Cal+10 and the future of renewable energy risk management
EEX extended Base Load Yearly Futures to Cal+10 on 27 September 2021 in markets with high potential of PPA activity: Spain, Germany and Italy, to facilitate long-term hedging and more PPA development.

This extends the standard Power product setup of EEX.*

Each product has as its underlying the Spot index for the respective market (ie. for German power, the day-ahead price for the AMPRION control zone).

NEW maturities for DE, ES, IT Base Load
How are EEX Members active in PPAs?

RE Developers sell Power via Long-Term PPAs

EEX Members buy Power via Long-Term PPAs and build RE assets

EEX Members provide balancing services on Spot & hedge via Futures

Banks provide financing once PPA is in place

EEX Members sell Power via LT Corporate PPAs

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Who are the PPA Hedgers on EEX?

Utilities
- Utility PPAs
- Corporate PPAs
- Hedge own generation

Intermediaries
- Banks providing access to market for Renewable Energy developers
- Market players offering hedging services

Industrial
- Oil companies pivoting to renewables
- Offtakers of RE to power industrial sites

Renewable Energy Producers
- Solar IPP hedging PPAs
Managing Renewable Energy Price Risk with Base Futures requires a Hedging Strategy

- Base Futures are a **best-fit product** and attract the most liquidity, creating a **strong price signal** and opportunities for trading at fair market prices.

- To use the Base Futures to manage the risk of a wind or solar profile, a **Hedging Strategy needs to be designed** to translate the variable generation profile into a constant Base load profile.

- Different Hedging Strategies can be employed, such as a **value-neutral hedge**.
Long-Term Hedging on EEX

Since 29th May 2018, 48 long-term hedges of have been registered OTC in Spanish Power, with a total volume of 18 TWh. This is equivalent to 3% of the electricity consumption of Germany.

Four long-term hedges have been registered in Italian Power with a total volume of 0.26 TWh; the Italian PPA market is poised for further growth in the coming years as costs for solar power projects are highly competitive.

The first 5 MW long-term hedge was cleared in Polish Power on 18 December 2019. The Polish deal proves the value for multinational utilities with renewable energy assets across the EU to hedge long-term on EEX Power Futures and offload their PPA risk onto ECC, even in relatively illiquid markets.

Long-term hedging in German Power is expected to rise as assets fall out of EEG subsidies and the German government is preparing a legal framework for PPAs. German Power can also be a proxy hedge ie. for offshore wind developments in Denmark.
Extension to Cal+10 in German, Spanish and Italian Power

- Cal+10 reflects the current shift in the market from the old hedging horizon to Cal+3 for conventional power generation to the new long-term hedging demand for renewable energy.

- A settlement price curve to Cal+10 is published daily on the EEX website for DE, ES and IT Power, bringing more price transparency to PPAs and renewable energy asset valuations.

- PPA players can now benefit from long-term price risk hedging and counterparty risk management by the ECC.
Example 1: Long-Term Hedge on Spanish Power

- Long-term hedges are primarily bilaterally negotiated then registered for clearing at a flat price and flat volume.
- This deal represents a total trading fee cost of **876.60 EUR** per counterparty (EEX & ECC trading fees = 0.0125 EUR/MWh)
- Initial margin requirements for long-term hedges are generally stable at **3 to 7%** in terms of notional value, but are dependent on recent volatility in the respective contracts and market.
- Initial margin is a form of collateral; accepted collateral can vary according to the clearing bank.
Example 2: Long-Term Hedge on Spanish Power

- These were the first trades registered in EEX’s new long-term contracts for Spanish Power; here, Cal+7 and Cal+8 were traded.
- The initial margin requirement was higher than average for two reasons: first due to the long-term contracts being relatively illiquid, second due to a recent “market shock” event in the European and Spanish power markets.
- Still, market participants benefit from counterparty credit risk in volatile market environments, also for long-term hedging.

<table>
<thead>
<tr>
<th>Trade Date</th>
<th>Product</th>
<th>Expiry Year</th>
<th>Expiry Month</th>
<th>Trade Price</th>
<th>Initial Margin per Contract</th>
<th>Lots (MW)</th>
<th>Initial Margin (in EUR)</th>
<th>Trade Volume (in MWh)</th>
<th>Notional Value</th>
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<tbody>
<tr>
<td></td>
<td>Spanish Power Base Year</td>
<td>2029</td>
<td>12</td>
<td>---</td>
<td>55,188 €</td>
<td>10</td>
<td>551,880 €</td>
<td>87,600</td>
<td>3,955,140 €</td>
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<td>1,094,730 €</td>
<td>175,440</td>
<td>7,943,076 €</td>
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</table>

Initial Margin in % of Notional Value = 13.78%
Role of the Exchange in the PPA Market

- **Price Transparency**
  - EEX’s market prices provide reliable price references.
  - Project developers and buyers of PPAs can assess their valuations against EEX wholesale prices.

- **Price Risk Management**
  - Manage power price risk for renewable energy assets.
  - Reduce the overall risk exposure for the largest risk element in RE portfolios.

- **Counterparty Risk Management**
  - Trading and hedging on EEX alleviates counterparty risk for trading participants.
  - This is especially important for long-term risk management.

- **Enabler of Renewable Energy Growth**
  - Price and counterparty risk is offloaded onto the clearing house, freeing internal risk capacity within trading participants.
  - This enables them to take on more PPAs and facilitate growth of renewable energy capacity in Europe.
Thank you!

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