

## PPAs for Renewable Energy Generation in Spain

Development of renewable energy projects beyond traditional regulatory scheme and periodic auctions organized by the Spanish authorities is boosting. Apart from conventional alternatives to develop renewable energy, available options for commercializing this energy in the market mostly focused on power self-generation and possible bilateral contracting (PPAs') with end consumers. Broadly, we can characterize the options available under current Spanish legislation as:

- Self-Generation (for auto consumption) together with sale of excess power.
- Bilateral Contracting, i.e. facilities constructed for direct sale to end-customers by means of bilateral agreements (PPA).

Until recently, the Spanish Corporate PPA market was virtually non-existent. However, there has been a significant increase in the appetite for these agreements over the 2017/18 period. Motivation for these contracts may be twofold, firstly, and most importantly, it protects consumers from volatility in energy prices and provides certainty in energy costs, similar to how large corporations protect themselves from other volatile economic aspects (exchange rate and interest rate). Secondly, depending on the behaviour of future prices, offer any excess electricity generated by the company from its exchanges to the wholesale market when market dynamics cause prices to surge could be of interest.

Corporate Power Purchase Agreements for renewable sources are not covered by a specific regulation but are covered by the same rules applying to any conventional bilateral contract, and no model templates have been issued by Spanish regulators.

Current regulation imposes the following alternatives:

**Physical PPAs.** Current options via batteries or derivatives contracts may still result expensive, so there are options to be offered to corporate consumers that can better manage this risk by firming up load requirements from a retailer via for example a 'sleeved' Synthetic PPA.

### Financial PPAs

- Contracts for Differences (CfDs): prices are cleared with respect to one strike price established by the contract.
- Collar PPA: including cap-and-floor prices to constraint final prices within a given range.

In our experience, feasibility analysis of the use of renewable energy for power generation required to carry out the following activities.

### Optimization of the offer:

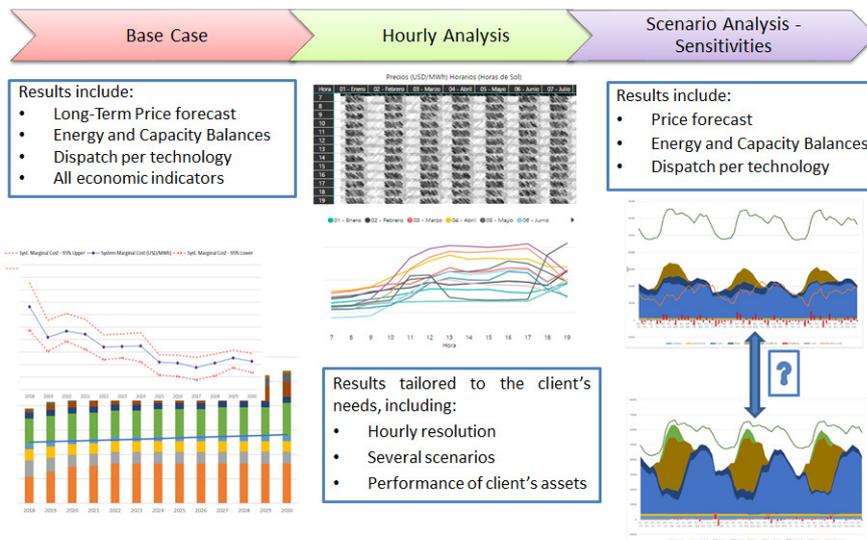
- Optimization: assess suitability of each option for the company in terms of profitability/cost savings, volume or profile. It is enough to make slight movements in the three variables to optimize their position within the cluster.
- Realignment: in case the consumer shows deficiencies either in their consumption adequacy, or in the characteristics of their consumption (volume or profile of improper load curve). We will suggest the appropriate measures to overcome this situation.

**MRC approach towards Corporate PPA analysis**



MRC is well position to analyse main variables and risks still important and possible ways to mitigate them, among which can be mentioned the following:

**Market price forecast.** MRC has developed its own power projections tool[1] which has been tested in a number of jurisdictions worldwide. Since the 2000' MRC experts have been modelling Iberian power system and fine-tuning power price projections achieving noticeable accuracy in the results.



**PPA design.** We may provide assistance in drafting the PPAs, defining roles and allocation of responsibilities between parties and ensure the bankability of the project, including commercial issues and also legal drafting if needed (we can provide the lawyers working on this).

**Interaction** with market agents and representatives to set up this business model.

**Risks:**

- Long-term Hedging Risk: forward market not yet mature; liquidity levels to hedge PPAs, etc.
- Plant development risk: time-lag between closing the PPA and commissioning of the plant.
- Regulatory Risk: renewable energy legislation in Spain has suffered a series of changes in the last eight years;
- Market Power: influence of large utilities has largely hampered the deployment of commercial self-consumption in the country.

[1] Further details on market modelling tool and its functionalities can be shared upon client's request.

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