

Green economy in Poland - economic support for renewable energy development

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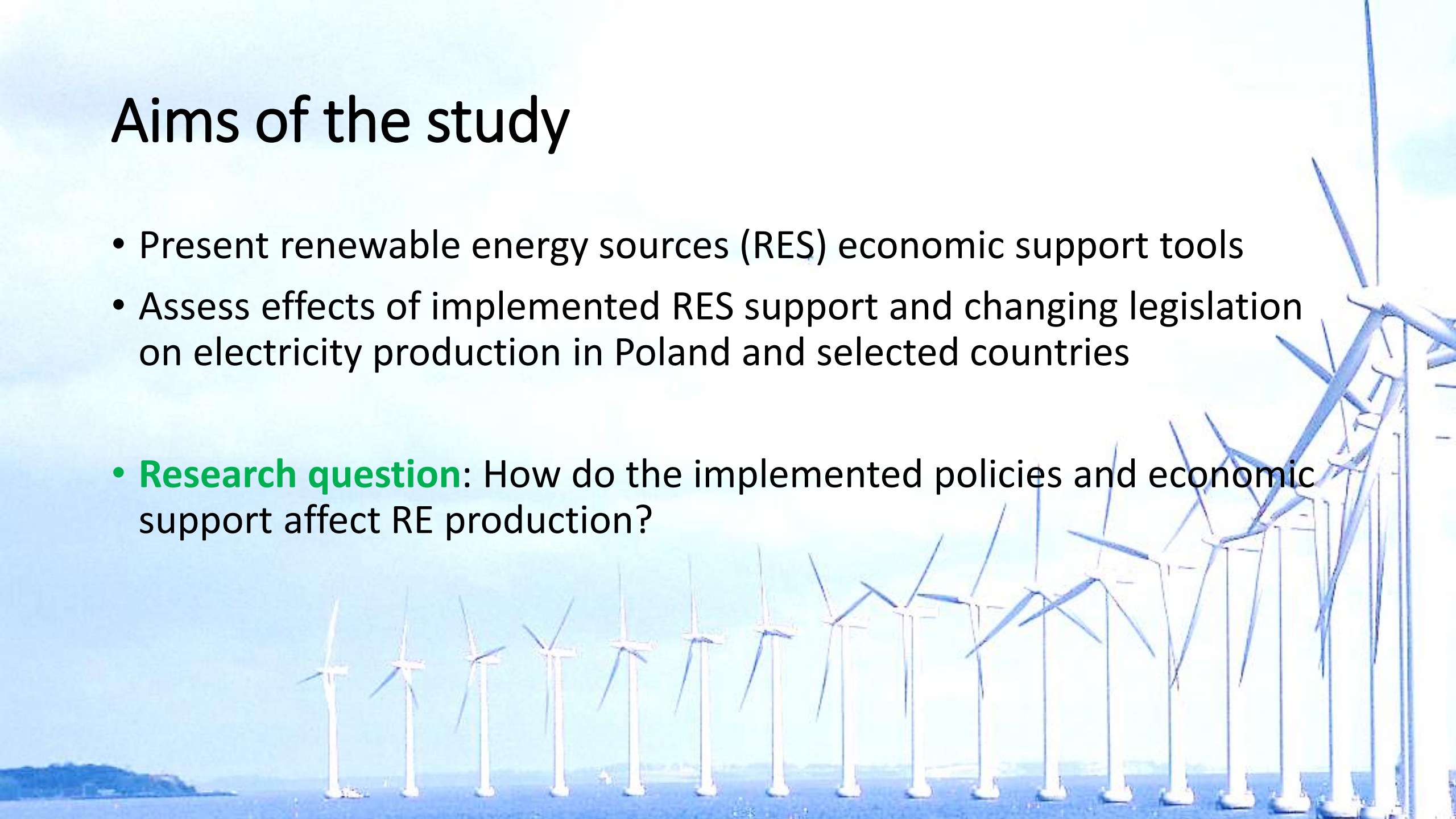
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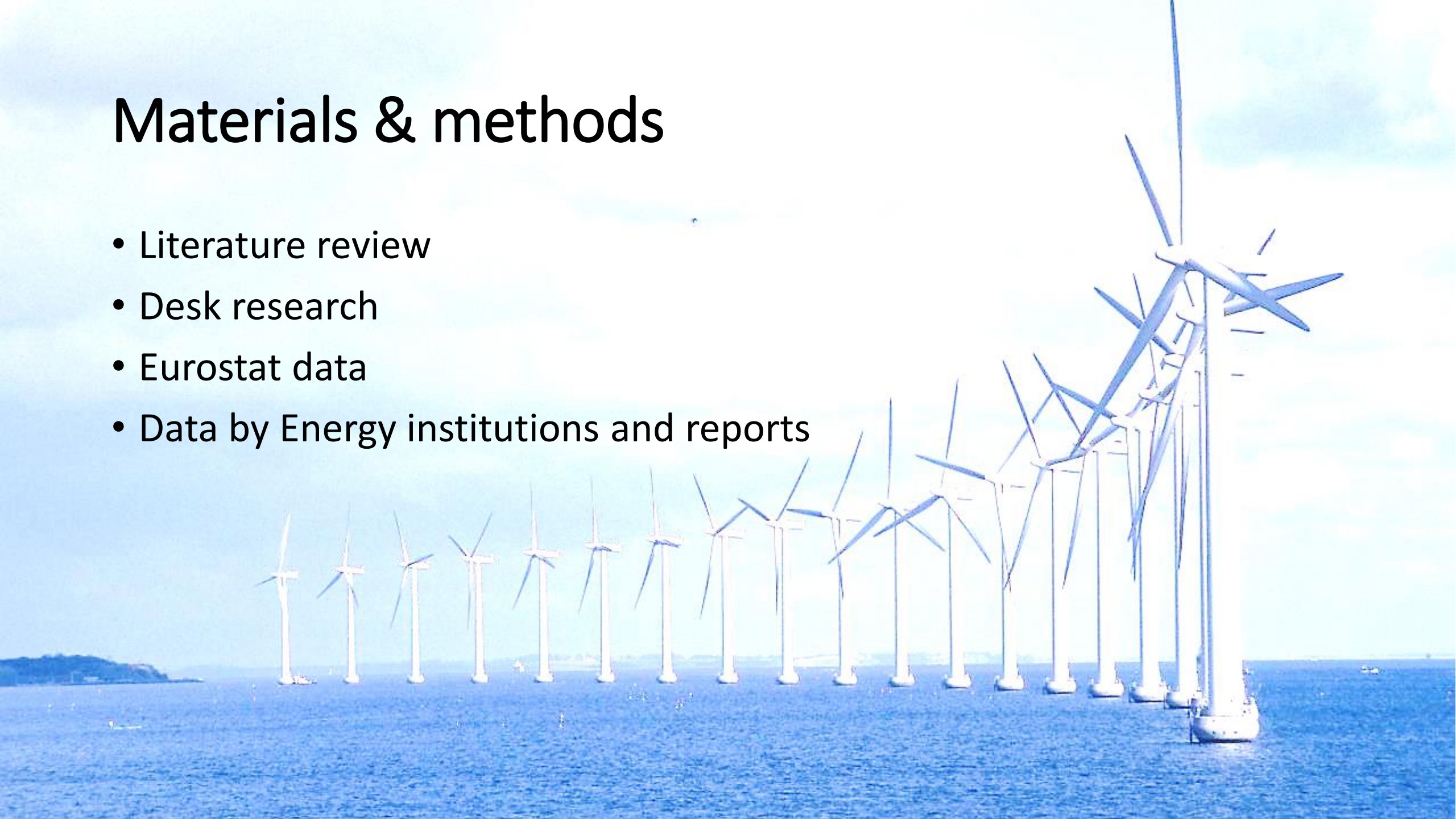
Aims of the study

- Present renewable energy sources (RES) economic support tools
- Assess effects of implemented RES support and changing legislation on electricity production in Poland and selected countries
- **Research question:** How do the implemented policies and economic support affect RE production?



Materials & methods

- Literature review
- Desk research
- Eurostat data
- Data by Energy institutions and reports





Map of Europe

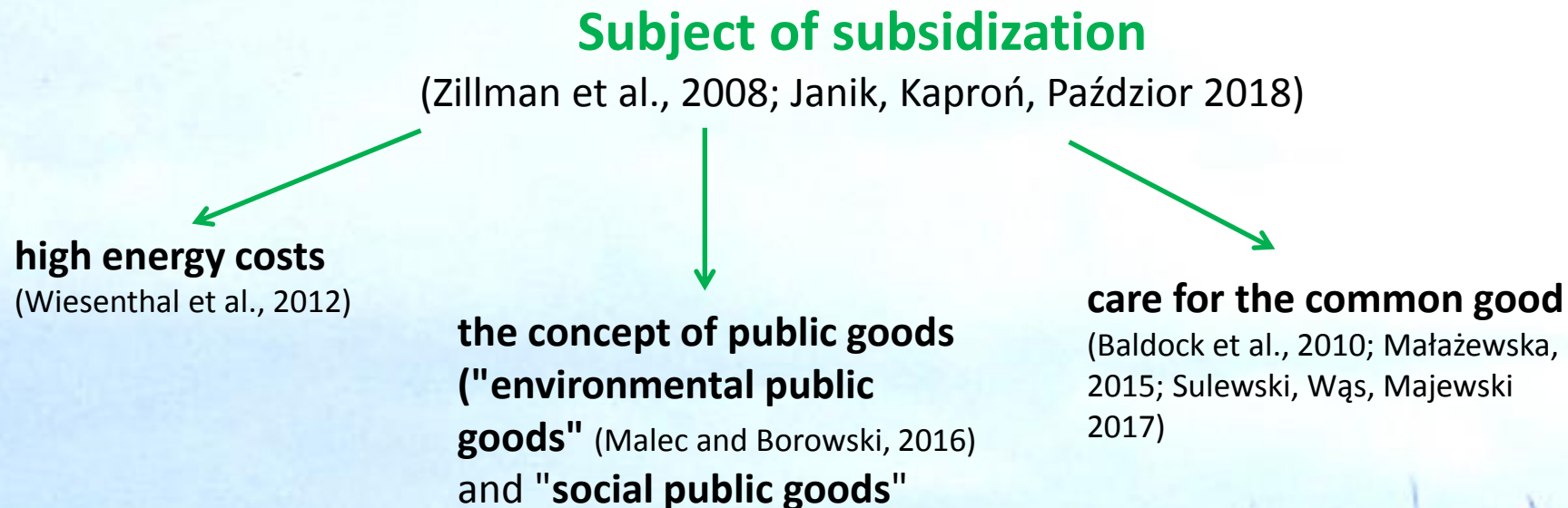
- EEA-31
- EU-15
- New-10
- EU-CC
- Other EEA member countries
- EEA collaborating countries
- Non member countries

STUDY AREA

Map source:
European Environment
Agency

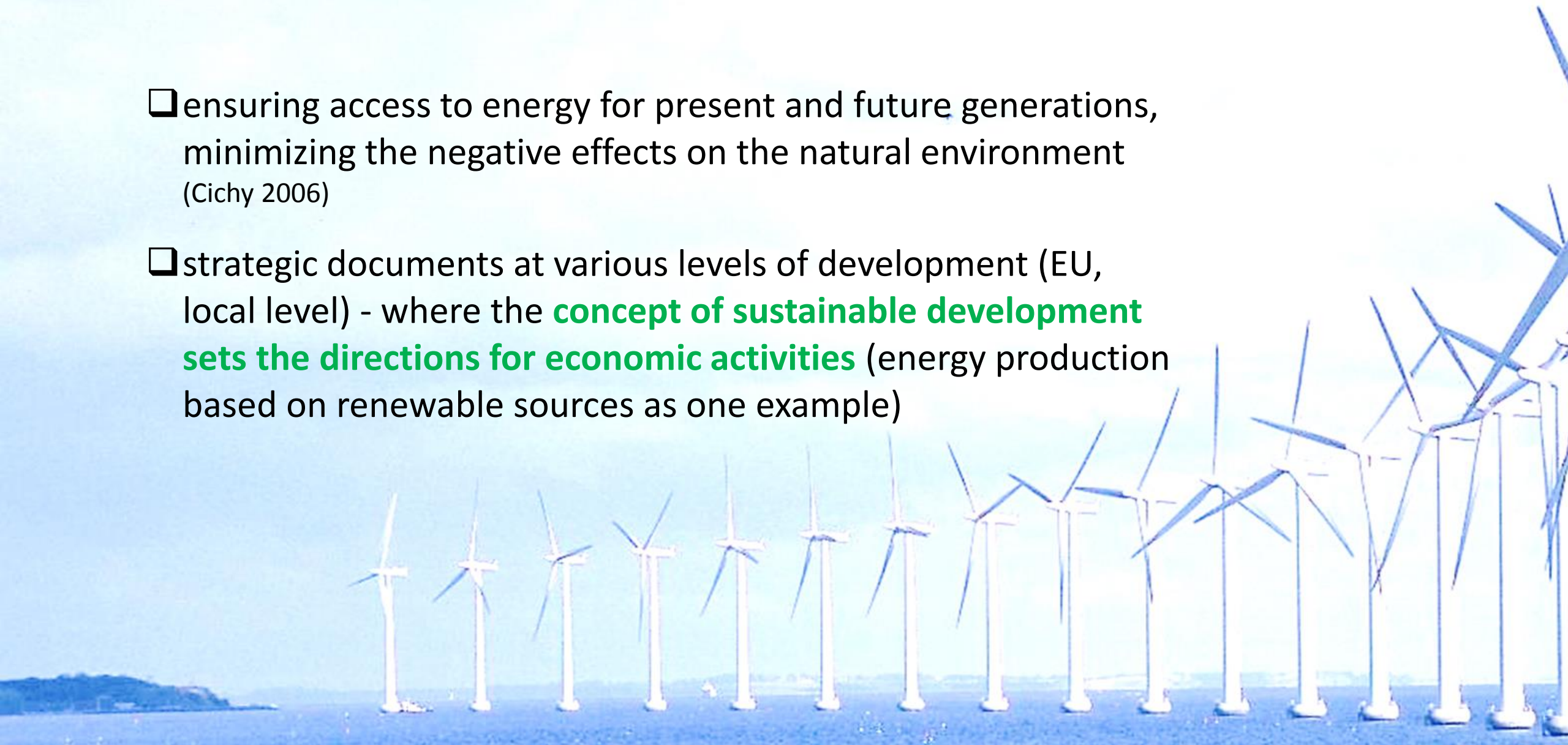
Why is the development of renewable energy important?

- ❑ development of the national economy (new functions, new income sources)
- ❑ a tool for socio-economic development of regions (eliminating differences)
- ❑ improving energy security (Żylicz 2012)



Sustainable energy development

- ❑ ensuring access to energy for present and future generations, minimizing the negative effects on the natural environment (Cichy 2006)
- ❑ strategic documents at various levels of development (EU, local level) - where the **concept of sustainable development sets the directions for economic activities** (energy production based on renewable sources as one example)



Renewable energy development factors



Economic support mechanisms:

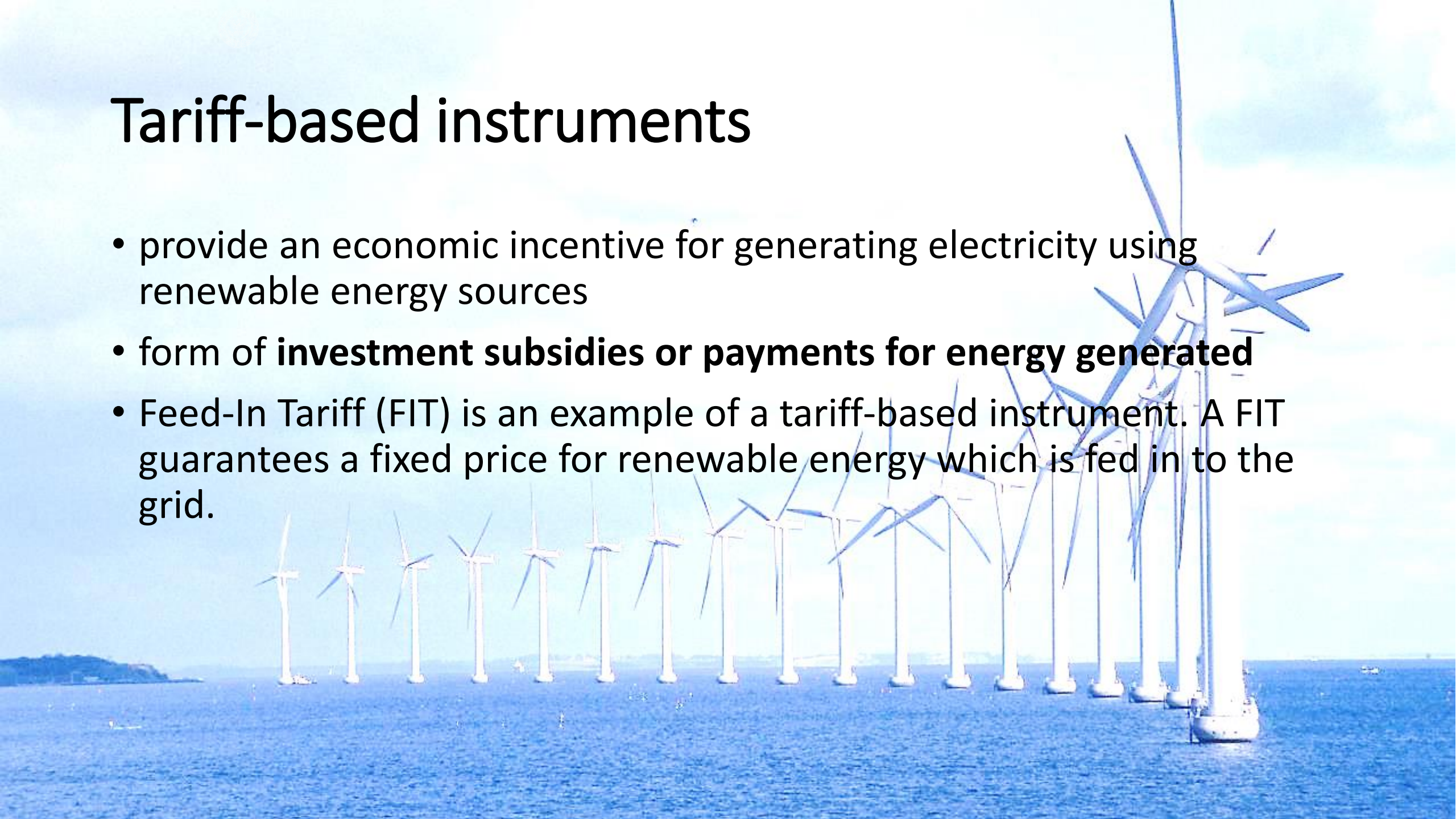
- Tariff-based Instruments
- Quantity-based Instruments
- Hybrid Instruments

Other conditions:

- Cultural issues
- Legislation (national & EU)
- Education
- Awareness
- Marketing

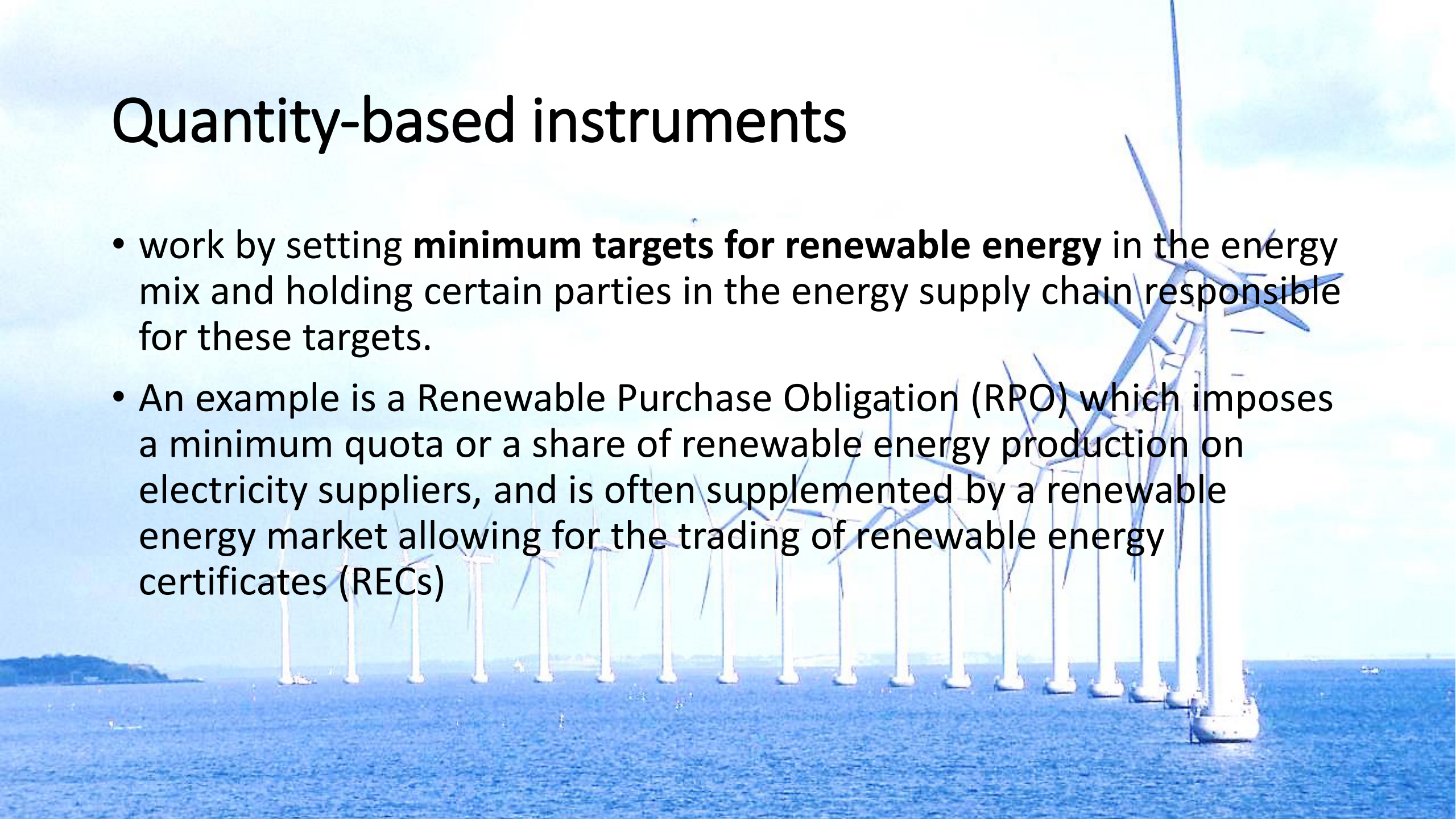
Tariff-based instruments

- provide an economic incentive for generating electricity using renewable energy sources
- form of **investment subsidies or payments for energy generated**
- Feed-In Tariff (FIT) is an example of a tariff-based instrument. A FIT guarantees a fixed price for renewable energy which is fed in to the grid.

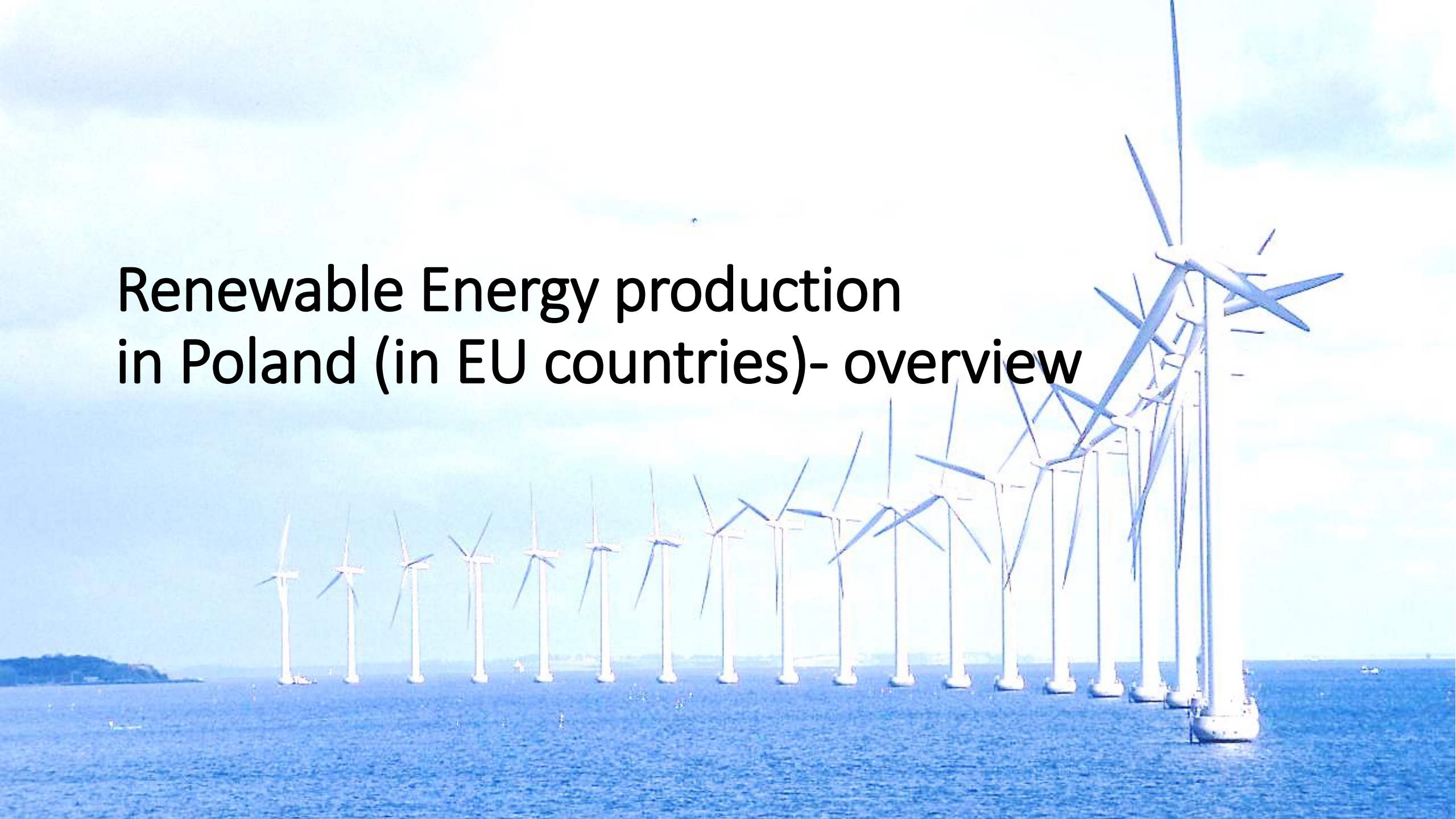


Quantity-based instruments

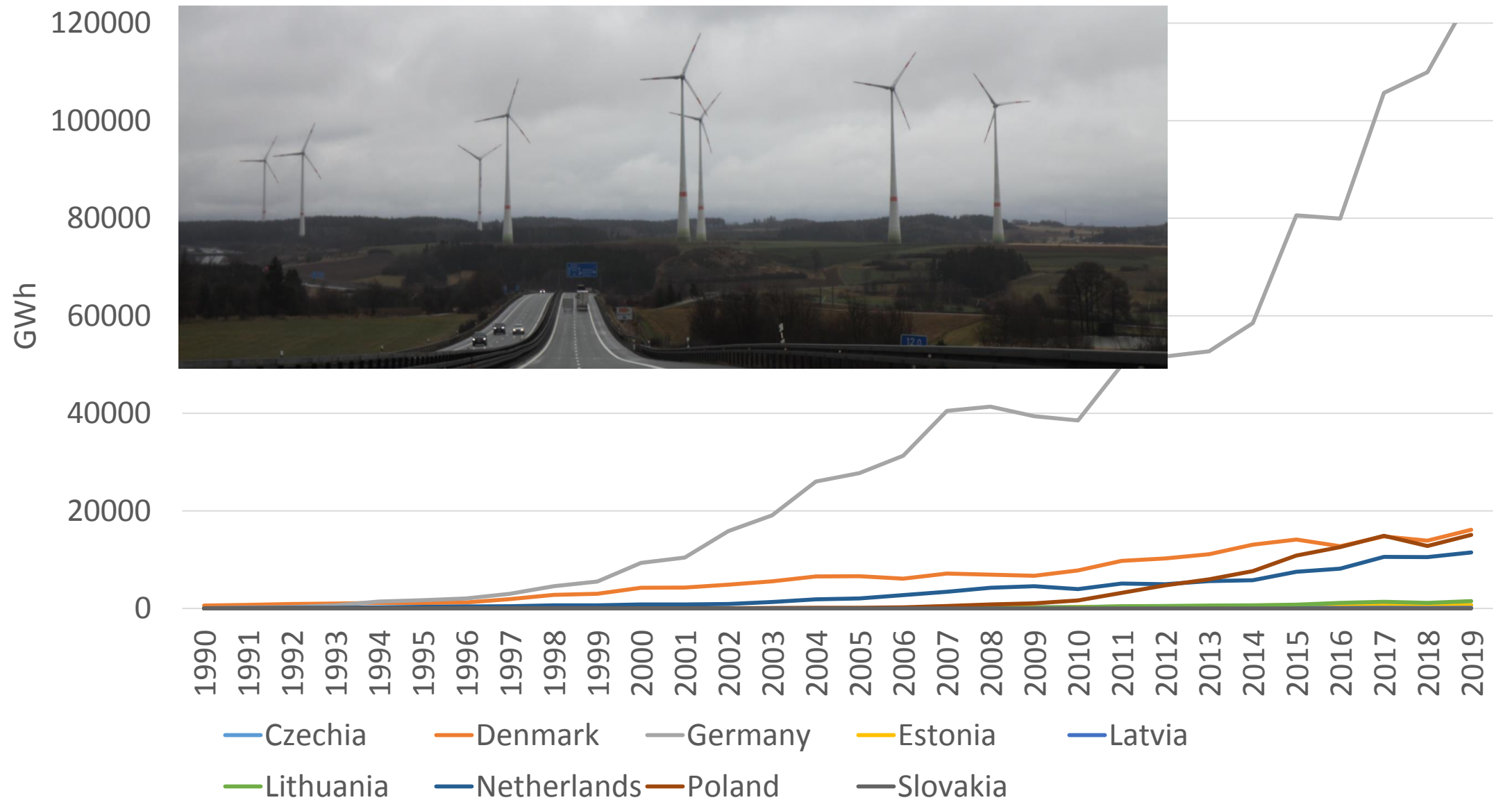
- work by setting **minimum targets for renewable energy** in the energy mix and holding certain parties in the energy supply chain responsible for these targets.
- An example is a Renewable Purchase Obligation (RPO) which imposes a minimum quota or a share of renewable energy production on electricity suppliers, and is often supplemented by a renewable energy market allowing for the trading of renewable energy certificates (RECs)



Renewable Energy production in Poland (in EU countries)- overview

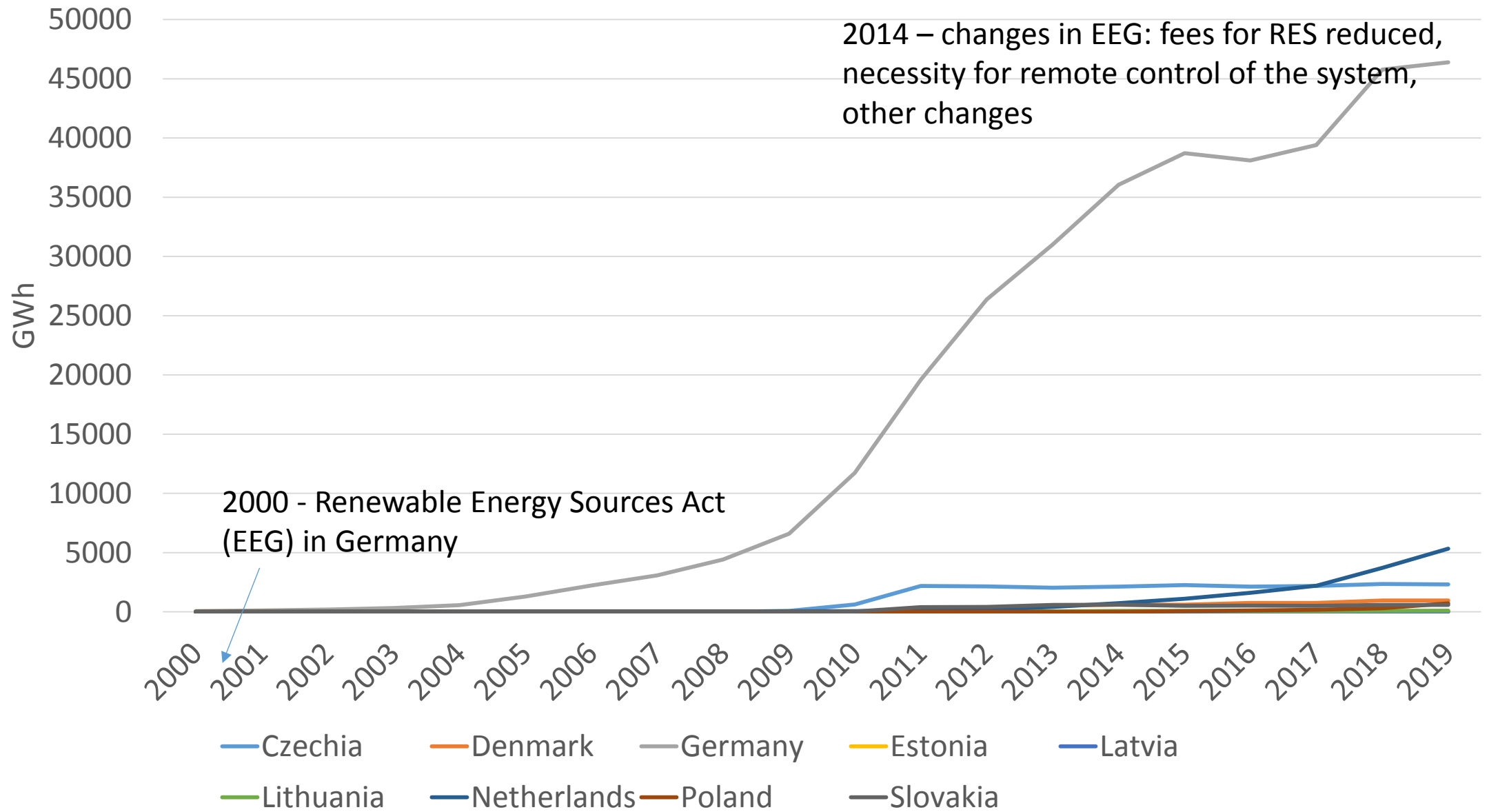


Wind power production in EU countries



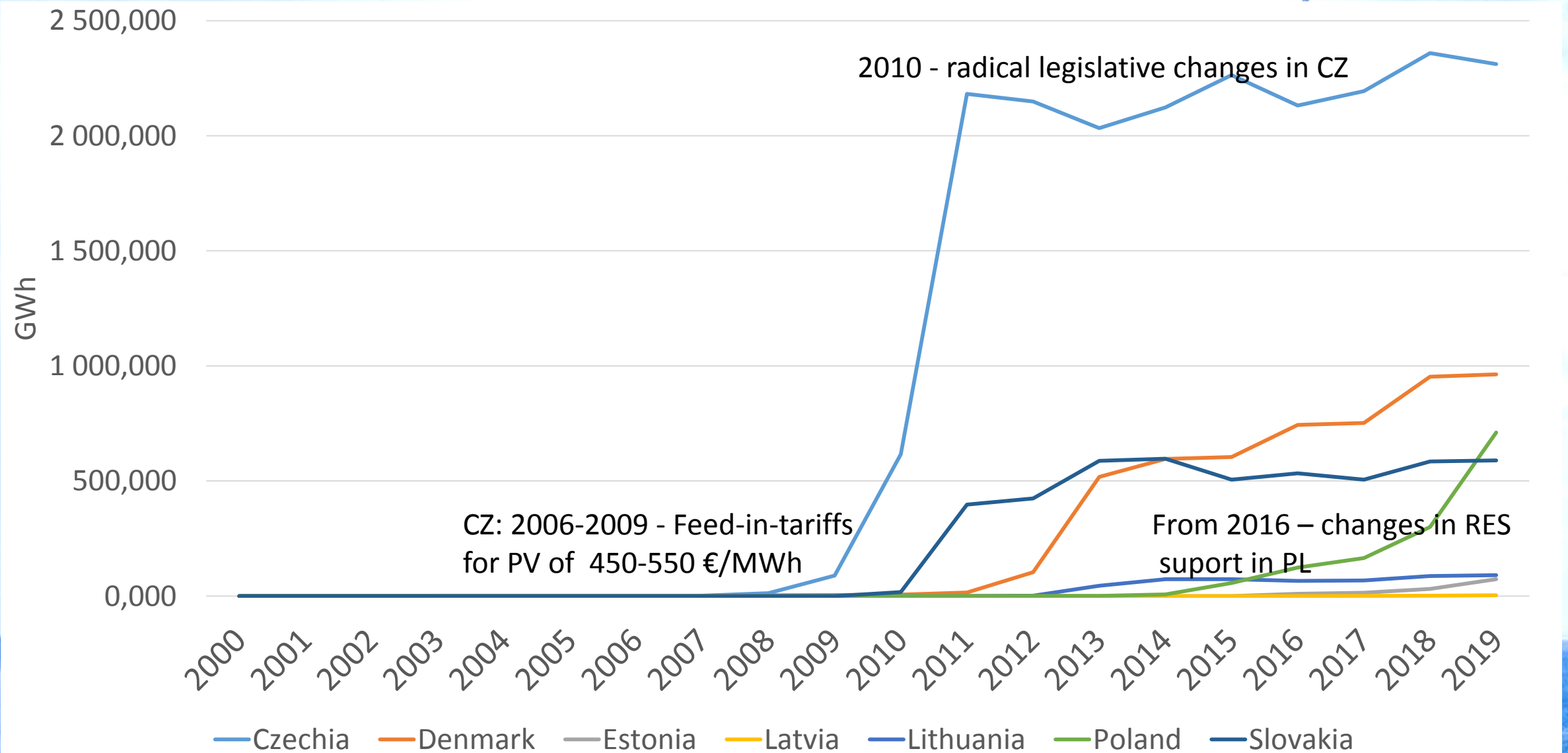
Source: own elaboration based on Eurostat data

PV solar power production in EU countries



Source: own elaboration based on Eurostat data

PV solar power production (selected countries)



Source: own elaboration based on Eurostat data

What can be done?

Instruments of support in Poland

- electricity trading power companies are required by law to purchase energy from renewable sources,
- investment incentives for renewable energy producers (auction system),
- renewable energy producers have priority access to transmission grid,
- electricity generated from renewable sources is exempt from excise tax,
- the grid connection fee for smaller installations (< 5 MW) is reduced by 50%. Such installations are also exempt from the license fee and the annual fee paid by license holders,
- investments in clean energy may be co-financed by the National Fund for Environmental Protection and Water Management or EU funds.

RES support systems in Poland

- "green certificates"
- RES auctions (who produces cheaper?)
- Feed-in-tariff (for biogas and hydropower): guaranteed purchase prices for electricity or subsidies to the market price
- discount system - dedicated to PV prosumers until March 2022
- Net-billing for PV (from April 2022)



Role of EU funds for RES in Poland

- operational programmes in the financial perspective 2007-2013, 2014-2020, 2021-2027
- Investment in RES (150,00 mln EUR in period 2014-2020)
- energy efficiency in buildings and enterprises (550 m. EUR)
- high efficiency cogeneration



Milestones in RES support in Poland

2016

- discount system established
- various types of incentives in the form of co-financing for photovoltaics from EU and national funds.

2019

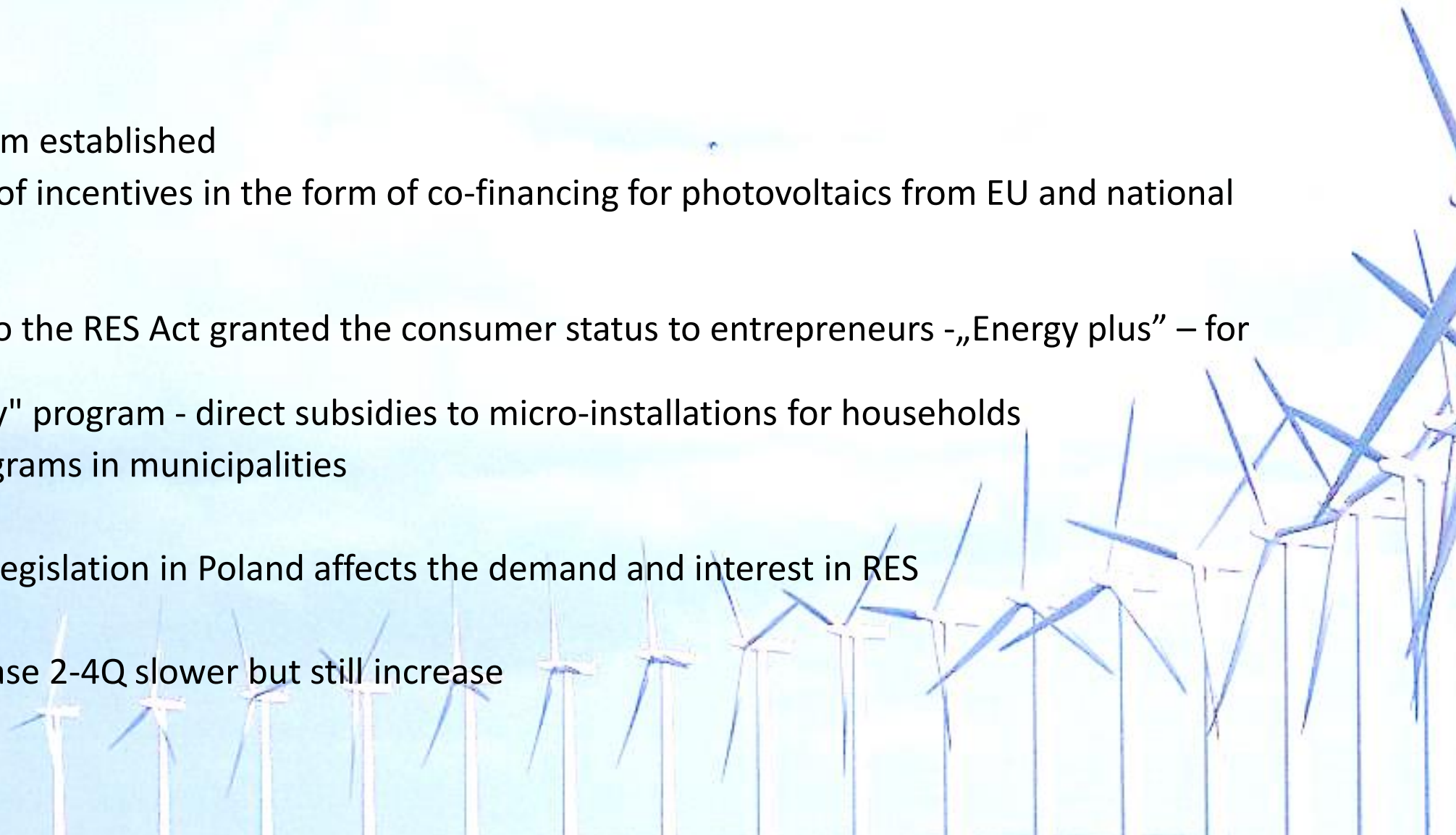
- amendment to the RES Act granted the consumer status to entrepreneurs - „Energy plus” – for enterprises
- "My Electricity" program - direct subsidies to micro-installations for households
- Local RES programs in municipalities

2021

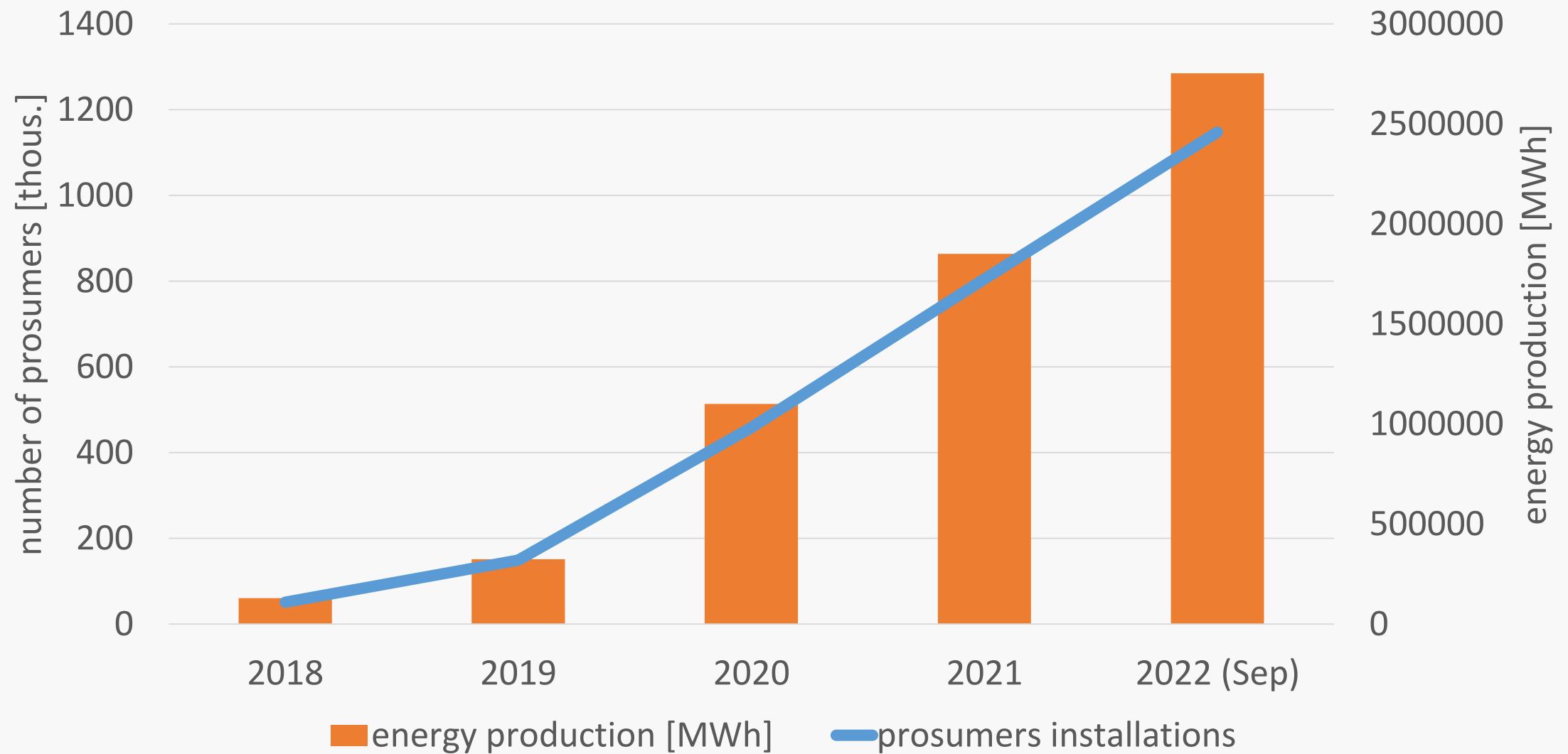
- Planned new legislation in Poland affects the demand and interest in RES

2022

- 1Q high increase 2-4Q slower but still increase



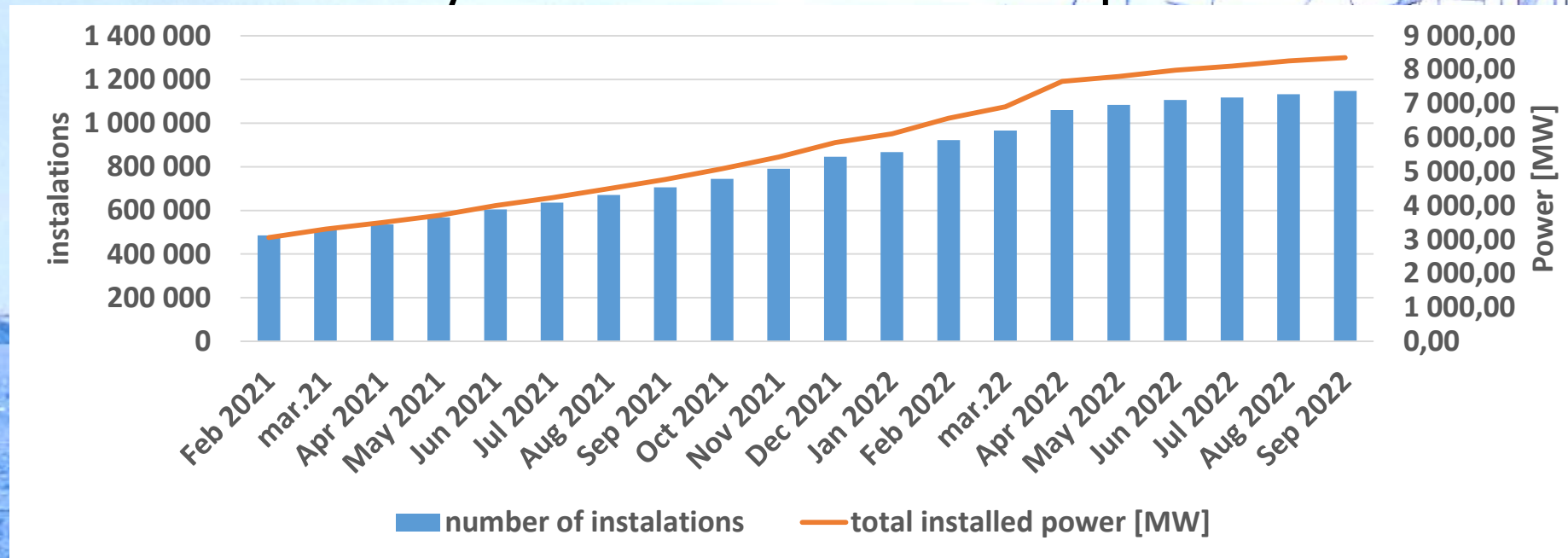
Development of PV prosumers in Poland



Source: own elaboration based on ARE SA data

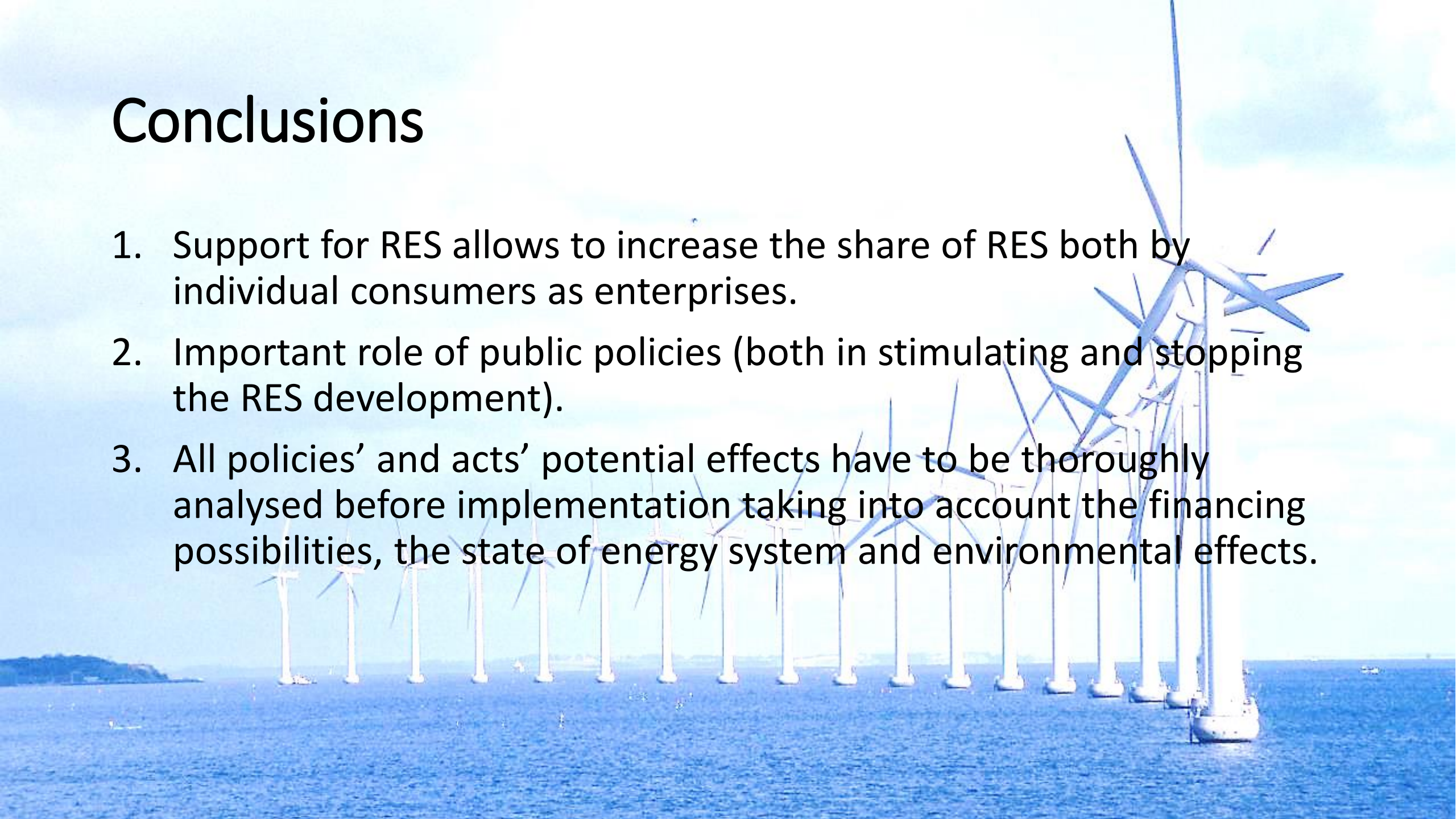
Regulations vs prosumers in Poland

- 1.04.2022 change from discounts to net billing
- WAS: self consumption (av. ab. 20% of total production) + 80% of energy overproduction could be used by the household at no cost
- NOW: self consumption + overproduction is sold at wholesale price, the household buys the difference at retail price



Conclusions

1. Support for RES allows to increase the share of RES both by individual consumers as enterprises.
2. Important role of public policies (both in stimulating and stopping the RES development).
3. All policies' and acts' potential effects have to be thoroughly analysed before implementation taking into account the financing possibilities, the state of energy system and environmental effects.



Thank you
for your attention!

