



# Low Carbon Ukraine

Policy advice on low-carbon policies for Ukraine

Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag

## A Cost-efficient Deployment of Renewables

Clemens Stiewe

Berlin, May 2021

Implemented by



Berlin  
Economics

## Key messages

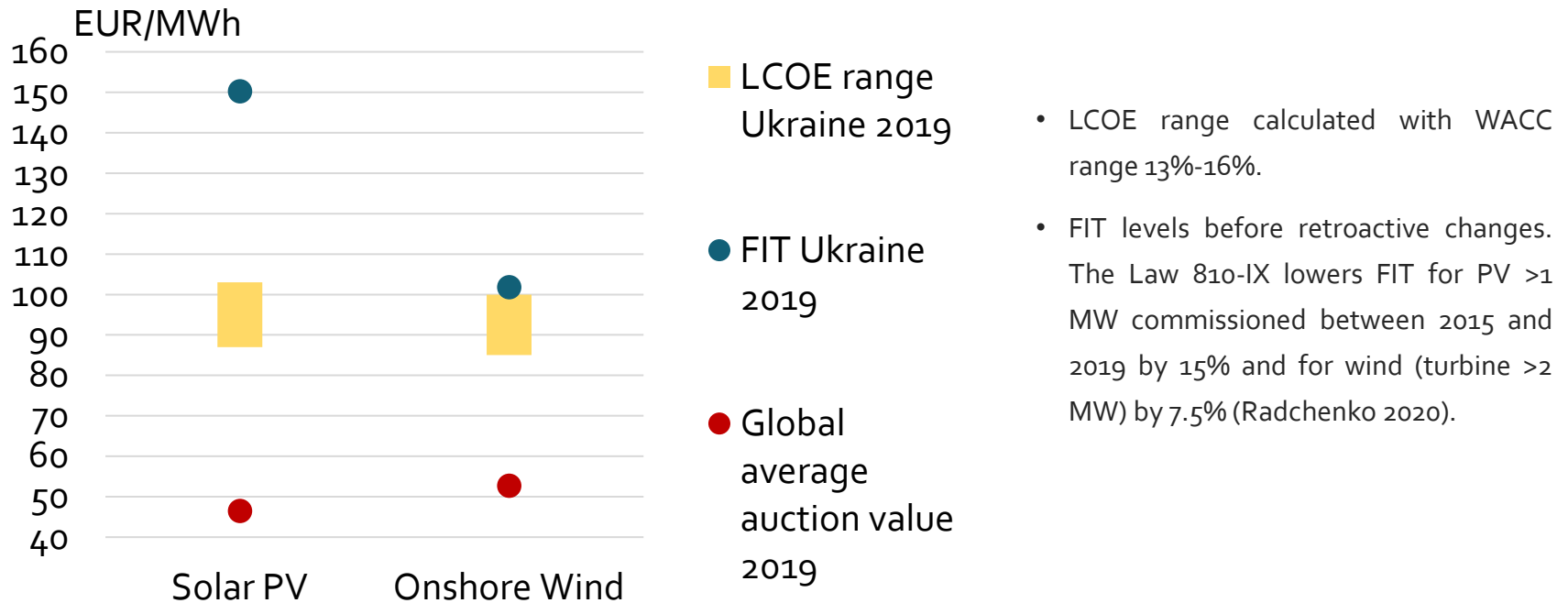
---

- Higher ambition and market design tweaks can help Ukraine's new RES auctions become a success
  - To get on track towards national targets and 2<sup>nd</sup> NDC, Ukraine should double preliminary auction volumes
  - Additional policies will ensure smooth integration of renewables:
    1. Introduce a feed-in premium system to make renewables a regular market player
    2. Phase out price caps to attract new flexible generators and storage that can balance renewables

## From fixed feed-in tariffs to auctions

- Wind and PV have been growing fast because of high feed-in tariffs
- Government has retroactively lowered FITs and will introduce auctions

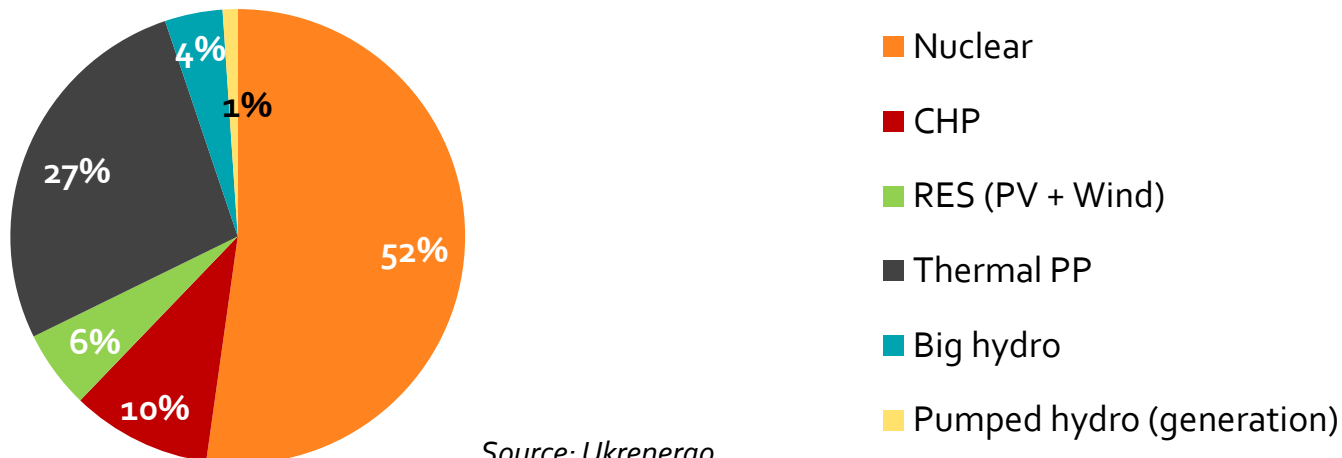
2019 Ukrainian FIT, LCOE and global average auction values



## Few RES are already causing system stress

- Despite fast capacity growth, wind and PV still only make up 6% of generation
- TSO Ukrenergo already massively curtails RES because of inflexible electricity system
- To integrate more RES, electricity market needs to be fixed to attract new flexible generators and storage

Electricity generation mix Ukraine, 2020

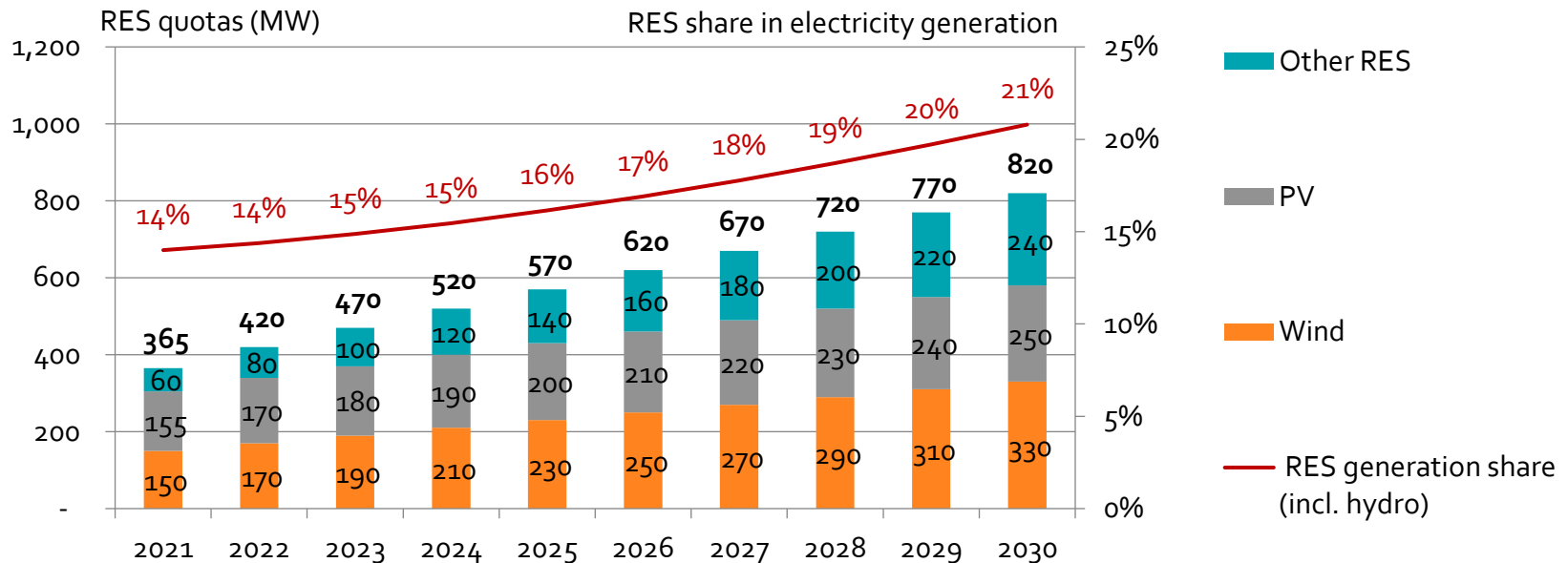


Source: Ukrenergo

## How much RES will be added?

- Extrapolating the *preliminary deployment path until 2025* would lead to **21%** RES share in electricity generation in 2030
- This is not sufficient to achieve 25% target\* and get on track towards 2<sup>nd</sup> NDC

RES shares according to extrapolated current deployment path



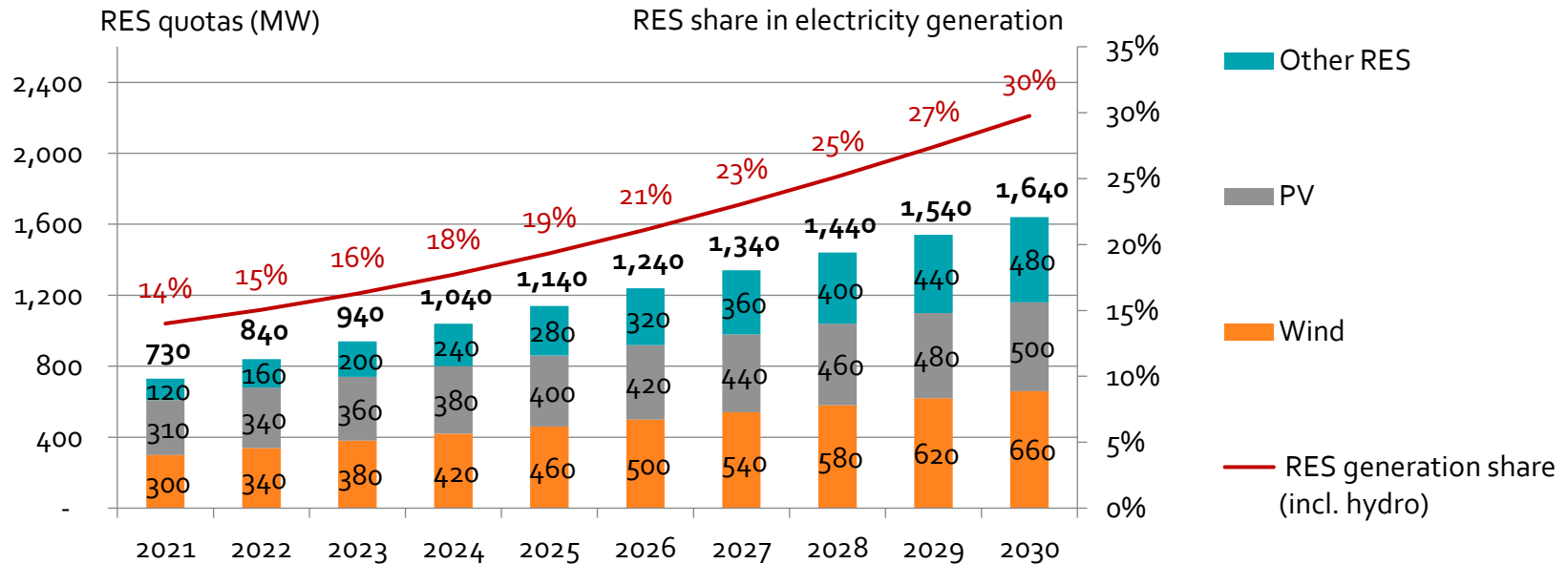
\*National Economic Strategy 2030

Source: Own calculations

## Double auction volumes for a 30% RES share in 2030

- Doubling RES quotas allows Ukraine to achieve targets
- Start with smaller volumes to increase competition
- Assign higher wind quotas for a more system-friendly RES mix

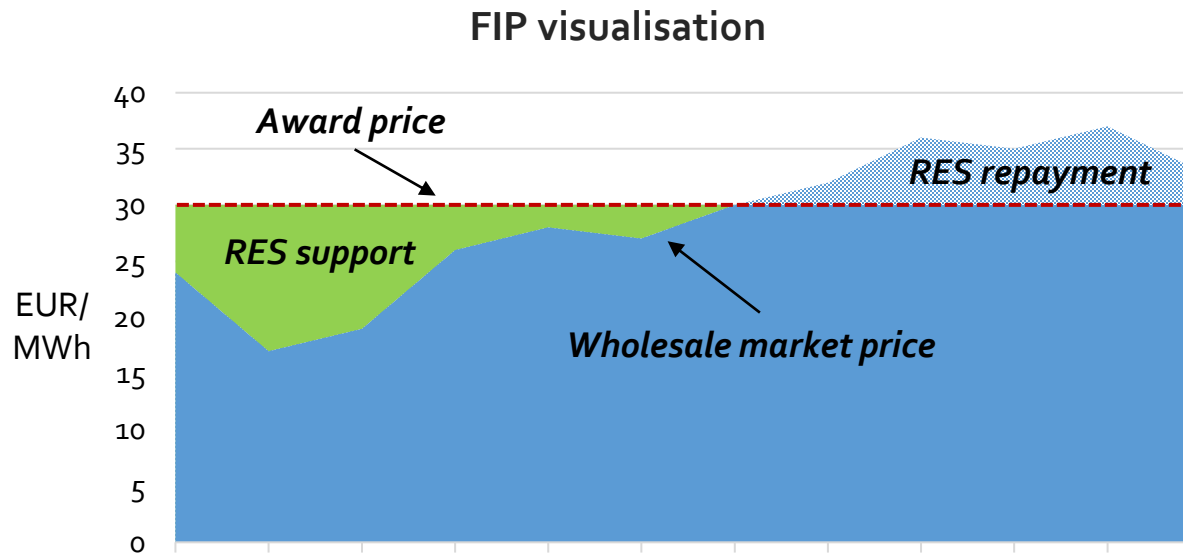
RES quotas to achieve a 30% RES share



Source: Own calculations

## Introduce a feed-in premium scheme

- New RES should sell electricity directly and receive top-up to award price
- FIPs incentivise RES to respond to market price signals and help system
- Preferred FIP design option: Contracts for Difference
  - RES pay back income if wholesale prices exceed award price
  - Steady income stream reduces RES financing costs

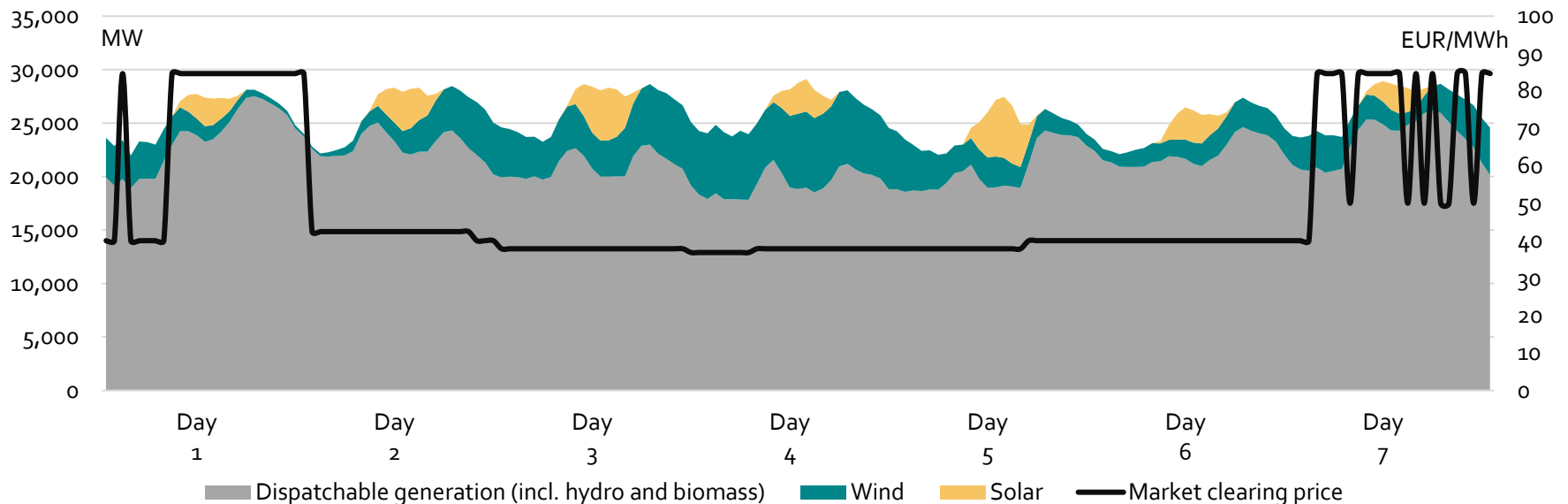


Source: Own visualisation

## Phase out wholesale market price caps

- New flexible generators will only enter the market if they can recover their investment costs
- Market design should allow for situations of high “scarcity” prices
- Achieving low average prices while lifting caps is feasible

Electricity generation and clearing prices for a winter week in 2030 (2<sup>nd</sup> NDC Policy Scenario)





## Key messages

---

- Higher ambition and market design tweaks can help Ukraine's new RES auctions become a success
  - To get on track towards national targets and 2<sup>nd</sup> NDC, Ukraine should double preliminary auction volumes
  - Additional policies will ensure smooth integration of renewables:
    1. Introduce a feed-in premium system to make renewables a regular market player
    2. Phase out price caps to attract new flexible generators and storage that can balance renewables



# Low Carbon Ukraine

Policy advice on low-carbon policies for Ukraine

Supported by:



Federal Ministry  
for the Environment, Nature Conservation  
and Nuclear Safety

based on a decision of the German Bundestag

Implemented by:



## Project Leader

Dr. Georg Zachmann

[zachmann@berlin-economics.com](mailto:zachmann@berlin-economics.com)

## Project Manager

Denis Kletzel

[kletzel@berlin-economics.com](mailto:kletzel@berlin-economics.com)

[www.lowcarbonukraine.com](http://www.lowcarbonukraine.com)

Tel.: 030 2064 34 64 – 0