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SUPPORT SYSTEMS FOR RENEWABLE POWER GENERATION

WHY SUPPORT FOR RES?

Demand for “green power”

- EU & national targets

High cost of “green power”

- On a free market most RES are not competitive against conventional generation
- Without incentives no one will voluntarily invest in renewable power generation

SUPPORT METHODS:

Obligation

- At least XX % of sold product must be “green”
- Used in liquid fuel market

Incentives

- Artificially increased price of “green” product
- Subsidies for new projects

TYPICAL INCENTIVE SCHEMES:

Certificates

- RES sells electricity on normal market at competitive prices
- RES gets special “green certificates” which are a separate product
- State creates demand for certificates among energy distributors (committed to acquire certain amount)

Feed-in tariffs

- RES sells electricity at certain guaranteed rate higher than market price of electricity
- Typically different prices for different technologies

Auctions

- Capped amount of renewable energy is purchased by state-appointed organisation
- The lowest bidders sell at guaranteed price for certain period

CURRENT POLISH SYSTEM

Green certificates

- Issued to RES operators for actually generated renewable electricity
- Same certificate type/value for every RES
- Sold to energy distributors obliged to acquire certain amount of green certificates each year
- Free market for certificates
- Distributors who fail to purchase enough certificates pay “equivalent fee” (penalty)
- In practice certificate price close to the penalty fee value for given year

Purchase obligation

- Local DSO required to buy all electricity from renewables connected to his grid
- Sales price equal to average market price for electricity from previous year

CURRENT SYSTEM: PROBLEMS

Microgeneration

- No simplifications for small plants
- Every small generator needs to follow the same rules as large power plants

Possible certificate oversupply

- Oversupply of certificates may cause price breakdown and render the system dysfunctional

Identical support for all technologies

- Excessive support of large hydro & biomass co-firing (excessive system cost, unjust profits for operators)
- Insufficient support for some more expensive technologies

INCENTIVES SYSTEM

- © The appropriate kind of certificate is issued by The Energy Regulatory Office (the ERO) to the PRODUCER of the electricity for each MWh of electricity generated in a “coloured” source.
- © Each ELECTRICITY DISTRIBUTOR is required to present to the ERO appropriate number of each kind of certificates at the end of the year (he has to prove, that no less than certain percentage of electricity it delivered was produced in green, yellow and red sources). For each lacking certificate the company has to pay a **penalty fee**.
- © The certificates can be freely traded on the market and do not have to “follow” the electricity.



NEW ACT ON RES DRAFT PROPOSALS

Old system for existing plants

New auction system for new plants

Auction system for existing plants

NEW ACT ON RES

DRAFT PROPOSALS

Old system for existing plants

- Existing plants eligible for certificates until 15 years since commissioning
- Amount of certificates awarded for biomass/coal co-firing halved
- Hydroelectric plants > 1 MW not eligible for any certificates
- Equivalent fee level frozen at current levels (297.40 PLN/MWh)
- Targets for required certificate purchases by distributors defined every year according to output of plants remaining in the old system
- Possibility to pay the equivalent fee suspended in certificate price drops below 75% of the equivalent fee
- Ultimate expiration of the system on 31 December 2031

New auction system for new plants

Auction system for existing plants

NEW ACT ON RES

DRAFT PROPOSALS

Old system for existing plants

New auction system for new plants

- Renewable electricity purchased by new state-appointed operator (OREO)
- Electricity purchased under 15-year contracts concluded through auctioning, at least once per year
- Capped amount of electricity purchased during every auction
- Separate auctions for plants below 1 MW (at least 25%) and above 1 MW
- Lowest bidders win contracts, fixed price (indexed by inflation)
- Price maximum levels set by the state (17 tech-size categories)
- System mandatory also for upgraded plants
- Electricity purchased by OREO then sold on the market
- Price difference covered by final consumers (in 2015: 2.27 PLN/MWh)

Auction system for existing plants

NEW ACT ON RES

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Auction system for existing plants

- Existing plants may voluntarily “change” system during 2015-2016
- Plant moves to the new system only upon winning an auction (in case of lost bid it stays in the old system)
- Auctions for existing plants separate from auctions for new plants
- Contracting period: 15 years from commissioning (i.e. contract length depending on age of the plant)
- Change impossible for large biomass (hi-eff. CHP > 150 MWth and all other > 50 MWe), biomass co-firing (except specialized multi-fuel)

NEW ACT ON RES

CONCLUSIONS

Limited total cost

- No support for “overproduction” of renewable energy beyond levels required by policy
- No excessive support for relatively cheap technologies
- No development of expensive technologies
- Reduced unjust support for co-firing & large hydro
- Acc. to the government reduction of total cost by 2020 from PLN 30-50b to PLN 24 b

Improved stability

- 15-year guarantees for specific projects

NEW ACT ON RES

CONCLUSIONS

Question marks

- Auctions for existing plants – how to compare different contract lengths?
- One auction for all technologies:
 - may block development of some technologies...
 - but will prevent development of expensive generation)
- Limited support for prosumers (guaranteed tariff, 80% of market energy price for excess, but no concession needed)
- Unpredictable demand for green certificates in the old system – targets for green certificates not known in advance

THANK YOU!