03 October 2018
Americas/United States
Financial Analysis
Renewable Energy

Offshore Wind to Increase Competition over Tax Equity?

Ali Shajrawi
Director of Research
646 845 0095
ali.shajrawi@karbone.com

Richard Weihe
Managing Partner
646 291 2857
rich.weihe@karbone.com

Greg Owens
Vice President, Capital Markets
646 833 0381
greg.owens@karbone.com

Liam Brooks
Research Associate
646 340 1714
liam.brooks@karbone.com

Hamza Zaidan
Associate, Capital Markets
646 963 2237
hamza.zaidan@karbone.com

Although offshore wind development has been lagging in the U.S. compared to Europe, a number of states have recently established mandates to accelerate the procurement of offshore wind energy, aiming for a diversified zero emissions energy portfolio. Karbone projects that 5 GW of offshore wind capacity will be online by year-end 2023, a timeline valuable for developers and project sponsors looking to take advantage of the tax benefits available for renewable project development.

These new state mandates for offshore wind development introduce a new player to the already competitive tax equity market, which has traditionally financed solar and onshore wind projects. Compared to solar and onshore wind, offshore wind projects are much larger in size, and have higher capital cost, which is likely to necessitate sourcing funds from multiple tax equity investors. *With increased competition and looming deadlines, Karbone expects the tax equity market to tighten without an increase in tax equity supply, potentially putting upward pressure on yields.*

Investment Tax Credit (ITC) vs. Production Tax Credit (PTC) Value Timeline

Federal tax credits are important motivators for renewable power deployment, such as solar and wind. The ITC, which provides direct tax rebates as a set percentage of the amount invested, has typically been claimed by projects with higher upfront costs and is the preferred tax credit for solar investors. The PTC, in contrast, provides compensation on a $/kWh basis, and has historically been favored by developers of resources with a high capacity factor like wind.

PTC Phase-out: In December 2015, Congress passed a five-year extension of the PTC that provides the full PTC to projects that began construction prior to the end of 2016, but that phases out the PTC for projects starting construction in subsequent years as follows:

Start of Construction Date	COD	PTC Rate
Prior to Jan 1, 2017	Before Jan 2020	100%
Prior to Jan 1, 2018	Before Jan 2021	80%
Prior to Jan 1, 2019	Before Jan 2022	60%
Prior to Jan 1, 2020	Before Jan 2023	40%

In 2016, the IRS issued Notice 2016-31, allowing four years for project completion after the start of construction.

ITC Phase-out: Similarly, in December 2015, Congress extended the ITC, allowing solar projects to qualify for a 30% ITC, but only if under construction prior to Jan 1, 2020. The tax credit then drops to 26% for projects that start construction in 2020, and 22% for projects starting construction in 2021, with a permanent 10% for any new build after 2021.

In June 2018, the IRS issued Notice 2018-59, effectively extending the 30% ITC from 2019 to 2023 for any build prior to 2020. Qualification requirements are similar to those of wind safe-harbor, with either 5% or physical work tests. Under the new guidance, solar projects can claim a rate above the final 10% if online by year-end 2023 as follows:

Start of Construction Date	COD	ITC Rate
Before Jan 2020	Before Jan 2024	30%
Jan 2020 – Dec 2020	Before Jan 2024	26%
Jan 2021 – Dec 2021	Before Jan 2024	22%
On or after Jane 2022	After Dec 2023	10%

Offshore Wind ITC: Offshore wind investors can choose the ITC in lieu of the PTC. Under the current IRS code, the ITC would be available for a qualifying wind project that begins construction before Jan 1, 2020. The phase-out schedule for ITC-qualifying offshore wind projects is as follows:

Start of Construction Date	COD	ITC Rate
Prior to Jan 1, 2017	Before Jan 2020	30%
Prior to Jan 1, 2018	Before Jan 2021	24%
Prior to Jan 1, 2019	Before Jan 2022	18%
Prior to Jan 1, 2020	Before Jan 2023	12%

Timeline Pressure to Claim Higher Tax Credit

These phase-out schedules of the ITC & PTC will motivate developers to seek qualification of as much capacity as possible as tax credit rates step down. *According to the DOE, 30-70 GW of wind turbine capacity had been qualified for the full PTC by the end of 2016, with another 10 GW qualifying for the 80% PTC last year.* With the four-year safe harbor window in which to bring PTC-qualified projects online, these 100%- and 80%-PTC projects will have to achieve commercial operation by 2020 and 2021, respectively. An additional 10 GW of wind capacity is likely to qualify for 60% PTC in 2018, with COD expected by 2022.

Before the IRS guidance, solar could not claim tax credits unless the system was operational, but now, new solar build can claim it as long as they are in service by Dec 2023. This extended timeline provides greater incentives for developers to expand their pipeline of new projects. Under safeharbor, developers only need to pay a minimum of 5% of the total cost of the energy property to maintain their applicable ITC rate. Many solar developers are expected to qualify as much solar capacity as possible before the ITC steps down to 10%. These developers will then be under pressure to bring their systems online by end of 2023. *Karbone estimates a pipeline of 40-60 GW of new solar capacity is going to be under pressure to be online by the end of 2023, in order to meet safeharbor requirements.*

Offshore Wind: A New Player in the Market

Tax credits provide a form of incentive that will be vital to support offshore wind development. Wind projects developers traditionally favor the PTC over the ITC because wind enjoys higher capacity factors than solar, and thus generates more value per kWh. However, offshore wind developers are likely to have a change in strategy due to lengthy project schedules and nearer-term PTC expiration dates. Additionally, given the high capital costs of offshore wind development (estimated between $3.5/W and $5/W), the ITC may be a project's preferred credit.

Just How Much Offshore Wind is in the Pipeline?

The U.S. total offshore wind pipeline capacity stands at around 25 GW, and several states have already implemented policy to mandate the procurement of offshore wind energy. The adoption is mainly concentrated in the Northeastern region of the U.S., which coincides with the highest power prices in the country. Thus far, New Jersey and New York have offshore wind goals to procure 3.5 GW and 2.4 GW, respectively, by 2030; Massachusetts is targeting 1.6 GW by 2027; and finally Rhode Island and Connecticut have also laid out plans to procure about 1 GW in total of offshore wind over the next decade.

Competition over Tax Equity to Increase?

The DOE reports that roughly $10 billion in 2017 was committed in third-party tax equity to finance new wind, solar and partial repowerings. This is down from approximately $11 billion in 2016, while 2015 saw a record year of $13 billion in committed funds. In 2017, 60% of the total deal volume was committed in PTC funding for wind projects versus 40% in ITC funding for solar.

Going forward, the tax equity deal volume is expected to hover around the $10-$12 billion level a year. Karbone estimates approximately 5 GW of offshore wind capacity is scheduled to come online by the end of 2023. With solar and wind developers facing deadlines to bring their systems online and maintain their projects' qualification under legacy ITC and PTC rates, plus the entry of new players like offshore wind, competition over the available tax equity supply is likely to increase significantly. This may have implications on the yields required by tax equity investors, which, since 2014, have commonly remained slightly below 8% (on an after-tax unlevered basis) for utility-scale solar and wind projects.

Compared to solar and onshore wind, offshore wind projects have larger nameplate capacity, and higher upfront costs. Such deal volumes are likely to necessitate multiple tax equity investors to finance a project. In total, there are about 35–50 tax equity investors, not all of whom participate in both the ITC and PTC market. A number of that total invests in renewable projects that are not utility-scale. With the shift to ITC investment as the preferred vehicle after PTC phases out, the number of tax equity investors may decrease if traditionally PTC-only tax equity providers do not transition their resources to ITC funding.

Will Tax Equity Investors Favor Offshore Wind?

Admittedly, many tax equity investors may not yet be comfortable investing in the first patch of offshore wind projects given development risk compared to the more traditional investments of solar and onshore wind. However, offshore wind developers enjoy several advantages that might be attractive to tax equity investors.

Most states with offshore wind programs are developing a mechanism through which investors can receive long-term contracts by compensating for the environmental attributes of the technology, the power or both in a bundled PPA.

For example, in the Maryland & New Jersey RPS programs, compliance entities must enter into long-term contracts to procure ORECs they need to satisfy a portion of their RPS requirements. Generally, a state's board of public utilities (BPU) will determine the cost per OREC and length of term.

In 2017, Maryland awarded ORECs to the two projects in progress in order to secure investments in the state's economy and employment sector. The Maryland PSC valued the ORECs at $131.93/MWh for 20 years.

Last August, Massachusetts provided 20-year contracts for energy & renewable energy credits (RECs) for two offshore wind projects at $74/MWh and $65/MWh with a 2.5% escalator for a total capacity of 800 MW, projected to come online in 2021 and 2022. The first project (being 400 MW) to commission in 2021 with the 24% ITC, and the second 400 MW in 2022 with 18% ITC.

Cash-flow long-term certainty is an important factor that tax equity providers consider when choosing which technology/project to invest in. While this is not the only requirement, projects that secure long-term revenue contracts and enjoy state policy support will be easier to finance against given the greater certainty, and thus are likely be favored by tax equity investors. This is where offshore wind projects may be able to compete over the tax equity supply available between 2019 through 2023. Considering the vast project pipeline capacity of both solar and onshore wind projects looking to be deployed over the same timeline, competition may increase significantly over tax equity, potentially putting upward pressure on yields. and consequently pressure project margins.