

LOSS FACTORS

AESO BOARD OF DIRECTORS

GREENGATE POWER CORPORATION AND DEPAL CONSULTING LIMITED

NOVEMBER 18, 2020

AGENDA

- Introductions
- Background – Greengate Power Corporation
 - Travers Solar
- Loss Factors –Importance to Developers
- Potential Solutions
- Next Steps

GREENGATE POWER CORPORATION

- Developed 450 MW or about one third of all wind energy produced in Alberta.
- Now developing the Travers Solar project
 - Once operational, Travers will be the largest solar project in Canada and one of the largest in North America
 - Currently approved 400 MW – GUOC has been paid (\$10 M)
 - Developing the project with partner Copenhagen Infrastructure Projects (CIP)
 - Working with AESO to increase capacity to 465 MW – expect approval late 2020
 - Developing a number of other wind and solar energy projects in Alberta
- DePal Consulting Limited
 - Consultant – Interconnections and Regulatory for the past 16 years

LOSS FACTORS – CURRENT SITUATION

- Prior to the new loss factor methodology, the AESO would provide a loss factor to a developer, as requested (one free, rest for a fee)
- Current situation, loss factor methodology extremely complex
 - AESO only provides loss factors when project is projected to be in-service
 - Difficult for a Developer to fully mimic the AESO loss factor development process
- For Travers, the project will receive its first AESO loss factor in December/20 for calendar 2021
 - Travers submitted its interconnection request to the AESO in October 2017

LOSS FACTOR ISSUE FOR DEVELOPERS

- Loss factor is meant to be a location signal for developers
 - Signal is muted if early estimates are not provided
- With a large development such as Travers, using a nearby wind unit loss factor provides limited guidance
- Travers has created its own loss factor estimate using AESO data as well as an estimate using 144 hours of full data provided by the AESO
 - It is unknown how well both methods will forecast an accurate loss factor
- Loss factors remain as the largest variable cost for a solar project and a few percentage point change in loss factors can make a project non-economic
 - Loss factors are an important factor for solar projects
 - Developers can hedge exposure to pool price with power hedges or PPAs
 - Developers can hedge exposure to solar variation with insurance products
 - Loss factors cannot be hedged and aren't determined until very late in the process which creates both risk and uncertainty

WHAT OPTIONS EXIST TO SOLVE THE ISSUE

1. The AESO could provide a loss factor estimate for the current year.
 - Project can be added to the project list and loss factors recalculated
 - Developer can use the estimate to provide guidance for its development, receiving a location signal
 - AESO has concerns on the number of requests for loss factors that may occur
2. The AESO could release the system loads and allow developers to calculate their own loss factor estimate
 1. AESO has been reluctant to provide full load data since some PODs have only one customer and therefore confidentiality concerns exist

NEXT STEPS

- AESO VP Dennis Frehlich has committed to consulting on the loss factor issue in Q2/2021 with Industry
 - This action is appreciated, and this consultation may bring about other alternatives
 - However this action leaves uncertainty on providing a developer with a loss factor estimate in 2021
 - We would appreciate the AESO budgeting for this Developer loss factor work in 2021 **or** allow Developers to: execute a confidentiality agreement; release the load data; and allow Developers to create their own loss factor estimate