

BEFORE THE MINNESOTA OFFICE OF ADMINISTRATIVE HEARINGS
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St. Paul, MN 55101

FOR THE MINNESOTA PUBLIC UTILITIES COMMISSION
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In the Matter of the Application of Enbridge Energy, Limited Partnership for a Certificate of Need for the Line 3 Replacement Project in Minnesota from the North Dakota Border to the Wisconsin Border

MPUC PL-9/CN-14-916
OAH 65-2500-32764

In the Matter of the Application of Enbridge Energy, Limited Partnership for a Routing Permit for the Line 3 Replacement Project in Minnesota from the North Dakota Border to the Wisconsin Border

MPUC PL-9/PPL-15-137
OAH 65-2500-33377

WHITE EARTH BAND OF OJIBWE AND RED LAKE BAND OF CHIPPEWA
INITIAL BRIEF

Introduction

The Line 3 replacement project represents a massive and disruptive energy project that Enbridge (the “Applicant”) is determined to force upon Minnesota and all of its communities. At every step in the regulatory process the applicant has sounded the alarm that the approval and construction of this project must occur at the earliest possible time, and that attention to the myriad impacts that this project necessarily sets into motion are unimportant in comparison to Enbridge’s right to ram this pipeline through the permitting process. The applicant has flooded the administrative record with self-serving pre-filed testimony, conclusory reports and more self-serving opinions of its employees and its highly paid consultants. The applicant does not come anywhere near addressing in a meaningful way the serious impacts its project presents, which

have been articulated in detail throughout the regulatory process in written filings and through testimony at public hearings and at the contested case proceeding.

While it is important on the one hand to understand the specifics of the statutory and rule definitions applicable to the certificate of need and route applications in this case, it is also important to understand the larger context against which these statutory and rule requirements must be measured. We must not lose sight of the forest through the trees, so to speak. Enbridge goes to great lengths to try to establish a need for a new Line 3 pipeline, while avoiding the current capacity of the Enbridge Mainline: 2.6 million barrels per day. Enbridge's desperation is indicative of a company that is trying to achieve regulatory approval for its first crude oil pipeline. When considering current capacity of the Enbridge Mainline to transport 2.6 million barrels of crude oil per day, Enbridge's desperation to construct yet another pipeline through a largely new corridor loses much of its urgency.

Also, the shippers don't present a very compelling need for more capacity, particularly when considering that they have a myriad of sources for crude oil supplies independent of the Enbridge Mainline. Actually, Enbridge's attempt to demonstrate "need" through the testimony of out of state shippers calls into question just what need are we supposed to be considering in this proceeding? The two refineries in Minnesota are operating at nearly 100% capacity, which demonstrates that they are currently receiving all the crude oil they need without another Enbridge pipeline. If "need" as defined in Minnesota statute and rule is intended to encompass regions larger than Minnesota, such as the Minnesota Petroleum Region which includes Wisconsin, North Dakota and South Dakota, there is no evidence that these other states are in need of another pipeline through Minnesota to fill their needs for crude oil. The entire Minnesota region is receiving all the crude oil it requires at the present time, and the demand for crude is diminishing in the Minnesota region.

Need cannot be determined simply based on the applicant's larger business interests. Especially considering that Enbridge is a foreign corporation, whose business structure demonstrates that it is focused on limiting its liabilities to the distinct entities that are actually engaged in the present proposed project. In any event, demonstrated need must be balanced against the harms that the applicant's proposed project presents to the human and natural environment here in Minnesota. The applicant's focus on minimizing any harms that its project presents to the human and the natural environment must be considered in the context of the overwhelming criticism by actual Minnesota residents who will be directly impacted by the proposed project, particularly those residents who have already been impacted by Enbridge's spills in Grand Rapids, Prairie River and Cohasset, all involving pipelines in the Enbridge Mainline system. The applicant can assert its corporate priority on safety all it wants, but the fact of the matter is that they have already caused extensive environmental degradation in the recent past along the Enbridge Mainline in Northern Minnesota. The applicant's professed safety measures have not panned out in reality, and the weight of their testimony in this proceeding must necessarily be diminished to reflect the actual harms that the company has caused along the pipeline route.

I. Minnesota Has a Well Developed System of Statutes and Rules Focused on the Protection of the Environment, Which Forms the Background Against Which the Present Project Must be Measured.

The Legal Requirements of the Minnesota Environmental Policy Act (MEPA).

The foundation of environmental regulation in Minnesota is the Minnesota Environmental Policy Act (hereinafter, MEPA), which establishes that it is the policy of the state of Minnesota to:

. . . use all practicable means and measures . . . in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of the state's people.¹

In enacting MEPA, the legislature did not establish this policy as a mere aspiration; the statute imposes on the state government the obligation to account for a robust set of environmental considerations in the course of carrying out its other mandates, including preserving sensitive natural resources and habitats, minimizing the environmental impacts of energy production and use, and discouraging economic activities that harm the environment.² The most rigorous of MEPA's obligations are the substantive and procedural mandates imposed on state agencies by the statute's requirements that they prepare a "detailed environmental impact statement" before taking any action with the "potential for significant environmental effects."³

The legal requirements for environmental review by EIS are established both in §116D.04 of MEPA and in rules adopted by the Minnesota Environmental Quality Board (hereinafter, EQB) pursuant to the statute, which are codified in Minn. R. Ch. 4410 (hereinafter, EQB Rules). An EIS is required to be "an analytical rather than an encyclopedic document"⁴ that evaluates the environmental, economic, employment, and sociological effects that are direct, indirect, and cumulative for the proposed action and each reasonable alternative to it.⁵ The EIS must also identify any measures that could mitigate these effects.⁶

Minnesota courts apply a "hard look" approach to MEPA and its requirements for an EIS. The Minnesota Supreme Court has stated that, like the National Environmental Policy Act (hereinafter, NEPA), its federal counterpart on which it was modeled, MEPA "primarily operate[s] by requiring administrative agencies to take a 'hard look' at the environmental consequences of governmental action"⁷ and that its purpose is "to force agencies to make their own impartial evaluation of environmental considerations before reaching their decisions."⁸ Because it was patterned on NEPA, Minnesota courts often use federal case law to interpret

¹ Minn. Stat. § 116D.02, subd 1.

² Minn. Stat. § 116D.02, subd 2.

³ Minn. Stat. § 116D.04, subd 2a.

⁴ Minn. Stat. § 116D.04, subd. 2a.

⁵ Minn. R. 4410.2300 (H).

⁶ Minn. R. 4410.2300 (I).

⁷ *Minn. Ctr. for Env'tl. Advocacy v. Minn. Pollution Control Agency*, 644 N.W.2d 457, 468 (Minn. 2002).

⁸ *No Power Line, Inc. v. Minn. Env'tl. Quality Council*, 262 N.W.2d 312, 327 (Minn. 1977).

MEPA.⁹ As such, the Minnesota Supreme Court has adopted the U.S. Supreme Court’s reasoning that:

“[p]ublication of an EIS . . . also serves a larger informational role. It gives the public the assurance that the agency has indeed considered environmental concerns in its decisionmaking process . . . and, perhaps more significantly, provides a springboard for public comment.”¹⁰

However, one critical difference between the two statutes is that, while NEPA’s EIS requirements are entirely procedural, MEPA’s mandates also include a substantive requirement in § 116D.04, subd. 6:

No state action significantly affecting the quality of the environment shall be allowed, nor shall any permit for natural resources management and development be granted, where such action or permit has caused or is likely to cause pollution, impairment, or destruction of the air, water, land or other natural resources located within the state, so long as there is a feasible and prudent alternative consistent with the reasonable requirements of the public health, safety, and welfare and the state's paramount concern for the protection of its air, water, land and other natural resources from pollution, impairment, or destruction. Economic considerations alone shall not justify such conduct.

As such, like NEPA, MEPA does not have any substantive requirements for an agency to grant or deny an approval for a project on the basis of an EIS showing the existence or absence of environmental impacts.¹¹ However, unlike NEPA, MEPA does require that an agency deny a permit for a project if there exists a “reasonable and prudent alternative” that is more environmentally sound, even if it is more expensive or less economically beneficially. Furthermore, the Minnesota Environmental Rights Act (hereinafter, MERA), which has no federal equivalent, gives this MEPA requirement teeth by granting any private party or local government the right to sue an agency in district court over any action the plaintiff can show has or is likely to have adverse environmental impacts and, also, making the agency’s only affirmative defense:

. . . that there is no feasible and prudent alternative and the conduct at issue is consistent with and reasonably required for promotion of the public health, safety, and welfare in light of the state’s paramount concern for the protection of its air, water, land and other

⁹ See, e.g., *Minn. Ctr. for Env'tl. Advocacy*, 644 N.W.2d at 468; *No Power Line, Inc.*, 262 N.W.2d at 325; *Minn. Pub. Int. Res. Group v. Minn. Env'tl. Quality Council*, 237 N.W.2d 375 (Minn. 1975).

¹⁰ *Minn. Ctr. for Env'tl. Advocacy*, 644 N.W.2d at 468 (Minn. 2002) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)).

¹¹ Minn. R. 4410.0300, subp. 3 (“Environmental documents shall not be used to justify a decision, nor shall indications of adverse environmental effects necessarily require that a project be disapproved. Environmental documents shall be used as guides in issuing, amending, and denying permits and carrying out other responsibilities of governmental units to avoid or minimize adverse environmental effects and to restore and enhance environmental quality.”).

natural resources from pollution, impairment, or destruction. Economic considerations alone shall not constitute a defense hereunder.¹²

As such, the alternatives are even more so “the heart of the environmental impact statement”¹³ under MEPA than under NEPA, especially since the Minnesota Supreme Court has consistently applied a standard that sets a very high bar for an alternative to not be “feasible and prudent.”

Criteria to be Used in Determining Whether a Pipeline Certificate of Need Should Be Approved.

The determination as to whether a certificate of need should be granted in order to permit an applicant to construct a crude oil pipeline are governed by Minnesota Administrative Rule Part 7853.0130, which provides that:¹⁴

A certificate of need shall be granted to the applicant if it is determined that: A. the probable result of denial would adversely affect the future adequacy, reliability, or efficiency of energy supply to the applicant, to the applicant's customers, or to the people of Minnesota and neighboring states, considering: (1) the accuracy of the applicant's forecast of demand for the type of energy that would be supplied by the proposed facility; (2) the effects of the applicant's existing or expected conservation programs and state and federal conservation programs; (3) the effects of the applicant's promotional practices that may have given rise to the increase in the energy demand, particularly promotional practices that have occurred since 1974; (4) the ability of current facilities and planned facilities not requiring certificates of need, and to which the applicant has access, to meet the future demand; and (5) the effect of the proposed facility, or a suitable modification of it, in making efficient use of resources;

Enbridge’s Description of the Line 3 Replacement Project.

Paul Eberth, the Project Manager for the Line 3 Replacement Project, describes the project as follows:

“[t]he Line 3 Replacement Program...will replace the existing Line 3 pipeline from Alberta, Canada, to Superior, Wisconsin...This includes the replacement of approximately 282 miles of the existing 34-inch diameter Line 3 pipeline with approximately 340 miles of 36-inch diameter pipeline and associated facilities between the North Dakota/Minnesota border and the Minnesota/Wisconsin border...The proposed replacement pipeline will serve the same purpose and need as the existing Line 3, which is the transportation of crude oil from the US and Canada to Enbridge’s Clearbrook Terminal near Clearbrook, Minnesota, and to the Superior Terminal Facility near

¹² Minn. Stat. § 116B.04; Minn. Stat. § 116B.03, subd. 1; Minn. Stat. § 116B.02, subd. 5.

¹³ 40 C.F.R. 1502.14.

¹⁴ The Office of the Revisor of Statutes, State of Minnesota. Public Utilities Commission. Chapter 7853. Part 7853.0130. <<https://www.revisor.mn.gov/rules/?id=7853.0130>>

Superior Wisconsin. The replacement pipeline serves the same markets and transports the same products as the existing Line 3 has done throughout its operating history.”¹⁵

Enbridge’s description of the proposed project narrowly defines the need of the project to serve its specific business needs. The project description does not contemplate the requirements of MEPA and the Minnesota Rules pertaining to certificates of need. The following section analyzes the reports, expert opinions and other data relied upon by Enbridge with respect to the certificate of need.

II. When Applicant’s Stated Need For a New Line 3 Pipeline is Critically Examined Against a Myriad of Relevant Considerations it Fails to Satisfy the Required Standard of Need.

As Dr. Marie Fagan explained in her report,¹⁶ the “need” for a crude oil pipeline is dependent upon a myriad of factors, and an applicant’s narrow (self-serving) definition of the need for a particular project must be dissected and analyzed in the context of the larger local, regional, national and global demand for crude oil. Accepting the applicant’s narrow definition and purpose for the Line 3 replacement project would be wholly incomplete, and the Minnesota Public Utilities Commission (PUC) would be doing a great disservice to the citizens of Minnesota, and to the complex inter-connected natural environment if it did not meaningfully consider the “need” for the project in light of the inter-connectedness of Line 3, the Enbridge Mainline and all of the other various pipelines and refineries in the United States that are impacted by the present proposal.

The Proposed Enbridge Line 3 Replacement Project in Context.

At a proposed 760 thousand barrels per day (b/d), the Enbridge Line 3 project includes 370 thousand b/d which is incremental to existing capacity. This increment amounts to about 4% of US crude oil production of 8.8 million b/d in year 2016.¹⁷ The proposed Line 3 replacement project is a small component of a large and integrated crude oil and downstream product supply system—not just the system owned by Enbridge, but the whole oil production and refining complex in North America and beyond. Global and continental trends, as well as local issues such as nearby supply, demand, and availability of transportation can impact prices of crude oil to refineries, and prices of refined products to customers.

The Inter-connectedness of the Crude Oil System.

¹⁵ Earnest, Neil. “Direct Testimony of Neil Earnest.” MPUC Docket No. PL9/CN-14-916, OAH Docket No. 65-250032764. Schedule 2: Muse Stancil “Enbridge Line 3 Replacement Program Market Analysis.” January 31, 2017; and Rennie, William. Oliver Wyman, Inc. “Direct testimony of William Rennie.” Schedule 2. MPUC Docket No. PL9/CN-14-916, OAH Docket No. 65-2500-32764. ” Report on the Impact of Crude-by-Rail and the “No-Action” Scenario for the Line 3 Project in Minnesota.” January 31, 2017.

¹⁶ Fagan, Marie, London Economics International LLC, Analysis of expert reports in Enbridge New Line 3 application for Certificate of Need (September 8, 2017) [hereinafter Fagan Report].

¹⁷ Energy Information Administration (“EIA”). “Petroleum and other liquids.” <https://www.eia.gov/dnav/pet/PET_CRD_CRPDN_ADC_MBBLPD_A.htm>. The 8.8 million b/d is crude oil only (it excludes lease condensate and other liquids).

The interconnectedness of the crude oil extraction, transportation, refinement and distribution of refined products markets is global; and an attempt to segregate a single component of the system, such as Enbridge's self-serving attempt to narrowly define the need for the present proposed project, fails to consider the larger context of the proposal. As noted by Dr. Fagan,

compared to its value, crude oil is cheap and easy to transport by tanker ships. Even if shipped thousands of miles, imported crude oil remains economically competitive. This economic competitiveness is evident in the very high share of global trade in crude oil compared to oil consumption. In 2016, global trade in crude oil reached 42.4 million b/d, or 2,117 million tonnes. This global trade accounted for 44% of total global consumption of crude oil of 96.5 million b/d in 2016.¹⁸

Because the oil market is integrated globally, events that impact supply or demand in one part of the world impact crude oil prices all over the world. Dr. Fagan points out how this was evident most recently in 2014/15, when surging oil production from the US caused global oil prices to collapse from about \$100 per barrel ("bbl") in the summer of 2014 to below \$40 per bbl in early 2016.¹⁹

In an effort to substantiate its need for the Line 3 replacement project, Enbridge cynically presented the self-serving testimony of shippers complaining that they are restricted from shipping the entire volume of crude oil that they would like to ship. The shippers completely failed to consider their professed need in the context of their ability to ship all the oil they want through the inter-connected crude oil distribution system. More importantly, Enbridge failed to consider that "need" as contemplated in applicable Minnesota statutes and rules is not restricted to the applicant's selfish needs, or the selfish needs of its shippers; but is instead intended to balance the impact of the stated need upon the impact of the proposed project on the Minnesota human and natural environment. In this context, Enbridge's cynical and self-serving testimony fails to satisfy the need for the project as contemplated by the governing statutes and rules. Accordingly, Enbridge's applications for a certificate of need and a routing permit for the Line 3 project should be denied. The multiple shortcomings of the Muse Stancil report, which the applicant heavily relied upon to substantiate its certificate of need will be addressed below.

Global Oil Prices Influence Local Oil Production.

The Muse Stancil report failed to adequately address the inter-connectedness of the crude oil supply system, and its negative implications for the need for a new Line 3 pipeline through a new corridor. As noted by Dr. Fagan, crude oil production from both the Bakken shale in North Dakota and from Canada is a significant component of the demand for pipeline and rail

¹⁸ Fagan Report at page 10, citing BP Statistical Review of World Energy, 2017.
<<http://www.bp.com/en/global/corporate/energyeconomics/statistical-review-of-world-energy/oil/oil-trade-movements.html>>

¹⁹ Fagan Report at page 10, citing EIA. "Petroleum and other liquids."
<<https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=D>>

transportation through Minnesota, and that both these regions have reacted to changes in global oil prices.²⁰

North Dakota production declined in the wake of the 2015 oil price collapse. Production from the Williston Basin (the location of the Bakken shale) had reached 1,184 thousand b/d in 2015. After the steep decline in oil prices, the average for 2017 (through May 2017) has been about 1,039 thousand b/d.²¹ Western Canadian oil production did not decline with the collapse in oil prices, but its rate of growth slowed compared with previous years.²²

With lower oil prices, oil producers have lower cash flows and usually cut back investment in response. The Canadian Association of Petroleum Producers (“CAPP”) reported that capital investment in the oil sands declined dramatically, from CAD 34 billion in 2014 to CAD 17 billion in 2016.²³ If producers expect that prices will stay low, then fewer new wells or new mining development projects will be viewed as economically attractive, and future investment plans will be cut back, even if current cash flows might be adequate. This reduces the amount of oil that will be available in the future.²⁴ The simplistic testimony presented by Enbridge on the need for the Line 3 proposal failed to account for the fact that global oil prices impact local production; and that a diminishment in need for crude oil as a result of a variety of circumstances, cumulatively, would have a corresponding negative impact on the need for the shipment of crude on Line 3.

Refined Product Markets are Also Integrated Throughout the United States.

The Muse Stancil report fails to adequately address the inter-connectedness of the markets for refined oil products. As noted by Dr. Fagan, the markets for refined products are well-integrated across North America. Similar to the flow of crude oil, refined products can flow freely from one location to another in response to price signals. In the US, refined product regions which are commonly used are the “Petroleum Administration for Defense Districts” (“PADDs”).²⁵ As explained by Dr. Fagan, PADDs are an administrative concept, developed by the federal government during World War II to help manage fuel rationing. PADDs do not represent physical boundaries between markets, and the price data shows that, for the most part, the US is a single, integrated market for refined products such as gasoline. This is evident when considering the price of refined products across US PADD Districts. Wholesale gasoline prices in PADD 1, PADD 2, PADD 3, and PADD 4, track one another closely. The exception is PADD 5, the West Coast region, which includes California and which has specific rules for gasoline that make it more expensive than other markets.²⁶

²⁰ Fagan Report, at page 11.

²¹ *Id.*

²² Fagan Report, at page 12.

²³ Fagan Report, at page 13 citing, Canadian Association of Petroleum Producers. Crude Oil Forecast, Markets and Transportation. 2017. P. 2.

²⁴ Fagan Report, at page 13.

²⁵ *Id.*

²⁶ Fagan Report, at page 13.

The wholesale price of gasoline tracks closely within PADD 2, too, averaging only 4% lower in Minnesota than in Illinois. This close tracking of prices indicates that PADD 2 is internally a single, integrated market. In such markets, when a local price spike occurs – for example, if a refinery or pipeline is unavailable — the spike will be short-lived because supplies can be brought in from alternative refineries or using other transportation modes.²⁷ Similarly, if a particular market served by the Enbridge Mainline was not able to obtain the full level of its crude oil demand from the Enbridge system, the crude oil consumer would be able to obtain the shortfall from another supplier on the integrated system in short order. The Muse Stancil report, and the testimony of the shippers fails to highlight this reality. Their singular focus on the Enbridge Mainline, and in particular the present Line 3 proposal, incompletely fails to take into account the inter-connectedness of the crude oil supply system in the US.

The Demonstrated “Need” for the New Line 3 Pipeline is Diminished Because Minnesota Area Refineries Operate at High Levels of Utilization.

Within PADD 2, the Energy Information Administration (“EIA”) defines a refining district that includes Minnesota, North Dakota, South Dakota, and Wisconsin as the “Minnesota district.” The Minnesota district tends to run at higher levels of refinery utilization – close to 100% for the past few years – than the rest of PADD 2 or the US on average.²⁸ Capacity utilization levels near 100% demonstrate that refiners are not only operating efficiently, they are processing all the crude they possibly can. This strongly suggests that crude oil for the Minnesota district has not been in short supply compared to refining capacity, though the mix of crude oil supplies between light and heavy might not be perfectly optimal. Clearly, any need for the new Line 3 pipeline is not within the Minnesota region. Accordingly, the applicant fails to satisfy the requirements of Minnesota law, which requires the need for a particular project to serve Minnesotans. We should not be forced to accept the extreme risks and consequences of a pipeline failure so that Enbridge and its shippers are able to make more money supplying crude oil to markets that serve consumers outside the Minnesota region.

Exports Increasingly Link the US to Global Refined Products Markets.

The Muse Stancil report and the testimony from the shippers fails to adequately acknowledge that the market for refined oil products is increasingly inter-connected globally. Moreover, Enbridge and its stable of experts fail to address the fact that any surplus refined products from the Minnesota region will be destined for the export market. Certainly, Minnesota law does not contemplate that the “need” for a new pipeline includes the ability to provide crude oil to be refined so that it can be sold on the international market. The US exports refined products, and these exports have risen over time, which means the US is increasingly linked to the global refined products market. US exports of refined products have been growing dramatically since about 2004/05 when domestic demand levelled off.²⁹ US refined product exports have been much higher than crude oil exports, which had been banned (except to Canada) until the end of

²⁷ Fagan Report, at page 14.

²⁸ *Id.*

²⁹ Fagan Report, at page 15.

2015. The US exports crude oil and refined products to a variety of countries.³⁰ Most US oil and product exports have been destined for North America, including Mexico. This export pattern supports the continental integration of oil and refined product markets.

Because Enbridge has the present capacity to ship 2.6 million barrels of crude oil per day on the existing six pipelines that make up the Enbridge Mainline; and because the needs of the Minnesota region for crude oil are much less than this capacity, Enbridge is not able to satisfy the need for the project as intended through Minnesota law. When the risks to our clean waters and wild rice lakes associated with the ultra-hazardous activity are considered, in the context of the applicant's present capacity to ship crude oil, there is no way that a certificate of need can be approved in this case.

Enbridge's Reliance on the Muse Stancil Report.

In addition to the testimony of the shippers, Enbridge relies almost exclusively on the testimony of Neil Earnest and his presentation of the Muse Stancil Report to support the applicant's assertion that there is sufficient need for the proposed Line 3 project to support its construction.³¹ While not explicitly stating such, the model utilized in the Muse Stancil report allows for unconstrained exports of refined oil products from PADD II, and from the US overall. This unexplained component of the Muse Stancil model conveniently enables Enbridge to avoid the difficult conclusion concerning the need for the project as contemplated in Minnesota statutes and rules. Specifically, the need for the project to serve the demand of Minnesota, in an atmosphere of diminishing reliance on crude oil and refined oil products. Additionally, Enbridge and its experts deliberately avoid the fact that the current capacity of the existing Enbridge Mainline is 2.6 million barrels per day.

The Muse Stancil Model is Driven by Demand for Crude Oil by Refineries, Which is Not Contemplated by Minnesota Laws Pertaining to Certificates of Need.

Rather than demand for refined products, the Muse Stancil model is driven by demand for crude oil by refineries, which is used as an input for the forecast. For the US, explicit assumptions for refinery capacity are shown on pages 48-55 of the Muse Stancil Report.³² The assumptions allow for crude oil exports, as the model can allocate crude to modelled refineries in Northeast Asia, Europe, and India (as well as Canada and the US).³³ The model does not appear to include potential crude exports to refineries in Mexico or Latin America.

Again, the related testimony by Enbridge and its shippers that they are subject to apportionment because they have more crude oil to ship than there is pipeline capacity, is irrelevant to the "need" as intended in Minnesota law. The focus should be on the demand of the consumers in the Minnesota region for refined oil products; not the shippers who are increasingly focused on exporting crude oil and refined oil products to national and global markets. Furthermore,

³⁰ Fagan Report, at page 15.

³¹ Fagan Report, at page 17, citing Earnest, Neil. "Direct Testimony of Neil Earnest." MPUC Docket No. PL9/CN-14-916, OAH Docket No. 65-250032764. January 31, 2017. P. 3

³² Fagan Report, at page 18.

³³ Fagan Report, at page 18, citing Muse Stancil. P. 59.

Enbridge completely avoids the balancing of the harms to the environment as a result of the mostly new pipeline corridor, against the speculative demand they assert for additional capacity to ship crude oil. The applicant's argument would carry more weight if this were the first pipeline that it sought to construct. But when the current capacity of the Enbridge Mainline to transport 2.6 million barrels of crude per day is considered, the applicant fails to demonstrate the need for the project as contemplated in Minnesota law.

A Further Limitation on the Report is that Muse Stancil's Conclusions Rely on a Single Supply Outlook.

Dr. Fagan points out that a major limitation of the Muse Stancil Report is the reliance on a single annual outlook for crude oil supply, the CAPP vintage 2016 outlook. This outlook drives the need for crude oil transportation from Western Canada, so it is important to the Muse Stancil forecasts for the utilization of the Enbridge Line 3 project and for rail shipments.³⁴

Using a single outlook for annual oil production can mask the potential for a wide variety of future outcomes. This can be seen by comparing CAPP's outlooks for Western Canadian production before and after the 2015 oil price collapse. After the collapse in oil prices in 2015, CAPP's outlooks have been about 5,000 thousand b/d for 2030, compared with about 6,500 thousand b/d before the price collapse.³⁵ Dr. Fagan emphasizes the importance on relying on a range of oil price assumptions, as opposed to Muse Stancil's reliance on a single supply outlook as follows:

It is widely recognized that current oil prices, as well as expectations for oil prices, drive future crude oil supply. This wide recognition is why many energy forecasting organizations, such as the National Energy Board ("NEB") in Canada and the EIA in the United States, provide forecasts for oil supply based on a range of oil price assumptions. In NEB's and EIA's outlooks, crude oil prices are assumptions, they are not generated by the internal relationships of their model (in economics terms, crude oil prices are "exogenous"). The NEB's "low oil price" outlook assumes a recovery to oil prices of USD \$75/bbl (Brent crude, an international crude benchmark price) in real terms by 2034, and projects a long-term increase in production to about 4,600 thousand b/d.³⁶

By failing to consider a range of oil price assumptions the forecast for oil supply asserted in the Muse Stancil report is flawed, and cannot be relied on for the self-serving conclusions asserted by Enbridge. The Muse Stancil report's failure to provide objective evidence of crude oil supply, and its singular self-serving focus on the western Canada tar sands supplies, is a major shortcoming of its analysis. The applicant is unable to demonstrate need within the meaning of applicable Minnesota law, and its application for a certificate of need must be denied.

Another Limitation on the Report is that Muse Stancil's Demand Assumptions For Refined Products Are Completely Lacking.

³⁴ Fagan Report, at page 23.

³⁵ *Id.*

³⁶ *Id.*

Another limitation of the Muse Stancil model is that a forecast for demand for refined products by end-users plays no role in the outlook, and is barely even mentioned in the report. The only discussions or details about refined product demand are backward-looking, illustrated by historical data from EIA.³⁷ This is in spite of the statement in the Muse Stancil Report noting that “Muse has been asked to...[d]escribe the historical and projected refined product demand in Minnesota...[and] [d]escribe the historical and projected refined product demand in the states that neighbor Minnesota...” (emphasis added).³⁸ In spite of what Muse Stancil was asked to do, there are no outlooks for refined product demand anywhere in the report. Because of this glaring omission, the Muse Stancil report is further compromised. Accordingly, the weight that should be placed on the conclusions should be diminished accordingly.

Without Making the Direct Assertion, the Muse Stancil Refined Product Model Assumes that Surplus Crude Oil and Refined Products Will be Exported.

The Muse Crude Oil Market Optimization Model implicitly assumes that consumer demand for refined products would be unchanged for the entire forecast period. It also implicitly takes for granted that the level of crude oil demand (and by implication refined product demand) by refiners in North America and export countries will automatically absorb any change in crude oil production. The Muse Stancil Report dismisses this issue with the comment “(a)n increase of throughput on crude oil pipelines, such as the Enbridge Mainline System, is not limited to just the amount required to satisfy an increase in regional or national refined product demand.”³⁹ In other words, any extra crude oil can be exported. The export of crude oil or refined oil products does not serve Minnesota or even the Minnesota region, and is accordingly in excess of the need contemplated in Minnesota statutes and rules pertaining to the certificate of need.

The Increasing Demand For Electric and Hybrid Vehicles Further Diminishes the Demand for Refined Oil Products, and Does Not Justify a Certificate of Need for Enbridge’s Proposed Project.

There is no need for extra pipeline capacity through the proposed project because the current and future demand for electric vehicles significantly diminishes the demand for gasoline. The demand for hybrid electric vehicles (“HEVs”) and plug-in electric vehicles (“PEVs”) in the United States is growing dramatically.⁴⁰ Alternative-fueled vehicles currently amount to about 10% of new car sales. At the Federal level, the US offers a potentially significant subsidy—a federal income tax credit of up to \$7,500—for all-electric and plug-in hybrid cars purchased during or after 2010. The initial credit amount varies based on the capacity of the battery used to power the vehicle.⁴¹ The credit begins to phase out after the manufacturer has sold 200,000 eligible vehicles in the United States as counted from January 1, 2010. The IRS is tasked with

³⁷ Fagan Report, at page 25, citing Muse Stancil. Figures 15, 16, 20.

³⁸ Fagan Report, at page 25, citing Muse Stancil. P. 5.

³⁹ Fagan Report, at page 26, citing Muse Stancil. P. 58.

⁴⁰ Fagan Report, at page 26.

⁴¹ Fagan Report, at page 26, citing US Department of Energy. Office of Energy Efficiency and Renewable Energy. “Federal Tax Credits for All-Electric and Plug-in Hybrid Vehicles.” <<https://www.fueleconomy.gov/feg/taxevb.shtml>>

counting the vehicles, announcing when a manufacturer exceeds this production, and announcing the subsequent phase out of the credit.⁴²

Ten states in the US have zero-emission vehicle (“ZEV”) mandates (ZEVs include EVs and fuel cell vehicles).⁴³ State and local government fleets in ZEV states will be a source of sales to meet these targets. Of all the states, the biggest impact on EV adoption will likely be from California, as it has the highest near-term target.⁴⁴

Dr. Fagan analyzed the demand for electric and hybrid vehicles, and translated this demand to the demand for refined oil products in the Minnesota region. If gasoline consumption in the Five-State area (Minnesota, Iowa, North Dakota, South Dakota, and Wisconsin) were to behave in the same way as the EIA outlook for the US overall, then the EIA Reference case and high oil price and low oil price scenarios would imply a similar range in the future demand for gasoline.⁴⁵ For Minnesota alone, gasoline consumption was 164 thousand b/d in 2014; at implied EIA decline rates, Minnesota’s demand for gasoline could fall to as low as 100 thousand b/d by 2030. These outlooks compare to gasoline net production of about 250 thousand b/d for the Five-State area in 2015.⁴⁶

The Growing Demand For Alternative Vehicles and the Rapid Transition to Solar and Wind Power Greatly Diminishes the Need for Crude Oil Pipelines.

Andrew Twite provided testimony on behalf of the Sierra Club pertaining to the growing demand for alternative vehicles, as well as the growing demand for and rapid transition to solar and wind power. Mr. Twite does not believe that Dr. Fagan went far enough in her testimony in acknowledging the degree to which renewables have displaced the need for refined oil products. Furthermore, Mr. Twite asserts that Ms. Kate O’Connell, on behalf of the Department of Commerce did not consider that oil already coming into Minnesota is not being used for energy purposes, which thereby further diminishes the need for the project within the meaning of applicable Minnesota law. In his rebuttal testimony, Mr. Twite asserts that the:

fact that there is no need for this pipeline is clear when you consider that electric vehicle sales in Minnesota, the Upper Midwest, and beyond will dramatically reduce the demand for gasoline and diesel fuel. Ms. O’Connell’s analysis also failed to consider the fact that oil already coming into Minnesota’s market is being used for non-energy purposes that are beyond the purview of the Commission’s instant inquiry into need. When you factor in the fact that the Commission cannot find a need based on non- energy uses of oil, it is apparent that this analysis is too conservative. This analysis is shown to be even more conservative when adding the additional fact that electric vehicle technology running on

⁴² Fagan Report, at page 26, citing Internal Revenue Service. “IRC 30D – Plug-In Electric Drive Motor Vehicle Credit Quarterly Sales.” <<https://www.irs.gov/businesses/irc-30d-plug-in-electric-drive-motor-vehicle-credit-quarterly-sales>>

⁴³ Fagan Report, at page 27, citing Alternative Fuels Data Center. California Laws and Incentives. US Department of Energy. September 2016. Web. 19 January 2017. <http://www.afdc.energy.gov/laws/state_summary?state=CA>

⁴⁴ Fagan Report, at page 27, citing Alternative Fuels Data Center. California Laws and Incentives. US Department of Energy. September 2016. Web. 19 January 2017. <http://www.afdc.energy.gov/laws/state_summary?state=CA>

⁴⁵ Fagan Report, at page 28.

⁴⁶ Fagan Report, at page 29.

clean energy such as solar power is viable and available to Minnesotans and the projections are that this technology will spread quickly in coming years, providing an existing viable alternative to the Project... While I agree with the analysis's finding that there is no additional need for oil in the Minnesota market going forward, I think Dr. Fagan's analysis significantly underestimates the adoption rate of electric and zero-emissions vehicles and ignores Minnesota policy that requires the state and Commission to foster such technology. I would argue that there is little to no energy-based need for the oil that will be shipped on the existing Line 3 considering the other technologies that are available to Minnesotans.⁴⁷

Mr. Twite believes strongly that the definition of a "Large Energy Facility" in Minnesota law is very important to the PUC's analysis of the various considerations for a certificate of need, and the statutory definition provides that:

Subd. 2. **Large energy facility.** "Large energy facility" means:

- 1) any electric power generating plant or combination of plants at a single site with a combined capacity of 50,000 kilowatts or more and transmission lines directly associated with the plant that are necessary to interconnect the plant to the transmission system;
- (2) any high-voltage transmission line with a capacity of 200 kilovolts or more and greater than 1,500 feet in length;
- (3) any high-voltage transmission line with a capacity of 100 kilovolts or more with more than ten miles of its length in Minnesota or that crosses a state line;
- (4) any pipeline greater than six inches in diameter and having more than 50 miles of its length in Minnesota used for the transportation of coal, crude petroleum or petroleum fuels or oil, or their derivatives;
- (5) any pipeline for transporting natural or synthetic gas at pressures in excess of 200 pounds per square inch with more than 50 miles of its length in Minnesota;
- (6) any facility designed for or capable of storing on a single site more than 100,000 gallons of liquefied natural gas or synthetic gas;
- (7) any underground gas storage facility requiring a permit pursuant to section 103I.681;
- (8) any nuclear fuel processing or nuclear waste storage or disposal facility; and
- (9) any facility intended to convert any material into any other combustible fuel and having the capacity to process in excess of 75 tons of the material per hour.⁴⁸

⁴⁷ Rebuttal Testimony of Andrew Twite on behalf of the Sierra Club, Docket No. OAH 65-2500-32764/MPUC PL-9/CN-14-916 (October 11, 2017) at 2-3 [hereinafter Twite Rebuttal].

⁴⁸ Minn. Stat. § 216B.2421 (2017).

Mr. Twite explained that utility-scale solar photovoltaic and wind generation are being deployed rapidly as technology has improved and installation costs have fallen. For example, Xcel Energy, the state's largest electric utility, produced just 3 percent of its electricity from wind in 2005; by 2021, Xcel will generate one-third of its electricity from wind.⁴⁹ These energy sources could be regulated under the CN threshold for a "large energy facility" if they are larger than 50,000 kilowatts, but due to their scalability they can also meet large electric energy demand through the addition of smaller generating facilities to the overall electric grid without needing a CN.⁵⁰

Mr. Twite explained that electrical generation can substitute for combustible fuel demand in many different ways. Right now, combustible fuel is used for transportation, diesel-generated electricity, and space heating in buildings, among other applications. In all of these cases, there are now viable alternatives that do not require oil inputs. For example, a house outfitted with sufficient battery power storage will not require diesel fuel to occasionally run a generator. Electricity-powered trains in the Twin Cities provide thousands of people with transportation on a regular basis without the need of diesel inputs for other public transit modes. Light-duty electric vehicles allow consumers to travel near and far without the need for refined gasoline. For years, ground-source heat pumps have both warmed and cooled homes across Minnesota, and recent developments in cold-climate air-source heat pump technology will make air source heat pumps viable and cost-effective in the state of Minnesota in the near future.⁵¹

Mr. Twite emphasized that the Great Plains have some of the best wind resource in the world; accordingly, wind generation is, by far, the lowest-cost generation resource available on a levelized cost of energy basis. Utilities in the Upper Midwest have regularly been securing power purchase agreements for new wind farms for less than \$20 per MWh (or less than \$0.02/kWh) over 15–25 year periods.⁵² By comparison, the incremental costs of running existing coal and combined-cycle natural gas power plants are typically \$25-35 per MWh. In turn, all of these electric power plants are significantly cheaper and more efficient than internal combustion of transportation fuels in an energy-to-cost sense.

Mr. Twite explained that installation costs for utility-scale solar photovoltaic projects have also fallen dramatically in recent years. Utilities in several southwestern states have acquired power purchase agreements for less than \$40/MWh, with some lower than \$30/MWh.⁵³ Accounting for Minnesota's somewhat lower-quality solar resource (relative to southwestern states), Mr. Twite expects utilities in Minnesota would be able to secure utility-scale solar power purchase

⁴⁹ Chris Clark, Wind and Solar energy: clean, affordable, reliable and secure, MinnPost, October 6, 2017, <https://www.minnpost.com/community-voices/2017/10/wind-and-solar-energy-cleanaffordable-reliable-and-secure> (commentary by president of Xcel Energy—Minnesota, South Dakota, North Dakota).

⁵⁰ Minn. Stat. § 216B.2421 (2017).

⁵¹ MN Department of Commerce & Center for Energy and Environment, Air Source Heat Pumps: Cost-Effective & Cold-Climate Ready <https://www.mncee.org/resources/resourcecenter/webinars/air-source-heat-pumps-cost-effective-cold-clima/> (last visited Oct. 11, 2017).

⁵² Ryan H. Wiser & Mark Bolinger, 2016 Wind Technologies Market Report (Electricity Markets & Policy Group, Lawrence Berkeley National Laboratory), available at <https://emp.lbl.gov/publications/2016wind-technologies-market-report>, attached to this testimony as Schedule 2.

⁵³ See, e.g., TEP to Power 21,000 Homes with New Solar Array for Historically Low Price, BusinessWire, May 22, 2017, <http://www.businesswire.com/news/home/20170522005290/en/TEP-Power21000-Homes-Solar-Array-Historically>.

agreements today for approximately \$45-55/MWh.⁵⁴ And while this is a higher price than wind on an energy basis, solar photovoltaic generation is more coincident with utility peak demand, making the energy produced more valuable. For comparison, the incremental cost for running an existing combustion turbine natural gas plant--which are typically dispatched only during peak periods--is typically between \$65-75/MWh.

Mr. Twite explained that the costs of wind and solar photovoltaic generation are predicted to continue falling. In 2016, the U.S. Department of Energy's Lawrence Berkeley National Laboratory conducted a survey of more than 160 wind experts.⁵⁵ The study found "a considerable amount of agreement" among the experts surveyed, who predicted the installed cost of utility-scale wind generation will fall by 25 percent between 2016 and 2030. Many analysts project even faster cost declines for utility scale solar: GTM Research, for example, projects a 27 percent cost decline between 2017 and 2022.⁵⁶

Other than low costs, there further benefits to the environment and to society of utilizing new technologies that replace oil-based infrastructure. Mr. Twite explained that utilizing renewable energy instead of oil-based infrastructure provides a wide range of societal benefits, including environmental, public health, and economic development. Renewable energy creates more jobs and provides a larger economic benefit to Minnesota.⁵⁷ A large portion of the lifetime cost of a fossil-fuel power plant goes to the fuel itself, and since Minnesota has no coal or natural gas, these resources have to be purchased from other states. By comparison, renewable energy sources have no fuel cost, so a much larger portion of the overall investment stays in the state of Minnesota.

Mr. Twite explained that renewable energy sources also have significant public health benefits. Burning fossil fuels produces harmful gases like carbon monoxide, particulate matter, and nitrogen oxides, which contribute to serious respiratory diseases and can even cause premature death. Renewable energy generation has none of these harmful side effects. Nationally, emissions from road transportation and electricity generation cause 53,000 and 52,000 premature deaths per year, respectively, making them the two largest contributors to premature deaths from air pollution.⁵⁸ In the Twin Cities, particulate matter and ozone pollution contribute to 2,000 deaths, 400 hospitalizations, and 600 emergency room visits per year.⁵⁹ Importantly, the harmful effects of this pollution falls disproportionately on low income people, people of color, children, and the elderly.

⁵⁴ This is consistent with the estimates provided by Xcel Energy President Chris Clark at a January 18, 2017 meeting of the Minnesota House Job Growth & Energy Affordability Policy & Finance Committee. A PDF of Mr. Clark's presentation is attached to this testimony as Schedule 3.

⁵⁵ Ryan H. Wiser, et al. Expert Elicitation Survey on Future Wind Energy Costs, *Nature Energy*, vol. 1, no. 10 (2016): 16135, attached to this testimony as Schedule 4.

⁵⁶ Eric Wesoff & Stephen Lacey, Solar Costs are Hitting Jaw-Dropping Lows in Every Region of the World, *Greentech Media*, June 27, 2017, <https://www.greentechmedia.com/articles/read/solar-costs-arehitting-jaw-dropping-lows-in-every-region-of-the-world>.

⁵⁷ *See, e.g.*, Clean Jobs Midwest, 2017 Clean Jobs Minnesota, <https://www.cleanjobsmidwest.com/state/minnesota>.

⁵⁸ Fabio Caiazzo, et al. Air Pollution and Early Deaths in the United States. Part I: Quantifying the impact of major sectors in 2005, *Atmospheric Environment*, Vol. 79, November 2013: 198, attached to this testimony as Schedule 5.

⁵⁹ MN Pollution Control Agency & MN Department of Health, Life and Breath: How air pollution affects public health in the Twin Cities, July 2015, available at <https://www.pca.state.mn.us/sites/default/files/aq1-61.pdf>, attached to this testimony as Schedule 6.

Switching to renewable energy also provides significant environmental benefits. Electricity and transportation are the largest sources of greenhouse gas emissions in the US, constituting the majority of the nation's greenhouse gas emissions.⁶⁰ Electricity generated from wind and solar photovoltaics has no direct greenhouse gas emissions.

Conclusion

The applicant has not demonstrated that there is a need for the new Line 3 pipeline that it has proposed. The current capacity of its Mainline system, 2.6 million barrels of crude oil per day, is sufficient to serve the needs of Minnesota and the larger Minnesota Region well into the future, particularly considering that the demand for crude oil in the Minnesota Region is declining. The demand for renewable energy has been growing exponentially, which will further diminish the demand for crude oil.

Enbridge must not be permitted to open up a new pipeline corridor, especially considering that any crude that is in excess of the needs of the Minnesota Region will likely be destined for the export market. Minnesota law appropriately requires that the needs of the applicant be balanced against the actual and potential harms to the human and natural environment from the ultra-hazardous activity being proposed. Clearly, the actual and potential harms to the Minnesota human and natural environments are greater than the benefits to the applicant from being able to increase its capacity to ship crude oil beyond the 2.6 million barrels per day. Accordingly, Enbridge's application for a certificate of need for a new Line 3 pipeline should be denied.

Respectfully submitted,

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⁶⁰ US Environmental Protection Agency, Source of Green House Gas Emissions, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions>.