Company Participants

- Lee Klaskow, Senior Freight Transportation & Logistics Analyst
- Taylor Robinson, President

Presentation

Lee Klaskow {BIO 16957183 <GO>}

Thank you for joining us today. Welcome to Bloomberg Intelligence Webinar on the Changing Energy Landscape and Location for the Railroads. We'll touch upon the impact from coal secular decline and the disappointing growth of crude on railroads. We'll also dive into the opportunities from shale gas projects may provide for the industry. Sorry, I did that too quick. This is our disclaimer. So you can read that. I guess you've done reading that.

And then our speakers today, my name is Lee Klaskow, and I'm Bloomberg Intelligence Senior Freight Transportation Logistics Analyst. My team and I cover the North America Railroad and Trucking industries as well as the Global Marine Shipping Logistics and Airfreight market. Prior to joining Bloomberg about seven years ago, I was on the sell-side for 12 years and most recently, I was the Senior Transportation Analyst at LongBow Research and Prudential.

I'm excited to have with me today Taylor Robinson, President of PLG Consulting.

PLG Consulting is a bulk logistics experts, focusing on rail transportation and logistics, energy and chemical markets. Since 2001, PLG has partnered with clients design or improve their logistics strategy and operations, utilizing a team of 30 plus industry veterans. Over the past five years, PLG has worked extensively throughout the unconventional energy supply chain, providing strategic design and operational advice.

Taylor joined PLG in May of 2012, after spending over 25 years leading global supply chain organizations and a broad range of industries. Mr. Robinson's career included times at -- in the automotive, aerospace and the food industries with Honda, Honeywell and HJ Heinz. He's a graduate of Bowling Green State University and is a Six Sigma Black Belt.

And we're having problems with slides, so forgive me. Just some housekeeping issues today. It will be -- the webinar will be recorded and available for replay by using the same link to access the live event. A copy of the slides are available upon request following the webinar. At the bottom of the slide window, you'll notice that you can adjust time and maximize your screen. We suggest that you maximize your screen for the best quality of the slides. And lastly, feel free to ask questions by using the Q&A panel to the right of the PowerPoint slides. We'll address questions at the conclusion of the presentation.

So before we dive into our discussion, I want to briefly introduce you to Bloomberg Intelligence or BI, an exciting research platform available to terminal customers. Bloomberg introduced a new approach to industry and company analysis by putting the data, analytics and in-house research at users' fingertips. Bloomberg Intelligence dashboards facilitate peer comparisons, support investment analysis, and provide insights into industries and company fundamentals.

Given Bloomberg Industries' depth and breadth, users are able to research and analyze, complete supply chains from basic materials to consumer discretionary sectors and we're getting deeper since we've added macro regulatory and credit research to the platform. We have currently over 120 sectors and over 1,500 companies around the globe under coverage. Covering these sectors are 30 teams headed by senior analysts with an average of 15 years experience in the buy or sell-side that are accessible to Bloomberg customers.

All right, for -- and we provide research and analysis on the North American Railroad industry as backed by our robust industry and company data libraries. Our transportation dashboards have data from a number of third-party providers through household names as it relates to freight economy. Some of our partners include AAR, Ajana, FTR, Internet TruckStop, Truckloadrate.com, ATA, Data Mine, Drewry, CTS, (inaudible) SSY and many, many more. Users are able to chart the data within Bloomberg or download the raw data for further analysis and excel.

So then transportation stocks have outperformed the broader market over the past 18 months and year-to-date this year, which follows the group significantly underperformed in the S&P in 2015 when truckload carriers, LTL carriers and railroads were down about a-third and the great logistic providers like FedEx and UPS were down only 14%, but that was well underperforming in the S&P, which was down about 1%.

Increased demand and improving fundamentals coupled with the new administration's promise of increasing infrastructure spending and lowering taxes helped propel transportation stocks higher this year. Excluding the truckload group, transportation stocks have outperformed the broader market over the past 18 months. Year-to-date, only railroads have outperformed the broader markets. Rails are up 18 versus the S&P, which is up eight, and that is still not enough for truckload carriers, which were down seven. LTLs are down -- or I'm sorry, LTLs are up 4% this year and integrated logistics providers are up 3%.

Strength in the rail group has been driven by improving volume growth and speculation about what CSX new management team can do for the Eastern railroad and the larger industry. Railroads and LTL carriers' EPS growth are expected to outpace truckload carriers and integrated logistics providers this year. Increased demand should drive margins lower from operational leverage of these asset intensive networks. Integrated logistics providers like UPS and FedEx are facing margin compression from the mix-shift towards less profitable B2C freight and truckload carriers are facing tepid demand and low rates coupled with the best price for equipment sold in the aftermarket.

After decelerating to an anemic 1.6% in 2016, US GDP growth may average just 2.2% through 2018 based on consensus. The recovery has not been broad based and we've seen some areas of strength and pockets of weakness in the US economy and among various modes of transportation.

Fortunately for rails, we've appeared to emerge from the commodity depression and the manufacturing recession. Also, inventories have been trending lower, which could spur additional intermodal traffic. The ISM and Industrial Production Indexes have been pointing towards a recovery in the manufacturing sector that relies on transportation industry to deliver raw materials and managed supply chain and deliver goods to market.

Unemployment has been one of the biggest roadblocks to faster expansion, that was expected to decline to 4.8% this year from a high of 9.6% in 2010. Despite the low employment number, there are still questions about the health of the job market. May payrolls fell well short of consensus expectations, as May payrolls have been prone to do, but significant downward revisions to the prior two months added insult to injury, thereby pushing the three month average pace of hiring to the slowest rates since mid-2012.

Class 1 rails' EPS, topped estimates by medium of 4% in the first quarter. This is the first quarter since the fourth quarter of 2014 that all peers recorded volume gains. CSX EPS surpassed the most at 7%, rising 38% from the previous year. The results were driven by productivity gains and pricing strength. Management expects headcount reductions to produce annual productivity savings of about $0.12 per share after tax from its previously announced elimination of 20% of CSX management.

Norfolk Southern at 7.3% EPSB [ph] was powered by a 21% increase in coal tonnage due to an improved export market, higher natural gas prices in utility coal share gains. It ups [ph] first quarter EPS expectations by $0.05, excluding a benefit from a lower tax rate.

Public Class 1 rail operating ratios improved 38 basis points in average in the first quarter versus last year to about 65.1%. CSX delivered its lowest ever first quarter operating ratio of 69.2%, showed the most improvement from last year. Management expects its full year ratio to improve to the mid-60s and could reach low-60s by 2018, from 69.5 in 2016. CSX's new management team expects 2017 productivity gains to surpass last year's 427 million, which was about $0.29 a share.

From the implementation of Hunter Harrison's precision railroading and through employee attrition.

CP or Canadian Pacific's operating ratio rose the most among its peers. Weaker margins were driven by difficult comparisons from milder weather and land sales and a weaker Canadian dollar last year. CN logged the best overall operating ratio despite having an increase of about 50 basis points.

Railroads -- carloads are up about 5.5% year-to-date as growth is accelerated into the second quarter. Coal, metal and minerals have been bright spots, while autos and forest

products are trending lower. Growth may moderate in the second half. US railroad traffic may rise 3.2% in 2017 according to FTR, eclipsing an estimated 2.2% growth for GDP.

Commodity carloads could increase 2.1%, fueled by an expected 4.6% gain in coal and a 6.1% rise in non-metallic minerals. Intermodal should resume its long-term secular growth for rails in 2017, after a year of inflated inventories and increased truck competition. FTR expects US rail intermodal traffic to rise 4.7% of easier comparisons with network investments, slightly lower inventories and weaker truck competition as fuel prices rise and capacity tightens from new regulations at year's end. The US inventory to sales ratio was 1.35 in March, which is 3% above the 15-year average, but an improvement of 4% to 5% from last year.

Railroad shifts away from coal carloads will continue to be a painful evolution for the industry. Coal is one of the -- was once a reliable source of revenue and carrier above average margins, given the efficient nature of unit trains. This helped the rails fund growth projects outside of coal, which the industry is now leaning on more for growth.

The growth in crude and related traffic was supposed to help temper the secular decline in coal. Energy carloads demand went from bad to worse with the collapse in oil prices.

Rail could benefit from carrying additional carloads of plastic, chemicals, fertilizers and gases resulted from new shale projects and additional downstream carloads will account for less than 1% of rail traffic, but represent a bright spot for energy related carloads that are facing a number of challenges.

Burlington Northern accounts for the largest share of coal carloads, about 39%, followed by Union Pacific at 23%. The Western Rails have 62% share driven by volumes in the Powder River Basin and market shares are mostly steady for the Group, Norfolk gained the most and captured a good chunk of new export volumes. CSX and Burlington are the most leveraged to coal at 18% of the revenues, while CN is the least at 4%. CN is the only rail with declining originated carloads year-to-date. Over the last four quarters, coal accounted for our 13% of revenues for Class 1 rails, and this is down from 16% in 2016 and 25% in 2011. The secular decline in coal has been driven by regulations in abundance of natural gas as a cheaper alternative. Regulations from the Obama administration aimed at coal has forced electric utilities to choose between either installing costly new pollution controls or retiring certain coal plants. Rolling back some of these regulations under the Trump administration might not be enough to mitigate the shift taking place towards gas given its low cost.

Most of the electric utilities that have been retired or planned to be shut down are concentrated east in the Mississippi, where CSX and Norfolk Southern operate. The closure will hurt their originate and receive carloads more than the Western competitors.

Revenues and volumes at Class 1 rails should get a boost in 2017 from increased coal carloads. Rails have been pretty optimistic about demand for the remainder of the year, whether natural gas prices will play a major role in the level of growth. Unfortunately, the rally in coal will likely be short-lived and will continue on its cyclic [ph] decline next year

when comparisons become more difficult. FTR projects a 5% rise in US coal carloads this year and then it begins to decline less than 1% in 2018. Coal accounts for about 11% of originated commodity carloads.

Rails benefited from the North America energy boom during 2010 to 2014, but crude by rail volumes declined in 2015 and 2017 due to low oil prices, tighter spreads, and fewer rigs. Crude by rail volumes will remain under pressure as long as WTI oil prices remain depressed. The EIA estimates that WTI crude prices could average 70% higher to about $50.68 in 2017. Crude by rail carloads are down 23%, according to the EIA through March versus last year.

North America rail share of Bakken oil shipments did improve to 27% in March from February. We're getting some of the share from pipelines, despite the increased rail shares done [ph] eight percentage points from 2016 and 48 points lower than the April 2013 high of 75%, amid pressure from tighter spreads in greater pipeline capacity. OPEC production cuts may aid to -- may aid second half crude by rail, which may benefit from higher oil prices and domestic productions if the cuts stick and pipelines are still the primary motive of Bakken oil transportation at about 58% in March.

After declining 19% in 2016, petroleum related carloads are 7% lower year-to-date. Petroleum products include crude oil, refined products such as jet fuel and asphalt. Burlington Northern remains the market share leader at 29% of the petroleum carloads followed by CN at 27%. Kansas City Southern doesn't originate any crude carloads and only hauls interchange loads mainly from Canadian carriers.

Fracking was supposed to be a source of carload growth for the rail industry, with increased demand for sand chemicals, pipes and water, increased rig counts and using more sand per rig to maximize wells has led to an increase in sand demand. Originate stone, clay and glass production carloads fell about 18% in 2017 year-to-date. Despite their strength, volumes remain about 6% below their peak levels in 2014 and account for only 1.5% of the industry's total carloads. Rails like CN and CP, and Kansas City Southern and CSX were hoping crude related carloads might mitigate coal secular decline.

Now, I'm going to hand over the presentation to Taylor Robinson, President of PLG. He will provide us with a deep dive about the opportunities available for rails from the growth in energy and related markets. Taylor?

Taylor Robinson {BIO 19470118 <GO>}

Great. Thank you, Lee. Appreciate you inviting me to join today. A lot to cover in a short amount of time. So, we'll move pretty quickly. Lee talked about PLG and you can see some of our customers here. Let's dive into the -- first, the overview of energy from our perspective. Secondly, and then we'll dive into a couple of commodities that are highly energy and petrochemical related and what we see coming down the road. And then we're going to look at another growth opportunity related to the energy industry in Mexico.

So as we look at crude, of course, everyone understands where it's kind of range found 45 to 55. However, there is some risk right now, downside risk, so that could change the game pretty quickly if we head to $40 mark for an extended period of time, many folks think there will be a downturn in production.

Of course, crude -- I'm sorry, shale oil is coming more and more competitive with the best-in-class in the $30 to $40 range. They can be profitable in certain place and, of course, most of the rigs have moved to horizontal for fracking. So big growth is coming in the southern shale plays. If you look at right now, about 60% -- over 60% of the rigs are in the Texas, Oklahoma, New Mexico area. Permian is by far the leader, approaching 50% of the rig counts. And as you can see, on the horizontal rigs, they've actually almost gone back to where they were at the peak. What's interesting is Permian -- I'm sorry, Eagle Ford and Bakken are the big losers. And as you can see, after Permian, it's a lot of smaller players as far as rig counts. The reason; high productivity, low cost, and there is a tremendous amount of big players that are still setting up shop in the Permian. It is the place to be right now.

If we look at their productivity, of course, tremendous growth of initial production out of their wells in the Permian. They're getting better at pad drilling, they are improving high intensity fracking methods. There are some headwinds, because of -- there will be anticipated oilfield service price increases. Also as you get more efficient, there is less room for productivity, but I believe these trends going to probably continue on an upward path for the next one or two years at least. So future is all about more and more productivity.

On the gas side, most people are locked in the $3 range in the futures due to -- there is growing demand. However, it seems there's unending low-cost supply, especially in the Marcellus. And as you can see over the past six years, literally, seven times more gas coming out of the well in the first 90 days, just tremendous productivity even better than crude oil. So the productivity of the rigs for gas if prices would spike up for any reason, the producers can quickly bring on supply.

Let's look at the rail impact we talked -- Lee already talked about coal, of course, the decline, when we look at, we're heavily involved in lots of industrial bulk commodities. If we go back to the start of the coal decline, these other commodities were about 25% of carloads, get a nice growth driven mainly by shale, and the oil price downturn, still 25% of the cars, pretty consistent is these other industrial commodities. And we'll talk about what could be going up and down in the coming years.

When we look at the whole supply chain around shale products upstream, it's all about proppants or frac sand. We'll talk about a little bit about each of the petrochemical and the petro -- the products coming out. Further downstream, we'll get into plastics and chemicals, we will also talk a little bit about propane.

So, as you can see, a number of commodities that are going to be interesting. First of all, we'll get the really bad news out of the way, crude by rail has come down significantly and this little sleepy commodity of LPG, which is mainly propane and butane, has overtaken

crude by rail and we see that as a slow, steady increase over time, and the crude by rail will continue to lower.

Also, let's look at Bakken where most of the crude by rail is from. Over the last six months, it's only gotten about a 29% market share compared to 71% at peak. So completely flipped, we don't see that changing, we've got the Dakota Access Pipeline in place, that will continue to erode share and import competition on the East Coast isn't likely going to change with the current WTI/Brent spread.

Western Canada, on the other hand, has a small crude by rail window for growth. Later this year through 2019, we think there could be 200,000 to 300,000 barrels a day moved on crude by rail in addition to the current 125,000 level. That's due to about a 0.5 million more barrels a day being brought on in production over the next 24 months and pipelines are at capacity.

We don't see any pipelines -- additional pipelines coming on stream before 2019. So, there is this window, it's not going to be significant as the Bakken, but hence some increase in volume moved mostly from, of course, Western Canada to the US West Coast and also to the Gulf Coast.

As we look at the shale operations, quite logistics intensive, led by proppants or frac sand. Right now, we see on an average well, about 55 rail carloads and to the monster wells, the proppants [ph] they're called up to 240 cars or over two unit trains in each well. So quite a range, we'll talk about the growth of this high intensity. You multiply that out when you hit truckloads by four and you are up to almost a 1,000 truckloads from the largest wells.

So, the logistics challenges moves downstream, as well you have to move some of the crude by truck as it's coming out of the well to get it to heater pipeline and even worse case in some of the -- some of the shale plays, especially the Permian, you got a tremendous amount of produced water coming out in addition to crude up to five, six, seven barrels of water per barrel of crude. So, again that logistics challenge is growing.

I should say also in addition to adding more and more proppants, you have to have a like amount more water and also you have to dispose of that water comes out. So again logistic challenges continue to grow in the shale fields. As we look at, we'll shift to frac sand which is the bright spot right now. And as you can see in three quarters, we've basically (Technical difficulty)

Operator

Please stand by, while we get our speaker back on the line. Hello, I've got you back on the line.

Taylor Robinson {BIO 19470118 <GO>}

Yeah. Sorry about that, I'm not sure what happened there. We were talking frac sand back to the peak of 2014, we're very close right now and projected to go higher in the coming quarters. If we look at the frac sand handled by rail, this is not originations, this includes transfers. As you can see right now, BNSF has overtaken UP during the downturn and has maintained that lead and likewise, CN is having good growth as the other two carriers.

Why is it growing so quickly? It is not only the rig count growth, but it's also the efficiency, adding more wells per rig, the lateral lengths are growing quite quickly which means more profit. They're adding more stages of completion to each well and they're adding much more sand per lateral foot, nearly doubled in the past three to four years.

So this is the reason for that multiplied group and the other key thing is, there's been a shift to finer meshed sand, which means that sand can come from different places. So 100 mesh sand is in vogue right now on the high intensity wells. It's a key part, 60%, 70% of that well might be fine mesh and it is available as we're going to see in the shale plays in some cases.

So if we look at that supply chain from Wisconsin, Illinois mainly the Northern white sand, which was -- is the highest quality sand been traditionally used for a great majority, up to 70% to 80% of the sand, that percentage is falling and as you can see, this is the largest cost driver and the supply chain is moving at long distance via rail. You've got quite far ranges in each category of the supply chain and as you can see, moving from Northern white to regional sand takes hold steps large chunks out of supply chain and lowers cost dramatically.

So here's that kind of cost range just to get an idea, least -- the highest cost total delivered would be northern white and Manifest with unit train of course you're going to gain price efficiency, cycle time efficiency and improve the cost structure. Regional sand is going to be slightly cheaper, especially from Missouri and Arkansas. We'll see some growth, but we're going to see the most growth is regional sand and in many cases, directly delivered from the mine to the well.

If we look at Texas, alone in the past year there were three major sand producers bought new mines and as of this week, U.S. Silica added their second one, a much larger mine right in the heart of the Permian hoping -- they're hoping to open it by Q4 of 2017. So it's a real game changer. As well there are a number of other companies, actually this we can't keep up with the number of regional mines. There are 12 we understand in the permitting stages various places around the Permian.

So this is a game changer. As you can imagine, it's going to lower the producers' cost. The sand now is good enough, it used to not be high enough quality. They've -- during the downturn in order to cut costs, they tried it and it worked and they're using it. So this is the game changer that's going to affect the whole logistics chain over the next two to three years.

So if we look at overall frac sand volume, the consensus is there's going to be some significant growth. We've got a couple of analysts that think it's meteoric growth, but I

think that's very doubtful and it's kind of overdone. But needless to say, there is more growth on the horizon.

Let's jump into NGLs, which of course, there is a precursor to the downstream petrochemical market. As you can see, we've been oversupplied with NGLs due to this production growth of the associated crude and natural gas, so prices have been depressed. However, that oversupply is likely going to change here in the next six to nine months, as more and more petrochemical demand with new crackers, still four more crackers to come on stream in the near future and growing exports of ethane and propane. And what's that going to do is, that's going to change that supply/demand balance and the ethane prices, some folks predict they could double by 2018, which is going to impact the key [ph]producers of polyethylene and other downstream products. So this is a challenge, eventually I think supply is going to catch up, but there could be a period two to three years of higher pricing.

Shale gas is extremely efficient for the downstream petrochemical world, especially when it comes to ethylene. Ethylene, about 80% of ethane cracks becomes ethylene in comparison to Asia and Europe use naphtha as their feedstock or really a crude oil byproduct and they get much lower amounts of ethylene. So our ethylene and downstream products are quite competitive. And then, after you crack the ethane and made it ethylene, the next cracking moves it into over 60% polyethylene, which is the highest volume plastic in the world. This is going to make the US a polyethylene powerhouse, starting the next several years.

So if we look at that overall, what's the impact of all the shale gas expansion, we predict there will be about $126 billion of projects investment by 2025. As you can see, those large ethylene crackers are the largest portion yet in the associated polymer and resins and you've got nearly half of the investments in those areas. Also fertilizer ammonia and methanol are a couple of other big categories and again, as you see, there's this decade, quite a number of projects still coming on stream and more to the -- more in the next first half of next decade.

Let's dive into polyethylene, because it is the largest and the big needle mover. Capacity is going to grow here, over a seven, eight year period by 50% in North America. We don't need that much polyethylene. Therefore, there is going to have to be more and more polyethylene exports. Right now it averages about 2.5 million tons a year. We expect by 2025, that number could grow to 7,000 to 8,000 or even higher. So quite a growth. That supply chain, that export supply chain needs to be developed. It's coming very quickly and it's in process right now as those crackers expand in their polyethylene units. We even expect another wave out in the middle of next decade, a number of folks are looking at putting in crackers and TE facilities. So this is not a short-term phenomenon. This is a longer-term good growth, very steady, once the units come online, they very seldom shutdown. This is not going to be another crude by rail up and down and we think (Technical Difficulties)

Lee Klaskow {BIO 16957183 <GO>}

Looks like we lost Taylor again. Tammy, can you connect him again.

Operator

Yeah. We'll reach out to him now. Please standby.

Lee Klaskow {BIO 16957183 <GO>}

(inaudible) one more time to focus on these great charts, so just bear with us.

Taylor Robinson {BIO 19470118 <GO>}

Hello, this is Taylor again.

Operator

Hi Taylor, you're back on.

Taylor Robinson {BIO 19470118 <GO>}

Okay. I'm not touching the phone. I'm not sure what's happening. Okay, so I think where we left off, likely almost 0.25 million new annual carloads due to all these shale gas projects. We calculate this through our SHIELD database, it's available for sale, there's lots of detail on the project. We got over 385 projects in the database and what's unique is we add -- we have experts that calculate the logistics output which we're able then to do all these calculations. So shieldbyplg.com and we did a deep dive, end-to-end review of the North American and global polyethylene market, that can be found at polyethylenereport.com again heavy logistics, analysis and research.

Let's dive into Mexico, this is a developing story. It's been developing since 2013 when the Pemex monopoly was ended. It impacts the whole energy value chain, moving to more of an open market over time. Some things have already happened as you can see down here, there's been some progress much more to come as it develops.

Pemex had a really difficult environment to say the least, in essence it's opposite of the US, nearly everything is opposite there. You've got declining production of crude oil. You've got an inadequate pipeline system, with rampage theft [ph], you have uncompetitive refining. The distribution network is barely functioning, and all this with rising demand. So it's an environment definitely open for improvements.

If look at Mexico, it has relied on petroleum products being imported to offset some of their challenges. Even as we've seen in the chart, in the upper right, 2016 gasoline or the green, that's up to 900,000 barrels a day of imports. So meanwhile, not only has the shale revolution impacted crude oil production, but also has given our refiners an opportunity to become a more of an export powerhouse and it's grown significantly as you can see over the past four to five years.

Shale gave the refiners an abundant, low-cost supply. We have the best, some of the best refineries in the world and we've got great pipeline infrastructure. So as we look to what's

happening with exports so far, really just an early story. LPG started to grow, it's a smaller commodity that we see that continuing to grow in exports to Mexico. As pipelines are built, natural gas will become a significant -- will become a significant part of their natural gas supply. So things are growing in addition to the gasoline that we talked about.

So in the petroleum products, which is mainly gasoline and distillates or diesel fuel, that's where the big opportunity is in the coming couple of years. A solution is really needed because there's growing demand, there is not enough pipelines, there's an over-reliance on truck transportation and as you can see by this data here, many of these terminal locations, product terminal locations have two or less days of supply. So it's really literally hand to mouth.

So rail -- it looks like rail might come to the rescue here and fill that void. We see at least 12 new terminals that are announced to be built, not sure if of course all of these come to fruition. But as you can see, highly leveraging the existing rail network with only one product pipeline seem to be going in, in the next several years. So this network is going to be growing. Most of the volume hasn't started because these new terminals aren't completely built yet. There has been permitting challenges, but we see some going in this year and more come in, in 2018.

So if we look back at the volume chart, again here's the crude by rail and LPG in the US. Here's the other data -- or the other products such as gasoline and distillates. We see that later this year and into the coming years growing again small at first, but good growth opportunity as the US products get moved -- continually to get moved into Mexico via rail.

So finally, big questions, big challenges remain in Mexico around their energy supply chain. Can they modernize their refineries, that's the first question. Where is the money coming from and when, things just take longer in Mexico. So it could be a number of years before that happens. And the other challenges, do they have the right crude slate. They have more production coming online.

As we said earlier or as we saw earlier, they've already bid out offshore production. And they are now bidding out quite a bit more onshore production to producers outside of PEMEX. But that's going to take three to four years to come online. The key question is going to be do those locations for crude oil matchup and is it of the right grade that would match the refinery slate. Unanswered question, not sure, but it is going to be a challenge for a number of years to get the refineries up to snuff.

And then secondly, really can they grow their production -- I'm sorry, their product distribution network. One of the challenges we didn't talk about in the middle of Mexico, you have a mountain range, which makes it difficult to take the pipelines across, infrastructure and Mexico is going to take some time and then, can that supply network with those terminals, can that whole supply network end-to-end compete with the US supply chain of products that we see coming out in the next several years. When will Mexico be able to be competitive with that supply chain. So big unanswered questions, quite interesting and just unfolding.

So with that, would love to hear some questions. Hopefully, that was helpful to everyone.

Lee Klaskow {BIO 16957183 <GO>}

Yeah and just as a reminder, thanks Taylor, that was great. If you have any questions, you can use the Q&A panel to the right of the PowerPoint slides and we'll address them as they come in. And as I guess we're waiting for any questions, let's see what we have. We're going to wait till they queue up. And I guess, Taylor could you talk about where the crude exports, whether they're in the US or soon to be in Mexico, where they're heading and kind of more in the US, what ports so they're heading out of?

Taylor Robinson {BIO 19470118 <GO>}

Yeah, right now the crude export side mainly heading out of Houston and Corpus Christi. See Corpus Christi growing, they have a little bit easier access for these large ships. That's where most of the crude exports are going to come out of, there is a possibility that the LOOP and Louisiana could grow, so that's kind of the shift.

Right now, there's not a lot of crude going into Mexico, not sure if that -- we don't think that's really ever going to be the case, it's more about these petroleum products or gasoline and diesel. And again, that will be rail coming out of the Houston area, as the -- where the refineries are located in Texas.

Lee Klaskow {BIO 16957183 <GO>}

Okay. We have a question from the group. Do you see the share of energy and energy-related products as a percentage of the overall rail pie increasing?

Taylor Robinson {BIO 19470118 <GO>}

I think it's going to have a slow increase, led by frac sand. Frac sand has overtaken what crude by rail, was for quite a period of time. So that has been a good upside to try to offset some of the crude by rail. The LPG and some of these other commodities, chemicals probably will continue to have slow growth, but steady and slow growth versus any declines.

So it's really all about how much I think frac sand can continue to grow, have -- what's the limit of amount of sand per well, but then the other big kind of dark cloud for the railroads right now is how much of this regional sand in the Permian and then it will -- will there be regional sand in other plays crop up. If it works in the Permian, why can't lower quality sand work in the other -- the other major plays. Those are the big I think question marks for how long this frac sand growth on rail is going to last.

Lee Klaskow {BIO 16957183 <GO>}

Right. And our view would be that no coal is going to continue its secular long-term decline and all the things that outside of coal that are growth areas will help mitigate that

decline, but you know, net-net it probably will decline and then you have other commodities or things that are hold by the rail like intermodal have the kind of a secular long-term growth story. So the pie is getting bigger and our view is that, the slice that the rails are getting are going to get a little smaller over time.

Taylor Robinson {BIO 19470118 <GO>}

Yeah. That is great [ph].

Lee Klaskow {BIO 16957183 <GO>}

And then we have another question, geographic. I guess, the US Mexican product shipments, are they mostly from the Gulf or California or it does in [ph] West or essential Eastern Mexico. I'm just sort of wondering where the stuff from US and Mexico are heading, are they going intra-Mexico or out to the US?

Taylor Robinson {BIO 19470118 <GO>}

Yeah, well, they're -- a majority is going to come from the Gulf Coast refineries. Those are the most efficient, have the most capacity. I believe there is going to be some coming from California refineries, but again, a great majority of the volume is going to come from Gulf Coast (Multiple Speakers) and into Mexico, through the Mexican rail network.

Lee Klaskow {BIO 16957183 <GO>}

Okay. And for the person that asked that question, if I read it wrong, please re-send it. And then there is a question here, do you have an opinion on which of the crude pipelines out of the Canada will actually occur and will they be delayed beyond 2019 date that you mentioned?

Taylor Robinson {BIO 19470118 <GO>}

Well, that's a great question. I think they all have risk in today's world. The regulatory and the environmental push in Canada is extreme right now in some of the western provinces, we think the Trans Mountain is going to happen in 2019, but that's definitely not a guarantee in today's world. They are basically twinning a pipeline. So it's not like they will cut new ground here. Yeah, there is still a few challenges left there to get that going.

The other one would be, I think the Enbridge coming in to the US. Again, it's not a major brand new pipeline, but there always could be something to get in the way of that. Can't guarantee, they're both going to be in early 2019. They've been delayed by three to four years already.

Lee Klaskow {BIO 16957183 <GO>}

Yeah and I had mentioned now Canadian National had their Investor Day yesterday and the day before. And they highlighted a new product that they're trying to launch where

they add polymer to tar sands and mix and then wraps it in a polymer, it's almost like a hockey puck and they're going to use the -- they would like to use the coal infrastructure to be able to export that out to the West Coast, which is something that's not -- it's not being used yet, but it's something that they have patents on and looking to commercialize. So that, that could be an opportunity for the rails given the delays and pipelines going out west in Canada.

And there's a question here about regulations. Any risks from the current trends out of Washington D.C. to I guess the energy markets as it relates to transports?

Taylor Robinson {BIO 19470118 <GO>}

Not any that are clear and pronounced right now.

Lee Klaskow {BIO 16957183 <GO>}

Okay, let's see. I think that is all the questions that we have. So unless we get one in the next couple of minutes, I just want to thank everyone for joining us today. I want to thank Taylor for speaking with us, it was very informative. And if you have any questions or comments, so feel free to reach out to Taylor or myself and also apologize for the technical issues we had earlier, next time, it will be a little smooth we promise. So thanks again for your attention and have a great day. Thanks, Taylor.

Taylor Robinson {BIO 19470118 <GO>}

Thank you, appreciate it.