



# Review of Leading Rural Electric Cooperative Energy Efficiency Programs

By Adam Bickford and Howard Geller  
January, 2016



*(THIS PAGE INTENTIONALLY BLANK)*

**Contents**

Tables..... ii

Acknowledgments..... ii

About SWEEP..... ii

**I. INTRODUCTION..... 1**

**II. BACKGROUND..... 1**

**III. UNDERSTANDING COOPERATIVE DSM SAVINGS: STATE REGULATION AND INFRASTRUCTURE..... 3**

**IV. PROFILES OF REC AND G&T DSM EFFORTS IN SELECTED STATES..... 5**

Minnesota: EERS and Statewide Infrastructure..... 5

    Regulation..... 5

    Infrastructure..... 5

    DSM Program Savings..... 6

Iowa: EERS and Cooperative Infrastructure..... 7

    Regulation..... 7

    Infrastructure..... 8

    DSM Program Savings..... 8

Arizona: EERS, but No Infrastructure..... 9

    Regulation..... 9

    Infrastructure..... 10

    DSM Program Savings..... 10

New Hampshire: No EERS, with Statewide Infrastructure..... 12

    Regulation..... 12

    Infrastructure..... 12

    DSM Program Savings..... 12

Hoosier Energy: No EERS, with Cooperative Infrastructure..... 13

    Regulation..... 13

    Infrastructure..... 14

    DSM Program Savings..... 14

Tri-State Generation and Transmission Association: No EERS and No Infrastructure..... 15

    Regulation..... 15

    Infrastructure..... 15

    DSM Program Savings..... 17

Conclusion..... 18

**V. RECOMMENDATIONS FOR BEST PRACTICE DSM PROGRAMS..... 19**

Adopt Supporting Policies..... 19

Determine Need..... 20

Establish Goals, Track Data and Evaluate Results..... 20

Develop Effective Program Leadership..... 21

Gain Customer Support..... 21

Leverage Funding Sources..... 21

Develop an Effective Contractor and Vendor Infrastructure..... 22

**VI. CONCLUSION..... 23**

## Tables

Table 1   REC Support of Energy Efficiency .....	2
Table 2   Typology of Cooperatives and States/Utilities Covered in This Report .....	4
Table 3   Minnesota Electric Cooperatives DSM Electric Savings, 2008-2014.....	6
Table 4   Iowa Association of Electric Cooperative DSM Electric Savings, 2010-2014.....	9
Table 5   Arizona Electric Cooperatives DSM Savings, 2011-2014.....	11
Table 6   New Hampshire Electric Cooperative Savings, 2010-2014 .....	13
Table 7   Hoosier Energy Cooperative DSM Electric Savings, 2010-2014.....	14
Table 8   Tri-State Generation and Transmission Association DSM Electric Savings, 2010-2014.....	18
Table 9   Cooperative Performance by Typology Dimension.....	18

## Acknowledgments

This report would not have been possible without the assistance of the following people, who provided information and data about the rural cooperatives in their states:

- Jon Beyer, Keith Emerson, and Myles Jensen, Tri-State Generation Cooperative
- Keith Dennis, National Rural Electric Cooperative Association
- Ethan Hohenadel, Iowa Association of Electric Cooperatives
- Barbara Keene, Arizona Corporation Commission Staff
- Will Nissen, First Energy
- Laree St. Onge, Trico Electric Cooperative, Arizona
- Adam Zoet, Minnesota Department of Commerce, Division of Energy Resources
- Ellen Zuckerman, SWEEP

All interpretations and errors are attributable to the authors. All policy recommendations reflect the position of SWEEP.

## About SWEEP

The Southwest Energy Efficiency Project is a public interest organization dedicated to advancing energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. For more information, visit [www.swenergy.org](http://www.swenergy.org).

SWEEP's Utilities Program actively promotes the expansion and improvement of utility energy efficiency programs throughout the Southwest.

Questions or comments about this report should be directed to Adam Bickford, Senior Associate: [abickford@swenergy.org](mailto:abickford@swenergy.org).

Copyright © 2016 by Southwest Energy Efficiency Project



## Review of Leading Rural Electric Cooperative Energy Efficiency Programs

By Adam Bickford and Howard Geller  
January 2016

### I. INTRODUCTION

Rural electric cooperatives (RECs) account for about 12% of all electricity sales in the U.S. Over the past decade, investor-owned electric utilities (IOUs) in the Southwest have greatly expanded their energy efficiency and other demand-side management (DSM) programs by implementing state-mandated programs providing incentives for customers to install energy efficient equipment and improve savings on the customer side of the meter.<sup>1</sup> RECs in the Southwest region have invested in some programs to help their customers save energy, but in general REC energy efficiency programs in the Southwest achieve less savings as a percentage of sales compared to the programs offered by the IOUs in the region. In contrast, as seen in this report, RECs in a number of other states implement well-funded programs that achieve much higher levels of energy savings compared to the efforts of RECs in the Southwest.

RECs operate in a range of regulatory structures and have developed a variety of administrative infrastructures, both of which impact the effectiveness of the energy efficiency investments they make. The purpose of this report is to review the energy efficiency and load management programs of RECs along two dimensions – the requirements of state policies and the types of program infrastructure in a state – and to identify the best practices that will support increased energy savings in the Southwest.

### II. BACKGROUND

America's RECs were originally created as part of the New Deal in the decade spanning the late 1930's and 40's to deliver electrical services to areas not served by existing electric companies. IOUs could not earn a fair return on investment from branching out to serve rural areas due to the high costs of transmitting and distributing power over long distances; therefore, they focused their efforts on serving urban areas. In 1934, less than 11% of U.S. farms and rural communities had access to electricity. As a result of federal intervention and funding, nearly all of the country's

<sup>1</sup> Geller, H. "Update on Utility Energy Efficiency Programs in the Southwest." Southwest Regional Energy Efficiency Workshop, November 20, 2014. [http://swenergy.org/Data/Sites/1/media/events/regional-workshops/2014/presentations/Geller\\_presentation.pdf](http://swenergy.org/Data/Sites/1/media/events/regional-workshops/2014/presentations/Geller_presentation.pdf).

rural communities were electrified by 1952. Today, approximately 840 RECs and 65 power generation and transmission cooperatives (G&Ts) serve 18.5 million customers across 3,141 counties in the United States.<sup>2</sup>

Throughout the years, many RECs have banded together to form G&Ts to purchase, produce and transmit electricity. These non-profit organizations help RECs to aggregate power purchases and investments in generation and transmission resources; in return, they are offered federally subsidized business loans. As the construction of generation resources is generally not feasible for individual RECs due to both their size and financial capabilities, collaboration through G&T organizations provides an economical way to purchase, produce and transmit electricity. While the mission of G&T organizations is to deliver cost-effective power to its member cooperatives, the actual costs associated with operating and maintaining rural electric generation, transmission and distribution systems is significant. However, the price to consumers is generally comparable to energy costs provided by IOUs, despite the challenges of operating in a rural context.

Many RECs and G&T cooperatives provide self-funded DSM programs to promote energy efficiency throughout their service territories; this provides benefits at all levels of the cooperative system. G&T cooperatives benefit directly from DSM programs that save energy and help to flatten customer demand for electricity, thereby reducing the need for expensive baseload or peak-serving power plants. RECs benefit from reductions in the amount of energy they have to purchase to serve their customers. Finally, customers can see direct benefits by improving the efficiency of their homes, farms and businesses, thereby lowering their electric bills.

**Table 1 | REC Support of Energy Efficiency**

<b>92%</b> communicate directly with consumers about energy efficiency
<b>77%</b> co-ops offer energy audits for free or minimal costs
<b>49%</b> co-ops offer financial incentives to consumers to increase efficiency
<b>40%</b> co-ops provide weatherization and efficiency services to consumers
<b>50%</b> offer advanced meters to some consumers

Source: National Rural Electric Cooperative Association<sup>3</sup>

While some REC and G&T organizations have established cost effective and innovative DSM programs, many of these organizations do not. Almost all RECs communicate directly with their customers about the benefits of energy efficiency, offering tips and stories about energy efficiency through a variety of media sources, newsletters, websites, advertisements and even press releases, as illustrated in Table 1. However, few support energy efficiency program designs beyond offering

<sup>2</sup> National Rural Electric Cooperative Association Cooperative Facts and Figures, 2015. <http://www.nreca.coop/about-electric-cooperatives/cooperative-facts-figures/>.

<sup>3</sup> National Rural Electric Cooperative Association. <http://www.nreca.coop/nreca-on-the-issues/energy-operations/energy-efficiency/>.

mail-in rebates for the purchase of efficient equipment.<sup>4</sup> Among RECs, the most common approach is modeled after Touchstone Energy Cooperative's *Together We Save* program. Since 2009, this project has provided promotional materials and information to customers about opportunities to save energy and reduce load.<sup>5</sup> The *Together We Save* program also provides standard rebate forms to assist in the administration of a common portfolio of programs that provide rebates for high efficiency lighting purchases, installation of ENERGY STAR® appliances and appliance recycling.

### III. UNDERSTANDING COOPERATIVE DSM SAVINGS: STATE REGULATION AND INFRASTRUCTURE

The DSM savings attributable to RECs and G&Ts varies substantially by state. Cooperatives in some states are able to sponsor portfolios and programs that save more than 1.0% of annual sales per year, while others do not sponsor any DSM programs. This variation in savings can be understood by considering two dimensions: the applicability of state energy efficiency policies to cooperatives and the type of program infrastructure that cooperatives have developed. This report examines the DSM savings of RECs and G&Ts in six states through a typology delineated by these two dimensions.

The first dimension is defined by whether or not cooperatives are regulated by state policies encouraging energy efficiency. Several states described below have Energy Efficiency Resource Standards (EERS), either approved explicitly in law or authorized by state utility commissions.<sup>6</sup> An EERS is a long-term policy that sets savings targets or requirements for eligible utilities to achieve. EERSs establish savings goals, and typically require that DSM investments are cost effective. In some states with an EERS, cooperatives are required to meet specified savings goals, while in other states cooperatives are exempt. The key distinction of this dimension is whether or not a cooperative is affected by an EERS or not.

The other dimension addresses the development of a utility infrastructure to administer energy efficiency programs. In general, utilities with successful energy efficiency programs commit organizational resources to plan programs, research energy efficiency measures, enter into contracts with program implementers and local businesses, develop rebate processing systems and report savings. Many cooperatives are small organizations working in rural areas and lack the organizational capacity to complete these functions. The "infrastructure" dimension used in this paper identifies three categories:

<sup>4</sup> National Rural Electric Cooperative Association. "Energy Efficiency." <http://www.nreca.coop/issues/FuelsOtherResources/Pages/EnergyEfficiency.aspx>.

<sup>5</sup> <http://www.togetherwesave.com/>

<sup>6</sup> See ACEEE, 2015. State Energy Efficiency Resource Standards (EERS). <http://aceee.org/policy-brief/state-energy-efficiency-resource-standard-activity>.

1. Statewide program infrastructure that is one of two types: either the state itself provides opportunities for cooperatives and other utilities to meet and develop the organizational capacity needed to administer programs effectively, or the state assigns program implementation responsibilities to a third party administrator.
2. State cooperative associations or G&Ts aggregate program administration responsibilities.
3. No common infrastructure, meaning that individual cooperatives manage program administration and reporting responsibilities independently.

Together these two dimensions define a typology with six categories, as seen in Table 2. These two dimensions identify the necessary conditions to produce sustained DSM savings, but they are not causal. A third consideration is necessary. Sustained investment in DSM requires a commitment on the part of cooperative customers and management, who agree to participate in utility programs and support potential increases in electric rates in return for DSM programs that reduce consumption, lower electricity bills and provide other non-energy benefits such as reduced pollutant emissions and enhancement of business or farm productivity and profitability. These productivity and profitability benefits can be significant in rural areas that are often under severe economic pressure. However, the broad benefits of DSM programs may not be clearly visible or well understood by individual customers. In order to build member acceptance of DSM programs, efforts must be made to document the real costs as well as the broad benefits of the programs.

**Table 2 | Typology of Cooperatives and States/Utilities Covered in This Report**

Policy: <i>Cooperatives covered by state EERS?</i>	Infrastructure: <i>Energy Efficiency Program Leadership</i>		
	Statewide	G&T Cooperative	None
Yes	Minnesota	Iowa	Arizona
No	New Hampshire	Hoosier Energy <i>(Southern Indiana and Southern Illinois)</i>	Tri-State <i>(Colorado, Nebraska, New Mexico, and Wyoming)</i>



## IV. PROFILES OF REC AND G&T DSM EFFORTS IN SELECTED STATES

This report seeks to document the range of cooperative DSM savings in terms of the regulatory environment under which RECs and G&Ts operate and the type of program infrastructure. The DSM programs offered by RECs are regulated in a range of ways, from being fully regulated (in the same way as IOU programs) to being completely unregulated. Additionally, the RECs in individual states may rely on a statewide infrastructure to manage their programs, organize collectively as G&T cooperatives, or seek to administer their programs independently. The six states discussed below highlight how the differences in these dimensions relate to differences in program scope and energy savings achievement.

### Minnesota: EERS and Statewide Infrastructure

#### *Regulation*

Minnesota's Next Generation Energy Act (NGEA) of 2007 established a regulatory framework that requires investor-owned, municipal and rural cooperative utilities to spend at least 1.5% of their gross operating revenues to fund energy efficiency and load management programs. The NGEA also established an annual energy savings goal of 1.5% of a three-year average of retail electricity and natural gas sales, with at least 1.0% savings from demand-side programs and up to 0.5% coming from supply-side efficiency improvements. The purpose of this legislation is to promote cost-effective energy efficiency programs, technologies and practices that will help all of Minnesota's gas and electric customers use energy more wisely, while ensuring an adequate supply of affordable energy into the future.

In addition to establishing energy efficiency budgets and saving requirements for the state's electric and gas utilities, the NGEA mandates a per capita energy reduction requirement, a renewable energy resource standard, and a greenhouse gas reduction standard. The legislation requires per capita energy use to be reduced by 15% by 2015 through investments in energy efficiency and renewable energy resources, and requires that renewable energy resources make up a minimum of 25% of the total energy used in the state. Lastly, this legislation mandates a 15% reduction of 2005 greenhouse gas emissions by 2015, increasing to 30% reduction by 2025 and 80% reduction by 2050.<sup>7</sup>

#### *Infrastructure*

The NGEA created the Minnesota Energy Conservation Improvement Program (CIP). As part of this program, the Minnesota Department of Commerce, Division of Energy Resources created a comprehensive energy efficiency suite, including the Conservation Applied Research and Development program (CARD), a statewide efficiency stakeholder program to educate utilities about savings opportunities, and the Energy Savings Platform, an online data collection tool to coordinate energy efficiency program reporting.

<sup>7</sup> Minnesota Sustainable Communities Network. "Next Generation Energy Act of 2007." Minnesota Pollution Control Agency. [http://www.nextstep.state.mn.us/res\\_detail.cfm?id=4034](http://www.nextstep.state.mn.us/res_detail.cfm?id=4034).

The Energy Savings Platform (ESP) began collecting energy efficiency savings data in 2008 and serves as an integrated portal for Minnesota’s municipal, cooperative and investor-owned utilities.<sup>8</sup> Forty-three electric distribution cooperatives operate in Minnesota and report the results of their CIP savings to this online data resource. In 2014, the distribution cooperatives served over 770,000 customers and spent \$26.5 million on DSM programs. CIP programs support load management and demand response improvements, residential and commercial lighting improvements, heating and cooling system improvements, rebates for home and commercial appliances, building retrofits, efficient new construction, and programs targeted towards low income populations.<sup>9</sup>

The Minnesota CARD program is a statewide stakeholder program to support the development, administration and reporting of energy efficiency programs. The CARD program sponsors stakeholder workshops that support program development efforts and educate utilities in the use of the state’s integrated reporting platform. However, individual RECs implement programs independently.

### DSM Program Savings

The DSM performance of Minnesota cooperatives is shown in Table 3. Between 2010 and 2014, first-year energy efficiency program savings ranged between 0.93% and 1.18% of annual energy sales.

Table 3 | Minnesota Electric Cooperatives DSM Electric Savings, 2008-2014

Year	Annual Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2010	14,275.4	166.2	1.16
2011	14,329.6	149.3	1.04
2012	14,059.8	135.6	0.96
2013	14,853.3	170.0	1.14
2014	15,066.8	140.2	0.93

Source: Minnesota Department of Commerce, Division of Energy Resources, Energy Savings Platform

The combination of the EERS law and the infrastructure support has helped Minnesota cooperatives achieve high levels of program savings. For four out of the five years between 2010 and 2014, the combination of the EERS and the statewide infrastructure support resulted in the cooperatives achieving annual savings between 0.93% and 1.16%.

<sup>8</sup> See <http://www.energyplatforms.com/OurStory.aspx>.

<sup>9</sup> Minnesota Department of Commerce, Division of Energy Resources, Energy Savings Platform 2014 data.

## Iowa: EERS and Cooperative Infrastructure

### Regulation

In 2008, the Iowa General Assembly enacted legislation SF 2386 to address the state's need for energy efficiency.<sup>10</sup> The legislation outlines a number of directives including a requirement for consumer-owned electric utilities (i.e., municipal utilities and RECs) to establish energy efficiency goals and cost-effective programs to meet prescribed energy savings targets.

The legislation also created an Energy Efficiency Plans and Programs Study Committee to evaluate utility DSM plans, ensure that programs are both effective and meet the needs of Iowa utility customers, and make recommendations for additional requirements that would lead to improvement.<sup>11</sup> Iowa's efficiency legislation allowed different utilities to set their own savings goals and establish their own program infrastructures.

Under Iowa law, cooperatives are exempt from rate regulation, but are subject to other regulations established by the Iowa Utilities Board (IUB), including the review of energy efficiency programs.<sup>12</sup> SF 2386 requires that individual RECs set their own savings goals and specify a schedule for submitting energy efficiency plans, savings goals and reports.<sup>13</sup> Iowa RECs, working with the support of the Iowa Association of Electric Cooperatives (IAEC), established their first energy efficiency plans in response to SF 2386 in 2009.<sup>14</sup> These plans were based on an energy efficiency potential study conducted in 2009, which estimated the achievable potential value for each participating cooperative for the period of 2010 to 2014. Based on this assessment, each REC established its own energy efficiency savings goals. These goals, which averaged 1.24% of sales in 2012 (with a range from 0.21% to 2.07%), were endorsed by the IUB in 2011.<sup>15</sup>

At the end of 2014, IAEC and its member RECs filed a revised plan for the period of 2015-2019. This plan anticipates an overall investment of \$79.8 million to achieve 785 million kWh savings over the five years of the plan.<sup>16</sup> The estimated lifetime savings from this investment is nearly 3.2 billion kWh, which represents 51% of kWh sold to cooperative customers in 2013.

<sup>10</sup> Iowa Legislature. Senate File 2386 - Enrolled. <http://coolice.legis.state.ia.us/Cool-ICE/default.asp?category=billinfo&service=billbook&GA=82&hbill=SF2386>.

<sup>11</sup> Iowa Utilities Board. "Evaluation of Energy Efficiency Goals and Programs Filed with the Iowa Utilities Board by the Iowa Association of Electric Cooperatives." Report to the Iowa General Assembly. January 1, 2011. [http://www.iowa.gov/iub/docs/misc/EE/2011\\_IUB\\_REC\\_EE\\_Report.pdf](http://www.iowa.gov/iub/docs/misc/EE/2011_IUB_REC_EE_Report.pdf).

<sup>12</sup> Iowa State Code, Chapter 476.A1.g.

<sup>13</sup> *ibid*, Appendix A.

<sup>14</sup> Iowa Association of Electric Cooperatives "Electric Cooperatives' Joint Final Report", December 31, 2009. <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mdyx/~edisp/029852.pdf>.

<sup>15</sup> Iowa Utilities Board, 2011, Recommendation 1.

<sup>16</sup> Iowa Association of Electric Cooperatives Electric Cooperatives' Joint Energy Efficiency Plan 2015 – 2019. <https://efs.iowa.gov/cs/groups/external/documents/docket/mdaw/mjcx/~edisp/271374.pdf>.

### Infrastructure

The IAEC serves 34 individual REC organizations providing electricity and natural gas to approximately 650,000 customers throughout rural Iowa. The majority (84%) of the cooperatives' customers are residential, compared with an average of 27% of the customers served by the state's IOUs.<sup>17</sup> This demographic detail poses a number of challenges to IAEC members, as the cost of delivering electricity to residential customers is considerably higher than the cost of delivering electricity to commercial and industrial customers.

IAEC has branded its DSM programs *Living with Energy in Iowa* to improve customer awareness and recognition of its energy saving services and incentives. *Living with Energy in Iowa* focuses on consumer education with a magazine, website, energy savings tips, articles and advertisements targeted to communicate the benefits of energy efficiency and promote consumer participation in DSM programs. The *Living with Energy in Iowa* programs are a comprehensive portfolio addressing natural gas and electric DSM programs administered by individual RECs. Rebate processing and other administrative functions, including reporting, are managed centrally by the IAEC.

The residential portfolio offered by IEAC's RECs addresses every area of home energy use. Programs include lighting retrofits, appliance rebates, water heating programs, building shell improvements for both existing and new construction, and programs providing rebates for heating and cooling upgrades. Additionally, demand response programs provide opportunities to reduce peak demand through load control devices for water heaters, space heaters and air conditioners.

The agricultural programs of IAEC's RECs are optimized to address specific agricultural needs, such as air circulation fans, high efficiency crop dryers and livestock watering equipment. The non-agricultural commercial programs address lighting retrofits, heating and cooling improvements, water heating retrofits and motor and drive improvements. As with the residential portfolio, substantial savings are coming from demand response programs, including load control devices for high-intensity agricultural measures such as crop dryers.

The cost of energy efficiency programs, including administrative costs and costs of rebates, are incorporated into the base rates of each REC. RECs do not employ a separate energy efficiency rider, nor do they receive an incentive payment for meeting an annual performance target.

### DSM Program Savings

Savings results for IAEC for 2010 to 2014 show that IEAC member cooperatives out-performed the expected results filed in the 2009 plan (see Table 4).<sup>18</sup> First year GWh savings are consistently between 0.90% and 1.0% of annual sales. Additionally, Iowa Cooperatives have consistently exceeded their estimates of potential, achieving between 102% and 121% of the estimate of achievable potential, while spending 94% of the IAEC's budget.

<sup>17</sup> Iowa Association of Electric Cooperatives. [http://www.iowarec.org/about\\_us](http://www.iowarec.org/about_us).

<sup>18</sup> The IAEC is scheduled to report results for 2013 to 2014 in December, 2015.

The experience of IAEC highlights effective interaction between state legislation and the group of cooperatives. Iowa's EERS legislation established a procedure for setting energy efficiency savings goals for individual RECs. This legislation specified a planning process that produced a study estimating the achievable potential for each REC. The RECs then used the potential study to establish individual savings goals and plans to achieve the goals. Through its review of these plans, the IUB endorsed this process while maintaining the RECs' independence. Once the energy efficiency plans were in place, the work of the IAEC was instrumental in coordinating program marketing, communications and reporting. Through the work of the IAEC, the RECs were able to establish savings goals relative to their estimated savings potential and develop effective programs that provide benefits to REC customers throughout the state.

**Table 4 | Iowa Association of Electric Cooperative DSM Electric Savings, 2010-2014**

Year	Annual Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2010	6,192.0	63.7	1.03
2011	6,131.8	58.2	0.95
2012	6,113.9	58.4	0.96
2013	6,571.4	58.4	0.89
2014	6,665.0	64.2	0.96

Source: Iowa Association of Electric Cooperatives Electric Cooperatives' Joint Report, December 2014<sup>19</sup>

## Arizona: EERS, but No Infrastructure

### Regulation

The Arizona Corporation Commission (ACC) established its EERS rules in 2010.<sup>20</sup> These rules set savings targets for qualifying IOUs to save 22% of electricity sales in 2020 as a result of energy efficiency programs implemented during 2011-2020. Up to 2.0% of the total savings can be attained through demand response and load management programs. Rural electric cooperatives that had at least 25% of their customers living in Arizona are required to achieve 75% of the IOU savings requirements, meaning 16.5% savings by 2020 with up to 1.5% coming from demand response and load management. For the period of 2011 to 2014, the cumulative savings targets established for cooperatives started at 0.94% of previous year's sales in 2011 and increased to 5.44% of previous year's sales in 2014.

The Arizona EERS rules were published in 2010, and the five cooperatives operating under these rules filed their initial DSM plans in 2011. In 2014, the five RECs served a total of 181,302 customers. These plans combined programs authorized prior to the establishment of the EERS with

<sup>19</sup> <https://efs.iowa.gov/cs/groups/external/documents/docket/mdax/mzcv/~edisp/1370290.pdf>; Iowa Utility Annual Reports 2010 to 2014, <https://iub.iowa.gov/iub-annual-reports>.

<sup>20</sup> See Arizona Corporation Commission Rules R14-2-2401-2419.

new offerings in an attempt to meet the savings requirements specified by the ACC. Shortly after the first DSM plans were proposed, the ACC began several years of reconsidering the application of the EERS to the cooperatives. During this period, from 2010 to 2014, approvals of cooperative DSM programs were limited by the ACC. In some cases, only legacy programs were approved, effectively stopping the expansion of DSM programs. In other cases, cooperatives were instructed to not to file additional plans until receiving guidance from the Commission. This regulatory uncertainty and delay greatly limited the ability of the RECs to meet the savings requirements.

### *Infrastructure*

Individual cooperatives in Arizona have operated DSM programs since the 1990s. Typically these programs were run without tariffs authorizing cost recovery; program costs were incorporated into regular rates. Beginning with their initial filing after adoption of the EERS, the five cooperatives requested approval of specific DSM program cost recovery tariffs. None of the plans requested incentives or other types of rate relief authorized by the EERS. All plans requested waivers from the short-term savings requirements specified by the EERS.

The range of programs proposed by the five cooperatives included residential new construction programs, residential home audits, low income weatherization programs, tree planting programs, educational programs through workshops and presentations to school children, efficient lighting programs, and demand response programs. The majority of these programs were offered to residential customers, although some were targeted to the commercial, industrial and agricultural sectors. In contrast, the programs approved by the ACC focused on a more limited set of improvements, typically lighting retrofits, appliance recycling, low income weatherization, tree planting and educational efforts.

Individual cooperatives administer and report on their programs independently. In some cases, such as the appliance recycling programs offered by three of the five regulated cooperatives, they work with national implementers operating in adjacent utility territories. Occasionally a cooperative will adopt an existing program design, such as the Touchstone Efficient Homes program, which is the new home construction program offered by the Sulphur Springs Cooperative. However, these are the exceptions. In the majority of cases, individual cooperatives design and implement their own programs, offering free measures or conventional mail-in rebates.

### *DSM Program Savings*

The energy savings from DSM programs implemented during 2011-14 for the five covered RECs are reported in Table 5. The overall savings levels are low; the range of percentage savings is between 0.03% in 2014 and 0.19% in 2013. These low savings values were due in large part to the review of the EERS rules by the ACC and the fact that the cooperatives had their DSM plans constrained by the Commission. In contrast, the Arizona IOUs achieved savings of 1.15% to 1.94% of sales during this period.<sup>21</sup>

---

<sup>21</sup> Values taken from Annual DSM Reports filed with the ACC.

Table 5 | Arizona Electric Cooperatives DSM Savings, 2011-2014

Year	Annual Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2011	808.8	0.5	0.06%
2012	826.4	0.4	0.05%
2013	1,647.0	3.2	0.19%
2014	1,442.2	0.4	0.03%

Sources: Retail Sales Data: EIA Form 861 Data; DSM Savings Data: Arizona Cooperative DSM savings reports, 2011-2014.

The experience of the regulated electric cooperatives in Arizona highlights the roles of state policy and state-specific infrastructure, largely by their absence. The state of Arizona has implemented an aggressive EERS, but these standards were not fully applied to cooperatives between 2011 and 2014. While the ACC deliberated on the scope and applicability of the EERS to cooperatives, programs were limited to existing efforts, which contributed to the low level of performance. The savings record of the Arizona cooperatives illustrate that the presence of a favorable state policy alone is insufficient to produce high levels of savings. The policy needs to be implemented in a timely and consistent manner so that RECs are empowered to succeed rather than fail.

The other dimension highlighted by the experience of Arizona's cooperatives is the role of a collective program design and implementation infrastructure, which is lacking in the state. Arizona's five regulated cooperatives are relatively small, are geographically separated, and serve small towns and rural areas.<sup>22</sup> For Arizona's cooperatives, their small size and the distance between them act as barriers to the implementation of effective programs. For example, the individual cooperatives face difficulties mounting effective upstream residential lighting programs, leaving few options for promoting high efficiency lighting measures to its customers. The lack of a collective program infrastructure presents an additional barrier to the development and implementation of effective programs.

<sup>22</sup> See <http://www.azcc.gov/Divisions/Utilities/Electric/map-elect.pdf?d=8>.



## New Hampshire: No EERS, with Statewide Infrastructure

### Regulation

In November 2000, under Order No. 23,574, the New Hampshire Public Utilities Commission requested that IOUs and New Hampshire's single cooperative utility, the New Hampshire Electric Cooperative (NHEC), work together to design and implement a set of "CORE" DSM programs to meet the state legislature's directive to target cost-effective energy efficiency opportunities. In May of 2002, the New Hampshire Public Utilities Commission issued Order No. 23,982 in Docket No. DE 01-057, approving the implementation of the CORE energy efficiency programs by the state's electric utilities. This order created a statewide administrator, operating as *NHSaves*, to administer the CORE programs.

*NHSaves* programs are funded through a system benefit charge (SBC) of 3.3 mills, or \$0.0033, for each kilowatt hour (kWh) distributed to New Hampshire customers. In exchange for meeting planned energy savings goals within approved annual DSM budgets, the member utilities can earn a bonus of up to 12% of their total DSM budget which is around \$2.2 million per year. All costs related to the delivery of DSM programs including customer rebates, marketing, evaluation and internal administration are paid with SBC funds.

### Infrastructure

NHEC is the only REC in New Hampshire. It is a member-owned and controlled electric distribution utility serving approximately 80,000 customers across 115 towns in the state. The *NHSaves* portfolio sponsors a set of CORE programs offering residential and commercial rebates for existing building retrofits, new construction and ENERGY STAR® measures. In 2012 the *NHSaves* portfolio expanded to include natural gas programs. Each participating utility offers additional programs to supplement the CORE program offerings. For example, NHEC offers a residential energy efficiency loan program and rebates for high efficiency heat pumps, while other utilities offer programs designed to improve building practices.

Beyond administering the New Hampshire CORE programs, *NHSaves* conducts cost-effectiveness analyses and provides annual reports to the state.

### DSM Program Savings

The savings results for NHEC programs (i.e., the combination of the *NHSaves* CORE programs and the NHEC specific programs) are presented in Table 6. Program savings are between 0.26% and 0.54% of annual sales. In the majority of years, the savings percentage fluctuates around the 0.50% mark. The majority of the savings are attributable to the *NHSaves* CORE programs, which are designed to provide a comprehensive base portfolio.



Table 6 | New Hampshire Electric Cooperative Savings, 2010-2014

Year	Annual Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2010	657.1	1.7	0.26
2011	668.0	3.6	0.54
2012	651.4	3.1	0.47
2013	657.1	3.3	0.50
2014	675.2	3.2	0.48

Sources: Retail Sales Data: EIA Form 861 Data; DSM Savings Data: NHSaves Annual Reports

New Hampshire is characterized by the absence of state legislation or commission action setting savings targets. However, the state commission created a statewide infrastructure for program implementation through the development of *NHSaves*. The New Hampshire CORE programs offered by *NHSaves* provide a substantial base of savings, along with a stable reporting platform and annual calculation of program cost effectiveness. In terms of the case studies presented in this report, the annual savings attributable to NHEC are midway between high-achieving states with both an established EERS and a strong program infrastructure, such as Minnesota and Iowa, and states with lower savings achievements.

### Hoosier Energy: No EERS, with Cooperative Infrastructure

#### Regulation

Hoosier Energy is a G&T cooperative that provides electricity for 18 RECs serving electricity to 290,000 customers throughout Southern Indiana and portions of Southern Illinois. It began offering a suite of DSM programs to its member cooperatives in 2009, partially in response to the Indiana Utility Regulatory Commissions' (IURC) adoption of rules implementing a statewide EERS.

Indiana's EERS was established entirely by IURC rule, rather than by legislation. The rules governing this EERS were repealed by the Indiana Legislature in 2014. Between 2009 and 2014, the EERS established a third-party implementer, the *Energize Indiana* program, to achieve "overall annual energy savings goal of 2.0% to be achieved by jurisdictional electric utilities in the State of Indiana within 10 years, with interim savings goals established in this Order to be achieved in years one through nine."<sup>23</sup> The cooperatives were exempt from these rules.

<sup>23</sup> Indiana Utility Regulatory Commission CAUSE NO. 42693, December 9, 2009.

### Infrastructure

Hoosier Energy's development of its DSM programs was partially in response to the IURC's implementation of an EERS between 2010 and 2014. While Hoosier Energy and its member cooperatives were exempt from the EERS requirements, they developed an set of centrally administered programs to provide its member RECs in Southern Indiana and Southern Illinois with a flexible menu of options that they could use to encourage customer savings. Individual RECs decide which programs they want to participate in. In 2014, Hoosier Energy spent nearly \$25 million on energy efficiency programs; the cost is recovered through the wholesale electricity rates paid by its member cooperatives.

The portfolio of programs sponsored by Hoosier Energy is administered by a staff of nine; all operate out of Hoosier Energy's headquarters.<sup>24</sup> This approach to implementation allows Hoosier Energy to create an integrated set of program designs. For example, its residential lighting program consists of a series of customized online lighting stores which allow cooperative customers of individual cooperatives to purchase CFL and LED bulbs from a central location. Additionally, Hoosier Energy maintains a relationship with a national implementer to operate an appliance recycling program and provides training to builders and contractors to support an extensive residential new construction program. In the commercial and industrial sector, the portfolio offers custom and prescriptive rebates, as well as sponsoring a pilot program directed at small commercial customers.<sup>25</sup>

### DSM Program Savings

As seen in Table 7, Hoosier Energy's portfolio achieved modest savings between 2010 and 2014. Annual savings has ranged between 0.29% of retail sales in 2013 and 0.50% in 2011. Analysis of individual cooperative savings in 2014 showed that each of the 18 member cooperatives recorded savings from at least one DSM program; savings as a percentage of sales range between 0.04% and 0.81% across the individual member cooperatives.<sup>26</sup>

**Table 7 | Hoosier Energy Cooperative DSM Electric Savings, 2010-2014**

Year	Annual Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2010	7,018.5	24.8	0.35
2011	6,847.6	34.2	0.50
2012	6,833.3	22.4	0.33
2013	6,987.0	20.3	0.29
2014	6,177.8	24.1	0.39

*Source: EIA Form 861 Data; does not include savings from pilot Programs*

<sup>24</sup> See Hoosier Energy 2014 Demand Side Management Annual Report, Page 1.

<sup>25</sup> Ibid., page 9.

<sup>26</sup> Ibid., Appendix A.

In terms of the typology of cooperative programs, Hoosier Energy is an example of a G&T organization that is exempt from state EERS legislation but has developed an infrastructure that both designs and implements DSM programs for its members. The presence of an infrastructure, in this case individual Hoosier Energy staff members tasked with implementing specific DSM programs, has been instrumental in delivering a moderate level of program savings. These savings are facilitated by centralized program design and implementation (where appropriate), the capability to contract with regional implementers, and economy of scale in marketing, and training.

### **Tri-State Generation and Transmission Association: No EERS and No Infrastructure**

Previous sections of this report have focused on the regulatory frameworks and cooperative organizations in individual states. This section considers energy efficiency programs offered by, and the savings achievements of, the Tri-State Generation and Transmission Association. Tri-State G&T operates in four states, Colorado, Nebraska, New Mexico and Wyoming, where it provides electricity to 44 member cooperatives. For the most part, the member cooperatives are not subject to state regulations.

#### **Regulation**

The four states in which Tri-State operates have different regulatory frameworks, and none require distribution cooperatives to meet energy efficiency savings goals. Two states, Nebraska and Wyoming, do not have any statewide laws or regulations mandating energy efficiency savings. Colorado has energy savings goals and policies for IOUs, but rural cooperatives are exempt. New Mexico also has an EERS for IOUs (New Mexico's Efficient Use of Energy Act), but rural cooperatives are not subject to the savings standards specified in the law. Rather, New Mexico cooperatives are required to establish energy efficiency targets individually. Moreover, the Efficient Use of Energy Act prohibits the state utility commission from establishing savings targets for cooperatives.<sup>27</sup>

In effect, the energy efficiency activities of Tri-State's member cooperatives are unregulated by their states, and member cooperatives have wide latitude in the energy efficiency rebates and services they sponsor.

#### **Infrastructure**

Tri-State offers a suite of energy efficiency and demand response rebates that are provided to customers by their member RECs. Tri-State began offering rebates in 1985. Individual members are not required to offer these rebates to their customers; rather, the individual distribution cooperatives offer rebates for individual energy efficiency measures independently, choosing which rebates to offer their customers and the rebate level they will pay. By 2014, 42 out of the 44 member RECs offered rebates for at least one energy efficiency measure and 18 RECs offered rebates for demand response or other "load shaping" measures designed to shift load to non-peak

<sup>27</sup> See New Mexico Efficient Use of Energy Act, 2008 Section 62-17-11.A.

periods. These measures can be applied to the full range of electrical applications, supporting residential, commercial, industrial and agricultural customers.

Beginning in 2000, the Tri-State board adopted several policies to “identify and investigate state-of-the-art technology and ongoing research pertaining to load management, energy conservation and resource technology.”<sup>28</sup> Later policies adopted the development demand response and load shaping products.<sup>29</sup> While these policies enable Tri-State to investigate and offer energy efficiency products, they did not establish a program delivery infrastructure similar to those of Hoosier Energy, the other G&T profiled in this report. Lacking this infrastructure, Tri-State funds product rebates, but these rebate programs are administered by individual RECs.

The application process for efficient equipment follows a common template. RECs post paper applications on their websites. Customers download, complete and then send in the paper applications to their REC, which files the applications online using a web portal supported by Tri-State. Tri-State reviews the applications and distributes checks to the RECs, which then rebate customers, either through a direct payment or by issuing a bill credit. The costs of energy efficiency and demand response rebates are included in the wholesale power rates charged by Tri-State to its member cooperatives. Savings from rebated equipment is calculated on a deemed savings basis using savings values from California’s Database for Energy Efficiency Resources.

The suite of energy-efficient products offered by Tri-State through its member cooperatives as of 2015 includes:

- LED lighting for residential, commercial, pole mounted (street / parking lot) and refrigerated case lighting;
- ENERGY STAR electric heat pumps, split-system air conditioning and heating systems;
- ENERGY STAR household appliances, including refrigerators, freezers, dishwashers and clothes washers;
- Electric motor and variable speed drive improvements for commercial and industrial customers;
- Energy-efficient water heating equipment;
- Pilot programs providing rebates for custom commercial and industrial retrofit projects;
- Low income weatherization;
- Demand response programs for managing irrigation, air conditioning, water heating and commercial loads; and
- Educational programs directed at member cooperatives.

<sup>28</sup> Tri-State Board of Directors Policy Policy 100, “Conservation, Load Management, and Renewable Resource Policy.”

<sup>29</sup> See Tri-State Board of Director Policy Policies 120 and 121.

Individual cooperatives can offer additional services in addition to those offered by Tri-State and many cooperatives offer additional rebates and services to their customers. For example, the Delta-Montrose Electric Association (DMEA), located in western Colorado, participated in the Smart Grid Demonstration Grant sponsored by the National Rural Electric Cooperative Association (NRECA), to install an automatic metering infrastructure (AMI) system and develop a residential pre-pay program.<sup>30</sup> DMEA also offers free home energy audits, incentives for adoption of ground-source heat pumps, and LED streetlights to the municipalities it serves.

### *DSM Program Savings*

The savings derived from Tri-State's energy efficiency programs are reported in Table 8. Savings results are recorded at the Tri-State system level, as it does not break out savings by state. These results show low percentage savings throughout the period; first-year annual savings are generally less than 0.15% of sales.

The experience of Tri-State and its member cooperatives illustrate how the absence of a clear program delivery infrastructure can limit the effectiveness of energy efficiency programs. Although two of the states where Tri-State member cooperatives operative have EERS policies in place, rural cooperatives are exempt from these laws, while the two other states Tri-State served do not have state energy efficiency laws or regulations in place. Individual co-ops decide which of Tri-State's rebate offers, if any, they wish to promote and have the option to add on additional amounts to these or create their own rebate programs. While Tri-State's policies support energy efficiency, demand response and load shifting, the REC members of Tri-State have maximum independence and these policies do not result in high levels of savings. Tri-State supports rebates for new efficient equipment and provides education programs for builders. However, the lack of a centralized program support and delivery infrastructure limits the scope and effectiveness of Tri-State's programs and inhibits its members from taking advantage of economies of scale.

For example, there are no programs that offer in-store discounts on efficient lighting or other products in local hardware or big box stores. Nor are there programs to engage local commercial HVAC distributors to stock energy-efficient equipment or bring in older appliance disposal and recycling services. While some of Tri-State's member cooperatives encourage customers to complete energy audits of their homes or businesses, there are no programs that link the energy audit to installation of efficient equipment. By relying exclusively on measure-specific rebates, Tri-State and its members are forgoing energy savings opportunities.

<sup>30</sup> NCERA, 2014. Conservation Impacts of Prepaid Metering: Motivation and Incentives for Pre-Paid Systems, Final Report. June 30, 2014. [http://www.nreca.coop/wp-content/uploads/2014/10/NRECA-DOE\\_Prepaid\\_Metering.pdf](http://www.nreca.coop/wp-content/uploads/2014/10/NRECA-DOE_Prepaid_Metering.pdf).

Table 8 | Tri-State Generation and Transmission Association DSM Electric Savings, 2010-2014

Year	Annual Energy Sales (GWh)	DSM Savings (GWh)	DSM Savings (as percentage of annual energy sales)
2010	15,026.5	10.0	0.07
2011	15,421.2	11.7	0.08
2012	15,717.5	8.8	0.06
2013	15,313.5	18.4	0.12
2014	15,426.6	15.9	0.10

Source: Tri-State Generation and Transmission Association

## Conclusion

The discussion of states and multi-state regions highlights differences in REC and G&T DSM program savings along two dimensions: 1) whether cooperative DSM programs are regulated by a state EERS; and 2) the nature of the cooperative's program infrastructure. Table 9 below ranks the states profiled in the preceding discussion by the level of energy savings achieved. The data demonstrates that in states where cooperatives are regulated by EERS, with the exception of Arizona, cooperatives achieve maximum savings levels at 1.00% or higher. The other important finding is that in every state with a strong collective program design and implementation infrastructure – whether sponsored by a state or created by a group of cooperatives working together – cooperatives have saved more than those states where RECs develop and operate programs independently.

Table 9 | Cooperative Performance by Typology Dimension

State / Region	Regulation: Cooperative regulated by State EERS?	Infrastructure: Energy Efficiency Program Delivery Infrastructure	Minimum Percentage Savings	Maximum Percentage Savings
Minnesota	Yes	Statewide	0.93%	1.18%
Iowa	Yes	Cooperative	0.90%	1.00%
New Hampshire	No	Statewide	0.26%	0.54%
Hoosier Energy (Southern Indiana and Southern Illinois)	No	Cooperative	0.29%	0.50%
Tri-State (Colorado, Nebraska, New Mexico, and Wyoming)	No	None	0.07%	0.33%
Arizona	Yes	None	0.03%	0.19%

In the case of a collective program design and implementation infrastructure, the resources for designing and implementing effective programs, educating cooperatives about savings opportunities, achieving savings, and reporting savings are aggregated to support individual cooperatives. Cooperatives can then put their resources to the immediate details of program implementation. The aggregation of resources among cooperatives facilitates more effective program design. For example, the cooperatives working with Hoosier Energy are able to pool their resources to implement a cooperative-specific online residential lighting store, which produces greater savings than the simple lighting rebate program implemented by the cooperatives served by Tri-State. In the case of Hoosier Energy, developing and mounting an online presence to facilitate residential lighting purchases would not have been possible unless the participating cooperatives pooled their resources to develop a set of online stores. The contrast between the experience of Hoosier Energy and Tri-State Generation illustrates what is possible when RECs pool their resources to provide the benefits of energy efficiency to their customers.

## V. RECOMMENDATIONS FOR BEST PRACTICE DSM PROGRAMS

The cases in this report illustrate how the level of savings achieved by RECs and G&Ts varies according to the specific regulatory framework in a given state and whether RECs operate energy efficiency programs individually or collectively. Given that individual RECs are often small and physically isolated, those RECs that collaborate with others are more likely to be successful at achieving a high level of savings than those that administer programs independently. However, creating effective programs requires more than relying on state requirements or organizing RECs to pool their program resources. It is also necessary to have agreement among RECs and their customers that DSM benefits are worth pursuing. The recommendations below highlight some steps states and cooperatives can take to implement effective DSM programs.

### Adopt Supporting Policies

Legislative action was critical to the expansion of DSM programs by RECs and G&T organizations in Minnesota and Iowa. In Minnesota, minimum savings requirements apply to RECs as well as investor-owned utilities, with requirements for triennial DSM planning and annual reporting of results. In Iowa, RECs are required to develop DSM plans and goals. The case of Arizona is also instructive, for while the EERS law specified substantial energy savings requirements for specific cooperative utilities, the actions of the state utility commission constrained program implementation and energy savings. In the states where savings goals for cooperatives were established and where proposed plans designed to meet these goals were approved, cooperatives were able to achieve high levels of savings. Cooperatives subject to regulation under EERS legislation find ways to meet state specified goals and maintain cost effectiveness, as long they are empowered to design and implement effective programs. We urge states to apply key DSM policies, including an EERS, to RECs and G&Ts.



## Determine Need

In order to determine the potential benefits of DSM programs, G&Ts and larger RECs should follow the lead of the country's regulated IOUs by developing an Integrated Resource Plan (IRP) to determine the optimal mix of demand side and supply side system resources needed to meet customer demand. The IRP is an important tool for determining the value of DSM and load management programs as compared to other electric resources for specific utility service areas. Because its generation resources are primarily in Colorado, Tri-State files a triennial IRP with the Colorado Public Utility Commission. In other states, such as Iowa, cooperatives estimate achievable savings through potential studies. A comprehensive IRP evaluates the impact of DSM programs and helps to identify the most appropriate level of DSM needed to ensure that customers receive comprehensive energy efficiency services and are protected from future rate increases due to higher than desirable load growth and supply-side resource investment.<sup>31</sup>

While an IRP examines a variety of resources (including baseload power plants, peaking power plants, cogeneration, renewable energy, load management and energy efficiency), there is no inherent requirement to implement the least-cost mix of resources. Consequently, a number of states or regulatory commissions have adopted a Least Cost Procurement (LCP) requirement in addition to the traditional IRP process.<sup>32</sup> LCP requires that utilities implement the least-cost mix of electric resources while ensuring system reliability. DSM resources can usually be obtained at a lower cost compared to electricity generated from new power plants and renewable energy resources, meaning LCP leads utilities to emphasize acquisition of DSM resources.

G&Ts and larger RECs are urged to adopt IRP and LCP processes to ensure that their customers benefit from a thorough investigation of options that value demand side and supply side resources on a level playing field. Given the small size and limited capabilities of most RECs, it is more appropriate to carry out IRP and LCP efforts at the G&T level.

## Establish Goals, Track Data and Evaluate Results

Because RECs and G&Ts are not regulated in the same manner as IOUs, RECs and G&Ts tend to limit their examination of the impacts and cost-effectiveness of their DSM programs. To ensure that DSM programs are effectively delivering benefits for customers, RECs and G&Ts are advised to conduct benefit-cost screening of their entire portfolio of DSM programs. This process is well documented in U.S. Environmental Protection Agency's *Model Energy Efficiency Program Impact Evaluation Guide*.<sup>33</sup>

In order to evaluate program performance, a variety of DSM program costs and measure savings must be collected and reported as part of ongoing program delivery. Data collection not only aids

<sup>31</sup> National Action Plan for Energy Efficiency. 2007. *Model Energy Efficiency Program Impact Evaluation Guide*. Prepared by Steven R. Schiller, Schiller Consulting, Inc. [http://www.epa.gov/cleanenergy/documents/suca/evaluation\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/suca/evaluation_guide.pdf).

<sup>32</sup> Angel, S., J. Bryson, S. Gander, T. Kerr, and K. Pielli. 2006. *Clean Energy-Environment Guide to Action: Policies, Best Practices and Action Steps for States. Chapter 6 - Utility Planning and Incentive Structure*. U.S. Environmental Protection Agency, Office of Atmospheric Programs. [http://www.epa.gov/statelocalclimate/documents/pdf/guide\\_action\\_chapter6.pdf](http://www.epa.gov/statelocalclimate/documents/pdf/guide_action_chapter6.pdf).

<sup>33</sup> National Action Plan for Energy Efficiency. 2007. *Model Energy Efficiency Program Impact Evaluation Guide*. Prepared by Steven R. Schiller, Schiller Consulting, Inc. [http://www.epa.gov/cleanenergy/documents/suca/evaluation\\_guide.pdf](http://www.epa.gov/cleanenergy/documents/suca/evaluation_guide.pdf).



program benefit-cost screening and evaluation, but this information is essential in determining the optimal mix of DSM programs required to best capture cost-effective energy saving opportunities that exist within individual REC or G&T service areas. In the case of G&T-sponsored programs, systems are needed to track data and report actual program results to member cooperatives, which need feedback to ensure that their investment in DSM is actually producing real energy saving results in their communities. DSM program evaluation also helps to modify and improve programs over time by, for example, pointing out weak elements in program design or measures that are not cost-effective.<sup>34</sup>

### Develop Effective Program Leadership

RECs and G&Ts delivering effective DSM programs don't get there by accident. As suggested above, the regulatory framework and the way that program design and implementation infrastructure cooperatives work can contribute to, but will not necessarily ensure, high levels of DSM savings. Organizational leadership is also necessary. Organizations deliver DSM savings to their customers through a well-trained and committed DSM team, such as seen at Hoosier Energy, which includes executive management, program managers and administrative staff. Strong leadership sets quantitative goals and makes sure the human and financial resources are in place to achieve the goals. Top performing REC organizations educate their staff and customers through a variety of training opportunities, ranging from DSM program evaluation to specialized weatherization classes. A well rounded and educated program management team will ensure success in the development and delivery of the most effective DSM programs.

### Gain Customer Support

Educating G&T and REC customers about the value of energy efficiency and load management impacts on electric systems is key to gaining support for comprehensive and well-funded DSM programs. Many of the country's G&T and REC organizations communicate with their customers about DSM, offering a variety of programs, rebates and educational materials in order to encourage program participation. However, RECs and their customers are not often educated on the value of these programs for ensuring low system costs over the long run, reducing risk, etc. Gaining member and end-user appreciation of the value of energy efficiency and load management programs helps to gather support for funding of these least-cost resources. Education efforts along these lines should feature non-energy as well as energy benefits.

### Leverage Funding Sources

While many REC and G&T organizations directly fund energy efficiency, load management and renewable energy programs through a surcharge on customers' bills, external funding sources can help to expand programs while minimizing rate impacts. Examples of external funding sources include the Regional Greenhouse Gas Initiative in the eastern U.S., funds from Regional

---

<sup>34</sup> See SEE Action "Energy Efficiency Program Impact Evaluation Guide" December 12, 2012  
<https://www4.eere.energy.gov/seeaction/publication/energy-efficiency-program-impact-evaluation-guide>.

Independent System Operators, state energy agencies, and the federal government. For example, the USDA offers both grants through Rural Energy for America Program.<sup>35</sup>

Also, many charitable organizations provide funding to support programs for specific customer classes such as low income home weatherization programs. Not only can collaboration with charitable funding sources help to reduce the burden of low income programs on rate payers, this partnership offers RECs a significant public relations opportunity as well as an effective forum to recruit low income customers in need of weatherization services.

### **Develop an Effective Contractor and Vendor Infrastructure**

Due to the rural characteristics of REC service territories, the availability of contractors and vendors to deliver DSM products and services is often limited. This contractor scarcity impacts both the availability and performance of specific DSM programs in REC service territories and inhibits the development of many DSM programs that would be cost-effective in urban utility service areas. The low population density and small size of REC territories serve as direct disincentives to contractors that may consider delivering energy efficiency services to rural communities.

These challenges require increased effort from REC organizations to develop contractor/vendor trade alliances, innovative DSM program approaches, and community-based program support. The costs of developing such alliances are properly seen as program administration costs and can be lower than the cost of running a program directly. Examples of these recommendations include working with area technical schools to develop and deliver weatherization training, developing trade ally outreach programs to educate and network with potential contractors, and partnering with existing community-based organizations that can assist in DSM program implementation.

Because of their larger scale operations, G&T organizations (such as Hoosier Energy) along with state cooperative organizations (such as the IAEC) are in a position to help deliver DSM programs on behalf of RECs, leveraging contractors and vendors that work across a larger service territory and offering an opportunity for significant costs savings. In addition, implementing uniform DSM programs across a number of RECs served by one G&T, as is being done in Indiana and Iowa, is an effective strategy to stimulate the development of an adequate contractor and vendor base. Another creative response to this challenge is the online lighting products store that Hoosier Energy developed and implemented with its member RECs.

---

<sup>35</sup> <http://www.rd.usda.gov/programs-services/rural-energy-america-program-renewable-energy-systems-energy-efficiency>.

## VI. CONCLUSION

This review finds that a number of G&Ts and RECs in various parts of the country have implemented effective energy efficiency programs for their customers. Cooperatives in the leading states are saving on the order of 1.0-1.2% of their retail energy sales through efficiency programs implemented each year. This review underscores the need for effective statewide legislation to motivate DSM programs, support where necessary from regulators, and the development of a program design and implementation infrastructure that overcomes the limitations of individual cooperatives. The strongest rural energy efficiency programs are found in states such as Minnesota and Iowa, which have enacted legislation directing RECs and G&Ts to fund DSM programs and/or meet energy savings and peak load reduction requirements. In addition to the impacts of legislation, these states and G&Ts have developed a collaborative program infrastructure that helps to design and implement effective programs on a statewide or regional basis.

SWEEP recommends that state policy makers adopt legislation requiring RECs and G&T organizations to implement significant DSM efforts including budgetary, energy savings and load reduction requirements. Ideally, RECs should be directed to ramp up to saving at least 1.0% of retail electricity sales per year.

Commitments to promoting effective DSM programs should occur at multiple levels within electric cooperative organizations, from senior management to program managers to customer service personnel. RECs and G&Ts should thoroughly evaluate system needs, the role the energy efficiency and demand response can play in meeting these needs, and the benefits and costs of DSM programs. These organizations should clearly communicate the benefits of DSM program participation to customers and motivate action on a broad scale by rural homeowners and businesses. RECs and G&Ts should also pursue integrated resource planning in order to ensure an adequate and affordable energy supply while prioritizing least-cost electric resources like energy efficiency and demand response.

While cost-effective energy savings potential exists everywhere, it should be recognized that there is great diversity among RECs and that RECs differ from IOUs in key ways. The demographics and climate conditions of individual service territories will dictate the type and intensity of DSM programs that RECs can offer to customers. Additionally, customer characteristics will determine the potential energy savings that can be gained through DSM programs as well as the cost of electric savings realized through these programs. RECs and G&Ts should be given the flexibility to design DSM programs that meet the needs of both their customers and the distribution system.<sup>36</sup>

Last but not least, there is relatively little data available about the DSM programs implemented by RECs and G&Ts. We encourage RECs and G&Ts to make public their DSM plans and report on the actual results of DSM programs. Doing so will shed light on the challenges and results of individual

<sup>36</sup> Potter, T. 2008. *Rural Electric Efficiency Prospects*. Southwest Energy Efficiency Project. <http://www.swenergy.org/publications/reep/REEP.pdf>.

DSM programs, as well as identify best practices. Making this information publicly available and compiling it in a single information clearinghouse, perhaps hosted by the National Rural Electric Cooperative Association (NRECA) or by an energy efficiency organization such as the American Council for an Energy-Efficient Economy (ACEEE), will benefit RECs and their customers nationwide.