Complying with the Clean Power Plan: An Opportunity for the Industrial Sector

ACEEE Webinar Series

May 19, 2016
ACEEE Webinar Series

“Energy Efficiency and the Clean Power Plan”

Series of five webinars through July

Upcoming Topics
- Paying for Clean Power Plan Compliance
- People’s Choice!

Links to Register - aceee.org/topics/clean-power-plan
Webinar Speakers

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Overview

• Why is the industrial sector important?
• What are industrial energy efficiency programs?
• What is the role of industrial energy efficiency in the Clean Power Plan?
• How does industrial energy efficiency count?
• How can industrial customers participate?
Industry is an important end-use sector

Total End-use Consumption By Sector, 2015

- Transportation: 28%
- Residential: 21%
- Commercial: 19%
- Industrial: 32%

US industrial firms have a history of becoming more energy-efficient.

Some of the many benefits of industrial energy efficiency

- Lowers operating costs
- Increases productivity
- Boosts competitiveness
- Large energy savings
- Significant GHG reduction*
- Economic development
- Lowers price of energy

What are industrial energy efficiency programs?

• Financed by small charge on monthly energy bill
• Administered by local utility or third party
• Provide incentives, services, and technical assistance

Source: Energy Trust of Oregon:
Industrials play fundamental role in utility programs

Large customer programs can achieve large savings at low cost

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<tr>
<th>Energy Trust of Oregon</th>
<th>National Grid Rhode Island</th>
<th>Xcel Colorado</th>
<th>Focus on Energy Wisconsin</th>
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<tbody>
<tr>
<td>70%</td>
<td>63%</td>
<td>54%</td>
<td>57%</td>
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- Energy savings from C&I (%)
- Non-C&I (%)

<table>
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<tr>
<th>Energy savings from C&amp;I savings ($/kWh)</th>
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<tr>
<td>2.4¢</td>
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<td>2.8¢</td>
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<td>1.9¢</td>
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Combined investments enable greater savings potential

**INDUSTRY INVESTMENTS**

The low-risk, high return private investments. A small percentage of all possible energy efficiency projects.

Short-term return (1–2 years)

**UTILITY INVESTMENTS**

Public infrastructure investments with long-term benefits, like generation, transmission and distribution systems.

Long-term return (10–20 years)

**NEW POTENTIAL**

Partnered investments the customer would not make alone, but that represent deep energy savings and cost less than infrastructure.

Medium-term return (3–20 years)

Participation translates into financial value to customers

- Incentives reduce payback periods
- Help identifying projects
- Access to technical assistance and project implementation support
- Multiple benefits (safety, reduced waste, lower maintenance costs)
- Lower energy bills (less consumption and lower prices)
Challenges exist, but Clean Power Plan can help

Clean Power Plan Opportunity

• EPA’s Clean Power Plan (CPP) sets state limits for CO₂ emissions from existing power plants
• Provides incentive to ramp up efficiency efforts
• States are ultimately on the hook to comply
• Energy efficiency is a low-cost option for emission reductions
Energy efficiency is a low-cost resource

Source: Levelized cost of energy efficiency. ACEEE 2016. aceee.org/blog/2016/01/yes-saving-energy-cheaper-making
What types of industrial efficiency can count?

- Process efficiency improvements
- Equipment upgrades
- Combined heat and power (CHP) and waste heat to power (WHP)
- Smart manufacturing
- Strategic Energy Management
- Superior Energy Performance/ISO 50001
SUPR 2

- User chooses from 19 different policies and technologies to build a “compliance scenario”
- Results are for 2016-2030
- State specific results for:
  - $CO_2$, $NO_x$, $SO_x$ reductions
  - Energy savings (MWh)
  - Costs ($)

SUPR2 Calculator for CPP Compliance

It's super easy to find out which energy efficiency and other options would help your state the most while complying with EPA Clean Power Plan (CPP) emissions regulations. Just follow these easy steps!

1. SELECT
   Download the calculator (link below) and select your state from the menu.

2. BUILD
   Energy efficiency, pollution control, and clean power options are on the table. Choose a mix that works for your state.

3. EVALUATE
   The calculator shows you how much your options will cost and what you will get for that investment. You can tailor the options you selected to optimize savings.

4. RESULTS
   Besides the savings estimate, the results show how much of your state’s CPP goal is achieved by each selected measure.

State and Utility Pollution Reduction Calculator Version 2

Download it now at aceee.org/research-report/e1601
State example: SUPR 2 results for Illinois

10% of CHP technical potential = 1280 MW for Illinois


Source: State and Utility Pollution Reduction Calculator Version 2 (SUPR 2); represents savings potential in 2030 from selected efficiency options
Compliance approaches

Industrial energy efficiency (IEE) can contribute savings under any compliance approach

**Rate-based:**
- IEE installed on or after Jan. 1, 2013 that is still achieving savings in 2022 can earn emission rate credits (ERCs)
- States can issue ERCs to industrial energy users that generate, measure, and verify reductions from IEE

**Mass-based:**
- Any reductions during compliance period can count
- States can directly allocate a portion of allowances to industrial energy users, who can sell them to EGU owners
- States can auction allowances and divert revenue to IEE
How could it work?

Example: Manufacturing company completes EE installations, resulting in 800 MWh annual energy savings and 465 tons CO$_2$ reductions

**Rate-based:**
- Estimate savings
- Complete installations
- Measure and verify savings
- **Earn ERCs** (1 ERC = 1 MWh saved energy)
- Sell ERCs to EGU owners

**Mass-based:**
- Reduced emissions from EE automatically “count”
- Could **receive revenue** to fund EE project via auctioning of allowances (1 allowance = 1 ton CO$_2$)
- Could **receive allowances** from state to sell to EGU owners
How to get involved

• Meet with your state officials
• Learn about existing programs
• Discuss the opportunity for IEE and incentives available in market-based compliance
• Engage in compliance plan development
• Network with peers and share information – Industrial Coordinating Committee
Key takeaways

• EPA encourages states to use IEE
• IEE can contribute savings under any compliance approach
• CPP crediting mechanisms (ERCs or allowances) can benefit manufacturers
• Large energy users can talk to state agencies about the opportunity for IEE savings
“It’s time to implement good industrial energy efficiency programs in your state,” ACEEE Blog Post, February 10, 2016.

[Link to blog post]
Additional Resources

Communicating the Value of Industrial Energy Efficiency Programs
[aceee.org/communicating-value-industrial-energy-efficiency](aceee.org/communicating-value-industrial-energy-efficiency)

Manufacturers Save Big with Utility Industrial Energy-Efficiency Programs
[alliance4industrialefficiency.org/manufacturers-save-big-with-utility-industrial-energy-efficiency-programs/](alliance4industrialefficiency.org/manufacturers-save-big-with-utility-industrial-energy-efficiency-programs/)

*Forthcoming Conference Paper* How energy-intensive manufacturers can be winners under EPA’s Clean Power Plan


Clean Power Plan Resources Page [aceee.org/topics/clean-power-plan](aceee.org/topics/clean-power-plan)

Answers to States Questions (ASQ) [cpp.naseo.org/asq](cpp.naseo.org/asq)
Upcoming Events…

May 24 – 26, 2016
Hosted by Texas A&M

ACEEE presentations will include:

• How Information and Communication Technologies (ICT) Will Increase the Participation of Distributed Energy Resources in Electric Power Markets - Ethan Rogers and Eric Junga, ACEEE

• How Energy-intensive Manufacturers Can be Winners under EPA’s Clean Power Plan - Meegan Kelly, ACEEE
Call for presentations open through May 31.
For more information: aceee.org/conferences/2016/ie
Upcoming Webinar

Paying for Clean Power Plan Compliance: Energy Efficiency

Thursday, June 23rd, 1:00 – 2:00pm EDT

Register:

attendee.gotowebinar.com/register/1970732029541162242
Questions?

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