Statewide Stakeholder Governance and Fostering EE Savings and GHG Reduction through New Models

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ABSTRACT

Energy efficiency (EE) programs are generally overseen by state utility commissions and implemented by utilities. Most states rely on commissions to develop EE policy and approve EE savings that are verified through an evaluation process. A key to fostering growth of EE programs is to understand how to manage the EE program process beyond traditional state utility commission regulatory oversight models. Fostering development of statewide EE program oversight and development requires new ideas for cooperation between utilities, stakeholders, municipalities, and other interested parties. This process can also be applied to leverage EE programs for carbon and greenhouse gas (GHG) reductions.

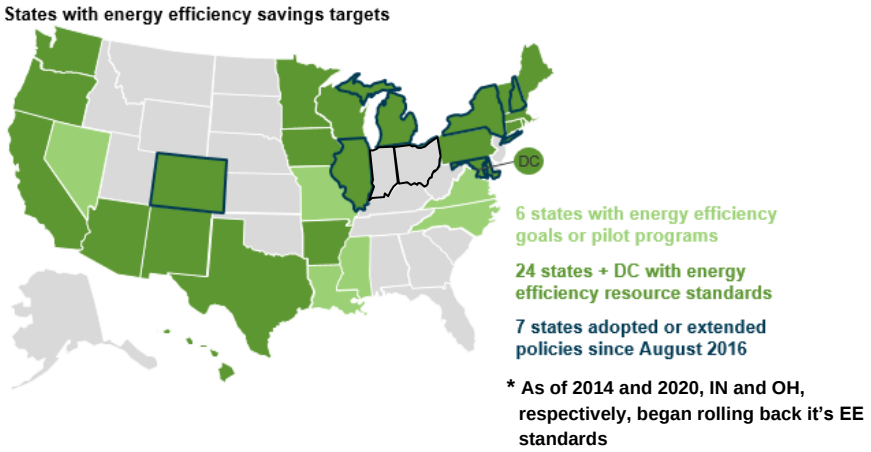
There are EE regulatory approaches that have started to "break away" from the traditional regulatory model. Specific new approaches are seen in California, Illinois, Massachusetts, New Hampshire, and Wisconsin. In California and various east coast states (RGGI States), EE programs are being used to drive GHG reductions. These models can be used so states can use EE measures for demand savings as well as GHG reduction. Each example is different, reveals public benefits and offers direction to further statewide development of EE programs and standards. All of these points are important to develop a cooperative-statewide process – utilities and states will also benefit.

Statewide Cooperation Fosters EE Programs and Energy Savings

EE is implemented across many US states. Six states have EE goals or pilot programs; 24 states and DC have legislated EE resource standards and 7 states have adopted or extended EE policies since 2016. Exceptions exist, Indiana and Ohio have retreated on EE goals since 2014. This is illustrated in Figure 1, below. Part of this disjointed EE approach is because there is no national US energy policy or legislation today. US energy policy does have broad stroke national laws such as the Public Utility Holding Company Act of 1935 (facilitates regulation of electric utilities, by limiting their operations to a single state), the Energy Policy Act of 2005 (addresses energy production in the US), and the Federal Power Act of 1920 (national guidance on development of power), as well as various national laws that establish the Nuclear Regulatory Commission, Federal Energy Regulatory Commission and the Environmental Protection Agency, among others. But there is no overriding US federal law that guides energy use and conservation and no national laws that mandate meeting demand or GHG reduction by certain dates. This is mainly the result of US states wanting to maintain their control of power production and distribution – energy policy has been codified as a state's right issue, so states

want to control how energy is produced and distributed. A review of states EE policies reveals many differences between states. The detail in Figure 1 illustrates these differences.

Figure 1: Map of US States with EE Standards



Sources: EIA State Adoption of EE Policies; Guidehouse 2021 State Analysis

Each state establishes its own regulatory structure for implementing EE. Only 30 states have some type of established EE goals. Utilities in many other states offer EE programs, but they are not required by law or regulation. States have established various initiatives to promote the development of EE programs. Legislative and regulatory oversight varies greatly by state. Many states have degrees of EE legislative or regulatory policy activity. But the level of specific requirements, length of EE in each state and the types of incentives and penalties differ across states. EE regulatory financial paradigms are typically designed around cost recovery, lost margin recovery and performance incentives.[1] Many initiatives focus on cost recovery and performance incentives. Others include adjustable rate mechanisms or specific cost recovery riders. Corresponding absence of such incentives is described as financial penalties (negative incentives), or disincentives to actively pursuing EE programs since utilities are concerned and focused on avoiding non-recovery of implementation costs.

California, Illinois, Michigan, Massachusetts, Oregon, and Vermont implement EE and EM&V through legislated and commission policies. These states provide strong models to follow while also considering specific state utility and commission nuances and interactions. Each of these states have cost recovery and detailed EM&V policies and approaches. Many states have had EE policies in place for many years, but no legislated requirements. It should be noted that each state is different and the relationship between utilities, regulators and implementers also determines state model structure. Other states have varying degrees of policy oversight, for example:

[1] Program Cost Recovery: Costs include those for program administration, implementation, and evaluation. Because program costs reduce utility revenues on a dollar-for-dollar basis, reasonable recovery of these costs is a minimum requirement program implementation; Incentives: Financial incentives allowed in addition to cost-recovery if utilities meet EE goals.

- California, Illinois, Massachusetts, Minnesota, New Mexico, and Wisconsin are strong EE states. Illinois continues to implement EM&V policy through various Stakeholder Advisory Group policies approved by the Illinois Commerce Commission (ICC - IL's public utility commission). Illinois has strong overall EE statewide focus, stakeholder group focus and enabling commission action.
- Connecticut, Pennsylvania, New York, Michigan, New Hampshire, Maryland, Arizona, and Arkansas are stable EE&V states given their established programs and EM&V approaches and policies and track record of implementing consistent evaluations over a period of years.
- Arkansas has established EM&V policies and procedures, a statewide working group, and a technical reference manual (TRM) for deemed measure savings and other state EE standards that is the model for the southeast.
- Iowa, Indiana, and Ohio have historically achieved EE savings based on performance against statewide goals. But Indiana (2014) and Ohio (2020) state legislatures reduced or eliminated EE resource standards – utilities are expected to continue to implement programs with some commission oversight. Iowa's legislature started a rollback of EE in 2018. In 2018 Iowa allowed use of a no losers Ratepayer Impact Measure (RIM) cost-effectiveness test to show negative cost-benefit results and disallow programs – that made it challenging for EE programs to be judged successful.

As a nation, the US deploys EE across states, but not all states, and broad EE adoption is limited by each state's internal policies, local interest, or political concerns or limited interest in reducing energy consumption. Numerous states have limited or no EE savings goals focused on reducing energy demand or use. Many more states have no carbon or GHG reduction policies. Even for the majority of 30 EE states, none of those energy savings are rolled-up at the national level and few states count EE savings toward carbon or GHG reduction. Only California and RGGI states are tracking GHG reduction attributed to EE energy savings. EE focus in the US has been and continues to be energy demand reduction so that new generation supply is not required. The state-by-state approach is disjointed and precarious since politics has led to drastically altered policies (i.e., OH and IN). (Gunn, Neumann - Regulatory Regimes 2014, 2016, 2018, 2020)

A comparison and possible alternative to the state-by-state approach is the EU's approach to deployed EE. The EU focuses on reducing energy use and waste and reducing GHG as well as reducing carbon levels through deployed EE. EU 2007 targets were set to cut annual energy consumption by 20% by 2020 - this was further expanded to 32.5% by 2030. These goals are mandated across all the EU states, there is a unified approach with rules that allow each MS to implement plans to reach individual MS goals. The goals appear to be working. EE measures are used to achieve energy supply needs, cut GHG, and promote EU economic competitiveness. (European Parliament: Fact Sheet on EE in the EU; http://www.europarl.europa.eu/factsheets/en/sheet/69/energy-efficiency).

EE is positioned as a strategic imperative in the EU. Only a handful of the 30 US EE states view EE as an imperative resource - that positioning is among a minority of states (e.g., CA, IL, MA, MI, MN, NH, NY, VT). (Neumann – IEPPEC 2020). The EU model could be used in the US for states to implement programs and policies for GHG reduction.

Cooperative State Approaches – Smoothing-Out the Regulatory Process

There are examples of cooperative state approaches that can leveraged to improve EE savings. Key outcomes of cooperative approaches are reduced regulatory burden, utility program cooperation and consensus building across utility and consumer parties. These cooperative models generally treat residential, commercial, and industrial customers in similar manners. Below are brief discussions of cooperative approaches.

Illinois EE Programs and Stakeholder Advisory Group

The large investor owned utilities in Illinois are required by state law to implement EE programs are Ameren Illinois, Commonwealth Edison Co. (ComEd), Peoples Gas Company, North Shore Gas Company and Nicor Gas (jointly referred to as "Utilities"). Each of these companies are required to implement EE programs in a cost-effective manner. This has led to joint utility EE programs and consistent ICC policy. The ICC originally required joint programs energy efficiency utility orders and this was later required by the update to the state energy efficiency law (Future Energy Jobs Act - Senate Bill 2814). The ICC also ordered each utility (ca. 2008) to actively participate in the Illinois Stakeholder Advisory Group (SAG) so that there are consistently applied and agreed-upon performance metrics for measuring portfolio and program performance. The SAG overseas all elements of EE policy, including, but not limited to net-to-gross frameworks, EE Utility planning, discrete policy issues and TRM oversight and updates. The joint-program directive is assisted through the collaborative effort of a statewide electric and gas "collaborative" group, the Illinois Energy Efficiency Stakeholder Advisory Group (IL SAG). Importantly, there is ongoing advisory oversight between the Utilities implementing the energy efficiency programs that create an additional opportunity for the Utilities to talk through and attempt to implement a consistent approach to key policy issues across the joint programs (e.g., net-to-gross framework, evaluation requirements, Technical Resource Manual detail and implementation etc.). Key details include:

- In Illinois, the joint programs include residential home energy savings, elementary energy education, residential prescriptive (complete system replacement), residential new construction, multifamily. C&I joint programs include retro-commissioning, new construction, and small business direct install.[2]

[2] Based upon review of Illinois Joint Utilities programs.

- The IL SAG, established through separate ICC orders[3], includes key energy efficiency stakeholders, including each of the joint utilities[4] and has become a public forum to work through joint energy efficiency program issues, *among other energy efficiency issues* (e.g., NTG, cost-effectiveness, overview of programs and issues, successes and hurdles, etc.). The ability to have all the parties in a room discussing a core agenda has fostered a structured approach to managing energy efficiency issues.

Arkansas Statewide

Arkansas established a permanent statewide collaborative in 2006 – it was established with an expectation that it would evolve as the issues faced by the jurisdiction evolve. The Parties Working Collaboratively (PWC) initially focused on a narrow set of issues and its role expanded as the commission and the participants realized the value the collaborative model can bring to the regulatory process. The PWC in Arkansas was established by the commission to work through the start-up issues with designing energy efficiency programs. The objective of the group is to forge consensus around issues and incorporate those areas of agreement into the projects undertaken by the PWC. In this way filings presented to the commission are reduced to a consensus filing by the PWC, supplemented by dissenting opinions from the parties, if any. The process involves actively engaging stakeholders early in the planning process to critically examine the myriad of issues present in developing energy efficiency programs and managing their evolution. To maintain transparency and to ensure progress, the PWC has developed a set of procedural guidelines. The input of the PWC proved valuable, and it remains today as an influential forum focused on energy efficiency programs in Arkansas. One interesting feature of the PWC is that it regularly files motions with the commission that include both minority and majority positions. Among other collaborative success, the PWC completed four versions of a TRM, which includes EM&V protocols that govern a wide range of energy efficiency activities. The annual updating process for the TRM includes input from all affected parties, a technical manager, and consultants. (Arkansas – Parties Working Collaboratively)

Other State Cooperative Approaches

The previous discussion of collaborative efforts focuses on mutually agreed partnerships across a state. This approach should be distinguished from states that have jointly administered energy efficiency programs through larger, statewide umbrella organizations that implement most (if not all) energy efficiency programs within a state (Statewide Programs) as opposed to jointly agreed upon and implemented individual programs between single-fuel utilities. Such Statewide Programs are discussed below and include California, Massachusetts, New

[3] *See* ICC language in ComEd's Energy Efficiency ICC Order 07-0540 (p. 32 - Petition for Approval of the Energy Efficiency and Demand-Response Plan pursuant to Section 12-103(f) of the Illinois Public Utilities Act) approving ComEd's plan.

[4] A full list of SAG participant can be found on the SAG website, *see footnote above.*

Hampshire, and Wisconsin.[5] Importantly, statewide, and regional cooperation models are useful starting points for leveraging EE programs and policies for GHG reduction since key stakeholders and utilities are structured to collaborate and complex energy matters.

California

California offers specific Statewide Programs for residential customers and, separately, for commercial and industrial (C&I) customers. On Sept. 18, 2008, the California Public Utilities Commission (CPUC) adopted the state's first Long Term Energy Efficiency Strategic Plan (Strategic Plan), presenting a single roadmap to achieve maximum energy savings across all major groups and sectors in California. This Strategic Plan for 2009 to 2020 is the state's first integrated framework of goals and strategies for saving energy, covering government, utility, and private sector actions, and holds energy efficiency to its role as the highest priority resource in meeting California's energy needs. The Strategic Plan includes joint evaluation (EM&V) budgets and partnering with counties and governments on low income initiatives (California Statewide Programs). During 2010-2012, California Statewide Program for Residential Energy Efficiency is designed to offer and promote specific and comprehensive energy solutions within the residential market sector. The residential portfolio uses strategies to overcome market barriers and to deliver programs and services aligned to support the Strategic Plan by encouraging adoption of economically viable energy efficiency technologies, practices, and services (Southern California Edison 2011 Annual Report at p. 3). For the C&I sector, the 2010-2012 Statewide Commercial Energy Efficiency Program offers strategic energy planning support, technical support (e.g., facility audits, calculation, and design assistance), and financial support through rebates and incentives aimed at providing integrated energy management solutions (Southern California Edison 2011 Annual Report).

Massachusetts

Massachusetts created its joint-statewide effort and published the Joint Statewide Three Year Electric and Gas Energy Efficiency Plan (Three Year Plan" - 2019). The largest utilities in the Commonwealth are included (National Grid, NSTAR, Columbia Gas of Massachusetts, Western Massachusetts Electric, Cape Light Compact, Berkshire Gas, New England Gas Company and Unitil, Blackstone Gas Company). These utilities filed the Three Year Plan on a joint basis and it is claimed to be the most aggressive joint plan in the nation.

As stated in the joint Three Year Plan, the goal of the Plan is "[t]o achieve the GCA's (Massachusetts's Green Communities Act) mandate for a sustained and integrated statewide energy efficiency effort. The Program Administrators will continue to engage in the unprecedented levels of integration, coordination and cooperation that have been the hallmark of the initial three-year plan, including working together on all levels of programming,

[5] The review of "other states" is not exhaustive, but is representative of other programs across the US.

implementation, regulation and evaluation". The Program Administrators currently work together in formal groups, in regularly scheduled and recurring meetings, and through ad hoc discussions. It should be noted that there is a preference for evaluations to be undertaken at a statewide level, rather than at program level, except when regional issues make sense for program level review.

New Hampshire

Similarly, New Hampshire has a statewide planning, implementation and evaluation effort for electricity and natural gas programs and the utilities involved file a joint two year plan. The most recent such plan is the CORE Energy Efficiency Programs (New Hampshire Two Year Plan) filed by Granite State Electric Company d/b/a Liberty Utilities, New Hampshire Electric Cooperative, Inc., Public Service Company of New Hampshire and Unitil Energy Systems, Inc. (referred to throughout the remainder of this document as the "NH Electric Utilities") and EnergyNorth Natural Gas, Inc. d/b/a Liberty Utilities and Northern Utilities, Inc. (referred to as the "NH Gas Utilities") or collectively as the "NH CORE Utilities" (New Hampshire EE Programs). The CORE Programs were started from the Energy Efficiency Working Group (NH PUC Docket No. DR 96-150 developed between 1998 and 1999) and approved by the NH PUC in November 2000 (final approval received in 2002). This was the first time a coordinated, joint utility effort undertaken by the electric utilities statewide. The NH Gas Utilities began offering energy efficiency programs in 1993. As noted in the NH Two Year Plan, CORE Programs "provide products and services tailored for business, residential and income-eligible customers or members…there are utility-specific programs that are typically utilized to test new technologies…"(New Hampshire 2013-2014 CORE energy efficiency Programs at pp. 1 and 2). Monitoring and evaluation efforts became the responsibility of the New Hampshire PUC in 2006 and PUC staff receives input and advice from the utilities on monitoring and evaluation efforts.6

Wisconsin

Wisconsin created Focus on Energy which is a consortium approach to delivering energy efficiency programs statewide (Wisconsin Focus On Energy). Focus on Energy is the Wisconsin utilities' statewide energy efficiency and renewable resource program that has been operating since 2001. It works with eligible Wisconsin residents and C&I customers on cost-effective energy efficiency and renewable energy projects. The joint initiative offers energy efficiency information, resources, and financial incentives to assist in implementing energy-saving projects. Participating utilities include the largest utilities, municipal utilities as well as cooperatives – the list of participants is too numerous to list here and can be found at the link below7. Focus on Energy is Wisconsin utilities' statewide energy efficiency and renewable resource program funded by the state's investor-owned energy utilities, as required under Wis. Stat. §

[6] Id. at 12. *See,* NH PUC Order No. 24,599 (March 17, 2006).
[7] List of Wisconsin Focus on Energy participants: http://www.focusonenergy.com/about/participating-utilities

196.374(2)(a), and participating municipal and electric cooperative utilities. It should be noted that the utilities do not manage the programs; implementation is outsourced by Focus on Energy.

GHG Reduction and New Models

A great deal of the change in resources and models is due to the global movement away from central generation to reduce carbon and GHG. To that end, many states and nations are looking to EE to reduce energy demand since EE is shown to be a least cost resource while also playing a key role in decarbonization. The US leverages EE mostly for energy savings reductions, reducing costs and demand. The EU deploys EE mainly to reduce greenhouse gas (GHG) and carbon.[8] Except for CA and the RGGI states (Regional Greenhouse Gas Initiative)[9], the US does not track or require GHG or carbon reduction. A key difference between the EU and US on EE policy is that there is an overall EU directive to reduce GHG by 20% by 2020 and 32.5% by 2030 – each nation chooses to adopt the EU EE directive or choose an alternative policy approach. The US has no national energy goals, no EE national goals and each city and state sets its own goals and standards. These models can be leveraged in the US so that states use EE measures for demand savings as well as GHG reduction. The following sections outline the regulatory and policy EE structures in the US and EU. (Molina & Relf, Cost of Saved Energy 2018) These models are strong examples of state and regional cooperation to further GHG reduction goals.

California

In July 2017, California's state legislature passed assembly bill (AB) 398 to reauthorize and extend until 2030 the state's economy-wide GHG reduction program. The bill sets a new GHG target of at least 40% below the 1990 level of emissions by 2030. As of 2015, about 86% of California's GHG emissions were related to the consumption of energy. The California Energy Commission leads the state in establishing rules and regulations for implementing energy efficiency, specifically for (i) appliance efficiency regulations, building energy efficiency, energy supplier reporting and state energy management. California's initial target was to reduce emissions to the 1990 level by 2020. An executive order from California's governor targets an 80% reduction from 1990 levels by 2050. A large portion of the reductions are expected to come from energy efficiency. California's emissions cap-and-trade program, launched in 2013, is one of the major policies the state is using to lower its greenhouse gas emissions. In 2015, the California Air Resource Board (CARB) recommended tightening the program, which would reduce the amount of available emissions credits. Other recommendations from CARB include new regulations that would affect petroleum refinery emissions and double energy efficiency savings by 2030.

[8] The underlying legal basis for this is Article 194 of the Treaty on the Functioning of the European Union (TFEU).

[9] RGGI states include Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia. RGGI detail can be found here: www.rggi.org

RGGI

The Regional Greenhouse Gas Initiative (RGGI) is the first mandatory market-based program in the US to reduce GHG. RGGI is a cooperative effort among the states of Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia to reduce CO_2 emissions from power generation. The RGGI states implemented a new cap reduction trajectory of 30% over the period 2020 to 2030. The CO_2 cap represents a regional budget for CO_2 emissions. RGGI states auction most CO_2 allowances and the proceeds are invested in EE, renewables, and other beneficial resources. (www.rggi.org) EE is the largest portion of RGGI investments, equal to 38% of investments. Recent investments in EE funded projects are anticipated to save consumers over $1.2 billion on energy bills – this provides benefits to more than 115,000 households and 1,200 businesses. This also projected to avoid the release of 1.4 million short tons of CO_2 pollution. (RGGI Report 2018)

Europe

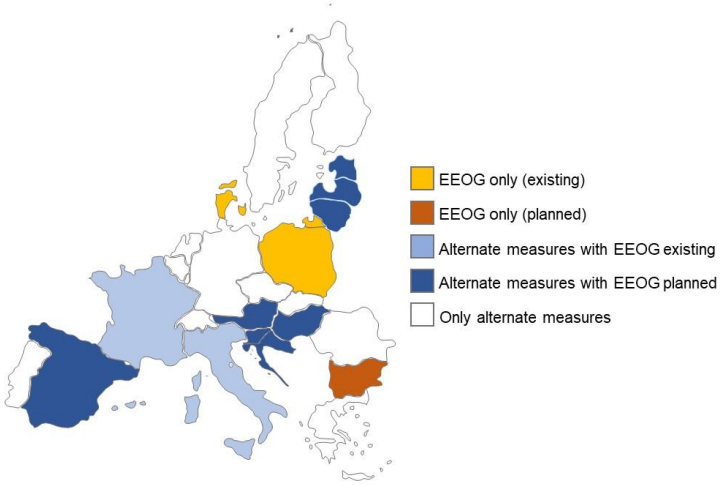
In the EU, EE deployment focuses on decarbonization in the power, heating, and transport sectors. The EU deploys EE to meet climate and energy goals since it recognizes that reaching those goals without EE is expensive and problematic – EE is widely seen as a least cost resource. EU recognizes that substantial renewable energy would be required which is more expensive. The EU recognizes that it will have to decrease energy use by approximately 17% by 2030 compared to 2015 levels. The building sector is identified as important to reaching this EE goal. EE is expected to be leveraged after 2030 to reach future goals. It's planned that energy use will have to continue to decrease by at least one third by 2050 to achieve its decarbonization goals – it's expected to be greater than one third. (European Energy Transition 2030: The Big Picture)

EE is also seen as a key strategy in ensuring the cost-effective decarbonization of the energy system - electrification investment can only be limited by reducing overall energy demand in buildings, industrial and transport sectors and increasing efficiencies of appliances. Modelling from the European Commission, final electricity demand and gross electricity generation only rise slightly (by 8.5% and 6.9%, respectively) between 2015 and 2030 due to efficiency measures. With large decarbonization scenarios, electricity consumption increases by 50%, while electricity generation increases more than twofold compared to 2015 due to cleaner forms of generation (i.e., solar, hydrogen). (European Energy Transition 2030: The Big Picture)

Central to the Energy Efficiency Directive (EED) are Energy Efficiency Obligation Schemes (EEOS). The EED has led to increased EEOS across the EU member states (MS) – at least 17 MS plan to implement or have already implemented an obligation scheme and approximately 40% of the proposed savings from Article 7 of the EED are expected to be generated by EEOS. This makes EEOS the most important policy instrument in terms of energy savings. Four MS have notified EEOS as the only policy instrument for Article 7 (two MS have

notified existing schemes: Denmark and Poland, and two MS have notified planned schemes: Bulgaria, Luxembourg). The Figure 2 map below illustrates the current status of implementation of EEOS across the EU. For a number of MS, the details of the planned EEOS are still being developed. (Study Evaluating National Policy Measures & Methods to Implement Article 7).

Figure 2: Map of MS with Existing and Planned EEOS



Source: Study Evaluating the National Policy Measures and Methodologies to Implement Article 7 of the EED at p. 16

Conclusion

New approaches and regulatory models are essential to foster the global movement toward new energy resources (i.e., EE, renewables) and reduce energy demand and GHG. Efforts to move beyond traditional, case-by-case state regulatory commission oversight are essential. Multi-year EE plans, collaborative regional and statewide efforts are imperative to improve and increase EE deployment. Fostering development of statewide EE program oversight and development will require incremental state regulatory changes and new ideas for cooperation between utilities, stakeholders, municipalities, and stakeholders. This process can also be applied to leverage EE programs for carbon and GHG reduction. As the EU, California and RGGI states have recognized, acknowledging EE as a way to reduce demand and GHG is essential. Other US states should adopt similar GHG goals and standards. The EU model with a central directive is impressive and is likely to be difficult to approve in the US. The US hasn't had a new national energy policy for many years – there are no detailed EE or GHG federal energy laws or regulations. Agreeing to national energy goals would be an important step toward fostering market model changes and large-scale movement toward GHG reduction in the coming decades. Important to this discussion is that statewide and regional models should be used to structure future GHG reduction approaches since key stakeholders and utilities are already collaborating and complex energy matters.

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