

# Merchant renewables: a viable investment or a bubble fit to burst?

**Post-subsidy solar** | After several years with a moratorium on renewable energy incentives and no new build, Spain is seeing a new generation of projects being developed without subsidies as grid parity is achieved. Whilst this has encouraged an increase in renewable energy projects, it could be harmful to profits and have serious economic risks for investors. ÅF Pöyry Management Consulting's Javier Revuelta considers the potential risks of taking a long-lasting grid parity in Spain for granted, how to mitigate these problems, and why it's relevant to us all



Anyone who believes we are in the midst of a climate crisis will celebrate the recent increase in renewable energy projects, but policies must also ensure a secure energy supply and competitive end-user prices. In order to contribute to the new ambitious EU targets for 2030, the Spanish government has committed to more than doubling the current wind capacity, and multiply by eight times the solar PV capacity; it considers the use of new auctions to find bidders, as a complement to subsidy-free developments. These auctions are expected to include guaranteed prices which shield investors from future changes in market prices, for example if they fall due to the increasing number of renewable projects already planned and promised to the EU. Unfortunately, this means that the market is likely to reduce revenues as a consequence of a high cannibalisation effect; whilst some cannibalisation can be digested by current projects and still make them sufficiently profitable, it might be too high if all grid connection requests that have deposited guarantees and have been accepted by the grid operator effectively go forward.

Government auctions mitigate investment risks, but there are considerable economic risks for those who believe that the current 'apparent' or 'initial' grid parity will remain over the life of the project, and that future market prices will support the case for independent investments outside of probable future government auctions. Those risks only increase when you consider other challenges that would contribute to reduce the cannibalisation of market prices, such as: the development of interconnections; the rise of currently unprofitable storage; electric vehicles; and the many necessary regulatory changes which are likely to take years to develop.

If the Spanish government strives to achieve its commitments with the EU through the development of auctions, those who have already invested and expect the wholesale electricity market to remain at current levels are likely to encounter serious economic problems. Should the wholesale electricity market price drop, they should not expect the government to bail them out, stop the annual auctions for new entrants, or change the market model so that it suits their needs. The government will

**The trajectory of Spain's post-subsidy renewables boom will hold important lessons for other markets reaching grid parity**

not rescue investors, nor will the EU change the market model it has just ratified, at least in the foreseeable future. These investors should also not rely on a sector 'collusion' to bid-up in hours of RES surpluses and otherwise depressed prices, not only because it is illegal, but also because it is materially impossible to orchestrate and is counterproductive given its negative effect on renewable exports to the rest of Europe.

Investors must seek robust analysis and advice to decide where to put their money. The big question for any investor with merchant exposure is what future prices will be. At present, despite much higher revenues than new projects' LCOEs (the average remuneration that a project requires over its lifetime), it is difficult to guarantee whether investments in merchant renewables in Spain will indeed reach attractive returns over the investment lifetime, or whether very high additional capacities supported by auctions will trespass the bursting point of today's investors. Potential return on investment will depend on several factors, including: the international price of gas and carbon emissions; the development of electric interconnections; the penetration of electric vehicles and storage; and the government's ability to meet its commitments to reduce greenhouse gas emissions.

## Forecasting

As for any other sector, an investment decision is a sole responsibility of the investor, who can do their internal research or hire studies from third parties. There are two types of very different forecasts that investors need. Long-term forecasts are required for investment decisions, with or without proper hedging instruments. If an investor cannot live with the forecasted future or with a potential downside

case, then it ought to not invest with merchant risk and instead wait for the next government auctions.

No forecast in any sector that can be trusted at 100% or even close to that, even looking at short periods of 2-3 years. Obviously, no forecast can consider precisely unexpected events, geopolitical decisions, the exact technology breakthroughs, social changes etc. In short, projections of experts cannot be trusted as an accurate forecast of revenues; but, it is not so much about getting an accurate forecast (that would be ideal, but that just doesn't exist), it is about building a solid view of the potential futures, the most probable ones, the drivers of upside and downside, the range of impacts and whether one can live with the reasonably lower end of potential futures; and ultimately, taking a risk based on individual investors' belief. It is more about what possible futures you prepare for, and how likely those futures are. Hire good advisors, even several advisors to understand their different views, and build your own view.

Aside from long-term forecasts, short-term, day-ahead and within-day forecasts will be required to maximise revenues from increasingly sophisticated markets, where continuous trading and participation in ancillary services will make the smartest plants make a few extra euros/MWh compared to passive asset managers. There is also an interesting aspect to consider around the type of pricing of asset management services, from all fixed annual fee per megawatt, or all variable fee per megawatt hours produced; because 'market curtailments' will increase, and there is some risk-sharing due to curtailments between the producer and the O&M provider. In a world where, for instance, 5 or 10% of the hours there is a wind surplus that cannot be fed into the power market, a renewable producer must choose how low a market bid they are willing to go to before they prefer to shut down their plant and save the variable O&M costs plus have the plant live a little bit longer through lower wear and tear of equipment. In this world, the bidding strategy of the asset owner in the spot market, the cost structure of the asset management services, and the expected output production net of the resulting market curtailments, are interlinked decisions in the puzzle.

### Power purchase agreements

The PPA is definitely one of the most used instruments for merchant investments,

at least under discussion because only a fraction of negotiations end up in a signed contract. A PPA is an insurance against power prices, or in other words passing the risk to another entity. So obviously you need an off-taker willing to take the risk at a fee which is acceptable by the buyer of the insurance (i.e. the solar producer). If the price of the insurance is considered too high by the producer (the PPA price is too low) then there is no agreement; conversely if the price is too cheap (PPA price is very close from the market expectations) then the off-taker doesn't want to commit to being stuck in a 10-year contract that can ultimately put them out of business. It is proving very difficult to agree on terms that are acceptable by both parties, it typically takes one year to negotiate a PPA if you are already experienced and know beforehand what type of PPA suits you. By the way, current PPAs that have been signed have gone as high as 15 years, but technical lifetime and business plans of solar typically reach 30 to 35 years, so even the longest PPA only hedges a share of the project lifetime revenues; generally just enough to get the banks onboard and finance some of the Capex.

### Finance

Banks are not very sophisticated yet, and most banks by principle do not finance – at all – projects with full merchant exposure. Few banks in Spain, and not the two largest, finance with merchant risk. For the ones that do, you can expect strong downside conditions to size the debt, and mechanisms to get the money as early as possible in case of upside, so investors are generally left with money towards the end of the lifetime. There is little movement around 'junior' or 'mezzanine' debt, more expensive but cheaper than equity investments; perhaps it is a financing segment to explore. Keep in mind that banks have never needed to really understand power markets to finance renewable projects in the past, when they were backed by government incentives; so for banks to reach a solid knowledge allowing them to get some exposure to this volatile market is a very long process that very few of them have only just started.

### Operations and maintenance choices

O&M needs to be the cheapest, or at least the best value for money. And also to get smarter; O&M providers will need to not only provide a cheap service of quality, but to use new digitalisation strategies to understand the best interactions with the

market. In the near future, counterintuitively it may be best to do some maintenance works tomorrow at noon when solar resource is the highest, because the market will pay €/MWh anyway!

### A risky future?

The future of the renewable energy landscape is unclear as we do not know how many renewable megawatts will be installed. At present, administrative inefficiencies and market price signals are the sole moderators of investors' appetites. In this new environment of subsidy-free developments, nobody controls and anticipates the volume of annual connections, and no authority is responsible for warning investors about the potential economic risks set out above.

A message for investors in renewables – regardless of where they are investing – is that it is not a responsibility for grid operators, governments or regional governments to show them the economic risks of their investments. Specialists must provide good analysis and advice to investors in order to help them understand the opportunities and the many risks. Investors should take care to understand this environment, or to otherwise entrust themselves to the wholesale electricity market.

At this point it's hard to say if subsidy-free investments in the renewable energy market in Spain will provide a good return on investment despite the very attractive initial returns of this 30 years investment journey. Hence investors must be aware of the potential risks. European governments can monitor the upcoming volumes of investments under the two main investment options (subsidy-free with volatile market revenues, or under auctions with guaranteed revenues), and we shall soon see whether they can learn from the Spanish energy market how to do things, or how not to do them. Business or bubble? Let's talk in 2030. ■

### Author

Javier Revuelta is an industrial engineer from ICAI and holds an MBA from INSEAD Business School. He currently works as a principal at ÁF Pöyry Management Consulting of the ÁF Pöyry group, where he specialises in the business development of energy markets and networks in Iberia and Latin America.

