

**BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO**

In the Matter of the Application of Vectren)
Energy Delivery of Ohio, Inc. for Approval)
to Continue Demand Side Management) Case No. 19-2084-GA-UNC
Program for its Residential, Commercial,)
and Industrial Customers.)

**DIRECT TESTIMONY
OF
COLLEEN SHUTRUMP**

IN OPPOSITION TO THE JOINT STIPULATION AND RECOMMENDATION

**On Behalf of the
The Office of the Ohio Consumers' Counsel**
*65 East State Street, 7th Floor
Columbus, Ohio 43215*

August 11, 2020

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1 **I. BACKGROUND**

2

3 ***Q1. PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.***

4 ***A1.*** My name is Colleen Shutrump. I am employed as the Energy Resource Planning
5 Advisor for the Office of the Ohio Consumers' Counsel ("OCC"). My business
6 address is 65 East State Street, Suite 700, Columbus, Ohio 43215.

7

8 ***Q2. PLEASE BRIEFLY SUMMARIZE YOUR EDUCATION AND***
9 ***PROFESSIONAL EXPERIENCE.***

10 ***A2.*** I have a Bachelor of Science in Business Administration from the Youngstown
11 State University with a major in Management and a Master of Business
12 Administration from Baldwin Wallace College with emphasis in International
13 Business. I have worked over ten years in electric utility regulation with emphasis
14 on customer-funded energy efficiency programs. I started as a Utility Analyst at
15 the Indiana Utility Regulatory Commission in 2009. I was promoted to Senior
16 Utility Analyst in 2015. While there, I attended the Institute of Public Utilities
17 Michigan State University Advanced Regulatory Studies Program and Camp
18 NARUC. I began work as an Energy Resource Planning Advisor with OCC in
19 August 2015. In spring 2016, I completed a graduate-level course on Utility
20 Regulation and Deregulation at the Ohio State University, John Glenn College of
21 Public Affairs.

1 ***Q3. WHAT ARE YOUR DUTIES AT THE OHIO CONSUMERS' COUNSEL?***

2 ***A3.*** I provide analytical support on energy resource planning issues impacting Ohio
3 consumers' interests. I serve as the Analytical Department's lead analyst and
4 policy advisor for the OCC on cases and issues relating to resource planning
5 issues such as customer-funded energy efficiency and demand side management
6 programs. This includes, among other things, advocating for (i) consumer options
7 to reduce their energy use and save money on their utility bills and (ii) developing
8 agency policy that addresses consumer-protection issues. I was extensively
9 involved in each of the four 2016 electric energy efficiency portfolio cases before
10 the Public Utilities Commission of Ohio ("PUCO"). My involvement included
11 providing testimony in the Dayton Power & Light¹ and Duke Energy Ohio²
12 portfolio cases affecting consumers. I recently testified in Case No. 19-1940-GA-
13 RDR (Columbia's Demand Side Management rider adjustment) and in Vectren's
14 rate case, Case No. 18-0298-GE-AIR. I participate in energy efficiency
15 collaborative meetings for utility-led electric and gas programs.

¹ <http://dis.puc.state.oh.us/CaseRecord.aspx?Caseno=16-0649&link=PDC>.

² <http://dis.puc.state.oh.us/CaseRecord.aspx?CaseNo=16-0576-EL-POR>.

**II. PURPOSE OF TESTIMONY AND SUMMARY OF
RECOMMENDATIONS**

Q4. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A4. In my testimony, I conclude that the June 26, 2020 Stipulation and Recommendation (the “Settlement”) for Vectren Energy Delivery of Ohio (“VEDO”) fails the PUCO’s three-part test for settlements because it continues charges to consumers for natural gas energy efficiency programs that do not benefit consumers or the public interest and violates regulatory principles and practices.

***Q5. WHAT DOES THE PUCO CONSIDER WHEN EVALUATING
SETTLEMENTS?***

A5. The PUCO uses three criteria for evaluating the reasonableness of a proposed settlement:³

1. Is the settlement the product of serious bargaining among capable, knowledgeable parties?
2. Does the settlement, as a package, benefit customers and the public interest?
3. Does the settlement, as a package, violate any important regulatory principle or practice?

³ *Consumers' Counsel v. PUCO*, 64 Ohio St.3d 123, 125 (1992).

1 My testimony focuses on how the Settlement violates the second and third
2 prongs of the PUCO's three-prong test.

3

4 ***Q6. CAN YOU SUMMARIZE YOUR CONCLUSIONS AND***
5 ***RECOMMENDATIONS TO PROTECT CONSUMERS REGARDING THE***
6 ***SETTLEMENT AS IT RELATES TO PRONGS TWO AND THREE OF THE***
7 ***PUCO'S THREE-PRONG TEST?***

8 ***A6.*** I recommend that the PUCO reject the Settlement because:

- 9 1. The Settlement does not benefit consumers or the public interest because
10 it imposes \$11.2 million⁴ in charges on customer bills for non-essential
11 services (gas energy efficiency) over the next three years. It is unjust and
12 unreasonable for the PUCO to add \$11.2 million in new non-essential
13 charges on customers' bills in 2021, 2022, and 2023 especially when
14 customers can expect to see new charges associated with reimbursing
15 Vectren for its emergency plan. Vectren should be focusing on providing
16 essential services to customers to keep their bills affordable during this
17 time. Customers need lower utility bills, not higher bills resulting from
18 unnecessary subsidies (especially subsidies that benefit the relative few at
19 the expense of all).
- 20 2. The Settlement benefits only a relatively few customers who
21 choose to participate in the programs, but all customers must pay

⁴ The Settlement provides for funding of non-low-income programs as reflected in Attachment A, Table 4 in the Application minus the budgeted amounts for the Multi-family direct install.

1 for the programs. Customers who do not participate in the
2 programs do not benefit from them. This is because gas energy
3 efficiency, unlike electric energy efficiency, does not avoid costly
4 electric generation plants that reduce costs for non-participants
5 paying for electric energy efficiency programs. Thus, Vectren
6 customers are left with higher utility bills at a time when many
7 customers are facing a financial and health crisis, with no
8 corresponding benefits.

9 3. The Settlement does not benefit customers because the
10 competitive market for energy efficient products no longer
11 justifies monopoly gas distribution customers subsidizing energy
12 efficiency programs.

13 4. The Settlement, as a package violates important regulatory principles and
14 practices, specifically R.C. 4929.02(A), which provides that it is state
15 policy to “promote the availability to consumers of adequate, reliable, and
16 **reasonably priced** natural gas services and goods” (emphasis added).
17 Reasonably priced gas service cannot be achieved in 2021, 2022, and
18 2023 should the PUCO approve a settlement that continues a charge to
19 consumers for programs that are not necessary for adequate and reliable
20 service.

**III. THE SETTLEMENT DOES NOT BENEFIT CUSTOMERS OR THE
PUBLIC INTEREST.**

***Q7. DOES THE SETTLEMENT BENEFIT CUSTOMERS OR THE PUBLIC
INTEREST?***

A7. No, not in these “defining times” as so aptly put from Governor DeWine during his July 15, 2020 briefing from the Governor’s Office in the Ohio State House.⁵ The public interest is most definitely being shaped by the multiple emergency cases filed as the result of the pandemic. And as stated by the PUCO in the order approving Vectren’s plan: “In regard to disconnections, the Commission recognizes that many customers may continue to experience financial stress as a result of COVID-19 despite the reopening of businesses through the state.”⁶

As the coronavirus pandemic continues to spread, Ohio businesses and families are facing financial burdens that were unforeseeable just a few months ago. The Dayton area unemployment rate as of June 2020 is 10.7%.⁷ Compare this to June 2019 of 4.3%. The public interest is not served from a settlement that provides for Vectren to charge \$11.2 million over the next three years⁸ to fund programs that will not alleviate but will exacerbate the immediate hardships of Vectren

⁵ <https://www.youtube.com/watch?v=Vd9IMwl6kXw> at time spot 11:37.

⁶ Supplemental O&O, *In the Matter of the Motion of Vectren Energy Delivery of Ohio Inc. to Suspend Certain Procedures and Process During the Declared State of Emergency and Related Matters*.

⁷ https://www.bls.gov/eag/eag.oh_dayton_msa.htm.

⁸ Total three-year non-low-income budget of \$11,599,144 (Table 4, Attachment A of Application) minus three-year budgeted amounts for the Multi-family install of \$431,144 equals \$11,168,000 (See testimony of Rina Harris on the Stipulation filed July 7, 2020).

*Direct Testimony of Colleen Shutrump
On Behalf of the Office of the Ohio Consumers' Counsel
PUCO Case No. 19-2084-GA-UNC*

1 consumers by increasing rates they pay for gas utility service. Nor will these
2 programs help Vectren customers pay for the anticipated future costs associated
3 with the utility's emergency plans.

4
5 Table 1 below shows the unemployment rate impacts across the state. Many
6 customers who have consistently paid their utility bills may find themselves
7 choosing between paying those bills and affording other essentials. The public
8 interest demands a closer evaluation of what charges on the bill are necessary to
9 serve customers during and after the emergency and what charges on the bill are
10 not necessary. In Vectren's service territory (Table 1) unemployment in
11 Montgomery country is higher than all of Ohio at 11.6%.

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1 Table 1

Counties served by Vectren	Unemployment Rate (June 2020)
Montgomery	11.6%
Clinton	11.1%
Highland	11.0%
Allen	11.0%
Clark	10.4%
Shelby	10.0%
Fayette	9.7%
Logan	9.5%
Anglaize	9.4%
Miami	9.2%
Champaign	9.1%
Preble	9.0%
Greene	8.8%
Darke	8.2%
Mercer	7.9%
Madison	7.8%

2

3

4 ***Q8. HOW HAVE THINGS CHANGED SINCE VECTREN'S ENERGY***
5 ***EFFICIENCY PROGRAMS WERE FIRST APPROVED?***

6 ***A8.*** The regulatory environment of 2003 and 2005 was vastly different then it is
7 today. In 2003, there was an economic rationale for regulatory actions (e.g.,
8 utility subsidies) to correct for barriers to natural gas efficiency programs. The
9 price of natural gas nearly doubled (after years of considerable low prices),
10 directing emphasis on polices at the federal and state level that provided for
11 energy-consuming product standards, building codes and utility conservation
12 programs.

1 In Ohio, these policies are evident in the PUCO's 2005 Annual Report that
2 emphasizes the PUCO's efforts to educate consumers about conservation and
3 acknowledging concerns from consumers about the high price of natural gas. The
4 annual report also noted VEDO's proposal to implement an energy efficiency
5 tariff.⁹ Apparently, subsidized energy efficiency programs were deemed in the
6 public interest in 2005. The high price of natural gas resulted in a public service
7 obligation model that legitimized VEDO's proposal to fund energy efficiency
8 programs. Those actions have adequately addressed market and behavioral
9 failures associated with serving the public good. In this case, the public good will
10 only be served if the PUCO rejects the Settlement so customers, for the first time
11 since 2005, no longer have to pay the energy efficiency charge beginning in 2021
12 giving them a break on their bills.

13
14 ***Q9. DOES THE SETTLEMENT, WHICH INCLUDES FUNDING FOR NON-***
15 ***LOW-INCOME PROGRAMS, BENEFIT CUSTOMERS?***

16 ***A9.*** No. VEDO's programs have low customer participation levels. In the first six
17 months of 2020, 57,406 residential customers participated in VEDO's non-low-
18 income programs.¹⁰ This means that more than 80% of VEDO's residential
19 customers are not participating in VEDO's non low-income programs. As a result,
20 these non-participating customers end up subsidizing programs in which
21 relatively few customers participate. For those customers that do not participate,

⁹ The Public Utilities Commission of Ohio, Annual Report, 2005.

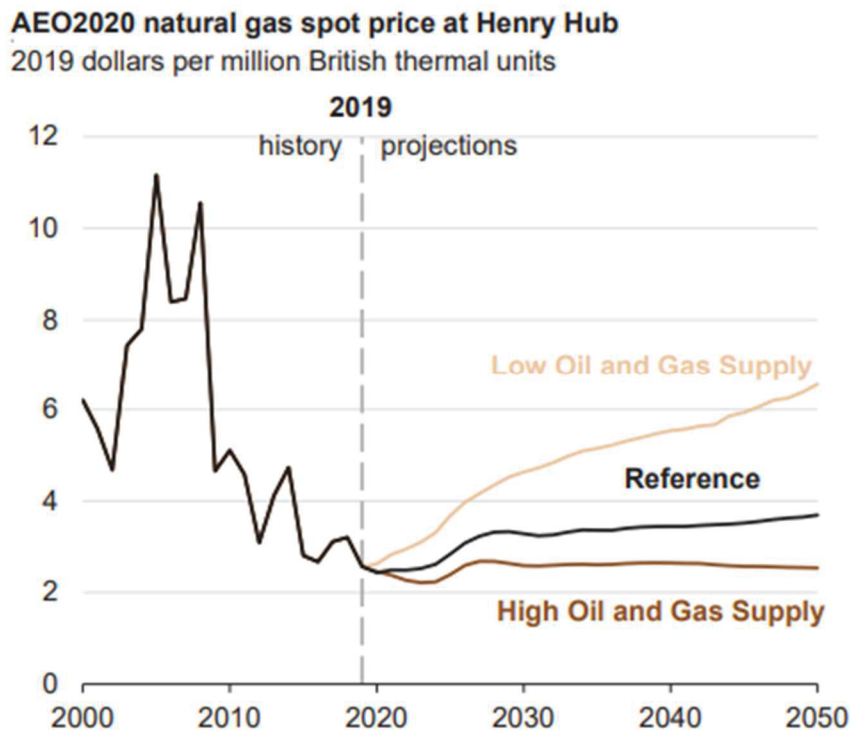
¹⁰ See VEDO June 2020 YTD Scorecard, attached hereto as Attachment CLS-1.

1 the programs do nothing more than increase the charge on their bill without any
2 tangible program benefit in return.

3

4 ***Q10. HOW DO LOW NATURAL GAS PRICES AFFECT THE INTENDED***
5 ***BENEFITS FROM VEDO'S NON-LOW-INCOME CUSTOMERS NATURAL***
6 ***GAS ENERGY EFFICIENCY PROGRAMS?***

7 ***A10.*** Natural gas prices have a fundamental impact on the reasonableness of energy
8 efficiency programs. Henry Hub prices in the U.S. Energy Information Agency's
9 AEO 2020 reference case remain lower than \$4.00 per million British Thermal
10 Units (BTU) throughout the projection period as shown below.¹¹



11

¹¹ Annual Energy Outlook 2020 Natural Gas Sector <https://www.eia.gov/outlooks/aeo/>.

1 As explained earlier, natural gas energy efficiency programs were initiated largely
2 as a response to high natural gas prices. As explained in a recent paper by
3 Kenneth Costello, “the rationales for EE programs of both electric and gas
4 utilities are less valid today than when they were first implemented” because
5 “natural gas prices are low and expect to remain so for the next several years.”¹² I
6 agree. When gas prices are low, the programs are less cost-effective and the
7 payback period for energy efficiency equipment is much longer.

8
9 The competitive marketplace, and not monopoly utilities, are preferred for the
10 provision of natural gas energy efficiency services and products to consumers.
11 Again, I refer to Mr. Costello’s succinct conclusion: “[S]ociety should rely more
12 heavily on the marketplace to influence EE investments, or the role of utilities
13 should be increasingly displaced by better-functioning market mechanisms that
14 rely on the self-interest of individual customers to reduce their energy bills.”¹³

15

16 ***Q11. IS THE MARKET FOR ENERGY EFFICIENCY PRODUCTS AND***
17 ***SERVICES COMPETITIVE?***

18 ***A11.*** Yes. While energy efficiency products existed in the market decades ago,
19 relatively few were sold. To remedy this, utilities were viewed by regulators as
20 the most practical market intervention tool to provide information and bring
21 public awareness to their customers about efficiency benefits using bill inserts,

¹² See Attachment CLS-2. A copy of the paper is also currently available at
https://www.cato.org/sites/cato.org/files/serials/files/regulation/2019/3/regulation-v42n1-4_0.pdf.

¹³ Costello at 29.

1 providing web content and offering rebates for products. Utility programs initially
2 helped move the market toward higher customer adoption rates for energy
3 efficiency products in the home. But now there is a thriving competitive market
4 for the provision of energy-efficient technologies, numerous manufacturers
5 producing those technologies, and many retailers offering those technologies.

6

7 Education and information through utility programs and state and federal
8 programs has also increased market availability over time. One example is the
9 ENERGY STAR program, an information and branding campaign that for the last
10 20 years has revolutionized the market for energy-consuming products. More than
11 80% of American consumers now recognize the ENERGY STAR label.¹⁴ And,
12 there are more than 70 product categories that are ENERGY STAR certified.¹⁵
13 This would suggest that consumers have options to choose among a variety of
14 energy efficient options depending on how much they choose to save and at what
15 price. Regulatory expert Kenneth Costello agreed with this sentiment in a recent
16 paper, concluding: “[C]ustomers have better information on [energy efficiency]
17 programs ... Presumably, the most cost-effective actions have already been
18 exploited. Thus, market failures for [energy efficiency] have decreased over time,

¹⁴ Energy Star® Products 20 Years of Helping America Save Energy Save Money and Protect the Environment;
https://www.energystar.gov/ia/products/downloads/ES_Anniv_Book_030712_508compliant_v2.pdf.

¹⁵ <https://energystar.zendesk.com/hc/en-us/articles/212112307-I-was-shopping-for-appliances-and-a-lot-of-models-were-ENERGY-STAR-I-thought-it-was-supposed-to-be-hard-to-get->.

1 lessening the need to have utility or government intervention to advance [energy
2 efficiency].”¹⁶

3
4 Requiring monopoly consumers to subsidize natural gas energy efficiency
5 programs is unnecessary and unreasonable given that the competitive market for
6 energy efficient products is strong and consumers are acting on their own to learn
7 how being more efficient can achieve bill savings. Today, the competitive market
8 provides that connection between energy efficiency products and the information
9 needed by consumers to make informed savings decisions. Decades of marketing
10 the benefits of energy efficiency programs have resulted in much better
11 information on energy efficiency programs and more consumer awareness. The
12 market has transformed and utility involvement in offering programs is no longer
13 needed.

14

15 **IV. THE SETTLEMENT VIOLATES REGULATORY PRINCIPLES AND**
16 **PRACTICES**

17

18 ***Q12. WHAT REGULATORY PRINCIPLES OR PRACTICES ARE VIOLATED***
19 ***THROUGH THE SETTLEMENT?***

20 ***A12.*** The Settlement, as a package violates important regulatory principles and
21 practices, specifically R.C. 4929.02(A) that provides for state policy to “promote
22 the availability to consumers of adequate, reliable, and **reasonably priced** natural

¹⁶ See Attachment CLS-2.

gas services and goods” (emphasis added). Reasonably priced gas service cannot be achieved in 2021, 2022, and 2023 if the PUCO approves a Settlement that continues a charge for programs that are unrelated to adequate and reliable service while also expecting customers pay to reimburse Vectren for its emergency plans. As Vectren resumes disconnection practices on August 15, 2020,¹⁷ we know of at least 25,775 residential customers¹⁸ at risk for disconnection will be faced with additional charges to resume service and payment plans to pay off their arrearages averaging \$451 per customers. This is just one set of customers where reasonably priced gas service cannot possibly be achieved should they be made to pay multiple fees and charges to resume service plus continue to fund programs that have nothing to do with restoring and sustaining their natural gas service. To reject the Settlement would mean customers can still choose to benefit from energy efficiency in the marketplace but will not have to pay \$11.2 million on their gas bills.

Q13. DOES THIS CONCLUDE YOUR TESTIMONY?

A13. Yes. However, I reserve the right to supplement my testimony if additional testimony is filed, or if new information or data in connection with this proceeding becomes available.

¹⁷ See Case No. 20-649-GE-UNC Supplemental Finding & Order (July 29,2020).

¹⁸ See Supplemental Response to OCC INT-02-001.

CERTIFICATE OF SERVICE

It is hereby certified that a true copy of the foregoing *Direct Testimony of Colleen Shutrump on Behalf of the Office of the Ohio Consumers' Counsel* has been served electronically this 11th day of August 2020.

/s/ Christopher Healey
Assistant Consumers' Counsel

The PUCO's e-filing system will electronically serve notice of the filing of this document on the following parties:

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June 2020 Scorecard - Vectren Ohio

Attachment CLS-1
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	Measures Implemented				Gross CCF Savings				Program Expenditures			
	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal
Residential Programs												
Residential Prescriptive Program												
Boiler 95%	3	10	33	30%	455	1,299	6,433	20%				
Furnace 95%	93	703	1,800	39%	12,369	93,499	239,367	39%				
Furnace 97%	60	288	600	48%	9,074	43,557	90,731	48%				
Wi-Fi (Basic) Thermostat	43	241	1,041	23%	2,476	13,879	59,932	23%				
Wi-Fi (Smart) Thermostat	85	453	3,762	76%	4,895	26,088	253,461	75%				
Wi-Fi (Smart) Thermostat Online Store *	692	2,422			46,626	163,191						
Residential Prescriptive Subtotal	976	4,117	7,236	57%	75,896	341,514	649,924	53%	\$ 124,788	\$ 724,877	\$ 1,091,167	66%
DP&L Multifamily Direct Install *	0	1,267	4,375	29%	0	10,584	29,238	36%	\$ 1,230	\$ 16,669	\$ 47,585	35%
Bath Aerator	0	283	2,244	13%	0	775	6,145	13%				
Kitchen Aerator	0	475	590	81%	0	3,696	4,585	81%				
Showerhead	0	509	1,541	33%	0	6,113	18,508	33%				
Residential Behavioral *	0	34,000	34,000	100%	24,310	145,859	243,100	60%	\$ 988	\$ 95,499	\$ 101,652	94%
Residential Home Insulation												
Wall Insulation	6	57	263	22%	1,387	13,177	60,702	22%				
Attic Insulation	46	172	555	31%	5,934	21,674	71,562	30%				
Air Sealing	49	177	578	31%	4,983	18,001	58,748	31%				
Residential Home Insulation	101	406	1,395	29%	12,305	52,852	191,012	28%	\$ 171,099	\$ 420,853	\$ 976,365	43%
DP&L EE Kits *	1,055	17,616	15,000	117%	7,934	132,472	112,800	117%	\$ 34,158	\$ 143,189	\$ 137,182	104%
Schools *	0	0	9,000	0%	0	0	84,141	0%	\$ 12,472	\$ 82,860	\$ 280,783	30%
Total Residential	2,132	57,406	71,005	81%	120,445	683,281	1,310,215	52%	\$ 344,734	\$ 1,483,947	\$ 2,634,735	56%
Commercial Programs												
Commercial Prescriptive Program												
Boiler - Commercial Prescriptive	0	8	25	32%	0	10,972	22,303	49%				
Boiler Tune-Up	0	1	8	13%	0	3,139	1,320	238%				
Combi Oven	0	0	8	0%	0	0	5,288	0%				
Convection Oven	0	0	3	0%	0	0	789	0%				
Dishwasher	0	0	4	0%	0	0	2,228	0%				
Furnace 95%	0	4	62	6%	0	727	8,763	8%				
Gas Fryer	0	0	2	0%	0	0	1,010	0%				
Infrared Heater	0	0	4	0%	0	0	1,264	0%				
Steam Cooker	0	1	3	33%	0	148	444	33%				
Unit Heater - Condensing <300 MBH	0	0	1	0%	0	0	266	0%				
Wi-Fi (Smart) Thermostat	0	5	16	31%	0	1,265	3,922	32%				
Wi-Fi (Smart) Thermostat Online Store	0	0			0	0						
Commercial Prescriptive Subtotal	0	19	136	14%	0	16,252	47,597	34%	\$ 5,086	\$ 80,390	\$ 188,424	43%

June 2020 Scorecard - Vectren Ohio

Attachment CLS-1

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	Measures Implemented				Gross CCF Savings				Program Expenditures			
	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal
Commercial Custom *												
< 7500 Therms	0	1	5	20%	0	756	17,500	4%				
>=7500 Therms	0	0	2	0%	0	0	22,000	0%				
Total Commercial Custom	0	1	7	14%	0	756	39,500	2%	\$ 4,938	\$ 45,445	\$ 131,125	35%
Total Commercial	0	20	143	14%	0	17,008	87,097	20%	\$ 10,024	\$ 125,835	\$ 319,549	39%
Total Residential & Commercial	2,132	57,426	71,148	81%	120,445	700,289	1,397,312	50%	\$ 354,758	\$ 1,609,782	\$ 2,954,284	54%
Program Outreach and Education									\$ 3,899	\$ (1,025)	\$ 350,000	0%
Online Tool Licensing Fees									\$ -	\$ 82,246	\$ 82,246	100%
Contact Center									\$ -	\$ 8,750	\$ 35,000	25%
Evaluation									\$ 40,000	\$ 40,000	\$ 193,234	21%
Portfolio Total	2,132	57,426	71,148	81%	120,445	700,289	1,397,312	50%	\$ 358,658	\$ 1,691,003	\$ 3,614,764	47%
* Denotes Integrated DP&L Programs												
	Homes Weatherized				Gross CCF Savings				Program Expenditures			
	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal	Current Month (June)	YTD	Planning Goal	% to Goal
VWP I	2	28	201	14%	406	5,684	40,803	14%	\$ 24,665	\$ 217,349	\$ 1,223,425	18%
VWP II	0	4	133	3%	0	864	28,728	3%	\$ 18,437	\$ 81,052	\$ 1,040,375	8%
Total	2	32	334	10%	406	6,548	69,531	9%	\$ 43,102	\$ 298,401	\$ 2,263,800	13%

ENERGY & ENVIRONMENT

A Cautionary Tale About Energy Efficiency Initiatives

If these programs are such bargains, then why does government mandate them and energy utilities push for them?

◆ BY KENNETH W. COSTELLO

I constantly hear about how wonderful utility and government-mandated energy efficiency (EE) initiatives are. Many EE supporters claim these efforts to push consumers to buy higher-efficiency appliances and use more insulating materials are “negative-cost” ways to reduce carbon emissions—that by reducing energy consumption along with emissions, these changes more than pay for themselves.

For instance, in 2009 the consulting firm McKinsey & Co. estimated that adoption of cost-effective EE investments in the United States could generate \$700 billion in net private cost savings. Amory Lovins, an environmental scientist and chairman of the Rocky Mountain Institute, once remarked that EE is the “lunch you are paid to eat.”

Yet these free lunches seem suspicious to me—and to many analysts who have studied the benefits and costs of EE initiatives. If these efforts are such a bargain, then why must government mandate them and utilities push for them?

WHY DO WE NEED EE POLICY?

The conventional economic defense for government-imposed EE standards begins by assuming deep flaws in consumer rationality, barriers to information, or underpricing of energy. Supposedly, these factors lead to consumers making incorrect calculations and tradeoffs between the initial costs of appliances and their subsequent energy-use costs. Consumers allegedly are unwilling to pay more initially for consumer durables that would use

less energy and save money in present value. Instead, they buy cheap durables that are costlier to run over time. Mandatory energy standards force consumers to make the “correct” tradeoff between initial and operating costs, “purchase” more energy efficiency, and eliminate the so-called “EE gap.”

In the typical EE gap study, analysts often calculate the savings in energy costs over the lifetime of an appliance by using a discount rate converting the stream of annual costs into a present value. If the present value of cost savings from an efficient appliance is greater than the incremental cost of the efficient appliance relative to a conventional substitute, then an EE gap is said to exist. Said differently, the discount rate that consumers appear to use in their decisions about paying more initially for later energy savings is “too high” relative to the “market” discount rate used by the analyst.

This gap provides the justification for both government EE standards and utility EE initiatives. Policymakers attribute the “low” adoption of EE investments to market failure or consumer-behavioral problems. The presumption is that consumers are incapable of making the correct calculations or else make decisions contrary to their self-interest.

Hence, there is an economic rationale for government policies such as energy building codes, appliance standards, and utility subsidies. However, this rationale includes two assumptions that often go unrecognized by EE supporters:

- The gap truly represents a market or behavioral failure.
- The benefits from correcting this failure are greater than the costs.

Just because market problems exist that might hinder EE invest-

ments does not mean that utility or governmental intervention is socially desirable.

RECONCILING AN EE GAP AND RATIONAL CONSUMERS

Energy consumers who do not invest in seemingly cost-effective EE can be acting rationally. To understand why, we must keep in mind three additional factors.

First, consumers have difficulty verifying energy savings claims. And even if the energy savings are verifiable, future energy prices are not. Past energy prices have varied dramatically; they were

much higher in the 1970s, then low from the mid-1980s through the early 2000s, high again in the mid-2000s, and now they are low again. Thus, consumers have reason to balk at making EE investments because of uncertainty over whether those investments will pan out.

The second factor is consumer heterogeneity—the simple fact that different people use energy differently. Although the average consumer may find an EE investment economically attractive, some may not because of differences in preferences, the level of energy usage, and the cost of borrowing.

The third factor is the need to consider costs borne by consum-



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ers themselves. These include transaction costs (e.g., the time spent by households in searching for energy-efficient appliances), poor appliance performance (e.g., dishwashers and clothes washers that do a poor job on especially soiled loads), and so forth.

ACADEMIC VS. UTILITY EVALUATIONS
OF EE PROGRAMS

Another problem is that supposedly objective analyses of specific EE initiatives often reach very different conclusions. Utility-sponsored studies of EE proposals often yield results that are much more optimistic about energy savings than subsequent academic, peer-reviewed studies of the programs once they are in place. Why does this happen, and whose results should regulators believe?

Academic reviews of EE programs conclude that such programs are not the “low-hanging fruit” that many people believe. Academic reviews find that utilities grossly overstate energy savings from EE programs because they rely on *ex-ante* engineering estimates. The reviews also note that utilities often fail to consider “hidden costs” for consumers from the time and effort spent on both energy audits and investments. The combination of these factors, according to some academic studies, has led to

Utility-sponsored ex-ante studies of energy-efficiency proposals often yield results that are much more optimistic about energy savings than subsequent academic, peer-reviewed studies of the programs once they are in place.

utilities understating the costs of EE programs by as much as 50% or more.

Academic research on utility studies has also found “rebound effects” that reduce anticipated energy savings. A “rebound” occurs when energy consumers use their air conditioners and heating systems more intensively because of lower operating costs for the EE technologies. This reduces the actual energy savings relative to those predicted by engineering possibilities.

Academic studies also find “free riders.” These are individuals who would have purchased lower energy-use appliances or HVAC systems regardless of the existence of the EE programs and thus their energy savings should not be counted as benefits created by the policy. The subsidies they receive for purchasing their EE products are pure transfers from other utility customers, many of whom are low-income households. For instance, a 2016 *Energy Journal* paper by Anna Alberini, Will Gans, and Charles Towe document this effect in a heat pump subsidy program.

EE building codes have also produced less-than-expected energy savings. For instance, a 2016 *American Economic Review*

article by Arik Levinson found that California’s strict EE building codes have resulted in much less energy savings than projected.

The common perception is that residential weatherization programs have produced large and cost-effective savings to low-income households. But a 2015 *American Economic Review: Papers and Proceedings* article by Meredith Fowlie, Michael Greenstone, and Catherine Wolfram and a 2016 *Energy Journal* paper by Joshua Graff Zivin and Kevin Novan provide empirical evidence to the contrary. They find *ex-ante* energy savings projections to be grossly high and the overall net benefits to participating households in many instances to be negative.

Most utilities fail to apply the best analytical tools to their evaluations of EE programs. These tools include randomized trials and quasi-experimental designs to measure energy savings and understand consumer behavior. The problem with other approaches is that they do not reliably measure the actual energy savings from individual EE programs.

WHY ARE EE PROGRAMS SO POPULAR?

Despite the negative evaluations of EE programs by academics, these programs are politically popular. Legislatures, governors, and state public utility commissions (PUCs) want utilities to promote EE. Some utilities initially balk at this, but PUCs then offer support to ensure the utilities’ profitability isn’t hurt by reduced energy sales. For instance, about half the states have adopted “revenue decoupling” for gas utilities; that is, the PUCs permit utilities to raise their rates in order to offset lower sales. These initiatives have been instrumental in mitigating utility opposition to EE programs. Instead, the utilities release reports (arguably both biased and technically flawed) showing that EE initiatives are cost-beneficial.

Everyone’s happy, right? Well, someone has to pay for these initiatives, and it is almost always the utility’s customers. But is it equitable and good public policy to compel utility customers to pay for EE initiatives? Many of these initiatives benefit only a relatively few customers, most of whom can afford to pay for higher EE without any financial assistance. Besides, these consumers are quite capable of making rational decisions, just like they do when they invest in other activities. So, why should utilities offer these customers subsidies and why should other customers bear the costs?

ARE SOME EE PROGRAMS NOW UNECONOMICAL?

An especially relevant question for gas utilities today is, should they have eliminated or downsized some of their EE programs over the course of the “fracking” era? After all, shale gas has greatly increased the supply and lowered the cost of gas, thereby altering the energy efficiency calculus. Yet, gas utilities now spend

about \$1.5 billion annually on EE programs, up from \$320 million in 2007.

It seems that the rationales for EE programs of both electric and gas utilities are less valid today than when they were first implemented. Their customers have better information on EE programs, and natural gas prices are low and expect to remain so for the next several years. Presumably, the most cost-effective actions have already been exploited. Thus, market failures for EE have decreased over time, lessening the need to have utility or government intervention to advance EE.

Over time (we are talking about decades), we should expect to see a continual erosion of market problems, as well as consumer-behavioral ones, warranting fewer utility/regulatory (“bureaucratic”) programs. That is, society should rely more heavily on the marketplace to influence EE investments, or the role of utilities should be increasingly displaced by better-functioning market mechanisms that rely on the self-interest of individual customers to reduce their energy bills.

THE PUSH FOR ELECTRIFICATION RESEMBLES THE PUSH FOR ENERGY EFFICIENCY

“Electrification” refers to the enactment of policies to induce consumers to use electricity rather than natural gas and other fossil fuels for specific end-use applications. Electrification can include conversion from natural gas heating to an electric heat pump in an existing home, or conversion from gasoline to electricity for transportation.

Electrification, according to its advocates, would reduce carbon emissions, lower energy costs for at least some consumers, and increase EE by reducing the primary energy use per unit of energy service (e.g., the full-cycle energy usage per mile of driving or gallon of heated water). These advocates assume that an “electrification gap” exists—that is, there is a deviation between socially optimal electrification and actual electrification.

Electrification advocates inevitably push for additional subsidies and out-of-market incentives to accelerate electrification. (Both electric vehicles and electric heat pumps presently receive subsidies from both the government and utilities.) Advocates have referred to electrification as “strategic electrification,” “smart electrification,” “beneficial electrification,” “efficient electrification,” and “policy-driven electrification.” I would add to this lexicon “bad electrification” and “artificial or subsidized electrification.”

Studies have shown electrification to be technically feasible in many end-use applications and economically feasible in at least some applications. Technological advances and public policy (e.g., digitization and the focus on clean energy) seem to favor electricity over fossil fuels in the future. Electrification proponents champion policies that would accelerate electrification. Before committing to such policies, should we not have more precise calculations of the costs and benefits, instead of referring to them in qualitative terms (which so far has dominated the analyses)?

Lacking today is evidence that market and behavioral problems

are severe enough to warrant additional government intervention to hasten the pace of electrification. There is a more-than-remote chance that subsidized electrification will have a negative effect on society.

The question at present for policymakers is how fast electrification should develop. We should expect the electrification advocates in the coming years to employ many of the same justifications that are now used to advocate EE.

CONCLUSION

The best available evidence—peer-reviewed studies conducted by disinterested analysts using sophisticated methods—suggests that EE initiatives funded by utility customers should be scrutinized rather than reflexively praised by policymakers. Even if EE programs were ever cost effective, the “shale gas” era has made many of them ineffective now. The best available evidence suggests that EE programs transfer money from some utility customers to others with no gains in efficiency.

Regretfully, this evidence has had little effect on these programs because the public is unaware of the transfers, energy efficiency is culturally popular, and utilities can enjoy their support without suffering any financial consequences. Despite that, many of these programs would fail a benefit–cost test and should be called into question. R

READINGS

- “Are the Non-Monetary Costs of Energy Efficiency Investments Large? Understanding Low Take-Up of a Free Energy Efficiency Program,” by Meredith Fowle, Michael Greenstone, and Catherine Wolfram. *American Economic Review: Papers and Proceedings* 105(5): 201–204 (May 2015).
- “Electrification: The Nexus between Consumer Behavior and Public Policy,” by Kenneth W. Costello. *The Electricity Journal* 31(1): 1–7 (2018).
- “Evaluating the Costs and Benefits of Appliance Efficiency Standards,” by Jerry A. Hausman and Paul L. Joskow. *American Economic Review: Papers and Proceedings* 72(2): 220–225 (May 1982).
- “Free Riding, Upsizing, and Energy Efficiency Incentives in Maryland Homes,” by Anna Alberini, Will Gans, and Charles Towe. *The Energy Journal* 37(1): 259–290 (2016).
- “How Much Energy Do Building Energy Codes Save? Evidence from California Houses,” by Arik Levinson. *American Economic Review* 106(10): 2867–2894 (October 2016).
- “Motivating and Evaluating Energy Efficiency Policy,” by Kenneth Gillingham, Amelia Keyes, and Karen Palmer. *Resources for the Future Working Paper* WP17–21, November 2017.
- “The Energy Paradox and the Diffusion of Conservation Technology,” by Adam B. Jaffe and Robert N. Stavins. *Resource and Energy Economics* 16(2): 91–122 (May 1994).
- “Upgrading Efficiency and Behavior: Electricity Savings from Residential Weatherization Programs,” by Joshua Graff Zivin and Kevin Novan. *The Energy Journal* 37(4): 1–23 (2016).
- *Unlocking Energy Efficiency in the U.S. Economy*, published by McKinsey Global Energy and Materials (McKinsey & Co.), 2009.
- “What Does a Negawatt Really Cost? Evidence from Utility Conservation Programs,” by Paul Joskow and Donald B. Marron. *The Energy Journal* 13(4): 41–74 (1992).

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Summary: Testimony Direct Testimony of Colleen Shutrump in Opposition to the Joint Stipulation and Recommendation on Behalf of The Office of The Ohio Consumers' Counsel electronically filed by Mrs. Tracy J Greene on behalf of Healey, Christopher