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Future energy mix in Poland – PV more likely than new coal by 2030

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Key message

- 2 GW of PV rather 2 GW of new coal.
- Real challenges matter.
- Time is working against new coal-fired projects.

Outline

- Challenges
- Decision making practice
- Energy mix in 2030 – assumptions
- Which technologies may gain by 2030?
- Why a new coal-fired power plant is not likely by 2030?
- Other technologies
- Energy mix – expert assessment
- Conclusions

Challenges

- Capacity deficit
- Homogenous energy mix
- Low flexibility
- High emissions
- Low competitiveness in the region

Decision-making practice

- Keeping retail electricity prices low
- Coal as an anchor of strategic thinking
- Deferring difficult decisions
- Responding only to pressing problems

Energy mix by 2030 – assumptions

- Decision-makers have to address system challenges
- Technologies that can respond to these challenges have an advantage
- Technological progress matters
- EU will pursue climate policy and internal market integration

Which technologies may gain by 2030?

Challenge / technology	Gas	PV	Wind	CHP
Capacity deficit	Yes	Summers - yes	Winters - yes	Winters - yes
Diversification	Yes	Yes	Yes	Depends
Flexibility	Yes	No	No	Yes
Emissions reductions	Yes	Yes	Yes	Yes
Regional competition	No	Yes*	Yes*	Yes*

*These technologies move the merit order to the right, lowering a wholesale price.

Why a new coal plant is not likely by 2030?

Challenge / technology	Coal	Comments
Capacity deficit	Yes	<ul style="list-style-type: none">• Ostrołęka is ready for launching but it is located far from load centers.• It would take years to develop a new project.
Diversification	No	<ul style="list-style-type: none">• Makes the problem even more serious.
Flexibility	No	<ul style="list-style-type: none">• Medium units can be flexible, but only large, new supercritical units have acceptable emissions.
Emissions reductions	No	
Regional competition	No	<ul style="list-style-type: none">• Exposed to unpredictable prices of coal and CO₂

Other technologies

Biogas and biomass

- Not suitable for RES auctions
- Limited biomass potential in Poland

Water

- No new potential

Nuclear

- Not doable by 2030

Energy mix 2030 – expert assessment

- Most of the existing coal fleet to be upgraded
- Plus 2-4 GW of PV
- Plus 2-4 GW of off-shore wind (the current policy has halted on-shore wind)
- Plus 1-2 GW of gas
- Plus 1-2 GW of coal / gas CHPs

Conclusions

- 2 GW of PV is more likely than 2 GW of new coal by 2030, as new coal does not respond to challenges.
- Energy transformation will accelerate after 2030, once Poland depletes most easily accessible coal deposits.
- Technological progress and regional competition will facilitate the transition.

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts that focuses on the long-term economic and environmental sustainability of the power sector. RAP has deep expertise in regulatory and market policies that:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

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