



**National Rural Electric  
Cooperative Association**  
A Touchstone Energy® Cooperative



**To:** Dr. Kathleen Hogan, Deputy Assistant Secretary, US Department of Energy

**From:** Natural Resources Defense Council (NRDC), National Rural Electric Cooperatives Association (NRECA), Edison Electric Institute (EEI), and American Public Power Association (APPA)

**Subject:** Response to Request for Information (RFI) Entitled “Accounting Conventions for Non-Combustible Renewable Energy”

**Date:** March 14, 2016

*Sent via email to: EERE.Analysis@ee.doe.gov*

The joint signatories of this letter (Joint Stakeholders) respectfully submit the following comments in response to the Request for Information (RFI) entitled *Accounting Conventions for Non-Combustible Renewable Energy* that was issued by the Department of Energy (DOE or Department) on February 2, 2016, and was later published in the *Federal Register*. See 81 *Fed. Reg.* 7778 (Feb. 16, 2016).<sup>1</sup> The Joint Stakeholders would like to take this opportunity to thank the Department for initiating this conversation about how to account for zero-emitting resources in the analyses that inform efficiency standards for products and buildings, as well as other efficiency reports and standards, such as the Home Energy Score. These analyses, which aim to compare energy savings between types of technologies and products, generally convert site energy into source energy estimates using a “source-site ratio.” As DOE notes in the RFI, the goal of this conversion is to allow for a more “equitable” comparison of energy use than would be provided by a review of site energy consumption alone.

In putting out the RFI, DOE has recognized the concern of the Joint Stakeholders that the current source-site ratio for electricity is flawed because it discounts the value of zero-emitting resources used to generate electricity. While these resources are converted to electricity without combustion and result in no emissions of traditional air pollutants or greenhouse gases, DOE’s current metric assigns these resources the same conversion values as combusted fossil fuels. As

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<sup>1</sup> A description of each Joint Stakeholder is attached as Appendix A.

a result, these metrics create a preference for the on-site combustion of fossil fuels over the off-site generation of electricity using zero-emitting resources. We believe that this accounting approach is inconsistent with the policy goals and objectives of the energy conservation standards programs and other efficiency programs administered by the Department. Moreover, given the continuing trend toward de-carbonization of the sources of energy used to generate electricity, using a fossil fuel equivalency factor for zero-emitting resources could lead to regulatory outcomes that encourage higher-emitting on-site combustion of fossil fuels when lesser-emitting, more efficient off-site options exist.

The Joint Stakeholders have three primary requests in addressing concerns about the source-site ratio:

**1) Provide Transparency into how the Source-Site Energy Ratio is Derived by Publishing the Inputs in One Location and Publish a “Fossil Fuel Source-Site Energy Ratio”**

The source-site energy ratio plays a prominent role in many energy efficiency tools and programs. Yet determining the actual methodology that DOE and others use to calculate the value is very difficult, requiring finding and calculating values from various tables buried in EIA data. Therefore, the joint stakeholders request that DOE regularly publish a disaggregated display of the data that constitutes the source-site ratio, such as the one provided below in Table 1 below. Providing transparent, disaggregated, fuel-specific data does not require DOE to alter its analyses. *The Joint Stakeholders see DOE’s accommodation of this request for transparency as critical to the credibility of the source-site energy ratio as a policy tool.* Meeting this request would not place an undue burden on the Department as this information is included as part of EIA’s Monthly Energy Review and is already used in the computation of the source-site ratio.

**Table 1: Disaggregated Display of the Derivation of the Source Energy Metric.<sup>2</sup>**

<b>Summary of Energy Sources By Fuel Source</b>				
	Generation By	Conversion	Source	
	Source (TWh)	Factor	Energy	
		(BTU/kWh)	(Quad)	
Wind	182	3,412	0.62	
Solar	18	3,412	0.06	
Geothermal	16	3,412	0.05	
Hydro	259	3,412	0.88	
<b>Total Renewable Energy</b>	<b>475</b>		<b>1.62</b>	
<b>Total Nuclear Energy</b>	<b>797</b>	<b>10,449</b>	<b>8.33</b>	
Wood	42		0.43	
Waste	22		0.31	
Other Gases	12		0.11	
Other			0.20	
<b>Total Wood/Waste/Other</b>	<b>76</b>		<b>1.06</b>	
Coal	1,582	10,459	16.55	
Petroleum	30	10,713	0.32	
Natural Gas	1,127	7,948	8.96	
<b>Total Fossil Fuels</b>	<b>2,739</b>		<b>25.82</b>	

<b>Summary of Energy Sources By Category</b>	
Renewable Energy	1.62
Nuclear Energy	8.33
Wood/Waste/Other	1.06
Fossil Fuels	25.82
<b>Total</b>	<b>36.83</b>

End Use	13.32
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<b>Total Source-Site Ratio</b>	<b>2.77</b>
<b>Fossil Fuel Source-Site Ratio</b>	<b>1.94</b>

<sup>2</sup> EIA, Electric Power Annual, <http://www.eia.gov/electricity/annual/>. This table uses the values provided in the RFI, including the captured energy value for renewable energy.

The Joint Stakeholders also request that DOE publish a “fossil fuel source-site energy” ratio that reflects the ratio of the fossil fuel energy input into the electrical system versus end-use. This request only requires DOE/EIA to make one simple calculation in addition to those already conducted by EIA. This fossil source-site energy ratio is representative of the overall efficiency of the electric system in converting fossil fuel into delivered electricity. The Joint Stakeholders believe this is a more relevant ratio than the current source-site ratio, which includes the heat losses associated with burning biomass and waste, conversion of renewable solar wind and hydro to electricity, and heat losses during energy generation in nuclear reactors. This fossil source-site energy ratio can be used to determine “fossil source” energy associated with the site energy use of a building or appliance. This fossil source energy metric is relevant to many policies designed to reduce fossil fuel use and greenhouse gas emissions, such as the rulemaking on reducing fossil fuel use in Federal buildings.<sup>3</sup> Making this fossil fuel source-site energy ratio available will help policy makers better understand the role of fossil fuels in generating the nation’s electricity.

## **2) Consider Using the “Fossil Fuel Source-Site Ratio” in Analyses, Tools, and Policies that are Designed to Reduce CO<sub>2</sub> Emissions and Reduce Fossil Energy Use**

The Joint Stakeholders strongly urge the DOE and EPA to use the fossil source energy metric instead of the existing source-site ratio as it is more aligned with the policy goals that DOE and others seek to achieve through use of this type of metric. Regardless as to whether DOE decides to use the fossil fuel source values in its analyses, tools and policies, the stakeholders strongly request its publication along with the source-site ratio that includes non-emitting sources.

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<sup>3</sup> See *Supplemental NOPR for Fossil-Fuel Generated Energy Consumption Reduction for New Federal Buildings and Major Renovations of Federal Buildings*, Docket No. EERE-2010-BT-STD-0031, 79 *Fed. Reg.* 61,694 (Oct. 14, 2014).

### **3) Establish a Stakeholder Process for Further Refining Metrics to Evaluate Relative Energy Performance of Fuels**

While this RFI is an important first step in the conversation about how best to address the Joint Stakeholders' concerns about the source-site energy ratio (and source energy metrics in general) and its accounting for non-emitting electric generation sources, the Joint Stakeholders believe that DOE would be best served by initiating a stakeholder process to explore the additional concerns of all stakeholders. For example, there is a need to address the source energy metric's ability to appropriately reflect the forward-looking impacts of policies. The current accounting method reflects only the existing generation fleet, and not the impacts that result from the changing fuel mix on the grid over time.

The Joint Stakeholders welcome the Department's recognition that changes to the accounting for zero-emitting resources in the site-to-source metric are necessary and look forward to continuing this discussion with DOE and other stakeholders.

Respectfully submitted,

Keith Dennis  
Sr. Principal, End-Use Solutions and Stds.  
Business and Technology Strategies  
NRECA  
703-907-5787  
[keith.dennis@nreca.coop](mailto:keith.dennis@nreca.coop)

Robin Roy, Ph.D.  
Director, Building EE and CES  
Natural Resources Defense Council  
650-888-7806  
[rroy@nrdc.org](mailto:rroy@nrdc.org)

Rick Tempchin  
Executive Director, Retail Energy Services  
Edison Electric Institute  
202-508-5558  
[rtempchin@eei.org](mailto:rtempchin@eei.org)

Michael J. Hyland  
Senior Vice President, Engineering Services  
American Public Power Association  
202-467-2986  
[mhyland@publicpower.org](mailto:mhyland@publicpower.org)

## Appendix A

**APPA** is the national service organization for the more than 2,000 not-for-profit, community-owned electric utilities in the U.S. Collectively, these utilities serve more than 48 million Americans in 49 states (all but Hawaii). APPA was created in 1940 as a non-profit, non-partisan organization. Its purpose is to advance the public policy interests of its members and their consumers, and to provide member services to ensure adequate, reliable electricity at a reasonable price with the proper protection of the environment. APPA members also include joint action agencies (state and regional entities formed by public power utilities to provide them wholesale power supply and other services) and state, regional, and local associations that have purposes similar to APPA. Together, public power utilities deliver electricity to one of every seven electricity consumers.

APPA considers energy efficiency an important element of our national energy strategy. APPA has long since participated in the DOE standards setting process on behalf of municipal electric utilities and the customers they serve. APPA encourages the continued analysis of energy efficiency standards in a way that is environmentally conscious and consumer centered, yet also fuel-, technology-, and market-neutral.

**EI** is the association that represents all U.S. investor-owned electric companies. Our members provide electricity for 220 million Americans, operate in all 50 states and the District of Columbia, and directly employ more than 500,000 workers. With more than \$106 billion in annual capital expenditures, the electric power industry is responsible for millions of additional jobs. Reliable, affordable, and sustainable electricity powers the economy and enhances the lives of all Americans. Many of our members are combination gas and electric companies, and provide services for both energy types.

EI and its member companies have been very involved in the following EERE products, analyses, and standards: Appliance Energy Efficiency Standards Rulemakings, Appliance Energy Efficiency Standards Technical Support Documents, Home Energy Score program, Commercial Building Asset Rating program, Building Energy Code Determination analyses, Building Energy Code Proposals for IECC and ASHRAE 90.1, Definition of “Zero Energy Building”, and many other EERE activities that are associated with the end-use of electricity.

EI and its members have provided feedback for numerous preliminary analyses, advanced notice of proposed rules, proposed rules, and requests for information. Decisions made by EERE have a direct impact on the use of electricity and electric applications in residential, commercial, industrial, and agricultural buildings.

**NRDC** is a national, non-profit environmental organization with more than 2 million members and activists. Since 1970, our lawyers, engineers, scientists, and other environmental specialist have worked to protect the world’s natural resources, public health, and the environment. NRDC’s top institutional priorities include curbing global warming and creating a clean energy future. NRDC has long advocated for energy efficiency as a critical component in meeting our energy demands and climate goals, now and in the future. NRDC has a long history of

involvement in setting standards. NRDC participated in the enactment of the first federal legislation establishing efficiency standards and has been active in all significant rulemakings since then; and actively participates in the development of ENERGY STAR specifications and IECC and ASHRAE building code proposals.

**NRECA** is the national service organization dedicated to representing the national interests of cooperative electric utilities and the consumers they serve. NRECA represents more than 900 not-for-profit rural electric utilities that provide electric energy to over 42 million people in 47 states or 12 percent of electric customers. Cooperatives own and maintain 2.5 million miles or 42 percent of the nation's electric distribution lines covering three-quarters of the nation's landmass. The coops are critical stakeholders to the development of metrics that measure relative energy performance of electricity as we implement energy efficiency programs in our service territories across the country. NRECA regularly participates in code hearings and efficiency appliance rulemakings, including ICC, ASHRAE, and DOE standards setting processes.