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All aboard the oil train

CN says it could move up to 400,000 barrels per day in the near future

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CN and its supporters say that rail transportation of bitumen is an economic short-term solution. Photo courtesy of: CN

As uncertainty continues to slow production growth in Alberta's oilsands and stymie the construction of the much-needed expansion of pipeline delivery systems, Canadian National (CN) Railway is riding the rails to the rescue with a proposal that could redefine the way oil companies get their products to market.

Current cost estimates to construct pipeline expansions for increased product movement to the U.S. Gulf Coast sit at around $24.7 billion, while another $4 billion it is estimated is needed to increase capacity to new Asian markets on the West Coast. What CN is proposing is a delivery solution that can target both coastlines for considerably less through its proposed Pipeline on Rails, a solution the company says can be had for the more affordable “millions, not billions.”

Utilizing already well-established railway lines and infrastructure, CN says its idea is one of scalability, which will allow it to move up to 10,000 barrels per day of oilsands products by the end of this year, up to 300,000 to 400,000 barrels per day in the very near future, and an estimated escalation of upwards of four million barrels per day, if and when the industry buys into the idea. All CN would need to do ostensibly is simply add more railcars, seeing as it has already invested more than $135 million into upgrading its recently acquired Athabasca Northern Railway and Lakeland & Waterways Railway lines to improve rail transport into and out of the Fort McMurray area of Alberta.

While the idea of rail transportation of oil products is a relatively new one for this generation of oil producers, it is one that is neither without merit nor precedence, both in the past and today.

As far back as 1946, before the megaproject pipeline construction of the 1950s took place, oil products from fields near Leduc, Alberta, were solely transported using established rail systems, and more recently EOG Resources announced it would use rail to ship its North Dakota Bakken shale oil to markets due to limited pipeline availability with Enbridge's North Dakota System. It's a transportation solution the company is set to begin utilizing as early as February 2010, a solution that it says will boost output up to 20,000 additional barrels per day.

Making the case for rail

To promote the Pipeline on Rails solution, CN's manager of oilsands sales, Randy Meyer, has been hitting the industry conference circuit, talking to various producers who are looking for new innovation in a tried and true industry. He's tried tactics from a presentation done jointly with Altex Energy president Glen Perry at a recent Canadian Heavy Oil Association (CHOA) mixer in Calgary, to the Van Horne Institute's recently held transportation summit in Edmonton—all with the aim of convincing producers that rail, at least in the short term, is the better option.

Headlining the arguments for the case Meyer is setting, in addition to lower capital costs and the scalability of the proposal, is the quick turnaround time to get products to market, the system's multi-directional ability, its ability to transport undiluted bitumen, and for those whose focus is on the environment, what CN is calling it's ability to offer a greener alternative.

Turning product in any direction

With a transcontinental network that operates in eight Canadian provinces and 16 U.S. states, CN has more than 20,000 route-miles of track in North America and offers the shortest route from the Atlantic coast to the U.S. Midwest through the St. Clair Tunnel. With such an extensive track line, CN argues, shipping by rail would mean a much shorter amount of time to get products to market and payment into the hands of cash-starved producers.

Instead of the estimated 50 days it takes product to travel by pipeline, CN boasts it can get the product there in 8 to 10 days. And, the "there" can literally be anywhere CN travels.

While the argument can be made that once firmly established, pipelines can offer producers an ultimately more economical option for transportation, it's the firmly established part that Meyer says makes rail, all the more, an attractive prospect.

With the cost of investing declining, and a belief in oil prices rebounding, significant interest in the oilsands has been seen by the Chinese and other Asian investors. Before further large-scale investments are made, fears must be eased as to how the products will be transported.

Regardless of when or if pipeline capacities to the West Coast are expanded, CN's multi-directional ability to reach the ports of Prince Rupert, and Kitimat could help ease those fears while at the same time help to remove the dependency producers today have on U.S. markets.

A surprising advocate

One of the biggest advocates for CN's Pipeline on Rails idea is surprisingly enough a pipeline company, in the form of Altex Energy, simply because the company proposed the idea in the first place. After seeing the many solutions rail could provide the problem-plagued industry, Altex approached CN, and partnered with them to turn the Pipeline on Rails innovation a reality.

Working diligently to reduce the costs associated with moving bitumen, Altex has also been hard at work to develop a new pipeline technology that can move bitumen without the need for expensive diluents. The problem that Altex faces in marketing this new and reportedly cost-effective technology is the need for a new pipeline to be constructed, and the need for a new attitude towards the processing of bitumen.

While older existing pipelines can't be retrofitted to use the new technology, and all plans to build a new pipeline with the technology have stalled along with the economy, Altex says it has also experienced resistance from producers and refineries that are eager to embrace the cost savings of undiluted products, but are anxious to know how they will get products to market undiluted, without the moving forward of the proposed new pipeline. Enter in CN's Pipeline on Rails.

"We approached CN about a year before the economic meltdown," says Altex president Perry. "We saw their ability to transport undiluted bitumen in railcars that can be heated to stimulate flow as a bridging mechanism to get producers and refiners slowly on board."

While Perry ultimately believes that pipelines, particularly the technology available through Altex, are still the best and most economical proposal for the future, for the short term, he sees rail as one of the best solutions available in this new reality, especially for small to mid-sized producers.

"The cost of investing in a pipeline not only involves initial capital expenditure costs, it also involves a 20 to 30 year commitment to that pipeline whether or not they are using it," says Perry.

"What we're saying is rather than spending money on a pipeline before a producer is sure of its project's success, buy a few railcars first. If the project turns out to be wildly successful, then build a pipeline."

"That's one of the greatest advantages of the rail system," continues Perry. "It's a flexible system that can help deal with uncertain production, which is ideal for those small to mid-sized producers."

Paired with the significant cost savings of $8 to $10 per barrel that comes from not having to add and bring back the diluent, Perry says it's an innovation that can re-invigorate oilsands development from its current marginal economic state back to its large profit potential.

Something George Rhody, who arranged for both Meyer and Perry to jointly present their ideas to the CHOA, says is one of the greatest benefits of this joint idea.

“Getting smaller and medium-sized players into the game, who won't have to put money up front or take on a 20 to 30 year pipeline tariff, makes this proposal a game changer. Add in the idea of not having to add diluent and you make both the ‘to' and the ‘fro' costs significantly less,” says Rhody.

While Perry admits that the solution of using rail service does have its drawbacks in that it lacks the simplicity of a pipeline, which unlike rail services does not have to be managed, he believes the cost benefits of the solution easily combat the system's lack of simplicity in the long run.

Rail—the green alternative

Tying up the arguments that CN puts forth to support its Pipeline on Rails alternative is the argument that not only is rail a more cost-effective and flexible solution for producers, it's also a more energy-efficient one.

“Aside from the fact that the rail system already exists, and you don't have to expend further energy to build the infrastructure, if you look at the energy required to move a barrel of oil from Fort McMurray to the U.S. Gulf Coast, rail takes less than half of the energy a pipeline does. Even we were startled by that when we did the calculations,” Perry explains. “A pipeline needs a significant amount of energy to overcome friction and move the product through it. For rail, the only friction it needs to overcome is that of its wheels on the track, regardless of what it's carrying.”

Weighing the risks

Despite its long history in the energy industry, CN's proposal is still a relatively new one, and reaction from the industry is cautiously optimistic.

While Alberta Energy Minister Mel Knight believes the idea to be a practical one after viewing CN's feasibility study, it's something he says he is reserving judgment on until the Alberta government does its own research.

As for the CHOA, president Trent Kaiser says they have yet to have much feedback from their members, but many are certainly intrigued by the idea and are interested in hearing more.

“What it boils down to is cost,” says Kaiser. “Is this a solution that is going to be able to deliver? I'll be interested to learn more about how the two compare.”

Even the Canadian Association of Petroleum Producers (CAPP) is staying out of the debate until it learns more.

“It's very early in the day still,” says CAPP spokesman Travis Davies. “And while we haven't as yet gotten any feedback from our members on this project, we just have to say that options are always healthy for any market. We'll just have to wait and see how this evolves.”

Perry puts this industry caution into perspective.

“Producers are overwhelmed with issues right now. With layoffs, slowdowns, and investment money slow to come in, the industry has gone from being euphoric and spending any amount of money to holding tight and not spending any of it, with no time in between. What we're trying to do with CN is to convince guys to take a little bit of risk. The reception we've experienced has been good up to now, but producers are just not wanting to take any risk right now,” he notes. “It's not a particularly difficult idea to grasp. It's just a new idea.”