

# Corporations Turn to Synthetic PPAs to Reduce Energy Costs, Carbon Footprints

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Synthetic power purchase agreements (PPAs) for renewable energy have emerged in recent years as a promising opportunity for corporations to reduce and stabilize their long-term energy costs and advance their sustainability commitments, including by reducing their carbon footprints. In 2015, corporations signed renewable PPAs for a total capacity of 3.44 GWh, according to Rocky Mountain Institute's Business Renewables Center (BRC). These PPAs (three-quarters of which were synthetic) represent nearly a three-fold increase of contracted capacity over 2014, and most industry insiders expect 2016 to bring even more deals. Unlike a traditional PPA, a synthetic PPA does not involve the physical delivery of power to a corporate buyer. Rather, it is a hedge arrangement that offers corporate buyers cost predictability for their energy use and promotes growth in the renewable energy sector by offering project developers long-term contracts with predictable revenues — a key element to attracting project financing and investment. These and other benefits may result in a continued expansion of synthetic PPAs in the coming years, as long as transactions are properly structured to avoid potential pitfalls.

## Background

Over the past decade, corporations have sought to contract directly with project developers for the purchase and sale of renewable energy and/or renewable energy credits (RECs). These contracts have allowed corporations to meet energy needs at their offices, retail outlets, data centers, manufacturing plants, warehouses and other locations while also reducing their carbon footprints.

However, several issues have limited growth opportunities for these transactions. Principal among them is the fact that the physical delivery of power is often both impractical and cost-inefficient. Renewable projects require more land or rooftop space than is typically available on or near corporate locations, and a single project may generate more energy than is required to meet energy needs at any one location. Moreover, corporate locations may lack the solar radiation or wind patterns necessary to generate an optimal amount of energy, and connecting projects with corporate locations has been hampered by a lack of adequate transmission. In addition, the physical delivery of power may require approvals under federal and state energy laws, which can increase the complexity and cost of these transactions, particularly from a legal perspective. Corporations have tried to address these issues by contracting solely for the purchase and sale of RECs. But those arrangements generally have failed to generate enough long-term predictable revenue to enable renewable energy project developers to obtain project financing and, in turn, industry growth.

## How Synthetic PPAs Work

In light of these challenges, synthetic PPAs have emerged as an important alternative to implement corporate procurement strategies for renewable energy. The term "synthetic PPA" may be used to describe a number of transactions for the purchase and sale of renewable energy. Most commonly, a synthetic PPA refers to a contractual arrangement with a corporate buyer who does not take physical delivery of power but instead comprises (1) a long-term financial hedge for the energy produced by a renewable energy project and (2) a purchase-and-sale agreement for the associated RECs. These contracts are frequently structured as a fixed-price purchase-and-sale agreement for RECs with an embedded "contract-for-differences" for power. Under this arrangement, the project owner sells its power into a wholesale electricity market. That power is purchased by a local utility or other buyer for resale to meet the energy needs of that reseller's customers. The project owner is paid the prevailing market price for that

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power. At the end of a specified settlement period, usually a month, the project owner calculates the floating price payment it received during that period. If the floating price payment exceeds the product of the quantity of power and the fixed price for power specified in the synthetic PPA, then the project owner pays the excess to the corporate buyer. If the product exceeds the floating price payment, then the corporate buyer pays the project owner. The term of a synthetic PPA typically ranges from 12 to 15 years but may be up to 20 or 25 years.

The settlement process under a synthetic PPA acts as a price hedge for a portion of the corporate buyer's energy use corresponding to the quantity of power generated by the project. As a result, corporate buyers can lock in cost savings if energy prices increase over the life of the contract and fix their energy costs over that period to aid in budget planning. These benefits are key because energy costs represent a huge portion of total operating expenses for most corporations.

This settlement process also results in predictable cash flows for the project owner over the life of the contract. The expected contract value can be determined based on the fixed contract price and forecasted generation output for the project. As a result, synthetic PPAs can help renewable energy project developers attract the financing structures needed to develop new projects and thus promote industry growth.

## Challenges and Considerations

Notwithstanding these benefits, synthetic PPAs raise unique challenges. They do not eliminate energy price risk to corporate buyers. Cost savings relative to the market pricing can occur only if the market price for power rises at a faster rate than the contract price. Corporations may wrap this risk by using synthetic PPAs in conjunction with protective hedging arrangements.

Synthetic PPAs are also imperfect hedges, which create basis risk. Floating prices may differ from retail prices if a project sells power at a different market hub or node (*i.e.*, pricing location)

than where a corporate buyer's energy use is priced or if a project sells power at different times than when such energy use occurs. Economic curtailment rights, if the market price falls below a minimum price, can help offset this risk, but project developers and their lenders resist them.

The quantity of power generated by a project may exceed a corporate buyer's energy use and thus result in consumption risk. Reduced pricing for excess energy and protective hedging arrangements can both be used to mitigate this risk.

Seller performance risk is a very important consideration. Synthetic PPAs can be structured to include a number of provisions to protect against this risk. Examples include (1) credit support requirements to secure a seller's payment and performance obligations, (2) a minimum availability factor to safeguard against a project being unavailable to generate energy and (3) construction milestones and preconditions to commercial operation to manage construction risks.

Additionally, synthetic PPAs may need to be structured to avoid being subject to Dodd-Frank regulations for "swaps" and/or to avoid triggering derivative or lease accounting treatment.

Despite these challenges, synthetic PPAs can be structured to overcome key risks and provide corporations with cost savings and predictability while also advancing corporate sustainability commitments by promoting industry growth. Corporate renewable PPAs have increased in use in recent years, and corporate procurement strategies are part of larger sustainability commitments for 43 percent of *Fortune* 500 companies, according to BRC. Yet fewer than 20 of these companies have signed PPAs to date. Therefore, we expect to see expanded use of synthetic PPAs in the coming years.