Resource Adequacy Deliverability for Distributed Generation

2023-2024 DG Deliverability Assessment Results

February 29, 2024

Resource Adequacy Deliverability for Distributed Generation

2023-2024 DG Deliverability Assessment Results

1 Introduction

In accordance with the ISO tariff section 40.4.6.3, the ISO performed the 2023-2024 Distributed Generation Deliverability (DGD) assessment to determine MW quantities of Potential DGD at specific nodes of the CAISO Controlled Grid for assigning deliverability status to Distributed Generation (DG) Facilities.

Section 2 of this paper provides a high level summary of the study results for each participating transmission owner (PTO) service territory. The study model used by the ISO in conducting the annual DG deliverability assessment is described in section 3. Section 4 describes how the Potential DGD at each node is determined. Section 5 provides information intended to help make the detailed results easier to understand.

The detailed results are contained in worksheets attached to this report.

2 DG deliverability assessment results summary

The 2023-2024 renewable portfolios identified 125.04 MW distributed generation. In addition, the POUs provided DG forecasts for their territories.

The 2023-2024 DG deliverability assessment results indicate that a total of 56.2 megawatts of Potential DGD is available at nodes studied for assignment of deliverability status to DG resources[1] connected or requesting interconnection below those nodes. The total Potential DGD for each PTO service territory is summarized in the following table. Of these total quantities, some amounts of Potential DGD at specific nodes will be available to municipal utility distribution companies (UDC) for assignment of deliverability status to DG resources on their distribution systems.

[1] For purposes of this study, DG refers to generation resources connected to utility distribution systems. The ISO recognizes that, in some contexts, some parties use the term “distributed generation” to mean resources of certain technology types or below certain size thresholds, and may even include such categories of resources when they are connected to the transmission system. For purposes of this study, however, the term “distributed generation” refers to all generation resources connected to utility distribution systems, without regard to size or resource type.

PTO service territory	Total MW of Potential DGD
SCE	56.2
SDG&E	0
PG&E	0
GWT/VEA	0
Total	56.2

The detailed nodal amounts of Potential DGD within each PTO service territory are provided in worksheets attached to this report. The following three sections provide a summary of the results for each PTO service territory.

2.1 SCE service territory

There were six distributed generation nodes identified in the 2023-2024 renewable portfolio for the SCE service territory. There were seven nodes with updated distribution generator plans from POUs. The study determined that a total of 56.2 MWs of Potential DGD is available at 5 of the 13 nodes studied.

2.2 SDG&E service territory

There was no distributed generation identified in the 2023-2024 renewable portfolios for the SDG&E service territory, and therefore, there were no nodes studied for Potential DGD.

2.3 PG&E service territory

There were 24 distributed generation nodes identified in the 2023-2024 renewable portfolios for the PGAE service territory. There were zero nodes with updated distribution generator plans from POUs. The study determined that 0 MWs of Potential DGD is available at 24 of the 24 nodes studied.

2.4 GWT/VEA service territory

There was no DG node in GWT/VEA service territory.

3 DG deliverability assessment study model

The study model used by the ISO in the assessment was developed from the most recent ISO generation interconnection deliverability assessment base case. The first step was to model the transmission systems and prior commitment of deliverability that generally included:

i. Generators that are operational and have obtained Full Capacity Deliverability Status (FCDS) or Partial Capacity Deliverability Status (PCDS)[2], including the ones obtained FCDS or PCDS in the previous DGD cycles;
ii. Active generation interconnection requests in the ISO's and Participating TOs' generation interconnection queues that requested Full Capacity Deliverability Status or Partial Capacity Deliverability Status in Queue Cluster 14 window or earlier;
iii. Generation projects that have obtained deliverability using the annual full capacity deliverability option;
iv. Generation projects that have obtained deliverability in the previous deliverability status assignment;
v. The MW amount of Potential DGD that was identified but not assigned in 2022-2023 DGD cycle, i.e. 2023 unassigned PDGD;
vi. Transmission upgrades that have been approved in ISO Transmission Planning Process and were included in the Cluster 14 Phase II study;
vii. Network Upgrades required for any generation interconnection requests that are under construction or have received regulatory permits.

Next, target DG amounts were determined and added to the study model following the steps described below.

i. Identify all DG nodes that have non-zero distributed generation MW in one of 2023-2024 Transmission Plan renewable portfolios.
ii. At each DG node, determine the target additional DG amount. The target additional DG amount at each node was initially set to {*total existing Energy Only DG[3] + the greatest of the (a) and (b) below*}:
    a. Maximum DG MW at the node among all renewable portfolios
    b. Total MW amount of non-NEM WDAT or Rule 21 requests

    The target amount was set to 0 at a node if the following condition was true:

    - If the node is within an electrical area for which the Queue Cluster 14 Phase II interconnection studies have showed a need for a Delivery Network Upgrade;

    The total MW modeled at a node is equal to {max (target MW, 2023 unassigned PDGD)}.
iii. If a DG node is found to be behind a constraint for which there is an SPS/RAS, the node may be identified to have conditional PDGD:

[2] These generators may not have achieved FCDS or PCDS due to required Network Upgrades not in service yet.
[3] For the purpose of this study, Energy Only DG includes any DG that has requested Energy Only Deliverability Status and not previously obtained Full Capacity Deliverability Status or Partial Capacity Deliverability Status, as well as the portion of a DG that would bring the DG from Partial Capacity Deliverability Status to Full Capacity Deliverability Status.

a. If the constraint is behind a future SPS/RAS, the DG node behind such constraint will be identified to have no PDGD.
b. If the constraint is behind an existing load-dropping SPS/RAS, the DG node behind such constraint will be identified to have no PDGD if the SPS/RAS requires modification in terms of increasing required amount of load drop. If the SPS/RAS doesn't require modification in terms of increasing required amount of load drop, the DG node behind such constraint will be identified to have PDGD.
c. If the constraint is behind an existing gen-dropping SPS/RAS, the DG node behind such constraint will be identified to have conditional PDGD subject to verification from PTO for whether or not any DG at that node needs to be included in the SPS/RAS from a reliability perspective and if it is feasible.

4 DGD determination

This ISO performed deliverability assessment, which determined the amount of deliverable MW at each node. Part or all of the deliverable MW amount determined was then identified as Potential DGD for assigning Deliverability Status to Distributed Generation Facilities. In general, the Potential DGD is the deliverable MW amount, minus any prior commitments, that does not exceed the sum of existing Energy Only DG and future Energy Only DG. If the initially identified Potential DGD is lower than the 2023 unassigned Potential DGD, the 2023 unassigned Potential DGD is preserved.

Potential DGD = max {2023 unassigned PDGD, min {deliverable MW, existing EO + max {base portfolio, EO interconnection requests} } }

5 Detailed DG deliverability assessment results

The detailed results are attached to this report. There is one worksheet for each PTO service territory. The following is a listing of the column headings used in the worksheet along with a brief explanation of each.

A. **DG Node—Substation Name**. Name of the substation representing the DG node.
B. **DG Node—Transmission Level kV**. The transmission level voltage at the transmission/distribution interface.
C. **DG in Base Portfolio/POU forecast**. The megawatts of DG at the node in the base portfolio utilized in the ISO's 2023-2024 Transmission Planning Process, or the amount submitted by the POU.
D. **WDAT/Rule 21 non-NEM DG—EO**. The total megawatts of non-NEM DG at the node in the WDAT queue that have requested Energy Only Deliverability Status and not obtained deliverability previously.

E. **WDAT/Rule 21 non-NEM DG—FC**. The total megawatts of non-NEM DG at the node in the WDAT or Rule 21 queue that have requested or obtained deliverability.
F. **Existing non-NEM DG—EO**. The total megawatts of non-NEM DG at the node already in commercial operation that have not obtained deliverability.
G. **Existing non-NEM DG—FC**. The total megawatts of non-NEM DG at the node already in commercial operation that have obtained deliverability.
H. **2023 Unassigned PDGD**. The total megawatts of Potential DGD identified but not assigned in the 2022-2023 DG deliverability cycle.
I. **Target DG Modeled**. The total megawatts of DG modeled at the node in the DG deliverability assessment.
J. **DG Deliverable**. The total megawatts of DG determined to be deliverable at the node.
K. **Potential DGD**. The total megawatt amount of Potential DGD at the node available for assignment of deliverability status to DG resources. Potential DGD is calculated as Max (Column H, Min (Column J, Column F + Max (Column C, Column D))).
L. **Notes.** Comments to help understand the results.