



Combined Heat and Power in EPA's Clean Power Plan

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Louisiana CHP Stakeholder Forum
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The American Council for an Energy-Efficient Economy (ACEEE)

- ACEEE is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors
- 50 staff; headquarters in Washington, D.C.
- Focus on energy efficiency in industry, buildings, & transportation sectors
- Research in economic analysis & financing, behavior, energy efficiency programs, national policy, utilities, state, & local policy, and some international work
- Diverse funding sources, including foundation grants, contracts and government grants, and conferences & publications



Overview

- What does the CPP say about CHP?
- How can CHP count?
- What is the potential impact of CHP on Louisiana's CPP target?
- Q&A with EPA CHP Partnership

Energy Efficiency in the CPP

Utility and non-utility EE programs

Residential, commercial and industrial measures

Energy savings performance contracts (ESPC)

Building energy codes

Combined heat and power

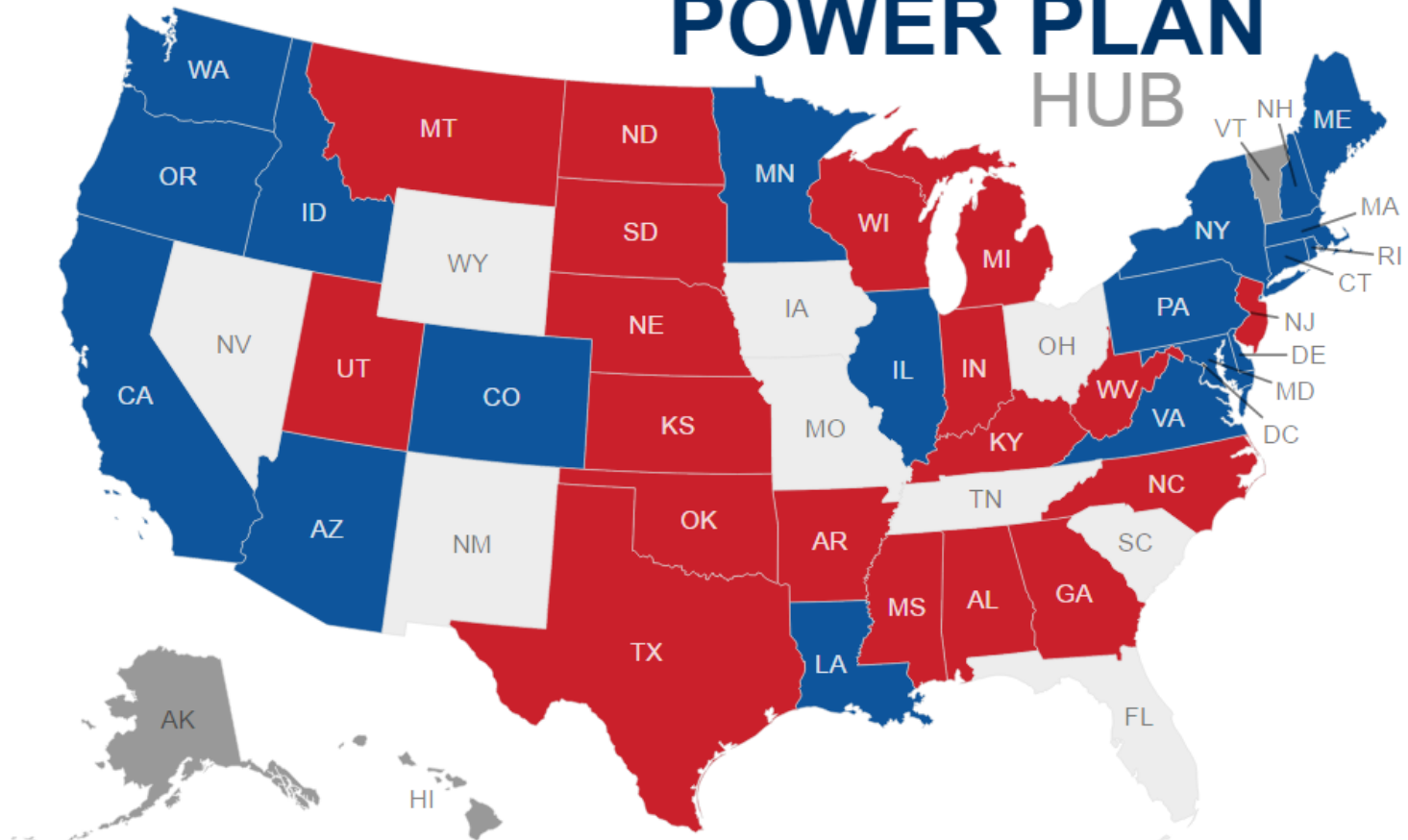
Appliance replacement and recycling programs

Behavioral programs

State appliance and equipment standards

Water and wastewater programs

E&E's POWER PLAN HUB



Supreme Court Stay Response

Continuing Planning



19 states

Assessing Planning



9 states

Suspending Planning



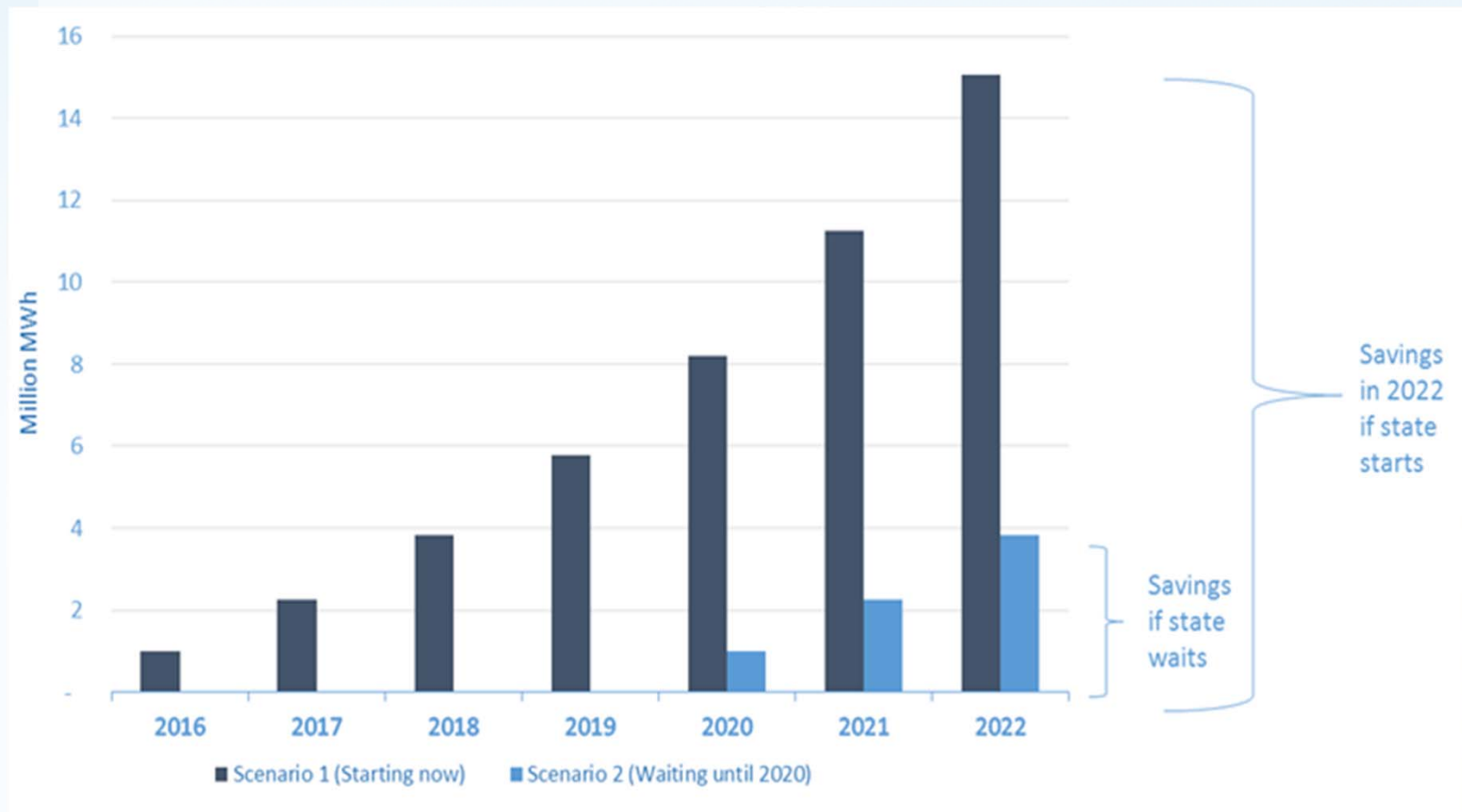
19 states

Exempt

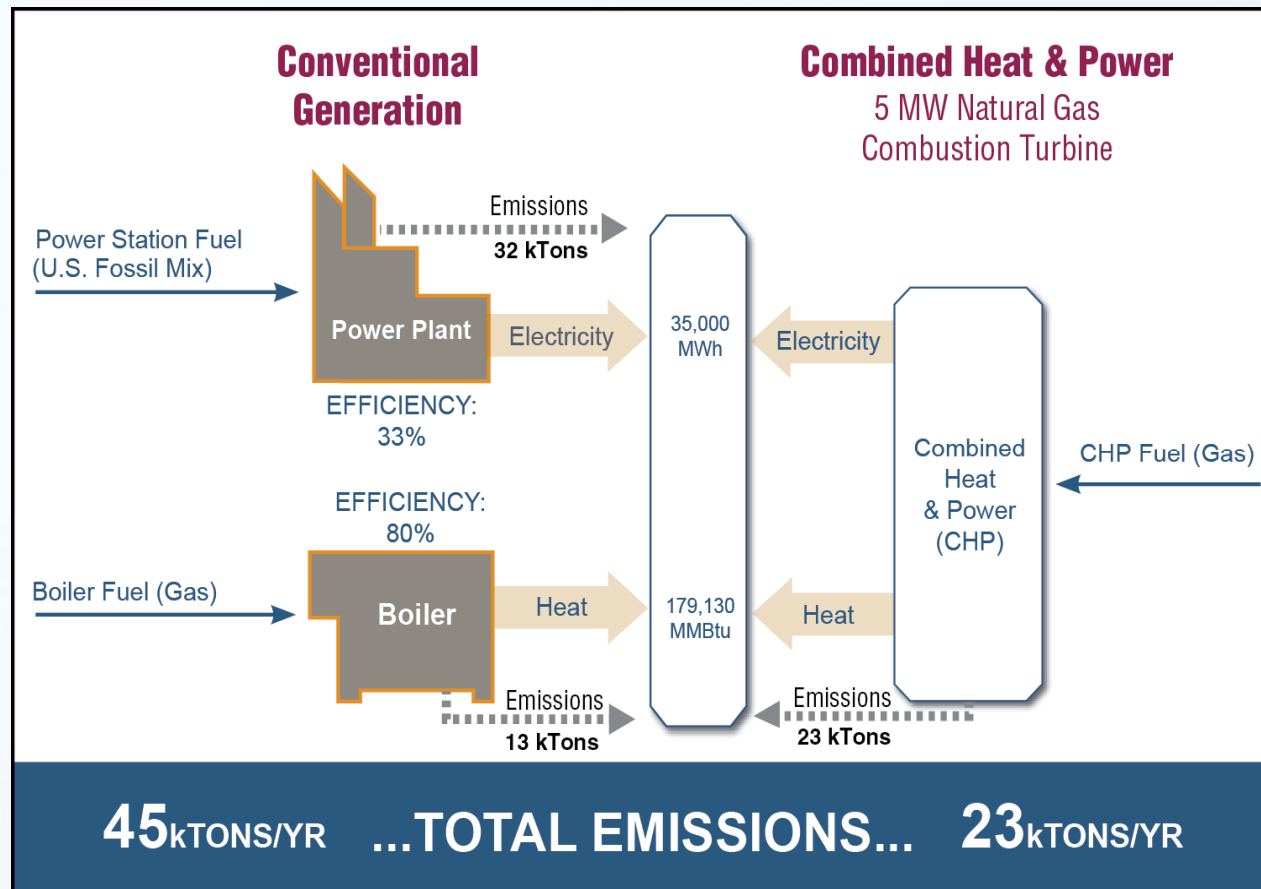


4 states

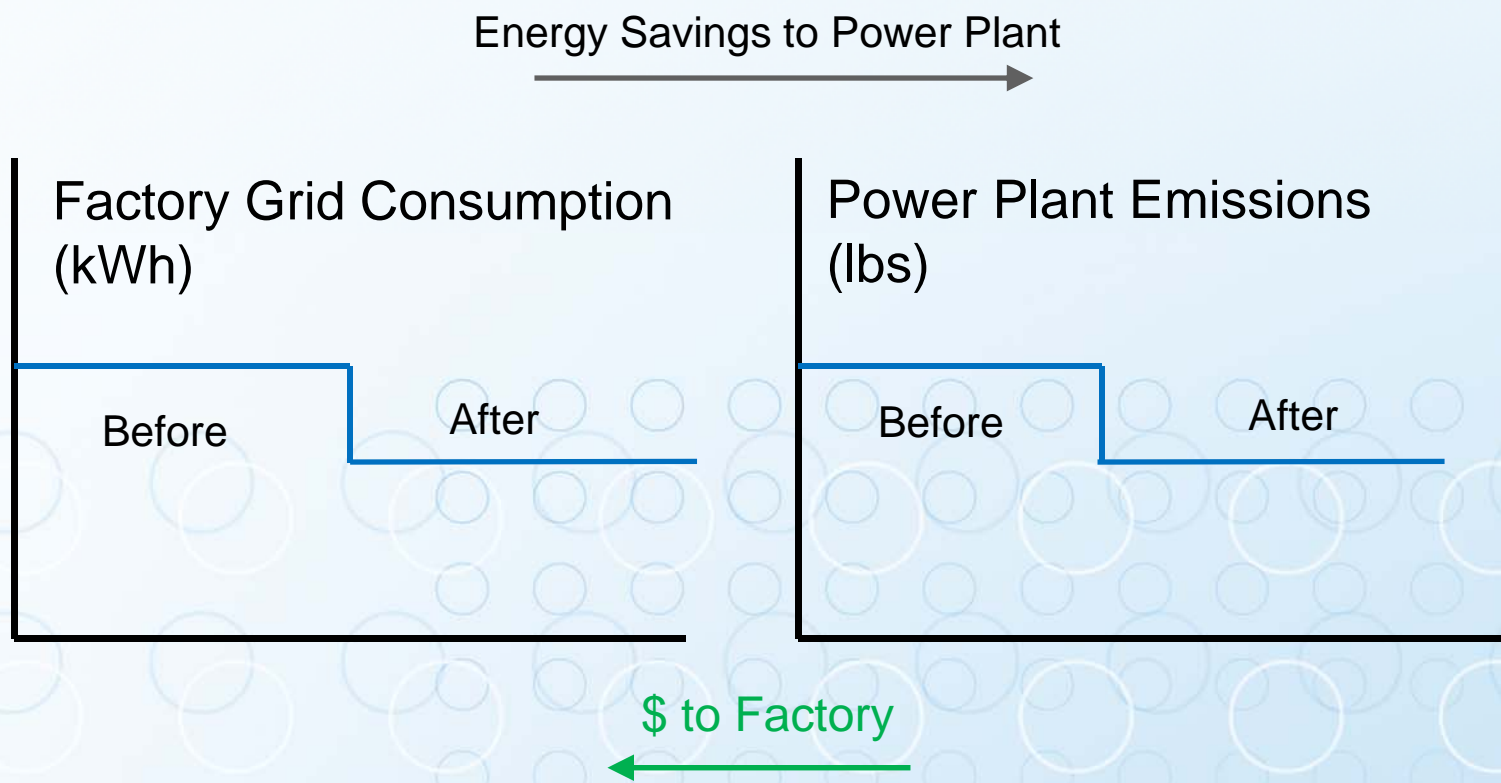
Getting a Head Start



Increased efficiency of CHP results in reduced emissions



What does CHP do to contribute to compliance?



What does the CPP say about CHP as a compliance option?

“Electric generation from **non-affected CHP units** may be used to **adjust the CO2 emission rate** of an affected EGU, as CHP units are low-emitting electric generating resources that can replace generation from affected EGUs.”

80 Fed. Reg at 64902

Definition of Affected Sources

A CHP facility is an affected EGU if it was in operation or under construction as of January 8, 2014, is capable of **selling greater than 25 MW** to a utility, has a base load rating of greater than 260 GJ/h , and combusts 90% natural gas on an annual basis.

80 Fed. Reg. at 64715 - 64716

Two basic approaches to compliance

Rate

$$\text{Target} = \frac{\text{CO2 emitted (lbs)}}{\text{Generation (MWh)}}$$

1,121 lbs/MWh in 2030
(Louisiana's rate based target)

*CHP may earn
Emission Rate Credits
(ERCs)*

Mass

$$\text{Target} = \text{CO2 emitted (tons)}$$

35,427,023 tons in 2030
(Louisiana's mass based target)

*CHP may be issued
allowances or other
incentives*

How could it work in practice?

Example: Manufacturer wants to reduce energy use by investing in a 10 MW CHP system at their facility

Rate

lbs/MWh

- Estimate MWh savings
- Verify savings
- Earn ERCs
- Sell ERCs

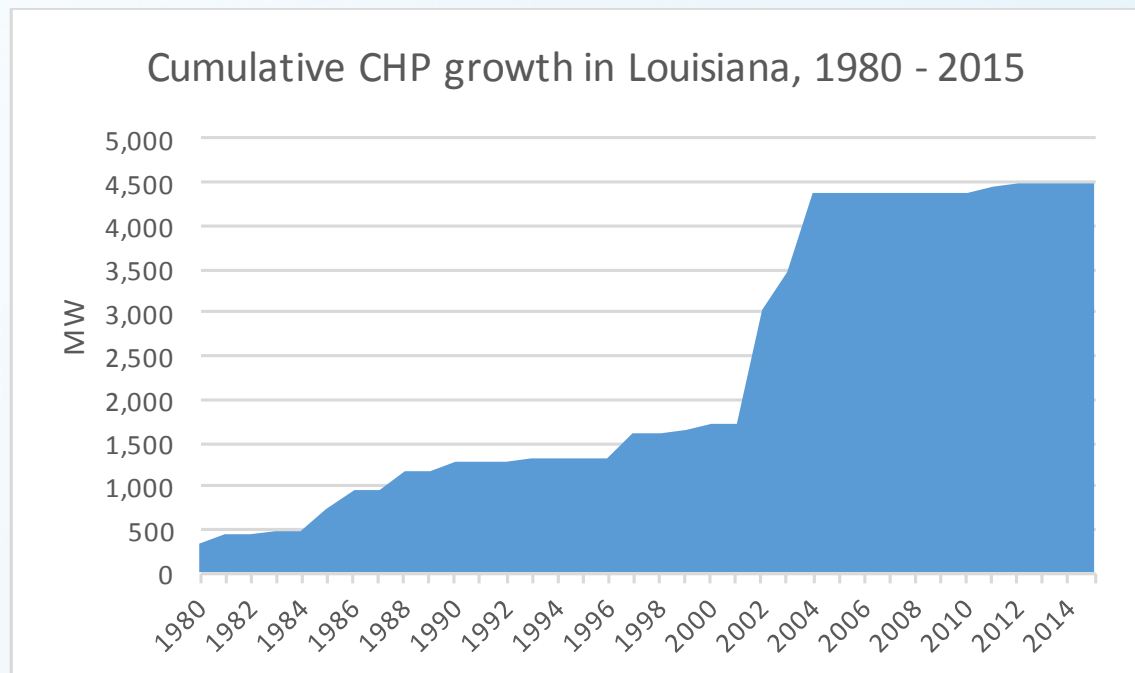
Mass

tons CO₂

- Reducing CO₂ from grid *implicitly* contributes to state compliance
- State may provide incentives from auction proceeds to fund CHP
- State may choose to directly allocate allowances to CHP

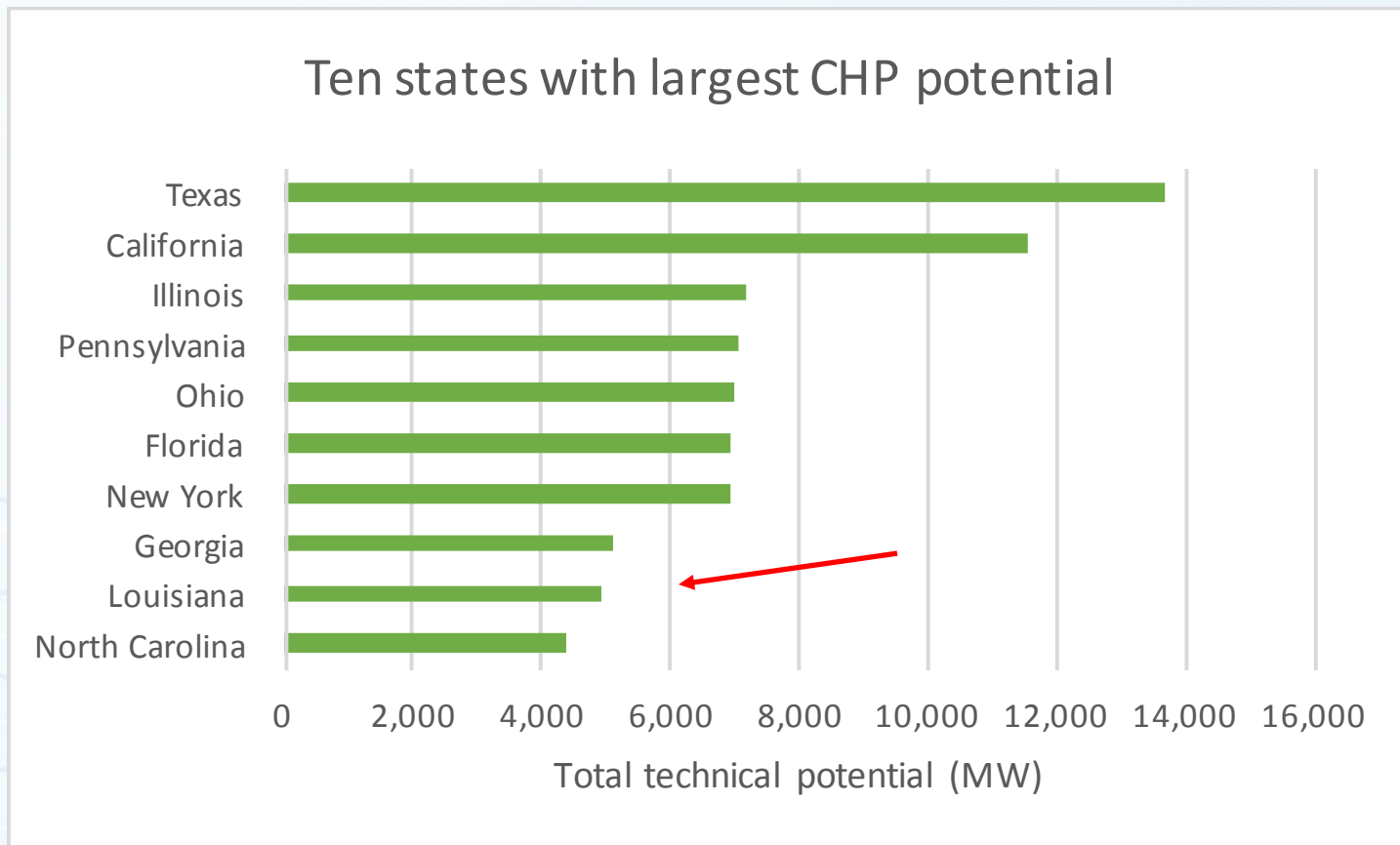
Louisiana has long history of expertise in CHP deployment

- 59 sites across the state; first system in 1930
- 5,927 MW of total capacity



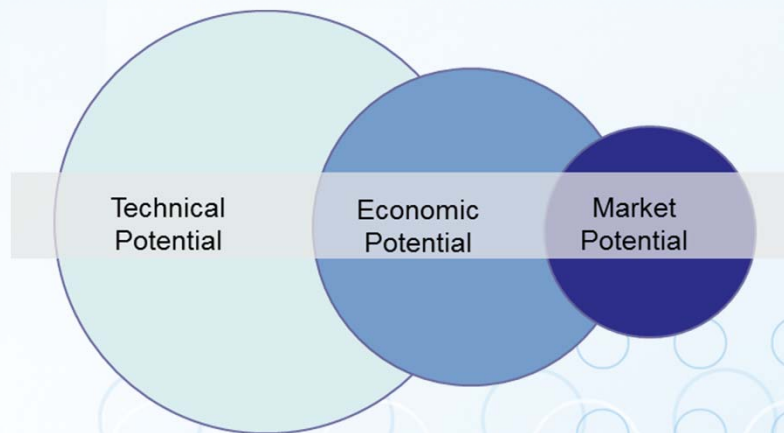
Source: <https://doe.icfwebsiteservices.com/chpdb/state/LA>

Louisiana has large technical potential for CHP



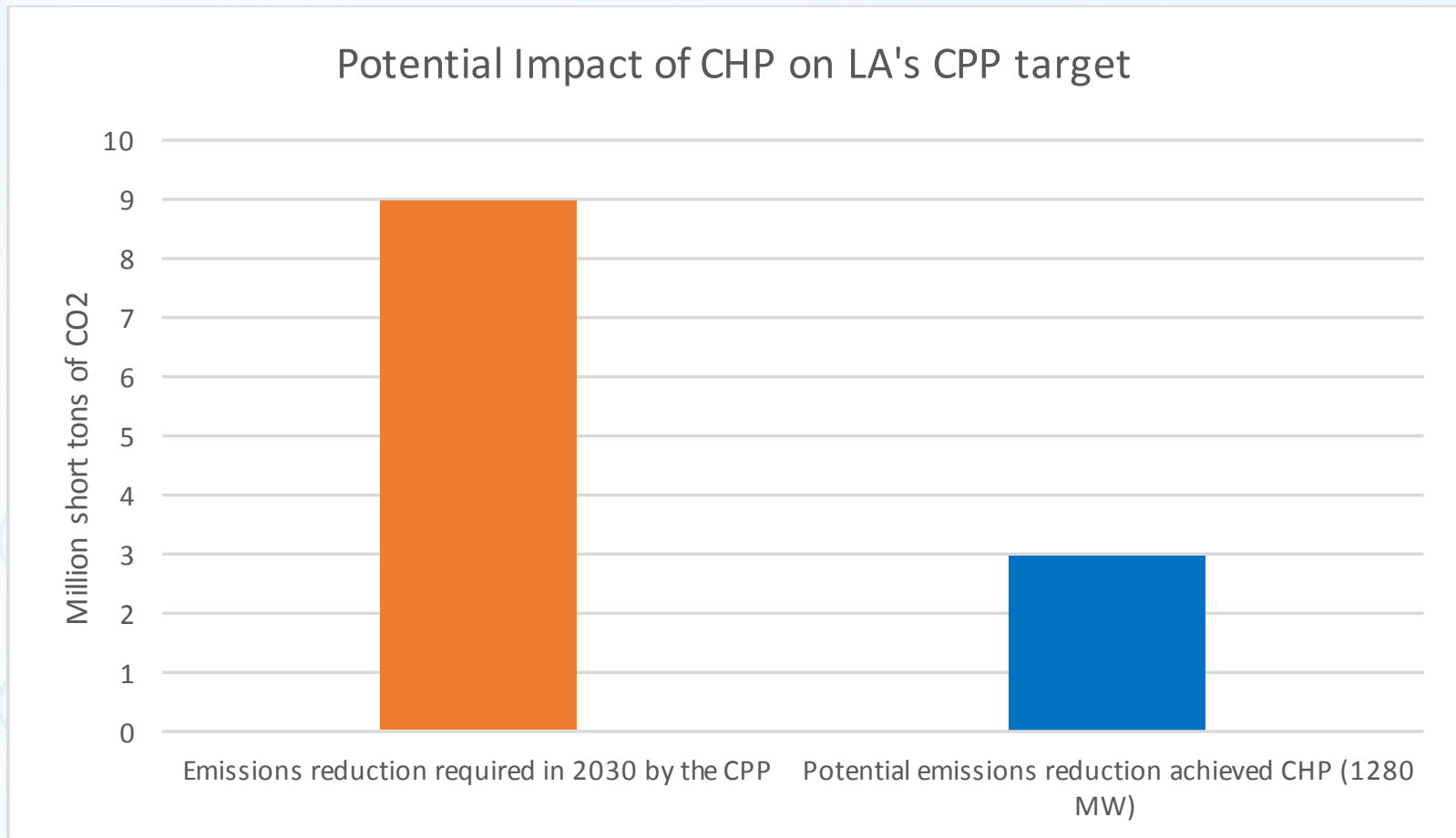
Source: DOE 2016, *CHP Technical Potential in the United States*

What is the potential impact of CHP on state goals?



- Technical potential is broad and does not account for certain realities
- CPP may influence how much CHP potential is realized
- How far would installing a portion of technical potential get a state toward its goal?

CHP can meet 33% of Louisiana's CPP mass target



Source: ACEEE SUPR 2 Calculator

Key points about CHP in CPP

- EPA encourages states to use industrial efficiency
- CHP can contribute savings under any compliance approach
- Industrial customers can earn credit and generate revenue for their EE investments
- Energy savings from industry are a large, low-cost opportunity for compliance
- CHP offers other benefits, including reliability, improved competitiveness, reduced grid congestion, etc.

Recommended Actions on CPP

- Act early on energy efficiency and compliance planning
- Engage air agency, public utility commission and state energy office
- CHP stakeholders should get involved in compliance planning process
- Model compliance scenarios and incorporate CHP and other energy efficiency
- Participate in multi-state discussions

Additional Resources

EPA Clean Power Plan for Existing Power Plants:
www.epa.gov/cleanpowerplan/clean-power-plan-existing-power-plants

ACEEE's Clean Power Plan Webpage:
aceee.org/topics/clean-power-plan

State and Utility Pollution Reduction Calculator Version 2 (SUPR 2): aceee.org/research-report/e1601

State and Local Policy Database: database.aceee.org/

Thank you!

Questions? Comments?

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