taxnotes federal

Volume 172, Number 10 ■ September 6, 2021

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Reprinted from *Tax Notes Federal*, September 6, 2021, p. 1559

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In this report, Burton and Leff examine the federal income taxation of proxy revenue swaps as applied to renewable energy project owners and insurance companies or other hedge or swap providers, and they identify areas in which clarifying guidance is needed.

Table of Contents

I. Introduction

The proxy revenue swap (PRS) is a burgeoning financial product that supports renewable energy projects that sell electrical energy into the wholesale electricity markets.[1] The PRS is typically used by renewable energy project sponsors, financing parties, and investors that transact opposite a handful of insurance companies specializing in risk transfer. The goal of the PRS is to stabilize variable cash flows that beset renewable energy projects that operate within the wholesale electricity markets.

At its core, the PRS is a financially settled fixed-for-floating swap. However, the structure of the PRS and the risks it is intended to mitigate set it apart from more traditional energy-related hedges. For renewable energy projects that sell electrical energy into the wholesale electricity markets and take merchant price risk[2] associated with those sales, the PRS provides revenue stabilization necessary to obtain project financing.[3] In essence, the PRS tries to simulate the effects of contracted offtake (for example, a power purchase agreement) for the term of the PRS,

[1] Although the PRS has been used in wholesale electricity markets outside the United States (for example, within the jurisdictional territory of the Australian Energy Market Operator), this report focuses on the use of the PRS solely within the United States.

[2] The terms "merchant," "merchant price risk," "merchant power," or "merchant generation" in this context refer generally to energy projects that take price risk associated with the sale of electricity into the wholesale electricity markets, usually selling at a geographical node rather than a trading hub. Effectively, merchant risk is akin to selling electricity on the spot market. Although merchant risk takes many forms in the wholesale electricity markets, a detailed overview of those risks is beyond the scope of this report.

[3] A traditional definition of project finance is "a method of raising long-term debt financing through 'financial engineering,' based on lending against the cash flow generated by the project alone; it depends on a detailed evaluation of a project's construction, operating and revenue risks, and their allocation between investors, lenders, and other parties through contractual or other arrangements." E.R. Yescombe, *Principles of Project Finance* 1 (2013).

which is typically equal to the term of the project financing.[4]

This report examines the federal income taxation of the PRS as applied to renewable energy project owners and insurance companies or other hedge or swap providers, and it highlights areas in which the rules governing the taxation of financial products fall short in their application to the PRS.

II. Background

In 2016 Allianz Risk Transfer (Bermuda) Ltd., a limited company organized under Bermuda law, entered into a first-of-its-kind PRS to support a 178-megawatt wind project located in Kansas.[5] Allianz underwrote the PRS with the assistance of several service providers that specialized in weather risk transfer and energy hedge structuring as well as ongoing support and management of PRSs.[6]

Since 2016 PRSs have been used to support gigawatts of renewable energy projects in the United States.[7] A typical PRS takes the following form:

1. *The fixed payment*. A hedge or swap provider, such as Allianz, agrees to make fixed quarterly payments to a renewable energy project sponsor.[8] Although there are multiple ways to calculate — and variables to consider when calculating — the fixed payment, typically it is sized to at least satisfy debt service of an attendant project financing and also achieve a prospective return hurdle for the project sponsor and other stakeholders in the capital stack, such as tax equity investors. Importantly, the fixed payment is made regardless of the volume of electrical energy produced by the underwritten project, the timing of that production, or the market clearing price of electrical energy in the applicable wholesale electricity market to which the project exports electrical energy.[9]
2. *The floating payment*. The project sponsor, in turn, agrees to make quarterly floating payments to the hedge provider. A floating payment is calculated by finding the proxy revenue of the applicable renewable energy project.[10] Generally, proxy revenue is calculated by finding the product of (1) the sum of the applicable project's *modeled* generation of electricity over the measurement or settlement period (assuming predetermined operational characteristics and efficiencies[11]) and (2) the market clearing price of electrical energy as measured at a liquid trading hub within the wholesale electricity market that is proximate to the project.[12] Proxy production, as opposed to actual generated production, is used to calculate the floating payments because it protects the hedge provider from assuming the project sponsor's operational risk on the project. In turn, a PRS mitigates the risk of changes in the hub clearing price that result from fluctuations in the weather (but not the risk that weather affects a project's actual level of production), volumetric risk, and "shape risk"[13] inherent in the operation of a renewable energy project that sells

[4]The tenors of project finance debt instruments in the market generally range from seven to 15 years, with 10 to 12 years making up the majority of project finance credit facilities.

[5]Allianz, "Allianz Risk Transfer and Partners Develop Innovative Swap Solution to Hedge Volatile Revenues of Wind Farms" (May 5, 2016).

[6]*Id*.

[7]*See, e.g.*, Steve Evans, "Nephila & Allianz in Proxy Revenue Swap for Escalade Wind Farm in Texas," *Artemis*, June 17, 2020; and Nephila Climate, "Nephila Climate Announces First Proxy Revenue Swaps for Wind Project Re-powering," Cision PR Newswire, Feb. 28, 2019.

[8]Bo Harvey, "Proxy Revenue Swaps Drafting and Negotiation," LexisNexis Practical Guidance (2020).

[9]Christine Brozynski and Hans Tuenter, "Proxy Revenue Swaps for Solar," Norton Rose Fulbright Project Finance (June 5, 2018).

[10]Harvey, *supra* note 8.

[11]Operational characteristics and efficiencies include, for example, the "availability" of the project, short-term and long-term (seasonal) weather patterns, the project's overall performance, electrical losses, and curtailment resulting from technical or market congestion. *See id.*

[12]Brozynski and Tuenter, *supra* note 9. Measurement of the market price of electrical energy is taken at a liquid trading hub as compared with the relatively illiquid node within the wholesale electricity market, which reflects the more volatile locational marginal price of electrical energy.

[13]Shape risk is the correlation between increased volume of renewable energy production from (some intermittent) technology and the decreased price of electricity produced by that technology within the same geographic area. *See* Harvey, *supra* note 8. For instance, because the wind blows more at night in West Texas, there is a greater supply of electricity at night there, and the price declines.

electrical energy into the wholesale electricity markets on a merchant basis.[14]

3. *Settlement*. The fixed payment and the floating payment are financially settled on a net basis at the expiration of each measurement or settlement period.[15] When the fixed payment exceeds the floating payment, the hedge provider pays the project sponsor the positive delta. When the floating payment exceeds the fixed payment, the project sponsor pays the hedge provider the positive delta.[16] All the while the project sponsor is selling electricity into the wholesale electricity markets on a merchant basis. The effect is that the project sponsor has a stable and predictable stream of revenue to meet its project financing requirements.
4. *Premiums*. In consideration for the hedge provider entering into a PRS with the project sponsor, the project sponsor pays the hedge provider an upfront payment upon the closing of the PRS, as well as an annual premium payment.[17]
5. *Documentation*. PRSs are typically memorialized using the 2002 Master Agreement from the International Swaps and Derivative Association.[18] The Master Agreement is supplemented with the ISDA Schedule (which tends to incorporate highly negotiated provisions), the ISDA Credit Support Annex, and in some cases, with the ISDA North American Power Annex.[19] The tenor of a typical PRS is often coterminous with the applicable project financing.

III. Income Taxation of the PRS

A. PRS as an NPC

Conceptually, the PRS should constitute a notional principal contract (NPC) under reg. section 1.446-3(c)(1)(i); however, given the structural complexity of the PRS, a thorough analysis is required. Reg. section 1.446-3(c)(1)(i) defines an NPC as follows:

> A notional principal contract is a financial instrument that provides for the payment of amounts by one party to another at specified intervals calculated by reference to a specified index upon a notional principal amount in exchange for specified consideration or a promise to pay similar amounts. . . . Notional principal contracts governed by this section include . . . commodity swaps[20] . . . and similar agreements.

The 2011 proposed regulations modified the foregoing definition by requiring at least one party to make "two or more payments to the counterparty."[21] Also, the 2011 proposed regulations expanded the list of financial arrangements that constitute NPCs to include weather-related swaps.[22]

For a PRS to constitute an NPC, the PRS must (1) provide for payment of amounts by one party to another at specified intervals, (2) be calculated by reference to a "specified index," and (3) be calculated on a "notional principal amount." Structurally, a typical PRS provides for payments at specified intervals. As described above, a typically structured PRS provides for quarterly net-basis payments.

Whether a PRS is calculated by reference to a specified index is more complex. Reg. section 1.446-3(c)(2) defines a specified index as (1) a "fixed rate, price, or amount"; (2) a "fixed rate, price, or amount applicable in one or more specified periods followed by one or more different fixed rates, prices, or amounts applicable

[14]Harvey, *supra* note 8.
[15]*Id.*
[16]*Id.*
[17]*Id.*
[18]*Id.*
[19]*Id.*

[20]However, there is no consensus among economists that electricity constitutes a commodity. *See* J.B. Lesourd, "Electricity: The Limits of Commodity Status," presented at Conférence sur L'ouverture des Marchés de L'éléctricité (Jan. 23, 2004). The IRS, however, has concluded that it likely does. *See* ILM 201132021 ("electricity is most likely a commodity").
[21]Prop. reg. section 1.446-3(c)(1)(i), REG-111283-11, 76 F.R. 57684 (Sept. 16, 2011).
[22]Prop. reg. section 1.446-3(c)(1)(iii).

in other periods"; (3) an "index that is based on objective financial information";[23] or (4) an "interest rate index that is regularly used in normal lending transactions between a party to the contract and unrelated persons."

Generally, the use of or reference to only *one* specified index is required for a swap to constitute an NPC. This is true regardless of whether more than one specified index or additional variables are referenced in calculating periodic payments. This reading is supported by the plain language of the definition of NPC,[24] the definition of periodic payments,[25] and commentary at the time the 1993 regulations were promulgated.[26]

The 2011 proposed regulations would expand the definition of specified index by adding that there is no requirement that a specified index be a financial index. Specified nonfinancial indexes qualify as long as they satisfy four requirements[27]: (1) The specified index is based on "any objectively determinable information that" (2) "is not within the control of any of the parties to the contract and is not unique to one of the parties' circumstances," (3) "is not financial information," and (4) "cannot be reasonably expected to front-load or back-load payments accruing under the contract."[28] Further, the preamble to the 2011 proposed regulations makes explicit that weather-related swaps are not NPCs under the 1993 regulations because "a weather index does not qualify as a 'specified index' under Regulation section 1.446-3(c)(2)"; however, weather-related swaps would constitute NPCs under the 2011 proposed regulations.[29]

Proposed regulations have no more authority than the IRS's litigating position in a case.[30] Accordingly, it is a fundamental principle of tax practice that proposed regulations may not be relied on for planning purposes, "except if there are no applicable final or temporary regulations in force and there is an express statement in the preamble to the proposed regulations that taxpayers may rely on them currently."[31] "If there are applicable final or temporary regulations in force, taxpayers may only rely on proposed regulations for planning purposes in the limited circumstance if the preamble to the proposed regulations contain an express statement permitting taxpayers to rely on them currently, notwithstanding the existence of the final or temporary regulations."[32] The preamble to the 2011 proposed regulations does not contain a statement permitting taxpayers to rely on the proposed regulations; rather, the closest statement regarding reliance in the preamble to the 2011 proposed regulations makes clear that "these regulations are proposed to apply to contracts entered into on or after the date the final regulations are published in the Federal Register."[33] Final regulations codifying the 2011 proposed regulations have not been published in the *Federal Register*; as such, the 1993 regulations provide the applicable definitive guidance.

There are two indexes used in a typical PRS: (1) weather-related indexes[34] and (2) electricity-related indexes. As stated above, a weather index does not constitute a specified index under the 1993 regulations. The question is whether the electrical-energy-related indexes used in a typical PRS constitute a specified index under reg. section 1.446-3(c)(2). Reg. section 1.446-3(c)(2) again

[23] Objective financial information is defined in reg. section 1.446-3(c)(4)(ii).

[24] Reg. section 1.446-3(c)(1)(i) ("by reference to *a specified index* upon a notional principal amount" (emphasis added)).

[25] Reg. section 1.446-3(e)(1) ("payments made or received . . . that are based on *a specified index*" (emphasis added)).

[26] *See* New York State Bar Association Tax Section, "Report on Proposed Regulations on Methods of Accounting for Notional Principal Contracts," at n.48 (Jan. 6, 1991) (For a swap whose form references to two specified indexes, "the requirement of the definition of periodic payments that the payments be based on a 'single specified index' is satisfied if the definition is based on economic substance of the swap. If, however, the parties are bound by the form of the transaction, it is not clear that the definition of periodic payments is satisfied, because the counterparty's payment obligations could be construed as relating to two specified indices."). Treasury did so resolve this ambiguity by promulgating final regulations defining periodic payments by reference to "*a* specified index" rather than "a *single* specified index."

[27] To clarify, however, the 1993 final regulations do not explicitly prohibit a specified index from being a nonfinancial index. Also, the preamble to the 1991 proposed regulations makes it clear that commodity indexes constitute specified indexes. Preamble to former prop. reg. section 1.446-3 (FI-16-89, 56 F.R. 31350 (July 10, 1991)).

[28] Prop. reg. section 1.446-3(c)(2), REG-111283-11.

[29] Preamble to REG-111283-11, 76 F.R. 57684.

[30] *See, e.g.*, FSA 199907004.

[31] Internal Revenue Manual 32.1.1.2.2.

[32] *Id.*

[33] Preamble to REG-111283-11, 76 F.R. 57684.

[34] Weather-related indexes used in a PRS vary by transaction but typically refer to weather data measured at the renewable energy project site. However, broader-based indexes derived from weather data over a larger geographic area may also be used.

states in pertinent part that a specified index is "an index that is based on objective financial information." Objective financial information means "any current, objectively determinable financial or economic information that is not within the control of any of the parties to the contract and is not unique to one of the parties' circumstances (such as one party's dividends, profits, or the value of its stock)."[35]

In a typical PRS, the floating payment (but not the fixed payment) is calculated by reference to the market clearing price of electrical energy at a liquid trading hub proximate to the applicable renewable energy project. The market clearing price of electrical energy within a regulated wholesale electricity market is objectively determinable because it is customarily established by a uniform clearing price auction calculated at predetermined time increments throughout the day, and it is administered by neutral, quasi-governmental parties, such as regional transmission organizations and independent system operators. Moreover, the use of a uniform clearing price auction to determine the price of electrical energy is inherently objective (and economic) and fosters competition to combat market manipulation by providing market participants an incentive to bid low to ensure they clear the price set by the marginal resource.[36] These characteristics are also evidence that a determination of the market clearing price for electrical energy "is not within the control of any of the parties to the contract and is not unique to one of the parties' circumstances."[37] Tax practitioners and their clients engaged in PRSs have generally concluded that it is appropriate to determine that the indexes involved in PRSs are specified indexes, although there are no cases, rules, or regulations confirming that.

Once it is determined that the PRS provides for payment of amounts by one party to another at specified intervals and is calculated by reference to a specified index, the final question in determining whether a PRS is an NPC is whether the payments are calculated "upon a notional principal amount." The final regulations from 1993 define notional principal amount as "any specified amount of money or property that, when multiplied by a specified index, measures a party's rights and obligations under the contract. . . . The notional principal amount may vary over the term of the contract, provided that it is set in advance or varies based on objective financial information (as defined in paragraph (c)(4)(ii) of this section)."[38] The 2011 proposed regulations define notional principal amount as:

> Any specified amount of money or property that, when multiplied by either a specified financial index or a specified non-financial index, measures a party's rights and obligations under the contract. . . . The notional principal amount may vary over the term of the contract, provided that it is set in advance or varies based on objective financial information (as defined in paragraph (c)(4)(ii) of this section). If a notional principal contract references a notional principal amount that varies, or that references a different notional principal amount for each party, and a principal purpose for entering into the contract is to avoid the application of the rules in this section, the Commissioner may recharacterize the contract according to its substance, including by separating the contract into a series of notional principal contracts for purposes of applying the rules of this section or by treating the contract, in whole or in part, as a loan.[39]

The IRS's long-held view is that electricity is tangible property — specifically, an inventoriable good — rather than a service.[40] In calculating the floating payment, the modeled generation of electrical energy by the applicable renewable energy project, which varies over the term of the PRS in accordance with the operational characteristics and efficiencies of the project, is

[35] Reg. section 1.446-3(c)(4)(ii).

[36] ISO New England Inc., "How Resources Are Selected and Prices Are Set in the Wholesale Energy Markets."

[37] Reg. section 1.446-3(c)(4)(ii).

[38] Reg. section 1.446-3(c)(3).

[39] Prop. reg. section 1.446-3(c)(3).

[40] *See, e.g.*, FAA 20062801F (citing LTR 200152012). GCM 38337 (Apr. 4, 1980); GCM 37352 (Dec. 21, 1977); Announcement 86-65, 1986-19 IRB 19; TAM 200543050; and LTR 200146009.

multiplied by the market clearing price of electrical energy at a liquid trading hub proximate to the applicable renewable energy project. Based on these characteristics of a PRS, the electricity sold is the notional principal amount (which is then multiplied by the price at the hub (that is, the specified index)) to determine the payment due to or from the hedge provider.

B. Timing and Measurement

Once it is determined that a PRS is an NPC, the federal income tax analysis follows a well-traveled path, starting with the timing and measurement of periodic payments, nonperiodic payments, and termination payments. Under section 446(b), if a taxpayer's method of accounting "does not clearly reflect income, the computation of taxable income must be made under such method as, in the opinion of the Treasury secretary, does clearly reflect income."[41] That authority was demonstrated in the final 1993 regulations:

> For all purposes of the Code, the net income or net deduction from a notional principal contract for a taxable year is included in or deducted from gross income for that taxable year. The net income or net deduction from a notional principal contract for a taxable year equals the total of all of the *periodic payments* that are recognized from that contract for the taxable year under paragraph (e) of this section and all of the *nonperiodic payments* that are recognized from that contract for the taxable year under paragraph (f) of this section.[42] [Emphasis added.]

Periodic payments are defined as "payments made or received pursuant to a notional principal contract that are payable at intervals of one year or less during the entire term of the contract . . . that are based on a specified index . . . and that are based on either a single notional principal amount or a notional principal amount that varies over the term of the contract in the same proportion as the notional principal amount that measures the other party's payments."[43] The ratable daily portion of a periodic payment for a tax year to which those portions relate must be recognized,[44] and:

> If the amount of a periodic payment is not determinable at the end of a taxable year because the value of the specified index is not fixed until a date that occurs after the end of the taxable year, the ratable daily portion of a periodic payment that relates to that taxable year is generally based on the specified index that would have applied if the specified index were fixed as of the last day of the taxable year.[45]

The quarterly payment schedule of a typical PRS makes the calculation of periodic payments relatively simple. Generally, the fixed payment and floating payment are made to coincide with the date that debt service is due under the applicable renewable energy project's financing.

Example: On July 1, 2018, the project sponsor and hedge provider enter into a two-year PRS associated with a utility-scale solar project that sells electrical energy into a hub within ISO New England's jurisdictional territory. The PRS provides that the fixed payment and floating payment will be made by the project sponsor and hedge provider on the last day of each calendar quarter. Table 1 illustrates the amount of proxy generation by the solar project, the average market clearing price,[46] and the fixed payment applicable to each calendar quarter as used in the foregoing example.

[41] Note that the economic performance rules and the all-events test do not apply to NPCs. *See* reg. section 1.461-4(d)(1) and (f).

[42] Reg. section 1.446-3(d).

[43] Reg. section 1.446-3(e)(1).

[44] Reg. section 1.446-3(e)(2)(i).

[45] Reg. section 1.446-3(e)(2)(ii).

[46] An average market clearing price is used for simplicity. Actual PRSs use complex calculations that correspond to the market clearing price for both the real-time and day-ahead markets. Real-time markets in ISO New England are calculated every hour and every five minutes. *See* ISO New England Inc., "Day-Ahead and Real-Time Energy Markets" (retrieved Dec. 6, 2020). Calculations concerning the capacity markets and ancillary services markets are beyond the scope of this report.

Table 1. 'Periodic Payment' Example

Due Date of Payment	Proxy Generation (MWh)	Market Clearing Price (Avg $/MWh)	Floating Payment	Fixed Payment	Delta[a]
Sept. 30, 2018	145,000	$45	$6,525,000	$3,750,000	$2,775,000
Dec. 31, 2018	85,000	$60	$5,100,000	$3,750,000	$1,350,000
Mar. 31, 2019	70,000	$40	$2,800,000	$3,750,000	($950,000)
June 30, 2019	110,000	$25	$2,750,000	$3,750,000	($1,000,000)
Sept. 30, 2019	135,000	$30	$4,050,000	$3,750,000	$300,000
Dec. 31, 2019	75,000	$50	$3,750,000	$3,750,000	$0
Mar. 31, 2020	65,000	$35	$2,275,000	$3,750,000	($1,475,000)
June 30, 2020	105,000	$30	$3,150,000	$3,750,000	($600,000)

[a]A positive number indicates a net-basis payment payable from the project sponsor to the hedge provider, while a negative number indicates a net-basis payment payable from the hedge provider to the project sponsor.

Calculation of the ratable daily portions of the periodic payments set forth in Table 1 is relatively simple given that each leg is settled on a calendar quarter and the last leg in each calendar year is paid on the last day of that year. Thus, using the information in Table 1, the following would be true: (1) in tax year 2018 the hedge provider would have $4,125,000 of net income arising from the PRS, and the project sponsor would have $4,125,000 of net deduction arising from the PRS; (2) in tax year 2019 the hedge provider would have $1,650,000 in net deduction, and the project sponsor would have $1,650,000 in net income; and (3) in tax year 2020 the hedge provider would have $2,075,000 in net deduction, and the project sponsor would have $2,075,000 in net income. However, for illustrative purposes, if a leg straddled two tax years, the net amount allocable to each year would be the difference between the ratable daily portions of the two periodic payments in that tax year.[47]

A nonperiodic payment is defined as "any payment made or received with respect to a notional principal contract that is not a periodic payment . . . or a termination payment."[48] In the context of a PRS, nonperiodic payments generally refer to the premiums paid by the project sponsor to the hedge provider. Similar to periodic payments, nonperiodic payments are recognized ratably on a daily basis (that is, recognized for both income and deduction purposes over the term of the PRS).[49] If it is reasonably expected that an extension (that is, renewal) right or an early termination right will be exercised, the "term" used must reflect that expectation — that is, a nonperiodic payment is recognized over the remaining term, taking into account extension rights that are reasonably expected to be exercised.[50]

One nuance about the PRS that differs from nonperiodic payments made for more traditional swaps is that there's an annual premium payment payable by the project sponsor to the hedge provider. This raises the question whether those annual premium payments should constitute periodic payments or nonperiodic payments. Referring to reg. section 1.446-3(e)(1), periodic payments must be made based on both a specified

[47]Reg. section 1.446-3(e)(2)(i). (The issues resolved by reg. section 1.446-3(e)(2)(ii) and (iii) are not present with PRSs given the granularity of the price of electrical energy and of the proxy generation information, which are fed into the calculation of the floating payment.)

[48]Reg. section 1.446-3(f)(1). Note for comprehensiveness that on September 14, 2020, the IRS published final regulations under section 163(j) that partially reinstate the embedded loan rule for some significant nonperiodic payments. *See* prop. reg. section 1.446-3(g)(4). A review of the embedded loan rule is beyond the scope of this report.

[49]Reg. section 1.446-3(f)(2)(i).

[50]Reg. section 1.446-3(f)(2) and (3).

index and a notional principal amount. The annual premium payments paid under a typical PRS are based on neither and therefore constitute nonperiodic payments under reg. section 1.446-3(f)(1).

Generally, a "nonperiodic payment that relates to a swap must be recognized over the term of the contract by allocating it in accordance with . . . the forward prices . . . of a series of cash-settled forward contracts that reflect the specified index and the notional principal amount."[51] Alternatively, "a nonperiodic payment made or received with respect to a swap may be allocated to each period of the swap contract using one of the methods described in" reg. section 1.446-3(f)(2)(iii).[52] Given the complexity of the general rule in reg. section 1.446-3(f)(2)(ii) and the potential requirement that multiple methods of accounting be used to account for periodic payments and nonperiodic payments,[53] market participants typically use one of the alternative methods described in reg. section 1.446-3(f)(2)(iii)(A) and (B). One of the more typical methods used by PRS market participants is described in reg. section 1.446-3(f)(2)(iii)(B)[54]:

> Nonperiodic payments on a swap other than an upfront payment may be amortized by treating the contract as if it provided for a single upfront payment (equal to the present value of the nonperiodic payments) and a loan between the parties. The discount rate (or rates) used in determining the deemed upfront payment and the time value component of the deemed loan is the same as the rate (or rates) used in the level payment method. The single upfront payment is then amortized under the level payment method described in paragraph (f)(2)(iii)(A) of this section. The time value component of the loan is not treated as interest, but, together with the amortized amount of the deemed upfront payment, is recognized as a periodic payment.

Again, an example is illustrative.[55] Assuming the same facts as in Table 1, the project sponsor makes the premium payments shown in Table 2 to the hedge provider.

Table 2. 'Nonperiodic Payment' Example

Date	Premium ($)
Sept. 30, 2018	$200,000
Sept. 30, 2019	$150,000
Sept. 30, 2020	$150,000

This calculation starts with a discount rate. The regulations provide that "the discount rate used in this calculation must be the rate (or rates) used by the parties to determine the amount of the nonperiodic payment. If that rate is not readily ascertainable, the discount rate used must be a rate that is reasonable under the circumstances."[56] For purposes of this example, it is assumed that a 10 percent annual discount rate is reasonable (that is, the present value at a 10 percent discount rate of the premium payments). The project sponsor is treated as borrowing from the hedge provider an amount equal to $460,298,[57] with Table 3 roughly reflecting the time value component.

Table 3. 'Level Payment Method'

Date	Loan Balance	Time Value Component	Principal Component ($)
Sept. 30, 2018	$460,298	$46,030	$200,000
Sept. 30, 2019	$506,328	$50,633	$150,000
Sept. 30, 2020	$556,961	$55,696	$150,000

[51] Reg. section 1.446-3(f)(2)(ii).

[52] Reg. section 1.446-3(f)(2)(iii).

[53] *See* reg. section 1.446-4(e)(5).

[54] There is an argument to be made that the first premium payment made under a typical PRS should be recognized using reg. section 1.446-3(f)(2)(iii)(A); however, for simplicity, only one method is used here for illustrative purposes.

[55] *See also* reg. section 1.446-3(f)(4), Example 6.

[56] Reg. section 1.446-3(f)(2)(iii)(A) (prepaid swaps) as referenced in reg. section 1.446-3(f)(2)(iii)(B) (nonperiodic swap payments) (which refers to "the discount rate (or rates) used in determining the deemed upfront payment and the time value component of the deemed loan is the same as the rate (or rates) used in the level payment method").

[57] This number was calculated using the "XNPV" function in Microsoft Excel.

The amortization of the project sponsor's premium payment paid over the life of the PRS is equal to project sponsor making an upfront payment equal to $460,298, increased by the time value component of the deemed loan between the project sponsor and the hedge provider.[58] That single upfront payment is then amortized under the level payment method described in reg. section 1.446-3(f)(2)(iii)(A). Finally, the single upfront payment *plus* the applicable time value component is added to the periodic payment calculation in reg. section 1.446-3(e)(2)(i), which again, in substance requires the calculation of the ratable daily portion of both periodic and allocable nonperiodic payments.

To date, there have been no known terminations of PRSs.[59] Presumably, however, at some point a PRS will be terminated, in which case a payment will likely be made to facilitate that termination. The final 1993 regulations define a termination payment as any payment made or received to extinguish all or a proportionate part of the rights and obligations of one party to an NPC.[60] Generally, a party to an NPC recognizes a termination payment in the year the entire NPC is extinguished.[61] The extinguishment of an NPC also accelerates the recognition of any other payments that have been made or received but have not yet been recognized under the regulations.[62]

C. Character

The final 1993 regulations do not address the character of income, loss, and deduction arising from NPCs, although guidance makes it clear that payments made under an NPC do not constitute interest.[63] While there remains some debate about the proper treatment of NPCs, the IRS has generally taken the position that net periodic and nonperiodic payments made under an NPC are deductible by the payer as ordinary and necessary business expenses under section 162 and are includable in income by the recipient under section 61.[64] Further, the IRS has ruled that periodic and nonperiodic payments made under a commodity swap should be treated as ordinary income and an ordinary expense.[65]

With the foregoing in mind, it is evident that both the project sponsor and the hedge provider should treat money paid or received from a periodic payment or a nonperiodic payment under a PRS as ordinary income, loss, or deduction.

D. Source

Regulations under section 863 govern the attribution of income received from an NPC.[66] Generally, income attributable to an NPC is sourced to the residence of the taxpayer (that is, the residence of whichever of the project sponsor or hedge provider has recognized the taxable income).[67]

However, there are exceptions to this general rule. One of particular concern relates to section 882(a). If income attributable to an NPC is effectively connected in a tax year to a U.S. trade or business, that income is sourced in the United States.[68] Generally, the ownership and operation

[58] The time value components are needed only to compute the principal components and are then disregarded. *See* reg. section 1.446-3(f)(4), Example 7.

[59] It is also highly unlikely that PRSs will be assigned. This is because structurally, most renewable energy project transfers are carried out as a sale of the special purpose vehicle that owns the project, thus obviating the need to assign project contracts.

[60] Reg. section 1.446-3(h)(1).

[61] Reg. section 1.446-3(h)(2).

[62] *Id.*

[63] *See* Joint Committee on Taxation, "General Explanation of the Tax Reform Act of 1986," JCS-10-87, at 1077 (1987) (interest rate swap payments are not viewed as interest because they are not paid as compensation for use or forbearance of money); Rev. Rul. 87-5, 1987-1 C.B. 180 (swap payments are treated as industrial and commercial profits rather than interest); LTR 9824026 (neither periodic nor nonperiodic payments (other than significant nonperiodic payments) are treated as interest income or expense because they are not compensation for the use or forbearance of money); and LTR 9119014 (payments received from an interest rate swap are not interest for personal holding company purposes).

[64] *See* LTR 9824026; FSA 1998-124; and FSA 1999-1041.

[65] LTR 9730007; *see also* LTR 9824026 and prop. reg. section 1.162-30.

[66] The definition of NPC as used in reg. section 1.863-7(a)(1) is functionally identical to the definition found in the 1993 regulations promulgated under section 446.

[67] Reg. section 1.863-7(b)(1) (referencing section 988(a)(3)(B)); reg. sections 1.863-7(b)(2)(ii) and 1.988-4(b)(2).

[68] Reg. section 1.863-7(b)(3); *see also* reg. section 1.988-4(c) and Notice 87-4, 1987-1 C.B. 416. *See also* reg. section 1.864-4.

of, and the sale of electrical energy produced by, an electrical generation facility sited in the United States is considered a U.S. trade or business. Whether income derived from a PRS is effectively connected to the ownership and operation of a renewable energy project is a question that no authority has yet addressed. However, it appears reasonably likely that the IRS will decide to adopt the position that it is effectively connected.

E. Hedging Under Section 1221

Finally, it is worth briefly discussing the interplay of section 446 with section 1221. Hedging transactions can include an NPC, and in this context, they are accounted for under reg. section 1.446-4. Generally, the method of accounting used for hedging transactions must clearly reflect income (that is, the method used must reasonably match the timing of income, deduction, gain, or loss from the applicable hedging transaction with the timing of income, deduction, gain, or loss from the item or property being hedged).[69] Despite the clear reflection of income requirement, provisions of the section 446 regulations notionally address a hedging transaction that may fail that test. In that case, it appears the section 446 regulations can be disregarded, and a different method of accounting that more accurately reflects income can be used.[70]

IV. Conclusion

A PRS should constitute an NPC. However, as the above analysis demonstrates, some uncertainty remains regarding whether a PRS is calculated based on a specified index. Finalizing the 2011 proposed regulations would go a long way in providing that certainty. Further, affirmative guidance is needed regarding how the IRS views the wholesale electricity markets in the United States within the context of commodity swaps generally.

The events in Texas in February associated with cold weather causing electricity prices to escalate to $9,000 a megawatt hour and causing some projects to be unable to dispatch power demonstrate the need for hedging products that require project sponsors to pay hedge providers based only on actual production that is dispatched to the grid (or at least limit the payment to the hedge provider when weather or other external events make dispatch to the grid impossible). Further, those events make financiers more wary of the risks associated with merchant revenue streams. With some structural changes, including settlement interval liability limits, the PRS may be a solution to both problems. However, the long-term viability of PRSs in the Electric Reliability Council of Texas Inc. (ERCOT) — the operator of the electric grid in the majority of Texas — remains unclear.

PRS tax guidance would not be a panacea for the financing challenges facing the renewable energy industry. However, it would be little or no cost to the fisc and would provide certainty on the tax treatment of a type of financial instrument that is critical — particularly after the events of February — to enabling merchant renewable energy projects to raise financing at competitive rates. Therefore, it would be a low-cost means to further the Biden administration's goal of encouraging the development of renewable energy projects.

A revenue ruling could fill this need for certainty by (1) confirming (A) that the price of electricity sold at the geographic hub is a specified index[71] and (B) that electricity sold at the hub is the notional principal amount;[72] and (2) providing guidance on (A) what a reasonable means is to determine the discount rate applicable to nonperiodic payments[73] and (B) whether income derived from a PRS is effectively connected with a renewable energy project.[74] The publication of that revenue ruling would smooth one of the bumps in the road to financing merchant renewable energy projects. ■

[69] Reg. section 1.446-4(b).

[70] *See* LTR 9832020.

[71] *See* reg. section 1.446-3(c)(2).

[72] *See* reg. section 1.446-3(c)(3).

[73] *See* reg. section 1.446-3(f)(2)(iii)(A), (B).

[74] *See* section 882.