RES Support Schemes: Impact on Energy Transition and Fossil Fuel Substitution

Jelena Dilienė,
National Energy Regulatory Council of
the Republic of Lithuania

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RENEWABLE ENERGY IN LITHUANIA: OVERALL CONTEXT

Lithuania needs to urgently increase the scale and pace of renewable energy:

- Following the closure of the Ignalina NPP (2009) Lithuania went from being a net exporter of electricity to a net importer
- Lithuania completely cut off imports of energy from Russia and Belorussia as of May, 2022

Unprecedentedly high energy prices:

- €4,000/MWh on 17 August, 2022
- main reason for high energy prices - insufficient domestic generation capacity
- Inflation: 12.4% (January 2022) to 22.4% (August 2022)

Lithuania will rely heavily on RES energy, which is expected to remain the main source of electricity generation

Key Figures: Renewable Energy

RES TARGETS FOR 2030

Offshore wind

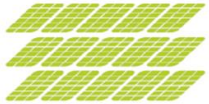
4,5 GW 2050

1,4 GW 2030

Onshore wind

10 GW 2050

1,8 GW 2025
3,6 GW 2030



Solar power plants

9 GW 2050

1 GW 2025
2 GW 2030

Overall installed RES capacity 7 GW in 2030

23,5 GW in 2050

Financial support from:

- EU FS 2021-2027
- RRF
- Transfer of RES statistics

Regulatory target:

- Simple and understandable
- Reduced bureaucratic burden

LIETUVOS RESPUBLIKOS
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RES SUPPORTING SYSTEM IN LITHUANIA (I)

2002 - 2011

Supported power plants: All power plants of RES with some exceptions*
Eligibility period: until 31-12-2020 (or 12 years from the issue of generation permit (if by 31-12-2020 the eligibility period is less than 12 years)
Incentives: Fixed tariffs (determined by type of power plant); Priority dispatch of electricity; Balancing responsibility does not apply; Since 2004 – 40% connection fee discount

2011 - 2019

Supported power plants: Small (until 30 kW) power plants of RES and winners of auctions (by type of power plant)
Eligibility period: until 31-12-2020 (or 12 years from the issue of generation permit (if by 31-12-2020 the eligibility period is less than 12 years).
Incentives: Fixed tariffs (determined by type of power plant); Priority dispatch of electricity; Balancing responsibility does not apply; Connection fee discount (>30 kW – 100%, 30-350 kW – 20%; <350 kW – 40%).

2019 - now

Technologically neutral auctions
Prosumers; Active consumers, RES communities
The Offshore (I, II)

RES SUPPORTING SYSTEM IN LITHUANIA (II)

I.
The Auction

The neutral technology auction (up to +500 MW). Promotion quota (annual amount of electricity production), TWh: **2019 – 0,3; 2020 – 0,7** *(no participants); currently auctions are no longer in place*

II.
Prosumers

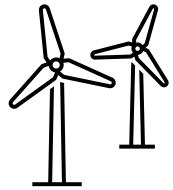
Development of prosumers. The total installed capacity of prosumers and remote prosumers is already 1,5 GW. Plan: to have 300 thousand prosumers by 2030

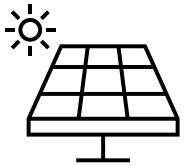
III.
The Offshore

I tender in 2023, the **700 MW wind farm** could start producing electricity by 2030.
II tender in 2025, the **700 MW wind farm** could start producing electricity by 2033.
With an annual output of around 6 TWh, the wind farms would cover up to a half of Lithuania's electricity demand

THE NEUTRAL TECHNOLOGY AUCTION: FACTS&FIGURES

- **Legislation:** Law on RES; Regulation on RES Auction Procedure; Maximum Price Setting Methodology, Reference Price Methodology
- **Technologically neutral**: all types of RE generation (solar, wind, hydro, biogas and biomass) can participate in the Auction
- **Eligibility period:** 12 years from the issue of generation permit
- **Organizer:** NERC
- **Incentives:** Price premium to the market price; priority dispatch of electricity
- **Commitments:** the electricity production – not less than 80% of quota designated at the auction, otherwise – penalties apply

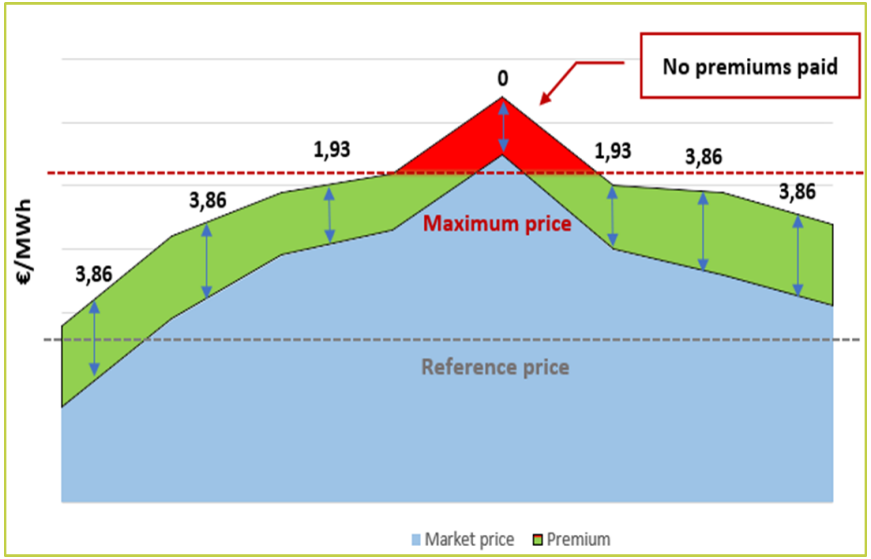




THE NEUTRAL TECHNOLOGY AUCTION: A DETAILED LOOK

- **Auction bidders compete for a price premium**
- **Max size of price premium** = Maximum price – Reference price
- **Reference price** is calculated as weighted average of 3 years market price, i.e. price, that person reasonably expects to get selling electricity of renewable sources at the market.
- **The maximum price** is calculated as costs, necessary to produce 1 MWh electricity of renewable sources, using the most efficient technologies (in 2019 the solar and wind technologies were evaluated)

- **Price premium payment**: The winner will be paid the price premium if the market price plus the price premium does not exceed the maximum price



Future perspective: the offshore windfarm

2nd offshore tender

2024-11-18

Installed capacity: 700 MW, generated capacity: 700 MW

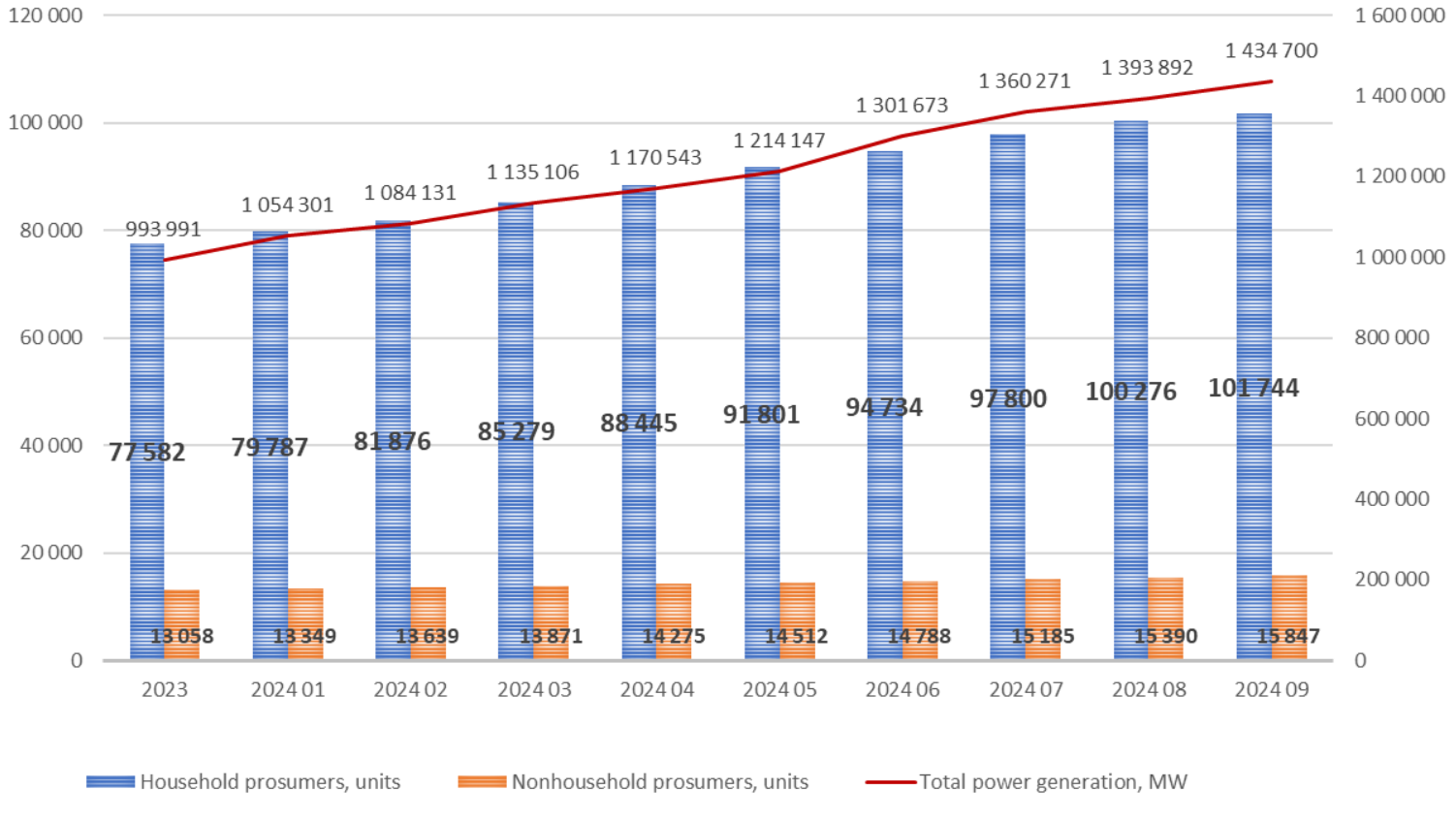
CfD scheme (exact CfD range 2024-11-18, 15 years incentive period)

Possibility to pay **premium to the state** (if all bids=0)

Cost of the project –

2 402,542 mln EUR

Future perspective: prosumers



SUPPORTING SYSTEM: STRENGTHS AND WEAKNESSES

Flexibility – proactive regulation, regulator can forecast social and economical tendences

Stagnation – reactive regulation, regulator follows the tendences

Fit4Purpose – proportional invervention to boost competitiveness

Inadequate support – market distortions, negative impact on competition

The NTA – cheaper electricity (less need for support).

The NTA – risk of improper use of grid; specific competition wind vs solar

Possible solution – support of prosumers (NB – not only financial incentives)

SUPPORTING SYSTEM: NEGATIVE IMPACTS/RESULTS

As a result, the consumer pays for regulatory failures – not only directly, also by limited supply and possibility to choose products&services

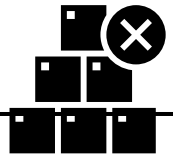
Consumers

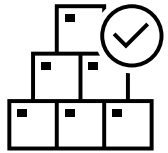
RES development is common interest; inclusion of consumers in energy markets

Disproportionate state aid demotivates businesses that are not involved in support system

Regulatory environment

Appropriate regulation fosters technology and innovation





Support schemes are necessary condition for evolution towards green future; too long support deprive incentives for self-support of businesses

Evolution

Proper support helps to activate business environment, businesses get involved in bilding green future

Thank You

Jelena Dilienė,
National Energy Regulatory Council of the Republic of Lithuania
Jelena.Diliene@vert.lt