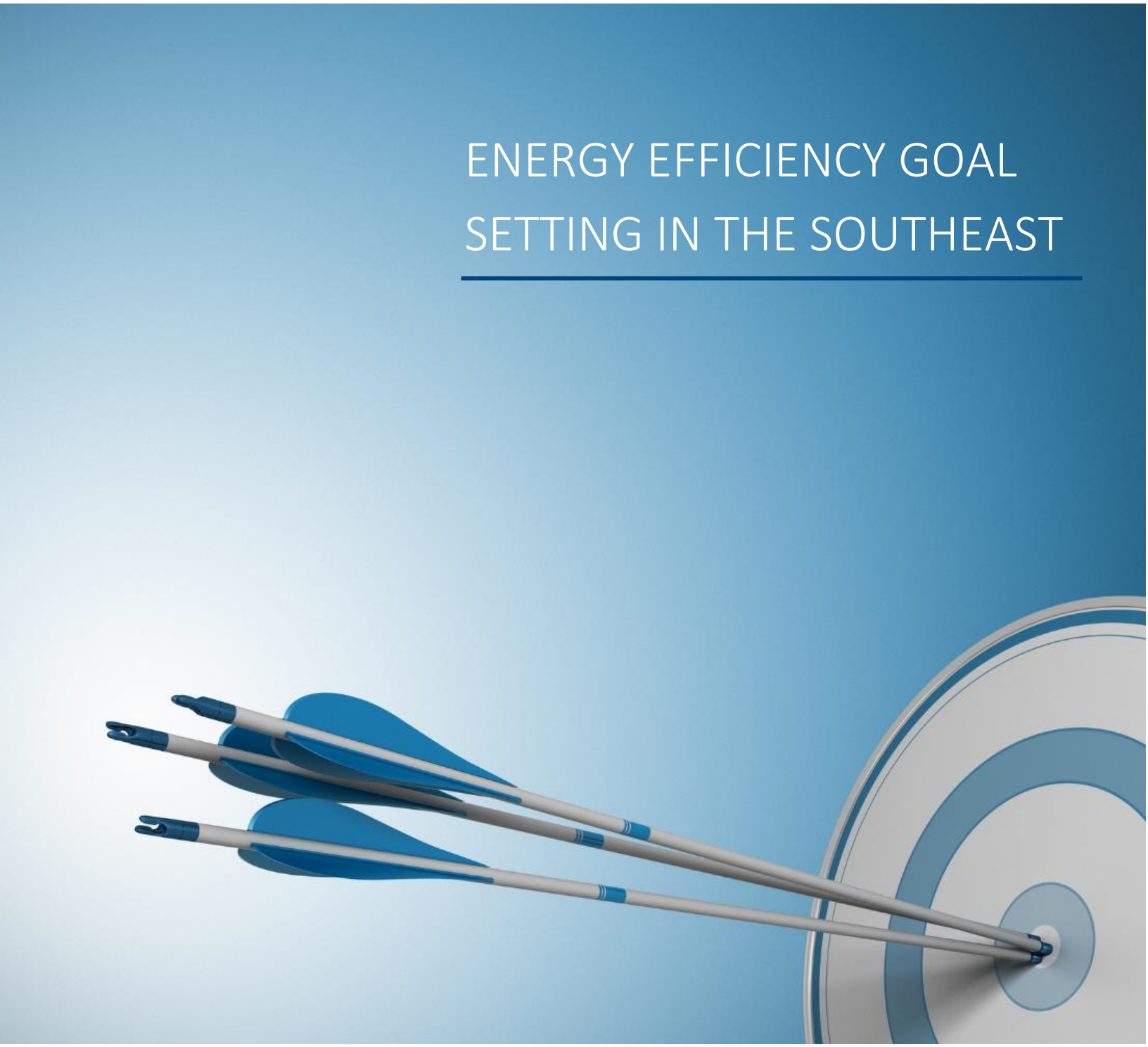
ENERGY EFFICIENCY GOAL SETTING IN THE SOUTHEAST



SEEA
SOUTHEAST ENERGY EFFICIENCY ALLIANCE

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About This Document

At the request of public utility commissions, their staff, utilities and other interested parties, the Southeast Energy Efficiency Alliance (SEEA) created this document to provide examples and model policies implemented in other states to inform the creation of energy saving targets and goals. This document is intended to be broadly applicable to entities throughout the region that are exploring policy options for expanding the role of energy efficiency within their portfolio or jurisdiction.

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I. Executive Summary

As energy efficiency continues to expand and demonstrate its value as an economic driver in the Southeast, many states and utilities are contemplating the long-term role of energy efficiency in their resource portfolios. Setting energy-savings goals is an important element of energy efficiency program planning, and over the years, both states and utilities have experimented with multiple approaches for doing so. Among the most widely used target-setting mechanisms are:

1. Mandatory portfolio standards;
2. Voluntary goals; and
3. Integrated resource planning.

Each of these mechanisms is in place in at least one southeastern state, and each has demonstrated both strengths and weaknesses in implementation. This paper provides an overview of voluntary and mandatory policy mechanisms utilized in the Southeast to set goals for driving an increased level of investment in energy efficiency.

A. Mandatory Portfolio Standards

Mandatory portfolio standards require utilities and other energy efficiency program administrators to undertake activities to achieve long-term energy-savings. Mandatory portfolio standards establish clear goals and criteria for programs, measures, cost-recovery and tracking progress.

B. Voluntary Goals

Voluntary energy efficiency goals set non-binding savings targets, promoting the adoption of energy-saving measures without requiring or enforcing compliance.

C. Integrated Resource Planning

Integrated resource plans are utility-specific, comprehensive plans that provide a forecast of present and future energy demand, and define an approach for meeting those needs while balancing reliability, environmental responsibility, efficiency and cost.

States and utilities should consider the merits of each policy, as well as unique local conditions and priorities, in determining which path to pursue.

II. Introduction

Setting energy-savings goals is an important element of energy efficiency market development. Having explicit goals or goal-setting mechanisms in place can help to chart a path forward, providing a helpful degree of specificity and direction, and can help states and utilities maximize the benefits of energy efficiency. In addition, having goals to work toward can facilitate rapid rollout and deployment of programs, in jurisdictions where policy makers have determined this to be of value. Finally, goal-setting can provide a "yardstick" for review and evaluation of energy efficiency activities, and support continual improvement and achievement of savings at as low a cost as possible.

This paper provides an overview of policy mechanisms and approaches that have been used in the Southeast and beyond to set goals, both mandatory and voluntary. It addresses the benefits and drawbacks of each approach, while ultimately recognizing that the appropriateness of any single approach will vary by jurisdiction and local context, as well as policy goals.

III. Goal-Setting Policy Mechanisms

A. Mandatory Targets or Portfolio Standards

1) Definition and Characterization

Portfolio standards, including Energy Efficiency Resource Standards (EERS) or Energy Efficiency Portfolio Standards (EEPS), set long-term, mandatory energy-savings targets for utilities and other energy efficiency program administrators.

The magnitude of savings opportunity from portfolio standards is significant. In 2014, ACEEE noted that, "if states continue to meet savings targets—and legislators and regulators maintain these targets in years leading up to 2020—the combined annual electricity savings from the 26 states with EERS policies will be equivalent to 6.2% overall electricity sales in the United States in 2020."[1]

Portfolio standards have proven to be a particularly effective mechanism for promoting reliable investment in energy efficiency and supporting ramp-up to leading levels, as described below. Historically, portfolio standards have driven the largest and most sustainable energy savings of all of the mechanisms described in this paper.[8] According to ACEEE, the characteristics of an EERS are as follows:

- Sets clear long-term targets for electricity and/or natural gas savings;
- Makes clear that targets are mandatory; and
- Includes sufficient funding for full implementation of programs necessary to meet targets.

a. Magnitude of Targets

Policy makers may use a variety of benchmarks to determine the magnitude and ramp rate of savings goals. These may include historical, in-state performance, targets from neighboring states or market potential studies.

Some states measure performance based on gross savings, while other looks at net savings, which makes an adjustment for savings attribution.

b. Baselines

Baselines may be defined in absolute terms (e.g., X GWh/year) or in relative terms (e.g., savings equivalent to Y% of a certain year's electricity consumption).[2]

Where goals are set as a percent of sales, rather than an absolute value, the baseline level of sales may be established in a number of different ways.

- **Actual Sales:** One method is to use a baseline that reflects actual sales. This method is effective; however, actual sales may not be known until the end of a program year.
- **Prior Year Sales:** Another method is to utilize prior year sales. Most states that use this approach use a historic but dynamic baseline that changes over time.
- **Annual Average:** A third method is to use an annual average over a number of years.

c. Incremental vs. Cumulative Targets

Incremental savings refers to the reduction in electricity use in a given year resulting from energy efficiency measures installed in that year, whereas cumulative, or annual, savings refers to the reduction in electricity use in a given year resulting from energy efficiency measures installed in that year and measures installed in prior years that continue to provide savings.[3] Portfolio standards may be set by using both approaches.

d. Eligible Measures

All EERS include savings from traditional end-use energy efficiency programs, which are well-established and generally have robust evaluation, measurement and verification (EM&V) protocols associated with them. Outside of this, eligible measures may differ from state to state. Because the scope of eligible measures may differ, it is important to note that the magnitude of savings may vary from jurisdiction to jurisdiction. For example, a jurisdiction that includes distribution improvements, combined heat and power (CHP) and codes and standards under a portfolio standard may have higher targets than a jurisdiction that does not because of the increased savings opportunity, all other things being equal.

By allowing for a greater scope of eligible measures, policy makers increase the flexibility of the standard; however, less established measures may present difficulty in terms of quantifying and attributing savings.

e. Timeframe

Establishing multi-year goals through an EERS ensures consistency in program funding overtime. Additionally, it will allow programs enough time to establish program infrastructure and adjust program performance based on data and experience. Arkansas' EERS, which is the only true EERS currently in place in the Southeast (since North Carolina's is combined within their RPS), establishes goals for three years at a time.

f. Flexibility

When developing an energy-savings target, state regulators may wish to incorporate elements that promote flexibility to make adjustments based on extenuating circumstances. As noted earlier, the Arkansas EERS permits utilities to present arguments in favor of modified targets by providing a specific plan for meeting the targets and the costs of doing so. In addition, state portfolio standards may include provisions that allow for temporal or source-based flexibility. Examples may include credit trading programs, which incorporate a market-based trading system of energy-savings certificates, or mechanisms that allow for banking of savings over time.

g. Cost Containment Provisions

To ensure rate stability, some jurisdictions include cost caps in their portfolio standard. For example, Illinois has a maximum rate impact cap; if the cap is reached, the utility savings target may be adjusted downward to equal maximum savings under the cap.[4]

h. Southeastern Examples

As of March 2015, 24 states nationally had EERS in place. In the Southeast, North Carolina (2007) and Arkansas (2010) are the only states that have adopted portfolio standards to date, although North Carolina's portfolio standard is different, though related to, an EERS according to some definitions; it is a Renewable Energy and Energy Efficiency Portfolio Standard –a renewable portfolio standard with an energy efficiency carve-out. Savings targets for covered utilities in each state are provided below.[5] While portfolio standards are not the norm in the Southeast, voluntary goals, which are discussed in the section that follows, can serve as a useful starting point that may transition into a portfolio standard over time.

While Mississippi does not have an EERS in place, Rule 29: Conservation and Energy Efficiency Programs, issued in July 2013, requires the establishment of long-term energy efficiency targets in their comprehensive phase.[6] This will create an opportunity for utilities to earn incentives, and create a mechanism for the state to more easily track and attribute energy savings.

Arkansas EERS Targets

Table 1: Arkansas First Cycle EERS Targets

(Annual incremental savings express as a percent of retail sales)

Year	2011	2012	2013
Electric Efficiency Target	0.25%	0.5%	0.75%
Gas Efficiency Target	0.2%	0.3%	0.4%

Table 2: Arkansas "Bridge Years" and Second Cycle EERS Targets

Year	2014 [7]	2015 [8]	2016	2017-2019 (second cycle)[9]
Electric Efficiency Target	0.75%	0.9%	0.9%	TBD
Gas Efficiency Target	0.4%	0.5%	0.5%	TBD

Sources: Arkansas Public Service Commission Order No. 17, Docket No. 08-144-U; Order No. 15, Docket No. 08-137-U; Order No. 1, Docket No. 13-002-U; Order No. 7.

North Carolina REPS Targets

Table 3: North Carolina REPS Targets

(Portion of prior-year electricity sales)

Year	2012	2015	2018	2021 and beyond
Target [10]	3%	6%	10%	12.5%

Sources: N.C. Gen. Stat. Section 62-133.804 NCAC 11 R08-64, et seq.

For investor-owned utilities, energy efficiency is capped at 25% of the 2012-2018 targets and at 40% of the 2021 target. Because of its cost-effectiveness, energy efficiency has historically been utilized up to the cap.

Non-Portfolio Standard Targets

In Florida, utility-specific targets are set under the Florida Energy Efficiency and Conservation Act; however, it is generally not considered a portfolio standard. As articulated by ACEEE, funding levels are not adequate to meet annual savings targets set by utilities; therefore, the target-setting process in Florida does not qualify as an EERS.[11]

Duke Energy Progress and Progress Energy Carolinas also have utility-specific goals in place; however, they are not considered portfolio standards for much the same reasons.

Portfolio standards may either be set statewide, or for a subset of utilities. Generally, portfolio standards only apply to investor-owned utilities, although some states, such as North Carolina, also include municipal and cooperative utilities. While the proposition of applying uniform savings targets statewide is appealing in its simplicity, an argument can be made that utilities are not "all created equal," with the same resources and implementation capacity, and that the cost-effectiveness of energy-savings opportunities is not uniform statewide. Some standards, like Arkansas', include natural gas utilities, while others do not. A size cap may also be used to distinguish between utilities, and to account for undue impacts of administrative burdens.

While the form of portfolio standards may differ from state to state, they are most commonly set as a percentage of energy sales. This minimizes the frequency of update, since targets adjust to sales, and accordingly, may be used over many years without resetting. A handful of states set portfolio standard targets as a percent of load growth; however, this approach results in a great deal of uncertainty in terms of the savings that are ultimately achieved. In addition, some states set savings goals as absolute targets, which has the benefit of providing a degree of certainty in predicting the amount of savings that will be achieved over time, but may be less responsive to changing market conditions. Finally, targets may be set as annual incremental goals, or cumulative goals, which set the total amount of reductions to be achieved in a given year from all policies implemented up through that year.[12] It is important to understand the tradeoffs of each approach when developing an EERS.

2) Target Adoption Process

Portfolio standards may be set either legislatively, like North Carolina's, or administratively, like Arkansas', based on a commission's broad, non-specific authority to regulate utilities in a manner that serves the public interest, and to order "just and reasonable rates." In other states, commissions may be reluctant to set goals without specific statutory authorization.[13] In some cases, the legislature may specify funding

levels or savings goals, while in other cases it delegates those decisions to the state utility regulatory agency.

In the case that goal-setting is initiated by the legislature, the law should specify roles and responsibilities of various actors, including commissions, utilities and third parties.[14]

3) Target Advantages

A mandatory portfolio standard provides a degree of certainty as to the levels of energy savings that will be achieved. This feature is critical in helping industry businesses and trade allies develop long-term growth strategies. In addition, research points to the effectiveness of mandatory portfolio standards relative to other goal-setting mechanisms, including IRP.[15]

Portfolio standards have been found to be among the most effective tools for increasing investment in energy efficiency and expanding ratepayer-funded programs. According to a recent analysis by ACEEE, states with an EERS portfolio standard in place demonstrated over three and a half times as much program spending (2.63% vs. 0.76%) and savings (1.11% vs. 0.30%) as the non-EERS states.[16]

In addition, portfolio standards provide an opportunity for utilities to earn incentives for exemplary performance, and represent an important part of the regulatory mechanisms needed to encourage investment in energy efficiency.

Finally, portfolio standards may facilitate tracking for achievement and attribution of progress towards emissions reduction goals for EPA's proposed Clean Power Plan, as well as other pending environmental regulations.

4) Target Disadvantages

An EERS in and of itself will not lead to expanded deployment of energy efficiency unless complementary regulatory mechanisms to encourage and reward investment in energy efficiency are also in place. These policies are described in greater detail in Section IV.

Administration of an EERS is often complex, involving communication and coordination between commissions, utilities or program administrators and program evaluators. Measurement and verification of energy savings, as well as reporting processes, must be also be fairly robust to ensure that covered entities are meeting their targets.[17]

Reporting instruments vary across jurisdictions. For example, not all utilities maintain energy efficiency "annual" program results; some utilities only track incremental impacts. Incremental savings only capture the impacts of new programs and new participants in existing programs. Utilities may report energy impacts in "net" or "gross" terms. Gross savings are defined as the total change in energy consumption that results from program-promoted actions taken by program participants regardless of the extent or nature of program influence on their actions. Net savings are defined as the change in energy consumption

attributable only to the energy efficiency program efforts, separating out exogenous influences on energy consumption, such as consumer self-interest, program free riders and program spillover.

B. Voluntary Goals

1) Definition and Characterization

Voluntary energy efficiency goals are energy-savings targets that are not enforceable by a specific mandate or standard. They are established to promote adoption of energy-efficient practices and measures to realize the energy-savings benefits without requiring compliance.

Many states and utility companies adopt voluntary goals in order to have a stronger voice in formulating future policies, gain public recognition for efforts to reduce energy demand proactively, and get a head start in developing cost-effective plans for responding to energy demand and regulations in the future. Table 4 lists Southeastern states with voluntary goals.

Table 4: Southeastern States with Voluntary Goals

State	Goal	Authority
Kentucky	18% of the state's projected energy demand in 2025 (utility and non-utility programs)	Kentucky's 7-Point Strategy for Energy Independence (2008)
Tennessee	3.5% savings through energy efficiency by 2015 and 6.8% savings by 2020 (TVA)	TVA Board of Directors/2011 IRP
Virginia	10% (from 2006 levels) by 2020	S 1416 (2007)

1. Kentucky's Voluntary Goals

The savings achieved by Kentucky utilities under the state's voluntary goals demonstrate the viability of significant energy efficiency progress in the absence of mandatory targets.

Kentucky utilities began ramping up their energy efficiency investments with the release of Governor Beshear's 2008 Energy Plan, "Intelligent Energy Choices for Kentucky's Future: Kentucky's 7-Point Strategy for Energy Independence," which identifies energy efficiency as the leading strategy, and targets an 18% reduction of Kentucky's energy demand by 2025.

In part, a three-year collaborative process that began in 2011 supported Kentucky's ramp up and advancement. This effort, funded by the U.S. Department of Energy (DOE) and facilitated by the Midwest Energy Efficiency Alliance (MEEA), focused on designing a strategy for a 1% energy

efficiency goal to facilitate achievement of the goals set out under the State Energy Plan. Based on in-state stakeholder input, Kentucky has pursued a voluntary goal without a mandated portfolio standard.

Increased investment also supported this ramp up. In 2008, Kentucky's statewide energy efficiency investments were only $2.2 million, but by 2011, investments increased to more than $48 million.[18] In 2013, Duke Energy Kentucky's savings reached 1% of retail sales, and Louisville Gas and Electric (LG&E) and Kentucky Utilities Company (KU) topped 0.7%.[19] In large part due to these successes, ACEEE's 2014 State Energy Efficiency Scorecard named Kentucky one of its most improved states.[20] Importantly, Kentucky's major utilities have all three elements of the "three-legged stool" in place, supporting a policy framework that encourages investment in energy efficiency.

Table 5: Historic Savings for Kentucky Utilities

Year	Savings As a Percent of Sales
2009	0.07%
2010	0.15%
2011	0.25%
2012	0.45%
2013	0.52%

Source: Southern Alliance for Clean Energy

While the eventual achievement of the state's voluntary goals has yet to be determined, progress to date indicates that it is well on its way, and Kentucky has been the most successful of all southeastern states in the achievement of its voluntary goals.

2. TVA's Voluntary Goals

In August 2010, the Tennessee Valley Authority (TVA) Board adopted voluntary goals to effectively lead the Southeast in energy efficiency, setting out to achieve a cumulative 3.5% of sales in energy efficiency savings through 2015, relative to 2015 energy sales.

A supportive management and investments in program delivery infrastructure—including incentive programs, price structure changes and education efforts to raise awareness—catalyzed initial progress toward this goal. As seen below, this comprehensive approach led to significant

gains in the early years of program delivery. Declines in recent years are a result of the need to cut operations and maintenance costs overall,[21] following the economic downturn, demand reduction, utility downsizing; and an increase in capital expenditures associated with building several new natural gas combined cycle (NGCC) plants.

Table 6: Historic Savings for TVA

Year	Savings As a Percent of Sales
2008	0.12%
2009	0.13%
2010	0.12%
2011	0.33%
2012	0.34%
2013	0.32%
2014	0.35%

Sources: Personal communication with program staff, TVA Form 10-K data

While TVA has significantly increased investment in energy efficiency, it is unlikely to achieve its voluntary goals by the end of 2015. TVA's experience indicates the potential for goal-setting to support substantial progress, but demonstrates that the non-enforceable nature of voluntary goals can cause them to fall in priority relative to other objectives. However, TVA's commitments to energy efficiency will likely result in increased savings in the long term, particularly in light of TVA's recent IRP, which models energy efficiency as a resource that can compete on par with supply-side resources – making it one of the first utilities in the country to do so.

3. Virginia's Voluntary Goals

Virginia's voluntary energy-saving goals demonstrate the need for supportive funding and policies to implement goals effectively. In 2007, the Virginia General Assembly adopted S 1416, setting a legislative goal of reducing electricity consumption by 10% (from 2006 levels) by 2022. In 2015, Gov. Terry McAuliffe announced a revised plan to speed up efforts to meet energy efficiency goals under the Virginia Energy Plan that will reduce retail electricity consumption by 10 percent by 2020 — two years earlier than the previous goal. In order to achieve this plan, Gov. McAuliffe appointed 12 individuals from the public and private sectors to an Executive Committee on Energy Efficiency.

While the state's major utilities, including Dominion Virginia Power, have implemented basic energy efficiency programs since the adoption of the goals, progress to date has been slow, as

demonstrated below. Attempts to adopt implementing legislation, such as a mandatory portfolio standard, have not moved forward. Concerns about affordability and free-ridership have complicated utility investment in energy efficiency, and will need to be addressed in order to significantly expand current programming.

Table 7: Historic Savings for Virginia

Year	Savings As a Percent of Sales
2008	0.00%
2009	0.00%
2010	0.00%
2011	0.10%
2012	0.03%
2013	0.03%

Source: ACEEE Data.

In 2014, Virginia Governor Terry McAuliffe began to take steps toward implementation of the goal with the release of the 2014 Virginia Energy Plan. The plan focuses on an "all-of-the-above" approach, advancing diverse traditional energy resources, as well as energy efficiency and renewables. The plan recommends a number of strategies for advancing energy efficiency in the public and private sectors, including convening the "Virginia Board on Energy Efficiency" to develop a strategic plan for meeting Virginia's voluntary goal of a 10% reduction in retail energy consumption.[22] This renewed effort to implement Virginia's goals is a positive step toward meaningful energy-saving reductions and the fulfillment of statewide goals.

2) Goal Adoption

Voluntary goals, which are less formal in nature, may be established in a range of policy-related materials or documents, as described above. In the past, they have appeared in executive orders, state energy plans or IRPs.

3) Goal Advantages

Setting a goal that is not a true mandate may remove the perception of risk, facilitating adoption and buy-in from the necessary stakeholder base. While voluntary goals do not always produce the level of results that may be seen in the case of mandatory goals, there are notable exceptions. For example, Kentucky's

utilities have ramped up to region-leading levels based on directives included in its 2008 state energy plan, as described above.

4) Goal Disadvantages

While the establishment of a voluntary goal may, in some cases, be less challenging than in the case of a mandatory goal, implementing it may be more difficult, as in the case of Virginia. Without the authority of a statute or an order behind it, it may be challenging to make the case for cost recovery, incentives and other needed supportive regulatory structures, and to establish accountability for following through on goal achievement. However, notable exceptions exist, including that of Kentucky, where goals are voluntary, but leadership at both the state agency and Commission level have spurred healthy progress toward these goals.

C. Integrated Resource Planning (IRP)

1) Definition and Characterization

According to the U.S. Department of Energy (DOE), an integrated resource plan (IRP) is a long-range utility plan for meeting the forecasted demand for energy within a defined geographic area through a combination of supply side resources and demand side resources and at least cost.[23] IRP may reflect a spectrum of policy objectives, including safety and reliability.

While the amount of cost-effective energy efficiency may vary by jurisdiction, some quantity is generally available at a lower levelized cost than supply-side resources, causing utility scenario planning models to select it. Depending on the manner in which utilities are required to assess energy efficiency, IRP may result in a long-range plan with specific goals for energy efficiency resource acquisition.[24] Municipal or cooperative utilities that own generation typically set energy-savings goals as part of a resource planning process.[25] An additional layer of policy supporting energy efficiency is the statutory or regulatory requirement that utilities acquire “all cost-effective” energy efficiency, or to prioritize energy efficiency in their energy resource “loading order,” or relative priority.

A true IRP process allows both supply- and demand-side resources to “compete” on even ground, allowing the model to choose the optimal resource portfolio. While 38 states have some kind of IRP or resource planning process in place, only a handful treat energy efficiency as a resource. In the Southeast, the most notable example is the Tennessee Valley Authority (TVA), which incorporated this new methodology in its 2015 IRP. [26]

a. Planning Horizons

Integrated resource plans are long-term in nature, but these planning periods vary according to state authority or guidance.

b. Frequency of Updates

States in the Southeast with IRP processes require updates every two to three years to reflect changing circumstances related to fuel prices, load forecasts, operating costs and regulations among other factors.

c. Southeastern Examples

IRP has become increasingly popular in the Southeast in recent years, although IRP policies and requirements vary from state to state.

Table 8: Southeastern States that Conduct IRP [27]

State	IRP Process in Place?	Notes/Authority
Alabama		IRP exists but does not give full consideration to energy efficiency.
Arkansas	X	Arkansas has an IRP "guideline," rather than a rule: See Arkansas PSC. "Resource Planning Guidelines for Electric Utilities." Approved in Docket 06-028-R. January 4, 2007.
Florida	X	The Florida Public Service Commission requires filing of long-term energy plans.
Georgia	X	Integrated Resource Planning Act of 1991 (O.C.G.A. § 46-3A-1), Amended. Georgia Public Service Commission. General Rules. Integrated Resource Planning 515-3-4.106.
Kentucky	X	KY Administrative Regulation 807 KAR 5:058. Integrated Resource Planning by Electric Utilities. Relates to KRS Chapter 278.110.
Louisiana	X	Louisiana Public Service Commission Corrected General Order. Docket No. R-30021. Decided at the Commission's March 21, 2012 Business and Executive Session.
Mississippi		
North Carolina	X	North Carolina Utilities Commission Rule R8-60: Integrated Resource Planning and Filings.
South Carolina	X	Code of Laws of South Carolina, Chapter 37, Section 58 3740. Integrated resource plans. Public Service Commission of South Carolina Order No. 91-885 in Docket No. 87-223-E. October 21, 1991.

Tennessee	**X**	IRP applies to TVA, but not utilities regulated by the Tennessee Regulatory Authority (TRA)
Virginia	**X**	Code of Virginia § 56-597 - § 56-599.

Source: Regulatory Assistance Project, Best Practices in Electric Utility Integrated Resource Planning.

2) IRP Adoption Process

The genesis of IRP requirements and the authority under which they are enacted vary by state. IRP requirements may be articulated in state statutes, administrative rules or public service commission (PSC or "Commission") orders.

3) IRP Advantages

IRP has the benefit of delivering the lowest cost resource portfolio that can deliver reliable power to end-use customers, unless superseded by other policy objectives.[28] Because energy efficiency is generally lower cost than supply-side resources, if allowed to compete on an equal footing, energy efficiency will be among the first resources that an IRP model selects.

Even if energy efficiency is not modeled as a resource, as is best practice, jurisdictions that are committed to doing so can acquire significant levels of energy efficiency savings, although this requires support by the state PSC. [29]

True to its name, IRP has the advantage of providing a comprehensive look at an interrelated set of priority issues, which may include economic growth, reliability, environmental protection and other important goals. The combination of interrelated considerations supports a more complete analysis of the current landscape as well as a plan to address current and future needs.

4) IRP Disadvantages

While IRP is a useful planning tool and can set a general direction for energy efficiency activities, the results of an IRP are generally not binding. Unless IRP outputs are intentionally integrated with other processes,[30] the amount of energy efficiency identified by the model may not come to fruition, and the IRP may serve as more of a general guideline for resource acquisition.

In addition, even in the presence of an IRP requirement, DOE has noted that that federal and state policies can influence the extent to which IRPs and other similar planning processes are used as well as how effective they are at promoting energy efficiency.[31]

Finally, the degree to which IRP actually impacts the delivery of energy efficiency is also unclear. According to ACEEE, there is no statistically significant difference in either energy efficiency program spending in states that conduct IRP compared to states that do not, indicating that IRP as it is commonly practiced does not necessarily lead to ramp up in the levels of energy efficiency that are ultimately delivered.[32]

IV. Implementation Considerations

The existence of any variety of goal-setting mechanism does not guarantee its effective implementation. There are several other factors that contribute to successful development, deployment and administration of energy savings goals.

A. Cost Recovery

The three goal-setting mechanisms previously described, while they vary in nature, all necessitate a number of key supporting policies to be implemented successfully. Collectively referred to as the three-legged stool of cost recovery, the following components are often utilized to compensate and incentivize utilities for their investments in energy efficiency.

1. Program Cost Recovery:

Reimburses utilities for spending on program essentials. In most states, these costs are treated as "expenses" in rate cases–in other words, the costs are added into the revenue formula and recovered through customer rates.

2. Lost Revenue Recovery:

Enables utilities to recover revenues that would have been accrued in the absence of energy savings from approved customer energy efficiency programs. Variations include full decoupling, which allows the utility to recover its investment and operating costs independent of the volume of actual electricity sales, and Lost Revenue Adjustment Mechanisms (LRAM) or Lost Contributions to Fixed Costs (LCFC), which allows utilities to recover revenues that are "lost" through approved energy efficiency programs.

3. Performance Incentives:

Allow a financial return on energy efficiency investments, placing them on par with supply-side investments in traditional generation. These performance incentives are paired with meeting or exceeding stated voluntary or mandatory goals.[33]

A recent review of the cost-recovery mechanisms in the Southeast concluded that the lost revenue adjustment mechanism (LRAM) is the most commonly used way of decoupling utility profits from electricity sales, expensing energy efficiency program costs is the most common approach to program

cost recovery, and shared savings based on net benefits from the Program Administrator Cost test is the most frequently used way of incentivizing performance.[34] Decoupling is not currently in place for electric utilities in the Southeast, but is being discussed in at least one jurisdiction.

In addition, a clear cost-effectiveness testing framework is essential for sustaining consistent investment in energy efficiency. Inconsistency can lead to swings in energy efficiency investment over time and hinder long-term planning the business community involved in delivery of energy efficiency offerings.

B. Evaluation, Measurement and Verification

Evaluation, measurement and verification (EM&V) constitutes a critical component of effective energy efficiency programs. Without a robust process to estimate and verify these savings, states risk entities reporting exaggerated or inflated estimates of program savings to the regulator and greatly reducing the effectiveness of the standard. Broadly speaking, EM&V has three primary objectives:

1. Documenting program impacts and determining whether a program (or portfolio of programs) met its goals;
2. Identifying ways to improve current and future programs by determining why program-induced impacts occurred; and
3. Supporting energy demand forecasting and resource planning by understanding the historical and future resource contributions of energy efficiency compared to other energy resources.[35]

As a best practice, approximately 3 to 5% of energy efficiency program costs is generally spent on EM&V. Minimizing administrative costs is an important part of energy efficiency program delivery, and strategies exist to minimize EM&V expenses.

C. Program Budget Commitments

Utility program budget commitments are essential not only for ramp up, but also for sustaining program savings over time. A firm budgetary commitment allows for the planning necessary to develop program administrative structure and contractor networks. Energy efficiency programs, and the businesses that implement them, cannot effectively support programs and plan for the future without certainty of funding levels.

D. Adequate Ramp-up Time

In order to effectively ramp up performance, utilities require time to establish and promote their programs, along with the infrastructure to support them.[36] Commissions and utilities should allow adequate time for programs to succeed, and avoid starting and stopping programs, which can be a detriment to market development. In addition, both parties must account for regulatory lag when determining realistic goals and expectations for ramp up.

E. Access to Programs

Consideration should to be given to the specific needs of each customer segment, because some—especially fixed-income residential customers and small business customers—may experience unusually large financial challenges to participating in programs. Within a set of programmatic offerings, funding allocations may be determined by existing regulatory mandates, goals and priorities. For example, if peak demand savings is a priority, then programs may be weighted toward those that address peak-savings measures, such as high-efficiency cooling programs. The balance of program offerings may also be determined by the magnitude of energy savings potential by customer class or the magnitude of energy sales within each customer class.

V. Conclusion

Across the Southeast, both mandatory and voluntary goals have generated energy savings and other related benefits and have served as a motivation and guide for energy efficiency programs and initiatives.

There are several approaches a state or utility can utilize to establish energy savings goals and each one has its own unique characteristics and impacts. No matter how it is established or managed, the scope of a goal and how it can be achieve should be tailored to address the local conditions and policy priorities of a jurisdiction.

Goal-setting represents an important part of a broader framework to support investment in energy efficiency, and may be complemented by other policies and programs like financing mechanisms, codes and standards upgrades, and state and local lead-by example programs. Models from the Southeast and beyond demonstrate the potential of a robust supporting policy framework to achieve energy efficiency goals.

End Notes

[1] American Council for an Energy-Efficient Economy, "Energy Efficiency Resource Standards: A New Report on State Experience" (April 2014) available at http://aceee.org/research-report/u1403.

[2] National Renewable Energy Laboratory, "State Energy Efficiency Resource Standards: Design, Status, and Impacts" (May 2014) available at http://www.nrel.gov/docs/fy14osti/61023.pdf.

[3] Ibid.

[4] Resources for the Future, "Putting a Floor on Energy Savings: Comparing State Energy Efficiency Resource Standards" (February 2012) available at http://www.rff.org/Documents/RFF-DP-12-11.pdf.

[5] North Carolina does not have a true EERS, rather it has an RPS with an energy efficiency carve-out, or Renewable Energy and Energy Efficiency Portfolio Standard.

[6] Mississippi Public Service Commission, Final Order Adopting Rule, filed in Docket No. 2010-AD-2 (July 2013) available at http://www.psc.state.ms.us/InsiteConnect/InSiteView.aspx?model=INSITE_CONNECT&queue=CTS_ARCHIVEQ&docid=310904.

[7] Targets, budgets and incentives for Program Year 2013 were also applied to 2014 in an effort to give utilities adequate time to refine their program structure for the next three-year cycle. Accordingly, this cycle will begin in 2015 (Order No. 2, Docket No. 13-002-U, http://goo.gl/xa93bq).

[8] 2015 and 2016 were "bridge years," in which the Commission set goals outside of an EERS cycle to allow time for the completion of a number of efforts impacting the development and implementation of targets.

[9] To be established based on the results of a statewide potential study.

[10] Renewable Energy and Energy Efficiency Portfolio Standard (REPS), available at http://www.ncga.state.nc.us/EnactedLegislation/Statutes/HTML/BySection/Chapter_62/GS_62-133.8.html

[11] ACEEE, Energy Efficiency Resource Standards (April 2015) available at http://aceee.org/policy-brief/state-energy-efficiency-resource-standard-activity

[12] Resources for the Future, "Energy Efficiency Resource Standards" (February 2012) available at http://www.rff.org/documents/RFF-DP-12-10.pdf.

[13] State and Local Energy Efficiency Action Network, "Setting Energy Savings Targets for Utilities" (September 2011) available at https://www4.eere.energy.gov/seeaction/system/files/documents/ratepayer_efficiency_targets.pdf.

[14] Ibid.

[15] American Council for an Energy-Efficient Economy, "IRP vs. EERS: There's One Clear Winner," *ACEEE Blog*, December 16, 2014, available at http://aceee.org/blog/2014/12/irp-vs-eers-there%E2%80%99s-one-clear-winner-.

[16] Ibid.

[17] National Renewable Energy Laboratory 2014.

[18] Midwest Energy Efficiency Alliance, "Achieving Voluntary Efficiency Goals: The Kentucky Approach" (August 2013) available at

http://mwalliance.org/webinars/meea-policy-webinar-achieving-voluntary-efficiency-goals-kentucky-approach.

[19] Kentucky Energy and Environment Cabinet, "Demand-Side Management in Kentucky: Current Performance, Costs and Potential."

[20] American Council for an Energy-Efficient Economy. "The 2014 State Energy Efficiency Scorecard" (October 2014) available at http://aceee.org/research-report/u1408.

[21] Energy efficiency is a part of TVA's Operations and Maintenance (O&M) budget.

[22] Commonwealth of Virginia, Department of Mines, Minerals and Energy, "2014 Virginia Energy Plan" (October 2014) available at http://www.dmme.virginia.gov/DE/LinkDocuments/2014_VirginiaEnergyPlan/VEP2014.pdf.

[23] State and Local Energy Efficiency Action Network, "Using Integrated Resource Planning to Encourage Investment in Cost-Effective Energy Efficiency Measures" (September 2011) available at https://www4.eere.energy.gov/seeaction/sites/default/files/pdfs/ratepayer_efficiency_irpportfoliomanagement.pdf.

[24] Lawrence Berkeley National Laboratory, "The Future of Utility Customer-Funded Energy Efficiency Programs in the United States" (January 2013) available at http://emp.lbl.gov/sites/all/files/lbnl-5803e.pdf.

[25] National Action Plan for Energy Efficiency, "Guide to Resource Planning with Energy Efficiency" (December 2007) Prepared by Snuller Price et al., Energy and Environmental Economics, Inc., available at www.epa.gov/eeactionplan.

[26] Tennessee Valley Authority, "Integrated Resource Plan" accessed April 2015, http://www.tva.com/environment/reports/irp/.

[27] While policies are broken out by state for ease of reference, all utilities within a given state may not be subject to the IRP requirement.

[28] Regulatory Assistance Project, "Best Practices in Utility Integrated Resource Planning" (June 2013) available at www.raponline.org/document/download/id/6608.

[29] Ibid.

[30] For example, IRP outputs can be used in establishing energy efficiency goals, or vice versa.

[31] State and Local Energy Efficiency Action Network, "Using Integrated Resource Planning to

Encourage Investment in Cost-Effective Energy Efficiency Measures" (September 2011), available at https://www4.eere.energy.gov/seeaction/system/files/documents/ratepayer_efficiency_irpportfoliomanagement.pdf.

[32] American Council for an Energy-Efficient Economy, "IRP vs. EERS: There's One Clear Winner," *ACEEE Blog*, December 16, 2014, available at http://aceee.org/blog/2014/12/irp-vs-eers-there%E2%80%99s-one-clear-winner-.

[33] American Council for an Energy-Efficient Economy, "The Old Model Isn't Working: Creating the Energy Utility for the 21st Century" (September 2011) available at http://aceee.org/files/pdf/white-paper/The_Old_Model_Isnt_Working.pdf.

[34] Marilyn Brown et al. "Alternative Business Models for Energy Efficiency: Emerging Trends in the Southeast" (October 2014) available at http://www.spp.gatech.edu/sites/default/files/publication/download/201410/BusinessCase_10-28-2014%20_WP84%20%281%29.pdf.

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[36] American Council for an Energy-Efficient Economy. "2013 State Energy Efficiency Scorecard" (November 2013) available at http://aceee.org/research-report/e13k.