

Surface Transportation Board – Rail Energy Transportation Advisory Committee Meeting

Performance Measures Subcommittee Update



October 19, 2017

Using EIA, AAR and individual railroad data sources, a data table is assimilated, and from it.....

Six coal-related dashboards, organized as follows:

1. Coal Production, Consumption, and Inventories Dashboard
2. Net Generation by Fuel Type Dashboard
3. Coal Exports Dashboard
4. Western Rail Coal Carloads Dashboard
5. Eastern Rail Coal Carloads Dashboard
6. Canadian Rail Coal Carloads Dashboard
7. Railroad Coal Train Speed Dashboard

Most dashboards have three sections:

- a. Left - historical and forecasted data (no forecasts of rail metrics)
- b. Middle - comparison for the most recent quarter (Q3 or Q4 as noted)
- c. Right - current YTD comparison versus the 5-year range

Performance Summary

Coal Production

(2017 vs 2016)

Appalachia:	Increased 14.5 million tons	(17%)
Interior:	Increased 3.6 million tons	(5%)
Western:	Increased 32.6 million tons	(19%)
Total Production:	Increased 50.6 million tons	(15%)

Coal Consumption

(2017 vs 2016)

Electricity/Power	Increased 15.7 million tons	(5%)
Retail/Other	Decreased 1.1 million tons	(-6%)
Met/Coke	Increased 0.3 million tons	(4%)
Total Consumption	Increased 14.8 million tons	(5%)

Coal Exports

(2017 vs 2016)

Met Coal:	Increased 5.4 million net tons	(27%)
Steam Coal:	Increased 10.2 million tons	(124%)
Total Exports:	Increased 15.7 million tons	(55%)

Coal Production MM Tons				
2016	Appalachia	Interior	Western	Total
Q1	44.3	36.9	91.8	173.0
Q2	43.2	34.4	82.8	160.5
Sum:	87.5	71.3	174.6	333.5
2017	Appalachia	Interior	Western	Total
Q1	50.7	38.5	107.8	197.0
Q2	51.3	36.4	99.4	187.1
Sum:	102.0	74.9	207.2	384.1
Tonnage	14.5	3.6	32.6	50.6
Percent	17%	5%	19%	15%

Coal Consumption MM Tons				
2016	Electric Pwr	Other	Coke	Total
Q1	152.2	9.6	4.1	166.0
Q2	147.2	8.7	4.1	160.0
Sum:	299.4	18.3	8.2	326.0
2017	Electric Pwr	Other	Coke	Total
Q1	160.5	8.9	4.2	173.6
Q2	154.6	8.3	4.3	167.2
Sum:	315.1	17.2	8.5	340.8
Tonnage	15.7	-1.1	0.3	14.8
Percent	5%	-6%	4%	5%

Coal Exports MM Tons			
2016	Met	Steam	Total
Q1	10.2	4.0	14.2
Q2	10.1	4.2	14.2
Sum:	20.3	8.2	28.4
2017	Met	Steam	Total
Q1	12.2	10.1	22.3
Q2	13.5	8.3	21.8
Sum:	25.7	18.4	44.1
Tonnage	5.4	10.2	15.7
Percent	27%	124%	55%

Coal Inventories MM Tons				
2016 YTD	Electric Pwr	Bit	Sub-Bit	Total
Q1	191.9	233.6	319.1	744.6
Q2	182.8	243.2	310.9	736.9
Sum:	374.7	476.8	630.0	1,481.5
2017 YTD	Electric Pwr	Bit	Sub-Bit	Total
Q1	163.9	203.6	266.2	633.7
Q2	160.5	207.5	269.3	637.3
Sum:	324.4	411.1	535.5	1,271.0
Tonnage	-50.3	-65.7	-94.5	-210.5
Percent	-13%	-14%	-15%	-14%

Performance Summary

Railroad Carloads (2017 estimate versus 2016)

Burlington (BNSF):	Increased 156,422 carloads	(21%)
Union Pacific:	Increased 93,430 carloads	(21%)
Kansas City Southern:	Increased 26,446 carloads	(46%)
Norfolk Southern:	Increased 52,243 carloads	(17%)
CSX Transportation:	Increased 31,263 carloads	(12%)
Canadian National:	Increased 5,047 carloads	(8%)
Canadian Pacific:	Increased 2,279 carloads	(2%)
Total Carloads:	Increased 367,130 carloads	(18%)

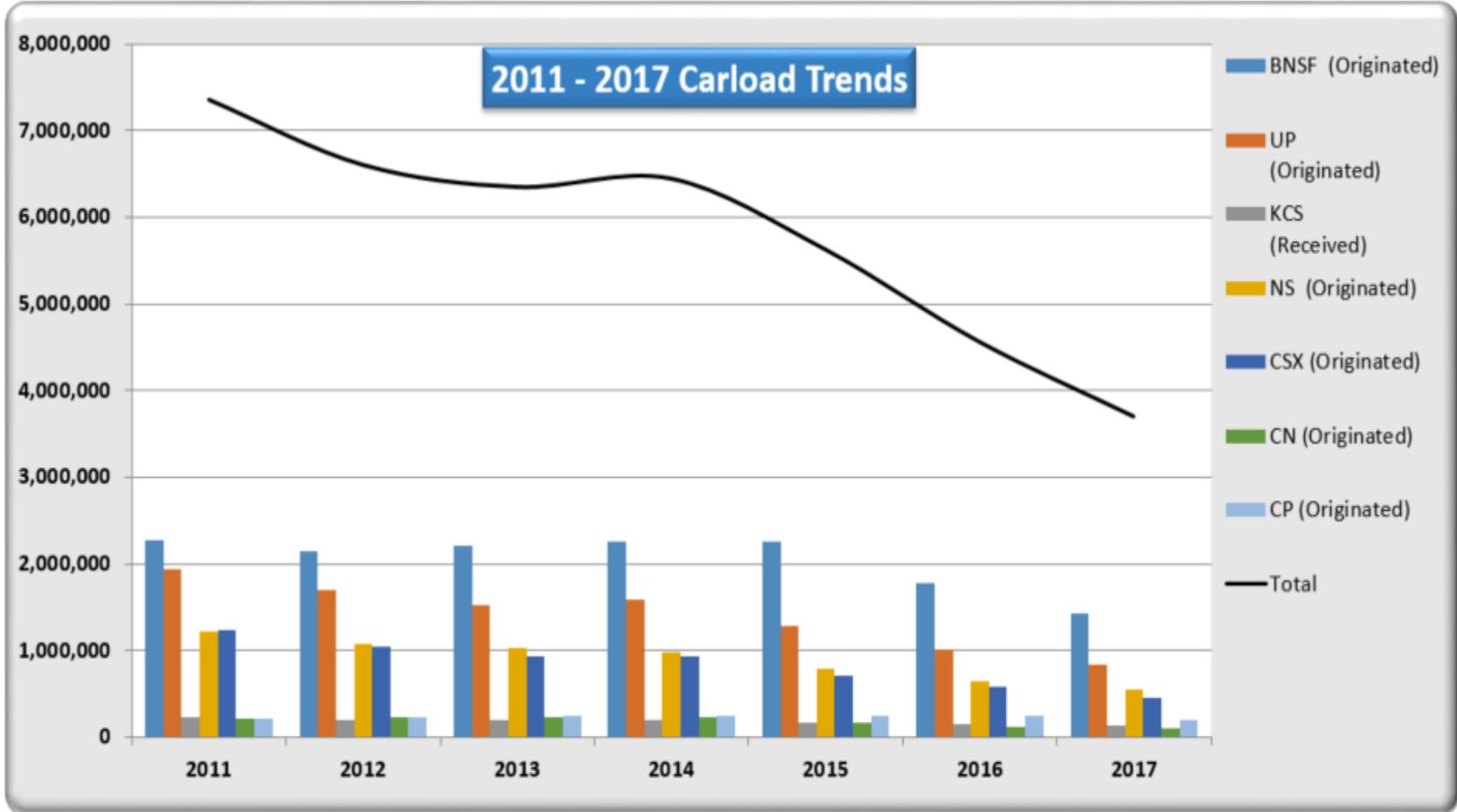
Car Originations / *KCS Receipts (000 Carloads)

<u>2016</u>	<u>BNSF</u>	<u>UP</u>	<u>*KCS</u>	<u>NS</u>	<u>CSX</u>	<u>CN</u>	<u>CP</u>	<u>Total</u>
Q1	396,864	224,275	30,652	159,945	137,474	29,733	62,626	1,041,569
Q2	361,143	216,018	26,608	152,812	132,856	30,897	60,233	980,567
Sum:	758,007	440,293	57,260	312,757	270,330	60,630	122,859	2,022,136
<u>2017</u>	<u>BNSF</u>	<u>UP</u>	<u>*KCS</u>	<u>NS</u>	<u>CSX</u>	<u>CN</u>	<u>CP</u>	<u>Total</u>
Q1	479,118	272,334	44,843	179,443	151,404	35,158	57,207	1,219,507
Q2	435,311	261,389	38,863	185,557	150,189	30,519	67,931	1,169,759
Sum:	914,429	533,723	83,706	365,000	301,593	65,677	125,138	2,389,266
Carloads	156,422	93,430	26,446	52,243	31,263	5,047	2,279	367,130
Percent	21%	21%	46%	17%	12%	8%	2%	18%

Average Train Speeds (MPH)

<u>2016</u>	<u>BNSF</u>	<u>UP</u>	<u>KCS</u>	<u>NS</u>	<u>CSX</u>	<u>CN</u>	<u>Avg</u>
Q1	26.2	29.8	27.8	18.0	17.9	25.9	24.3
Q2	24.7	27.3	28.3	17.8	17.6	25.9	23.6
<u>2017</u>	<u>BNSF</u>	<u>UP</u>	<u>KCS</u>	<u>NS</u>	<u>CSX</u>	<u>CN</u>	<u>Avg</u>
Q1	23.7	27.3	25.6	17.4	0.0	24.9	19.8
Q2	22.6	26.1	24.3	16.7	0.0	24.8	19.1

Carload Summary



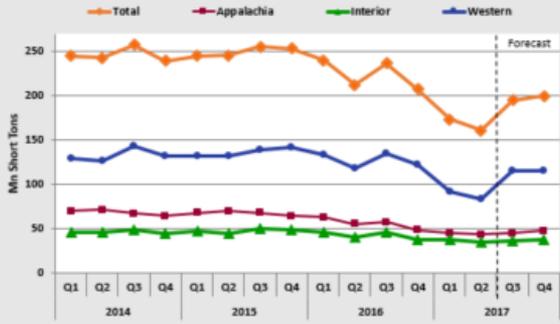
Source Data: AAR

In 7 years Coal cars are down 3.6M and 50%. Only one year in the last seven have seen a slight increase in traffic while two years have seen over 10% decline.

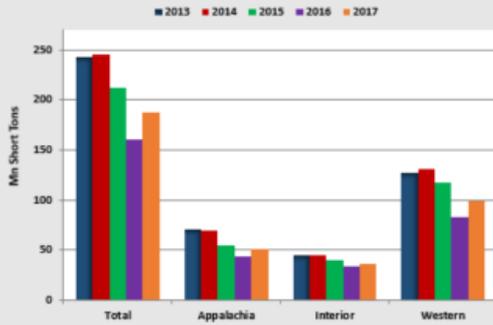
Note: 2017 traffic is Q1-Q3 carloads only

U.S. COAL PRODUCTION, CONSUMPTION, AND INVENTORIES DASHBOARD

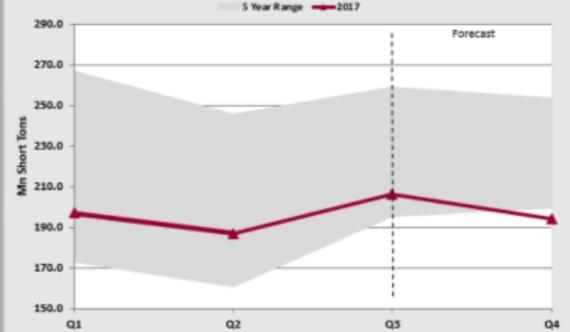
Historical and Forecasted Production



Q2 Production Comparison



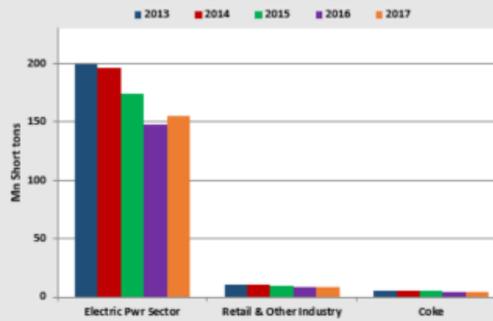
2017 Production vs 5-Year Range



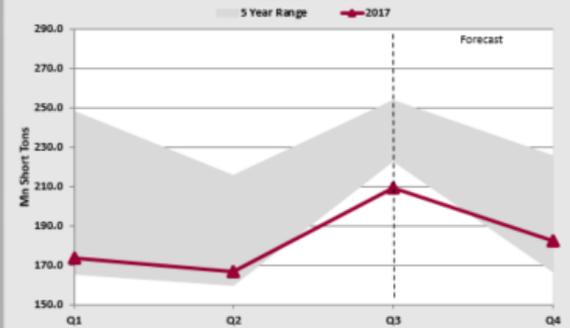
Historical and Forecasted Consumption



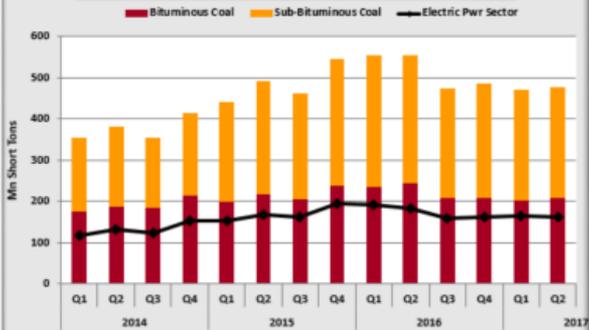
Q2 Consumption Comparison



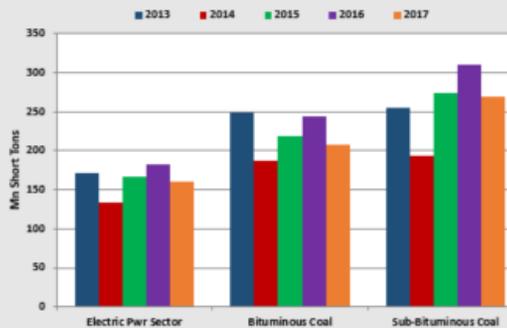
2017 Consumption vs 5-Year Range



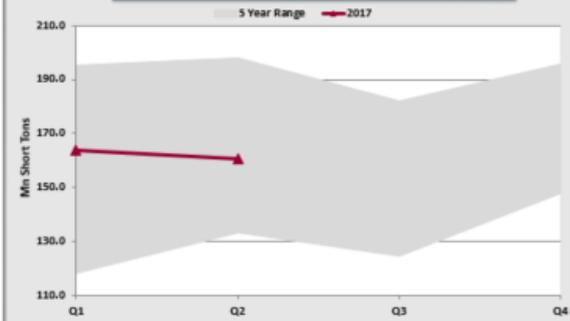
Historical and Forecasted End-of-Period Inventories



Q2 End-of-Period Inventories Comparison



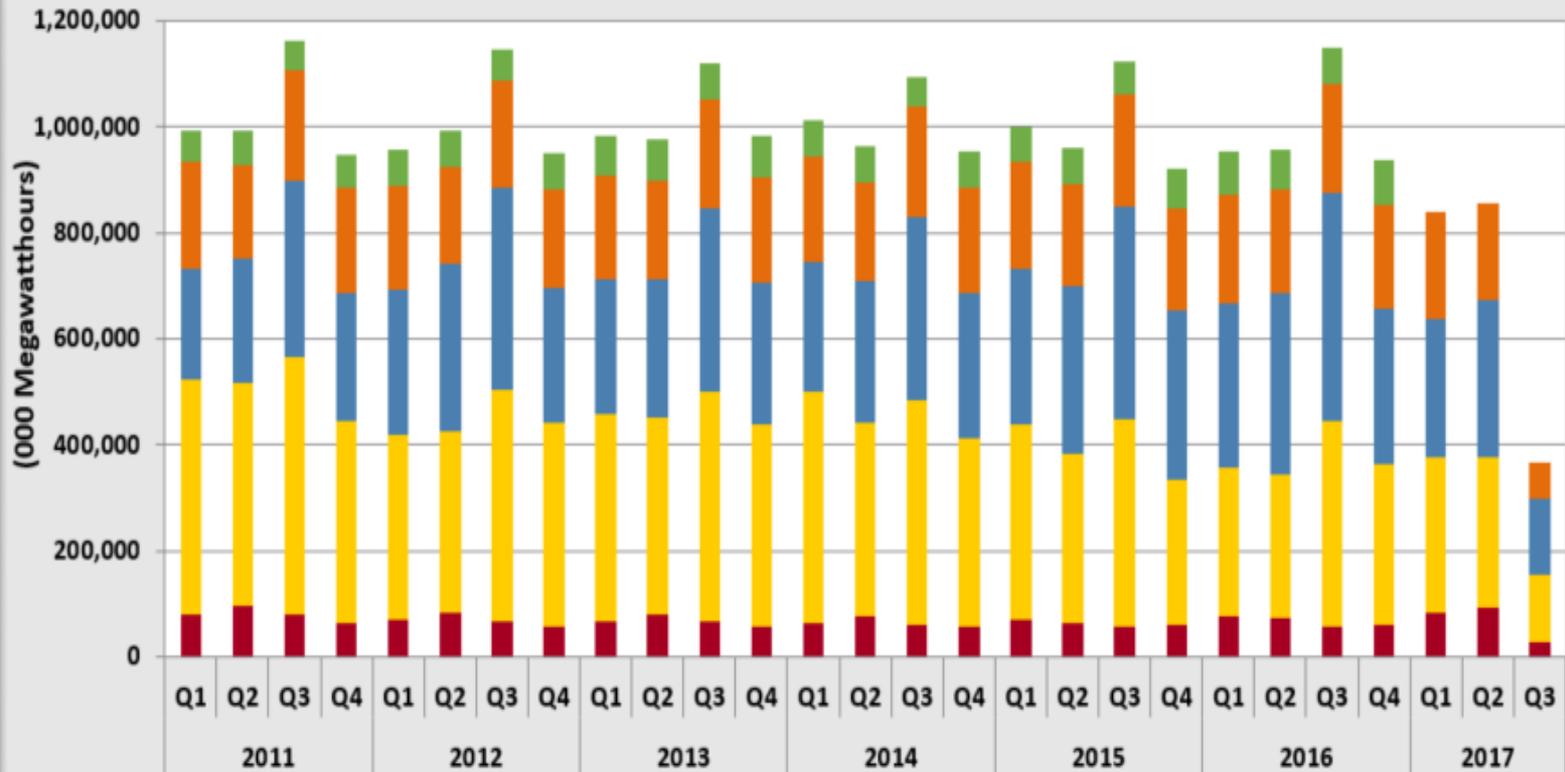
2017 End-of-Period Inventories vs 5-Year Range



NET GENERATION BY FUEL TYPE DASHBOARD

Historical Net Generation by Fuel Type

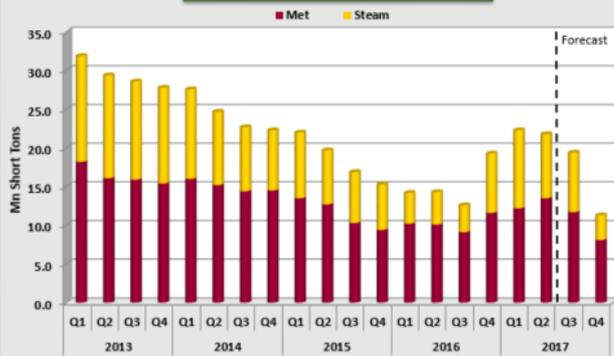
Hydroelectric Coal Natural Gas Nuclear Renewables



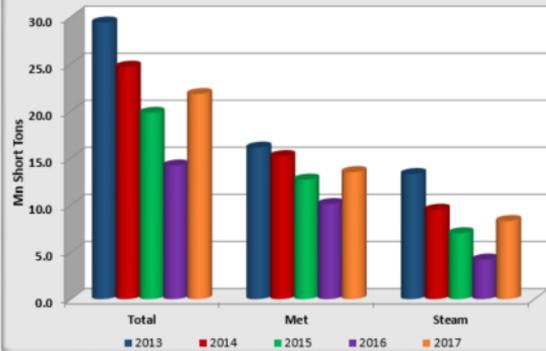
Source Data: EIA

U.S. COAL EXPORTS DASHBOARD

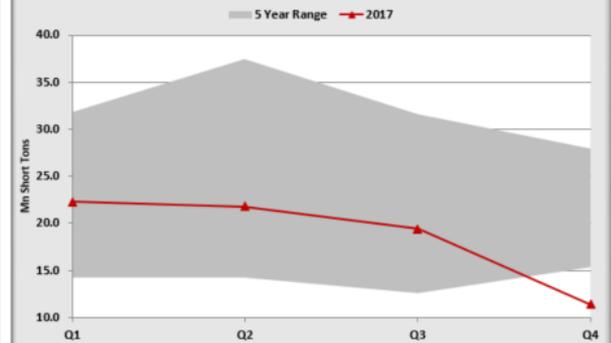
Historical and Forecasted Exports



Q2 Exports Comparison



2017 Exports vs 5-Year Range



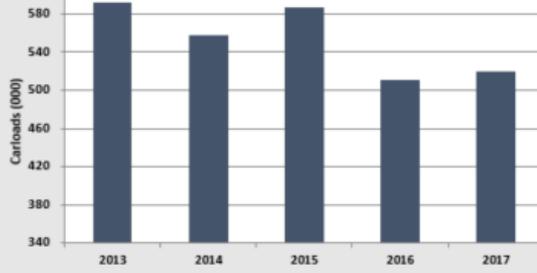
Source Data: EIA

WESTERN RAILROAD COAL CARLOADS DASHBOARD

BNSF Historical Originations



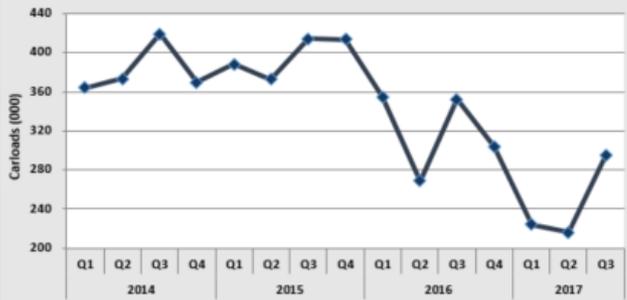
BNSF Q3 Originations Comparison



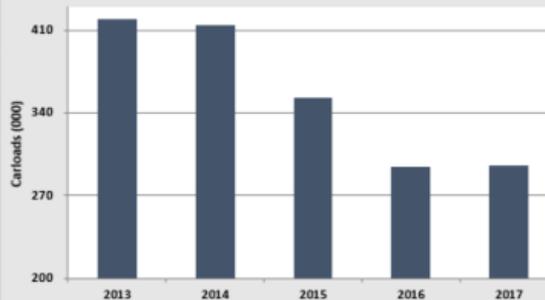
2017 BNSF Originations vs 5-Year Range



UP Historical Originations



UP Q3 Originations Comparison



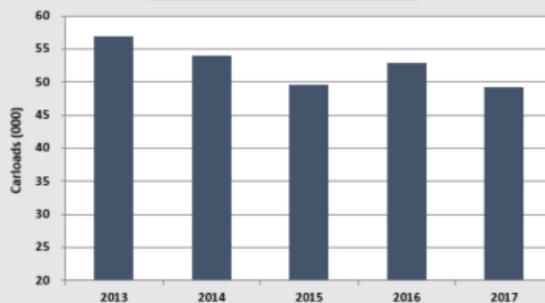
2017 UP Originations vs 5-Year Range



KCS Historical Receipts



KCS Q3 Receipts Comparison



2017 KCS Receipts vs 5-Year Range



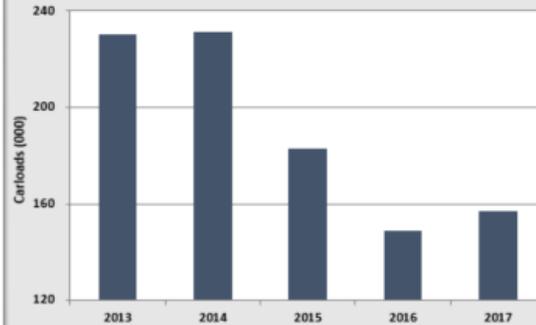
Source Data: AAR, BNSF, UP, KCS

EASTERN RAILROAD COAL CARLOADS DASHBOARD

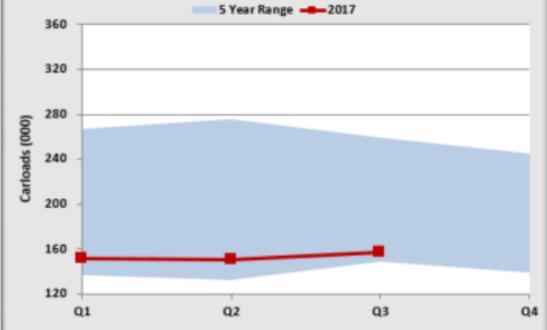
CSX Historical Originations



CSX Q3 Originations Comparison



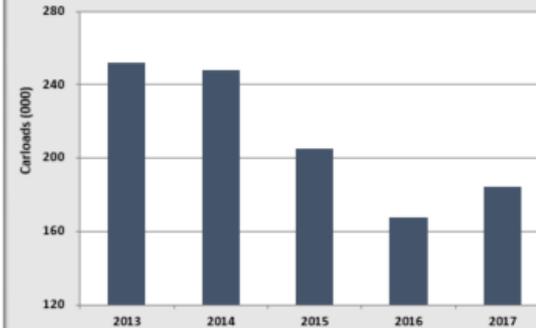
2017 CSX Originations vs 5-Year Range



NS Historical Originations



NS Q3 Originations Comparison



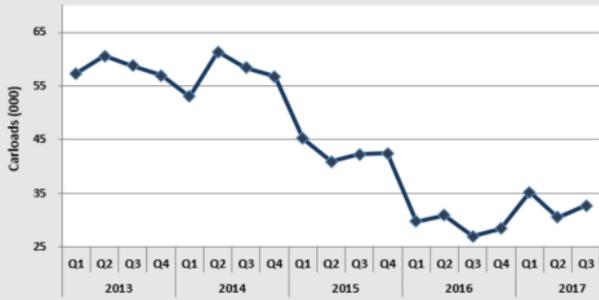
2017 NS Originations vs 5-Year Range



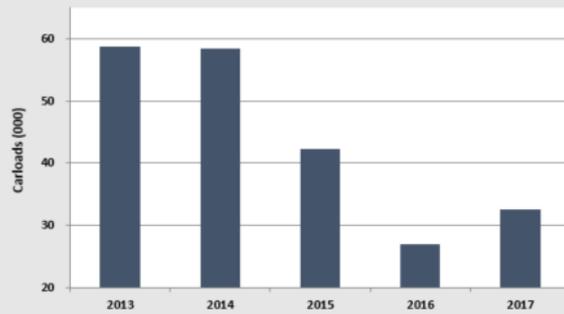
Source data: AAR, CSX, NS

CANADIAN RAILROAD COAL CARLOADS DASHBOARD

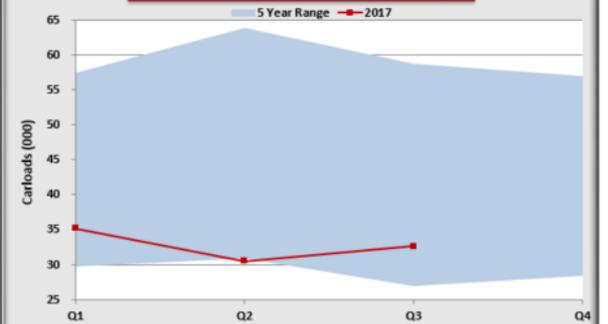
CN Historical Originations



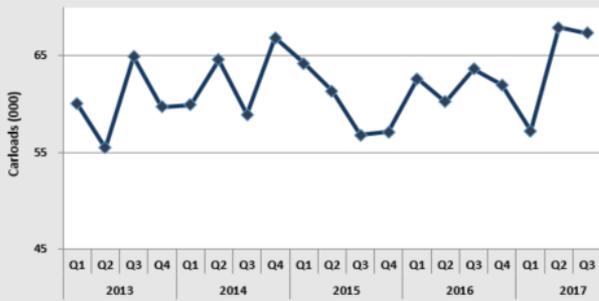
CN Q3 Originations Comparison



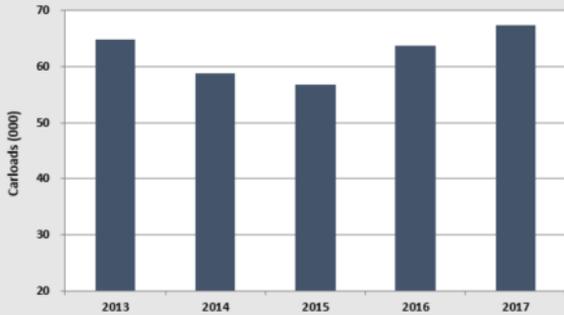
2017 CN Originations vs 5-Year Range



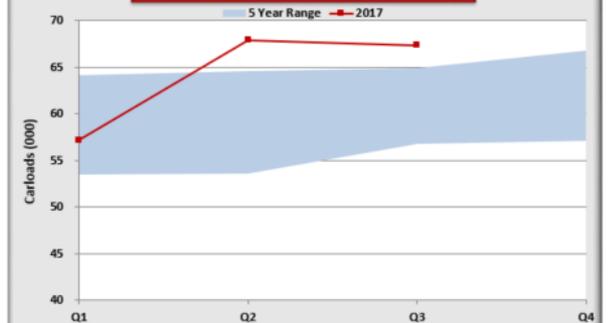
CP Historical Originations



CP Q3 Originations Comparison



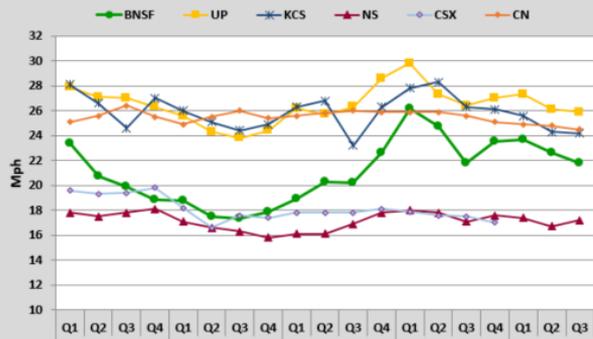
2017 CP Originations vs 5-Year Range



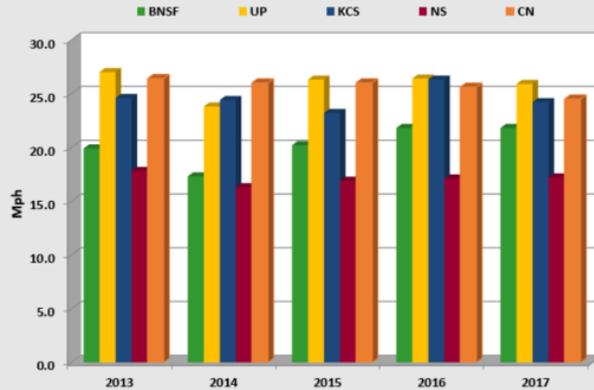
Source Data: AAR, CN, CP

RAILROAD COAL TRAIN SPEED DASHBOARD

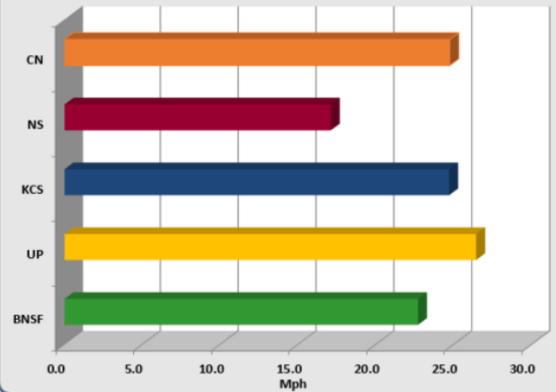
Historical Coal Train Speed



Q3 Coal Train Speed Comparison



2017 Average Coal Train Speeds



Source Data: AAR, BNSF, UP, KCS, NS, CSX, CN, CP