Energy Innovation in the FY 2021 Budget: Congress Should Lead

By Colin Cunliff

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- In-depth analysis of all programs and subprograms that make up the clean energy innovation budget.
- Analytical overview, plus 4-page briefs for each of DOE’s 19 energy science and technology research programs.
- PDFs available at itif.org/energy-budget.
Federal energy RD&D as a share of total outlays in FY 2020

- Energy research comprises just 0.17 percent of total federal outlays.
- Federal energy has declined from 0.14 percent of GDP in 1978 to 0.04 percent in 2019.
- Had investment kept pace with the economy, DOE’s RD&D budget today would be $32 billion.
Proposed Changes in DOE’s Budget, by Major Function

- Energy research, development, and demonstration (RD&D) accounts for just 20 percent of DOE’s total budget.

- The proposed cut to energy RD&D would be the largest single-year decrease (40 percent below FY 2020) in the history of the department.
Federal Energy R&D Funding, FY 1978 to FY 2021 Request

U.S. DOE Energy RD&D Spending

DOE Energy RD&D Spending (left axis)
DOE Energy RD&D Share of GDP (right axis)
Energy RD&D by Program Office

The report examines the impact of the proposed budget on 19 energy technology RD&D programs in the following DOE offices:

Examples: Solar Energy and Nuclear Energy RD&D

Solar Energy RD&D Proposed Cut: 76 Percent

Nuclear Energy RD&D Proposed Cut: 21 Percent

Read the complete series on the U.S. energy budget at itif.org/energy-budget.
Examples: Vehicle Technologies and Carbon Capture RD&D

Vehicle Technologies RD&D Proposed Cut: 81 Percent

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<tbody>
<tr>
<td>Millions</td>
<td>163.2</td>
<td>174.7</td>
<td>64</td>
<td>40.5</td>
<td>46.3</td>
<td>30</td>
<td>135.3</td>
<td>39.4</td>
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Carbon Capture RD&D Proposed Cut: 36 Percent

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<th>FY 2019 Enacted</th>
<th>FY 2020 Enacted</th>
<th>Pre-Combustion</th>
<th>Post-Combustion</th>
<th>FY 2021 Request</th>
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<tr>
<td>Millions</td>
<td>95</td>
<td>109</td>
<td>-2</td>
<td>-38.8</td>
<td>70</td>
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Read the complete series on the U.S. energy budget at itif.org/energy-budget.
Federal Energy RD&D – Read the Complete Series

Available at itif.org/energy-budget:

- Summary
- ARPA-E
  - ARPA-E
- Renewables
  - Solar
  - Wind
  - Water
  - Geothermal
- Transportation
  - Vehicles
  - Bioenergy
  - H₂ & Fuel Cells
- Energy Efficiency
  - Advanced Manufacturing
  - Buildings
- Fossil Energy
  - CO₂ Capture
  - CO₂ Storage
  - Advanced Coal
  - Oil & Gas
- Nuclear
  - Nuclear
- Office of Electricity
  - Grid Modernization
  - Cybersecurity
- Office of Science
  - Basic Energy Sciences
  - Fusion
Thank You!

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