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TONGUE RIVER RAILROAD COMPANY, INC. – RAIL CONSTRUCTION
AND OPERATION – IN CUSTER, POWDER RIVER AND
ROSEBUD COUNTIES, MT

TONGUE RIVER RAILROAD COMPANY'S
REPLY COMMENTS IN SUPPORT OF ITS
SUPPLEMENTAL APPLICATION FOR
CONSTRUCTION AND OPERATION AUTHORITY

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Tongue River Railroad Company, Inc. (“TRRC”) hereby submits this reply (“Reply”) to the April 2, 2013 Comments submitted in response to TRRC’s December 17, 2012 Supplemental Application (“Application”) under 49 U.S.C. § 10901 to construct a rail line in Montana to be operated by one of TRRC’s owners, BNSF Railway Company (“BNSF”).¹

I. INTRODUCTION

Only two sets of comments were filed in opposition to the TRRC Application: (1) the Comments of Northern Plains Resource Council and a landowner along the proposed alignment for the TRRC line, Rocker Six Cattle Company (jointly, “NPRC Comments”); and (2) the Comments of Montana Environmental Information Center, National Wildlife Federation and Sierra Club (jointly, “MEIC Comments” and collectively with the NPRC Comments, the “Opposing Comments”).

¹ By order served May 10, 2013, the Board provided an extension until June 7, 2013 for TRRC to file this Reply.

A third Comment was filed by Jay L. Schollmeyer, for and on behalf of United Transportation Union, General Committee of Adjustment (“Schollmeyer Comments”). Although Mr. Schollmeyer raises certain issues that warrant response, these comments do not oppose the issuance of the requested construction and operation authority, provided (as will be the case) that BNSF will be the sole operator of the TRRC rail line.

The Opposing Comments fail to even come close to meeting their burden to demonstrate that construction and operation of the TRRC line would be “inconsistent with the public convenience and necessity,” as the Board would need to find in order to deny TRRC’s Application under Section 10901. No slave to consistency, NPRC argues in its Comments that the Application should be denied on the grounds that: (a) no coal will move on the line because there is no market for it; and (b) so much coal will move on the line that the environmental costs of transporting it require denial of the Application, obviating the need to prepare an Environmental Impact Statement (“EIS”) pursuant to the National Environmental Policy Act, 42 U.S.C. §§ 4321, *et seq.* (“NEPA”). MEIC essentially mimics these arguments, although it does not go so far as to call for the termination of the environmental review process.

The Opposing Commenters cannot have it both ways: there cannot at the same time be both an absence of any market for the coal that the TRRC line would transport and severe environmental impacts from transporting large quantities of such coal. In fact, the Opposing Commenters are wrong both in their assessment of the coal market and in their assessment of the environmental impacts of constructing and operating a rail line.

As to their market assessment, major Upper Midwest utilities that are likely candidates to use coal from the area that TRRC would serve have expressed support for the TRRC railroad as a means of transporting the coal that each could use in power generation operations on behalf of

the large numbers of electricity consumers that they serve. Specifically, major coal users DTE Energy, Minnesota Power and Wisconsin Electric Power Company, in separate submissions attached at Exhibit 1 to this Reply, support the TRRC Application. These letters of support from significant current users of Powder River Basin (“PRB”) coal underscore that there is an ample public need for the TRRC line and that the Opposing Commenters are far afield in their effort to prove otherwise. It also bears noting that additional parties have expressed their confidence in the TRRC line by submitting letters in support of the TRRC Application. In addition to the letters attached to the Application from the Montana Coal Council, Montana Chamber of Commerce, and Western Environmental Trade Association, support has now also been expressed by the Billings Chamber of Commerce and Southeastern Montana Development Corporation. *See* Exhibit 2. Congressman Steve Daines (R-MT), Montana’s sole House member, also supports the TRRC Application. *See* Exhibit 3.

Moreover, as TRRC has shown in prior submissions, and will underscore here through detailed expert rebuttal testimony of its witness Seth Schwartz, there is in fact a significant and growing domestic and international market for coal moving from the Otter Creek/Ashland area, one of the largest remaining areas of low sulfur, sub-bituminous coal in the United States not today benefiting from rail transport options. In direct response to the Opposing Commenters and the reports they have submitted, Mr. Schwartz demonstrates that there is a large and growing domestic market for the Montana PRB coal that the TRRC line would serve. He shows, for example, that the coal generated at the planned Otter Creek mine that the TRRC line would serve will have certain transportation and other competitive advantages over coal from other sources that will make it attractive primarily to Upper Midwest utilities. He also shows that the export market will be available to this coal through existing Canadian ports that are in the process of

expansion or through existing and planned U.S. ports, and that there is demand for this coal in the growing overseas markets.

The Opposing Commenters also make contentions about claimed severe environmental impacts that will follow from construction and operation of the TRRC line. As noted, these arguments are grossly inconsistent with their contention that there is no market at all for the coal. That issue of credibility aside, the fact is that the impacts of the TRRC line have been previously studied in decisions in which the Board has approved construction of a rail line in the area.

Tongue River R.R.—Rail Construction and Operation—In Custer, Powder River and Rosebud Counties., MT, Finance Docket No. 30186 (ICC served Sept. 4, 1985) (*TRRC I ALJ Decision*), *aff'd on administrative appeal*, 1986 ICC LEXIS 314 (ICC served May 9, 1986) (*TRRC I Final Decision*) (approving an 89-mile alignment between Ashland/Otter Creek and Miles City); *Tongue River R.R. Co., Inc.—Construction and Operation—Western Alignment*, Finance Docket No. 30186 (Sub-No. 3), 2007 WL 2936132 (STB served Oct. 9, 2007) (*TRRC III*) (updating *TRRC I* environmental analysis and approving a line extending the Ashland/Miles City line south to Decker, MT).

Any impacts that may result from the construction and operation of the TRRC line are of course now being studied once again in a new EIS currently being prepared by the Board's Office of Environmental Analysis ("OEA"). The EIS will identify and assess the impacts of transporting coal by rail along the proposed TRRC alignment via Colstrip, MT, as well as via comparative alignments, and recommend mitigation for the Board's consideration. In contrast to NPRC, which claims that the impacts require no further environmental review, TRRC fully supports the Board's EIS process so that the Board can assess the environmental impacts and the public interest in light of facts, not overheated rhetoric.

Further, relative to the proposals previously considered and approved by the Board, impacts will be reduced if the Board approves the 42-mile “Colstrip Alignment” now proposed for construction. Among many other advantages, the Colstrip Alignment is less than half the length of the previously approved TRRC alignment via Miles City, will impact fewer properties and less land near the Tongue River, and takes maximum advantage of existing rail infrastructure in the area.

In addition to its internally inconsistent “there is no market, but there will be too many trains” arguments, NPRC also attacks the financial fitness of TRRC as well as one of TRRC’s owners, Arch Coal, Inc. (“Arch”). Arch of course is not the applicant here. Nonetheless, NPRC’s attack is ill-considered and without foundation, as TRRC will demonstrate below.

The Schollmeyer Comments, as noted, do not oppose the Application provided that BNSF will be the sole operator of the line. TRRC believes its Application made this point clear, and hereby reiterates that TRRC only seeks authority to construct the line and that BNSF would be the operator of the line. As to Schollmeyer’s contention that the Board cannot consider the Application unless a control application is also filed, TRRC submits that a control application is not a related application that has to have been filed with the construction application. Further, Schollmeyer’s contention that the Board should apply the pre-ICCTA version of section 10901 to this proceeding is not correct, as will be discussed below. In any event, the Application should be approved regardless of which version of Section 10901 were to be applied.

II. TRRC'S APPLICATION MEETS THE APPLICABLE PUBLIC CONVENIENCE AND NECESSITY TEST FOR APPROVAL

A. Legal Standard

1. The Current Public Convenience and Necessity Standard Applies

Under the governing statute, the Board must authorize the construction of a rail line unless it finds that the construction is “inconsistent with the public convenience and necessity.” 49 U.S.C. § 10901(c) (2011) (hereafter “PCN Standard”). The PCN Standard creates “a statutory presumption that rail construction is to be approved.” *See, e.g., Mid States Coal. Progress v. Surface Transp. Bd.* 345 F.3d 520, 552 (8th Cir. 2003) (“Mid States”); *TRRC III*, at 13. The Board has approved several recent rail construction applications under the PCN Standard, finding that they met the public convenience and necessity standard or warranted an exemption from regulation. *See* Finance Docket No. 35095, *Alaska Railroad Corporation – Construction and Operation Exemption – A Rail Line Extension to Port Mackenzie, Alaska*, (served Nov. 21, 2011); Finance Docket No. 34284, *Southwest Gulf Railroad Company – Construction and Operation Exemption – Medina County, Tx*, (served Dec. 18, 2008); Finance Docket No. 33407, *Dakota, Minnesota & Eastern Railroad Corporation Construction into the Powder River Basin* (served Feb. 15, 2006).

NPRC acknowledges that the PCN Standard applies here (NPRC Comments at 8). However, Schollmeyer argues that the PCN Standard applicable before the Interstate Commerce Commission Termination Act (“ICCTA”) took effect on January 1, 1996 should apply (Schollmeyer Comments at 9-10). Specifically, noting that this reopened *TRRC I* proceeding existed prior to ICCTA’s January 1, 1996 effective date, Schollmeyer argues that the pre-ICCTA

version of section 10901(c) applies due to ICCTA’s savings clause. Schollmeyer Comments at 9-10.²

This argument fails because that savings clause, which is found in section 204(b) of ICCTA (codified at 49 U.S.C. § 701 Note), states that “[t]he provisions of this Act shall not affect any proceedings or any application for any license *pending before the Interstate Commerce Commission at the time this Act takes effect* ... [and] [o]rders shall be issued in such proceedings, appeals shall be taken therefrom, and payments shall be made pursuant to such orders, as if this Act had not been enacted.” (Emphasis added). As the terms of the savings clause make clear, the fact that the *TRRC I* proceeding pre-dates the January 1, 1996 effectiveness of ICCTA is not determinative. Rather, the savings clause does not apply here because the *TRRC I* proceeding was no longer “pending” at the time ICCTA took effect. That proceeding was the subject of a final Interstate Commerce Commission decision served on May 9, 1986, almost ten years before ICCTA took effect, and that final decision had been judicially affirmed prior to 1996.³

The conclusion that the post-ICCTA standard is applicable here is further supported by Section 204(c) of ICCTA, which states, “If the court in a suit [commenced before enactment of ICCTA] remands a case to the Board or the Secretary, subsequent proceedings related to such case shall proceed in accordance with applicable law and regulations as *in effect at the time of such subsequent proceedings*.” (Emphasis added.) As this language makes clear, Congress intended any remand resulting from a suit pending at the time of enactment of ICCTA to apply post-ICCTA law. *See also, Caddo Antoine & Little Missouri R.R. Co.—Feeder Line*

² The Board reopened the *TRRC I* proceeding by decision served June 18, 2012, and also required that TRRC submit a new application.

³ *See N. Plains Res. Council v. I.C.C.*, 817 F.2d 758 (9th Cir. 1987), *cert. denied*, 484 U.S. 976 (1987).

Acquisition—Arkansas Midland R.R. Co. Line between Gurdon & Birds Mill, AR, Finance Docket No. 32479, slip. op. at n. 1 (STB served Aug. 12, 1999) (“Section 204(c) of the ICCTA provides, in general, that, if a court remands a suit against the ICC that was pending on the date of that legislation and involves functions retained by the ICCTA, subsequent proceedings related to the case shall proceed under the applicable law and regulations in effect at the time of the subsequent proceedings ... Thus, current 49 U.S.C. 10907 will apply to this proceeding on remand.”). Given that Congress intended post-ICCTA law to apply in Board proceedings on remand from court cases pending at the time of ICCTA’s enactment, it would be contrary to Congressional intent to apply pre-ICCTA law in the present case where the agency proceedings were reopened years after the enactment of ICCTA. As explained in the Application, the PCN Standard applies in this case because the Board has made it clear that it is undertaking a full review of TRRC’s Application, treating it like a new application. As the Board explained in its November 1, 2012 decision in this proceeding at 2:

We make clear here that we reopened the *Tongue River I* proceeding to review in full what is now the entire *Tongue River I* line construction project. The Board’s review will include not only the new environmental review of the entire construction project that will be prepared, but also an examination of the transportation merits supporting the entire *Tongue River I* line.

Because the Board is reviewing this application as though it were an application submitted in a new proceeding, the post-ICCTA version of Section 10901 applies.

Further, although less relaxed than the current PCN Standard, the pre-ICCTA PCN standard was also relaxed, requiring the Board’s predecessor to approve a construction application if it found that “present or future public convenience and necessity require[d] or permit[ted]” it.⁴ TRRC submits that the proposal to construct and operate the Colstrip

⁴ See former 49 U.S.C. § 10901(a) (1988).

Alignment meets the public convenience and necessity standard under this pre-ICCTA standard as well, because the current or future public convenience and necessity “requires or permits” TRRC’s construction proposal.

2. NPRC Misstates the Presumption Favoring Approval of Construction Applications

Citing to STB decisions in the *Dakota, Minnesota and Eastern Railroad Corporation* (“DME”) construction application proceeding,⁵ NPRC erroneously asserts that even if there is a presumption favoring the approval of construction applications, Opponents do not bear a heavy burden to rebut that presumption and satisfy that burden if they provide credible evidence challenging the elements of the PCN factors. *See* NPRC Comments at 8-9. NPRC’s reliance on those *DME* decisions as support for its position is misplaced. In *DME*, the Board merely held that when an opponent provides credible evidence challenging an application, the presumption favoring approval of construction applications is not so strong that the Board will approve construction without requiring the applicant to respond to the opponent’s allegations. *DME I*, 1998 WL 398189, at *3 (“The statute provides that construction applications should be granted unless we find that ‘such activities are inconsistent with the public convenience and necessity.’ That means that where, as here, opponents have presented strong evidence challenging the elements that make up the ‘public convenience and necessity’ determination (i.e., financial fitness, and public demand or need) for such a broad proposal, it is critical for the applicant to respond to these allegations.”) Here, TRRC is responding in detail to the Opponents’ allegations, demonstrating that they have failed to overcome the presumption favoring grant of the Application.

⁵ *See Dakota, Minnesota and Eastern Railroad Corporation Construction into the Powder River Basin*, Finance Docket No. 33407, 1998 WL 398189 (STB served July 16, 1998) (“*DME I*”) and *Dakota, Minnesota and Eastern Railroad Corporation Construction into the Powder River Basin*, Finance Docket No. 33407, 1998 WL 869567 (STB served Dec. 10, 1998).

Further, in a decision issued subsequent to the *DME* decisions cited by NPRC, the Board made it clear that the burden is on project opponents to actually establish that a proposal is inconsistent with the public interest as opposed to simply providing evidence that challenges the application. *See Norfolk Southern Corp. and Norfolk Southern Ry. Co.— Construction and Operation—in Indiana County, PA*, Finance Docket No. 33928, 2003 WL 21132522, at *5 (STB served May 16, 2003) (“Under the current law, rail construction is presumed to be in the public interest. As such, the burden is on opponents to establish that a proposal is inconsistent with the public interest because there is no public demand or need for the construction, thus shifting the burden back to proponents.”). The Opponents here have not met that burden, as TRRC will demonstrate in this Reply and accompanying exhibits.

3. Factors Considered in Applying PCN Standard

TRRC agrees with NPRC that to determine whether the PCN Standard is met, the Board generally applies a three-part test examining whether: (1) there is a public demand or need for the service; (2) the applicant is financially fit to undertake the construction and provide service; and (3) the construction project is in the public interest and will not unduly harm existing carrier services. *TRRC III* at *8 (“While the statute does not define ‘public convenience and necessity, the agency has traditionally looked at whether: (1) the applicant is financially able to undertake the project and provide rail service; (2) there is a public demand or need for the proposed service; and (3) the proposal is in the public interest and will not unduly harm existing services.”).

NPRC’s claim at page 9 of its Comments that TRRC failed to satisfy the three-part PCN test because it provided “generalized statements and speculation” rather than specific information is wrong. As described below, TRRC has provided specific information addressing each part of the PCN test. The statements that NPRC principally complains about are projections

of future events. However, in other construction cases, the Board has recognized that “[n]either [the Board] nor any of the parties can predict the future with certainty.” *Dakota, Minnesota and Eastern Railroad Corporation Construction into the Powder River Basin*, Finance Docket No. 33407, 2002 WL 121210 at *20 (STB served Jan. 30, 2002). This uncertainty regarding the future requires some degree of generality in the evidence provided by applicants in construction cases, and as explained further below, TRRC has provided much more than mere speculation in support of its application.

B. NPRC’s Claims That There is No Public Need for the TRRC Rail Line Are Baseless

The Application and other previous TRRC filings set forth evidence, supplemented here by the Verified Statement of Seth Schwartz (*see* Exhibit 4) (“Schwartz VS”) offered in rebuttal to the evidence offered by the Opposing Commenters, that shows beyond any doubt that there is a public need for the TRRC rail line. It is undisputed that the proposed line is the only viable transportation alternative for bringing to market the vast reserves of coal in the Otter Creek and Ashland area of Montana, including coal from the planned Otter Creek mine. In previous filings, TRRC has presented substantial evidence regarding the market for such coal. *See* Application at 6-7 and 17-22; Verified Statements of Stevan Bobb (“Bobb VS”) and William M. Rowlands (“Williams VS”) (both submitted with the Application); Verified Statement of Andrew Blumenfeld (“Blumenfeld VS”) submitted with TRRC’s January 28, 2013 Reply to NPRC’s Petition to Revoke in this proceeding; and TRRC’s February 6, 2013 Reply to Information Request #1 from Ms. Vicki Rutson (“TRRC Reply to Info Request #1”) (included as Appendix 2 to NPRC Comments).

As reported in the Application, the Otter Creek mine, being developed by a subsidiary of one of TRRC’s owners, Arch, is now the subject of an active permitting proceeding at the

Montana Department of Environmental Quality (“MDEQ”) and is undergoing environmental review pursuant to the Montana Environmental Policy Act. The fact that the Otter Creek mine is now en route to becoming an important source of sub-bituminous coal is the result of a lease to Arch of a checkerboard series of coal tracts in the area owned by the State of Montana and the aggregation of those tracts with the adjacent privately owned coal tracts. The lease, approved by the State in March, 2010, and affirmed on judicial review by the Montana Supreme Court,⁶ has allowed for the development of this important coal resource as well as for the State to earn significant royalties, over and above the over \$85 million lease payment already made by Arch to the State. While no coal mines are currently proposed for the Montco area south of Ashland and west of Otter Creek, there is no dispute that very significant coal reserves exist there and it is likely that one day those reserves will be developed and the coal transported to market. As explained in the Application and in the verified statements that TRRC has previously submitted, the TRRC line would provide rail transportation for coal mined in that area. And as noted above, utilities that are prospective users of Otter Creek coal have now confirmed their support for the TRRC project.

NPRC nonetheless argues that TRRC has not established that a market in fact exists for the Otter Creek/Ashland area coal and, thus, has not established a public need for the rail line.⁷ These criticisms are without merit. While the coal market has been volatile and changeable in recent years—making it difficult to predict precisely what the market for Otter Creek coal will be in several years when the Otter Creek mine may begin producing coal—TRRC’s Application,

⁶ *Northern Plains Res. Council, Inc. v. Mont. Bd. of Land Comm'rs*, 288 P.3d 169 (Mont. 2012) (affirming Land Board decision to lease Otter Creek tracts).

⁷ The environmental groups submitting the MEIC Comments generally agree with the market criticisms presented by NPRC. See MEIC Comments at 4-5. These environmental groups presented no additional information in support of these criticisms.

including the attached Bobb and Rowlands verified statements, the Blumenfeld verified statement, TRRC's Reply to Info Request # 1, and this Reply, including the attached verified statement of Seth Schwartz (an expert with more than 30 years of experience consulting for the energy industry regarding coal markets and the economics of coal operations and coal procurement) demonstrate a public need for the rail line by showing that a domestic market as well as an international market will exist for the Otter Creek/Ashland area coal.⁸

As explained in the Application, the Otter Creek mine is expected to produce 20 million tons of coal annually at full production. Even based on the abnormally depressed 2012 coal market, this amount constitutes less than 5% of the 419 million ton PRB coal market and less than 2% of the 1,061 million ton coal market for the entire United States in that year.⁹ The United States Energy Information Administration ("EIA") forecasts that total demand for U.S. coal will increase at an average annual rate of 0.2% from 2011 to 2040.¹⁰ EIA further predicts that Montana PRB coal will be the fastest growing coal supply region in the United States with a projected average annual growth rate of 2.0% from 2011 to 2040.¹¹ EIA predicts even greater growth in production for low-sulfur Montana PRB coal, like Otter Creek coal, projecting that such coal will increase at an average annual rate of 2.8% to 2040, from 24.4 million tons in 2011 to 54.1 million tons in 2040.¹² By 2016 (before the Otter Creek mine is expected to begin

⁸ Reiterating the erroneous assertion from its Petition to Revoke the Supplemental Application, NPRC claims that "TRRC's financial backers are looking to Asia as the primary market for Otter Creek coal." NPRC Comments at 19-20. That assertion is not true. As explained in TRRC's Reply to that Petition to Revoke, at 11-13, the market forces in effect when the Otter Creek mine and TRRC rail line are operational will dictate the amount of Otter Creek coal that will be used domestically and the amount that will be exported. NPRC's reasons for asserting Asia is the primary market are not well-founded. *Id.* As explained further below and in TRRC's previous submissions, in addition to the export market, the domestic market is a likely market for Otter Creek coal.

⁹ Schwartz VS at 4.

¹⁰ Schwartz VS at 7.

¹¹ Schwartz VS at 7.

¹² Schwartz VS at 8.

production), EIA projects that the entire PRB coal region will resume its growth and will reach 500 million tons per year by 2023, which is more than 80 million tons above its 2012 production level.¹³

As explained further below, Otter Creek coal is expected to fare well in the competitive domestic coal market because of the low cost to extract that coal relative to other mines.¹⁴ The primary domestic market for Otter Creek/Ashland area coal is electric utilities in the Upper Midwest because of the shorter rail distance required to serve these customers; however, there are secondary markets in the southern states for some of this Otter Creek/Ashland area coal as well.¹⁵

In addition to the large domestic market for Otter Creek/Ashland area coal, there is a large and growing export market for United States coal, and Otter Creek/Ashland area coal is well-situated to supply it.¹⁶ While most Montana coal has been used domestically rather than exported, over 13 million tons of Montana coal were exported in 2011.¹⁷ According to the International Energy Agency (“IEA”), an organization that publishes statistics on world coal demand and trade, thermal coal shipped by ocean vessel more than doubled from 356 million tonnes in 2000 to 791 million tonnes in 2011.¹⁸ IEA projects that coal imports into South Korea, China and other southeast Asian countries – the countries most likely to import Otter Creek/Ashland area coal – will grow significantly this decade from 496 million tonnes in 2011 to

¹³ Schwartz VS at 8.

¹⁴ Blumenfeld VS at 2-3; *see also* Schwartz VS at 33.

¹⁵ *See* Blumenfeld VS at 2-3; Schwartz VS at 12-13.

¹⁶ Schwartz VS at 18-32.

¹⁷ Tongue River Railroad Company’s Reply to the January 23, 2013 Information Request from Ms. Vicki Rutson (dated Feb. 6, 2013), citing attached EIA Report. This is Appendix 2 to the NPRC Comments.

¹⁸ Schwartz VS at 24, citing IEA, Coal Information 2012, Table 2.4. Tonnes are metric tons; one metric ton equals 1.10231 tons (also referred to as “short tons”) as measured in the United States.

652 million tonnes (or 719 tons) in 2017.¹⁹ According to IEA, Europe, a secondary market for Otter Creek/Ashland area coal, is expected to continue to net import about 200 million tonnes through 2017.²⁰ PRB coal, including Otter Creek/Ashland area coal, is a very competitive source of coal for the Asian and European markets.

1. NPRC's Claim That No Domestic Market Exists for Otter Creek/Ashland Area Coal is Without Merit

Relying primarily on two reports prepared at its request – a March 1, 2013 report by Synapse Energy Economics titled “Declining Markets for Montana Coal” (“Synapse Report”) and a November 2012 report by Power Consulting titled “Changes in the Market for Montana Powder River Basin Coal between 1986 and 2012” (“Power Report”) – NPRC claims that there is no domestic market for Otter Creek coal. *See* NPRC Comments at 10-19. However, as explained above, the market for coal generally and for Montana PRB coal in particular is expected to grow substantially between 2011 and 2040. The annual 20 million tons of coal expected to be produced from the Otter Creek mine at full production constitutes less than 5% production of the abnormally low 419 million ton PRB coal market in 2012, and would be only 4% of the projected PRB coal market in 2023. NPRC and its experts have not presented information that rebuts the reasonable conclusion that there will be demand for Otter Creek and Ashland area coal in the very large and growing domestic PRB coal market. As shown below and in the attached verified statement of Mr. Schwartz offered in rebuttal, their arguments are flawed.

First, NPRC takes issue with TRRC's use of the current EIA forecast of coal growth, arguing, among other things, that the forecast does not demonstrate demand for Montana coal in

¹⁹ Schwartz VS at 32.

²⁰ Schwartz VS at 21.

the United States. *See* NPRC Comments at 10-11.²¹ Contrary to NPRC's claim, EIA's detailed tables that underlie the forecast show that EIA in fact projects that Montana PRB coal will be the fastest growing coal supply region in the United States. *See* Schwartz VS at 7. NPRC also attempts to undercut the EIA forecast by claiming it is just a forecast that may or may not come true. This is not a valid criticism. Analyzing the market for Otter Creek/Ashland area coal several years from now necessarily involves a forecast of future events, and every forecast of future events may or may not turn out to be true. Since it is necessary to forecast the future coal market in this proceeding, the EIA forecast is perhaps the best forecast available. It is an objective forecast published on an annual basis by a knowledgeable, objective third-party.

Second, NPRC's reliance on the Synapse report to argue that Montana coal demand has declined and will likely continue to decline due to lower natural gas prices and higher coal prices is also baseless. NPRC Comments at 11-13. Not only is it inconsistent with the current EIA forecast but, as explained by Mr. Schwartz, the Synapse conclusion is not reasonable because it is based on an improper distortion of the decline in natural gas prices relative to PRB coal prices (PRB coal retains a significant delivered cost advantage over natural gas) and on unusual events that drove down the demand for domestic coal in 2012 and are unlikely to be repeated. *See* Schwartz VS at 5-6; 9-10. Domestic demand for coal generally declined in 2012 due to an unusually mild winter that led to a decline in electric power generation and an even more significant decline in the demand for natural gas used for residential and commercial heating. The resulting natural gas surplus drove natural gas prices way down and displaced even more coal-fired generation. The market for Montana coal specifically was also negatively affected in

²¹ NPRC also makes the puzzling claim that TRRC's mischaracterized the EIA forecast by saying the forecast showed coal consumption would grow and then citing as support an EIA forecast indicating that coal production would grow. NPRC Comments at 10-11. While it follows logically that if coal consumption grows, coal production will grow as well, EIA also specifically projects that domestic coal consumption will grow at the same annual rate through 2040 as coal production. *See* Schwartz VS at 7.

2012 by several other unusual events that are not expected to recur, including the unexpected temporary breakdown of a generating unit owned by the largest customer of Montana's Absaloka mine and the significantly depressed coal burn at the Colstrip station in Montana due to above normal hydroelectric power generation in the Pacific Northwest. This 2012 decline in domestic coal demand is expected to reverse in 2013 due to the return of normal winter weather, the return of natural gas inventories to normal and the recovery of natural gas prices to over \$4.00 per million Btu. *See Schwartz VS at 5-6.*

Third, NPRC presents flawed arguments at pages 14-19 of its Comments where it asserts that the Otter Creek/Ashland area coal will not be able to compete with other Wyoming and other Montana PRB coal because of its higher sodium content and purported transportation disadvantage. The claims are based on the incorrect assumption that very few power plants can burn this coal due to its sodium content and the relatively higher transportation costs that allegedly exist for this coal as compared to the transportation costs for coal from the Wyoming PRB mines. To the contrary, as explained by Mr. Schwartz, there are a large number of power plants that use Montana PRB coal today or have used Montana PRB coal in the past with similar sodium content and similar relative transportation costs compared to Wyoming PRB coal as the Otter Creek/Ashland area coal. *See Schwartz VS at 10-15.* Mr. Schwartz also shows that NPRC has overstated the number of power plants for existing Montana PRB coal customers that have announced plans to retire and, as a result, NPRC has further understated the number of plants that can burn Otter Creek/Ashland area coal. *See Schwartz VS at 14-16.* Based on his more appropriate identification of the potential domestic market for Otter Creek/Ashland area coal which includes: (1) plants that currently purchase Montana PRB coal; (2) plants that previously purchased Montana PRB coal; and (3) plants purchasing other PRB coal that have wet bottom

boilers which prefer high-sodium coal, and which excludes coal-fired plants that fit within one of these categories but are being retired, Mr. Schwartz shows that the potential domestic market for Otter Creek/Ashland area coal is 118 million tons. Schwartz VS at 2, 17. This potential domestic market for Otter Creek/Ashland area coal is very large, and many times the 20 million tons expected to be produced annually from the Otter Creek mine at full production.

Also without merit is NPRC's claim at pages 14-15 of its Comments that Otter Creek/Ashland area coal will not be competitive with Wyoming and other Montana PRB coal due to its higher mining costs. NPRC relies on a 2006 Norwest Report to support its contention. However, since the Norwest Report was prepared in 2006, the production costs of Wyoming and other Montana PRB coal have risen due largely to the increase in their strip ratios²² as the reserves in those mines have become more depleted. *See* Schwartz VS at 34-36. PRB coal prices have increased steadily since then, making the Otter Creek coal more competitive with coal from existing Wyoming and Montana PRB mines than it was at the time the Norwest Report was prepared in 2006. *See* Schwartz VS at 37.

For this reason, among others, (and contrary to the assertions in the Power Report at 1), it is likely that Otter Creek/Ashland area coal will be developed now even though it was not developed in 1986 when a Tongue River rail line was first approved. As explained by Mr. Schwartz at pages 34-37 of his verified statement, since 1986, the coal reserves at existing Wyoming and Montana PRB mines have been heavily mined and consequently have much higher production costs (due primarily to higher strip ratios) now than they did in 1986. As a result, while the production costs of Otter Creek coal were above those of coal from existing Wyoming and Montana PRB mines in 1986, now the production costs of Otter Creek coal are

²² The strip ratio is the cubic yards of rock which must be mined to produce one ton of coal. *See* Schwartz VS, at 35.

below those of coal from existing PRB mines. Thus, Otter Creek coal is much more competitive with coal from existing Wyoming and Montana PRB mines now than it was in 1986. Moreover, the PRB coal market is three times larger today (averaging 450 million tons in last 10 years) than it was in 1986 (151 million tons) making it more likely that the Otter Creek coal reserves will be developed. *See Schwartz VS at 34-35.*

2. NPRC's Claim That No Export Market Exists for Otter Creek/Ashland Area Coal is Without Merit

Relying on articles rather than any expert reports, NPRC also claims that there is no international market for Otter Creek coal. *See NPRC Comments at 19-30.* Specifically, it claims that none of the following international markets – Japan, South Korea, China or Europe – are likely markets for Otter Creek coal. These claims, like NPRC's claims regarding the domestic market for Otter Creek coal, lack foundation. Indeed, they are inconsistent with the Power Report and a report by Gerald Fauth, also relied on by NPRC, which talk at length about the large market for PRB coal in Asia.²³

As Mr. Schwartz shows in his rebuttal, IEA projects that coal imports into South Korea, Japan, China and other southeast Asian countries – the countries most likely to import Otter Creek/Ashland area coal – will grow significantly this decade from 496 million tonnes in 2011 to 652 million tonnes (or 719 tons) in 2017.²⁴ According to IEA, Europe, a secondary market for Otter Creek/Ashland area coal, is expected to continue to net import about 200 million tonnes (or 220 tons) through 2017.²⁵ In total, these Asian countries and Europe are expected to import over 900 million tons of coal in 2017.

²³ Power Report, at 17-19; Fauth Report, at 13-19.

²⁴ Schwartz VS, at 28.

²⁵ Schwartz VS at 21.

Otter Creek coal is well-situated to serve these very large international markets. Montana PRB coal is exported to Asia and Europe today. As explained above, EIA reported that over 13 million tons of Montana coal were exported in 2011. In 2012, 1.3 million tons of Montana coal were shipped to Europe through the Midwest Energy Resources Company (“MERC”) terminal in Superior, Wisconsin.²⁶ As explained by Mr. Schwartz, PRB coal has been competitive in Asia since 2009 and is likely to remain so for the foreseeable future.²⁷ The proposed Otter Creek mine is well-placed to supply the growing export market to Asia because it will have the shortest rail distance to reach the existing export terminals in Vancouver, Canada and proposed terminals in Washington and Oregon. Compared to Wyoming PRB coal, Otter Creek coal is also well-placed to supply the European market because it has a shorter rail distance to the MERC dock. Schwartz VS at 32.

NPRC’s efforts to show that Otter Creek coal is not likely to serve the Japan, South Korea, China or European markets are unpersuasive.

1. China: NPRC provides three reasons for its claim that China is not a likely market for Otter Creek coal: (1) China will purportedly have little need for new PRB coal when TRRC is able to transport Otter Creek coal; (2) TRRC allegedly will not be able to compete with this well-served market; and (3) existing North American infrastructure is allegedly not adequate to accommodate new shipments to Asia. *See* NPRC Comments at 21-28. As Mr. Schwartz shows, NPRC’s reasons are not well-founded. While NPRC correctly points out that domestic coal production in China has increased rapidly, NPRC neglects to explain that such domestic production has been significantly outpaced by coal consumption and, as a result, China has switched from being a large coal exporter in 2004 to being a large coal importer in 2011. *See*

²⁶ Schwartz VS at 26.

²⁷ Schwartz VS at 32.

Schwartz VS at 27. NRPC's reliance on an IHS CERA press release for its assertion that coal imports to China will decrease is misplaced.²⁸ While acknowledging that domestic coal production in China has increased, the IHS CERA press release, like the IEA forecast, projects that thermal coal imports into China will *increase* through this decade. *See* Schwartz VS at 27-29.

NRPC's assertion at pages 24-25 of its Comments that Otter Creek coal is unlikely to be able to compete with China's other current sources of imported coal – Australia and Indonesia – is also baseless. Asian countries, including China, have imported PRB coal each year between 2009 and 2012. *See* Schwartz VS at 32. Montana PRB coal (sub-bituminous coal) has a competitive advantage over Australian coal (bituminous coal). *See id.* Montana PRB coal also has been competitive with Indonesian coal (also sub-bituminous coal). Montana PRB coal's competitive position vis-à-vis Indonesian coal is dependent on various factors, including world prices for coal, currency exchange rates, coal production costs, and transportation costs. *Id.* Given that PRB coal has competed successfully with Indonesian coal to provide coal to the Asian markets between 2009 and 2012, it is reasonable to expect that it will continue to be able to compete with Indonesian coal for those markets in the future. *Id.*

Finally, NRPC's argument at pages 26-28 of its Comments that the existing North American infrastructure is inadequate to accommodate new coal shipments to Asia is without merit. Even if the new coal export terminals proposed in Washington and Oregon are not constructed, there is more than adequate coal export capacity at the existing Canadian export terminals in Vancouver, British Columbia to accommodate the expected Otter Creek coal production, even assuming that all produced Otter Creek coal is exported. *See* Schwartz VS at

²⁸ *See* NRPC Comments at 22-24.

17-21. There will be at least 22 million tonnes per year (24.25 million tons per year) of new capacity in the Port of Vancouver, Canada available for increased shipments of PRB coal to Asia. The export terminals in Vancouver, Canada are able to handle exports of Montana PRB coal to Asia since they are doing so today. *Id.* at 21.

2. Europe: TRRC believes that Europe is a secondary rather than a primary market for Otter Creek coal because it must travel farther than coal from the eastern United States to reach Europe. As a result, TRRC believes that only a portion of the Otter Creek coal is likely to move to Europe. NPRC's claim that Europe is not a likely market for even a portion of the Otter Creek coal (NPRC Comments at 28-29) is based in part on the erroneous assertion that IEA projects a significant decline in European coal imports by 2015. In fact, the IEA slide that NPRC cites as support for this assertion forecasts a small (not a significant) drop in coal *consumption* in Europe; it does not address European coal *imports*. *See Schwartz VS* at 24-25. Contrary to NPRC's assertion, IEA forecasts that European coal imports will remain flat, not decline. *See id.* at 25. NPRC's claim is also based on its contention that TRRC has not provided evidence that MERC has the capacity to serve as a port for European shipments of Otter Creek coal. In fact, the MERC terminal has excess capacity that is not being used. *See id.* at 26.

3. South Korea/Japan: NPRC argues that it is unlikely that South Korea or Japan will serve as markets for Otter Creek coal because: (1) coal imports are purportedly unlikely to grow in those countries; and (2) Otter Creek coal is unlikely to be able to compete with coal from Australia and Indonesia, the existing suppliers of coal imports in those countries. *See NPRC Comments* at 29-30. However, South Korea and Japan also are likely international markets for Otter Creek/Ashland area coal. South Korea is the largest market in Asia for United States coal exports today, and its coal imports are expected to grow considerably by 2017 while coal

consumption in Japan is also expected to rise due to the drop in Japan's nuclear power output. *See* Schwartz VS at 30-31. Moreover, as explained above, PRB coal is competitive with Indonesian coal and also has a competitive advantage over Australian coal.

In addition to the Asian countries identified above, it is projected that India, Vietnam and other Southeast Asian countries will increase their coal imports through 2017; and they are also potential markets for Otter Creek/Ashland area coal. *See id.* at 31-32.

C. NPRC'S Financial Fitness Claims are Without Merit

The Application also presents evidence demonstrating that TRRC satisfies the second factor of the PCN Standard – that the applicant is financially fit to undertake the construction and provide service. As NPRC acknowledges, it is well established that the purpose of the financial fitness requirement is not to protect the carrier or its investors but to protect existing shippers.²⁹ Specifically, the Board analyzes whether the proposed construction could have an adverse impact on the rail carrier's ability to continue to serve those shippers. *See, e.g., Tongue River R.R. Co.—Rail Construction and Operation—Ashland to Decker, Montana*, 1 S.T.B. 809, 828 (1996) (“The purpose of the financial fitness test is not to protect the carrier or those who elect to invest in the proposed project, but, rather, to protect existing shippers from carrier financial decisions that could jeopardize a carrier's ability to carry out its common carrier obligation to serve the public ...”).

Since TRRC does not serve any existing shippers, the proposed construction could not have any adverse impact on TRRC's ability to continue to serve existing shippers. In cases like this where the applicant seeks to build a new rail line without any existing shippers, the Board has held that an examination of applicant's financial ability to construct, maintain and operate a

²⁹ *See* NPRC Comments at 33 and cases cited therein.

line has little, if any, relevance. *See, e.g., Great Salt Lake and S. R.R., L.L.C.-Constr. and Operation-in Tooele County, UT*, Finance Docket No. 33824, 2000 WL 1844695 at *4 (STB served Dec. 15, 2000) (because the proposed line was “a new railroad without existing shippers, the financial fitness test has little, if any, bearing on the [] rail construction application”). Nevertheless, TRRC has provided the requisite financial information in its Application showing that it is financially fit. TRRC showed that it has reasonable options available for financing the construction of the Tongue River Railroad and that the rail line is expected to be profitable in the two years following construction based on projected payments from the operator, BNSF. *See* Application at 31-32, and Exhibits E, F, G and Appendix B thereto.

NPRC’s attempt to show that TRRC has failed to satisfy the financial fitness requirement is legally defective and factually flawed. Relying on a 90-year-old United States Supreme Court decision, *Texas & P. Ry. Co. v. Gulf, C. & S.F. Ry. Co.*, 270 U.S. 266, 277 (1926), NPRC incorrectly argues that the financial fitness requirement cannot be satisfied under the philosophy of “letting the financial market itself determine whether the project is financially viable.” *See* NPRC Comments at 34, 38. However, as is apparent from the language that NPRC quotes from the Supreme Court case, that decision does not support NPRC’s assertion.³⁰

Moreover, the STB has reached the opposite conclusion, holding that the determination whether an applicant is financially fit *should be left up to the financial markets* following its approval of the construction application. *See, e.g., Dakota, Minnesota and Eastern Railroad Corporation Construction into the Powder River Basin*, Finance Docket No. 33407, 2002 WL

³⁰ NPRC quotes the following language from the Supreme Court decision: “Congress undertook to develop and maintain, for the people of the United States, an adequate railway system. It recognized that preservation of the earning capacity, and the conservation of the financial resources, of individual carriers, is a matter of national concern; that the property employed must be permitted to earn a reasonable return; that the building of unnecessary lines involves a waste of resources, and that the burden of waste may fall upon the public; that the competition between carriers may result in harm to the public, as well as in benefit; and that, when railroads inflict injuries upon its rival, it may be the public which ultimately bears the loss.” 270 U.S. at 277.

121210 at *20, (STB served Jan. 30, 2002) (“[I]f the financial community is not persuaded that this line would attract the levels of traffic needed to justify the investment, this line will not be built, notwithstanding our approval. On the other hand, were we to disapprove the construction of this line because of MSC’s pessimistic projections, the public benefits of this project would never be realized. Because we do not wish to deprive shippers of the anticipated improved rail service that would result from the addition of this new line and attendant rehabilitation of DM&E’s existing lines, we will not stand in the way of DM&E’s going forward with this project if it can obtain the necessary financing”); *Tongue River R.R. Co.—Rail Construction and Operation—Ashland to Decker, Montana*, 1 S.T.B. 809, 829 (1996) (“We note that, as with any business transaction, the financial market itself, of course, will ultimately determine if the project is economically viable—i.e., private financing approval will depend in part on current market economics, partners’ willingness to contribute substantial amounts of capital, and other factors that may change by the time the project is under way.”); *TRRC III* at *12 (STB served Oct. 9, 2007) (“In any event, while we believe that TRRC would secure sufficient traffic to make the Western Alignment project financially viable, the market ultimately will determine whether or not the line is built. The venture capitalists, banking institutions, and overall financial sector will provide the necessary financing if they agree that TRRC is financially viable. Given the liberal nature of our licensing statute, they should have that opportunity.”); *see also Mid States*, 345 F.3d at 552 (“[W]e agree with the Board that the ultimate test of financial fitness will come when the railroad seeks financing. Without impugning the accuracy of the financial analyses presented by the various parties in this case, we believe that the nation’s financial institutions possess the expertise and insight necessary to determine the financial viability of this project. Given the

liberal nature of the licensing statute and the Board's analysis thus far, they should have that opportunity.”)

The STB’s conclusion that the financial markets should decide whether an approved rail project will be built makes sense. The owners of TRRC are large sophisticated businesses with substantial resources, and include owners with expertise in rail transportation and coal production. They will not invest the millions of dollars in the project available to them if there were no market for the coal that the line will transport.

NPRC’s criticisms about the adequacy of TRRC’s financial fitness evidence are similarly groundless. First, NPRC takes issue with TRRC’s projected income statement on several bases. NPRC complains that the projected income statement is only for two years following construction and that it is unclear how the numbers in the projected income statement were generated. *See* NPRC Comments at 35-36. However, the Board’s regulations only require the applicant to provide income projections for the two years following construction, and the projected income statement itself (Exhibit G to the Application) provides notes that explain exactly how the projected income was derived. NPRC also argues that the projected income statement is “guesswork” since not one utility is on record as supporting the project, which NPRC further claims shows that there is no market for Otter Creek coal. As discussed above, TRRC has provided ample evidence in its Application showing there is a market for the Otter Creek/Ashland coal. And while statements of support from utilities are not necessary to show that a market for the coal exists, to date three large utilities are now on the record as supporting the TRRC project. *See* Exhibit 1.

NPRC then claims TRRC’s projected income statement is inadequate by comparing it unfavorably with the projected income statements provided in various construction cases,

involving Norfolk Southern and DME, respectively, and with the financial fitness evidence provided in an earlier TRRC proceeding where TRRC submitted a verified statement from Lehman Brothers and statements of interest from electric utilities. *See* NPRC Comments at 35-38. NPRC's criticisms are misplaced. The fact that TRRC's evidence of financial fitness in this proceeding differed in some respects from the financial fitness evidence submitted in other construction application proceedings does not indicate that TRRC lacks financial fitness now; it merely indicates that different circumstances existed in the other proceedings. For example, the DME construction application differed from the current TRRC construction application in that it involved a much larger project and, unlike the TRRC project, it did not have owners including one of the nation's largest coal mining companies and one of its largest railroads, each with considerable resources and financial expertise.

Similarly, in the earlier TRRC construction proceeding, a statement from Lehman Brothers may have been warranted because, unlike the current situation, TRRC previously did not have large owners that had committed to either provide equity contributions to fund the construction or guarantee long-term debt privately placed by TRRC that would fund the construction. Given the commitments by the current owners, TRRC does not need to provide a verified statement from a company like Lehman Brothers to demonstrate that it will have financing to construct the rail project.

NPRC's subsequent claims at pages 38-42 of its Comments that TRRC should have provided evidence that Arch, one of its owners, was financially fit are without legal or factual basis. As a legal matter, Arch is not the applicant so TRRC was not required to provide information regarding Arch's financial fitness. Arch is just one of three owners of TRRC. NPRC does not take issue with the financial viability of the other two large owners – BNSF nor

TRRC Financing, LLC, a company controlled by Forrest E. Mars, Jr. In any event, Arch is a large, financially stable company. Recent losses by Arch that are identified by NPRC are typical of the cyclical coal business and do not show that Arch is financially unstable. To the contrary, Arch has a strong liquidity position, primarily in cash, that will allow the company to weather the 2012 downturn in the coal market.³¹ Consistent with the domestic coal market information presented by Mr. Schwartz, Arch has seen that downturn in the U.S coal market beginning to turn around. *Id.* at 1-2, 4-5.

Finally, NPRC makes the legally and factually unsupported claim that the Board may need to re-evaluate the financial viability of the TRRC project subsequent to the environmental review even if it decides TRRC satisfies the financial fitness factor under the PCN Standard because the environmental mitigation costs imposed by the Board are likely to be high and could cause the TRRC project to become financially unviable. *See* NPRC Comments at 42-43. NPRC provides no legal authority for this assertion because there is none. There is no factual basis for it either. The owners of TRRC are sophisticated, financially stable companies that are able to finance reasonable environmental mitigation costs. These companies invested in TRRC knowing the environmental mitigation that had been imposed in previous TRRC proceedings.

D. NPRC's Conclusory Assertion that the TRRC Line is Contrary to the Public Interest is Legally Flawed and Factually Unsupported

NPRC argues that the Board should not approve the TRRC line because it does not satisfy the third factor of the PCN Standard – it allegedly is not in the “public interest.” In fact, NPRC argues that the adverse environmental and socioeconomic impacts are such that the Board should decide even “before completing its environmental review” that the proposed TRRC line

³¹ April 23, 2013 Arch Coal, Inc. Press Release, at 2, 5, attached as Exhibit 5.

does not meet the public interest test and therefore that TRRC's Application should be denied. Again, NPRC's argument is legally untenable and factually flawed, as shown next.

1. NPRC's Request that the Board Terminate its Environmental Review Should be Rejected

In fulfilling its responsibility to assess the public interest relative to a rail construction project, the Board balances safety and environmental impacts against the transportation benefits associated with the proposed line. *See TRRC III* at 33.³² Plainly, the Board cannot do so unless it has completed the review of environmental impacts that it is currently undertaking through the EIS that it is preparing in this proceeding and determined the mitigation steps that will be appropriate to reduce environmental impacts. NPRC in fact recognizes that in the past the Board has imposed significant measures to address environmental impacts of the TRRC line, and even assumes that the Board will do likewise in any future final decision in this proceeding. *See* NPRC Comments at pgs. 42-43 (noting the cost of mitigation measures).

NPRC correctly acknowledges that under the Board's regulations at 49 C.F.R. § 1105.10(f), and of course the dictates of NEPA, the Board has an obligation to review environmental issues before it makes a final determination on the Application under 49 U.S.C. § 10901. NPRC Comments at 44. However, in the very next sentence of its Comments, NPRC makes the entirely contradictory and unsupported assertion that the Board may and should "deny an application before completing its environmental review when existing evidence sufficiently demonstrates that the project is not in the public interest." *Id.* at 44.³³

³² *See also, Alaska R.R. Corp.—Construction and Operation Exemption—a Rail Line Extension to Port Mackenzie, Alaska*, Docket No. FD 35095, 2010 WL 24954, at *8 (STB served Jan. 6, 2010) ("In a rail construction case, we weigh environmental concerns against transportation concerns in evaluating the public interest.").

³³ NPRC inaccurately states that the Board may not act until all environmental issues are "resolved." NPRC Comments at 44. If NPRC is suggesting that the Board can only act if there are no environmental impacts, that is of course wrong. The Board's obligation is to identify environmental impacts and impose mitigation where warranted.

NPRC's strange contention that the Board should act before it has completed its environmental review of the TRRC Application is directly contrary to the dictates of NEPA, as NPRC must surely know. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (the "environmental effects of the proposed action [must be] adequately identified and evaluated" prior to final decisionmaking); *Neighbors of Cuddy Mountain v. Alexander*, 303 F.3d 1059, 1070 (9th Cir. 2002) (NEPA requires agencies to take a "hard look" at the consequences of proposed action before making a final agency decision). The Board cannot fulfill its responsibility to determine whether the TRRC proposal is in the public interest until a Final EIS is issued. At that time, the Board can weigh the environmental impacts and the mitigation recommended to address those impacts against the transportation benefits of the proposed rail line in order to satisfy its responsibilities under Section 10901. As shown next, it should not be difficult for the Board to find, as has been the case with TRRC's prior proposals, that construction and operation of the TRRC line is in the public interest.

2. The Board Has Previously Found that the TRRC Proposal is Consistent with the Public Interest, and Should Do So Again in this Proceeding

The Board has previously weighed the balance of transportation benefits and environmental and safety issues in favor of construction of a line that would serve Ashland/Otter Creek. Previously, the Board's predecessor approved the construction of a line designed to link the Ashland/Otter Creek area with an existing BNSF line at Miles City, finding that the public interest test was met by TRRC. *See TRRC I, ALJ Decision* at 27-28 (concluding that the public interest "is overwhelmingly in favor of approval of the construction and operation application" and that "the environmental as well as the economic balance weighs heavily in favor of" the supporters of TRRC and against the opposition); *TRRC I, Final Decision* at 10 (finding that the evidence "shows a need for rail transportation to serve coal mines in the Tongue River Valley")

and that “[t]his is a provident and necessary expenditure that will give shippers new rail service to their benefit and to the benefit of the public as well.”) More recently, in its 2007 final decision in the *TRRC III* proceeding, the Board concluded based on its Supplemental EIS (which updated the *TRRC I* environmental assessment) that “nothing . . . causes us to question the grant of authority” in *TRRC I. TRRC III* at 34. TRRC submits that the record here will allow the Board to reach the same pro-construction conclusion once again when it makes a final decision in this proceeding. Also, as discussed further below, granting TRRC’s Application would be fully consistent with the Rail Transportation Policy, 49 U.S.C. § 10101, which reflects a public interest in sound and competitive rail transportation.

In fact, the public need for the TRRC line is no less clear now than it has been in the past. The lease of the Otter Creek tracts by the State of Montana to Arch has facilitated the aggregation of the substantial coal resource in the Otter Creek area so as to allow for the development of that resource. The Otter Creek mine that the TRRC line will serve is currently in the permitting and environmental review process, and the significant planned output from that mine will supply ample outbound traffic to justify a new rail line by itself. Further, as shown above, there is a very large domestic and export market for the Otter Creek and other Ashland area coal, and there are power-generating utilities, i.e., potential users of that coal for the benefit of consumers of electricity, which have expressed support for the TRRC project.

Not only is the need for the railroad clear, but the different alignment now proposed for the TRRC line avoids many of the environmental concerns that had been raised previously, thereby tipping the balance even more heavily in favor of a finding that the proposed TRRC line is in the public interest. As shown in the Application, the preferred Colstrip Alignment is only marginally longer (about 38 miles/one way) for eastbound traffic originating at Otter Creek than

the Miles City alignments, and is shorter (by about 50 miles/one way) for westbound traffic. Thus, the line will be able to efficiently serve both of the primary markets for which most of the coal likely will be destined, the domestic market in the Midwest and export coal market via the Pacific Northwest.

Further, the Colstrip Alignment has significant advantages over the Miles City alignment that was previously approved by the Board. In terms of new rail construction, it is considerably shorter than the Miles City alignment (42 miles versus 89 miles) and consequently will have fewer environmental impacts. Specifically, the Colstrip Alignment will impact less acreage, including acreage used for agriculture; require less grading and earthwork; avoid the U.S. Department of Agriculture's Fort Keogh Livestock and Range Research Facility; avoid the Montana Department of Fish, Wildlife and Park's Miles City Fish Hatchery; avoid a crossing of Interstate 94; affect a smaller number of landowners; follow to a greater extent existing public state and county road corridors; result in fewer private road crossings; reduce significantly the number of new rail line miles (from about 81 to about 17) that would be built in the Tongue River valley; have the lowest number of stream crossings and take advantage of an existing, operational BNSF line (the Colstrip Subdivision).³⁴ The Colstrip Alignment was in fact found by the ICC in its prior environmental review in *TRRC I* to have fewer environmental impacts in comparison to other alternatives, including the Miles City alignment previously approved for construction.³⁵

³⁴ TRRC prepared and submitted to the Board's Office of Environmental Analysis the comparative analysis of several of the routes under consideration on January 11, 2013. That Alternatives Screening Analysis is attached hereto as Exhibit 6. The analysis was supplemented on April 30, 2013, after the Board identified additional routes for possible analysis. See Exhibit 6.

³⁵ See Table 4-14 of 1983 Draft EIS in the TRRC I proceeding, entitled "Summary Impact Table"; Executive Summary of the 1985 Final EIS in the TRRC I proceeding and Section 4.15 of that Final EIS, entitled "Summary Comparison of Proposed Action and Alternatives," attached as Exhibit H to the Application.

NPRC, however, lists a parade of horrors that it claims will accompany the construction and operation of the rail line, including decreased ranch productivity, loss of agricultural land, increased traffic, air quality degradation, heightened risk of wildfires; and various public safety concerns. *See* NPRC Comments at 44-45. These are the same kinds of claimed impacts that the ICC considered previously in its *TRRC I* EIS and in the update of that EIS in the *TRRC III* proceeding. Thus, twice before the impacts of a rail line transporting Ashland/Otter Creek coal to the BNSF rail line via either a Colstrip or a Miles City routing have been fully assessed, and twice before this agency and its predecessor have weighed the balance in favor of construction. The Board's Office of Environmental Analysis ("OEA") is now preparing a new EIS in which it will once again undertake to carefully and thoroughly study the environmental impacts of the TRRC proposal so that these, and recommended mitigation measures designed to address impacts, can be considered by the Board when it makes a final decision on the question of whether TRRC's proposal is in the public interest.

In support of its contention that the environmental review should be stopped and a denial order issued, NPRC offers no more than a listing of alleged impacts and unsupported contentions about the severity of those impacts. NPRC Comments at 44-48. NPRC's list of issues and potential impacts, however, consists in virtually all cases of matters readily susceptible of being assessed (as they previously have been) through the EIS process and mitigated as appropriate.³⁶

In fact, virtually all of the issues it has identified have been assessed previously in the EISs prepared in *TRRC I* and updated in *TRRC III*. In addition, these same issues are raised in NPRC's Scoping Comments (Appendices 42 and 43 of the NPRC Reply) and are noted in the March 19, 2013 Final Scoping Notice issued by OEA in this docket. That Scoping Notice makes

³⁶ NPRC also raises the issue of payment for the right to cross a landowner's property. TRRC is prepared to address that issue, when it is ripe, through negotiations with landowners.

clear that the Board's EIS will address, *inter alia*, impacts to ground water and water quality; wildlife; agriculture; traffic; the economy of the area; air quality; fires; weed control; safety; downline traffic; environmental justice; and cultural resources, among others. The participatory EIS process has allowed, and will allow through comments on the Draft EIS that the Board will issue in the coming months, NPRC and others to make their views known on these and other issues. The EIS will provide an opportunity for assessment and analysis based on the relevant facts, rather than on overblown rhetoric.

NPRC makes much of impacts that the TRRC line might have to agricultural operations. NPRC Comments at 44-46. Similar concerns have been raised previously. *See e.g., TRRC I* FEIS, at viii, and 139-144 (identifying concerns over impacts to agriculture were raised through comments; determining that impacts to agricultural lands may result, including displacement and lost use); *TRRC III* Final SEIS, at pgs. ES-10, 3-244 to 3-255, 3-227, 3-230, 3-305, and 3-308 (noting comments raised with regard to potential impacts to agricultural operations; and requiring mitigation measures to compensate for loss of agricultural lands). TRRC is mindful that the land through which its line will traverse is in many cases used for ranching and farming, and is prepared to work with landowners to address legitimate concerns. Railroads have co-existed with farms and ranches for a very long time in Montana and elsewhere, and the TRRC line would be no exception.

NPRC claims in its Comments, as it did in its scoping comments, that TRRC traffic will result in a significant release of coal dust, which it irresponsibly claims is linked to disease. NPRC Comments at 46-47. However, NPRC has failed to submit any evidence to substantiate its claims of health-related impacts. In any event, whether there are any health impacts of coal

dust emissions is apparently going to be studied in the EIS, as indicated in the Final Scoping Notice at pgs. 20-21.

Further, NPRC overlooks in connection with its coal dust claim, as well as its downline traffic safety and congestion claims, that the Otter Creek mine, the only mine which TRRC will serve for the reasonably foreseeable future, will generate only an average of 3.7 loaded trains/day. *See* Application at 17, Exhibit D. This is a small fraction of the coal rail traffic that is handled daily on BNSF and other rail lines that handle coal originating at the PRB and other coal sources around the United States. In addition, the same surfactant requirement that BNSF has imposed by tariff on its PRB mine shippers, requiring the spraying of a dust-reducing agent on loaded rail cars at the mine site to limit coal dust emissions and preserve the rail infrastructure, will apply to all TRRC-originating trains.

NPRC attaches to its Comments letters from certain downline communities west of the planned TRRC line expressing certain safety and other concerns about the level of coal traffic. NPRC Comments, Appendices 47-51. While NPRC asserts that such safety impacts are sufficient to disqualify the TRRC line from approval, its credibility in making these claims is undermined by its prediction that there is no market for Otter Creek/Ashland coal, either in the United States or abroad. Moreover, the impacts that will result from the modest amount of downline Otter Creek-originating traffic moving on the TRRC line through these communities are speculative at this time as the volume of such traffic that will move westbound versus eastbound is undetermined, despite NPRC's repeated and unsubstantiated claims that all of the TRRC traffic will move westbound for export. In any event, the community letters that NPRC

has attached to its Comments call on the Board to study downstream impacts, which OEA's Scoping Notice indicates the EIS will do. *See* Final Scoping Notice at 14, 23-24.³⁷

NPRC also makes allegations about the adverse greenhouse gas and climate change impacts of TRRC's transportation of coal to utilities, where the coal will be burned for electricity generation. It bears note that the Board has previously looked at this question in connection with the *TRRC III* EIS, where it concluded that the impact of the TRRC-transported coal on air emissions, including CO₂ emissions, would be *de minimus*. Specifically, the Board found that the transportation of coal by the TRRC would not meaningfully increase the level of coal consumption or resulting emissions, and that in any event emissions from plants cannot exceed state-prescribed emissions limits. *See e.g., TRRC III* Final SEIS at pgs. 2-48 to 2-49 ("because TRRC would likely result in only a minor increase in coal consumption that would be even less than the increase that would result from DM&E, the effect of TRRC on air quality, at least on a national and regional basis, also would be minor (and less than the impacts on air emissions expected to result from DM&E)"); *TRRC III* Draft SEIS at pgs. 6-18 to 6-22 ("Plant emissions are regulated by MDEQ to ensure compliance with state and Federal air quality standards ... the Board could not control emissions from [] power plants [where coal may be delivered], which would still be capped by SIPs and individual power plant permit requirements"); *TRRC III*, 2011 WL 2421152, at *7 (STB served June 15, 2011). As noted, OEA has made clear that the EIS currently being prepared will address air emissions, including GHG impacts.

³⁷ NPRC cites to *Indiana & Ohio Ry. Co. – Construction and Operation – Butler, Warren, and Hamilton Counties, OH*, 9 ICC2d 783 (1993) to contend that the Board should deny construction authority for the TRRC line on safety grounds. The circumstances of that case, however, could not be more different. There, the applicant had already foregone its interest in building the line, the transportation benefits of which were quite modest. By contrast, the safety implications were significant because the line would have bisected a heavily populated suburban area. Here, the TRRC line will not traverse through any heavily populated area.

3. NPRC Improperly Challenges the Level of Predicted Traffic

NPRC devotes no less than 33 pages of its Comments to an attempt to prove that there is no market for the Otter Creek/Ashland coal, domestically or internationally. However, at pages 49-51 of its Comments, NPRC inconsistently argues that TRRC has understated the real volume of coal traffic likely to move on its line. According to NPRC, “more than 8 trains per day could originate from this project.” NPRC Comments at 51. The difference between the 7.4 loaded and empty trains/day predicted in TRRC’s Application and the undefined higher number claimed by NPRC is accounted for by the fact that TRRC has based its prediction on ascertainable information (*i.e.*, the approximate volume of coal that Arch intends to mine at Otter Creek per year when full production at that mine is reached). NPRC is including coal from the Montco mine area, which is not currently the object of any planned or proposed mine development.

TRRC agrees with NPRC that there is a substantial amount of coal in the Montco mine area and that it is likely to be developed at some future time. Mr. Schwartz’s statement addresses generally the expected future demand for this coal and the markets for it. Since it is likely that the Montco mine area will be developed at some future point, TRRC seeks authorization for construction of a portion of its line to Terminus 1 at this time, notwithstanding the uncertainties in predicting future traffic levels generated from Montco area coal.

NPRC cites to the 8 train/day threshold in the Board’s rules and suggests that TRRC will exceed that threshold, thereby requiring more extensive environmental analysis. *See* NPRC Comments at 49. Those rules provide that if a party is preparing an environmental report it must include a more detailed analysis of the air and noise impacts of its proposal if the proposal will result in an increase of at least 100 percent measured in gross ton miles or more than 8 trains/day on any given segment. 49 C.F.R. §§ 1105.7(e)(5)(6). Here, TRRC did not prepare an environmental report, but instead has retained a third-party contractor to work exclusively under

the Board's direction to prepare an EIS as permitted by the Board's regulations at 49 C.F.R. § 1105.10(d). *See Tongue River R.R. Co., Inc.—Rail Construction and Operation—in Custer, Powder River and Rosebud Counties, Mont.*, 2013 WL 708134, at 4.

Thus, the cited regulation on which NPRC relies is of no direct applicability. In any event, OEA's Final Scoping Notice leaves no doubt that air and noise impacts will be fully addressed, including downline impacts. *See* Final Scoping Notice at 18-21; 27. TRRC neither opposes the scope of the EIS in this regard nor seeks to avoid an appropriately thorough environmental review of its project.

4. NPRC's Miscellaneous Attacks on the TRRC Proposal Should be Rejected

NPRC makes a variety of unsubstantiated assertions about the TRRC proposal at pages 51-59 of its Comments, none of which has any merit. These will be addressed here.

NPRC claims that, "TRRC purports [in its Application] to evaluate environmental impacts relative to the public interest based entirely on the environmental impact statement prepared in relation to the TRR I proceeding." NPRC Comments at 52. It urges the STB to disregard any part of the Application that relies on the *TRRC I* EIS, claiming that the Ninth Circuit decision in *N. Plains Res Council, Inc. v. STB*, 668 F.3d 1067, 1085-87 dictates that the *TRRC I* EIS and references to it be ignored. *Id*

NPRC is wrong on all counts here. First, the Board will make a public interest determination weighing the transportation benefits against any unmitigated environmental impacts once the new EIS is completed. Nothing in TRRC's Application is designed to forestall that process or suggest instead that the Board rely only on the *TRRC I* EIS in lieu of the new EIS being prepared. Further, the Board has already found no fault in TRRC's limited reliance in its Application on portions of the *TRRC I* EIS that address alternatives. *See Tongue River R.R. Co.*,

Inc.—Rail Construction and Operation—in Custer, Powder River and Rosebud Counties, Mont., Finance Docket No. 30186, 2013 WL 708134, at 4 (STB served Feb. 26, 2013).

Second, TRRC’s Application appropriately relied on the *TRRC I* EIS for some basic and indisputable facts about the Colstrip Alignment. These facts, which were not at issue in the Ninth Circuit proceeding, concerned only the adequacy of the EISs in *TRRC II* and *III*. In the *TRRC I* EIS, the Board recited that the Colstrip Alignment is shorter and has fewer land use and other direct environmental impacts in most respects relative to the longer Miles City alternatives considered then and now. TRRC submits that these facts remain true, and they are borne out in the Alternatives Screening Analyses attached hereto as Exhibit 6. Notably, NPRC has not claimed otherwise about the Colstrip Alignment in any of its submissions, nor could it credibly assert the Colstrip Alignment is more impactful.³⁸ Nothing in the *TRRC I* EIS is either wrong or stale in regard to indisputable facts about that Alignment.³⁹

NPRC next takes issue with the proposition that the TRRC line will benefit the Montana economy. NPRC Comments at 53-54. Specifically, NPRC argues that the Board should disregard a study submitted with the Application (at Appendix D) that describes the short and long term economic impacts of the development of the Otter Creek mine and the Tongue River Railroad. *See* “Impact of Otter Creek Coal Development on the Montana Economy” (“Economic Report”) prepared by two professors at the Bureau of Business and Economic Research, University of Montana. The Economic Report underscores the significant economic benefit to the State of the rail line and the coal mine development in terms of direct and indirect jobs that

³⁸ NPRC may be constrained to acknowledge this because the Colstrip Alternative traverses a longer distance on the Rocker Six Cattle Company ranch, with which it has jointly filed its comments.

³⁹ The staleness issue addressed in the Ninth Circuit decision concerned aerial photos of habitat and vegetation on which the STB relied in the *TRRC III* EIS. *See* 668 F.3d at 1085-87. TRRC’s Application does not urge STB reliance on any potentially outdated photos.

will accrue from the development of the mine and the railroad; higher personal incomes; population growth; and state tax revenues. As stated in the Economic Report, “The study finds that as a result of Otter Creek coal development, the state economy is significantly larger, more prosperous, and more populous than would otherwise be the case.” *See* Economic Report at 30. Specifically, as shown at Table 5.1 on page 31, 2,648 jobs would be created during the peak construction year, as well as 1,740 permanent, year-round jobs once the mine and railroad are operational. These job increases would occur “across a wide spectrum of industries and, largely due to rail operations, in most regions of the state.” Economic Report at 31. The Report describes the diversity of the jobs that would be created, including management, health care, transportation, and sales, as well as construction, extraction and government jobs. *See* Economic Report at 32-34. Income gains are also described in detail in the Economic Report, which concludes that, “The income impacts attributable to the development of Otter Creek coal are substantial ... [b]oth mining and railroad jobs pay wages significantly above the state average, and even though every job created by coal development is not a high paying job, the increased income due to the project is substantial.” Economic Report at 35. The authors conclude that over \$100 million of new personal income will be earned annually by Montanans as a result of the coal mine and rail construction and over \$125 million in annual personal income will be earned during the operations phase. Economic Report at 42.

The State Government will benefit significantly as well. The authors predict about \$92 million in additional annual tax revenues from the coal and rail development. *Id.* This is in addition to the \$85 million lease payment already received by the State from Arch to lease the State’s portion of the Otter Creek coal tracts, as well as significant royalties that the State will earn once mining commences. It has been estimated that those royalties could total \$1.4 billion

over a 40 year period. *See* June 25, 2009 Fact Sheet prepared for Land Board, attached as Exhibit 7.

NPRC states (incorrectly) that the Economic Report only looks at “short-term economic gains.” NPRC Comments at 53. In fact, the Economic Report considers both construction impacts and impacts from continued operation over a longer term. NPRC also states that the Economic Report fails to consider “environmental, community and social impacts.” NPRC Comments at 53. The same critique of the Economic Report as being “one-sided” is made in a January 2013 Power Consulting report attached to the MEIC Comments.⁴⁰ However, this criticism is misplaced. The Economic Report was not designed to weigh economic benefits against asserted costs, but rather, to identify the economic plusses of the development of the Otter Creek coal resource. The impacts of the TRRC line that are relevant to the Board’s assessment will be addressed in the ongoing environmental reviews of the railroad and of the coal mine development, and NPRC will have ample opportunity to make its views known in those reviews. The fact that the Economic Report is limited to economic matters does nothing to undermine the credibility of its findings on the economic benefits of the proposed coal mine development and TRRC rail line. These are public interest benefits that are impressive by any measure.⁴¹

However, even if the Board were to decide to discount the information in the Economic Report about general economic benefits for the State of the railroad and the coal mine, TRRC

⁴⁰ That Power Report, entitled “The ‘Economics of the Proposed Otter Creek Coal Mine: A Critique of One-Sided Economic Analysis,” also takes issue with the magnitude of the economic projections in the Economic Report and, not surprisingly given its authorship, with the existence of a market for the coal.

⁴¹ NPRC also attacks the credibility of the Economic Report on the grounds that the two professors who authored it acknowledged that they received information from Arch and BNSF. NPRC Comments at 53. This type of silly critique (where were the professors supposed to get information about expected direct employment if not from BNSF and Arch?) illustrates that NPRC has nothing substantive to say about the Economic Report. By the same logic, the credibility of every Board decision is suspect to the extent that the Board relies on information obtained from the parties.

has met its burden in this proceeding by demonstrating through evidentiary submissions: (1) the public need for the line in terms of the impressive market for the coal it will transport and the support of those entities that would use the coal; (2) financial fitness; and (3) that the line will serve the public interest. TRRC submits that there is ample evidence in this proceeding, wholly apart from the Economic Report, to sustain a determination that the Application should be granted.

NPRC repeats points it has raised previously in its Scoping Comments, namely, that the Board needs to consider downline impacts from transporting and burning the coal, as well as greenhouse gas/climate change impacts. NPRC Comments at 54-59. NPRC's arguments about the greenhouse gas emissions implications of the coal that will be transported on the TRRC line are of course grossly inconsistent with its contention that there is no market for that coal. If there is no market, the coal will not be sold and there will be no emissions.

In any event, the Board's Final Scoping Notice indicates that downline and greenhouse gas issues will be addressed as appropriate in the EIS being prepared by the STB. Thus, the Final Scoping Notice states that the EIS will include a "life-cycle analysis of potential GHG emissions." Final Scoping Notice at 20. In addition, the Board will also study the impacts of "combustion of the coal proposed to be transported on the TRRC line." Final Scoping Notice at 27.

NPRC argues that "the development of Powder River Basin coal reserves, and associated developments including the proposed Tongue River Railroad, is contrary to current National policy to reduce Greenhouse Gas Emissions." NPRC Comments at 58. NPRC cites to a 2011 United Nations Report on the "Framework Convention on Climate Change," attached as Appendix 58 to its Comments. NPRC also cites to a 2012 IEA report at Appendix 59, which

provides an outlook on world energy developments. NPRC also cites to various other climate change/greenhouse gas (“GHG”) policies, including the possibility that the Council on Environmental Quality might finalize its current Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions; a report on Global Climate Change Impacts in the United States and EPA’s Tailoring Rule. NPRC Comments at 59.

NPRC has failed to show that any of the materials that it cites would require that the Board do more than OEA has already announced it is doing in terms of assessing greenhouse gas emissions in the EIS now being prepared.⁴² However, if NPRC is dissatisfied with the Draft EIS on these issues, it will have an opportunity to express its views during the EIS public comment period.

As discussed above, the Board’s analysis of the air emissions impacts of the *TRRC III* proposal resulting from the use of TRRC-transported coal at domestic utilities showed that the impacts would be *de minimus*. See e.g., *TRRC III* Final SEIS, at pgs. 2-48 to 2-49; *TRRC III* Draft SEIS, at pgs. 6-18 to 6-22. The impact analysis should yield a similar result from the current proposal because it is anticipated that Otter Creek coal will substitute coal from other sources, rather than result in additional coal use. Likewise, NPRC does not suggest that the availability of Otter Creek coal will result in increased coal usage in the United States or elsewhere. Indeed, any such argument by NPRC would be inconsistent with its contention that there is no market for Otter creek coal, domestically or elsewhere.

OEA will be free to consider greenhouse gas and climate change issues, to the extent that they are relevant, as part of its EIS. The Board can then weigh those and other impacts against

⁴² For example, EPA’s Tailoring Rule does not apply to TRRC’s proposal. Rather, as NPRC observes, it regulates GHG emissions from stationary sources. The Board has previously found that this EPA rule could be relevant here only to the extent that it would act to limit the emissions from plants that would use coal burned by the utilities that receive TRRC-transported coal. See *TRRC III*, 2011 WL 2421152 at *10 (STB served June 15, 2011).

the benefits of the project. By contrast, NPRC's effort to argue that the TRRC project is contrary to national policy on GHGs and energy use is misplaced. There is no national policy that prevents the development of the rail infrastructure for handling coal or any other energy producing commodities. Rather, the key national policies that the Board is charged with implementing are embodied in the Rail Transportation Policy, at 49 U.S.C. § 10101. As the Ninth Circuit recently found in affirming a Board decision to exempt a rail construction project, the relevant statutory policies in the construction setting are those favoring "the development and continuation of a sound rail transportation system with effective competition among rail carriers and with other modes, to meet the needs of the public and the national defense;" promoting "sound economic conditions in transportation and [ensuring] effective competition and coordination between rail carriers and other modes" and reducing "regulatory barriers to entry into and exit from the industry." *Alaska Survival, et al., v. Surface Transportation Board*, 705 F.3d 1073, 1078 (9th Cir. 2013) (quoting 49 U.S.C. §10101(4), (5) and (7)). It is these policies, and the liberal policy favoring new rail construction embodied in Section 10901, which must govern Board decisions.

The TRRC proposal is in line with these policies. The TRRC line will provide an efficient means of transporting coal from the Otter Creek and Ashland areas to market in coordination with BNSF, thereby serving the interests of those entities that will use the coal, the public that will benefit from electricity generation and the State of Montana, which will benefit from economic development and enhanced revenues. It will also promote the entry of a new rail carrier. The relevant policies guiding rail construction dictate that the Board should once again find that TRRC's Application is in the public interest and that it should be approved.

III. REPLY TO SCHOLLMAYER COMMENTS

Schollmeyer states that he does not oppose the Application to the extent that it requests STB authority for TRRC to construct the rail line it seeks to construct. What he takes issue with is any authorization for TRRC, as opposed to BNSF, to operate the line. However, TRRC seeks no such operations authorization. The Application explicitly states that BNSF is expected to be the sole operator of the rail line. *See*, Application at 1, 12, 30. Thus, the authority sought by the Application is the authority for: (1) TRRC to construct the rail line; and (2) BNSF to serve as the operator of the rail line. In short, the condition sought by Schollmeyer for not opposing the Application has been met.

Notwithstanding that the Board accepted the TRRC Application by decision served on January 8, 2013, Schollmeyer argues that the Application is not complete because TRRC has not submitted: (1) an application for BNSF to control TRRC; and (2) the agreement between TRRC and BNSF regarding BNSF's operation of the line. In support of this claim, he cites 49 C.F.R. § 1150.10(d), which requires parties to file "directly related applications" concurrently with a construction application.

BNSF, however, did not need to file a control application in order for the construction and operation Application to be complete. That is because BNSF's control application is not "directly related" to the TRRC construction/operation application. Nothing in the former application has any bearing on TRRC's proposal to construct or BNSF's proposed operation of the TRRC rail line. This is in contrast to the type of applications that Section 1150.10(d) identifies as examples of "directly related" applications, e.g., a trackage rights application or an application to obtain access to terminals. Likewise, any future BNSF-TRRC agreement for the operation of the TRRC line (no such agreement currently exists) is not a "directly related"

application (much less an application at all) that needs to be addressed before TRRC has authority to construct its line or BNSF authority to operate the line.

IV. CONCLUSION

For all of the reasons set forth in the Application and above, TRRC urges that its Application be granted.

Respectfully submitted,



Betty Jo Christian
David H. Coburn
Linda S. Stein
STEPTOE & JOHNSON LLP
1330 Connecticut Avenue, N.W.
Washington, DC 20036
(202) 429-3000

Attorneys for Applicant
Tongue River Railroad Company, Inc.

Dated: June 7, 2013

CERTIFICATE OF SERVICE

I hereby certify that a copy of the Tongue River Railroad Company's Reply Comments in Support of Its Supplemental Application for Construction and Operation Authority was served this 7th day of June, 2013 via first-class U.S. mail, postage prepaid, upon all parties of record to this proceeding.

A handwritten signature in black ink, appearing to read "K. Decker", written over a horizontal line.

Keith Decker



DTE Energy

One Energy Plaza, Detroit, MI 48226-1279

Surface Transportation Board
395 E Street, SW
Washington, DC 20423

Re: Tongue River Railroad, Finance Docket 30186

Chairman Elliott:

My name is John Wagner. I am the Director of Fuel Supply for DTE Electric Company (DTEEC) (formerly The Detroit Edison Company). In that position, I have the responsibility for the acquisition of coal and associated transportation for our company's generating units.

DTEEC produces electricity at its generating plants in the state of Michigan and purchases and sells electricity to the MISO Regional Transmission Operator as a member utility. MISO is responsible for the cost-effective delivery of electricity over parts or all of 15 U.S. states and the Canadian province of Manitoba. DTEEC ships approximately 18.5 million tons of coal annually to its 6 coal fired plants, including about 16 million tons of Montana and Wyoming origin coal.

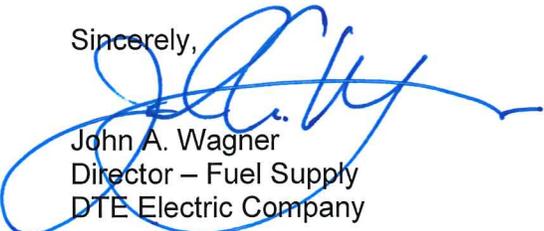
I am writing to express DTEEC's support for the supplemental application submitted by the Tongue River Railroad Company in December 2012 for the construction of a 42-mile rail line in Powder River and Rosebud Counties, Montana called the Colstrip Alignment. DTEEC has strongly supported the Tongue River rail construction project for a number of years.

DTEEC continues to support the Tongue River rail construction project because it is the only viable transportation alternative that would allow access to the significant coal reserves of Otter Creek and Ashland area. This low sulfur, sub-bituminous Montana coal is a cost competitive, environmentally desirable fuel supply option for DTEEC.

Based on the information provided in Tongue River Railroad Company's December 2012 supplemental application, the Colstrip Alignment would provide an economically and operationally sound rail route for the transportation of Otter Creek and Ashland area coal.

DTEEC believes that the Colstrip Alignment is in the best interests of DTEEC and its customers and urges the Board to seriously study and approve the Tongue River Railroad Company's supplemental application.

Sincerely,



John A. Wagner
Director – Fuel Supply
DTE Electric Company



30 west superior street / duluth, minnesota 55802 / 218-355-3480

Allan S. Rudeck, Jr.
Vice President – MP Strategy & Planning

May 31, 2013

Chairman Daniel R. Elliott, III
Surface Transportation Board
395 E Street SW
Washington, DC 20423

Re: Docket No. FD 30186, Tongue River Railroad, Inc. – Rail Construction and Operation – in
Custer, Powder River and Rosebud Counties, Montana

Dear Chairman Elliott:

I am writing to express Minnesota Power's support for the transportation merits of the supplemental application submitted by the Tongue River Railroad Company in December 2012 for the construction of a 42-mile rail line in Powder River and Rosebud Counties, Montana called the Colstrip Alignment. Minnesota Power has strongly supported the Tongue River rail project for a number of years.

Minnesota Power, a division of ALLETE, Inc., is a utility company based in Duluth, Minnesota. Minnesota Power provides electricity in a 26,000-square-mile service area in northeastern Minnesota; we serve about 144,000 residential and commercial customers, 16 municipalities and some of the nation's largest industrial customers. These large industrial customers depend on reliable and affordable baseload electric energy. As the Vice President of Strategy & Planning my responsibilities include the acquisition of coal for our company's generating units in Minnesota.

Minnesota Power burns coal at its five thermal Energy Centers: a) Boswell Energy Center, located in Cohasset, Minnesota, b) Hibbard Renewable Energy Center, located in Duluth, Minnesota, c) Laskin Energy Center, located between Aurora and Hoyt Lakes, Minnesota, d) Rapids Energy Center, located in Grand Rapids, Minnesota, and e) Taconite Harbor Energy Center, located in Schroeder, Minnesota. We ship about 5.5 million tons of coal annually to our coal fired plants, all of it coming from the Powder River Basin of Montana and Wyoming.

Based on the information provided in Tongue River Railroad Company's December 2012 supplemental application, the rail construction project is the only viable transportation alternative that would allow access to the significant reserves of Otter Creek and Ashland area coal. The Colstrip Alignment would provide an economically and operationally sound rail route for the transportation of Otter Creek and Ashland area coal to our facilities.

Minnesota Power urges the Board to seriously consider the positive merits of the Tongue River Railroad Company's supplemental application.

Sincerely,

Allan S. Rudeck, Jr.
Vice President – Minnesota Power Strategy & Planning



We Energies
231 W. Michigan St.
Milwaukee, WI 53203
www.we-energies.com

May 31, 2013

Chairman Daniel R. Elliott, III
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

Re: Tongue River Railroad, Finance Docket 30186

Dear Chairman Elliott:

My name is Randall Van Aartsen. I am the Director Fuel Supply for Wisconsin Electric Power Company. In that position, I am responsible for acquisition of coal and rail transportation services for our company's coal fueled generating units.

Wisconsin Electric Power Company serves more than 1.1 million customers in Wisconsin and Michigan's Upper Peninsula, and also has coal fueled generating units in both states. Wisconsin Electric Power Company ships about 10 million tons of coal annually to its coal fired plants, including about 8 million tons of Montana and Wyoming coal.

I am writing to express Wisconsin Electric Power Company's support for the supplemental application submitted by the Tongue River Railroad Company in December 2012 for the construction of a 42-mile rail line in Powder River and Rosebud Counties, Montana called the Colstrip Alignment. Wisconsin Electric Power Company supports the Tongue River rail construction project because it would allow access to the reserves of Otter Creek and Ashland area coal and as a result, provide for more coal supply, enhancing competition in coal markets.

Wisconsin Electric Power Company believes that the Colstrip Alignment is in the best interests of the company and its customers. Consequently, Wisconsin Electric Power Company urges the Board to seriously study and consider the Tongue River Railroad Company's supplemental application.

Sincerely,

A handwritten signature in black ink, appearing to read 'Randall Van Aartsen', written over a horizontal line.

Randall Van Aartsen
Director - Fuel Supply

April 25, 2012

234173

Chairman Daniel R. Elliott, III
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

ENTERED
Office of Proceedings
May 7, 2013
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Re: Tongue River Railroad, Finance Docket 30186

Dear Chairman Elliott:

I am writing to express support for the supplemental application submitted by the Tongue River Railroad Company in December 2012 for the construction of a 42-mile rail line in Powder River and Rosebud Counties, Montana called the Colstrip Alignment.

The state of Montana has some of the most significant reserves of low sulfur, sub-bituminous coal in the United States. The Colstrip Alignment would provide rail service to a planned coal mine in the Otter Creek area of Montana that is in the process of permitting and any future coal mines in the Otter Creek and Ashland, Montana areas. Such rail service is the only viable transportation alternative for bringing Otter Creek and Ashland area coal to market.

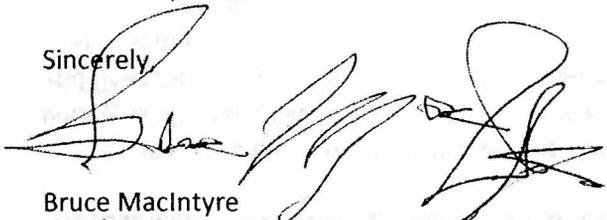
A key to energy development in Montana is the ability to move natural resources from area of development to the ultimate market. For the past 30 years the Tongue River Railroad project has been studied, dissected and discussed, and roadblocks have been thrown in front of the progress at every step of the way.

Responsible energy exploration and development on public and private lands is crucial to resolving our nation's energy crisis and building Montana's economy. We recognize the significance of coal production to the state economy and financial assistance it affords local communities throughout Montana. The responsible and timely development of new coal mines will provide a much needed economic boost to Montana. We therefore support efforts that will enable new coal production to occur, including the development of railroad infrastructure and securing access to federal and state-owned coal reserves.

The economic impact to Eastern Montana in general and the Billings area specifically is enormous and we need to facilitate, not hinder this process. A June 2012 University of Montana study of the potential of Otter Creek, shows the economic impact to Montana would be \$200 million yearly. The mine would generate \$92 million in state and local taxes, create hundreds of jobs locally and across the state, and increase the state's population by nearly 3,000 people

On behalf of our 1,170 members and their employees who number over 44,000, the Billings Chamber of Commerce/Convention & Visitors Bureau encourages the forward progress of this spur.

Sincerely,



Bruce MacIntyre
Director, Business Advocacy and Government Affairs



815 South 27th Street / P.O. Box 31177 / Billings, MT 59107-1177
ph 406-245-4111 / f 406-245-7333 / www.billingschamber.com





SouthEastern Montana Development Corporation

Growing Montana ~ One Job at a Time

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May 14, 2013

Chairman Daniel R. Elliott, III
Surface Transportation Board
395 E Street, SW
Washington, DC 20423

Re: Tongue River Railroad, Finance Docket 30186

Chairman Elliott:

As an economic development professional and Executive Director of Southeastern Montana Development (SEMDC), I would like to express my strong support for the supplemental application submitted by the Tongue River Railroad Company in December 2012. This is concerning the construction of a 42-mile rail line in Powder River and Rosebud Counties, Montana called the Colstrip Alignment.

SEMDC is a regional non-profit economic development group that was established in 1997 to simulate and encourage economic activity in the four (4) Counties of Custer, Powder River, Rosebud and Treasure. Today, SEMDC continues to work with the private, public and non-profit sectors to help create and retain jobs in these four counties. Our track record has documented over 853 jobs created or retained and over \$26 million dollars in project assistance since 1997. Since 2005, SEMDC has been designated by the State of Montana as a Certified Regional Development Corporation (CRDC) and the federal Economic Development Administration (EDA) as an Economic Development District (EDD).

The State of Montana has some of the most significant reserves of low sulfur, sub-bituminous coal in the United States. The Colstrip Alignment would provide rail service to a planned coal mine in the Otter Creek area that is in the process of permitting and any future coal mines in the Otter Creek and Ashland, Montana areas. Such rail service is the only viable transportation alternative for bringing Otter Creek and Ashland area coal to market. By providing Montana coal with a means to access the market, the Colstrip Alternative will contribute to the nation's energy output.

I urge you to seriously consider the merits of the Colstrip Alignment and enable the construction of the rail line which will provide economic benefits through increased tax revenue, job creation for Native Americans and a revitalized coal industry.

Sincerely,

Jim Atchison
Executive Director

Congress of the United States
House of Representatives
Washington, DC 20515-2600

May 9, 2013

Chairman Daniel R. Elliott, III
Surface Transportation Board
395 E Street, SW
Washington DC 20423

Re: Tongue River Railroad

Dear Chairman Elliott:

I am writing to express my support for the supplemental application submitted by the Tongue River Railroad Company in December 2012 for the construction of the Colstrip Alignment; a 42 mile rail line in Southeastern Montana.

Montana has some of the most significant reserves of low sulfur, sub-bituminous coal in the United States. The Colstrip Alignment Rail line would provide the only viable way to bring this coal to market.

Responsible energy production and development on public and private lands is critical in achieving American energy independence. This energy independence will spur our national and local economies, create good-paying jobs, increase our national security and decrease energy costs for energy consumers right here in Montana.

The economic impact potential for Otter Creek was estimated to be \$250 million annually by a University of Montana study conducted in 2010. The study also found that the Otter Creek Mine would generate \$92 million in state and local taxes and create hundreds of Montana jobs.

As a member of the House Committee on Transportation and Infrastructure, as well as the House Natural Resources Committee, it is my priority to ensure responsible and adequate transportation infrastructure to develop Montana's natural resources. Construction of this project will bring us 42 miles and one step closer to achieving American energy independence.

Sincerely,

A handwritten signature in black ink, appearing to read "Steve Daines", with a stylized flourish at the end.

STEVE DAINES
Member of Congress

**BEFORE THE
SURFACE TRANSPORTATION BOARD**

STB FINANCE DOCKET NO. 30186

**TONGUE RIVER RAILROAD COMPANY, INC. – RAIL CONSTRUCTION
AND OPERATION – IN CUSTER, POWDER RIVER AND
ROSEBUD COUNTIES, MT**

**VERIFIED STATEMENT OF SETH SCHWARTZ IN SUPPORT OF
TONGUE RIVER RAILROAD COMPANY’S
REPLY TO NPRC COMMENTS TO
SUPPLEMENTAL APPLICATION**

My name is Seth Schwartz. I am President of Energy Ventures Analysis, Inc. (“EVA”). My business address is 1901 North Moore Street, Suite 1200, Arlington, VA 22209. I have been a principal at EVA since it was founded in 1981. Since that time, most of my work has been consulting for the energy industry regarding coal markets and economics of coal operations and coal procurement. My clients include coal producers, coal consumers, coal transporters, and investors in coal operations and coal-fired power plants, as well as regulatory agencies and industry associations. I have testified numerous times regarding coal markets in Federal courts (district court, bankruptcy court and the U.S. Supreme Court), State courts, arbitration hearings and regulatory agencies, including the Surface Transportation Board, the Federal Energy Regulatory Commission, the Environmental Protection Agency, and state public utility commissions.

I am providing this verified statement in response to the April 2, 2013 NPRC Comments to Tongue River Railroad Company’s Supplemental Application submitted by Northern Plains Resource Council and Rocker Six Cattle Company (jointly, “NPRC”), as well as the November

2012 report prepared for NPRC by Power Consulting Inc. (“Power Report”) and the March 2013 report prepared for NPRC by Synapse Energy Economics (“Synapse Report”), another consultant, which are offered as support for NPRC’s Comments.

My opinions are summarized as follows:

- Contrary to the claims by NPRC and its consultants, the domestic market for Powder River Basin (“PRB”) coal is huge and it is not declining. While the market is no longer growing as fast as it was in 1986 (at the time when the TRRC rail line was originally approved), it now averages 450 million tons per year, three times larger than it was in 1986.
- The drop in the domestic market in 2012 was an anomaly due to very mild winter weather and extremely low natural gas prices. This short-term event has already ended and is not a trend of declining markets for PRB coal.
- The Montana PRB domestic market is not severely limited by the sodium content of the coal or by transportation factors to just a few power plants as NPRC claims. There are a large number of power plants which use Montana PRB coal with similar quality as Otter Creek today or have used Montana PRB coal in the past. Further, there are many more power plants which are designed to use this high-sodium coal. The Montana PRB is projected by the U.S. Energy Information Administration (“EIA”) to be the fastest-growing source of U.S. coal production.
- While there are some power plants that have announced plans to retire due to new rules from the Environmental Protection Agency (“EPA”), they constitute only 10% of the existing domestic market. Most large plants are already compliant with the new EPA rules or are investing in emissions controls. Excluding plants that have plans to retire, existing plants that could use Montana PRB coal currently consume approximately 118 million tons per year.
- The export market is a huge potential market for Montana PRB coal. While its consultants discuss this large and growing market, NPRC claims that this export market is “dwindling”. The fastest-growing coal markets in the world are Asian countries which are the logical market for PRB coal exports, including China, South Korea and other countries in Southeast Asia.

- The committed expansion of the existing ports in western Canada provides enough port capacity to handle the proposed production from the Otter Creek mine, were one to assume that the entire production of the mine would be exported. In addition, there are several proposed new port projects on the U.S. West Coast that could serve coal exports. Port capacity will not constrain the development of the Otter Creek mine.
- Montana PRB coal has been competitive in the world markets and is likely to be competitive in the future. Cloud Peak's Spring Creek mine in the Montana PRB has been exporting over 4 million tons per year of PRB coal to Asia.
- It is not possible to predict what percentage of the Otter Creek coal will move westbound for export or will be sold to the domestic market, as markets will continue to change over time. It is likely that a meaningful share of the coal will be used domestically, primarily, but not entirely, in the Upper Midwest, with the remainder exported.
- The Otter Creek mine and development of other Ashland area coal reserves would not create increased coal demand or require increased demand in order to be economically competitive. The Otter Creek coal reserves are becoming steadily more economic over time as the existing mines in the Montana and Wyoming PRB deplete their coal reserves and are forced to mine higher-cost reserves with higher strip ratios (the amount of rock which must be removed per ton of coal produced). While the undeveloped coal reserves at Otter Creek will have strip ratios of 3.0:1 (cubic yards of rock per ton of coal), new leases to maintain production at existing PRB mines now have strip ratios over 4.0:1 and up to 5.0:1. The productivity of the existing PRB coal mines has been declining and costs have been rising due to these rising strip ratios, which is making the Otter Creek coal reserve comparatively more economic over time.

I. There is a Large Domestic Market for Otter Creek and Ashland Area Coal

A. The NPRC Comments Misrepresent Both the Current and Projected Size of the Domestic Market for Powder River Basin Coal

NPRC, the Power Report and the Synapse Report are replete with statements suggesting that the domestic market for Powder River Basin (“PRB”) coal has declined significantly and is expected to decline in the future.¹ These sweeping statements rely on an unusual short-term event to selectively show a decline in the market and misrepresent the coal forecasts to imply that the domestic market for PRB coal is expected to decline in the future.

1. The Market for PRB Coal is Still over 400 Million Tons per Year

While it is true that the growth in domestic demand for PRB coal has slowed, and even declined in 2012, it is not true that the market for this coal could be described as so small that it is not adequate for the entry of a new mine at Otter Creek. The production of PRB coal did grow dramatically from 1986 through 2006, before leveling out at about 460 million tons per year for the years 2009 – 2011. As described further below, there was a decline in 2012 to 419 million tons due to the temporary impact of very mild weather on the natural gas and electric power markets. Even at the total 2012 market of 419 million tons per year for PRB coal and 1,061 million tons for all U.S. coal,² the Otter Creek mine operating at 20 million tons per year would supply less than 5% of the PRB coal market and less than 2% of the total U.S. coal market.

¹ NPRC Comments at 2: “The demand for PRB coal is so low ...”; “Domestic demand for coal is declining precipitously...”

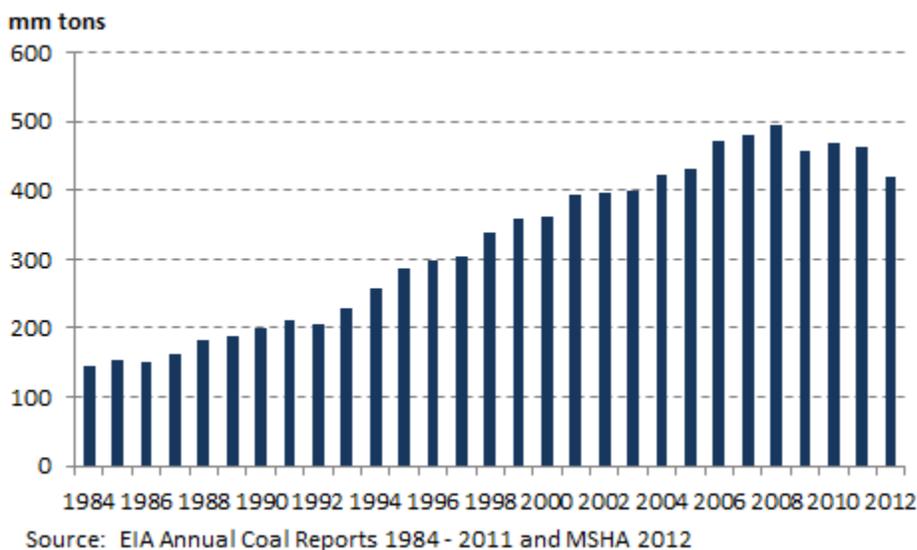
NPRC Comments at 10: “All of these factors lead to the decline in demand for coal...”

Power Report at 1: “Coal demand in the historical markets for PRB coal ... are projected to decline.”

Synapse Report at 2: “Demand for coal is falling across the United States...”

² EIA Quarterly Coal Report, October – December 2012, page 7 at <http://www.eia.gov/coal/production/quarterly/>

Exhibit 1: Powder River Basin Coal Production 1984 – 2012 (mm tons)³



2. The Drop in PRB Coal Demand in 2012 was due to Temporary Factors

The decline in domestic coal consumption in 2012 was driven by the unusually mild winter weather of 2011–2012. The mild weather caused a drop of 1.7% in total retail electric power sales from 2011 to 2012 (including a drop of 3.4% in residential power demand) and a corresponding decline in electric power generation.⁴ The fall in demand for natural gas for residential home heating was even more dramatic, down 11.4% from 2011 to 2012. The total demand for natural gas for residential and commercial use fell 786 billion cubic feet from 2011 to 2012.⁵ This created a massive surplus of natural gas and record high gas inventories, which caused natural gas prices to fall sharply, with prices at Henry Hub reaching a low of \$1.95 per million Btu in April 2012, down from \$3.81 per million Btu at the beginning of the winter in November 2011.⁶ The natural gas surplus had no place to go other than the electric power

³ EIA Annual Coal Reports 1984 through 2011 at <http://www.eia.gov/coal/annual/> and Mine Safety and Health Administration Data Retrieval System at <http://www.msha.gov/drs/drshome.htm>

⁴ EIA Electric Power Monthly, April 2013, Table 5.1 at <http://www.eia.gov/electricity/monthly/pdf/epm.pdf>

⁵ EIA Monthly Energy Review, April 2013, Table 4.3 at <http://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf>

⁶ EIA website at <http://tonto.eia.gov/dnav/ng/hist/rngc1w.htm>

market, displacing coal-fired generation. As a result of both the decline in demand for electricity in 2012 and the increase of gas-fired generation, the demand for coal for power generation fell 11.6% from 929 million tons in 2011 to 821 million tons in 2012.⁷

There were unusual events in 2012 which negatively affected the market for Montana PRB coal which are unlikely to be repeated. In November 2011, the largest customer for Westmoreland Coal's Absaloka mine (one of the 4 mines operating in the Montana PRB) was shut down by a fire in the boiler of Sherburne County Unit 3 and did not operate for all of 2012.⁸ As a result, the production at Absaloka fell from 5.6 million tons in 2011 to 2.7 million tons in 2012, its lowest level since 1987.⁹ Further, hydroelectric power generation in the Pacific Northwest was above normal for the second straight year, depressing coal burn at the Colstrip station in Montana (the largest market for Montana coal) to 7.8 million tons, compared to a typical annual burn of almost 10 million tons.¹⁰

The short-term drop in domestic coal demand is expected to turn around in 2013. The winter weather returned to normal, natural gas inventories fell back to normal and natural gas prices recovered to over \$4.00 per million Btu by April 2013.¹¹ In its most recent Short-Term Energy Outlook, EIA projects: "EIA expects total coal consumption will increase by 7.3 percent from 890 MMst in 2012 to 955 MMst in 2013 as consumption in the electric power sector rises due to higher electricity demand and high natural gas prices."¹² Thus the hyperbole in the NPRC

⁷ EIA Electric Power Monthly, April 2013, Table 2.1 at <http://www.eia.gov/electricity/monthly/pdf/epm.pdf>

⁸ Westmoreland Coal, 2012 SEC Form 10-K, page 32 at http://www.westmoreland.com/library/2013_SEC_Filings/WLB_-_12.31.2012_-_10K_at_031213_Final.pdf

⁹ Mine Safety and Health Administration, data retrieval system at <http://www.msha.gov/drs/drshome.htm>

¹⁰ EIA 923 data 1998 – 2012 at <http://www.eia.gov/electricity/data/eia923/>

¹¹ EIA website at <http://tonto.eia.gov/dnav/ng/hist/rngc1w.htm>

¹² EIA Short-Term Energy Outlook, May 2013, page 7 at http://www.eia.gov/forecasts/steo/pdf/steo_full.pdf (note that EIA is referring to coal consumption for domestic electric power generation, not including other domestic demand and exports)

Comments (“it is unreasonable to expect that there will be domestic demand for Otter Creek and other Ashland area coal”) is unfounded.

3. The Long-Term Domestic Market for PRB Coal is Projected by EIA to be Large and Growing

EIA has recently released the Annual Energy Outlook (“AEO”) 2013, which is a forecast of energy supply and demand through 2040. TRRC and NPRC both relied upon the Annual Energy Outlook Early Release in the Supplemental Application and in the NPRC Comments, respectively. EIA forecasts that the total demand for US coal will increase at an average annual rate of 0.2% from 2011 to 2040¹³, not decline as the Power Report and the Synapse Report represent. NPRC argues that “TRRC’s characterization of the [EIA] report is misleading and inaccurate” because the Early Release referenced that coal production would grow, not consumption.¹⁴ Regardless of the NPRC’s illogic (if coal production grows, obviously coal consumption must also be growing), the EIA AEO does project that domestic coal consumption will grow at the same 0.2% annual rate through 2040 as coal production.¹⁵

Further, *EIA projects that Montana PRB coal will be the fastest-growing coal supply region of any region in the country.* As shown in Exhibit 2 below, EIA’s detailed AEO tables project that Montana PRB coal will grow at an average annual rate of 2.0% from 2011 to 2040, while the next highest-growth region is at a lower 1.2% average annual rate.¹⁶ EIA’s forecast of Montana PRB coal production increases from 41.7 million tons in 2011 to 73.4 million tons in 2040, quickly recovering from the drop in 2012 and showing rapid growth beginning in 2017 (about the time that Otter Creek could be on line). EIA further divides the projection for

¹³ EIA, Annual Energy Outlook, Table A15 at <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>

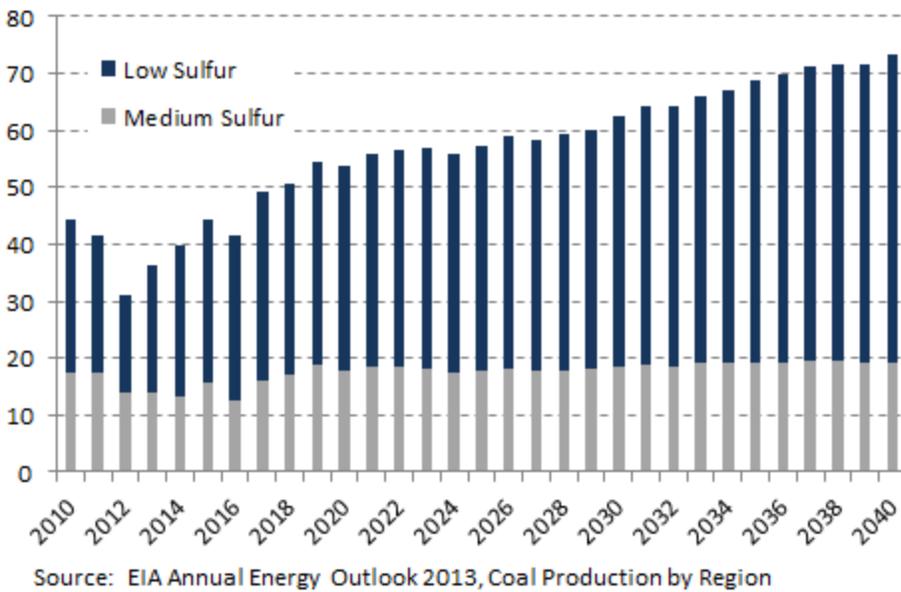
¹⁴ NPRC Comments at 11

¹⁵ EIA, Annual Energy Outlook, Table A15 at <http://www.eia.gov/forecasts/aeo/pdf/0383%282013%29.pdf>

¹⁶ See <http://www.eia.gov/oiaf/aeo/tablebrowser/#release=AEO2013&subject=7-AEO2013&table=95-AEO2013®ion=0-0&cases=ref2013-d102312a>

Montana PRB coal into “low-sulfur” like Otter Creek, and medium-sulfur (like the existing Rosebud and Absaloka mines). EIA forecasts that the production of low-sulfur Montana PRB coal will grow at the rate of 2.8% annually through 2040, from 24.4 million tons in 2011 to 54.1 million tons in 2040.¹⁷ Clearly, EIA thinks that there will be demand for the Otter Creek coal.

Exhibit 2: EIA Forecast of Montana PRB Coal Production 2011 – 2040 (mm tons)

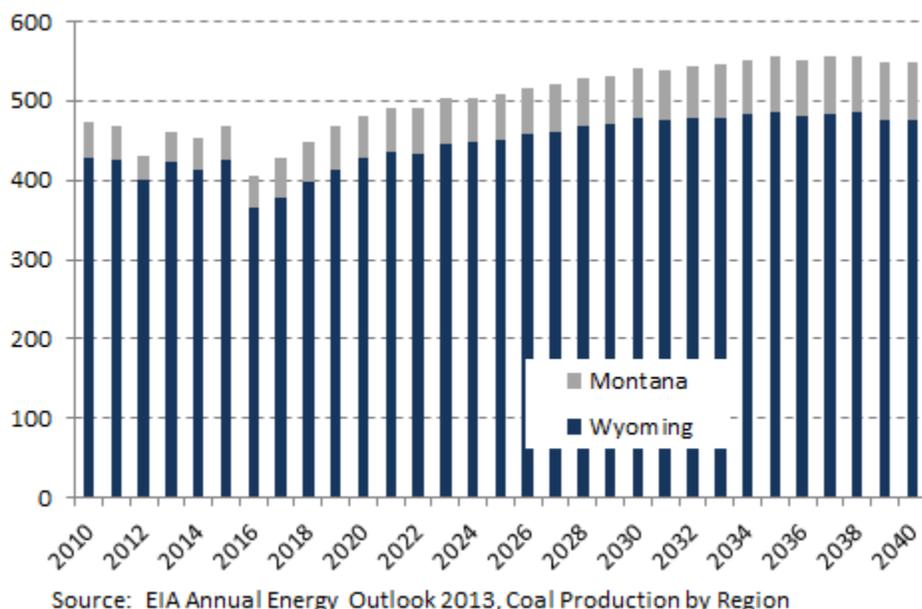


As shown in Exhibit 3, EIA projects that the entire PRB (Montana and Wyoming) will resume its growth after 2016 and will exceed 500 million tons per year by 2023 and exceed 550 million tons per year by 2034.¹⁸ While this rate of growth is slower than the PRB experienced from 1984 to 2007, it is still projected to be a very large and growing market which will need expanded coal production to supply it.

¹⁷ ibid

¹⁸ ibid

Exhibit 3: EIA Forecast of PRB Coal Production 2011 – 2040 (mm tons)



The NPRC Comments rely on the Synapse Report, which alleges that “falling prices of natural gas coupled with higher mining and transportation costs for coal have eroded coal’s competitiveness.”¹⁹ However, the data in the Synapse Report show that coal still has a substantial cost advantage over natural gas, just not as large as it was at the peak of natural gas prices. The Synapse Report cites the EIA Electric Power Annual 2011 for the delivered cost of fuel for the electric power industry; however Synapse has misrepresented and manipulated the data to exaggerate the decline in natural gas prices relative to PRB coal prices. Synapse claims that its chart²⁰ presents the price of natural gas and subbituminous coal (i.e., PRB coal), but the prices presented are actually for bituminous coal, which is much higher cost. Further, by starting the chart at the peak of gas prices, the decline in gas prices looks more dramatic.

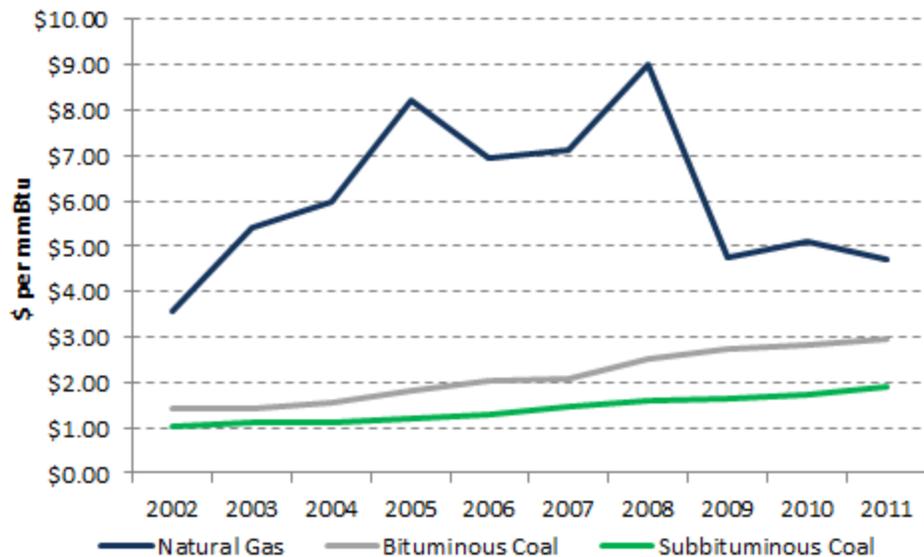
I have presented the full data on delivered prices (including the commodity price and transportation) for coal and natural gas from the EIA Electric Power Annual 2011 on Exhibit 4

¹⁹ NPRC Comments at 2; Synapse Report at 1

²⁰ Synapse Report at 5, Figure 2

below. In 2011, the delivered price of subbituminous (PRB) coal was \$1.90 per million Btu, compared to \$2.94 per million Btu for bituminous coal and \$4.72 per million Btu for natural gas.²¹ Thus PRB coal retains a large delivered cost advantage over both natural gas and bituminous coal; still larger than it was in 2002.

Exhibit 4: Average Delivered Cost of Natural Gas and Coal to the Electric Power Industry



Source: EIA Electric Power Annual 2011, Table 7.4

B. The Market for Otter Creek Coal is Not Severely Constrained by its Sodium Content and Relative Transportation Costs

The NPRC Comments, the Power Report and the Synapse Report all assert that the market for Otter Creek coal is severely limited by its sodium content.²² This assumption is a key element in the arguments raised by these parties, *i.e.*, there are very few power plants that can burn this coal due to its sodium content. Further, they all contend that the market for Otter Creek coal is limited to a small geographic region because of its location and relative transportation

²¹ EIA, Electric Power Annual 2011, Table 7.4 at <http://www.eia.gov/electricity/annual/pdf/epa.pdf>

²² NPRC Comments at 2, “few electric utilities are willing to accept it due to its high sodium content” Power Report at 16, “the high sodium character of the Otter Creek coal limits the market into which it can be sold” Synapse Report at 1, “high sodium content limits Otter Creek’s customer base”

costs compared to the Wyoming PRB mines.²³ Both of these assertions are grossly exaggerated and are not founded on any analysis done by these parties.

1. There are Many Power Plants That Have Used and Will Use Higher-Sodium Coals

The assertions made regarding the marketability of Otter Creek coal given its sodium content in the NPRC Comments, the Power Report and the Synapse Report all have the same referenced source: the Otter Creek Property Summary Report prepared by Norwest Corporation in 2006. They all assert that high-sodium coal causes slagging problems in boilers and claim that “boiler slag is the molten bottom ash produced in wet bottom boilers”.²⁴ This is incorrect in several respects:

- Slag is the retained solid material from coal (ash) which adheres to the furnace. It is not produced in wet bottom boilers; it is produced in all boilers. Wet bottom boilers are called wet bottom because they are designed to remove slag from the furnace in molten form.²⁵ Thus, wet bottom boilers *require* a coal with a low ash fusion temperature, such as Otter Creek. For these boilers, a slagging coal is not a problem, it is a necessity.
- All PRB coals, including those in Wyoming, are slagging coals (they have a low ash fusion temperature). Wyoming PRB coal causes similar slagging problems as Montana PRB for boilers not designed for coal with low ash fusion temperature.²⁶

²³ NPRC Comments at 14, “Otter Creek ... will not be able to compete with Wyoming PRB coal ... because of the transportation costs and higher sodium content of Otter Creek coal”
Power Report at 12, “Montana PRB ... suffers from of (sic) a transportation disadvantage relative to the Wyoming PRB”

Synapse Report at 3, “Montana coal is at a relative disadvantage to Wyoming”

²⁴ NPRC Comments at 2, Synapse Report at 1, Power Report at 14

²⁵ Babcock and Wilcox, Steam, its generation and use, Chapter 21, Fuel Ash Effects on Boiler Design and Operation (Babcock and Wilcox is the inventor and manufacturer of the cyclone boiler, which is the principal wet bottom boiler in use in the United States). See <http://203.158.253.140/media/e-Book/Engineer/Power%20Plant/Steam%20Generation%20and%20Use/pdf/Chap%2021.pdf>

²⁶ Lehigh Energy Update, “Accounting for Changes in Coal Properties when Optimizing Combustion, March 2002 at http://www.lehigh.edu/~inenr/leu/leu_31.pdf

- The high sodium content of Montana coals can cause fouling in the superheater area (from fly ash), which is a different problem for boilers not designed for this coal. Power companies deal with this problem with sootblowers and tube spacing.²⁷
- Sodium does not “interfere with air pollution control devices” as asserted in the Power Report,²⁸ it is used as an additive to improve the performance of air pollution control equipment. Many plants add trona, a naturally-occurring sodium carbonate mineral to improve the performance of electro-static precipitators and to control acid mist.²⁹
- All Montana PRB coals are high-sodium. The Otter Creek coal is no different than the coals that have been produced and sold in Montana for many years.³⁰ Power plants that have used Montana PRB coals in the past, or that have wet bottom boilers which are designed for low ash fusion temperature coals, are all likely markets for higher-sodium Montana PRB coal.

2. Montana PRB Coals have a Transportation Advantage to Some Markets and a Disadvantage to Other Markets

Compared to the Wyoming PRB coals, the Montana PRB coals have a shorter rail distance to reach customers in the northern states (primarily Montana, Washington, Oregon, North Dakota, Minnesota, Wisconsin, Michigan and the Great Lakes) and a longer rail distance to reach markets in states farther south. Accordingly, these northern states will be the primary domestic market for the coal. This does not mean that all customers in the northern states use Montana PRB coal and all markets in the southern states use Wyoming PRB coal. It merely means that if all other factors are equal (mine price, coal quality, etc.), the customers in the

²⁷ Babcock and Wilcox, Steam, its generation and use, Chapter 21

²⁸ Power Report at 14

²⁹ See Babcock & Wilcox “Trona Injection for Effective SO₃ Mitigation” at <http://www.babcock.com/library/pdf/ps-415.pdf>

³⁰ Norwest Corporation, Montana Otter Creek State Coal Valuation, January 30, 2009, page 2-2 (attached as SS-1). Exhibits attached to this verified statement have the prefix “SS-“.

northern states will prefer Montana PRB over Wyoming because of a freight mileage advantage and vice versa.

I have estimated the rail mileage distances for Otter Creek and the competing Wyoming PRB mines to a number of potential domestic markets.³¹ Otter Creek has a mileage advantage of over 355 miles to Duluth (857 miles vs. 1,212 miles) to serve the markets in Minnesota and the Great Lakes (power plants in Michigan). Otter Creek also has a shorter distance to load coal on the Mississippi River (857 miles to St. Paul) for transfer to barge delivery than the Wyoming PRB mines (1,169 miles to St. Louis). For customers located near Chicago, or served by eastern railroads with interchange in Chicago, Otter Creek has a mileage disadvantage to Chicago of 131 miles (1,329 miles compared to 1,198 miles from the Black Thunder mine). For customers to the south, such as the Coronado plant in Arizona, Otter Creek has a mileage disadvantage of over 400 miles (1,864 miles vs. 1,445 miles).

Even though the transportation differentials mean that Montana PRB coal will be more competitive in the northern states and less competitive in the southern states, the rail mileage difference is only one factor in the competition to supply the most economic coal to all of the markets. The Synapse Report cited a study by the Energy Information Administration (EIA) regarding coal transportation rates to the electric power sector.³² This study estimated that the average delivered price for PRB coal in 2010 was \$29.76 per ton, with an average rail transportation cost of \$17.31 per ton.³³ A difference in the rail rate of 10% due to the difference in miles would be a difference in the delivered price of 6%, which could be offset by the difference in the mine prices between Otter Creek and the Wyoming PRB.

³¹ Source: PCMiller rail software

³² Synapse Report at 8

³³ EIA Coal Transportation Rates to the Electric Power Sector, Table 7 at http://www.eia.gov/coal/transportationrates/pdf/table7_PRB_Averages.pdf

C. The Potential Domestic Market for Otter Creek and Montana PRB Coal is Huge

Rather than a market limited to a “small number of Midwestern generating plants”,³⁴ there is a large potential market consisting of power plants which either 1) already use Montana PRB coal; 2) have used Montana PRB coal in the past but currently use Wyoming PRB coal due to economic advantages; or, 3) currently use Wyoming PRB coal and have a boiler design with wet bottom (cyclone) boilers which prefer coals with low ash fusion temperature (high-sodium) and are likely potential customers for Otter Creek coal. Contrary to the contentions in the Synapse Report³⁵ and the Power Report,³⁶ few of these plants have announced plans to retire.

1. NPRC Overstates the Number of Coal-Fired Plants Announced for Retirement

The NPRC Comments make claims regarding the potential for retirement of coal-fired plants at several specific existing customers for Montana PRB coal that are not supported by the record.

- **Minnesota Power:** The NPRC Comments cite the Minnesota Power 2013 Resource Plan in support of the contention that “the number of power plants Otter Creek and other Ashland area mines could serve will soon decrease”.³⁷ The NPRC Comments make much of the fact that Minnesota Power plans to convert an existing coal-fired plant at Laskin Energy Center to a gas peaking facility in 2015. What the NPRC Comments fail to mention is that the Laskin station is Minnesota Power’s oldest (built in 1953) and smallest plant (only 110 MW), which burned only 334,000 tons of coal in 2011. In contrast, the same Resource

³⁴ Power Report at 14, similarly NPRC Comments at 15 and Synapse Report at 25

³⁵ Synapse Report at 25

³⁶ Power Report at 20

³⁷ NPRC Comments at 17

Plan³⁸ affirms that the Boswell Energy Center, which is its largest coal-fired facility at over 1,000 MW and supplies over one-third of the company's power supply, is economic for Minnesota Power to invest in emissions controls and will continue to operate for the entire planning period. The Boswell plant burns over 4 million tons per year and is one of the largest markets for Montana PRB coal. The retirement of the tiny Laskin plant is almost irrelevant. The contention that there will be a large decline in demand for Montana PRB coal because power plants are retiring is rebutted by Minnesota Power's Resource Plan.

- DTE Energy: The NPRC Comments cite a report by the Union of Concerned Scientists claiming that many power plants are "ripe for retirement".³⁹ While it may be true that this advocacy group thinks that these coal-fired plants should be retired, their opinion matters little compared to the power companies who own these plants. The NPRC Comments specifically cite 2 power plants owned by Detroit Edison (St. Clair and Trenton Channel) as "ready for retirement" because these are 2 of the plants listed in the Norwest report. However, DTE Energy (Detroit Edison) has stated that it plans to invest in new emissions control equipment for its coal-fired power plants. In its 2012 SEC Form 10-K, DTE states that it will make approximately \$1.6 billion of capital expenditures through 2020 to comply with emissions regulations.⁴⁰ In its most recent financial presentations, DTE outlines its plans for its coal fleet and identifies only 203 MW which will be retired in the short-term and another 650 MW which may be retired

³⁸ NPRC Comments, Appendix 9 at 38

³⁹ NPRC Comments at 19

⁴⁰ DTE Energy Company Form 10-K 2012, page 26 at <http://phx.corporate-ir.net/phoenix.zhtml?c=68233&p=irol-sec>

pending EPA regulations, while another 6,830 MW are classified as long-term units (operate at least 20 more years) and medium-term units (may face retirement after 2020).⁴¹

2. The Potential Domestic Market for Otter Creek and Montana PRB Coal

I have performed an analysis of the potential domestic market for Otter Creek coal. I have defined the potential domestic market for Otter Creek coal to include 1) plants which are currently purchasing Montana PRB coal; 2) plants which have previously purchased Montana PRB coal; and 3) plants which are purchasing PRB coal and have wet bottom boilers which prefer high-sodium coal. Also, I have considered the impact of the announced plans to retire existing coal-fired units on the potential market. This analysis is based on the coal purchases in 2011 (the last full year with complete data reported to EIA).⁴² My conclusions are:

- In 2011, the total domestic demand (purchases) of PRB coal by all electric power plants (excluding industrial markets) was 445.4 million tons. This demand included 416.1 million tons of Wyoming PRB coal and 29.3 million tons of Montana PRB coal.
- Of the 2011 PRB coal demand, 47.9 million tons were at power plants which have announced plans to retire through 2025, which is only 11% of the existing market. The demand from these retiring plants will be offset by increased demand from several new power plants that were under construction in 2011 (Turk, Sandy Creek and Dry Fork) as well as increased utilization of existing plants with growing demand for electricity.

⁴¹ DTE Presentation, Citi Global Energy & Utilities Conference, May 15-16 2013, page 15 at <http://phx.corporate-ir.net/phoenix.zhtml?c=68233&p=irol-presentations>

⁴² See EIA data for calendar year 2011 at <http://www.eia.gov/electricity/data/eia923/>

- The potential domestic power market for Montana PRB coal is about 139.7 million tons per year, which is the amount of PRB coal purchased at plants which are currently using at least some Montana PRB coal (45.6 million tons/year), other plants which have used Montana PRB coal in the past (55.0 million tons/year), and other plants which have cyclone boilers (39.2 million tons/year). Excluding plants which have announced plans to retire, the potential domestic power market for Montana PRB coal is about 118.0 million tons per year.

The detailed plant-specific table supporting this analysis is shown on Appendix 1.⁴³

⁴³ Data on 2011 generation, burn and coal purchases comes from EIA 923 data at <http://www.eia.gov/electricity/data/eia923/>; identification of plants which burned Montana PRB coal in previous years comes from EIA and FERC 423 data at <http://www.eia.gov/electricity/data/eia423/>; identification of which plants are cyclone and wet bottom boilers comes from EPA Air Markets Program at <http://ampd.epa.gov/ampd/>

II. The Export Market for Otter Creek and Montana PRB Coal is Large and has Viable Transportation Options

The NPRC Comments claim that “There is no International Demand for Otter Creek Coal,”⁴⁴ yet their own expert reports that “the new markets for Montana PRB coal envisioned by PRB coal companies [is] exports to Asia.”⁴⁵ In fact, there is a large and growing export market for US coal and the coal from Otter Creek and the Ashland area is well-situated to supply it. The NPRC Comments’ arguments appear to come down to these points:

- “U.S. infrastructure is not aligned for exporting Otter Creek coal to Asia.”⁴⁶
- “Otter Creek coal cannot compete in the dwindling markets for steam coal in Europe, Japan and South Korea.”⁴⁷

I will address each of these claims.

A. Expanding Terminal Capacity on the West Coast is Planned to Handle Increasing Coal Exports to Asia

The NPRC Comments consider the plans for new export coal terminals in the State of Washington, but discount the impact of the expansions of the existing coal terminals in Canada to significantly increase the ability for PRB coal (both Montana and Wyoming) to export coal to Asia. The NPRC Comments only mention the Westshore Terminal in Vancouver, Canada and incorrectly claim that it is already operating near capacity and that the capacity expansion at Westshore is not “going smoothly.” In fact, there are 3 large existing coal terminals in Canada (Westshore, Neptune and Ridley), all of which are expanding and all of which provide the ability for increased exports of US coal from Montana and Wyoming to Asia, as described below.

⁴⁴ NPRC Comments at 19

⁴⁵ Power Report at 17

⁴⁶ NPRC Comments at 26

⁴⁷ NPRC Comments at 28

Westshore Terminals Investment Corporation is a public company which owns the Westshore Terminal at Roberts Bank, British Columbia. The coal export terminal is located only 500 meters from the United States border⁴⁸ and is the largest coal export terminal (based on shipments) in North America. Westshore is served by the BNSF railroad as well as the CP and CN railroads. As Westshore Terminal Investment Corporation states, “In recent years, Westshore has proved to be an increasingly popular choice on the West Coast for United States mines, particularly in the Powder River Basin in Montana and Wyoming. U.S. shipments reached a record 8.2 million tonnes in 2011.”⁴⁹ Not only are the NPRC Comments wrong that “recent plans to increase Westshore’s capacity from 27 million tons to 30 million tons has resulted in significant local opposition” but the recent expansion of Westshore was actually completed late in 2012 and “it is now estimated that the throughput capacity is approximately 33 million tonnes, under current and foreseeable operating conditions.”⁵⁰ Westshore’s exports were a record 27.3 million tonnes⁵¹ in 2011 (2012 exports fell to 26.1 million tonnes because an accident disrupted loading), which included 8.2 million tonnes of coal from Montana and Wyoming.⁵² U.S. coal accounts for 29% of the exports from Westshore.⁵³ There are only 3 Canadian companies (Teck, Coal Valley and Grande Cache) exporting coal through Westshore and these exports are not likely to grow in the future. While Teck plans to increase production by 3 million tonnes per year, Coal Valley has idled one of its two mines and its exports are falling.⁵⁴ The expansion of Westshore provides an additional 6 million tonnes per year of excess

⁴⁸ See www.westshore.com

⁴⁹ Ibid

⁵⁰ Westshore Terminals Investment Corporation, Annual Information Form, March 19, 2013, page 3 at <http://www.westshore.com/pdf/finance/2012/aif.pdf>

⁵¹ Note that all of the data for Westshore is in metric tons (tonnes); one metric ton equals 1.10231 short tons

⁵² See www.westshore.com

⁵³ Westshore Terminals Investment Corporation, Annual Information Form, March 19, 2013, page 6

⁵⁴ Sherritt International Corporation, Annual Information Form, page 44 at

<http://www.sherritt.com/getattachment/33fb64ba-3744-449a-a45d-47a1cd6ab035/2012-Annual-Information-Form>

capacity for increased exports of coal from Montana and Wyoming on top of the 8 million tonnes currently exported.

The second export coal terminal in Vancouver is the Neptune Terminal, owned by Teck Coal and served by BNSF, CP and CN railroads. Neptune has recently completed an expansion of its capacity from 8.5 to 12.5 million tonnes per year and plans to further increase export capacity to 18.5 million tonnes per year.⁵⁵ Exports through Neptune reached a high of 6.4 million tonnes in 2012.⁵⁶ The expansion will provide an additional 12 million tonnes per year of available capacity for U.S. coal exports, as there are no expansions planned for Canadian producers (other than Teck's 3 million tonnes per year) in southeast British Columbia which would be shipped through Vancouver.

The third large Canadian coal export terminal is Ridley Terminal, located in Prince Rupert, British Columbia and served by the CN railroad. Ridley was built in 1984 to handle coal exports from the new mines in northeast British Columbia.⁵⁷ Ridley has existing export capacity of 12 million tonnes of coal per year and exported 11.5 million tonnes in 2012.⁵⁸ Ridley has begun construction on a project to more than double its export capacity to 25 million tonnes per year, with completion by the end of 2014.⁵⁹ In 2011, Ridley signed contracts to handle shipments of Powder River Basin coal with Arch Coal, Cloud Peak Energy and Enserco Energy (a coal trader).⁶⁰ While much of the additional capacity at Ridley is expected to be supplied by

⁵⁵ Teck Fourth Quarter 2012 Investor Presentation, February 7, 2013, page 12 at <http://www.teck.com/Generic.aspx?PAGE=Teck+Site%2fInvestors+Pages%2fFinancial+Reporting+Pages%2fQuarterly+Reports&portalName=tc>

⁵⁶ Westshore Terminals Investment Corporation, Annual Information Form, March 19, 2013, page 6

⁵⁷ Ridley Terminals Inc., 2011 Annual Report, page 1 at http://www.rti.ca/sites/default/files/annualreport/Ridley_2011AR_English_V4.pdf

⁵⁸ Westshore Terminals Investment Corporation, Annual Information Form, March 19, 2013, page 6

⁵⁹ Ridley Terminals Inc. 2012 Third Quarter Report, page 4 at http://www.rti.ca/sites/default/files/2012_q3_financial_statements_en_-_final_v2.pdf

⁶⁰ Ridley Terminals Inc. 2011 Annual Report, page 7

new Canadian mines (Teck's Quintette mine and Coalspur's Vista project), Ridley is likely to have additional capacity to handle PRB coal beyond the existing contracts.

Another existing terminal in Vancouver, Canada, Fraser Surrey Docks, is served by the BNSF railroad and is proposing to add the ability to export 4.0 million tonnes per year of PRB coal. The operation is expected to start exporting in 2014 and reach full capacity the next year.⁶¹ This would provide the capacity for an additional 4 million tonnes per year.

In total, the expansion plans at the existing Canadian terminals would add 35 million tonnes per year of export coal capacity above the shipments in 2012. Even if all of the Ridley expansion were consumed by new Canadian coal mines, there would be 22 million tonnes per year (24.25 million tons per year) of new capacity in the Port of Vancouver available for increased shipments of PRB coal from Montana and Wyoming. This capacity is more than enough to accommodate the new Otter Creek mine, even if one were to assume that all projected Otter Creek coal is exported. The terminals in Vancouver, Canada are perfectly "aligned" to handle exports of Montana PRB coal to Asia; that is what they are doing today. Westshore reports that 79% of its exports are to Asia and Ridley reports that 90% of its exports are to Asia.⁶²

There are also 3 large new terminal projects proposed in Washington and Oregon to handle increased coal exports from the PRB to Asia. The terminal projects are:

- SSA Marine Gateway Pacific Terminal in Cherry Point, Washington is a proposed new terminal to handle dry bulk commodities (coal, grain and potash). The port would be served by the BNSF railroad and would be designed to handle up to 54

⁶¹ Fraser Surrey Docks memo to Port Metro Vancouver, May 13, 2013 at http://www.fsd.bc.ca/documents/detailed_project_scope.pdf

⁶² Westshore Terminals Investment Corporation, Annual Information Form, March 19, 2013, page 3 and Ridley Terminals Inc. 2011 Annual Report, page 7

million tons per year, of which 48 million tons is expected to be coal.⁶³ It can load capesize vessels in deep water and is located near an oil refinery and an aluminum smelter.⁶⁴ Peabody Energy (the largest producer in the Wyoming PRB) has a contract to ship up to 24 million tonnes per year of coal through Gateway Pacific.⁶⁵ Cloud Peak Energy (the third-largest PRB coal producer) has announced a contract to ship up to 16 million tons per year.⁶⁶ While the NPRC Comments at page 26 state that “Arch Coal is also invested in the planned Gateway Pacific terminal”, that is not correct.⁶⁷

- Millennium Bulk Terminals in Longview, Washington is an operating bulk material terminal which is planned to handle coal exports. The terminal is located on the site of an idle aluminum smelter on the Columbia River.⁶⁸ It is served by both the BNSF and UP railroads and can load Panamax vessels. The planned capacity is 44 million tonnes per year of coal. The project is owned by Ambre Energy and Arch Coal has a 38% ownership interest.⁶⁹ Cloud Peak also has an option to export up to 5 million tonnes per year through the terminal.⁷⁰
- The Morrow Pacific project is a proposed new terminal at the Port of Morrow, Oregon on the Columbia River, served by the UP railroad. The coal would be barged to the Port Westward Industrial Park and transloaded to Panamax ocean

⁶³ Gateway Pacific Terminal Project Information Document, February 28, 2011, page 1-9 at <http://gatewaypacificterminal.com/wp-content/uploads/2011/09/GPT%20PID%20DOCUMENT.pdf>

⁶⁴ See Gateway Pacific Terminal website at <http://gatewaypacificterminal.com/the-project/what/>

⁶⁵ See <http://www.peabodyenergy.com/content/120/Press-Releases>

⁶⁶ See <http://www.businesswire.com/news/home/20130213005880/en/Cloud-Peak-Energy-Announces-Option-Agreement-SSA>

⁶⁷ Gateway Pacific Terminal Project Information Document, February 28, 2011, page 1-10 at <http://gatewaypacificterminal.com/wp-content/uploads/2011/09/GPT%20PID%20DOCUMENT.pdf>

⁶⁸ See <http://millenniumbulk.com/>

⁶⁹ See <http://www.ambreenergy.com/millennium-bulk-terminal>

⁷⁰ See http://phx.corporate-ir.net/phoenix.zhtml?c=232126&p=irol-newsArticle_print&ID=1764789&highlight=

vessels. The project is designed to ship 3.5 million tonnes per year initially, with a planned expansion to 8 million tonnes per year.⁷¹

These projects are in the permitting process. Even if these Washington and Oregon terminals are not permitted, there is adequate capacity in Canada to accommodate the volume of Otter Creek coal that could be exported.

B. World Thermal Coal Demand is Growing and Montana PRB Coal is Competitive with other Sources

The Comments critique the outlook for thermal coal imports in China, South Korea, Japan and Europe, stating, for example,

- “There is no international demand for Otter Creek coal.”
- “The market for Asian coal is speculative and waning.”
- “... the dwindling markets for steam coal in Europe, Japan and South Korea.”

Notably, the Comments do not rely upon their expert reports, including the Synapse Report, the Power Report and the Verified Statement of Gerald Fauth, for this assertion. Synapse makes no mention of the export market at all, while the Power Report and Fauth talk at length about the large market for PRB coal in Asia, thereby contradicting the NPRC Comments.

In fact, the world market for thermal coal is huge and has been growing steadily and rapidly since the early 1990’s. The International Energy Agency (IEA) publishes statistics on world coal demand and trade. According to the IEA, world steam (thermal) coal consumption has increased from 3.16 billion tonnes in 1995 to 5.66 billion tonnes in 2011.⁷² Since the year 2000, the rate of growth has averaged over 200 million tonnes each year and the rate of growth has accelerated, with consumption increasing by 718 million tonnes in the last two years.⁷³

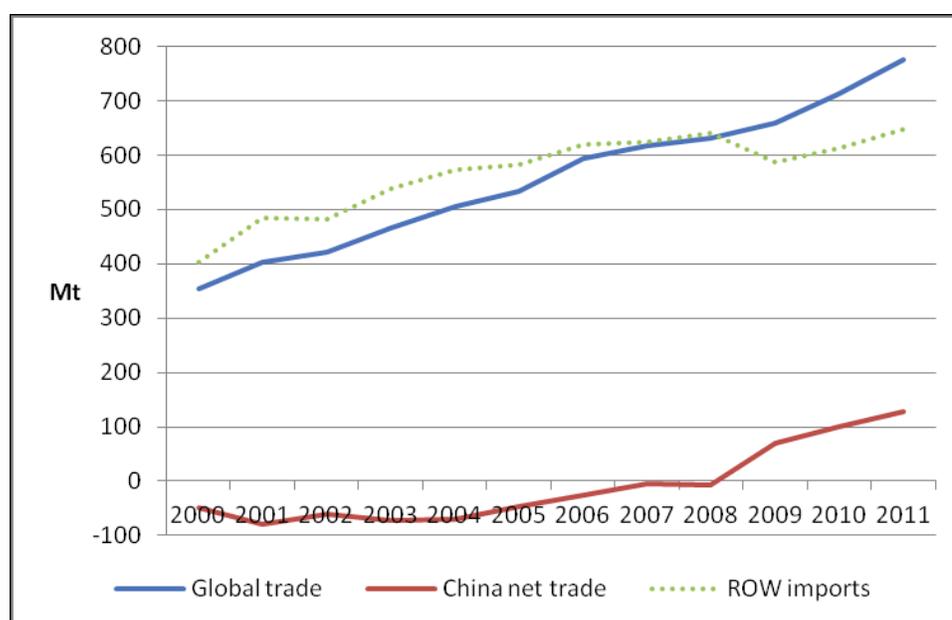
⁷¹ See <http://www.ambreenergy.com/morrow-pacific-project>

⁷² IEA, Coal Information 2012, Table 2.4 (attached as SS-2)

⁷³ Ibid

While a large driver of the growth in world consumption has been in China, with much of the coal supplied by increased production in China, world thermal coal imports have also been increasing rapidly. World seaborne coal trade (coal shipped by ocean vessel) has more than doubled from 356 million tonnes in 2000 to 791 million tonnes in 2011. NPRC’s Comments cite a presentation on world coal markets by the IEA,⁷⁴ but they do not cite the chart on world steam coal trade shown on Exhibit 5, which comes directly from the same presentation.⁷⁵

Exhibit 5: IEA Presentation, World Seaborne Steam Coal Trade (million tonnes)



The NPRC Comments misquote one slide regarding IEA’s projection of European thermal coal imports, claiming that it shows “IEA predict that European demand for coal imports will decrease significantly by 2015”.⁷⁶ Actually, the slide is a forecast of coal *consumption* in Europe, not coal *imports*, as shown on Exhibit 6.⁷⁷ The difference between consumption and imports is domestic production in Europe, which is steadily declining.

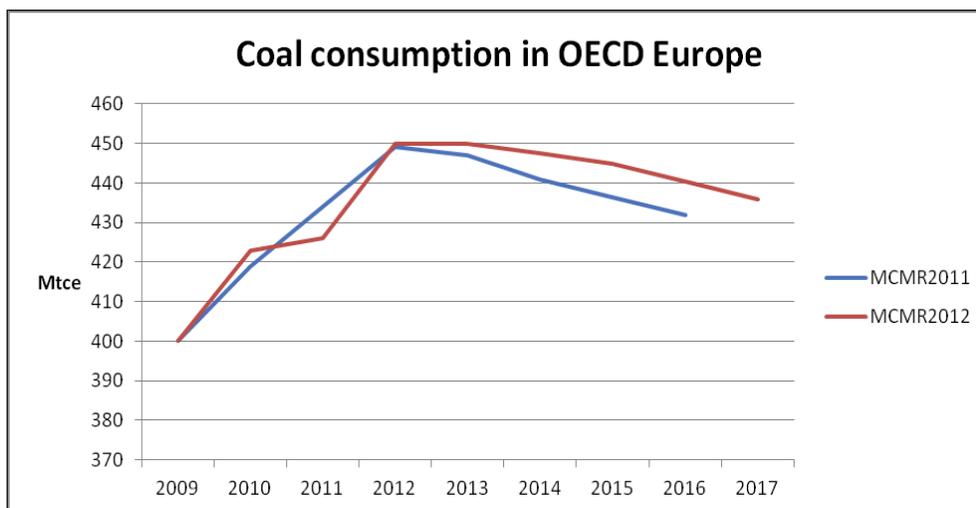
⁷⁴ NPRC Comments at 28

⁷⁵ IEA, Medium-term Coal Market Report presentation December 18, 2012, slide 9 at http://www.iaa.org/newsroomandevents/speeches/121218MCMR2012_presentation_KSK.pdf

⁷⁶ NPRC Comments at 28

⁷⁷ IEA, Medium-term Coal Market Report presentation December 18, 2012, at slide 6

Exhibit 6: IEA Medium-Term Coal Market Report, Coal Consumption in Europe



The IEA forecast does not even show that consumption will decrease significantly by 2015. It shows that total coal demand in OECD Europe⁷⁸ is projected by IEA to fall from 450 million tonnes in 2012 and 2013 to 445 million tonnes in 2015,⁷⁹ a drop of just 1%, hardly significant. Further, this slide (cited in the NPRC Comments at page 28) shows that the IEA has *increased* its forecast of European coal consumption since its previous forecast in 2011.

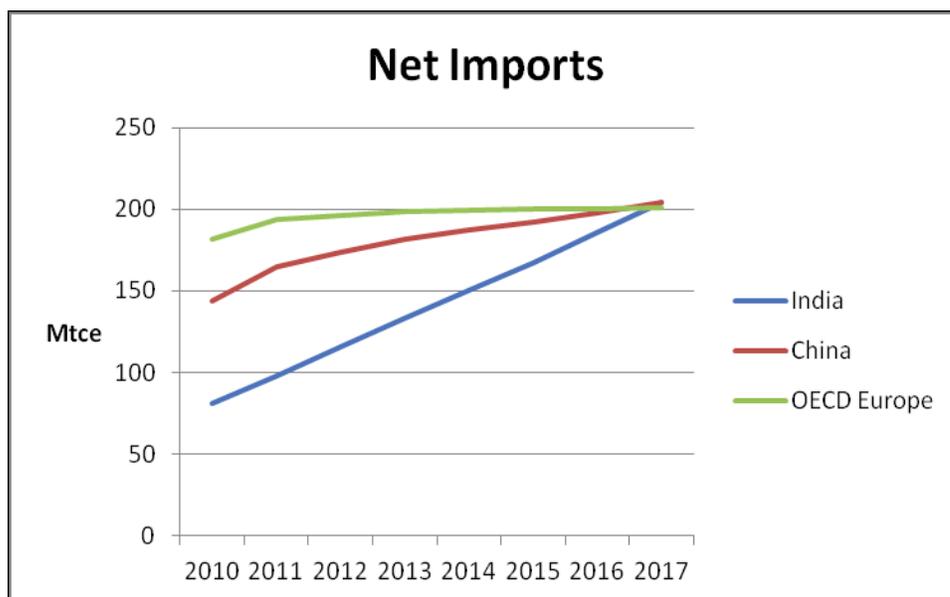
Finally, if NPRC wanted to show what IEA was actually forecasting for European coal *imports*, it only had to look at slide 10 from the same presentation,⁸⁰ shown on Exhibit 7, which shows a forecast of flat coal imports to Europe (the reason why consumption is projected to decline slightly but imports are flat is that production in Europe is declining). This slide also shows that IEA projects imports into China and India will rise significantly by 2017.

⁷⁸ OECD is the Organization for Economic Cooperation and Development; OECD Europe includes most countries in the European Union

⁷⁹ IEA, Medium-term Coal Market Report 2012, Table 23 (attached as SS-3)

⁸⁰ IEA, Medium-term Coal Market Report presentation December 18, 2012, slide 10

Exhibit 7: IEA Medium-Term Coal Market Report, World Imports



NPRC is also wrong when it states that “Europe, long a destination for coal from the eastern U.S., does not present a likely market for western coal.”⁸¹ In fact, Montana coal is being shipped to Europe today through the Midwest Energy Resources Company (MERC) terminal in Superior, Wisconsin. According to the Lake Carriers’ Association, the coal shipments from Lake Superior ports in 2012 “included ... 1.3 million tons shipped to Quebec City for loading into oceangoing vessels and delivery overseas.”⁸² This is Montana coal shipped through the MERC dock, just as TRRC said was likely. NPRC is correct that shipments through MERC have declined from their peak of 22.3 million tons in 2008 to 13.7 million tons in 2011,⁸³ but this merely demonstrates that the MERC terminal has excess capacity which is not being used. The decline comes from reduced shipments of PRB coal to Ontario Power Generation in Canada, due to closure of its coal-fired plants.

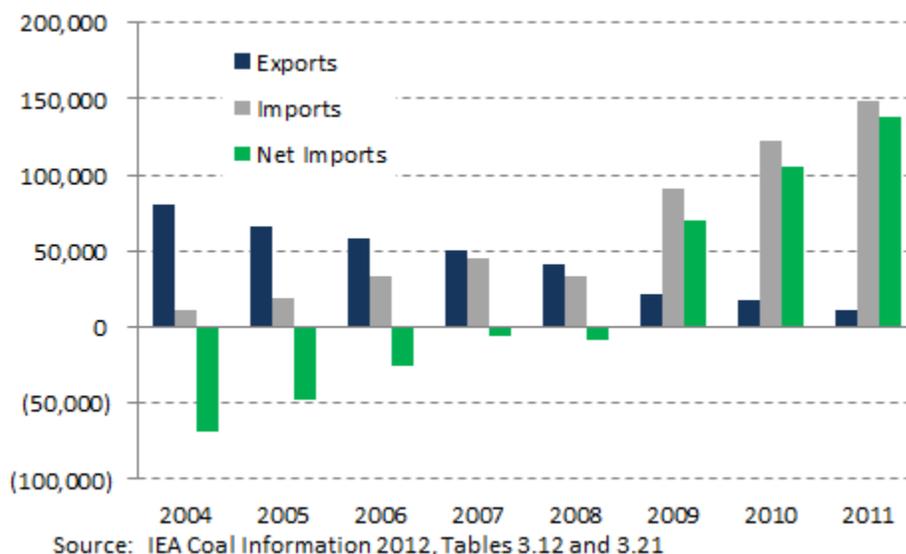
⁸¹ NPRC Comments at 28

⁸² Lake Carriers’ Association, Monthly Cargo report, January 9, 2013 at <http://www.lcaships.com/wp-content/uploads/2013/01/coal1212-text.pdf>

⁸³ See http://www.midwestenergy.com/terminal_activity.php

NPRC also misquotes IEA’s presentation regarding steam coal imports into China. NPRC claims that the pie chart shows that “Even as coal imports in China increased from 104 [million] metric tons (Mt) in 2009 to 133 Mt in 2010, the market share commanded by U.S. exports declined.”⁸⁴ Actually, according to IEA’s Coal Information 2012, steam coal imports from the U.S. into China were flat from 2009 to 2010 but more than doubled in 2011.⁸⁵ As IEA’s trade data shows on Exhibit 8, China has swung from being one of the world’s largest steam coal exporters to the world’s largest steam coal importer in a very short period of time from 2004 to 2011.⁸⁶ In 2004, China was a net exporter of 69 million tonnes of steam coal, but in 2011, China was a net importer of 138 million tonnes.⁸⁷ This swing caused increased demand of 207 million tonnes per year from other world coal suppliers, including the United States.

Exhibit 8: Thermal Coal Net Imports to China (1000 tonnes)



The major destinations for U.S. coal exports from Montana and Wyoming from the West Coast are the countries of South Korea, China, Japan and Taiwan. Rather than “dwindling”

⁸⁴ NPRC Comments at 25

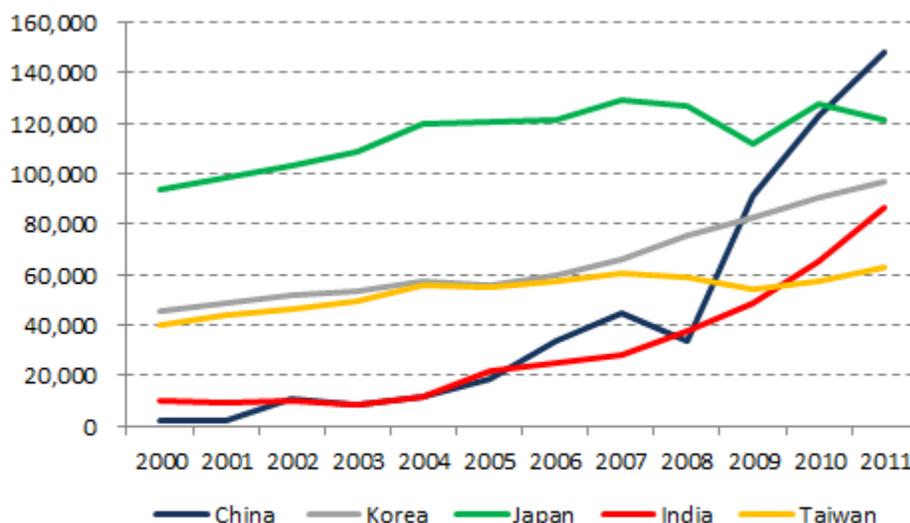
⁸⁵ IEA, Coal Information 2012, Table 2.4 (attached as SS-2)

⁸⁶ Id, Tables 3.12, 3.21 and page V.23 (attached as SS-2)

⁸⁷ Ibid

thermal coal imports into these countries has been growing and growth is expected to continue. Including India, these countries are the world's largest thermal coal importers and their demand has grown rapidly since 2000, as shown on Exhibit 9.⁸⁸

Exhibit 9: Thermal Coal Imports to China, Korea, Japan, India and Taiwan (1000 tonnes)



Source: IEA Coal Information 2012, Table 3.12

The growth in thermal coal imports in these countries is being driven by the construction of new coal-fired power plants to serve increasing demand for electricity. Contrary to the allegations in NPRC's Comments, coal demand in China and these other Asian countries continues to grow rapidly due to construction of new coal-fired power plants. The new coal-fired plants are being built with the flexibility to consume subbituminous coal from Indonesia and the PRB, as this is the lowest-cost coal on the world market (most existing plants were designed to burn bituminous coal).

In China, coal consumption has been growing at the rate of over 200 million tonnes every year since 2000, increasing from 1.38 billion tonnes in 2000 to 3.65 billion tonnes in 2011.⁸⁹ Most of this growth is due to the construction of new coal-fired power plants. According to the

⁸⁸ IEA Coal Information 2012, Table 3.12 (attached as SS-2)

⁸⁹ Id, Table 2.1 (attached as SS-2)

U.S. EIA, “At present, China is installing approximately 900 megawatts of coal-fired capacity (equivalent to one large coal-fired power plant) per week.”⁹⁰ This is equal to almost 50,000 megawatts of new coal-fired capacity each year, which would equal the entire U.S. coal-fired capacity in six years. The NPRC Comments misstate the concern in China over pollution in Beijing and other cities. The pollution problem in Beijing comes from local consumption of coal for heating homes and small businesses, as the last coal-fired power plant in Beijing is being closed this year.⁹¹ The NPRC Comments cite a press release from a company called IHS CERA to argue that coal imports to China will decline in the future due to increased domestic coal production in China.⁹² While it is true that domestic coal production in China has also increased rapidly, it has not grown as fast as consumption, hence the rapid switch of China from a large coal exporter to the largest coal importer since 2004. While the long-term future is uncertain to all, both the International Energy Agency (see Exhibit 7 above) and IHS CERA project growing thermal coal imports into China through the end of this decade meaning that China will continue to be a huge market for imported thermal coal. The IHS CERA press release forecasts that coal demand in China will continue to grow at an average annual rate of 2.4% through 2025, reaching an astonishing level of 5.1 billion tonnes by 2025, up from 3.7 billion tonnes in 2011,⁹³ an increase 50% greater than the entire annual production of the U.S. coal industry.

South Korea is the largest existing market for PRB coal exports and will grow rapidly this decade. According to IHS CERA’s McCloskey Coal Report, “A considerable ramp up in

⁹⁰ EIA, International Energy Outlook 2011, page 97 at <http://www.eia.gov/forecasts/ieo/pdf/0484%282011%29.pdf>

⁹¹ See

<http://topic.chinadaily.com.cn/index/cache?collection=cbsweb&source=China+Daily&title=Beijing+to+shut+coal-fired+boilers+to+clean+up+air&aid=16534168>

⁹² NPRC Comments at 22; See IHS CERA, China’s Coal Market Not the “Promised Land” for International Suppliers, “Chinese coal imports will peak before the end of the decade and enter a prolonged period of decline ... A moderation of demand combined with a rise in domestic supply and improved transportation will bring international producers into increased competition with domestic suppliers.” At <http://press.ihs.com/press-release/energy-power/chinas-coal-market-not-promised-land-international-suppliers>

⁹³ Ibid

Korean import requirements is expected to come from 2014 onwards...”⁹⁴ McCloskey reports that the 2012 thermal coal imports for the five Korean generators were 79 million tonnes, but is expected to grow to 120.9 million tonnes by 2017, with new coal-fired power plants being completed from 2014 – 2017, including:

- **2014:** Kosep’s 870 MW Yeonghueng and 500 MW Bukpyeong
- **2015:** Korea East-West Power’s (EWP) 1,000 MW Dangjin 9, Kospo’s 1,000 MW Samcheok, Kosep’s 1,000 MW Yeosu 1, 500 MW Bukpyeong 2, and 500 MW Dongbu Green
- **2016:** EWP’s 1,000 Dangjin 10, Kowepo’s 1,000 MW Taean 9 and 1,000 MW Taean 10, and Komipo’s 1,000 MW New Boryeong 1
- **2017:** Komipo’s 1,000 MW New Boryeong 2⁹⁵

While most of Korea’s imported coal demand is currently supplied by Indonesian subbituminous coal, PRB coal is a very competitive source for the Korean market. The Korean power companies have shown their interest in PRB coal imports with new long-term contracts to purchase PRB coal from Ambre Energy, the primary developer of the Morrow Pacific and Millennium Bulk Terminals and 50% owner of two mines in Montana and Wyoming. Korea South-East Power (Kosep) and Korea Southern Power (Kospo) have each signed 10-year contracts to purchase a total of 4 million tons per year from Ambre Energy.⁹⁶

In Japan, while growth in coal consumption had slowed after 2005, it has now resumed due to the drop in nuclear power output after the Fukushima Dai-ichi nuclear plant disaster. The Wall Street Journal reported that Japan imported a record amount of thermal coal in fiscal year

⁹⁴ IHS CERA, McCloskey Coal Report, May 17, 2013, page 29, “Komipo’s imports to reach 21mt/yr from 2017” (attached as SS-4)

⁹⁵ Ibid

⁹⁶ Platts Coal Trader International, May 1, 2012, page 6, “S Korean utilities ink 10-year deals for US thermal coal with Ambre” (attached as SS-5)

2012-13, according to a Reuters report cited by SNL Energy.⁹⁷ Japan has recently started operations at large coal-fired power plants, which contributed to the increased coal consumption.⁹⁸ Further, according to the Canberra Times, Japan has moved to fast-track the approval of new coal-fired power plants and Tokyo Electric has issued a tender for the construction of a new 2,600 MW coal-fired power plant.⁹⁹

India is the fastest-growing market for imported coal, with imports more than tripling from 2007 to 2011. According to the World Resources Institute, India has 519,396 MW of proposed new coal-fired power plants, second only to China.¹⁰⁰ Many of these projects are 4,000 MW ultra-mega power projects, which are designed to be highly-efficient and burn coal with lower heat content.¹⁰¹

There are new coal-fired power plants under construction across Southeast Asia. In Vietnam, there are 5 new coal-fired plants, each 1,200 MW, to be placed in service between 2013 and 2018.¹⁰² New coal plants are also under construction in the Philippines, Indonesia, Singapore, Malaysia and Pakistan.¹⁰³ Except for Indonesia, there is little local coal production in these countries, so these projects will require imported coal.¹⁰⁴

⁹⁷ SNL Energy, “Japan imports record amounts of steam coal, LNG in FY’13”, April 30, 2013 (attached as SS-6)

⁹⁸ Wall Street Journal, “Japan Increases Coal Use at Expense of Oil”, May 21, 2013 (attached as SS-7)

⁹⁹ SNL Energy, “Japan to fast track approval of new coal-fired power plants”, April 25, 2013 (attached as SS-8)

¹⁰⁰ World Resources Institute, Global Coal Risk Assessment, November 2012, Table I.1 at

http://pdf.wri.org/global_coal_risk_assessment.pdf

¹⁰¹ See Platts International Coal Report, March 18, 2013 “India’s Reliance Power commissions first unit of Sasan UMPP (attached as SS-9) and McCloskey Coal Report, May 17, 2013, “Indian imports could hit 266 mt by 2017” (attached as SS-10)

¹⁰² Platts International Coal Report, April 29, 2013, page 9, “Petrovietnam to push ahead with coal-fired power plants in next 3 months” (attached as SS-11)

¹⁰³ See SNL Energy Coal Report, April 29, 2013, “Malaysia short-lists 5 companies to build 2,000-MW coal plant (attached as SS-12); SNL Energy Daily Coal Report, April 17, 2013, “Demand for Indonesia’s low-grade coal surges” (attached as SS-13); Platts Coal Trader International, January 8, 2013, “Alsons to begin construction of Philippines coal-fired power unit in Q1” (attached as SS-14); SNL Energy Daily Coal Report, January 25, 2013, “Pakistan approves construction of 600-MW coal plant” (attached as SS-15)

¹⁰⁴ IEA Coal Information 2012, Table 1.1 (attached as SS-2)

IEA projects that seaborne thermal coal imports into China, Korea, Japan, Taiwan, India and other Asian countries will continue to grow rapidly from 496 million tonnes in 2011 to 652 million tons in 2017.¹⁰⁵

The major existing thermal coal suppliers to the Asian market are Indonesia and Australia, both of which have been increasing production. While Australian coal is bituminous, much of Indonesia's exports are subbituminous coal, like Otter Creek and the PRB. Otter Creek will need to compete with Indonesian coal in the growing markets in Asia. World market prices fluctuate, and at times PRB coal has been lower-cost than comparable Indonesian coal and at times higher-cost.¹⁰⁶ The future competitive position of PRB coal exports will depend on many factors, including world currency exchange rates, demand growth in world markets, supply growth and mining costs in Indonesia and other competing countries, ocean freight costs and inland freight costs. Cloud Peak Energy's exports of PRB coal to Asia were 4.4, 4.7, 3.3 and 1.6 million tons in 2012, 2011, 2010 and 2009, respectively.¹⁰⁷ PRB coal has been competitive in Asia since 2009 and is likely to remain so for the foreseeable future.

The proposed Otter Creek mine is well-placed to supply the growing export market to Asia. Otter Creek will have the shortest rail distance to reach the existing export terminals in Vancouver, Canada and the proposed new terminals in Washington and Oregon. Compared to the Wyoming PRB (like Arch's Black Thunder mine), Otter Creek is 135 miles closer to Longview, Washington and 138 miles closer to Cherry Point, Washington and Vancouver, Canada. For exports through the MERC dock, Otter Creek is 355 miles closer than the Wyoming PRB and 176 miles closer than the Spring Creek mine in the Montana PRB.¹⁰⁸

¹⁰⁵ IEA, Medium-term Coal Market Report 2012, Table 29 (attached as SS-3)

¹⁰⁶ IHS CERA, McCloskey Coal Report, "Can PRB compete in Asia", December 14, 2012 (attached as SS-16)

¹⁰⁷ Cloud Peak Energy 2012 SEC Form 10-K, page 60 at <http://cloudpeakenergy.com/investor-relations/sec-filings/>

¹⁰⁸ Mileage calculated using PCMiller commercial software (attached as SS-17)

III. Otter Creek is Able to Compete with Existing Wyoming and Montana PRB Coal Mines

The development of the new Otter Creek coal mine will not change the demand for coal but it will change the source of supply to serve the future coal markets. The current and future markets for subbituminous coal will be supplied by the existing PRB mines in the U.S., other potential future mines in the PRB (such as the proposed projects of Cloud Peak at Youngs Creek and County Coal at Shell Creek) as well as the growing supply of Indonesian subbituminous coal in the international market. The success of a new mine development at Otter Creek depends upon its ability to compete with the existing producers of Montana and Wyoming PRB coal as well as other potential new mine projects. The competitive economics depend on the differences in the mining costs and the transportation costs to reach customers in various locations. With regard to transportation, there are some markets where Otter Creek will have an advantage over the Wyoming PRB (the northern states of Montana, Michigan, Minnesota, North Dakota, Washington and Oregon) and other markets to the south where Otter Creek will have a disadvantage. However, Otter Creek is likely to have significantly lower mining costs because of the fact that there has been significant depletion of coal reserves at the existing mines due to a high level of production over many years.

Because the Montana PRB coal is competitive in both the domestic and export markets today, and is expected to remain competitive in both markets in the future, it is not possible to predict the percentage of Otter Creek coal that will be shipped to each market in the future. Otter Creek will have a very long mine life and it is likely that the markets will change multiple times over the course of its life. At the present time, it appears likely that a majority of the Otter Creek coal will be sold in domestic markets, primarily but not exclusively in the Upper Midwest, but a significant share of the coal would be sold to export markets.

A. The Major Change Since 1986 has been Reserve Depletion of Other Mines

The NPRC Comments and the Power Report make much of the fact that the Tongue River Railroad was not constructed when it was approved in 1986 and they contend that the domestic market for this coal is much worse than it was in 1986.¹⁰⁹ The question they raise is if the market for Montana PRB coal was not sufficient to develop the Tongue River Railroad in 1986, why would it be better now? There are several questions and answers:

- Why were mines in the Ashland area of the Montana PRB not developed before now? The reason that the Ashland area Montana PRB mines were not developed prior to now has been the lack of rail transportation, not the lack of market. The PRB market is more than large enough to absorb the additional supply from Montana, but it has not had rail to access the market because the Tongue River Railroad was not built. The market for PRB coal is much larger today than it was in 1986. PRB coal production in 1986 was only 151 million tons. PRB coal production for the last 10 years has averaged 450 million tons per year.¹¹⁰
- How was the market demand satisfied without the Ashland area Montana PRB mines? The BNSF/UP Joint Line opened the Wyoming PRB to development ahead of the Ashland area. Once the Joint Line was built, new coal mines were built in the Wyoming PRB and were able to expand to meet the growing market.
- What has changed to make the development of the Montana PRB mines more likely today? First, the market is three times larger today, at 450 million tons per year, not 150 million. Second, the coal reserves at the existing PRB mines (both Montana and Wyoming) have been heavily mined over this period of time and

¹⁰⁹ Power Report at 1

¹¹⁰ Mine Safety and Health Administration, data retrieval system at <http://www.msha.gov/drs/drshome.htm>

have much higher costs now. The undeveloped reserves at Otter Creek still have low strip ratios (the cubic yards of rock which must be mined to produce one ton of coal), while the strip ratios at the existing PRB mines have been steadily rising. Finally, the Otter Creek coal reserves, which previously were held by separate parties in alternating (“checkerboard”) tracts, have now been consolidated into logical mining units because both reserve owners (Great Northern Properties and the State of Montana) have leased their coal to the same lessee, Arch Coal.

Since 1986, the mines in the PRB have mined more coal than they have remaining reserves. As shown on Exhibit 10, in the Montana PRB, the Big Sky mine has been closed and the Decker mine is nearly depleted. In Wyoming, 2 mines have been closed and the remaining reserves from 6 mines have been merged into adjacent operations for economies of scale. The current reserves held by the active mines in the Wyoming PRB are 7.7 billion tons and in the Montana PRB are 0.66 billion tons. These reserves are adequate to support the current production rate of about 450 million tons per year for about 18 years. The proposed Otter Creek mine has reported reserves of 1.4 billion tons, more than double the total assigned reserves at all of the existing mines in the Montana PRB.¹¹¹

¹¹¹ Arch Coal SEC Form 10-K 2012, page 47 at <http://investor.archcoal.com/phoenix.zhtml?c=107109&p=irol-sec>

Exhibit 10: PRB Coal Production and Assigned Reserves (million tons)

| Company | Mine | Status | Production Cumulative Reserves | | |
|----------------------|----------------|--------|--------------------------------|--------------|--------------|
| | | | 2012 | 1986 - 2012 | 12/31/2012 |
| Alpha | Belle Ayr | active | 24.2 | 515 | 368 |
| Alpha | Eagle Butte | active | 22.5 | 516 | 404 |
| Arch Coal | Black Thunder | active | 93.1 | 1,530 | 1,466 |
| Arch (Kennecott) | Jacobs Ranch | merged | | 627 | |
| Arch (Triton) | North Rochelle | merged | | 112 | |
| Arch Coal | Coal Creek | active | 7.6 | 106 | 170 |
| Cloud Peak | Antelope | active | 34.3 | 530 | 649 |
| Cloud Peak | Cordero | active | 39.2 | 762 | 331 |
| Cloud Peak | Caballo Rojo | merged | | 111 | |
| Kiewit | Big Horn | closed | | 4 | |
| Kiewit | Buckskin | active | 18.1 | 423 | 250 |
| PacifiCorp | Dave Johnston | closed | | 44 | |
| Peabody | NARM Complex | active | 107.6 | 1,478 | 2,364 |
| Peabody | North Antelope | merged | | 169 | |
| Peabody | Caballo | active | 16.8 | 573 | 852 |
| Peabody | Rawhide | active | 14.7 | 282 | 312 |
| Western Fuels | Dry Fork | active | 6.0 | 87 | 304 |
| Western Fuels | Fort Union | merged | | 3 | |
| Wyodak | Wyodak | active | 4.2 | 103 | 232 |
| Wyodak (Kerr-McGee) | Clovis Point | merged | | 3 | |
| Wyoming Total | | | 388.4 | 7,979 | 7,702 |
| Cloud Peak | Spring Creek | active | 17.2 | 292 | 293 |
| Ambre Energy | Decker | active | 2.8 | 232 | 2 |
| Peabody | Big Sky | closed | | 58 | |
| Westmoreland | Absaloka | active | 2.7 | 135 | 59 |
| Westmoreland | Rosebud | active | 8.0 | 316 | 307 |
| Montana Total | | | 30.7 | 1,032 | 661 |

Sources: Production from MSHA data; reserves from company SEC Forms 10-K and annual reports

Note: 12/31/2012 reserves for Kiewit and Western Fuels calculated from last filing of reserve data less cumulative production

New coal reserves and mines are needed to replace the depletion of existing reserves over time. The new Otter Creek and Ashland area coal reserves which will be accessed by the Tongue River Railroad will be needed to replace the depletion of reserves at the existing PRB mines, both in Montana and Wyoming.

B. The Otter Creek Coal Reserves are More Economic Today than in 1986 Because Costs Have Been Rising at Existing PRB Mines Due to Reserve Depletion

From 1986 to 2012, 9.0 billion tons of coal has been mined in the PRB, including 1.0 billion tons in Montana and 8.0 billion tons in Wyoming.¹¹² All of the coal mines began producing coal in their lowest-cost reserves first, which are near the outcrop where the strip ratios are the lowest. As the lowest-cost coal was mined, the existing mines have moved steadily into reserves with higher strip ratios which are farther from the rail loadout and have higher costs to produce and transport. This is even acknowledged in the Synapse Report, which states that “Arch Coal’s Powder River Basin production costs have escalated at an average annual rate of nearly 7 percent since 2003.”¹¹³ While true, Synapse mistakenly attributes the cost increase to the price of diesel fuel, which only accounts for a relatively small portion of the total cost of coal production in the PRB. While most companies do not disclose the components of their production costs, Cloud Peak Energy (the third-largest producer in the PRB) formerly published this data in the SEC Form 10-K. For the years 2007, 2008 and 2009, fuel and lubricants accounted for just 11.4%, 12.9% and 7.8%, respectively, of Cloud Peak’s cost of coal production.¹¹⁴ Including the cost of explosives (which are partly related to fuel oil costs), the total fuel-related costs for these years were 17.3%, 19.6% and 13.9%, respectively.

The vast majority of the cost increase in the PRB is due to the increased strip ratio experienced at the existing mines. The increase in the strip ratio affects all of the components of mining costs (including labor, fuel, repairs, supplies, explosives, tires and other services) because it requires more rock to be moved per ton of coal produced. The cost increases have not been

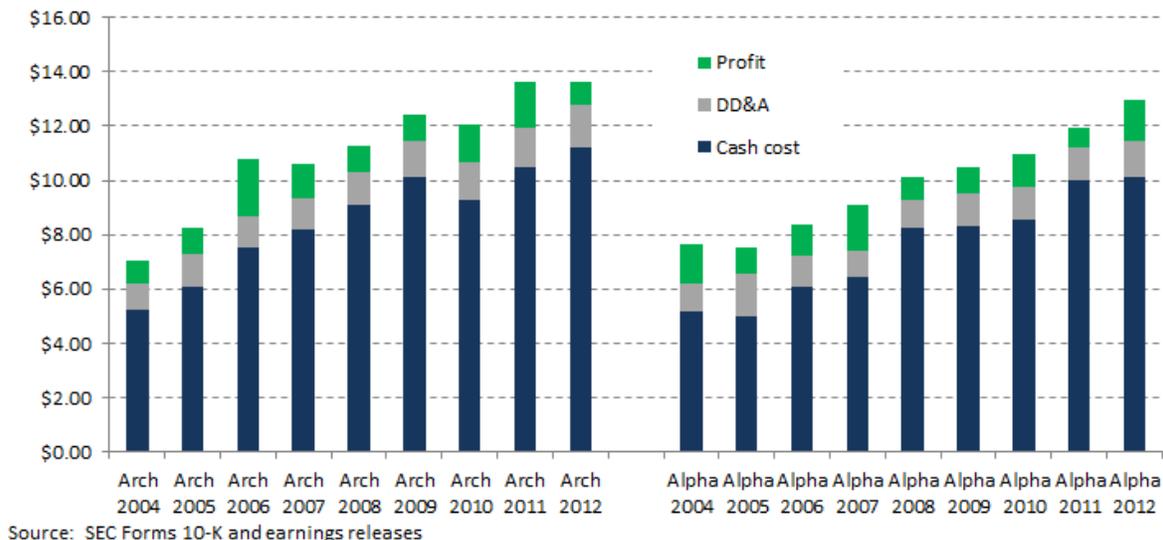
¹¹² Mine Safety and Health Administration, data retrieval system at <http://www.msha.gov/drs/drs/home.htm>

¹¹³ Synapse Report at 8

¹¹⁴ Cloud Peak Energy, SEC Form 10-K for the year 2009, page 80 at <http://cloudpeakenergy.com/investor-relations/sec-filings/>

limited to Arch Coal. Exhibit 11 shows the reported production costs (both cash costs and DD&A¹¹⁵) from 2004 to 2012 for the PRB mines of Arch Coal and Alpha Natural Resources.

Exhibit 11: Reported Production Costs and Profit for PRB Producers (\$/ton)



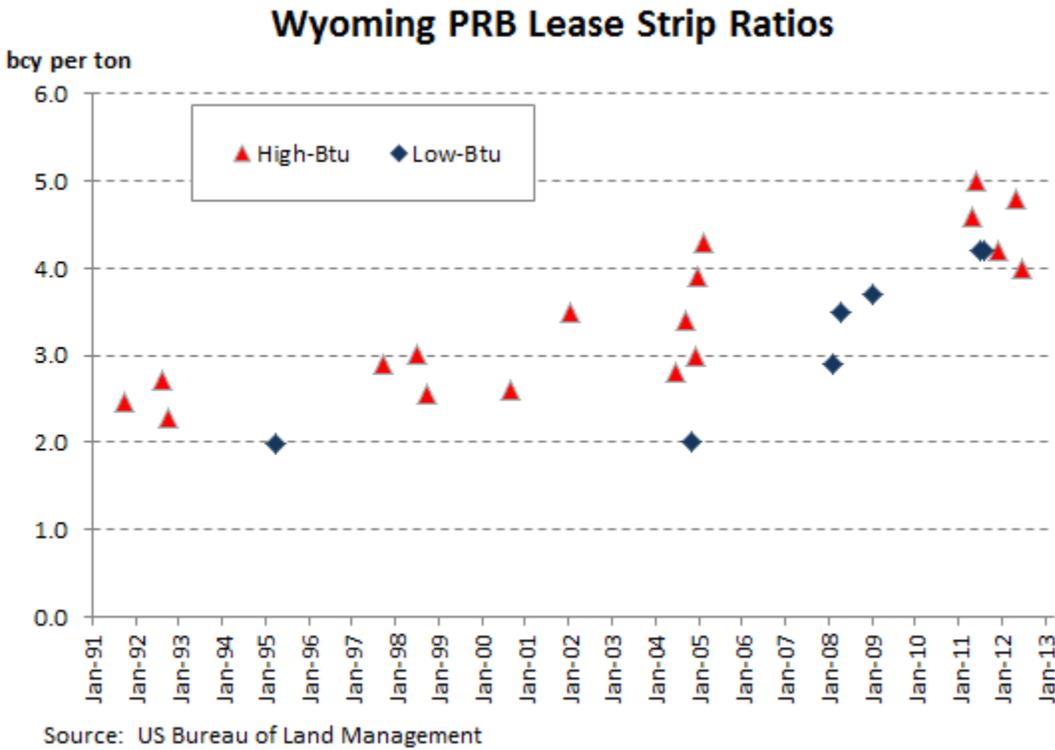
The steady increase in strip ratios in the Wyoming PRB can be seen from the reports issued by the Bureau of Land Management (“BLM”) regarding the issuance of new leases to Wyoming coal producers. Coal producers obtain new federal coal leases through the lease-by-application (“LBA”) process. The existing PRB mines have replaced their depleting coal reserves by acquiring new federal leases in order to continue operations. The first LBA in the Wyoming PRB was issued in 1991 (before that time, producers were mining on leases obtained in the 1960’s and 1970’s). The strip ratios in the new LBAs are shown on Exhibit 12.¹¹⁶ The early LBAs were issued with strip ratios of 2.0:1 – 2.7:1. The strip ratios in the LBAs have steadily increased over time and the new leases now have strip ratios of 4.0:1 – 5.0:1. This

¹¹⁵ Depreciation, depletion and amortization of existing investment

¹¹⁶ U.S. Department of Interior, Bureau of Land Management at http://www.blm.gov/wy/st/en/programs/energy/Coal_Resources/PRB_Coal/lba_title.html

means that the amount of rock that the Wyoming PRB coal producers must remove per ton of coal produced has doubled over time and will continue to grow in the future.

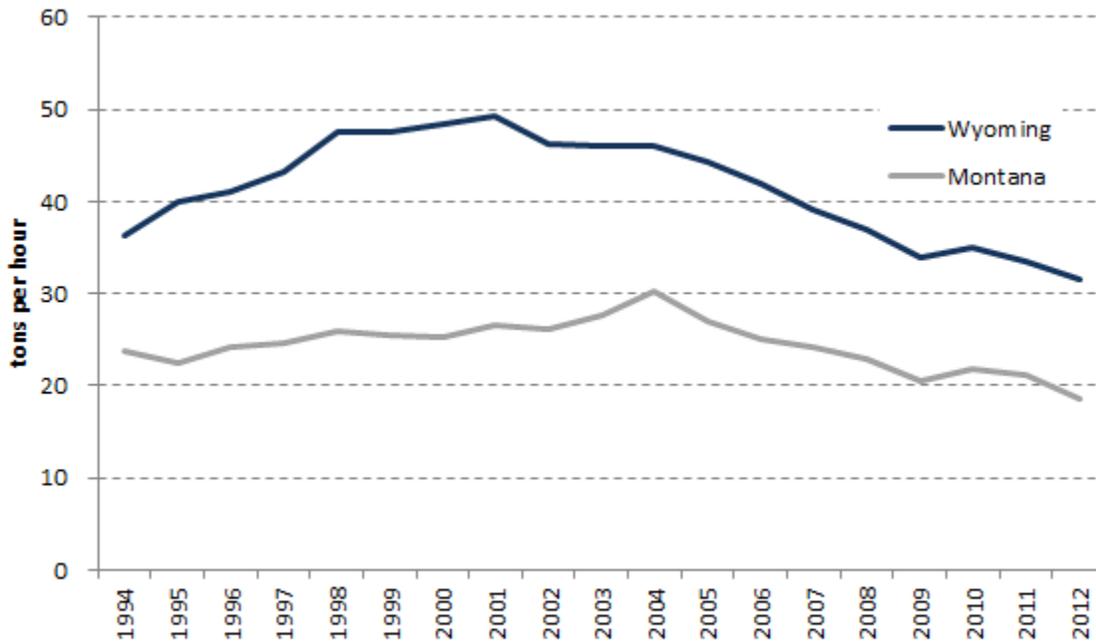
Exhibit 12: Strip Ratios for New Wyoming PRB LBAs



The impact of increased strip ratios can be seen in the steadily declining productivity (tons produced per hour worked) of the PRB mines since 2001. Prior to 2001, productivity was steadily increasing through the use of larger mining equipment and capital investment. As shown on Exhibit 13, productivity has declined steadily since its peak in 2001, with the Wyoming PRB average falling 36% from 49.3 tons per hour in 2001 to 31.5 tons per hour in 2012.¹¹⁷ The Montana PRB average has fallen 38% from its peak of 30.2 tons per hour in 2004 to 18.7 tons per hour in 2012. Labor productivity is the key indicator of production costs and is directly correlated with the change in strip ratios.

¹¹⁷ Calculated from Mine Safety and Health Administration data (tons produced divided by hours worked, excluding office hours) at <http://www.msha.gov/drs/drshome.htm>

Exhibit 13: PRB Labor Productivity (tons per hour worked)



Source: Mine Safety and Health Administration data

While the reserves have been depleting and costs have been rising at the existing PRB mines, the Otter Creek coal still has the same economic conditions as it had in 1986. The Norwest report projected the strip ratio to be 3.0:1 (cubic yards of rock per ton of coal).¹¹⁸ Compared to the strip ratios in the Wyoming PRB (see Exhibit 12) this strip ratio would have been higher-than-average cost in 1986, but is now lower-cost than the existing mines, which are entering into new leases with strip ratios of 4.0 – 5.0:1. Otter Creek's cost advantage will grow as the existing mines move into steadily higher strip ratios.

As shown on Exhibit 11, PRB coal prices have been escalating steadily, driven by the rising cost of production. The average coal sales prices received by Arch and Alpha have increased by \$2.79 and \$4.55 per ton, respectively, since 2006, when Norwest prepared its

¹¹⁸ Norwest Corporation, Otter Creek Property Summary Report, July 12, 2006, Table 2.2 (attached as SS-18)

property summary report. The rising price of PRB coal (and rising costs at its competitors) has made the Otter Creek coal more economic than it was at the time of Norwest's report.

VERIFICATION

I, Seth Schwartz, hereby verify under penalty of perjury under the laws of the United States of America that the foregoing is true and correct to the best of my knowledge and belief.


Seth Schwartz

Dated this 6th day of June, 2013

Appendix 1: Domestic Electric Power Markets for Montana PRB Coal

| Owner | Plant | Unit | ST | Retire Date | Capacity MW | Generation GWh | Capacity Factor | Coal Burn 1000 tons | 2011 PRB Coal Purchases 1000 tons | | | | | | | | | |
|----------------------------|-----------------|---------|----|-------------|-------------|----------------|-----------------|---------------------|-----------------------------------|--------|----|------------------------|-------|-------|---------------------|-------|-------|-------|
| | | | | | | | | | Total Purchases of PRB Coal | | | 2011 Market for MT PRB | | | MT PRB Excl. Retire | | | |
| | | | | | | | | | Total | WY | MT | Retire | Now | Past | Wet | Now | Past | Wet |
| AEP | Flint Creek | 1 | AR | | 480 | 3,785 | 90.0% | 2,303 | 2,302 | 2,302 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Kammer | 1-3 | WV | 2015 | 615 | 1,774 | 32.9% | 871 | 183 | 183 | | 183 | 0 | 0 | 183 | 0 | 0 | 0 |
| AEP | Northeastern | 3 | OK | | 470 | 3,567 | 86.6% | 2,174 | 2,089 | 2,089 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Northeastern | 4 | OK | 2016 | 465 | 3,529 | 86.6% | 2,128 | 2,089 | 2,089 | | 2,089 | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Oklaunion | 1 | TX | | 690 | 3,385 | 56.0% | 2,158 | 2,150 | 2,150 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Rockport | 1-2 | IN | | 2,600 | 16,360 | 71.8% | 9,058 | 7,920 | 7,920 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Tanners Creek 4 | 4 | IN | 2015 | 500 | 2,639 | 60.3% | 1,404 | 834 | 834 | | 834 | 0 | 0 | 834 | 0 | 0 | 0 |
| AEP | Welsh | 1,3 | TX | | 1,056 | 7,318 | 79.1% | 4,585 | 4,653 | 4,653 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP | Welsh | 2 | TX | 2014 | 528 | 3,558 | 76.9% | 2,206 | 2,327 | 2,327 | | 2,327 | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP - OVEC | Clifty Creek | 1-6 | IN | | 1,231 | 7,944 | 73.7% | 4,251 | 2,978 | 2,978 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AEP - OVEC | Kyger Creek | 1-5 | OH | | 1,023 | 6,510 | 72.6% | 3,220 | 1,200 | 1,200 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| AES | Shady Point | | OK | | 350 | 1,882 | 61.4% | 1,314 | 951 | 937 | | 14 | 951 | 0 | 0 | 951 | 0 | 0 |
| Allete | Boswell | 3-4 | MN | | 935 | 6,487 | 79.2% | 3,756 | 3,807 | 2,044 | | 1,763 | 3,807 | 0 | 0 | 3,807 | 0 | 0 |
| Allete | Boswell | 1-2 | MN | | 138 | 798 | 66.0% | 505 | 519 | 519 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Allete | Laskin | 1-2 | MN | 2015 | 110 | 459 | 47.6% | 334 | 322 | 322 | | 322 | 0 | 0 | 0 | 0 | 0 | 0 |
| Allete | Rapids Energy | | MN | | 27 | 34 | 14.5% | 63 | 63 | 63 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Allete | Taconite Harbor | 1-3 | MN | | 225 | 1,115 | 56.6% | 683 | 747 | 530 | | 217 | 747 | 0 | 0 | 747 | 0 | 0 |
| Alliant Energy | Burlington | 1 | IA | | 212 | 1,201 | 64.8% | 772 | 768 | 768 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Alliant Energy | Columbia | 1-2 | WI | | 1,070 | 6,971 | 74.4% | 4,396 | 4,416 | 4,416 | | | 0 | 4,416 | 0 | 0 | 4,416 | 0 |
| Alliant Energy | Dubuque | 3-4 | IA | 2011 | 66 | 102 | 17.7% | 86 | 24 | 24 | | 24 | 0 | 24 | 0 | 0 | 0 | 0 |
| Alliant Energy | Edgewater | 5 | WI | | 422 | 2,358 | 63.8% | 1,507 | 1,469 | 1,469 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Alliant Energy | Edgewater | 4 | WI | 2018 | 334 | 1,795 | 61.4% | 1,052 | 1,023 | 1,023 | | 1,023 | 0 | 0 | 1,023 | 0 | 0 | 0 |
| Alliant Energy | Edgewater | 3 | WI | 2015 | 76 | 180 | 27.0% | 115 | 131 | 131 | | 131 | 0 | 0 | 131 | 0 | 0 | 0 |
| Alliant Energy | Kapp | 2 | IA | | 221 | 898 | 46.4% | 604 | 585 | 585 | | | 0 | 585 | 0 | 0 | 585 | 0 |
| Alliant Energy | Lansing | 4 | IA | | 261 | 1,363 | 59.7% | 957 | 829 | 829 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Alliant Energy | Nelson Dewey | 1-2 | WI | 2013 | 226 | 1,056 | 53.4% | 572 | 382 | 0 | | 382 | 382 | 382 | 0 | 0 | 0 | 0 |
| Alliant Energy | Ottumwa | 1 | IA | | 716 | 3,402 | 54.3% | 2,241 | 2,248 | 2,248 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Alliant Energy | Prairie Creek | 1-4 | IA | | 215 | 530 | 28.2% | 392 | 677 | 677 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Alliant Energy | Sutherland | 1-3 | IA | 2012 | 111 | 418 | 43.0% | 255 | 171 | 171 | | 171 | 0 | 0 | 171 | 0 | 0 | 0 |
| Ameren | Coffeen | 1-2 | IL | | 900 | 4,994 | 63.3% | 3,043 | 2,816 | 2,816 | | | 0 | 0 | 2,816 | 0 | 0 | 2,816 |
| Ameren | Duck Creek | 1 | IL | | 410 | 2,088 | 58.1% | 1,186 | 1,064 | 1,064 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Edwards | 1-3 | IL | | 740 | 4,856 | 74.9% | 2,926 | 2,880 | 2,880 | | | 0 | 2,880 | 0 | 0 | 2,880 | 0 |
| Ameren | Hutsonville | 3-4 | IL | 2011 | 154 | 764 | 56.7% | 480 | 440 | 440 | | 440 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Joppa | 1-6 | IL | | 1,002 | 7,709 | 87.8% | 4,749 | 4,721 | 4,721 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Labadie | 1-4 | MO | | 2,402 | 18,581 | 88.3% | 10,851 | 10,810 | 10,810 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Meramec | 1-4 | MO | 2014 | 884 | 5,466 | 70.6% | 3,570 | 3,508 | 3,508 | | 3,508 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Meredosia | 3 | IL | 2011 | 215 | 860 | 45.6% | 545 | 450 | 450 | | 450 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Newton | 1-2 | IL | | 1,198 | 7,387 | 70.4% | 4,352 | 4,385 | 4,385 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Rush Island | 1-2 | MO | | 1,167 | 8,226 | 80.5% | 4,836 | 4,726 | 4,726 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Ameren | Sioux | 1-2 | MO | | 957 | 5,209 | 62.1% | 2,881 | 2,151 | 2,151 | | | 0 | 0 | 2,151 | 0 | 0 | 2,151 |
| Ames, IA | Ames | 7-8 | IA | | 95 | 293 | 35.3% | 214 | 220 | 220 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Arizona Public Service | Cholla | 1-4 | AZ | | 995 | 7,302 | 83.8% | 4,145 | 43 | 0 | | 43 | 43 | 0 | 0 | 43 | 0 | 0 |
| Arkansas River Power | Lamar | 1 | CO | | 39 | 56 | 16.7% | 89 | 89 | 89 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Associated Electric | Chamois | 2 | MO | 2013 | 50 | 373 | 86.0% | 249 | 243 | 243 | | 243 | 0 | 0 | 243 | 0 | 0 | 0 |
| Associated Electric | New Madrid | 1-2 | MO | | 1,160 | 7,282 | 71.7% | 4,230 | 4,060 | 4,060 | | | 0 | 0 | 4,060 | 0 | 0 | 4,060 |
| Associated Electric | Thomas Hill | 1-3 | MO | | 1,120 | 8,131 | 82.9% | 4,919 | 4,762 | 4,762 | | | 0 | 0 | 4,762 | 0 | 0 | 4,762 |
| Basin Electric | Dry Fork | 1 | WY | | 385 | 568 | 16.8% | 363 | 382 | 382 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Basin Electric | Laramie River | 1-3 | WY | | 1,710 | 12,204 | 81.5% | 7,416 | 7,405 | 7,405 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Basin Electric | Leland Olds | 1-2 | ND | | 669 | 3,256 | 55.6% | 2,699 | 301 | 301 | | | 0 | 0 | 301 | 0 | 0 | 301 |
| Black Hills Power | Ben French | 1 | SD | 2012 | 25 | 130 | 59.2% | 119 | 119 | 119 | | 119 | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Hills Power | Neil Simpson | 5 | WY | 2014 | 22 | 143 | 75.1% | 131 | 131 | 131 | | 131 | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Hills Power | Neil Simpson II | 1 | WY | | 90 | 645 | 81.9% | 510 | 510 | 510 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Hills Power | Wygen | 3 | WY | | 110 | 820 | 85.1% | 596 | 596 | 596 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Hills Power | Wygen | 1 | WY | | 90 | 719 | 91.2% | 545 | 545 | 545 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Black Hills Power | Wygen | 2 | WY | | 95 | 673 | 80.8% | 519 | 519 | 519 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Cleco | Brame | 2 | LA | | 523 | 3,198 | 69.8% | 1,937 | 1,939 | 1,939 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Colorado Springs Utilities | Martin Drake | 5-7 | CO | | 259 | 1,542 | 68.0% | 915 | 648 | 648 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Colorado Springs Utilities | Nixon | 1 | CO | | 208 | 1,450 | 79.6% | 871 | 931 | 931 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Consumers Power | Campbell | 1-3 | MI | | 1,402 | 8,372 | 68.2% | 4,653 | 4,336 | 4,336 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Consumers Power | Cobb | 4-5 | MI | 2014 | 300 | 1,487 | 56.6% | 821 | 845 | 269 | | 576 | 845 | 845 | 0 | 0 | 0 | 0 |
| Consumers Power | Karn | 1-2 | MI | | 515 | 2,559 | 56.7% | 1,440 | 906 | 599 | | 307 | 906 | 0 | 0 | 906 | 0 | 0 |
| Consumers Power | Weadock | 7-8 | MI | 2014 | 310 | 1,757 | 64.7% | 932 | 700 | 700 | | 700 | 0 | 700 | 0 | 0 | 0 | 0 |
| Consumers Power | Whiting | 1-3 | MI | 2017 | 326 | 1,581 | 55.4% | 943 | 813 | 813 | | 813 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dairyland Power | Alma | 4-5 | WI | | 181 | 105 | 6.6% | 68 | 63 | 63 | | | 0 | 63 | 0 | 0 | 63 | 0 |
| Dairyland Power | Genoa | 3 | WI | | 345 | 888 | 29.4% | 543 | 425 | 425 | | | 0 | 425 | 0 | 0 | 425 | 0 |
| Dairyland Power | Madgett | 1 | WI | | 387 | 1,976 | 58.3% | 1,243 | 1,112 | 1,112 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detroit Edison | Belle River | 1-2 | MI | | 1,260 | 7,905 | 71.6% | 4,401 | 4,079 | 0 | | 4,079 | 4,079 | 0 | 0 | 4,079 | 0 | 0 |
| Detroit Edison | Monroe | 1-4 | MI | | 3,000 | 16,849 | 64.1% | 8,528 | 5,736 | 5,736 | | | 0 | 5,736 | 0 | 0 | 5,736 | 0 |
| Detroit Edison | River Rouge | 2-3 | MI | | 509 | 2,481 | 55.7% | 1,328 | 1,034 | 1,034 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Detroit Edison | St Clair | 1-4,6-7 | MI | | 1,406 | 6,096 | 49.5% | 3,523 | 3,002 | 0 | | 3,002 | 3,002 | 0 | 0 | 3,002 | 0 | 0 |
| Detroit Edison | Trenton Channel | 7-9 | MI | | 725 | 3,427 | 54.0% | 1,933 | 1,205 | 1,205 | | | 0 | 0 | 0 | 0 | 0 | 0 |

| Owner | Plant | Unit | ST | Retire Date | Capacity MW | Generation GWh | Capacity Factor | Coal Burn 1000 tons | 2011 PRB Coal Purchases 1000 tons | | | | | | | | | |
|---------------------------|-------------------|-------|----|-------------|-------------|----------------|-----------------|---------------------|-----------------------------------|-------|-----|-----------------------|-----|-------|--------------------|-----|-------|-------|
| | | | | | | | | | Total Purchases of PRB Coal | | | 2011 Market for MTPRB | | | MTPRB Excl. Retire | | | |
| | | | | | | | | | Total | WY | MT | Retire | Now | Past | Wet | Now | Past | Wet |
| Dominion Generation | Kincaid | 1-2 | IL | | 1,108 | 5,101 | 52.6% | 3,192 | 3,255 | 3,255 | | | 0 | 3,255 | 0 | 0 | 3,255 | 0 |
| Dominion Generation | State Line | 3-4 | IN | 2012 | 490 | 3,054 | 71.1% | 1,837 | 1,839 | 1,839 | | 1,839 | 0 | 1,839 | 0 | 0 | 0 | 0 |
| Dynergy | Baldwin | 1-3 | IL | | 1,800 | 13,435 | 85.2% | 7,688 | 7,624 | 7,624 | | | 0 | 0 | 7,624 | 0 | 0 | 7,624 |
| Dynergy | Havana | 6 | IL | | 441 | 2,934 | 75.9% | 2,003 | 1,965 | 1,965 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Dynergy | Hennepin | 1-2 | IL | | 293 | 2,193 | 85.5% | 1,318 | 1,315 | 1,315 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Dynergy | Vermilion | 1-2 | IL | 2011 | 177 | 155 | 10.0% | 107 | 50 | 50 | | 50 | 0 | 0 | 0 | 0 | 0 | 0 |
| Dynergy | Wood River | 4-5 | IL | | 446 | 3,440 | 88.0% | 2,023 | 2,073 | 2,073 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Edison Mission Energy | Crawford | 7-8 | IL | 2012 | 537 | 2,382 | 50.6% | 1,481 | 1,483 | 1,483 | | 1,483 | 0 | 1,483 | 0 | 0 | 0 | 0 |
| Edison Mission Energy | Fisk | 19 | IL | 2012 | 326 | 1,583 | 55.4% | 966 | 968 | 968 | | 968 | 0 | 968 | 0 | 0 | 0 | 0 |
| Edison Mission Energy | Joliet | 7-8 | IL | | 1,040 | 5,892 | 64.7% | 3,663 | 3,386 | 3,386 | | | 0 | 3,386 | 0 | 0 | 3,386 | 0 |
| Edison Mission Energy | Joliet | 6 | IL | 2018 | 314 | 1,672 | 60.8% | 1,105 | 1,191 | 1,191 | | 1,191 | 0 | 1,191 | 0 | 0 | 0 | 0 |
| Edison Mission Energy | Powerton | 5-6 | IL | | 1,538 | 9,177 | 68.1% | 5,872 | 6,701 | 6,701 | | | 0 | 6,701 | 0 | 0 | 6,701 | 0 |
| Edison Mission Energy | Waukegan | 6-8 | IL | 2014 | 689 | 3,890 | 64.4% | 2,410 | 2,414 | 2,414 | | 2,414 | 0 | 2,414 | 0 | 0 | 0 | 0 |
| Edison Mission Energy | Will County | 3-4 | IL | | 772 | 3,447 | 51.0% | 2,207 | 2,140 | 2,140 | | | 0 | 2,140 | 0 | 0 | 2,140 | 0 |
| EIF | Plum Point | 1 | AR | | 665 | 4,159 | 71.4% | 2,343 | 2,278 | 2,278 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Empire District Energy | Asbury | 1-2 | MO | | 213 | 1,169 | 62.7% | 727 | 706 | 706 | | | 0 | 0 | 706 | 0 | 0 | 706 |
| Empire District Energy | Riverton | 7-8 | KS | 2012 | 92 | 259 | 32.1% | 184 | 203 | 203 | | 203 | 0 | 0 | 0 | 0 | 0 | 0 |
| Entergy | Independence | 1-2 | AR | | 1,678 | 10,987 | 74.7% | 6,613 | 6,848 | 6,848 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Entergy | Nelson | 6 | LA | | 550 | 3,497 | 72.6% | 2,382 | 2,334 | 2,334 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Entergy | White Bluff | 1-2 | AR | | 1,659 | 10,387 | 71.5% | 6,207 | 6,069 | 6,069 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Ashtabula | 5 | OH | 2015 | 244 | 875 | 41.0% | 568 | 334 | 334 | | 334 | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Bay Shore | 2-4 | OH | 2012 | 489 | 2,316 | 54.1% | 1,297 | 856 | 856 | | 856 | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Eastlake | 1-5 | OH | 2015 | 1,278 | 6,664 | 59.5% | 3,424 | 2,414 | 2,414 | | 2,414 | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Fort Martin | 1-2 | WV | | 1,107 | 7,104 | 73.3% | 3,072 | 396 | 396 | | | 0 | 396 | 0 | 0 | 396 | 0 |
| First Energy | Hatfields Ferry | 1-3 | PA | | 1,580 | 10,764 | 77.8% | 4,509 | 156 | 156 | | | 0 | 156 | 0 | 0 | 156 | 0 |
| First Energy | Lake Shore | 18 | OH | 2015 | 195 | 583 | 34.1% | 383 | 274 | 274 | | 274 | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Sammis | 1-7 | OH | | 2,220 | 10,045 | 51.7% | 4,747 | 1,094 | 1,094 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| First Energy | Willow Island | 1-2 | WV | 2012 | 239 | 163 | 7.8% | 123 | 92 | 92 | | 92 | 0 | 92 | 0 | 0 | 0 | 0 |
| Fremont, NE | Lon Wright | 8 | NE | | 85 | 446 | 59.9% | 308 | 304 | 304 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| GDF Suez | Coletto Creek | 1 | TX | | 632 | 4,090 | 73.9% | 2,297 | 2,950 | 2,950 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Island Utilities | Platte | 1 | NE | | 100 | 554 | 63.2% | 379 | 320 | 320 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand River Dam Authority | GRDA | 2 | OK | | 520 | 3,498 | 76.8% | 2,275 | 2,288 | 2,288 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand River Dam Authority | GRDA | 1 | OK | | 490 | 3,295 | 76.8% | 2,142 | 2,288 | 2,288 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Great River Energy | Stanton | | ND | | 190 | 1,263 | 75.9% | 717 | 752 | 0 | 752 | | 752 | 0 | 0 | 752 | 0 | 0 |
| Hastings Utilities | Whelan | 1-2 | NE | | 297 | 1,517 | 58.3% | 943 | 926 | 926 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Hibbing | Hibbing | | MN | | 31 | 72 | 26.8% | 90 | 90 | 90 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Holland, MI | James De Young | 3-5 | MI | 2015 | 58 | 217 | 42.7% | 138 | 28 | 0 | 28 | 28 | 28 | 0 | 0 | 0 | 0 | 0 |
| Kansas City Board | Nearman Creek | 1 | KS | | 235 | 1,381 | 67.1% | 900 | 970 | 970 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City Board | Quindaro | 1-2 | KS | | 208 | 936 | 51.4% | 603 | 646 | 646 | | | 0 | 0 | 646 | 0 | 0 | 646 |
| Kansas City P&L | Hawthorn | 5 | MO | | 565 | 3,760 | 76.0% | 2,239 | 2,203 | 2,203 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City P&L | Iatan | 1-2 | MO | | 1,520 | 9,016 | 67.7% | 4,982 | 4,738 | 4,738 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City P&L | La Cygne | 1 | KS | | 688 | 3,940 | 65.4% | 2,339 | 2,371 | 2,371 | | | 0 | 2,371 | 0 | 0 | 2,371 | 0 |
| Kansas City P&L | La Cygne | 2 | KS | | 674 | 4,213 | 71.4% | 2,549 | 2,371 | 2,371 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City P&L | Lake Road | 4 | MO | | 97 | 340 | 40.0% | 373 | 367 | 367 | | | 0 | 0 | 367 | 0 | 0 | 367 |
| Kansas City P&L | Montrose | 1-3 | MO | | 510 | 2,598 | 58.2% | 1,653 | 1,588 | 1,588 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Kansas City P&L | Sibley | 1-3 | MO | | 495 | 2,361 | 54.4% | 1,384 | 1,269 | 1,269 | | | 0 | 0 | 1,269 | 0 | 0 | 1,269 |
| Lansing, MI | Eckert | 1-6 | MI | | 363 | 1,310 | 41.1% | 914 | 1,345 | 1,345 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Lansing, MI | Erickson | 1 | MI | | 158 | 825 | 59.5% | 492 | 368 | 368 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| LCRA | Fayette | 1-3 | TX | | 1,641 | 10,765 | 74.9% | 6,550 | 6,086 | 6,086 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| LG&E | Trimble County | 1-2 | KY | | 1,261 | 7,795 | 70.6% | 3,202 | 609 | 609 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Luminant | Big Brown | 1-2 | TX | | 1,150 | 7,898 | 78.4% | 5,925 | 2,581 | 2,581 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Luminant | Martin Lake | 1-3 | TX | | 2,418 | 17,608 | 83.1% | 13,699 | 3,555 | 3,555 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Luminant | Monticello | 1-2 | TX | | 1,176 | 7,412 | 71.9% | 5,403 | 3,688 | 3,688 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Luminant | Monticello | 3 | TX | | 780 | 5,049 | 73.9% | 3,650 | 2,459 | 2,459 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Manitowoc, WI | Manitowoc | 8-9 | WI | | 95 | 178 | 21.3% | 100 | 14 | 14 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Marquette Board L&P | Shiras | 3 | MI | | 44 | 288 | 74.8% | 195 | 188 | 188 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| MDU Resources | Hardin | 1 | MT | | 116 | 646 | 63.5% | 462 | 462 | 0 | 462 | | 462 | 0 | 0 | 462 | 0 | 0 |
| MidAmerican Energy | George Neal North | 3 | IA | | 515 | 3,167 | 70.2% | 1,957 | 1,950 | 1,950 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| MidAmerican Energy | George Neal North | 1-2 | IA | 2016 | 435 | 2,486 | 65.3% | 1,476 | 1,450 | 1,450 | | 1,450 | 0 | 0 | 1,450 | 0 | 0 | 0 |
| MidAmerican Energy | George Neal South | 4 | IA | | 644 | 4,272 | 75.7% | 2,540 | 2,777 | 2,777 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| MidAmerican Energy | Louisa | 1 | IA | | 700 | 4,291 | 70.0% | 2,606 | 3,303 | 3,303 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| MidAmerican Energy | Riverside | 7-9 | IA | 2016 | 135 | 798 | 67.5% | 576 | 600 | 600 | | 600 | 0 | 0 | 0 | 0 | 0 | 0 |
| MidAmerican Energy | Walter Scott | 3-4 | IA | | 1,480 | 11,165 | 86.1% | 6,572 | 6,728 | 6,728 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| MidAmerican Energy | Walter Scott | 1-2 | IA | 2016 | 133 | 823 | 70.6% | 549 | 550 | 550 | | 550 | 0 | 0 | 0 | 0 | 0 | 0 |
| Muscatine, IA | Muscatine | 9 | IA | | 160 | 599 | 42.7% | 398 | 416 | 416 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Muscatine, IA | Muscatine | 7-8 | IA | | 80 | 247 | 35.3% | 361 | 416 | 416 | | | 0 | 0 | 416 | 0 | 0 | 416 |
| Nebraska Public Power | Gentleman | 1-2 | NE | | 1,365 | 9,333 | 78.1% | 5,634 | 5,626 | 5,626 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| Nebraska Public Power | Sheldon | 1-2 | NE | | 225 | 1,399 | 71.0% | 944 | 931 | 931 | | | 0 | 0 | 931 | 0 | 0 | 931 |
| Newmont | TS Power | 1 | NV | | 203 | 1,315 | 73.9% | 727 | 729 | 729 | | | 0 | 0 | 0 | 0 | 0 | 0 |
| NIPSCO | Michigan City | 12 | IN | | 469 | 2,940 | 71.6% | 1,596 | 1,225 | 1,225 | | | 0 | 0 | 1,225 | 0 | 0 | 1,225 |
| NIPSCO | Schahfer 14-15 | 14-15 | IN | | 903 | 4,408 | 55.7% | 2,692 | 2,595 | 2,595 | | | 0 | 0 | 2,595 | 0 | 0 | 2,595 |

| Owner | Plant | Unit | ST | Retire Date | Capacity MW | Generation GWh | Capacity Factor | Coal Burn 1000 tons | 2011 PRB Coal Purchases 1000 tons | | | | | | | | | | |
|------------------------------|------------------|-------|----|-------------|----------------|----------------|-----------------|---------------------|-----------------------------------|----------------|---------------|------------------------|---------------|---------------|---------------------|---------------|---------------|---------------|---|
| | | | | | | | | | Total Purchases of PRB Coal | | | 2011 Market for MT PRB | | | MT PRB Excl. Retire | | | | |
| | | | | | | | | | Total | WY | MT | Retire | Now | Past | Wet | Now | Past | Wet | |
| NRG Energy | Big Cajun 2 | 1,3 | LA | | 1,168 | 8,256 | 80.7% | 5,310 | 4,786 | 4,786 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRG Energy | Big Cajun 2 | 2 | LA | 2015 | 575 | 4,493 | 89.2% | 2,982 | 2,393 | 2,393 | | | 2,393 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRG Energy | Dunkirk | 1-4 | NY | 2014 | 530 | 1,979 | 42.6% | 1,201 | 1,197 | 1,197 | | | 1,197 | 0 | 0 | 0 | 0 | 0 | 0 |
| NRG Energy | Huntley | 67-68 | NY | | 380 | 1,400 | 42.1% | 831 | 823 | 823 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| NRG Energy | Limestone | 1-2 | TX | | 1,700 | 13,466 | 90.4% | 9,171 | 3,894 | 3,894 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| NRG Energy | Parish | 5-8 | TX | | 2,488 | 16,767 | 76.9% | 11,043 | 9,061 | 9,061 | | | 0 | 9,061 | 0 | 0 | 9,061 | 0 | |
| NV Energy | Reid Gardner | 1-4 | NV | 2017 | 605 | 2,242 | 42.3% | 1,171 | 310 | 310 | | | 310 | 0 | 0 | 0 | 0 | 0 | |
| Oklahoma Gas & Electric | Muskogee | 4-6 | OK | | 1,491 | 8,661 | 66.3% | 5,322 | 4,133 | 4,133 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Oklahoma Gas & Electric | Sooner | 1-2 | OK | | 1,031 | 6,822 | 75.5% | 4,060 | 3,355 | 3,355 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Omaha Public Power | Nebraska City | 1-2 | NE | | 1,309 | 9,104 | 79.4% | 5,319 | 4,920 | 4,920 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Omaha Public Power | North Omaha | 1-5 | NE | | 599 | 3,319 | 63.3% | 2,168 | 1,952 | 1,952 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Otter Tail Power | Big Stone | 1 | SD | | 464 | 2,456 | 60.4% | 1,648 | 1,676 | 1,676 | | | 1,676 | 0 | 0 | 1,676 | 0 | 0 | |
| Otter Tail Power | Hoot Lake | 2-3 | MN | 2020 | 149 | 788 | 60.5% | 486 | 484 | 0 | 484 | 484 | 484 | 0 | 0 | 0 | 0 | 0 | |
| PacifiCorp | Dave Johnston | 4 | WY | | 330 | 2,072 | 71.7% | 1,433 | 1,441 | 1,441 | | | 0 | 0 | 0 | 0 | 1,441 | 0 | |
| PacifiCorp | Dave Johnston | 3 | WY | | 220 | 1,552 | 80.5% | 1,084 | 1,080 | 1,080 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| PacifiCorp | Dave Johnston | 1-2 | WY | | 222 | 1,423 | 73.2% | 1,046 | 1,080 | 1,080 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| PacifiCorp | Wyodak | 1 | WY | | 362 | 1,829 | 57.7% | 1,450 | 1,449 | 1,449 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Platte River Power Authority | Rawhide | 1 | CO | | 279 | 2,287 | 93.6% | 1,281 | 1,310 | 1,310 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Portland General Electric | Boardman | 1 | OR | 2020 | 585 | 3,334 | 65.0% | 1,985 | 2,352 | 2,243 | 108 | 2,352 | 2,352 | 0 | 0 | 0 | 0 | 0 | |
| PPL Generation | Colstrip | 3-4 | MT | | 1,480 | 9,439 | 72.8% | 5,939 | 6,107 | 0 | 6,107 | 6,107 | 0 | 0 | 6,107 | 0 | 0 | 0 | |
| PPL Generation | Colstrip | 1-2 | MT | | 614 | 3,574 | 66.4% | 2,295 | 2,298 | 0 | 2,298 | 2,298 | 0 | 0 | 2,298 | 0 | 0 | 0 | |
| PPL Generation | Corette | 1 | MT | 2015 | 154 | 830 | 61.5% | 550 | 555 | 555 | | | 555 | 0 | 555 | 0 | 0 | 0 | |
| Raven Power | Crane | 1-2 | MD | | 385 | 981 | 29.1% | 589 | 583 | 583 | | | 0 | 0 | 583 | 0 | 0 | 583 | |
| Rockland Capital | England | 1 | NJ | 2014 | 129 | 61 | 5.4% | 32 | 14 | 14 | | | 14 | 0 | 14 | 0 | 0 | 0 | |
| Rosebud Energy | CELP | 1 | MT | | 40 | 259 | 74.0% | 214 | 203 | 203 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Salt River Project | Coronado | 1-2 | AZ | | 785 | 5,444 | 79.2% | 3,295 | 3,124 | 2,362 | 762 | 3,124 | 0 | 0 | 3,124 | 0 | 0 | 0 | |
| San Antonio CPS | Deely | 1-2 | TX | 2018 | 830 | 6,311 | 86.8% | 3,781 | 3,704 | 3,704 | | | 3,704 | 0 | 0 | 0 | 0 | 0 | |
| San Antonio CPS | Spruce | 1-2 | TX | | 1,370 | 8,955 | 74.6% | 5,116 | 5,115 | 5,115 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sikeston, MO | Sikeston | 1 | MO | | 233 | 1,838 | 90.0% | 1,136 | 1,094 | 1,094 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Southern Company | Daniel | 1-2 | MS | | 969 | 2,746 | 32.4% | 1,451 | 987 | 987 | | | 0 | 987 | 0 | 0 | 987 | 0 | |
| Southern Company | Miller | 1-4 | AL | | 2,742 | 20,522 | 85.4% | 12,042 | 11,868 | 11,868 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Southern Company | Scherer | 1-4 | GA | | 3,446 | 21,330 | 70.7% | 13,123 | 13,619 | 13,619 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Springfield, MO | James River | 1-5 | MO | | 239 | 965 | 46.1% | 654 | 607 | 607 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Springfield, MO | Southwest | 1-2 | MO | | 478 | 2,512 | 60.0% | 1,457 | 1,639 | 1,639 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Sunflower Electric | Holcomb | 1 | KS | | 362 | 2,728 | 86.0% | 1,651 | 1,597 | 1,597 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Texas Municipal Power | Gibbons Creek | 1 | TX | | 462 | 3,138 | 77.5% | 1,942 | 2,085 | 2,085 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Tondu Energy | Filer City | 1 | MI | | 60 | 381 | 72.4% | 234 | 74 | 74 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| TransAlta | Centralia | 1-2 | WA | 2025 | 1,405 | 5,200 | 42.2% | 3,425 | 3,523 | 1,181 | 2,343 | 3,523 | 3,523 | 0 | 0 | 0 | 0 | 0 | |
| Tri-State G&T | Springerville | 3-4 | AZ | | 832 | 5,883 | 80.7% | 3,388 | 3,413 | 3,413 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| TVA | Allen | 1-3 | TN | | 749 | 4,605 | 70.2% | 2,660 | 2,299 | 2,299 | | | 0 | 0 | 2,299 | 0 | 0 | 2,299 | |
| TVA | Colbert | 1-5 | AL | 2016 | 1,192 | 4,739 | 45.4% | 2,330 | 447 | 447 | | | 447 | 0 | 0 | 0 | 0 | 0 | |
| TVA | Gallatin | 1-4 | TN | | 982 | 7,277 | 84.6% | 4,331 | 4,249 | 4,249 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| TVA | Johnsonville | 1-10 | TN | 2015 | 1,230 | 4,696 | 43.6% | 2,828 | 1,663 | 1,663 | | | 1,663 | 0 | 0 | 0 | 0 | 0 | |
| TVA | Kingston | 1-9 | TN | | 1,445 | 4,718 | 37.3% | 2,331 | 1,198 | 1,198 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| TVA | Shawnee | 1-9 | KY | | 1,224 | 7,831 | 73.0% | 4,117 | 2,029 | 2,029 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Virginia | Virginia | | MN | | 29 | 48 | 19.0% | 83 | 83 | 83 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Westar Energy | Jeffrey | 1-3 | KS | | 2,213 | 13,593 | 70.1% | 9,059 | 9,096 | 9,096 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Westar Energy | Lawrence | 3-5 | KS | | 548 | 3,512 | 73.2% | 2,132 | 2,035 | 2,035 | | | 0 | 2,035 | 0 | 0 | 2,035 | 0 | |
| Westar Energy | Tecumseh | 7-8 | KS | | 204 | 1,112 | 62.2% | 724 | 673 | 673 | | | 0 | 673 | 0 | 0 | 673 | 0 | |
| Western Farmers | Hugo | 1 | OK | | 412 | 2,878 | 79.8% | 1,892 | 1,705 | 1,705 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Willmar | Willmar | | MN | | 24 | 24 | 11.3% | 35 | 35 | 35 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Energy | Pleasant Prairie | 1-2 | WI | | 1,224 | 6,128 | 57.1% | 4,096 | 4,202 | 4,202 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Energy | Presque Isle | 7-9 | MI | | 261 | 1,544 | 67.5% | 1,041 | 1,770 | 926 | 844 | 1,770 | 0 | 0 | 1,770 | 0 | 0 | 0 | |
| Wisconsin Energy | Presque Isle | 5-6 | MI | | 176 | 699 | 45.4% | 361 | 105 | 105 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Energy | South Oak Creek | 5-8 | WI | | 1,137 | 5,352 | 53.7% | 2,919 | 2,889 | 2,889 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Public Service | Pulliam | 7-8 | WI | | 216 | 751 | 39.8% | 492 | 395 | 395 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Public Service | Pulliam | 5-6 | WI | 2015 | 119 | 171 | 16.4% | 131 | 100 | 100 | | | 100 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Public Service | Weston | 4 | WI | | 535 | 3,659 | 78.1% | 1,960 | 1,793 | 1,793 | | | 0 | 0 | 0 | 1,793 | 0 | 0 | |
| Wisconsin Public Service | Weston | 3 | WI | | 322 | 1,877 | 66.5% | 1,137 | 1,327 | 1,327 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Wisconsin Public Service | Weston | 1-2 | WI | 2015 | 135 | 490 | 41.5% | 321 | 466 | 466 | | | 466 | 0 | 0 | 0 | 0 | 0 | |
| Wyandotte, MI | Wyandotte | 8 | MI | | 32 | 26 | 9.2% | 38 | 20 | 0 | 20 | 20 | 0 | 0 | 0 | 20 | 0 | 0 | |
| Xcel Energy | Arapahoe | 3-4 | CO | 2013 | 157 | 569 | 41.4% | 421 | 422 | 422 | | | 422 | 0 | 0 | 0 | 0 | 0 | |
| Xcel Energy | Bay Front | 4-6 | WI | 2015 | 74 | 50 | 7.6% | 47 | 47 | 47 | | | 47 | 0 | 47 | 0 | 0 | 0 | |
| Xcel Energy | Black Dog | 3-4 | MN | 2015 | 278 | 1,183 | 48.6% | 773 | 726 | 726 | | | 726 | 0 | 726 | 0 | 0 | 0 | |
| Xcel Energy | Comanche | 1-3 | CO | | 1,410 | 7,346 | 59.5% | 4,230 | 4,623 | 4,623 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Xcel Energy | Harrington | 1-3 | TX | | 1,066 | 5,708 | 61.1% | 3,355 | 3,568 | 3,568 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Xcel Energy | King | 1 | MN | | 578 | 3,421 | 67.6% | 1,885 | 2,040 | 2,040 | | | 0 | 2,040 | 0 | 0 | 2,040 | 0 | |
| Xcel Energy | Pawnee | 1 | CO | | 495 | 2,928 | 67.5% | 1,877 | 2,005 | 2,005 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Xcel Energy | Sherburne County | 1-3 | MN | | 2,313 | 12,991 | 64.1% | 7,788 | 8,192 | 3,462 | 4,730 | 8,192 | 0 | 0 | 8,192 | 0 | 0 | 0 | |
| Xcel Energy | Tolk | 1-2 | TX | | 1,080 | 7,807 | 82.5% | 4,395 | 4,221 | 4,221 | | | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total | | | | | 143,289 | 852,738 | 67.9% | 513,273 | 445,417 | 416,095 | 29,322 | 47,885 | 45,552 | 54,971 | 39,171 | 37,937 | 44,933 | 35,122 | |

**MONTANA OTTER
CREEK STATE COAL
VALUATION**

ENERGY, MINING, AND ENVIRONMENTAL CONSULTANTS

NORWEST
CORPORATION

**MONTANA OTTER
CREEK STATE COAL
VALUATION**

Submitted to:

**MONTANA DEPARTMENT OF
NATURAL RESOURCES &
CONSERVATION**

TRUST LAND MANAGEMENT DIVISION
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JANUARY 30, 2009

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NORWEST
CORPORATION

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EXECUTIVE SUMMARY

Norwest Corporation (Norwest) completed a valuation of the Otter Creek Coal Tracts 1 through 3 located in the State of Montana. The purpose is to determine the fair market value that Montana should accept from a qualified bidder. This valuation was completed according to the methods specified in the Bureau of Land Management (BLM) Handbook H-3070-1, *Economic Evaluation of Coal Properties*. The handbook provides two separate methods for determining a coal property's value. These methods are the Comparable Lease Sales Approach and the Income Approach. Research for this valuation was completed in October, 2008 and all revenue and costs reflect economic conditions at that time. The actual valuation process went through multiple reviews by Norwest and by the State of Montana prior to completion and preparation of this report on January 30, 2009.

Comparable Lease Sales Approach

The Comparable Lease Sales Approach uses similar past lease sales to determine the bonus price per ton of the coal. It is generally assumed that this approach provides the best indication of value when reliable sales data are available. The Comparable Lease Sales Approach takes past lease sale transactions and compares them to the new coal property to determine its value. Adjustments to the reference properties are made to develop a more accurate estimate of the new property. Typically these adjustments include key economic parameters such as coal quality, stripping ratio, and transportation options among others. The final per ton value is calculated by taking an average of the similar lease sales or one that is the closest in coal quality and stripping ratio to the new property and applying any adjustments for differences in these parameters.

Income Approach

Using the Income Approach, an economic model of the coal property is created. This model should emulate the most economic mine plan for the coal property which creates the highest net present value (NPV). Under the Income Approach, a mine plan based on current and projected coal markets is created. Cost and revenue streams are estimated and combined to produce a cash flow over the projected mine life. The cash flow is then discounted to present day values using a discount rate of 10%. This rate is

justified on the basis that it is representative of the alternative cost of capital and has been successfully used for a number of years in coal land valuations. The calculated NPV is then divided by the number of recoverable tons for the lease to determine the bonus price per ton.

FINDINGS

The results of the two valuation methods are discussed in detail in the body of this report and are summarized in Table E.1 below.

Table E.1 Fair Market Value of Montana Unleased Coal

| Method | Bonus (\$/ton) | Recoverable Tons (1,000,000s) | Total Bonus (\$1,000,000s) |
|---------------------------------|-----------------------|--------------------------------------|-----------------------------------|
| Comparable Lease Sales Approach | \$0.0539 | 572.3 | \$30.8 |
| Income Approach | \$0.0652 | 572.3 | \$37.3 |

The Comparable Lease Sales Approach produced a value of \$30.8 million (M) or approximately \$0.05/ton for Montana’s 572M recoverable tons of coal. This value is lower than similar federal lease sales of high sodium coal in Montana, reflecting the lack of existing rail service at Otter Creek.

The Income Approach produced a value of \$37.3M, or \$0.07/ton for 572M tons of coal. The economic model includes \$187M for an 85 mile rail line addition. There is an approved rail line proposed along this same route, owned by the Tongue River Railroad Company (TRRC), but construction has not begun, nor is Norwest aware of a set schedule for construction. Norwest has assumed that the developer of Otter Creek would pay for this railroad in the two years ahead of production and be reimbursed by TRRC over 15 years from the start of production. Because the developer would not own the railroad, the cost is not included as a capital expenditure, but rather is shown in the cash flow calculation along with recapture payments from TRRC at 4% interest. Had the railroad been in place at the time of this report, the resulting NPV would have been \$124.8M, or approximately \$0.10/ton.

In addition to the bonus bid, Montana will receive production royalties for coal mined on these leases as well as an annual fee of \$3 per acre. The typical royalty is 12.5% of the gross sales value. On a theoretical market price of \$20/ton FOB mine, the royalty would be \$2.50/ton.

In summary, Norwest concludes that a bonus bid between \$0.05 and \$0.07/ton of recoverable coal, as determined through the Comparable Lease Sales and Income approaches, represents the fair market value range for the Otter Creek Tracts 1 through 3.

Figure E.1 shows the general location of the Otter Creek Coal Tracts. Figure E.2 illustrates the remaining lease areas.

TABLE 2.1
FEDERAL COAL LEASE SALES- POWDER RIVER BASIN, MONTANA AND WYOMING (from 1991)
1/10/2008

| TRACT | APPLICANT | HIGH BIDDER | BLM SERIAL NO. | CASE TYPE | SALE DATE | TOTAL BONUS | TRACT ACRES | BONUS (\$/ACRE) | TONS RECOV. (MMT) | BONUS (\$/TON) | MINING RATIO (BCY:TON) | HEAT VALUE (BTU/LB) | %S | % Ash | % Moist. | Na as % Ash |
|----------------------|--------------------|---------------------|-------------------------|-----------|------------|---------------|-------------|-----------------|-------------------|----------------|------------------------|---------------------|------|-------|----------|-------------|
| Spring Creek | Spring Creek Coal | Spring Creek Coal | MTM 94278 | LBA | 4/17/2007 | \$19,902,200 | 1,117.7 | \$17,806,39 | 108.60 | \$0.1833 | 2.89 | 9,331 | 0.35 | 3.80 | 23.71 | 8.38 |
| Decker Modifications | Decker Coal Co. | Decker Coal Co. | MTM037604/ | MOD | 4/18/2006 | \$456,320 | 100.4 | \$4,545.02 | 4.960 | \$0.0920 | 2.76 | 9,546 | 0.42 | 4.35 | 24.16 | 1.27 |
| West Roundup | Titan Coal | Peabody Energy | WYW151134 | LBA | 2/16/2005 | \$317,697,610 | 2,812.51 | \$112,958.75 | 327,186 * | \$0.9710 | 4.30 | 8,790 | 0.20 | na | na | 1.60 |
| West Antelope | Antelope Coal | Antelope Coal | WYW151643 | LBA | 12/15/2004 | \$146,311,000 | 2,809.13 | \$52,084.10 | 194,961 * | \$0.7505 | 3.00 | 8,858 | 0.23 | na | na | 1.86 |
| West Hay Creek | Titan Coal | Kiewit Mining Group | WYW151634 | LBA | 11/17/2004 | \$42,809,400 | 921.16 | \$46,473.49 | 142,698 * | \$0.3000 | 2.00 | 8,346 | 0.28 | na | na | 1.75 |
| Larrie Thunder | Ark Land Co. | Ark Land Co. | WYW150318 | LBA | 9/22/2004 | \$610,999,950 | 5,083.50 | \$120,192.77 | 718,719 * | \$0.8501 | 3.40 | 8,884 | 0.24 | na | na | 1.20 |
| NARCO South | Powder River Coal | Powder River Coal | WYW154001 | LBA | 6/29/2004 | \$274,000,000 | 2,956.725 | \$92,670.10 | 297,469 * | \$0.9211 | 2.80 | 8,929 | 0.20 | na | na | 2.00 |
| Rosebud | Western Energy | Western Energy | MTM80697 | Mod | 2/17/2004 | \$11,250 | 30.0 | \$375.00 | 0.250 | \$0.0450 | 4.63 | 8,382 | 0.81 | 10.3 | 25.41 | 0.5 |
| N. Jacob's Ranch | Jacob's Ranch Coal | Jacob's Ranch Coal | WYW146744 | LBA | 1/16/2002 | \$378,504,652 | 4,982.2 | \$76,171.49 | 537,542 * | \$0.7060 | 3.51 | 8,792 | 0.45 | 5.46 | 27.40 | 1.29 |
| Spring Creek | Kennecott | Kennecott | MTM88405 | LBA | 11/27/2000 | \$1,740,200 | 150.0 | \$11,601.33 | 15,860 | \$0.1097 | 2.08 | 9,370 | 0.34 | 3.65 | 25.53 | 8.63 |
| Horse Creek | Antelope Coal | Antelope Coal | WYW141435 | LBA | 9/7/2000 | \$91,220,121 | 2,818.7 | \$32,362.54 | 275,577 * | \$0.3310 | 2.60 | 8,890 | 0.22 | 4.28 | 26.83 | 1.49 |
| Spring Creek | Kennecott | Kennecott | MTM69782 | MOD | 10/1/1999 | \$13,860 | 10.0 | \$1,386.00 | 0.330 | \$0.0420 | 1.92 | 9,361 | 0.41 | 3.91 | 25.51 | 9.56 |
| Rosebud | Western Energy | Western Energy | MTM80697 | LBA | 6/16/1999 | \$4,416,000 | 1,401.0 | \$3,152.03 | 27,600 | \$0.1600 | 3.51 | 8,382 | 0.81 | 10.3 | 25.41 | 16.3 |
| Thundercloud | Kerr-McGee | Ark Land Co. | WYW136458 | LBA | 10/1/1998 | \$158,000,009 | 3,545.5 | \$44,563.50 | 412,000 * | \$0.3835 | 2.57 | 8,810 | 0.34 | 4.48 | 27.93 | 1.45 |
| Powder River | Peabody | Peabody | WYW136142 | LBA | 6/30/1998 | \$109,596,500 | 4,224.2 | \$25,944.91 | 532,024 * | \$0.2060 | 3.00 | 8,742 | 0.19 | 4.21 | 27.93 | 1.84 |
| Decker | Kennecott | Kennecott | MTM57934-A/ MTM61685 | MOD | 6/10/1998 | \$478,400 | 320.0 | \$1,495.00 | 7,360 | \$0.0650 | 2.35 | 9,512 | 0.42 | 4.35 | 24.16 | 1.27 |
| Spring Creek | Kennecott | Kennecott | MTM69782 | MOD | 4/10/1998 | \$163,170 | 25.0 | \$6,526.80 | 3,366 | \$0.0455 | 1.48 | 9,350 | 0.35 | 3.70 | 25.51 | 8.72 |
| N. Rochelle | Bluegrass Coal | Bluegrass Coal | WYW127221 | LBA | 9/25/1997 | \$30,576,340 | 1,481.9 | \$20,632.78 | 157,610 * | \$0.1940 | 2.91 | 8,680 | 0.23 | 4.91 | na | na |
| Antelope | Kennecott | Kennecott | WYW125222 | LBA | 12/4/1996 | \$9,054,600 | 617.2 | \$14,670.45 | 60,364 | \$0.1500 | 1.70 | 8,776 | 0.23 | 4.22 | 25.70 | 1.21 |
| Spring Creek | Kennecott | Kennecott | MTM69782 | MOD | 6/16/1995 | \$166,000 | 60.0 | \$2,766.67 | 4,380 | \$0.0379 | 1.88 | 9,357 | 0.35 | 3.71 | na | na |
| Eagle Butte | Cypress-Amax | Cypress-Amax | WYW124783 | LBA | 4/5/1995 | \$18,470,400 | 1,059.2 | \$17,438.40 | 163,300 | \$0.1131 | 1.99 | 8,376 | 0.22 | 4.60 | 25.51 | 8.72 |
| Spring Creek | Kennecott | Kennecott | MTM69782 | MOD | 11/23/1994 | \$19,509 | 15.0 | \$1,300.60 | 0.465 | \$0.0420 | 1.67 | 9,237 | 0.33 | 4.15 | na | na |
| Caballo | Exxon | Exxon | WYW125698 | MOD | 2/21/1994 | \$25,217 | 20.2 | \$1,246.82 | 0.917 | \$0.0275 | 1.76 | 8,500 | 0.38 | 5.05 | na | na |
| Spring Creek | NERCO | NERCO | MTM69782 | MOD | 9/1/1993 | \$1,000 | 10.0 | \$100.00 | 0.020 | \$0.0500 | 2.10 | 8,183 | 0.55 | 9.10 | na | na |
| Scouta Bay | Thunder Basin | Thunder Basin | WYW2313 | MOD | 5/8/1993 | \$84,000 | 10.2 | \$6,268.36 | 1,030 | \$0.0621 | 1.43 | 8,752 | 0.39 | 5.35 | na | na |
| West Rocky Butte | Peabody | Peabody | WYW122586 | LBA | 1/7/1993 | 16,500,000 | 463.2 | \$35,621.76 | 56,700 | \$0.2910 | 3.75 | 8,354 | 0.27 | 4.30 | na | na |
| N. Antelope | Peabody | Peabody | WYW119554 | LBA | 9/28/1992 | \$86,987,765 | 3,064.0 | \$28,389.89 | 403,500 | \$0.2156 | 2.23 | 8,752 | 0.27 | 4.30 | na | na |
| W. Black Thunder | Thunder Basin | Thunder Basin | WYW118907 | LBA | 8/12/1992 | \$71,909,282 | 3,492.5 | \$20,589.69 | 429,000 | \$0.1676 | 2.72 | 8,839 | 0.25 | 4.40 | na | na |
| Jacob's Ranch | Kerr-McGee | Kerr-McGee | WYW117924 | LBA | 9/26/1991 | \$20,114,930 | 1,708.6 | \$11,772.62 | 147,424 | \$0.1364 | 2.46 | 8,540 | 0.47 | 5.40 | na | na |
| F. Black Thunder | Thunder Basin | Thunder Basin | WYW2313 | MOD | 4/29/1991 | \$300,155 | 102.8 | \$2,920.93 | 5,000 | \$0.0600 | 0.70 | 8,508 | 0.32 | 4.98 | na | na |
| New Decker | Kiewit | Kiewit | MTM37604 | MOD | 1/1/1991 | \$494,650 | 160.0 | \$3,091.56 | 7,610 | \$0.0650 | 4.20 | 9,610 | 0.35 | 3.85 | na | na |

* Revenues expressed as TONS MINABLE
MOD- Lease Modification
LBA- Lease By Application

COAL INFORMATION



2012
with 2011 data

Table 1.1: World coal⁽¹⁾ production
(thousand tonnes)

| | 1973 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e |
|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Australia | 79604 | 104504 | 160726 | 204562 | 241807 | 306722 | 372558 | 397076 | 411647 | 424090 | 414303 |
| Austria | 3328 | 2865 | 3081 | 2448 | 1298 | 1249 | - | - | - | - | - |
| Belgium | 10362 | 8018 | 7666 | 2357 | 637 | 375 | 109 | - | - | - | - |
| Canada | 20472 | 36688 | 60853 | 68332 | 74981 | 69163 | 65345 | 67749 | 62938 | 67896 | 67114 |
| Chile | 1435 | 1165 | 1326 | 2183 | 1038 | 366 | 544 | 667 | 636 | 619 | 654 |
| Czech Republic | 103745 | 116807 | 121037 | 101398 | 74901 | 65162 | 62026 | 60200 | 56417 | 55209 | 54352 |
| Estonia | x | x | x | 22486 | 12433 | 11727 | 14591 | 16117 | 14939 | 17933 | 18734 |
| France | 29114 | 22750 | 18894 | 13532 | 9896 | 4100 | 617 | 277 | 147 | 261 | 149 |
| Germany | 470816 | 484218 | 522886 | 434021 | 251614 | 205067 | 205925 | 194381 | 183623 | 182303 | 188561 |
| Greece | 13301 | 23198 | 35888 | 51896 | 57662 | 63887 | 69398 | 65720 | 64893 | 56520 | 58767 |
| Hungary | 27111 | 26025 | 24092 | 17830 | 14772 | 14033 | 9570 | 9404 | 8986 | 9113 | 9555 |
| Ireland | 64 | 60 | 57 | 25 | 1 | 47 | 55 | 59 | 71 | 66 | 61 |
| Israel | - | - | - | 303 | 470 | 390 | 429 | 427 | 444 | 432 | 416 |
| Italy | 1190 | 1286 | 1892 | 1014 | 172 | 14 | 95 | 117 | 72 | 101 | 92 |
| Japan | 25190 | 18054 | 16381 | 7979 | 6317 | 2964 | - | - | - | - | - |
| Korea | 13571 | 18625 | 22543 | 17217 | 5720 | 8300 | 2832 | 2773 | 2519 | 2084 | 2084 |
| Mexico | 2578 | 3089 | 5193 | 6933 | 9320 | 11344 | 10755 | 11430 | 10548 | 10106 | 12384 |
| Netherlands | 1829 | - | 101 | - | - | - | - | - | - | - | - |
| New Zealand | 2468 | 2138 | 2526 | 2578 | 3577 | 3458 | 5267 | 4830 | 4564 | 5331 | 4947 |
| Norway | 415 | 288 | 507 | 303 | 292 | 632 | 1471 | 3430 | 2641 | 1935 | 1386 |
| Poland | 195845 | 229987 | 249388 | 215320 | 200713 | 162815 | 159540 | 144013 | 135172 | 133238 | 139242 |
| Portugal | 221 | 177 | 237 | 281 | - | - | - | - | - | - | - |
| Slovak Republic | 5804 | 5796 | 5731 | 4766 | 3759 | 3648 | 2511 | 2423 | 2573 | 2378 | 2376 |
| Slovenia | x | x | x | 5583 | 4884 | 4480 | 4540 | 4520 | 4429 | 4430 | 4501 |
| Spain | 12994 | 28292 | 39663 | 35682 | 28305 | 23471 | 19481 | 10187 | 9445 | 8430 | 6621 |
| Sweden | 12 | 18 | 13 | 11 | - | - | - | - | - | - | - |
| Turkey | 12396 | 18625 | 39997 | 47428 | 55073 | 63268 | 58340 | 79402 | 79499 | 73399 | 78075 |
| United Kingdom | 131985 | 130097 | 94111 | 92762 | 53037 | 31198 | 20498 | 18054 | 17874 | 18416 | 18342 |
| United States | 543012 | 752961 | 801636 | 933561 | 937098 | 971591 | 1038591 | 1075881 | 987552 | 996107 | 1004131 |
| IEA Total | 1704849 | 2031477 | 2229906 | 2255303 | 2021632 | 2001164 | 2094229 | 2135976 | 2030633 | 2036877 | 2050158 |
| OECD Total | 1708862 | 2035731 | 2236425 | 2292791 | 2049777 | 2029471 | 2125088 | 2169137 | 2061629 | 2070397 | 2086847 |
| Algeria | 333 | 3 | 23 | - | - | - | - | - | - | - | - |
| Botswana | - | - | 437 | 794 | 898 | 947 | 985 | 910 | 738 | 988 | 738 |
| Dem. Rep. of Congo | 130 | 138 | 121 | 126 | 93 | 96 | 120 | 131 | 135 | 139 | 132 |
| Egypt | - | - | - | - | - | 58 | 25 | - | - | - | 24 |
| Morocco | 565 | 680 | 775 | 526 | 650 | 31 | 12 | - | - | - | - |
| Mozambique | 394 | 207 | 35 | 40 | 38 | 16 | 3 | 38 | 38 | 38 | 38 |
| Nigeria | 327 | 176 | 140 | 90 | 20 | 3 | 8 | 8 | 8 | 8 | 8 |
| South Africa | 62352 | 115120 | 173500 | 174800 | 206211 | 224200 | 244986 | 252213 | 249489 | 254522 | 253105 |
| United Rep. of Tanzania | - | 1 | 15 | 4 | 44 | 79 | 75 | 92 | 98 | 105 | 95 |
| Zambia | 940 | 570 | 511 | 377 | 152 | 196 | 150 | 1 | 1 | 1 | - |
| Zimbabwe | 2806 | 2768 | 3104 | 5345 | 4693 | 4260 | 3621 | 2706 | 2852 | 3083 | 2996 |
| Other Africa | 160 | 196 | 317 | 314 | 342 | 585 | 678 | 711 | 761 | 789 | 708 |

Table 1.1: World coal⁽¹⁾ production (continued)
(thousand tonnes)

| | 1973 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Argentina | 451 | 390 | 400 | 276 | 305 | 259 | 25 | 110 | 82 | 65 | 81 |
| Brazil | 2339 | 5242 | 7712 | 4595 | 5199 | 6806 | 6255 | 6612 | 5709 | 5415 | 5448 |
| Colombia | 2834 | 4164 | 8766 | 21375 | 25651 | 38242 | 59064 | 73502 | 72807 | 74350 | 83783 |
| Peru | 33 | 41 | 127 | 97 | 51 | 17 | 43 | 142 | 322 | 92 | 92 |
| Venezuela | 50 | 42 | 40 | 2189 | 4064 | 7885 | 7195 | 4922 | 3282 | 2730 | 2271 |
| Bangladesh | - | - | - | - | - | - | 77 | 840 | 888 | 770 | 1000 |
| India | 79908 | 116110 | 158508 | 225258 | 290426 | 335675 | 437267 | 525178 | 566113 | 570424 | 585924 |
| Indonesia | 149 | 304 | 1908 | 10230 | 41828 | 79377 | 170541 | 248766 | 291247 | 325000 | 376200 |
| DPR of Korea | 30198 | 44106 | 52000 | 46353 | 31300 | 29743 | 34610 | 32333 | 31556 | 31957 | 31556 |
| Malaysia | - | - | - | 111 | 135 | 384 | 788 | 1254 | 2138 | 2397 | 2842 |
| Mongolia | - | - | 6523 | 7157 | 5019 | 5185 | 7526 | 10071 | 14442 | 25455 | 31346 |
| Myanmar | 10 | 38 | 86 | 78 | 35 | 580 | 574 | 669 | 620 | 686 | 1415 |
| Nepal | - | - | - | - | - | 17 | 12 | 15 | 15 | 16 | 16 |
| Pakistan | 1143 | 1569 | 2238 | 2746 | 3637 | 3094 | 4871 | 3739 | 3481 | 3451 | 3669 |
| Philippines | 39 | 326 | 1256 | 1232 | 1293 | 1357 | 2880 | 3609 | 4687 | 6650 | 9435 |
| Chinese Taipei | 3327 | 2574 | 1858 | 472 | 235 | 83 | - | - | - | - | - |
| Thailand | 361 | 1525 | 5188 | 12421 | 18421 | 17708 | 20878 | 17982 | 17786 | 18344 | 21137 |
| Vietnam | 2990 | 5200 | 5594 | 4638 | 8350 | 11609 | 34093 | 39777 | 44078 | 44011 | 44524 |
| Other Asia | 2323 | 4496 | 151 | 108 | 97 | 463 | 740 | 1242 | 1426 | 1524 | 1493 |
| PR of China | 417000 | 620150 | 837272 | 1050734 | 1342222 | 1394043 | 2299697 | 2734421 | 2895345 | 3140154 | 3471073 |
| Albania | 811 | 1420 | 2150 | 2071 | 80 | 30 | 64 | 85 | 14 | 14 | 22 |
| Bosnia and Herzegovina | x | x | x | 19670 | 1640 | 7439 | 9119 | 11244 | 11469 | 10985 | 15003 |
| Bulgaria | 26810 | 30213 | 30880 | 31675 | 30830 | 26432 | 24695 | 29050 | 27279 | 29427 | 37844 |
| Croatia | x | x | x | 174 | 82 | - | - | - | - | - | - |
| Georgia | x | x | x | 1103 | 34 | 7 | 5 | 11 | 152 | 105 | 73 |
| Kazakhstan | x | x | x | 131443 | 84494 | 77444 | 87197 | 111072 | 100854 | 110929 | 116670 |
| Kosovo | x | x | x | .. | .. | 3508 | 4609 | 5427 | 6041 | 6082 | 6082 |
| Kyrgyzstan | x | x | x | 3635 | 463 | 425 | 335 | 492 | 602 | 582 | 845 |
| F.Y.R. of Macedonia | x | x | x | 6644 | 7249 | 7516 | 6881 | 7630 | 7426 | 6724 | 5959 |
| Montenegro | x | x | x | .. | .. | .. | 1297 | 1740 | 957 | 1938 | 1938 |
| Romania | 24851 | 35164 | 46581 | 38183 | 41121 | 29285 | 31106 | 35861 | 33961 | 31127 | 35263 |
| Russian Federation | x | x | x | 371899 | 245728 | 240324 | 282881 | 304962 | 275991 | 321701 | 333831 |
| Serbia | x | x | x | 45937 | 40595 | 37094 | 35100 | 38709 | 38499 | 37976 | 40817 |
| Tajikistan | x | x | x | 925 | 41 | 22 | 99 | 199 | 202 | 200 | 200 |
| Ukraine | x | x | x | 152763 | 76298 | 62403 | 60361 | 59628 | 55540 | 55387 | 61806 |
| Uzbekistan | x | x | x | 6400 | 3054 | 2569 | 3076 | 3290 | 3654 | 3340 | 2842 |
| Former Soviet Union | 667600 | 716000 | 726000 | x | x | x | x | x | x | x | x |
| Former Yugoslavia | 32450 | 41301 | 68472 | x | x | x | x | x | x | x | x |
| Islam. Rep. of Iran | 903 | 925 | 1106 | 835 | 1084 | 1148 | 1556 | 1590 | 1152 | 1025 | 1174 |
| Non-OECD Total | 1364587 | 1751159 | 2143794 | 2385843 | 2524202 | 2658644 | 3886180 | 4572984 | 4773937 | 5130706 | 5591518 |
| World | 3073449 | 3786890 | 4380219 | 4678634 | 4573979 | 4688115 | 6011268 | 6742121 | 6835566 | 7201103 | 7678365 |

(1) Coal comprises all coals from anthracite through lignite, however excludes peat and manufacture of all coal products.

For further information, see notes and definitions in Part I.

Source: IEA/OECD Energy Statistics of OECD Countries, IEA/OECD Energy Statistics of Non-OECD Countries

Table 2.1: World coal⁽¹⁾ consumption
(thousand tonnes)

| | 1973 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽²⁾ |
|-------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------|
| Australia | 51413 | 67316 | 78360 | 95289 | 102491 | 128123 | 141181 | 141660 | 142236 | 140295 | 119699 |
| Austria | 6184 | 6145 | 7046 | 6663 | 5135 | 5105 | 5325 | 4107 | 3345 | 3815 | 3875 |
| Belgium | 17169 | 17099 | 15851 | 16429 | 12589 | 11266 | 7757 | 6162 | 4855 | 5164 | 4173 |
| Canada | 25614 | 37272 | 48175 | 49146 | 52634 | 62968 | 60211 | 55533 | 49253 | 48172 | 42738 |
| Chile | 1772 | 1718 | 1827 | 3720 | 3391 | 4590 | 4571 | 7726 | 6817 | 8351 | 9654 |
| Czech Republic | 103745 | 103759 | 105884 | 91832 | 66480 | 61089 | 56843 | 54809 | 50995 | 51544 | 49425 |
| Denmark | 3146 | 9669 | 11935 | 9992 | 11003 | 6641 | 6293 | 6836 | 6778 | 6496 | 5526 |
| Estonia | x | x | x | 26336 | 14646 | 13319 | 14860 | 15833 | 13856 | 17949 | 18809 |
| Finland | 3035 | 5692 | 5318 | 5648 | 6540 | 5193 | 4598 | 4986 | 5413 | 6982 | 5478 |
| France | 43064 | 50650 | 38925 | 30885 | 24127 | 22156 | 21178 | 19192 | 16373 | 17347 | 14629 |
| Germany | 478298 | 488138 | 525987 | 451015 | 269035 | 238905 | 241844 | 238900 | 221862 | 228108 | 229618 |
| Greece | 13651 | 23237 | 37964 | 53433 | 58442 | 65685 | 70659 | 65155 | 65550 | 58318 | 60050 |
| Hungary | 29033 | 27544 | 25626 | 20305 | 16931 | 15173 | 11588 | 11837 | 10676 | 10989 | 11576 |
| Iceland | 1 | 12 | 69 | 65 | 65 | 101 | 117 | 109 | 98 | 106 | 112 |
| Ireland | 822 | 1066 | 1586 | 3236 | 2734 | 3021 | 3048 | 2382 | 1981 | 1977 | 2132 |
| Israel | - | - | 2927 | 4023 | 7038 | 10981 | 12553 | 13367 | 12291 | 12742 | 13034 |
| Italy | 12902 | 18409 | 23935 | 22416 | 17642 | 18043 | 24248 | 24914 | 19949 | 21767 | 23298 |
| Japan | 81790 | 87726 | 109391 | 114960 | 133564 | 153190 | 176974 | 184088 | 163717 | 185367 | 175377 |
| Korea | 16329 | 27790 | 42505 | 44776 | 44634 | 71799 | 82272 | 102723 | 106861 | 120048 | 130344 |
| Luxembourg | 305 | 374 | 199 | 197 | 217 | 172 | 122 | 115 | 104 | 102 | 89 |
| Mexico | 2894 | 3973 | 5317 | 6881 | 10245 | 12294 | 17559 | 14000 | 16367 | 17642 | 19240 |
| Netherlands | 4814 | 6129 | 10379 | 14101 | 14314 | 12786 | 13059 | 12710 | 11899 | 11903 | 11706 |
| New Zealand | 2460 | 1976 | 2074 | 2243 | 2138 | 2095 | 4286 | 3933 | 2987 | 2645 | 2946 |
| Norway | 772 | 951 | 1118 | 749 | 1018 | 999 | 795 | 826 | 538 | 818 | 763 |
| Poland | 156379 | 199086 | 214135 | 187622 | 171019 | 142859 | 142027 | 142319 | 132814 | 141381 | 146027 |
| Portugal | 805 | 604 | 1050 | 4397 | 5708 | 6154 | 5476 | 4156 | 4677 | 2702 | 3695 |
| Slovak Republic | 18618 | 21412 | 21593 | 18360 | 12551 | 8869 | 8290 | 8025 | 7593 | 7214 | 7209 |
| Slovenia | x | x | x | 6090 | 5239 | 4925 | 5192 | 5197 | 4942 | 4922 | 4993 |
| Spain | 16322 | 31222 | 48440 | 46823 | 42542 | 45654 | 44498 | 26413 | 19678 | 14661 | 23515 |
| Sweden | 1060 | 2138 | 4158 | 3709 | 3444 | 2861 | 3070 | 2774 | 2433 | 2859 | 3043 |
| Switzerland | 258 | 315 | 640 | 494 | 253 | 179 | 217 | 237 | 221 | 228 | 233 |
| Turkey | 12237 | 20431 | 41490 | 54324 | 61019 | 79932 | 76736 | 98614 | 98694 | 95608 | 101874 |
| United Kingdom | 133527 | 123610 | 105980 | 106722 | 75916 | 59839 | 61779 | 58220 | 48786 | 51428 | 51213 |
| United States | 505515 | 650167 | 744671 | 815949 | 863552 | 966391 | 1029721 | 1021750 | 918493 | 949702 | 925349 |
| IEA Americas | 531129 | 687439 | 792846 | 865095 | 916186 | 1029359 | 1089932 | 1077283 | 967746 | 997874 | 968087 |
| IEA Asia Oceania | 151992 | 184808 | 232330 | 257268 | 282827 | 355207 | 404713 | 432404 | 415801 | 448355 | 428366 |
| IEA Europe | 1056146 | 1157680 | 1249239 | 1149352 | 878659 | 812581 | 809450 | 793689 | 735214 | 741411 | 759147 |
| OECD Americas | 535795 | 693130 | 799990 | 875696 | 929822 | 1046243 | 1112062 | 1099009 | 990930 | 1023867 | 996981 |
| OECD Asia Oceania | 151992 | 184808 | 235257 | 261291 | 289865 | 366188 | 417266 | 445771 | 428092 | 461097 | 441400 |
| OECD Europe | 1056147 | 1157692 | 1249308 | 1181843 | 898609 | 830926 | 829619 | 814828 | 754110 | 764388 | 783061 |
| IEA Total | 1739267 | 2029927 | 2274415 | 2271715 | 2077672 | 2197147 | 2304095 | 2303376 | 2118761 | 2187640 | 2155600 |
| OECD Total | 1743934 | 2035630 | 2284555 | 2318830 | 2118296 | 2243357 | 2358947 | 2359608 | 2173132 | 2249352 | 2221442 |

Table 2.1: World coal⁽¹⁾ consumption (continued)
(thousand tonnes)

| | 1973 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽²⁾ |
|-------------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|----------------------|
| Algeria | 63 | 93 | 1226 | 1005 | 632 | 689 | 819 | 856 | 290 | - | 1 |
| Botswana | - | - | 466 | 815 | 912 | 1040 | 1002 | 914 | 742 | 992 | 738 |
| Dem. Rep. of Congo | 170 | 167 | 156 | 169 | 136 | 132 | 160 | 190 | 195 | 209 | 202 |
| Egypt | 487 | 894 | 1192 | 1340 | 1540 | 1820 | 1810 | 1696 | 1660 | 1625 | 1625 |
| Kenya | 70 | 16 | 90 | 151 | 96 | 66 | 89 | 109 | 95 | 165 | 32 |
| Libya | - | - | - | - | - | - | - | - | - | - | 9 |
| Morocco | 582 | 635 | 1110 | 1774 | 2665 | 4018 | 4938 | 4462 | 4099 | 4223 | 4860 |
| Mozambique | 587 | 288 | 106 | 58 | 56 | - | - | 10 | 10 | 10 | 33 |
| Namibia | - | - | - | - | 16 | 3 | 20 | 413 | 193 | 136 | 136 |
| Nigeria | 289 | 151 | 94 | 55 | 20 | 3 | 8 | 8 | 8 | 8 | 8 |
| Senegal | - | - | - | - | - | - | 152 | 215 | 254 | 264 | 357 |
| South Africa | 60408 | 86961 | 125870 | 124900 | 147205 | 157135 | 175403 | 196727 | 192164 | 189968 | 182710 |
| United Rep. of Tanzania | - | 1 | 15 | 4 | 44 | 79 | 75 | 92 | 98 | 105 | 99 |
| Tunisia | 33 | 21 | 21 | 15 | - | - | - | - | - | - | - |
| Zambia | 941 | 618 | 471 | 375 | 148 | 130 | 140 | 1 | 1 | 1 | - |
| Zimbabwe | 2758 | 2614 | 3026 | 5355 | 4494 | 4297 | 3698 | 2767 | 2917 | 3154 | 3042 |
| Other Africa | 222 | 278 | 379 | 436 | 442 | 697 | 763 | 971 | 940 | 974 | 936 |
| Argentina | 1072 | 1425 | 1247 | 1367 | 1439 | 1058 | 1383 | 1682 | 1654 | 1364 | 2729 |
| Brazil | 4122 | 9142 | 16861 | 15436 | 17120 | 20270 | 20003 | 20823 | 17420 | 21707 | 24919 |
| Colombia | 2859 | 2803 | 3144 | 4825 | 5608 | 4231 | 4173 | 3589 | 5399 | 6202 | 8258 |
| Costa Rica | 1 | 1 | 1 | - | - | 1 | 2 | 1 | 4 | 1 | - |
| Cuba | - | 95 | 126 | 153 | 77 | 22 | 22 | 24 | 17 | 13 | 13 |
| Dominican Republic | - | - | 224 | 17 | 80 | 93 | 476 | 763 | 747 | 709 | 925 |
| Guatemala | - | 22 | - | - | - | 215 | 409 | 452 | 294 | 492 | 518 |
| Haiti | - | - | 61 | 12 | - | - | - | - | - | - | - |
| Honduras | - | - | - | - | - | 135 | 183 | 105 | 103 | 107 | 32 |
| Jamaica | - | - | - | 52 | 55 | 53 | 58 | 48 | 51 | 54 | 72 |
| Panama | 13 | - | 32 | 32 | 51 | 60 | - | - | - | - | - |
| Peru | 86 | 74 | 107 | 149 | 389 | 708 | 1075 | 1073 | 1142 | 1100 | 647 |
| Uruguay | 32 | 4 | - | 1 | - | 1 | 1 | 2 | 3 | 4 | 4 |
| Venezuela | 53 | 42 | 42 | 355 | 7 | 181 | 51 | 193 | 325 | 273 | - |
| Bangladesh | 243 | 235 | 98 | 563 | 642 | 660 | 742 | 1257 | 1257 | 1257 | 1848 |
| Cambodia | - | - | - | - | - | - | - | - | 16 | 17 | 43 |
| Hong Kong (China) | 12 | 3 | 5523 | 8928 | 9109 | 6058 | 10824 | 11345 | 12331 | 10324 | 12946 |
| India | 77172 | 107796 | 156229 | 220707 | 294875 | 357009 | 463510 | 573880 | 619706 | 643203 | 655344 |
| Indonesia | 129 | 236 | 925 | 6320 | 11892 | 22720 | 42031 | 48926 | 57885 | 57854 | 66778 |
| DPR of Korea | 30580 | 44456 | 54200 | 48453 | 31940 | 29383 | 31806 | 29709 | 28576 | 27356 | 28217 |
| Malaysia | 13 | 84 | 574 | 2150 | 2558 | 3661 | 10926 | 15062 | 16730 | 23161 | 24022 |
| Mongolia | - | - | 6167 | 6649 | 5204 | 5212 | 5473 | 5999 | 6521 | 6511 | 9203 |
| Myanmar | 74 | 248 | 266 | 118 | 38 | 580 | 574 | 669 | 620 | 686 | 1420 |
| Nepal | 78 | 83 | 17 | 81 | 123 | 430 | 413 | 309 | 322 | 337 | 337 |
| Pakistan | 1270 | 1667 | 2954 | 4246 | 4722 | 4044 | 7714 | 8391 | 8139 | 7718 | 6260 |
| Philippines | 40 | 558 | 2419 | 2576 | 3004 | 8603 | 9909 | 11794 | 10060 | 13319 | 14785 |
| Singapore | 1 | 1 | 2 | 2 | - | - | 1 | 1 | - | - | - |
| Sri Lanka | - | - | 1 | 8 | 5 | - | 93 | 72 | 93 | 95 | 242 |
| Chinese Taipei | 3572 | 5956 | 11085 | 17230 | 26229 | 46780 | 59716 | 62611 | 60018 | 63415 | 66320 |
| Thailand | 362 | 1619 | 5344 | 12707 | 20801 | 21270 | 29525 | 34377 | 33318 | 35419 | 37562 |
| Vietnam | 2770 | 4052 | 4990 | 3951 | 5917 | 7808 | 14812 | 21104 | 22397 | 26146 | 21567 |
| Other Asia | 2426 | 4857 | 345 | 303 | 244 | 575 | 725 | 1224 | 1275 | 1362 | 1448 |
| PR of China | 414180 | 626010 | 803907 | 1050745 | 1316108 | 1377767 | 2274375 | 2686468 | 2941280 | 3102909 | 3648126 |

Table 2.1: World coal⁽¹⁾ consumption (continued)
(thousand tonnes)

| | 1973 | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽²⁾ |
|------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------|
| Albania | 899 | 1580 | 2370 | 2145 | 80 | 73 | 77 | 98 | 226 | 248 | 44 |
| Armenia | x | x | x | 552 | 3 | - | - | 2 | - | - | - |
| Azerbaijan | x | x | x | 200 | 6 | - | - | - | - | - | - |
| Belarus | x | x | x | 2389 | 1125 | 504 | 168 | 76 | 79 | 79 | 55 |
| Bosnia and Herzegovina | x | x | x | 19670 | 1640 | 7437 | 9457 | 11606 | 11547 | 12090 | 15941 |
| Bulgaria | 32447 | 36703 | 38934 | 37824 | 34316 | 29223 | 29231 | 33167 | 30186 | 32601 | 40954 |
| Croatia | x | x | x | 1893 | 331 | 703 | 1140 | 1182 | 848 | 1171 | 1646 |
| Cyprus | - | - | 74 | 97 | 97 | 49 | 53 | 41 | 22 | 27 | 18 |
| Georgia | x | x | x | 1323 | 44 | 27 | 18 | 119 | 226 | 113 | 89 |
| Kazakhstan | x | x | x | 89249 | 64825 | 44090 | 63767 | 78456 | 72239 | 78029 | 82830 |
| Kosovo | x | x | x | .. | .. | 3633 | 4658 | 5232 | 5971 | 6270 | 6144 |
| Kyrgyzstan | x | x | x | 6154 | 792 | 1169 | 1339 | 1028 | 1104 | 1146 | 1399 |
| Latvia | x | x | x | 920 | 252 | 97 | 120 | 162 | 130 | 167 | 273 |
| Lithuania | x | x | x | 1303 | 372 | 131 | 287 | 324 | 242 | 306 | 393 |
| F.Y.R. of Macedonia | x | x | x | 6937 | 7435 | 7769 | 7473 | 7744 | 7480 | 6939 | 6075 |
| Malta | - | - | 192 | 300 | 52 | - | - | - | - | - | - |
| Republic of Moldova | x | x | x | 4510 | 1315 | 181 | 167 | 198 | 181 | 186 | 154 |
| Montenegro | x | x | x | .. | .. | .. | 1261 | 1727 | 937 | 1869 | 1869 |
| Romania | 26180 | 39373 | 53109 | 46223 | 45700 | 31962 | 36002 | 39545 | 34483 | 31607 | 36875 |
| Russian Federation | x | x | x | 374080 | 245331 | 230479 | 214594 | 229532 | 186662 | 223820 | 234666 |
| Serbia | x | x | x | 45937 | 40605 | 37324 | 35391 | 38741 | 39085 | 37679 | 41185 |
| Tajikistan | x | x | x | 1494 | 41 | 29 | 105 | 207 | 215 | 217 | 204 |
| Turkmenistan | x | x | x | 670 | - | - | - | - | - | - | - |
| Ukraine | x | x | x | 147423 | 89898 | 66680 | 64023 | 70571 | 59114 | 65489 | 67749 |
| Uzbekistan | x | x | x | 8940 | 3028 | 3542 | 3185 | 3518 | 3817 | 3426 | 2962 |
| Former Soviet Union | 647358 | 692140 | 700445 | x | x | x | x | x | x | x | x |
| Former Yugoslavia | 33896 | 44306 | 73306 | x | x | x | x | x | x | x | x |
| Islam. Rep. of Iran | 948 | 1783 | 1444 | 1061 | 1546 | 1781 | 2074 | 1754 | 1137 | 952 | 1140 |
| Lebanon | - | 1 | - | - | 180 | 200 | 200 | 200 | 109 | 340 | 289 |
| Syrian Arab Republic | 1 | 1 | - | - | - | - | - | - | - | - | - |
| United Arab Emirates | - | - | - | - | - | - | 236 | 557 | 894 | 1162 | 2084 |
| Non-OECD Total | 1349499 | 1720093 | 2080987 | 2345882 | 2455657 | 2556780 | 3655108 | 4277171 | 4508303 | 4760882 | 5374411 |
| World | 3093433 | 3755723 | 4365542 | 4664712 | 4573953 | 4800137 | 6014055 | 6636779 | 6681435 | 7010234 | 7595853 |

(1) Coal comprises all coals from anthracite through lignite, however excludes peat and manufacture of all coal products.
For further information, see notes and definitions in Part I.

(2) Consumption data for 2011e is supplied by OECD member countries. For non-OECD countries, it is calculated using production and net trade data from varied sources. Stock changes are not accounted for, with the exception of the People's Republic of China, where it has been necessary to estimate consumption (and calculate stock changes) based on official growth rates.

Source: IEA/OECD Energy Statistics of OECD Countries, IEA/OECD Energy Statistics of Non-OECD Countries

Table 2.4: World steam coal⁽¹⁾ consumption
(thousand tonnes)

| | 1973 ⁽²⁾ | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽³⁾ |
|------------------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------|
| Australia ⁽⁴⁾ | 27292 | 27373 | 34504 | 43367 | 45865 | 56031 | 66186 | 67205 | 66717 | 64059 | 45814 |
| Austria | 2856 | 500 | 787 | 1822 | 1484 | 1885 | 2215 | 2236 | 1645 | 1964 | 2087 |
| Belgium ⁽⁴⁾ | 17169 | 8994 | 7490 | 8996 | 7657 | 7001 | 4288 | 2969 | 2724 | 2293 | 1525 |
| Canada | 17556 | 24269 | 31904 | 34765 | 37318 | 47299 | 44782 | 40647 | 35158 | 34316 | 27573 |
| Chile ⁽⁴⁾ | 1711 | 1224 | 1365 | 3228 | 2676 | 3876 | 3868 | 7051 | 6226 | 7842 | 9014 |
| Czech Republic | 27780 | 11771 | 10665 | 10119 | 7532 | 5745 | 4887 | 5127 | 3825 | 4443 | 3712 |
| Denmark | 3146 | 9662 | 11929 | 9992 | 11003 | 6641 | 6293 | 6836 | 6778 | 6496 | 5526 |
| Estonia | x | x | x | 382 | 85 | 87 | 56 | 129 | 87 | 60 | 70 |
| Finland ⁽⁴⁾ | 3035 | 5692 | 5318 | 4937 | 4890 | 3909 | 3197 | 3909 | 4498 | 5776 | 4199 |
| France ⁽⁴⁾ | 40289 | 33510 | 25175 | 19122 | 14872 | 15258 | 14920 | 11907 | 12818 | 12790 | 10794 |
| Germany | 105801 | 46092 | 45641 | 44749 | 40231 | 44501 | 41759 | 44054 | 36544 | 43475 | 37540 |
| Greece | 651 | 161 | 1750 | 1380 | 1480 | 1121 | 563 | 523 | 337 | 614 | 387 |
| Hungary | 2137 | 3249 | 3456 | 1435 | 287 | 390 | 1269 | 1182 | 757 | 653 | 465 |
| Iceland ⁽⁴⁾ | 1 | 12 | 49 | 52 | 58 | 87 | 103 | 102 | 88 | 102 | 104 |
| Ireland | 822 | 1066 | 1579 | 3184 | 2689 | 2985 | 2995 | 2357 | 1957 | 1956 | 2111 |
| Israel | - | - | 2927 | 3720 | 6568 | 10591 | 12124 | 12940 | 11847 | 12310 | 12618 |
| Italy | 11603 | 5787 | 11729 | 12694 | 10480 | 11355 | 18610 | 18985 | 16357 | 16616 | 18139 |
| Japan ⁽⁴⁾ | 81690 | 17496 | 35935 | 50026 | 73768 | 96109 | 120444 | 126721 | 111383 | 127688 | 121542 |
| Korea ⁽⁴⁾ | 16329 | 23803 | 35546 | 33041 | 28329 | 52384 | 61389 | 78888 | 85679 | 92838 | 98050 |
| Luxembourg | 305 | 346 | 199 | 197 | 217 | 172 | 122 | 115 | 104 | 102 | 89 |
| Mexico ⁽⁴⁾ | 2894 | - | 1480 | 3970 | 8368 | 11358 | 16880 | 12990 | 14460 | 16468 | 17450 |
| Netherlands | 4794 | 2452 | 6215 | 9641 | 9388 | 8686 | 8327 | 8266 | 8448 | 7920 | 7443 |
| New Zealand ⁽⁴⁾ | 2317 | 1760 | 1804 | 1841 | 1755 | 1882 | 3925 | 3680 | 2727 | 2286 | 2625 |
| Norway | 772 | 519 | 724 | 749 | 1018 | 999 | 795 | 826 | 538 | 818 | 763 |
| Poland | 122097 | 138506 | 138825 | 102104 | 90418 | 70039 | 69281 | 69656 | 65823 | 72452 | 71523 |
| Portugal ⁽⁴⁾ | 805 | 241 | 680 | 4084 | 5253 | 5657 | 5476 | 4156 | 4677 | 2702 | 3695 |
| Slovak Republic | 5834 | 3037 | 3019 | 2743 | 2585 | 2059 | 2245 | 2034 | 1936 | 1673 | 1555 |
| Slovenia | x | x | x | 262 | 328 | 446 | 612 | 596 | 492 | 520 | 437 |
| Spain | 13260 | 14715 | 26058 | 25788 | 28696 | 33695 | 33471 | 22960 | 17176 | 12163 | 20975 |
| Sweden | 1060 | 484 | 2538 | 2194 | 1798 | 1089 | 1223 | 1188 | 993 | 991 | 1410 |
| Switzerland | 258 | 315 | 640 | 481 | 245 | 173 | 178 | 162 | 155 | 166 | 164 |
| Turkey | 4595 | 1781 | 1887 | 3098 | 3956 | 8506 | 14574 | 16472 | 15902 | 18854 | 21924 |
| United Kingdom | 133527 | 111982 | 94858 | 96205 | 67429 | 51015 | 55210 | 51289 | 43123 | 45455 | 45499 |
| United States ⁽⁴⁾ | 492567 | 546581 | 645362 | 701657 | 752854 | 866163 | 932692 | 931318 | 839346 | 862251 | 832051 |
| IEA Americas | 510123 | 570850 | 677266 | 736422 | 790172 | 913462 | 977474 | 971965 | 874504 | 896567 | 859624 |
| IEA Asia Oceania | 127628 | 70432 | 107789 | 128275 | 149717 | 206406 | 251944 | 276494 | 266506 | 286871 | 268031 |
| IEA Europe | 502596 | 400862 | 401162 | 365714 | 313608 | 282881 | 291898 | 277209 | 247115 | 260372 | 261525 |
| OECD Americas | 514728 | 572074 | 680111 | 743620 | 801216 | 928696 | 998222 | 992006 | 895190 | 920877 | 886088 |
| OECD Asia Oceania | 127628 | 70432 | 110716 | 131995 | 156285 | 216997 | 264068 | 289434 | 278353 | 299181 | 280649 |
| OECD Europe | 502597 | 400874 | 401211 | 366410 | 314079 | 283501 | 292669 | 278036 | 247782 | 261054 | 262136 |
| IEA Total | 1140347 | 1042144 | 1186217 | 1230411 | 1253497 | 1402749 | 1521316 | 1525668 | 1388125 | 1443810 | 1389180 |
| OECD Total | 1144953 | 1043380 | 1192038 | 1242025 | 1271580 | 1429194 | 1554959 | 1559476 | 1421325 | 1481112 | 1428873 |

Table 2.4: World steam coal⁽¹⁾ consumption (continued)
(thousand tonnes)

| | 1973 ⁽²⁾ | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽³⁾ |
|-------------------------|---------------------|--------|--------|--------|---------|---------|---------|---------|---------|---------|----------------------|
| Algeria | 63 | - | - | - | - | - | - | - | - | - | 1 |
| Botswana | - | - | 466 | 815 | 912 | 1040 | 1002 | 914 | 742 | 992 | 738 |
| Dem. Rep. of Congo | 170 | 167 | 156 | 169 | 136 | 132 | 160 | 190 | 195 | 209 | 202 |
| Egypt | 487 | - | - | 1 | - | - | - | - | - | - | - |
| Kenya | 70 | 16 | 90 | 151 | 96 | 66 | 89 | 109 | 95 | 165 | 32 |
| Libya | - | - | - | - | - | - | - | - | - | - | 9 |
| Morocco | 582 | 635 | 1110 | 1774 | 2665 | 4018 | 4938 | 4462 | 4099 | 4223 | 4860 |
| Mozambique | 587 | 288 | 106 | 58 | 56 | - | - | 10 | 10 | 10 | 33 |
| Namibia | - | - | - | - | 16 | 3 | 20 | 413 | 193 | 136 | 136 |
| Nigeria | 289 | 151 | 94 | 55 | 20 | 3 | 8 | 8 | 8 | 8 | 8 |
| Senegal | - | - | - | - | - | - | 152 | 215 | 254 | 264 | 357 |
| South Africa | 60408 | 79803 | 119870 | 119225 | 142985 | 154566 | 172428 | 193381 | 189136 | 186886 | 178765 |
| United Rep. of Tanzania | - | 1 | 15 | 3 | 43 | 79 | 75 | 92 | 98 | 105 | 99 |
| Tunisia | 33 | 21 | 21 | 15 | - | - | - | - | - | - | - |
| Zambia | 941 | 618 | 471 | 375 | 148 | 130 | 140 | 1 | 1 | 1 | - |
| Zimbabwe | 2758 | 1623 | 2757 | 4743 | 3873 | 3484 | 3008 | 2362 | 2504 | 2730 | 2630 |
| Other Africa | 222 | 278 | 379 | 436 | 442 | 697 | 763 | 971 | 940 | 974 | 936 |
| Argentina | 1072 | 624 | 421 | 246 | 850 | 500 | 594 | 895 | 867 | 675 | 1627 |
| Brazil | 2842 | 2066 | 5212 | 2703 | 3374 | 7463 | 7686 | 8929 | 6792 | 9278 | 10764 |
| Colombia | 2859 | 2087 | 2399 | 4050 | 4927 | 3644 | 3659 | 3048 | 4284 | 4242 | 4791 |
| Costa Rica | 1 | 1 | 1 | - | - | 1 | 2 | 1 | 4 | 1 | - |
| Cuba | - | 95 | 126 | 153 | 77 | 22 | 22 | 24 | 17 | 13 | 13 |
| Dominican Republic | - | - | 224 | 17 | 80 | 93 | 476 | 763 | 747 | 709 | 925 |
| Guatemala | - | 22 | - | - | - | 215 | 409 | 452 | 294 | 492 | 497 |
| Haiti | - | - | 61 | 12 | - | - | - | - | - | - | - |
| Honduras | - | - | - | - | - | 135 | 183 | 105 | 103 | 107 | 32 |
| Jamaica | - | - | - | - | - | - | - | - | - | - | - |
| Panama | 13 | - | 32 | 32 | 51 | 60 | - | - | - | - | - |
| Peru | 86 | 25 | 57 | 112 | 338 | 664 | 1075 | 1073 | 1142 | 1100 | 647 |
| Uruguay | 32 | 4 | - | 1 | - | 1 | 1 | 2 | 3 | 4 | 4 |
| Venezuela | 53 | 42 | 42 | 355 | 7 | 181 | 51 | 193 | 325 | 273 | - |
| Bangladesh | 243 | 235 | 98 | 563 | 642 | 660 | 742 | 1257 | 1257 | 1257 | 1848 |
| Cambodia | - | - | - | - | - | - | - | - | 16 | 17 | 43 |
| Hong Kong (China) | 12 | 3 | 5523 | 8928 | 9109 | 6058 | 10824 | 11345 | 12331 | 10324 | 12946 |
| India | 73410 | 87296 | 120167 | 166231 | 233168 | 296333 | 394230 | 495490 | 530741 | 553569 | 591128 |
| Indonesia | 129 | 236 | 925 | 6320 | 11892 | 22580 | 41933 | 48819 | 57816 | 57799 | 64742 |
| DPR of Korea | 23580 | 40170 | 49200 | 43310 | 30900 | 29383 | 31806 | 29709 | 28576 | 27356 | 28014 |
| Malaysia | 13 | 84 | 574 | 2150 | 2558 | 3661 | 10926 | 15062 | 16730 | 23161 | 24022 |
| Mongolia | - | - | 480 | 595 | 1290 | 70 | - | - | - | - | - |
| Myanmar | 74 | 221 | 223 | 80 | 15 | 468 | 504 | 592 | 548 | 646 | 1132 |
| Nepal | 78 | 83 | 17 | 81 | 123 | 430 | 413 | 309 | 322 | 337 | 337 |
| Pakistan | 1270 | 1098 | 1567 | 2320 | 2546 | 2166 | 5139 | 6350 | 6508 | 6188 | 4653 |
| Philippines | - | 558 | 2415 | 2573 | 3001 | 8600 | 9909 | 11794 | 10060 | 13319 | 14785 |
| Singapore | - | - | - | - | - | - | 1 | 1 | - | - | - |
| Sri Lanka | - | - | 1 | 8 | 5 | - | 93 | 72 | 93 | 95 | 242 |
| Chinese Taipei | 3572 | 4443 | 8523 | 13080 | 22021 | 41544 | 54797 | 58014 | 55843 | 57773 | 62501 |
| Thailand | 1 | 94 | 212 | 250 | 2305 | 3684 | 8479 | 15885 | 15475 | 17378 | 16425 |
| Vietnam | 2770 | 4052 | 4990 | 3951 | 5917 | 7808 | 14490 | 20511 | 22397 | 26146 | 21567 |
| Other Asia | 220 | 657 | 345 | 303 | 244 | 530 | 630 | 1148 | 1187 | 1268 | 1444 |
| PR of China | 414180 | 559188 | 741034 | 970583 | 1176247 | 1258729 | 1854137 | 2183502 | 2378905 | 2520059 | 2966891 |

Table 2.4: World steam coal⁽¹⁾ consumption (continued)
(thousand tonnes)

| | 1973 ⁽²⁾ | 1980 | 1985 | 1990 | 1995 | 2000 | 2005 | 2008 | 2009 | 2010 | 2011e ⁽³⁾ |
|------------------------|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------------|
| Albania | 89 | 135 | 187 | 240 | - | - | - | - | - | - | - |
| Armenia | x | x | x | 552 | 3 | - | - | 2 | - | - | - |
| Azerbaijan | x | x | x | 200 | 6 | - | - | - | - | - | - |
| Belarus | x | x | x | 2389 | 1125 | 504 | 168 | 76 | 79 | 79 | 55 |
| Bosnia and Herzegovina | x | x | x | - | - | 4057 | 4556 | 5408 | 5382 | 5224 | 4651 |
| Bulgaria | 6136 | 5073 | 6724 | 4192 | 4944 | 2054 | 3310 | 4203 | 3015 | 3156 | 3235 |
| Croatia | x | x | x | 403 | 143 | 623 | 1057 | 1121 | 799 | 1112 | 1587 |
| Cyprus | - | - | 74 | 97 | 97 | 49 | 52 | 40 | 21 | 26 | 18 |
| Georgia | x | x | x | 637 | 38 | 27 | 18 | 119 | 226 | 113 | 89 |
| Kazakhstan | x | x | x | 55823 | 50342 | 31309 | 48836 | 64249 | 56812 | 61120 | 66440 |
| Kosovo | x | x | x | .. | .. | 9 | 12 | 15 | 7 | 34 | 34 |
| Kyrgyzstan | x | x | x | 4014 | 505 | 830 | 887 | 554 | 502 | 554 | 579 |
| Latvia | x | x | x | 917 | 252 | 97 | 120 | 162 | 130 | 167 | 273 |
| Lithuania | x | x | x | 1303 | 372 | 130 | 284 | 324 | 101 | 150 | 249 |
| F.Y.R. of Macedonia | x | x | x | 12 | 72 | - | 97 | 175 | 110 | 155 | 119 |
| Malta | - | - | 192 | 300 | 52 | - | - | - | - | - | - |
| Republic of Moldova | x | x | x | 4510 | 1315 | 181 | 167 | 198 | 179 | 186 | 154 |
| Romania | 8490 | 6781 | 6880 | 4269 | 843 | 392 | 715 | 1191 | 788 | 645 | 876 |
| Russian Federation | x | x | x | 186148 | 112597 | 98284 | 96447 | 106563 | 69630 | 97843 | 92176 |
| Serbia | x | x | x | 137 | 55 | 306 | 227 | 245 | 170 | 147 | 158 |
| Tajikistan | x | x | x | 1044 | 34 | 27 | 103 | 205 | 213 | 215 | 204 |
| Turkmenistan | x | x | x | 670 | - | - | - | - | - | - | - |
| Ukraine | x | x | x | 84932 | 55256 | 35306 | 33793 | 42660 | 33806 | 38602 | 41111 |
| Uzbekistan | x | x | x | 2740 | 81 | 69 | 73 | 198 | 101 | 65 | 210 |
| Former Soviet Union | 490220 | 397576 | 419445 | x | x | x | x | x | x | x | x |
| Former Yugoslavia | 2540 | 388 | 400 | x | x | x | x | x | x | x | x |
| Islam. Rep. of Iran | 948 | 83 | 100 | 75 | 158 | 155 | 590 | 287 | 104 | 96 | 113 |
| Lebanon | - | 1 | - | - | 180 | 200 | 200 | 200 | 109 | 340 | 289 |
| Syrian Arab Republic | 1 | 1 | - | - | - | - | - | - | - | - | - |
| United Arab Emirates | - | - | - | - | - | - | 236 | 557 | 894 | 1162 | 2084 |
| Non-OECD Total | 1101544 | 1197023 | 1504406 | 1712431 | 1891549 | 2034510 | 2827942 | 3347225 | 3524836 | 3741480 | 4235530 |
| World | 2246497 | 2240403 | 2696444 | 2954456 | 3163129 | 3463704 | 4382901 | 4906701 | 4946161 | 5222592 | 5664403 |

- (1) Steam coal is also commonly known as thermal coal. From 1978 onwards it comprises anthracite, bituminous coal and sub-bituminous coal. For further information, see notes and definitions in Part I.
- (2) Data prior to 1978 are hard coal. Hard coal comprises anthracite, coking coal, other bituminous coal and for certain countries sub-bituminous coal.
- (3) Consumption data for 2011e is supplied by OECD member countries. For non-OECD countries, it is calculated using production and net trade data from varied sources. Stock changes are not accounted for, with the exception of the People's Republic of China, where it has been necessary to estimate consumption (and calculate stock changes) based on official growth rates.
- (4) Includes sub-bituminous coal prior to 1978.

Source: IEA/OECD Energy Statistics of OECD Countries, IEA/OECD Energy Statistics of Non-OECD Countries

Table 3.11: World coking coal imports - selected countries

| | (thousand tonnes) | | | | | | | | | | | | |
|-------|-------------------|--------|---------|-------|------|------|--------|--------------|-------|-------------|--------------|-------|-------|
| | Belgium | France | Germany | Spain | UK | USA | Canada | Russian Fed. | India | PR of China | China Taipei | Japan | Korea |
| 1988 | 6838 | 8165 | 2248 | 3643 | 7082 | - | 6255 | x | 3700 | 50 | 4687 | 71128 | 11237 |
| 1989 | 7064 | 7769 | 2281 | 4000 | 7998 | - | 5917 | x | 4410 | 303 | 4921 | 68689 | 11651 |
| 1990 | 7132 | 7848 | 1706 | 4169 | 8614 | - | 4491 | - | 5854 | 250 | 4237 | 64935 | 11287 |
| 1991 | 6426 | 7660 | 1057 | 4652 | 9196 | - | 4744 | - | 5272 | 408 | 4350 | 61839 | 15572 |
| 1992 | 5795 | 7457 | 1357 | 4343 | 8385 | - | 4848 | - | 6325 | 400 | 3748 | 57900 | 16381 |
| 1993 | 4748 | 6904 | 987 | 4572 | 8602 | - | 4681 | - | 6936 | - | 3915 | 57104 | 17321 |
| 1994 | 4444 | 6747 | 1093 | 3893 | 8065 | - | 4467 | 3237 | 9874 | - | 4032 | 60301 | 16902 |
| 1995 | 5267 | 7300 | 1427 | 3244 | 7754 | - | 4129 | 2215 | 9378 | - | 4390 | 59799 | 17151 |
| 1996 | 5325 | 7387 | 2189 | 3318 | 8245 | - | 4833 | 1708 | 10617 | - | 3946 | 59479 | 18226 |
| 1997 | 4328 | 7235 | 2536 | 3745 | 8072 | - | 4301 | 1274 | 11745 | 398 | 6033 | 59098 | 17395 |
| 1998 | 4195 | 7052 | 4299 | 3905 | 8646 | 1050 | 4597 | 292 | 10023 | 103 | 5636 | 53649 | 17979 |
| 1999 | 3953 | 6950 | 3519 | 3548 | 8020 | 1065 | 4041 | 2 | 10992 | 263 | 5375 | 54880 | 17227 |
| 2000 | 3818 | 6543 | 4608 | 3755 | 8462 | 1547 | 4296 | 200 | 11063 | 339 | 5158 | 57081 | 19575 |
| 2001 | 4169 | 6942 | 3984 | 3424 | 7723 | 2091 | 3987 | - | 11107 | 277 | 5373 | 56625 | 17899 |
| 2002 | 3363 | 6405 | 5174 | 3425 | 6315 | 2207 | 4315 | - | 12947 | 256 | 5272 | 58435 | 20003 |
| 2003 | 3220 | 5577 | 5504 | 3321 | 6474 | 1556 | 3272 | - | 12992 | 2605 | 5274 | 57744 | 20315 |
| 2004 | 3577 | 6798 | 6875 | 4043 | 6345 | 1987 | 3429 | - | 16925 | 6830 | 5078 | 60884 | 21808 |
| 2005 | 3533 | 6255 | 7152 | 3571 | 6551 | 1603 | 4228 | 866 | 16891 | 7195 | 4968 | 56530 | 20627 |
| 2006 | 3490 | 5995 | 8692 | 3622 | 6774 | 1533 | 4253 | 167 | 17877 | 4663 | 4872 | 57671 | 20081 |
| 2007 | 3247 | 6191 | 9627 | 3682 | 7481 | 1515 | 3322 | - | 22029 | 6219 | 4483 | 58200 | 22532 |
| 2008 | 2993 | 7239 | 9255 | 3371 | 6349 | 1580 | 3286 | 1450 | 21080 | 6857 | 4757 | 57367 | 24083 |
| 2009 | 1666 | 3581 | 6448 | 2058 | 5164 | 947 | 2219 | 225 | 24690 | 34417 | 4119 | 52334 | 20659 |
| 2010 | 2801 | 4615 | 7793 | 2777 | 6235 | 1385 | 3092 | 847 | 19484 | 34774 | 5524 | 57679 | 28160 |
| 2011e | 2704 | 3799 | 8778 | 2505 | 5467 | 1445 | 3770 | - | 19339 | 38251 | 3819 | 53835 | 32234 |

Table 3.12: World steam coal imports - selected countries

| | (thousand tonnes) | | | | | | | | | | | | |
|-------|-------------------|--------|---------|-------|-------|-------|--------|--------------|-------|-------------|--------------|--------|-------|
| | Belgium | France | Germany | Spain | UK | USA | Canada | Russian Fed. | India | PR of China | China Taipei | Japan | Korea |
| 1988 | 4227 | 3949 | 11056 | 5123 | 4603 | 1936 | 11222 | x | - | 1693 | 12768 | 30113 | 11420 |
| 1989 | 5594 | 8174 | 8790 | 6569 | 4139 | 2587 | 8605 | x | - | 1987 | 11931 | 32820 | 12565 |
| 1990 | 7629 | 11541 | 11874 | 6287 | 6169 | 2449 | 9678 | 53210 | 192 | 1753 | 14290 | 41983 | 12442 |
| 1991 | 7995 | 14132 | 14366 | 8336 | 10415 | 3075 | 7823 | 46911 | - | 960 | 14094 | 50836 | 13522 |
| 1992 | 8219 | 14532 | 14095 | 9936 | 11954 | 3450 | 8155 | 39723 | 170 | 1230 | 18391 | 52730 | 14400 |
| 1993 | 7146 | 7327 | 12103 | 8154 | 9798 | 6631 | 3787 | 28200 | 394 | 1428 | 21430 | 54949 | 20060 |
| 1994 | 8215 | 5443 | 14390 | 7876 | 7023 | 6880 | 4899 | 23961 | 682 | 1209 | 22689 | 61176 | 24107 |
| 1995 | 8832 | 5890 | 13625 | 10645 | 8142 | 6533 | 5606 | 20519 | 3134 | 1635 | 24367 | 67555 | 28680 |
| 1996 | 7489 | 8371 | 14159 | 8812 | 9554 | 6464 | 7374 | 18373 | 2558 | 3217 | 27202 | 70893 | 27848 |
| 1997 | 8468 | 6369 | 17495 | 7595 | 11685 | 6792 | 10168 | 19441 | 4695 | 1615 | 30186 | 77119 | 34602 |
| 1998 | 8439 | 11372 | 17950 | 10649 | 12598 | 6818 | 14060 | 21508 | 6512 | 1483 | 31457 | 76395 | 35607 |
| 1999 | 8883 | 10891 | 19159 | 16550 | 12273 | 7139 | 15718 | 16042 | 8708 | 1410 | 35729 | 83735 | 37342 |
| 2000 | 7529 | 12437 | 23340 | 17894 | 14984 | 9724 | 18935 | 25318 | 9867 | 1839 | 40251 | 93259 | 45320 |
| 2001 | 8512 | 9018 | 29527 | 15492 | 27819 | 16581 | 19636 | 27820 | 9441 | 2384 | 43718 | 97991 | 48482 |
| 2002 | 6543 | 11737 | 27433 | 21089 | 22372 | 13853 | 17744 | 20866 | 10313 | 11002 | 46542 | 102871 | 51705 |
| 2003 | 6170 | 11191 | 29413 | 18231 | 25417 | 21058 | 19294 | 25217 | 8691 | 8493 | 49396 | 108674 | 53090 |
| 2004 | 6213 | 12662 | 32661 | 20430 | 29808 | 22648 | 15793 | 22259 | 11559 | 11854 | 55405 | 119920 | 57155 |
| 2005 | 5271 | 13596 | 29953 | 21185 | 37417 | 25903 | 16516 | 21524 | 21695 | 18975 | 55284 | 120447 | 56131 |
| 2006 | 4566 | 14396 | 33440 | 20082 | 43754 | 31158 | 16463 | 25575 | 25204 | 33463 | 57439 | 121448 | 59626 |
| 2007 | 4168 | 12767 | 36660 | 20757 | 35883 | 31350 | 15110 | 23441 | 27765 | 44797 | 60749 | 128788 | 65753 |
| 2008 | 4438 | 14049 | 36172 | 17596 | 37527 | 29333 | 17262 | 29542 | 37923 | 33483 | 59083 | 126724 | 75501 |
| 2009 | 3140 | 11827 | 32027 | 14980 | 33003 | 19461 | 10691 | 23583 | 48565 | 91423 | 54516 | 111385 | 82323 |
| 2010 | 2726 | 12925 | 37932 | 10040 | 20286 | 16036 | 9515 | 24012 | 65078 | 122942 | 57631 | 127692 | 90431 |
| 2011e | 1988 | 10628 | 32508 | 13663 | 27143 | 10297 | 5575 | 23849 | 86399 | 146362 | 62501 | 121542 | 96916 |

Notes: Steam coal comprises anthracite, other bituminous coal and sub-bituminous coal for all countries.

Table 3.20: World coking coal exports - selected countries

| | (thousand tonnes) | | | | | | | | | | | | |
|-------|-------------------|--------|-------|-----------|----------|-----------|--------------|------------|---------|-------------|-------|-----------|--------------|
| | Poland | Canada | USA | Australia | Colombia | Venezuela | Russian Fed. | Kazakhstan | Ukraine | PR of China | India | Indonesia | South Africa |
| 1988 | 13381 | 27609 | 56200 | 55881 | 862 | - | x | x | x | 3241 | - | 9 | 5016 |
| 1989 | 11467 | 28677 | 59083 | 55228 | 891 | - | x | x | x | 2896 | - | 9 | 4161 |
| 1990 | 11226 | 26851 | 57568 | 57750 | 945 | - | 31573 | - | 7775 | 3473 | - | 29 | 3633 |
| 1991 | 9767 | 28786 | 58645 | 65450 | 967 | - | 15633 | - | 8503 | 3840 | - | 49 | 3523 |
| 1992 | 10781 | 23124 | 53910 | 67561 | 1016 | - | 24322 | - | 7342 | 3700 | - | 89 | 5088 |
| 1993 | 12829 | 23921 | 45044 | 73941 | 1040 | - | 6729 | 4247 | 3101 | 4283 | - | 170 | 4843 |
| 1994 | 10694 | 27066 | 42941 | 71496 | 1101 | - | 17367 | 3375 | 4106 | 4906 | 254 | 210 | 5764 |
| 1995 | 12296 | 28564 | 47255 | 74291 | 1158 | - | 8693 | 1999 | - | 6744 | 329 | 241 | 6305 |
| 1996 | 9886 | 28722 | 48036 | 76968 | 1182 | - | 6538 | 1509 | 31 | 7487 | 188 | 303 | 6133 |
| 1997 | 9138 | 30092 | 47314 | 83462 | 1223 | - | 8450 | 1371 | 44 | 4601 | 272 | 334 | 5850 |
| 1998 | 6506 | 28353 | 42722 | 83312 | 1230 | - | 6440 | 271 | 12 | 4855 | 385 | 285 | 5167 |
| 1999 | 6635 | 28946 | 29146 | 91996 | 1178 | - | 6400 | 184 | 17 | 5246 | 774 | 835 | 2517 |
| 2000 | 5290 | 28386 | 29780 | 99161 | 1230 | - | 7300 | 344 | 22 | 6470 | 624 | 616 | 1744 |
| 2001 | 3813 | 26914 | 23053 | 104935 | 1251 | - | 14431 | 316 | - | 11445 | 879 | 740 | 970 |
| 2002 | 3521 | 22964 | 19539 | 104526 | 1282 | - | 9196 | 271 | 3 | 13295 | 163 | 826 | 759 |
| 2003 | 2710 | 23716 | 20039 | 106814 | 1333 | - | 9470 | 328 | 24 | 13135 | 158 | 914 | 584 |
| 2004 | 3036 | 23847 | 24349 | 110815 | 1624 | - | 11935 | 245 | 417 | 5757 | 114 | 1059 | 917 |
| 2005 | 3151 | 26710 | 26001 | 124914 | 937 | - | 9983 | 247 | 509 | 5260 | 46 | 1222 | 524 |
| 2006 | 3601 | 25203 | 24946 | 120477 | 729 | - | 10007 | 289 | 530 | 4344 | 107 | 1550 | 672 |
| 2007 | 2363 | 26674 | 29198 | 131965 | 688 | - | 10019 | 262 | 118 | 2543 | 36 | 1736 | 910 |
| 2008 | 1683 | 26643 | 38599 | 136924 | 762 | - | 13614 | 329 | 197 | 3457 | 109 | 1922 | 1266 |
| 2009 | 1725 | 21531 | 33803 | 125238 | 764 | - | 13276 | 283 | 453 | 636 | 269 | 2049 | 616 |
| 2010 | 1815 | 27528 | 50906 | 157265 | 1216 | - | 18030 | 294 | 261 | 1461 | 111 | 2201 | 834 |
| 2011e | 1670 | 27666 | 63077 | 140455 | 112 | - | 13811 | 294 | 247 | 2897 | 49 | 567 | 152 |

Table 3.21: World steam coal exports - selected countries

| | (thousand tonnes) | | | | | | | | | | | | |
|-------|-------------------|--------|-------|-----------|----------|-----------|--------------|------------|---------|-------------|-------|-----------|--------------|
| | Poland | Canada | USA | Australia | Colombia | Venezuela | Russian Fed. | Kazakhstan | Ukraine | PR of China | India | Indonesia | South Africa |
| 1988 | 18959 | 4123 | 30003 | 43737 | 9259 | 1025 | x | x | x | 12405 | 200 | 957 | 39154 |
| 1989 | 17476 | 4140 | 32374 | 43441 | 11596 | 1689 | x | x | x | 12442 | 160 | 2480 | 42770 |
| 1990 | 16839 | 4149 | 38344 | 45646 | 12560 | 1834 | 24478 | 51480 | 14442 | 13817 | 100 | 4631 | 46267 |
| 1991 | 12697 | 5317 | 40164 | 54733 | 15412 | 2196 | 21769 | 51963 | 4219 | 16161 | 110 | 7193 | 43834 |
| 1992 | 11761 | 5041 | 39045 | 58681 | 13598 | 2309 | 16178 | 42459 | - | 19663 | 130 | 15318 | 46971 |
| 1993 | 10139 | 4353 | 22558 | 57811 | 16576 | 3825 | 19152 | 29574 | - | 15532 | 100 | 16708 | 46868 |
| 1994 | 17001 | 4629 | 21795 | 59705 | 17336 | 4135 | 5733 | 22625 | - | 19288 | 419 | 20004 | 49074 |
| 1995 | 19572 | 5429 | 33074 | 62411 | 17116 | 4242 | 17570 | 18769 | 2400 | 21873 | 322 | 31067 | 53371 |
| 1996 | 19034 | 5726 | 34040 | 63888 | 23599 | 3617 | 18803 | 19331 | 2258 | 28998 | 290 | 36067 | 54091 |
| 1997 | 20328 | 6438 | 28474 | 74095 | 26357 | 5105 | 15043 | 23486 | 2330 | 30730 | 268 | 41380 | 58550 |
| 1998 | 21549 | 5830 | 29376 | 83484 | 28831 | 5908 | 17602 | 23023 | 1869 | 27442 | 438 | 47315 | 56133 |
| 1999 | 17467 | 4593 | 23855 | 79865 | 28754 | 6828 | 21309 | 16841 | 2121 | 32191 | 382 | 54915 | 63718 |
| 2000 | 17955 | 3696 | 23226 | 87801 | 34161 | 7930 | 29437 | 33937 | 2298 | 48587 | 668 | 56181 | 68166 |
| 2001 | 19216 | 2704 | 21013 | 87243 | 37617 | 7560 | 27122 | 30952 | 3729 | 78680 | 1024 | 65604 | 68240 |
| 2002 | 19102 | 3841 | 16266 | 99808 | 35228 | 7344 | 34301 | 26704 | 3089 | 70592 | 1354 | 72155 | 68472 |
| 2003 | 17409 | 4566 | 18857 | 101935 | 44311 | 6748 | 45155 | 32244 | 2888 | 80851 | 1469 | 87772 | 70947 |
| 2004 | 16648 | 1904 | 19002 | 107611 | 49278 | 6748 | 56681 | 24081 | 3466 | 80901 | 1180 | 104063 | 67029 |
| 2005 | 16218 | 1366 | 19094 | 107415 | 52670 | 7143 | 76023 | 24199 | 3157 | 11722 | 1943 | 127386 | 70918 |
| 2006 | 13134 | 2927 | 19914 | 111984 | 61239 | 7589 | 81384 | 28316 | 2927 | 58866 | 1447 | 181637 | 68075 |
| 2007 | 9537 | 4002 | 24161 | 112424 | 64575 | 6355 | 88035 | 25691 | 3503 | 50568 | 1591 | 193150 | 66053 |
| 2008 | 6778 | 6267 | 35089 | 115265 | 67761 | 4729 | 83856 | 31716 | 4597 | 41831 | 1546 | 198025 | 56625 |
| 2009 | 6671 | 6939 | 19576 | 136504 | 65992 | 2957 | 92276 | 28012 | 4837 | 21712 | 2185 | 231382 | 51361 |
| 2010 | 8150 | 5751 | 23023 | 135352 | 66932 | 2457 | 114245 | 29078 | 5933 | 17641 | 4298 | 265000 | 65562 |
| 2011e | 5098 | 5933 | 34059 | 144055 | 75413 | 2271 | 109358 | 31781 | 7496 | 10579 | 4366 | 308910 | 71552 |

Notes: Steam coal comprises anthracite, other bituminous coal and sub-bituminous coal for all countries.

PEOPLE'S REPUBLIC OF CHINA

Steam coal⁽¹⁾ exports by destination
(thousand tonnes)

| | 1978 ⁽²⁾ | 1985 | 1990 | 1995 | 2000 | 2005 | 2009 | 2010 | 2011e |
|----------------------------|---------------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| World | 2820 | 5270 | 13280 | 24062 | 48578 | 66413 | 21331 | 18814 | 10579 |
| OECD | 534 | 2663 | 6879 | 17495 | 33172 | 37207 | 15445 | 12842 | 8688 |
| Austria | - | - | - | - | - | - | - | - | - |
| Belgium | - | 112 | 292 | 406 | 109 | 297 | - | 114 | - |
| Canada | - | - | - | - | 114 | 70 | - | - | - |
| Czech Republic | - | - | - | - | - | - | - | - | - |
| Denmark | - | 29 | 57 | - | - | - | - | - | - |
| Finland | - | - | 100 | - | - | - | - | - | - |
| France | - | 46 | 1776 | 956 | 452 | 8 | 2 | - | - |
| Germany | 21 | 9 | 8 | 57 | - | 79 | - | - | 4 |
| Greece | - | - | - | - | 228 | - | - | - | - |
| Hungary | - | - | - | - | - | - | - | - | - |
| Israel | - | - | - | 13 | - | 2 | 3 | - | - |
| Italy | - | - | 310 | 455 | 383 | - | - | - | 3 |
| Japan | 513 | 2427 | 3258 | 7717 | 12585 | 15947 | 5906 | 6060 | 4206 |
| Korea | - | - | 838 | 7362 | 18760 | 18481 | 9250 | 6464 | 4455 |
| Mexico | - | - | - | - | 2 | 8 | 1 | - | - |
| Netherlands | - | 1 | 152 | 449 | 146 | 148 | 11 | - | 9 |
| Norway | - | - | 4 | - | 36 | 24 | - | 6 | - |
| Poland | - | - | - | - | - | - | 2 | - | - |
| Portugal | - | - | - | - | - | - | - | - | - |
| Spain | - | - | - | - | 199 | 184 | - | - | - |
| Sweden | - | - | 8 | - | - | - | - | - | - |
| Turkey | - | - | - | - | 43 | 1736 | 62 | 189 | - |
| United Kingdom | - | 34 | 69 | 80 | 107 | 163 | 205 | - | - |
| United States | - | - | - | - | 8 | 60 | 3 | 9 | 11 |
| Other OECD ⁽³⁾ | - | 5 | 7 | - | - | - | - | - | - |
| Non-OECD | 2286 | 2607 | 6401 | 6567 | 15406 | 29162 | 5886 | 5972 | 1891 |
| Brazil | - | - | - | - | 585 | 293 | 4 | - | - |
| Bulgaria | - | - | - | 29 | - | - | - | - | - |
| China, People's Rep. | - | - | - | - | - | - | - | - | - |
| Chinese Taipei | - | - | - | 3988 | 9076 | 20992 | 4872 | 4198 | 1872 |
| Hong Kong, China | - | 700 | 1708 | 1469 | 1963 | 993 | 122 | 395 | - |
| India | - | - | - | 264 | 1562 | 3492 | 12 | - | - |
| Morocco | - | - | - | - | 36 | 138 | - | - | - |
| Romania | - | - | - | - | - | - | - | - | - |
| Russian Federation | - | - | - | 103 | - | 3 | - | - | - |
| Ukraine | - | - | - | - | - | - | - | - | - |
| Other Africa | - | - | - | - | - | - | - | 2 | - |
| Other Asia | 2286 | 1907 | 4693 | 714 | 2182 | 3186 | 876 | 1377 | 16 |
| Other Eastern Europe | - | - | - | - | - | 65 | - | - | - |
| Other FSU | - | - | - | - | 2 | - | - | - | - |
| Other non-OECD Americas | - | - | - | - | - | - | - | - | - |
| Other Middle East | - | - | - | 13 | - | 2 | 3 | - | 3 |
| Non-specified/Other | - | - | - | - | - | 44 | - | - | - |

(1) Steam coal now comprises anthracite, other bituminous coal and sub-bituminous coal.

(2) Earliest year for which split by coal type is available.

(3) Australia, Chile, Estonia, Iceland, Ireland, Luxembourg, New Zealand, Slovak Republic, Slovenia and Switzerland.

Source: IEA/OECD Coal Statistics.

COAL

Medium-Term Market Report 2012

Market Trends and Projections to 2017

TABLES

Table 23 Coal demand, 2010-17, Base Case Scenario (BCS), in Mtce

| Mtce | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| OECD | 1 545 | 1 525 | 1 496 | 1 473 | 1 457 | -0.8% |
| OECD Americas | 768 | 745 | 683 | 663 | 653 | -2.2% |
| <i>United States</i> | 718 | 697 | 636 | 612 | 600 | -2.5% |
| OECD Europe | 423 | 426 | 450 | 445 | 436 | 0.4% |
| OECD Asia Oceania | 354 | 353 | 363 | 364 | 368 | 0.7% |
| Non-OECD | 3 507 | 3 754 | 4 042 | 4 359 | 4 712 | 3.9% |
| China | 2 387 | 2 562 | 2 757 | 2 965 | 3 190 | 3.7% |
| India | 410 | 446 | 501 | 566 | 643 | 6.3% |
| Africa and Middle East | 157 | 152 | 158 | 166 | 176 | 2.5% |
| Eastern Europe/Eurasia | 312 | 336 | 336 | 336 | 337 | 0.1% |
| Other developing Asia | 212 | 225 | 252 | 284 | 320 | 6.1% |
| Latin America | 29 | 34 | 37 | 42 | 46 | 5.1% |
| Total | 5 053 | 5 279 | 5 538 | 5 832 | 6 169 | 2.6% |

* Estimate.

Table 24 Coal demand, 2010-17, Chinese Slow-Down Case (CSDC), in Mtce

| Mtce | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| OECD | 1 545 | 1 525 | 1 500 | 1 485 | 1 476 | -0.5% |
| OECD Americas | 768 | 745 | 684 | 666 | 656 | -2.1% |
| <i>United States</i> | 718 | 697 | 637 | 615 | 604 | -2.4% |
| OECD Europe | 423 | 426 | 452 | 450 | 443 | 0.6% |
| OECD Asia Oceania | 354 | 353 | 364 | 370 | 377 | 1.1% |
| Non-OECD | 3 507 | 3 754 | 3 982 | 4 187 | 4 406 | 2.7% |
| China | 2 387 | 2 562 | 2 696 | 2 791 | 2 881 | 2.0% |
| India | 410 | 446 | 501 | 566 | 643 | 6.3% |
| Africa and Middle East | 157 | 152 | 158 | 166 | 176 | 2.5% |
| Eastern Europe/Eurasia | 312 | 336 | 336 | 336 | 337 | 0.1% |
| Other developing Asia | 212 | 225 | 253 | 286 | 323 | 6.2% |
| Latin America | 29 | 34 | 38 | 42 | 47 | 5.3% |
| Total | 5 053 | 5 279 | 5 482 | 5 672 | 5 883 | 1.8% |

* Estimate.

Table 25 Coal production, 2010-17, BCS, in Mtce

| Mtce | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|------------------------|--------------|--------------|--------------|--------------|--------------|-------------|
| OECD | 1 402 | 1 408 | 1 431 | 1 413 | 1 421 | 0.2% |
| OECD Americas | 815 | 828 | 794 | 763 | 759 | -1.4% |
| <i>United States</i> | 760 | 771 | 741 | 706 | 697 | -1.7% |
| OECD Europe | 241 | 244 | 252 | 245 | 235 | -0.7% |
| OECD Asia Oceania | 345 | 335 | 386 | 404 | 427 | 4.1% |
| Non-OECD | 3 757 | 4 101 | 4 107 | 4 419 | 4 748 | 2.5% |
| China | 2 346 | 2 593 | 2 575 | 2 774 | 2 986 | 2.4% |
| India | 349 | 362 | 368 | 399 | 440 | 3.3% |
| Africa and Middle East | 211 | 210 | 215 | 235 | 252 | 3.1% |
| Eastern Europe/Eurasia | 408 | 433 | 426 | 437 | 442 | 0.3% |
| Other developing Asia | 368 | 419 | 429 | 464 | 511 | 3.4% |
| Latin America | 75 | 83 | 93 | 110 | 118 | 5.9% |
| Total | 5 158 | 5 508 | 5 538 | 5 832 | 6 169 | 1.9% |

* Estimate.

Table 29 Seaborne steam coal imports, 2010-17, BCS, in Mtce

| | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|--------------------------|------------|------------|------------|------------|------------|-------------|
| Europe and Mediterranean | 143 | 153 | 154 | 154 | 155 | 0.2% |
| Japan | 108 | 103 | 106 | 107 | 106 | 0.4% |
| Korea | 76 | 82 | 83 | 81 | 86 | 0.8% |
| Chinese Taipei | 53 | 57 | 62 | 66 | 72 | 3.8% |
| China | 110 | 130 | 137 | 141 | 147 | 2.1% |
| India | 51 | 69 | 101 | 129 | 157 | 14.7% |
| Latin America | 12 | 16 | 17 | 18 | 19 | 2.7% |
| Other | 58 | 55 | 71 | 76 | 84 | 7.3% |
| Total | 611 | 665 | 731 | 773 | 825 | 3.7% |

* Estimate.

Table 30 Seaborne steam coal imports, 2010-17, CSDC, in Mtce

| | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|--------------------------|------------|------------|------------|------------|------------|-------------|
| Europe and Mediterranean | 143 | 153 | 155 | 159 | 161 | 0.9% |
| Japan | 108 | 103 | 107 | 110 | 110 | 1.1% |
| Korea | 76 | 82 | 84 | 83 | 89 | 1.4% |
| Chinese Taipei | 53 | 57 | 62 | 68 | 74 | 4.5% |
| China | 110 | 130 | 116 | 107 | 47 | -15.6% |
| India | 51 | 69 | 103 | 137 | 170 | 16.1% |
| Latin America | 12 | 16 | 17 | 18 | 19 | 3.3% |
| Other | 58 | 55 | 71 | 78 | 87 | 7.9% |
| Total | 611 | 665 | 715 | 761 | 758 | 2.2% |

* Estimate.

Table 31 Seaborne steam coal exports, 2010-17, BCS, in Mtce

| | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|---------------|------------|------------|------------|------------|------------|-------------|
| Australia | 119 | 126 | 146 | 160 | 182 | 6.3% |
| South Africa | 61 | 63 | 63 | 71 | 75 | 3.1% |
| Indonesia | 221 | 255 | 276 | 287 | 309 | 3.3% |
| Russia | 89 | 81 | 81 | 90 | 94 | 2.5% |
| Colombia | 62 | 70 | 74 | 87 | 92 | 4.7% |
| China | 13 | 9 | 6 | 4 | 3 | -16.0% |
| United States | 13 | 27 | 59 | 46 | 42 | 7.6% |
| Other | 33 | 35 | 27 | 29 | 29 | -3.3% |
| Total | 611 | 665 | 731 | 773 | 825 | 3.7% |

* Estimate.

Table 32 Seaborne steam coal exports, 2010-17, CSDC, in Mtce

| | 2010 | 2011* | 2013 | 2015 | 2017 | CAGR |
|---------------|------------|------------|------------|------------|------------|-------------|
| Australia | 119 | 126 | 145 | 155 | 165 | 4.6% |
| South Africa | 61 | 63 | 63 | 71 | 75 | 3.1% |
| Indonesia | 221 | 255 | 276 | 286 | 306 | 3.1% |
| Russia | 89 | 81 | 80 | 85 | 83 | 0.5% |
| Colombia | 62 | 70 | 74 | 87 | 92 | 4.7% |
| China | 13 | 9 | 6 | 4 | 3 | -16.0% |
| United States | 13 | 27 | 45 | 45 | 5 | -24.8% |
| Other | 33 | 35 | 27 | 29 | 28 | -3.7% |
| Total | 611 | 665 | 715 | 761 | 758 | 2.2% |

* Estimate.

Turkey's cement output sees robust growth

TURKEY'S CEMENT PRODUCTION continues to perform strongly and increased 43% year-on-year in February, according to the latest figures from the Turkish Cement Manufacturers' Association.

Cement output in February was 4.30mt, up from 2.67mt in the same month last year. Production in the first two months reached 8.25mt, up from 5.76mt in the January-February period in 2012. End-February inventories at cement plants were 0.76mt, down from 0.85mt at the same time last year.

Cement exports were also higher y-o-y in February at 0.78mt, up from 0.60mt previously. Exports for the January-February period are also much stronger y-o-y at 1.65mt, compared to 1.1mt previously.

Deliveries to the Libyan and Russian markets remain very strong and demand from Lebanon is also improving. This continues to help compensate for the loss of cement exports to markets in Syria and Iraq.

Queensland coal shipments keep rising

TOTAL COAL SHIPMENTS from Queensland kept rising in April, despite some lingering flood and rail repair impacts, according to confirmed terminal figures.

They showed shipments reached 14.60mt for the month, 16.4% higher year-on-year than 12.54mt previously, pushing the year-to-date total to 56.49mt, up 9.2% y-o-y against 51.73mt previously (see table).

| Australian coal shipments – April ('000t) | | | | |
|---|---------------|---------------|----------------|---------------|
| Port | April 13 | April 12 | YTD 13 | YTD 12 |
| Abbot Point | 1,795 | 1,184 | 6,310 | 4,182 |
| Dalrymple Bay | 4,937 | 4,368 | 19,772 | 16,592 |
| Hay Point | 2,459 | 2,279 | 11,154 | 10,161 |
| Gladstone | 4,586 | 3,960 | 16,650 | 17,734 |
| Brisbane | 820 | 745 | 2,608 | 3,056 |
| QLD Total | 14,597 | 12,536 | 56,494 | 51,725 |
| Newcastle | | | | |
| PWCS | 9,457 | 10,004 | 35,739 | 34,088 |
| NCIG | 3,223 | 1,537 | 10,981 | 7,010 |
| Pt Kembla | 1,054 | 1,365 | 3,896 | 4,569 |
| NSW Total | 13,734 | 12,898 | 50,616 | 45,958 |
| AUST Total | 28,231 | 25,434 | 107,110 | 97,683 |

Source: IHS McCloskey

The bulk of the monthly and YTD increases came from the major met coal terminals, Dalrymple Bay and Hay Point, while the major thermal coal terminal of Gladstone also improved in April, but was down on a YTD basis after bearing the brunt of flood and rail issues.

In New South Wales, monthly and YTD totals also rose y-o-y, mainly reflecting the ramp up of the NCIG terminal at Newcastle, with PWCS shipments also stronger against a slightly re-stated previous basis.

For Australia in total, April shipments rose to 28.23mt, 11.3% higher y-o-y than 25.37mt previously. This took the YTD total to 107.11mt, 9.7% higher y-o-y than 97.62mt previously.

Komipo's imports to reach 21mt/yr from 2017

KOREA MIDLAND POWER (Komipo) is looking to import 50% more coal from 2017 onwards, pushing its intake to around 21mt/yr from its current level of 14mt/yr.

The rise will be a result of the introduction of the two new 1GW units at the Boryeong thermal power plant, scheduled for completion around that time, the company stated.

A \$247.9m shipping contract – spanning 15 years – has been signed with compatriots Hyundai Merchant Marine and SW Shipping to bring in supplies from Australia and Indonesia.

Across the whole of last year the five Korean generators imported 79mt of coal, a level projected to be maintained this year.

A considerable ramp up in Korean import requirements is expected to come from 2014 onwards, when Kosep's 870MW Yeongheung and the 500MW Bukpyeong power plants come online, adding 8.4mt of demand, and bringing Korean imports to 82.4mt.

Five new power plants are set to start up in 2015 - EWP's 1GW Dangjin 9, Kospo's 1GW Samcheck 1.2, Kosep's Yeosu 1 and the independent 500MW Bukpyeong 2 and 500MW Dongbu Green 1.2, requiring a total of 19.8mt of coal, and bringing the overall total to 102.2mt.

In 2016, EWP's 1GW Dangjin 10, Kowepo's 1GW Taeon 9 and 1GW Taeon 10 and Komipo's 1GW New Boryeong 1 should become operational, ramping up coal needs by 14.9mt to 117.1mt in total.

The completion of Komipo's 1GW New Boryeong 2 in 2017 will see the need for a further 3.8mt, taking total demand to 120.9mt/yr.

Turkey's coal imports to grow to 25mt by 2023

STEAM COAL IMPORTS for electricity generation in Turkey could grow to 25mt by 2023 from 9mt in 2012 if all coal fired projects currently on the drawing board get built, according to Dr Sirri Uyanik, CEO of generator Isken, speaking at the IHS McCloskey *European Coal Outlook* conference in Nice.

According to Dr Uyanik, the government's vision for Turkey in 2023 is to become the tenth biggest economy worldwide and the fourth largest in Europe.

In order to achieve this, installed capacity for electricity generation has to increase from 57GW in 2012 to 90GW by 2020, or an additional annual installed capacity growth of 5GW.

Coal imports reached 27mt during 2012, of which 9mt were used for electricity generation, 5.8mt for coke and steel production, 2.4mt for industrial uses and the rest for domestic heating.

A total of 6mt of the total of 9mt imported for power plants came from Colombia, 1mt from South Africa and the rest from Russia, Indonesia, the CIS and other smaller players.

It has been estimated that by 2023 imports from Colombia could reach 15mt, 2mt from South Africa and 8mt from Russia, Indonesia, CIS and others.

Turkey has 3.88GW of coal fired power plants currently in operation: Isken (1.32GW), Eren (1.36GW), Icdas (1GW) and Colakoglu (1.96MW).

There are currently 2.2GW of coal plants under construction, 3GW licensed and 3GW have applied for licensing, for a total of 8.2GW of new capacity.

"Buyers are holding back...now. India and China seem to be quiet," a Singapore-based source said.

Demand from China is expected to improve in July as the approaching summer is expected to lead to lower hydro-electric power generation and higher need for electricity, an Indonesia-based source said.

"We are waiting for that (summer demand)," he said.

Higher freight rates are affecting demand, market sources said.

Platts assessed the daily Panamax freight rates from South Kalimantan to India's west coast at \$10.80/mt and to the east coast at \$10.30/mt, both unchanged from Friday, when it had assessed these rates higher on-day.

However, the Indonesia-based source said higher freight rates might be favourable for Indonesia, given its proximity to major coal consuming countries, as freight rates for cargoes from the US and Australia might be impacted due to their longer journeys.

Rains in Indonesia's Kalimantan coal-producing region continue, but it is not heavy enough to impact production, this source said.

Platts assessed the daily 90-day prices for FOB Kalimantan 5,900 kcal/kg GAR at \$90.25/mt, and 5,000 kcal/kg GAR at \$70.50/mt, both unchanged from Friday. They are down 75 cents and 25 cents, respectively, since April 2.

— Deepak Kannan

S Korean utilities ink 10-year deals for US thermal coal with Ambre

Perth — Two South Korean power utilities have signed in-principle agreements to buy US thermal coal from Ambre Energy in 10-year deals worth a combined \$2.5 billion, the Australia and US-based coal producer said in a statement Sunday.

The deals highlight the growing importance of US thermal coal to Asian coal buyers, the company added.

Korea South-East Power Co. has agreed to buy 3 million st/year and Korea Southern Power Co. 1 million st/year of thermal coal from Ambre's US coal mines over 10 years.

An Ambre spokesman said the deals were signed on Friday April 27.

The South Korean power companies will also invest A\$20 million (\$20.9 million) in Ambre Energy following its listing on the Australian Securities Exchange, which is planned for mid-2012, the company said. They will also provide more funding for expansion in the US and Australia, Ambre added.

Clarification

Platts would like to clarify that it has updated its methodologies for the Virtual Freight, Freight Differential and CIF ARA carbon-adjusted prices published daily on page 1 of Coal Trader International, to include the formulae for the calculation of these prices. The updated methodologies are available to view at: <http://www.platts.com/MethodologyAndSpecifications/Coal>

"With this strategic partnership we have put in place one of the final building blocks required to achieve our vision of creating an integrated thermal coal mining and export business," Ambre Energy managing director Edek Choros said in the company's statement.

South Korea's five power utilities currently import around 110 million mt/year of thermal coal, which comes mostly from Australia and Indonesia and to a lesser degree from Colombia, Russia and South Africa.

The coal supply agreements for Kosep and Kospo will start once Ambre Energy's Morrow Pacific coal export terminal is commissioned in the US state of Oregon, linked by the Union Pacific railway to coal mines in Colorado, Montana, Wyoming and Utah.

At Port Morrow on the US west coast, Ambre Energy plans to build a marine terminal that will receive thermal coal barged down the Columbia River for shipment to Asian markets on Panamax ships.

"Ambre Energy expects to make significant progress on this development over the coming year with a goal to barge and ship first coal to Asia in 2013-14," Ambre said.

The company currently has a 50% stake in two US coal mines, the Decker coal mine in Montana's Powder River Basin, which is a joint venture with Cloud Peak Energy; and the Black Butte mine, a joint venture with Anadarko Petroleum in Wyoming.

The Decker mine and Black Butte mines each produce about 3 million st/year of low ash, low sulfur sub-bituminous thermal coal, which is currently sold in the domestic market.

Millennium bulk terminals at Longview in the state of Washington is set to be the next coal-loading facility to be commissioned by Ambre Energy in 2014-15. The facility is located on the site of a former aluminum smelter operated by Alcoa that closed in 2001, according to information on Ambre's website.

The Millennium bulk terminals project is a joint venture between Ambre with a 62% stake and US coal producer Arch Coal with a 38% stake. It is accessible by the Union Pacific and Burlington Northern Santa Fe railways.

Ambre said on its website that its new port capacity will help it access the Asian seaborne market, a key obstacle currently.

Ambre has 100% interest in two coal deposits in Black Horn and Rosebud in Wyoming and stakes in coal-to-liquid fuel and coal exploration projects in Australia.

— Mike Cooper

China coal producer Shenhua Energy Q1 net profit up 6.3%

Huailua, Hunan — China Shenhua Energy Co., the listed subsidiary of China Shenhua Group, posted net profit of Yuan 11.18 billion (\$1.78 billion) in the first quarter of 2012, up 6.3% year on year, the company said Saturday.



Tuesday, April 30, 2013 2:17 PM ET

Japan imports record amounts of steam coal, LNG in FY'13

By Kalayaan Teodoro

Coal and LNG imports into Japan were at record highs for the fiscal year ended in March due to power utilities using more fossil fuels after the Fukushima Dai-ichi nuclear incident in 2011, Reuters reported April 30.

Japan imported 106.3 million tonnes of thermal coal in fiscal 2012-2013, up 4.5% year over year and surpassing the previous record of 105 million tonnes set in the fiscal year ended in March 2011, according to the report.

Japan, the world's top purchaser of LNG, also brought in 86.9 million tonnes of the fuel in fiscal 2012-2013, an increase of 4.4% over the previous fiscal year's record high.

The Japanese government reportedly is speeding up approval for new coal-fired power plants as coal and natural gas usage increases with the decline of nuclear power in the country.

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ASIA BUSINESS | May 21, 2013, 11:33 p.m. ET

Japan Increases Coal Use at Expense of Oil

Tepco Started Two Coal-Fired Units in April, Boosting Demand for Relatively Cheaper Coal While Limiting Oil Use

By MARI IWATA

TOKYO—Japan's thermal coal imports rose while oil imports fell in April, reflecting increased coal-fired output at electricity utilities. The trend of coal replacing relatively more expensive oil will likely continue until the summer, as higher temperatures could force generators to use all available capacity.

Japan's imports of thermal coal totaled 7.8 million metric tons in April, up 10% from last April, Ministry of Finance data showed Wednesday. Crude-oil imports fell 2.2% to 18.7 million kiloliters, or 3.93 million barrels a day, the ministry said.

—7 Last month, Tokyo Electric Power Co., Japan's largest power utility by capacity, started operations at its one-gigawatt Hitachinaka No. 2 unit and 600-megawatt Hirono No. 2 unit, both northeast of Tokyo, accounting for a significant portion of the increase in coal consumption.

→ A pair of one-gigawatt coal-fired units at Tohoku Electric Power Co.'s Haramachi generation site that came online in December also contributed to the on-year rise in coal demand. The No. 1 and No. 2 units at Haramachi had both been out of commission since the earthquake and tsunami in March 2011.

Both Tokyo Electric, known as Tepco, and Tohoku Electric cut their oil consumption as they increased power output from coal in a bid to cut costs, spokesmen at each company said previously. Generators save more than two-thirds when they burn coal instead of oil.

"Coal demand will remain strong because utilities use it as base load," said Yuji Morita, senior research fellow at the Institute of Energy Economics Japan, adding that "weak oil demand may be only temporary at a time when power consumption is seasonally low."

The Japan Meteorological Agency has forecast temperatures will likely be somewhat higher than normal this summer.

Write to Mari Iwata at mari.iwata@dowjones.com

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Thursday, April 25, 2013 10:59 AM ET

Report: Japan to fast track approval of new coal-fired power plants

By Kalayaan Teodoro

Japan is planning to fast track the environmental assessment process for new coal-fired power plants as the nation's power sector is under pressure to drive down costs, *The Canberra Times* of Australia reported April 26, citing Japanese local publications.

The normal approval process for new coal-fired plants can take up to four years, according to the report. The Japanese government aims to reduce the processing time to 12 months maximum. The country's commitment to reduce 2020 carbon emissions by 25% will also be revised in October, according to local media.

Coal-fired power plants that have started operations in 2013 are expected to consume 11.5 million tonnes of coal per year, *The Times* reported.

Meanwhile, [Tokyo Electric Power Co.](#) has called for tenders for the construction of new coal-fired power stations with 2,600 MW of capacity to replace lost nuclear capacity and aims to have the stations in operation by the end of the decade. The company is reportedly adding coal-fired generation capacity of about 2.6 GW from two new plants that came online in April and electricity bought from two units owned by [Tohoku Electric Power Co. Inc.](#)

The closure of much of Japan's nuclear power after the Fukushima Dai-ichi incident has caused the country to rely on expensive oil as fuel for its power plants, driving up energy bills and causing the government to look to coal as a cheaper alternative. Tohoku Electric Power recently [settled](#) a steam coal contract with [Xstrata plc](#) at a four-year-low price of \$95/tonne.

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Leeuwpaan, Matla and Arnot produce 3 million mt/year, 14 million mt/year and 5 million mt/year of coal respectively and mainly supply thermal coal to power stations owned by state-run generator Eskom in "cost-plus" agreements.

However, South African national power generator, Eskom, admitted Thursday that there has been very little coal delivered to its power stations during the 10-day wildcat strikes.

Eskom spokesman Hilary Joffe said the utility had 48 days worth of coal stockpiles Thursday, which were running down as the strikes wear on.

"There has been very little in the way of coal deliveries since the strike began and we are becoming concerned. At this time of year we are usually building up our stockpiles ready for winter, but instead we have had to run them down," Joffe said.

Anglo workers briefly down tools

Workers at Anglo American's Kleinkopje thermal coal mine also briefly downed tools Tuesday, indicating that the spate of unofficial strikes may be spreading to other South African coal producers.

An Anglo spokesman confirmed Wednesday that workers at the mine near Witbank in the Mpumalanga province had staged an illegal walkout Tuesday morning, but the dispute had been resolved by late afternoon, with the night shift unaffected.

The spokesman did not specify the reasons for the strike, although he told Platts that it was an "isolated incident over internal issues specific to the mine" and Anglo did not expect it to spread to any of its other operations.

— *Jacqueline Holman & Chris Bishop*

Turkey licenses new 600 MW coal-fired power plant

Istanbul — Turkey's energy regulator EPDK has issued a generating license to Turkish company Filiz Enerji for a 600 MW thermal plant to be sited at Lapseki on the south side of the Dardanelles straits on the Sea of Marmara.

Speaking to Platts, a spokesman for Filiz confirmed that the newly licensed plant will burn imported hard coal and that the company is tentatively planning to commission it by the end of 2015.

Interest in developing new coal-fired plants in Turkey has surged since announcements last year by energy minister Taner Yildiz that the country needs to diversify away from over-reliance on imported gas.

And at the end of last year deputy prime minister Ali Babacan said that an existing investment incentive scheme will be extended to include the development of coal-fired power plants.

Already this year the EPDK has issued a generating license to Turkey's park Elektrik for a 500 MW plant burning locally produced lignite.

In addition, the EPDK has received license applications

from two companies planning to develop plant burning locally produced lignite: KKK Madencilik (660 MW) and Teyo Yatirim (720 MW), and from three companies planning to develop plants burning imported coal: Sanko (810 MW), Atakas Elektrik (660 MW) and Suba Enerji (1,370 MW).

Late last year saw the signing of an MoU between Turkey and Abu Dhabi under which Abu Dhabi power company TAQA will develop up to 8 GW of new generating capacity burning lignite from Turkey's giant Afsin Elbistan lignite field.

— *David O'Byrne*

Production suspended at part of Prodeco's Calenturitas coal mine

Barranquilla — Colombia's environment authority ANLA has suspended production in a section of Glencore unit Prodeco's Calenturitas thermal coal mine as a preventive measure for alleged violations to its environmental license, Prodeco said late Monday.

ANLA specifically prohibited mining from the CD section of the Calenturitas mine, stating that Prodeco mined coal outside of the permitted territory as stipulated in the license, Prodeco said in a statement.

Prodeco has decided to abide with the measure, but is appealing, it said.

"The preventive measure imposed by ANLA implies, unfortunately, various effects in the normal progress of our operations, including a reduction in coal production in the Calenturitas mine, the temporary suspension of work done by our employees on the CD sector, and the corresponding effect in royalty and tax payments to the nation," Prodeco said.

The miner, however, did not specify how much coal would be shut in due to the measure.

Prodeco mined 14.8 million mt of coal in 2012, a 1% increase on-year, making it Colombia's third largest thermal coal exporter. The company is also on-track to increase its production to 20 million mt by 2014, with the construction of a new coal export terminal, Puerto Nuevo, which should be operational by the end of the first half of 2013.

Prodeco was one of the few companies not affected by a series of export disruptions in December, which included an ANLA temporary ban on coal exports from Colombia's second-largest exporter, Drummond and an ongoing strike at Colombia's largest exporter, Cerrejon.

— *Jaime Concha*

India's Reliance Power commissions first unit of Sasan UMPP

New Delhi — Indian private sector power producer Reliance Power Monday announced that the first 660 MW unit at its 3,960 MW ultra mega power project (UMPP) in

Sasan, Madhya Pradesh in central India has been successfully synchronized.

Coal production has already started from two captive blocks allotted for the Sasan UMPP, while the third coal block has also received forest clearance and is under development, the company said in a statement. The blocks have a production capacity of about 20 million mt/year.

Reliance Power said the project would be the first integrated coal mine and super-critical power plant to be commissioned in India.

It added that the project's electricity generated would be sold to 14 distribution companies across seven states benefiting an estimated 350 million people.

Reliance Power, part of the Reliance Group, has a generating capacity of 1,840 MW. It is also developing three coal mines in Indonesia.

Sasan is the second UMPP to be connected to the grid after Tata Power's 4,000 MW UMPP in Mundra, Gujarat. The Mundra UMPP recently became fully operational.

— Sapna Dogra

COKING COAL / COKE / STEEL

Asia coking coal seaborne prices continue to dip on Chinese chill

Singapore — Coking coal prices fell further Friday as Chinese steelmakers continued to retreat from the spot market because of uncertainty in the steel market.

Several sources from large Chinese trading houses Friday were reluctant to discuss anything related to price since they felt that it was meaningless in the current illiquid market.

"We are expecting most domestic miners to cut prices at the end of March and early April," a Beijing-based trader said. "I will wait for it."

A trading source agreed that, given the current faltering steel prices, procurement of raw materials such as coking coal would necessarily have to wait.

"People just don't have confidence in the near-term market," a second Beijing trader said. He believed that BHP Mitsubishi Alliance's Saraji HCC would have great difficulty finding a buyer even if it was offered at \$172/mt CFR China.

Perhaps reflective of current souring sentiment, another trading source said it is "meaningless talking about prices. It is impossible to make any deals now."

Platts assessed premium low-vol hard coking coals \$2/mt lower at \$159/mt FOB Australia Friday. Second-tier HCCs also declined by \$1.50/mt to \$144.50/mt FOB.

A purchasing manager from a large Chinese steel mill said his plant had changed their blending plans and was now aiming for second-tier HCC instead of premium low-vols HCC. "We don't have any purchasing plan now for Peak Downs or Saraji," he said.

He said he might consider \$150/mt CFR China for Australian 60-63% CSR HCC with 21-22% VM and 7 CSN.

Indicative offers were also heard by a trading source at \$155/mt CFR China for Indonesia mid-vol HCC with 60% CSR.

There was however some support to Friday's market from an end-user who was willing to pay around \$160/mt CFR China for such material, though only for a small volume.

Chinese mills plan to cut coal inventory

Smaller mills in south China were also said to be planning to cut coking coal inventory to only seven days — which places constraints on accepting any Panamax cargoes, one trader said.

Such steps, unheard of before, would mean mills would be looking more towards port stocks rather than seaborne shipments, the source added.

"70,000 mt is too much for some mills to digest."

One trader withdrew his bid for a Panamax cargo yesterday due to interest only in smaller volumes.

Another mill situated in central China also said that their coking coal inventories also have been reduced from 25-30 days to 15 days.

A source who recently visited the ports at Jintang said that there was little activity going on in the coal yards — another sign that there was lack of even domestic coking coal trading activity going on.

"It is just not a good time to buy or sell anything."

In the domestic coking coal market in north China, coking coal prices had also started to decline due to dropping coke prices and reduced demand from coke plants.

A Beijing-based trader also reported quite weak demand from coke plants at Tangshan region: "They have cut production to 70-80% from full capacity."

Coke plants and mills have sent inquiries to major Chinese miners to cut price.

Separate trading sources reported offers for Australian second-tier HCC with 60-63% CSR and above 20% VM at only Yuan 1,150-1,160/mt ex-stock, and the seller was "open for negotiation."

Canadian high-CSR HCC was also reported to be indicatively offer at Yuan 1,200/mt ex-stock for 65-70% CSR, 25% VM, 85 G-value and 15 Y-value.

Meanwhile, a Hebei-based mill source said he had just bought an Australian premium low-vol HCC at Yuan 1,290/mt delivered to mill with credit.

Platts assessed premium hard coking coal in northern China at Yuan 1,270/mt ex-stock (\$204/mt), Yuan 50/mt lower compared with last week, and standard-quality HCC fell by Yuan 70/mt to Yuan 1,160/mt ex-stock. Prices include VAT.

Indian coke tenders

Elsewhere, the Bokaro plant of India's state-owned Steel Authority of India (SAIL) awarded its coke procurement tender at Rupee 17,700/mt delivered to

becoming a significant supplier to the export market, he said it will in 5-10 years but not in the next 2-3 years.

He said the outlook for the US domestic market continues to be bleak, with a wave of environmental legislation removing 40GW of coal-fired generating capacity in the next couple of years.

Natural gas continues to have the biggest impact on coal burn in the US, but with gas prices moving up to and stabilising at around \$4, Vining said gas storage levels are beginning to decline.

“The question is, are the gas producers going to produce themselves back into a \$2-3 market? Probably not”.

And while coal stockpiles in the US remain very high, Vining said there is a glimmer of hope on the horizon that stock levels will finally begin to erode.

He said: “We’re still fat, we’ve still got a lot of inventories in the US. But \$4 gas and the continuation of favourable weather patterns should see inventories drop to normal by the end of the year.”

US exports hit record level in March

STRONG DEMAND FOR thermal and coking coal pushed US exports to a new record high in March, surpassing any previous total since the US government began compiling data in 1973.

Exports for the month totalled 13.64mt, up 42% from February’s 8.63mt and 23.2% higher year-on-year, according to data released by the US International Trade Commission (USITC).

Thermal coal exports in March reached 6.22mt, up 69.8% from February’s total of 3.30mt and up 25% year-on-year.

More than half of the thermal coal, approximately 3.80mt, was delivered to Europe. The United Kingdom received 1.16mt of US coal in March, the first time the total amount surpassed 1.0mt since July 2012. Exports to the Netherlands (0.933mt); Italy (0.533mt); France (0.456mt) and Germany (0.372mt) also posted year-on-year increases.

Coking coal exports in March totalled 7.42mt, up 25.9% from February’s total of 5.32mt and 22% higher than the same month in 2012.

Asia was the biggest destination for coking coal, taking 3.69mt. Exports to China were 1.27mt in March, the highest amount since June of last year. Exports to Japan hit 0.64mt in March followed by South Korea (0.55mt) and India (0.34mt). With the exception of India, exports to all Asian destinations increased year-on-year.

Brazil was the second largest export destination for US coking coal in March receiving 0.88mt, an increase of 21% year-on-year.

Coking coal exports to Europe declined 12% year-on-year in March to 2.38mt. Turkey remains one of the bright spots in the European market for US coking coal. The country took 0.74mt in March, the highest amount on record.

Exports of both thermal and coking coal in Q1 totalled 31.84mt, up by 11% from the same corresponding period in 2012. Coking coal exports in Q1 totalled 18.45mt up 4.8% year-on-year, while thermal exports during the period totalled 13.39mt, up 21.2% from 2012.

Industry observers believe March will be the high point for US exports in 2013.

“We are really impressed with the amount of thermal coal that shipped in March,” one source said. “Coal from Central Appalachia and the Illinois Basin made a strong showing. However, the general consensus is that US exports will decline by 10 to 15mt this year. The reduction could even be higher, so March will probably be the best month for US exports. We believe export numbers will begin to fall going forward.”

Indian imports could hit 266mt by 2017 – Mjunction

TOTAL INDIAN COAL imports will reach between 185-266mt by 2017, from current import levels of around 135mt, due to increasing demand and a growing shortfall from domestic supply, Viresh Oberoi, CEO and managing director of broker mjunction told delegates at the *IHS McCloskey European Coal Outlook Conference* in Nice.

Oberoi said the wide range of predicted import levels is largely because of uncertainty around the growth in domestic coal production over the same period.

The growth in coal demand will be fuelled by increased consumption from the power, steel and cement sectors, he said.

Total Indian power capacity is expected to increase by 100,000MW between 2012-17, with around 70,000MW being met by coal-fired capacity, compared to levels in 2011, according to Oberoi. This will lead to utilities and captive power plants consuming a total of 739mt/yr of thermal by 2017, he added.

In terms of steel production, India’s total annual capacity will rise to 126mt by 2017 with an addition of 52mt compared to 2011 levels, while steel plants will consume 67mt/yr of met coal, he said.

Meanwhile, cement production will rise to around 407mt by 2017, compared to 224mt in 2011, with cement producers consuming around 48mt/yr of thermal.

Coal imports are expected to be made up of between 110-135mt of Indonesian material, 40-48mt from Australia, 25-37mt from South Africa and 10-20mt from the US and elsewhere, according to Oberoi.

Projected coal demand including domestic and imports is expected to hit 981mt/yr.

In terms of domestic coal production, the current level of 560mt/yr would rise to 715mt/yr based on current rates, but to 795mt/yr in a “best case scenario”, as output fails to keep pace with growing demand, he said.

In 2012, India imported 35.20mt of met coal and 123mt of thermal coal.

There is already \$1.12tn allocated for infrastructure growth in the government’s 12th five-year plan from 2012-2017, with electricity making up \$300bn of the total and ports and railways a combined \$144bn.

PEOPLE

Linares ratified as Drummond president

JOSE MIGUEL LINARES has been ratified as Drummond’s president in Colombia after serving as interim president since January 1 this year.

He replaces Augusto Jiménez, who stepped down at the end of last year after 23 years in charge of one of Colombia’s largest coal producers.

Prior to this, Linares was vice president of legal and corporate affairs at Drummond. He has been working at the company for more than 23 years. The appointment has been well received by the company’s workforce ahead of upcoming pay negotiations. Linares is well liked by the workers and the government bodies in charge of coal.

Linares said: “This appointment is a vote of confidence that the Drummond family, company executives and colleagues have placed in me after 23 years of career growth within the company.”

where it plans to retire four coal units totaling 595 MW. It is also retiring two coal units, totaling 323 MW at its Yorktown plant, also in Virginia, and keep an 818-MW oil-fired unit running as a peaker.

— Peter Maloney

Coal stocks at Indian ports down marginally on week: Interocean

Singapore—Major ports in India had about 10.3 million mt of coal stockpiles as of Saturday, compared with 10.7 million mt a week earlier, according to data released Monday by Interocean Group, a New Delhi based ship broker.

The stocks recorded Saturday included 8.28 million mt of thermal coal, 2.01 million mt of coking coal, and 9,168 mt of anthracite and petcoke, the data showed.

Paradip port on India's east coast had the highest total stockpile, 2.7 million mt, which was flat week on week. Next was Krishnapatanam port with 1.4 million mt, down from about 2 million mt the previous week.

Haldia port on the east coast had the highest stockpile of coking coal at 587,200 mt, down from 609,700 mt a week earlier, the data showed.

India's coal imports have remained high due to a shortage in domestic supply. In March, the country imported about 11.8 million mt of coal, of which about 2.1 million mt was coking coal and the rest was thermal coal.

— Deepak Kannan

Petrovietnam to push ahead with coal-fired power plants in next 3 months

London—State-owned Vietnam Oil and Gas Group (Petrovietnam) will speed up procedures and arrange capital required for the timely construction of its coal-fired power plants during the next three months, the chairman of the energy company said earlier this month.

The projects include Vung Ang-1, Thai Binh-2, Long Phu-1 and Song Hau-1 coal-fired independent power

producer plants, which together have about 5,000 megawatts of capacity.

Petrovietnam also owns a 6-MW operational wind farm at Phu Quy and a 3.2-MW small hydropower plant at Nam Cat. However, most of its future projects will be large-scale coal-fired plants, with the company planning to supply 20% of national output by 2015.

The first of Petrovietnam's coal-fired projects that is scheduled to enter operation is the 1,200-MW Vung Ang-1 plant in the Vung Ang Economic Zone in Ha Tinh province. The two 600-MW subcritical units began construction in 2009 and are scheduled to enter operation in June 2013 and December 2013, respectively.

The plant will burn 3.2 million mt/year of indigenous coal with a heating value of around 5,050 kcal/kg and an ash content of 25%, with the coal being supplied by the state miner Vinacomin and delivered through dedicated wharves at Vung Ang port.

Several other coal-fired projects are due to follow the commissioning of Vung Ang-1. The two 600-MW subcritical units comprising the 1,200-MW Thai Binh-2 project at My Loc commune in the Thai Thuy district of Thai Binh province secured an investment license in 2012 and are scheduled to be commissioned in September 2015 and March 2016, respectively.

Thai Binh-2 will be supplied by Vinacomin with around 3 million mt/year of indigenous coal with a heating value of around 5,300 kcal/kg and an ash content of up to 30%.

1,200-MW Long Phu-1 to use imported coal

While the Vung Ang-1 and Thai Binh-2 projects are both predicated on the use of local coal, the 1,200-MW Long Phu-1 project at Long Duc commune in the Long Phu district of Soc Trang province is projected to use imported coal. Long Phu-1 will comprise two 600-MW supercritical units that are projected to use 3.2 million mt/year of coal imported from Indonesia and Australia, and with a heating value of around 5,725 kcal/kg and maximum ash content of around 15%.

The 1,200-MW, \$1.633-billion Song Hau-1 project at Phu Huu A commune in the Chau Thanh district of Hau Giang province is similar to Long Phu-1. It will comprise two 600-MW supercritical units that are projected to use

Petrovietnam projects offered for foreign investment

| Project | Owner | Province | Capacity | Type | COD | Investment, \$m | % offered |
|---------------|--------------|------------|----------|-------|------------|-----------------|-----------|
| Nhon Trach-1 | PV Power | Dong Nai | 450 | Gas | 2009 | 322 | 49 |
| Song Hau-1 | Petrovietnam | Hau Giang | 1,200 | Coal | 2017, 2018 | 1,633 | 49 |
| Thai Binh-2 | Petrovietnam | Thai Binh | 1,200 | Coal | 2015, 2016 | 1,656 | 49 |
| Vung Ang-1 | Petrovietnam | Ha Tinh | 1,200 | Coal | 2013 | 1,595 | 49 |
| Quang Trach-1 | Petrovietnam | Quang Binh | 1,200 | Coal | 2016 | 1,778 | 49 |
| Long Phu-1 | Petrovietnam | Soc Trang | 1,200 | Coal | 2015, 2016 | 1,595 | 49 |
| Hua Na | PV Power | Nghe An | 180 | Hydro | 2013, 2013 | 288 | 49 |
| Dak Drinh | PV Power | Quang Ngai | 125 | Hydro | 2013 | 238 | 35 |
| Hoa Gang | Petrovietnam | Binh Thuan | 49.5 | Wind | 2014 | 83 | 49 |

Source: Petrovietnam

The country's first-quarter coal imports grew 27.3% year over year to 63.8 million tonnes, as a domestic surfeit of the resource lowered prices of imported coal and encouraged utilities to look to overseas suppliers, Reuters said.

Imports of coking coal in March rose 11.9% to 4.6 million tonnes compared to the same month in 2012, bringing total imports of the steelmaking fuel to 17.2 million tonnes.

Indonesia was once again the top coal supplier to China, selling 6.0 million tonnes in March, up from 5.1 million tonnes in the previous month and up almost 19% year on year. Traders told Reuters that the surge in Indonesian imports was due to China's increased demand for low-sulfur subbituminous coal, which is often used for blending purposes.

China's imports from Australia were at 5.7 million tonnes in March, up 55.7% compared to the year-ago period.

The price of thermal coal at Qinhuangdao, China's largest shipping port for the fuel, fell to its lowest in more than three years, according to an April 22 Bloomberg News report. Prices for coal spec'd at 5,500 kilocalories per kilogram dropped to 605 Chinese yuan from 615 yuan as of April 21, according to data from the China Coal Transport and Distribution Association obtained by Bloomberg.

Coal stockpiles dropped 15% to a five-month low of 5.8 million tonnes from the week of April 15, due to maintenance work at major coal railway Daqin. The railway, which connects Shanxi province to Qinhuangdao and handles a third of all rail-transport coal in China, is conducting maintenance from April 13 to May 7. Around 290,000 tonnes per day of coal shipments are affected, according to the association.

Even with the resurgence of coal imports, producers and traders expect shipments to fall in the second quarter as Chinese demand for thermal coal stalls, Reuters said. A senior industry official recently said that the "golden decade" of coal power ended in 2011.

As of April 19, US\$1 was equivalent to 6.18 Chinese yuan.

Report: Malaysia short-lists 5 companies to build 2,000-MW coal plant

Malaysia's Energy Commission has initially short-listed five companies for the 2,000-MW Project 3B coal-fired power plant to be developed at their respective proposed sites in the country, London's *Energy Business Review* reported April 19.

The plant will be built at a cost of 12 billion Malaysian ringgit and commissioned in stages in October 2018 and April 2019, according to the report.

The five companies are 1Malaysia Development, Formis Resources, Tenaga Nasional, Malakoff and YTL Power International. All the bidders have either foreign or local partners, the report said.

1Malaysia Development plans to build the plant at Negri Sembilan, while Malakoff has proposed Selangor. Formis and YTL Power have both proposed Johor, while TNB plans to build the plant at Perak, according to the report.

The commission received seven requests for qualification submissions for the power plant project on March 11.

As of April 18, US\$1 was equivalent to 3.03 Malaysian ringgit.

Lots of interest in Rio Tinto's assets for sale, CFO says

Global miner Rio Tinto Plc told shareholders that there is a lot of interest in the company's list of assets up for sale, Reuters reported April 18.

The company addressed concerns that it could not find buyers at a good price, Reuters said. Included in the list of assets on the market are \$3 billion of stakes in several thermal coal mines in Australia.

"It is the case that we will have a lot of appetite for the assets that we are considering the sale of," said Guy Elliott, Rio Tinto's outgoing CFO. "There are plenty of buyers — many of them customers, sovereign wealth funds, competitors. There is a long list of them that is well financed and able to buy these assets."

In January, Rio Tinto recorded a massive write-down on its investments, including coal assets in Mozambique, which caused former CEO Tom Albanese to step down. Rio Tinto said there was still potential for its Mozambican operations, according to the report.

Rio Tinto, which is in danger of a credit rating downgrade, recorded a full-year 2012 loss of \$3 billion.

Poland to move away from coal, seek low-cost alternatives, minister says

Poland is moving away from its reliance on coal-fired power generation and is seeking low-cost electricity alternatives, Bloomberg News reported April 25, citing Environment Minister Marcin Korolec.

Korolec said he is seeking to phase out subsidies for clean power and fossil fuels, even as the country moves to replace its aging power stations. "Maybe we have to introduce a phase-out of energy subsidies in all areas, a phase-out of fossil fuel and also renewable energies and concentrate on those technologies which are commercial," he said at an energy conference in New York.

Poland is facing pressure from the European Commission to implement rules for renewable energy. The nation was one of those that voted to block the EU's proposal to increase the price of CO2 emissions, according to the report.

Korolec was skeptical about carbon capture and storage technology, which could reduce pollution from Poland's coal-fired plants. "CCS is a beautifully romantic story, but I don't see it. It is cheaper to build a gas plant," he said.

Europe will need more coal- and gas-fired power plants to back up the use of renewables in power generation, according to a grid operators group in the region.

Scottish Coal goes into administration, cuts 590 jobs

Scottish Coal has cut 590 jobs at its mining operations in the U.K., and its directors have put the company into administration, an alternative to liquidation, BBC News reported April 19.

Scottish Coal is a unit of Scottish Resources Group plc, which said in March that it planned to lay off 450 workers due to financial woes brought about by weakening coal prices and high operating costs. The company's six open-cast coal mines in East Ayrshire, South Lanarkshire and Fife have been shut down.

The company's administrators plan to secure the sale of certain operations as well as key assets in the coming weeks, BBC said. "It is still possible that mining operations will continue and offer future employment prospects for at least some of the people who have lost their jobs today," said Blair Nimmo of KPMG, joint provisional liquidator.

The U.K. coal sector has seen a number of challenges in the past months, with miners UK Coal Mine Holdings Ltd. and Hargreaves Services closing down some operations and ATH Resources Plc going into administration.

India's Jindal Steel to revive Mmamabula energy project in Botswana

India's Jindal Steel & Power, or JSPL, aims to revive the Mmamabula energy project in central Botswana, Xinhua News reported April 19, citing local media.

JSPL plans to develop the 2.7 billion-tonne Mmamabula coal asset, targeting construction of a 3,600-MW power station and exporting millions of tonnes of the fuel annually. The company has finished technical and financial studies for eight mining complexes, and there are multiple studies ongoing for power generation, according to Tony Zebert, head of Jindal Africa.

"We are looking at coal exports through Walvis Bay in Namibia and development of power station within 36 to 42 months, depending on discussions we are having here and within the region as well as the regional power situation," Zebert said.

JSPL also plans to include coal-to-liquids technology as part of the project, according to the report. "We will be bringing [coal-to-liquids] technology and expertise from India to Africa," Zebert said.

In September 2012, JSPL acquired CIC Energy, which had been developing the project prior to the acquisition.

Yancoal Australia's coal sales decline 12% in Q1'13

Yancoal Australia Ltd. reported sales of 1.4 million tonnes of metallurgical coal and 1.9 million tonnes of thermal coal from its equity interests in Australian coal mines, according to the company's production report for the March quarter.

Overall coal sales declined 12% from the year-ago quarter, the company said.

Yancoal produced 5.2 million tonnes of run-of-mine coal in the quarter ended March, up 11% from 4.7 million tonnes in the comparable period of

The company's thermal operations in Mozambique were impacted by heavy rain in January and February with a force majeure called for two weeks due to the closure of the rail system.

In 2012, Rio Tinto produced 20.7 million tonnes of thermal coal, up from 17.8 million tonnes in 2011.

Some analysts have suggested that the global thermal coal market remains oversupplied and more production cuts are needed to restore market balance, which is not forthcoming. Meanwhile, annual price negotiations between Japanese utilities and Australian producers "appear to be in stalemate," according to one recent report.

Rio Tinto said production of hard coking coal used in steelmaking in the first quarter 2013 was 1.5 million tons, 10% below the year-ago period. Coal production at its Hail Creek operation in Queensland was impacted by lower-than-expected overburden removal during 2012, as well as wet weather. Additionally, a planned shutdown of the Kestrel mine coal-handling plant was undertaken during March for upgrade works as part of the Kestrel mine extension.

The company expects that 2013 hard coking coal production will be 8.5 million tonnes, up from 8 million tonnes in 2012.

Semisoft coal production rose 72% in the first quarter 2013 to 1 million tonnes "as operations in the Hunter Valley changed their production profile to take advantage of the stronger short term market for alternate product to hard coking coal due to wet weather in Queensland," Rio Tinto said.

For full year 2013, semisoft coal production is expected to be 4 million tonnes, up from 3.3 million tonnes in 2012.

COMPANY REFERENCED IN THIS ARTICLE:

Rio Tinto Plc

PR: Rio Tinto PLC: First quarter 2013 operations review

[E-mail this story.](#)

Report: Demand for Indonesia's low-grade coal surges

by Rohan Somwanshi

The demand for Indonesia's low-grade coal has been increasing due to its voluminous supply in the country, Indonesia's *Jakarta Globe* reported April 16, citing a representative of the coal mining industry.

"Five years ago, the demand for Indonesian coal was typically for that with a heating content above 5,000 to 5,500 kilocalories per kilogram. Now the demand is increasing significantly for coal with a heating content of 4,200 [kilocalories per kilogram] and demand for coal with a heating content of 3,800 is starting to steadily increase," said Bob Kamandanu, chairman of the Indonesian Coal Mining Association.

"The buyers acknowledged that Indonesia has plenty of middle- or low-grade coal, so they based their power plant construction on the abundant supply from this country," Kamandanu added.

Low-grade coal contains heating value below 4,500 kilocalories per kilogram, according to the report.

Indonesia's coal production grew 2% to 3% in the first quarter of 2013, while low-grade coal output rose 20% in the same period, according to Kamandanu. The country's low-grade coal is expected to account for 50% of the country's total output in 2013. Indonesia's

coal output may reach 400 million tonnes in 2013, up 5.2% from 2012 levels.

According to an earlier report, Indonesia has started implementing a plan that will no longer allow exports of low-quality coal by the end of 2013, in a move to revive the country's power sector.

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Indonesia meets coal target for Q1, produces 99 million tonnes

by Kalayaan Teodoro

Indonesia has met its coal production target for the first quarter, *The Jakarta Post* reported April 16, citing a government official.

The country produced 99 million tonnes of coal in the first three months of 2013, which is the initial target set by the Energy and Mineral Resources Ministry, according to Edi Prasodjo, coal director of the ministry.

About 80% of the output, or 80 million tonnes, was exported to major coal consumers such as China and India, Prasodjo said.

Indonesia, the world's largest thermal coal exporter, is targeting to produce 391 million tonnes of thermal coal for 2013. Roughly 74 million tonnes will be allocated for domestic customers as part of the country's domestic market obligation, and the rest will be exported, Prasodjo said.

The Indonesian Coal Mining Association estimated that the country's 2013 coal production could reach 400 million tonnes, with exports reaching 330 million tonnes, according to earlier reports.

[E-mail this story.](#)

Cardero Resource further extends option to acquire met coal project in Canada

by Rohan Somwanshi

Canada-listed Cardero Resource Corp. said April 16 that it has extended an option to acquire four coal licenses that form part of the Carbon Creek metallurgical coal project in British Columbia.

The deadline to exercise the option has now been extended to April 22 from April 14, Cardero said in a news release. Under the new terms agreed with the targeted private company, Cardero paid a nonrefundable deposit of C\$1 million on April 12, with C\$3 million balance and 400,000 shares due upon exercise of the option.

Cardero said it also is negotiating a private placement of US\$5.5 million of senior secured notes with certain affiliates of Luxor Capital Group LP. The net proceeds of the notes will be used to fund the option and for working capital purposes.

Under the private placement offering, the notes are expected to have a one-year term. The notes will be secured by a general security agreement over the assets of the company, as well as a specific pledge of the shares of Cardero Coal Ltd.

As a bonus for subscribing for and purchasing the notes, the holders of the notes will, subject to regulatory process, be issued an aggregate of 2 million common shares of the company. The bonus shares will be subject to a four-month hold period in Canada from the date of issuance, according to the release.

mates to \$175/mt CFR after deducting 17% VAT and Yuan 30/mt port charges.

"Highway transportation trouble caused by cold weather keeps supply tight, and inventory levels at mills were not high enough to ignore the effect," a purchasing manager with a north China steelmaker said, "so port stock HCC prices saw some increase."

However, purchasing managers said they are very reluctant to accept the increase given lean profits at mills currently, and one pegged the tradable level at Yuan 1,280-1,290/mt ex-stock, equivalent to \$169-171/mt CFR.

Meanwhile, prices for Mongolian HCC with around 23% VM, 9% ash and 0.5% sulfur also saw some small increment to around Yuan 1,250-1,280/mt delivered Tangshan, according to a trading source. The price was slightly higher than the Yuan 1,250/mt Tangshan delivered price reported by another trader two weeks ago.

Strong PCI demand persists

PCI demand continued to be strong given good steel prices, tighter supply and higher domestic PCI prices.

Australia PCI, with 13-15% VM and 9% ash was heard offered to China at \$147-148/mt CFR China, although some market participants felt that it was high.

One trader however expressed some interest in the material since he held an optimistic view for the market in the near term.

A mill source partly agreed, saying that he might consider paying \$145/mt CFR for BMA's South Walker Creek PCI.

Not many cargoes were heard offered in the market and "miners also seem holding back a little bit," another trader added.

Demand for semi-soft was also strong in China. An east China trader said he would pay around \$130/mt CFR for Indonesia semi-soft with 37-38% VM and below 1% sulfur, considering a port stocks price level at Yuan 1,040-1,050/mt ex-stock at north China ports, Jingtang and Rizhao. The price approximates to \$137-138/mt CFR.

— Edwin Yeo, Helena Sheng

India begins CIL restructuring process, invites expressions of interest

New Delhi — India's coal ministry Monday invited expressions of interest from consulting organizations to help restructure the country's largest coal producer Coal India Limited as recommended by the Planning Commission.

The expressions of interest have to be submitted within 15 days.

The restructuring was recommended by various panels in view of the rapidly increasing demand for coal which has made the need to hike production imperative. It would also make the coal sector competitive, the panels added.

A study to examine the recommendations and "to assess

the need for restructuring of CIL in light of the avoidance of drawbacks inherent in a monopolistic situation" had been proposed, the coal ministry said.

The study would also assess the scope for improving competition among CIL's subsidiaries to improve production, it added.

The Planning Commission had earlier recommended spinning off CIL's seven subsidiaries into separate state-owned companies to increase coal output.

CIL, which meets 80% of the country's coal requirements, missed its production target for fiscal year 2011-12 running from April to March, producing only 435.84 million mt against a target of 440 million mt. For fiscal 2012-13, CIL aims to produce 464 million mt.

The Planning Commission has said that by 2016-17, the end of the 12th Five Year Plan, overall domestic coal production will be 795 million mt against demand of 980.5 million mt.

— Sapna Dogra

Alsons to begin construction of Philippines coal-fired power unit in Q1

Manila — Alsons Consolidated Resources plans to begin construction of a coal-fired power plant in Sarangani province in the southern Philippines this quarter, after securing a Philippines Pesos 9.3 billion (\$227 million) syndicated bank loan for the project, company chief financial officer Luis Ymson told Platts Monday.

The first phase of the project will comprise a 105 MW power unit, which is scheduled to come online in August 2015, the company said Monday in a filing with the Philippine Stock Exchange. The plant will be operated by Alsons' subsidiary, Sarangani Energy.

Ymson said the 105 MW unit will require 600,000 mt/year of coal with a calorific value of 3,500-4,500 kcal/kg GAR. The company has already inked a coal supply deal with Japan's Toyota Tsusho, he said, adding that the coal will be mainly from Indonesia. Further details of the contract are not known.

The company is also planning to build a 105 MW coal-fired unit in Zamboanga city, also in the southern Philippines, before doubling the capacity at the Sarangani plant to 210 MW, Ymson said without providing a timeline for the two projects. But he said that the company is now open to receiving coal supply proposals for the Zamboanga plant and the second Sarangani unit.

The Zamboanga project will be undertaken by another Alsons subsidiary, San Ramon Power. The project already received environmental approval from local authorities early last year, and an engineering, procurement and construction contract was signed with South Korea's Daelim Industrial in December, the company said.

— Cecilia Quiambao

mer CEO of Leighton Holdings Ltd., told Bloomberg. "We met with a number of investors in London. They can see the issues. They want to go forward on a positive basis."

COMPANIES REFERENCED IN THIS ARTICLE:

Bumi plc

PT BUMI Resources Tbk.

[✉ E-mail this story.](#)

Report: Pakistan approves construction of 600-MW coal plant

by [Rohan Somwanshi](#)

The Council of Common Interests has approved the construction of a 600-MW coal-fired power project at Jamshoro in Pakistan, the *Dawn* of Pakistan reported Jan. 24.

The power plant will use 80% imported coal and 20% coal produced from the Thar region, according to the report. The Asian Development Bank will provide a \$900 million loan for the development of the power project.

In a related matter, Pakistan Prime Minister Raja Pervez Ashraf directed the finance ministry to immediately process the request by the government of Sindh province to provide sovereign guarantees to a Chinese firm interested in mining Thar coal and establishing a power plant, the report said.

[✉ E-mail this story.](#)

Report: Malawi coal firm to double production

by [Rohan Somwanshi](#)

Eland Coal could double production after it completes installation of a new excavator at its Mwaulambo mine in Karonga, Malawi, *The Daily Times* of Malawi reported Jan. 22.

The new machine will allow coal production of 25 tonnes per hour, compared to the current rate of 10 tonnes per hour, Mayamiko Mwinjilo, head of marketing and sales at Eland Coal, told the publication.

"We are the only mining company in the country which is producing washed coal but the new plant will produce coal of even better quality than we are producing now through its ability to separate pure coal from no-coal materials right during mining," the *Times* quoted Mwinjilo as saying. Eland Coal produces 3,500 tonnes of coal per month and exports 85% of the total monthly production, according to Mwinjilo.

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Alpha Natural *continued*

plan on active mechanized mining units and for an accumulation of combustible material. Air readings taken by inspectors indicated increased potential for ignitions in the mine as well as for injuries and illnesses to miners, MSHA said.

The mine operator, Mill Branch Coal Corp., has been cited 35 times in the past two years for failure to follow the approved ventilation plan.

In all, eight coal mines in West Virginia, Virginia, Kentucky and Colorado were targeted during the December inspections and received a combined 98 citation and nine orders.

"December's impact inspections found one of the lowest numbers of violations to date, which tells us broadly that mines undergoing impact inspections are improving," said Joseph Main, assistant secretary of labor for mine safety and health. "But we still see some mines that fail to address recurring problems that put miners at risk."

COMPANIES REFERENCED IN THIS ARTICLE:

Alpha Natural Resources Inc.

ANR

Brooks Run Mining Co. LLC

Dorchester Enterprises Inc

Mill Branch Coal Corp

[📄 Industry Document: MSHA Announces Results of December 2012 Impact Inspections](#)

[✉ E-mail this story.](#)

US coal exports *continued*

tion and the only other generation technologies it has are nuclear and hydroelectric.

"Consequently, it consumes all of the nuclear and hydroelectric energy it has and any supply shortfall must be made up with coal-fired generation. This means that China is going to buy all of the coal it can to meet this electricity supply shortfall."

Environmentalists: US should not encourage coal use

Environmentalists, meanwhile, counter that the U.S. should not abet carbon pollution by exporting coal. Lowering the global price of coal will only encourage its use, they said.

Greenpeace released a report Jan. 22 titled "Point of No Return" claiming that the proposed expansion of U.S. coal exports would produce 420 million tonnes of carbon emissions annually by 2020. Greenpeace took aim at Ambre Energy Ltd., Arch Coal Inc. and Peabody Energy Corp. — three of the producers involved in the five export coal proposals in the Pacific Northwest.

Greenpeace counts U.S. coal export expansion as one of 14 global projects threatening to hasten climate change and alter ecosystems.

now signed term contracts with US suppliers – Cloud Peak Energy, Arch Coal and Signal Peak.

Jang said the US domestic market had “gone” as a result of the US government being “not friendly” to the industry and low gas prices. “They are looking for a second market,” he said, indicating that the US was keen to develop markets outside of the US.

With most PRB coals currently exported through Canada’s Ridley Island terminal - a huge distance from the PRB fields in Wyoming - and capacity at the Canadian ports constrained, Jang said port expansion and the construction of new ports on the US West Coast is necessary.

He said that Korea South East Power and Korea Southern Power had agreements in place with port developer Ambre Energy for 5mt/yr offtake over a 10 year period.

The Millennium Bulk Terminal (MBT) project is planned for Longview, Washington state, at the location of a former Reynolds Metals Co alumina smelter, about 50 miles upriver from the Pacific Ocean on the Colombia River.

The \$600m project is planned to have an ultimate capacity of 44mt/yr, though would initially export far less. It is a joint venture between Australia’s Ambre Energy (62%) and Arch Coal (38%).

The terminal is supposed to start coming online in 2015. Its position away from the coast means that it will be a relatively shallow water terminal, accommodating panamax vessels.

Jang said that EWP would not be against investing in a US coal export terminal to increase the availability of supply.

Despite these moves, Indonesian material still accounts for the bulk of imports into the Korean gencos, at 50.78% in 2010 and 46.4% in 2011.

A rapid rise in the level of imports from Korean generators is expected in the next five years, with a considerable ramp up coming from 2014 onwards as a host of new power plants come online. Korea has imported around 74mt in each of the last three years and expects to maintain that level through 2013.

The first big pick up will come with the introduction of Kosep’s 870MW Yeongheung and the 500MW Bukpyeong power plants in 2014, which will add 8.4m/t of demand, bringing Korean imports to 82.4mt.

In the following year, five new power plants are set to come online with EWP’s 1GW Dangjin #9, Kospo’s 1GW Samcheok #1.2, Kosep’s Yeosu #1 and the independent 500MW Bukpyeong #2 and 500MW Dongbu Green #1.2, adding an additional 4.85GW of generation to Korea’s power mix in total.

A total of 19.8mt of coal will be required for those new plants completed in 2015, bringing total demand above the nine-figure mark for the first time, up at 102.2mt.

Another three power plants are due to fire up in 2016, with EWP’s 1GW Dangjin #10, Kowepo’s 1GW Taean #9 and 1GW Taean #10 and Komipo’s 1GW New Boryeong #1.

The combined 4GW power output of these four plants will ramp up coal needs by 14.9mt, taking the total requirement across Korea to 117.1mt.

Komipo’s 1GW New Boryeong #2 completes the round of the new power plants in 2017, topping out the demand requirements with a further 3.8mt and bringing total demand to 120.9mt.

From 2018 to 2024 there will be no construction of new coal-fired power plants, with only nuclear planned, totalling 8.6GW across six units.

Can PRB compete in Asia?

THE DRIVE BY the Korean gencos to diversify supply through imports of Powder River Basin material comes hand in hand with a drive to build US west coast export terminals as the US coal industry looks to the export market in the face of reduced domestic demand. Currently most PRB is exported through the Canadian port of Ridley Island where rail costs from the PRB are around \$45/short tons (st). Exports through the proposed west coast terminals are likely to result in a rail saving of \$15/t. IHS CERA examines the potential market for PRB export to Asia.

The primary driver behind efforts to build coal export terminals in the Pacific Northwest of the US is Powder River Basin (PRB) coal. PRB coal is cheap to mine and abundant, and could be easily mined in significantly greater quantities than the 465mst mined in 2011. However, the steady move away from coal-fired electricity generation in the US means that demand for the coal is essentially capped, a situation that is unlikely to be reversed given the recent shale-gas revolution. The only way for PRB producers to sell more tons, or even to sustain current tonnages, is to expand into other markets, and prospective Northwest terminals are an effort to tap the fast growing Asian market.

Producers also hope that PRB exports to Asia would cause PRB pricing to be at least partially driven by Pacific coal prices. At current prices of around \$12 FOB mine/st, basis 8,800Btu GAR, PRB coal is often referred to as “the cheapest btu on the planet”. However, coal with a similar heat content from Indonesia currently markets at around \$60/t FOB, basis 4,900kc NAR, and approached \$90/t FOB during the market peak in mid-2011, while PRB only reached \$14/t.

PRB is cheap because of the long expensive rail-hauls to its US generation centers and a competitive supply environment. PRB producers looking to export tons do so with the hope that international buying of PRB will pull up prices, providing them not only with healthy income from the export sales, but improved margins on their domestic sales.

Currently there are five export terminals in various stages of planning on the northwest US coast amounting to 115mt/yr of export capacity coming on line between 2014 and 2017. Development and operation of these terminals and their logistics chains faces political, environmental and permitting challenges. However, the construction and operation of export facilities and transportation infrastructure means creation of jobs and tax income. Since the approval process governing the west coast terminals resides with the same local and state jurisdictions that will benefit most from their development, as long as the US Army Corps of Engineers’ environmental impact studies do not raise substantial questions, the terminals could be built – if the demand is there.

Are west coast exports viable?

Despite the potential upside of growing PRB into the Asian market, and the apparently surmountable challenges facing the terminal developments themselves, the terminals face some serious problems that question the viability of such a large build in capacity.

There are two ways that PRB coal can go to Asia. The first of these is that supply-demand dynamics in the Pacific market will be structurally tight enough in the longer term that market forces will make PRB coal economic. This hinges on ongoing supply-demand tightness in Asia, driven by continual growth in China and other Asian demand centres.

Leads

However, recent Chinese economic slowing casts some doubt on this. A far more serious concern, however, is raised by IHS CERA's recently completed multi-client study "Coal Rush".

This study found that China will progressively becoming more self-sufficient in its coal needs, slowing the rate of its import growth, as existing resources can be mined plentifully at current cost levels, and transportation costs fall as rail bottlenecks are resolved. At the same time, rapidly improving export outlooks from Australia, Russia, South Africa, Mozambique and Colombia mean that supply has the ability to ramp up, and quickly. These factors seriously question the notion that the Pacific market will remain structurally tight in the longer term in such a way that prices would move up enough to incentivise large scale PRB imports.

In this scenario any potential growth of PRB in Asia would have been through being more competitive on a delivered basis than other coals in the market. However, the primary coal that PRB is likely to displace is Indonesian origin. The economic comparison with Indonesian coal is not good (see table). A year ago, when the Pacific market was tight, PRB out-competed Indonesian coal into both southern China and Korea, even allowing for some heat content loss during transit. In today's much looser market, the economics are much less favourable. PRB is currently well out of the money into southern China, and about \$5/t out of the money into Korea. This is assuming a very small PRB producer margin.

Importantly, though, economics are not the only grounds on which PRB coal can displace Indonesian. Some end users, particularly utilities in Korea and Taiwan, desire to diversify away from Indonesian coal for qualities reason outlined by East West Power's Jason Jang (*see lead article*). PRB is more consistent in quality, and PRB producers are large reliable entities with strong credit.

More importantly, however, there is a limit to which buyers will switch for these reasons. At potential current delivered prices into Korea and Taiwan the extra cost of PRB may be acceptable, but PRB is likely too far out of the money into southern China to warrant the same switching. Even in Korea, where coal import demand will rise in the coming years as new coal units come online, a 20% PRB market share would only amount to around 24mt in 2017, with Taiwan probably representing a quarter of that amount. Both of those amounts may be generous.

While it seems likely that there will be a PRB market in Korea and Taiwan, the size of the market elsewhere seems limited, although Indian buyers are watching these developments keenly. These factors suggest that PRB exports are likely to be capped at 30-40mt/yr this decade, and it seems unlikely that they can rise much beyond that without a paradigm shift in Indian buying or a Chinese regulatory change that favours imported coal.

Even if PRB can develop a market in Asia, there are significant logistical challenges. PRB does not travel well, with its high volatile content and long travel distances making it prone to spontaneous combustion en route. This doesn't prevent the movement of the coal to Asia, but it impacts the heat content of the delivered coal and therefore its economics.

Another factor capping PRB exports is the I-5 rail corridor in the North West of the US, which would be used to serve the West Coast ports. This is one of the busiest rail stretches in the country, and likely cannot accommodate coal movements of anywhere near the 115mt/yr of proposed export capacity without substantial development. Additionally, the trip-miles involved in exporting PRB

PRB vs Indonesian prices into Asia

| | Southern China | | Korea | | short ton/ metric ton |
|-------------------------|----------------|--------------|--------------|--------------|--------------------------|
| | Today | 1 year ago | Today | 1 year ago | |
| PRB FOB Mine Cost | 11.00 | 11.00 | 11.00 | 11.00 | \$/st |
| Producer Margin | 2.00 | 2.00 | 2.00 | 2.00 | \$/st |
| + Rail * | 30.00 | 30.00 | 30.00 | 30.00 | \$/st |
| + Port Throughput | 7.00 | 7.00 | 7.00 | 7.00 | \$/st |
| FOB Pacific NW | 50.00 | 50.00 | 50.00 | 50.00 | \$/st |
| = | 55.12 | 55.12 | 55.12 | 55.12 | \$/mt |
| + Panamax Freight | 16.00 | 20.00 | 13.60 | 17.00 | \$/mt |
| CIF Asia | 71.12 | 75.12 | 68.72 | 72.12 | \$/mt |
| GAR-NAR conversion | 73.54 | 77.68 | 71.06 | 74.57 | \$/mt |
| +5% quality degradation | 4.44 | 4.69 | 4.29 | 4.51 | \$/mt |
| Delivered | 77.41 | 81.76 | 74.80 | 78.50 | \$/mt |
| Conversion to 4,900kc | 2.44 | 2.58 | 2.36 | 2.48 | \$/mt |

PRB Delivered

(4,900kc NAR) **79.85** **84.35** **77.16** **80.98** **\$/mt**

Indonesian FOB

(4,900kc NAR) **60.00** **88.00** **60.00** **88.00** **\$/mt**

+ Freight 5.00 5.50 9.00 9.50 \$/mt

+5% quality degradation 3.25 4.68 3.45 4.88 \$/mt

Indonesian Delivered

(4,900kc NAR) **68.25** **98.18** **72.45** **102.38** **\$/mt**

* \$30 per short ton is for rail to Washington, Oregon and Vancouver. Rail to Ridley Terminal in Prince

Rupert Canada is \$40-45 per short ton.

Source: IHS

are long, so would require additional locomotives, rolling stock and crews. These issues are likely not insurmountable, but rail companies will not invest without guaranteed business, and there is little actual booked business underlying the terminal projects.

Rail constraints in the meantime will increase potential for delays, demurrage risks and missed laycans. Additionally, rail companies in the US have also consistently priced their transportation rates to take the bulk of the economic upside in both domestic flows and exports through the US east coast. This likely limits the potential per-ton upside for producers exporting PRB.

History offers some cautionary lessons regarding terminal development. The west coast has seen significant coal port developments before, and like the current proposed developments they were all predicated on projections of Asian demand. The Port of Portland built a coal terminal in the 1980s but it failed due to lack of coal buying interest. Like the terminals on the Columbia River, that terminal could only take Panamax vessels. Despite being able to take much larger vessels, the 10mt/yr, \$200m Los Angeles Export Terminal (LAXT) never exceeded 4mt/yr in the six years that it operated before its closure due to lack of profitability.

Importantly, LAXT was unable to lock in long term purchase contracts with Asian buyers, and that situation is very similar to the current terminal developments. Currently there are some term deals (*see lead article*) for throughput at the prospective West Coast terminals, but they come nowhere close to the total projected

Otter Creek Spring Creek Black Thunder

a. Export ports and domestic docks:

| | | | |
|---------------------------|-------|-------|-------|
| MERC terminal, Duluth, MN | 857 | 1,033 | 1,212 |
| Cherry Point, WA | 1,465 | 1,478 | 1,603 |
| Longview, WA | 1,205 | 1,218 | 1,340 |
| St. Paul, MN | 857 | 1,033 | 1,076 |
| Hall Street, MO | 1,484 | 1,262 | 1,169 |

b. Domestic power plants:

| | | | |
|-----------------------------|-------|-------|-------|
| Transalta Centralia, WA | 1,251 | 1,263 | 1,389 |
| PGE Boardman, OR | 1,010 | 1,022 | 1,148 |
| Minnesota Power Boswell, MN | 859 | 1,035 | 1,305 |
| Xcel Sherco and King, MN | 791 | 967 | 1,115 |
| Allete Columbia, WI | 1,117 | 1,293 | 1,336 |
| EME Powerton, IL | 1,307 | 1,152 | 1,059 |
| Ameren Coffeen, IL | 1,546 | 1,335 | 1,242 |
| Dominion Kincaid, IL | 1,389 | 1,233 | 1,140 |
| PPL Colstrip, MT | 35 | 269 | 395 |
| SRP Coronado, AZ | 1,864 | 1,605 | 1,445 |
| MS Power Daniel, MS | 2,207 | 1,812 | 1,719 |
| LCRA Fayette, TX | 2,171 | 1,615 | 1,455 |
| AECI New Madrid, MO | 1,768 | 1,394 | 1,224 |
| Nipsco Michigan City, IN | 1,342 | 1,304 | 1,211 |

c. Interchange points with other railroads:

| | | | |
|--------------------------|-------|-------|-------|
| Chicago, IL (NS and CSX) | 1,329 | 1,291 | 1,198 |
| Memphis, TN (NS and CSX) | 1,786 | 1,412 | 1,319 |
| Woodlawn, IL | 1,464 | 1,308 | 1,215 |
| East St. Louis, IL | 1,477 | 1,264 | 1,171 |
| Kansas City | 1,293 | 921 | 828 |

Source: PC Rail

**OTTER CREEK
PROPERTY SUMMARY
REPORT**

Volume I of II

ENERGY, MINING, AND ENVIRONMENTAL CONSULTANTS

NORWEST
CORPORATION

**OTTER CREEK
PROPERTY SUMMARY
REPORT**

Volume I of II

Submitted to:
**GREAT NORTHERN
PROPERTIES, L.P.**

and:
**MONTANA DEPARTMENT
OF NATURAL RESOURCES
AND CONSERVATION**

July 12, 2006

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EXECUTIVE SUMMARY

Norwest Corporation (Norwest) was contracted by Great Northern Properties L.P. (GNP) to analyze and interpret existing data regarding coal properties controlled by GNP and the State of Montana, collectively referred to as the Otter Creek Property. The Otter Creek Property covers a large area within Powder River and Rosebud counties, Montana. The tract trends north to south and encompasses over 100 square miles of land.

The overall project objectives consisted of updating the geologic model and resource estimates, identifying specific logical mining units (LMUs), preparing documents that describe each LMU in terms of geology, available resources, coal quality, mineability, strip ratio and range of expected mining costs. An additional objective of this study was to assess the vertical variation of sodium in the Knoblock Seam and to assess the opportunity for selective mining in order to minimize variations in coal quality.

The Otter Creek Property is located in the Ashland coalfield east of Billings, Montana. The Otter Creek Property is located in Rosebud and Powder River Counties, Montana. The general location of the property is shown on Figure E.1.

GNP coal resources are located within the boundaries of the Custer National Forest and comprise alternating sections of property held in fee by GNP and public domain property held by the State of Montana.

The coal resources of the Otter Creek Property have been the subject of several investigations starting in the mid 1970's. This has resulted in numerous data sets developed by several corporate and government entities.

News from Arch Coal, Inc.

FOR FURTHER INFORMATION:

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Vice President, Investor Relations

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FOR IMMEDIATE RELEASE

Arch Coal, Inc. Reports First Quarter 2013 Results

*Available liquidity of \$1.3 billion as of March 31, 2013
Strong first quarter 2013 cost performances in key regions
U.S. thermal market poised to bounce back in 2013*

Earnings Highlights

| <i>In \$ millions, except per share data</i> | Quarter Ended | |
|--|----------------------|----------------|
| | 3/31/13 | 3/31/12 |
| Revenues | \$825.5 | \$1,039.7 |
| Income (Loss) from Operations | (32.4) | 54.1 |
| Net Income (Loss) ¹ | (70.0) | 1.2 |
| Fully Diluted EPS/LPS | (0.33) | 0.01 |
| Adjusted Net Loss ^{1,2} | (71.8) | (7.6) |
| Adjusted Fully Diluted LPS ² | (0.34) | (0.04) |
| Adjusted EBITDA ² | \$83.6 | \$179.8 |

1/- Net income attributable to ACI.

2/- Defined and reconciled under "Reconciliation of non-GAAP measures."

ST. LOUIS (April 23, 2013) – Arch Coal, Inc. (NYSE: ACI) today reported a net loss of \$70 million, or \$0.33 per diluted share, in the first quarter of 2013. After excluding non-cash accretion of acquired coal supply agreements, Arch's first quarter 2013 adjusted net loss was \$72 million, or \$0.34 per diluted share. In the first quarter of 2012, Arch reported an adjusted net loss of \$8 million, or \$0.04 per diluted share.

Revenues totaled \$826 million in the first quarter of 2013 on lower sales volumes compared with the prior-year quarter. Adjusted earnings before interest, taxes, depreciation, depletion and amortization ("EBITDA") were \$84 million in the first quarter of 2013 versus \$180 million a year ago. First quarter 2013 results include a pre-tax charge of \$10.5 million related to minimum throughput fees as required under Arch's existing port and logistics agreements.

"Despite the global coal market headwinds that have prevailed over the last 18 months, we are delivering strong cost control, exercising capital restraint and minimizing cash outflows in the trough of the market cycle, while maintaining our commitment to safety and environmental excellence," said John W. Eaves, Arch's president and chief executive officer. "As the market cycle turns, we are confident that our low-cost operations will generate strong cash flows and value for our shareholders."

“Positive catalysts, such as normalized weather and higher competing fuel prices, are improving the outlook for the domestic thermal market, our largest market by volume,” continued Eaves. “We expect these trends to continue to reduce customer coal stockpiles throughout 2013 and to create a more balanced U.S. coal market thereafter. Globally, we believe metallurgical and thermal coal markets are in the process of stabilizing, and we anticipate gradual improvement as we progress through the remainder of the year.”

2013 Plans

“During 2013, our focus remains on improving cash flows during this period of market weakness and on preparing the company to capitalize as coal markets recover,” said Eaves. “Our plan includes three key areas: capital spending reductions, cost containment, and working capital and financial management.”

Arch has further reduced its forecasted capital expenditures by approximately \$30 million for 2013, and now expects to spend between \$300 million and \$330 million for the full year. This range includes spending for the completion of the Leer metallurgical mine in Appalachia and for previously committed land obligations. In addition, the company’s capital plans include spending for maintenance and efficiency projects, which have benefited from the redeployment of equipment from idled mines into active operations.

As evidenced by first quarter 2013 results, Arch is containing costs and improving operational efficiencies despite running at planned lower volume levels. Cost reductions per ton were achieved in several regions by reducing overtime and contractor costs, generating cost savings on consumables and lowering other carrying costs. For full year 2013, Arch has maintained its thermal coal volume guidance range of 125 million to 135 million tons, but has reduced its annual cash cost guidance range for two of the company’s largest operating regions, the Powder River Basin and Appalachia.

Arch is maintaining its financial strength and flexibility during the market downturn by minimizing cash outflows through active working capital and other financial management. At March 31, Arch had total available liquidity of \$1.3 billion, approximately \$1.0 billion of which was in the form of cash and other short-term investments. The company also has roughly \$300 million available to be borrowed under undrawn lines of credit and other sources.

Core Values

Arch continued to build upon its leading safety and environmental record during the first quarter of 2013. The company’s reported lost-time safety incident rate was nearly 50 percent lower than in the prior-year quarter. Arch also improved its environmental compliance record for the three months ended March 31, 2013 compared with the year-ago quarter.

In addition, several of Arch’s eastern operations and facilities received West Virginia Mountaineer Guardian Awards in the first quarter for exemplary safety records achieved during 2012. Four operations also were honored by state environmental agencies. In West Virginia, the Department of Environmental Protection honored Coal-Mac, Wolf Run and Mountain Laurel for superior reclamation, wildlife habitat and conservation efforts. In Colorado, West Elk was recognized by the Colorado Department of Public Health & Environment as a senior participant in the state’s Pollution Prevention Program.

“We’re off to another strong year for our safety and environmental performance in the first quarter, with nine operations attaining *A Perfect Zero*, a dual accomplishment of operating without a reportable safety incident or environmental violation,” said Paul A. Lang, Arch’s executive vice president and chief operating officer. “I’m proud of our employees’ ongoing pursuit of our ultimate goal of *A Perfect Zero* at all of our sites every single day.”

Operational Results

“In the first quarter of 2013, Arch’s operations turned in strong cost performances that met or exceeded our expectations when compared to the fourth quarter and the first quarter of last year,” said Lang. “Even while running at lower production levels, we’re managing our per-ton costs. As markets correct, we expect our volumes and realized prices to increase over time, which will improve our profitability.”

| | Arch Coal, Inc. | | |
|---------------------------------|-----------------|---------------|---------------|
| | 1Q13 | 4Q12 | 1Q12 |
| Tons sold (in millions) | 34.1 | 36.1 | 35.5 |
| Average sales price per ton | \$21.66 | \$24.21 | \$25.73 |
| Cash cost per ton | \$18.02 | \$19.44 | \$20.18 |
| Cash margin per ton | \$3.64 | \$4.77 | \$5.55 |
| Total operating cost per ton | \$21.46 | \$22.88 | \$24.07 |
| Operating margin per ton | \$0.20 | \$1.33 | \$1.66 |

Consolidated results may not tie to regional breakout due to exclusion of other assets, rounding. Operating cost per ton includes depreciation, depletion and amortization per ton. Amounts reflected in this table have been adjusted for certain transactions. For a description of adjustments, refer to the regional schedule at <http://investor.archcoal.com>

Arch earned \$3.64 per ton in consolidated cash margin in the first quarter of 2013 compared with \$4.77 per ton in the fourth quarter of 2012, primarily reflecting the impact of lower realized prices across operating regions. A larger percentage of Powder River Basin coal in Arch’s overall volume mix in the first quarter of 2013 also contributed to the decline in consolidated sales price per ton versus the fourth quarter. Consolidated cash costs per ton declined 7 percent over the same time period, due to lower costs in several operating regions and a larger percentage of lower-cost tons in the company’s overall volume mix.

| | Powder River Basin | | |
|---------------------------------|--------------------|-----------------|---------------|
| | 1Q13 | 4Q12 | 1Q12 |
| Tons sold (in millions) | 26.6 | 27.6 | 27.2 |
| Average sales price per ton | \$12.68 | \$13.12 | \$13.87 |
| Cash cost per ton | \$10.65 | \$11.58 | \$11.24 |
| Cash margin per ton | \$2.03 | \$1.54 | \$2.63 |
| Total operating cost per ton | \$12.24 | \$13.18 | \$12.75 |
| Operating margin per ton | \$0.44 | (\$0.06) | \$1.12 |

Operating cost per ton includes depreciation, depletion and amortization per ton. Amounts reflected in this table have been adjusted for certain transactions.

In the Powder River Basin, first quarter 2013 cash margin increased 32 percent to \$2.03 per ton compared with the fourth quarter of 2012. First quarter 2013 sales price per ton decreased 3 percent, stemming from lower pricing on contracted, market-based and export tons. The decline in realized pricing was more than offset by an 8 percent decline in cash cost per ton. Despite lower volume levels, cash cost per ton declined due to lower maintenance expense and successful cost containment efforts.

| | Appalachia | | |
|---------------------------------|-----------------|-----------------|-----------------|
| | 1Q13 | 4Q12 | 1Q12 |
| Tons sold (in millions) | 3.4 | 4.2 | 4.5 |
| Average sales price per ton | \$74.76 | \$83.50 | \$87.33 |
| Cash cost per ton | \$67.16 | \$70.23 | \$70.95 |
| Cash margin per ton | \$7.60 | \$13.27 | \$16.38 |
| Total operating cost per ton | \$83.50 | \$84.78 | \$87.74 |
| Operating margin per ton | (\$8.74) | (\$1.28) | (\$0.41) |

*Operating cost per ton includes depreciation, depletion and amortization per ton.
Amounts reflected in this table have been adjusted for certain transactions.*

In Appalachia, Arch recorded a cash margin of \$7.60 per ton in the first quarter of 2013 compared with \$13.27 per ton in the fourth quarter of 2012. Sales volumes declined 0.8 million tons in the first quarter of 2013 versus the fourth quarter due to lower thermal and metallurgical coal shipments, partially driven by a longwall move at the Mountain Laurel operation. Average sales price per ton decreased 10 percent over the same time period, largely reflecting lower prices on metallurgical shipments. First quarter 2013 cash cost per ton declined 4 percent versus the fourth quarter of 2012, even with metallurgical volumes representing more than one half of the regional volume mix.

| | Western Bituminous Region | | |
|---------------------------------|---------------------------|----------------|----------------|
| | 1Q13 | 4Q12 | 1Q12 |
| Tons sold (in millions) | 3.5 | 3.8 | 3.3 |
| Average sales price per ton* | \$35.53 | \$37.37 | \$36.77 |
| Cash cost per ton* | \$24.12 | \$18.69 | \$21.28 |
| Cash margin per ton | \$11.41 | \$18.68 | \$15.49 |
| Total operating cost per ton* | \$29.07 | \$23.15 | \$26.98 |
| Operating margin per ton | \$6.46 | \$14.22 | \$9.79 |

**Sales prices and costs in the region are presented f.o.b. point for domestic customers.
Operating cost per ton includes depreciation, depletion and amortization per ton.
Amounts reflected in this table have been adjusted for certain transactions.*

In the Western Bituminous Region, Arch recorded a cash margin of \$11.41 per ton in the first quarter of 2013 compared with \$18.68 per ton in the fourth quarter of 2012. First quarter 2013 sales volumes declined as the longwall at Dugout Canyon was idled in the prior-quarter period. Average sales price per ton declined modestly over the same time period, reflecting lower pricing on export sales. Cash cost per ton increased in the first quarter of 2013 compared with the low levels reported in the fourth quarter when the Dugout Canyon longwall was still in service.

Market Trends

“The trend in U.S. coal markets is improving,” said Eaves. “U.S. power demand is rising in 2013, coal production continues to rationalize, and coal is regaining its share of the domestic power generation market due to the higher cost or lack of availability of competing fuels.”

Arch expects U.S. coal consumption for power generation to increase by 50 million tons or more in 2013 compared with 2012, due to favorable weather trends and higher natural gas prices. Coal supply rationalization also is expected to continue in 2013. Mine Safety and Health Administration data suggests that U.S. coal production totaled 246 million tons in the first quarter of 2013 compared with 268 million tons in the same quarter of last year. Increased

demand and decreased supply should lead to a further liquidation in U.S. coal stockpiles in 2013. Internal estimates forecast that customer coal stockpile levels could end the year below 145 million tons.

In 2013, the growing global coal trade is projected to exceed the record 1.2 billion metric tonnes set in 2012. More than 100 gigawatts of new coal-fueled plants are expected to come online in 2013, resulting in more than 300 million metric tonnes of incremental annual coal demand this year alone. Seaborne coal supply should service a portion of that demand. “Growing global demand for coal, coupled with restraint in seaborne supply growth, should translate into a more balanced market as the year progresses,” added Eaves.

Global steel production also is projected to grow in 2013, with Asia, Latin America and the United States leading the increase. Arch expects U.S. metallurgical coal exports to remain elevated, with overall U.S. coal exports projected to total above 100 million tons in 2013.

Company Outlook

“We continue to execute our strategy of layering in some thermal sales to run our mines efficiently, manage our costs and meet our sales plans for 2013, despite operating at reduced volume levels,” said Eaves. “We have also booked 6.5 million tons of our metallurgical coal for 2013, and see significant opportunity to place additional tons.”

“Looking ahead, we will continue to focus on managing through the market downturn with the liquidity that we have in place,” continued Eaves. “We also expect a stronger second half in 2013, driven by improving domestic coal market fundamentals, a recovering metallurgical market and the startup of Arch’s Leer longwall mine.”

| | 2013 | | 2014 | |
|--|---------|-------------------|------|------------|
| | Tons | \$ per ton | Tons | \$ per ton |
| Sales Volume (in millions tons) | | | | |
| Thermal | 125-135 | | | |
| Met | 8-9 | | | |
| Total | 133-144 | | | |
| Powder River Basin | | | | |
| Committed, Priced | 94.3 | \$13.13 | 52.6 | \$14.18 |
| Committed, Unpriced | 7.1 | | 14.6 | |
| Total Committed | 101.4 | | 67.2 | |
| Average Cash Cost | | \$10.65 - \$11.15 | | |
| Western Bituminous | | | | |
| Committed, Priced | 12.7 | \$37.38 | 8.2 | \$40.69 |
| Committed, Unpriced | 1.4 | | 0.2 | |
| Total Committed | 14.1 | | 8.4 | |
| Average Cash Cost | | \$24.00 - \$27.00 | | |
| Appalachia | | | | |
| Committed, Priced Thermal | 6.4 | \$63.95 | 1.7 | \$53.98 |
| Committed, Unpriced Thermal | 0.2 | | 0.3 | |
| Committed, Priced Metallurgical | 6.1 | \$91.01 | - | |
| Committed, Unpriced Metallurgical | 0.4 | | - | |
| Total Committed | 13.1 | | 2.0 | |
| Average Cash Cost | | \$66.00 - \$71.00 | | |
| Illinois Basin | | | | |
| Committed, Priced | 2.1 | \$42.50 | 1.7 | \$42.33 |
| Average Cash Cost | | \$34.00 - \$36.00 | | |
| Corporate (in \$ millions) | | | | |
| D, D&A | | \$500 - \$530 | | |
| S, G&A | | \$130 - \$140 | | |
| Interest Expense | | \$360 - \$370 | | |
| Capital Expenditures | | \$300 - \$330 | | |

A conference call regarding Arch Coal's first quarter 2013 financial results will be webcast live today at 10 a.m. Eastern time. The conference call can be accessed via the "investor" section of the Arch Coal website (<http://investor.archcoal.com>).

U.S.-based Arch Coal, Inc. is one of the world's top coal producers for the global steel and power generation industries, serving customers in 25 countries on five continents. Its network of mining complexes is the most diversified in the United States, spanning every major coal basin in the nation. The company controls a 5.5-billion-ton reserve base of high-quality metallurgical and thermal coals, with access to all major railroads, inland waterways and a growing number of seaborne trade channels. For more information, visit www.archcoal.com.

Forward-Looking Statements: This press release contains "forward-looking statements" – that is, statements related to future, not past, events. In this context, forward-looking statements often address our expected future business and financial performance, and often contain words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," or "will." Forward-looking statements by their nature address matters that are, to different degrees, uncertain. For us, particular uncertainties arise from changes in the demand for our coal by the domestic electric generation industry; from legislation and regulations relating to the Clean Air Act and other environmental initiatives; from operational, geological, permit, labor and weather-related factors; from fluctuations in the amount of cash we generate from operations; from future integration of acquired businesses; and from numerous other matters of national, regional and global scale, including those of a political, economic, business, competitive or regulatory nature. These uncertainties may cause our actual future results to be materially different than those expressed in our forward-looking statements. We do not undertake to update our forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by law. For a description of some of the risks and uncertainties that may affect our future results, you should see the risk factors described from time to time in the reports we file with the Securities and Exchange Commission.

###

Arch Coal, Inc. and Subsidiaries
Condensed Consolidated Statements of Operations
(In thousands, except per share data)

| | Three Months Ended March 31, | |
|---|------------------------------|-------------------|
| | 2013 | 2012 |
| | (Unaudited) | |
| Revenues | \$ 825,502 | \$ 1,039,651 |
| Costs, expenses and other operating | | |
| Cost of sales | 710,573 | 850,871 |
| Depreciation, depletion and amortization | 118,868 | 139,966 |
| Amortization of acquired sales contracts, net | (2,810) | (14,017) |
| Change in fair value of coal derivatives and coal trading activities, net | 1,308 | (3,613) |
| Selling, general and administrative expenses | 33,209 | 30,861 |
| Other operating income, net | (3,217) | (18,498) |
| | <u>857,931</u> | <u>985,570</u> |
| Income (loss) from operations | (32,429) | 54,081 |
| Interest expense, net: | | |
| Interest expense | (95,087) | (74,772) |
| Interest and investment income | 2,836 | 1,021 |
| | <u>(92,251)</u> | <u>(73,751)</u> |
| Loss before income taxes | (124,680) | (19,670) |
| Benefit from income taxes | (54,631) | (21,079) |
| Net income (loss) | <u>(70,049)</u> | <u>1,409</u> |
| Less: Net income attributable to noncontrolling interest | — | (203) |
| Net income (loss) attributable to Arch Coal, Inc. | <u>\$ (70,049)</u> | <u>\$ 1,206</u> |
| Earnings (loss) per common share | | |
| Basic earnings (loss) per common share | <u>\$ (0.33)</u> | <u>\$ 0.01</u> |
| Diluted earnings (loss) per common share | <u>\$ (0.33)</u> | <u>\$ 0.01</u> |
| Weighted average shares outstanding | | |
| Basic | <u>212,062</u> | <u>211,687</u> |
| Diluted | <u>212,062</u> | <u>211,908</u> |
| Dividends declared per common share | <u>\$ 0.03</u> | <u>\$ 0.11</u> |
| Adjusted EBITDA (A) | <u>\$ 83,629</u> | <u>\$ 179,827</u> |

(A) Adjusted EBITDA is defined and reconciled under "Reconciliation of Non-GAAP Measures" later in this release.

Arch Coal, Inc. and Subsidiaries
Condensed Consolidated Balance Sheets
(In thousands)

| | March 31, 2013 | December 31, 2012 |
|--|-------------------|----------------------|
| | (Unaudited) | |
| Assets | | |
| Current assets | | |
| Cash and cash equivalents | \$ 730,119 | \$ 784,622 |
| Restricted cash | 2,290 | 3,453 |
| Short term investments | 248,414 | 234,305 |
| Trade accounts receivable | 263,294 | 247,539 |
| Other receivables | 81,750 | 84,541 |
| Inventories | 368,240 | 365,424 |
| Prepaid royalties | 13,105 | 11,416 |
| Deferred income taxes | 67,337 | 67,360 |
| Coal derivative assets | 20,856 | 22,975 |
| Other | 88,977 | 92,469 |
| Total current assets | 1,884,382 | 1,914,104 |
| Property, plant and equipment, net | 7,272,541 | 7,337,098 |
| Other assets | | |
| Prepaid royalties | 91,691 | 87,773 |
| Goodwill | 265,423 | 265,423 |
| Equity investments | 246,807 | 242,215 |
| Other | 159,300 | 160,164 |
| Total other assets | 763,221 | 755,575 |
| Total assets | \$ 9,920,144 | \$ 10,006,777 |
| Liabilities and Stockholders' Equity | | |
| Current liabilities | | |
| Accounts payable | \$ 229,269 | \$ 224,418 |
| Coal derivative liabilities | 643 | 1,737 |
| Accrued expenses and other current liabilities | 352,040 | 318,018 |
| Current maturities of debt | 28,306 | 32,896 |
| Total current liabilities | 610,258 | 577,069 |
| Long-term debt | 5,082,205 | 5,085,879 |
| Asset retirement obligations | 410,975 | 409,705 |
| Accrued pension benefits | 69,342 | 67,630 |
| Accrued postretirement benefits other than pension | 46,413 | 45,086 |
| Accrued workers' compensation | 81,039 | 81,629 |
| Deferred income taxes | 610,195 | 664,182 |
| Other noncurrent liabilities | 227,363 | 221,030 |
| Total liabilities | 7,137,790 | 7,152,210 |
| Stockholders' equity | | |
| Common Stock | 2,141 | 2,141 |
| Paid-in capital | 3,029,536 | 3,026,823 |
| Treasury stock, at cost | (53,848) | (53,848) |
| Accumulated deficit | (180,459) | (104,042) |
| Accumulated other comprehensive loss | (15,016) | (16,507) |
| Total stockholders' equity | 2,782,354 | 2,854,567 |
| Total liabilities and stockholders' equity | \$ 9,920,144 | \$ 10,006,777 |

Arch Coal, Inc. and Subsidiaries
Condensed Consolidated Statements of Cash Flows
(In thousands)

| | Three Months Ended March 31, | |
|--|-------------------------------------|-------------|
| | 2013 | 2012 |
| | (Unaudited) | |
| Operating activities | | |
| Net income (loss) | \$ (70,049) | \$ 1,409 |
| Adjustments to reconcile to cash provided by operating activities: | | |
| Depreciation, depletion and amortization | 118,868 | 139,966 |
| Amortization of acquired sales contracts, net | (2,810) | (14,017) |
| Amortization relating to financing activities | 6,167 | 4,288 |
| Prepaid royalties expensed | 3,537 | 8,586 |
| Employee stock-based compensation expense | 2,713 | 4,079 |
| Changes in: | | |
| Receivables | (12,340) | 88,082 |
| Inventories | (2,816) | (111,196) |
| Coal derivative assets and liabilities | (192) | (5,347) |
| Accounts payable, accrued expenses and other current liabilities | 38,249 | (66,222) |
| Income taxes, net | 458 | 23,002 |
| Deferred income taxes | (54,801) | (21,742) |
| Other | 16,307 | 4,102 |
| Cash provided by operating activities | 43,291 | 54,990 |
| Investing activities | | |
| Capital expenditures | (54,522) | (93,271) |
| Additions to prepaid royalties | (9,142) | (8,262) |
| Proceeds from dispositions of property, plant and equipment | 714 | 22,105 |
| Purchases of short term investments | (26,787) | — |
| Proceeds from sales of short term investments | 11,534 | — |
| Investments in and advances to affiliates | (4,298) | (5,777) |
| Change in restricted cash | 1,163 | 1,455 |
| Cash used in investing activities | (81,338) | (83,750) |
| Financing activities | | |
| Net increase in borrowings under lines of credit | — | 34,000 |
| Payments on term note | (4,125) | — |
| Net payments on other debt | (5,964) | (7,323) |
| Debt financing costs | — | (100) |
| Dividends paid | (6,367) | (23,327) |
| Issuance of common stock under incentive plans | — | 5,131 |
| Cash provided by (used in) financing activities | (16,456) | 8,381 |
| Decrease in cash and cash equivalents | (54,503) | (20,379) |
| Cash and cash equivalents, beginning of period | 784,622 | 138,149 |
| Cash and cash equivalents, end of period | \$ 730,119 | \$ 117,770 |

Arch Coal, Inc. and Subsidiaries
Schedule of Consolidated Debt
(In thousands)

| | <u>March 31,</u> <u>2013</u> | <u>December 31,</u> <u>2012</u> |
|---|---------------------------------|------------------------------------|
| | (Unaudited) | |
| Term loan (\$1.65 billion face value) due 2018 | \$ 1,623,955 | \$ 1,627,384 |
| 8.75% senior notes (\$600.0 million face value) due 2016 | 591,535 | 590,999 |
| 7.00% senior notes due 2019 at par | 1,000,000 | 1,000,000 |
| 9.875% senior notes (\$375.0 million face value) due 2019 | 360,621 | 360,042 |
| 7.25% senior notes due 2020 at par | 500,000 | 500,000 |
| 7.25% senior notes due 2021 at par | 1,000,000 | 1,000,000 |
| Other | 34,400 | 40,350 |
| | <u>5,110,511</u> | <u>5,118,775</u> |
| Less: current maturities of debt | 28,306 | 32,896 |
| Long-term debt | <u>\$ 5,082,205</u> | <u>\$ 5,085,879</u> |
| | | |
| Calculation of net debt: | | |
| Total debt | \$ 5,110,511 | \$ 5,118,775 |
| Less liquid assets | | |
| Cash and cash equivalents | 730,119 | 784,622 |
| Short term investments | 248,414 | 234,305 |
| | <u>978,533</u> | <u>1,018,927</u> |
| Net debt | <u>\$ 4,131,978</u> | <u>\$ 4,099,848</u> |

Arch Coal, Inc. and Subsidiaries
Reconciliation of Non-GAAP Measures
(In thousands, except per share data)

Included in the accompanying release, we have disclosed certain non-GAAP measures as defined by Regulation G. The following reconciles these items to net income and cash flows as reported under GAAP.

Adjusted EBITDA

Adjusted EBITDA is defined as net income attributable to the Company before the effect of net interest expense, income taxes, depreciation, depletion and amortization, and the amortization of acquired sales contracts. Adjusted EBITDA may also be adjusted for items that may not reflect the trend of future results.

Adjusted EBITDA is not a measure of financial performance in accordance with generally accepted accounting principles, and items excluded from Adjusted EBITDA are significant in understanding and assessing our financial condition. Therefore, Adjusted EBITDA should not be considered in isolation, nor as an alternative to net income, income from operations, cash flows from operations or as a measure of our profitability, liquidity or performance under generally accepted accounting principles. We believe that Adjusted EBITDA presents a useful measure of our ability to incur and service debt based on ongoing operations. Furthermore, analogous measures are used by industry analysts to evaluate our operating performance. In addition, acquisition related expenses are excluded to make results more comparable between periods. Investors should be aware that our presentation of Adjusted EBITDA may not be comparable to similarly titled measures used by other companies. The table below shows how we calculate Adjusted EBITDA.

| | Three Months Ended March 31, | |
|--|------------------------------|-------------------|
| | 2013 | 2012 |
| | (Unaudited) | |
| Net income (loss) | \$ (70,049) | \$ 1,409 |
| Income tax benefit | (54,631) | (21,079) |
| Interest expense, net | 92,251 | 73,751 |
| Depreciation, depletion and amortization | 118,868 | 139,966 |
| Amortization of acquired sales contracts, net | (2,810) | (14,017) |
| Net income attributable to noncontrolling interest | — | (203) |
| Adjusted EBITDA | <u>\$ 83,629</u> | <u>\$ 179,827</u> |

Adjusted net income and adjusted diluted earnings per common share

Adjusted net income and adjusted diluted earnings per common share are adjusted for the after-tax impact of acquisition related costs and are not measures of financial performance in accordance with generally accepted accounting principles. We believe that adjusted net income and adjusted diluted earnings per common share better reflect the trend of our future results by excluding items relating to significant transactions. The adjustments made to arrive at these measures are significant in understanding and assessing our financial condition. Therefore, adjusted net income and adjusted diluted earnings per share should not be considered in isolation, nor as an alternative to net income or diluted earnings per common share under generally accepted accounting principles.

| | Three Months Ended March 31, | |
|---|------------------------------|-------------------|
| | 2013 | 2012 |
| | (Unaudited) | |
| Net income (loss) attributable to Arch Coal | \$ (70,049) | \$ 1,206 |
| Amortization of acquired sales contracts, net | (2,810) | (14,017) |
| Tax impact of adjustments | 1,012 | 5,186 |
| Adjusted net loss attributable to Arch Coal | <u>\$ (71,847)</u> | <u>\$ (7,625)</u> |
| Diluted weighted average shares outstanding | <u>212,062</u> | <u>211,908</u> |
| Diluted earnings (loss) per share | \$ (0.33) | \$ 0.01 |
| Amortization of acquired sales contracts, net | (0.01) | (0.07) |
| Tax impact of adjustments | — | 0.02 |
| Adjusted diluted loss per share | <u>\$ (0.34)</u> | <u>\$ (0.04)</u> |

David H. Coburn
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www.steptoe.com

January 11, 2013

VIA E-Mail

Ms. Victoria Rutson
Chief
Office of Environmental Analysis
Surface Transportation Board
395 E Street, SW
Washington, D.C. 20423

**Re: Finance Docket No. 30186, Tongue River Railroad Company, Inc.--
Rail Construction and Operation--In Custer, Powder River and
Rosebud Counties, MT**

Dear Ms. Rutson:

Please find enclosed a copy of the Alternatives Screening Analysis that has been prepared on behalf of Tongue River Railroad Company, Inc. ("TRRC") by its contractors, TranSystems and Hanson Professional Services, Inc.

I also write to confirm that TRRC has previously submitted under separate cover to the Board's third-party contractor, ICF, certain technical files concerning TRRC's preferred alignment and certain of the alternative alignments that your office may consider in connection with its review of the TRRC application. A description of this technical information is provided below:

- Four Google kmz files and an exhibit depicting four rail alternatives.
- Design files concerning certain rail alternatives and certain other files depicting the USGS existing ground model and aerial photography used to prepare the design files.
- Revised Google kmz files and an exhibit depicting various design refinements.

Ms. Victoria Rutson
January 11, 2013
Page 2



Please let me know if you have any questions concerning the information described above.

Respectfully,

A handwritten signature in black ink that reads "David H. Coburn". The signature is fluid and cursive, with a long horizontal flourish extending to the right.

David H. Coburn
Attorney for Tongue River Railroad Company, Inc.

Enclosures

cc: Kenneth Blodgett

ALTERNATIVES SCREENING ANALYSIS

TONGUE RIVER RAILROAD
CUSTER, POWDER RIVER, AND ROSEBUD COUNTIES
MONTANA

STB FINANCE DOCKET NO. 30186

Prepared by



TranSystems

and



Hanson Professional Services Inc.

January 11, 2013

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1. Proposed Action

The Tongue River Railroad Company, Inc. (TRRC) filed a Revised Application for Construction and Operation Authority with the STB on December 17, 2012. The TRRC revised application proposes to construct and operate a rail line between the BNSF branch line at Colstrip, Montana and Ashland/Otter Creek, Montana. As stated in the Revised Application, the purpose of the project is to transport low-sulfur, sub-bituminous coal from proposed and future mine sites in Rosebud and Powder River Counties, including the proposed Otter Creek mine. The southern portion of the proposed rail line was previously authorized by the STB's predecessor, the Interstate Commerce Commission (ICC), in 1986. The proposed line differs from that previously authorized line as follows: (1) the northern connection point with BNSF trackage has been shifted from Miles City to Colstrip and (2) refinements are being proposed to the previously authorized alignment south of the Tongue River crossing. The proposed refinements address rail operational considerations, including straightening and shortening the alignment. Also, TRRC does not intend to construct previously-authorized rail lines south of Terminus Point 1. BNSF is a partial owner of TRRC, is the proposed operator of the rail line, and is a party to the Revised Application.

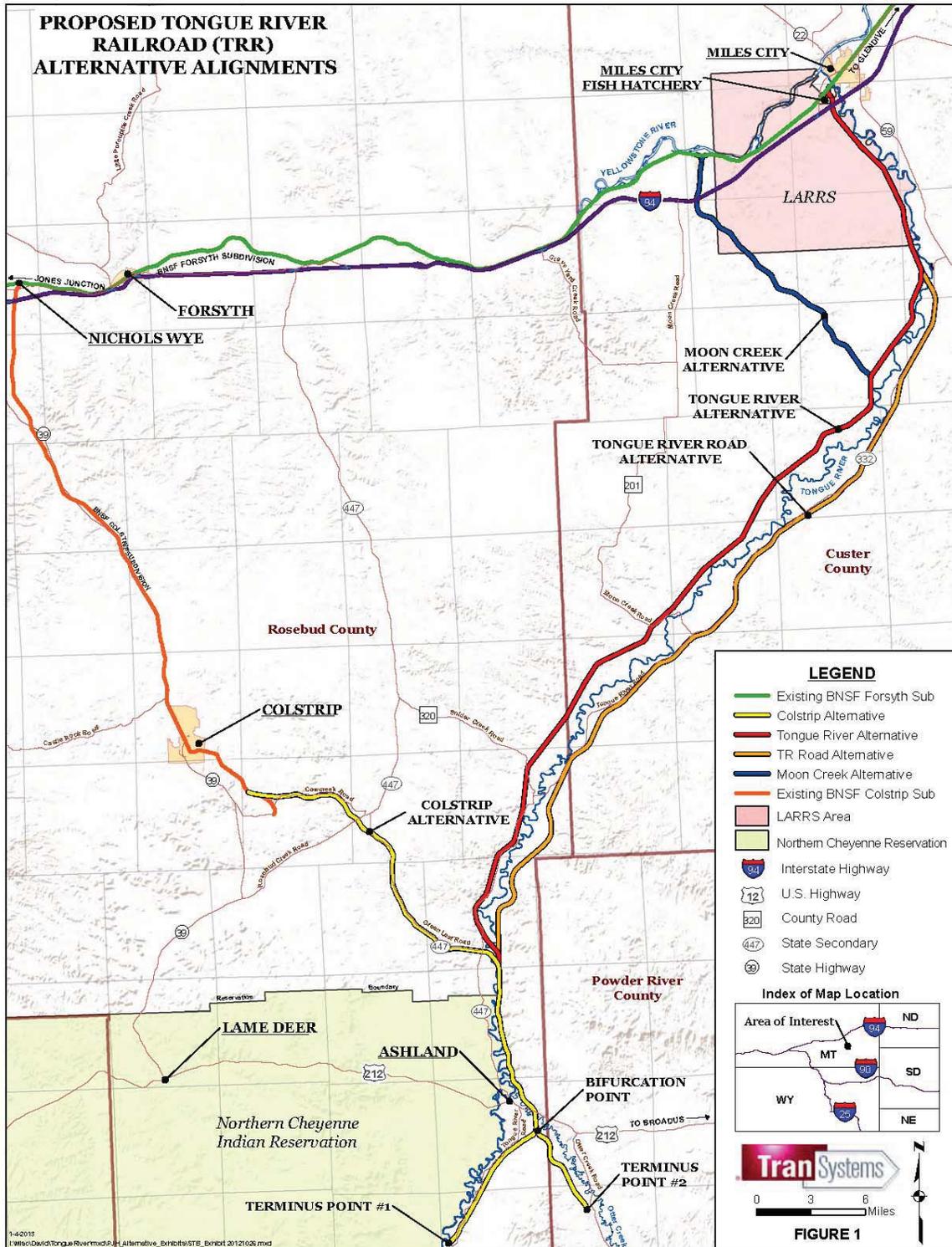
The STB has determined that it will conduct a new environmental review of the currently-proposed project. To support the environmental review, a third-party contractor has been retained to work with the STB's Office of Environmental Analysis, as provided under the STB's rules.

To assist the STB and its contractor, TRRC provides this Alternatives Screening Analysis of alternative alignments and other transportation options that have been considered by TRRC. This Analysis identifies four feasible alternatives that TRRC believes should be carried forward for further environmental study by the STB and also identifies other alternatives that TRRC has determined are not feasible based on applicable screening criteria and therefore that it believes do not warrant further detailed study. Detailed map data for each of the four alternatives has been shared with the STB's third party contractor.

2. Alternatives Development

TRRC has identified four rail alternatives that it recommends to be carried forward for further study, several rail alternatives that were considered but that it believes do not warrant further detailed study, and several non-rail alternatives that were considered but that it also believes do not warrant further detailed study. In assessing these alternatives, TRRC has relied to some extent on information previously gathered on these alternatives, supplemented by current or updated information where available and relevant. The four rail alternatives that TRRC recommends for further detailed study are shown on Figure 1.

Figure 1 Rail Alternatives Map



3. Rail Alternatives that Should be Considered for Further Study

3.1 Colstrip Alternative

The Colstrip Alternative was identified in TRRC's December 17 Application as its preferred route. The north end of the Colstrip Alternative will connect to the existing BNSF Colstrip Subdivision just south of Colstrip, MT and continue east and south, crossing and paralleling Cow Creek Road for about seven miles before crossing Rosebud Creek Road and then Greenleaf Road. The rail line will then run generally parallel to Greenleaf Road for about eleven miles to the south and east before crossing Tongue River Road and then the Tongue River. From just east of the Tongue River crossing, approximately nine miles north of Ashland, MT, the alignment matches the Tongue River Alternative going south to Ashland, dividing at the bifurcation point and continuing southwest and southeast of Ashland to Terminus Points 1 and 2. The total length of new railroad construction for the Colstrip Alternative is about 42 miles including the trackage south of the bifurcation point serving both Terminus Points 1 and 2. The estimated cost to construct the Colstrip Alternative is \$416 Million (2013 Cost). Upgrades to the existing BNSF Colstrip Subdivision and the connection between the Colstrip and Forsyth Subdivisions will be made to bring the branch line up to current main line standards as well.

3.2 Tongue River Alternative

The Tongue River Alternative was previously identified as TRRC's preferred alternative. TRRC has previously proposed modifications to the version of this Alternative approved by the ICC in 1986 which are designed to straighten curves to facilitate modern unit train movements. It is this modified version of the Tongue River Alternative that is considered here. This Alternative originates at a wye connection to the existing BNSF mainline at Miles City. The current configuration includes the west leg of the wye passing through the north eastern edge of the Miles City Fish Hatchery. The alignment would cross Interstate 94 beneath a new highway grade separation and then follow the west side of the Tongue River south from Miles City. This portion of the route would cross the United States Department of Agriculture Livestock and Range Research Station (LARRS). The alignment continues southward west of the Tongue River, generally on high ground outside the floodplain of the river; however, at a few locations, due to the topography and river meanders, the alignment runs within about 500 to 1,000 feet of the river. About 10 miles north of Ashland, the alignment crosses the Tongue River on a new bridge north of the Northern Cheyenne Indian Reservation in order to access the proposed Otter Creek Mine and Terminus Point 1, which are both east of Tongue River. The alignment continues southward on the east side of the river, passing east of Ashland. The railroad would cross U.S. Route 212 and Otter Creek on new bridges, and then split into two branches, running southwesterly and southeasterly, respectively, to mine sites at Terminus Points 1 and 2. Terminus Point 1 is near the previously permitted Montco Mine site and Terminus Point 2 is near the proposed Otter Creek Mine site. The total length of new railroad construction is about 83 miles, including the trackage south of the bifurcation point serving both Terminus Points 1 and 2. The estimated cost to construct the Tongue River Alternative is \$625 Million (2013 Cost).¹

¹ The cost of this option is higher than the \$490 Million cost estimated in TRRC's October 16, 2012 Revised Application for Construction and Operation Authority. That is because additional information which supports the higher cost estimate has been developed since the filing of that Application.

3.3 Tongue River Road Alternative

The northern portion of the Tongue River Road Alternative is the same as the Tongue River Alternative. Both alternatives originate at a wye connection to the existing BNSF mainline at Miles City. The current configuration includes the west leg of the wye passing through the northeastern edge of the Miles City Fish Hatchery. The alignment would cross Interstate 94 beneath a new highway grade separation and then follow the west side of the Tongue River south from Miles City. This portion of the route would cross the LARRS. The alignment continues about 2 miles south of the LARRS, and then crosses to the east side of the river on a new bridge. The route continues southward on the east side of the river, generally parallel to the east side of Tongue River Road until the Tongue River Road turns and crosses to the west side of the river, about 19 miles north of Ashland. The railroad continues southward on the east side of the river to Ashland. The portion of this route, from about 10 miles north of Ashland to Terminus Points 1 and 2, follows the same alignment as the Tongue River Alternative. The alignment passes east of Ashland, crosses U.S. Route 212 and Otter Creek on new bridges, and then splits into two branches, running southwesterly and southeasterly, respectively, to mine sites at Terminus Points 1 and 2. The total length of new railroad construction for the Tongue River Road Alternative is about 83 miles including the trackage south of the bifurcation point serving both Terminus Points 1 and 2. The estimated cost to construct the Tongue River Road Alternative is \$753 Million (2013 Cost).

3.4 Moon Creek Alternative

The Moon Creek Alternative was considered as an alternative to minimize impacts to the Miles City Fish Hatchery and the LARRS. This alternative originates at a wye connection to the existing BNSF mainline, about 8.4 miles west of Miles City. Previous versions of this alignment originated at the old Milwaukee Road alignment and required a new bridge crossing the Yellowstone River; the current configuration does not cross the Yellowstone River. The alignment runs southward and crosses Interstate 94 beneath a new highway grade separation. The alignment passes through about 2.4 miles of the western edge of the LARRS, and then continues southeasterly along the Moon Creek drainage for about 17.2 miles toward the Tongue River. The alignment then runs southward along the same alignment as the Tongue River Alternative, crossing the Tongue River and continuing southwest and southeast of Ashland to Terminus Points 1 and 2. The total length of new railroad construction for the Moon Creek Alternative is about 82 miles including the trackage south of the bifurcation point serving both Terminus Points 1 and 2. The estimated cost to construct the Moon Creek Alternative is \$731 Million (2013 Cost).

4. Alternatives Screening Analyses

4.1 Alternatives Screening Criteria

The alternatives described in this Analysis were subjected to screening generally similar to analyses conducted in the previous studies. The screening criteria included engineering feasibility (construction and operating), environmental consequences discernible at this stage, and cost considerations. In screening alternatives, attention was also paid to the length of the track that would need to be constructed, avoiding sensitive areas and reducing known environmental impacts where possible. Track alignment was designed using current main line

standards, including maximum curvature of 2.5-degrees except at connections to existing BNSF trackage and a maximum ruling grade of 1%, while minimizing cuts and fills to the extent practical.

Table 1 summarizes the descriptions, environmental impacts, engineering issues, and relative advantages of each of the four alternatives identified for further analysis. Table 2 summarizes the physical characteristics of each of these alternatives. The following sections discuss the screening criteria and relevant data applicable to each of the four rail alternatives recommended for further study. General observations were made of portions of the potential alignments from public roadways. However, due to the lack of site access, no recent field studies have been conducted to date to evaluate environmental features such as wetlands, flora and fauna, or cultural resources.

4.2 Railroad Construction Parameters

Each of the proposed rail alternatives would utilize conventional steel-wheel on steel-rail train operations with diesel-electric locomotives. The rail line would be a single track constructed of continuous-welded rail and would be built and maintained to FRA Class 3 standards. Passing sidings will be constructed at locations to be determined during the design phase, depending on the alternative selected for construction. The rail line is planned to occupy a minimum right-of-way of 200 feet, although the actual right-of-way at specific locations may vary depending on land acquisition conditions, topography requiring large cuts or fills, or other factors. Rail line construction will include clearing and excavating earth and rock on previously undisturbed land. Due to the variable natural topography, construction will require both cuts and fills. To the extent practicable, TRRC would attempt to adjust the design profile to balance cut and fill quantities. Typical railway culverts and bridges will be used to cross streams, drainageways, and grade-separated roadways where needed.

4.3 Railroad Operational Issues

TRRC anticipates that at full mine production for the Otter Creek mine, coal tonnage hauled will result in about 26 round trips per week on a 7-day weekly schedule. Railroad operational issues associated with the four rail alternatives are generally associated with the grades encountered along each alignment. Estimated ruling grades against loads for each alternative are as follows:

- Colstrip Alternative: 1.00% max, with about 12.76 miles total length against load.
- Tongue River Alternative: 0.94% max, with about 1.46 miles total length against load.
- Tongue River Road Alternative: 1.00% max, with about 1.46 miles total length against load.
- Moon Creek Alternative: 1.00% max, with about 4.88 miles total length against load.

Table 1. TRR Alternatives Comparison

| Route Alternative | Length (miles) | Environmental/ Operational Issues | Environmental/Operational Advantages |
|-------------------|---------------------|--|--|
| Colstrip | ~42 mi to TP1 & TP2 | <ol style="list-style-type: none"> Requires new grade separation of US 212, and possibly Tongue River Road. Longest total ruling grade. Longest continuous ruling grade. | <ol style="list-style-type: none"> Shortest rail line length. Least grading quantities and excess excavation. Highest % parallel to existing transportation corridors. No grade separation of I-94 required. Does not pass through or near USDA LARRS. Does not pass through or near Miles City Fish Hatchery. Least Right-of-Way Acquisition, including Grazing and Irrigated Land Least impacts to BLM lands. Affects and bisects least # of landowners. Lowest impacts to Block Management Areas and Conservation Easements. Lowest rail line length parallel to Tongue River Valley. Lowest number of stream crossings. Utilizes existing BNSF track to access the BNSF mainline. Although currently lightly used, population is accustomed to the track from Colstrip to the main line near Forsyth. |
| Tongue River | ~83 mi to TP1 & TP2 | <ol style="list-style-type: none"> Shares longest rail line length with Tongue River Road Alternative. Lowest % parallel to existing transportation corridors. Requires new grade separations of I-94, US 212, and possibly Tongue River Road. Shares highest impact to USDA LARRS with Tongue River Road Alternative. Passes through Miles City Fish Hatchery. Highest impacts to Block Management Areas and Conservation Easements. Highest rail line length parallel to Tongue River Valley. | <ol style="list-style-type: none"> Least Impacts to State and County Land. Shares shortest total ruling grade with Tongue River Road Alternative. Shortest continuous ruling grade. |

| Route Alternative | Length (miles) | Environmental/ Operational Issues | Environmental/Operational Advantages |
|-------------------|---------------------|--|--|
| Tongue River Road | ~83 mi to TP1 & TP2 | <ol style="list-style-type: none"> 1. Shares longest rail line length with Tongue River Alternative. 2. Highest grading quantities and excess excavation 3. Requires new grade separations of I-94, US 212, and possibly Tongue River Road. 4. Shares highest impact to USDA LARRS with Tongue River Alternative. 5. Passes through Miles City Fish Hatchery. 6. Highest Right-of-Way Acquisition, including Grazing and Irrigated Land. 7. Affects and bisects highest # of landowners. 8. Passes near or through more residential drives than other options. | <ol style="list-style-type: none"> 1. Shares shortest total ruling grade with Tongue River Alternative. |
| Moon Creek | ~82 mi to TP1 & TP2 | <ol style="list-style-type: none"> 1. Second highest grading quantities and excess excavation. 2. Requires new grade separations of I-94, US 212, and possibly Tongue River Road. 3. Impacts USDA LARRS 4. Most impacts to BLM lands 5. Most impacts to State and County land. 6. Affects and bisects second-most number of landowners. 7. Second highest rail line length parallel to Tongue River Valley. 8. Highest number of stream crossings. | <ol style="list-style-type: none"> 1. Does not pass through or near Miles City Fish Hatchery. 2. Less impact to USDA LARRS than Tongue River and Tongue River Road Alternatives. |

Table 2. TRR Rail Alternative Characteristics

| No. | Alternative Alignment Characteristics | Colstrip | Tongue River | Tongue River Road | Moon Creek |
|-----|---|--------------|--------------|-------------------|--------------|
| 1 | Length of New Main Track Construction (Miles) | 42.1 | 83.1 | 83.1 | 81.7 |
| 2 | Cut (Cubic Yards) ¹ | 18,100,000 | 25,300,000 | 38,800,000 | 36,200,000 |
| 3 | Fill (Cubic Yards) ¹ | 17,700,000 | 22,900,000 | 34,600,000 | 33,100,000 |
| 4 | Excess Cut (Cubic Yards) ¹ | 400,000 | 2,400,000 | 4,200,000 | 3,100,000 |
| 5 | Length of Public Roadway Impacted (Miles) | 8.3 | 8.9 | 9.2 | 8.9 |
| 6 | Length Alignment Parallels Existing Transportation Corridor (Miles (% of New Main Length)) | 18.1 (52.5%) | 10.1 (13.4%) | 37.0 (49.8%) | 10.1 (13.6%) |
| 7 | Alignment Requires New Interstate 94 Crossing? | No | Yes | Yes | Yes |
| 8 | County and State Public Roadway Crossings | 5 | 3 | 4 | 4 |
| 9 | Length Alignment Impacts USDA Livestock and Range Research Station (Miles) | 0.0 | 9.5 | 9.5 | 2.4 |
| 10 | Alignment Crosses Miles City Fish Hatchery? | No | Yes | Yes | No |
| 11 | Right-of-Way Acquisition (Acres) ² | 2,400 | 4,100 | 4,500 | 4,300 |
| 12 | Right-of-Way Acquisition of Grazing Land (Acres) ² | 1,560 | 3,200 | 3,520 | 3,020 |
| 13 | Right-of-Way Acquisition of Irrigated Land (Acres) ² | 40 | 90 | 230 | 90 |
| 14 | Length of Impacts to Bureau of Land Management (Miles) | 0.7 | 3.6 | 2.4 | 4.6 |
| 15 | Length of Impacts to State/County Land (Miles) | 3.4 | 7.4 | 3.4 | 16.5 |
| 16 | Number of Affected Landowners ³ | 44 | 53 | 60 | 54 |
| 17 | Number of Bisected Landowners ⁴ | 30 | 40 | 42 | 41 |
| 18 | MT FW&P Block Management Areas and Conservation Easements (Miles) | 9.5 | 27.7 | 9.8 | 21.8 |
| 19 | Length Alignment Parallels Tongue River Valley (Miles) | 17.0 | 68.2 | 31.8 | 57.7 |
| 20 | Number of Stream Crossings ⁵ | 99 | 270 | 250 | 298 |
| 21 | Number of River Crossings | 1 | 1 | 1 | 1 |
| 22 | Max Curvature (Excluding Wye Tracks) | 2°20' | 2°20' | 2°20' | 2°20' |
| 23 | Total Length of Curves (Miles) | 13.84 | 14.81 | 23.54 | 17.56 |
| 24 | Ruling Grade Compensated for Horizontal Curves where Applicable | 0.91 - 1.00% | 0.86 - 0.94% | 0.91 - 1.00% | 0.91 - 1.00% |
| 25 | Total Length of Ruling Grade Against Load ⁶ (Miles) VPI - VPI | 12.76 | 1.46 | 1.46 | 4.88 |
| 26 | Max Continuous Length of Ruling Grade Against Load ⁶ (Miles) | 7.15 | 0.80 | 1.46 | 4.88 |
| 27 | Total Length of Grade Against Load ⁶ (Miles) | 18.72 | 26.29 | 26.66 | 24.22 |
| 28 | Conceptual Estimate of Probable Cost (2013 \$Million) | 416 | 625 | 753 | 731 |
| 29 | Conceptual Estimate of Probable Cost Per Mile (2013 \$Million/Mile) | 9.88 | 7.52 | 9.06 | 8.95 |
| | ¹ Includes grading for proposed single main track and public road relocations, but not for future track at 15' track centers or adjacent track access road | | | | |
| | ² Includes R/W for future grading of second track at 15' track centers and adjacent track access road | | | | |
| | ³ Affected Landowner is defined here as a landowner whose property is impacted by the proposed Right-of-Way | | | | |
| | ⁴ Bisected Landowner is defined here as landowners whose property is impacted and severed by the proposed Right of Way | | | | |
| | ⁵ Perennial, Intermittent, or Ephemeral Streams; may be indicative of potential wetland impacts | | | | |
| | ⁶ Grade Against Load is defined here as the uphill grade which loaded trains must traverse heading northbound | | | | |

The ruling grade is given as a maximum due to the fact that horizontal curves, and thereby curve compensations, do not apply to the entire length of ruling grade. BNSF has conducted train performance modeling on each alternative to determine power and operating requirements. The results of the performance modeling show none of these ruling grades would preclude railroad operations. Notably, the modeling indicates that the Colstrip alignment does not require additional locomotive power to haul current unit coal train lengths despite its longer length against load. Therefore, none of the four rail alternatives should be discarded based on railroad operational issues.

4.4 Environmental Impacts to Land Use

Among the potential environmental consequences associated with the rail alignments are temporary and permanent impacts to the Miles City Fish Hatchery, the LARRS, Interstate 94, and local ranches and farms. Although portions of the right-of-way for all the alternatives would be acquired from private landowners, it appears that only one residence would be displaced, located north of Ashland on the alignment that is common to all the alternatives under consideration. The railroad construction and operation may also cause environmental impacts to natural and cultural resources. These potential environmental impacts that are currently discernible are discussed in the following sections. Additional data will be developed during the EIS process.

4.4.1 Miles City Fish Hatchery

The Tongue River and Tongue River Road Alternatives originate at a wye connection to the existing BNSF mainline at Miles City. The current configuration for both alternatives includes the west leg of the wye passing through the northeastern edge of the Miles City Fish Hatchery. TRRC has reached a tentative agreement with the Montana Department of Fish, Wildlife & Parks for an easement for the proposed railroad to pass through the fish hatchery; however, mitigation including construction of at least one replacement hatchery basin would be required. The Moon Creek and Colstrip Alternatives do not run through or near the Miles City Fish Hatchery.

4.4.2 Interstate 94

The Tongue River, Tongue River Road, and Moon Creek Alternatives would cross Interstate 94, likely beneath new highway grade separations. Traffic would be disrupted during construction of the overpass structures. The Colstrip Alternative does not require construction of a new highway grade separation; the existing BNSF Colstrip Subdivision track already passes beneath Interstate 94.

4.4.3 LARRS

The Tongue River and Tongue River Road Alternatives pass through about 9.5 miles of the eastern edge of the LARRS. Agricultural research could be disrupted to some degree by railroad construction and/or train operations. The Moon Creek Alternative crosses only about 2.4 miles of the western portion of the LARRS. The Colstrip Alternative does not cross or pass near the LARRS.

4.4.4 Bureau of Land Management, Block Management Areas and Conservation Easements

The Tongue River, Tongue River Road, and Moon Creek Alternatives pass through about 2.4 to 4.6 miles of Bureau of Land Management parcels while the Colstrip Alternative crosses only about 0.7 mile. Approximately 27.7 miles of the Tongue River Alternative passes through Montana Fish Wildlife & Parks (MT FW&P) Block Management Areas and Conservation Easements compared to 21.8 miles of the Moon Creek Alternative, 9.8 miles of the Tongue River Road Alternative and 9.5 miles of the Colstrip Alternative, which has the lowest impact.

4.4.5 Impacts to Property

All of the rail alternatives impact private property. Some private property is impacted by the rail alignment along the edge of parcels such that the remainder of the property is usable, while other parcels are bisected by the rail alignment such that a portion of the property may be reduced in utility even though it is not specifically needed for railroad right-of-way. The numbers of impacted private properties and bisected private properties are as follows:

- Colstrip Alternative: 30 bisected / 44 impacted.
- Tongue River Alternative: 40 bisected / 53 impacted.
- Tongue River Road Alternative: 42 bisected / 60 impacted.
- Moon Creek Alternative: 41 bisected / 54 impacted.

4.5 Topography and Soils

The topography of the area is characterized by hilly, rugged uplands interspersed with wide, rolling valleys. Most of the rail alternatives would run on high ground outside the Tongue River basin, except where the alignments cross the Tongue River north of Ashland and Otter Creek south of Ashland. Due to the variable topography, construction of all the rail alternatives will require both cuts and fills. To the extent practicable, TRRC would attempt to adjust the design profile to balance cut and fill quantities. Table 2 shows the relative estimated cut and fill quantities. All the rail alternatives appear to require more cut than fill, resulting in between 0.4 million to 4.2 million cubic yards of excess earth, with the Colstrip Alternative requiring the smallest volume of additional cut. Some of the excess material may be accounted for in material shrinkage when soil and soft rock are cut from existing loose bank conditions and placed in compacted railroad embankment. The remainder will be utilized onsite in flattened fill slopes.

Soils in the project area are not expected to be unsuitable for railroad construction. Pending site access, geotechnical investigations are planned to characterize site soils and develop foundation recommendations for structures and large fills.

4.6 Water Resources

4.6.1 Surface Water and Wetlands

All of the rail alternatives would cross the Tongue River once. The Tongue River, Moon Creek, and Colstrip Alternatives all cross the Tongue River at a location about 10 miles north of

Ashland. The Tongue River Road Alternative crosses the Tongue River about 10 miles south of the BNSF connection at Miles City. The southern portion of the railroad south of the bifurcation point between trackage connecting to Terminus Points 1 and 2, which is common to all the alternatives, crosses Otter Creek southeast of Ashland. All the alignments would cross other small streams and drainageways, using culverts and bridges depending on the length of the crossing. Table 2 summarizes the required numbers of stream crossings estimated by reviewing USGS topographic maps and aerial photography. Due to the lack of site access, no field studies have been conducted to date to verify the numbers or characteristics of potential streams to be crossed. The estimated numbers of stream crossings for each alternative, including the Tongue River and Otter Creek crossings, are as follows:

- Colstrip Alternative: 100 crossings.
- Tongue River Alternative: 271 crossings.
- Tongue River Road Alternative: 251 crossings.
- Moon Creek Alternative: 299 crossings.

Due to the relatively shorter length of new rail construction and the higher elevations of the route, the Colstrip Alternative has by far the fewest number of waterbody crossings. However, all of the alternatives cross the Tongue River and Otter Creek and up to five other perennial streams. Relatively small culverts and bridges are common elements of railroad construction, and following construction, the presence of culverts and bridges is not expected to cause any significant continuing impacts to area drainage, surface water quality, or aquatic habitat.

Rail construction could also directly affect wetlands, if present within the new rail right-of-way (ROW), by clearing, grading and placement of fill material. Wetlands adjacent, but outside of the ROW, may be indirectly impacted by the fragmenting of habitat, changes in hydrology, and changes in vegetation diversity.

Due to the lack of site access, no field studies have been conducted to date to determine and delineate wetlands along the rail alternatives. Large wetlands have not been observed in general observations made in some locations from public roadways. Most of the routes of the four rail alternatives have not been mapped in the National Wetland Inventory (NWI) to identify wetlands. Available NWI mapping of areas south of Miles City and north of Colstrip generally indicate intermittent occurrences of small emergent or shrub/scrub wetlands adjacent to streams or drainage ways. Isolated stock ponds are also shown. Based on interpretation of the route topography, limited visual observations from public roadways, and extrapolation of the apparent typical NWI mapping, large contiguous wetland areas are not likely present in any of the four rail alternatives. Small intermittent wetlands may be present adjacent to the Tongue River and other relatively-permanent streams that may provide sufficient hydrology for wetland establishment.

When site access is obtained, wetland and waterbody delineations will be conducted to support the environmental review of the project and permitting requirements. The actual wetland determinations will include evaluations of soil, vegetation, and hydrology in accordance with the U.S. Army Corps of Engineers *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* and the *1987 Corps Wetland Delineation Manual*. At this time, qualitative evaluations of potential wetland impacts can be made based on the relative numbers of stream crossings encountered by each alternative. Wetlands would be most likely to occur at locations where sufficient hydrology is present, such as streams and drainage ways.

The relative numbers of stream crossings as shown above may represent the relative amounts of wetland impacts.

The northern sections of the Tongue River and Tongue River Road Alternatives appear to run within the floodplains of the Tongue River for short stretches. A higher likelihood for wetlands exists within the floodplains. All of the rail alternatives cross the Tongue River once and follow the same southern alignment along Otter Creek to Terminus Point 2. Therefore, potential wetland impacts in the southern segments appear to be equivalent between the rail alternatives. Overall, the Colstrip Alternative appears to have the potential for significantly less wetland impacts than the other alternatives, due to its shorter length of new construction, fewer stream crossings, and divergence from the Tongue River floodplain.

4.6.2 Groundwater

Construction of each of the alternatives would occur at or above grade, with cuts required on the upland side of construction due to the topography. Localized groundwater infiltration may be altered within the footprint of the rail line. The rail line is not expected to cause significant effects to groundwater movement or quality.

4.6.3 Floodplains

Most of the routes for the four rail alternatives have not been mapped by FEMA to identify floodplains. The FEMA Flood Insurance Rate Map (FIRM) for Custer County shows Zone A floodplains along the Tongue River for a few miles south of Miles City at the northern end of the Tongue River and Tongue River Road Alternatives. The lack of flood hazard mapping over much of the project area suggests that the areas are not prone to flooding, although this has not been confirmed. The rail alternatives generally run on high ground. Flood-prone areas may be crossed at the Tongue River crossing and in a few locations where the alignment runs close to current or abandoned river meanders. Stream crossing and drainage structures will be hydraulically designed to convey the expected water flows. When an alternative is selected, TRRC will coordinate with the affected Counties to obtain floodplain development permits if necessary.

4.7 Biological Resources

4.7.1 Endangered and Threatened Species

According to the United States Fish and Wildlife Service (USFWS) list of Endangered, Threatened, Proposed, and Candidate Species in Montana Counties, the following listed endangered species may be present in Custer, Powder River, and Rosebud Counties:

- Pallid sturgeon;
- Interior least tern;
- Black-footed ferret;
- Whooping crane;
- Greater sage grouse (candidate species); and
- Sprague's pipit (candidate species).

Subject to updated review, no USFWS-designated critical habitat for these or other species have been identified for the project locations. The USFWS Montana Field Office issued a Biological Opinion on July 12, 2006 regarding the effects of the proposed railroad on listed species. The 2006 list of endangered species within the project counties included the species listed above plus the bald eagle, which has since been de-listed as an endangered species but is still protected under the Bald and Golden Eagle Protection Act. The Biological Opinion concurred that the proposed action (constructing and operating the proposed railroad) was likely to adversely affect the bald eagle, and was not likely to adversely affect the pallid sturgeon, whooping crane, interior least tern, and black-footed ferret. "Candidate species" indicates the USFWS has sufficient information on the biological status and threats to these species to propose to list them as threatened or endangered. USFWS encourages their consideration in environmental planning and partnerships, however, none of the substantive or procedural provisions of the Endangered Species Act apply to candidate species.

Since all the alternative routes cross the Tongue River and traverse similar upland terrain, the potential for these listed species or their habitat to be present within each alternative alignment appears to be approximately equivalent. The Colstrip Alternative may cause the fewest impacts to listed species and their habitat because of its shorter length and its location adjacent to existing roadways. The Colstrip Alternative also may cause fewer impacts to bald eagles since it diverges away from the Tongue River where bald eagles may be likely to nest.

4.7.2 Flora

Rail line construction will include clearing surface vegetation and excavating earth and rock on previously undisturbed land. Secondary impacts to vegetation may include loss or alteration of shrub or forested habitat, fragmentation of habitat types, and altered vegetation succession. Creation of staging areas and work pads would cause temporary vegetation impacts in all the rail alternatives. Based on visual observation of the alternatives from public roadways, the natural vegetation generally consists of variable grassland and shrublands interspersed with coniferous forests, with deciduous trees and shrubs in drainages and bottomland areas. Areas disturbed during construction and not covered by railroad structures will be reseeded with native species.

The Colstrip Alternative has the potential to cause the least amount of vegetation impacts because of its shorter length and its route adjacent to existing roadways where natural vegetation has already been disturbed. The Tongue River Alternative is the longest in length and has a higher potential for impacts to established vegetation and scrubland forests.

4.7.3 Terrestrial Wildlife

A variety of wildlife species likely inhabit areas within all alternatives. The majority of land within the alternatives is open pasture or scrubland forests. Potential impacts to wildlife for each alternative would vary based on the dependence of specific wildlife to a preferred habitat, sensitivity to habitat fragmentation and past and present population trends. Habitat fragmentation occurs when large areas of continuous core habitat are split into smaller pieces, thereby increasing the amount of habitat edge. Potential construction impacts common to all alternatives could include habitat alteration and loss, disturbance and displacement of wildlife, disruption of food sources and direct mortality from construction equipment and/or trains. Common potential impacts related to train operation could include animal/train collisions, habitat

fragmentation, and potential exposure to spills. Appropriate mitigation will be adopted to address these potential impacts.

The Colstrip Alternative has the least potential for wildlife impacts due to its shorter length. Also, the Colstrip Alternative will create less habitat fragmentation than the other alternative routes because it is shorter and a significant portion is adjacent to established roadways. The Tongue River Alternative is the longest in length and has a higher potential for wildlife impacts.

4.7.4 Aquatic Ecology

All of the four rail alternatives cross the Tongue River, Otter Creek, and several named and unnamed tributaries that provide habitat for numerous fish and aquatic macroinvertebrate species. Construction activities conducted in the waterbodies may cause temporary increases in sedimentation and short-term degradation of water quality. Water quality and aquatic habitat would be expected to return to normal conditions when construction is completed. Stream crossings may result in some loss or alterations to in-stream and associated riparian habitat. Bridge crossings would likely result in less impact to aquatic habitat than installation of culverts.

Since the Colstrip Alternative crosses fewer waterbodies than the other rail alternatives, as presented in Section 4.6.1, the Colstrip Alternative can be expected to cause less aquatic species and habitat disturbance than the other alternatives, although operation of the railroad on any of the alternative alignments is not expected to cause significant long-term adverse effects to aquatic ecology.

4.8 Cultural Resources

The alternative routes will be subject to updated comparative cultural resources reviews during the EIS and Section 106 processes. Those updated reviews have not yet been undertaken. Based on information reported in the Tongue River I EIS, the Colstrip Alternative would impact fewer total prehistoric and historic resources than each of the other alternatives, while the Tongue River Road Alternative would impact a greater total of resources than the other alternatives. Clearly, however, the additional cultural resources information, including information on impacts to traditional Native American cultural properties, will need to be gathered and the relevant impacts assessed.

4.9 Transportation

Most of the rail alternatives pass through sparsely-populated rural country that is generally used for rangeland and some crop production. The Tongue River Road and Colstrip Alternatives parallel existing transportation corridors through much of their lengths. Although these alternatives may result in less division of agricultural parcels, these alternatives require more roadway grade crossings than the other alternatives, leading to the potential for more traffic delays and collisions.

Grade separations are anticipated at Interstate 94 (except for the Colstrip Alternative, which would not cross I-94) and U.S. Route 212. Other roadways will be crossed at-grade, although the Montana Department of Transportation has asked that Tongue River Road be evaluated for grade separation. The numbers of public and private roadway grade crossings estimated for

each alternative are as follows (additional private crossings may be required through landowner negotiation):

- Colstrip Alternative: 5 public / 18 private
- Tongue River Alternative: 3 public / 41 private.
- Tongue River Road Alternative: 4 public / 46 private.
- Moon Creek Alternative: 4 public / 36 private.

4.10 Right-of-Way Acquisition

Construction of the railroad will require acquisition of right-of-way from private and public landowners. The numbers of landowners directly affected by each alternative are as follows:

- Colstrip Alternative: 44 landowners.
- Tongue River Alternative: 53 landowners.
- Tongue River Road Alternative: 60 landowners.
- Moon Creek Alternative: 54 landowners.

Although portions of the right-of-way for all the alternatives would be acquired from private landowners, it appears that only one residence would be displaced, located north of Ashland on the alignment that is common to all the alternatives under consideration. Due to the relatively shorter length of new rail construction, the Colstrip Alternative directly affects the fewest number of landowners. Property negotiations with fewer landowners may result in more expeditious acquisition of right-of-way for the Colstrip Alternative. The relative numbers of landowners directly affected by the other alternatives are similar to each other, ranging from 53 landowners on the Tongue River Alternative to 60 landowners on the Tongue River Road Alternative.

Rail traffic utilizing the Colstrip Alternative would pass through the city of Colstrip on the existing BNSF track. Colstrip has an estimated population of 2,200 according to the 2010 Census.

4.11 Air Quality

The U.S. Environmental Protection Agency (USEPA) National Ambient Air Quality Standards (NAAQS) regulations specify the maximum acceptable ambient concentration levels for six primary or “criteria” air pollutants: ozone (O₃), nitrogen dioxide (NO₂), carbon monoxide (CO), sulfur dioxide (SO₂), respirable particulate matter (PM), and lead (Pb). According to the USEPA *The Green Book of Nonattainment Areas for Criteria Pollutants as of July 20, 2012* (<http://www.epa.gov/oar/oaqps/greenbk/index.html>, accessed November 24, 2012), the Lame Deer area in Rosebud County, Montana persistently exceeds the NAAQS for PM (PM-10) and is designated as a “nonattainment area.” All other areas within the project alternatives are in attainment of the NAAQS.

Air emissions of PM may occur as fugitive dust from earthmoving activities during construction of the rail line. However, fugitive dust emissions during construction are temporary and can be readily controlled by water application. The Colstrip Alternative would result in the lowest temporary PM during construction since it requires the least amount of earthwork.

BNSF is currently performing modeling of locomotive emissions and fuel usage. A comparative discussion will follow upon completion of the modeling.

4.12 Noise and Vibration

TRRC has not conducted modeling to estimate noise or vibration effects caused by construction or operation of the railroad except for specific evaluations performed previously at the Miles City Fish Hatchery. The Tongue River and Tongue River Road Alternatives pass through the Miles City Fish Hatchery and LARRS, which may be sensitive receptors for noise and vibration. The Moon Creek Alternative reduces the amount of trackage through the LARRS. The Colstrip Alternative does not pass through the LARRS or the Fish Hatchery. Each of the rail alternatives traverses a common alignment east of the populated area of Ashland, so the potential effects of noise and vibration, if any, would be equivalent between the rail alternatives in that area. The Colstrip Alignment does not pass through any populated areas upon leaving the Tongue River valley.

4.13 Parks and Recreation

There are no designated recreation areas within any of the rail alternative alignments. The Tongue River and Tongue River Road Alternatives pass along the western edge of the Spotted Eagle Lake (Miles City) Recreation Area where the eastern leg of the wye connects to the BNSF main line.

4.14 Hazardous Materials and Waste Sites

According to the USEPA EnviroMapper for Envirofacts (<http://www.epa.gov/emefdata/em4ef.html?ve=7,46.22972869873047,-106.73079681396484&pText=Rosebud> , accessed November 24, 2012), there are no uncontrolled hazardous waste sites or other listed sites that suggest possible areas of contaminated soils that may be encountered during construction of any of the rail alternatives.

4.15 Socioeconomics

Most of the rail alternatives pass through sparsely-populated rural country. Although portions of the right-of-way for all the alternatives would be acquired from private landowners, it appears that only one residence would be displaced, located north of Ashland on the alignment that is common to all the alternatives under consideration. Most socioeconomic impacts to the region are expected to be the same for all the rail alternatives.

5. No-Build Alternative

The No-Build Alternative would result in no construction of any rail line to serve the Otter Creek mine or other mines in the Ashland area. The No-Build Alternative is based on the assumptions that either: 1) there will not be a need to transport coal from the proposed mines near Ashland/Otter Creek; or 2) another mode of transportation is preferable to the proposed railroad.

At this time, permitting for the Otter Creek mine is progressing. Therefore, there will be a need to transport coal from the area. However, we assume that the No-Build Alternative will be evaluated during the current STB EIS proceedings.

6. Alternatives Previously Considered and Eliminated from Detailed Study

Certain rail alternative routings were considered during the screening process and eliminated as being unfeasible or otherwise clearly inferior to the four rail alternatives described above on the basis of relevant screening criteria, including the length of required track construction or other readily discernible impacts. Non-rail alternatives for transporting coal from the Ashland/Otter Creek area also were evaluated in the previous environmental studies. The evaluations of the non-rail alternative transportation modes concluded that the non-rail alternatives are unfeasible. TRRC believes that these conclusions remain valid. The following sub-sections summarize the evaluations of the rail and non-rail transportation alternatives that TRRC does not believe warrant detailed consideration.

6.1 Rail Alternatives and Sub-Alternatives

A previous alignment of the Tongue River Road Alternative has been discarded due to impacts that it would have on newer developments on the east side of Miles City. Significant relocations to commercial and industrial development would be required as the alignment passed through the east side of Miles City and then continued southward crossing Interstate 94 beneath new highway grade separations. The rail line continued southward on the east side of the Tongue River just north of Pumpkin Creek, and then turned west and crossed the Tongue River. The rail line then turned southward and ran about 10 miles before crossing the Tongue River again, and then running on the east side of the Tongue River to Terminus Points 1 and 2. The current proposed alignment of the Tongue River Road Alternative originates on the west side of Miles City and includes only one crossing of the Tongue River.

An alternative known as the Bureau of Land Management (BLM) Alternative has been evaluated to determine approximate grading quantities and right-of-way impacts using the same criteria as the updated evaluation of the four rail alternatives described above. The north end of this alternative shares a common connection to the BNSF Forsyth Subdivision as the Moon Creek Alternative, which is a modification from the previously studied route. The connection point to the Forsyth Subdivision studied previously was not feasible due to excessive cuts through rugged terrain. The alignment runs south runs parallel to the Tongue River, but further west and along higher ground than the Tongue River Alternative. Although the grades are comparable to the Moon Creek Alternative, the grading quantities required to construct this alternative are about 60 million cubic yards of cut and 60 million cubic yards of fill, even with the adjustment of the north end to reduce grading. The grading footprint is about triple, and right-of-way impacts are about double, that of the Tongue River Road Alternative, which contains the highest volume of grading and right-of-way impacts of the four alternatives screened. For these reasons, it was not selected for further analysis.

Other alternative rail alignments were proposed during public scoping meetings in November 2012. Two of these alternatives would originate at Otter Creek and run east toward Broadus along US 212 before paralleling Montana State Route 59 (MT59) to the north or south. The two alternatives share a common alignment from the proposed Otter Creek Mine site north to US 212, then turn east and run parallel to US 212 for about 40 miles before diverging. The north

route turns north about 4 miles northwest of Broadus and runs parallel to MT59 for a distance of 60 miles before connecting to the Tongue River Road Alternative about 13 miles south of Miles City. The south option turns south about 3 miles southeast of Broadus and runs parallel to MT59 for a distance of about 78 miles before connecting to the existing BNSF Campbell Subdivision in Campbell, Wyoming. The northern MT59 alternative would require about 119 miles of new main track construction and the southern MT59 alternative would require about 127 miles of new main track construction. Impacts associated with construction and energy consumption would be at least double the impacts associated with any of the four alternatives identified for further study. For these reasons, these alternatives were not selected for further analysis.

Routings to the south of Ashland/Otter Creek were also considered. A rail route from Terminus Point 1 to the existing Spring Creek rail spur near Decker, Montana was originally proposed as part of Tongue River II EIS and refined in Tongue River III EIS. Although approved during those previous proceedings, significant concerns were raised by Native American groups and the National Park Service due to the proximity of the route to the Wolf Mountains battlefield site, which was added to the National Register of Historic Places in 2001 and designated a National Historic Landmark in 2008. Some concerns were also raised about the effect of vibrations caused by rock excavation during construction on the Tongue River Reservoir, as well as visual and noise issues for recreational users of the reservoir. The approved Tongue River III south alignment extended approximately 38 miles south from Terminus Point 1 to the existing Spring Creek rail spur near Decker, Montana. A meaningful comparison to the current preferred rail line would involve the route length from Terminus Point 2 to Miles City of approximately 119 miles for east-bound traffic via the Colstrip Alternative and approximately 340 miles via the Tongue River III south alignment. Terminus Point 2 to Jones Junction near Billings, MT requires west-bound traffic to travel approximately 148 miles via the Colstrip Alternative and approximately 209 miles via the Tongue River III south alignment. The additional route length of 221 miles for east-bound traffic and 61 miles for west-bound traffic, as well as approximately 52% more total grading and the aforementioned cultural resources and environmental impacts, are significant issues when compared to the Colstrip Alternative and do not merit further consideration of the TRRC III south alignment alternative in this screening analysis.

6.2 Non-Rail Alternatives

6.2.1 Conveyor

The previous studies considered constructing a conveyor system to transport coal from the mine to a bulk transportation system to the BNSF main line at Miles City. However, the previous studies concluded that building and operating the conveyor system would not be feasible for the following reasons:

- The cost of constructing and operating a conveyor system from Terminus Point 2 to Miles City would be higher than the cost of transporting the product on the proposed railroad. The higher cost would have a negative impact on the marketability of coal. Since the current proposed route to Colstrip is less than half the distance to Miles City, the total costs of a conveyor system would be less than the costs previously determined. It is assumed the costs of a conveyor and the proposed railroad to Colstrip would each be proportional to the shorter length of the current proposal. Therefore the conveyor

system would be expected to have a higher cost than the proposed railroad, although this has not been confirmed in this Alternatives Screening analysis.

- The constructor or operator of a conveyor system would likely not have the legal power of eminent domain to acquire right-of-way for the conveyor. It is not likely that all of the required right-of-way could be acquired through negotiation.
- A conveyor system operating 24/7 may cause constant noise annoyance.
- The conveyor system would likely present a significant barrier to wildlife migration at most or all portions of the conveyor route.
- Conveyor systems are normally designed for a specific tonnage capacity. With the possibility of additional mines being developed in the Otter Creek area, any conveyor system would require upgrading, or re-construction, to handle additional tonnage from new mines.
- We are not aware of any conveyor system in existence that is over 20 miles long.

6.2.2 Coal Slurry Pipeline

The previous studies considered constructing a coal slurry pipeline to transport coal from the mine to a bulk transportation system to the BNSF main line at Miles City. However, the previous studies concluded that building and operating the coal slurry pipeline system would not be feasible for the following reasons:

- The cost of constructing and operating a coal slurry pipeline system from Terminus Point 2 to Miles City would be higher than the cost of transporting the product on the proposed railroad. The higher cost would have a negative impact on the marketability of coal. As described above for a conveyor system, a coal slurry pipeline would be expected to have a higher cost than the proposed railroad, even along the shorter proposed route to Colstrip.
- The constructor or operator of a coal slurry pipeline system would likely not have the legal power of eminent domain to acquire right-of-way for the conveyor. It is not likely that all of the required right-of-way could be acquired through negotiation.
- A coal slurry pipeline system requires a reliable source of sufficient water to operate. It is unlikely that sufficient water supply is present in this area.

6.2.3 Hauling by Truck

The previous studies considered hauling coal from the Ashland/Otter mines to Miles City by truck using existing and new roadways. The previous studies concluded that hauling coal by trucks would not be feasible for the following reasons:

- The cost of hauling coal by truck from Terminus Point 2 to Miles City would be higher than the cost of transporting the product on the proposed railroad. The higher cost would have a negative impact on the marketability of coal. The costs of hauling coal by truck via Colstrip have not been determined, but typical cost per ton-mile for other similar haul situations indicates that truck hauling costs would be significantly higher than rail.
- Hauling the coal by truck would likely have a greater negative impact on air quality than transportation by rail, including higher fugitive dust emissions from the roadways and higher diesel exhaust emissions from the required number of operating trucks compared to the projected numbers of railroad locomotives.

- The large number of trucks operating on public roadways would cause significant increases in traffic, road damage, noise, and vibration. Using an assumption of 38 tons/truck maximum capacity for highway trucks with an additional trailer, the anticipated coal production of 20 MMT/year would require 1,442 round trips via truck every day of the year. This equates to approximately one round trip per minute.

6.2.4 Mine-Mouth Power Generation

Previous studies indicated that constructing and operating a mine-mouth electrical generating plant near the proposed mine may be cost competitive with rail transportation. The previous studies concluded that constructing and operating a mine-mouth electrical generating plant near the proposed mine would not be comparatively advantageous to rail transportation for the following reasons:

- The environmental impacts of constructing and operating an electrical generating power plant in this area would be substantial, including the plant's needs for large amounts of water, which would not be available in the area, and possible deterioration of air quality, including to the Northern Cheyenne Indian Reservation.
- Substantial environmental impacts would also result from siting and constructing the necessary high-voltage transmission lines from the plant.

7. Conclusion

Based on the analysis presented above, all four alternatives are feasible, but the Colstrip Alternative presents the shortest length of new construction, smallest grading footprint, least right-of-way acquisition, least waterway crossings and significantly less length parallel to the Tongue River valley compared to the other rail alternatives. The Colstrip Alternative does not require a new grade separation of I-94, would not impact LARRS or the Miles City Fish Hatchery and follows existing transportation corridors to a far greater extent than the other rail alternatives.



Tongue River Proceeding -- TRRC's Supplemental Alternatives Analysis
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1 Attachment



TRR_Supplement_to_Alternatives_Screening_Analysis_2013_04_30.pdf

Ken, Alan – Please find attached TRRC's supplemental alternatives screening analysis addressing the Decker Alternatives and the two route variations identified in the STB's March 22, 2013 final scoping notice.

I would be pleased to respond to any questions that you might have.

Regards. David Coburn/Attorney for Tongue River Railroad Company, Inc.

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**SUPPLEMENT TO ALTERNATIVES SCREENING ANALYSIS
EVALUATION OF ADDITIONAL RAIL ALTERNATIVES
UNDER CONSIDERATION FOR DETAILED STUDY**

**TONGUE RIVER RAILROAD
CUSTER, POWDER RIVER, AND ROSEBUD COUNTIES
MONTANA**

STB FINANCE DOCKET NO. 30186

Prepared by



TranSystems

and



Hanson Professional Services Inc.

April 30, 2013

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1. Introduction

The Tongue River Railroad Company, Inc. (TRRC) filed a Revised Application for Construction and Operation Authority with the Surface Transportation Board (STB) on December 17, 2012, proposing to construct and operate a rail line between the BNSF Colstrip Subdivision line at Colstrip, Montana and proposed and potential mine sites at Ashland/Otter Creek, Montana. The STB is preparing an Environmental Impact Statement (EIS) on the proposed project, including analysis of feasible alternatives to the proposed route. To assist the STB and its contractor, TRRC provided an Alternatives Screening Analysis dated January 11, 2013 summarizing evaluations of alternative rail alignments and other transportation options that were considered by TRRC. The Analysis identified four feasible alternatives that TRRC recommended to be carried forward for further environmental study by the STB and also identified other alternatives that TRRC advised are not feasible based on applicable screening criteria and therefore do not, in its view, warrant further detailed study.

During development of the scope of the EIS, the STB's Office of Environmental Analysis ("OEA") identified two additional rail alternatives and two alternative variations. These are being considered to determine if more detailed analysis in the EIS is warranted.¹ TRRC has prepared for OEA's consideration this Supplement to its previous Alternatives Screening Analysis, which evaluates the relative merits and feasibility of the additional identified rail alternatives and alternative variations.

2. Rail Alternatives under Consideration

TRRC recommended the following four rail alternatives to be carried forward for further study:

- Colstrip Alternative (the proposed route);
- Tongue River Alternative;
- Tongue River Road Alternative; and
- Moon Creek Alternative.

In addition to the four rail alternatives listed above, STB identified in a final scoping notice issued on March 22, 2013 two rail alternatives going south from Ashland, Montana and connecting to the BNSF network near Decker, Montana. STB also developed alternative variations for certain segments of the alternative alignments. The additional alternatives and alternative variations are as follows:

- Decker 1 Alternative;
- Decker 2 Alternative;
- Ashland East Variation; and
- Terminus 1 Variation.

The alternative alignments and variations to be considered are shown on Figures 1 through 3.²

¹ Surface Transportation Board Notice of Availability of the Final Scope of Study for the Environmental Impact Statement, Served March 22, 2013.

² Map for Figure 1 obtained from the Surface Transportation Board Tongue River Railroad Environmental Impact Statement website, http://www.tonguerivereis.com/documents/final_scope_maps.pdf, accessed March 29, 2013.

Figure 1. Final Scope Alternative Alignments

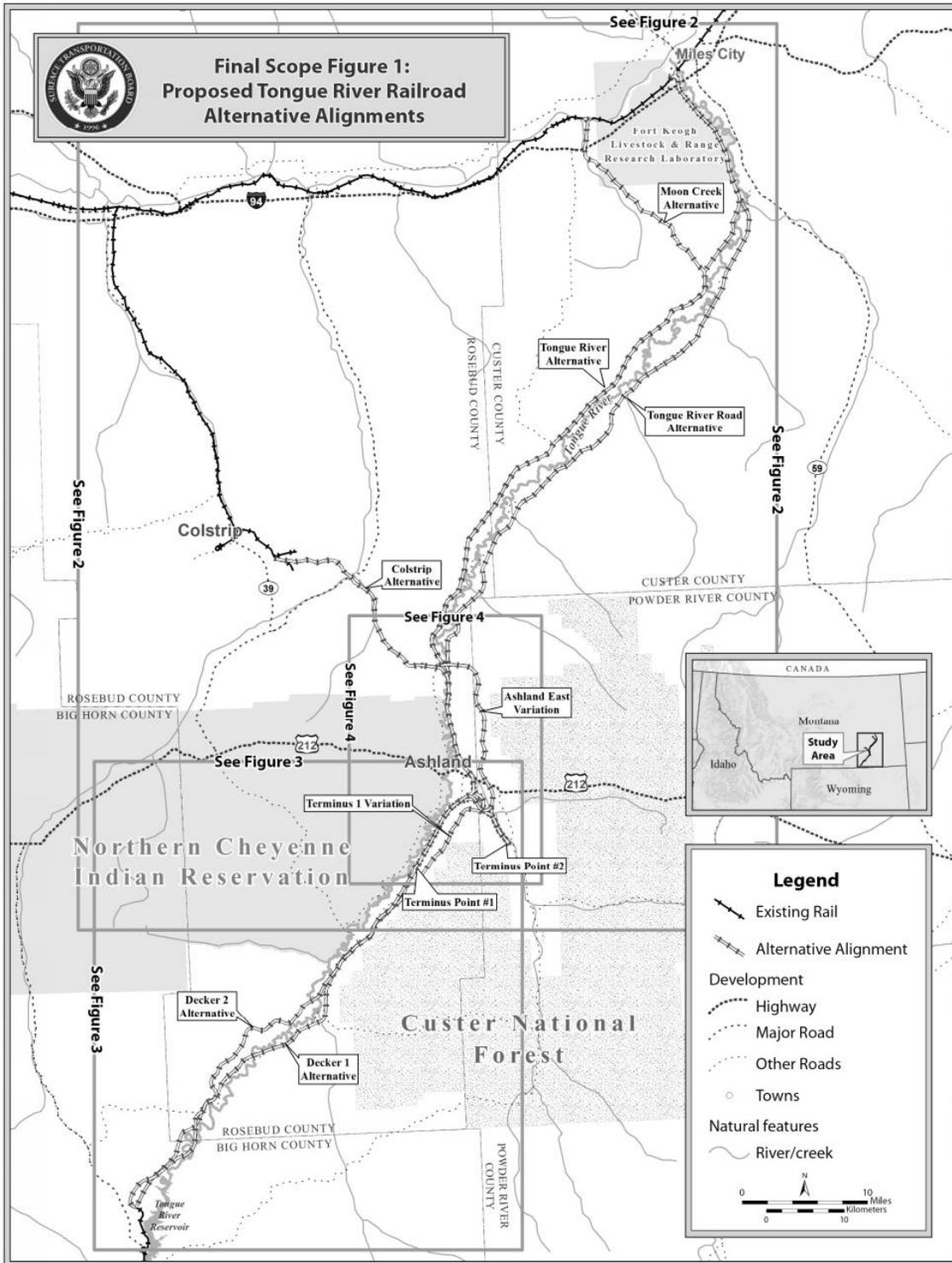


Figure 2. Proposed Southern Alternatives to Decker

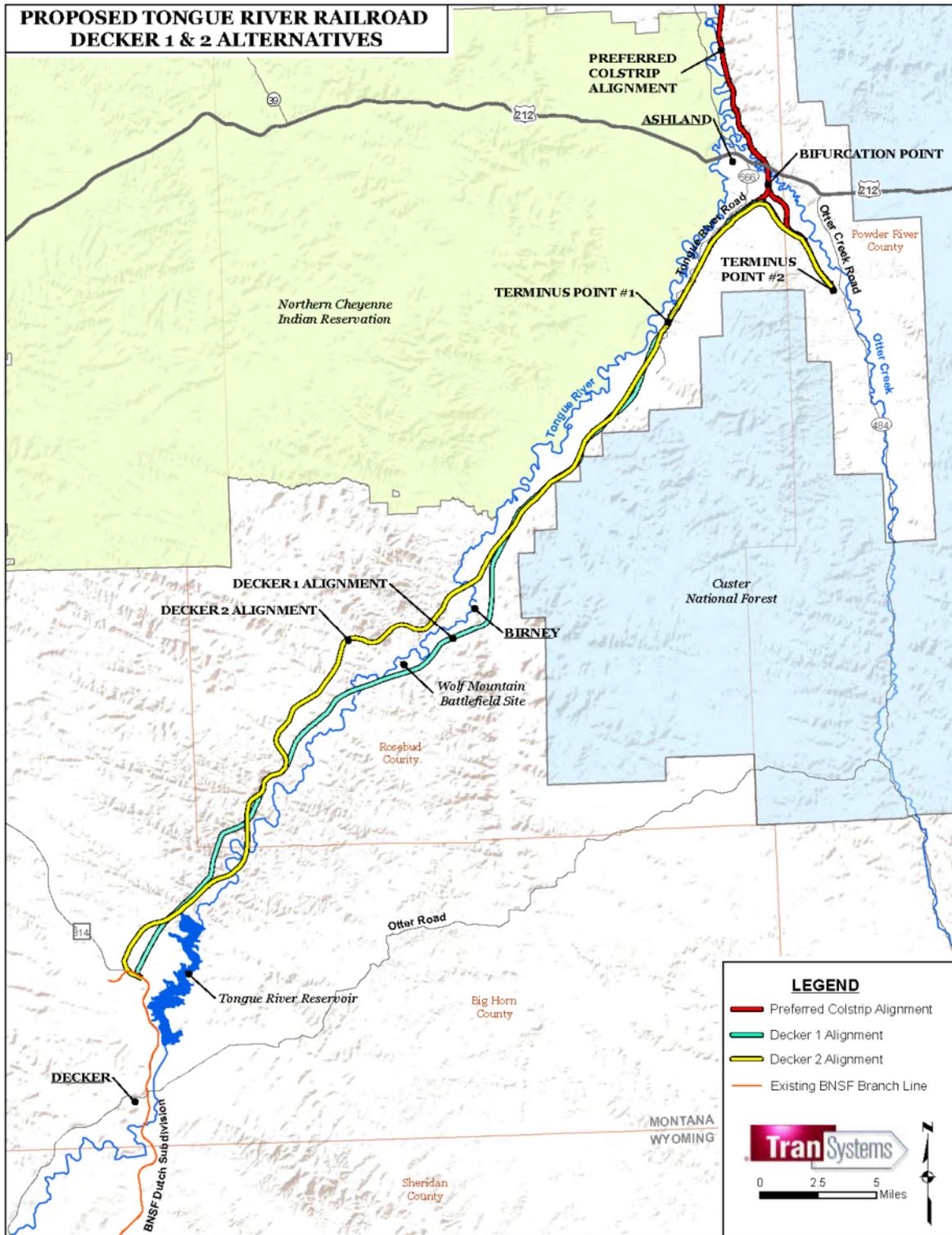
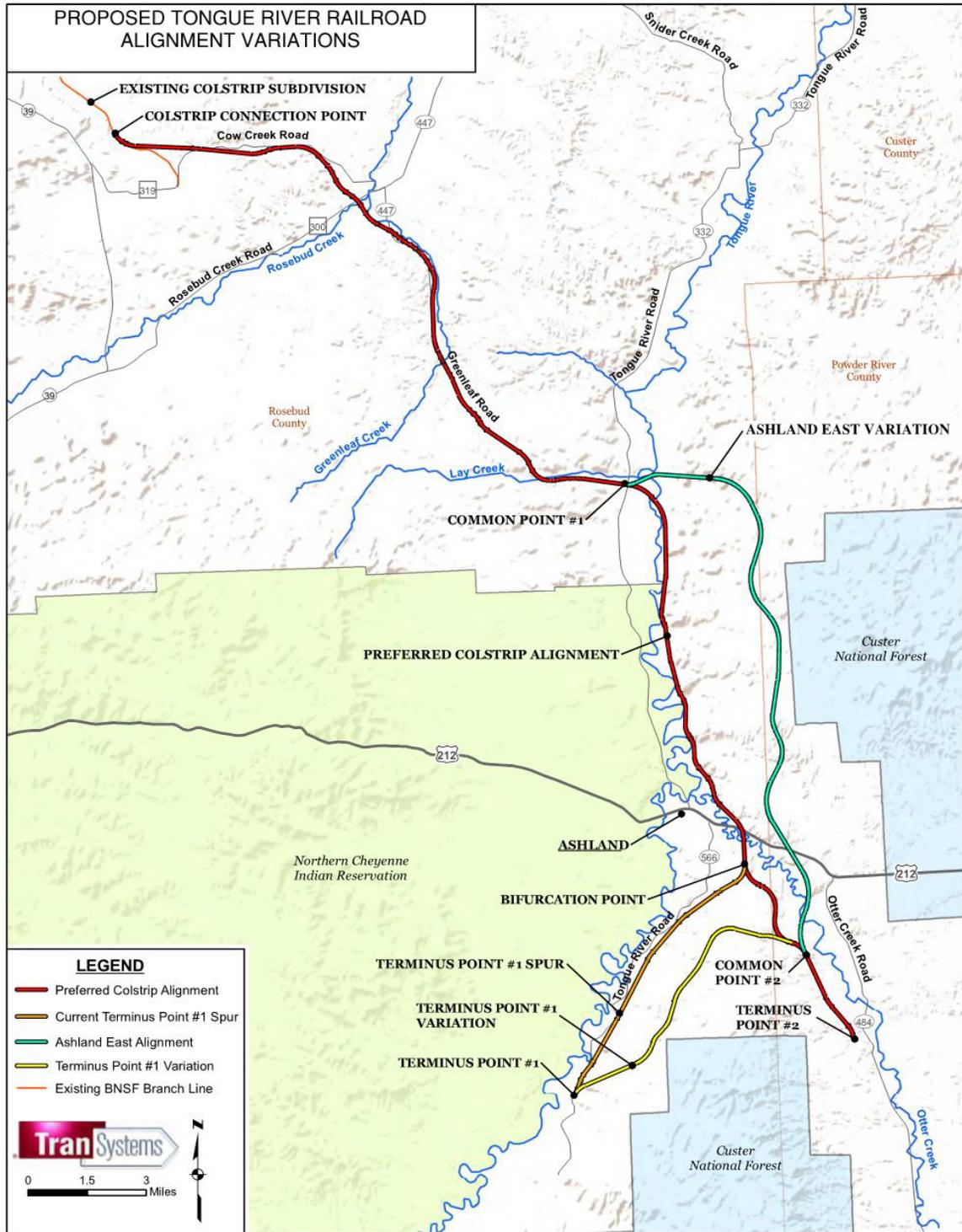


Figure 3. Proposed Alignment Variations



2.1 Decker 1 Alternative

The Decker 1 Alternative would depart from Terminus Point 2 at the proposed Otter Creek Mine, and follow Otter Creek approximately five miles north along the same route used for the Otter Creek Spur and then travel southwest generally paralleling the Tongue River through Terminus Point 1, as shown on Figures 1 and 2. It would run along the eastern side of the Tongue River and pass through the Wolf Mountains Battlefield National Historic Landmark (NHL). From there it would cross to the west side of the Tongue River and continue to its connection with the BNSF rail line via the Spring Creek Railroad Spur near Decker, Montana. This alternative is identical to the Ashland-Decker alignment (including the Western Alignment) that was previously approved for construction and operation by the STB in Tongue River III with one very significant difference, namely, the TRRC III line was part of a longer proposed Decker-Miles City line designed to transport coal mined in the Decker/Spring Creek area and Wyoming north to the BNSF Forsyth Subdivision at Miles City. The total length of new railroad construction would be about 50.1 miles. The estimated cost to construct the Decker 1 Alternative is \$566 Million (2013 Cost).

2.2 Decker 2 Alternative

STB developed the Decker 2 Alternative in an effort to consider a southern route that would avoid the Wolf Mountains Battlefield NHL. This alternative was not considered in the previous Tongue River Railroad proceedings. The Decker 2 Alternative would be almost identical to the Decker 1 Alternative. However, it would cross from the east to the west side of the Tongue River just north of Birney. It would pass west of the Wolf Mountains Battlefield NHL and, with the exception of a short segment approximately three miles north of the Tongue River Dam, this alternative would continue on the west side of the Tongue River for the remainder of its course, as shown on Figures 1 and 2. The total length of new railroad construction for the Decker 2 Alternative would be about 52 miles. The estimated cost to construct the Decker 2 Alternative is \$698 Million (2013 Cost).

2.3 Ashland East Variation

STB developed the Ashland East Variation in response to a scoping comment from the Northern Cheyenne Tribe requesting an alternative as far as possible from the eastern boundary of the Northern Cheyenne Reservation and the Tongue River, as shown on Figures 1 and 3. It could be used to replace segments of the Colstrip Alternative, Tongue River Alternative, Tongue River Road Alternative, and/or the Moon Creek Alternative. Starting at its northern end, this variation would connect to the Colstrip Alternative where it begins to curve to the south, at a location just east of its crossing of Tongue River Road, shown on Figure 3 as Common Point 1. The Ashland East Variation would connect to the Tongue River Alternative approximately 0.8 mile east of the intersection of Greenleaf Road and Tongue River Road. From there, the Ashland East Variation would continue east for approximately 3 miles before curving to the south. This variation would generally parallel the Tongue River, but would be offset to the east at distances ranging from approximately 2 miles to 4 miles. To lower the grade for the Otter Creek crossing, it would include a gradual westward bulge which would be located approximately 2 miles east of Ashland at its closest point. The variation would pass approximately 2 miles east of Ashland before connecting to the Otter Creek Spur, and either Terminus 1 Variation or Terminus 1 through a wye track approximately 2.5 miles northwest of Terminus Point 2, shown on Figure 3

as Common Point 2. The total length of new railroad construction for the Ashland East Variation is about 15.9 miles, compared to about 13.9 miles for the corresponding portion of the proposed Colstrip alignment. The estimated cost to construct the Ashland East Variation is \$275 Million, compared to \$127 million for the corresponding segment of the proposed alignment (2013 Cost).

2.4 Terminus 1 Variation

STB developed the Terminus 1 Variation in response to scoping comments from the Northern Cheyenne Tribe, which requested an alternative as far as possible from the eastern Reservation boundary and the Tongue River, as shown on Figures 1 and 3. This variation would start at a point approximately 1.8 miles southeast of the proposed Terminus Point 1. From there, it would travel northeast, largely paralleling the spur leading to Terminus Point 1 before joining with the Ashland East Variation. The Terminus 1 Variation connects to the Ashland East Variation and from there could connect to any of the northern alternatives (i.e., Tongue River, Colstrip, Tongue River Road and Moon Creek alternatives) and could also connect to the southern alternatives (i.e., Decker 1 and 2 alternatives). The total length of new railroad construction for the Terminus 1 Variation is about 8.3 miles, compared to about 7.5 miles for the corresponding portion of the proposed alignment. The estimated cost to construct the Terminus 1 Variation is \$141 Million compared to \$76 Million for the corresponding segment of the proposed alignment (2013 Cost).

3. Purpose and Need Assessment of the Southern Alternatives

The principal purpose of the proposed Tongue River Railroad is to efficiently transport low-sulfur, sub-bituminous coal from mine sites developed in Rosebud and Powder River Counties, Montana, including proposed mine sites in the Otter Creek area, to the national rail network via the BNSF Railway system. Coal from this region, the Northern Powder River Basin, would primarily be shipped eastbound to the upper Midwestern United States or westbound toward the Pacific Northwest coast for export, i.e., coal trains may travel on the BNSF system either east or west.

As discussed further in Section 4 below, the proposed southern alternatives add significant mileage (approximately 436 to 440 miles for eastbound round-trip traffic and 122 to 126 miles for westbound round trip traffic) to shipments of coal from the Otter Creek area to the anticipated primary markets. The longer southern routing of the Decker 1 and Decker 2 alternatives would place the Otter Creek/Ashland area coal in a disadvantageous position in terms of transportation distance and cost relative to coal sourced at mines south of Otter Creek/Ashland. Therefore, the proposed southern alternatives (Decker 1 and Decker 2) do not meet the stated purpose of the railroad to provide efficient transportation of coal from the mines in the Otter Creek area to the anticipated markets and these alternatives accordingly do not warrant any further consideration.³

TRRC's February 6, 2013 response to question 1 of the STB's January 23, 2013 first information request provides detail on the historical markets for Montana coal and the expected markets to which coal transported by TRRC would be transported. As explained in that

³ Section 4.1.1 of this Analysis provides further detail with regard to the transportation disadvantages of the Decker Alternatives for Otter Creek/Ashland coal transported to the primary markets.

response, TRRC anticipates that the bulk of the coal transported by the TRRC line will (i) find a market at the Upper Midwest electric utilities (mostly in Michigan and Minnesota) that have historically used Montana coal and (ii) be exported to Asia through the existing west coast port at the Westshore Terminal south of Vancouver, BC or possibly through other Pacific Northwest port facilities presently in the planning stages.

TRRC anticipates that there will also be secondary markets for the coal. Some of the coal may be exported to Europe through a Great Lake port at Superior, Wisconsin, and historical data suggests that relatively smaller volumes might find their way to utilities in other Midwestern states (Wisconsin, Illinois and Ohio, among others) or to Arizona. See Exhibit 1 to TRRC Response to First Information Request.⁴ It is also possible that some volume of Otter Creek/Ashland coal will be used for power generation within Montana, including notably at the PPL Montana Colstrip plant, which at present has a source of coal at the adjacent Rosebud mine. The proposed Colstrip Alternative would allow for the most efficient routing to that facility.

The reason that most of the Otter Creek/Ashland area coal is expected to move northbound on the TRRC line to the BNSF Forsyth Subdivision is that such northbound transportation from the mine sites will provide a transportation distance and cost advantage to above-described primary market destinations for the coal. Transportation distance is a key factor in determining a likely market for coal from any particular mine and the nearest markets for the Otter Creek/Ashland coal, as in the case of other Montana coal that leaves the State, will be Upper Midwest and Pacific Northwest points to which Montana coal has historically been transported.

The northbound movement of the coal on the TRRC line from Otter Creek and future Ashland mines will allow the coal to enjoy a significant transportation distance advantage given the relative proximity of the Otter Creek/Ashland mines to the above-described primary markets, particularly in comparison to Southern Powder River Basin mines in Wyoming and other Montana mines located south of Otter Creek/Ashland, including Spring Creek and Decker. However, transporting the coal over the Decker Alternatives would reduce this advantage considerably, particularly for eastbound trains, which (if transported via either Decker Alternative) would have to traverse an additional 436 to 440 miles roundtrip versus the Colstrip Alternative to reach Upper Midwest markets. For westbound traffic, the Decker Alternatives would add an additional 122 to 126 miles roundtrip. These additional miles would add a transportation cost penalty on the Otter Creek/Ashland coal that would reduce its natural geographic advantages in the primary target markets and thus its competitiveness relative to coal from most other Powder River Basin mines.

It is notable in this regard that none of the various alternative proposals for TRRC routings that have been considered since the 1980's – until now – have contemplated the movement of coal from the Otter Creek/Ashland areas southbound via Decker. The TRRC II and III proposals did contemplate building a line linking Decker with the BNSF Forsyth Subdivision to the north, but that proposed line was designed to transport Decker/Spring Creek and Wyoming coal northbound, thereby *shortening* the route for that coal to reach Upper Midwest and other destinations to the north. That proposal was never designed to transport Otter Creek/Ashland coal southbound (and against grade), away from its primary markets.

⁴ How much of the coal will be used domestically versus exported through the above ports will depend on a variety of market conditions that cannot be predicted with confidence this many years in advance of the first carloads of coal being shipped out of the Otter Creek mine and potential Ashland area mines.

Significantly, the vast bulk of coal generated from the Montana mines at Spring Creek and Decker today follow a BNSF routing that takes the coal northward on the BNSF Big Horn Subdivision to a point from where it would follow the same eastbound or westbound routings on BNSF's Forsyth Subdivision and other northern BNSF lines that the Otter Creek/Ashland coal is expected to take. See Exhibit 1 on the following page, which shows that most Spring Creek coal travels primarily east via the Forsyth Subdivision with some smaller volume moving westbound via BNSF's northern lines. The same exhibit also shows that most Decker coal moves eastbound via the Forsyth Subdivision. Relatively smaller volumes of the Spring Creek and Decker coal move south from those mines via the BNSF Central corridor and other routes. Wyoming coal from the Southern Powder River Basin has a transportation distance advantage over Montana coal for markets that are south of the above-described primary target markets for Otter Creek and Ashland area coal.

In short, the two Decker alternatives would be disadvantageous for Otter Creek coal moving to its primary markets and therefore would not serve the purpose and need of the TRRC Project. Coupled with the other disadvantages discussed below, this transportation disadvantage underscores that those Alternatives warrant no further detailed examination.

4. Alternatives Screening Analyses

4.1 Alternatives Screening Criteria

The alternatives and variations described in this Analysis were subjected to screening evaluations using existing information from the previous studies where applicable along with a modest level of conceptual engineering studies. The screening criteria included engineering feasibility (construction and operating), environmental consequences discernible at this stage, and cost considerations. The route alternatives and variations are evaluated relative to the corresponding attributes of the proposed Colstrip Alignment. The following sections discuss the applicable and relevant screening data for the rail alternatives and variations described in this Supplement.

The descriptions, environmental impacts, engineering issues, and relative advantages of the Colstrip Alignments, Tongue River Alternative, Tongue River Road Alternative, and the Moon Creek Alternative, collectively referred to as the "Northern Alternatives," were presented in the January 11, 2013 Alternatives Screening Analysis, and are not repeated in detail in this Supplement. However, Table 1 summarizes the physical characteristics of the four Northern Alternatives and the Decker 1 and 2 Alternatives. Table 2 summarizes the physical characteristics of the alternative variations and compares them to the corresponding segments of the proposed Colstrip Alignment. Due to the lack of site access, no recent field studies have been conducted to date to evaluate environmental features such as wetlands, flora and fauna, or cultural resources.

4.2 Transportation Evaluation of the Alternatives

Train shipments originating from the Otter Creek area were evaluated over all of the proposed six rail alternatives. For comparison purposes, loaded trains were considered to originate at Terminus Point 2, travel over the alternative routes and the BNSF to common points at Miles



Exhibit 1. Montana Coal Moves 2003 – 2012

Data for 10 years (2003 - 2012)

Tons (000s)

| Origin Mine | Likely Route based on Destination State | | | | Total |
|--------------------------|---|-------------------|------------------|---------------------------|----------------|
| | Montana | West/Big Horn Sub | East/Forsyth Sub | South or Central Corridor | |
| Absaloka | 2,919 | | 58,910 | | 61,829 |
| Big Sky | | | 2,802 | | 2,802 |
| Bull Mountains No 1 | | 66 | 476 | 2,809 | 3,351 |
| Decker | | 232 | 46,691 | 5,652 | 52,575 |
| Rosebud Crusher/Conveyor | 94,529 | | 16,222 | 0 | 110,751 |
| Savage | 2,777 | | | | 2,777 |
| Spring Creek Coal Co | | 23,911 | 81,143 | 16,147 | 121,201 |
| Grand Total | 100,225 | 24,209 | 206,245 | 24,608 | 355,286 |
| | 28.2% | 6.8% | 58.1% | 6.9% | |

Source: Compiled by Ventyx from EIA form 923 data

Notes:

EIA 923 data is for coal delivered to electric generating facilities in the United States. Dataset does not include exports.

Table 1. TRR Rail Alternative Characteristics

| No. | Alternative Alignment Characteristics | Colstrip | Tongue River | Tongue River Road | Moon Creek | Decker 1 | Decker 2 |
|-----|---|---------------|---------------|-------------------|---------------|---------------|---------------|
| 1 | Length of New Main Track Construction (Miles) | 42.1 | 83.1 | 83.1 | 81.7 | 50.1 | 52.0 |
| 2 | Round Trip Distance to Miles City Common Point for Eastbound Trains ¹ (Miles) | 236 | 151 | 151 | 165 | 672 | 676 |
| 3 | Round Trip Distance to Huntley Common Point for Westbound Trains ¹ (Miles) | 295 | 411 | 411 | 392 | 417 | 421 |
| 4 | Annual Round Trip Ton-Miles to Common Points with Trains Split 60% East and 40% West ^{1,2} | 4,169,621,333 | 4,100,213,333 | 4,100,213,333 | 4,109,210,667 | 9,156,072,000 | 9,219,696,000 |
| 5 | Annual Round Trip Ton-Miles to Common Points with Trains Split 50% East and 50% West ^{1,2} | 4,264,093,333 | 4,517,946,667 | 4,517,946,667 | 4,472,960,000 | 8,747,014,667 | 8,810,638,667 |
| 6 | Annual Round Trip Ton-Miles to Common Points with Trains Split 40% East and 60% West ^{1,2} | 4,358,565,333 | 4,935,680,000 | 4,935,680,000 | 4,836,709,333 | 8,337,957,333 | 8,401,581,333 |
| 7 | Cut (Cubic Yards) ³ | 18,100,000 | 25,300,000 | 38,800,000 | 36,200,000 | 40,300,000 | 49,450,000 |
| 8 | Fill (Cubic Yards) ³ | 17,700,000 | 22,900,000 | 34,600,000 | 33,100,000 | 36,900,000 | 44,900,000 |
| 9 | Excess Cut (Cubic Yards) ³ | 400,000 | 2,400,000 | 4,200,000 | 3,100,000 | 3,400,000 | 4,550,000 |
| 10 | Total Grading (Cubic Yards) ³ | 35,800,000 | 48,200,000 | 73,400,000 | 69,300,000 | 77,200,000 | 94,350,000 |
| 11 | Ratio of Total Grading Compared to Colstrip Alternative | 1.00 | 1.35 | 2.05 | 1.94 | 2.16 | 2.64 |
| 12 | Length of Public Roadway Impacted (Miles) | 8.3 | 8.9 | 9.5 | 8.9 | 5.9 | 1.3 |
| 13 | Length Alignment Parallels Existing Transportation Corridor (Miles (% of New Main Length)) | 18.1 (52.5%) | 10.1 (13.4%) | 37.0 (49.8%) | 10.1 (13.6%) | 24.54 (49%) | 15.67 (30%) |
| 14 | Alignment Requires New Interstate 94 Crossing? | No | Yes | Yes | Yes | No | No |
| 15 | Alignment Requires New Highway 314 Crossing? | No | No | No | No | Yes | Yes |
| 16 | Alignment Requires New Highway 212 Crossing? | Yes | Yes | Yes | Yes | No | No |
| 17 | County and State Public Roadway Crossings | 5 | 3 | 4 | 4 | 6 | 7 |
| 18 | Length Alignment Impacts USDA Livestock and Range Research Station (Miles) | 0.0 | 9.5 | 9.5 | 2.4 | 0 | 0 |
| 19 | Alignment Crosses Miles City Fish Hatchery? | No | Yes | Yes | No | No | No |
| 20 | Right-of-Way Acquisition (Acres) ⁴ | 2,400 | 4,100 | 4,500 | 4,300 | 2,910 | 3,065 |
| 21 | Right-of-Way Acquisition of Grazing Land (Acres) ⁴ | 1,560 | 3,200 | 3,520 | 3,020 | 2,250 | 2,320 |
| 22 | Right-of-Way Acquisition of Irrigated Land (Acres) ⁴ | 40 | 90 | 230 | 90 | 10 | 20 |
| 23 | Length of Impacts to Bureau of Land Management Land (Miles) | 0.7 | 3.6 | 2.4 | 4.6 | 3.4 | 6.9 |
| 24 | Length of Impacts to State/County Land (Miles) | 3.4 | 7.4 | 3.4 | 16.5 | 3.7 | 4.5 |
| 25 | Number of Affected Landowners ⁵ | 44 | 53 | 60 | 54 | 25 | 21 |
| 26 | Number of Bisected Landowners ⁶ | 30 | 40 | 42 | 41 | 16 | 18 |
| 27 | Wolf Mountains Battlefield National Historic Landmark Impacted? | No | No | No | No | Yes | No |
| 28 | Residences Impacted | 1 | 1 | 1 | 1 | 0 | 1 |
| 29 | MT FW&P Block Management Areas and Conservation Easements (Miles) | 9.5 | 27.7 | 9.8 | 21.8 | Unknown | Unknown |
| 30 | Length Alignment Parallels Tongue River Valley (Miles) | 17.0 | 68.2 | 31.8 | 57.7 | 42.6 | 31.5 |
| 31 | Number of Stream Crossings ⁷ | 122 | 247 | 197 | 250 | 132 | 132 |
| 32 | Number of River Crossings | 1 | 1 | 1 | 1 | 1 | 3 |
| 33 | Max Curvature (Excluding Wye Tracks) | 2°20' | 2°20' | 2°20' | 2°20' | 2°20' | 2°20' |
| 34 | Total Length of Curves (Miles) | 13.84 | 14.81 | 23.54 | 17.56 | 11.9 | 18.42 |
| 35 | Ruling Grade Compensated for Horizontal Curves where Applicable | 0.91 - 1.00% | 0.86 - 0.94% | 0.91 - 1.00% | 0.91 - 1.00% | 0.80 - 0.88% | 0.84 - 0.92% |
| 36 | Total Length of Ruling Grade Against Load ⁸ (Miles) VPI - VPI | 12.76 | 1.46 | 1.46 | 4.88 | 9.62 | 5.96 |
| 37 | Max Continuous Length of Ruling Grade Against Load ⁸ (Miles) | 7.15 | 0.80 | 1.46 | 4.88 | 9.62 | 5.96 |
| 38 | Total Length of Grade Against Load ⁸ (Miles) | 18.72 | 26.29 | 26.66 | 24.22 | 31.34 | 27.3 |
| 39 | Elevation Difference Between TP #2 to Existing BNSF Connection Point ⁹ (Feet) | 130 | -760 | -760 | -746 | 393 | 393 |
| 40 | Conceptual Estimate of Probable Cost (2013 \$Million) | 416 | 625 | 753 | 731 | 566 | 698 |
| 41 | Conceptual Estimate of Probable Cost Per Mile (2013 \$Million/Mile) | 9.88 | 7.52 | 9.06 | 8.95 | 11.32 | 13.42 |
| | ¹ Round trip originates at Terminus Point #2 | | | | | | |
| | ² Annual Tonnage based on 20 million tons of coal per year and empty train weight of 4,550 tons | | | | | | |
| | ³ Includes grading for proposed single main track and public road relocations, but not for future track at 15' track centers or adjacent track access road | | | | | | |
| | ⁴ Includes R/W for future grading of second track at 15' track centers and adjacent track access road | | | | | | |
| | ⁵ Affected Landowner is defined here as a landowner whose property through which the proposed rail right-of-way traverses | | | | | | |
| | ⁶ Bisected Landowner is defined here as landowners whose property is affected and severed by the proposed right-of-way | | | | | | |
| | ⁷ Perennial, Intermittent, or Ephemeral Streams; may be indicative of potential wetland impacts | | | | | | |
| | ⁸ Grade Against Load is defined here as the uphill grade which loaded trains must traverse | | | | | | |
| | ⁹ Negative value indicates cumulative downhill grade from TP#2 to existing BNSF connection point for loaded trains | | | | | | |

Table 2. TRR Rail Alternative Variation Characteristics

| No. | Alternative Alignment Characteristics | Ashland Alternatives | | Terminus Point 1 Alternatives | |
|-----|---|----------------------|------------------------|-------------------------------|-----------------|
| | | Proposed Alignment | Ashland East Variation | Proposed Alignment | TP #1 Variation |
| 1 | Length of New Main Track Construction (Miles) | 13.9 | 15.9 | 7.5 | 8.3 |
| 2 | Cut (Cubic Yards) ¹ | 5,900,000 | 22,000,000 | 4,600,000 | 12,000,000 |
| 3 | Fill (Cubic Yards) ¹ | 6,850,000 | 20,800,000 | 4,400,000 | 7,800,000 |
| 4 | Excess Cut (Cubic Yards) ¹ | -950,000 | 1,200,000 | 200,000 | 4,200,000 |
| 5 | Total Grading (Cubic Yards) ¹ | 12,750,000 | 42,800,000 | 9,000,000 | 19,800,000 |
| 6 | Length Alignment Parallels Existing Transportation Corridor (Miles (% of New Main Length)) | 2.18 (16%) | 0 (0.0%) | 4.72 (63%) | 0.0 |
| 7 | Length of Public Roadway Impacted (Miles) | 2.3 | 0.0 | 1.5 | 0.0 |
| 8 | Alignment Requires New Highway 212 Crossing? | Yes | Yes | No | No |
| 9 | County and State Public Roadway Crossings | 2 | 1 | 0 | 0 |
| 10 | Right-of-Way Acquisition (Acres) ² | 760 | 1,175 | 430 | 525 |
| 11 | Right-of-Way Acquisition of Grazing Land (Acres) ² | 605 | 1,103 | 418 | 510 |
| 12 | Right-of-Way Acquisition of Irrigated Land (Acres) ² | 84 | 67 | 4 | 15 |
| 13 | Length of Impacts to Bureau of Land Management Land (Miles) | 0.3 | 0.0 | 0.2 | 0.8 |
| 14 | Length of Impacts to State/County Land (Miles) | 0.0 | 0.9 | 0.0 | 0.0 |
| 15 | Number of Affected Landowners ³ | 22 | 12 | 8 | 7 |
| 16 | Number of Bisected Landowners ⁴ | 14 | 11 | 7 | 5 |
| 17 | MT FW&P Block Management Areas and Conservation Easements (Miles) | 0.0 | 0.0 | 0.0 | Unknown |
| 18 | Length Alignment Parallels Tongue River Valley (Miles) | 8.4 | 0.0 | 7.5 | 0.0 |
| 19 | Number of Stream Crossings ⁵ | 43 | 39 | 18 | 12 |
| 20 | Number of River Crossings | 1 | 1 | 0 | 0 |
| 21 | Max Curvature (Excluding Wye Tracks) | 2°20' | 2°20' | 2°00' | 2°00' |
| 22 | Total Length of Curves (Miles) | 6.1 | 8.42 | 1.25 | 3.66 |
| 23 | Ruling Grade Compensated for Horizontal Curves where Applicable Against Load | 0.86 - 0.95% | 0.76 - 0.82% | 0.91 - 0.95% | 0.91 - 1.00% |
| 24 | Total Length of Ruling Grade Against Load ⁶ (Miles) VPI - VPI | 0.68 | 5.41 | 1.10 | 2.80 |
| 25 | Max Continuous Length of Ruling Grade Against Load ⁶ (Miles) | 0.68 | 5.41 | 1.10 | 2.80 |
| 26 | Total Length of Grade Against Load ⁶ (Miles) | 4.16 | 5.41 | 4.13 | 5.00 |
| 27 | Conceptual Estimate of Probable Cost (2013 \$Million) | 127 | 275 | 76 | 141 |
| 28 | Conceptual Estimate of Probable Cost Per Mile (2013 \$Million/Mile) | 9.15 | 17.35 | 10.08 | 16.97 |
| | ¹ Includes grading for proposed single main track and public road relocations, but not for future track at 15' track centers or adjacent track access road | | | | |
| | ² Includes R/W for future grading of second track at 15' track centers and adjacent track access road | | | | |
| | ³ Affected Landowner is defined here as a landowner whose property is impacted by the proposed Right-of-Way | | | | |
| | ⁴ Bisected Landowner is defined here as landowners whose property is impacted and severed by the proposed Right of Way | | | | |
| | ⁵ Perennial, Intermittent, or Ephemeral Streams; may be indicative of potential wetland impacts | | | | |
| | ⁶ Grade Against Load is defined here as the uphill grade which loaded trains must traverse | | | | |

City, Montana for eastbound shipments, or Huntley, Montana for westbound shipments, and then return empty trains via the same routes. The alternative routes from Terminus Point 2 to the common points are shown on Figure 4. The transportation evaluations in round-trip mileage are shown in Table 1 (Rows 2-3).

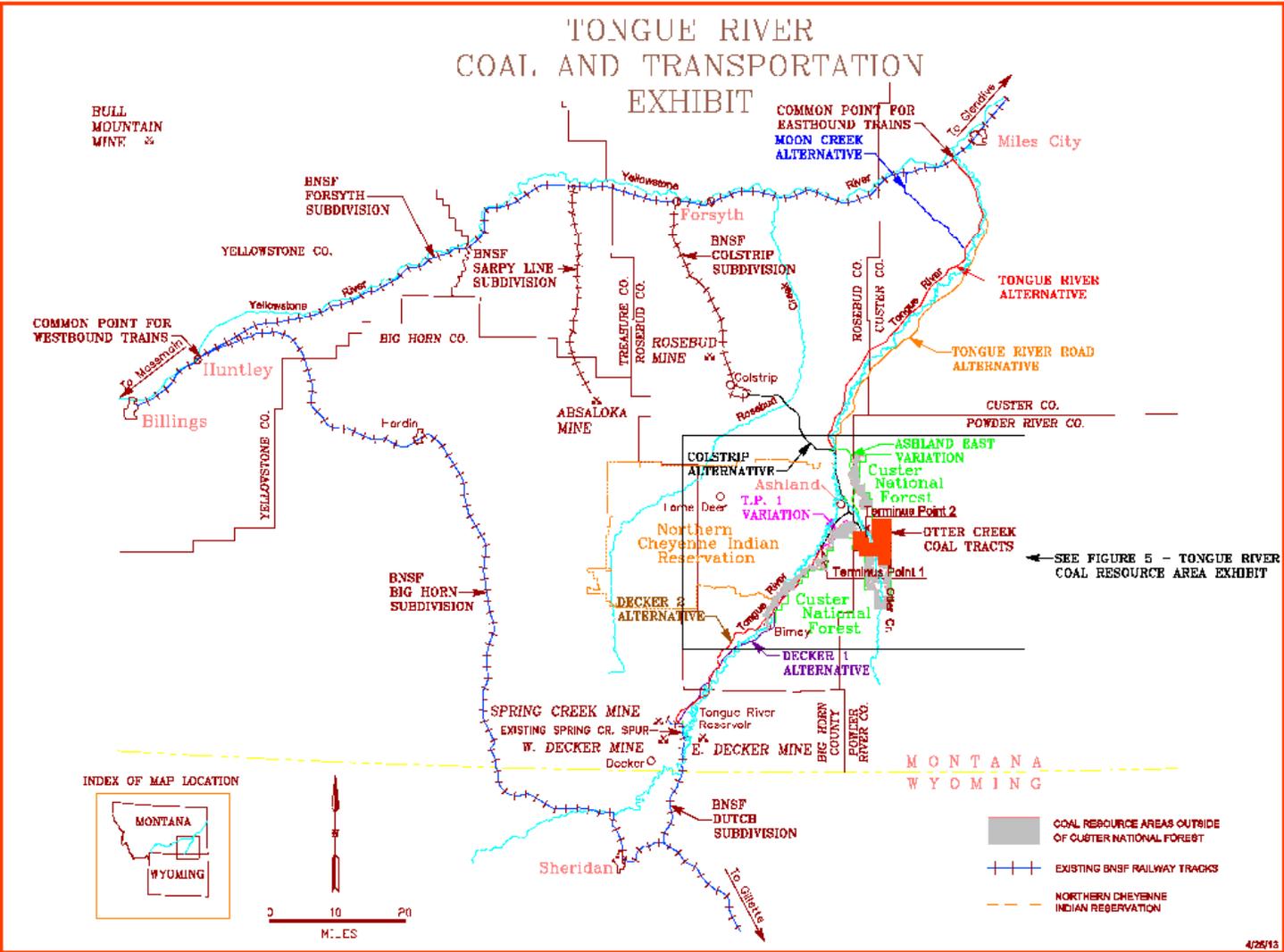
The transportation evaluations of the proposed Decker 1 and 2 Alternatives indicate:

- Loaded trains from the Otter Creek area traveling eastward through Miles City toward the Upper Midwestern United States using the Decker 1 Alternative route would travel about 436 miles farther per round-trip than if using the Colstrip Alternative route.
- Loaded trains from the Otter Creek area traveling eastward through Miles City toward the Upper Midwestern United States using the Decker 2 Alternative route would travel about 440 miles farther per round-trip than if using the Colstrip Alternative route.
- Loaded trains from the Otter Creek area traveling westward through Huntley using the Decker 1 Alternative route would travel about 122 miles farther per round-trip than if using the Colstrip Alternative route.
- Loaded trains from the Otter Creek area traveling westward through Huntley using the Decker 2 Alternative route would travel about 126 miles farther per round-trip than if using the Colstrip Alternative route.

Although the volume of coal that will be transported to each coal market over the Tongue River Railroad cannot be conclusively determined at this time, assumptions were made of annual ton-mile shipments over each of the rail alternatives in order to evaluate the relative efficiencies of the routes to each of the primary markets, i.e., Upper Midwest and Pacific Northwest. Assumptions regarding the proportions of shipments going eastbound vs. westbound were calculated for projected shipments of 20 million tons per year going 60% eastbound – 40% westbound; 50% eastbound – 50% westbound; and 40% eastbound – 60% westbound. The transportation evaluations in estimated annual round-trip ton-miles are shown in Table 1 (Rows 4-6). As shown in the table, the Decker 1 Alternative requires approximately 8.7 billion ton-miles round trip to common points shared by all alternatives assuming one half of the traffic travels east and the other half west. The Decker 2 Alternative similarly requires approximately 8.8 billion ton-miles round trip to common points shared by all alternatives with half the traffic travelling east and the other half west. The Colstrip Alternative, by contrast, requires approximately 4.3 billion ton-miles round trip split evenly between east- and west-bound traffic, less than half of either of the Decker Alternatives.

The transportation mileage and ton-mile figures shown in Table 1 conclusively show that the Decker 1 and 2 Alternatives are far less efficient than any of the Northern Alternatives by orders of magnitude. As discussed above, this disadvantage of the Decker Alignments relative to the presumed primary target markets for the transported coal renders those alternatives infeasible relative to the purpose of the project and not warranting further analysis.

Figure 4. Coal Transportation Exhibit



4.3 Decker 1 Alternative Screening Analysis

4.3.1 Decker 1 Alternative Engineering and Environmental Screening Analysis

The screening analysis of the Decker 1 Alternative indicates:

- Construction of the Decker 1 Alternative would require about 8 more miles of new railroad construction than the Colstrip Alternative, which requires fewer miles of new construction than any of the rail alternatives.
- Construction of the Decker 1 Alternative route is estimated to require about 41.4 million more cubic yards of excavation and embankment construction compared to the Colstrip Alternative in order to achieve the grade and curvature necessary to accommodate unit coal trains while attempting to balance the cut and fill quantities to the greatest extent possible.
- Primarily due to the added length and the substantial additional earthwork, construction of the Decker 1 Alternative is estimated to cost about \$150 Million more than the Colstrip Alternative.
- Loaded coal trains using the Decker 1 Alternative route would run about 31.3 miles against adverse grades (uphill), compared to about 18.7 miles on the Colstrip Alternative, which provides the shortest length against load relative to each of the alternative alignments. Please note that the similar alignment of the previously-approved Tongue River III Alternative was planned to transport loaded trains from south to north toward Miles City, which is generally downhill; the Decker 1 Alternative proposes to transport loaded trains south from Ashland to Decker, which is generally uphill.
- National Wetlands Inventory (NWI) mapping along this alternative route is available from about Milepost 7 on the Terminus Point 1 spur southward to the Tongue River Reservoir near Decker, Montana. Emergent and forested wetlands are generally shown adjacent to the Tongue River, with small wetlands shown intermittently in various drainages and other locations. The proposed Decker 1 Alternative route generally runs southward from Terminus Point 1 to Birney through upland areas on the east (high) side of Tongue River Road. The Decker 1 Alternative runs near a mapped emergent wetland near the crossing of Hanging Woman Creek southeast of Birney. South of Birney the route turns westward through the Tongue River valley across irrigated fields and crosses the river once. The route continues southward through upland areas on the west side of the river to its connection near Decker. Review of the available NWI mapping indicates the route would impact only small, intermittent wetlands, if any, primarily near the river crossing. Wetlands along the proposed alternative route have not been field verified.
- The Decker 1 Alternative would run near the western boundaries of the Custer National Forest in several places. We assume that additional consultation requirements may be required with the U.S. Forest Service for this routing.
- The southern portion of the Decker 1 Alternative runs west of the Tongue River Reservoir. The October 2006 Final Environmental Impact Statement for Tongue River I, Tongue River II, and Tongue River III included a list of recommended mitigation measures, including Mitigation Measure 76 (Dam Vibration). Mitigation Measure 76 required *“Prior to construction of the Western Alignment, TRRC shall conduct a seismic analysis based on local geology and specific blasting plans to quantify the risk of construction-related activities to the Tongue River Reservoir Dam. TRRC shall consult with Montana Department of Natural Resources and Conservation during the*

development of the geotechnical-drilling/blasting plans for construction of those portions of the Western Alignment located within two miles of the dam, to limit peak particle velocity and minimize vibration impacts that may occur.” It is anticipated that similar measures to determine potential effects to the Tongue River Reservoir Dam would be required if the Decker 1 Alternative is selected for construction.

- The Decker 1 Alternative runs along the eastern boundary of the Northern Cheyenne Reservation for a distance of approximately 17.5 miles. To the extent that there are any discernible disadvantages to proximity to the Reservation (we note that the two Variation Alternatives discussed below were designed to locate the line away from the Reservation boundary), the Decker 1 alternative will not mitigate any such disadvantages compared to the four northern alternatives, which parallel the eastern boundary of the Northern Cheyenne Reservation for a distance of approximately 12.1 miles. However, since other factors militate strongly against the Decker 1 Alternative, further assessment of impacts to the Reservation does not appear warranted in TRRC’s view.

4.3.2 Wolf Mountains Battlefield National Historic Landmark

The Decker 1 Alternative would pass through the Wolf Mountains Battlefield NHL in Rosebud County, Montana. The Battlefield is the site of the last major battle of the Great Sioux War in 1877, and was designated as a NHL in 2008. National Historic Landmarks are designated by the Secretary of the United States Department of the Interior under the authority of the Historic Sites Act of 1935, which authorizes the Secretary to identify historic and archaeological sites, buildings, and objects which “possess exceptional value as commemorating or illustrating the history of the United States.” Only about 2,500 historic places have been designated as NHLs.

Wolf Mountains Battlefield was designated an NHL *after* the *TRRC III* decision was issued by the STB in 2007 authorizing construction of the TRRC III line through the Battlefield. Were the STB to now pursue a routing for the TRRC line through the Wolf Mountains NHL site, it would have to satisfy a more elaborate process and meet a much higher standard than was the case in the *TRRC III* proceeding. As discussed more fully below, the STB would need to consider all prudent and feasible alternatives to avoid an adverse effect on the NHL, and could reject such alternatives only based on undue cost or “compromise” to the goals of the project.

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies, prior to approval of an undertaking, to take into account the effects of an undertaking on historic properties, including NHLs. Section 110(f) of the NHPA requires that Federal agencies exercise a higher standard of care when considering undertakings that may directly and adversely affect NHLs. 16 U.S.C. § 470h-2(f). In particular, agencies must, “to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm” to NHLs. *Id.*

If it is determined that an undertaking may affect an NHL, the agency is required to take the following actions, as set forth in 36 CFR Part 800:

- Notify the federal Advisory Council on Historic Preservation (ACHP) and invite the ACHP to participate in consultation to resolve adverse effects to the NHL. The ACHP may request the Secretary of the Interior to provide a report to ACHP detailing the

significance of the affected NHL under Section 213 of the NHPA and recommending measures to avoid, minimize or mitigate adverse effects to the NHL.

- Notify the Secretary of the Interior and invite the Secretary to participate in the Section 106 consultation process.
- Consider the findings of the Department of the Interior if the ACHP has formally requested a report from the Secretary under Section 213 of the NHPA to assist in consultation.
- Advise the consulting parties of the adverse effect on the NHL, and determine if other consulting parties should be involved in consultation.
- Provide background documentation to consulting parties, including an analysis of alternatives considered to avoid, minimize, or mitigate adverse effects on the NHL.
- Notify the public of the proposed mitigation plan for the undertaking, and provide them an opportunity to express their views on resolving adverse effects.
- Resolve adverse effects, or request and consider ACHP comments.
- Inform the public of the outcome of the undertaking, such as the provisions of a Programmatic Agreement.

In addition to the above requirements, the National Park Service (NPS) has issued guidance⁵ that provides a summary of factors that should be considered when planning undertakings that involve NHLs:

- ... the agency should consider all prudent and feasible alternatives to avoid an adverse effect on the NHL.
- ...Where such alternatives appear to require undue cost or to compromise the undertaking's goals and objectives, the agency must balance those goals and objectives with the intent of Section 110(f). In doing so, the agency should consider:
 - (1) the magnitude of the undertaking's harm to the historical, archaeological and cultural qualities of the NHL;
 - (2) the public interest in the NHL and in the undertaking as proposed; and
 - (3) the effect a mitigation action would have on meeting the goals and objectives of the undertaking.

Thus, under the NPS guidelines, an agency is required to consider all prudent and feasible alternatives to avoid an adverse effect on the NHL, and should reject such alternatives only based on undue cost or "compromise" to the goals of the project.

NPS and the Northern Cheyenne Tribe have already commented in prior proceedings that the routing through the Battlefield would adversely impact the NHL. During the post-decision Section 106 consultation process for *TRRC III*, the STB consulted with the NPS and other entities regarding the Wolf Mountains Battlefield. The NPS Intermountain Region, which administers the NHL program in Montana, commented in 2011 that the alignment of the Tongue River Railroad through the Wolf Mountains Battlefield would have "a direct adverse effect" on the NHL. See July 7, 2011 NPS Letter to STB at p. 1. NPS noted that "the Wolf Mountains Battlefield has a very high degree of physical integrity..." See March 11, 2011 NPS Letter to STB at p. 2. NPS also noted its concern that STB continue to consult "to identify an alternative

⁵ NPS, Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act, 63 Fed. Reg. 20496 (April 24, 1998).

that avoids Wolf Mountains Battlefield.” *Id.* The Northern Cheyenne Tribe also expressed concerns regarding impacts to the Wolf Mountains Battlefield, stating that the Wolf Mountains Battlefield should be given special attention in light of its new status and role in U.S. and tribal history.” See March 31, 2011 Letter from Northern Cheyenne Tribe Administration to STB.

In sum, the Decker 1 Alternative would directly and adversely impact the Wolf Mountains Battlefield NHL. Given that, the STB is required by the NHPA guidelines to consider all prudent and feasible alternatives to avoid such an adverse effect on the NHL. In this case, there are feasible, and indeed more advantageous alternatives that would not impact the Wolf Mountains Battlefield NHL or any other NHL. Moreover, as demonstrated in the above sections and Table 1, the Decker 1 Alternative route does not meet the purpose of the project and presents substantial engineering, construction, and operating challenges compared to the proposed Colstrip Alternative. For these reasons, given the impact to the Wolf Mountains Battlefield NHL and the feasibility of alternative routes, the Decker 1 Alternative should not be further pursued.

4.4 Decker 2 Alternative Screening Analysis

The screening analysis of the Decker 2 Alternative indicates:

- Construction of the Decker 2 Alternative would require about 10 more miles of new railroad construction than the Colstrip Alternative.
- Construction of the Decker 2 Alternative route is estimated to require about 58.5 million more cubic yards of excavation and embankment construction compared to the Colstrip Alternative in order to achieve the grade and curvature necessary to accommodate unit coal trains while attempting to balance the cut and fill quantities to the greatest extent possible.
- Primarily due to the added length and the substantial additional earthwork, construction of the Decker 2 Alternative is estimated to cost about \$282 Million more than the Colstrip Alternative.
- Loaded coal trains using the Decker 2 Alternative route would run about 27.3 miles against adverse grades (uphill), compared to about 18.7 miles on the Colstrip Alternative. Similar to the Decker 1 Alternative, the Decker 2 Alternative proposes to transport loaded trains south from Ashland to Decker, which is generally uphill.
- The Decker 2 Alignment would require three crossings of the Tongue River, compared to only one crossing by the other alignments under consideration.
- National Wetlands Inventory (NWI) mapping along this alternative route is available from about Milepost 7 on the Terminus Point 1 spur southward to the Tongue River Reservoir near Decker, Montana. Emergent and forested wetlands are generally shown adjacent to the Tongue River, with small wetlands shown intermittently in various drainages and other locations. The proposed Decker 2 Alternative route generally runs southward from Terminus Point 1 to Birney through upland areas on the east (high) side of Tongue River Road. North of Birney the route turns westward through the Tongue River valley across irrigated fields and crosses the river. The route continues southward through upland areas on the west side of the river. Just north of the Tongue River Reservoir, the route swings easterly and crosses a double oxbow of the Tongue River twice, then continues on the west side of the river to its connection near Decker. Review of the available NWI mapping indicates the route would impact only small, intermittent wetlands, if any, primarily near the river crossings. However, since the Decker 2 Alternative crosses the

Tongue River three times, the expected wetlands impacts of the Decker 2 Alternative would be expected to be about three times the impacts associated with the Decker 1 Alternative. Wetlands along the proposed alternative route have not been field verified.

- The Decker 2 Alternative would run near the western boundaries of the Custer National Forest in several places. It is unclear what, if any, additional consultation requirements may be incurred with the U.S. National Forest Service for this routing.
- The southern portion of the Decker 2 Alternative runs west of the Tongue River Reservoir. As with the Decker 1 Alternative, it is anticipated that seismic analysis and consultation with the Montana Department of Natural Resources and Conservation would be required to determine potential effects to the Tongue River Reservoir Dam if the Decker 2 Alternative is selected for construction.
- The Decker 2 Alternative runs along the eastern boundary of the Northern Cheyenne Reservation for a distance of approximately 17.8 miles. To the extent that there are any discernible disadvantages to proximity to the Reservation (we note that the two Variation Alternatives discussed below were designed to locate the line away from the Reservation boundary), the Decker 2 alternative will not mitigate any such disadvantages compared to the four northern alternatives, which parallel the eastern boundary of the Northern Cheyenne Reservation for a distance of approximately 12.1 miles. However, since other factors militate strongly against the Decker 2 Alternative, further assessment of impacts to the Reservation does not appear warranted in TRRC's view.

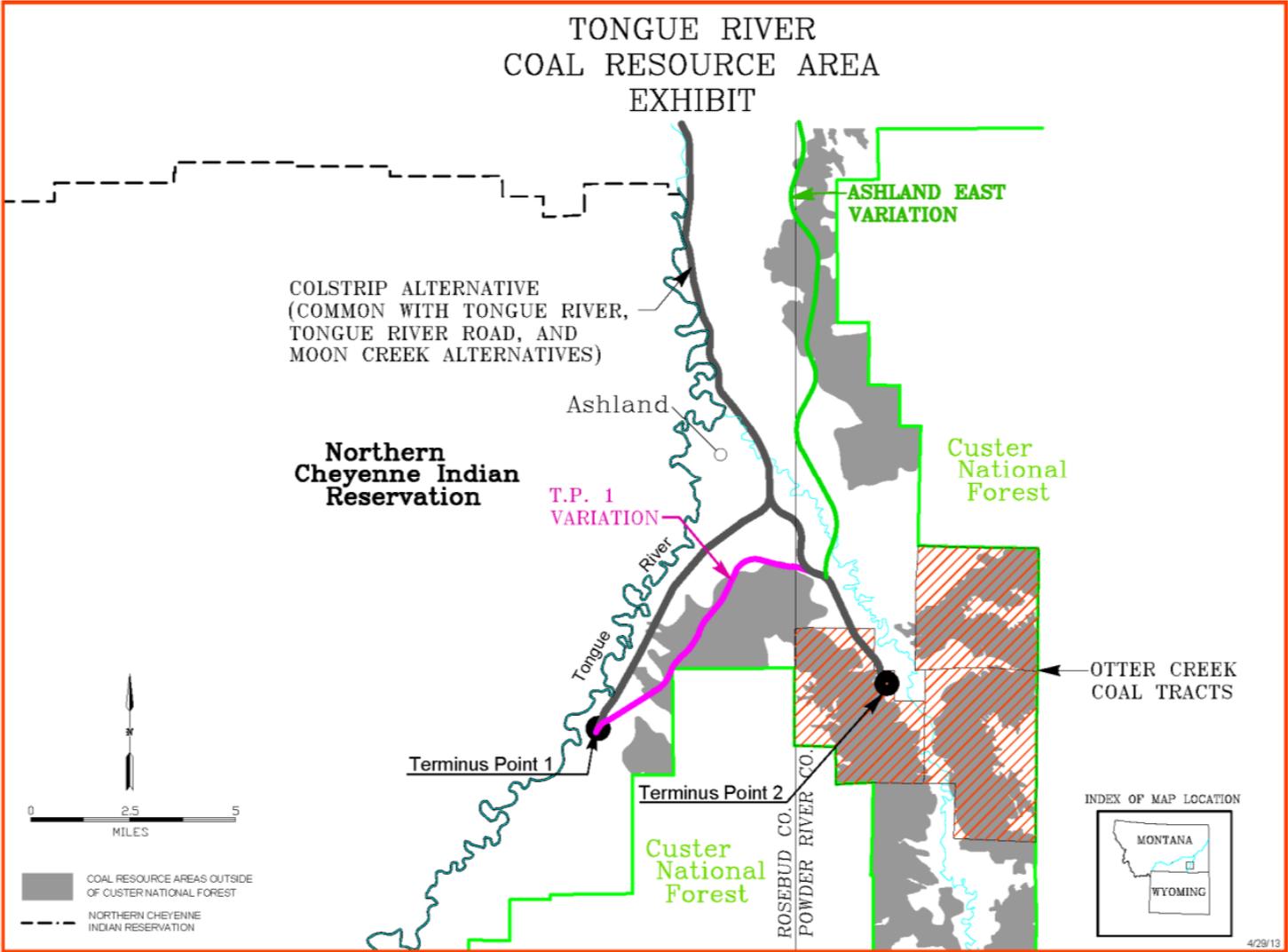
Although the Decker 2 Alternative route avoids the Wolf Mountains Battlefield NHL and the associated requirements under the NHPA, it encounters similar substantial engineering, construction, and operating challenges as the Decker 1 Alternative, and wetlands impacts are expected to be about three times the impacts associated with the Decker 1 Alternative. For these reasons, given the feasibility of alternative routes, the Decker 2 Alternative should not be further pursued.

4.5 Ashland East Variation Screening Analysis

The screening analysis of the Ashland East Variation indicates:

- Portions of the Ashland East Variation would cross over mineable coal reserves, which would require future relocation of the railroad as mining progresses. The proximity of the Ashland East Variation to central portions of mineable coal reserve areas is shown on Figure 5. The fact that this variation would be constructed over mineable coal reserves in the Ashland area provides a significant disqualifying factor for this variation.
- Construction of the Ashland East Variation would require about 2 more miles of new railroad construction than the proposed alignment.
- The Ashland East Variation route would run about 5.4 miles against adverse grades (uphill), compared to about 4.2 miles on the corresponding segment of the proposed alignment.
- Due to the topography encountered, construction of the Ashland East Variation route is estimated to require about 30 million more cubic yards of excavation and embankment construction compared to the proposed alignment.

Figure 5. Coal Resource Area Exhibit



- The Ashland East Variation route would require acquisition of about 415 more acres of right-of-way than the proposed alignment.
- Primarily due to the added length and the substantial additional earthwork, construction of the Ashland East Variation is estimated to cost about \$148 Million more than the corresponding segment of the proposed alignment.
- The Ashland East Variation route would disturb a greater number of acres crossing the Otter Creek drainage along with potentially greater impacts to riparian habitat and agricultural land.
- The Ashland East Variation does not parallel any existing transportation corridor, while by contrast the other alternatives under review for this area do parallel the Tongue River Road or other existing roads.
- The Ashland East Variation would run near the western boundaries of the Custer National Forest. It is unclear what, if any, additional consultation requirements may be incurred with the U.S. Forest Service for this routing.
- There are no apparent offsetting benefits to this route variation. While the route would be somewhat more distant from the Northern Cheyenne reservation compared to the Northern Alternatives and thus noise impacts on the reservation could be lower, the number of receptors in the eastern portion of the reservation in comparison to the number of receptors in the area traversed by the Ashland East Variation would need to be determined in order to meaningfully compare noise impacts. Also, further study would be required to assess air quality impacts to the reservation of the proposed Variation in contrast to the originally proposed routes. However, given the other disadvantages of this variation alternative noted above, including most notably the fact that the variation would be constructed over mineable reserves, such further study is not warranted.

The Ashland East Variation would involve substantial engineering, construction, and operating challenges as compared to the proposed alignment. For these reasons, given the feasibility of alternative routes, the Ashland East Variation should not be further pursued.

4.6 Terminus 1 Variation Screening Analysis

The screening analysis of the Terminus 1 Variation indicates:

- Portions of the Terminus 1 Variation would cross over mineable coal reserves, which would require future relocation of the railroad as mining progresses. The proximity of the Terminus 1 Variation to central portions of mineable coal reserve areas is shown on Figure 5. The fact that this variation would be constructed over mineable coal reserves in the Ashland area provides a significant disqualifying factor for this variation.
- Construction of the Terminus 1 Variation would require about 0.8 more mile of new railroad construction than the proposed alignment.
- The Terminus Point 1 Variation does not parallel the existing transportation corridor of Tongue River Road as this segment of the Northern Alternatives does.
- The Terminus 1 Variation route would run about 5 miles against adverse grades (uphill), compared to about 4.1 miles on the corresponding segment of the proposed alignment.
- Due to the topography encountered, construction of the Terminus 1 Variation route is estimated to require about 8.8 million more cubic yards of excavation and embankment construction compared to the proposed alignment.

- Primarily due to the added length and the substantial additional earthwork, construction of the Terminus 1 Variation is estimated to cost about \$65 Million more than the corresponding segment of the proposed alignment.

The Terminus 1 Variation encounters substantial engineering, construction, and operating challenges as compared to the proposed alignment. For these reasons, given the feasibility of alternative routes, the Terminus 1 Variation should not be further pursued.

5. Conclusion

Based on the analyses presented above, the Decker 1 and 2 Alternatives do not meet the stated purpose of the project to provide efficient transportation of coal from the mines in the Otter Creek area to the primary anticipated destinations for the coal in the Upper Midwest and Pacific Northwest. The Decker 1 Alternative and Decker 2 Alternative merit prompt disqualification due to the substantial transportation mileage penalty these routes would impose on the Ashland/Otter Creek coal. In addition, these alternatives, the Ashland East Variation, and the Terminus 1 Variation all appear to encounter substantial engineering, construction, and operating disadvantages in comparison to the proposed Colstrip Alternative Alignment. Further, there do not appear to be any apparent offsetting benefits to these alternatives.

**Otter Creek Coal Proposal
Fact Sheet
June 25, 2009
Prepared by Montana DNRC**

What is the coal leasing process? How do my comments fit into the process?

The department and Governor's office have received significant interest in having the Otter Creek state coal tracts put forth for public bidding. In May 2008 the Land Board authorized the department to prepare a coal leasing appraisal to assist the board in its review of whether or not and upon what terms to place the state school trust coal rights up for lease. The department is now making the appraisal available for review and public comment, as provided by state statute. (77-3-312, MCA)

If the Land Board decides to solicit competitive bids on state coal leases at Otter Creek, the board will utilize the appraisal and public comments received to design a bid package to secure fair market value for the coal leases. If a bid or bids are received, the Land Board will evaluate whether to accept or reject the bids. If the Land Board determines it has received an acceptable bid, it would then direct the department to issue coal leases to the successful bidder.

How much coal exists at Otter Creek? What is its development potential?

State recoverable coal totals 616 million tons, or about one-half of the total 1.3 billion ton reserve. Of that, 572.3 million tons of state coal is not leased.

What revenues could be generated from leasing and development of the Otter Creek property?

State coal leases generate two types of revenue for the school trust beneficiary – rentals and royalties. Rentals are payments made by the lessee to hold the lease. Rentals may include bonus payments, which are amounts offered through a competitive bid process over and above the first year base rental. If the coal lease is developed, royalties are paid on each ton of coal removed from the lease. Royalties represent the state's share of the gross revenue generated when the coal is sold. Royalties constitute the overwhelming majority of gross revenue generated from a producing coal lease.

The appraisal yields the following estimated value for the state property that may be considered for lease and development.

| | |
|----------------------------|---|
| Minimum Bonus Payment: | \$37.3 million (\$57.2 million if rail line is separately financed) |
| Annual Rentals (\$3/acre): | \$1.0 million (over 40 years) |
| Royalty Payments (12.5%): | \$1.4 billion (over 40 years) |

Since the state's Otter Creek property is school trust land, these revenues would help support K-12 education in Montana.

If a mine were developed, the state and Powder River County would receive the following additional estimated tax payments over the life of the mine:

| | | |
|---------------------|---------------------|-----------------|
| State of Montana | Severance Tax: | \$2.7 billion |
| | Gross Receipts Tax: | \$0.9 billion |
| | RIT Tax: | \$0.072 billion |
| Powder River County | Property Tax: | \$1.09 billion |

Why does the appraisal analyze a coal mine project both with and without railroad development costs?

Appraisal methodology requires an estimate to consider the development costs needed to get the production from the proposed project to market. Therefore, the base appraisal does incorporate financing costs for that portion of the Tongue River Railroad from Otter Creek to Miles City. For years state Land Boards have established a policy that all transactions involving state trust land resources be valued as if access is in place. The railroad should be viewed as if it had separate financing. Therefore, the appraisal also calculated the net present value of the proposed mine operations without any capital investment required for railroad construction. This calculation yielded the higher forecast bonus bid of \$0.10 per ton.

What is the Settlement Agreement between the Northern Cheyenne Tribe and Land Board?

Prior to the federal conveyance of the Otter Creek tracts, the Land Board entered into a February 19, 2002, Settlement Agreement with the Northern Cheyenne Tribe (NCT). The NCT had concerns over potential impacts to the NCT from development of a mine at Otter Creek. They filed suit against the federal government opposing the transfer, but withdrew that suit after entering into an agreement with the Land Board. Key provisions of the Settlement Agreement include:

- **LAND BOARD SUPPORT FOR:**
 - Federal impact legislation;
 - Improvements by the state of key off-Reservation roads;
 - Cooperative enforcement agreements among the Tribe, counties and, if appropriate, the State Highway Patrol.

- **REQUIRED OPERATING PLANS FOR:**
 - Otter Creek related training and employment opportunities for members of the Tribe and other local residents;
 - Otter Creek related contracting opportunities for the Tribe and its members;
 - Environmental monitoring of air, water and biological resources on the Northern Cheyenne Reservation which may be affected by mining operations;
 - A cultural resource program addressing Northern Cheyenne historic, cultural, religious and burial sites or items, including plants having cultural or religious significance.

If the Land Board issues any coal leases in the Otter Creek project area, these leases will expressly require the lessee to comply with the provisions of the Settlement Agreement.

Does the issuance of coal leases authorize a mine to be developed?

No. A coal lease establishes the operating, rental and royalty provisions that the lessee must comply with, but does not authorize mining activity. The mine lessee/operator must submit detailed operating and reclamation plans to the Department of Natural Resources and Conservation (DNRC) and the Department of Environmental Quality (DEQ) for permitting review pursuant to the Montana Environmental Policy Act (MEPA). This environmental review process includes opportunity for public review and comment. The lessee/operator cannot commence mining activities unless the DNRC and DEQ issue approvals.

Is coal mining and reclamation regulated in Montana?

Yes. The Montana Department of Environmental Quality (DEQ) is charged with regulating coal mining operations on federal, state and private lands in Montana. The DEQ reviews proposed mine operating and reclamation plans in detail pursuant to MEPA. DEQ staff inspect and monitor all phases of exploration, mining and reclamation. DEQ also calculates and requires full reclamation bonding from the mine operator.

A significant portion of the surface estate above the coal resources owned by the state school trust is privately owned. How are surface owners compensated for their property ownership?

While ownership of the coal estate carries with it the right to explore and develop the coal resource, the surface estate owner is entitled to compensation for the impact to their property. It is not uncommon for the operator of a surface coal mine to either purchase or enter into a long-term lease agreement with the split-estate surface owner. Where the state owns both the coal and the surface estate, the state's surface lessee would be entitled to compensation for lease improvements on any acreage withdrawn from the surface lease.

Is there an estimate of how many jobs this project might create?

A briefing packet prepared during the Federal process of transferring the Otter Creek tracts to the State of Montana provides the following job estimates:

- | | |
|--|-----|
| • Construction of Tongue River Railroad (2-3 years): | 500 |
| • New mine 1 (40+ years): | 261 |
| • New mine 2 (40+ years): | 225 |