



Eastern Interconnection Planning Collaborative



## SSC Webinar/Conference Call June 6, 2011, 1:00-3:00 PM Eastern Summary

### SSC Members in Attendance (by sector):

**Canada:** Rob Sinclair (alt. for Jon Norman)

**End Users:** Ryan Kind, Sonny Popowsky, Brenda Harris

**Generation Owners:** Steve Gaw, Michael Goggin

**NGOs:** Mark Brownstein, Andy Oliver, Beth Soholt

**Other Suppliers:** Herb Healy, Chris Lyons, Dennis Sobieski

**Public Power/TDUs:** Paul Malone, Tim Noeldner, Maryam Sharif

**States:** Diane Barney (alt. for Garry Brown), Jim Volz, Lib Fleming, Ed Finley, Kevin Gunn, Bob Pauley (alt. for Jon McKinney), Doug Nazarian, Marya White (alt. for Colette Honorable and Lauren Azar), Greg Atkins (alt. for Rob Berntsen)

**Transmission Owners:** Will Kaul, Tamara Linde, Stuart Nachmias

**SSC Chairs:** Roy Thilly, Kevin Gunn

**Ex Officio Members:** David Meyer

**EIPC:** David Whiteley, John Buechler, Flora Flygt

**The Keystone Center:** Catherine Morris, Caitlin Connelly

### 1. Results of Future 2, Sensitivities 1 & 2 (Ralph Luciani, CRA)

A. See CRA's presentation materials for details. Key highlights:

- The carbon price iteration resulted in lower values than default values (beginning with \$30/ton price in 2015 and escalating each year by \$7) in early years and higher than the default values after 2030 to meet the targeted reductions.
- Least expensive carbon reductions are found in the electricity sector, resulting in 99% elimination of CO<sub>2</sub> emissions from generation plants by 2050.
- Carbon capture & storage (CCS) on coal does not increase significantly because the 90% reductions achieved are not sufficient to achieve the reduction targets.
- Carbon reductions increase as transmission is allowed to expand under Sensitivities 1 & 2.
- The overall mix of generation changed significantly between Future 1 (BAU) and Future 2 (Federal Carbon Constraint - National implementation). Coal retirements increased and the capacity is replaced by natural gas in the earlier years and nuclear and renewable generation in the later years.
- EI-wide electricity demand decreased by 12% in 2030, natural gas and electricity prices increased significantly, and GDP declined compared to Future 1.
- Relaxing the transmission constraints via changes in the overload (OL) charges in Sensitivity 1 & 2 result in a significant increase in wind generation compared to Future 2 Base Case.
- The total amount of wind capacity in the EI does not increase significantly (3 GW) from Sensitivity 1 (75% OL) to Sensitivity 2 (25% OL) because the amount of wind is limited by

the 35% intermittency limits in the model. In addition, the wind generation increases in MISO\_W, SPP and Nebraska as transmission is relaxed.

#### B. Discussion & Questions:

- Ralph L. explained that the high carbon prices after 2030 are a function of the perfect foresight of the model, the need to meet 80% economy-wide CO2 reductions by 2050, and the fact that banking is not allowed in order to achieve the specified reduction target.
- Ralph L. confirmed that energy efficiency does not increase automatically in the model and must be “forced in,” so the results of Future 2 do not include explicit increases in EE in response to increasing carbon prices. Decreased electricity demand is a function of price elasticity of demand and the shrinking economy. Energy efficiency levels plateau in 2025.
- Several “Modified” low carbon price options were discussed including keeping the price constant after 2030 and using the lower value in each year of the default carbon price or the iterated carbon price.
- Roy Thilly emphasized the importance of restricting the use of the results to informing the Scenario selection process given the limitations of the model and the unexpected results driven by the model inputs.

**CONSENSUS DECISION OF SSC:** The SSC agreed to use the carbon price iteration results as the basis for the remaining F2 Sensitivities and F3 Base Case and Sensitivities. The SSC agreed to hold the high carbon price sensitivity in Futures 2 & 3 for possible use as a modified low carbon sensitivity or for use in the development of Scenarios. The low carbon price sensitivity was retained at 20% below the iterated values.

## 2. Selection of Sensitivity 1 (OL75) or Sensitivity 2 (OL25) and Transmission Limit Hardening (TLH) methodology (Tyler Ruthven, National Grid)

### A. OL75 Vs OL25

- See “Future 2 Soft Constraints and Transfer Limit Hardening” presentation for details.
- The NEEM-TX Subteam did not have a recommendation on the choice between these two options, but noted that none of the Subteam supported the use of the Baseline Infrastructure as the basis for hardening the transfer capability between NEEM regions.
- The pros and cons of each Sensitivity were discussed at some length.
- EISPC decided earlier in the day to adopt the Chairs’ compromise proposal in principle, that is, to use one of the expansion Sensitivities for Futures 2 & 3 and the other for Futures 5 & 6 to address the interests of all sides and to ensure as much comparability as possible between the National and Regional Futures with the same policy drivers.
- Generation Owners & Developers Sector said that if this approach were used, they would prefer that the more expansive (OL25) be applied to Future 5 & 6. However, as noted below, the GO/GDs were strongly in favor of using the more expansive OL25 transmission capability as the basis for both National Futures.
- A number of Sectors voiced their interest in seeing the results of OL75 in Future 5 even if it was not going to be used for hardening the limits.
- NGOs noted again that they are willing to give up the OL25 Sensitivity in Future 8 but may want to retain the Sensitivity to test other factors, rather than give it up for use in

the Scenario development phase.

## B. Transfer Limits Hardening Methodology

- Option 1 TLH Method was preferred by most of the Sectors as the best approach for hardening the limits between NEEM Regions.

**DECISION OF SSC:** Sensitivity 1 (OL75) will be used for Futures 2 and 3 and Sensitivity 2 (OL25) will be used for Futures 5 and 6 as the basis for hardening transfer limits between NEEM regions. Option 1 (average of the 3 methods using the default values and revised RHC method) will be applied for hardening the limits in all Futures where an expanded transmission option is selected. Several people expressed a desire to keep Sensitivity 1 (OL 75) in Futures 5 & 6 for information and it was not removed.

NOTE: The Generation Owners and Developers Sector (Generators) dissented from this decision on the ground that the Sector believes that the more expansive OL 25% case should be used as the basis for hardening the transfer limits between regions and applied in both national Futures (Futures 2 and 5.) In the Sector's view, it is very important when looking at potential generation build-outs on a national basis to relax transfer limits between regions to a level that more reasonably represents a national future and provides an opportunity for the model to allow the development of the most economic generation resources. The Sector believes that working toward these goals would provide important information to see where the most cost-effective generation resources might be built without undue restrictions.

The Generator Sector representatives on the SSC provided the following additional views: *The regional futures (Futures 3 and 6) were designed to limit the development of generation from more remote resources. Placing artificial constraints on the development of more remote generation in Future 2 or 5 will provide less distinction when compared to the results of the regionally implemented futures and therefore, less information when making decisions in Phase II. It is also inconsistent with the stated desire of the Administration to incorporate more renewable energy and development of a grid to access the wind rich regions of the eastern interconnect which was understood by some to be one of the desires of the Department of Energy in this study.*

In light of the fact that there was consensus among the other Sectors on this decision, the Generators agreed that this decision would constitute the SSC's decision and that the Generators' dissent would be clearly noted for the record in both the meeting summary and the Phase I Report, rather than calling for a formal vote. The other Sectors concurred with this process.

## 3. Next Steps

- CRA expects to release results for remaining Future 2 Sensitivities and F3, Sensitivities 1&2 in about a week to 10 days.
- The GO/GD Sector's dissenting position will be noted in the meeting summary and Phase 1 report.
- Keystone will poll the SSC members on their availability within 2-3 days of the release to hold a webinar/conference call to review the results and make a decision if possible on the use of the outstanding high carbon price sensitivities and the use of the OL25 Sensitivity in Future 8.
- The chairs stressed the desirability of retaining one or two additional sensitivities for scenario development to provide the SSC with flexibility given the need to specify

transfer limits between regions and to resolve anomalies in generation location due to the way the model works. They asked SSC members to consider whether additional low carbon sensitivities in 2 and 3 will provide helpful information for scenario development and to consider what other sensitivities may not be needed.

- Tyler Ruthven will work with Stan Hadley to provide the revised Exhibit 17 of model inputs to reflect today's decisions.