

REDUCTION TAX CREDIT (RTC)

Policy design and GHG impacts

September 2021



Context

Energy efficiency and demand-side management are not adequately supported in current federal legislative proposals. Energy not consumed is CO2 not emitted and directly reduces the size of new renewable energy investment required. But despite often being the least-cost resource, energy efficiency is at risk of being deprioritized in federal climate policy. This will lead to slower decarbonization timelines, misplaced federal spending in other areas, and missed opportunities to create high-earning jobs in energy efficiency and demand-side management.

Reduction Tax Credit

The Reduction Tax Credit (RTC) is an innovative proposal to use tax policy to promote investments in the demand-side of the electricity sector on par with clean energy incentives for supply-side resources such as generation and storage. The RTC is modeled on the Production Tax Credit (PTC) for wind and similar in economic size but measured in reductions of carbon dioxide (CO₂) emissions that result from investments in qualifying demand-side electricity measures.

It would be eligible to administrators of energy efficiency and demand response programs, including electric utilities, third party administrators, aggregators, and electric retailers. In addition, the tax credit could be taken in direct payments to allow publicly owned utilities, including municipal utilities and electric co-ops, to take advantage.

The RTC incorporates features that make it attractive to a broad set of stakeholders and highly effective at driving carbon out of the electric sector:

- It is the first energy efficiency tax credit that is **“pay for performance”**, not a reward simply for spending money.
 - It is the first energy efficiency tax credit that **focuses on carbon reductions**, not just saving kWhs. Not all kWh are created equal from a carbon perspective. A kWh saved in the middle of the night in the Pacific Northwest might not reduce CO2 very much compared to saving a kWh on a hot summer afternoon in the Midwest.
 - This tax credit **puts itself out of business** over time. As the grid decarbonizes, the value of the credit falls. If the grid were completely served by clean energy generation, the credit would have no value.
 - The credit can also be seen as **a hedge against failure to decarbonize the grid** because if decarbonization does not proceed as fast as required, this credit will continue to provide an incentive to reduce total electric consumption thereby continuing to reduce upstream CO2 production.
- The RTC **does not conflict with either a federal Clean Energy Standard (CES) or Energy Efficiency Resource Standard (EERS)** and in fact provides financial support for either of those policy tools.
 - In the absence of a federal EERS, the RTC could be the most important federal incentive for energy efficiency. It **provides an insurance policy or backstop to EERS** proposals that are not yet enacted.
 - The RTC is **completely voluntary**; no party is mandated to take advantage of it.
 - It **can be adapted to include carbon reductions from building electrification**, in addition to demand-side management savings.
 - The RTC **could motivate a transformation of energy efficiency and demand-side management** by utilities and commercial entities from a limited regulatory compliance activity to a strategic imperative, similar to how many utilities have used the PTC to develop wind generation businesses.

RTC Design

Who is Eligible?

Administrators of energy efficiency and demand response programs, including electric utilities, third party administrators, aggregators and electric retailers. In addition, the tax credit could be taken in direct payments to allow publicly owned utilities, including municipal utilities and electric co-ops, to take advantage.

What Measures are Eligible?

Any and all demand-side management measures provided that they:

- Are on the customer side of the revenue meter at residential, commercial and government buildings, or on farms;
- Reduce carbon emissions; and
- Do not substitute appliances or equipment that use energy sources other than electricity.

RTC Design

Size of Credit:

The credit would be expressed as dollars per ton of CO₂ reduction. In order to make the RTC roughly equal to the amount of the PTC for wind (currently at \$0.015/kWh) the Environmental Protection Agency (EPA) would make a calculation of the average amount of CO₂ emitted across the country per kWh generated in 2021: “National Average CO₂ per kWh”. Then the EPA would divide that US\$/kWh value by the EPA’s National Average CO₂/kWh to arrive at a US\$/unit of CO₂ expressed in US\$ per ton of carbon avoided. The advantage of this approach is that the average incentive level is similar to the wind PTC, while at the same time rewarding those kWh reductions that save more carbon, either by being in a carbon intensive electric region or by reducing energy consumption at times when power generation is more carbon intensive.

How Long Does the RTC Last?

10 years from passage. DSM measures would be eligible to receive the credit for up to five years following activation for GHG reductions achieved in each year (as compared to the wind PTC, in which projects are eligible for 10 years). In other words, no new DSM measures would be eligible for the credit 10 years after the RTC’s passage, but measures installed in year eight would continue to collect the credit until year 13.

RTC Design

Measurement and Verification of Energy Savings

For a taxpayer to take advantage of the RTC, they need to verify that they have actually saved energy before the translation to CO₂ savings can occur. EPA is required to create M&V protocols informed by existing efforts in this area including the Uniform Methods Project, current EPA capabilities, and state initiatives.

Carbon Calculations

To more accurately calculate how much carbon was saved by particular DSM activities at particular times and places, EPA would also calculate monthly and hourly carbon contents (CO₂/kWh) by region of the country. While the payment per pound of carbon would be the same nationwide, the amount of carbon saved would depend on the generation mix in the region where it was saved and the date and time when it was saved. Locations that have hourly automated metering infrastructure could take advantage of the hourly carbon calculations with a measured savings approach.

RTC Design

Design is flexible to policy and legislative objectives

Policy design

- RTC policy design can be adjusted to achieve reductions at desired credit amounts and total cost
- Design parameters include:
 - Eligible measures
 - Credit amount
 - Inclusion or exclusion of base vs. additional savings

Credit amount

- Base credit rate at 1.5 cents per kWh (can consider different price levels to have parity with other clean energy tax credits)
- Use national average carbon intensity (ton/MWh carbon intensity of grid) to translate US\$/kWh amount to US\$/ton CO₂
- US\$/ton credit amount is available for emission reductions based on time and location of electricity demand changes

Why now?

Budget reconciliation is underway

- The RTC is tax law, and therefore should comply with “Byrd rule” for reconciliation
- After infrastructure package and given current politics, budget and tax law are the identified path for decarbonization policy in reconciliation.
- RTC is complementary to CES and EERS — it can coexist and amplify those (as well as other existing federal and state policies)
- Congress and White House may be seeking a creative solution if other policies falter
- This is our shot; no telling what Congressional appetite will be in 2022 (or beyond)

Impact Analysis

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|--|--|
| US\$ Payment per kWh | 0.015 |
| <u>Pounds CO2 per kWh Produced (US Average - 2019)</u> | 0.92 |
| 1 short ton (lbs) | 2,000 |
| US\$ per ton CO2 avoided | $(0.015/0.92) \times 2,000 =$ 32.61 |

- Estimated RTC payment per ton of carbon reduction of \$32.61 based on 2019 national carbon intensity (EIA)

Impact Analysis

| | |
|-----------------------------------|------------------|
| US\$ per ton CO2 | 32.61 |
| Bill Amount Objective | \$10,000,000,000 |
| Total Carbon Impact (tons CO2) | 306,654,400 |

- For \$10 billion over ten years and at 1.5 cents credit level, more than 300 million tons of CO2 abated over ten years
- Adjustments can be made to apply RTC to only incremental or additional CO2 reductions above BAU, thereby ensuring that these dollars are funneled to new demand-side measures

Impact Analysis

| | |
|-----------------------------------|------------------|
| US\$ per ton CO2 | 32.61 |
| Bill Amount Objective | \$10,000,000,000 |
| Total Carbon Impact (tons CO2) | 306,654,400 |

- At a cost ceiling of \$10 billion over ten years and 1.5 cents credit level, more than 300 million tons of CO2 abated over ten years
- That is equivalent to*:
 - Shutting down 7 coal plants -or-
 - Offsetting 6.5 million cars -or-
 - Preserving 37 million acres of forest

*source: US EPA, via <https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator>