# Utilities Enjoying the Benefits of CHP

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**ABSTRACT**

Combined heat and power (CHP) systems convey substantial benefits to individual facilities, local grids, and society at large. Despite these benefits and their cost-effectiveness, CHP deployment in the U.S. has been minimal in recent years, and significant efforts will be required to meet the new national goal of 40GW of new CHP by 2020.

Utilities are particularly well-suited to help CHP deployment rise, because they are uniquely capable of making and encouraging long-term cost-effective investments for the greater good of the grid. They are also involved in long-term system planning, where much more could be done to view CHP as an important energy resource. However, utilities are generally not economically incentivized to pursue or encourage CHP, and so their role as project developer and proponent is often weak.

This paper identifies the many ways utilities could begin to view CHP as in their economic interest. It identifies policies and regulations in certain U.S. states that help utilities enjoy some of the economic benefits of CHP, and suggests possible future benefit streams that are not playing a major role in CHP project economics but could in the future. Finally, this paper suggests policy changes that could be applied at the state level that would help utilities view CHP as an economic opportunity instead of an economic threat.

## Introduction

Combined heat and power (CHP) systems generate electric and thermal energy concurrently in a single integrated system, and usually from a single source of fuel. Energy that is normally wasted in power generation is captured in a CHP system, and then put to a productive use, such as steam for a production process or hot water for domestic hot water needs. Due to the capture and use of what was previously wasted, CHP systems are generally far more efficient than the separate generation of electricity and thermal energy. While the average combined efficiency of stand-alone electric generation and thermal energy generation in the U.S. is about 45 – 50%, average CHP system efficiencies are about 60-80% (SEEAction 2013). CHP is not one specific technology, but rather a suite of technologies that can be adapted to a great number of facilities and energy needs.

Despite its benefits and widespread applicability, CHP currently represents only about 8% of the country's total generating capacity, at 82GW (Ibid). However, the potential for CHP is much higher, as the technical potential in the U.S. in existing facilities alone is about 130GW. Last year, recognizing the economic benefits and reduced emissions provided by CHP, President Obama issued an Executive Order calling for 40GW of new CHP by 2020 (White House 2012). This marked the first time that an official national goal for CHP had been established.

The Executive Order and the activities begun in support of it have clearly identified the importance of state-level policies and regulations on growing the domestic CHP market. This mirrors the past work of U.S. CHP advocates, who have largely focused on improving state-level

policies to increase CHP deployment. Despite the good work at the state level, CHP growth in recent years has been anemic (Hedman 2012). There are many reasons for this that are manifest in the individual facilities that would be well-suited for CHP. The recent recession yielded a strong internal aversion to making the big up-front investment CHP requires, and facilities are reluctant to make such investments even if the payback period is only four or five years long (Chittum and Kaufman 2011).

In addition to economic barriers, CHP developers note that in states where CHP development has been minimal or nonexistent, utilities are not particularly motivated to move projects forward and in fact sometimes actively work to thwart new project development (Chittum and Kaufman 2011). Much of this reflects the fact that CHP often represents a reduction in customer load to utilities, and unless they have some mechanism to make up for the lost revenues caused by such reduced load, their economic interests are misaligned with the goals of increased CHP deployment.

Some of the well-known barriers to CHP deployment, such as challenges with interconnection, punitive standby rates, and other frustrations (SEEAction 2013, DOE 2012), could be minimized if utilities stood to benefit from increased CHP deployment. If utilities became more involved in CHP project development, individual facilities might view CHP as less risky and feel supported enough to make part of the up-front investment or otherwise take on some of the risk. This paper discusses some of the ways CHP projects are currently conferring economic benefit to utilities, and the additional barriers that are preventing utilities from taking better advantage of these economic benefits.

## Current Value Streams

There are a number of key types of benefits that CHP systems confer to individual facilities, the local grid, and society as a whole. Most of these benefits are direct or indirect products of CHP's high efficiency and location-specific application. Many of these benefits can be monetized in some way, but the degree to which monetization is possible varies widely among states and is largely a reflection of the policies and regulatory structures in place in each state.

Table 1 lists the major benefits of CHP to utilities, and identifies which benefits accrue to which types of utilities, and how those benefits are currently being monetized.

**Table 1. Summary of CHP Value Streams**

| Benefit | Utility Type | Magnitude | Monetizing Opportunity | Example |
|---|---|---|---|---|
| Energy Efficiency Resource | Electric, Natural Gas | Medium | EERS or other EE portfolio; EE performance incentives; Forward capacity markets | Massachusetts, Ohio, Arizona |
| Efficient Generation Resource | Electric | Major | Low-cost utility generation | Alabama Power, Austin Energy |
| Avoided Transmission and Distribution Investments | Electric | Major | Reduced costs | Con Edison |
| Avoided Line Losses | Electric | Medium | Reduce costs, reduced reserve requirements | Ontario Power |
| Speed of Development | Electric | Medium | Reduced risk, reduced costs | |
| Environmental Compliance Mechanism | Electric | Medium | Clean Air Act Sec. 111(d) | Ohio |
| High-Load Factor Customer | Natural Gas | High | Reliable revenues | Southwest Gas |
| System Resiliency | Electric | Medium | Reduced outages | |
| Power Quality | Electric | High | Ancillary services markets, customer retention | |
| Customer-Focused Economic Development | Electric, Natural Gas | Low | Economic benefits to customers, increased customer satisfaction | Philadelphia Gas Works |
| Fuel Flexibility | Electric | Medium | Risk reduction | |

Many of the benefits of CHP are not often monetized, and some of the opportunities for monetization listed in Table 1 are more theoretical than realized. What follows is a description of

some of those opportunities for monetization, and a discussion of how these opportunities are currently being tapped by different utilities in the U.S.

**Energy Efficiency Standards and Credits**

Nearly half – 24 – of U.S. states have an energy efficiency resource standard (EERS) or similar policy in place, which requires utilities to meet specific energy savings goals by a certain time (ACEEE 2013). What typically motivates a utility to meet these standards is the threat of some compliance payment if goals are not met, or the reward of an incentive payment if goals are exceeded. Utilities satisfy EERS goal through the procurement of energy efficiency resources or the purchase of credits representing the resources.

These standards, as well as some other portfolio standards such as alternative energy portfolio standards (APS), can explicitly include CHP as an eligible resource (Ibid). The manner in which CHP savings is calculated can vary from state to state, but the credit for a CHP system is generally based on the efficiency benefits of CHP as compared to grid-derived electricity and boiler-derived thermal energy.

**How it confers value.** In Massachusetts, the APS is specifically designed to support CHP and a few other additional technologies (Breger 2011). In recent years CHP has represented over 99% of the credits acquired by utilities to meet the standard (MDOER 2012), which is entirely separate from the state's EERS. Utilities buy Alternative Energy Credits (AECs) from the marketplace, which represent approved APS resources. If utilities do not buy enough AECs, they make alternative compliance payments, currently set at $21.43 per MWh (NEPOOL 2013). Currently, AECs are trading for $17 – $19 per MWh, offering utilities a direct incentive to acquire and support projects that yield AECs so as to ensure a supply of AECs at less than the alternative compliance payment (Ballam 2013). Utilities in Massachusetts are thus economically incentivized to acquire AECs rather than pay the compliance payment, thus strengthening the AEC market and providing an additional revenue stream to CHP system owners.

Utilities themselves could, in certain regulatory schemes, own CHP systems and claim the savings for satisfaction of their own EERS or APS goals, or sell the credits to other utilities needing to satisfy their goals. Regardless, a binding EERS or APS target is only as impactful on the CHP market as its treatment of CHP as an eligible resource. Standards that relegate CHP to a lower tier of resource do not confer the same economic value to CHP in the minds of utilities, since values for lower-tier resources are less valuable for trade.

**The barriers.** Many EERS do not explicitly define CHP as an eligible resource. Those EERS that do define CHP as eligible tend to lack clear guidance on how to treat and calculate CHP savings within the EERS. This fails to give utilities confidence that their CHP resources will carry similar weight as their traditional energy efficiency resources (ACEEE 2013). Sometimes EERS and renewable portfolio standards (RPS) only allow CHP fueled by renewable fuels to be eligible for the standards. Also, most portfolio standards tend to list CHP in a bottom tier of eligible resource, meaning that the value associated with any tradeable credits is minor compared to those representing other resources.

### Energy Efficiency Program Portfolio

Some electric and natural gas utilities actively encourage CHP as part of their energy efficiency program portfolios. Energy efficiency programs are usually funded via non-bypassable charges, such as system benefits charges or energy efficiency riders, so utilities can reasonably expect to earn cost-recovery on the energy efficiency programs they offer. Sometimes utilities are required to meet particular energy savings goals with their portfolios, and can earn incentive payments for exceeding the goals (Hayes et al. 2011). Even without incentive payments in place, utilities present their energy efficiency portfolios to regulators during rate cases and energy efficiency program design processes, and indicate their budgets and desired rate of return.

**How it confers value.** In many states, utilities can earn incentive payments for reaching or going beyond a certain energy savings goal. It appears that these incentives are driving some utilities to consider CHP where they did not before. In Ohio, electric utilities are encouraged to provide new support for CHP as incentives are available for reaching or surpassing utility annual energy savings goal (Williams 2012). In Massachusetts, CHP constituted over 30% of utilities' total energy savings in 2012, helping utilities earn their incentive payments, which amounted to about 5% of their total efficiency program spending (Ballam 2013). CHP was a critical component of exceeding targets, so some utilities have begun to view CHP as more of an opportunity for revenue generation than a threat to their bottom line in Massachusetts (Ibid).

States that have engaged in some degree of decoupling may allow utilities to earn a return on investment in energy efficiency programming, including CHP. Southwest Gas in Arizona has developed a small CHP incentive program as part of its larger energy efficiency programming. Of an entire efficiency portfolio of about $4.7 million, the CHP program is funded at about $750,000 (Esparza 2013). To Southwest Gas, CHP represents a way to meet energy efficiency targets as well as increase the number of high load factor customers. Additionally, natural gas-fueled CHP does *not* count toward Arizona electric utilities' energy efficiency goals (ACEEE 2013), so the natural gas utilities can view the offering of CHP support as a unique competitive advantage when competing for customers with electric utilities.

**The barriers.** Unless there is a specific call for CHP to be part of a utility's energy efficiency portfolio, most utilities do not offer CHP-specific programming. Absent CHP-specific programs, CHP can sometimes be encouraged within custom incentive programs, but many of those incentive programs are too small in scale to have much impact on CHP projects, or their time frames are too short to accommodate a CHP project that may take five or six years to payback its initial investment.

### CHP as Rate-Based Generation Asset

CHP is generally much more efficient than separate generation of electricity and thermal energy. This allows owners – say, a utility – to generate the same amount of energy with less fuel, provided a thermal host is sited nearby to buy and use the thermal energy. The additional thermal energy output is an additional revenue stream utilities could monetize. In deregulated markets, distribution utilities are generally not allowed to own generation assets, but vertically integrated markets could be well-suited to utility ownership of CHP. In deregulated markets,

distribution utilities can develop unregulated third-party companies that could potentially own generation assets.

**How it confers value.** In 2003 in Louisiana, a 425MW natural gas-fueled CHP plant was developed as a joint venture between Entergy and PPG, a glass and chemicals manufacturer. The CHP plant provides thermal energy and electricity to two nearby industrial plants, including PPG, and sells about half the power to the wholesale market through Entergy's Wholesale Commodities business unit (Bullock and Weingarden 2006, ICF 2012, Power Engineering 2003). The system operates as a base load asset (Entergy 2012), and provides additional revenue for Entergy Corporation, the larger parent company of Entergy Wholesale Commodities and Entergy's electric utility companies.

In Missouri, CHP systems located at two different ethanol plants provide thermal energy to the plants and electricity to the local municipal utilities. The 15MW plant in Laddonia and the 10MW plant in Macon are both structured as joint deals, with the electric-generating turbines owned by the utilities and the heat recovery steam generators owned by the host ethanol plants. The relationship between the public utilities and the local ethanol plants means power is produced at a lower cost than it would otherwise be, because the ethanol plants are contributing to the cost of fuel and the total fuel consumed to generate both the electric and thermal power is 26% less than it would otherwise be in separate generation of heat and power (MPUA 2013). The CHP plants export the power to the grid, the ethanol plants use the waste heat, and then the ethanol plants purchase their electricity from the utility (MCHP 2013).

**The barriers.** Utilities do not always view CHP as eligible for a similar rate of return as other more traditional assets, such as generation or distribution resources. They also tend to avoid risky business decisions, and investing in a CHP system that only makes economic sense with a nearby thermal host leaves the utility open to challenges if the thermal host reduces operations, relocates, or goes out of business. Utilities must then determine where potential thermal loads are or could be in the future, and then target CHP project development to those areas. This is not a typical type of planning in which utilities engage, and they can view CHP systems as complicated and too small, which they believe may increase transaction costs.

### Avoided Distribution and Transmission Cost

CHP offers tremendous benefits to the local grid to which it is interconnected, many of which can directly benefit utilities and customers with stakes in the distribution and transmission system. Since CHP is located near the point of use, it avoids the line losses that occur when electricity moves over transmission lines. While average line losses are regularly cited as about seven percent of total electricity generated, line losses are much more pronounced as a system reaches its peak load, and in fact grow in direct relationship to the used capacity of a system. At peak, line losses can be up to three times the size of just average grid losses (Lazar 2011).

Beyond line losses, CHP can also avoid near-term distribution investments by utilities. CHP systems serving areas that would have otherwise required equipment upgrades or new substations can allow a utility some breathing room to focus on other critical infrastructure needs and keep costs down for ratepayers.

**How it confers value.** As a system reaches its peak load, the marginal price of power increases and the cost of line losses increase as well. One analysis in Ontario found that as the transmission system reached a summer peak, the cost of marginal power included $57 per MWh for fuel and $115 per MWh in line losses – making line losses the predominate factor in the cost of peak power (OPA 2007).

In New York, Con Edison benefitted from the developing of a new 7.5 MW CHP project at New York Presbyterian Hospital. The system was placed in a pocket of the utility's distribution system that was strained, and where the utility had been planning to make major investments to the local network in 2017. However, with the deployment of the system, the utility experienced the equivalent of a 7MW load reduction at the challenged substation, allowing it to avoid making costly distribution system upgrades in the near future (Jolly 2013).

**The barriers.** The full degree to which CHP helps utilities avoid distribution and transmission investments is not incorporated into the cost-benefit analyses utilities use when looking at CHP as a generation asset or energy efficiency asset. Most of the cost tests used in energy efficiency portfolio planning consider CHP as a stagnant energy efficiency resource – that is, it does not provide additional benefits beyond those associated with the reduced kW and kWh, like other efficiency resources (Woolf 2013). CHP, though, can be a dynamic resource in some applications and can ramp up and ramp down and behave in different ways depending on the need, including to balance intermittent resources such as wind or solar-powered generators (Østergaard 2006).

**For-Profit Business Unit**

For utilities that distribute natural gas, CHP represents an opportunity to build a base of high load natural gas customers while offering them the kind of project support to customers they may not be getting from their electric-only utilities. CHP project support and ownership also allows these utilities to help their customers cut costs, stimulating economic development and helping ensure that the customers stay in business (and stay current on their natural gas accounts) for years to come. Increasingly some natural gas utilities are viewing CHP ownership and support as a new opportunity to market their sustainability services and earn additional revenue.

Electric utilities can also, depending on their regulatory structure, look to CHP as a potential revenue generator, especially if they are in a deregulated state where they can act as a third party, advising customers on CHP systems or potentially owning systems and selling power to customers via long-term agreements.

**How it confers value.** A large natural gas utility[1] is currently considering a new program that would allow it to own CHP systems at customer sites for up to ten years, transferring ownership to the site after that period. During utility ownership, the host facility would pay the utility a fixed rate for the power and thermal energy, at a total price below what it would cost the facility to acquire the electricity and thermal energy separately. The revenue stream would cover the utilities' all-in costs, as well a fixed rate of return similar to what it already receives on more traditional investments.

[1] This particular utility chose to remain nameless, since it is currently engaged in sensitive discussions with its regulatory agency.

In Connecticut, United Illuminating is considering owning CHP systems if its existing "Zero Capital" program proves to make economic sense for such an ownership structure. The Zero Capital program currently works by bringing together third party CHP system owners and facilities that are well-suited to CHP. The third party entities invest in the CHP system, selling the useful power and thermal energy to the host facilities, also at a cost below what they would be paying for separate heat and power. United Illuminating is closely watching this program, and believes that an unregulated subsidiary of its company may be able to act as the third party in the future. If such a program developed, United Illuminating is considering working strategically placed CHP systems into its distribution system asset base, allowing it to earn a rate of return like any other distribution asset and fully valuing the benefit CHP systems offer to its distribution system (Cooper 2013, Wood 2013).

**The barriers.** In states where some electric and natural gas distribution utilities are explicitly prohibited from owning generation assets, such as New York and Arizona, many utilities have little appetite to address the regulatory hurdles to establish an unregulated subsidiary company that would own CHP systems. While it might technically be possible to establish a new company within existing regulatory frameworks, it appears that utilities remain unsure of the extent to which requests to own CHP systems would be approved (Jolly 2013, Ballam 2013, Esparza 2013).

Additionally, electric utilities may perceive ownership of CHP as risky if they operate in states where they do not have opportunities to recover lost revenue or otherwise decouple their revenue from volume of electricity sales. Stand-alone natural gas utilities, however, are generally agnostic on the resulting impact of CHP on customer retail electric purchases, and are well-suited to enter the CHP market where not explicitly prohibited.

### Customer Retention and Growth

For utilities that are concerned about the long-term existence of high volume customers and the continued economic development of their service territories, CHP is a tool in the toolbox to retain customers and help strengthen the surrounding economy. CHP also helps utilities establish a long term relationship with high profile customers by helping them reduce their energy costs and improve their resiliency during blackouts or extreme weather.

**How it confers value.** Philadelphia Gas Works, a natural gas-only utility, runs a program specifically designed to help customers make the leap to investing in large efficiency projects such as CHP. The utility makes the initial large investment in CHP equipment for participating customers, paying a third party to retain ownership and sell the energy products to the customer. Philadelphia Gas Works then charges the customer a flat rate for this service on their monthly bills, and the customer pays the utility a monthly charge that is less than it would have otherwise paid by separately purchasing electricity and generating thermal energy. This arrangement stretches over five years, and most of the projects supported through the program have seen payback periods of 3.5 to 4 years (Yousseff 2013).

Philadelphia Gas Works views this program as first and foremost an economic development tool for the city, ensuring that energy costs are reduced for important local businesses. It also sees it as a critical path to reducing emissions, and as a way to ensure the

continued operation of customers that are steady, reliable, and high load factor natural gas customers (Yousseff 2013).

**The barriers.** In the name of economic development, many utilities offer "business incentive rates" or other discounted rates to industrial and manufacturing facilities. These rates can often set up perverse incentives for customers that might otherwise consider or be interested in CHP, because the lower energy rates do little to encourage energy efficiency. CHP systems become less cost-effective on paper when customers are already enjoying artificially lowered rates. Though such rates save customers money in the near term, they are not long-term solutions to encouraging economic development because they do little to encourage customers to strategically manage their energy use. Utilities that are truly interested in stimulating economic development could do well to identify situations where CHP or more in-depth energy efficiency improvements would serve a facility's long term needs better than short-sighted reduced energy rates.

Additionally, the regulatory landscape can change the way in which the benefit of customer retention is viewed. While electric and natural gas utilities can offer CHP support or CHP services as a way to offer a competitive advantage over other utilities or utility service providers, the competitive advantage is moot in vertically integrated electric markets. Customers do not have the option of leaving their utility to seek out a different utility that might be more hospitable to CHP.

## How Regulatory and Policy Frameworks Impact Utility Investments

One of the greatest difficulties when assessing CHP policies is the wide variety of regulatory structures facing utilities today. The electric industry in particular went through a significant change beginning in the late 1990s and consequently a little under half of U.S. states are deregulated, meaning that states are open to competition in electric generation to some degree. In deregulated states, some distribution utilities are explicitly prohibited from owning generation assets, which would include CHP. In the other states, where fully regulated vertically integrated utilities remain, it may be very difficult for a utility to partner with a third party, because some states would require CHP system owners to be regulated as "utilities" if they attempted to sell power to a nearby facility.

Beyond simple regulatory barriers, each state has its own way utilities are economically incentivized to invest in energy efficiency versus more traditional generation or distribution assets. For instance, in states where electric utility revenues are decoupled from volume of sales, utilities may be more incentivized to make investments in CHP if they believe they can recover the investments through their decoupling mechanisms. Similarly, states with energy efficiency goals often offer their utilities performance incentives, which can be earned for meeting or exceeding certain energy savings targets. In these cases, CHP can become very attractive and can help utilities meet their performance targets faster than many other energy efficiency programs.

Finally, utilities receive different returns on investments in certain assets depending on the rates of return approved by regulators. In a state like Georgia, a utility can earn a guaranteed 11.15% return on its entire investment in a nuclear plant. In contrast, a utility's return on its energy efficiency spending is 10%, and even that is based only on the *net* cost benefits of its energy efficiency programming over the alternative, instead of the full cost of the energy efficiency investment (GPSC 2010, Henry 2010).

Table 2 shows some of these policy and regulatory "metrics" for selected states, to understand the varying landscapes facing utilities within different state borders. These states were selected because of higher than average CHP activity in recent years and, in some cases, high potential for CHP.

**Table 2. CHP Policy and Regulatory Framework, Selected States**

| | Utility Regulation | Electric Utility Decoupling | CHP in EERS/RPS | EE Funding for CHP (Electric) | EE Funding for CHP (Nat.Gas) | Shareholder Incentives for EE |
|---|---|---|---|---|---|---|
| Alaska | Fully regulated | No | No | | | No |
| Arizona | Fully regulated | Yes | Only renewable for electric EERS | | Yes | Yes |
| California | Deregulated | Yes | No | SBC + rates | | Yes |
| Connecticut | Deregulated | Yes | Yes | SBC | | Yes |
| Hawaii | Fully regulated | Yes | Yes | SBC | | No |
| Iowa | Fully regulated | No | No | | | No |
| Maine | Deregulated | No | Yes | | | Not in place; allowed |
| Maryland | Deregulated | Yes | Yes | Yes | | Not in place; allowed |
| Massachusetts | Deregulated | Yes | CHP has own AEPS standard, utility targets | SBC + rates | | Yes |
| New Jersey | Deregulated | No | Only renewable in RPS | Yes | | No |
| New York | Deregulated | Yes | Yes | SBC | SBC | Yes |
| Ohio | Deregulated | Yes | Yes | | | Yes |
| Pennsylvania | Deregulated | No | Yes | | | No |
| Rhode Island | Deregulated | Yes | Yes | Yes | | Yes |
| Texas | Deregulated | No | Yes; certain systems/classes | Yes; certain systems/classes | | Yes |
| Wisconsin | Fully regulated | Yes | No | SBC | | Yes - Wisconsin Power & Light |

Table sources: ACEEE 2013, Ballam 2013, Chittum and Kaufman 2011, Cooper 2013, Esparza 2013, Hayes et al. 2011, C2ES 2012

As is evident, the policy and regulatory environment shaping how different utilities view CHP varies tremendously across state lines. Utilities are eager to find new revenue streams and new ways to participate in the distributed energy generation revolution, but they will have to creatively work within or suggest changes to their existing regulatory structures in order to find and access these benefit streams.

## Conclusion and Policy Suggestions

There are many ways utilities today could be incentivized to either invest in or support new CHP project deployment. There are also a number of other ways that are somewhat theoretical, such as by selling ancillary services and capacity services into markets, that utilities could better monetize the benefits of CHP in the future (Chittum and Farley 2013). Utilities and states around the country are only just beginning to explore these economic value streams.

That so few of these opportunities are being seized by utilities today suggests there is tremendous room for growth of CHP within utilities' business plans. The full suite of benefits of CHP have yet to be tapped and utilities are better suited than most to fully monetize all of these benefits in the marketplace.

It is clear that states that have seen significant CHP deployment in recent years – such as New York, California, and Massachusetts – have explored some of these new value streams and helped utilities enjoy some of the benefit. Some of the ways state and federal policies and regulations could better encourage investment in CHP by utilities include:
More accurately measuring and forecasting the cost of line losses and incorporate the additional losses into the marginal cost of power when determining the costs and benefits of strategically placed CHP systems:

- Establishing an EERS and/or APS portfolio standards in all states, and clearly treating cost-effective CHP as a priority resource in utility plans to meet these goals;
- Allowing generation-owning utilities to earn a return on CHP investment similar to that which they are allowed on centralized generation assets;
- Encouraging heat planning and thermal mapping, to help utilities identify areas of their service territories that might be particularly well-suited to CHP as excellent thermal hosts, to reduce concerns about stranded assets by electric utilities considering ownership of CHP;
- Developing FERC-sanctioned state guidance to natural gas distribution utilities on how subsidiary CHP businesses could avoid violating concerns about affiliate concerns;
- Considering CHP's impacts on avoided distribution system investments and consider such CHP as "distribution assets" for purposes of cost-recovery; and
- Including all of CHP's additional non-energy benefits in the cost-benefit tests employed by utilities when developing energy efficiency portfolios and energy generation and distribution plans.

CHP advocates and developers cannot expect utilities to invest in CHP absent some clear economic incentive and a sense that such investments are not too risky. There are a variety of policy and regulatory tools available to policymakers to help utilities view CHP not as an economic loss but as an economic gain. By deploying those tools and helping utilities understand how best to leverage them, the national goal of 40GW of new CHP by 2020 may not be so impossible a target to meet.

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