



## Supplementary Materials for

### **Keep climate policy focused on the social cost of carbon**

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#### **The PDF file includes:**

Table S1  
References

**SUPPLEMENTARY MATERIAL**  
**U.S. Government Regulations for Which Associated Regulatory Impact Analyses**  
**Applied the Social Cost of Carbon (or Methane) to Changes in GHG Emissions**  
**2008-2019**

The authors constructed a database of all economically significant U.S. government final regulations issued by executive branch agencies for which the associated regulatory impact analysis applies the social cost of carbon or social cost of methane to changes in greenhouse gas emissions expected under the regulation (Table SI-1). As a starting point, the authors drew from Appendix Table A1 of (1) for rules over 2008-2013 and the compilation by (2) over 2008-2015. The authors determined if the listed rules applied the social cost of carbon and if the rules were determined “economically significant” under Executive Order 12866. The authors corroborated the rules from these lists by reviewing the published regulation in the Federal Register and the annual report to Congress from the Office of Management and Budget on the benefits and costs of federal regulations. The authors expanded the database of rules through 2019 with those included in the more recent Office of Management and Budget reports to Congress.

Table SI-1 presents each regulation, including its date of publication in the Federal Register, formal title, promulgating agency or agencies, regulatory identification number (RIN – and in a few cases, its secondary RIN, denoted RIN\_2), and Federal Register citation with hyperlink to the PDF of the regulation.

U.S. Government agencies promulgated 60 final regulations over 2008-2019 that applied the social cost of carbon or social cost of methane to expected changes in greenhouse gas emissions in their associated regulatory impact analysis.

#### References

(1) R.W. Hahn, R.A. Ritz. “Does the Social Cost of Carbon Matter? Evidence from US Policy.” *J. Legal Studies* 44: 229-248.

(2) E. Kopits. *Personal communication*, June 7, 2021.

Table SI-1: Economically Significant Executive Branch Final Regulations with Regulatory Impact Analyses Applying the Social Cost of Carbon or Social Cost of Methane to Greenhouse Gas Emission Impacts

| Agency | Date      | Title   | Federal Register            | RIN       | RIN_2 |
|--------|-----------|---|-----------------------------|-----------|-------|
| DOE    | 10/7/2008 | Energy Conservation Program for Commercial and Industrial Equipment: Packaged Terminal Air Conditioner and Packaged Terminal Heat Pump Energy Conservation Standards  | <a href="#">73 FR 58772</a> | 1904-AB44 |       |
| DOE    | 1/9/2009  | Energy Conservation Program for Commercial and Industrial Equipment: Energy Conservation Standards for Commercial Ice-Cream Freezers; Self-Contained Commercial Refrigerators, Commercial Freezers, and Commercial Refrigerator-Freezers Without Doors; and Remote Condensing Commercial Refrigerators, Commercial Freezers, and Commercial Refrigerator-Freezers | <a href="#">74 FR 1092</a>  | 1904-AB59 |       |
| DOT    | 3/30/2009 | Average Fuel Economy Standards Passenger Cars and Light Trucks Model Year 2011  | <a href="#">74 FR 14196</a> | 2127-AK29 |       |
| DOE    | 4/8/2009  | Energy Conservation Program: Energy Conservation Standards for Certain Consumer Products (Dishwashers, Dehumidifiers, Microwave Ovens, and Electric and Gas Kitchen Ranges and Ovens) and for Certain Commercial and Industrial Equipment (Commercial Clothes Washers)  | <a href="#">74 FR 16040</a> | 1904-AB49 |       |
| DOE    | 7/14/2009 | Energy Conservation Program: Energy Conservation Standards and Test Procedures for General Service Fluorescent Lamps and Incandescent Reflector Lamps   | <a href="#">74 FR 34080</a> | 1904-AA92 |       |

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| DOE     | 7/22/2009 | Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards and Test Procedures for Commercial Heating, Air-Conditioning, and Water-Heating Equipment  | <a href="#">74 FR 36312</a> | 1904-AB83 |           |
| DOE     | 8/31/2009 | Energy Conservation Program: Energy Conservation Standards for Refrigerated Bottled or Canned Beverage Vending Machines  | <a href="#">74 FR 44914</a> | 1904-AB58 |           |
| DOE     | 1/8/2010  | Energy Conservation Program: Energy Conservation Standards for Certain Consumer Products (Dishwashers, Dehumidifiers, Microwave Ovens, and Electric and Gas Kitchen Ranges and Ovens) and for Certain Commercial and Industrial Equipment (Commercial Clothes Washers) | <a href="#">75 FR 1122</a>  | 1904-AB93 |           |
| DOE     | 3/9/2010  | Energy Conservation Program: Energy Conservation Standards for Small Electric Motors   | <a href="#">75 FR 10874</a> | 1904-AB70 |           |
| DOE     | 4/16/2010 | Energy Conservation Program: Energy Conservation Standards for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters   | <a href="#">75 FR 20112</a> | 1904-AA90 |           |
| EPA     | 4/30/2010 | Control of Emissions From New Marine Compression-Ignition Engines at or Above 30 Liters per Cylinder   | <a href="#">75 FR 22896</a> | 2060-AO38 |           |
| DOT/EPA | 5/7/2010  | Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule  | <a href="#">75 FR 25324</a> | 2060-AP58 | 2127-AK50 |
| EPA     | 5/10/2010 | Regulation of Fuels and Fuel Additives: Modifications to Renewable Fuel Standard Program   | <a href="#">75 FR 26026</a> | 2060-AQ31 |           |
| DOT     | 5/28/2010 | ADS-B Out Performance Requirements to Support Air Traffic Control Service  | <a href="#">75 FR 30160</a> | 2120-AI92 |           |

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| EPA     | 9/9/2010  | National Emission Standards for Hazardous Air Pollutants From the Portland Cement Manufacturing Industry and Standards of Performance for Portland Cement Plants | <a href="#">75 FR 54970</a> | 2060-AO15 | 2060-AO42 |
| EPA     | 3/21/2011 | National Emission Standards for Hazardous Air Pollutants for Area Sources: Industrial, Commercial, and Institutional Boilers                                     | <a href="#">76 FR 15554</a> | 2060-AM44 |           |
| EPA     | 3/21/2011 | Standards of Performance for New Stationary Sources and Emission Guidelines for Existing Sources: Commercial and Industrial Solid Waste Incineration Units       | <a href="#">76 FR 15704</a> | 2060-AO12 |           |
| EPA     | 3/21/2011 | National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters                | <a href="#">76 FR 15608</a> | 2060-AQ25 |           |
| DOE     | 4/21/2011 | Energy Conservation Program: Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners  | <a href="#">76 FR 22454</a> | 1904-AA89 |           |
| DOE     | 6/27/2011 | Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps                      | <a href="#">76 FR 37408</a> | 1904-AC06 |           |
| EPA     | 8/8/2011  | Federal Implementation Plans: Interstate Transport of Fine Particulate Matter and Ozone and Correction of SIP Approvals  | <a href="#">76 FR 48208</a> | 2060-AP50 |           |
| DOE     | 9/15/2011 | Energy Conservation Program: Energy Conservation Standards for Residential Refrigerators, Refrigerator Freezers, and Freezers                                    | <a href="#">76 FR 57516</a> | 1904-AB79 |           |
| DOT/EPA | 9/15/2011 | Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles   | <a href="#">76 FR 57106</a> | 2060-AP61 | 2127-AK74 |

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| DOE | 11/14/2011 | Energy Conservation Program: Energy Conservation Standards for Fluorescent Lamp Ballasts  | <a href="#">76 FR 70548</a> | 1904-AB50 |           |
| EPA | 2/16/2012  | National Emission Standards for Hazardous Air Pollutants From Coal and Oil-Fired Electric Utility Steam Generating Units and Standards of Performance for Fossil-Fuel-Fired Electric Utility, Industrial-Commercial Institutional, and Small Industrial Commercial-Institutional Steam Generating Units | <a href="#">77 FR 9304</a>  | 2060-AP52 | 2060-AR31 |
| DOE | 5/21/2012  | Energy Conservation Program: Energy Conservation Standards for Residential Clothes Washers  | <a href="#">77 FR 32308</a> | 1904-AB90 |           |
| DOE | 5/30/2012  | Energy Conservation Program: Energy Conservation Standards for Residential Dishwashers  | <a href="#">77 FR 31918</a> | 1904-AC64 |           |
| EPA | 10/15/2012 | 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards  | <a href="#">77 FR 62624</a> | 2060-AQ54 | 2127-AK79 |
| EPA | 1/31/2013  | National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters   | <a href="#">78 FR 7138</a>  | 2060-AR13 |           |
| DOE | 4/18/2013  | Energy Conservation Program: Energy Conservation Standards for Distribution Transformers  | <a href="#">78 FR 23336</a> | 1904-AC04 |           |
| DOE | 6/17/2013  | Energy Conservation Program: Energy Conservation Standards for Standby Mode and Off Mode for Microwave Ovens  | <a href="#">78 FR 36316</a> | 1904-AC07 |           |
| DOE | 2/10/2014  | Energy Conservation Program: Energy Conservation Standards for Metal Halide Lamp Fixtures   | <a href="#">79 FR 7746</a>  | 1904-AC00 |           |
| DOE | 2/10/2014  | Energy Conservation Program: Energy Conservation Standards for External Power Supplies  | <a href="#">79 FR 7846</a>  | 1904-AB57 |           |
| DOE | 3/28/2014  | Energy Conservation Program: Energy Conservation Standards for Commercial Refrigeration Equipment   | <a href="#">79 FR 17726</a> | 1904-AC19 |           |

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| DOE | 5/29/2014  | Energy Conservation Program: Energy Conservation Standards for Commercial and Industrial Electric Motors   | <a href="#">79 FR 30934</a> | 1904-AC28 |           |
| DOE | 6/3/2014   | Energy Conservation Program: Energy Conservation Standards for Walk-In Coolers and Freezers  | <a href="#">79 FR 32050</a> | 1904-AB86 |           |
| DOE | 7/3/2014   | Energy Conservation Program for Consumer Products: Energy Conservation Standards for Residential Furnace Fans  | <a href="#">79 FR 38130</a> | 1904-AC22 |           |
| EPA | 8/15/2014  | National Pollutant Discharge Elimination System—Final Regulations To Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities                                | <a href="#">79 FR 48300</a> | 2040-AE95 |           |
| DOE | 1/26/2015  | Energy Conservation Program: Energy Conservation Standards for General Service Fluorescent Lamps and Incandescent Reflector Lamps  | <a href="#">80 FR 4042</a>  | 1904-AC43 |           |
| DOE | 1/28/2015  | Energy Conservation Program: Energy Conservation Standards for Automatic Commercial Ice Makers   | <a href="#">80 FR 4646</a>  | 1904-AC39 |           |
| EPA | 10/23/2015 | Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units  | <a href="#">80 FR 64662</a> | 2060-AR33 |           |
| EPA | 10/26/2015 | NESHAP for Brick and Structural Clay Products Manufacturing; and NESHAP for Clay Ceramics Manufacturing  | <a href="#">80 FR 65470</a> | 2060-AP69 |           |
| DOE | 1/15/2016  | Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards for Small, Large, and Very Large Air-Cooled Commercial Package Air Conditioning and Heating Equipment and Commercial Warm Air Furnaces | <a href="#">81 FR 2420</a>  | 1904-AD11 | 1904-AC95 |

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| DOE     | 1/15/2016  | Energy Conservation Program: Energy Conservation Standards for Residential Boilers                                 | <a href="#">81 FR 2320</a>  | 1904-AC88 |           |
| DOE     | 1/26/2016  | Energy Conservation Program: Energy Conservation Standards for Pumps   | <a href="#">81 FR 4368</a>  | 1904-AC54 |           |
| EPA     | 6/3/2016   | Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources                        | <a href="#">81 FR 35825</a> | 2060-AS30 |           |
| DOE     | 6/13/2016  | Energy Conservation Program: Energy Conservation Standards for Dehumidifiers                                       | <a href="#">81 FR 38338</a> | 1904-AC81 |           |
| EPA     | 8/29/2016  | Emission Guidelines and Compliance Times for Municipal Solid Waste Landfills                                       | <a href="#">81 FR 59276</a> | 2060-AS23 |           |
| EPA     | 8/29/2016  | Standards of Performance for Municipal Solid Waste Landfills   | <a href="#">81 FR 59332</a> | 2060-AM08 |           |
| DOI     | 10/18/2016 | Waste Prevention, Production Subject to Royalties, and Resource Conservation                                       | <a href="#">81 FR 83008</a> | 1004-AE14 |           |
| DOT/EPA | 10/25/2016 | Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles— Phase 2    | <a href="#">81 FR 73478</a> | 2127-AL52 | 2060-AS16 |
| EPA     | 10/26/2016 | Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS   | <a href="#">81 FR 74504</a> | 2060-AS05 |           |
| DOE     | 10/28/2016 | Energy Conservation Program: Energy Conservation Standards for Miscellaneous Refrigeration Products                | <a href="#">81 FR 75194</a> | 1904-AC51 |           |
| USDA    | 12/19/2016 | Roadless Area Conservation; National Forest System Lands in Colorado   | <a href="#">81 FR 91811</a> | 0596-AD26 |           |
| DOE     | 1/6/2017   | Energy Conservation Program: Energy Conservation Standards for Residential Central Air Conditioners and Heat Pumps | <a href="#">82 FR 1786</a>  | 1904-AD37 |           |
| DOE     | 1/18/2017  | Energy Conservation Program: Energy Conservation Standards for Dedicated Purpose Pool Pumps                        | <a href="#">82 FR 5650</a>  | 1904-AD52 |           |
| DOE     | 1/19/2017  | Energy Conservation Program: Energy Conservation Standards for Ceiling Fans  | <a href="#">82 FR 6826</a>  | 1904-AD28 |           |



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| DOE | 7/10/2017 | Energy Conservation Program: Energy Conservation Standards for Walk-In Cooler and Freezer Refrigeration Systems   | <a href="#">82 FR 31808</a> | 1904-AD59 |  |
| DOI | 9/28/2018 | Waste Prevention, Production Subject to Royalties, and Resource Conservation; Rescission or Revision of Certain Requirements  | <a href="#">83 FR 49184</a> | 1004-AE53 |  |
| EPA | 7/8/2019  | Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations | <a href="#">84 FR 32520</a> | 2060-AT67 |  |