CANADIAN SOLAR

DGC FLOW-THROUGH PROPOSAL

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Introduction

Canadian Solar retained:

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To (1) obtain a detailed understanding of the history and evolution of cost allocation between loads and generators in Alberta as well as (2) the foundational principles that led to the creation of the Transmission Regulation (TReg)—refer to Canadian Solar's white paper for additional detail

These discussions came to focus on two main items:

- **Local interconnection costs, i.e., the extent of a generator's cost obligation and**
- **The purpose of the generator System Contribution Payment (SCP, now called GUOC)**

Pertinent Background

- Leading to and following Alberta's electricity market deregulation, discussion was ongoing between the Transmission Administrator (ESBI), the EUB and others relating to various forms locational pricing signals for generators (SERP, ZIC)
- In 2003, the ADOE expressly overruled the direction that the Transmission Administrator was taking to allocate system transmission costs to generators on the basis of the policy of the Government of Alberta
- Government policy was embodied in the TDP and the subsequent enactment of the TReg
  - The TDP, as a foundational document, set out the principles and the objectives that the TReg was to accomplish
  - **The TDP effectively remains an interpretation guide for the Treg**

Foundational Principles

- Tariffs that were designed as a 50/50 wires cost recovery, through STS and DTS tariffs, where generation paid half of the Bulk, Local and Point of Delivery (POD) components all part of system charges were EXPRESSLY OVERRULED as a matter of government policy

- The TDP and TReg are prescriptive with regard to the segregation of wires costs from energy costs, cost allocation and in establishing what system costs and local interconnection costs are with reference to the interconnection of a generator

- **The SCP (now GUOC) was to be the sole system contribution of a generator based on clear objectives and attributes set out in the TDP and reflected in the TReg**

System Contribution Payment (SCP) vs. Generator Unit Owner Contribution (GUOC)

- The SCP or system contribution payment is:

  A clear and transparent charge, known in advance to provide a long-term siting signal for new generation that is not related to location or precise system costs

- The SCP was made refundable over time subject to satisfactory performance over a 10-year period based on established performance metrics by generator technology type
- Were a generator unable to perform, refunds would not occur and that generator's SCP would have contributed to system costs

The ADOE's views on the SCP and GUOC under the TReg remain the same, i.e., for upgrades to the existing transmission facilities

Principles Of This Proposal

- This proposal considers the historical developments of the regulatory framework on cost allocation and cost causation principles that propelled the ADOE's policy for transmission development as well as the principles for access to the transmission system outlined in the EUA and Treg

- This proposal considers:
  - GUOC as mechanism to provide financial certainty to generators and to serve a generator's only obligation towards transmission system costs
  - Development timing of load and generation relative to cost causation
  - DFO and DCG relationship with regard to unified a System Access Service Agreement (SASA) at a given Point of Delivery (POD)

Cost Recovery of the Transmission System and Fairness

The issue of fairness has been raised in the context of the DCGs using transmission and distribution wires at no cost to DCGs and without consideration that load pays for the wires costs:

- That is how the ADOE's policy, the EUA and TReg are expected to work
- Fairness cannot be added as an act of kindness to circumvent ADOE Policy, EUA and TReg

In short, it has been established that load, *not DCGs*, pay for wires cost that were rolled-in to and recovered through rate base

Local Interconnection Cost vs. Participant Related Cost

The drivers and causation for radial infrastructure are in general initially established as:

- Point of Delivery (POD) – to supply DFO load
- Point of Supply (POS) – to provide access to a generator
- POS/POD – to provide service to a generator to access the energy market (Rate STS) and receive transmission system support (Rate DTS) when the local site generation is out of service

Radial infrastructure funding at the inception of a project is accepted to be:

- **Point of Delivery** – funding covered by AESO's investment policy, and from time to time by a small supplemental contribution from the DFO. In either case, these costs are rolled-in to their respective rate bases for recovery

- **Point of Supply** – funding covered fully by the generator since there is no investment policy for generators. The funds are not rolled-in to rate base and are indeed a transmission asset paid for exclusively by the generator

- **Point of Supply / Point of Demand** (dual use) – initial funding covered by the generator. However, for instances where the generator project has a load component requiring DTS, in this case, AESO concurrently applies a contribution in proportion to (a) size and (b) duration of the DTS contract the generator wishes to carry

Local Interconnection Cost vs. Participant Related Cost

- From a generator's perspective the local interconnection cost is a function of where the "transmission system" connection will occur and how far it is from the project site.
  - Therefore, it matters where a generator's access point to the transmission system is and where the transmission facility point of connection will occur

Timing and causation of the interconnection drivers also matter to assess who pays for the radial connection

It would appear that as a first mover:

- For a Point of Delivery – It is a Customer Related cost (rate DTS)
- For a Point of Supply – It is a Local Interconnection cost (rate STS)
- For a Point of Supply requiring a DTS service - It is a combination of Local Interconnection cost (rate STS) with an AESO contribution for the DTS level contracted

The question that remains is, for a situation where after some time a DCG shows up, at PODs for which costs have been rolled-in to rate base, **what is the first connection or access point to the transmission system or transmission facility? Is there a test to determine this?**

Local Interconnection Cost vs. Participant Related Cost

- AESO advised in its February 27, 2020 Technical Session, that the transmission system classification is limited to “Bulk” and “Local” transmission components; however, the “POD” component does not classify as transmission system. However, rate DTS as a transmission system wires recovery mechanism has been functionalized to recover or “roll-in” to rate base “all” transmission system components; hence, by definition Bulk, Local and POD are all system cost components once rolled-in to rate base
  - To confirm the above statement, the functionalization definitions for rate DTS were compared between the 2005 ISO Tariff and 2018 ISO Tariff filings and it appears that the functionalization scope and intent has remained essentially unchanged between the Tariff filings

- **From a DCG’s perspective, at a POD, the 25 kV bus fits the definition of transmission system where it will indirectly contract with AESO for STS, through the DFO, and directly contract with AESO for GUOC payment and performance management of the generator asset**

Local Interconnection Cost vs. Participant Related Cost

- It would appear that causation and sequence of development, load or generation, does matter:
  - If the first mover is a generator, a cost sharing will occur when the next generator (or load) connects to its radial investment—this principle is supported by the TReg
  - However, if the first mover is a load (DFO), and some time in the future a DCG contracts for STS and pays GUOC, it appears that the GUOC functions as the system payment for upgrades as seen from the 25 kV upstream into transmission

  Therefore, to apply a flow-through cost in this instance, AESO would have to roll-out costs from both transmission and distribution rate bases to convert them into an incremental cost to the DCG's local interconnection

  There are no principles in the TDP, EUA or TReg that empower AESO to defeat the purpose of the GUOC, to roll-out cost from rate base and convert it to a flow-through charge to the DCG interconnection

DFO Combined SASA Request

- The treatment of the DFO's SASA, carrying a DCG STS contract, as a single Market Participant may also be a culprit in the perception that a cost flow-through to the DCG is warranted and justified by AESO
  - There are in fact two Market Participants, a distribution service provider and an energy supplier. The DFO within its franchise area is responsible for providing electric distribution service as defined by Electric Utilities Act (EUA) to both the load and DCG
  - However, it appears that AESO's need or sense of obligation to flow-through cost stems from the perception that the DFO is a single market participant under one SASA
- The treatment of the DFO's SASA, containing a DCG STS request, as single Market Participant leads to a disconnect in cost allocation where the generator then experiences an incremental flow-through, in addition to its local interconnection cost, under the definition of Participant Related (Rate STS) costs
- Within the definition of Participant Related cost, as it pertains to DCG, the AESO treats both the DFO load and DCG as a common driver to establish need or causation of the POD, and on this basis, allocate flow-through cost—**the relevance of sequence and timing between the original DFO DTS and the present DCG STS request is disregarded**

Proposal Outline

Four (4) scenarios were considered and each scenario is based on the historical evolution of the electric industry regulatory process

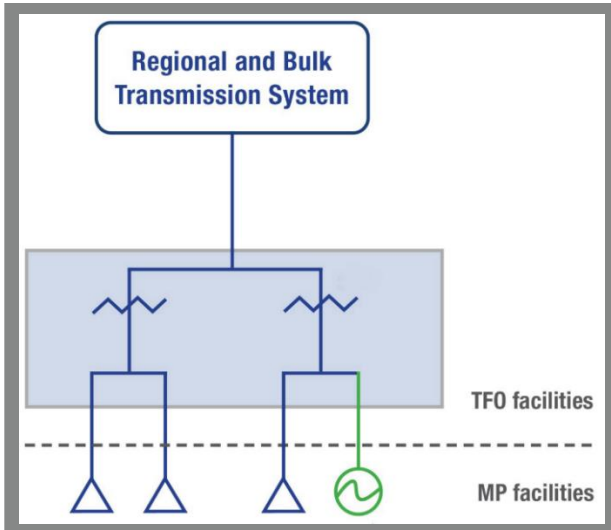
- The scenarios seek to establish alignment between ADOE Policy, EUA and TReg

No proposals are provided for the handling of future flow-through costs for the following reasons:

- A future flow-though cost to address transmission facility capacity improvement, upgrades, corrections to voltage deficiencies, etc., is in fact nothing more than absence of transmission planning where AESO ought to have relied on load and generation forecasts to plan the transmission system in fulfillment of their legislated obligations
- This type of transmission system flow-through does not appear to have an ADOE Policy basis or align with EUA or TReg as it pertains to flowing through a future cost in presence of a GUOC

A future flow-through to a DCG while a GUOC is in place essentially constitutes double counting to recover the future cost of transmission facility upgrades

Scenario 1 – Existing POD, No Transmission Upgrades



DGC Pays for:

- Connection to the dist. system,
- Revenue meter / SCADA as required
- Protection coordination (dist. & trans.)
- Direct Trip (sub to project site as required)
- Transfer Trip (if required)

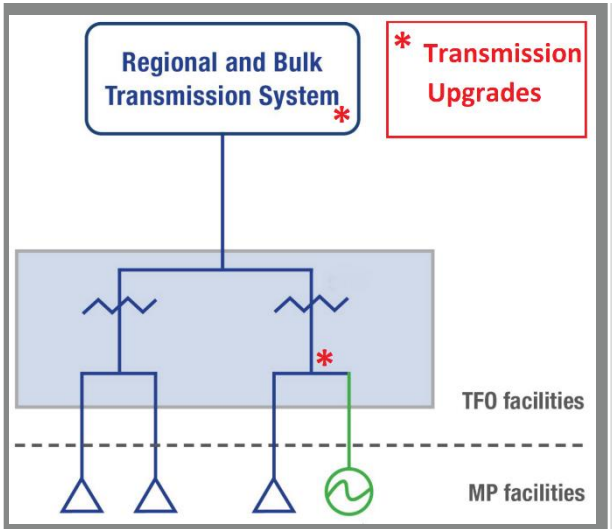
Pros:

- No cost impact to rate base by DCG
- Local Interconnection Costs principles align with TDP, EUB and TReg.

Cons:

- May be subject to a run-back curtailment signal in lieu of transmission upgrade costs

Scenario 2 – Existing POD + DCG Related Transmission Upgrades



DGC Pays for:

- Connection to the dist. system,
- Revenue meter / SCADA as required
- Protection coordination (dist. & trans.)
- Direct Trip (sub to project site as required)
- Transfer Trip (if required).
- Limited Transmission Upgrades (at time of interconnection)
- 25 kV switches and breakers in the subs
- Deep RAS modifications (soft costs not infrastructure)
- Minor transmission modification, i.e., jumpers, CTs, PTs, etc.

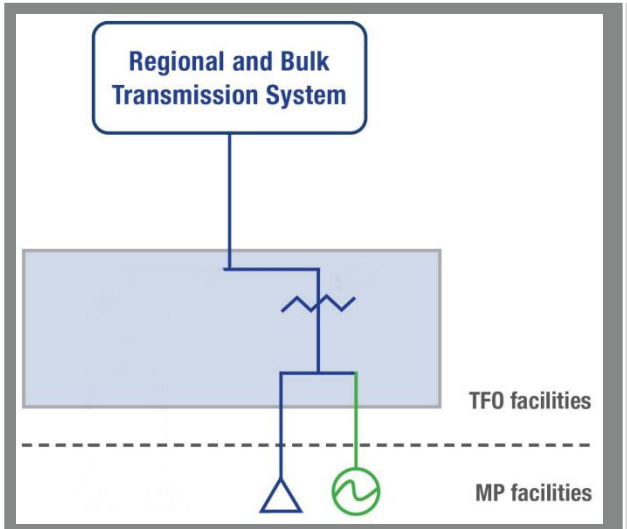
Pros:

- No cost impact to rate base by DCG
- Local Interconnection Cost principles align with TDP, EUB and TReg

Cons:

- Back end transmission RAS costs may resemble transmission like capacity management principles and potentially costly to the DCG

Scenario 3 - New POD with STS
(Load and STS are the same Market Participant)



GC Pays for:

- If load that drives the POD need and concurrently develops onsite DCG, and the DCG requires an STS contract at the time of first POD energization, and before the POD costs are rolled-in to rate base, then the DCG will contributed in proportion to DTS (DFO) and STS (DCG) ratio in addition to its Local Interconnection cost
- The initial load and DCG interconnection have a likeness to transmission connected generation; however, the main driver and causation is the load
- In the future, DCG connections, are not subject to further cost flow-through allocation and are treated as Case 1 or Case 2

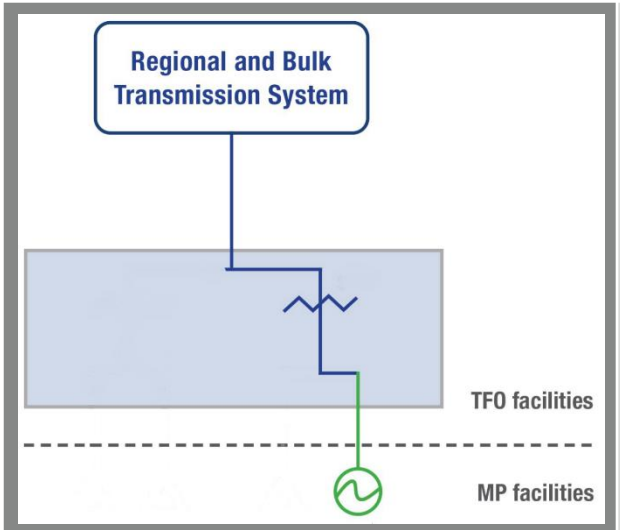
Pros:

- No cost impact to rate base by DCG
- Clear contribution requirement by a generator
- Both Local Interconnection and Customer Related Cost principles align
- Aligns with TDP, EUB and TReg

Cons:

- Could be difficult to establish causation, i.e., if load or generation is the driver and may trigger Scenario 4 cost allocation

Scenario 4 - New POS with no DTS



First DGC pays for:

- All costs—no cost is rolled-in to rate base—assume no DTS contract

Then DFO pays for:

- If the DFO requests access to the POS, it triggers a contribution to the non-rate base investment and refundable to the first DCG

Then next DCG pays for:

- Contrary to Scenario 3, the next DCG pays a contribution to the residual value of the remaining cost to the first DCG for costs that were not rolled-in to rate base

Pros:

- No cost impact to rate base by DCG
- Follows TCG model
- Clear contribution process to a generator investment
- Aligns with TDP, EUB and TReg

Cons:

- Reimbursement settlement may be complex with multiple parties, and with the additional complexity of multiple contract vintage

Summary

TDP Policy and TReg are clear that: "generators will be responsible to pay for several elements of transmission including:

a. Local interconnection charges,
b. Location-based loss charges, and
c. A financial commitment and payment towards transmission system upgrades.

The balance of remaining transmission costs (i.e. wires, TMR, historical IBOC/LBCSO, operating reserves, etc.) will be allocated to load."

Nowhere is it contemplated that pre-existing assets (in whole or in part) are rolled-out from the transmission rate base and charged to distribution connected generators

Summary

It is critical that the cost causation and allocation principles of the TDP and TReg be adhered to

- This provides much needed commercial clarity and cost certainty to generators
- Ensures that generators are not adjusting site selection behavior to the detriment of load
- **One party should not cause a cost that is allocated to another (generators should not drive increases to rate base; rate base should not be retroactively rolled-out and imposed on generators)**

  (i.e. locating so as to minimize flow-through costs, despite indisputable technical rationale for generators to site near load to support the transmission system)

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THANK YOU