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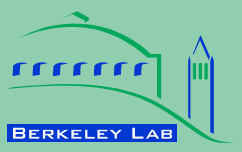

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Avoiding the Haircut:
Potential Ways to Enhance the Value of the USDA's Section 9006 Program

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Executive Summary

Section 9006 of Title IX of *The Farm Security and Rural Investment Act of 2002* (the "2002 Farm Bill") established the *Renewable Energy Systems and Energy Efficiency Improvements Program* (the "Section 9006 program"). Administered by the United States Department of Agriculture (USDA), the Section 9006 program provides grants, loan guarantees, and – perhaps in the future – direct loans to farmers, ranchers, and rural small businesses for assistance with purchasing renewable energy systems and making energy efficiency improvements.

In the three rounds of Section 9006 funding to date (FY03-FY05), roughly 40% of all grant dollars in aggregate have been awarded to "large" (defined as > 100 kW) wind projects. Such projects are also typically eligible for the Federal Production Tax Credit (PTC) codified in Section 45 of the US tax code. Because the PTC provides a significant amount of value to a wind project, most "large wind" applicants to the Section 9006 program have also tried to take advantage of the PTC.

Through what are known as "anti-double-dipping" or, more colloquially, "haircut" provisions, however, the size of the PTC is reduced if a project receives certain other forms of governmental support. Specifically, Section 45(b)(3) of the US tax code reduces the size of the PTC in proportion to the aggregate amount of government grants, tax-exempt or subsidized financing, or other Federal tax credits that a project receives over time, relative to its overall capital cost (with the proportion not to exceed 50%). The legislative and regulatory history surrounding the PTC's haircut provisions suggests that grants and direct loans (but not loan guarantees) provided under the Section 9006 program will cause a PTC haircut.

Focusing exclusively on "large wind" projects, this report demonstrates that the magnitude of the haircut can be significant: Section 9006 grants lose between 11% and 46% of their face value (depending on the wind project's capital cost and capacity factor) to PTC haircuts. And because Section 9006 grants are most likely considered taxable income, an additional 20%-37% (depending on tax bracket) is lost to income tax payments on the grant. In combination, depending on the specific combination of tax bracket, capital cost, and capacity factor that pertain to a given wind project, the percentage of a Section 9006 grant lost to both income tax payments and the PTC haircut can range from 31% to 83% of the dollar value of the grant. Our base-case scenario falls in the middle of that range, at a combined loss of 58% (37% due to income tax payments, and 21% due to PTC haircut). Add to this the transaction costs of applying for a Section 9006 grant, as well as the possibility of an unsuccessful application, and some might be left with relatively little motivation to apply.

As a result, the USDA may – with Congressional approval potentially a prerequisite – wish to consider revising the Section 9006 program in order to maximize its value in the presence of other Federal incentives. Although the taxation of the grant cannot be avoided,[1] the PTC haircut (equal to 21% of the grant in the base case) is potentially avoidable, if not through direct

[1] One must either pay tax on the grant (if taxable), or else reduce the depreciable basis of the project by the amount of the grant (if non-taxable). The only difference between the two is the time value of money – the tax payment on a taxable grant hits up in the first year, whereas the equivalent loss of tax benefits associated with a reduction in depreciable basis occurs, for the most part, over a six-year period (assuming mid-year convention).

legislative relief, then through careful structuring of the incentive (which also may require statutory changes). Specifically, with proper statutory authority, the USDA could potentially allow its grants to be used to defray operational – rather than capital – costs, depending on the preference of the recipient. Alternatively, it could award the grant funding in the form of production-based payments, either paid out over time or as a lump sum at the inception of commercial operations (i.e., more like a traditional grant). A combination of legislative history, public IRS guidance, and private letter rulings suggest that any of these three options will not trigger a PTC haircut (though advance consultation with the IRS is nevertheless advisable).

Finally, the USDA is reportedly considering a direct loan program for future rounds of Section 9006 funding. Given the PTC interaction, such a program is likely to provide little (if any) value to projects that also take the PTC: a government loan will either cause a PTC haircut that will likely result in a net loss (if subsidized), or else will provide little or no advantage over the private market (if unsubsidized). It may be possible to structure a subsidized loan such that it is applied strictly to non-capital costs, and therefore does not offset the PTC, but there has been little experience with this type of structure to date, and consultation with knowledgeable tax counsel is strongly recommended before proceeding down this path.

Given the complexities and nuances of tax law, the USDA would be wise to seek experienced tax counsel, and perhaps IRS guidance, prior to implementing any of the programmatic changes discussed in this report. Furthermore, depending on how broadly the language in Section 9006(a)(1) – i.e., that funds are to be used to "purchase renewable energy systems" – can be interpreted, each of the potential solutions to the double-dipping problem discussed in this report might require statutory changes to the Section 9006 program's authorizing legislation (i.e., the USDA may not have the authority to make such changes on its own). In this light, it is perhaps important to conclude by noting that the PTC's anti-double-dipping provisions were put in place for a reason. While state renewable energy programs have generally been interested in structuring their incentives in ways that will not trigger a PTC haircut (i.e., states are looking to leverage as many Federal dollars as possible), Congress may be considerably less interested in modifying one Federal program (the USDA's Section 9006 program) to allow the "double-dipping" of another (the Section 45 PTC).

1. Introduction

As rural communities throughout the United States continue to struggle with population decline, job loss, and rising energy prices, farmers are increasingly turning to home-grown renewable energy and energy efficiency as a way to reduce their own energy costs, create jobs, diversify their income, and help meet the nation's vast energy needs. From biofuels to wind power, the agricultural community is poised to play a major role in energy production in the coming years.

To this end, Section 9006 of Title IX of *The Farm Security and Rural Investment Act of 2002* (the "Farm Bill") established the *Renewable Energy Systems and Energy Efficiency Improvements Program* (the "Section 9006 program"). Administered by the United States Department of Agriculture (USDA), the Section 9006 program provides grants, loan guarantees, and – perhaps in the future – direct loans to farmers, ranchers, and rural small businesses for assistance with purchasing renewable energy systems and making energy efficiency improvements. The USDA expects this program to not only help farmers reduce their energy costs and the nation to meet its energy needs, but also to stimulate rural economic development by helping farmers, ranchers, and rural small businesses create new sources of income, new jobs, and new uses for agricultural products and wastes.

By most accounts, the program has been a success, providing a major boon to agricultural communities. In its first three funding cycles (FY03-FY05), the Section 9006 program has awarded roughly $65 million in grants – capable of leveraging a *minimum* of $200 million in private investment – to 430 projects aimed at reducing energy consumption, increasing energy production, and revitalizing rural communities (see Table 1, below). Future rounds of funding (including one currently underway for FY06) will expand upon this already significant impact.

The Section 9006 program, however, is only one of several ways in which the Federal government encourages the development of renewable generation. Others include accelerated depreciation (for solar, wind, geothermal, and biomass), production tax credits (PTC) for wind and various other resources,[2] and investment tax credits (ITC) for solar and geothermal. Each of these tax incentives can be significant, and in some cases of greater value to a project than a Section 9006 grant. At the same time, each of these Federal tax incentives will – through what are known as "anti-double-dipping" or, more colloquially, "haircut" provisions – be reduced in value to the extent that a project receives certain other forms of governmental support.[3]

[2] Resources currently eligible for the PTC (at least in some form) include: wind, biomass (including co-firing and livestock waste), geothermal, certain types of hydropower, landfill gas, and municipal solid waste.

[3] Congress explained the rationale for anti-double-dipping rules in the conference report to the Crude Oil Windfall Profits Tax Act of 1980: "The conference agreement provides rules to coordinate the business energy credits with other government subsidies for energy-related expenditures. The conferees are concerned that if no such rules were adopted, the compound effect of various subsidized loan and grant programs could lead to a situation in which the taxpayer could purchase this property with very little expenditure of his own funds. A potential result could be the encouragement of inefficiency through expenditures for equipment the production of which would require diverting substantial resources from more effective uses. The effect of the rule provided in the conference agreement, in conjunction with the present treatment of nontaxable grants, is that the purchaser of the eligible equipment must choose between the tax credit, on one hand, and subsidized energy loans and nontaxable grants, on the other hand. Grants which are taxable are not taken into account under these rules because their taxation serves as a partial offset; similarly, credits against State and local income taxes are not taken into account because the deductibility of these

Traditionally, many individuals, including farmers, have not been able to make efficient use of Federal tax benefits for renewable energy projects for various reasons (Bolinger and Wiser 2006a, Ing 2005). Recent innovations in project ownership structures, however, have facilitated the indirect use of tax benefits by individuals and farmers (Bolinger and Wiser 2006a, Ing 2005). As a result, many Section 9006 grant recipients have tried to take advantage of some combination of these Federal incentives, only to find that anti-double-dipping provisions result in an aggregate incentive that is something less than additive. For example, receipt of a Section 9006 grant causes a PTC "haircut," in effect rendering the true value of the Section 9006 grant substantially less than its face value (due to lost PTCs). In addition, because Section 9006 grants are most likely considered to be taxable income, some portion of the grant will be lost in the form of higher income tax payments.

Focusing exclusively on large wind projects funded under the Section 9006 program, this report explores the anti-double-dipping issue and suggests some ways to possibly avoid a PTC haircut. Its purpose is two-fold: (1) to inform recipients of Section 9006 grants, as well as applicants and potential applicants to the program, of the implications of the PTC's anti-double-dipping provisions; and (2) to help the USDA and related stakeholders understand the financial impact of such provisions, and possibly re-design the program to avoid that impact.

The report begins in Section 2 with a brief description of Section 9006 program results to date. Section 3 describes the two primary Federal tax incentives for wind power – accelerated depreciation and the production tax credit – and reviews the mechanics of the PTC's anti-double-dipping provision. Section 4 discusses specifically how the different elements of the Section 9006 program – i.e., grants, loan guarantees, and perhaps in the future, direct loans – interact with Federal tax benefits. Section 5 then quantitatively demonstrates the negative financial impact of this interaction. Section 6 discusses several policy options that the USDA and others might consider to avoid PTC haircuts on grants and loans. Section 7 concludes.

taxes under the Federal income tax implies that the effect of these credits is equivalent to the effect of a taxable grant."

2. The USDA's Section 9006 Program

As envisioned by Congress in the 2002 Farm Bill, the Section 9006 program would provide "loans, loan guarantees, and grants to farmers, ranchers, and rural small businesses to (1) purchase renewable energy systems; and (2) make energy efficiency improvements."[4] In practice, however, only grants were funded under the first two Notices of Funding Availability (NOFA) in FY03 and FY04. Loan guarantees were added as an option in FY05, with half of the available funds reserved (for a limited period of time) for that purpose.[5] Grants and loan guarantees are again being offered in FY06, and the USDA will reportedly consider offering direct loans in future solicitations.

Table 1 shows the number and dollar amount of grants awarded by resource to date.[6] In its first three years, the program has awarded 430 grants totaling nearly $65 million dollars. Since Section 9006 grants are capped at the lesser of 25% of eligible project costs or $500,000,[7] the nearly $65 million in grants awarded to date represent a *minimum* (i.e., if all grants were at their 25% limit) $260 million investment in rural economies throughout the United States, and the USDA has estimated the potential private investment to be much larger – closer to $800 million.

As shown in the final column of Table 1, "large" (> 100 kW) wind projects account for 40% of total grant dollars awarded to date, followed by anaerobic digesters at 33% and bioenergy projects at 11%. Efficiency accounts for 8%, and the remaining renewable technologies account for just 9% in aggregate.

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[4] The full text of Section 9006 is included as Appendix A. For details on the 9006 program, see http://www.rurdev.usda.gov/rd/farmbill/9006resources.html or http://www.rurdev.usda.gov/rbs/farmbill/index.html.

[5] If unused after a certain period of time, funds reserved for loan guarantees become available to additional grants.

[6] In addition, two guarantees (not included in Table 1) for $10.1 million in loans were awarded in FY05.

[7] From Section 4280.110(c) of the final rule (see http://www.rurdev.usda.gov/rd/farmbill/section9006rule.pdf), eligible project costs include:

> (1) Post-application purchase and installation of equipment (new, refurbished, or remanufactured), except agricultural tillage equipment, used equipment, and vehicles.
> (2) Post-application construction or improvements, except residential.
> (3) Energy audits or assessments.
> (4) Permit and license fees.
> (5) Professional service fees, except for application preparation.
> (6) Feasibility studies and Technical Reports.
> (7) Business plans.
> (8) Retrofitting.
> (9) Construction of a new energy efficient facility only when the facility is used for the same purpose, is approximately the same size, and based on the energy audit will provide more energy savings than improving an existing facility. Only costs identified in the energy audit for energy efficiency improvements are allowed.

Table 1. Grants Issued Under First Three Rounds of USDA Section 9006 Program[8]

	FY03		FY04		FY05		Total	
	#	$	#	$	#	$	#	$
Anaerobic Digester	30	$7,046,530	37	$9,508,946	13	$4,813,267	80	$21,368,743
Biomass – Bioenergy	12	$2,029,005	13	$3,136,132	11	$2,118,391	36	$7,283,528
Geothermal – Direct Use	0	$0	2	$285,353	2	$94,930	4	$380,283
Hybrid	6	$2,112,977	2	$126,992	1	$199,863	9	$2,439,832
Hydrogen	1	$400,000	0	$0	0	$0	1	$400,000
Solar > 10 kW	2	$624,350	1	$49,886	4	$626,480	7	$1,300,716
Solar <=10 kW	4	$101,216	1	$4,936	5	$35,375	10	$141,527
Wind > 100 kW	25	$7,201,769	26	$7,301,540	40	$11,251,373	91	$25,754,682
Wind <= 100 kW	9	$187,134	12	$585,290	6	$101,157	27	$873,581
Energy Efficiency	24	$1,504,252	73	$1,812,974	68	$1,610,429	165	$4,927,655
Total:	**113**	**$21,207,233**	**167**	**$22,812,049**	**150**	**$20,851,265**	**430**	**$64,870,547**

It is worth noting that electricity generated by each of the top three funded technologies – large wind, anaerobic digesters, and bioenergy, which together account for 84% of all grant dollars awarded to date – is potentially eligible for the PTC, presuming it is sold to unrelated parties and meets other eligibility requirements. The rest of this report, however, will focus exclusively on large wind projects, for several reasons:

- Large wind projects have so far led the program in terms of grant dollars awarded (having captured 40% of all grant commitments to date), and most often sell their output wholesale to unrelated parties, rather than consuming the power on-site.
- Anaerobic digesters must be larger than 150 kW to qualify for a PTC that is *half* the size of that provided to wind projects (see Section 45(b)(4)(A) of the US tax code). Based on the data sources used for Table 1, it is not clear (A) how many of the digesters funded under the Section 9006 program exceed the 150 kW threshold and (B) how much of the power produced is sold rather than used on-site. This uncertainty, in combination with the reduced (halved) value of the PTC, makes double-dipping somewhat less of an issue for digesters than it is for large wind projects.
- The Bioenergy category includes biofuels and potentially other non-power-producing technologies that are not eligible for the PTC. In addition, like anaerobic digesters, open-loop (as opposed to closed-loop) biomass receives half of the PTC's stated value. Given a lack of information about the specific technologies funded within the bioenergy category, as well as the halved value of the PTC for open-loop biomass, double-dipping is potentially somewhat less of an issue than it is for large wind projects.

Excluding digesters, bioenergy projects, and other eligible Section 9006 technologies from the remainder of this report is not intended to minimize their importance, or the importance of understanding how the Section 9006 program may interact with other Federal support for such technologies. Such interactions may (and do) exist and, although they are outside of the scope of this paper, deserve further study.[9]

[8] The sources of the information in Table 1 include: http://www.eesi.org/publications/9006%20technologies.pdf (FY03), http://www.farmenergy.org/2004recipients2.pdf (FY04), and http://www.eesi.org/publications/Press%20Releases/2005/9.15.05%209006_awards.htm (FY05).

[9] For a recent analysis of how government grants, such as Section 9006 grants, interact with solar tax credits, see Bolinger and Wiser (2006b).

3. Federal Tax Incentives for Wind Power

The two main Federal incentives for wind power are accelerated depreciation and the production tax credit (PTC).

3.1 Accelerated Depreciation

3.1.1 Description

Section 168 of the Internal Revenue Code provides a Modified Accelerated Cost Recovery System (MACRS) through which certain investments in wind (and other types of) projects can be recovered through accelerated income tax deductions for depreciation. Under this provision, which has no expiration date, certain wind project equipment – including the turbines, generators, power conditioning equipment, transfer equipment, and related parts up to the electrical transmission stage – may qualify for 5-year, 200 percent (i.e., double) declining-balance depreciation.[10] A typical rule of thumb is that 90% of the total costs of a wind project qualify for 5-year MACRS depreciation, with much of the remaining 10% depreciated over 15 years.

3.1.2 Interaction with Other Incentives

Relevant to the topic at hand, a project's "tax basis" (i.e., the dollar amount to which depreciation schedules, and investment tax credits such as the solar and geothermal credits, apply) must be reduced dollar-for-dollar by the amount of any *non-taxable* government grant provided to the project. Taxable grants (i.e., those grants considered to be taxable income), on the other hand, do not reduce a project's tax basis, since taxation of the grant is viewed by the IRS to provide an offset that is equivalent (actually, more-than-equivalent, given the time value of money) to a reduction in depreciation benefits. In other words, it is impossible to escape taxation of grants (even those deemed non-taxable): one must either pay tax directly through an income tax payment (taxable grant), or indirectly over time through reduced depreciation benefits (non-taxable grant), with the only difference being the time value of money.

3.2 The Production Tax Credit

3.2.1 Description

As authorized by the Energy Policy Act of 1992 and amended over time, Section 45 of the Internal Revenue Code provides a production tax credit for power generated by certain types of renewable energy projects, including wind power. For wind power, the PTC provides an inflation-adjusted 1.5¢/kWh credit (equal to 1.9¢/kWh in 2006) for a 10-year period. To qualify, power from the project must be sold to an unrelated party.

[10] Assuming a half-year convention, the 5-year MACRS depreciation schedule for wind power equipment is spread over six years as follows: 20.00%, 32.00%, 19.20%, 11.52%, 11.52%, 5.76%.

Despite its much-discussed shortcomings (principally the periodic expiration of the credit, which has led to boom/bust cycles in the industry), the PTC has arguably been the single most important driver of wind power development in the United States. When used efficiently, the PTC provides the equivalent of about $20/MWh of taxable revenue levelized over a 20-year project life.[11] This significant amount of value – equal to between one-third and one-half the amount of revenue that can be earned through a long-term power purchase agreement – enables wind projects to price their power more competitively, and to generate competitive returns for equity investors.

Because of the amount of value that the PTC provides, virtually every wind project – including "farmer-owned" wind projects targeted by the USDA's Section 9006 program – seeks to make use of as much of the PTC as it possibly can. To that end, a number of creative ownership structures have been developed in recent years to provide access to the PTC among projects that would otherwise not be able to use it (e.g., due to insufficient tax liability, passive credit rules, etc.). Anecdotal evidence suggests that many of the large wind projects funded by the Section 9006 program are making use of these structures, some of which are described in Bolinger and Wiser (2006a).[12]

3.2.2 Interaction with Other Incentives

With wind projects trying to take advantage of both the PTC and the Section 9006 program, how the two interact becomes an important question. Section 45(b)(3) of the Internal Revenue Code (titled "Credit reduced for grants, tax-exempt bonds, subsidized energy financing, and other credits") contains what are commonly known as the PTC's anti-double-dipping provisions, or more colloquially, the PTC's "haircut" provisions. Specifically, Section 45(b)(3) reads:

> The amount of the credit…for any taxable year…shall be reduced by the amount which is the product of the amount so determined for such year and the lesser of 1/2 or a fraction –
>
> (A) the numerator of which is the sum, for the taxable year and all prior taxable years, of –
>
> (i) grants provided by the United States, a State, or a political subdivision of a State for use in connection with the project,
>
> (ii) 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,

[11] Because the PTC *directly* reduces the amount of income taxes paid, it should be thought of as providing $19/MWh of *after-tax* income. The amount of *pre-tax* income required to yield $19/MWh of *after-tax* income is $19/(1-marginal tax rate), or $29.23/MWh assuming a 35% marginal income tax rate. At a 7% real discount rate, $29.23/MWh (2006$) for 10 years equals an equivalent PTC value of $19.38/MWh (2006$) levelized over 20 years.

[12] The most common of these structures is known as a "flip," where a project sponsor with limited tax credit appetite teams with a passive, tax-motivated equity investor to co-own the project. During the project's first 10 years (i.e., the period of tax credits), the passive investor receives most or all of the tax credits and cash distributions, while the project sponsor receives very little. After 10 years, the investors' interests in the project flip, such that the project sponsor now receives most or all of the cash distributions (tax benefits have, by then, been exhausted), and the passive investor receives very little.

(iii) 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

(iv) 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.

In other words, the "haircut" is a proportional, rather than dollar-for-dollar, reduction in the value of the credit calculated as the aggregate amount of "offending" dollars (described in (i) through (iv)) divided by the capital cost of the project, and capped at 50%. The next section describes how this anti-double-dipping language specifically applies to the Section 9006 program.[13]

[13] Though not covered here, the PTC can also be negatively impacted by incentives from state programs (e.g., see Ing 2002). It is possible that some USDA-funded projects are also recipients of state incentives.

4. Interaction Between the Section 9006 Program and Federal Tax Incentives for Wind Power

The Section 9006 program currently offers grants and loan guarantees to qualifying projects, while direct loans are under consideration for future funding cycles. This section describes how each of these three incentives interacts with the PTC within the context of Section 45(b)(3). It also discusses any impacts on depreciation deductions, where relevant.

4.1 Grants

As currently structured, the Section 9006 grants clearly fall within the first offending category of "grants provided by the United States, a State, or a political subdivision of a State for use in connection with the project" [Section 45(b)(3)(A)(i)]. Past IRS rulings on the Section 29 and Section 48 credits, as well as the legislative history of both credits, "indicate that their respective offset rules apply only to grants and financing which subsidize project construction and equipment acquisition" (Ing, 2002). Although the IRS has issued only limited public guidance on the Section 45 credit (the PTC) offset rule, the IRS rulings on Section 29 and Section 48 provide insight as to how the IRS might interpret Section 45 (Ing 2002). In fact, in a 1997 general information letter to the California Energy Commission, the IRS stated:

> This legislative background suggests that Congress intended to apply the § 29 safeguards and limitations to the § 45 credit and that the results pertaining to credit offsets under § 29 are warranted under § 45. Therefore, there is a strong inference that the offset rules under § 45 should apply only to grants, credits, tax-exempt financing, subsidized energy financing, and other credits [sic] that relate to the construction or acquisition of the facility or its equipment ....(Ing 2002)

Because Section 9006 grants are in many cases disbursed during the construction of the project (as the last money in), and are commonly applied towards the project's capital costs, they will trigger a PTC haircut.

Furthermore, if the Section 9006 grants are considered to be non-taxable, they will also reduce the project's tax basis for depreciation purposes. Section 61 of the Internal Revenue Code, however, generally defines gross (taxable) income to mean income derived from any source, except as otherwise provided in statute. In general, the IRS broadly interprets this definition to treat government grants as taxable income unless statutorily excluded from taxation. Since there does not appear to be any such exclusion pertaining to USDA Section 9006 grants, a reasonable default assumption is that USDA grants are, in fact, taxable. In other words, the recipient must pay income tax on the grant, but is able to depreciate the full capital cost of the project.

4.2 Loan Guarantees

Of the four offending categories provided in Section 45(b)(3)(A), the third category pertaining to "subsidized energy financing" is the only one potentially relevant to loan guarantees. Although Section 45 does not define subsidized energy financing, under Section 48, the term means

"financing provided under a Federal, State, or local program a principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy." While this definition is not sufficiently clear on its own to inform the question of whether loan guarantees are considered subsidized energy financing, a number of legislative and IRS determinations have explicitly stated that loan guarantees are *not* considered subsidized energy financing. Specifically, the conference report on the Crude Oil Windfall Profits Tax Act of 1980 took this position, as did both the proposed (but never implemented) 1982 supplemental regulation to implement the Section 48 credit offset rule and the 1997 general information letter from the IRS to the California Energy Commission (Ing 2002). More recently, a private letter ruling has also held that a state loan guarantee program does not constitute subsidized energy financing.[14]

As a result of these rulings, it is safe to conclude that loan guarantees offered under the Section 9006 program will not cause a PTC haircut.

4.3 Direct Loans

As with loan guarantees, the third offending category of Section 45(b)(3)(A) pertaining to subsidized energy financing is the only one relevant to direct loans. Based on the definition of subsidized energy financing provided in Section 48 – "financing provided under a Federal, State, or local program a principal purpose of which is to provide subsidized financing for projects designed to conserve or produce energy" – it would appear that whether or not any future Section 9006 loan program causes a PTC haircut will depend in large part on whether the financing is considered to be subsidized, or below-market. In Private Letter Ruling 8530004, for example, the IRS determined that a particular loan from a government agency was *not* considered subsidized energy financing because the agency certified that the borrowing costs of the loan were similar to what the recipient could have obtained in the private market.

Presumably the primary reason for offering direct loans under the Section 9006 program would be to provide attractive – i.e., "subsidized" – financing. Otherwise, there would be little point to offering such a program, particularly with a loan guarantee program in place – i.e., the borrower could do just as well in the private market. Indeed, Section 9006(d)(1) of the 2002 Farm Bill itself specifies that "A loan made by the Secretary under subsection (a) shall bear interest at the rate equivalent to the rate of interest charged on Treasury securities of comparable maturity on the date the loan is approved." Because the credit quality of eligible borrowers will always be inferior to that of the US Treasury, a direct loan program that lends at Treasury-equivalent interest rates will most likely be considered subsidized, and will therefore cause a PTC haircut. It is also important to realize that subsidized energy financing not only affects the PTC (under Section 45 of the tax code), but also both the residential (Section 25) and commercial (Section 48) solar investment tax credits.[15]

[14] See Private Letter Ruling 200318066 at http://www.irs.gov/pub/irs-wd/0318066.pdf.

[15] So-called "at risk" rules may further limit the value of a loan program, if loans are made on a non-recourse basis. Further discussion of "at risk" rules is outside of the scope of this document, but see Ing (2005) for more information.

5. Demonstrating the Financial Impact of the Section 9006 Program on Federal Taxes

This section focuses exclusively on grants and loans, and ignores loan guarantees (which do not trigger a PTC haircut).

5.1 Grants

The financial impact of the interaction between Section 9006 grants and Federal tax benefits can be examined in several ways. One way is to simply map out the relevant projected cash flows, implement the tax interactions discussed in the previous section, and observe the results in terms of present value of cash flows. Another approach involves making use of a financial pro forma model to ascertain the impact of tax interactions on some chosen metric, such as the levelized cost of energy from the project. The analysis discussed below was conducted using both approaches, and arrived at the same answers either way.

Table 2 presents results from the former, simpler analysis (i.e., in terms of present value dollars and percentages, rather than $/MWh and percentages). Specifically, under what seems to be an appropriate base-case scenario (described below the table), Table 2 shows both the dollar and percentage amounts of a $500,000 Section 9006 grant that are lost to taxation (in the first column) and a PTC haircut (in the second column). The final column shows that, at least under this base-case scenario, more than $290,000, or 58% of a $500,000 taxable grant, is lost to tax payments and the PTC haircut.

Table 2. Amount of $500,000 Grant Lost to Taxes and PTC Haircut: Base-Case*

	Present Value of Loss to Income Taxes		Present Value of Loss to PTC Haircut		Present Value of Combined Loss	
	$	%	$	%	$	%
If Grant is Taxable[16]	**$182,727**	**37%**	**$107,323**	**21%**	**$290,050**	**58%**

*The base-case scenario is as follows: 1.5 MW wind turbine, $1600/kW project cost, $500,000 USDA grant (20.8% of project costs), 30% net capacity factor, marginal tax rates of 35% (Federal) and 8% (state), 90% of project cost depreciated using 5-year MACRS, 5% of project cost depreciated using 15-year MACRS (with the remaining 5% not depreciated at all), 2.5% inflation rate, 10% nominal discount rate.

As will be described below, the base-case results presented in Table 2 will only vary (in percentage terms) based on (1) assumed tax brackets (for income taxes only) and (2) project capital costs and capacity factor (for the PTC haircut only). The other two major variables – project size and grant size – do not matter, for the following reasons:

[16] If the USDA grant were considered to be non-taxable, then there would be a reduction in depreciation deductions over time (rather than a first-year income tax payment on the value of the grant) with a present value of $145,082 (equal to 29% of the USDA grant). This loss is less than for a taxable grant (shown in Table 2) due solely to the time value of money. The loss to the PTC haircut would be the same as for a taxable grant (present value of $107,323, or 21%), leaving the combined loss at a present value of $252,405, or 50% of a *non-taxable* USDA grant. As noted earlier in Section 4.1, however, it appears that the Section 9006 grants should be considered taxable, rather than non-taxable, income, in which case the values presented in Table 2 are what are relevant.

- **Project Size:** Project size does not impact income tax payments on the grant, but does impact the size of the PTC haircut: because the Section 9006 grants are capped at $500,000, they will cause a smaller proportional PTC haircut as project size increases. Larger projects, however, produce more power and therefore earn more PTCs, which perfectly negates the smaller proportional percentage haircut and leaves the percentage of the USDA grant lost to the PTC haircut unchanged.
- **Grant Size:** Unless the size of the grant shifts the recipient from one tax bracket into another, the recipient will pay the same *percentage* of income tax regardless of the dollar amount of the grant. Similarly, the percentage of the USDA grant lost to the PTC haircut remains the same regardless of the dollar amount of the grant.

At the 35% Federal income tax bracket (currently the maximum personal bracket, and most likely corporate bracket) assumed in the base case, the percentage of a taxable grant lost to income tax payments is 37% (assuming an 8% state bracket, and that state tax payments are deductible from taxable Federal income). The percentage of the grant lost declines to 28% at a 25% Federal bracket, and 20% at a 15% Federal bracket (assuming the same 8% state bracket).[17]

Figure 1 illustrates how the percentage of the grant lost to PTC haircuts only (income tax payments are not included in Figure 1) varies based on project capital costs and capacity factor. As capital cost increases, the grant becomes a progressively smaller proportion of overall capital costs, causing a smaller percentage PTC haircut, which in turn results in less of the grant being lost. Meanwhile, as capacity factor increases, so do the number of PTC's generated, thereby increasing the dollar impact of a given percentage haircut.

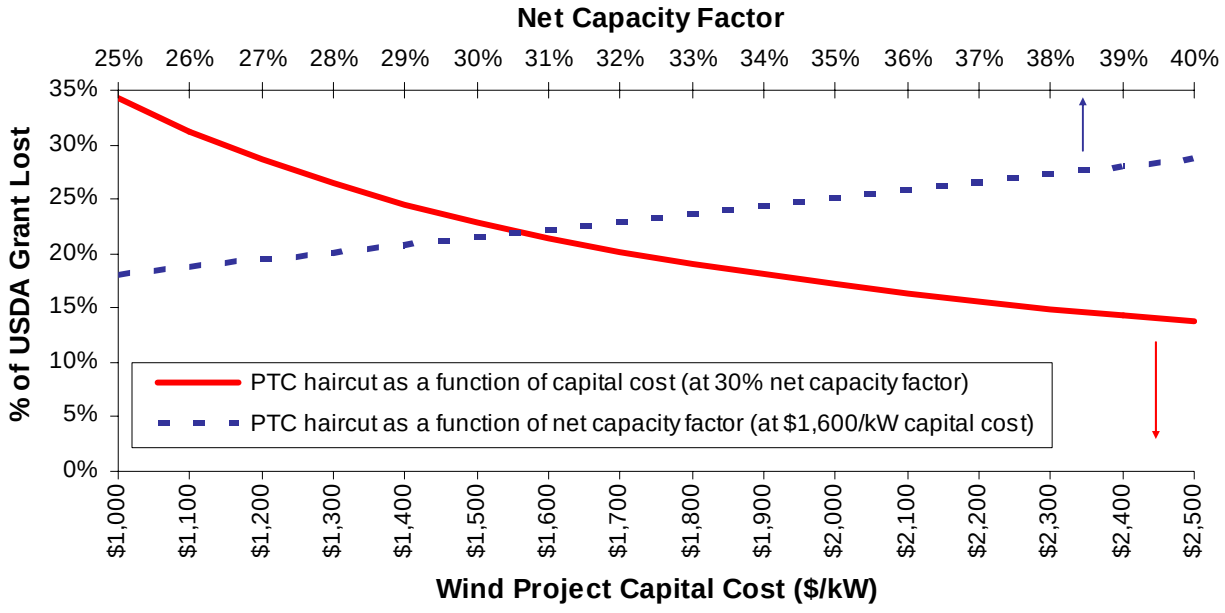

Figure 1. Percent of Section 9006 Grant Lost to PTC Haircut as a Function of Project Cost and Capacity Factor

[17] In 2005, the 25% personal tax bracket applied to those married filing jointly with taxable income between $59,400 and $119,950. The 15% tax bracket applied to those married filing jointly with taxable income below $59,400.

It is important to note that the values depicted in Figure 1 are not additive. In other words, to find the percentage of the grant lost for a given combination of capital cost and capacity factor, one must look specifically at that scenario, rather than simply adding the relevant results for each line in Figure 1. At the high extremes represented in the figure, $1000/kW at a 40% capacity factor results in 46% of the grant being lost to the PTC haircut alone (not considering the income tax payment, which will take back an additional 20-37%, depending on tax bracket). At the low extremes, $2,500/kW at a 25% capacity factor results in just 11% of the grant being lost to the PTC haircut (again, not considering the tax payment).

In summary, depending on the specific combination of tax bracket, project cost, and capacity factor that pertain to a given wind project, the percentage of a Section 9006 grant lost to both income tax payments and the PTC haircut can range from 31% to 83% of the dollar value of the grant. Our base-case scenario falls in the middle of that range, at a combined loss of 58% (37% due to income tax payments, and 21% due to PTC haircut).

5.2 Direct Loans

Direct loans are one of the three financial instruments allowed under Section 9006(a) of the 2002 Farm Bill. Although the USDA does not yet offer direct loans under the Section 9006 program, it is reportedly considering doing so in future funding cycles. Section 9006(d)(1) requires that the interest rate on such loans must match that on Treasury securities of comparable duration. This suggests that a direct loan offered under the Section 9006 program will be subsidized, and will therefore subject borrowers to a PTC haircut. This section of the report analyzes whether the financial benefit of a subsidized loan outweighs the cost of the corresponding PTC haircut.

The financial benefit of a subsidized loan can be thought of and calculated as the present value of the reduction in loan payments, relative to an otherwise identical market-rate loan, over the life of the loan. The larger the interest rate subsidy, the greater the financial benefits.

Using this methodology, Figure 2 illustrates the present value impact of two different subsidized loans, as a function of the amount of debt in a wind project. Section 9006(c)(1)(B) limits the maximum combined amount of a grant, loan, or loan guarantee to 50% of project costs, so Figure 2 caps leverage at 50%. The specific wind project analyzed matches the base-case project described in the previous section under Table 2 (except without the Section 9006 grant). With 10-year Treasury bonds currently yielding about 5.25%, such a project seeking a 10-year market-rate loan would likely encounter interest rates in the vicinity of 7.25%, which is, therefore, the benchmark or basis for comparison in Figure 2.

The solid blue line (with circle markers) shows the present value dollar benefit of the Treasury-comparable Section 9006 loan (with an interest rate of 5.25%, or 200 basis points below the market interest rate). For illustrative purposes only, the solid green line (with “x” markers) shows the present value dollar benefit of a heavily subsidized loan (with an interest rate of 1.25%, or 600 basis points below the market interest rate). The solid red line (no markers) shows the present value dollar impact of the PTC haircut caused by both subsidized loans (the PTC haircut is based solely on the face value of the loan, and therefore is the same for both loans).

The dashed lines (with corresponding markers) represent the net financial benefit of each loan (in present value terms), after accounting for the PTC haircut.

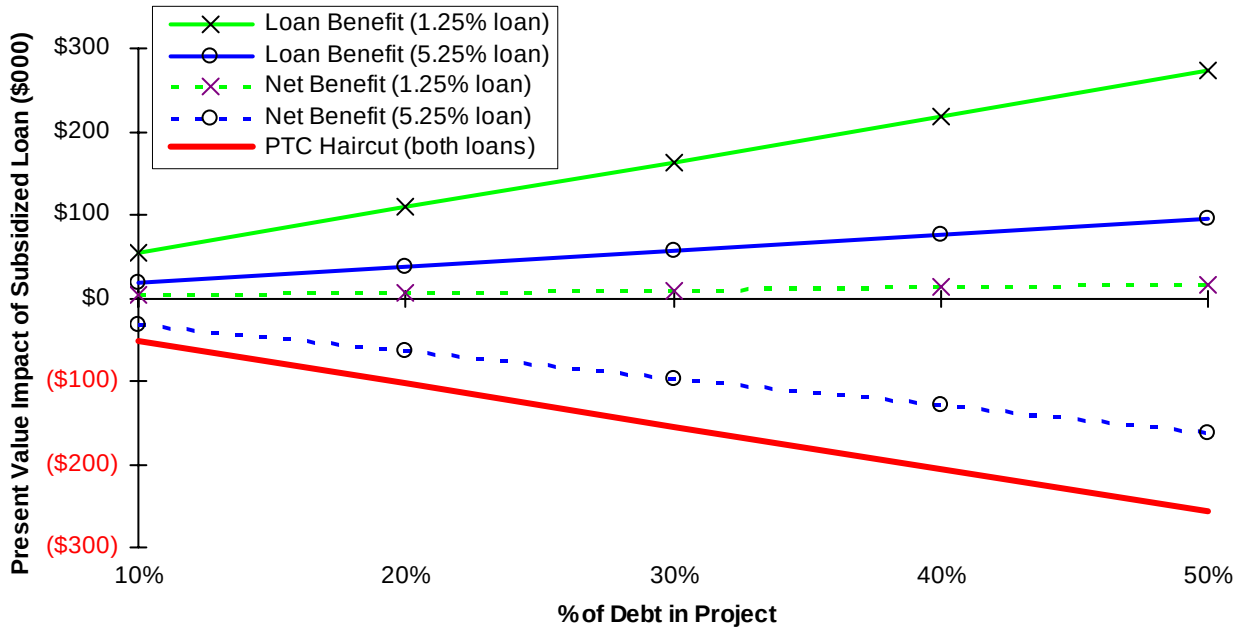

Figure 2. Present Value Impacts of Two Subsidized Loans as a Function of Leverage

As shown, the Treasury-comparable Section 9006 loan (at 5.25% interest) has a *negative* net benefit – i.e., the present value of the PTC haircut is greater than the present value of the reduction in loan payments – that grows progressively more negative as the size of the loan increases. The green lines, meanwhile, illustrate that the interest rate would have to be subsidized by about 600 basis points – i.e., from 7.25% down to 1.25% – before the net benefit of a subsidized loan would become positive (presuming the project is otherwise able to utilize the PTC).

6. Policy Implications: Potential Ways to Avoid a PTC Haircut

Although the income tax implications of a Section 9006 grant cannot be avoided,[18] the amount of the loss that is attributable to the PTC haircut – i.e., 21% in the base case results presented in Table 2 – is potentially avoidable, if not through direct legislative relief, then through careful structuring of the incentive (which may, in some cases, also require statutory changes). This section begins by exploring a few different ways in which the USDA might seek to mitigate or eliminate the impact of the PTC haircut on its grant program. It then highlights some PTC-related factors for the USDA to consider as (or if) it moves towards developing a loan program.

6.1 Grants: Solving the Double-Dipping Problem

The most straightforward solution to the double-dipping problem is to seek legislative relief. Congress could, for example, exempt Section 9006 grants from triggering the PTC's anti-double-dipping provisions in Section 45 of the tax code. Whether such an exemption is politically feasible or not is an open question.

In the absence of a direct legislative fix to Section 45, there are several ways in which the USDA might alter the structure of its Section 9006 grants in order to avoid PTC haircuts. These include allowing grants to be used solely for operational expenses, or structuring the incentive as a production-based payment, or alternatively as an *advance* production-based payment. The latter two approaches have been successfully employed by state "clean energy funds" that have, since 1998, been providing cash incentives to utility-scale, PTC-eligible wind projects,[19] and have as a result been forced to grapple with PTC interaction issues. All three of these approaches may ultimately require statutory changes to the Section 9006 enabling legislation.[20]

6.1.1 Grants Earmarked to Cover Operational Expenses

As noted earlier in Section 4.1, the IRS has ruled in the past (with respect to the Section 29 and Section 48 credits, and by extension to the Section 45 credit) that only grants and subsidized financing used for "the construction or acquisition of the facility or its equipment" will trigger a PTC haircut (Ing 2002). Grants that are earmarked to cover *operational* expenses, on the other hand, should not offset the PTC, because "such payments to defray the wind farm's non-capital repairs and the maintenance workers' salaries do not relate to the facility's construction or acquisition" (see Section IV.D of Ing 2002). To ensure that such a grant is not misconstrued as a capital grant, it should be disbursed after the project has achieved commercial operations, with a refund of the grant somehow guaranteed (e.g., through a letter of credit) in the event that the

[18] The financial impact could, however, be mitigated somewhat if Section 9006 grants were considered to be non-taxable. For more information, see footnote 16.

[19] For more information on the activities of state clean energy funds in this area, see Bolinger and Wiser (2006c).

[20] Whether legislative action is required to implement these changes to Section 9006 may depend, to some extent, on how broadly the language in Section 9006(a)(1) – i.e., that funds are to be used to "to purchase renewable energy systems" – can be interpreted. At face value, grants earmarked for operational expenses, as well as production-based payments, presumably do not help recipients to "purchase" their projects. As such, a legislative change to the wording of Section 9006(a)(1) – e.g., "to purchase *and/or support* renewable energy systems" – may be required in order to implement any of these potential solutions to the double-dipping problem.

project ceases operations prior to expending the full amount.[21] Operational grants will be considered taxable income to the recipients and, like the current Section 9006 grants, will therefore not impact tax depreciation.

Though this is arguably the simplest way to restructure a grant in order to avoid a PTC haircut, operational grants have not been extensively used in past renewable energy support programs (at the Federal or state level). For example, most state clean energy funds have instead used production-based payments, awarded either over time or in advance (as described in the next two sections), to support utility-scale renewable energy projects. This trend could simply reflect a philosophical desire among clean energy funds to utilize incentives that reward good project performance, rather than providing unconditional grants. Since by statute the Section 9006 program already provides capital grants, however, tweaking the structure of the grant to cover operational rather than capital expenses could be a relatively painless administrative transition (though one that might require legislative action) with a large payback in terms of PTCs. Because of the lack of historical experience with operational grants, however, the USDA may wish to seek IRS guidance as to the feasibility and requirements of such an approach.

6.1.2 Production-Based Payments

Past IRS rulings on the Section 29 and Section 48 credits have held that loan guarantees, purchase commitments, price support loans, price support payments, and other non-capital cost assistance do not reduce the value of the PTC. A 1997 general information letter from the IRS to the California Energy Commission further suggests that the Section 29 rulings are applicable to the Section 45 PTC (Ing 2002).

As a result, a number of state clean energy funds have structured their incentives to utility-scale wind power projects as "price support" or "production-based" payments – e.g., $Y/MWh over an X-year period. California was the first to do so, auctioning 5-year production payments to qualifying projects as early as June 1998. Since then, a number of other states, including Pennsylvania, Minnesota, New Jersey, and New York have followed suit. Such payments are considered to be taxable income to the recipients.

Production payments not only preserve the value of the PTC, but also better align the incentives of society and the developer than do grants, by rewarding efficient project operation rather than project construction. On the downside, production payments carry a higher administrative burden than do grants, due to the need to track production over time. In addition, production payments paid over time do not match up particularly well with the financial needs of most renewable energy projects, which tend to have high capital costs and low operating costs. Finally, because they are paid over time, production payments will (unless the time value of money is properly taken into account when structuring the payments) have a lower present value

[21] Such grants need not be limited to a single year's worth of operational expenses, but could instead be sized to cover several years' worth of operational expenses. In other words, the size of the grant need not be limited by the amount of annual operating expenses. Grants sized for multi-year commitments will most likely need to be secured by a letter of credit or some other mechanism to ensure that the funds are spent as intended.

than an equally sized grant,[22] and will also be riskier than an up-front grant due to the possibility of default.

6.1.3 Advance Production-Based Payments

A related approach that may prove to be more attractive (to both the grantor and grantee) than a production-based payment is to provide what's known as an *advance* production-based payment.[23] In this case, rather than paying out the incentive over time as the project generates power, the grantor would provide the lump-sum equivalent of the production incentive at the start of commercial operations, with a requirement that the project pay back any portion of the incentive that is not earned as expected via actual production over time.

Relative to a *regular* production-based payment (discussed above in Section 6.1.2), an *advance* production-based payment better matches a project's need for up-front capital, does not suffer a potential loss in value due to the time value of money, and does not carry the risk that the government will default on future funding commitments. In other words, an advance production payment, which is considered taxable income, provides many of the same benefits as a grant. Unlike a grant, though, an advance production-based payment will likely *not* trigger a PTC haircut, if structured properly.

To avoid a PTC haircut, an advance production-based payment should be awarded only *after* the project has achieved commercial operations. Otherwise, the payment could be considered subsidized financing. Specifically, in the pre-amble to a 1982 proposed regulation concerning the Section 48 credit, the IRS wrote the following:

> [P]rice guarantees and purchase commitments are not considered subsidized energy financing since these types of arrangements confer only a contingent benefit. However, if funds are advanced under a price guarantee or a purchase commitment agreement which, in effect, results in a loan ***(for example, where payments under the agreement are made before the project becomes operational)***, these advances are considered to be subsidized energy financing.[24] ***[Emphasis added]***

In other words, awarding the payment after the project has achieved commercial operations helps ensure that the award will not be used for capital or equipment-related expenditures, which do trigger a PTC haircut.

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[22] For example, under the base-case assumptions described in Section 5.1, the after-tax present value of $500,000 provided as a 5-year production payment (i.e., $100,000 per year for five years) is $226,689 – i.e., 55% less than its $500,000 face value. In comparison, the after-tax present value of $500,000 provided as an up-front grant is $317,273 – i.e., 37% less than its $500,000 face value (see Table 2 in Section 5.1). In other words, switching to a 5-year production payment in order to avoid a PTC haircut (equal to 21% of the $500,000 face value, per Table 2) costs the project 18% of the $500,000 face value, for a net gain of just 3% of the $500,000 face value. Though this may hardly seem worth the effort, note that this example also provides a financial benefit to the grantor – i.e., the present value of the 5-year production payment is just $379,079, or 24% less than its $500,000 face value. If, however, the 5-year production payment is adjusted to account for the time value of money (such that its present value equals $500,000), then there will be no financial difference between it and an up-front grant (other than the avoided PTC haircut).

[23] Alternatively known as an "advance supplemental production payment" or "advance production incentive."

[24] Federal Register, Vol. 47, No. 17, page 3559 (January 26, 1982), as cited in Ing (2002).

To date, three state clean energy funds – in Pennsylvania, Illinois, and Oregon – have offered some form of advance production-based payment to wind projects. The IRS has weighed in on all three, through private letter rulings that pertain only to the specific recipients of such payments that requested the rulings.

Pennsylvania

In 2000, the Sustainable Development Fund (SDF) – a private non-profit community development financial institution that administers one of Pennsylvania's clean energy funds – awarded the 64.5 MW Waymart wind project an advance production-based payment. The payment was contingent upon two independent parties – an independent engineer and the power purchaser – confirming that the project was operational and delivering power. In addition, SDF required the project owner to post a letter of credit for the full incentive amount with SDF, to serve as security to reimburse SDF in the event the project failed to generate sufficient energy to have earned the production incentive. The amount secured by the letter of credit declines each quarter as the project generates power, until the project has earned the full amount of the incentive.[25]

Although the IRS ruled that this incentive structure would not trigger a PTC haircut,[26] its determination was based on SDF not being a "governmental" unit – i.e., the IRS did not comment on the structure of the incentive itself. As such, further clarification on the structure of the incentive has been required (and, fortunately, provided with respect to an Illinois project, discussed below).

Illinois

In 2002, the Illinois Department of Commerce and Economic Opportunity (ILDCEO) awarded the 54.45 MW Crescent Ridge wind project a $2.75 million "advance supplemental production payment." As described in Private Letter Ruling 200318066,[27] ILDCEO would disburse the proceeds of the award only when the project is completed and in service. The project owner is required to spend the proceeds on operating expenses over a certain term, and will earn the proceeds as it produces and sells electricity over a different (presumably longer) term. If either of these conditions is not met, the project owner must repay the ILDCEO.

As it did in the earlier Waymart ruling in Pennsylvania, the IRS ruled that ILDCEO's advance supplemental production payment would not trigger a PTC haircut.[28] This ruling, however, is more significant than the Waymart ruling, in that it is presumably based on the structure, rather than the administrator, of the incentive. In other words, the fact that ILDCEO is clearly a

[25] Under base-case assumptions described earlier in Section 5.1, and also assuming a letter of credit fee equal to 1% of the amount secured, a declining letter of credit to secure a $500,000 advance production payment over 5 years would cost about $12,000 (in present value terms), or about 2% of the $500,000 face value. Though a letter of credit may carry other indirect costs as well (e.g., a reduction in the amount of debt the project can support), this appears to be a small price to pay in order to avoid a PTC haircut.

[26] See Private Letter Ruling 200202048, at http://www.irs.gov/pub/irs-wd/0202048.pdf

[27] http://www.irs.gov/pub/irs-wd/0318066.pdf

[28] Incidentally, PLR 200318066 also confirmed that a governmental loan guarantee would not trigger a PTC haircut.

governmental entity (unlike SDF in Pennsylvania) suggests that the IRS found the incentive structure itself to be satisfactory.

Oregon

In a related but not entirely analogous situation, the IRS ruled (in Private Letter Ruling 200439038)[29] that the Energy Trust of Oregon's advance purchase of a wind project's renewable energy credits (RECs) would not trigger a PTC haircut. The project would earn the advance payment as it delivers electricity to the power purchaser over time, and must repay "an amount equal to any portion of the advance payment that has not been earned by the 15th year after commencement of commercial operations."

Like the SDF in Pennsylvania, the Energy Trust of Oregon is a non-governmental, non-profit administrator of that state's clean energy fund. As such, it is not clear to what degree the IRS ruling was based on incentive administration rather than structure, which limits the value of this ruling.

6.1.4 Summary

From the USDA's current position of providing grants to defray capital costs, perhaps the simplest way to fix the PTC haircut problem is to allow Section 9006 grants to be used to cover operational, rather than capital, expenditures, depending on the preference of the recipient. Operational grants will likely need to be provided *after* the project is operational, and secured in some way (e.g., by a letter of credit) to ensure that the grant is used as intended. Though there are strong indications that operational grants conforming to these guidelines will not reduce the value of the PTC, there do not appear to be any explicit IRS rulings to that effect. As such, the USDA may wish to seek IRS guidance before proceeding down this path.

In contrast, a combination of legislative history and public IRS guidance appears to provide sufficient clarity that production-based payments will not trigger a PTC haircut. *Advance* production-based payments, on the other hand, have been addressed by just a few private letter rulings. Although private letter rulings are directed only to the taxpayers who requested them, and may not be used or cited as precedent, they nevertheless provide some insight as to how the IRS might interpret Section 45 with respect to this incentive structure. One such private letter ruling involving an Illinois wind project suggests that, if properly structured, an advance production-based payment will also not trigger a PTC haircut.

Both production-based and advance production-based payments are more administratively burdensome than a traditional grant, simply due to the fact that, by definition, electricity generation must be tracked over time. An advance production-based payment, however, more closely approximates a grant in that only one payment is made (reducing administrative burden somewhat), and that payment is disbursed closer to when it is most useful to the project – upon commencement of commercial operations. In addition, there is no potential loss of value due to the time value of money, and also no risk that the government will default on future funding commitments.

[29] http://www.irs.gov/pub/irs-wd/0439038.pdf

Finally, it should be noted that all three potential solutions to the double-dipping problem discussed above might require statutory changes to the Section 9006 program's authorizing legislation (i.e., the USDA may not have the authority to make such changes on its own).

6.2 Direct Loans: Issues to Consider

Although the USDA does not yet offer direct loans under the Section 9006 program, it is reportedly considering doing so in future funding cycles. Section 4.3 above noted that a below-market USDA loan program will likely be considered "subsidized energy financing," while Section 5.2 demonstrated that a subsidized loan will likely provide *negative* net economic value to a project, after considering the impact of the corresponding PTC haircut. Given the likelihood that costs will exceed benefits in the presence of Federal tax credits, the USDA may wish to reconsider the value of providing a subsidized loan program.

That said, there are *potentially* ways to provide subsidized loans that *may* not trigger a PTC haircut. In general, specifying that the loan be used for non-capital-related (or at least non-PTC-related[30]) expenditures might accomplish this goal. For example, in 2002, the Illinois Finance Authority provided the 54.45 MW Crescent Ridge wind project with a zero-interest, long-term loan of $2,880,000 to capitalize half of the initial required reserve funds for debt service, road repair, and project decommissioning. The loan was scheduled to close at the same time that the primary project financing closed. Since all of the intended uses for the loan proceeds were to be operational in nature (or at least not capital- or construction-related), it was presumed that the loan would *not* trigger a PTC haircut. Because the Crescent Ridge project ultimately chose a non-leveraged financing structure, however, debt service reserve funds were not required, and the zero-interest loan therefore never closed.

Structuring subsidized loans in ways that might avoid a PTC haircut is a relatively novel and uncharted area of tax law. If the USDA decides to offer loans as part of the Section 9006 program, this may be an area worth exploring, in which case consultation with tax counsel knowledgeable in this area is strongly encouraged. On the other hand, the amount of a wind project's overall cost that is not tied to the PTC is likely to be relatively small, in which case the size of the loan – and in turn the value that it provides to the project – would also have to be relatively small. For example, Figure 2 in Section 5.2 showed that the value of even a heavily subsidized loan is rather muted at low amounts of leverage.

[30] For example, Ing (2002) notes that the PTC applies to electricity generated at a "qualified facility," and that the IRS has ruled that each "wind turbine together with its tower and supporting pad" is a separate qualified facility (provided it meets "placed in service" and other requirements). Thus, if a wind project is considered to be made up of individual qualifying facilities, one might conclude that other aspects of the project – such as roads, transmission lines, and substations – fall outside of the scope of the PTC. As such, grants or subsidized loans targeting such expenditures might not cause a PTC haircut.

7. Conclusions

The USDA's Section 9006 program has been successful at stimulating the development of new renewable energy and energy efficiency projects in rural communities. Perhaps just as importantly, the program has inspired farmers across the United States to explore the possibility of harvesting a new crop – renewable energy.

When the Section 9006 program was first envisioned, the possibility that portions of it might negatively interact with the PTC was apparently of little concern.[31] Indeed, the program was intended to enable project ownership among farmers and other rural entities that have typically been unable to access Federal tax incentives for renewable energy. In retrospect, however, virtually all large wind projects that have been awarded Section 9006 grants to date (large wind projects have been awarded 40% of all Section 9006 grant funding to date) are attempting to make use of the PTC, in many cases by bringing in corporate equity partners that are able to monetize the credits. As such, how the Section 9006 program interacts with the PTC has become an important issue.

This report demonstrates that the magnitude of the interaction is significant: Section 9006 grants lose between 11% and 46% of their value (depending on the project's capital cost and capacity factor) to PTC haircuts.[32] An additional 20%-37% (depending on tax bracket) is lost to income tax payments on the grant. In combination, depending on the specific combination of tax bracket, capital cost, and capacity factor that pertain to a given project, the percentage of a Section 9006 grant lost to both income tax payments and the PTC haircut can range from 31% to 83% of the dollar value of the grant. Our base-case scenario falls in the middle of that range, at a combined loss of 58% (37% due to income tax payments, and 21% due to PTC haircut). Add to this the transaction costs of applying for a Section 9006 grant, as well as the possibility of an unsuccessful application, and some might be left with relatively little motivation to apply.

As a result, the USDA may – with Congressional approval potentially a prerequisite – wish to consider revising the Section 9006 program in order to maximize its value in the presence of other Federal incentives. Although the taxation of the grant cannot be avoided,[33] the PTC haircut (equal to 21% of the grant in the base case) is potentially avoidable, if not through direct legislative relief, then through careful structuring of the incentive (which also may require statutory changes). Specifically, with proper statutory authority, the USDA could potentially allow its grants to be used to defray operational – rather than capital – costs, depending on the preference of the recipient. Alternatively, it could award the grant funding in the form of production-based payments, either paid out over time or as a lump sum at the inception of commercial operations (i.e., more like a traditional grant). A combination of legislative history,

[31] Negative PTC interaction was also not addressed in public comments on the proposed program rules, at least according to the USDA's summary of those comments. Allowing passive tax equity investors (interested in using PTCs) to participate in the program, however, was the subject of several comments (for a summary of comments, see http://www.rurdev.usda.gov/rd/farmbill/section9006rule.pdf).

[32] Loan guarantees, however, do not trigger a PTC haircut – see Section 4.2.

[33] One must either pay tax on the grant (if taxable), or else reduce the depreciable basis of the project by the amount of the grant (if non-taxable). The only difference between the two is the time value of money – the tax payment on a taxable grant hits up in the first year, whereas the equivalent loss of tax benefits associated with a reduction in depreciable basis occurs over a six-year period (assuming mid-year convention).

public IRS guidance, and private letter rulings suggest that any of these three options will not trigger a PTC haircut (though advance consultation with the IRS is nevertheless advisable).

Finally, the USDA is reportedly considering a direct loan program for future rounds of Section 9006 funding. Given the PTC interaction, such a program is likely to provide little (if any) value to projects that also take the PTC: a government loan will either cause a PTC haircut that will likely result in a net loss (if subsidized), or else will provide little or no advantage over the private market (if unsubsidized). It may be possible to structure a subsidized loan such that it is applied strictly to non-capital costs, and therefore does not offset the PTC, but there has been little experience with this type of structure to date, and consultation with knowledgeable tax counsel is strongly recommended before proceeding down this path.

Given the complexities and nuances of tax law, the USDA would be wise to seek experienced tax counsel, and perhaps IRS guidance, prior to implementing any of the programmatic changes discussed in this report. Furthermore, depending on how broadly the language in Section 9006(a)(1) – i.e., that funds are to be used to "purchase renewable energy systems" – can be interpreted, each of the potential solutions to the double-dipping problem discussed in this report might require statutory changes to the Section 9006 program's authorizing legislation (i.e., the USDA may not have the authority to make such changes on its own). In this light, it is perhaps important to conclude by noting that the PTC's anti-double-dipping provisions were put in place for a reason. While state renewable energy programs have generally been interested in structuring their incentives in ways that will not trigger a PTC haircut (i.e., states are looking to leverage as many Federal dollars as possible), Congress may be considerably less interested in modifying one Federal program (the USDA's Section 9006 program) to allow the "double-dipping" of another (the Section 45 PTC).

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Appendix A: Text of Section 9006 of the 2002 Farm Bill

SEC. 9006. RENEWABLE ENERGY SYSTEMS AND ENERGY EFFICIENCY IMPROVEMENTS.

(a) IN GENERAL.—In addition to exercising authority to make loans and loan guarantees under other law, the Secretary shall make loans, loan guarantees, and grants to farmers, ranchers, and rural small businesses to—

(1) purchase renewable energy systems; and

(2) make energy efficiency improvements.

(b) ELIGIBILITY.—To be eligible to receive a grant under subsection (a), a farmer, rancher, or rural small business shall demonstrate financial need as determined by the Secretary.

(c) COST SHARING.—

(1) IN GENERAL.—

(A) GRANTS.—The amount of a grant shall not exceed 25 percent of the cost of the activity funded under subsection (a).

(B) MAXIMUM AMOUNT OF COMBINED GRANT AND LOAN.—The combined amount of a grant and loan made or guaranteed shall not exceed 50 percent of the cost of the activity funded under subsection (a).

(2) FACTORS.—In determining the amount of a grant or loan, the Secretary shall take into consideration, as applicable—

(A) the type of renewable energy system to be purchased;

(B) the estimated quantity of energy to be generated by the renewable energy system;

(C) the expected environmental benefits of the renewable energy system;

(D) the extent to which the renewable energy system will be replicable;

(E) the amount of energy savings expected to be derived from the activity, as demonstrated by an energy audit comparable to an energy audit under section 9005;

(F) the estimated length of time it would take for the energy savings generated by the activity to equal the cost of the activity; and

(G) other factors as appropriate.

(d) INTEREST RATE.—

(1) IN GENERAL.—A loan made by the Secretary under subsection (a) shall bear interest at the rate equivalent to the rate of interest charged on Treasury securities of comparable maturity on the date the loan is approved.

(2) DURATION.—The interest rate for each loan will remain in effect for the term of the loan.

(e) CONSULTATION.—In carrying out this section, the Secretary shall consult with the Secretary of Energy.

(f) FUNDING.—Of the funds of the Commodity Credit Corporation, the Secretary shall make available to carry out this section $23,000,000 for each of fiscal years 2003 through 2007.