



**AESO Stakeholder Consultation
Key Transmission Initiatives
Stakeholder Questions/Comments and AESO Responses
June 9, 2008 Stakeholder Consultation Session**

The AESO would like to take this opportunity to thank all stakeholders for their participation in the consultation on the Key Transmission Initiatives (Long-term planning, 20-year Outlook, Heartland Development, Edmonton to Calgary Reinforcement & Southern System Reinforcement).

The June 9, 2008 stakeholder meeting was attended by and/or the AESO received written comments from the following organizations:

ABB Inc.	Direct Energy Marketing Inc.	PowerEN Corporation	WindRiver Power Corp.
Alberta Wind Energy Corporation	EarthFirst Canada Inc.	Phillips Partners Inc.	
AltaGas Ltd.	EnCana	Power System Solutions	
AltaLink Management Ltd.	Enerplus Resources	PowerEn Corp.	
AML	ENMAX Corporation	RESL	
ATCO Electric	EPCOR Utilities Inc.	Shear Wind Inc.	
ATCO Power	E-T Energy Ltd.	Shell	
Alberta Utilities Commission	FortisAlberta	SNC-Lavalin	
Borealis Infrastructure	Hatch	Spirit Pine Energy	
Bowark Energy Ltd.	Hawk Hill Consulting	Suncor	
BP Canada	Husky	Synenco	
Cargill	Inter Pipeline Fund	TERA Environmental Consultants	
Canadian Hydro Developers	IPCAA	City of Calgary	
C-Free Power Corp.	Lawson Lundell LLP	Total E&P	
Canadian Natural Resources Ltd.	MEG EnergyNexen	TransAlta	
Constellation	Naturener Canada Inc.	TransCanada	
CRD Energy Services	NOVA Chemicals	University of Calgary	
Current Solutions Inc.	Nican International Consulting Ltd.	UCA	
Depal Consulting Limited	North West Upgrading Inc.	Valeo Power	
Desiderata Energy Consulting Inc.	NorthPoint Energy Solutions	Wind Power Inc.	



**Key Transmission Initiatives
Stakeholder Information & Consultation Session
Comment and Response Matrix
June 9, 2008**

Long-term Transmission Planning		
Stakeholder	Stakeholder Question asked during the June 9 meeting	AESO Response
TransCanada	<p>Is there any combined cycle generation included in the first 10 years?</p> <p>I was thinking about TransCanada's plant in the south, but it probably wasn't included in fall 2007.</p>	<p>In the November 2007 stakeholder consultation, the generation scenarios discussed in the first 10 years assumed 1,760 MW of cogeneration in scenarios 1, 3, 4, and 5 and 2,260 MW in scenario 2.</p> <p>The majority of cogeneration capacity is to support behind the fence load, however by 2017 the AESO has assumed that there will be an additional 500 MW of excess cogeneration capacity in the province in scenarios 1,3,4,5.</p> <p>Scenario 2 has a high cogeneration build, with 1000 MW of additional generation being available for the grid by 2017. The majority of this cogeneration will be located within the oilsands. In addition, the AESO has included ENMAX 1200 MW gas-fired generation in scenarios 4 and 5</p>



		<p>and 600 MW in scenario 3.</p> <p>With respect to TransCanada's Saddlebrook gas-fired plant in the south, the AESO was unaware of the plans for this plant in the fall of 2007 when the generation scenarios were developed and finalized.</p> <p>We recognize that plans for plants change over time as factors affecting generators change and that is why we build flexibility into our plans.</p>
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Submitted Questions

Stakeholder	Stakeholder Question	AESO Response
NaturEner	<p>Regarding the planning assumptions, NaturEner notes that the 10-year scenarios present five different generation scenarios and the 20-year scenarios consider TWO different generation scenarios. From a system usage perspective we suggest that the AESO also examine various load scenarios. Such scenarios would for example envision faster or slower load growth (relative to the long-range averages) in various regions in response to different economic drivers. In particular, the AESO should consider the “push” to load growth that will accompany the development of the bulk system in regions such as southern Alberta in response to this very development.</p> <p>NaturEner also notes the AESO did not explicitly identify any assumptions in the 10-year and 20-year scenarios regarding additional import capacity. NaturEner takes this opportunity to also indicate to the AESO that our affiliate company (NaturEner USA) is</p>	<p>While confidence intervals for the load forecast have been calculated, the transmission planning work has assumed the base forecast. Lower or higher load growth would result in either a deferral or advancement of transmission development.</p>



	<p>working with MATL and the AESO to advance the ability to import 300MW into the Alberta system at the MATL 102S substation by mid to late 2009. Accordingly, we request that the AESO include within its assumptions for all generation scenarios the addition of 300MW of import capability from 2010 onwards. If the production profile of these imports is of significance to the AESO's transmission planning then NaturEner USA can address this question during the project development meetings with the AESO.</p>	
<p>Name withheld – private citizen email comment submitted</p>	<p>Thank you for the invitation to this event in Calgary on June 9 on Monday Morning. I do not know if I can make it, but I do want to provide you with a much broader perspective on Alberta's Energy Future, then what seems to be the focus of discussion in AESO weekly email releases.</p> <p>I wish to provide you with my perspective in very general terms, which you are free to share with the meeting. First of all, Carbon Dioxide emission reductions and the Kyoto Accord by any other name, is going to happen because global warming has a scientific consensus. Cutting CO2 emissions however is a desirable goal irrespective of this topic because it reflects the sky rocketing costs of oil and gas fuels.</p> <p>The Second major fact is that methane gas (natural gas) produces ONLY 40% of the amount of CO2 than does coal for a given amount of power. Coal today accounts for some 60% plus of all Alberta power production. Switching to methane (or natural gas) is an improvement over coal, but it's still not as good as it can be. The Third major fact is that very large amounts of high quality natural gas (upwards \$4B a year, or more) are being consumed for the production of heavy oils, and furthermore, something like 90% of Alberta oil sand deposits CANNOT be produced by mining techniques, such as those being used in Ft. McMurray at this time.</p>	<p>Thank you for your in-depth and insightful comments. With respect to nuclear power the AESO has included this option in the generation scenarios which were used to test the transmission system. Generation is not centrally planned in Alberta but is part of the competitive marketplace.</p> <p>You also raise some good points with respect to advancements in transmission technology and this is an area the AESO is paying close attention to in its long-term planning processes.</p> <p>An estimated cost for CO2 has been included in the scenarios that were released in November 2007. Since that time, the federal government has released its greenhouse gas framework and the estimated costs will be revised accordingly.</p>

	<p>We will not avoid the near future demand for synthetic crude oil and we will not be able to "slow down" the production rates being planned because when crude oil is selling for some \$125 a barrel US, the insatiable demand is what will drive these developments.</p> <p>I have done a few simple calculations that I have shared with the Premier, which shows that we will not avoid the use of nuclear power in Alberta in the future, primarily for oil sands production, but secondarily for reducing power generation costs, and for reducing and meeting the Kyoto Treaty requirements, not with standing the current inability of the Federal Government to establish and meet our International Obligations under that Accord.</p> <p>In my view, if we installed some 6 GW of power generation capacity in North Eastern Alberta, PRIMARILY at heavy oil production sites, the "waste heat" from those power plants could be used for heavy oil production using processes that have been pioneered by Esso in the Cold Lake area. Those calculations illustrate that THIS SINGLE DECISION would meet 52% of the entire Kyoto emission requirements for ALL OF CANADA.</p> <p>In terms of power, very roughly speaking, it would fill in a 3GW power shortfall in the North East portion of Alberta, and it would permit the export of nuclear electric power in the opposite direction back into Edmonton in the amount of some 3GW using existing facilities, although to be sure, such a dramatic change would involve other capital costs.</p> <p>It would also make available the equivalent of some 12GW of "waste heat" energy for oil production.</p> <p>Indeed, utilizing nuclear power, primarily for oil production, would create the effect of "waste power" that would become available for</p>	
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	<p>export. Thus in my view, this "scenario" solves the difficult emissions problem, but it will also dramatically change the configuration for power transmission, oil production and power generation.</p> <p>What is therefore much more likely is a "power corridor" roughly paralleling the Alberta Saskatchewan border for power export to the US, with backbone transmission facilities westward for connection to the BC Grid, and eastward to Saskatchewan, Manitoba and Ontario.</p> <p>If energy production in the oil sands is ramped up to very high levels, then the demand for nuclear generation capacity will increase sharply and that amount of demand could every easily swamp our existing total demand for power in Alberta.</p> <p>In my view, all the discussion about "carbon credits" and "sequestering" CO2 is moot; the reality is that we need far too much energy to make any of these conventional approaches viable. I do not see how we can avoid the use of nuclear power.</p> <p>I have attached two PDF files from AECL for you to have a look at, because these systems are nearly ideal as "steam generators". As you know, companies like CNRL have already designed and built gas fired "co-generation" plants in the Cold Lake area, and so these "integration tasks" have already been examined in considerable detail. Only the CANDU system can "fit" this kind of application, and it's also the only system that has the confidence of most Canadians when it comes to nuclear safety and reliability.</p> <p>The second aspect to consider in your material relates to the very question of long range power transmission and how modern materials is making possible the use of DC transmission, BUT IN BURIED PIPELINES, and not overhead transmission facilities.</p>	
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	<p>As you know, the current carrying capacity of overhead cables is limited by the costs of the cable and the tower systems to hold these in place. It has been the practice of power companies to "double up" the cables to increase power transmission capacity. However, much heavier transmission capacity favours structures that are supported uniformly such as a pipeline that can be safely buried in a right of way, rather than suspended in overhead transmission lines. Better materials (such as recently developed silicones) provide the means to reliably handle very high potentials, and to keep conductor temperatures within close tolerance ranges, since earth temperatures are rather uniform even at modest burial depths. And this new transmission technology is especially important for long range transmission, which will be required for both interprovincial as well as export applications.</p> <p>To summarize,</p> <ol style="list-style-type: none"> 1. Nuclear cogeneration is perhaps the only sensible option that is open for Alberta's Energy Future that is consistent with CO2 emission reduction requirements. 2. The power transmission patterns will be determined by the siting of power plants, and these are determined in turn by the requirements for co-generation use of energy. 3. Heavier backbone transmission facilities should be DC buried pipeline type facilities that dramatically improve reliability since these are much better protected from lightning strikes, and power surges. 4. And finally, the further development of "in situ" oil production methods to produce the 90% of the tar sand deposits that are not accessible to mining methods in BOTH Saskatchewan and Alberta. <p>I do not think that this can be accelerated without some direction of Government, at both Federal and Provincial Levels, but I would be most interested to hear of other views on the required "paradigm" shift that is required for this topic. Thank you for your invitation.</p>	
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20-year Outlook: High-Level Transmission Concepts		
Stakeholder	Stakeholder Question	AESO Response
CRD Energy Services	Which year is this analysis presenting?	2027
PowerEN	Was this analysis done with additional future interties in place?	The analysis was done assuming there was a total of 2000 MW of intertie capacity connected to the system through the South region.
Desiderata Energy Consulting	Could you provide some comparison with the current transfer levels and the scenarios presented for Scenario 1A.	<p>The current cut-plane capacities are approximately :</p> <p>Northeast: 600 MW Northwest: 400-500 MW N-S: 2100 MW North to South: 400 MW</p> <p>There is a need to significantly increase the transfer capability in the next 20 years across all the bulk system cut-planes.</p>



20-Year Outlook, High-Level Transmission Concepts

Stakeholder	Stakeholder Question	AESO Response
Shell	What is the AESO’s plan to look at generation from a least cost/longer term perspective?	The mandate of the AESO is to develop transmission to facilitate a fair, efficient and openly competitive market. The AESO is not responsible for generation development in Alberta. The focus is on transmission requirements to facilitate anticipated growth for both generation and load customers.
Earth First Canada Inc	There needs to be further discussion about pros and cons of DC vs AC in terms of wind development and power management issues.	The AESO agrees and will provide additional information and discussion on this topic as it becomes available.
ENMAX	<p>Nuclear assumption in 20-year generation scenario In both 20-year generation scenarios the addition of large centralized nuclear generation is assumed. ENMAX power is concerned that making this assumption in both scenarios will lead to a lack of diversity in the transmission developments considered to address Alberta’s needs.</p> <p>Given that there are no existing large scale nuclear generation facilities in Alberta, ENMAX believes that it is premature to assume that nuclear generation is inevitable in the province. Societal trends toward Renewable energy, energy conservation, demand response, and distributed generation could lead to very different transmission development scenarios. With two generation scenarios being studied, it makes sense to study the bookend scenarios of both large centralized generation and a more distributed generation model.</p>	<p>Generation scenarios were crafted to enable a reasonable test of the transmission system. The potential to add large blocks of power from nuclear units has a major impact on transmission plans. Should the generation not be developed plans for new transmission can be deferred or cancelled.</p>



20-Year Outlook, High-Level Transmission Concepts

Stakeholder	Stakeholder Question	AESO Response
ENMAX	<p>Timing of Inerties AESO has identified several potential inerties in the High-level Transmission Concepts. ENMAX Power has several questions in relation to the inerties presented in the stakeholder presentation:</p> <p>Could the AESO identify which inerties are merchant inerties and which are being considered for regulated transmission system development?</p> <p>Which inerties are being modeled in the AESO's studies for long-term development scenarios?</p> <p>Can the AESO elaborate on the timing of the potential inerties?</p> <p>Have inerties or intra-Alberta merchant transmission been considered as alternatives to system development? i.e. Is the Northern Lights development an alternative to construction of a 500 kV line funded by ratepayers.</p>	<p>The analysis conducted by the AESO for purposes of the 20-Year Outlook document does not require that a distinction be made between 'regulated' and 'merchant' inerties; the analysis simply assumed that a total of 2000 MW of bi-directional intertie capacity was available in the South region. However, the AESO is aware of two merchant transmission intertie projects currently being considered – the Montana Alberta Tie Limited project (currently planned for service in 2009) and TransCanada's NorthernLights project (currently planned for service in 2015).</p> <p>The AESO is monitoring the NorthernLights project as an alternative for providing needed north-south transmission reinforcement. The AESO anticipates that should such an alternative be chosen AESO would be required to compensate the merchant developer and that the compensation would be recovered as part of transmission tariffs.</p>



20-Year Outlook, High-Level Transmission Concepts

Stakeholder	Stakeholder Question	AESO Response
ENMAX	<p>The Key Transmission Initiatives & Long-term Transmission Planning Stakeholder Information and Consultation Session did not include any discussion of transmission plans for the major urban centers of Edmonton and Calgary.</p> <p>When will the AESO present the long term development plans for the major urban load centers?</p>	<p>The AESO's 10-Year Transmission Plan will contain further details of the transmission development planned for the major urban areas.</p> <p>The AESO is currently updating the most recent plan, which was released in February 2007. A stakeholder session will be held this fall to gather input and comments regarding this plan.</p>



Key Transmission Initiatives Stakeholder Information & Consultation Session
Comment and Response Matrix
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Heartland Transmission Development		
Stakeholder	Stakeholder Question	AESO Response
Depal Consulting	<p>Regarding line charge on the Debottlenecking project: Between actual expected loads and what's available to suppliers, is there a shortfall? Significant gap between transfer capability in NE, how are the current interconnection applications going to be handled?</p> <p>If you're a customer in the (Heartland) area, will your interconnection proposal be denied? Will you be able to get service in the area? Will you be affected?</p>	<p>The capability shown as needed in the future is what is required to satisfy the planning criteria given the forecast used. The forecast is for a one in five-year peak path flow, not the average expected peak. This means there is an 80 per cent chance the transmission path load will be less than what is indicated and a 20 per cent it will be equal to or greater than the load indicated.</p> <p>The capabilities shown here take into account N-1 planning conditions. The AESO will monitor and assess the area transmission capability regularly and will take action as required to maintain system reliability. The AESO may make arrangements with local generation to alleviate transmission constraints. Voluntary demand response may also be an option. Involuntary load curtailments or constraints are avoided if possible. The AESO does not foresee denying any requests for service in the Northeast.</p>



Heartland Transmission Development

Stakeholder	Stakeholder Question	AESO Response
Canadian Natural Resources Limited	<p>I know you have applications in front of the AUC for Ft McMurray area. Are they included in this graph (Plan IIIB)?</p> <p>Are merchant plants that are discounted for included as well?</p>	<p>The "All Projects" scenario presented includes all announced projects throughout the Northeast including Fort McMurray. The AESO conducted a Monte Carlo simulation analysis to determine the net requirement of the oilsands load/cogeneration projects. With cogeneration there is difficulty predicting generation output as the operation is tied to an individual facility's operations as opposed to electricity market conditions.</p>
Desiderata Energy	<p>I see you have the alternatives. Have you precluded the HVDC option here in Plan 1B & 111B?</p> <p>What about a 500 kV loop between Ellerslie to Fort McMurray? Would this negate the need for a HVDC loop?</p>	<p>Yes; there are currently only three or four installations of HVDC Light in operation, and none in the realm of 1000 - 2000 MW. Overall, the cost of development is prohibitive. We are not proposing to carry this option forward.</p> <p>No, we would need both but they will be complementary.</p>



<p>ATCO Electric</p>	<p>Regarding Plan IA, one of the things driving this is congestion in the Genesee area. A line from Eilerslie to Genesee could remove congestion. Have you looked at taking the line going North instead of 3 terminals to break out Genesee-Heartland, Eilerslie-Genesee. This could remove congestion from Category 3 and provide diversity.</p>	<p>Improving the stability for the Genesee plant is being looked at as part of the Edmonton to Calgary development. Bringing a line all the way from Genesee instead of cutting into the existing line as proposed in Plan IA would add a significant amount of additional right-of-way as well as cost.</p>
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Heartland Transmission Development

Stakeholder	Stakeholder Question	AESO Response
ATCO Electric	Is the component in the TUC [transmission utility corridor] enough for 500kV?	Yes.
TransCanada	<p>On the slide “Heartland: Oilsands and Upgraders” (page 2) the Keephills Unit 3 is shown as increasing the NE Cut Plane Flow (S-N) capacity for all years from 2005 to 2018. However, this plant is not slated for completion until Q1 2011.</p> <p>If additional capacity from Keephills 3 is removed from the Figure until the year 2011, it appears there is a significant shortfall in the NE Cut Plane Flow capacity starting immediately. TransCanada requests that the Heartland slide be revised to show capacity increases as they actually occur (rather than as flat lines throughout the time period being examined.)</p> <p>What steps will be taken by the AESO to address other shortfalls in capacity which appear to begin in 2008 (even with the “Debottlenecking” project)?</p>	<p>The capability shown as needed in the future is what is required to satisfy the planning criteria given the forecast used. The forecast is for the predicted one in five-year peak loading. This means there is an 80 per cent chance the load will be less than what is indicated and at 20 per cent it will be equal or greater than the load indicated.</p> <p>The capabilities shown take into account N-1 planning conditions. The AESO will monitor and assess the area transmission capability regularly and will take action as required to maintain system reliability. The AESO may make arrangements with local generation to alleviate transmission constraints. Voluntary demand response may also be an option. Involuntary load curtailments or constraints are avoided if possible.</p>
TransCanada	The AESO indicated in the presentation that it was contemplating arrangements with local generation to support the transmission system under certain circumstances. TransCanada requests a forecast of the size and nature of these arrangements should they become necessary.	The AESO has no plans at this time to contract with local generation for support in the Northeast.



Heartland Transmission Development

Stakeholder	Stakeholder Question	AESO Response
TransCanada	<p>TransCanada supports combining the NID and Facilities application due to planning, approval and construction time constraints in this area of the province and because the benefits of establishing need in conjunction with facility options is more likely more efficient for these particular circumstances.</p>	
TransCanada	<p>Regarding the various plans under consideration, TransCanada recommends that the AESO examine the merits of two modifications to its plans as follows:</p> <p>a) Modified Plan 1A: TransCanada recommends that the AESO consider examining a plan that leaves the existing 1202L (upgraded to 500 kV) in place in its entirety and adds a 500 kV line from Keephills to Heartland. Compared to Plan 1A, it would involve the additional cost of a 500 kV line in parallel to 1202L from Keephills to the location where the proposed line turns north. The benefit of this modification is that the Edmonton area would now be served by three 500 kV lines from the Wabamun Lake area. Given the uncertainty, load growth volatility and potential generation in the Edmonton, Heartland and Ft. McMurray areas, this alternative provides a third 500 kV line to the Edmonton Heartland area at a reasonable incremental cost to Plan 1A.</p> <p>b) Modified Plan IV: While TransCanada does not endorse this plan, should the AESO proceed with this development, TransCanada recommends that the double circuit line be replaced with two single circuit lines. The reason for this is so the system will not be constrained by an N-2 double circuit contingency.</p>	<p>Modified Plan 1A; None of the scenarios considered for the Heartland Plan identified the need for a third 500 kV line into the Heartland region. However, the 500 kV line from Keephills to Fort McMurray in the later stages of Plan IA could be taken in and then out of the Heartland substation if necessary in the future.</p> <p>Modified Plan IV; The system would not be constrained by an N-2 double circuit contingency (Category C5). If this plan were implemented, the Category C5 events would be addressed through the installation of special protection systems (SPS) to shed load or drop generation as permitted by the planning criteria.</p>



Heartland Transmission Development		
Stakeholder	Stakeholder Question	AESO Response
TransCanada	TransCanada would like to confirm, for the purposes of determining transmission capacity requirements in the Edmonton and Heartland Area, whether the AESO is using an N-1 or N-2 (double circuit outage) criteria for the ruling contingency. Also, please confirm whether the AESO plans to operate the system on different criteria than the planning criteria and if so, explain the differences and reasons for those differences.	Transmission capabilities as stipulated in the Heartland Plan were determined based on Category B events. Our planning analysis considers all of the event categories (A through D) as defined in the planning criteria. These include both N-1 and N-2 as well as others. The performance requirements of Category C and Category D events are planned to be met through the application of SPS and safety net protection systems when required.
ENMAX	<p>Backstopping of Heartland Transmission Development</p> <p>A customer project that is occurring in the City of Calgary, the South Calgary Health Campus, has requested a high level of reliability for the electrical service. The system additions to meet the customer's reliability requirements are beyond the standard facilities as determined by the AESO and are deemed optional facilities. As such the development funding is paid for by the regional DFO and requires the DFO to seek financial backstopping of the project by the project proponents so that costs are not unfairly allocated to all of the DFO customers and to ensure that ratepayers will not be responsible for system development costs in the event of project cancellation or delay.</p> <ul style="list-style-type: none"> • Has the AESO considered requesting a contribution from the project proponents who are driving the Heartland development to shield ratepayers from the risk of project cancellations or delays? 	The Heartland transmission development being discussed here is considered a 'system' reinforcement and as such, the costs are borne by customers according to the current AESO tariff. However, the AESO has consistently applied its tariff in consideration of the interconnection facilities required for individual 'customer' projects in the Heartland area and have assessed customer contribution charges as required.



Heartland Transmission Development

Stakeholder	Stakeholder Question	AESO Response
ENMAX	<ul style="list-style-type: none"> • Which projects are responsible for the doubling of load between 2007 and 2008? 	<p>The graph presented does not show load but rather the net flow into the area resulting from total load plus lines losses minus generation in the area. The load graph presented shows the 2007 recorded peak flow into the Northeast. This value has not been normalized; corrected either for weather conditions or for other unusual events. During 2007 there were lower than expected loads due to a series of unplanned process outages for some oilsands upgraders in Fort McMurray.</p> <p>The peak flow shown for 2008 is the forecast capability needed based on a one in five-year peak. By definition a one in five-year peak forecast will be higher than the predicted average peak loading on the path. There are multiple projects as well as growth in distribution loads which are causing the load in the region to grow.</p>



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Edmonton to Calgary Transmission Reinforcement		
Stakeholder	Stakeholder Question	AESO Response
TransCanada	<p>On the different paths are you showing any specific line routes?</p> <p>Are there any emerging themes from consultation?</p>	<p>The AESO is not showing any paths. The work is representative to produce metrics and ranges for numbers under each criteria. The AESO looked at the paths to get numbers but it is the TFO's responsibility to determine the actual route.</p> <p>No one wants a transmission tower in their backyard and there are concerns. Stakeholders attending the 26 open house consultations are pleased that the sessions are occurring and the process is working. There are EMF concerns but generally people understand the line is needed. There are misconceptions about exports.</p>
NOVA Chemicals	Are there no substations needed between Edmonton and Calgary?	This line would unload the existing 240 kV lines and would be used to serve the local loads in central Alberta and also provide for future capacity.



NOVA Chemicals	It [the new line] would cut the load in half?	The new line would reduce the load on existing 240 kV lines by more than half. The plan is for most of the flow to be on the new line.
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Edmonton to Calgary Transmission Reinforcement

Stakeholder	Stakeholder Question	AESO Response
Shell	<p>Reliability- Does it meet N-1 and N-2 WECC reliability criteria?</p> <p>Based on new transmission lines, have you considered alternative technologies for the existing lines? Challenges on ROW. Have you considered Plan B re: series compensation etc?</p> <p>I have not seen any series compensation or SVC added to Alberta's system for short term load?</p>	<p>For NERC planning criteria the AIES has fallen below, a few 100 MW short in short term.</p> <p>As these lines were built in the 1960's and 70's the AESO doesn't see the ability to get more out of these lines. The lines are maxed out and there is no additional opportunity to increase existing capacity.</p> <p>SVC & Series compensation doesn't help increase thermal capacity and that is now the issue on the existing 240 kV lines from Edmonton to Calgary. The use of existing lines is approaching maximum capacity.</p>
ENMAX Power	<p>The first time for this there was no reinforcement between Calgary and Langdon (phase shifters). Are there plans for it this time?</p>	<p>The AESO is aware of the need to reinforce the area around Calgary. The AESO is looking at 240 kV reinforcement around the city and this is being dealt with separately. Please review the slides presented on the South transmission development update for more information about these system plans.</p>
ATCO Electric	<p>Some consideration of 765 kV for Edmonton-Calgary project but dropped it. Was it considered for Fort McMurray to Calgary? Similar to 500 kV DC Classic</p>	<p>There didn't seem to be a driving benefit to look at voltages above 500 kV.</p>



Edmonton to Calgary Transmission Reinforcement

Stakeholder	Stakeholder Question	AESO Response
TransCanada	<p>The slide “Edmonton-Calgary projected Transmission Capacity Requirements” (page 3) was explained in the session to demonstrate that for 2008 until at least 2011, the north-south path is falling below the NERC/FERC reliability criteria. It is of concern to TransCanada that this situation may result in reduced levels of energy transfers between the Edmonton area and the Calgary area under various loading patterns. TransCanada requests a full report on the circumstances (amounts, duration, reasons) in which north-south flows will be limited. Also, TransCanada requests that the AESO identify all short term (less than a year) and medium term (greater than 1 year and less than 5 years) projects that have been identified and can be implemented to manage and eventually eliminate this shortfall as soon as possible. Given the projected shortfall, these projects should be implemented prior to the completion of the north-south transmission system upgrade. TransCanada is also interested in potential solutions that have been ruled out (SVCs, series compensation, phase shifters, dynamic line ratings, etc) and the reasons why they have been ruled out as temporary solutions to north-south constraints.</p> <p>TransCanada continues to support the urgent need for additional north-south capacity between Edmonton and Calgary.</p> <p>TransCanada would like to confirm, for the purposes of determining transmission capacity requirements between Edmonton and Calgary, whether the AESO is using an N-1 or N-2 criteria for the ruling contingency. Also, please confirm whether the AESO plans to operate the system on different criteria than the planning criteria and if so, explain the differences and reasons for those differences.</p>	<p>The AESO has not prepared a report as requested. AESO continues to monitor the situation in the interim period prior to reinforcement being completed and assess potential interim measures.</p> <p>The AESO’s planning criteria are available on the web at: http://www.aeso.ca/rulesprocedures/8677.html</p>



Edmonton to Calgary Transmission Reinforcement

Stakeholder	Stakeholder Question	AESO Response
ENMAX	<p>At the present time ENMAX Power is not aware of any plan or consideration of alternatives to reinforce the transmission path from Langdon to Calgary. Without a plan to bring power from Langdon to Calgary, we are confused by the AESO's use of the title "Edmonton to Calgary Transmission Reinforcement". In its current form the 500 kV proposal is a connection of northern generation to the AB-BC tie line and should be called such.</p> <ul style="list-style-type: none"> • When will AESO release the Need Statement and system studies for the north-south 500 kV proposal? 	<p>The Edmonton to Calgary label was selected to generally describe the reinforcement area. The southern termination point for the project is Langdon. Related regional planning for reinforcements from Langdon to serve the City of Calgary loads and other loads in southern Alberta will be undertaken as separate projects.</p>



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Southern Alberta System Reinforcement		
Stakeholder	Stakeholder Question	AESO Response
TransAlta	Is the AESO assuming the SW 240 kV reinforcement is in place under each scenario?	Yes, the AESO is assuming the 240 kV is in place.
Submitted Questions		
Stakeholder	Stakeholder Question	AESO Response
NaturEner	<p>Regarding the Southern System planning presentation, NaturEner notes that the slide demonstrating wind interest has omitted the Wild Rose projects which are under development by NaturEner. On a go-forward basis, NaturEner requests the AESO to include all of the NaturEner projects within any material which is intended to show the range of wind interests in Alberta. This would be much appreciated and will ensure that your public communication is consistent with our own.</p> <p>Additionally, NaturEner suggests that in future presentations to discuss the routing of the transmission alternatives that it would also be of assistance to show the general locations of all the wind projects in the queue totalling the 9000 MW amount. This will be of assistance by confirming that the location of any proposed routes will minimize the long-run land-use impacts of transmission developments (including system and local interconnections) as prescribed by the Transmission Regulation.</p>	<p>The AESO apologizes for the oversight and will make the necessary corrections.</p> <p>The AESO will consider this comment in view of confidentiality requirements.</p>



<p>ENMAX</p>	<p>Integration of gas generation in Southern Alberta Reinforcement</p> <p>The Southern Alberta System Reinforcement provides transmission capacity to interconnect southern Alberta wind generation.</p> <p>Does the Southern Alberta System Reinforcement provide for or take into account the gas generation that has been announced by TransCanada and ENMAX Energy? If not, why not?</p> <p>If so, how has the AESO modeled these and existing Alberta gas-fired facilities for planning purposes?</p> <p>Which southern gas-fired facilities are deemed to be off line when studying (a) peak-stress loading in southern Alberta; (b) peak-stress loading in Alberta as a whole?</p>	<p>The AESO is aware of the gas-fired generation proposed in Southern Alberta by TransCanada, ENMAX and two other parties. The proposed Southern Alberta System Reinforcement can accommodate all these proposed gas generation plants (for ENMAX, reinforcements around The City of Calgary will also be required). In the planning studies, it was assumed that all the gas generation, with the exception of ENMAX, will be off-line under the conditions of maximum wind generation in the south as confirmed by the respective developers. For ENMAX, a minimum generation level was assumed during the peak wind period.</p> <p>There is more than adequate capacity on the proposed southern system (911L rebuild) to integrate the TransCanada plant and the other two gas-fired power plants during times of peak wind production in southern Alberta, or during peak wind production in the province of Alberta.</p>
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