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## **THE ROLE OF PRODUCTION TX CREDIT (PTC) IN PUBLIC PROMOTION OF RENEWABLE ENERGY**

A Renewable energy credit (REC) is any tax credit offered by a local or federal taxation authority as an incentive for the installation and operation of renewable energy systems such as solar or wind power.

In the United States, as part of the new economic stimulus package, new renewable Energy Rebate Programs are in place. Residential and commercial customers may receive a lump sum cash rebate or, for larger systems, a five-year payback program from their local utility company. In addition, there is new 30% uncapped federal tax credit and state tax credits around 10%. This article describes current U.S. federal income tax incentives for the renewable energy industry. It focuses solely on tax incentives for wind and solar energy, in part because Congress has allowed provisions to expire that provided tax credits for certain other renewable energy resources like geothermal, fuel cells, and hydropower. In addition, the article describes possible outcomes based on tax reform plans from Congress and statements by the Trump administration's transition team.

The federal renewable electricity production tax credit (PTC) is an inflation-adjusted per-kilowatt-hour (kWh) tax credit for electricity generated by qualified energy resources and sold by the taxpayer to an unrelated person during the taxable year. The duration of the credit is 10 years after the date the facility is placed in service for all facilities placed in service after August 8, 2005 [1].

Renewable Energy Credit is one of two main outputs or benefits from generation of new power from renewable sources. Renewable power generation creates actual power in the form of electricity, and environmental benefits to society from "green" power production – such as minimizing pollution and slowing the rate finite fuel resources are used. The actual power is sold into the local grid, and the societal benefits are sold in the form of Renewable Energy Credits or "RECs", sold separately as a commodity into the marketplace. While RECs are not actually a measure of power, each REC represents one megawatt hour (MWh) of renewable-generated

energy. For each REC purchased the customer is able to claim the equivalent MWh of energy reduction as an offset to their conventional energy use.

Companies that generate electricity from wind, geothermal, and “closed-loop” bioenergy (using dedicated energy crops) are eligible for a federal PTC, which provides a 2.3-cent per kilowatt-hour (kWh) incentive for the first ten years of a renewable energy facility's operation.

Other technologies, such as “open-loop” biomass (using farm and forest wastes rather than dedicated energy crops), efficiency upgrades and capacity additions at existing hydroelectric facilities, small irrigation systems, landfill gas, and municipal solid waste (MSW), receive a lesser value tax credit of 1.1 cents per kWh.

Opponents declare that by using RECs a customer can claim energy “reduction” even if they do not actually reduce their end-use at all - or even increase it. Proponents counter that more REC purchases drive increased production of renewable power, which can replace conventional production [2, p.9].

After President Obama was sworn into office, the renewable energy industry saw a boom in temporary tax incentives with the passage of the American Recovery and Reinvestment Tax Act of 2009. Almost 8 years later, the fate of renewable energy tax incentives under the Trump administration is uncertain. Trump's transition team, his advisors, and President-Elect Trump have given mixed signals on their views on tax incentives for renewable energy. While some advisors have indicated that the credits will remain in place, others have called for a full repeal. Trump himself has reportedly called subsidies for renewable energy “a disaster,” while in other instances, he has included wind and solar in his “all-of-the-above” approach to energy production. He even went as far as to say that he was “okay” with the production tax credit for wind, but that was at a campaign stop in Iowa and thus may or may not provide meaningful information as to the future of renewable energy tax policy. Trump's position is not the only determining factor in the fate of renewable energy tax incentives. Congress has already put forth tax reform plans that may give us some insight on the future of federal renewable energy tax policy.

The PTC has been important to the growth and development of renewable electricity resources, particularly wind. Tax incentives for renewables, however, may not be the most economically efficient way to correct for distortions in energy markets or to deliver federal financial support to the renewable energy sector. Tax subsidies reduce the average cost of electricity, increasing demand for electricity overall, countering energy efficiency and emissions reduction objectives. Subsidies delivered as non-refundable tax incentives often require those wishing to use the credit find “tax-equity” partners to provide equity investments in exchange for tax credits. The use of tax-equity reduced the amount of the incentive that flows directly to the renewable energy sector.

The last piece of this renewable energy tax reform puzzle is President-Elect Donald Trump's stance on renewable energy tax policy. As mentioned above, statements by Trump and his advisors vary. Advisors include ideological purists who are uniformly opposed to any tax expenditure to sway energy policy. On the other hand, there are advisors from Wall Street who have invested heavily in the renewable

energy markets and developed property and have taken advantage of the renewable energy tax credits. There is a diversity of opinions among Trump's advisors. In the end, the position of the executive branch will be up to President-Elect Trump, but it is likely that he will pay close attention to how Congress proceeds [3, p. 90-94].

Tax subsidies for clean energy resources are one policy option for addressing the inefficiencies and market failures in the energy sector. Here, the subsidies approach is not the most efficient way to achieve the policy objective. Subsidies reduce the average cost of energy, encouraging energy consumption, countering energy conservation initiatives and offsetting emissions reductions. Tax subsidies also reduce tax revenues. To the extent that these subsidies are financed by distortionary taxes on other economic activities, they reduce economic efficiency. A more direct and economically efficient approach to addressing pollution and environmental concerns in the energy sector would be a direct tax on pollution or emissions, such as a carbon tax.<sup>33</sup> This option would generate revenues that could be used to offset other distortionary taxes, achieve distributional goals, or reduce the deficit. A carbon tax approach would also be "technology neutral," not requiring Congress to select which technologies to subsidize [4, p.63].

Tax incentives are also not the most efficient mechanism for delivering federal financial support directly to renewable energy developers and investors. Stand-alone projects often have limited tax liability. Thus, project developers often seek outside investors to "monetize" tax benefits using "tax-equity" financing arrangements. The use of tax equity investors, often major financial institutions, reduces the amount of federal financial support for renewable energy that is delivered directly to the renewable energy sector.

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