

Posted: Sept. 30, 2020

- ATCO
- CanREA
- Energy Storage Canada
- ENMAX
- Heartland
- Lionstooth
- TC Energy
- TransAlta
- UCA

Stakeholder Comment Matrix – June 10, 2020

DER Roadmap



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|---|----------------------------|
| Date of Request for Comment: <u>June 10, 2020</u> | Contact: <u>[REDACTED]</u> |
| Period of Consultation: <u>June 10, 2020</u> through <u>July 10, 2020</u> | Phone: <u>[REDACTED]</u> |
| Comments From: <u>ATCO Electric</u> | Email: <u>[REDACTED]</u> |
| Date [yyyy/mm/dd]: <u>2020/07/10</u> | |

Instructions:

1. Please fill out the section above as indicated.
2. Please respond to the questions below and provide your specific comments.
3. Email your completed comment matrix to stakeholderrelations@aeso.ca by **July 10, 2020**.

The AESO is seeking comments from Stakeholders with regard to the following matters:

| Question | Answer |
|---|--|
| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <ul style="list-style-type: none"> - In the early stage of DER Roadmap engagement AESO had with ATCO, it was indicated that the Tx/Dx Coordinated Planning in the context of the DER Roadmap would primarily focus on where the transmission and the distribution systems interface with each other. ATCO agrees with this approach and suggests its inclusion in the DER Roadmap. - It is not clear how AESO has contemplated coordinated operation in the “Reliability” pillar. ATCO agrees that visibility of DER is key to AESO, however it is also important to note that DFOs have statutory obligations to plan and operate their distribution systems in a safe and reliable manner. The coordinated operation being contemplated in this roadmap should not overreach to the extent that duplicates, or dictates, how DFOs operate their distribution systems. - With respect to the proposed “Connection Process” in the Reliability Pillar, ATCO noticed that although the BTF process is designed to be streamlined, the project experience was not demonstrating the process efficiency as anticipated. DCG Owners have voiced the same concern. This issue needs to be addressed to improve customer service, either within the scope of this roadmap or through some other avenue. |
| Did you find value in the publication of the <i>DER Roadmap</i> ? Would any additional information be helpful? How can it be improved?. | ATCO supports AESO’s DER Roadmap initiative in general because it helps the industry to proactively prepare for the challenges and opportunities associated with high DER penetration. |

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| | The roadmap document lists a number of desired outcomes of the DER Roadmap. ATCO is interested in seeing whether the desired outcomes are achieved. |
| Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like. | No specific comment on the activity timing. ATCO agrees that the general approach of progressing/adjusting the DER Roadmap at a pace aligned with DER penetration growth. |
| Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain. | The AUC has facilitated multiple, DER-related proceedings in recent history, including Proceeding 22534 and Proceeding 24116. ATCO encourages the AESO to leverage the technical information and research that has been filed in these proceedings. |

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| Comments From: <u>Canadian Renewable Energy Association (CanREA)</u> | Email: <u>[REDACTED]</u> |
| Date [yyyy/mm/dd]: <u>2020/07/10</u> | |

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| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <ul style="list-style-type: none"> • AESO defines Distributed Energy Resources as “any distribution connected resource that can potentially supply energy to the electric distribution system.” Given the rightful inclusion of EVs and Energy Storage in the types of DERs CanREA recommends that the definition be amended along the lines of “any distribution connected resource capable of either (1) supplying energy to the electric distribution system, or (2) both supplying and drawing energy from the electric distribution system.” AESO correctly identifies the transformation from one-way to two-way flow, and this should also be included in the definition in recognition of the particular value of storage assets to the energy system in terms of enhancing flexibility and integration of renewables. • Distribution Principles: CanREA supports the principles as outlined on page 9 of the Roadmap document, however, per note below, we recommend that additional Principles should be added to the list, importantly, including investor certainty. • CanREA recommends that the AESO include reference to AUC Bulletin 2020-01 (<i>Exploring market concerns and tariff issues related to self-supply and export reform</i>) and ongoing regulatory engagements in an updated roadmap. The resolution of self-supply reform will have significant and far-reaching implications for future DER growth in the province. |

Did you find value in the publication of the *DER Roadmap*? Would any additional information be helpful? How can it be improved?.

- CanREA commends the AESO for having undertaken this project proactively, and in coordination with other workstreams, in order to prepare for a future state of higher penetration of DERs. It is encouraging to see the Roadmap contextualized alongside the 2017 AUC DCG inquiry, the ongoing Distribution System Inquiry, AESO’s parallel Storage Roadmap and Pricing Signal and Cost Allocation workstreams.
 - **Reliability:**
 - **Improved system visibility, data and forecasting:**The Roadmap document outlines a need for increased visibility of DER volumes and location on the distribution system. We strongly support the stated objective of working with DFOs to collect and utilize this information, and to shifting to geographically forecasting DER supply resources separately from gross load to ensure DER are explicit in the forecast. We would further suggest that this information be made available to all market participants, and would encourage discussion on establishing a framework to enable this.
 - **Coordination of system planning:** CanREA strongly supports the commitment to improved coordination of Transmission and Distribution system planning, including through developing a process to facilitate coordination of the AESO’s long-term transmission plans and system NIDs with DFO planning, and aligning DFO DER hosting capabilities with the capability of the transmission system to integrate generation. We would strongly encourage the incorporation of Non-Wires Alternatives within the Tx/Dx Coordinated Planning Framework and would welcome further industry engagement on doing so.
 - **Markets:** Lowering the current market participation thresholds and allowing for aggregation options are both positive and proactive steps and CanREA looks forward to further engagement on the proposed approach.
 - **Tariffs:**
 - Given the stakeholder consensus in the recent “Participant-Related Costs for DFOs (Substation Fraction) and DFO Cost Flow-Through Technical Session(s)” on the guiding Principles for the engagement, we recommend that these principles be formally reflected in this document. For clarity, these are:
 - Principle 1: Parity between transmission interconnection costs calculation for transmission connected customers and distribution connected customers while enabling effective price signals to ensure the optimal use of existing distribution and transmission facilities
 - Principle 2: Market participants should be responsible for an appropriate share of the costs of transmission facilities that are required to provide them with access to the transmission system (may include paying a contribution towards facilities paid for by other customers and refund to the customer that paid)
 - Principle 3: DCG participants should have cost certainty when making their final investment decision
 - Principle 4: DFOs should be provided with reasonable certainty re: cost treatment/recovery
 - Principle 5: Ease of understanding and implementation

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| | <ul style="list-style-type: none"> ▪ Page 15 states: “It is the AESO’s view that tariff price signals should reflect both the cost of transmission and the value created by having a connection to the AIES across transmission and distribution systems.” While we agree with this statement, we also suggest that the value of DERs to the system needs to be further studied, understood and accounted for as well. |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <ul style="list-style-type: none"> • Proposed timeline seems very comprehensive. AESO may want to reconsider the feasibility if all stakeholder engagements continue to be conducted virtually. • Bulk & Regional Tariff Design work stream projected out to Q4 2021 is somewhat concerning – Earlier resolution may be preferable from an investor certainty standpoint. If there has been any change to this timeline since the publication of the Roadmap document it would be useful to know. |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>For your reference, we enclose a whitepaper commissioned by CanSIA, <u><i>Non-Wires Alternatives (NWAs) - Energizing Distributed Energy Resources to Bring Value to Canadian Grids, Utilities and Ratepayers</i></u> (March 2020)</p> |

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| Comments From: <u>Energy Storage Canada</u> | Email: <u>[REDACTED]</u> |
| Date [yyyy/mm/dd]: <u>2020/07/14</u> | |

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| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <ul style="list-style-type: none"> • DERs can offer services to the AESO market as well as directly to customers and grid operators (e.g., DFOs/TFOs). The DER Roadmap should consider the coordination and participation requirements for DERs offering multiple services to multiple parties. • In addition to the above point, the DER roadmap should include a discussion on which entities should lead aspects of DER Roadmap evolution. For example, visibility requirements of DERs could be set by the AESO with additional requirements included for each DFO/TFO. On the other hand, visibility requirements could be set by the DFO/TFO and compiled by POD or Feeder before being passed along to the AESO. The responsible entity will be critical for defining roles and responsibilities for DER databasing, forecasting, planning and operational coordination. • The DER Roadmap could be heavily influenced by government policy and regulatory changes. For example, changes to the Transmission Regulation would influence the foundation of system planning in the province. Given the ongoing consultations with respect to Bulk & Regional Tariff design as well as Substation fractioning, the DER Roadmap should include a description of how future government policy and regulatory changes will be coordinated and incorporated. • Discussion on how timelines for activities were arrived at as well as which supersede other activities would be helpful information. Evolution of the market design for DERs is complex and requires coordination between different areas of expertise. Providing the linkage and explaining priorities would be useful in understanding where stakeholders should focus their analysis and participation |

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| <p>Did you find value in the publication of the <i>DER Roadmap</i>? Would any additional information be helpful? How can it be improved?.</p> | <ul style="list-style-type: none"> • The publication of the DER Roadmap was informative and useful for Energy Storage Canada. There are a number of related electricity market activities (e.g., Alberta Utility Commission Distribution System Inquiry, AESO’s Energy Storage Roadmap) that appear to be incorporated into the DER Roadmap • Energy Storage Canada believes that the DER Roadmap concentrates on many of the important changes required to integrate energy storage resources into the Alberta electricity market <ul style="list-style-type: none"> ○ Changes to forecasting and planning are required to ensure energy storage resource attributes are understood in relation to reliability standards (e.g., supply adequacy, operating reserve needs, outage management). Energy Storage Canada is encouraged that both are prominent in the DER Roadmap action plans ○ Coordination of planning and operations with TFOs/DFOs will be particularly important for integrating energy storage resources providing multiple services to different entities. Energy Storage Canada is looking forward to participating in the Tx/Dx Coordinated Planning Framework initiative. • Further information on how the timelines for the DER roadmap were determined would be useful in understanding the priority of activities. • Information on any sub-activities or stakeholder engagements planned for specific activities would be beneficial. In particular, Energy Storage Canada is interested in providing input on changes to the planning framework and operational coordination between the AESO/DFOs/TFOs; however, it is not clear where those engagement forums will take place. |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <ul style="list-style-type: none"> • Energy Storage Canada believes that the Bulk & Regional rate design should be accelerated for energy storage resources. The treatment of energy storage resources, which are not end-use customers, is important in determining the economics for storage in Alberta. |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <ul style="list-style-type: none"> • Analysis of DER integration into electricity markets is rapidly growing. Much of the recent research has been provided in the ongoing Alberta Utility Commission Distribution System Inquiry. |

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| Comments From: <u>ENMAX Corporation</u> | Email: <u>[REDACTED]</u> |
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| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <p>ENMAX Corporation (ENMAX) is responding to the AESO on behalf of ENMAX Power Corporation and notes that current DER penetration is low and will have negligible impact on overall transmission capacity in the near to medium term. As a result, the timing of a coordinated distribution and transmission planning framework for a two-way electricity flow (over what is currently already in place) is premature.</p> <p>Responding to customer preferences and adapting to changing technology is a goal for ENMAX and we remain committed to further dialogue with the AESO to ensure distribution and transmission systems remain safe and reliable. That said, it is important to note that while the transmission system is interconnected, due to the uniqueness of each DFO service territory, distribution systems are independently managed across the province with appropriate regulatory oversight.</p> <p>The AESO has a mandate to oversee the Alberta Interconnected Electric System (AIES) at the transmission level. However, at the distribution level, regional variations in customer needs have resulted in distribution systems that are tailored to best reflect those needs. With respect to current and future system planning, DFO's have a mandate under Section 105(1)c of the <i>Electric Utilities Act</i>, to take all reasonable measures available to ensure the continued safe and reliable operation of its system.</p> |

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| <p>Did you find value in the publication of the <i>DER Roadmap</i>? Would any additional information be helpful? How can it be improved?</p> | <p>Until clear policy direction is provided by the Government of Alberta (GoA) and changes are codified in Regulation, the extent of change under the existing regulatory framework will remain limited.</p> <p>In the future, it will be important to prioritize the types of DER technology that have the most impact on the transmission system, and focus analysis and resources accordingly.</p> <p>ENMAX looks forward to participating in each of the consultations that make up the AESO's DER Roadmap and expects that the roadmap and its timelines will evolve as a result of stakeholder views.</p> |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <p>The AESO indicated that it will publish a detailed 2020/2021 Plan for DER Integration Activities.</p> <p>ENMAX notes that there is significant overlap with other key initiatives, some of which have not yet concluded (AUC Distribution System Inquiry), have been delayed (ISO Bulk and Regional Tariff Design) or not yet started (review of Transmission Regulation). Furthermore, the integration of DERs on the AIES will rely on future policy direction from the GoA and will depend on the objectives identified in government policy. Until such clarity is provided, the AESO's DER Roadmap should not introduce significant changes to the existing framework (including any new requirements that introduce unnecessary costs or additional red tape) but could work to inform the industry of the challenges ahead.</p> |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>The AUC has indicated that it will issue a final report on the Distribution System Inquiry in early fall 2020. Due to the significant overlap, the AUC's report should be referenced to help guide and inform the AESO's DER Roadmap and avoid duplication of work. The actual end product of the AUC's inquiry is yet unclear and it is noted that the AESO has been a participant in that process.</p> |

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| Comments From: <u>Heartland Generation Ltd. ("Heartland")</u> | Email: <u>[REDACTED]</u> |
| Date [yyyy/mm/dd]: <u>2020/07/10</u> | |

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| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | The AESO notes on page 5 that it is not including demand-side management resources (DSMR) as part of the DER Roadmap. There are obvious linkages and overlap between the treatment of DER and DSMR with regard to grid reliability, tariff treatment, and market; for example energy storage could be thought of as a combined distribution-connected generator and DSMR, as it can provide reduction of load by changing its charging rate (DSMR) or by discharging energy (DER). While Heartland understands the desire to have a DER Roadmap that is limited to resources that have the potential to generate energy, it would be a helpful addition to indicate details on the separate engagement regarding DSMR and how the linkage between DER and DSMR will be handled, for example in the case of resources like energy storage. |
| Did you find value in the publication of the <i>DER Roadmap</i> ? Would any additional information be helpful? How can it be improved?. | The publication of the DER Roadmap was helpful and in furtherance of the AESO's Stakeholder Engagement Framework principles. Heartland hopes that the AESO will use a similar roadmap process for subsequent consultations. In particular, it was informative for the AESO to summarize and outline the parallel processes that are occurring not just at the AESO consultation level, but also the AUC proceeding level. It is an important consideration in all consultations to determine how the electricity agencies will be coordinating and where the interdependencies between related processes exist (e.g. the AUC's Distribution System Inquiry, the ISO Tariff proceedings, and the AESO's DER Roadmap). |

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| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap Integrated Plan</i>? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <p>At this time, Heartland does not have any comments relating to activity timing.</p> |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>As the AESO has identified in the DER Roadmap, the parallel AUC Distribution System Inquiry is a wealth of knowledge. There is an abundance of relevant expert reports, jurisdictional evaluations, and published research all relating to the emerging trends in the field of distribution technologies. This AUC Proceeding has a more broad focus than the DER Roadmap, but both Module One and the Combined Module contained party submissions that addressed the impact of DER on the distribution/transmission grids, the technical connection specifications suggested for different technologies, and advice on policy decisions affecting DER integration.</p> |

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| Comments From: <u>Lionstooth Energy</u> | Email: <u>[REDACTED]</u> |
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| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <p>Lionstooth Energy (Lionstooth) appreciates the effort by the AESO in the development of the DER Roadmap and the clarity that this roadmap reflects the activities planned under the AESO’s current legislative mandate. We anticipate the outcome of the Distribution System Inquiry (DSI) as well as any other government-led policy developments will begin to bridge any significant gaps between the AESO’s mandate and other areas requiring attention. As such, and until there is further direction, Lionstooth supports the AESO focusing on their mandate and even stepping back from directing or leading change in areas outside of this mandate. There must be a measured and thoughtful pace to change in order to prevent unintended consequences and restore investor certainty, especially as it relates to DERs.</p> <p>In terms of specific comments on content in the DER Roadmap, Lionstooth offers the following:</p> <ul style="list-style-type: none"> • Gas-Fired DERs: Figure 1 illustrates a decentralized network, highlighting specifically solar and energy storage DERs. Missing from this figure, and unique to the Alberta market, is gas-fired DERs. The availability of gas resources throughout the province as well as the nature of Alberta’s industrial operations supports gas-fired DERs, either operating independently (merchant generation) or associated with a commercial / industrial operation (could include ISDs). The AESO’s DER Roadmap should be inclusive of all generation / fuel / technology types, especially including those with dispatchable capabilities which have an increased potential to create value as it relates to the integrated electric system. |

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| | <ul style="list-style-type: none"> • Markets & FEOC: Generally, a focus on markets and FEOC looks to level the playing field, especially as it relates to DERs versus TCG. Lionstooth supports the AESO’s efforts to maintain a FEOC market and cautions that initiatives to promote parity must also consider the disparities that exist in our market today, especially for DERs. Generation developers take into consideration a broad range of elements when determining when and how to build new generation. Any focus on FEOC should ensure that developers have the ability and option to respond to market signals but recognize that the very nature of the generation may not qualify certain projects from providing or receiving certain benefits. FEOC does not require ALL playing fields to be leveled. For example, only renewable generators can earn offsets / credits, while still maintaining a FEOC market. • Signals & the Tariff: Lionstooth appreciates that there is a significant effort underway to evolve the ISO tariff. The AESO has acknowledged that the DER Roadmap reflects efforts under the AESO’s current mandate and that while the tariff is not directly applicable to DERs, alignment between Tx and Dx price signals should be pursued. Lionstooth is of the view that most open ISO tariff issues, as they relate to DERs have been addressed, or are in the process of being addressed and does not expect any further ISO tariff changes to directly focus on DERs. Lionstooth reiterates our support of the AESO stepping back from issues that are outside of the AESO’s mandate and notes that a measured and thoughtful pace to change, across the electricity value chain, is required to prevent unintended consequences and restore investor certainty, especially as it relates to DERs. • Legislation & Regulatory: Lionstooth supports this pillar of the DER Roadmap recognizing that policy confirmation and legislative change may be required as our electricity market evolves. Only the DOE can establish policy and if questions as to the efficacy or relevance of these policy directives are raised, we must first seek clarity from the DOE before pursuing or implementing any market changes, if needed. Lionstooth is interested in knowing the AESO’s view on what legislative and regulatory requirements may need to change to support DERs and notes that the timing of any such regulatory engagement is missing from the DER Roadmap actions. <p>It is vital that as our market evolves, through this DER Roadmap and other DER related initiatives, that the status quo be maintained until such time that any potential changes are clearly understood, their need confirmed, and the impact to stakeholders studied. We can no longer proceed down the path of making changes first, and then exploring their need and impacts, if investor certainty is to be restored.</p> |
| <p>Did you find value in the publication of the <i>DER Roadmap</i>? Would any additional information be helpful? How can it be improved?</p> | <p>Yes. Lionstooth found value in the DER Roadmap, especially as it relates to the AESO’s future vision of the Alberta electricity market and views on the value DERs can bring to the market.</p> <p>Additional information on how the AESO plans to improve system modeling and forecasting to accommodate DERs, especially in light of the upcoming LTO and LTP, would be beneficial. Lionstooth shares the AESO’s opinion that effective Tx and Dx system planning starts with data.</p> |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <p>Lionstooth supports prioritizing the timing of activities that would impact the LTO and LTP. As these documents are published every two years, we do not feel that our market is well served by waiting until 2023 to have improved integration of DERs into these planning documents. It is important that DERs are better accounted for in the 2021 LTO and LTP.</p> |

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| | <p>The timing of other activities in the DER Roadmap should remain flexible to accommodate any outcomes from the DSI or guidance from future regulatory process, while also aligning with other Market Initiatives. A duplication of effort should be avoided and a balance to stakeholder engagement sought, to control against regulatory fatigue.</p> |
| <p>Are you aware of any recent DER research/ resources/ information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>The AESO has a number of industry roundtables, learning forums, and working groups established for various subject areas, including a DER Working Group with the DFOs and DFO engagement through the Tx/Dx Planning Framework. There is however, no DER GFO involvement outside of standard industry engagement. Recent DER processes, such as the DSI and the Technical Sessions on the Substation Fraction issue, demonstrate that DER GFOs and developers have a strong voice and clear message to share with the market. Lionstooth would support the AESO expanding any DER Working Groups to include DER GFO leaders and / or establishing a forum for early engagement with DER GFO leaders.</p> |

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| Comments From: <u>TransCanada Energy Ltd.</u> | Email: <u>[REDACTED]</u> |
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| Did you find value in the publication of the <i>DER Roadmap</i> ? Would any additional information be helpful? How can it be improved? | The publication of the DER Roadmap was informative and useful for TC Energy. Some suggested improvements are as follows: <ul style="list-style-type: none"> • The DER roadmap schedule does not define decision points, stakeholder engagement, off-ramps, predecessors and deliverables. It would be helpful to see how actions feed into proposed deliverables. • TC Energy would propose to use the roadmap as the primary source of information with respect to the DER process, whereby the AESO continually updates the document with details as they are known. |
| Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like. | TC Energy would propose that the AESO prioritize both the BTF process efficiency effort and the tariff treatment of DER, to provide developers with greater certainty regarding the treatment of DER and the potential financial impact of tariff changes. |
| Are you aware of any recent DER research/resources/information that would provide the | |

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| AESO more insight on this topic? If yes, please provide details or explain. | |
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The AESO is seeking comments from Stakeholders with regard to the following matters:

| Question | Answer |
|---|---|
| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <p><i>The AESO should have a role in ensuring distribution tariffs are consistent with the transmission tariff</i></p> <p>Yes, the DER Roadmap does not include any discussion about the AESO’s mandate and approach to ensuring consistency between the transmission and distribution tariffs. The AESO has direct responsibility for the transmission tariff; however, the potential for inconsistent price signals between the transmission tariff and distribution rate design has led to the practice of tariff shopping (i.e. the payment of distribution transmission credits).</p> <p>We view a need and role for the AESO to ensure that there is alignment and consistency between tariff designs to provide appropriate price signals and fair cost allocation. In this respect, we believe that it is incumbent upon the AESO to take a more proactive role and intervene in distribution rate setting regulatory process to ensure that there is consistency between transmission tariffs and distribution rates designs.</p> |
| Did you find value in the publication of the <i>DER Roadmap</i> ? Would any additional information be helpful? How can it be improved?. | <p><i>The activities that arise out of the Distribution System Inquiry should be coordinated with the AESO’s DER Roadmap</i></p> <p>The publication of the DER Roadmap was helpful. We would like to better understand how the outcomes of the Distribution System Inquiry will be taken into account in the DER Roadmap.</p> |

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| | <p>There is a risk that the activities of the DFOs, AUC and AESO may not be well coordinated and could result in wasted effort as each entity potentially pursues their organization's own activities and vision. We support the development of policy guidance to help focus in the efforts in towards a shared vision and goal with respect to distributed energy resources.</p> |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | <p><i>Alignment of the Distribution Tariffs to the ISO Tariff should commence at the same time that the ISO tariff is reviewed</i> We generally agree with the activity timing proposed in the DER Roadmap. We would like to see specific contemplation of activities to review and the distribution rate designs with the forthcoming changes to the ISO tariff. We recommend that this be coordinated with the changes to the ISO tariff and begin concurrently to the tariff design activities.</p> |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>No comment at this time.</p> |

Stakeholder Comment Matrix – June 10, 2020

DER Roadmap



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| Date of Request for Comment: <u>June 10, 2020</u> | Contact: <u>██████████</u> |
| Period of Consultation: <u>June 10, 2020</u> through <u>July 10, 2020</u> | Phone: <u>██████████</u> |
| Comments From: <u>The Office of the Utilities Consumer Advocate</u> | Email: <u>██████████</u> |
| Date [yyyy/mm/dd]: <u>2020/06/07</u> | |

Instructions:

1. Please fill out the section above as indicated.
2. Please respond to the questions below and provide your specific comments.
3. Email your completed comment matrix to stakeholderrelations@aeso.ca by **July 10, 2020**.

The AESO is seeking comments from Stakeholders with regard to the following matters:

| Question | Answer |
|---|---|
| Did you identify any content gaps in the <i>DER Roadmap</i> ? If yes, please explain. | <p>In its outline for desired outcomes, the AESO highlights priorities that UCA’s experts InterGroup aligns with in its submissions in the DSI proceeding, including greater coordination between transmission and distribution planning processes, better alignment between price signals provided by respective transmission and distribution tariffs, and equitable treatment of transmission and distribution-connected generation. However, the AESO continues to maintain a strong emphasis on centralized aspects of the AIES in its outline for these desired outcomes, which creates an inherent risk to how the DER Roadmap evolves and the emphasis for its use. This concern is raised by the AESO’s statements about the value of transmission system without a corresponding reference highlighting the value of the distribution system, speaking primarily to the safety and reliability of the distribution system and the need for DER interconnection standards. The UCA highlights the following responses of the DER Roadmap by InterGroup to the Commission’s preliminary IRs in the DSI:</p> <ul style="list-style-type: none"> - In response to IR 008, InterGroup spoke to the need for distribution-specific consideration of the roadmap (p. 5 of 6) and shared the perspective that ISO tariff treatment should not overshadow an examination of how DER impact the operation of the distribution system (i.e. to which the vast majority of DER are connected). The general concern is that the AESO may be inclined to place greater emphasis on transmission and ISO tariffs, and therefore lose sight of the potential benefits associated with DER in a move towards greater reliance on decentralized generation (i.e. which invariable creates some competitive threat for centralized transmission-connected generation and transmission providers). |

- In response to IR 010, InterGroup spoke to the narrower definition of DER used by the AESO in comparison to the definition used by some other jurisdictions, which include energy efficiency and demand response as DER measures (p. 7 of 9). InterGroup aligns in this respect with the position presented by Energy Efficiency Alberta in the DSI proceeding that feels that this narrow definition was driven by the AESO's transmission-centric view of the AIES. The AESO mentions a future initiative to address DSMR's but sets not timeline for such an initiative. The inclusion of DSMRs would definitely broaden the assessment of DERs and the value that they create for consumers.
- In response to IR 009 IR 009, InterGroup referenced the use of DER Roadmaps outlined by E3 in the written submission provided by Fortis (p. 6 of 10). InterGroup considers E3 proposal quite robust and flexible for creating a framework for a DER Roadmap that provides useful action points for all parties.
- InterGroup previously mentioned the use of DER roadmaps in its response submission (p. 20) for examining the evolving role of the DSO.
- The DER Roadmap clearly indicates that the AESO feels that greater clarity is required around ISO tariffs as they relate to DERS and substation fractioning. In many respects the priorities raised by the AESO in respect to ISO tariffs somewhat mirror those raised by the DFO's in their concern over the risks that behind-the-meter DER create for DFOs in regards to load masking. The AESO highlights this masking effect in its comments about contract capacity and totalizing of system access service on the transmission side of the T-D substation rather than the distribution feeder level and the potential erosion of the price signal for system access service. In this respect, the UCA aligns with the AESO and this need for greater clarity (i.e. support with facts). The AESO provided detail on its required approach to DTS and STS fractioning in Information Document No 2018-019T, which attempts to address the ISO's concerns, which has created additional concerns about cost allocations for DCG as highlighted by commentary around the Bull Creek Wind Facility in its February 2020 presentation (<https://www.aeso.ca/assets/Uploads/BluEarth-Renewables-Presentation-Feb.-27-2020.pdf>). This two pieces of information along with other information presented at the AESO Technical Session on substation fractioning held in February 2020 highlight the need for greater clarity and consensus on the matter.

Considering the similar impacts of both DER and DSMR at the transmission-distribution interface identified by the AESO in the roadmap, the UCA considers that it would be advisable to include DSMR rather than treat these technologies separately. DER penetration associated with residential, small commercial and farm consumers is still low and has minimal impact on the safety and reliability of the AIES, particularly small-scale microgeneration, EVs and behind-the-meter energy storage. However, it is important that the AESO clearly identify the costs and benefits as well as the impacts of DER at this level when considering market access and participation.

Even though the AESO acknowledges on page 22 some problematic areas related to the ISO Tariff, it does not mention current issues related to the potential for incorrect incentives, cost shifting and cross subsidization affecting residential consumers. The UCA has raised concerns with the 12-CP methodology, transmission credits, and the substation-fraction formula calculation as well. The UCA is in favor of DCG paying a fair share of transmission costs, The UCA recommends that DCGs pay a locationally differentiated connection charge that would encourage more efficient system development, and prevent "voltage shopping" and uneconomic bypass.

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| | <p>The current process for compensating distribution-connected generation (i.e. not including behind-the-meter micro-generation used for both self-supply and export) through DG credits is not presently based on principles of cost causation (i.e. or cost avoidance). There is no defined revenue stream or cost avoidance applicable to DG credits in the current structure. As a result, non-DG distribution customers are directly funding DG credits with minimal understanding or realization of related benefits. Consideration may be given to an avoided marginal cost basis for compensating DG owners that used avoided costs as the basis for determining the scale and type of credits provided to DG owners</p> <p>The UCA is concerned with possible issues with competition for substation capacity created by increased number of DCG connections. Micro-generators connection applications to the distribution grid are denied due to increased DCG connections, particularly transmission-sized projects that instead of connecting to the transmission system are connecting to the distribution system.¹ This creates an issue of discriminatory access that appears to originate largely because of the conflicting price signals provided by transmission and distribution tariffs, which is further aggravated by the rather arbitrary application of DG credits to distribution-connected generation that is intended for supply only (i.e. excluding micro-generation).</p> <p>The UCA is in favor of a “balanced approach” to rate design that promotes overall fairness and follows cost causation, and recognizes energy transition and the ongoing transformation of the utility sector. The traditional Bonbright principles need to be considered and applied in proper context of system characteristics and customer-focused rate design, recognizing a new world with high levels of DER, energy efficiency, and customer options for onsite backup supply.² The UCA aligns with recommendations made by Jim Lazar of the Regulatory Assistance Project (RAP) that sets out modern principles for smart rate design.³ Distribution rate designs focused around fixed customer charges will generally discourage the adoption of energy storage by consumers. Key benefits related to the management of capacity requirements for servicing peak energy consumption demands behind-the-meter will not be rewarded through fixed-price rate designs.</p> <p>It is the UCA’s view that any changes to acts, regulations and rules must balance the interests of consumers, utility investors and policy makers. The changes should provide more opportunities for customers to potentially reduce their electricity costs by installing DER (i.e. including energy efficiency, energy storage, electrification of transportation, space and water heating, etc.), and provide more clarity and consistent guidelines for new DER customers, while also mitigating potential cost impacts on other customers. The UCA is interested in what services should be regulated and how rate structures should be modified to encourage efficient and cost-effective use of the grid as well as new technologies and innovation. The ability to connect DER to the grid in a cost-effective and expedient manner is a key factor for supporting DER integration and creation of a market that encourages DER adoption.</p> <p>The present lack of visibility and control for customer-owned DER downplays potential benefits. Verification and quantification of DER benefits will require greater visibility on the grid through smart metering, advanced distribution management systems (“ADMS”) and distributed-energy-resource-management-systems (“DERMS”). Rate-based investments will likely be required in these areas to facilitate the integration of DER and providing meaningful realization of their benefits. In consideration of the intent of the Fair, Efficient, and Open Competition Regulation (FEOC), the UCA would like more clarity as to how the AESO feels DERS will disrupt the ancillary services market and impact load consumers.</p> |
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¹ AUC Proceeding 24116Exhibit 24116_X0706, UCA-AUC-2020JUN03-009(c).

² AUC Proceeding 24116. Exhibit 24116_X0706, UCA-AUC-2020JUN03-004(a)

³ Lazar, J. and Gonzalez, W. (2015). *Smart Rate Design for a Smart Future*. Montpelier, VT: Regulatory Assistance Project. Available at: <http://www.raonline.org/document/download/id/7680>

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| <p>Did you find value in the publication of the <i>DER Roadmap</i>? Would any additional information be helpful? How can it be improved?.</p> | <p>The publication makes clear that the AESO, in collaboration with the DFOs, will rely heavily on forecasting models to determine the impact and penetration levels of DER in the future. The UCA would like to know more about how the AESO hopes to improve its decision-making processes to include the most up to date forecasts possible to meet expected needs. Ultimately, out-dated forecasts can result in projects being built that may no longer be necessary and result in increased costs for consumers. The UCA recommends the AESO to explore options to avoid and mitigate risk of over-build (i.e. enhanced reliance of leading-edge indicators, project approvals, power contracts signed, actuals from EV sales, etc), and more stringent prudency tests during NID processes.</p> <p>The UCA believes the AESO’s analysis of energy storage is not comprehensive. This relatively new technology, as per its definition, can be treated as both a load and generation entity depending whether it is charging or discharging. This can have an impact on investment and ultimately load customers given demand and supply related contract amounts as well as the funding allocation for construction. One objective of the DER Roadmap should be maximizing the benefits of energy storage. For this purpose, it is helpful to first understand the ways that the current regulatory and policy landscape treats storage systems to account for the benefits they may provide to the grid, including ancillary benefits. Energy storage systems have the potential to provide many benefits to the grid, such as lowering the price of electricity at peak demand times, and deferring or avoiding new capacity investments.</p> <p>The UCA recommends the AESO include in its analysis the costs and benefits of different energy storage projects, including whether the project is expected to deliver any savings to ratepayers and how ratepayers will be benefiting from energy storage projects at the distribution level. Without behind-the-meter (“BTM”) energy storage it becomes rather difficult for micro-generation consumers to control the market value that they obtain from exporting energy to the grid because they lack control over the timing and quantity of energy that they make available to the market. The availability of surplus energy is generally dictated by the timing of peak self-generation output (i.e. sunny midday conditions) and behind-the-meter load (i.e. often at lower levels during periods of peak generation output). As a result, micro-generation consumers generally have minimal control to dispatch energy based on market conditions and therefore become “price takers” who are required to accept whatever price the market provides at the time they have surplus energy. Providing a meaningful market price signal to micro-generation customers therefore requires a longer-term approach with lesser emphasis on dynamic hourly pricing for exported energy.</p> <p>The addition of energy storage will generally reduce energy exports to the grid as customers seek to maximize the “retail rate” benefit by consuming energy behind the meter and therefore reducing their costs for procuring energy from the grid. This trend may offset the intent of the move to net-billing based on wholesale energy rates if rate design continues to focus on energy consumption as the primary billing determinant.</p> <p>The AESO has acknowledged that DER impacts reliability. In addition, the AESO stated that DERs, in general, do not require an enhancement or expansion of the transmission system. The proliferation of distributed-connected generation (DCGs) and potentially not limiting the amount of distributed-connected generation at the feeder-level, could result in transmission overbuild in the future, especially given market incentives such as transmission credits and net-metering practices which fail to appropriately recover costs aligned with benefits being received by the DCGs. The UCA welcomes the proposals to improve transmission system planning that include enhanced DER models and forecasts, but recommends being mindful of cost accountability and prudency of investments. When considering DER in both TX/Dx system planning, the UCA recommends maximizing the use of existing infrastructure and prioritization of new investments. The UCA recommends more visibility into transmission and distribution system planning in order to</p> |
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| | <p>verify that TFOs and DFOs are considering all relevant factors when planning their upgrades to the grid, including load forecasts, trends in technology, DER adoption, etc. Smart rate design aligns customer investment and operation of DER with system value. Smart regulations and policies – including the use of a transparent distribution planning process that examines potential non-wires solutions – can help reveal the true value of DER and unleash their full potential.</p> |
| <p>Do you have suggested changes to the activity timing in the <i>DER Roadmap</i> Integrated Plan? If yes, please be specific to why you would like to see the timing changed and what the suggested timing should look like.</p> | |
| <p>Are you aware of any recent DER research/resources/information that would provide the AESO more insight on this topic? If yes, please provide details or explain.</p> | <p>MIT:</p> <ul style="list-style-type: none"> - Utility of the Future: An MIT Energy Initiative response to an industry in transition. Full report can be found at: energy.mit.edu/uof <p>Smart Power Alliance (SEPA):</p> <ul style="list-style-type: none"> - Beyond the Meter. Recommended reading for a modern grid. - 51 State Perspectives <p>IREC:</p> <ul style="list-style-type: none"> - Guidebook for Distributed Energy Resource (DER) Interconnection https://irecusa.org/publications/guidebook-for-distributed-energy-resource-der-interconnection/ - Charging Ahead: Energy Storage Guide for Policymakers https://irecusa.org/publications/charging-ahead-energy-storage-guide-for-policymakers/ <p>APPA:</p> <ul style="list-style-type: none"> - Rate Design Options for Distributed Energy Resources, Prepared by Paul Zummo and James Cater for the American Public Power Association, NOVEMBER 2016 www.PublicPower.org - Residential consumers and the Electric Utility of the Future, Prepared by Janee Briesemeister with the assistance of Barbara R. Alexander for the American Public Power Association, JUNE 2016 <p>Institute for Policy Integrity - NEW YORK UNIVERSITY SCHOOL OF LAW - ELECTRICITY POLICY INSIGHTS: “Managing the Future of Energy Storage. Implications for Greenhouse Gas Emission”. April 2018</p> <p>Regulatory Assistance Program (RAP) https://www.raonline.org/</p> <ul style="list-style-type: none"> - Capturing more value from combinations of PV and other distributed-energy-resources, Full report available at: https://www.raonline.org/knowledgecenter/capturing-more-value-from-combinations-ofpv-and-other-distributed-energy-resources/ - Lazar, J. and Gonzalez, W. (2015). <i>Smart Rate Design for a Smart Future</i>. Montpelier, VT: Regulatory Assistance Project. Available at: http://www.raonline.org/document/download/id/7680 |

