Spire Inc.
700 Market Street
St. Louis, Missouri 63101

March 7th, 2019

The Honorable Bobby Rush and Fred Upton
House Committee on Energy and Commerce Subcommittee on Energy and Power
2125 Rayburn House Office Building, Washington, D.C. 20515

Subject: Comments of Spire Inc. on hearing titled "Wasted Energy: DOE's Inaction on Efficiency Standards and Its Impact on Consumers and the Climate."[1]

Dear Representatives Rush and Upton:

Spire Inc. ("Spire") is a utility holding company with 3,300 employees providing natural gas to 1.7 million customers across Missouri, Alabama and Mississippi. Spire commitment to providing our customers with cost-effective energy efficiency rebates and low-income programs focused on energy savings has been strong for many years. In our Fiscal Year 2018 (ending September 30, 2018), Spire's Missouri utilities provided over $7 Million of energy efficiency and low-income weatherization funding within our Missouri service areas. Spire only opposes energy efficiency standards that ineffective, counterproductive and against our customers best interests, several of which are being discussed in this hearing.

Spire urges Leadership and Members of the Subcommittee on Energy and Power (the "Subcommittee") to recognize that the need for speedy regulatory action should not obviate the need to ensure that DOE's actions are lawful and constructive. Adoption of several standards DOE has developed for commercial packaged boilers and other gas heating technologies, but has not yet published in the Federal Register, would be:

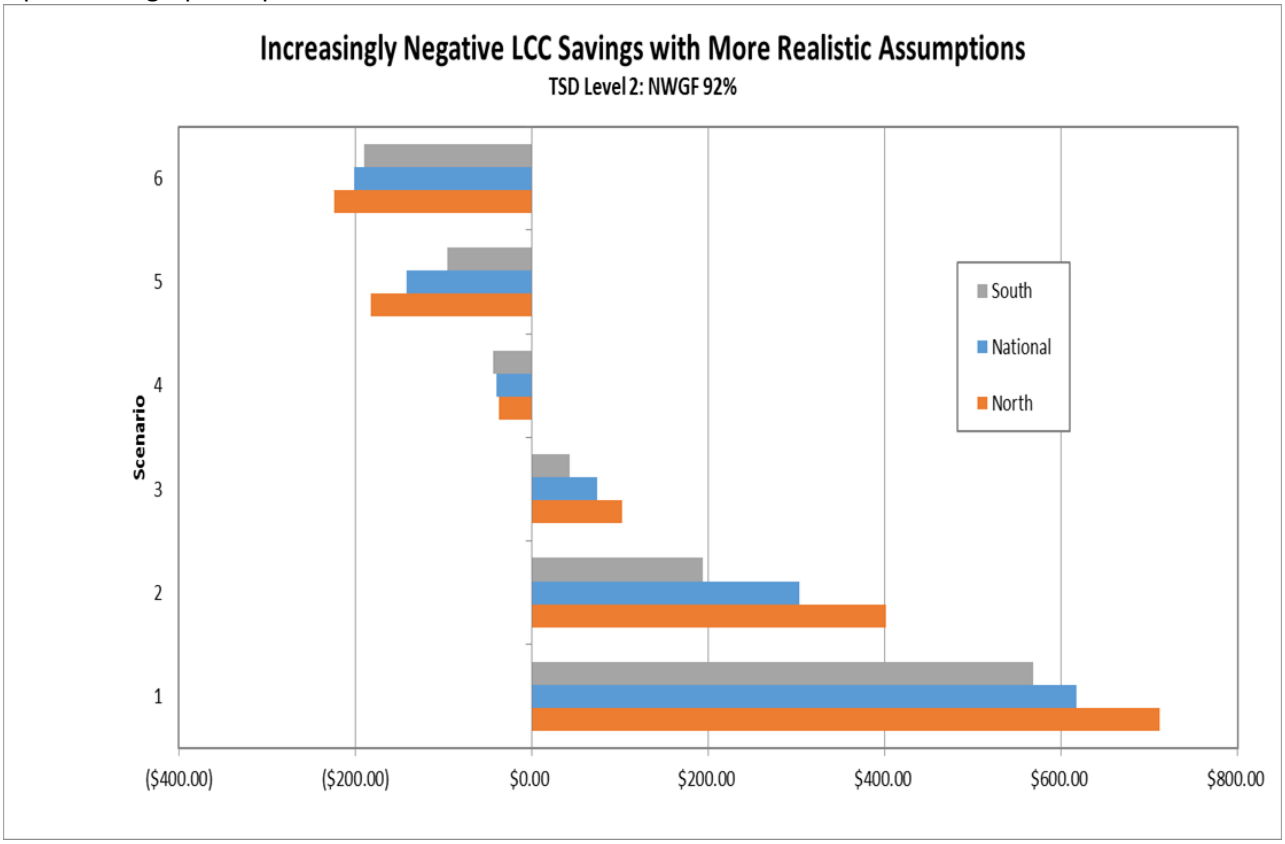
1. unlawful,
2. unlikely to provide substantial economic benefits. and
3. likely increase, instead of decrease, overall carbon emissions.

The purpose of this letter is to convey additional information regarding these concerns to the Subcommittee that explains why DOE's "inaction" is justifiable. Spire and many other stakeholders, have repeatedly raised these concerns with DOE and has further requested that DOE correct certain fundamental defects in its regulatory analysis before any new standards are adopted.

Many of DOE's recent proceedings for natural gas appliances suffer from certain systemic defects in DOE's regulatory approach and analysis. The commercial packaged boiler proceeding is but one case-in-point. There are substantial reasons why such rulemakings have not – and should not – be completed based on DOE's existing regulatory analysis. Numerous concerns have been expressed in comments submitted to the DOE regarding the transparency and enforceability of EERE procedures. DOE has begun to address those procedural concerns as evidenced by the recent release of proposed changes to DOE's "Process Rule" governing the standards development process.[2] In addition, there have been significant concerns about DOE's reliance on assumptions and analytical techniques that have produced determinations that can vary dramatically for no apparent reason. Of particular concern to Spire is DOE's failure to rely upon real-world, readily-available market

[1] https://energycommerce.house.gov/newsroom/press-releases/pallone-rush-on-department-of-energy-s-proposals-to-rollback-energy
[2] https://www.energy.gov/sites/prod/files/2019/02/f59/process-rule-notice.pdf

data to measure savings for high-efficiency equipment. Instead, DOE creates and relies upon excessively complex estimation techniques that calculate excessive, volatile and inaccurate savings for high-efficiency equipment. A graphical presentation of this is shown below:



Step-by-step scenario descriptions (starting from the bottom):

1. DOE's published LCC savings as published in SNOPR and TSD
2. Natural gas marginal (tail block) price factor (per MMbtu) based on 5-year average of EIA reported city-gate price+ 1$ additional overhead charge to customers
3. Scenario 2 + Average difference in installation costs between condensing and non-condensing furnace of $550 vs. $253 DOE estimates (based on ACCA 2015 "Survey of Furnace Installation Contractors")
4. Scenario 3 + Furnace average lifetime 18.1 years per Laclede study
5. Scenario 4 + Natural gas price escalation forecast set to equal electric price escalation forecasts per AEO 2016
6. Scenario 5 + 10% Discount rate with normal distribution mean of 10% and standard deviation of 5%

The source of this graphic is Spire's 2017-01-06 Comment response to DOE's published Supplemental notice of proposed rulemaking (SNOPR) and announcement of public meeting, reopening of public comment period.[3] The takeaway from this illustration is DOE's typical rosy "determinations" for economic benefits based upon its complex estimation techniques are easily reversed into economic hardships when real-world data are used.

For another example of the error in DOE's calculation of economic benefits is its calculation of life cycle cost (LCC)analyses over last 8 years. DOE produced LCC analyses for weatherized residential gas furnaces in 2011 for its "regional" DFR and again in 2015 for its "national" NOPR. The latter showed unexplained increases in LCC savings of 1% to over 2,000%, despite no major changes in relevant technological or economic conditions other than a significant decline in gas prices. This "inflation" is illustrated by the following table:

[3] https://www.regulations.gov/document?D=EERE-2014-BT-STD-0031-0309

Comparison of 2011 & 2015 Life Cycle Cost (LCC)
Spreadsheet Results for Weatherized Residential Gas Furnaces

	AFUE	2011 Average LCC savings	2015 Average LCC savings	Delta	% Change
National - All Installations	90%	$87	$236	$149	170.9%
	92%	$136	$305	$169	124.1%
	95%	$205	$388	$183	89.1%
	98%	$46	$441	$395	859.1%
North - All Installations	90%	$155	$208	$53	34.0%
	92%	$215	$277	$62	29.0%
	95%	$323	$374	$51	15.7%
	98%	$198	$467	$269	135.9%
South/Rest of Country - All Installations	90%	-$13	$267	$280	2156.3%
	92%	$19	$336	$317	1667.2%
	95%	$28	$404	$376	1341.4%
	98%	-$181	$412	$593	327.7%
National - Replacements	90%	-$11	$113	$124	1130.2%
	92%	$39	$179	$140	355.5%
	95%	$111	$264	$152	136.8%
	98%	-$26	$319	$346	1309.0%
North - Replacements	90%	$90	$106	$16	17.4%
	92%	$151	$172	$21	13.6%
	95%	$262	$259	-$3	1.1%
	98%	$158	$362	$204	129.0%
South/Rest of Country - Replacements	90%	-$160	$120	$280	175.4%
	92%	-$125	$188	$312	250.5%
	95%	-$110	$268	$378	343.7%
	98%	-$297	$273	$570	191.7%
National - New Construction	90%	$383	$588	$205	53.6%
	92%	$429	$659	$230	53.5%
	95%	$487	$730	$244	50.0%
	98%	$264	$764	$499	188.9%
North - New Construction	90%	$343	$484	$141	41.2%
	92%	$404	$557	$153	38.0%
	95%	$502	$665	$163	32.5%
	98%	$315	$704	$389	123.4%
South/Rest of Country - New Construction	90%	$445	$710	$265	59.5%
	92%	$469	$779	$310	66.0%
	95%	$463	$807	$344	74.3%
	98%	$184	$834	$649	352.3%

Notes to table:

1. 2011 data from EERE-2011-BT-STD-0011-0010 LCC spreadsheet, summary tab, cells K9:K58, L9:L58 & AI9:AI58
2. 2014 data from EERE-2014-BT-STD-0031-0021 LCC spreadsheet, summary tab, cells O8:O41, AE8:AE41 & AT:AT41

The above table was presented to DOE at the continuation of its public meeting on April 13th, 2015 and subsequently entered into regulations.gov on April 30th, 2015.[4] DOE was asked to account for these changes at that public meeting and failed to respond. April 13, 2015 Public Meeting Transcript, page 127, line 21-22.

[4] https://www.regulations.gov/document?D=EERE-2014-BT-STD-0031-0047

Spire has raised two even more fundamental problems with DOE's approach to standards development for gas products that the Subcommittee should understand, and that Spire has been most actively urging DOE to resolve.

First is the Monte Carlo modeling DOE misapplies for economic analysis. Our technical specialists uncovered that DOE's Monte Carlo simulations are not actually designed to address the economic impacts a new standard would have. Rather:

- The economic impact of an efficiency standard on product purchasers depends on the economic outcomes of the efficiency investments that would only be made if that standard were adopted; the outcomes of the efficiency investments purchasers would choose to make in the absence of regulation would happen anyway and are thus part of the regulatory baseline.

- DOE's modeling approach is designed to account for the right number of efficiency investments (i.e., the number of efficiency investments that would only occur if a standard were adopted), but it does not calculate regulatory impacts based on the right efficiency investments: those that would be made only if a new standard were adopted. Instead, it calculates purported rule impacts based on randomly-selected universe of all efficiency investments, including the efficiency investments that purchasers would choose to make in the absence of a new standard.

- This approach would only be valid if there were some basis to conclude that there would be no difference – in terms of the quality of economic outcomes – between the universe of efficiency investments purchasers would choose to make in the absence of regulation and the universe they would only make if a new standard were adopted. There is no such basis. To the contrary, it would be absurd to suggest that purchasers acting in the absence of regulation are so universally and completely indifferent to the economic outcome of their efficiency investments that their investments would reflect no statistically-significant preference for economically beneficial investments (and no aversion to economically disastrous investments). Available evidence clearly indicates that the opposite is true. Because DOE's modeling ignores this fact, it produces results that systematically overstate the economic benefits a standard could be expected to have.

Using Docket No. EERE-2013-BT-STD-0030 for commercial boilers as an example, the American Public Gas Association (APGA) and Spire sent a letter to Secretary Perry that explained this horrendous analytical error. The same error appears in other Dockets setting more stringent appliance minimum efficiency standards for other gas appliances. We also reminded Secretary Perry of other specific requests to investigate systemic problems.

Second is that DOE's failure to recognize that it cannot lawfully adopt efficiency standards for gas products that would eliminate the availability of noncondensing gas products because gas products using condensing combustion technology are the only gas products able to achieve such efficiency standards. Faced with the need for building modifications necessary to accommodate condensing gas products, Spire believes that many purchasers would have little choice but to defer the replacement of older gas products or turn to electric alternatives. The latter outcome would be typically leave consumers to bear significantly higher energy costs, and – in view of the prevalence and inherent inefficiency of combustion-based electrical power generation – could, on average, produce a substantial net increase in overall carbon emissions rather than the modest reduction the efficiency standard is ostensibly designed to provide.

EPCA makes it clear that DOE should not promulgate any standard that is "likely to result in the unavailability in the United States of any product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States" at the time a standard is under consideration. 42 U.S.C. § 6295(o)(4).

In contrast, DOE argues that the ability to connect a replacement furnace (or boiler or water heater) with an existing venting system is not a feature since they all produce the same product: heating. [5] This is like saying that all refrigerators are the same because they all refrigerate food or all washing machines are the same because they all wash clothes. Yet DOE has given such appliances numerous "separate product classes." DOE's rationale stretches credulity in view of DOE's recognition that the ability of non-condensing furnaces to function without a natural vent system requires "features" that non-condensing furnaces lack.[6] In any case, DOE's denial does not change the fact that the ability of a furnace to function with a natural vent system is a feature that can be – and often is – the difference between a gas furnace that is a reasonable option for a given application and one that is not. The same applies to non-condensing commercial equipment such as boilers.

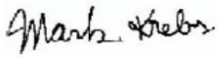
In conclusion: The details regarding these communications are available at regulations.gov. [7] Spire's 2017-01-06 Comment response to the published Supplemental notice of proposed rulemaking (SNOPR) and announcement of public meeting, reopening of public comment period also supplements this letter to the Subcommittee.

The point of this is that Spire and its aligned stakeholders also have grievances that have yet to be addressed. However, we recognize that Assistant Secretary Simmons has only been appointed for a few weeks and resolving such thorny issues takes time; especially when litigation is initiated; as in the case of NRDC vs. Perry over the commercial boiler Docket.

DOE's pending rulemaking regarding standards for commercial packaged boilers and other gas-fueled appliances have been infused with all of these problems. Spire respectfully submits that DOE's current analysis in these proceedings are fatally defective, and that – as previously indicated – adoption of the standards currently under consideration would be unlawful and due to lack of net public benefits.

Spire believes that DOE should be commended for its efforts to address serious and longstanding concerns with overhauling its deeply flawed and opaque appliance efficiency regulation program. To reiterate in closing: It is critical to ensure that the job of efficiency regulation is not done quickly at the expense of being done right.

Respectfully submitted,



Energy Policies and Standards Specialist
Spire Inc.

[5] 81 Fed. Reg. at 65753
[6] 81 Fed. Reg. at 65755
[7] 2017-04-29 Joint response to 60-day litigation threat letter