



Department of Energy

Bonneville Power Administration
P.O. Box 3621
Portland, Oregon 97208-3621

FREEDOM OF INFORMATION ACT/PRIVACY PROGRAM

May 24, 2021

In reply refer to: FOIA #BPA-2020-00700-F

Andrew Missel
Advocates for the West
3701 SE Milwaukie Avenue, Suite B
Portland OR 97202
Email: amissel@advocateswest.org

Dear Mr. Missel,

This communication is a third partial and final response to your records request submitted to the Bonneville Power Administration (BPA) and made under the Freedom of Information Act, 5 U.S.C. § 552 (FOIA). BPA received your records request on April 10, 2020, formally acknowledged your records request on April 23, 2020, provided you a first partial release of records on February 11, 2021, and provided you a second partial release of records on May 6, 2021.

Request

“... records ... pertaining to the Bonneville Power Administration’s (“BPA”) September 2019 decision to sign an Implementation Agreement with the California Independent System Operator (“CAISO”) to enter the Western Energy Imbalance Market (“EIM”) [, to include a]ny and all records concerning BPA’s choice to adopt the ‘three participating resource aggregation mode’ as part of its decision to sign the Implementation Agreement and join the EIM. This includes any records containing or comprising a reference to whether specific hydroelectric dams or groups of dams should be ‘bid into’ the EIM. This includes records generated before and after the signing of the [Record of Decision].”

Third Partial and Final Response

In an effort to both accommodate the review of the large volume of responsive records, and to provide the records expediently within the limitations of available agency resources, BPA is releasing responsive records to you in installments. A third partial and final release of responsive records accompanies this communication. The records in this release comprise those agency records containing information belonging to the California Independent System Operator (CAISO) and Powerex. In compliance with the FOIA, BPA contacted those third parties to solicit their objections to the public release of their information. BPA received affirmative objections. The third partial response, therefore, comprises 21 pages of responsive records, with

one page being partially redacted and seven pages being withheld in full under 5 U.S.C. § 552(b)(4) (Exemption 4). Additionally, BPA is herein releasing two pages with minor redactions applied under 5 U.S.C. § 552(b)(2) (Exemption 2). A more detailed explanation of the exemptions applied follows.

Explanation of Exemptions

The FOIA generally requires the release of all agency records upon request. However, the FOIA permits or requires withholding certain limited information that falls under one or more of nine statutory exemptions (5 U.S.C. §§ 552(b)(1-9)). Section (b) of the FOIA, which contains the FOIA's nine statutory exemptions, also directs agencies to release to FOIA requesters any reasonably segregable, non-exempt information that is contained in those records.

Exemption 2

Exemption 2 permits withholding of agency information "related solely to the internal personnel rules and practices of an agency." 5 U.S.C. §§ 552(b)(2). BPA relies on Exemption 2 here to protect internal BPA portal links.

Exemption 4

Exemption 4 protects from disclosure two types of third party information: (1) trade secrets; and (2) information that is (a) commercial or financial, and (b) obtained from a person, and (c) privileged or confidential. BPA here relies on Exemption 4 to withhold certain confidential commercial information belonging to the CAISO.

Certification

Pursuant to 10 C.F.R. § 1004.7(b)(2), I am the individual responsible for the records search, exemption determinations and records release described above and in all previously provide partial responses. Your FOIA request BPA-2020-00700-F is now closed with all available responsive agency records and information provided.

Appeal

The adequacy of the search may be appealed within 90 calendar days from your receipt of this letter pursuant to 10 C.F.R. § 1004.8. Appeals should be addressed to:

Director, Office of Hearings and Appeals
HG-1, L'Enfant Plaza
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585-1615

The written appeal, including the envelope, must clearly indicate that a FOIA appeal is being made. You may also submit your appeal by e-mail to OHA.filings@hq.doe.gov, including the phrase "Freedom of Information Appeal" in the subject line. (The Office of Hearings and Appeals prefers to receive appeals by email.) The appeal must contain all the elements required by 10 C.F.R. § 1004.8, including a copy of the determination letter. Thereafter, judicial review

will be available to you in the Federal District Court either (1) in the district where you reside, (2) where you have your principal place of business, (3) where DOE's records are situated, or (4) in the District of Columbia.

Additionally, you may contact the Office of Government Information Services (OGIS) at the National Archives and Records Administration to inquire about the FOIA mediation services they offer. The contact information for OGIS is as follows:

Office of Government Information Services
National Archives and Records Administration
8601 Adelphi Road-OGIS
College Park, Maryland 20740-6001
E-mail: ogis@nara.gov
Phone: 202-741-5770
Toll-free: 1-877-684-6448
Fax: 202-741-5769

Questions about this communication may be directed to the FOIA Public Liaison, Jason Taylor, at 503-230-3537 or jetaylor@bpa.gov. Thank you for your interest in the Bonneville Power Administration.

Sincerely,



Candice D. Palen
Freedom of Information/Privacy Act Officer

Enclosure: responsive agency records accompany this letter.

From: [Angelidis, George](#)
To: [Symonds Mark C \(BPA\) - B-3](#)
Subject: [EXTERNAL] FW: BPA request for ORA functionality
Date: Monday, December 3, 2018 11:27:48 AM
Attachments: [image001.png](#)
[image002.jpg](#)
[image003.jpg](#)
[image004.jpg](#)
[image005.jpg](#)
[image006.jpg](#)
[image007.jpg](#)
[image010.jpg](#)
[image009.jpg](#)

George

From: Angelidis, George
Sent: Wednesday, October 24, 2018 6:08 PM
To: Ristanovic, Petar <pristanovic@caiso.com>; Rothleder, Mark <MRothleder@caiso.com>; Abdul-Rahman, Khaled <KAbdulRahman@caiso.com>; Tretheway, Donald <dtretheway@caiso.com>
Subject: BPA request for ORA functionality

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(b) (4)

From: [Kochheiser, Todd W \(BPA\) - TOI-DITT-2](#)
To: [Truong, Mai N \(BPA\) - PGST-5](#); [Symonds, Mark C \(BPA\) - BD-3](#); [Mantifel, Russell \(BPA\) - TS-DITT-2](#)
Cc: [Messemmer, Clarisse M \(BPA\) - PGST-5](#)
Subject: RE: Help with definitions for federal participation ADF
Date: Wednesday, February 28, 2018 12:02:06 PM
Attachments: [Powerex's EIM Participat on Sept 26, 2017 pp.s](#)

Attached is a presentation from Powerex. Based on a conversation with Mike Goodenough I think it is still relatively accurate. Slides 5 and 6 cover their participation model.

Here is a summary of some other clarification that I asked Mike about:

- CAISO's NGR model (Non-Generating Resource) was originally developed to allow energy storage devices to participating in their market (e.g. Flywheels, Electric Cars, Batteries, Pumped Hydro, etc.)
- PWX's APR is modeled as an NGR. As such, the base schedule is OMW and their bids will be /-.
- PWX's ANPRs are modeled as an aggregation of normal GR (Generating Resources). As such, they will all have base schedules and will be carrying various ancillary services (regulations, contingency reserves, etc.)
 - Base schedules are carried by Generating Resources (there is one modeled for the big 8 plants on AGC and one for the remaining system)
- PWX will have some other NPRs that are modeled as Non-Generating Resources for non-EIM activity (bilats and Alberta and ancillaries)
- ALL of PWX's load/VER imbalances must be covered by their APR (or EIM dispatches whichever is more optimal as determined by the EIM)
- They can have separate GDFs for their APR and different ones for their ANPRs, even if they're the same plants – they can be updated hourly.
- They'll settle the APR as dispatched/awarded amount (meter = award)
- They'll settle their ANPRs based on actual meters net of APR dispatch/award amount

Bonneville Power Administration | Transmission Operations
3411 NE Hwy 99 | TOK-DITT2 | Vancouver, WA 98663
Direct: (360) 418-8752 | tkochheiser@bpa.gov

From: Truong, Mai N (BPA) - PGST-5
Sent: Tuesday, February 27, 2018 12:18 PM
To: Kochheiser, Todd W (BPA) - TOI-DITT-2; Symonds, Mark C (BPA) - BD-3; Mantifel, Russell (BPA) - TS-DITT-2
Cc: Messemmer, Clarisse M (BPA) - PGST-5
Subject: RE: Help with definitions for federal participation ADF

That would be great!

I just met with Mark and he was very helpful with definitions as well.

Thank you all for your help!

(b) (2)

From: Kochheiser, Todd W (BPA) - TOI-DITT-2
Sent: Tuesday, February 27, 2018 10:44 AM
To: Truong, Mai N (BPA) - PGST-5; Symonds, Mark C (BPA) - BD-3; Mantifel, Russell (BPA) - TS-DITT-2
Cc: Messemmer, Clarisse M (BPA) - PGST-5
Subject: RE: Help with definitions for federal participation ADF

I'll see if I can get something somewhat official from the CAISO that defines all these concepts.

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From: Truong, Mai N (BPA) - PGST-5
Sent: Tuesday, February 27, 2018 8:57 AM
To: Symonds, Mark C (BPA) - BD-3; Kochheiser, Todd W (BPA) - TOI-DITT-2; Mantifel, Russell (BPA) - TS-DITT-2
Cc: Messemmer, Clarisse M (BPA) - PGST-5
Subject: Help with definitions for federal participation ADF

I'm observing different degrees of understanding of terms so I'd like to add definitions to an appendix for level setting and education. Can you guys please help with definitions? I identified 5 terms but there may be more.

Clarisse started identifying characteristics of APR and ANPR based on the PWX discussions, which may be a good starting point for definitions.

Aggregate Participating Resource (APR)
Aggregate Non-Participating Resource (ANPR)
Generating Resource (GR)
Non-Generating Resource (NGR)
Generation Distribution Factor (GDF): The Bid template component that indicates the proportions of how the Bid is distributed for the resources participating in Physical Scheduling Plants, System Units, or Distributed Energy Resource Aggregations. (I grabbed this from CAISO's tariff)

Can we get something before tomorrow's meeting? Thanks in advance for your help!

From: Messemmer, Clarisse M (BPA) - PGST-5
Sent: Friday, February 23, 2018 5:42 PM
To: Van Calcar, Pamela M (BPA) - PGSP-5; Siewert, Christopher W (BPA) - PGSD-5; Kerns, Steven R (BPA) - PGS-5
Cc: Truong, Mai N (BPA) - PGST-5; Symonds, Mark C (BPA) - BD-3; Truong, Mai N (BPA) - PGST-5
Subject: FW: Notes from RHR Discussion with Powerex and PGP

I read Mark's notes again and there are some definitions that are useful to capture for the ADF. Specifically around APR, ANPR, generating and non-generating.

Here's what I gather: Each APR is dispatched by the CAISO and can be split into a generating and non-generating unit. The ANPR has a base schedule and is not dispatched by the CAISO. What I do not know is how the CAISO dispatches Powerex's generating APRs. Mark, you mention here that the non-generating resource has the 0 basepoint and all of the flexibility range. How, then, does the CAISO dispatch the generating APRs? Do they just dispatch the APRs according to their base schedule and so there is really no distinction between the generating APRs and the ANPRs? Help?

- Aggregate Participating Resource (APR)
 - APR is a defined portion of an actual physical resource using a Generation Distribution Factor (GDF) (this must be done, it is not a choice – it could be % or merit order based, but must allocate down to at least the project level)
 - APR is AGC capable (this must be done, it is not a choice)
 - GDFs for the APR are set at t-75 minutes with bid submission for the operating hour (this must be done, it is not a choice); BA / EIM Entity may change the GDF until t-40 min
 - APR is "electrically similar" (this must be defined likely via path-transfer distribution factors (PTDFs aka generating resource impacts on the transmission grid); there is an element of subjectivity to defining "electrically similar")
 - APR will have a base schedule quantity for every hour (this must be done, it is not a choice but it could be 0 as would likely be the case for Powerex every interval)
 - Powerex APR utilizes CAISO's Non-Generator Resource (NGR) functionality to have a 0 base schedule and therefore a 0 base point with a defined quantity of INCs and DEC's (this may be done, it is a choice Powerex has made)
 - APR will receive an instructed dispatch from CAISO – dispatch operating target (DOT) – every 5-minute market interval that may create imbalance which will be subject to financial settlement via the CAISO EIM (this must be done; however, how the DOT is passed to the resource is a choice, ie, CAISO-project (PAC) or CAISO-BCH-project (PWX))
- Aggregate Non-Participating Resource (ANPR)
 - ANPR is a defined portion of an actual physical resource using a Generation Distribution Factor (GDF) (this must be done, it is not a choice – it could be % or merit order based, but must allocate down to the project level)
 - An ANPR can be AGC capable (this may be done, it is a choice, therefore the ANPR could be a mix of AGC-capable and non-AGC-capable resources)
 - GDFs for the ANPR are set at t-75 minutes with bid submission for the operating hour (this must be done, it is not a choice); BA / EIM Entity may change the GDF until t-40 min
 - ANPR is "electrically similar" (this must be defined likely via path-transfer distribution factors (PTDFs aka impacts on the transmission grid); there is an element of subjectivity to defining "electrically similar")
 - An ANPR will have a base schedule quantity for every hour that adds up to the load and obligation forecast for that hour per the Resource Sufficiency check (this must be done, it is not a choice)
 - These resources will not receive CAISO dispatches (this happens, it is not a choice)
 - Physical deviation from the base schedules will be uninstructed deviation and create imbalance that will be subject to financial settlement via the CAISO EIM (this happens, it is not a choice)
 - CAISO offers tools, such as auto-matching, to mitigate the financial impacts of physical deviation (such tools may be utilized, but are not required to be used)
 - Auto-matching is primarily for interchange deviations to match the physical impact on a resource (a single resource or an ANPR) with a corresponding and offsetting physical impact on net scheduled interchange (NSI)
 - Powerex places regulating reserves and operating reserves dispatched by BC Hydro on an ANPR so that dispatches by BC Hydro are not mixed together with dispatches by the CAISO.

From: Symonds, Mark C (BPA) - BD-3
Sent: Thursday, February 15, 2018 1:50 PM
To: Kitchen, Larry (BPA) - PTL-5; Federovitch, Eric C (BPA) - PTM-5; Miller, Todd E (BPA) - LP-7; Haraguchi, Kelli H (BPA) - PTM-5; Higby, Aimee N (BPA) - PTL-5; Mantifel, Russell (BPA) - TS-DITT-2; Kochheiser, Todd W (BPA) - TOI-DITT-2; Malin, Debra J (BPA) - PTL-5; Bentz, Roger E (BPA) - BE-3; Kaseveter, Alisa D (BPA) - DI-7; Lut, Agnes (BPA) - BE-3; Kerns, Steven R (BPA) - PGS-5
Cc: Pierce, Deborah A (CONTR) - BD-3; Simpson, Troy D (BPA) - TOI-DITT-2; Germer, Matthew J (BPA) - PTM-5; Messemmer, Clarisse M (BPA) - PGST-5; Polsky, Cynthia H (BPA) - PGST-5

Subject: Notes from RHR Discussion with Powerex and PGP

All

Please find attached what I captured from the discussion:

(S) (2)

Others are welcome to add what they captured from the discussion. Please use track changes.

The last page includes the my notes from the portion of the discussion about how Powerex is establishing its participating resources in the EIM (including some of the updates we heard from Powerex on our 2/14 call).

Please let me know if there are any questions or concerns.

Thank you

Mark

Powerex's EIM Participation

September 26, 2017



CONFIDENTIAL – FOR DISCUSSION PURPOSES ONLY

Overview Of Powerex's EIM Participation

- **Powerex's participation is consistent with a Balancing Authority based implementation**
- **Powerex will participate in the EIM with the same "trifecta" as other EIM Entities:**
 1. **Flexible Generation** - voluntary bids and offers from residual BC Hydro flexible generation
 2. **Generation and Load Imbalances** - deviations from hourly base schedules
 3. **Transmission rights** - set aside ahead of the hour to support EIM transfers, anticipating:
 - 150 MW to and from Puget Sound Energy at BC-US Border
 - 150 MW to and from CAISO at Malin
 - Will include dynamic transfer capability (subject to availability)
- **CAISO's full network model will include information on BC Hydro Balancing Authority Area**
 - Data on generation, transmission, load, interchange, base schedules, etc.
 - Telemetry and Settlement Quality Meter Data*
 - CAISO will thus have full visibility, consistent with an EIM BA-based implementation
- **Powerex will be subject to CAISO's EIM requirements:**
 - Base schedule submission
 - Resource sufficiency
 - Local market power mitigation
 - GHG treatment
 - Settlement of energy imbalances, uplift allocations, etc.
 - Powerex will pay:
 - EIM Implementation Fee, estimated at \$1.9 million
 - EIM Administrative Fees, currently \$0.19/MWh
 - Will not apply to BC-Alberta transactions

* Information may be aggregated for some non-participating generation and/or load owned and/or operated by third parties

Overview Of Powerex's EIM Participation

- **Powerex's implementation framework reflects Powerex's unique participation with resources and load located in Canada:**
 1. **Powerex's participation in US wholesale electricity markets respects the mutually exclusive legal and regulatory jurisdictions of the BCUC and FERC**
 - Powerex is subject to FERC jurisdiction
 - BC Hydro is subject to BCUC jurisdiction
 - Powerex is the entity that participates in markets **outside** the Province of BC, with BC Hydro residual capability
 - BC Hydro operates **inside** the Province of BC
 - Title transfers between Powerex and BC Hydro at the BC border
 - Powerex's EIM participation must be consistent with this established framework
 2. **EIM Area will not extend into Canada**
 - EIM Area will remain subject to FERC's exclusive jurisdiction
 - Powerex's EIM transactions defined to occur at BC-US Border
 - CAISO will not publish market prices inside BC
 - CAISO will not manage congestion inside BC
 - CAISO will model power flows inside BC
 - CAISO will also inform BC Hydro of any resulting modelled congestion inside BC
 3. **BC Hydro continues to maintain legal, regulatory, operational autonomy**
 - Continues to be subject to BCUC jurisdiction
 - Continues to operate generation and transmission systems, serve load
 - Continues to manage transmission congestion in BC
 - Continues to settle tariff services independent of EIM, including Energy Imbalance Service

Overview Of Powerex's EIM Participation

- **Powerex's implementation framework reflects Powerex's unique participation with resources and load located in Canada:**
 1. **Powerex, not BC Hydro, will join and participate in the EIM**
 - Powerex will be subject to CAISO tariff
 - Powerex will settle EIM transactions with CAISO
 - BC Hydro will enter into a data-sharing agreement with CAISO to support Powerex's EIM participation
 2. **Powerex's EIM participation will adhere to Standards of Conduct**
 - BC Hydro will communicate necessary information covered under the Standards of Conduct directly to CAISO
 - CAISO will not provide Powerex access to Transmission Function Information (including through CAISO software interfaces)
 3. **No load biasing will be used for the BC Hydro BAA**
 - BC Hydro's load forecast will be communicated by BC Hydro directly to the CAISO, and used for Powerex's EIM participation
 - BC Hydro forecasted load will be distributed to load nodes within BC Hydro BAA using load distribution factors the same as for EIM Entities
 - Like with any EIM Entity, the EIM algorithm will balance any deviations between 15- and 5-minute load forecasts and Powerex's hourly base schedules
 - Like with any EIM Entity, Powerex will settle any load deviations from Powerex's hourly base schedules

Powerex's EIM Participation Using Aggregate Resources

- Powerex's participation will use CAISO's existing framework for aggregation of electrically-similar resources in the BC Hydro BAA:

Aggregate Participating Resource

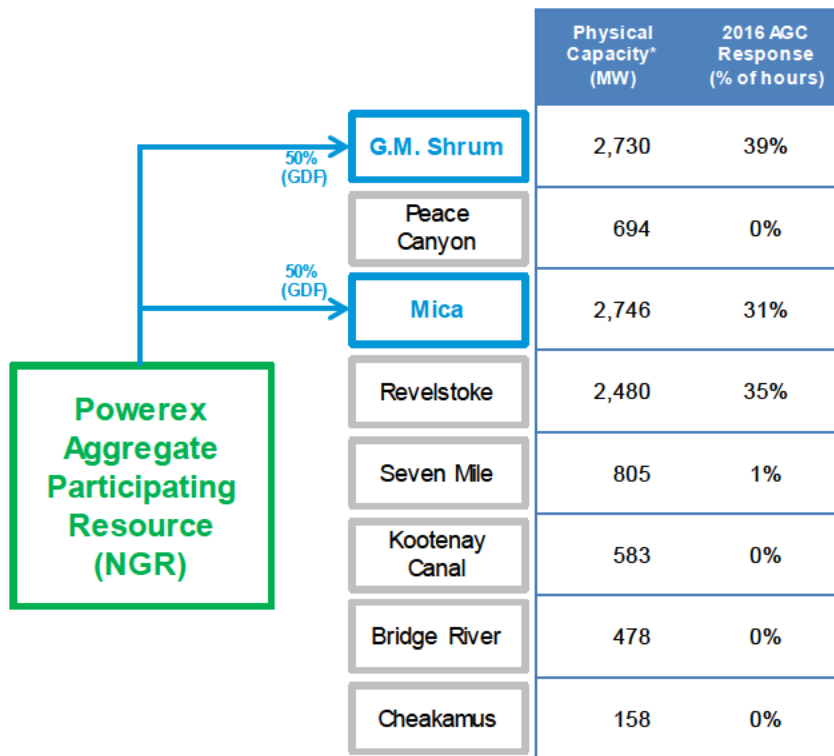
1. **Aggregate Participating Resource for 8 large hydro AGC facilities**
 - BC Hydro dispatches large hydro generation on AGC to respond to intra-hour changes in generation, load and interchange

Aggregate Non-Participating Resources

1. **Aggregate Non-Participating Resource for 8 large hydro AGC facilities**
2. **Aggregate Non-Participating VER Resources**
3. **Aggregate Non-Participating Resources for other Non-VER generation facilities**
4. **Aggregate Load**

Powerex's EIM Participation Using Aggregate Resources

Illustrative hour with G.M. Shrum and Mica providing AGC response

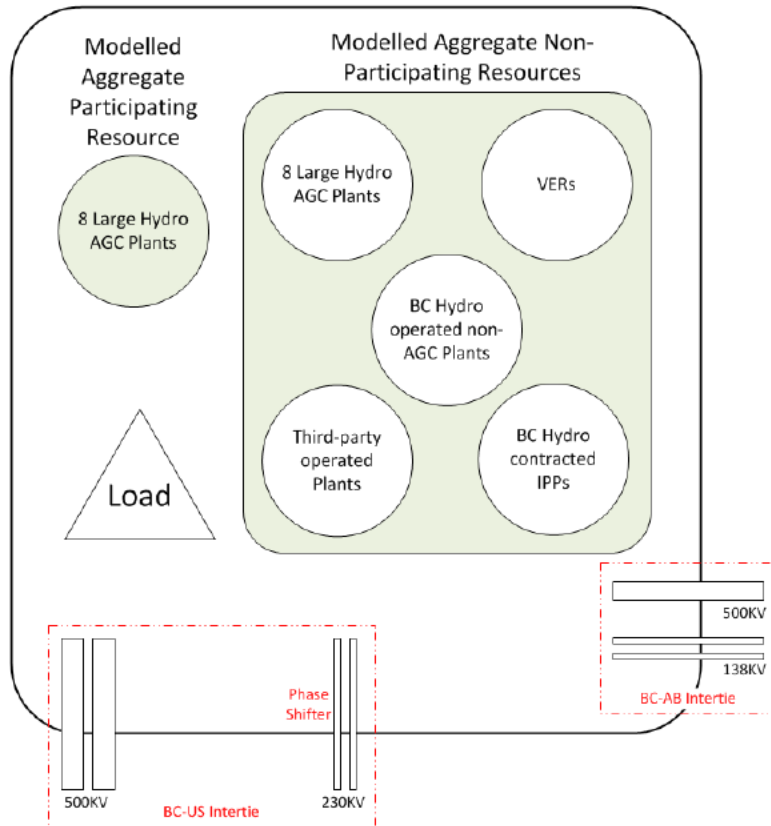


- These 8 large hydro facilities total 10,674 MW
- Base schedules, bids/offers and market dispatch for APR and ANPR will be within physical resource capabilities
- Modelled as:
 - Aggregate Participating Resource (APR), and
 - Aggregate Non-participating Resource (ANPR)
- Similar aggregation of large hydro generation occurs today for Mid-C resources in the EIM
- BC Hydro will determine GDFs for each upcoming hour, which will be communicated to CAISO
- These GDFs enable CAISO to more accurately model power flows from individual plants / units
 - Submission of hourly GDFs is an improvement from current aggregation approach
- Separating 8 large hydro AGC plants between APR and ANPR enables more accurate GDFs
 - Different GDFs for base schedules vs intra-hour EIM dispatch

* Maximum sustained generating capacity from "BC Hydro Quick Facts" for year ending March 31, 2017.
<https://www.bchydro.com/content/dam/BCHydro/customer-portal/documents/corporate/accountability-reports/financial-reports/annual-reports/bchydro-quick-facts-june-2017.pdf>

Powerex's EIM Participation with Aggregate Resources is Consistent with the EIM Design

BC Hydro BAA

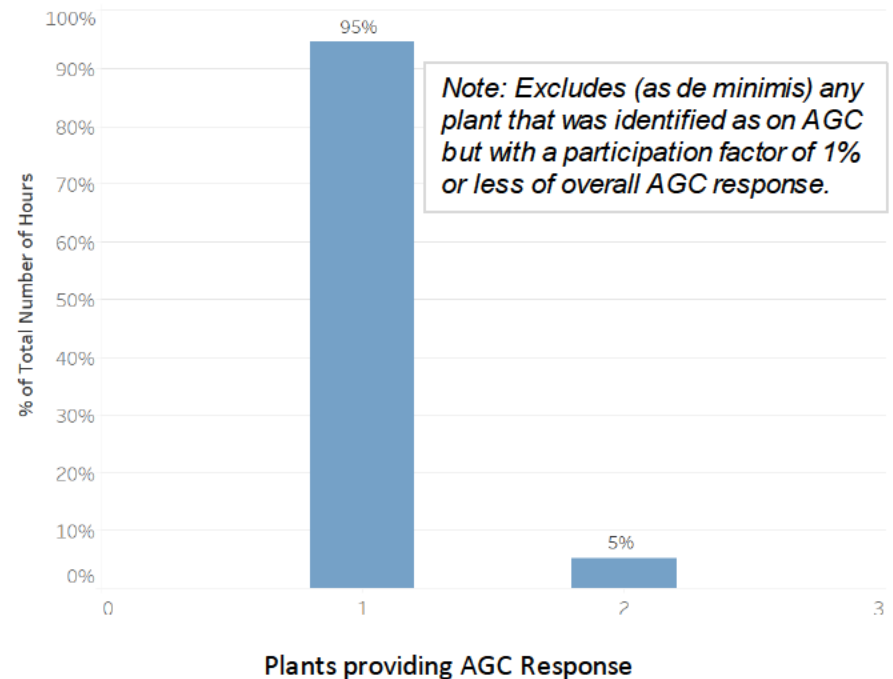


- **Powerex's resource aggregation meets the CAISO's existing requirements for aggregation of electrically-similar resources**
 - BC Hydro BAA is largely radial to the US (diagram)
 - Thus any potential rare departure from hourly GDFs will have limited impact on power flows in the EIM Area
 - Settlement of Powerex's aggregate resources will be consistent with the settlement of other EIM aggregate resources
- **CAISO will manage congestion within the EIM Area, including EIM transfers to and from BC**
 - BC Hydro will continue to manage congestion inside the BC Hydro BAA, and will not use CAISO's congestion management services
 - CAISO will inform BC Hydro of any resulting modelled congestion / infeasibilities in BC (if and when they arise)
 - CAISO will not enforce transmission limits within BC Hydro BAA
- **Powerex will be subject to the Resource Sufficiency tests**
 - CAISO will apply the balancing test, capacity test, flexible ramping sufficiency test and feasibility test
 - Powerex's base schedules and bids/offers are expected to continue to be fully feasible within the BC Hydro BAA

Transmission Congestion in the BC Hydro BAA

- BC Hydro has built out the transmission system to support winter peak demand under N-1 conditions including firm export commitments
- BC Hydro actively adjusts generation *prior to* the operating hour, considering transmission outages and congestion
- BC Hydro actively uses Generation RAS and Load Shedding RAS to ensure post-contingency states will respect reliability limits (instead of using generation re-dispatch)
- Thus, BC Hydro does not frequently re-dispatch generation intra-hour to resolve congestion
- In most hours, only one plant provides AGC response, and is known ahead of the hour, enabling accurate GDFs:
 - During 95% of the hours of 2016, only one plant was providing the AGC response
 - During the remaining 5% of the hours, only two plants were providing the AGC response
 - GDFs for APR may thus often be
 - 100% for one plant, or
 - 50%/50% for two plants

Number of Plants providing AGC Response each Hour - 2016



Above data are provided on a confidential basis to facilitate discussion. Data is preliminary and subject to verification.

Benefits of Powerex's EIM Participation

EIM Benefits to EIM Area

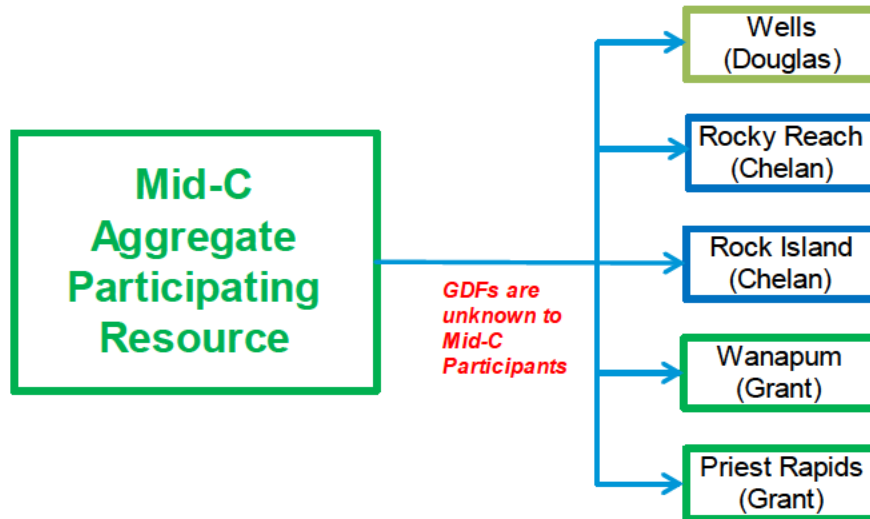
- 1. Powerex is bringing clean, fast-ramping, flexible hydro generation**
 - Increases supply options to meet generation and load imbalances
 - Supports integration of renewable resources
 - Reduces GHG emissions, through deployment of clean hydro energy
- 2. Powerex is bringing transmission rights**
 - Supports EIM transfers to/from BC and increases transfer capability between EIM Entities
 - Includes dynamic scheduling rights to/from CAISO, which is a frequent EIM limitation
- 3. Powerex is bringing additional diversity to the EIM**
 - Deviations in generation and load in BC included in EIM algorithm, and settled by Powerex
 - BC load and wind deviations are significantly diverse from NW load and wind deviations
 - Will reduce flexible capacity requirements for EIM Entities and CAISO
 - Flexible Ramping Sufficiency Test diversity credit

EIM Benefits to Powerex

- 1. Ability to use “stranded” balancing reserves**
 - Estimated at 300 MW of INC and 300 MW of DEC, on average
 - Does not displace non-EIM transactions
- 2. Ability to purchase during regional over-supply events, particularly spring season**
 - Additional voluntary DEC bids as opportunities arise
 - Requires additional transmission rights northbound be set aside
- 3. Leverages existing capability, in a more efficient way**
 - Powerex already participates in CAISO's 15-minute and 5-minute markets

Additional Slides

Example of Existing EIM Aggregation



It is Powerex's understanding that:

- EIM Entities participate today with a “slice” of Mid-C generation, modelled as an Aggregate Participating Resource
- Mid-C “slice” participants **do not** generally have information about which specific physical resource(s) will respond to their individual generation request (and thus cannot communicate hourly GDFs to CAISO)
- ***Powerex's implementation will be an improvement over existing EIM aggregation through the submission to CAISO of hourly GDFs***