How to benefit from a green PPA?

Enery Webinar

Latest power market trends

Raphaela Hein, Power Market Expert

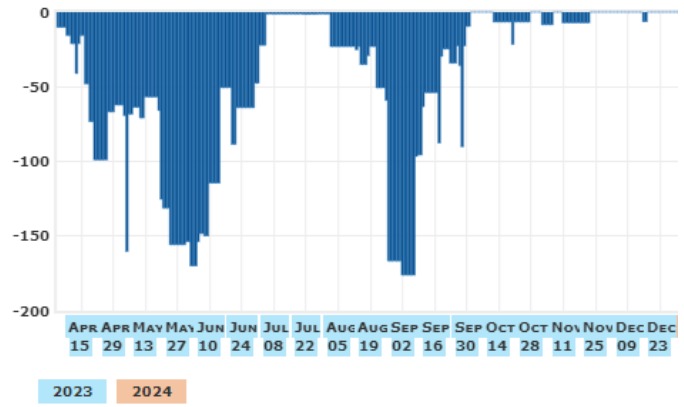
Power Market Update

Power prices normalised on the back of natural gas but have found a floor.

Fuel Commodities

Gas

- Bearish factors:
  - demand destruction
  - relatively mild winter
  - record high storage levels
- Bullish factors moving forwards:
  - Maintenance in **Norway**
  - Return of **demand**
  - **LNG** price and supply uncertainty due to Asian buyers



Coal

- Similar picture as gas, but little support expected moving forwards as demand is fading and ARA stocks are well filled

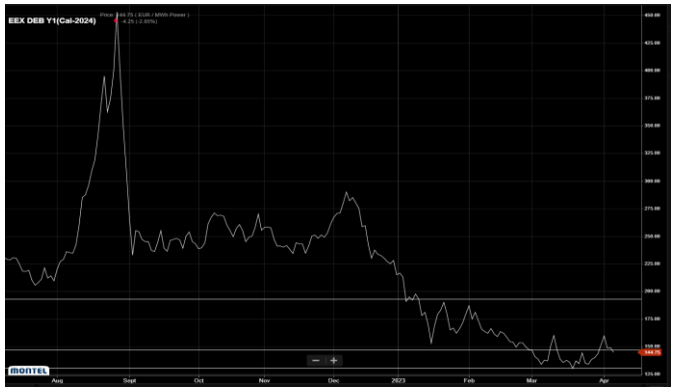
EUAs

- Volatility due to the turbulent environment of financial markets.
- Fundamental factors include:
  - Speculative up and down ahead of compliance deadline in late April
  - RePower EU: additional sales from frontloading and the market stability reserve to start from mid this year

Power

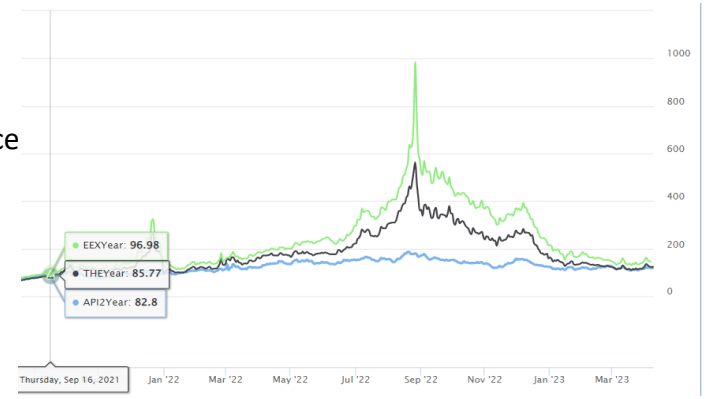
Price Development

- Power prices moved lower across Europe in line with gas prices.



Short Run Marginal Costs (SRMC)

- In February, German SRMCs for gas fell in line with those for coal for the first time since late 2021! → higher gas demand, lower coal demand
  - Lower correlation between power and gas prices



Hydropower situation in Europe

- Reservoir and river levels are once again very low in countries including Germany, France, Romania, and Bulgaria
- → another bullish element over the summer

Sources: Gassco UMM, Montel Online (montelnews.com)

Outlook: Wholesale Market and PPAs

A lot of uncertainty remains in European power markets and PPAs are an excellent, green hedging tool for consumers.

Factors that influence fuel and/or power prices in the short to medium term

- Macro situation
- China's LNG demand
- Weather at the end of the heating season, and also during the cooling season in Romania and Bulgaria
- Hydropower levels, wind

Power Price Outlook

→ a return to pre-crisis levels is unlikely, simply looking at the gas and EUA prices

→ Lower prices will only be achieved through higher renewables penetration over time

→ volatility is here to stay too

PPA Outlook

→ a PPA, where a fixed price can be secured for a long-term supply contract is an extremely attractive solution for medium to large off-takers

→ The EU has also realised the potential of PPAs and is supporting them in the upcoming electricity market reform

→At the same time, it does not see revenue caps as a solution to high power prices of consumers

→ the PPA market is set to pick up strongly, a contract we can already fully provide you with

Batteries and 24/7

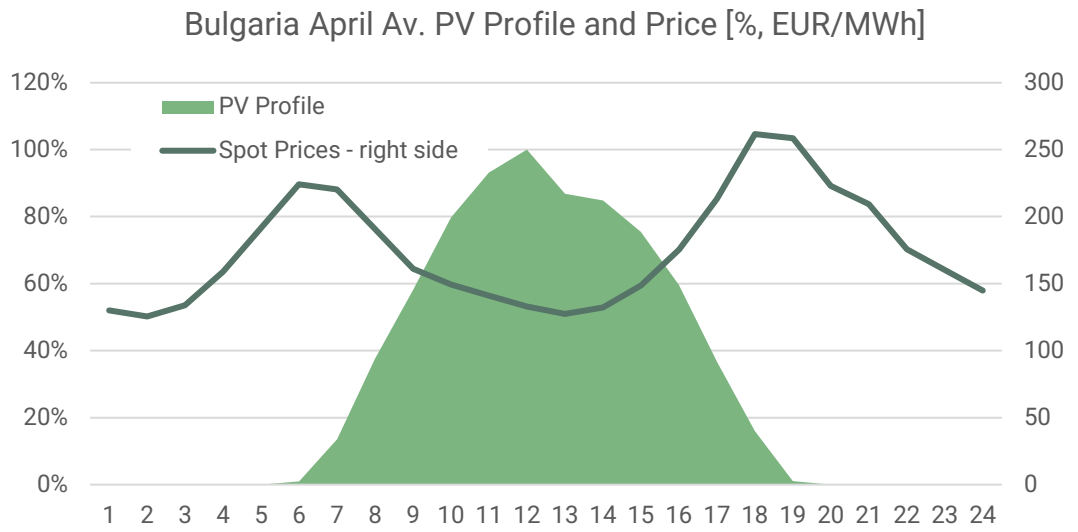
Renewable proojects and their intermittency pose challenges to off-takers and producers alike. The solution is a mix of generation technologies and storage

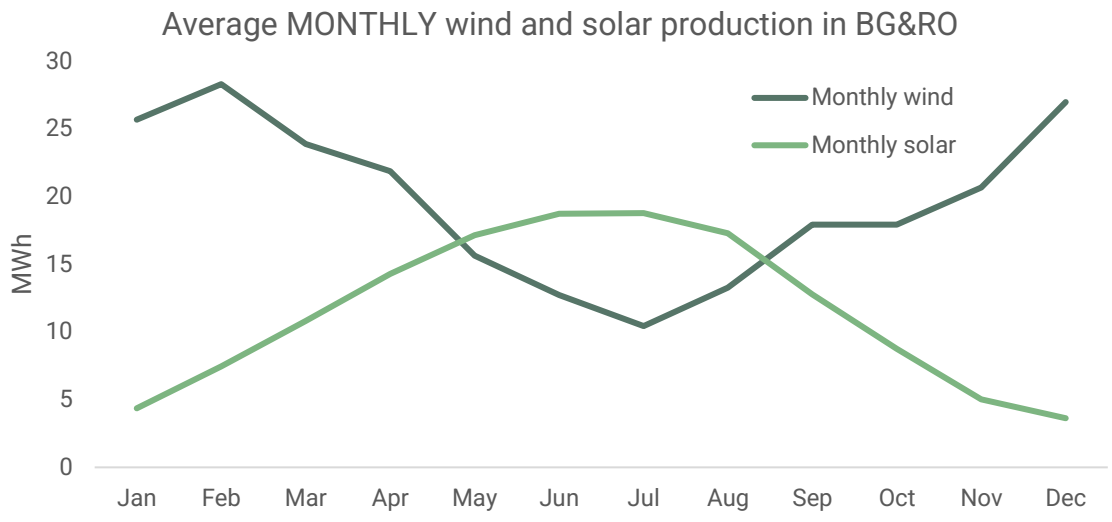
Battery Projects

- The main idea is to smooth out the production of our solar assets and provide PPAs with lower risks for our off-takers by covering balancing and profiling risk
- This is financially still challenging as peak shaving alone does not pay off. Hence, we are pursuing also other income streams such as providing ancillary services and additional arbitrage trading
    - We expect battery CAPEX to decline over the next years, however, in 2022 costs rose y-o-y for he first time in decades, bringing uncertainty to the market
- Bulgaria: change of legislation, subsidy likely
- Romania: subsidy scheme in place, pursuing first project there

24/7

- At Enery, we pursue the long-term goal of providing 24/7 renewable energy
- Only very few 24/7 contracts were closed globally and we aim to be at the edge of the industry here
- To provide renewable baseload or a customer profile, a combination of wind, solar, and storage is necessary and our batteries are important first steps
    - In particular in RO and BG, the solar and wind profiles match very well
- Additionally, gaps can be bridged via tri-partite PPAs in the short-term
- A certain merchant share will remain
- If you are interested, please reach out!





How to work with the local regulatory framework in Romania?

Razvan Ionescu, Commercial Asset Manager

Introduction to Romanian Energy Market

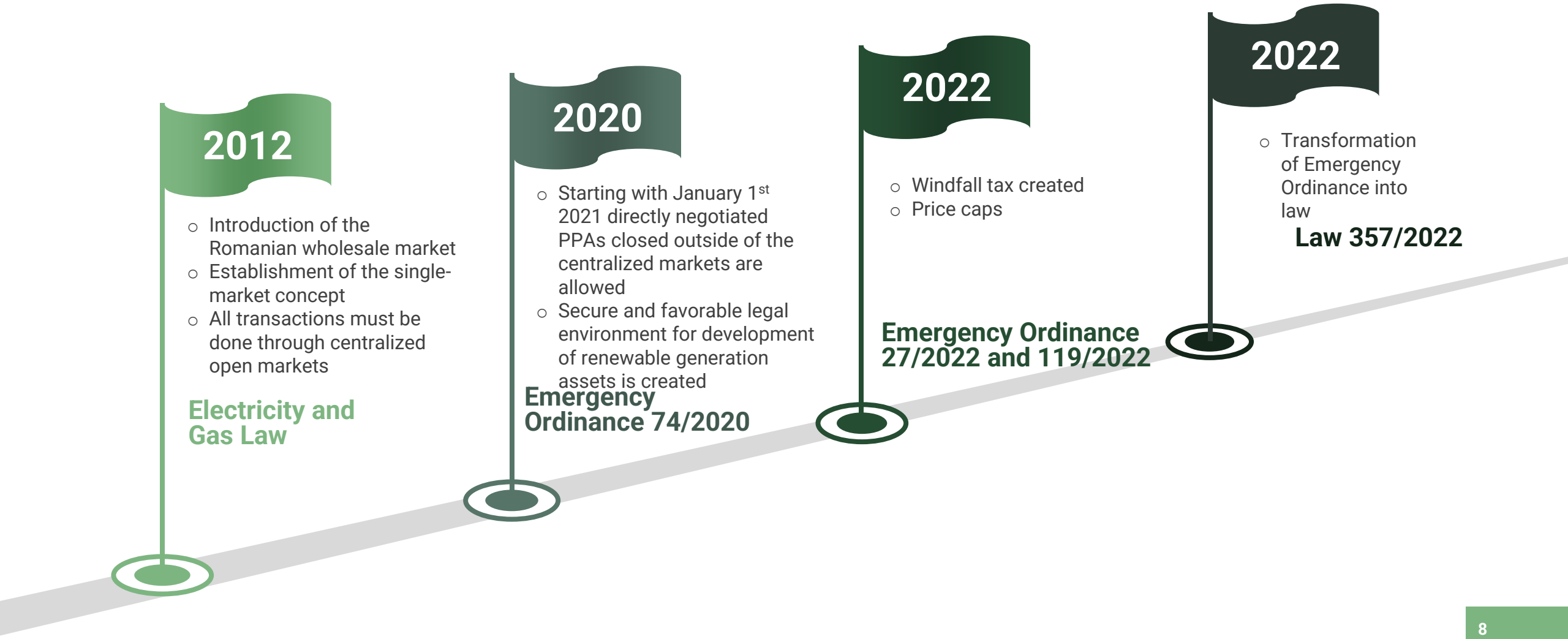
The Romanian elelctricity market structure is quite similar to the EU states' markets. The market is highly liberalized, but OPCOM's monopoly position stills raises concerns among the trading participants. ANRE, fulfilling its duties of a Regulator, contributes to relatively high level of trust in the market yet.

Market Participants

- *TRANSELECTRICA* – Transmission system operator which administers and operates the high voltage grid network in Romania. It is an ENTSO-E member and is responsible for ensuring the safety of the National Electricity System. TRANSELECTRICA operates **the balancing** and **ancillary services markets**.
- *OPCOM* – Power Exchange Operator which is responsible for administering the electricity market in Romania, in particular to organize the smooth functioning of the **Day-ahead**, **Intraday** and all **Centralized Bilateral markets**.
- *ANRE* – Romanian Energy Regulator which general responsibility are:
  - market monitoring
  - adopting regulations in the electricity and gas sectors
  - implementing energy efficiency measures
  - issuing license for performing different kind of activities in the energy sector, others
- *Distribution system operators (DSOs)* – ANRE has been issued licenses for distribution of electricity to eight entities in Romania which are responsible for maintenance of the distribution grid in different areas.
- *Producers* – Huge amount of the electricity generation (above 85%) is concentrated in state owned enitities – Nuclearelectrica SA, Hidroelectrica SA, Complexul Energetic Oltenia SA, Termoelectrica Deva SA and Electrocentrale Bucureşti SA.

Regulatory and Legal Framework in Romania

The regulatory and legal framework in Romania is well-developed as the Romanian governments have been endeavoring to implement all provision of the European legislation in the energy sector in the local one.

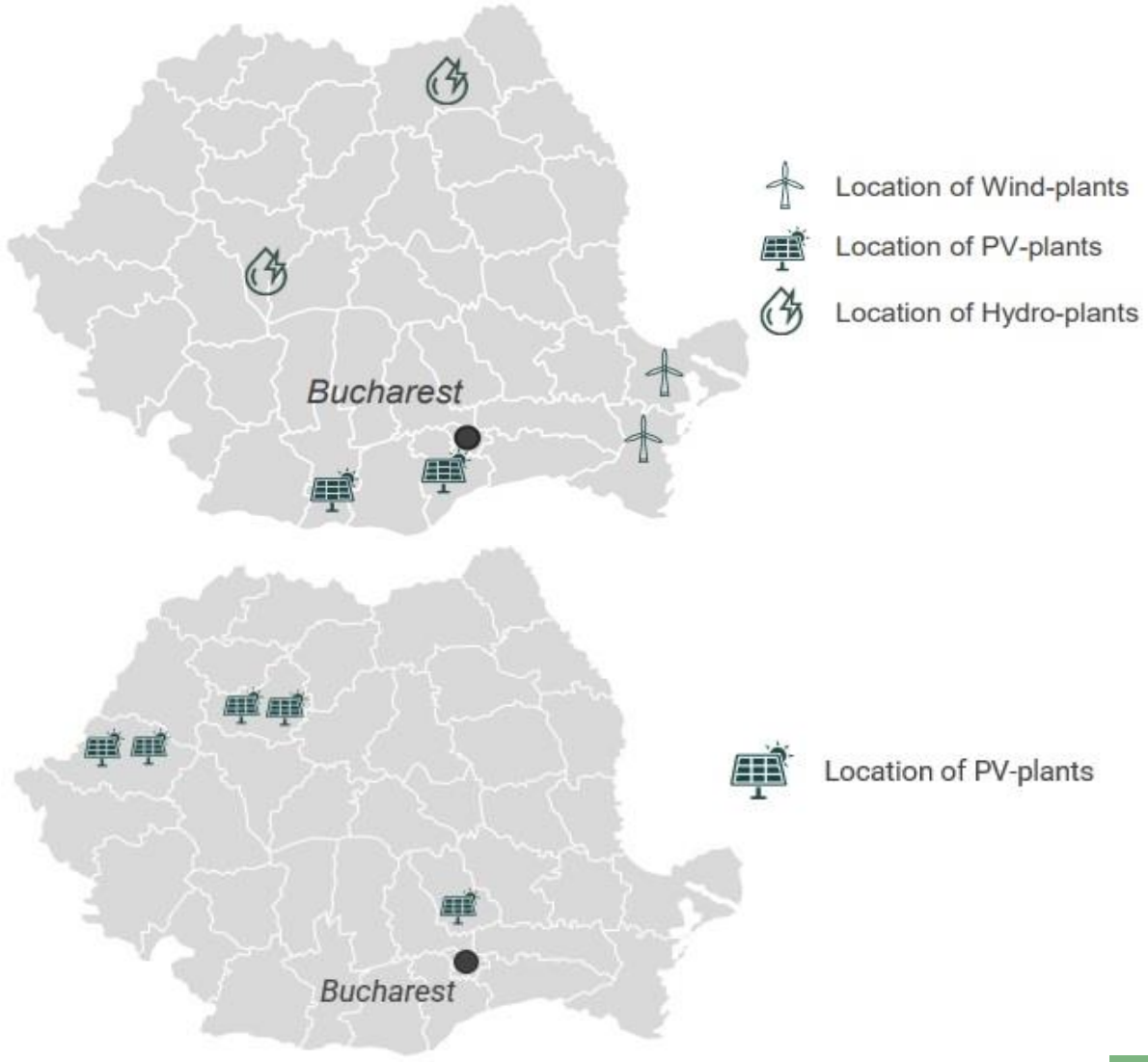


Enery presence on the Romanian Energy Market

Enery operates a portfolio with more than 115 MWp of total installed peak capacity renewables in Romania which includes solar parks, wind farms and small hydro power plants.

Enery's portfolio in Romania		
Type	***Assets***	***Total Capacity***
Solar	7	53 MWp
Wind	2	62 MWp
Hydro	2	3,6 MWp

Enery PPAs in Romania		
Type	***Tenor***	***Profile***
Solar	7y	Solar Profile
Solar	5y	Solar Profile
Wind	7y	Baseload



Why will your business benefit from signing a green PPA?

Severin Vartigov, Chief Commercial Officer

Executive Summary

Investing in the recovery and transition in Europe's Coal Regions

1

EU 2030 Targets

- The European Union is aiming to increase its climate ambition to a 55% reduction in emissions from 1990 levels by 2030 by reaching 42,5% share of renewable generation in the end electricity consumption, There is also an option for an additional 2.5% indicative top-up that increases the overall target to 45%
- A faster reduction of the power sector emissions and increased electrification of energy demand.
- The EU Emissions Trading System is the key policy tool used by the European Commission to achieve its 2030 goals leading to rising power prices in all CO2 sensitive markets.

2

Off-takers immediate & long-term benefits

- Large corporations (and progressive smaller corporations too) are committing to use renewable electricity to align with CSR commitments and enhance corporate image by reducing their carbon footprint.
- Only RE100 Climate Group members' demand is projected to reach 247 TWh by 2030, but the lack of projects has left a 224 TWh shortfall.
- The PPA at a price below the market secures energy savings with zero CAPEX and higher level of predictability of the power expenses in the long run.

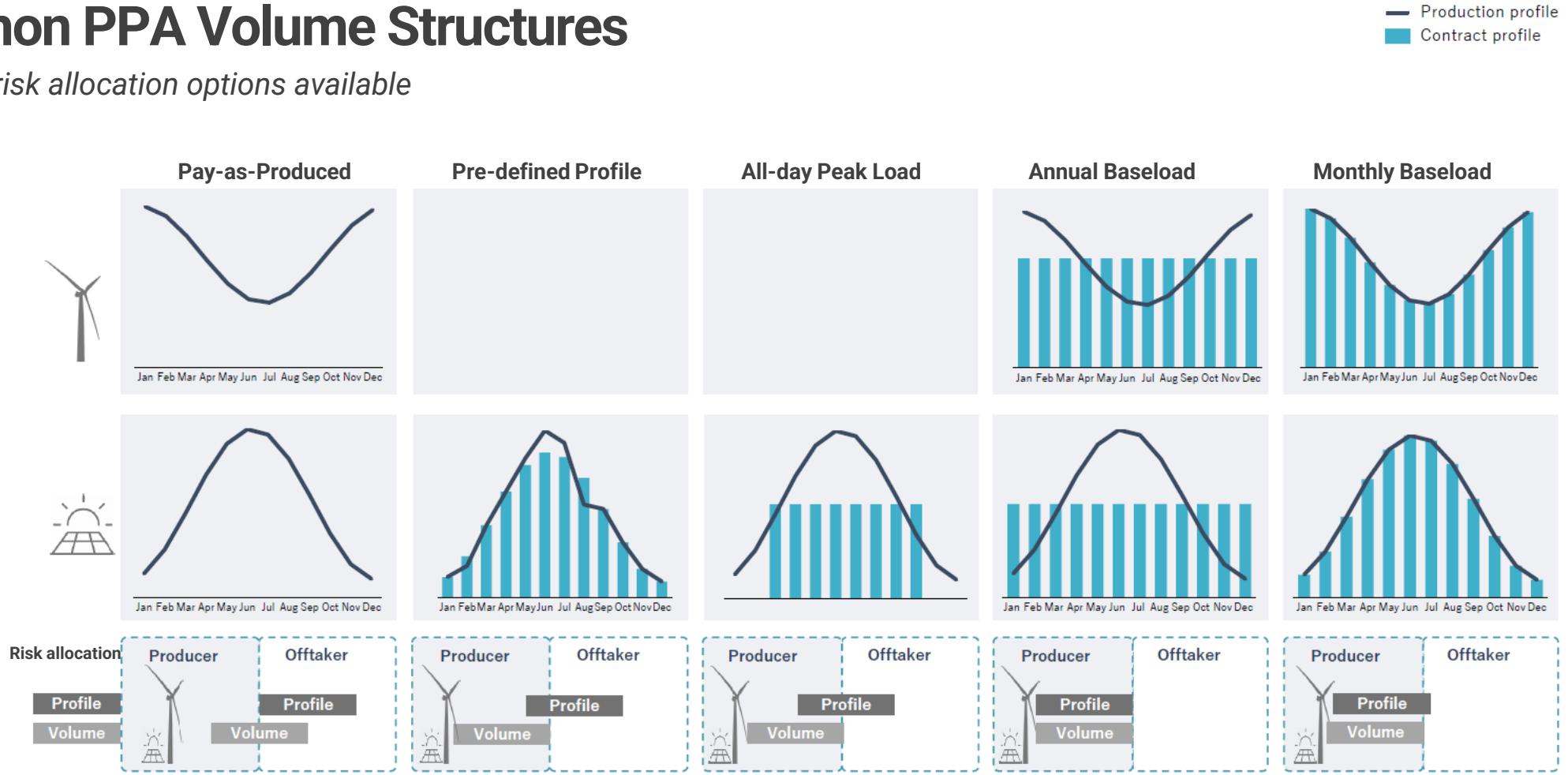
3

PPA Framework

- Enery grants access to large and very competitive solar projects developed in geographically optimized locations for solar generation.
- The PPA prices assumed by Enery are well below the independent price projections
- Variety of structures available
- The longer tenor is perceived as tool to hedge against the constantly rising power prices.

Common PPA Volume Structures

Variety of risk allocation options available



A fixed price is paid for any volume produced (regardless of market prices)

Artificial annual solar profile on a fixed volume (e.g. P50, P70, etc.)

Same daily profile for all the days in a month, adjusted for the specific month

Same volume (fixed) for all peak hours (8:00 to 20:00) in a day, adjusted for the specific month

Fixed volume for every hour of the year

Fixed volume for every hour of the month

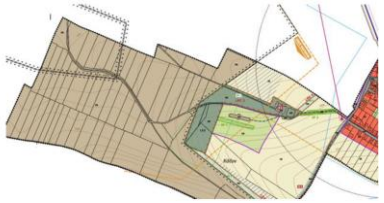
Enery PPAs

We have managed to secure variety of different PPA structures with both end consumers and utilities

Enery signed PPAs in 2022

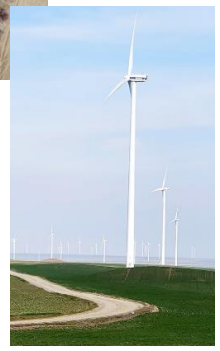
- **Austria**: Enery signed a 20-year pay-as-produced supply agreement with an Austrian chemical industry consumer. The project's name is Gleinz and the PV plant is under construction. The agreement covers all projects production of around 6 GWh/year.

- **Czech Republic** (onside project): Enery signed a 20-year pay-as-produced supply agreement with an industrial consumer for an onside project. The plant will be situated on a brown-field land plot provided by the buyer. The consumer will be directly connected to the plant through a cable connection „behind the meter".



- **Romania**: In 2022 Enery acquired a portfolio of 5 PV plant, with a total installed capacity of 36MWp. The power is sold to a big European corporate for a term of 7 years. The product delivered is a pre-defined monthly solar profile.

- **Romania**: In 2022 Enery acquired a portfolio of 81MW featuring two on-shore wind parks, two solar photovoltaic assets and two hydroelectric power plants. The power is sold to a big European corporate for a term of 7 years. Delivered profile is baseload.



Enery projects under development and PPA contracting

Project	Location	Technology	Capacity DC [MWp]	Yield [GWh]	COD
1	Austria	PV	Data	upon	request
2	**Bulgaria**	PV	Data	upon	request
3	**Bulgaria**	PV	Data	upon	request
4	Czech Republic	PV	Data	upon	request
5	Czech Republic	PV	Data	upon	request
6	Estonia	PV	Data	upon	request
7	Estonia	PV	Data	upon	request
8	Slovakia	PV	Data	upon	request
9	Slovakia	PV	Data	upon	request
10	Slovenia	PV	Data	upon	request
11	**Romania**	PV	Data	upon	request
12	**Romania**	PV	Data	upon	request

Thank you!

Q&A Session

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