

DIRECT FEDERAL FINANCIAL INTERVENTIONS AND SUBSIDIES IN ENERGY: AN UPDATE FOR FY 2016

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Overview

Given the scope and complexity of federal financial and award activities, it is important to examine and focus attention on direct federal financial interventions and subsidies in energy. In late spring 2018, the U.S. Energy Information Administration (EIA) released an energy subsidy report—an update based on Fiscal Year (FY) 2016 data and earlier EIA reports on direct federal financial interventions and subsidies in energy markets—that continues a series of reports¹ that began in response to congressional requests for information and data transparency. More recently, the Secretary of Energy requested updated information as part of the U.S. Department of Energy’s (DOE) Grid Resiliency Study.²

The scope of this EIA report is limited to direct federal financial interventions and subsidies, i.e., an *inventory* of subsidies provided by the federal government, subsidies that provide a financial benefit with an identifiable federal budget impact, and subsidies that are specifically targeted at energy technologies and markets. State and local programs—although significant in a number of cases—have been excluded from EIA’s reporting.

Methods

For measuring subsidies and support, EIA serves as a data aggregator from non-EIA federal data sources and depends on those federal sources for data quality and control issues. Using a taxonomy of federal programs and subsidy forms, this report compiles direct federal financial interventions and subsidies in energy markets using federal government outlays (for U.S. Department of Energy and the U.S. Department of the Treasury), reported budget obligations (for all other federal departments), the estimated outlay equivalent value of tax expenditure estimates, and the subsidy value of DOE loan guarantees. The report then sorts or assigns all of the within-scope federal activities into one or more energy-specific technology or energy source categories within the U.S. energy system (biomass, coal, end use, etc.).

The estimation methods used by EIA in reporting of subsidies are revised as new data and improved methods become available. While efforts are made to maintain consistency, improved estimation techniques take precedence over complete consistency with past editions of this report.

Results

Subsidies for many energy categories have declined since FY 2013, when spending related to the American Recovery and Reinvestment Act of 2009 (ARRA2009) was at or near their highest. Since FY 2013, direct federal financial interventions and subsidies in energy markets decreased by nearly half, from \$29.3 billion in FY 2013 to \$15.0 billion in FY 2016. Most current federal subsidies support developing renewable energy supplies (primarily biofuels, wind, and solar) and reducing energy consumption through energy efficiency.

In particular, federal subsidies for renewable energy—including biofuels for transportation use and renewable generation of electricity—dropped 56% between FY 2013 and FY 2016 (from \$15.3 billion to \$6.7 billion). Despite the decline, almost half of federal subsidies (46%) in FY 2016 went to renewable energy through tax expenditures, direct expenditures, or research and development.

Conclusions

The scope and complexity of federal financial and award activities are very large and spread over a wide range of sources, recipients, and time frames. Despite a recent trend of decreasing federal activity, hundreds of distinct energy-related federal financial programs continue to pursue a wide range of goals using various methods. The time

¹ The first EIA study was undertaken at the request of Congress in Fiscal Year (FY) 1992, pursuant to language appearing in the House Appropriations Committee’s Report on the U.S. Energy Information Administration FY 1992 appropriations.

² U.S. Department of Energy, [Staff Report to the Secretary on Electricity Markets and Reliability](#), Washington, DC, August 2017.

frames of these programs and activities can be very different, as in the case of tax provisions that allow taxpayers to decide which year to take a credit or to pay a deferred charge. Isolating the impacts of these programs, as well as characterizing the net impact of the whole set of actions on the U.S. energy system, is challenging. Most current federal subsidies support developing renewable energy supplies (primarily biofuels, wind, and solar) and reducing energy consumption through energy efficiency.

Recommendations for further research

Continued research by the project team seeks to establish how programs of differing taxonomy lead to differing levels of build outs of electricity generating plants of differing fuel types and how historical direct expenditure and subsidy policy change impacted build outs.

Additionally, as part of improving transparency and establishing a solid analytical base to support further analyses, EIA is investigating methods in which to better assign fuel types to direct expenditure items where the energy-specific technology or energy source category was unclear. Current considerations include machine learning algorithms, which are anticipated to assist word-based project descriptions classifications into one or more technology and energy source categories.

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