

A glass lightbulb is shown lying on its side on a dark, textured surface. Inside the bulb, a small green plant with two leaves is growing out of a mound of dark soil. The background is a blurred, natural setting with some dry twigs and leaves. The overall lighting is soft and natural, highlighting the plant and the bulb.

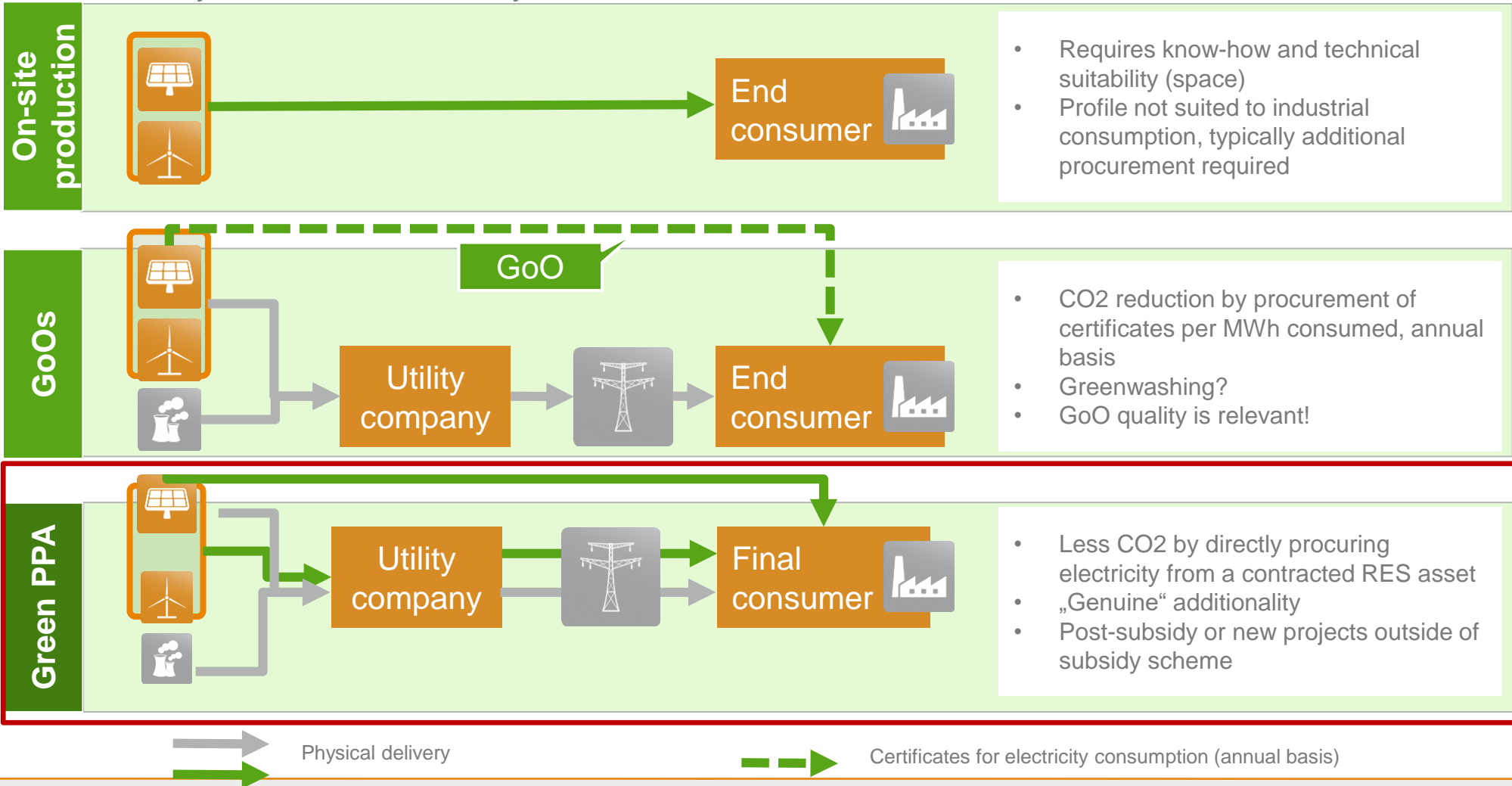
Bringing renewables to the market – a brief introduction to renewable PPAs and the opportunities they offer for Kosovo and the region

Pristina | enervis energy advisors GmbH | Miltiadis Zervas

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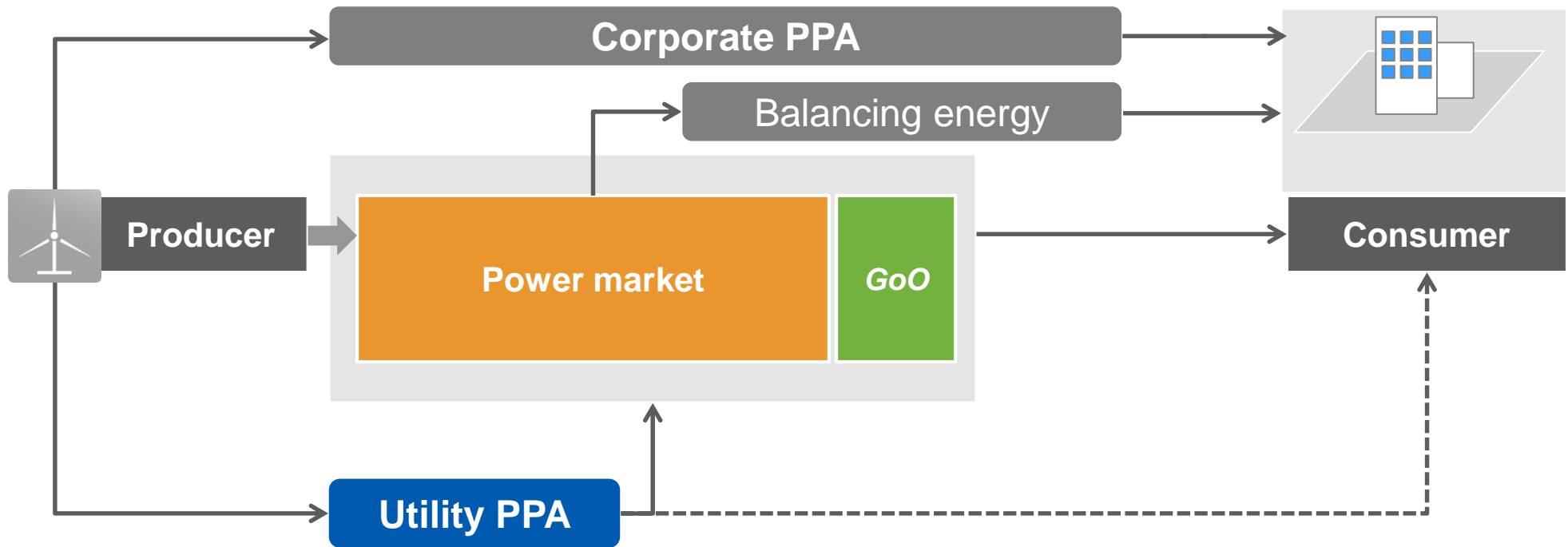
Three ways towards green electricity

From a consumer point of view, there are three options for procuring green electricity: 1) on-site production, 2) buying green certificated (GoOs) or 3) bilateral PPA contracts. From producer point of view: subsidy scheme vs. electricity market



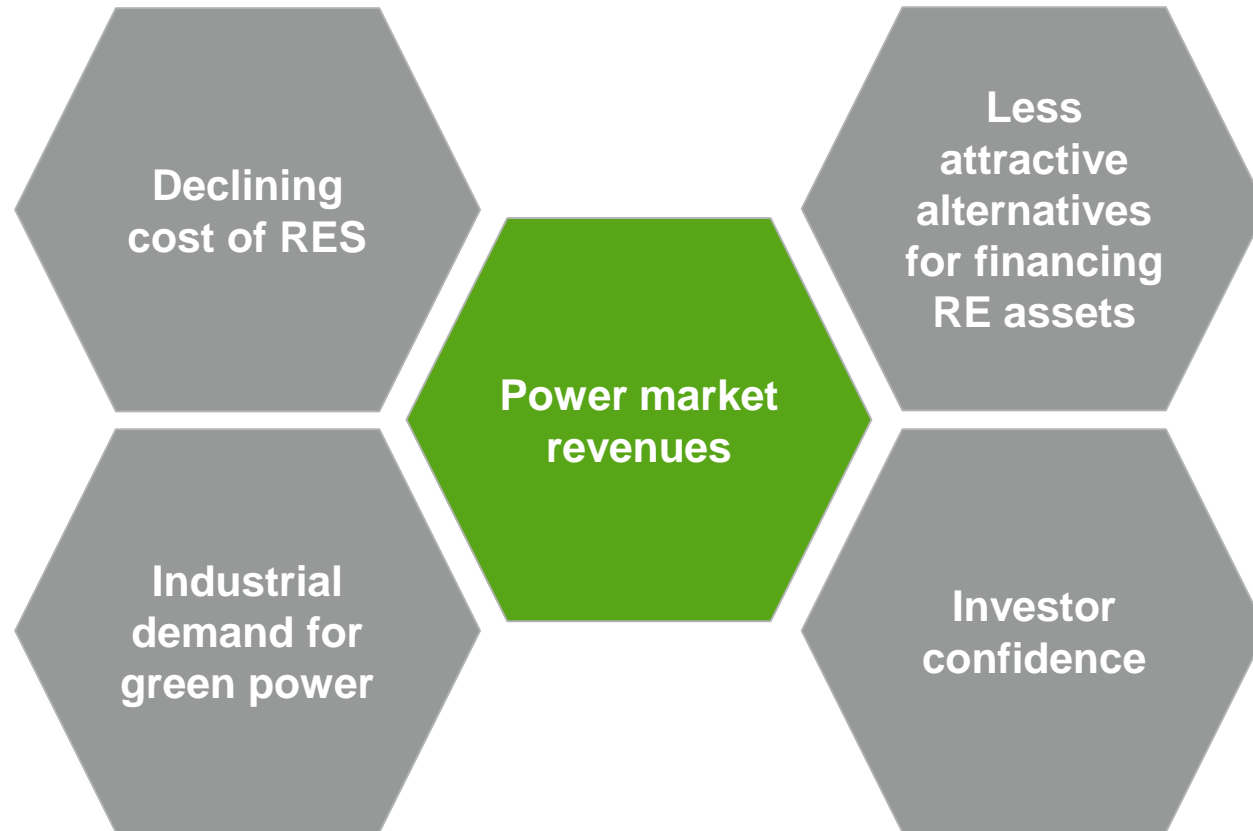
What is a Power Purchase Agreement (PPA)?

Green PPAs are bilateral agreements for the purchase of power from RES assets. Direct agreements between end-consumer and producer are also called corporate PPAs. Agreements with utility companies as intermediaries are called utility PPAs.



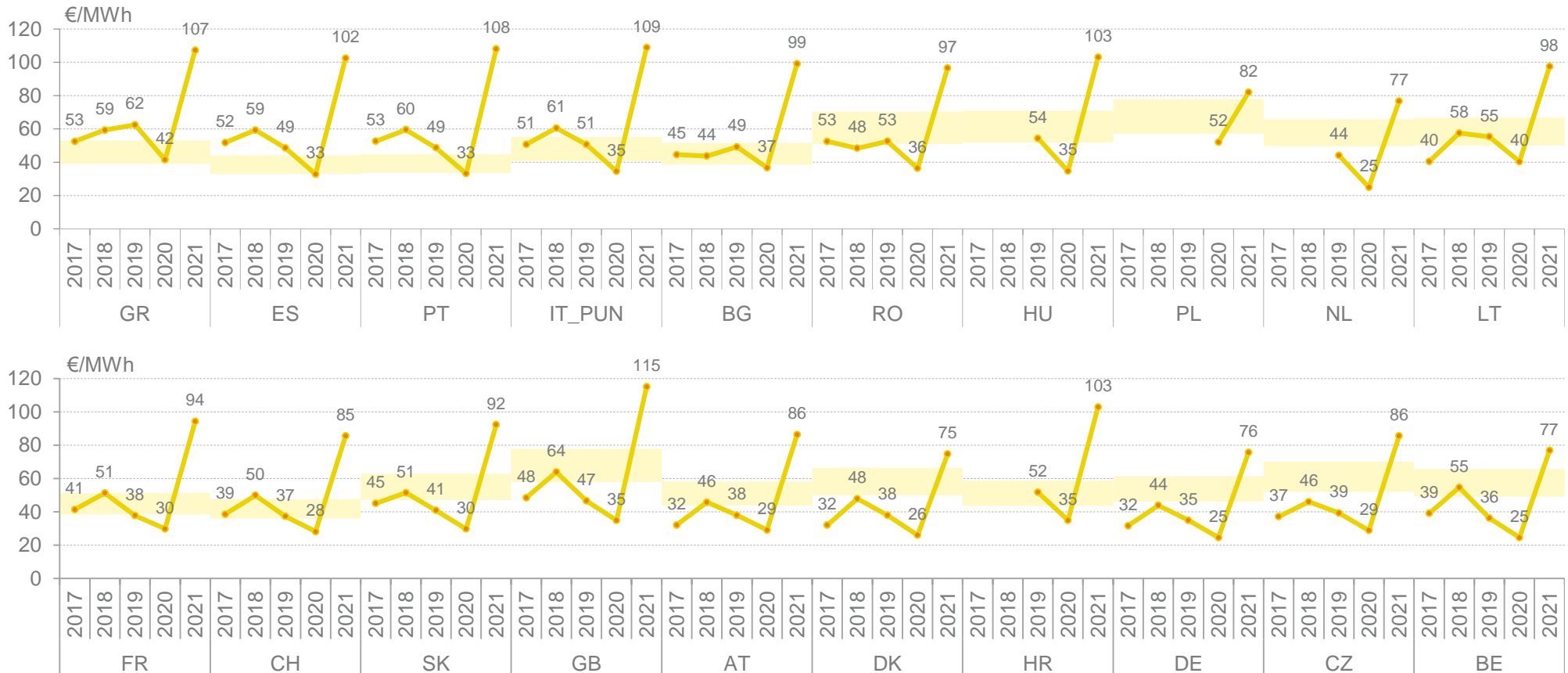
Drivers for PPAs

Driver for green PPAs: declining RES cost, long-term and sufficient market revenues, increasing investor confidence, larger industrial demand for green energy.



Energy-economic drivers: LCOE & capture prices

Ratio between power prices & levelized costs of electricity (LCOE) constitutes an important indicator for the viability of PPAs in a power market. High power prices and low LCOE make non-subsidized RES via PPAs possible.



Sources: capture prices based on hourly market and generation data from ENTSO-E Transparency Platform, except IT with capture prices based on mercatoelettrico.org and GB with capture prices 2021 based on Elexon Portal, analysis enervis 2022.

Capture price values for countries split into price zones were calculated by weighted averages (zonal). LCOE ranges based on exemplary technology, country-specific financing assumptions for subsidy-free projects and full load hour ranges based on high-resolution weather data.

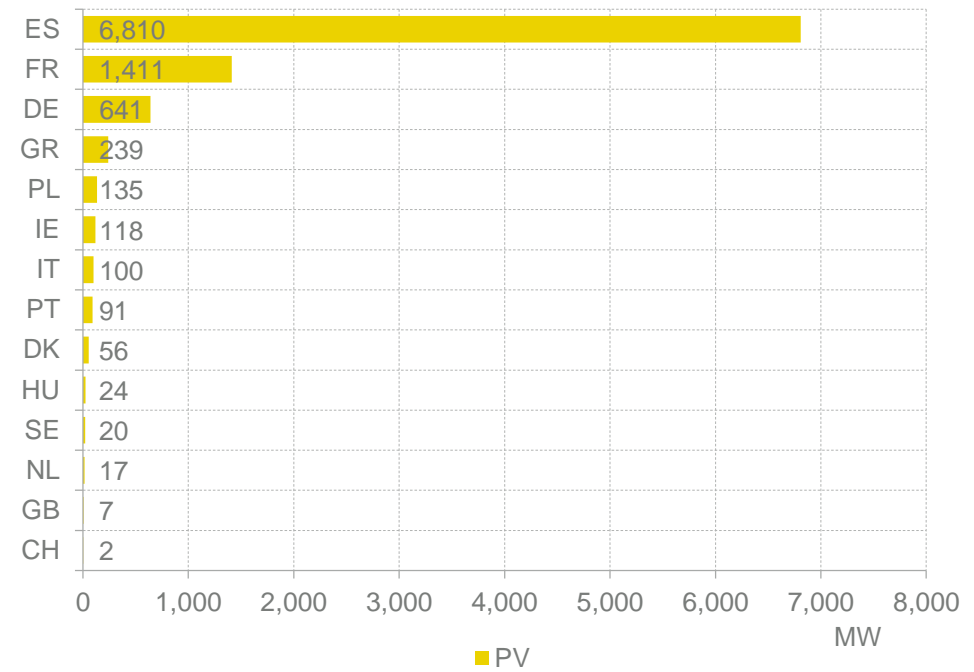
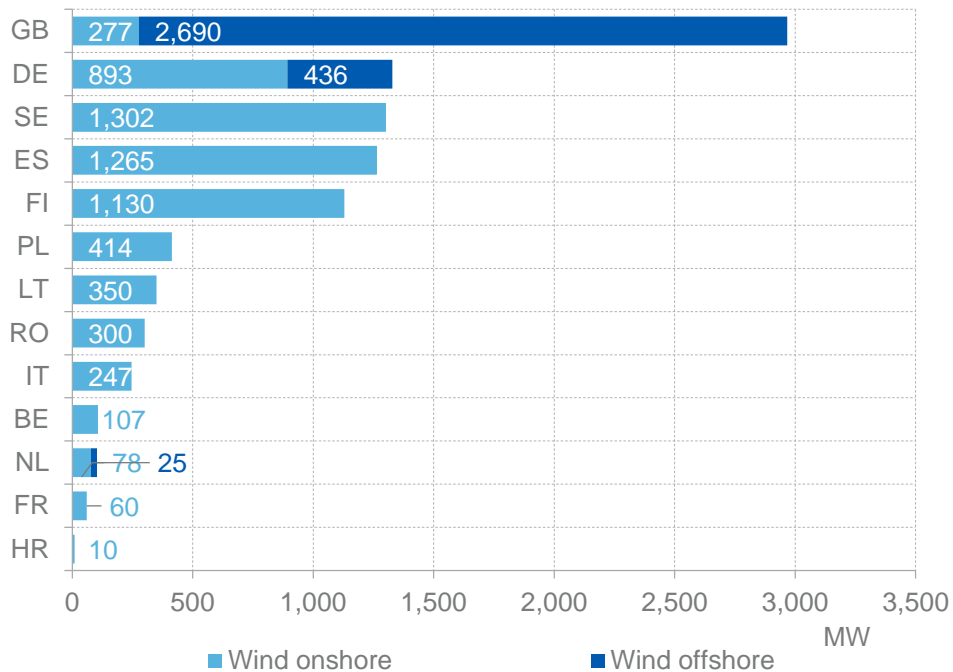
No data available for HR before 2019, for HU before 10/2019, for NL before 11/2019 and for Poland before 05/2020.

Opportunities for RES deployment via PPAs

European market: Subsidy-free wind projects are being developed mainly in Northern and Northwestern Europe. In the photovoltaic sector, Spain continues to lead the way. In other economically attractive Eastern and SE markets, PPA activity is increasing despite existing administrative hurdles.

Onshore Wind (~ 6,4 GW)
Offshore Wind (~ 3,2 GW)

Utility-scale PV (~ 9,7 GW)

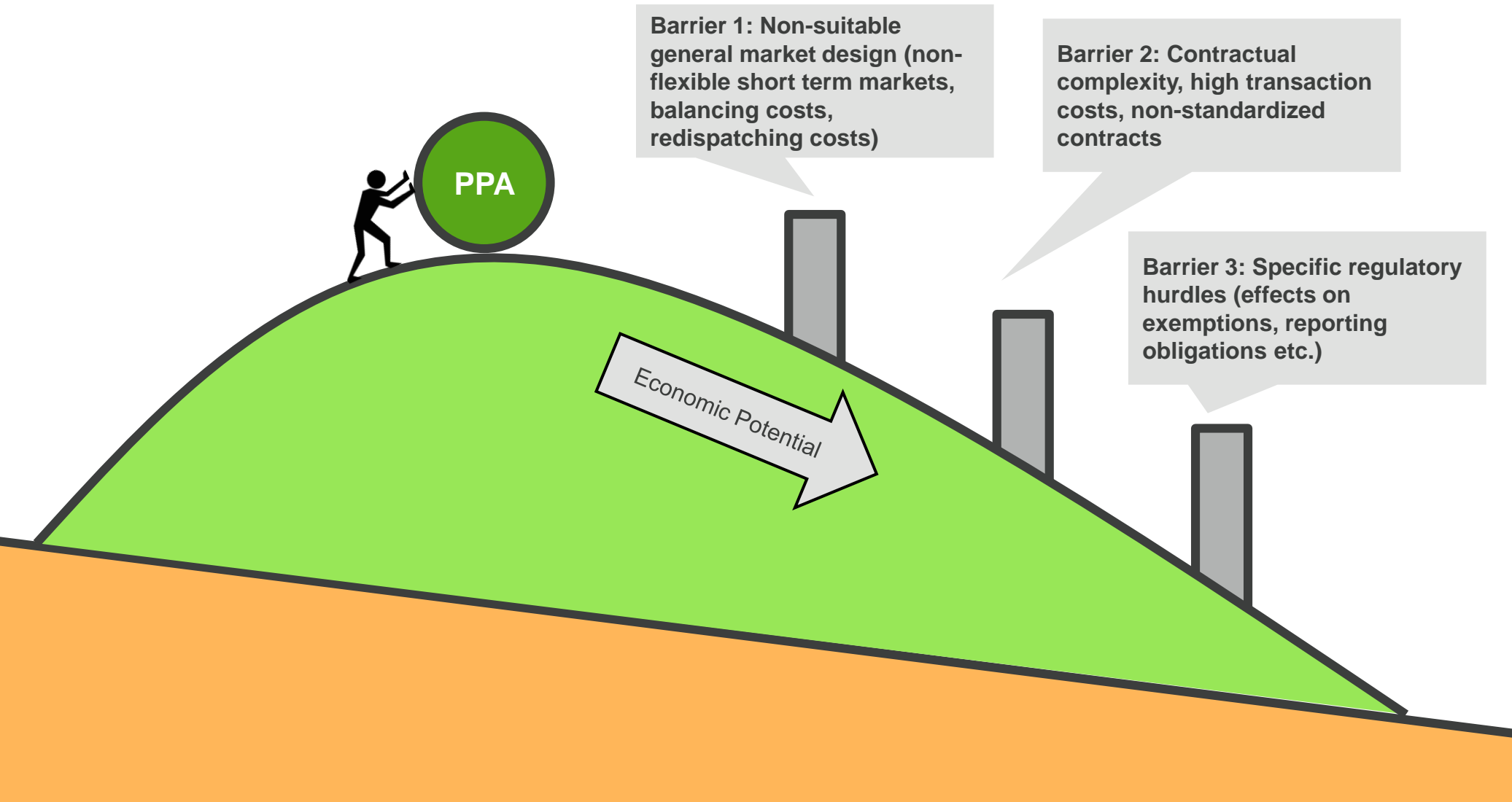


In **2021**, a pipeline of around 19 GW of subsidy-free renewable energy projects was announced. That is a similar level compared to the pre-pandemic year 2019. The announced merchant PV project capacity increased by about 13%, the onshore wind project capacity decreased by roughly 4% and offshore wind project capacity by 21% compared to 2019.

Source: enervis PPA database, analysis enervis 2022. No responsibility is assumed for the completeness or correctness of the data.

Barriers beyond economic viability

Given that economic incentive are there, regulatory design should focus on minimizing barriers.



Considerations

PPAs as instrument for financing RES subsidy-free can be successful if energy-economic incentives are right & major barriers are addressed by policy makers.

Barrier 1: Non-suitable general market design (non-flexible short term markets, balancing costs, redispatching costs)

- Liberalized electricity market with adequate sub-markets (balancing, GoOs etc.)
- Low and forecastable imbalance costs are important to allow market players a precise assessment of the economic viability of PPAs in the short, medium and long-term
- Liquidity and forecastability is essential for PPAs

Barrier 2: Contractual complexity, high transaction costs, non-standardized contracts

- Policy-maker have limited influence to reduce this barrier
- Developing a standardized PPA fitting into the market landscape could reduce transaction costs.
- Power price forecasts of both parties are an important element of PPA negotiations. Public institutions can help to reduce uncertainty in that aspect by publishing a clear vision and strategy on power system development (“power market study”).

Barrier 3: Specific regulatory hurdles (effects on exemptions, reporting obligations etc.)

- Establish transparent and efficient licensing/permitting procedures
- Avoiding windfall profits by limiting flexibilities (interchangeability of financing options)
- Addressing regulatory hurdles, e.g. requirements connected to being a “generator”
- Avoiding regulation via financial services authorization to be a barrier to (financial) PPAs

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