

Financing Alternative Energy Projects - Federal Tax Incentives

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Introduction

- Alternative energy encompasses energy produced from “clean” resources such as:
 - Wind
 - Biomass
 - Geothermal
 - Solar

- The development of electric generation facilities powered by alternative energy sources has been a major focus at both the federal and state levels

Renewable Portfolio Standards

- Nearly all states have enacted (or are in the process of enacting) a renewable portfolio standard (“RPS”), which requires that a certain portion of the electric energy sold in the state (or other jurisdiction) be sourced from alternative energy by a specified target year
- A national RPS is likely on the way
- Considering the current and expected enactment of RPSs, it is projected that the supply of alternative energy over the next 10 years will not be sufficient to meet the demand requirements pursuant to the RPSs

Incentivizing Alternative Energy

- Unlike projects using traditional sources of fuel to generate electric energy such as coal and natural gas, projects powered by alternative energy sources have historically struggled to be economically competitive
- In light of this competitive disadvantage and the forced ramp up of alternative energy pursuant to the RPSs, the federal and state governments have responded by enacting legislation that provides specified benefits to help offset this disadvantage and to incentivize the development and construction of alternative energy projects
 - State incentives (tax and non-tax)
 - Renewable energy certificate (REC), or “Green Tag” programs

Federal Tax Incentives

- Congress has provided the owners of alternative energy projects with several tax incentives
- Currently, these tax incentives are what drive the decision to construct alternative energy projects, as the economic viability of these projects often turn on the availability of these incentives
- Some of these incentives include:
 - Production tax credits under section 45
 - Investment tax credit under section 48
 - Accelerated depreciation
 - 5 year recovery period
 - Potential for bonus depreciation in year placed in service (currently 50% of cost if placed in service before 2010)



The Section 45 Production Tax Credit

Section 45 Production Tax Credit

- Section 45 establishes a production tax credit (“Section 45 PTC”) that is currently equal to 2.1¢ (“credit rate”) multiplied by the kilowatt hours of electricity that are:
 - sold by the taxpayer to an unrelated person during the taxable year
 - produced in the U.S. at a qualifying alternative energy project during the 10-year period beginning on the date the project is originally placed in service (“credit period”)
- Alternative energy projects that may qualify for the Section 45 PTC include those powered by wind, biomass, geothermal, municipal solid waste, and hydropower (“Section 45 Projects”) that are originally placed in service by the end of 2013 (by end of 2012 in the case of wind)

Limitations on the Section 45 PTC

- The credit rate is cut in half for certain biomass and other alternative energy projects
- The Section 45 PTC is reduced for certain government grants and subsidized/tax-exempt financing that the taxpayer receives for use in connection with the project
- The Section 45 PTC is reduced if the Secretary determines that the annual average contract price per kilowatt hour of electricity generated from the same qualified energy resources and sold in the previous year in the U.S. (“reference price”) exceeds a certain level (currently 11.08¢)
 - The reference price for wind is currently 3.60¢
 - The reference prices for biomass, geothermal, and other alternative energy sources have not been determined



The Section 48 Investment Tax Credit

Section 48 Investment Tax Credit

- Section 48 establishes an investment tax credit (“Section 48 ITC”) for certain energy property (“Section 48 Projects”) placed in service during the taxable year, that is equal to:
 - 30% of the cost of qualifying solar energy property, fuel cell property, and small wind energy property, and
 - 10% of the cost of qualifying geothermal energy property, microturbine property, and combined heat and power system property

- In order to qualify for the Section 48 ITC:
 - The construction, reconstruction, or erection of the energy property must be completed by the taxpayer, or the energy property must be acquired by the taxpayer if the original use of the property commences with the taxpayer,
 - The energy property must be business property (i.e., depreciation allowable), and
 - In the case of solar energy property and combined heat and power system property, the property must be placed in service prior to 2017

Section 48 Investment Tax Credit

- The basis of energy property must be reduced by 50% of the amount of the Section 48 ITC
- The Section 48 ITC is subject to recapture if the energy property is disposed of or otherwise ceases to be energy property in the hands of the taxpayer within 5 years of being placed in service



Significant Changes made by the American Recovery and Reinvestment Act of 2009

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- The Section 45 PTC is extended for 3 years (through 2012 for wind, 2013 for others)
- Elimination of requirement to reduce the cost of energy property, for purposes of determining the Section 48 ITC, by the amount of subsidized energy financing and tax-exempt debt that is used to finance such property
- Election established to claim the Section 48 ITC for Section 45 Projects instead of the Section 45 PTCs
- 50% bonus depreciation (Section 168(k)) extended 1 year (for property placed in service before 2010)

Significant Changes made by the American Recovery and Reinvestment Act of 2009

- Ability to apply for cash grant in lieu of the Section 48 ITC (in an amount equal to the Section 48 ITC) for energy property placed in service in 2009 or 2010 that would otherwise be eligible for the Section 48 ITC (including Section 45 Projects with respect to which an election to claim the Section 48 ITC is made)
 - Basis reduction and recapture provisions for the Section 48 ITC are made applicable
 - The ability to apply for the grant allows for the receipt of cash (within 60 days of the later of the date application is made or the facility is placed in service) without the need to have taxable income or to implement a monetization structure to recognize the benefit
 - However, taking the grant may leave benefit of depreciation deductions on the table if the owner cannot use them



Investment in Alternative Energy Projects

Investment in Alternative Energy Projects

- Developers of alternative energy projects often have insufficient income to utilize the tax attributes, at least in the early years
- In order for the provided tax incentives to serve their intended purpose (i.e., incentivizing/financing the construction and operation of alternative energy projects) it is essential that the developers be able to recognize the benefit of these incentives
- Several structures have evolved that allow the developer to “monetize” the tax incentives by shifting entitlement to the incentives to investors that can use them

Investment in Alternative Energy Projects

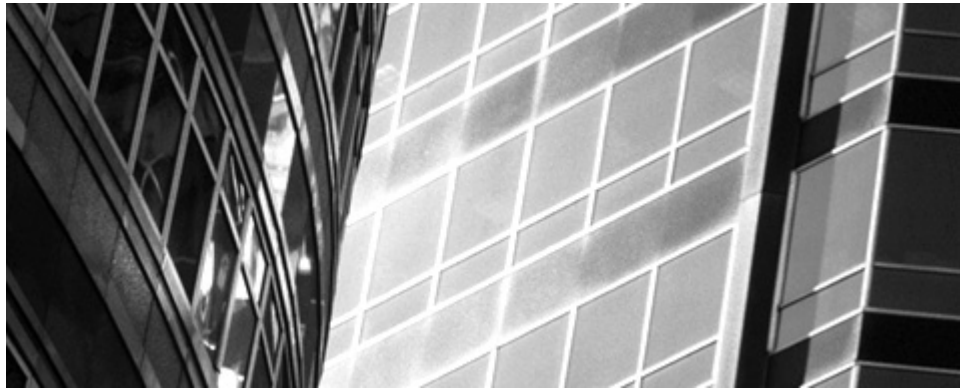
- For Section 45 Projects, tax partnerships (LPs or LLCs) are generally utilized as an investment vehicle (“Project Partnerships”), with the Project Partnership entering into a PPA with a utility or other offtaker
- This structure allows the developer to allocate the Section 45 PTCs and the depreciation deductions to investors (or the “tax equity”) in the Project Partnership, with an allocation “flip” to the developer after the 10-year credit period (often includes an IRR hurdle for the tax equity)
- A leasing structure is not used for Section 45 Projects because the taxpayer must be the producer of the electricity in order to be eligible for the Section 45 PTCs
 - However, Section 45 Projects that elect to claim the Section 48 ITC instead of the Section 45 PTCs may employ the use of a leasing structure since the taxpayer does not have to be the “producer” of the electricity under Section 48

Investment in Alternative Energy Projects

- A leasing structure is often used for Section 48 Projects, pursuant to which the Section 48 Project is owned by the tax equity and leased to the developer or other oftaker
- However, a PPA structure is employed where the developer of the Section 48 Project is a tax-exempt or governmental entity, since eligibility for the Section 48 ITC is lost if the user of the property is this type of entity
 - Certain safe harbor rules are provided that should be complied with to ensure that the PPA is treated as a service contract and not a lease for tax purposes

Investment in Alternative Energy Projects

- The developer usually has an option to acquire the interests in the alternative energy project from the tax equity for fair market value determined at the time of exercise
 - Option is exercisable after the tax attribute stream has run its course
- The ability to monetize the tax attributes associated with the alternative energy projects allows developers to provide significant returns to investors while maintaining a relatively low cost of capital (especially where the present value of these tax attributes to the developer is small)



Case Study



Scenario #1

- Wind farm is placed in service in 2009
 - Capacity: 100 MW
 - Construction cost: \$200M
 - Capacity factor: 34%
- Assumptions
 - Construction financed via equity and construction loan from financial institution (no grants, tax-exempt debt, or subsidized energy financing)
 - PTC annual escalation rate: 2%
 - Discount rate for NPV: 10%
 - Tax rate: 35%
 - Entire amount of construction cost depreciable as 5 year property

Tax Benefit Analysis - Section 45 PTCs

- Section 45 PTCs
 - Annual production
 - $100 \text{ MW} \times 24 \text{ hrs/day} \times 365 \text{ days} \times 34\% = 297,840 \text{ MWh}$
 - Annual PTC (unescalated)
 - $297,840 \text{ MWh} \times \$21/\text{MWh} = \$6.25\text{M}$
 - Depreciation deductions (tax basis of \$200M)
 - Year 1: \$100M (50% bonus depreciation)
 - Year 2: \$40M
 - Year 3: \$24M
 - Year 4: \$18M
 - Year 5: \$18M
 - NPV of PTCs over 10 years (escalated)
 - \$41.44M
 - NPV of depreciation deductions
 - \$57.91M
 - Total tax benefit = \$99.35M

Tax Benefit Analysis - Section 48 ITC

- Section 48 ITC
 - ITC
 - \$60M ($\$200\text{M} \times 30\%$)
 - Depreciation deductions (tax basis of \$170M)
 - Year 1: \$85M (50% bonus depreciation)
 - Year 2: \$34M
 - Year 3: \$20.4M
 - Year 4: \$15.3M
 - Year 5: \$15.3M
 - NPV of depreciation deductions
 - \$49.23M
 - Total tax benefit = \$109.23M

Decision

- Owner of wind farm would obtain a NPV tax benefit of \$9.88M by electing to take the Section 48 ITC instead of the Section 45 PTCs
- Owner should decide whether to apply to the Treasury for a cash grant of \$60M in lieu of the Section 48 ITC, or to claim (and perhaps monetize) the Section 48 ITC and depreciation deductions
 - Grant may not be preferable if owner cannot recognize the value associated with the accelerated depreciation deductions in the absence of a monetization structure (as a practical matter, investors are generally not interested in depreciation alone)
 - This grant would be received within 60 days of the date of application or the placed in service date (whichever is later), which will allow the owner to use the grant to pay down any construction financing
 - The owner may be able to collateralize the right to the grant in order to facilitate attaining construction financing



Scenario #2

Scenario

- Wind farm is placed in service in 2009
 - Capacity: 100 MW
 - Construction cost: \$170M
 - Capacity factor: 40%
- Assumptions
 - Construction financed via equity and construction loan from financial institution (no grants, tax-exempt debt, or subsidized energy financing)
 - PTC annual escalation rate: 2%
 - Discount rate for NPV: 10%
 - Tax rate: 35%
 - Entire amount of construction cost depreciable as 5 year property

Tax Benefit Analysis - Section 45 PTCs

- Section 45 PTCs
 - Annual production
 - $100 \text{ MW} \times 24 \text{ hrs/day} \times 365 \text{ days} \times 40\% = 350,400 \text{ MWh}$
 - Annual PTC (unescalated)
 - $350,400 \text{ MWh} \times \$21/\text{MWh} = \$7.36\text{M}$
 - Depreciation deductions (tax basis of \$170M)
 - Year 1: \$85M (50% bonus depreciation)
 - Year 2: \$34M
 - Year 3: \$20.4M
 - Year 4: \$15.3M
 - Year 5: \$15.3M
 - NPV of PTCs over 10 years (escalated)
 - \$48.76M
 - NPV of depreciation deductions
 - \$49.23M
 - Total tax benefit = \$97.99M

- Section 48 ITC
 - ITC
 - \$51M ($\$170\text{M} \times 30\%$)
 - Depreciation deductions (tax basis of \$144.5M)
 - Year 1: \$72.25M (50% bonus depreciation)
 - Year 2: \$28.9M
 - Year 3: \$17.34M
 - Year 4: \$13M
 - Year 5: \$13M
 - NPV of depreciation deductions
 - \$41.84M
 - Total tax benefit = \$92.84M

Decision

- Owner of wind farm would obtain a NPV tax benefit of \$5.15M by claiming the Section 45 PTCs instead of electing to take the Section 48 ITC



Observations

Effect of Capacity Rating, Net Capacity Factor, and Construction Costs

- Factors that drive the NPV of the Section 48 ITC higher and the NPV of the Section 45 PTCs lower:
 - Relatively low capacity rating
 - Relatively low net capacity factor
 - Relatively high construction costs

- Factors that drive the NPV of the Section 48 ITC lower and the NPV of the Section 45 PTCs higher:
 - Relatively high capacity rating
 - Relatively high net capacity factor
 - Relatively low construction costs

Other Factors to Consider

- The amount of the Section 45 PTC is reduced (by up to 50%) to the extent that the Section 45 Project is financed by grants, tax-exempt debt, and/or subsidized energy financing
 - Because the cost of an alternative energy project need not be reduced for tax-exempt debt or subsidized energy financing for purposes of determining the Section 48 ITC (or the grant in lieu thereof), the existence of such financing for a Section 45 Project will often make it beneficial for the owner to elect to take the Section 48 ITC instead of the Section 45 PTC
- The amount of the Section 45 PTC is reduced by 50% for certain Section 45 Projects, most notably those powered by open-loop biomass
 - Because the Section 48 ITC is not required to be reduced for such Section 45 Projects, the owner of these Section 45 Projects will often find it beneficial to elect to take the Section 48 ITC instead of the Section 45 PTC
- Lack of production risk associated with the Section 48 ITC

Final Thoughts

- The decision as to whether to elect the Section 48 ITC instead of the Section 45 PTCs, or to simply claim the Section 45 PTCs, will be affected by numerous factors. Each of these factors must be considered in the context of a NPV analysis in order to ascertain the best course of action