

UM 2005 Distribution System Planning Technical Work Group Agenda

April 14, 2021

Oregon Public Utility Commission (PUC) Staff announces an agenda for the April 21, 2021 Distribution System Planning (DSP) Technical Work Group meeting.

The meeting will be conducted using Zoom. Instructions for joining the workshop are below.

Proposed Meeting Agenda 1:00 pm - 4:00 pm Pacific

- 1:00 pm Welcome and introductions Nick Sayen, PUC Staff
- 1:15 pm Review of Technical Work Group Plan (draft) Nick Sayen
- 1:30 pm Section One questions All participants
- 2:30 pm Break
- 2:45 pm Section Two PGE's Hosting Capacity Analysis (HCA) Team discussion PGE staff
- 3:30 pm Discussion of possible next steps/revisions to Technical Work Group Plan Nick Sayen
- 3:45 pm Wrap up and review Nick Sayen
- 4:00 pm Adjourn

Meeting Materials

Included in this packet are the following:

- Technical Work Group Plan (draft)
- Technical Work Group questions for discussion at the April 21, 2021 meeting
- Slides for PGE's HCA Team discussion (presented on 4/14/21 at the PGE DSP Partners meeting)
- Please reference Order No. 20-485 at the following link for the DSP Guidelines (Guidelines) as adopted in December 2020: <u>https://apps.puc.state.or.us/orders/2020ords/20-485.pdf</u>

To Join the Meeting

Please use the following link to join the meeting: <u>https://opuc-state-or-</u> <u>us.zoom.us/j/82538430756?pwd=WXI5UmRyOHpVRk1xeGozdWt2Lzgzdz09</u>

Dial-in: 1-971-247-1195 Meeting ID: 825 3843 0756 Passcode: @=qaQSBTj7

The meeting will open approximately 5 minutes before the workshop is scheduled to begin.

Before joining a Zoom meeting on a computer or mobile device, you can download the Zoom Client for Meetings from the Zoom Download Center - <u>https://zoom.us/download</u>. If you have not used Zoom before, the Client will download automatically when you start or join your first Zoom meeting.

To familiarize yourself with Zoom, or to test your internet connection, join a test meeting - <u>https://zoom.us/test</u>.

Questions or Feedback

Questions and comments can be directed to Nick Sayen via email at <u>nick.sayen@puc.oregon.gov</u> or by telephone at 503-510-4355.

Distribution System Planning (DSP) Technical Work Group Plan – draft

Background

Based on feedback from UM 2005 discussions in 2020, as well as the draft DSP Guidelines (Guidelines) public comment period, Staff understands there is need for, and value in, a Technical Work Group to surface and, when possible, address technical questions that arise in the course of the utilities working on their plans.

As such, Staff proposes the following:

Purpose statement

The purpose of the Technical Work Group is to serve as a forum to identify, articulate, discuss, and when possible, resolve technical questions that arise in the course of the utilities preparing their plans.

The primary goal in addressing technical questions is to try to answer questions, solve problems, and find solutions to barriers that would otherwise inhibit completion of the utility plans.

This is distinct from other docket activities in which raising awareness, developing background, or providing education may be primary goals.

While still in development, the Group may engage in activities such as assisting utilities in vetting ideas needing stakeholder feedback, discussing data formats, clarifying terminology, or acting as a general point of discussion amongst utilities, stakeholders, and Staff.

Meeting timeline and deliverables

Technical Work Group meetings will be open to stakeholder participation.

Initially the Group will meet monthly for 3 hours. Cadence and meeting length will be revised as needed.

Meeting agendas and materials will be circulated one week prior to each meeting to allow participants to prepare in advance with the goal of making each meeting as productive as possible. **Meeting agendas and materials will be posted to the UM 2005 docket.**

Questions may be resolved in the meeting. Alternatively, a question may need more thought and consideration than is possible during the meeting in order to be resolved. In this case, Staff will strive to provide feedback on the unresolved question as expeditiously as possible after a meeting. Questions may also go unresolved, either in the meeting or after, and should that be the case it may not be a 'bad outcome'.

Staff will take notes during the meetings. The notes will summarize questions being asked, rationale provided surrounding the question and potential resolution, and any resolution. The notes are intended to serve as a reference, but are not intended to serve as a comprehensive transcript. **Staff will provide notes as expeditiously as possible after a meeting. Meeting notes, and any feedback on unresolved questions, will be posted to the UM 2005 docket.**



April 14, 2021

Below are the questions for discussion during the April 21, 2021 Distribution System Planning (DSP) Technical Work Group meeting.

Section One - Questions previously submitted to Staff

The questions in section one have been previously submitted to Staff and are now being circulated to the Technical Work Group.

General Questions

- Task 4.3.a.i (Community Engagement Plan, During Plan Development) references "b". Can staff confirm if this a typo for "ii" or if a requirement was accidentally deleted? Response: The "b" should indeed be "ii".
- The DSP Guidelines (Guidelines) mention "Staff anticipates requesting that Order Nos. 12-158 and 17-290, issued in Docket No. UM 1460, be revised or these orders may be superseded by new requirements adopted in this docket." What is staff's expectation for the future of the Smart grid report requirement?
 Response: Assuming that the DSP plans address Commission and stakeholder goals, specifically "focused and strategic reporting on distribution planning," Staff would recommend discontinuation of the Smart Grid Report.
- 3. Regarding requirements 4.1.f and 4.1.g, what does "at time of filing" mean? Response: For initial plans "at the time of filing" means the most recent year where complete data is available, or the most recent regulatory filing applicable to the data in question (for example the annual net metering report), whichever is more current.

Hosting Capacity Analysis (HCA) Questions

Regarding requirement 4.2.a – does "...difficult to connect DERs..." refer to all DERs, such as demand response, or is this limited to customer-sited generation, such as NEM, QFs and Community Solar?
Response: "DERs" refers to customer-sited generation, such as NEM, QFs and

Community Solar. EVs could become energy-producing DERs at some point in the future.

5. What does "circuit" mean?

Response: "The use of this terminology is to distinguish between <u>all</u> the parts below a substation, and the subsequent segmentation of those parts.

"Circuit" is intended to mean <u>all</u> parts; the main, three-phase circuit, right out of the substation (maybe also called main or mainline).

"Feeder" is intended to mean the circuits branching off the mainline (maybe also called laterals).

"Line segment" is intended to further specify individual portions of circuits or feeders.

6. HCA Options 1-3 articulate increasing levels of granularity. Can you describe the value that is gained by the increasing granularity?

Response: The purpose of increasing granularity is to assess locations with greater specificity, and to utilize data for increasingly recent conditions.

7. Can a utility propose additional options for HCA beyond the three described in the Guidelines?

Response: Yes. If a different HCA approach warrants discussion and consideration it can be included. The utility should explain, and provide justification for the different approach.

- 8. Can you explain the purpose of including "...costs of upgrades assigned to planned generation..." in the HCA dataset or map? This information may be confidential. Response: Including the "...costs of upgrades assigned to planned generation..." communicates the cost(s) required to interconnect. A utility is not expected to share the amount that each interconnecting customer is paying to interconnect.
- 9. Do you expect that every location of the service territory should have HCA performed? Response: Yes. However, if a different HCA approach – in this case one that does not evaluate the whole system – warrants discussion and consideration, a utility can propose it. The utility would have to provide the justification for why that makes sense.

Long Term Plan Questions

- 10. Can staff provide additional context and detail on the requirements 4.4.b.i.2 and 4.4.b.i.3:
 - *i. "Assessment of investment options to enhance the grid across the following range of areas, including relative costs and benefits:*
 -
- 2) Distributed resource and renewable resource enhancementsa) Penetration and activation/utilization of smart inverters

3) Transportation Electrification enhancements"

Response: The requirement states that one part of the utility's long-term DSP vision should include assessment of potential investment options to enhance the grid, and these options should include potential investments to enhance for DERs, as well as investments to enhance for transportation electrification. The assessment should include relative costs and benefits.

Part 2 Questions

11. Per requirement 4.5.a:

"How legacy distribution planning practices will be transitioned to the requirements of Part 2"

Can staff confirm the specific aspects of planning practices they are referencing in Part 2? For example, are DER forecasting, and non-wire alternatives analysis the two aspects of planning that are required for Part 2?

Response: "Legacy distribution planning practices" is a general reference to the activities which comprise utility distribution planning prior to Order No. 20-485 (referred to here as "status quo activities").

Part 2 articulates a process with four major components in a linear fashion (Forecasting of Load Growth, DER Adoption, and EV Adoption; Grid Needs Identification; Solution Identification; Near-Term Action Plan), however status quo activities as implemented day-to-day may not line up with the four components of Part 2. Requirement 4.5 states utilities should plan for how day-to-day implementation of status quo activities transitions to day-to-day implementation of the four components of Part 2.

Section Two - PGE's HCA team discussion

The HCA Team would like 30 minutes to cover the following topics:

- Recap the HCA slides we presented in the last partner meeting;
- Provide a brief overview of the DER Readiness Map;
- Review the accompanying training materials and user scenarios;
- Pause to get feedback on willingness of Technical Work Group members to participate in the review process;
- Review ARC GIS Online login instructions; and
- Review feedback instructions and next steps.

Hosting Capacity Analysis: Options Analysis



Hosting Capacity Analysis (HCA) Methods Examples

Method	Approach	Advantages	Disadvantages		Recommended Use Case
Stochastic	+Increase DER randomly +Run power flow for each solution	+Similar in concept to traditional interconnection studies +Becoming available in planning tools +Similar in concept to traditional +Computationally intensive +Limited scenarios		Hours/feeder	+DER planning
Iterative (Integration Capacity Analysis)	+Increase DER at specific location +Run power flow for each solution	+Similar in concept to traditional interconnection studies +Becoming available in planning tools	+Computationally intensive +Limited scenarios +Vendor-specific implementations can vary + does not determine small distributed (rooftop PV)	Hours/feeder	+Inform screening process +Inform developers
Streamlined	+Limited number of power flows +Utilizes combination of power flow and algorithms	+Computationally efficient +Not vendor tool specific	+Novel approach to hosting capacity +Not well understood method +Limited scenarios +Not available in current planning tools	Minutes/ feeder	+Inform screening process +Inform developers
DRIVE	+Limited number of power flows +Utilizes combination of power flow and algorithms	+Computationally efficient +Many DER scenarios considered +Not vendor tool specific +Broad utility industry adoption and input +Becoming available in planning tools	+Novel approach to hosting capacity +Not well understood method +Lag between modifications/ upgrades and associated documentation	Minutes/ feeder	+DER planning +Inform screening process +Inform developers

Source: Methods and Application Considerations for Hosting Capacity (hawaiianelectric.com)

Hosting Capacity Analysis (HCA) Methods Use Case

Method	Industry Adoption	Recommended Use Case	
Stochastic	Pepco, ComEd	+Enabling Planning +Informing the public	
Iterative	SCE, SDG&E	+Assisting with Interconnection +Informing the public	
Streamlined	PG&E	+Enabling Planning +Informing the public	
Hybrid – DRIVE	>27 utilities worldwide (including Xcel, NY)	+Enabling Planning +Assisting with Interconnection +Informing the public	

Source: Impact Factors, Methods, and Considerations for Calculating and Applying Hosting Capacity-EPRI

HCA Review Structure Example



Networks' Hosting Capacity Calculation

HCA Options To Be Evaluated

HCA Characteristic	Option 1	Option 2	Option 3
Methodology	Stochastic modeling/EPRI DRIVE modeling	Same as option 1	Iterative modeling
Geographic granularity	Circuit	Feeder	Line segment
Temporal granularity	Annual minimum daily load	Monthly minimum daily load	Hourly assessment
Data presentation	Web-based map for the public and available tabular	Same as option 1	Same as option 1
Data update frequency	Annual refresh	Monthly refresh	Monthly refresh
Other info	Queued generation	Same as option 1	Same as option 1

HCA Option Questions

- 1. What are the strengths of each option?
- 2. What are the implementation barriers for each option?
- 3. What are the cost and timeline for each option?
- 4. What is our choice, for near-term, long-term?
- 5. How frequently to update the data and map?
- 6. How helpful will this be for grid needs identification?
- 7. How helpful will this be for interconnection studies?

HCA Option Evaluation Parameter

Evaluation Parameter	Option 1	Option 2	Option 3	Notes
Timeline	6 months	12-18 months	24-36 months	system integration and computation time
Cost	\$	\$\$	\$\$\$	system upgrades, labors
Data security	Low	High	High	input data, output data
Result validation	Low- Medium	High	High	input , output data QA (process, time, cost)
Implementation Concerns	Low	High	High	data availability, time and cost at PGE
Interconnection use case and implications	Low	High	High	Back feed issues, VoltVar
Planning use case and implications	Low	Medium- High	High	Forecasting and distribution system configuration
Locational value and benefits	N/A	High	High	Distribution System CapEx planning
Interaction with "grid Needs Identification	Medium	High	High	Feeder level DER forecast
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