

Before the

OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
UNITED STATES DEPARTMENT OF ENERGY
WASHINGTON, D.C.

COMMENTS OF SPIRE INC.

In Response to the Request for Information entitled
Energy Conservation Program: Energy Conservation Standards for Air-Cooled Commercial Package Air
Conditioning and Heating Equipment and Commercial Warm Air Furnaces; Request for information

85 Fed. Reg. 27941 (May 12, 2020)

Docket No. [EERE-2019-BT-STD-0042](#)

RIN 1904-AE59

July 1, 2020

Overview of Spire, Inc.

Spire Inc. (Spire) owns and operates natural gas local distribution companies serving 1.7 million customers across Missouri, Alabama and Mississippi, and is submitting comments in this proceeding on its own behalf and on behalf of its largest operating companies: Spire Missouri Inc. and Spire Alabama Inc. Spire supports and actively invests in energy efficiency. For example, Spire Missouri utilities provided over \$7 Million of energy efficiency and low-income weatherization funding annually within our Missouri service areas. However, Spire does not support appliance efficiency standards that impose unjustified costs on consumers or that deprive consumers of gas products that are suitable to their needs. Such standards are not authorized by statute and would be harmful both to Spire’s interests and that of the consumers it serves.

Comments

Spire appreciates the opportunity to comment in response to the Department of Energy (“DOE”) request for information relevant to its consideration of whether new standards for gas-fired Commercial Warm Air Furnaces (CWAf) are warranted.¹ Spire submits that new standards for such products are not warranted.

On January 15, 2016, DOE/EERE posted a Direct Final Rule (DFR) for Docket EERE-2013-BT-STD-0021 titled [Energy Conservation Standards for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces](#).² Adoption of this DFR was hailed as a major victory for negotiated rulemaking:

- [Manufacturers, Efficiency Groups Praise Largest Energy-Savings Standards Ever Issued](#)³
- [ASAP, AHRI, and ACEEE applaud successful negotiated rulemaking for commercial air conditioners and warm air furnaces](#)⁴

That DFR established an 81% thermal efficiency factor for CWAf’s $\geq 225,000$ Btu/hr, along with other standards. CWAf $\geq 225,000$ Btu/hr is a non-condensing efficiency level. This level was determined based at least in part on safety considerations.⁵ The physics of safety have not changed. These considerations were expertly explained in the [comments of AHRI’s Frank Stanonik](#).⁶ Safety considerations preclude near condensing technology and economic considerations preclude condensing technology in this application at this time.

DOE may only impose new commercial standards if there is clear and convincing evidence that such standards are technologically feasible, economically justified, and would result in significant additional conservation of

¹ 85 Fed. Reg. 27941 (May 12, 2020).

² <https://www.regulations.gov/document?D=EERE-2013-BT-STD-0021-0055>

³ <https://appliance-standards.org/document/manufacturers-efficiency-groups-praise-largest-energy-savings-standards-ever-issued>

⁴ <https://appliance-standards.org/document/asap-ahri-and-aceee-applaud-successful-negotiated-rulemaking-commercial-air-conditioners>

⁵ *Federal Register*, Vol. 81, No. 10, January 15, 2016, Rules and Regulations p. 2451 “For CWAf’s, DOE screened out the technology options listed in Table IV-6. Each of these technology options failed to meet at least one of the four screening criteria: ...”

Table IV-6—Technology Options Screened Out for Commercial Warm Air Furnaces

Technology option	Reason for screening out
Pulse combustion	Adverse impact on utility; potential for adverse impact on safety.
Low NO _x premix burner	Technological feasibility.
Burner de-rating	Adverse impact on utility.
Low pressure, air-atomized burner (oil-fired CWAf’s only)	Technological Feasibility.

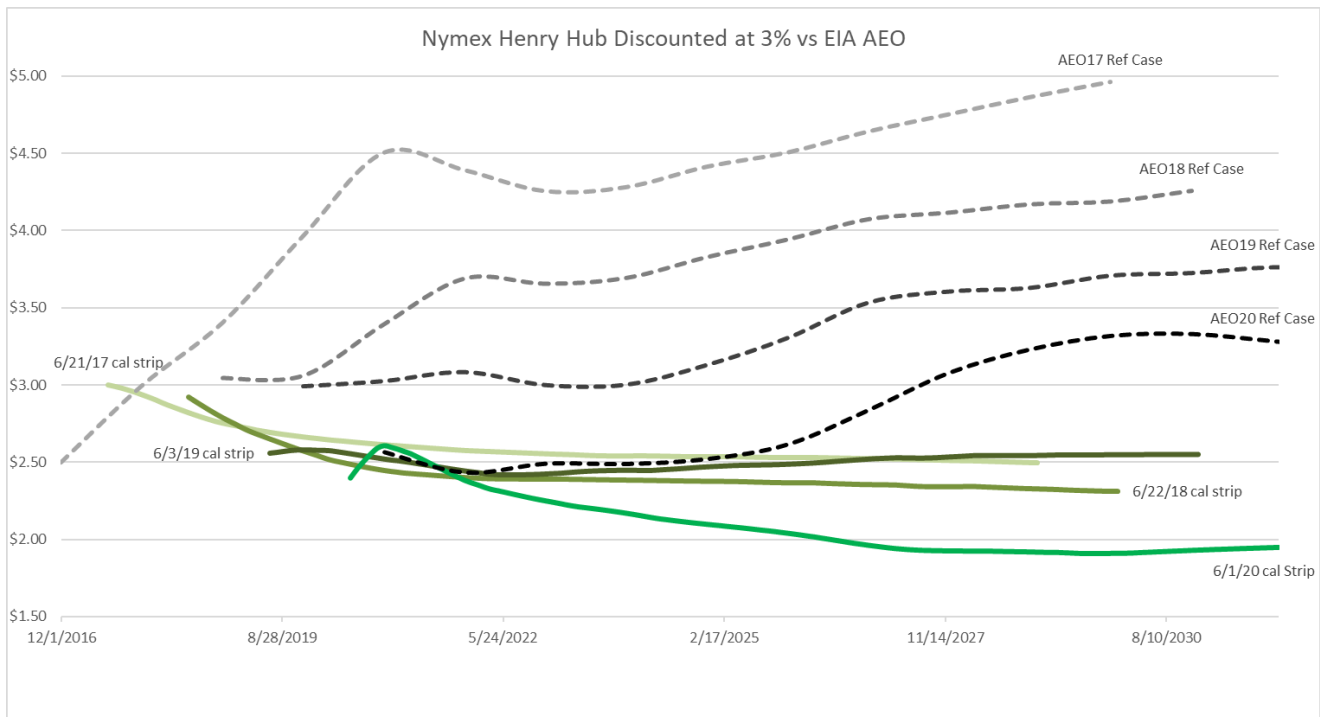
⁶ <https://www.regulations.gov/document?D=EERE-2013-BT-STD-0021-0026>

energy. There is no evidence of which Spire is aware that would justify higher CWF standards at this time, especially given that:

- Only four years has passed since the existing CWF standards were adopted; and
- Gas prices have significantly decreased since then.

Gas prices and projections used to justify the 2016 CWF standards appear grossly overstated. To illustrate, Figure 1 compares various Energy Information Administration (EIA) prices per past Annual Energy Outlooks (AEOs) with NYMEX settlement prices actually paid for delivery of natural gas at the Henry Hub, discounted 3%.⁷

Figure 1



As illustrated above AEO forecasts (while slowly getting better) and “cal strip” prices are diverging; except for the tail-end of the AEO20 forecast period. This data calls into question the consumer savings often cited by DOE and energy efficiency advocates.

DOE has traditionally used both 3% and 7% as default discount rates. Assuming a 7% discount rate instead of 3% in Figure 1 would show further disparity between AEO forecasts and the actual market prices.

⁷ The NYMEX cal strip price calculation in the above chart represents the average settlement price of the next 12 monthly futures contracts on the New York Mercantile Exchange (“NYMEX”). The Jan2021 “cal strip price” is the average settlement price for Jan-2021 to Dec-2021. NYMEX prices are what a person would pay to take natural gas delivery in the future at that point in time. The cal strip prices were adjusted back to current dollars using a 3% annual discount rate. NYMEX publishes settlement prices daily and currently has futures contracts for delivery from July 2020 through December 2032. For more information, see: https://www.cmegroup.com/trading/energy/natural-gas/natural-gas_quotes_settlements_futures.html#tradeDate=06%2F18%2F2020

In addition to relying on projections that significantly overstate wholesale gas prices, DOE has used the wrong data to quantify the utility bill savings efficiency improvements would provide. To illustrate, note the yellow highlighted numbers for Missouri from Technical Support Document Tables [8C.2.5](#)⁸ which were published in another rulemaking proceeding shortly after the current CWA standards were adopted:

Table 8C.2.5 2015 Monthly Commercial Natural Gas Prices by State

State	2015 Monthly Commercial Natural Gas Prices 2015\$/mcf											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AL	10.7	10.6	10.5	11.6	11.5	11.7	11.9	11.9	11.8	11.4	11.5	10.7
AK	8.7	8.4	8.1	8.0	7.9	8.6	8.2	8.2	7.2	7.9	7.6	7.6
AZ	10.7	11.8	11.4	10.8	10.8	10.8	10.7	10.5	10.4	10.1	9.4	9.2
AR	8.4	8.5	8.0	7.8	7.9	8.2	8.1	8.2	8.0	7.7	7.9	7.3
CA	8.9	8.5	8.6	7.8	7.0	7.7	7.7	7.9	7.8	7.7	7.2	8.2
CO	7.7	7.5	7.9	7.2	8.3	8.3	9.4	9.3	9.2	7.8	6.5	6.2
CT	8.6	7.8	7.6	8.5	9.4	10.1	9.3	9.5	10.5	9.5	8.5	8.2
DE	10.2	10.1	10.3	10.6	11.9	12.7	13.4	13.9	13.9	12.5	10.8	9.2
DC	11.7	10.8	12.5	12.3	12.3	11.7	11.2	11.2	11.5	11.7	11.3	10.0
FL	11.0	10.9	10.6	10.5	9.8	10.9	10.9	10.9	11.2	10.6	10.7	10.9
GA	8.4	8.1	8.0	8.6	8.6	9.0	9.1	9.1	9.4	8.7	9.7	7.8
HI	25.7	30.8	31.1	32.6	36.9	38.8	36.0	30.5	28.6	27.1	28.1	28.7
ID	7.7	7.8	8.0	7.9	7.9	8.0	8.4	8.1	8.0	7.7	6.9	7.1
IL	6.8	6.1	6.8	7.7	10.1	11.6	11.5	12.7	11.8	8.2	6.6	6.0
IN	7.5	6.9	8.5	8.9	10.3	11.2	10.6	10.6	8.0	6.2	6.1	6.2
IA	6.6	6.3	6.5	6.3	6.5	7.3	8.5	9.0	8.1	6.0	6.4	5.7
KS	8.7	8.0	9.0	10.2	10.8	12.4	12.4	12.0	12.5	9.4	7.3	7.1
KY	8.3	8.2	8.0	10.1	10.9	11.5	12.0	11.3	10.6	9.4	8.6	7.7
LA	8.6	8.4	7.9	7.6	7.5	7.7	7.7	7.7	7.6	7.6	7.7	7.9
ME	16.7	16.3	16.2	15.7	13.2	11.4	12.2	12.3	11.5	8.6	10.5	11.3
MD	10.0	9.6	9.4	9.5	11.5	11.7	11.0	11.6	11.1	10.0	9.6	10.4
MA	12.7	12.0	10.6	11.2	10.3	8.3	8.9	9.0	8.5	8.5	8.6	10.0
MI	7.7	7.5	7.3	7.3	7.9	8.9	9.3	9.2	9.1	7.5	6.8	6.6
MN	7.9	7.2	8.3	7.5	7.3	8.9	8.2	8.0	7.7	6.4	6.2	6.1
MS	8.0	7.8	7.6	8.0	7.8	7.8	7.8	7.7	7.8	7.8	8.0	8.1
MO	8.8	8.7	8.2	9.3	10.3	11.1	11.9	11.9	10.7	11.0	9.9	7.8
MT	8.1	7.9	7.7	7.9	8.0	8.8	9.4	9.4	9.4	8.2	7.1	6.6
NE	7.8	7.1	6.7	6.4	5.5	5.5	6.0	6.3	6.4	5.9	5.7	5.3
NV	8.6	8.8	8.9	9.2	9.6	9.6	9.5	9.1	9.1	8.6	7.8	7.4
NH	15.5	14.3	13.5	12.9	12.3	12.6	13.7	14.8	14.8	12.3	11.2	12.4
NJ	9.1	8.8	8.6	7.3	7.9	8.4	8.7	8.8	8.0	8.1	8.7	8.2
NM	6.6	5.9	5.8	6.2	6.9	6.8	7.5	7.7	7.7	7.7	6.5	5.3
NY	7.6	7.2	7.1	7.3	6.7	6.8	6.1	5.8	6.0	6.3	6.3	6.8
NC	8.3	7.3	7.8	8.3	8.5	9.8	9.4	9.3	9.3	8.0	8.5	8.4
ND	7.5	6.9	6.8	6.6	6.7	8.4	8.7	8.9	7.9	6.2	5.7	5.2
OH	6.7	6.4	6.5	6.6	7.2	7.8	8.1	8.0	8.0	6.8	6.0	5.5
OK	7.0	7.1	6.7	9.3	11.4	12.8	13.6	15.2	14.9	14.2	10.8	6.1
OR	9.9	10.3	10.6	9.7	10.8	10.8	10.8	11.1	10.1	10.2	8.4	9.1

State	2015 Monthly Commercial Natural Gas Prices 2015\$/mcf											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
PA	9.3	9.3	9.2	10.0	10.7	11.3	12.1	11.2	11.1	9.7	8.3	8.1
RI	11.2	11.1	11.1	11.7	13.0	15.4	16.6	17.0	17.1	15.7	12.9	11.0
SC	8.8	8.0	7.8	8.3	7.9	8.4	8.3	8.0	8.3	8.0	8.4	10.1
SD	6.4	6.2	6.4	6.3	6.3	6.8	7.4	7.2	7.1	5.7	5.3	5.3
TN	8.6	8.2	7.3	8.7	9.0	9.0	9.3	9.9	9.4	8.9	8.7	8.3
TX	7.4	7.0	7.0	6.6	6.9	6.5	7.5	7.6	7.7	7.7	7.2	6.5
UT	8.2	8.8	8.5	8.2	7.5	7.4	7.3	7.3	7.3	7.3	7.3	7.5
VT	8.9	8.9	8.9	9.0	8.5	6.8	6.1	6.5	7.0	6.2	6.7	7.4
VA	8.6	7.6	7.6	8.2	9.1	9.1	8.6	8.6	8.9	8.0	7.6	7.9
WA	9.5	9.6	9.4	9.4	9.5	9.6	9.8	10.0	9.4	9.3	8.4	7.8
WV	8.9	8.9	9.0	9.5	10.7	12.5	11.5	11.9	11.5	10.0	7.9	7.6
WI	7.4	7.3	7.1	6.3	5.5	6.7	6.4	6.4	6.2	5.4	6.3	6.1
WY	7.1	8.0	7.8	7.8	7.7	7.9	7.7	7.6	7.8	7.4	6.7	6.2

⁸ <https://www.regulations.gov/document?D=EERE-2013-BT-STD-0030-0083>

This table confirms what was not as clear in the record of the CWF rulemaking: DOE relies on natural gas prices that dramatically overstate the utility bill savings efficiency improvements would provide. Specifically, the prices cited for Missouri appear to plainly represent average dollar per thousand cubic feet (mcf) which is about 10 therms, rather than the marginal consumption-based prices that would actually determine the utility bill impact of gas savings. If DOE bases its commercial natural gas prices upon EIA data, it is important to note that EIA data collected is both insufficient and inappropriate for calculating consumer marginal energy rates (CMER).

In simple terms, *average* prices include substantial fixed charges that are billed on a monthly basis without regard to gas consumption and marginal energy rates do not. This difference is critical, because gas savings resulting from efficiency improvements would have no impact on customer fixed monthly charges; they would only result reduced consumption-based charges. For example, consider [Spire's present commercial rates](#):⁹

Small general service

[Fixed Monthly] Customer charge: \$35.00
Charge for gas used (per therm): \$0.20241

Large general service

[Fixed Monthly] Customer charge (per month): \$125.00
Charge for gas used (per therm): \$0.13220

Purchased Gas Adjustment (PGA): \$0.41274 per therm

For small general service, Spire's marginal rate is $\$0.20241 + \$0.41274 = \mathbf{\$0.61515}$

For large general service, Spire's marginal rate is $\$0.13220 + \$0.41274 = \mathbf{\$0.54494}$

In short, while average utility rates may have a purpose, that purpose should not include calculating consumer energy savings that result from improved efficiency. As illustrated above: the commercial gas rates DOE relied on in 2015 are close to double the marginal rate Spire currently charges for gas that would be saved by efficiency improvements. Thus, DOE's cost saving calculations are grossly inflated; at least for Spire's customers.

Spire's rates are not unusually low overall (as [shown here by tableau](#)). This tableau data is also useful to show that average gas rates have been generally declining while electric rates have been increasing -- something else that DOE should give additional consideration in this and other proceedings.

In the late 1990's EERE's original appliance efficiency advisory panel advised DOE to use marginal costs. DOE has never properly implemented that recommendation. However, in 1999, DOE, via Lawrence Berkeley National Laboratory (LBNL), issued a draft report titled [Marginal Energy Prices Report](#).¹⁰ It was based on an expensive/proprietary database called [MAISY](#),¹¹ from a vendor of proprietary utility customer databases, software and application products on more than 7 million individual electric utility customers (but far less gas utility customers). MAISY records include details on customer building, equipment, occupant, energy and hourly load characteristics for all states in the US, electric utility service areas and client-specified geographic areas. While the emphasis is on electric utility customers, recent discussions with the vendor of MAISY indicate that gas utility data is available.

⁹ <https://www.spireenergy.com/rates-and-tariffs>

¹⁰ <https://www.energy.gov/eere/buildings/downloads/marginal-energy-price-report-july-1999>

¹¹ <http://www.maisy.com/>

We do not know if LBNL still uses MAISY, but we do know that LBNL continues to claim it conducts analyses of “marginal energy prices” on behalf of DOE and its appliance efficiency programs. For example: “[Marginal Cost Pricing in a World without Perfect Competition: Implications for Electricity Markets with High Shares of Low Marginal Cost Resources](#).”¹² However, as the report name implies, it is about electric markets; not gas.

Based on the two substantive problems identified above, DOE’s use of chronically erroneous price forecasts and its failure to recognize that gas savings from efficiency improvements must be valued at the marginal rates consumers are actually charged, there is ample reason to question whether the existing CWF standards were economically justified in 2016 and it seems certain that new CWF standards would not be.

Spire understands that data collection for properly determining CMER is a significant additional burden. However, doing so is not “rocket science.” Rather, it is simply labor intensive. Given the labor intense but debatable value of other routine data collection activities undertaken by DOE and its contractors (e.g., “tear-down analyses”), Spire again urges DOE earnestly implement our CMER recommendations.

The Energy Information Administration (EIA) is in the process of soliciting comments for revising its natural gas collection forms.¹³ Spire has filed comments with the EIA that request the collection of tariffs so that actual CMER can be properly calculated.

In conclusion, more stringent CWF standards do not appear to be economically justified, especially if proper CMER analyses are used for deriving consumer monetary savings. Thus, a finding that the existing CWF standards do not need to be amended is warranted. Accordingly, DOE/EERE should issue a notice of determination that the existing standard for CWF will not be amended.

For further information, please address any requests to:

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Sincerely,
SPIRE INC.



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¹² <https://www.nrel.gov/docs/fy18osti/69076.pdf>

¹³ <https://www.federalregister.gov/documents/2020/04/28/2020-08895/agency-information-collection-proposed-extension>