



Intertie Framework

RECOMMENDATION PAPER

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1. Executive Summary

In 2008, the Provincial Energy Strategy (PES) stated the province's plan to adopt and implement a policy to build interties to other markets to ensure an adequate supply of electricity to Alberta. As new interties are being contemplated from multiple jurisdictions, a review of the intertie framework is required to ensure it supports fair, efficient, and openly competitive (FEOC) intertie transactions while advancing Government policy. In May of 2010, the AESO issued a discussion paper¹ reviewing the intertie framework and the options available. The purpose of this recommendation paper is to review stakeholder feedback to the discussion paper, to provide additional AESO discussion and responses, and to provide recommendations for the intertie framework.

From an energy perspective, imports and exports interact with the energy market merit order today as price takers because they are not dispatchable in real-time. In the discussion paper, the AESO reviewed options to permit imports and exports to submit priced bids and offers. From these options, the AESO recommends that dynamic scheduling be implemented as the most timely and efficient means to achieve the real – time dispatchable capability. One of the big advantages to this option is that several balancing authorities within WECC are implementing dynamic scheduling concurrently through a joint project thereby increasing the opportunity for Alberta participants to use this as a means to submit priced bids and offers.

From a transmission perspective, interties may have some congestion due to constraints to the line available transfer capability (ATC) and/or constraints to the system ATC. Due to the pending competition for system ATC² between interties from different jurisdictions or between merchant and rate based, the discussion paper reviewed options for managing ATC allocation. This raised the debate surrounding transmission rights on the interties. Alberta's energy only market, with no transmission rights and only opportunity service on the interties, connects to neighbouring jurisdictions and markets where "firm" transmission rights are sold to the border.

The AESO interprets that current governing Alberta legislation and policy does not permit for the recognition of a "first in" right for interties, but rather that there is an obligation to ensure system access service (SAS) to inject/withdraw at the border. SAS to inject/withdraw on the interties implies applying the policy and AESO obligation to plan an uncongested transmission system to 100% of anticipated in-merit generation. This is supported in sections 15³ and 16⁴ of the Transmission Regulation and 17 (c)⁵ of the Electric Utilities Act. The AESO interprets that imports and exports up to the path rating of each intertie are anticipated in-merit electric energy. As such, the AESO recommends

¹ Intertie Framework Discussion Paper, dated 7 May 2010

² Due to constraints external and internal to Alberta, MATL and the AB-BC intertie will share import transfer capability in some conditions, and MATL, the AB-BC intertie, and the AB-Sask intertie will share export transfer capability in some conditions.

³ "...the ISO must...plan a transmission system that is sufficiently robust so that 100% of the time, transmission of all anticipated in-merit electric energy referred to in section 17(c) of the Act can occur when all transmission facilities are in service"

⁴ "...the ISO must prepare a plan and make arrangements to restore each intertie that existed on August 12, 2004 to, or near to, its path rating"

⁵ "...The ISO has the duty...to determine, according to relative economic merit, the order of dispatch of electric energy and ancillary services in Alberta and from scheduled exchanges of electric energy and ancillary services between the interconnected electric system in Alberta and electric system outside Alberta"

that it plan the transmission system so that each intertie can transfer up to its path rating simultaneously.

To implement SAS for merchant interties, the AESO recommends that a merchant transmission service (MTS) be added to the AESO tariff, offered to the merchant transmission asset owner, which appropriately reflects system access service to inject/withdraw at the border. This in effect treats a merchant intertie like a generator at the border and provides a merchant developer the certainty of access in order to obtain financing. Import and export opportunity service (IOS/XOS) would be available on the merchant line as on the existing rate-base interties today with equal priority. The MTS should emulate the transmission characteristic of the system transmission service (STS) applied to internal generators with an appropriate system contribution payment refunded based on utilization. The IOS/XOS would continue to carry the loss factor charge as applied to STS.

It is expected that treating an intertie like a generator at the border may raise a concern among stakeholders that equal access treatment between imports, exports, generators and loads may in fact further unlevel the playing field due to regulatory, market and policy differences between jurisdictions. To manage this concern, the IOS/XOS, regardless of whether they are using a merchant line, would continue to be of lower priority than that of internal STS/DTS when it comes to curtailment for reliability reasons. The lower priority is a reflection that imports don't have to meet the same interconnection requirements as STS customers who provide reliability and adequacy benefits to Albertans, and exports should not take priority over intra-Alberta DTS load customers in a system emergency.

Finally, until such time as transmission reinforcement can be made, or whenever there is congestion on the interties, the AESO requires a means to allocate ATC between intertie participants. In the discussion paper, the AESO reviewed several options. The AESO recommends an ATC allocation rule be implemented that arbitrates first by energy price (when dynamic scheduling is implemented), and then by pro-rata curtailment among remaining same price schedule requests. The pro-rata curtailments would be performed at xx:45 to permit for neighbouring jurisdictions to continue to curtail schedules via their transmission rights priority.

In summary, the recommended framework is intended to permit priced imports and exports, and to manage the seam created by the energy only market connecting to markets with transmission rights. In the end, the framework should advance Government policy incenting future investment in interties by providing a means to transact in the energy market and providing certainty to market access.

After consulting on the recommendations in this paper, the AESO will start the implementation of the intertie framework. The AESO seeks stakeholder feedback to these recommendations.

2. Purpose

The purpose of this paper is to summarize stakeholder comments (ordered alphabetically) to the intertie framework discussion paper issued in May 2010, provide AESO responses and further discussion, and to provide AESO recommendations for the intertie framework. Note that the purpose of summarizing the stakeholder comments is to demonstrate the AESO's understanding of the comments and this may have resulted in some unintentional misrepresentation of stakeholder feedback. The actual stakeholder comments on the AESO website should be referred to for this purpose. The AESO welcomes feedback on all areas outlined in this recommendation paper.

3. Introduction/Background

Transmission interconnections with neighbouring jurisdictions are essential to a well functioning power market as they support reliability, market diversification, generation development and continued economic growth in Alberta. Albertans benefit from these interconnections by having the ability to import and export power as needed with physical access to diverse markets, achieving the most efficient, economic and environmentally beneficial exchange for a resource.

In 2008, the Provincial Energy Strategy (*PES*) stated the province's plan to adopt and implement a policy to build interties to other markets to ensure an adequate supply of electricity to Alberta. As new interties are being contemplated from multiple jurisdictions, a review of the intertie framework is required to ensure it supports fair, efficient, and openly competitive (FEOC) intertie transactions while advancing Government policy. In May 2010, the AESO issued a discussion paper to review the intertie framework. Stakeholder feedback was received and consulted on in developing this recommendation paper.

4. Policy Coherence and Principles

The Government of Alberta Department of Energy's policies and regulations confirm that interties are part of a well functioning market and that market design that supports their integration into the wholesale market in a fair, efficient and openly competitive fashion should be explored. The AESO has developed the following design principles grounded in government legislation, regulations and policies to be considered with intertie market design discussions. The AESO asked for stakeholder feedback to these principles.

1. Intertie market design should **facilitate competition by reducing barriers while maintaining reliability**. This principle is supported by sections 16, 17 and 29 of the Electric Utilities Act.
2. Intertie market design should **facilitate restoration and expansion of intertie capacity that proves sustainable over the long term and supports efficient market processes**. This principle is supported by section 16 of the Transmission Regulation, the Electricity Policy Framework (page 32) and the Provincial Energy Strategy (page 44).

3. Intertie market design should **support a level playing field for generation, imports, exports and load where possible**. This principle is supported by sections 6 and 18 of the Electric Utilities Act and the Electricity Policy Framework (page 4).
4. Intertie market design should ensure **product development is consistent with AB legislation and policy**. This principle is supported by section 27 of the Transmission Regulation and the AEUB Decision 2007-106 to the AESO tariff application.
5. Intertie market design should **manage seams between neighbouring jurisdictions and access to regulated and deregulated markets**. This principle is supported by the Transmission Development Policy (page 3) and the Electricity Policy Framework (page 39).
6. Intertie market design should **support system dispatch through the energy market merit order**. This principle is supported by sections 17 and 18 of the Electric Utilities Act.

4.1.1 Stakeholder Feedback

1. ATCO Power expressed concern that intertie policy may lead to external suppliers being advantaged relative to domestic suppliers by Alberta market rules and cost allocations designed to encourage their entry. ATCO Power commented that policies and principles need to recognize the lack of a level policy playing field between jurisdictions and that interties solutions should not be unduly constrained by intra-Alberta approaches.
2. Capital Power commented that intertie expansion policy must always be considered in the context of first meeting provincial policies of resource adequacy and the integrity of the energy only market. Capital Power commented that the integrity of the energy only market is challenged when imports and exports are not on a level playing field with intra-Alberta generators and loads. Capital Power recommended a stand alone principle that reflects that priority of reliability.
3. ENMAX commented that the policy should be set that encourages economic merchant build of lines through market processes. ENMAX suggests that it is better to promote a “fair, efficient and openly competitive market” rather than “reduce barriers”. Reducing barriers through building intertie capacity is acting like a market participant. ENMAX suggests that a market design change may be required to efficiently manage the seams, and that market design changes are not precluded within the EUA.
4. NaturEner commented that the first priority principle guiding the AESO’s efforts should be promoting a fair, efficient and openly competitive market for electricity and to provide for the safe, reliable and economic operation of the system. NaturEner commented that framework development needs to recognize existing as well as permitted lines.

5. NorthPoint Energy commented that creating a level playing field by treating imports and exports the same as intra-Alberta generators and loads is not possible because they are not the same. NorthPoint prioritizes the principles as follows: reduce barriers, dispatch through the EMMO, manage the seams, restoration of interties, create a level playing field and design products according to legislation and policy.
6. TonBridge commented that Alberta needs to support policy of additional intertie capacity which TonBridge believes will in large part be merchant developed. TonBridge feels that the AESO needs to seek a regulatory framework that provides certainty to projects that have demonstrated “need” so that they may be financed. Rate based lines are becoming increasingly more difficult to demonstrate “need” for. However, for merchant lines to be financed, policy that provides certainty to long term access needs to be created.
7. TransAlta commented that supporting a level playing field is unfair due to differences in adjacent market structures making the management of seams a priority.
8. UCA comments that firm rights to import or export electricity are consistent with the right to injection/withdrawal at particular points as per the Alberta model. This suggests that firm import and export services could be offered in Alberta with the right to injection/withdrawal at the border or the terminal of an intertie. UCA comments that any interim ATC measures must consider the long term sustainability and impact on future development.

4.1.2 AESO Response/Discussion

It is clear that stakeholders view that equal treatment of interties to internal generators/loads does not necessarily support a level playing field. The seams between market places and regulatory frameworks must be recognized and accounted for in making the playing field level. The AESO agrees with stakeholder comments that this must be considered carefully within the intertie framework.

The AESO conducted stakeholder sessions examining the issue of when to treat interties like intra-Alberta generators and loads and when not to. In the process a review of the governing legislation, regulation and policy as it pertains to intra-Alberta generators and loads was completed to see what could apply to the interties. The following additional key section of the regulation is referenced to further support the principles 1, 2, and 3 and to support recommendations to the intertie framework.

Transmission Regulation, Section 15 (1). In making rules under section 20 of the Act, and in exercising its duties under section 17 of the Act, the ISO must

- (e) taking into consideration the characteristics and expected availability of generating units, plan a transmission system that
 - (i) is sufficiently robust so that 100% of the time, transmission of all anticipated in-merit electric energy referred to in section 17(c) of the Act can occur when all transmission facilities are in service
 - (ii) is adequate so that, on an annual basis, and at least 95% of the time, transmission of all anticipated in-merit electric energy referred to in

section 17 (c) of the Act can occur when operating under abnormal conditions

The AESO interprets that import and exports up to the path rating of each line should be considered as anticipated in-merit electric energy referred to in section 17 (c). This is an important consideration given the comments of TonBridge and ENMAX that future interties will likely be merchant requiring certainty of access to be financed. There will be more to this discussion within the recommendations to the intertie framework.

The AESO points out that principle 6, **support system dispatch through the energy market merit order**, was intended to emphasize that bi-lateral dispatch outside of the pool was not supported by legislation. Imports and exports are today dispatched through the energy market merit order through the pool as price takers (\$0 offers, \$999 bids).

5. Intertie Framework

Within the discussion paper, the AESO identified the following questions pertaining to the intertie framework in order to facilitate consultation.

- How should interties be dispatched in real-time to enable priced offers/bids?
- Should there be transmission rights to ATC on the interties?
- Should there be new transmission products on the interties?
- Should pro-rata be used to allocate ATC instead of LIFO as tie breaker?

Each decision point is further explored in the sections below with stakeholder comments, AESO responses and discussion, and AESO recommendations.

5.1 Real-Time Dispatch/Scheduling

Currently, importers offer at \$0 and exporters bid at \$999 and are scheduled firm for the hour. They must offer and schedule in this manner because they cannot be dispatched and scheduled anytime within the hour. Within the discussion paper, the AESO explored possible options available in order to achieve real-time dispatch and scheduling for the purpose of permitting intertie participants to submit priced bids and offers. These options included intra-hour scheduling, dynamic scheduling and creating a dispatch up/down service that would take a dispatch for an intertie participant. The AESO asked for stakeholder feedback as to which option would be preferred. The AESO also asked whether stakeholders interpret that current policy would permit for a dispatch up/down service to be done bi-laterally.

5.1.1 Stakeholder Feedback

1. ATCO Power raised the issue of facilitating counter-flows when schedules may change intra-hour or dynamically, and the implications to allocation of ATC this might have. The associated complexity may outweigh the benefits to our market. ATCO doesn't feel that bi-lateral arrangements are inconsistent with Alberta's market principles, but is not yet convinced they could be feasibly implemented.
2. Capital Power raised the concern of achieving real-time or intra-hour scheduling participation from multiple transmission operators outside Alberta. This may in fact create more seams issues. Capital Power requests more information as to

how dynamic scheduling would be implemented and what the cost implications might be. Capital Power recommends that the AESO should consult further with other WECC transmission operators to determine if this is achievable. Capital Power is not clear that a dispatch up/down product would be required if the ISO implemented dynamic scheduling.

3. ENMAX commented that it might be more superior to set the market price in advance of the hour instead of requiring imports/exports to be dispatched in real time. ENMAX seeks clarity as to the AESO's position on bi-lateral dispatch, and does not believe the regulatory framework in Alberta precludes bilateral products or requires the AESO to manage dispatch up/down services strictly through system products. ENMAX seeks more information regarding intra-hour and dynamic scheduling.
4. NaturEner commented that the AESO should align its dispatch and scheduling procedures and capabilities with the other systems within WECC in order to minimize seams. NaturEner commented that the current legislation and policy does not require the AESO itself to procure dispatch up/down service, nor does it prevent other parties from entering into agreements to do so.
5. NorthPoint Energy commented that achieving real-time dispatch with other control areas and transmission owners may take too long. NorthPoint Energy supports the use of a dispatch up/down service. NorthPoint commented that permitting a bi-lateral market for a dispatch up/down service would not be fair to those external participants who do not have generation/load in Alberta.
6. Powerex supports the use of a variety of mechanisms to facilitate inertie dispatch in order to provide flexibility to market participants. If a market participant cannot respond to a market dispatch, they should still be permitted to submit as a price taker.
7. TransAlta commented that dynamic scheduling should not allow for an inertie participant to change their production within T-2 window. TransAlta supports the use of a dispatch up/down service when an import/export falls out of merit.
8. TransCanada recommended that the AESO consult with transmission operators in neighbouring jurisdictions to understand whether the options are feasible and which one is optimal. If real-time scheduling is deemed too costly or complex, TransCanada would support a review of a dispatch up/down service. TransCanada shares the AESO's operational concerns regarding physical location of the dispatch. TransCanada believes that bi-lateral dispatch could potentially take control of the system away from the System Controller creating reliability issues.
9. UCA commented that real-time dispatch and intra-hour scheduling and a new up/down service seem very complicated and potentially onerous for system operators. UCA commented that dynamic scheduling appears to hold more promise, should a sufficient number of jurisdictions be engaged.

5.1.2 AESO Response

The AESO interprets stakeholder feedback to generally support pursuing intra-hour scheduling and/or dynamic scheduling, but the available information on implementing these options does not allow a proper assessment of impacts or the full endorsement by stakeholders. There is also a general concern that getting multiple transmission operators from neighbouring jurisdictions to participate with the AESO may be difficult. The AESO has since consulted with our neighbouring jurisdictions on how these practices could be achieved. To this end, the AESO has recently become involved with two initiatives being pursued by “strike-teams” consisting of several Balancing Authorities and Transmission Operators in the North-West pertaining to intra-hour scheduling and dynamic scheduling.

The “strike-team” pursuing intra-hour scheduling has proposed standardized business practices and has encouraged participating members to target implementing the first step in these business practices by July 2011. Some participants have already implemented these practices between themselves. In summary, the first step of intra-hour scheduling will be to create the business practices where a participant can change their schedule or create a new schedule within the first 15 minutes of the scheduled hour, and ramp to that new schedule at half past the hour. (Note that this only pertains to scheduling, and would not permit a participant to change their market offer within T-2.)

While this step will still not create the conditions permitting real-time dispatch and scheduling, it is a first step which may lead to intra-hour scheduling at any time (real-time) which is captured in step 4 of the proposed business practices. Within this initiative, several participants have raised issues like the one raised by ATCO Power in their comments regarding the impact to counter-flows. The strike-team has captured these issues, and is working towards resolving them within the proposed business practices. The AESO will stay engaged with the intra-hour scheduling project and provide regular updates to stakeholders as to the progress.

The strike-team pursuing dynamic scheduling has contracted with a vendor (OATI) to develop a dynamic scheduling system (DSS) whereby all participants can dynamically schedule between each other. As of today, 18 of the 32 balancing authorities (BA) within WECC are participants within this project and are a part of the centralized DSS hub. The number of participants is an important factor to the DSS project making dynamic scheduling more available to market participants. Prior to the DSS project, the AESO would have had to set up separate arrangements with each BA in order to implement dynamic scheduling. It is set to go live in the fall of 2010. The AESO has been told that once the system goes live and is functioning, that the DSS will be opened to more participants at which time the AESO may become a participant (2011).

Dynamic scheduling would be the most timely and effective way to enable participants to submit priced bids/offers. Briefly, the DSS is a centralized hub that interfaces with participating BA's Energy Management Systems (EMS) to properly account for real-time changes to intertie energy flows caused by dynamically dispatched resources. The system controller will issue an energy market dispatch in real-time to the import/export asset. The dispatch signal is linked to the AESO's EMS and then to the DSS to initiate the dynamic change along the asset's scheduled path. Following the operational hour, the system will determine from the individual real-time changes an integrated hourly

value for each dynamically dispatched resource. This integrated hourly value will be communicated to the participants via automated e-Tag adjustments and ultimately used in energy market settlement. A participant would still be permitted to schedule for the hour as a price taker.⁶

The AESO does not recommend expending any resources on developing a dispatch up/down bi-lateral market at this time. It would be a better use of resources to focus on implementing dynamic scheduling since this may have additional benefits. Those benefits could include the scheduling of wind power or resources that could be used to balance wind power. It may also be possible to have regulating reserves offered on the interties via dynamic scheduling.

5.1.3 AESO Recommendation

The AESO recommends implementing dynamic scheduling to enable real-time dispatch and to permit the submission of priced/bids and offers.

5.2 Transmission Rights - Policy

Alberta's electricity market is an energy only market with no transmission rights. However, intertie integration provides an interesting dynamic in that interties link the Alberta energy only market to markets with transmission rights. There has been debate as to whether incumbent interties with participants who have purchased contracts for transmission rights to the Alberta border should have priority access to ATC over new interties that do not add additional ATC. Alternatively, there has been an argument that merchant lines, which have been financed privately via the sale of transmission rights, should have priority access to ATC over rate-based lines to encourage merchant builds.

The AESO asked for stakeholder comment as to whether current policy permits the assignment of transmission rights to ATC and whether interties should be treated by the same rules as internal generators and loads.

5.2.1 Stakeholder Feedback

1. ATCO Power commented that domestic and external market participants are in vastly different circumstances and treating them similarly has the potential to undermine the Alberta market. ATCO Power comments that transmission rights can be helpful to achieve efficient market outcomes.
2. Capital Power requested more detail around the RAS that MATL will be required to install, and why this would be different from the awarding of transmission rights. Capital Power commented that it is not practical or reasonable for the ISO to plan for uncongested interties, and that it is appropriate to treat interties differently than the intra-Alberta transmission system. Capital Power does not interpret current policy to preclude the assignment of transmission rights to interties.
3. ENMAX comments that there should be no intra-Alberta transmission rights based on purchases outside Alberta. ENMAX advocates a market-based allocation of transmission capacity.

⁶ The AESO will have to work separately with SaskPower to enable dynamic scheduling between Alberta and Saskatchewan.

4. NaturEner comments that the Alberta legislation does not provide for priority access of new or restored system ATC. Doing so would be a violation of the AESO's statutory obligation to facilitate operation of markets "in a manner that is fair and open and that gives all market participants wishing to participate in those markets a reasonable opportunity to do so". NaturEner comments that any priority rights to ATC would act as a barrier to a line that has been granted a permit to build from the NEB and AEUB (now AUC). NaturEner comments that assigning priority rights to incumbents would discourage future merchant builds which is in conflict with government policy. At the minimum, NaturEner suggests the AESO give equal weight to the rights of MATL to access ATC.
5. NorthPoint Energy comments that the same process that applies to a new generator or load should apply to a new intertie. That process being to assign a RAS to a new project until upgrades can be made to allow maximum use of all available interties. NorthPoint Energy comments that the practice of LIFO should be discontinued because it gives an unfair advantage to adjacent control areas that have a minimum number of counterparties to deal with.
6. Powerex commented that the guiding policy is to increase the amount of capacity available on the interties be it through restoration or new builds. Powerex points out that the interconnection of MATL without any mitigating measures, does not advance this guiding policy. Powerex references the regulatory history regarding the MATL permits at the NEB and AEUB regarding discussions and conditions that MATL mitigate any negative impacts to transfer capabilities on other paths. Powerex comments that the AESO must pursue any and all solutions for addressing the negative impacts that the addition of MATL to the AIES causes. Powerex comments that, as per addition of an internal generator, MATL should carry a RAS until such time as the AIES can interconnect MATL without reducing the existing transfer capability.
7. TonBridge comments that asking if current policy permits assignment of transmission rights is the incorrect question. A more appropriate question is whether the AESO should adopt a policy that will ensure that transmission rights are assigned on a transparent, equitable, and bankable basis providing certainty to investment. MATL references the regulatory history regarding the MATL permits, and observes that "first in time first in right" is only relevant, at best, to competing interests for capacity on a single transmission facility. MATL further comments that the increasingly congested transmission system is not compatible with the injection/withdrawal method, and that policy should instead be geared towards committing to "competitive procurement of transmission" for critical transmission infrastructure.
8. TransAlta comments that interties should not be treated to the same rules as internal generators and loads since they are opportunity service and are cut first under system abnormal conditions. TransAlta comments that internal generation should always have priority over imports.
9. TransCanada comments that it supports the development of new interties, but that the AESO's legislated priority is to increase transfer capability of the existing interties and that the existing interties provide an important service to Alberta for

which participants have been paying through tariffs for many years. TransCanada comments that not honoring existing investments will reduce confidence in new investment. TransCanada argues that proponents of new interties should design their facilities or work with the AESO so that simultaneous transfers can occur without reduction in existing interties' transfer capability. TransCanada comments that where there is congestion to ATC, existing interties should retain priority providing they are in merit (when Alberta moves to priced imports and exports). TransCanada comments that:

- a. to share ATC between existing and new interties would work against the explicit statutory obligation of restoring interties to or near their path ratings nor meets the intent of the government policy to increase intertie capacity.
 - b. the "no rights" model does not work on the interties due to the lack of a commitment to build an uncongested system and the seams whereby importers and exporters must be scheduled for the hour and must secure transmission rights for the transmission path to or from Alberta.
 - c. a parsing of ATC that reduces firm rights to transmission capacity held by existing customers in neighbouring jurisdictions is a violation of FERC principles and reciprocity requirement and may inhibit the ability to trade energy in the U.S.
 - d. the recent BCUC decision was based on the fundamental point that transmission operators cannot set intertie policies and practices which ignore the policies, practices, and realities of neighbouring transmission systems and that BCUC ruled that existing firm rights must be respected.
 - e. there is a regulatory history with MATL at the NEB, AEUB and WECC path rating stages. TransCanada shows that throughout the regulatory process, discussion was held regarding the issue of MATL impacting the transfer capability of existing paths. The end result of the regulatory process was left to be resolved with the WECC path rating process and the AESO to carry out its mandate. TransCanada comments that this implies that the AESO acknowledged that T-Reg requires the AESO to not diminish the utilization of existing interties by providing for pro-rata sharing of ATC between existing and new interties.
10. UCA comments that the current AESO policy for congestion that can be addressed through operator action is to implement reverse merit order followed by pro-rata curtailments, and this is perhaps more analogous to the ATC allocation issue. UCA comments that the challenge with using this policy on the interties is that it implies that the system be enhanced to remove the constraints. It is not clear that those constraints can be eventually removed in all cases for ATC induced limitations.

5.2.2 AESO Response/Discussion

After consulting with the industry and the ADOE, the AESO interprets current governing Alberta legislation and policy to prohibit the recognition of a "first in" right for interties. It is clear that by giving priority to existing interties, this could act as an impediment to future Intertie Framework Recommendation Paper

investment. Conversely, it is also clear that by giving equal priority to existing and new interties creating a long term condition of sharing, could also act as an impediment to future investment by reducing certainty to existing investment. Both polarized approaches would fail to advance the government's interties policy of increased capacity.

This concern is similar to that faced by intra-Alberta participants. The difference is that there is a policy to build an uncongested transmission system for all intra-Alberta participants so that any sharing condition is resolved. The AESO views that the only way to resolve the polarized situation on the interties is to apply the same policy of designing an uncongested system for the interties. The AESO suggests that this policy is already supported by the current legislation.

Section 15 of the T-Reg stipulates that the AESO must “plan a transmission system that is sufficiently robust so that 100% of the time, transmission of all **anticipated in-merit electric energy** referred to in section 17(c) of the Act can occur when all transmission facilities are in service”.

Section 17 (c) of the Act says that “The ISO has the duty...to determine, according to relative economic merit, the order of dispatch of electric energy and ancillary services in Alberta and **from scheduled exchanges of electric energy and ancillary services between the interconnected electric system in Alberta and electric system outside Alberta**, to satisfy the requirements for electricity in Alberta.”

The AESO interprets that imports and exports up to the path rating of each intertie are anticipated in-merit electric energy and that 17(c) of the Act supports this assessment. As such, the AESO interprets that it has an obligation to plan the transmission system so that each intertie can transfer up to its path rating simultaneously. The AESO's statutory obligation to restore the existing interties to their path rating (T-Reg section 16) supports the interpretation that intertie capacity is considered anticipated in-merit generation.

In response to Capital Power's questions with regards to use of remedial action schemes (RAS), WECC policy is that “a new project rating should not adversely impact the transfer capability the existing system and individual paths in the system”⁷. If a new project does impact the transfer capability of an existing project, the new project is required to mitigate and a RAS may be required and allocated to the new project. The AESO policy is that if the new project creates a condition that cannot be managed through system controller action in real-time; the new project may be assigned an automated RAS in order to interconnect. System controller real-time action includes energy market dispatch which may be a pro-rata allocation.

In the case of the MATL project, the WECC studies have shown a need for RAS assigned to MATL due to impacts to Path 3 (BC-Pacific NW) and Path 1 (AB-BC). For example, if the AB-BC intertie were to trip at full import, the MATL line would need to trip with a RAS because it is not large enough to manage the swing transfer of the AB-BC intertie and could overload. As a result of this RAS, the MATL and AB-BC interties are coupled and must share system ATC to avoid being larger than the single largest contingency when combined. However, the sharing of system ATC between interties and

⁷ Overview of Policies and Procedures for Regional Planning Project Review , Project Rating Review, and Progress Reports, WECC, April 2005, Page 30

intertie participants can be managed through the energy market merit order dispatch by the system controller.

5.2.3 AESO Recommendation

The AESO recommends that it plan the transmission system so that each intertie can transfer up to its path rating simultaneously.

5.3 Transmission Products

Currently the AESO only offers import and export opportunity service (IOS/XOS) on the interties. This is considered opportunity as it is made available when there is ATC and is curtailed as a priority before internal STS or DTS/DOS participants for reliability reasons. Opportunity service also comes with no obligation to build transmission to relieve congestion.

The product distinction creates a seam between Alberta and other electricity markets who offer firm products to the Alberta border. To date, this product seam has been managed by permitting our neighbouring jurisdictions to prioritize access based on their firm and non-firm priority rights. This has worked because multiple interties are not in competition for ATC. However, the product seam is more prevalent when there is sharing of ATC between interties from different jurisdictions.

The AESO asked for stakeholder feedback as to the objectives of a new product, design suggestions around new products, and whether an ATC auction would be beneficial.

5.3.1 Stakeholder Feedback

1. ATCO Power proposed an ATC auction design at T-2. The objectives of the auction would be to permit efficient allocation of ATC, facilitate the ability to counter-flow, and to use revenues to accommodate the sale of longer term financial transaction rights (realize the value of ATC).
2. Capital Power commented that the lack of a firm transmission product in Alberta does not create an unlevel playing field given the differences that exist between intertie participants and intra-Alberta participants. Capital Power commented that the ISO should develop differentiated products on the interties as a form of priority to reduce seams. Capital Power cautioned against building a product that does not actually increase ATC utilization, suggesting that the AESO should consult more on what the design should be once it is determined that a firm transmission product is required. Capital Power questioned why the AESO would expect a different decision from the AUC than it did when denied a firm export tariff in 2007.
3. ENMAX commented that they conceptually support market-based, differentiated transmission products, though more consultation is required.
4. NaturEner commented that it does not support the creation of differentiated products as a means to address the allocation of ATC among the interties. NaturEner suggests that priority access should be determined by the sale of firm, “conditional firm” or non-firm transmission rights on the interties consistent with the FERC OATT. The AESO should not attempt to create a commercial solution to what is supposed to be a temporary technical constraint; rather the AESO

should leave the commercial solutions to the interties. NaturEner would support the development of a lower-priority tariff for the facilitation of wind generation development (dispatched when ATC is not fully subscribed).

5. NorthPoint Energy commented that any new products would only increase seams issues. ATC priority should be based on market bid/offer prices. An auction is not preferable to NorthPoint Energy.
6. TonBridge commented that it does not support assignment of ATC by product. TonBridge commented that this could be advantageous to transmission parties that are related to generation. TonBridge suggests that it is a better approach to set up long term contracts.
7. TransAlta commented that it does not support firm or non-firm designations as they imply transmission rights which are not consistent with policy.
8. UCA commented that product questions depend fundamentally on how the seams issues with adjacent jurisdictions will be addressed.

5.3.2 AESO Response/Discussion

To implement the recommendation of 5.2 for merchant interties, a merchant transmission service (MTS) should be added to the AESO tariff, offered to the merchant transmission asset owner, which appropriately reflects system access service to inject/withdraw at the border. This in effect treats a merchant intertie like a generator at the border and provides a merchant developer the certainty of access in order to obtain financing. Import and export opportunity service (IOS/XOS) would be available on the merchant line as on the existing rate-base interties today with equal priority. The MTS should emulate the transmission characteristic of the system transmission service (STS) applied to internal generators with an appropriate system contribution payment refunded based on utilization. The IOS/XOS would continue to carry the loss factor charge as applied to STS.

It is expected that treating an intertie as a generator at the border may raise a concern among stakeholders that equal access treatment between imports, exports, generators and loads may in fact further unlevel the playing field due to regulatory, market and policy differences between jurisdictions. To manage this concern, the IOS/XOS, regardless of whether they are using a merchant line, would continue to be of lower priority than that of internal STS/DTS when it comes to curtailment for reliability reasons. The lower priority is a reflection that imports don't have to meet the same interconnection requirements as STS customers who provide reliability and adequacy benefits to Albertans, and exports should not take priority over intra-Alberta DTS load customers.

The AESO acknowledges stakeholder interest in the real-time ATC auction as proposed by ATCO Power during stakeholder consultation. The AESO is willing to further explore with industry the concept of an ATC auction to both allocate ATC and capture value to Alberta market access to further level the playing field. However, given the recommendation in section 5.2 to build for uncongested access for interties, the AESO is concerned that creating an auction with new import/export products will only add more seams and create rate pan caking between the Alberta market and external markets.

The AESO does see value in exploring how to make better use of counter-flow opportunities; one of the stated objectives of the suggested real-time ATC auction by ATCO Power. The AESO will explore how this might be achievable while it moves forward with the implementation of dynamic scheduling.

5.3.3 AESO Recommendation

The AESO recommends that a merchant transmission service (MTS) be added to the AESO tariff, offered to the merchant transmission asset owner, which appropriately reflects system access service to inject/withdraw at the border.

5.4 ATC Allocation

The AESO currently manages congestion on the interties and ATC allocation via the scheduling process. The AESO will approve all schedule submissions (known as e-tags). If the submitted volume is greater than the available transfer capability (ATC) of the intertie, the neighbouring transmission provider, BC Hydro or SaskPower, will curtail according to their priority given they sell transmission products which act as priorities or “rights”. If BC Hydro or SaskPower do not curtail enough volume by hh:45 before the scheduled hour, the AESO, as the path operator, will currently cut on a last in, first out (LIFO) basis according to the timing of e-tag approval.

With the pending share of system ATC between participants from multiple jurisdictions, a rule to allocate ATC is required since external TFOs cannot be expected to allocate across competing interties. Section 5.1 envisions a time when energy price can be used to arbitrate between participants. However, in situations where there is congestion between same priced opportunity service offers/bids (until transmission is reinforced to relieve congestion), a final means is necessary to break the tie.

The AESO provided possible options for a final means to ATC allocation including pro-rata between lines, pro-rata between all scheduled participants, and LIFO between all participants. The AESO asked for stakeholder feedback as to how to perform the ATC allocation tiebreaker and at what xx:yy time to do the curtailments.

5.4.1 Stakeholder Feedback

1. ATCO Power supports a market-based approach to allocating ATC. In the event of equal priced ATC offers, ATCO supports a pro-rata allocation.
2. BCTC commented that it is of greater priority to restore existing capacity than to work on market design to allocate existing levels. BCTC comments that it disagrees with any ATC allocation design that allocates ATC between interties. This would not be consistent with the premise of an energy market, and may favor one generator over another based on the path they are on. This would also not be consistent with the encouragement and development of a priced-based system for import transactions. Where there is an excess of in-merit bids and offers over the intertie capacity, dispatch should be the same as with internal transactions, based on a pro-rata allocation of scheduled energy. BCTC will review the impact of the new proposed time for curtailment, however, believes that curtailment time should not be later than the current time of hh:45.
3. Capital Power commented that pro-rata allocation is more consistent with internal transmission congestion management, and that LIFO creates a race for e-tag

submission. In calculating the pro-rata curtailments, the denominator should be the total system import ATC shared between the lines.

4. ENMAX commented that additional consultation on tiebreakers is needed before any decisions are made and that the AESO should focus on market-based mechanisms for allocating ATC.
5. NaturEner commented that it is not supportive of an approach that results in less than 300 MW of ATC for MATL, but of the options presented, NaturEner prefers pro-rata among interties in order to provide shippers with an ongoing degree of certainty for the amount of power that they will be able to ship into Alberta. The pro-rata among interties approach is also the only one that could enable the development of an additional intertie, a goal of the PES. NaturEner commented that the timing of allocation needs to align with the scheduling obligations of market participants. Curtailments need to be applied enough before the hour to allow remarketing and retagging along another path. The current practice of curtailing at xx:45 or less does not enable this.
6. NorthPoint Energy comments that pro-rata should be used instead of LIFO. NorthPoint Energy suggests that curtailments should be done at T-2 given this is when offers are made.
7. TonBridge commented that it does not support LIFO as this is un-bankable to a new entrant. TonBridge commented that it does not support time dated e-tags priority ordering, as this may favor one form of generation over another. TonBridge commented that the elements of the pro-rata allocation need to be on the basis of long term capacity in order to render new interties bankable. TonBridge suggests that the only allocation method which achieves all policy intents is an interim policy of pro-rata allocation based on existing valid long term capacity contracts.
8. TransAlta commented that the AESO should adopt a pro-rata solution among all participants rather than LIFO. TransAlta comments that curtailments should be at xx:45 to allow plants to ramp to meet the top of the hour.
9. TransCanada commented that the rule to deal with ATC allocation tiebreaking between existing interties should be different than that considering additional interties. TransCanada supports permitting neighbouring transmission operators to curtail any excess volume according to their priority of transmission products, and recommends that if there is still excess at xx:45, that the AESO use pro-rata instead of LIFO. TransCanada comments that if and when the pricing of bids and offers is implemented, TransCanada takes the position that pro-rata allocation should be applied to all in-merit, same product bids and offers as opposed to same priced, same product bids and offers. TransCanada believes that differentiating on price would simply add to the volume of \$0 offers and bids at the cap. This position is in line with the proposed ISO transmission constraints management rule, 9.4. TransCanada comments that in determining whether a bid or offer is the “same product”, the AESO is required to consider the nature of the transmission rights (i.e. firm or non-firm) that the market participant holds on neighbouring transmission systems.

10. UCA commented that the AESO should consider the measures taken by participants to acquire ATC, whether internally or externally, as well as to ensure interim measures do not lock the AESO into a particular long term solution.

5.4.2 AESO Response/Discussion

The AESO agrees with stakeholders that restoring intertie capacity is of high priority and has launched initiatives to accomplish this in accordance with the Transmission Regulation. The AESO sees a parallel priority to resolve how ATC will be allocated when congested in order to provide rule and process certainty to the market place.

There appears to be industry consensus surrounding the replacement of LIFO with pro-rata curtailments as a final form of arbitration to allocate ATC. This applies to both curtailments to meet intertie specific limits if the neighbouring transmission operator has not curtailed enough volume based on their priorities, and to curtailments to meet system ATC limits.

The AESO agrees with BCTC that a pro-rata allocation between interties for system ATC may favour one participant over another based on the path they are using, and that this is not consistent with the energy market design. Rather pro-rata between scheduled participants is more consistent with the energy market design. The AESO feels that given the ATC allocation rule is to be an allocation means until transmission reinforcements are built in accordance with the recommendation in section 5.2, that a pro-rated solution between scheduled participants would not make interties un-bankable.

The AESO disagrees with TransCanada that the pro-rated allocation should be to all in-merit scheduled participants. The energy market merit order should always be the first form of arbitration. The ISO proposed transmission constraint management rule 9.4 is for pro-rata allocation between all in-merit energy after two hours. Since the interties are scheduled and dispatched new every hour, the AESO views that the interties never reach the two hour trigger for a pro-rata allocation between all in-merit energy.

The AESO agrees with TransCanada that neighbouring transmission operators should still be permitted the opportunity to curtail schedules to their priority prior to the AESO making pro-rata curtailments. However, the AESO still believes that leaving these curtailments to xx:45 may not be practical permitting for participant remarketing and re-tagging, and will continue to work with industry and neighbouring transmission operators to determine the best timing for the pro-rata curtailments to be made.

The AESO views that when making pro-rata curtailments to system ATC, wheel-through schedules should be excluded as they will have no impact to resolving the congestion given they are net zero to the system. However, if wheel-through schedules cause congestion on a single intertie or line, the wheel-through schedule would be subject to curtailments.

5.4.3 AESO Recommendation

The AESO recommends when there is congestion on the interties, an ATC allocation rule be implemented that arbitrates by energy price and then pro-rata between remaining same priced schedule requests.

5.5 Next Steps

In the discussion paper the AESO listed its next steps in the consultation of the intertie framework. The AESO was prepared to move in two parallel paths. In the short term, the AESO was going to work on an ATC allocation rule that considered the AB-BC and AB-Sask interties once the AB-Sask intertie was restored. The longer term path consisted of continued consultation on the whole intertie framework. The AESO asked for stakeholder feedback to the next steps.

5.5.1 Stakeholder Feedback

1. Capital Power reiterated that it was too early to opine on design options and auction formats before it has been determined that a firm product is needed. Further consultation on this is required once it is determined to assign rights or that a firm transmission product is required.
2. NaturEner commented that the AESO needs to move as quickly as possible to develop certainly for all market participants on these issues. NaturEner does not agree with developing a short term ATC allocation rule that only considers the AB-BC and AB-Sask interties given the MATL line has been permitted by the EUB (AUC) and NEB. NaturEner commented that the AESO should develop a rule addressing a tie-breaker mechanism for all interties. NaturEner expressed concern in that the rule making process may be completed after the MATL line is constructed.
3. NorthPoint Energy commented that the next steps seem reasonable but that they need to be adhered to strictly.
4. TonBridge commented that the timeline for stakeholder comments was tight, and that if more time is given for further comments, it should be provided with a view towards timely policy implementation without delay. Policy certainty is a pre-requisite to the crystallization of projects which are at an advanced or construction phase.
5. TransAlta recognized the importance of resolving the ATC allocation tiebreaker for the AB-BC and AB-Sask interties. TransAlta feels more consultation is required for the broader intertie framework.
6. UCA commented that the development of the framework to manage seams issues needs to be advanced as quickly as possible.

5.5.2 AESO Response/Discussion

The AESO has decided not to develop a short term ATC allocation tiebreaker rule/OPP amendment considering the AB-BC and AB-Sask intertie. It has been determined that existing OPPs (304/307) provide the AESO system controllers with the required procedures. The procedure is to monitor the total export volume in real-time, and to curtail via pro-rata if this volume exceeds the system export ATC as set by South of KEG flows.

The AESO will use this procedure until a new rule is created within the broader intertie framework that considers multiple interties from multiple jurisdictions as discussed in section 5.4. The AESO will continue to follow the timelines described for the broader intertie framework consultation. These are:
Intertie Framework Recommendation Paper

- Consult on recommendation paper. (Q3/Q4 – 2010)
- Implement Intertie Framework (2011)
 - Implement dynamic scheduling
 - ATC allocation rule development and filing
 - MTS development and tariff filing
 - Plan required transmission reinforcements

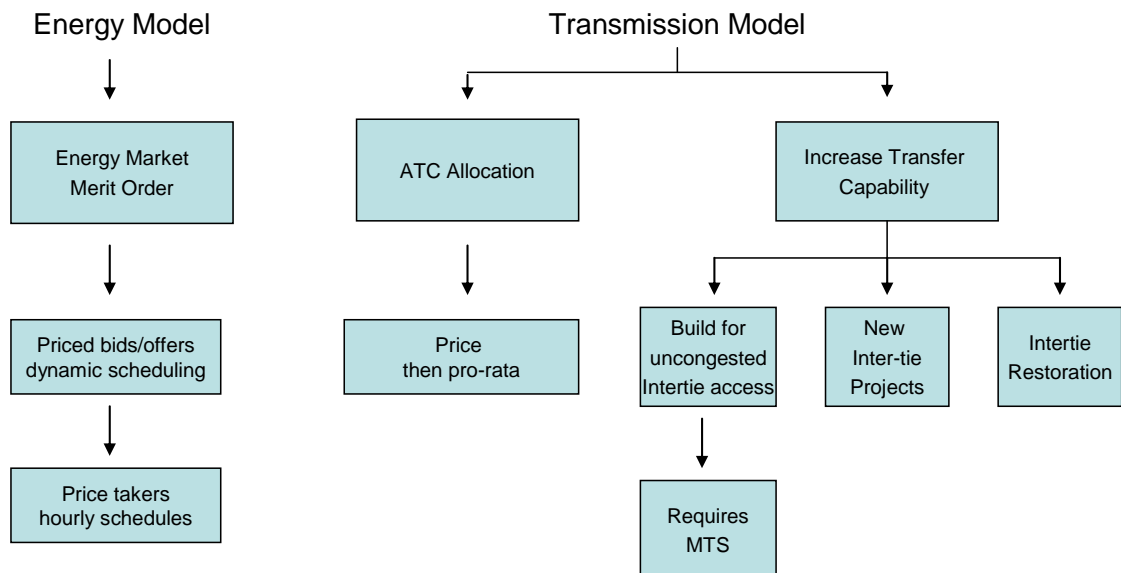
6. Summary

The vision in the 2008 Provincial Energy Strategy for greater interconnection capacity to other North American markets presents a huge opportunity for Alberta. As new interties are being contemplated as a part of this vision, this paper reviewed the issues, industry discussions around the issues, and provided recommendations to the long-term intertie framework.

From an energy perspective, the recommendation is for dynamic scheduling to be implemented to enable the capability for imports/exports to submit priced bids/offers. Dynamic scheduling permits for real-time dispatch. If a participant cannot or chooses to not dynamically schedule, they will still be able to schedule on the hour and be a price taker.

From a transmission perspective, the AESO is recommending that the AESO plan the transmission system so that each intertie can transfer to its path rating simultaneously. The AESO recommends a merchant transmission service (MTS) will be offered that reflects system access service to injection/withdrawal at the border for merchant developers. Finally, as a means to allocate ATC when there is congestion or until transmission reinforcements can be made, the AESO recommends an ATC allocation rule be implemented that arbitrates first by energy price, and then by pro-rata.

The following figure describes the recommended framework.



The AESO believes that this framework will ultimately advance Government intertie policy by providing a means to transact in the energy market and providing certainty to market access through a merchant transmission service. After consulting on the recommendations in this paper, the AESO will start the implementation of the intertie framework. The AESO seeks stakeholder feedback to this recommendation paper.