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BERKELEY NATIONAL LABORATORY

Analyzing the Interaction Between State Tax Incentives and the Federal Production Tax Credit for Wind Power

Ryan Wiser and Mark Bolinger
Environmental Energy Technologies Division

Troy Gagliano
National Conference of State Legislatures

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Abstract

This study analyzes the potential impact of state tax incentives on the federal production tax credit (PTC) for large-scale wind power projects.[1] While the federal PTC provides critical support to wind plants in the U.S., its so-called "double-dipping" provisions may also diminish the value of – or make ineffectual – certain types of state wind power incentives. In particular, if structured the wrong way, state assistance programs will undercut the value of the federal PTC to wind plant owners. It is therefore critical to determine which state incentives reduce the federal PTC, and the magnitude of this reduction. Such knowledge will help states determine which wind power incentives can be the most effective.

This research concludes that certain kinds of state tax incentives are at risk of reducing the value of the federal PTC, but that federal tax law and IRS rulings are not sufficiently clear to specify exactly what kinds of incentives trigger this offset. State investment tax credits seem most likely to reduce federal PTC payments; the impact of state production tax credits as well as state property and sales tax incentives is more uncertain.

Further IRS rulings will be necessary to gain clarity on these issues. State policymakers can seek such guidance from the IRS. While the IRS may not issue a definitive "revenue ruling" on requests from state policymakers, the IRS has in the past been willing to provide general information letters that can provide non-binding clarification on these matters. Private wind power developers, meanwhile, may seek guidance through "private letter" rulings.

This work also illustrates that – even if the federal PTC offset is triggered – state tax incentives are still helpful because they provide some value to a wind project developer. This is because the value of the federal PTC is not offset one-for-one by the availability of state tax incentives (and because state tax incentives can provide a valuable backstop to wind power developers were the federal PTC to expire). Instead, we find that state tax incentive policies generally lose ~40% of their value through a reduction in the federal PTC, meaning that they retain a full 60% of their value to wind project owners even after the federal PTC offset. State aid that is provided up-front (e.g., sales tax exemptions) is generally found to result in a larger loss of the federal PTC than aid that is provided over the life of a wind power facility (e.g., property tax reductions). Nonetheless, state wind power incentives that clearly do not offset the federal PTC may be preferable to state tax incentives.

[1] The federal PTC applies to business production and sale of wind-generated electricity, and not wind-generated electricity that is used for the project owner's individual electricity demand. As such, this paper addresses large-scale wind generation as opposed to smaller, customer-sited wind turbines that are most often used to offset personal electricity consumption.

1. Introduction

State Policies Foster a Wind Power Resurgence

The global wind energy business is expanding rapidly, with a record 6500 new megawatts (MW) of generating capacity installed in 2001. 1700 MW were installed in the U.S. alone, easily beating previous yearly domestic installation records.

State policies to support wind power have historically been a critical driving force in the growth of the renewable energy market in the United States. A resurging interest in supporting wind power is underway. Hoping to capitalize on its rapidly declining cost, its economic growth and rural economic development benefits, its security and fuel price risk reduction advantages, and its long-acknowledged environmental benefits, state policymakers are increasingly turning to renewable energy purchase mandates, system-benefits charges, and state tax incentives to further encourage the growth of the wind power market.

The Importance of the Federal Production Tax Credit

To determine the effectiveness of different types of state policies, possible interactions between these policies and the federal production tax credit (PTC) for wind power should be considered. Currently available to wind generators that achieve commercial operation by the end of 2003, the PTC now provides a 10-year, 1.8¢/kWh (increasing with inflation) federal tax credit to the owners of utility-scale wind projects (the PTC does not apply to wind turbines – typically small turbines – that are used to meet the project owners' individual use). Further extensions of the policy beyond 2003 are possible, even likely. This incentive dramatically lowers the cost of wind-generated electricity.

While the federal PTC has been a major stimulus to the recent dramatic growth of the domestic wind power market, its so-called "double-dipping" provision may also diminish the value of certain types of state wind power incentives. This provision requires that the federal PTC be reduced if a wind project receives certain other kinds of support. Consequently, if structured the "wrong" way, state assistance programs will undercut the value of the federal PTC. This double-dipping provision only applies to certain types of state aid, however. It is therefore critical to determine which state incentives reduce the federal PTC, and the magnitude of this reduction. State policymakers may want to enact wind power policies that leverage, and do not simply displace, the value of federal incentives.

Purpose and Roadmap of Analysis

This study analyzes the potential impact of *state tax incentives* on the federal PTC. State tax incentives alone are often not sufficient to encourage substantial wind power development without other supportive public policies such as renewable energy purchase mandates, renewables portfolio standards, or system-benefits charges (Rader and Wiser 1999).[2] Our motivation for focusing on state tax incentives is that several states have very recently established such incentives for wind power projects, and because these incentives can – on the margin – improve the profitability of wind power development (Text Box 1 discusses several of

[2] Of course, if the state tax incentive is large enough or if the local cost of wind power is low, the availability of state tax incentives may be sufficient to encourage wind power development. In Kansas, for example, wind power projects have recently come on line that have benefited from state tax incentives but not other forms of state support.

the limitations of state tax incentives, relative to other state renewable energy policies). State tax incentives come in several forms:

- **Production Tax Credits.** Like the federal PTC, these are credits denominated in cents per kilowatt-hour (kWh) that provide a state tax credit based on the amount of electricity generated by a wind plant for a specified period of time.
- **Investment Tax Credits (ITC).** Denominated as a percent of wind plant investment costs, state ITCs have been used in the past to encourage wind project development, but are less commonly used today to support large-scale wind projects.
- **State Sales and Property Tax Incentives**. Various other forms of state tax incentives are also common, including sales and property tax exemptions and reductions.

TEXT BOX 1:
THE LIMITATIONS OF STATE TAX INCENTIVES

This paper focuses on the impact of the federal PTC's double-dipping provisions on the value of state tax incentives. It deserves mention, however, that there are other limitations to the use of state tax incentives that are unrelated to the federal PTC. First, many potential wind power investors will not have the state tax liability to fully take advantage of state income tax credits; while investors can use the federal PTC against current federal income taxes from other subsidiaries and operations, many investors are not likely to be in the position to utilize state income tax credits immediately. This issue has recently been addressed in some states by making state wind power tax credits transferable to parties not directly related to the wind power investment, and by allowing wind power owners to carry over the credits to future years. Second, because state income taxes are deductible from federal income taxes, state income tax incentives have lower value than equal-sized federal tax incentives. Finally, it deserves mention that (with some notable exceptions) state tax incentives have often not been sufficient, alone, to spur substantial wind power development. Instead, other policy efforts such as purchase mandates, renewables portfolio standards, or system-benefits charges have also often been needed.

Though this study focuses on the interaction between state *tax* incentives and the federal PTC, for the interested reader, Text Box 2 provides information on the interaction of other non-tax-related forms of state wind power incentives with the PTC (for a more detailed review of these issues, see Ing 2002).

This study proceeds as follows. The next section provides a brief background to the federal PTC and introduces the double-dipping provisions of the legislation. This is followed by a discussion of whether state tax incentives will trigger the federal PTC's double-dipping provisions, thereby offsetting the value of the state incentives. The analysis concludes that federal tax law and IRS rulings are not sufficiently clear to know whether certain types of state tax incentives will trigger the double-dipping provisions of the federal PTC – further IRS rulings will be necessary to gain this clarity.

The study then quantitatively evaluates the possible impact of the PTC offset on some of the state tax incentive policies being considered and implemented in the U.S. The fraction of state tax incentives that might be "lost" by displacing the federal PTC is estimated. This analysis illustrates how, even if the federal PTC offset is triggered, state tax incentives can still provide some value to a wind project developer. The conclusion to this study features some final remarks on the implications of this work for policymakers.

2. The PTC and Its Double-Dipping Provisions

The Federal Production Tax Credit

Tax incentives have played a prominent role in both state and federal energy policy and in the commercialization of renewable energy technologies. In 1992, the Energy Policy Act established a 10-year, 1.5¢/kWh (adjusted for inflation) production tax credit for wind and "closed-loop" biomass. The PTC has recently been extended to wind generators that achieve commercial operation by the end of 2003, and in 2002 stands at 1.8¢/kWh. This incentive has been a major contributor to the expansion of the wind power market in the United States, as it can significantly reduce the cost of wind-generated electricity to the purchaser.

The PTC's Double-Dipping Provisions

To eliminate "double dipping," the federal PTC is reduced for any local, state, or federal grants, subsidized energy financing, and any other credits. The purpose of this rule is to prevent "excessive" reliance on government assistance. The specific language is as follows:

> *Credit Reduced for Grants, Tax-exempt Bonds, Subsidized Energy Financing, and Other Credits. The amount of the credit... with respect to any project for any taxable year… shall be reduced by the amount which is the product of the amount so determined for such year and a fraction:*
>
> *(A) the numerator of which is the sum, for the taxable year and all prior taxable years, of*
> *a. grants provided by the United States, a State, or a political subdivision of the State for use in connection with the project,*
> *b. proceeds of an issue of State or local government obligations used to provide financing for the project the interest on which is exempt from tax under section 103,*
> *c. the aggregate amount of subsidized energy financing provided (directly or indirectly) under a Federal, State, or local program provided in connection with the project, and*
> *d. the amount of any other credit allowable with respect to any property which is part of the project, and*
> *(B) the denominator of which is the aggregate amount of additions to the capital account for the project for the taxable year and all prior taxable years.*

Two aspects of the double-dipping provision deserve mention:

- **What Triggers an Offset?** From the statutory language, it is clear that a number of forms of state aid will offset – at least partially – the benefit associated with the federal PTC. Nonetheless, despite legislative history and a number of private letter rulings, there remains a lack of clarity on exactly what kinds of state incentives would trigger the offset.

- **What is the Degree of the Offset?** The federal PTC offset is not one-for-one, but rather is proportional (on an annual basis) to the cumulative amount of incentive funding divided by the capital cost of the project. The magnitude of the federal PTC offset will therefore depend on the capital cost of the project and on the size and payment schedule of the state incentive. Even if it triggers the double-dipping provision, a state incentive may therefore still provide value to a wind project by allowing the project to profitably sell its power at a lower price.

3. Whether State Tax Incentives Trigger the Double-Dipping Provisions is Unclear

The intent of this study is not to provide a comprehensive summary of the federal PTC's double-dipping provisions, but to instead specifically discuss the potential implications of state tax incentives on utility-scale wind projects. A particular emphasis is placed on state production tax incentives, as these have recently been implemented in several states. See Text Box 2 and Ing (2002) for information on the interactions of other non-tax-related forms of state wind power incentives with the federal PTC.

With respect to state tax incentives, it first bears mention that it is not entirely clear that the federal PTC's double-dipping provisions are even intended to cover such incentives. One might argue that the provisions were intended to prevent double dipping among multiple federal incentives, and not to reduce the value of state tax incentives. The IRS has been resistant to this idea informally, but no one has pushed this issue in a formal setting before the IRS. More specifically, the treatment of particular kinds of state tax incentives (investment and production income tax credits, as well as sales and property tax incentives) under the double-dipping provisions is equally unclear, as highlighted below.

- **State Investment Tax Credits (ITCs):** If one assumes that the double-dipping provisions do include state tax incentives, then, from the statutory language and legislative history on the federal PTC, it is clear that state investment tax credits will almost assuredly offset, at least partially, the benefits associated with the federal production tax credit. This is because state ITCs provide investment-based (as opposed to production-based) support for wind power projects, which has been argued to be the primary focus of the PTC's double-dipping provisions (Ing 2002).

- **State Sales and Property Tax Incentives:** In Private Letter Ruling 200206034 (November 2001), the IRS held that a conditional refund of the Colorado state sales and use tax did not offset the federal PTC. This was a contentious ruling, and the IRS did not offer strong reasoning for its conclusion (Ing 2002), which reduces the already restricted value of the private letter ruling (private letter rulings are only binding to the taxpayer that requested the ruling). While a conditional refund is different from a direct tax credit, the ruling offers some support for the proposition that sales tax incentives would not trigger the double-dipping provisions of the federal PTC, but even this issue remains unsettled. The impact of state property tax incentives is similarly unclear. Sales and property tax incentives are common at the state level; the lack of clarity on how they would be treated by the IRS is problematic.[3]

[3] One might argue that, because sales and property tax incentives are not "income" tax incentives, they should not offset the federal PTC (which is an income tax credit). It deserves note, however, that the PTC's double-dipping language refers to "the amount of any other credit allowable with respect to any property which is part of the project," without making specific reference to only income tax credits.

- **State Production Tax Credits:** It is similarly unclear whether a state PTC would reduce the federal PTC. No IRS rulings on this matter yet exist. The federal PTC is to be reduced for other "credits," implying a reduction for a state PTC. However, the IRS on several occasions has focused its offset rules on construction-related (capital) support, rather than operational (production) support (Ing 2002). Therefore, while a state ITC would appear likely to reduce the federal PTC (unless the IRS rules that *no* state tax incentives trigger the double-dipping provisions), the impact of a state PTC is less clear. This issue appears ripe for an IRS ruling.

TEXT BOX 2:
INTERACTION OF NON-TAX-RELATED INCENTIVES WITH THE PTC

States may offer wind power projects a variety of forms of non-tax-related financial support. This includes up-front cash grants, production-based financial incentives, low-interest loans, and renewables purchase mandates. Given the importance of these state policies in encouraging wind power development, the question of how these policies might impact the federal PTC is also relevant.

While federal tax law and IRS public rulings do not specifically address each of these incentive types, guidance is provided by two recent private letter rulings and one general information letter from the IRS, as well as a review of the legislative history of the double dipping provision. Specifically, one can infer (though without legal grounding, as even private letter rulings are prohibited from serving as a legal precedent) that state support that is unrelated to a project's capital costs, that is contingent in nature (e.g., is production-based), that is not made in advance of commercial operation, and that takes the value of the PTC and other revenue sources into consideration when establishing incentive levels, will not offset the value of the PTC.

Ing (2002) provides tangible examples of incentive types that are or are not likely to offset the value of the PTC. Government incentives that are likely to trigger a PTC offset include:

- up-front grants that buy down the project's capital costs, and
- below-market interest loans and other forms of subsidized financing.

Incentives that are not likely to trigger PTC offsets include:

- price support payments,
- production incentive payments,
- grants to meet operational costs,
- loan guarantees, and
- implicit subsidies provided through renewables purchase mandates.

Also important is the source and administration of the funds used to support the incentive. Specifically, even up-front grants and subsidized financing are unlikely to trigger the PTC offset if the funds are deemed by the IRS to be "non-governmental." Conversely, if the fund administrator is a governmental entity, even funds derived from non-governmental sources may be problematic.

The IRS has provided little administrative guidance on the offset rule for the federal PTC. Given the remaining uncertainties, there is a clear need for further IRS rulings on these matters.[4] How might this clarification be obtained? Private taxpayers, such as renewable energy developers with

[4] Alternatively, a federal legislative fix to clarify the intent and scope of the federal PTC's double-dipping provisions could be used to offer the needed clarification.

specific projects that would be impacted by the double-dipping provisions, can seek clarification from the IRS through private letter rulings. While such rulings are only binding to the taxpayer that requested the ruling, they can offer substantial clarification on how the IRS treats these issues more broadly. Alternatively, state policymakers can seek guidance from the IRS. While the IRS may not issue a definitive "revenue ruling" on requests from state policymakers, the IRS has in the past been willing to provide general information letters that can provide non-binding clarification on these matters. (In 1997, the IRS provided such a letter to the California Energy Commission).

4. "What-If" Analysis: Estimating the Impact of the Offset

The impact of state tax incentives on the federal PTC is a relevant consideration in determining the types of policies that states might use to most effectively support wind power, especially if one assumes that the federal PTC will continue to be extended. It is simply unclear, however, whether certain types of state tax incentives trigger the double-dipping provisions.

This section considers the possible impacts of state tax incentives, *assuming that the double-dipping provisions would be triggered*. It estimates the value of state tax incentive programs given the potential federal PTC offset, and specifically calculates the federal "take back" of state tax incentives. This "take back" represents the value of a state tax incentive that would effectively be lost through a reduction in the value of the federal PTC.

State Production Tax Credits

Several states have recently established state PTCs for wind power and/or other renewable energy sources; these states include Maryland, New Mexico, and Oklahoma. As noted earlier, it remains somewhat unclear whether these policies would trigger the federal PTC's double-dipping provisions.

This section evaluates the magnitude of the offset in New Mexico and Oklahoma, assuming that the double-dipping provisions would be triggered.[5] The analysis uses a standard 20-year cash-flow model for a wind power project that begins commercial operations in 2003 and has a nominal levelized price of 4.37¢/kWh, including the federal PTC. The model calculates this price after taking into consideration standard assumptions for project capital cost, operations costs, taxes, financing, and other variables.[6]

- **New Mexico.** New Mexico offers renewable facilities of 20 MW or greater a 10-year production tax credit of 1¢/kWh for the first 400,000 MWh (this limit roughly equates to a 150 MW wind facility) of electricity produced each year. Participation is limited to 800,000 annual MWh in aggregate, which equates to roughly 300 MW of total wind capacity. If the amount of the tax credit exceeds the taxpayer's corporate tax liability, the excess may be carried forward for 5 years. Assuming no offset of the federal PTC, New Mexico's PTC is calculated to be worth 0.53¢/kWh over 20 years. That is, the wind developer could reduce its

[5] We do not evaluate Maryland's 10-year PTC of $0.0085/kWh because it is only available to projects that do not claim the federal PTC, thereby rendering the issue of credit offset moot.

[6] For more on the basic model and its assumptions, see http://eetd.lbl.gov/ea/EMS/reports/48831.pdf.

20-year power sales agreement price by 0.53¢/kWh because of the incentive. This value is calculated by inserting the state tax incentive into the cash-flow model mentioned earlier, and evaluating the ¢/kWh price reduction that results. Meanwhile, with an offset of the federal PTC, the value of the New Mexico PTC declines to 0.33¢/kWh. In other words, 37% of the value of the New Mexico PTC is "taken back" by the federal PTC offset.

- **Oklahoma.** Starting in January 2002, Oklahoma offers renewable facilities of 50 MW or greater a production tax credit of 0.75¢/kWh for electricity generated prior to 2004, 0.50¢/kWh for electricity generated from 2004 through 2006, and 0.25¢/kWh for electricity generated from 2007 through 2011. Given our assumption that a 50 MW wind project could not come on line prior to January 2003, only 9 years of state tax incentives are available to the project. Assuming no offset of the federal PTC, analysis shows that the Oklahoma PTC is worth 0.22¢/kWh over 20 years. With an offset of the federal PTC, on the other hand, the value of the Oklahoma PTC is estimated to decline to 0.13¢/kWh. In other words, 41% of the value of the Oklahoma PTC is "taken back" by the federal PTC offset.

This analysis shows that a state PTC can still have value even if it does cause an offset in the federal PTC. However, approximately 40% of the value of the state PTCs evaluated above would be lost as a reduction in the federal PTC if these incentives were deemed by the IRS to offset the federal tax credit.[7]

State Investment Tax Credits

Some states have, in the past, used investment tax credits to support large-scale wind projects. Today, this practice is less common, though there remain several states with investment tax credits for wind power applications (see http://www.dsireusa.org/).

Using the same cash flow model as above, the "take back" is estimated assuming a 10% and 20% state ITC. Without any offset of the federal PTC, these ITCs are worth 0.40¢/kWh and 0.80¢/kWh respectively over 20 years. With an offset, their value drops to 0.24¢/kWh and 0.48¢/kWh respectively, a "take back" of 40%. This is essentially the same as that experienced by the state PTCs evaluated above.

State Sales and Property Tax Incentives

Reductions or exemptions of state sales, property, and other miscellaneous taxes are also relatively common (see http://www.dsireusa.org/). These tax incentives have somewhat similar impacts as state ITCs and PTCs (assuming they all trigger federal PTC offsets). For example, a reduction or exemption of state sales tax largely mimics the impact of a state ITC (because they are both investment-oriented incentives). Analysis shows that a sales tax exemption could lose 35% of its value due to a reduction in the federal PTC. Analysis of property tax incentives shows that – if they trigger the federal PTC's double-dipping provisions – they could lose 15-30% of their value, depending on their design, as a result of federal PTC offsets.

Generally speaking, state aid that is provided up-front (e.g., sales tax exemptions) results in a larger loss of the federal PTC than aid that is provided over the life of a wind power facility (e.g.,

[7] All else being equal, shorter-term state PTCs (e.g., 5 years) will have greater "take back" fractions (up to 45%), since more of the cumulative benefit of the state PTC is being provided in the early years.

property tax reductions). This is because up-front incentives result in a greater cumulative benefit to the wind power project in the early years, and it is this cumulative benefit that determines the magnitude of the federal PTC offset (see Section 2).

5. Implications for State Policymakers

The effectiveness of state programs for wind power development can be materially affected by the double-dipping rules of the federal PTC. The impact of state tax incentives on the federal PTC is therefore an important issue that warrants consideration during the selection and design of state renewable energy policies.

This study has provided a brief overview and analysis of the issues involved with the offset. State investment tax credits seem most likely to reduce federal PTC payments. The treatment of state property and sales tax incentives remains unclear, as does the treatment of state production tax credits. Clarification from the IRS is essential, especially for state PTCs as well as a broader array of state property and sales tax incentives. Formal clarification from the IRS on whether the federal PTC's double-dipping provisions cover state tax incentives in the first place would also be valuable.

As discussed earlier, such clarification can be obtained in one of two ways. First, renewable energy developers with specific projects that would be impacted by the double-dipping provisions can seek clarification from the IRS through private letter rulings. Second, state policymakers can seek guidance from the IRS. Though the IRS may not issue a definitive "revenue ruling" on requests from state policymakers, the IRS has in the past been willing to provide general information letters that can provide non-binding clarification on these matters.

The analysis provided in this study also suggests that state tax incentives still have value even if they are subject to federal PTC offsets. State policymakers may therefore not want to exclude such incentives from consideration.

- First, the value of these programs (in terms of reduced wind power costs) is shown to exceed the cost of a reduced federal PTC. The "take back" fraction is estimated to be approximately 40%. This means that the state incentive retains roughly 60% of its value. As mentioned earlier, whether wind project owners can take advantage of even this reduced value will often depend on whether they have sufficient state income tax liability.

- Second, the federal PTC is currently slated to expire at the end of 2003.[8] While the wind power industry is seeking a further extension of the incentive, such an extension may not be achieved. Even if the federal PTC's double-dipping provisions are triggered by state tax incentives, these incentives may therefore retain substantial value as a "backstop" to the federal PTC, were the PTC allowed to expire.

[8] Projects on line by 2003 will receive the full 10-year benefit of the PTC, but projects placed in service after 2003 would not receive the credit.

Nonetheless, given the federal PTC's double-dipping provisions and their uncertain application to state tax incentives, non-tax-based state wind power policies (cash-based production incentives, renewables purchase mandates, etc.) that clearly do not offset the federal PTC may be preferable. In fact, it deserves repeating that (with exceptions) state tax incentives alone have often not been sufficient to spur substantial wind power development. Other supportive public policies such as renewable energy purchase mandates, renewables portfolio standards, and system-benefits charges have typically also been required.

References

Ing, E. 2002. "The Effect of NYSERDA's Wind Project Assistance on the Federal Production Tax Credit." Prepared for the New York State Energy Research and Development Authority. http://www.nyserda.org/energyresources/taxcreditpaper.pdf

Rader, N. and R. Wiser. 1999. "Strategies for Supporting Wind Energy: A Review and Analysis of State Policy Options." Washington, D.C.: National Wind Coordinating Committee. http://www.nationalwind.org/pubs/strategies/strategies.pdf