

Combined Heat and Power Subcommittee Meeting #3

Overview Memo

November 12, 2014 (Prepared by SAG facilitator A. Beitel)

I. Overview

In the decisions on the last three-year energy efficiency plans (EY 6- 9; GY 4- 6), the Illinois Commerce Commission (ICC) delegated to the SAG discussion and resolution of issues related to Combined Heat and Power (CHP) in two of the dockets: ComEd's and DCEO's (ICC Docket Nos. 13-0495 and 13-0499, respectively). This memorandum summarizes ICC directives on CHP, prior SAG work on CHP, and a summary of key issues, proposed resolutions to the key issues, and any open issues and questions to provide a framework for discussion at the next CHP Subcommittee meeting scheduled for November 18, 2014.

A. Regulatory Directives

In the ComEd docket, the Commission determined that a “standalone” CHP program for ComEd should be evaluated within the stakeholder advisory group process. (Order, ICC Docket No. 13-0499, pp. 91 – 92). The Commission encouraged the discussions to occur “as soon as possible” to allow sufficient time to implement a CHP Pilot Program in the three-year plan. (Id.)

In the DCEO docket, the Commission directed DCEO and its evaluator to “work with the other utilities and the SAG to reach agreement on the most appropriate technical method to calculate savings from CHP systems in Illinois and include such methodology in the updated IL-TRM that gets submitted to the Commission for approval.” (Order, ICC Docket No. 13-0495, pp. 33 – 34). The Commission ruled that, in the meantime, DCEO's savings calculation method should be used to determine savings from CHP, as “DCEO's method correctly accounts for the fuel that would have been utilized to generate the electricity from the grid being supplied by the CHP system, accounts for the fuel that would have been used to generate the thermal energy recovered from the CHP system, and accounts for the increase in gas utilized at the site by the CHP system.” (Id.)

B. SAG Response to Regulatory Directives

ICC regulatory directives relating to CHP have been addressed primarily through the CHP Subcommittee. The CHP Subcommittee has met twice on July 15 and August 5. The CHP subcommittee has focused primarily on the following issues:

1. How to calculate savings from CHP;
2. How to calculate the cost-effectiveness of CHP;
3. How to allocate savings and co-fund CHP between the gas and electric companies;
4. The policy issue of whether CHP should be co-funded;

5. Developing a CHP workpaper for the IL TRM; and
6. ComEd's draft CHP Pilot Program design.

II. Key Issues; Proposed Resolutions; Open Issues and Questions

A. CHP Savings Calculations, including CHP Savings Calculations; C/E; Savings Attribution; Cost Allocation

- **Threshold Policy Issue – Do we want funding for CHP to come from one utility or fuel source or two?**
 - See Nicor (Ted Weaver) memo on issue.
 - Proposed Resolution: CHP is a measure that, on a Btu basis, reduces energy use. Thus, it is a measure that should be promoted in IL. The measure will be more effectively promoted if it is funded and promoted by both gas and electric utilities. Thus, from a policy perspective, it is preferable for CHP funding to come from two fuel sources.
- **Technical Question #1: How should savings from CHP measures be determined?**
 - Proposed Resolution: Calculate net savings at source. Specifically convert both kWh and thermal output to source Btus, and subtract source Btus of fuel used by CHP to obtain overall net Btu impact. *Rationale*: Because CHP involves saving multiple fuels, and also consumes significant purchased energy, a source calculation is the only way to truly reflect the net energy impact on Illinois.
- **Technical Question #2: How should CHP be screened for cost-effectiveness (C/E)?**
 - Proposed Resolution: Use net savings at site for each fuel. This includes reduced fuel at the site (kWh) and increased fuel use at the site (gas), and applying the appropriate avoided costs to each. *Rationale*: Using net savings at the site is consistent with how other EE measures are screened. Furthermore, the avoided costs used in the C/E calculator are based on savings at the site and already internalize upstream (source) impacts.
- **Technical Question #3: How should savings from CHP be allocated?**
 - Proposed Resolution (AG/NRDC Proposal): Any savings below the minimum baseline (60%) would be allocated to electric utilities. Savings above the minimum threshold efficiency (60%) would be allocated to gas utilities. *Rationale*: The decision to install CHP results in electric savings at the site, while increasing gas usage. Therefore, adoption of a baseline system results in only electric savings. However, once the decision to install is made, utilities should promote and incentivize the highest efficiency possible and appropriate. Any increased efficiency above the baseline will result in incremental gas savings for a given electric output.
- **Program Question #1: How should incentive costs from CHP be allocated between gas and electric utilities, assuming both want to participate (gas utility wants to fund CHP)?**
 - Proposed Resolution (AG/NRDC): DCEO is proposing a minimum baseline efficiency of over 60%, with “Tier 2” incentives that would kick in at 61%

efficiency, based on a continuous variable incentive per % of efficiency improvement. Gas companies would claim savings based in reduction in gas input at the site resulting from CHP efficiencies higher than 60%. Similarly, gas companies would fund the portion of the incentive resulting from increasing efficiency beyond 60%.

- Program Question #2: **How should incentive costs from CHP be allocated between gas and electric utilities, assuming gas doesn't want to participate** (gas utility doesn't want to fund CHP)?
 - Proposed Resolution (AG/NRDC): The minimum baseline efficiency for a CHP incentive is 60%. A "Tier 2" continuous variable incentives per percent of efficiency improvement could be offered for systems that meet a threshold of over 60%. In this case, electric companies would fund the portion of the Tier 2 incentive resulting from increasing efficiency past 60% . Electric companies then would claim full net savings resulting from going to higher efficiencies. In other words, the electric company would get the part of the savings that the gas utility otherwise would have claimed had the gas utility co-funded the program.

B. ComEd Pilot Plan for CHP

- Open Issue: How will EM&V calculate savings, cost-effectiveness, and free-ridership from CHP?

C. CHP Workpaper: Comments/Open Issues

On December 10, 2014, the Energy Resources Center of the University of Illinois, Chicago (Cuttica, Galliasso, Raikar) submitted a draft workpaper for inclusion in the Illinois Technical Reference Manual. Three sets of comments were received from IIEC, Navigant (K. Grabner), and AG/NRDC (Mosenthal/Neme). The comments will be discussed at the November 18, 2014 SAG meeting.

D. Other Open Issues/Questions

- What are Nicor, Ameren IL and Integrys plans for CHP?
 - Integrys – Does not plan to offer incentives for CHP, either custom or prescriptive.
 - Ameren IL – Plans to offer custom incentives for CHP (subject to check).
 - Nicor – Hopes to co-fund CHP with ComEd, pending resolution of key issues, above.

Attachments:

1. Ted Weaver Policy Memo titled "Fuel Switching Savings Calculations (circulated to SAG for Oct. SAG meeting)
2. ComEd CHP Pilot Program Plan (Updated)
3. CHP Workpaper

4. Kolway, Neil “Calculating Net Electricity Savings from Utility-Supported CHP Projects,” Southwest Energy Efficiency Project (August 2012, Updated and Revised, April 2013).