

## Key Elements of the U.S. Tax System

### ENERGY AND ENVIRONMENTAL TAXES

What tax incentives encourage alternatives to fossil fuels?

### Q. What tax incentives encourage alternatives to fossil fuels?

**A. The federal tax code includes more than a dozen incentives for alternatives to fossil fuels. These provisions support electricity production from solar, wind, and other renewable sources and, to much lesser extent, from nuclear facilities. They also support alternative transportation fuels, especially electricity, and encourage energy efficiency in homes and commercial buildings.**

The federal government provides roughly \$10 billion per year in tax subsidies that encourage non-fossil fuels (figure 1). The two largest are the energy investment tax credit (ITC) and the renewable electricity production tax credit (PTC), followed by incentives for electric vehicles and residential energy.

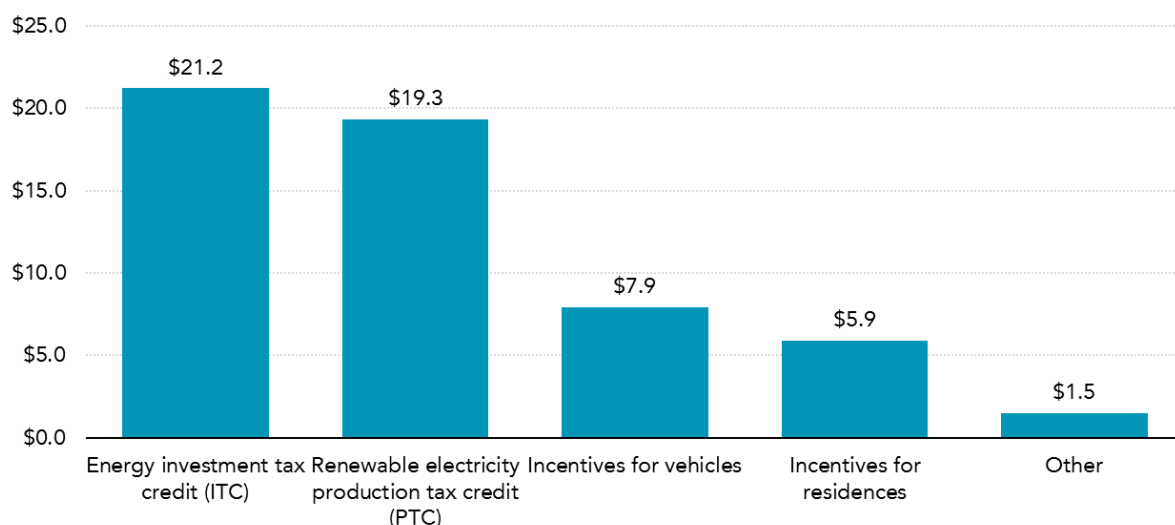
FIGURE 1

### Tax Incentives for Energy Production from Non-Fossil Fuels

Revenue losses, fiscal years 2019–2023



Billions of dollars



Source: Joint Committee on Taxation. "Estimates of Federal Tax Expenditures for Fiscal Years 2019–2023," December 2019.

Note: Estimates include both personal income and corporate income tax expenditure amounts. "Incentives for vehicles" include tax credits for plug-in electric vehicles and alternative technology vehicles. "Incentives for residences" include the residential energy-efficient property credit and exclusion of conservation subsidies provided by public utilities. "Other" includes the credit for manufacturing facility investment in advanced energy property and the credit for holders of clean renewable energy bonds.

# Key Elements of the U.S. Tax System

## ENERGY AND ENVIRONMENTAL TAXES

### What tax incentives encourage alternatives to fossil fuels?

#### ELECTRICITY PRODUCTION

The ITC (also known as the Section 48 credit) provides a one-time credit—currently, 10 percent—for new investment in qualifying facilities. Solar generators are its main recipients, with small amounts going to fuel cells, combined heat and power systems, and other projects. The PTC (also known as the Section 45 credit) provides a per kilowatt hour subsidy—current, 1.5 cents—to qualifying facilities during their first 10 years of operation. Wind-powered generators are the main recipients, but some geothermal, biomass, solid waste, and hydro facilities also claim it.

Two very small tax subsidies also target nuclear energy. Existing nuclear facilities get a special deduction for some contributions to future decommissioning funds. A production tax credit for advanced nuclear power facilities is little used to date.

#### ELECTRIC VEHICLES

The tax code provides a substantial tax credit to individuals and businesses who purchase or lease plug-in electric light passenger vehicles and trucks. The credit starts at \$2,500 and increases to \$7,500 based on battery capacity. Plug-in hybrids typically qualify for credits of \$4,000 to \$6,000, while all-electric vehicles get the full \$7,500. The credit phases out over the course of a year once a manufacturer reaches 200,000 qualifying vehicles. Tesla and General Motors reached that limit in 2018 and 2019, respectively. A smaller tax credit is available for electric motorcycles and other two-wheeled vehicles. There are also two small tax credits for fuel cell vehicles and alternative vehicle refueling.

#### RESIDENTIAL

The tax code also encourages homeowners to improve energy efficiency and switch to alternative sources. The largest of these benefits is residential energy-efficient property tax credit, known as Section 25D, which supports home installation of solar electric and water heating systems. The residential energy efficiency credit provides up to \$500 for energy efficiency improvements in existing homes, including insulation improvements and high-efficiency heating, cooling, and water heating. Also, energy conservation subsidies provided by public utilities are excluded from taxable income.

#### OTHER

Manufacturing facilities can claim a tax credit for investment in advanced energy property that generates clean power and/or improves efficiency. Commercial buildings get a special deduction of up to \$1.80 per square foot for investments in lighting, heating, cooling, water heating, and building envelopes that substantially improve energy efficiency.

The federal government provides a financing subsidy for certain bonds issued to invest in renewable energy and energy conservation projects.

#### EXPIRING PROVISIONS

Most of these incentives are part of a larger phenomenon of expiring tax provisions, which sunset every few years but are frequently extended; they are therefore referred to collectively as the “tax extenders”. Some, such as the second-generation biofuel tax credit, have been allowed to expire. Others, such as the credit for

# Key Elements of the U.S. Tax System

## ENERGY AND ENVIRONMENTAL TAXES

### What tax incentives encourage alternatives to fossil fuels?

residential solar, are slated to expire in the near future.

*Updated May 2020*

---

#### Data Sources

Joint Committee on Taxation. 2019. [“Estimates of Federal Tax Expenditures for Fiscal Years 2019–2023.”](#) JCX-55-19. Washington, DC: Joint Committee on Taxation.

#### Further Reading

Dinan, Terry. 2017. [Federal Support for Developing, Producing, and Using Fuels and Energy Technologies](#). Washington, DC: Congressional Budget Office. March 29, 2017.

Joint Committee on Taxation. 2018. [“Federal Tax Provisions Expired in 2017.”](#) JCX-5-18. Washington, DC: Joint Committee on Taxation.

Sherlock, Molly F. 2017. [“The Value of Energy Tax Incentives for Different Types of Energy Resources: In Brief.”](#) Washington, DC: Congressional Research Service.

US Department of Energy. n.d. [“Federal Tax Credits for All-Electric and Plug-In Hybrid Vehicles.”](#)

---

Copyright © 2020. Tax Policy Center. All rights reserved. Permission is granted for reproduction of this file, with attribution to the Urban-Brookings Tax Policy Center.