



# Clean Power Plan Subsidies for Wind Reinforces Arguments Against Renewing the PTC

George David Banks

Executive Vice President

American Council for Capital Formation.

November 2015



Center For  
Policy Research

## Background

The federal wind production tax credit (PTC) pays 2.3 cents per kilowatt hour (kWh) to qualified wind farms for electricity sold to the market – whether or not the grid actually demands it. The PTC, originally enacted in 1992 and renewed multiple times over the last few decades, expired at the end of 2014, but will continue to provide a hefty subsidy for more than another decade.

Recent adjustments by Congress allow for any project that commenced construction before January 1, 2015 to earn the credit. This revision provided substantial flexibility to investors seeking the PTC by establishing a “physical work” test<sup>1</sup> and a 5-percent safe harbor<sup>2</sup> that allows two years for the wind farm to be placed in actual service.<sup>3</sup> Accordingly, the latest extension of the wind PTC would allow qualifying facilities to earn the credit until **January 2027**.

While the credit has received broad bipartisan support in the past, it has come under increased scrutiny for distorting electricity markets and undermining the competitiveness of baseload power generation, including nuclear reactors. EPA’s recent Clean Power Plan (CPP) – [which forces states to cut an average of 32 percent of their carbon emissions before 2030](#) – also calls into question the continued need for the tax credit because it provides substantial subsidies to wind and locks in wind carve-outs under state renewable portfolio standards.

## Congress and the PTC Policy Objective

For over two decades, Congress has sought to [increase private sector investment](#) in wind capacity in order to [drive market penetration and cost reductions to a point where wind is competitive](#). Congress has not specified the amount of national wind capacity that is needed to achieve this goal,<sup>4</sup> but it has determined the following:

- The private sector requires a payment of 2.3 cents per kWh for ten years as an incentive to invest in wind capacity. **Notably, this number was chosen when the average cost of producing wind electricity was much higher than conventional generation (e.g., coal).**
- About \$2.7 billion in annual federal support is required.<sup>5</sup>

## Current Wind Economics

A recent report by the U.S. Department of Energy (DOE) finds that the national average price for wind (in terms of the average power purchase agreement) has dropped to 2.35 cents per kilowatt hour (kWh).<sup>6</sup> This drop represents a substantial improvement since 2009 when the price was nearly 7 cents per kWh.

- The average price of wind electricity is now roughly the same as the value of the wind PTC in kWh.
- Should Congress attempt to extend the PTC again, proponents would essentially be arguing that the price of wind power should be close to zero in order to be competitive. As a point of comparison, the cost of producing electricity from coal in 2011 was about 3.3 cents per kWh and about 2.1 cents per kWh from nuclear.

DOE’s finding supports the assertion of DOE Secretary Moniz that renewables are now cost competitive with fossil energy – even without subsidies.<sup>7</sup> Cumulative wind capacity at the end of 2014 stood at 65,879 megawatts, compared to 4,147 in 2001 – [an increase of nearly 1,500 percent](#). Based on the above figures, it certainly appears that Congress’ primary policy objective for the wind PTC has been achieved.

1 For example, the beginning of the excavation of the foundation.

2 A wind facility must show that 5 percent or more of the total cost was paid or incurred before January 1, 2015.

3 Harbin, Christine. “The Out-of-Control IRS, Rewriting Laws,” National Review, April 29, 2015 at <http://www.nationalreview.com/article/417637/out-control-irs-rewriting-laws-christine-harbin-hanson>.

4 As of 2014, installed wind capacity in the United States stood at 65,879 megawatts.

5 While the value of the wind PTC clearly fluctuates from year to year, the annual cost to the Treasury of the latest extension is \$13.8 billion between 2014 and 2018 – or about \$2.7 billion annually, according to the Joint Committee on Taxation (JCT). See Sherlock, Molly, “The Renewable Electricity Production Tax Credit: In Brief,” Congressional Research Service, July 14, 2015, pp. 9 accessed at <http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43453.pdf>.

6 See <http://energy.gov/eere/articles/eere-2014-wind-technologies-market-report-finds-wind-power-record-low-prices>.

7 Siciliano, John. “Moniz sees end to subsidies for solar,” Washington Examiner, August 27, 2015.

## Benefits for Wind under EPA's Clean Power Plan (CPP)

Wind advocates have consistently called for a price on carbon in order for wind to compete in the marketplace – presumably without subsidies and other mandates. The CPP prices carbon and it provides a direct, **potentially never ending** subsidy to wind and other renewables in the form of either a credit (rate plan) or an allowance as detailed in the proposed CPP Federal Implementation Plan (FIP)/model rule.

Under the mass-based FIP/model rule, nationwide allowances total 2 billion per year in the first three-year compliance period with each state receiving a certain carbon budget, which limits the amount of carbon dioxide emitted from its electricity sector. Five percent of the national carbon budget (100 million) is set aside for wind and solar power that begin operation after

2012; those operators can then sell their allowances to fossil fuel generators. Given EPA's assumption that the average cost of reducing a ton of carbon is \$30,<sup>8</sup> we can assume an estimated **annual subsidy value for wind and solar of \$2.95 billion during the first three-year compliance period of 2022-2024.**

Also included in the CPP is the proposed Clean Energy Incentive Program (CEIP) whereby 300 million allowances are handed out in a onetime give-away for "early action" of which new renewables are one of only two options, based on megawatt hours generated in 2020 and 2021.<sup>9</sup> Investors must build new wind and solar after a state submits a plan and before the compliance period begins. **If wind and solar generators receive half of those allowances, the estimated value of the CEIP subsidy is \$4.5 billion total.**

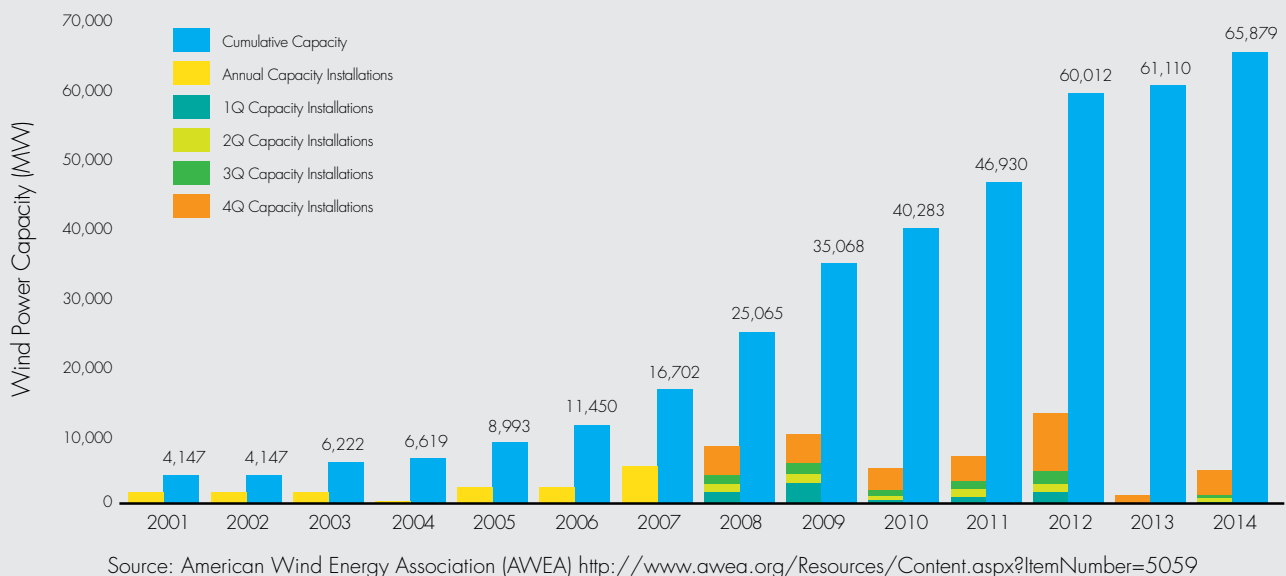
**Table 1: Regional Variation in Levelized Cost of Electricity (LCOE) for Select New Generation Resources, 2020<sup>1</sup>**

Plant Type	Capacity Factor (%)	Range for Total System LCOE (2013 \$/MWh)		
		Minimum	Average	Maximum
<b>Dispatchable Technologies</b>				
Conventional Coal	85	87.1	95.1	119.0
Natural Gas Conventional Combined Cycle	87	70.4	75.2	85.5
Natural Gas Advanced Combined Cycle	87	68.6	72.6	81.7
Advanced Nuclear	90	91.8	95.2	101.0
Geothermal	92	43.8	47.8	52.1
Biomass	83	90.0	100.5	117.4
<b>Non-Dispatchable Technologies</b>				
Wind	36	65.6	73.6	81.6
Wind – Offshore	38	169.5	196.9	269.8
Solar PV	25	97.8	125.3	193.3
Solar Thermal	20	174.4	239.7	382.5
Hydroelectric	54	69.3	83.5	107.2

<sup>1</sup> Data from [https://www.eia.gov/forecasts/aeo/electricity\\_generation.cfm](https://www.eia.gov/forecasts/aeo/electricity_generation.cfm).

<sup>8</sup> If Best System of Emissions Reduction (BSER) is used.

<sup>9</sup> 100 million in each year of the first three-year compliance period. See <http://www3.epa.gov/airquality/cpp/tsd-fp-allowance-allocations.pdf>

**Figure 1: Total Installed Wind Capacity**

Accordingly, combining the allowance share for wind and solar under the model FIP with the additional 150 million CEIP allowances could result in annual payouts to renewables of roughly \$4.5 billion in 2022 – 2024.<sup>10</sup> Wind power – with existing capacity of about nine times that of solar in 2013 – is expected to be the largest renewable recipient. *Even if wind only captures 75 percent of the total value of the subsidies in the above scenario, wind would receive roughly \$3.4 billion per year – greater than the annual wind PTC subsidy of \$2.7 billion.* Combining the two would total \$6.1 billion, which is more than double Congress’s estimate of what is needed for wind to be competitive.

## Double and Triple Dipping

Wind projects that came into service as early as 2013 will receive both the PTC and the CPP subsidies for a period of time. For example, if a facility began receiving

the PTC in 2013, it would benefit through 2022 – the first year of the CPP carbon price. If Congress extends the PTC for two years, as reflected in the current Senate extenders bill, eligible wind projects that begin construction in 2016 and completed in 2018 would “double dip” for six years. The economic benefit of the CPP would continue as long as there is value to the allowances. Moreover, “triple dipping” is even possible under the Clean Power Plan if a wind generator builds a wind farm after a state plan is submitted and if that facility is in operation before 2020 – 2021, thus qualifying for “early action” allowances.

Of course, this does not take into consideration the artificial market created by renewable portfolio standards (RPS) in the majority of states – where wind is the primary beneficiary – or President Obama’s executive orders mandating minimum renewable purchases for General Services Administration (GSA) contracts.

<sup>10</sup> If renewable generators sell all of “early action” allowances in 2022 – 2024; the more likely scenario is that CEIP beneficiaries would bank and sell their allowances across a greater number of years as illustrated in Table 2.

**Table 2: “Triple Dipping” scenario where wind project A is completed in 2018<sup>1</sup>**

	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Wind PTC													
Clean Power Plan Subsidy													
CEIP “Early Action” Allowance													

<sup>1</sup> PTC is renewed, per Senate extenders bill. Wind generator receives “early action” allowances in 2020 and 2021 and sells them over the compliance period (2022-2030).

## Conclusion

From a policy perspective, the wind production tax credit (PTC) has succeeded in achieving its primary Congressional objectives: helping promote a significant build-out of wind capacity and driving down generation costs. The “success” of federal market intervention in favor of wind has led to a determination by the U.S. Department of Energy that wind is now competitive without subsidies. The Clean Power Plan (CPP), nonetheless, does not reflect this new reality, unnecessarily providing wind substantial subsidies that may very well exceed the value of the PTC during the first three-year CPP compliance period. Unfortunately, the CPP rejects

technology-neutral approaches to emissions reductions, choosing instead to grant carve-outs to special corporate interests and distort electricity markets.

Congress should recognize that its goals related to the PTC have been achieved and refuse to renew the tax credit; any remaining concerns on the Hill should be alleviated by the CPP’s continued, perhaps never ending benefits for wind that come at the expense of fossil generators. Certainly, any continued Congressional support for renewables should pivot to more advanced technologies (e.g, storage) that would increase wind’s reliability and reduce its cost impact to the grid.