

# List of Issues – Stakeholder Comments on Scenarios and Sensitivity Analysis

December 19, 2006 – Stakeholder Meeting

# Big picture issues

- Be clear through the process and in the final report, to describe carefully what the scenarios are, and what they're not, intended to be:
  - i.e., not a plan, but rather an analysis of outcomes “if” the system developed with one set of resources or another)
- Characterize this scenario exercise as “the start” of a longer conversation assisted by the ISO’s provision of information – and work to use some of the outputs to frame up what are some of the “next steps” (including impediments, policy levers that can be pulled)

# Big picture issues (cont.)

- Be clear in terms of identifying the implications raised by different scenarios and sensitivity analyses:
  - E.g., identification of “infrastructure requirements” – for scenarios where transmission impacts are critical items (e.g., in the imports scenario, or in the offshore wind analysis), it will be important to call out the transmission issue and then assign a rough estimate of such transmission costs and the need to add transmission if this scenario is one that is of interest to stakeholders and policy makers. This may point to policy needs to assure that such transmission investment occurs.
  - E.g., identification of “revenue gaps” – for some scenarios where there are outcomes that appear desirable to one set of parties or another, there may be a gap between the market revenues produced in the scenario and the investment costs associated with the resources in the scenario. This may point to policy levers that may be required to close the investment gap.

# List of issues raised in discussion – Re: Scenarios

- Refer to the first scenario as the “Queue Case”, and not the “Base Case” – there’s no “base case”
- Conduct an “operable capacity” analysis in appropriate cases where fuel supply issues are key
- Include distribution losses as appropriate in cases
- Be clear that analyses will raise “transmission implications” are part of the “outcomes and metrics;” but there will not be a transmission plan per se.
- Demand-side resources – make sure at the end of the day that there are analyses that reveal metrics of flat or very low load growth
- Consider adding a new scenario if there are significant differences in the mix reflected in the results of the first FCM auction (but only if these results occur in a timely fashion for the scenarios analysis).

# List of issues raised in discussion – Re: Scenarios (cont.)

- In the nuclear case, if there's a base load nuclear case that includes an import scenario; this particular version needs to include transmission cost to import such nuclear to the border of the region.
- The “Low-emission, energy-limited case” needs to have much higher TWH in the scenario (e.g., 5400 MW with 25-30 TWH, versus a sensitivity case with 7 TWH less of the resource) – and consider varying the amount capacity too (and then add peaking or something to make up the capacity gap).
- In technical groups, there'll be discussion of appropriate availability factors to use for different technologies
- In the demand-side scenario, include the emissions table for demand response resources with combustion effects (e.g., some distributed generation)

# List of issues raised in discussion – Re: Scenarios (cont.)

- Demand side scenario –
  - consider including load-shifting resources as well as simple demand reduction as well demand-reduction and energy efficiency
  - Consider different profiles of effectiveness of the resource being provided across the load curve
  - Capture some of the behind-the-meter small scale renewables and DG as part of the EE/DR scenario
  - “Demand response” – includes more than just ISO’s program
  - 50% / 50% - look to see whether there is sufficient EE
  - Look at draft rule for DG emissions
  - Make sure that EE includes investment costs and energy-cost savings, etc.

# List of issues raised in discussion – Re: Scenarios (cont.)

- Renewable resources -
  - Power supply planning committee (meet this Thursday) – to address some technical issues (e.g., for wind) -
    - Make sure that there is a “useful” blend of renewables – focus on mix of intermittent and baseload renewables rather than slivers of 7 different resource types within the one renewables scenario
    - Talk to the utility wind integration group – for wind assumptions
    - Make sure that transmission implications of wind are added where appropriate
    - Look at RGGI studies and RPS for #'s on wind if helpful

# List of issues raised in discussion – Re: Sensitivities

- Fuel prices –
  - Use EIA forecasts of long-term prices in the regular scenarios – and then adjust the fuel-price sensitivity cases
  - If the sensitivities focus on widening and narrowing the oil/gas price differential, while holding coal prices relatively stable in the sensitivity cases, then:
    - the intent is to show impacts on value of non-gas and non-oil technologies as much as the gas/oil
    - While coal price paths themselves won't be adjusted in the sensitivity case, the changes in other fossil prices will cause them to vary against coal
  - In the Coal scenario, fuel price of gasified coal is going to be based on coal prices (not gas prices)

# List of issues raised in discussion – Re: Sensitivities (cont.)

- Issue of the necessity of keeping the system “in balance” in all cases where sensitivity analyses are run:
  - Do we have a deficiency and surplus situations, or do we keep the system in balance in all sensitivity analyses?
- Consensus:
  - In the retirement sensitivity cases, retire a certain amount of MW (using the oldest non-hydro plants as the proxy for the retired units) and then add back the same amount of the resources that’s the core resources in that scenario –
  - In the demand reduction sensitivity cases, add more demand-side and also then add fewer resources of the technologies reflected in a particular case. (In the demand-side scenario, remove “queue” type resources rather than reducing demand side resources, so that in effect, this case models virtually flat growth with no supply-side resource additions)
    - Provide ‘baseline’ information which shows today’s energy mix, and the extent to which today’s capacity is now used as peaking and/or intermediate and/or base load today
    - Consider retiring the sooty six, or that have permits with an end date on them
    - Might consider adding back some black start types of units
    - Consider using EE as the resource to supply the retirement scenario

# List of issues raised in discussion – Re: metrics – some ideas to start with...

- Show impact on dispatch of a combined cycle dispatch under different fuel prices, emissions
- Show today's fuel mix, and to see if today's mix would satisfy RGGI requirements, RPS requirements – and compare to the outcomes of the scenarios
- Important to show that for the results of all scenarios, there are some metrics that show # of facilities, # of sites, amount of fuel (# of barrels of oil, # of MMcf of gas, etc.), to reveal fuel supply implications