

IRP Modeling Advisory Group

Responses to Questions Posed Following Webinar #5

9/6/2017

Background

Energy Division staff moderates the IRP Modeling Advisory Group (MAG), an informal, interactive forum to discuss the technical aspects of modeling to support the CPUC's IRP process. More details on participating in the MAG and previous materials are found at this website:

<http://www.cpuc.ca.gov/General.aspx?id=6442453968>. Staff hosted Modeling Advisory Group (MAG) webinar #5 on 9/6/2017 to introduce a proposed process to evaluate IRP portfolios using production cost modeling, specifically with the SERVMM model. The webinar was abbreviated during the last 10 minutes due to a building fire drill – so the last few questions went unanswered. Staff collected questions that were emailed by parties and present them below with staff responses.

Questions and Responses

Vote Solar

1. In response to Arne Olson's statement that curtailments directly show ramping/flex need – “these are the same” – doesn't this mean that curtailment cost in RESOLVE define a version of the opportunity cost for ramping?

Yes, in some situations renewable curtailment can represent the cost of not having enough ramping capability on non-renewable resources. If the morning or evening ramp is difficult to meet, the default solution is to curtail renewables until the ramp no longer causes operational challenges. This incurs a cost – the cost of curtailment. However, if curtailment is seen in the dispatch results, it might not be driven by ramping needs. It could instead be driven by, for example, an oversupply during daylight hours. In this case there would be little or no curtailment cost that could be attributed to multi-hour ramping.

2. When curtailments trigger the need to optimize (select next best) resources, but cannot select DERs, is this sub-optimal?

Certain DERs, such as EE and BTM PV, are not modeled as candidate resources, while others, like battery storage, and DR, are modeled as candidate resources. RESOLVE is used to look at a range of scenarios with different assumed forecasts of DERs that are not candidate resources. The assumed forecasts of resources like EE and BTM PV are exogenous inputs based on the 2016 Integrated Energy Policy Report (IEPR) Update demand forecast. Following RESOLVE optimization, the total resource cost (TRC) of each scenario is calculated. The total resource cost calculation includes costs associated with the assumed forecast of each load-modifying resource. In this sense, even those DERs that are not candidate resources, are part of the overall scenario analysis that informs recommendations. For example a sensitivity with a higher amount

of EE could show either a higher or lower TRC than a default case. Future IRP cycles will consider modeling improvements to incorporate all DERs endogenously in the model optimization. Staff is already working to better coordinate with DER potential studies (e.g. EE, customer generation, DR) to ensure the required granular DER attribute and cost data is available to plug into an optimization model that makes investment decisions such as RESOLVE.

3. What are the plans to more dynamically integrate use of DERs as a way to avoid curtailment and lower total system costs?

See above.

4. If curtailments can be used to indicate when/where DERs can reduce curtailment, shouldn't the IRP aim to achieve this?

See above.

5. Timing to integrate 2017 IEPR demand forecast into SERVVM (and RESOLVE) modeling was pointed out by CPUC Energy Division as an issue; please explain why, and how this relates to 2016 IEPR demand forecast now in place?

The issue is that RESOLVE cases on which the Reference System Plan will be based all derive from the 2016 IEPR Update forecast. If we run SERVVM on the Reference System Plan, we need to use the 2016 IEPR Update forecast so that SERVVM results can be compared to the equivalent RESOLVE results. We also want to run SERVVM again, updated to use the 2017 IEPR, so that we have a basis to compare a SERVVM run with the Reference System Plan, to a SERVVM run with the Preferred Sys Plan (which will have been built based on the 2017 IEPR).

Calpine

6. While marginal ELCCs might be useful to guide policy, what incentive does any specific LSE have to consider marginal ELCCs in its own procurement if RA compliance continues to be based on average ELCCs, i.e., what about the modeling/procurement process that you are contemplating would cause an LSE to internalize the externality associated with reducing the average ELCC of existing solar by procuring additional solar?

Staff expects to advance discussion on this issue via the Common Resource Valuation Methodology work track proposed in the May 2017 Staff Proposal as well as future Resource Adequacy proceedings.