MAG Webinar Notes 1/12/2017

Materials

* We have a rich amount of data that can go into RESOLVE
* The Excel sheet that went out is not the final set of data, we may make changes…it is relatively complete, but will be tweaked before going into production mode
* The Excel workbook has the same user interface that RESOLVE has when we release RESOLVE for you to do your own runs

Technical clarifications or corrections, feedback on how data is being presented, alternative source suggestions, role of specific assumptions QUESTIONS AND ANSWERS…

* David (Dave) Marcus, Consultant

Q: Why not have a post-2035 years? Then you’d need a post 2030 RPS obligation bigger than 50%.

A: We are looking at a 20 year horizon. It’s not yet in the model because this is preliminary. But again we can’t model every year if we want to keep run-time reasonable.

* Gregg Morris, Green Power Institute

Q: Looking for the inputs regarding the specifications for renewable resources. Is there a specific place from which you’re pulling dataset?

A: Renewable candidates tab has most of the information you’re looking for. At the top you’ll see the candidate resources.

* Anna Murveit, Consultant for Pathfinder

Q: Has E3 looked at WECC TEPPC process?

A: Yes, E3 is in their scenario process steering group. We’re updating capital costs WECC is using.

* Dave Marcus

Q: CO2 emissions intensity is set at 0.27T. Does T mean English or metric tons? There’s a difference between some northwestern imports and southwestern imports.

A: Tough modeling thing to pin down. The trouble is that if you apply the same coefficient to all imports, you’ll see a lot of imports instead of California centric generation. We know there the dynamic where we have some hydro coming from the northwest.

Q: Why does emissions intensity affect the dispatch?

A: It affects the dispatch or what the model chooses to build. With respect to the coal from the southwest: this is not addressed by the ARB rules. It’s allowed to be brought into California at the default emission rate. Model is not capturing the effects of zero carbon energy from the Northwest. We’re missing the ability of northwest hydro generators to send their surplus in some years to California counted as zero carbon. Very complicated to try to model, fluctuates from year to year. Instead of trying to capture that dynamic, we’ve just accepted that on average a certain amount of zero carbon hydro power is coming in from the northwest and on average is displaces 5 million metric tons of carbon in ca.

* Tim Duane, Imperial Country

Q: Question about REN candidate tab. What’s the rationale for the Pacific Northwest?

A: Potential override is a remainder from the SB 350 study. We probably won’t use those numbers in our final, so I wouldn’t pay much attention to them. This functionality allows us to limit some of the potentials to more realistic numbers.

Q: How did you triple the amount of geothermal in the NorthWest compared to what the potential supply curve estimate was?

A: don’t know by heart where that number came from. We usually want to limit things rather than increase them. So we’ll probably get rid of that.

Comment: ok just wanted to flag that.

* Ben, PG&E

Q: Jimmy mentioned you adjusted the California GHG target because of northwest hydro imports. How did you adjust the ghg target?

A: Still under data development. We’re flagging this. We haven’t decided on the final calculation methodology.

Antonio Alvarez, PG&E

Q: Why would model have to adjust the emissions cap?

A: It’s difficult to know exactly where the energy ended up coming from. We thought about taking a specific resource and taking the transmission line tagged as zero carbon but because of constraints on development time we couldn’t. We’ve had this problem with any conventional production simulation models.

* Anna Murveit

Q: Will you be adding additional resource or technologies that are not currently in the Excel file?

A: We could easily add another storage resource.

Q: How is pumped storage being picked up? Is it a large chunk or nothing? Are there increments of quantities of pumped storage or is it all of nothing?

A: There’s existing pumped storage and then you can handpick any quantity to go in. You can represent actual and a conceptual amount of pumped storage. We don’t have the ability to pick discrete projects of a certain size. The model can only go continuously between 1 and 500 MW. Not 0 or 500MW (all or nothing).

* Steven Kelly, Independent Energy Producers

Q: Discuss RETI inputs. Why are you using it if it was said it wouldn’t be used in any regulatory proceedings?

A: We don’t have any specific land use assumptions from RETI 2.0 in the model. We only referred to it for transmission costs as a potential input into IRP modeling.

* Dave Marcus

Q: CAISO Export limit is set at 2,000 MW for all years. It seems like a more reasonable assumption would be a much bigger number or trend overtime.

A: We haven’t sat down and thought about what number we’re going to use. We are interested in any suggestions or thoughts.

Dave: If you’re going to do a sensitivity expand its range.

* Gregg Morris, GPI

Q: The SB350 screen?

A: The screens are preliminary to line up our results with what we did for SB 350.

Q: everywhere you’re quoting capital costs on $ per kilowatt year are you taking into account the assumed capacity factor?

A: We’re using the same pro forma financial model as the RPS calculator does. We are taking into account the capacity factor.

* Emily Leslie, Defenders of Wildlife

Q: The difference between REN Candidate tab and REN supply curves tab is that Candidate tab is based on SB 350 study?

A: Not really, candidate tab aggregates the supply curve of a smaller set of resources to make things more manageable. It aggregates the supply curve.

Q: Looking for westlands solar PV resource but it’s not in there? Only the westlands solar thermal resource is in there. Am I not seeing it or is it not in the model?

A: It is in the model. On Candidate Renewable tab, row 10.

* Dave Marcus

Q: RE: solar PV prices, If you’re assuming 59 dollars and it increase thereafter it’s inconsistent with actual prices. Cost of resource characteristics tab. Have you thought about alternative price assumptions?

A: What we have in there is the latest from black and veatch RPS work.

Q: The PUC has through its PRG actual prices.

A: We welcome sources that are public.

Q: City of Palo Alto is public.

A: We’ll take a closer look at that.

* Tim Duane, Imperial County

Q: Elaborate on SB 350 screens. Explain what they are and how they’re used

A: These are all very preliminary but in the final form we’ll want to have two sensitivities and look at WECC wide vs in state wind scenario.

Q: If you were to use something like this: those with a 1 or 0, what does that mean?

A: The 1 or 0 reflects whether or not the resource is available. It’s a convenient way to say whether or not a resource is available. We will have a bigger tab to toggle resource on or off depending on your scenario.

Not an indication of meeting or not meeting a diversity criteria.

* Delphine Hou, CAISO

Q: Can you give us a preview of what will be coming on the local needs tab.

A: We’re looking at local constraints that allow you to build local resources in areas. How they get built is still under development. The starting point will be the results of the ISOs local capacity requirement studies. There will be a year by year estimate of what the needs are in each area. It would be a year by year estimate for certain specific areas. The resources we pick for the local area will also affect need at the system level.

* Dave Marcus

Q: REN\_Tx\_Costs tab, column I: is the idea that Wyoming and New Mexico wind, that they have a cost for transmission?

A: This is a Nick Schlag question. We’ll have to get back to you. Say the resources were to be built in New Mexico or Utah and assumed to be effectively absorbed by the grid without requiring a new transmission all the way to the CA border. Column J represents if we’d have to build another transmission line.

Q: Particularly for New Mexico, having the local costs be almost half of the California costs seems very high.

A: There will be a document that goes through how we derive each of these assumptions. So you’ll be able to look through that.

Q: That assumption is inconsistent with economic theory. Where buyers face costs other than the costs of the resource itself.

Q: The wheeling charge would be included in the clearing price?

A: Having an option with a market clearing price and trying to develop where the price is between developers and rate payers would be difficult to do.

* Rhonda Mills, from Geothermal Energy Association

Q: Thank you for operating cost update.

* Shelly-Ann Maye, Trans- Canyon

Q: The model will be considering primarily in state procurement scenarios and not necessarily region wide procurement scenarios. Why wouldn’t we model region wide scenarios? Given SB350 says there would be significant benefits for rate-payers from regionalization.

A: No, that’s not correct. We’re not trying to get into scenarios in this webinar but we will be modeling that.

* Dave Marcus

Q: Load, except 2022 drops through 2025. Comment on electrification other than electric vehicles. You’re using IEPR and then extrapolating. I don’t think there’s any correlation between the Energy Commission’s forecast of electrification and ARB’s heavy dependency on electrification. What are you doing to get consistency between the two?

A: Approach is to use the IEPR forecast and acknowledge there’s work on this issue on all three. CEC and ARB are using different methodologies solving for different problems. We won’t be able to resolve in the short term but please let us know your suggestions.

Process alignment!

Comment: Work done by E3 in Pathways could be used as an output for electrification. There could be quite a bit, although it’s not what IEPRs about it should be something you’re including.

Q: Union of Concerned Scientists

Q: Question about energy efficiency doubling and the empty rows in excel.

A: Not clear we’ll in LOADS\_Forecast tab we may not fill out that doubling. It’s the Energy Commission’s role to fill out that empty row. We will be populating the AB 802 row.

AB 802-- we are using existing studies to include that information. Send email to share sources for information. We’ll be using previously published documents as a source.

* Shucheng Liu, CAISO

Q: Re: hydro data, minimum generation amounts are quite high. Where are those numbers coming from? The 37 days selected are highly biased towards spring and winter time. Not evenly distributed. When you select these days. How do you know 37 days represent the whole year correctly. If LSEs don’t use 37 days how will they use the data for their modeling.

A: The 37 days were not selected randomly. They were selected deliberately to capture an even distribution of net load conditions. We over sampled the tail to make sure we were getting an appropriate sample of the tails, and overweighed the average days. 37 days represent a set of conditions over the years.

* Phillip Muller, Ormat

Q: CEC cost of generation report RPS calculator 6.3?

A: We published 6.3 inputs we were planning to update the calculator with but we don’t have an update of when the whole thing will go out. Relevant data has been published on website and here (in RESOLVE inputs spreadsheet).

* Tim Duane, Imperial County

Q: This reflects RPS 6.3 data?

A: Yes. Includes reductions to geothermal costs. We’ll be working with stakeholders continuously to refine the data. And shape the analysis as it moves forward.

* Q: Deborah Behles, CEJA

Is there going to be any work on EE assumptions to include the SB 350 EE doubling goal?

A; Responsibility of the CEC and not until this November.

We are planning to look at additional tranche AB 802. But not in terms of going through a full doubling.

* Eric Woychik, representing VoteSolar

How do you aim to compare the results to the risks if there is no risk weight to any of the quantitative assumptions. Third time question has been raised and hasn’t been answered.

A: After comments due this Friday we’ll put our heads together to develop a proposal. Please send your suggestion to how to move forward on this.

* Jan Reid, Coast Economic Consulting

Thought of portfolio diversification in different portfolios?

A: This came up in our scenario development webinars and our workshop in December. Parties put forward diversity indices. IN essence the diversity is a means to an end and if you’re measuring the ends that’s the more important consideration.

Diversity is already accounted for in the model in different ways. A more diverse portfolio will have a higher capacity value and an impact on the operating reserve relative to a non-diverse portfolio.

Tim Duane

Q: Scenario development workshop comments due this Friday (1/13/17)

A: Yes