



## Webinar Hedging long-term price exposures in renewable power projects and PPAs - FAQ

During our webinar on "Hedging long-term price exposures in renewable power projects and PPAs of 25 January 2022, we were very happy to receive your questions! In this document we answer them.

**Would strategy 3 (i.e. dynamic hedging strategy – stack and roll, red.) be an example of what happened to trading houses in the LNG business...issues with margin calls? Did that happen to renewable producers?**

Yes, that could very well be. The stack-and-roll strategy is applied in many different commodity trading markets. It can be effective in reducing long-term price risks, but should be implemented with care due to the risks mentioned in the webinar. A classic textbook example of what can go wrong is e.g. here: [https://www.uni-trier.de/fileadmin/fb4/studium/FFA/Downloads/Risk\\_Management/CASE3\\_Metallgesellschaft\\_AG\\_1.pdf](https://www.uni-trier.de/fileadmin/fb4/studium/FFA/Downloads/Risk_Management/CASE3_Metallgesellschaft_AG_1.pdf)

**Can you elaborate on what you mean with a value neutral hedge?**

With a value-neutral hedge the value of the hedge position equals the (expected) value of the exposure. Example, the expected generation is 100 MWh, the baseload price in this period 50 EUR/MWh, but the generation especially in low-price hours, on average 40 EUR/MWh. In that case, the expected value of the exposure is  $40 \times 100 = 4000$  EUR. To hedge this exposure with a baseload forward trading at 50, the value-neutral hedge volume is 80 MWh, corresponding with the 80% capture rate. Note that this may still be a too high hedge volume to be optimal. For example, the risk minimizing hedge volume may be just 65 MWh. Our software supports you in calculating the optimal risk minimizing hedge of your asset or PPA.

**In the Stack-and-Roll slide you show a structure of buying 3,3,2,2 in the first 4 years. What is the logic behind this, why not 1,1,1,7? How do you assess the risk related to the time-spread in the stack-and-roll?**

That is a choice for the portfolio/risk manager. In general, longer-term contracts are less liquid, but better correlated to the (even) longer dated exposures than shorter-term contracts. That is a trade-off to make. With our software you can analyze several different strategies and see the impact on expected earnings and earnings risk.

**Is "Volume of production" based on statistical (historical data) or on fundamental data?**

The volume of production scenarios in our model are generated by a process that takes into account the fundamentals of the market (e.g. increasing cannibalisation makes the negative correlation to prices larger) and statistics.

**In what way, hedging by large corporate energy users differ from the producer's hedging strategy?  
Is there any specific end user industries ore suitable for hedging than others?**

The general concepts are the same. An element to consider for corporates, is the total exposure to electricity prices relative to other exposures. For example, if electricity makes up only a small portion of total costs, then hedging is less important. On the other hand, if it forms a (very) large part of total costs, then competitors may face the same risk, and sales prices may also move with electricity prices.

**When calculating a VaR of a long term PPA: How do you properly scale/extrapolate the risk for a long term contract VaR, e.g. 10 years?**

For long-term exposures, we do recommend the use of Profit-at-Risk or similar methods which assess the profit over the complete horizon of the exposure. In comparison, VaR calculates the risk of market price changes over typically a 1, 5 or 10 day horizon.

**Which type of corporate do you see becoming a major PPA offtaker?**

Economically, it makes most sense for corporates with large electricity price exposures, also relative to their total cost base. And credit-worthy off-takers are more likely to enter into PPAs. Tech companies, which are already among the most active, are therefore logical candidates for the future as well.

**We can share more in a personal conversation or demo, so feel free to contact us: [info@kyos.com](mailto:info@kyos.com)**

