



# How can a competitive market for renewable energy be improved?

Perspectives and challenges for renewable energy deployment in UNECE Region.

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## Insights.

- Objectives of the report.
- Analytical background: Structure matters!
- Overview: Access to electricity market and promotion schemes in force.
- Status of technology development in UNECE Region.
- Case studies.

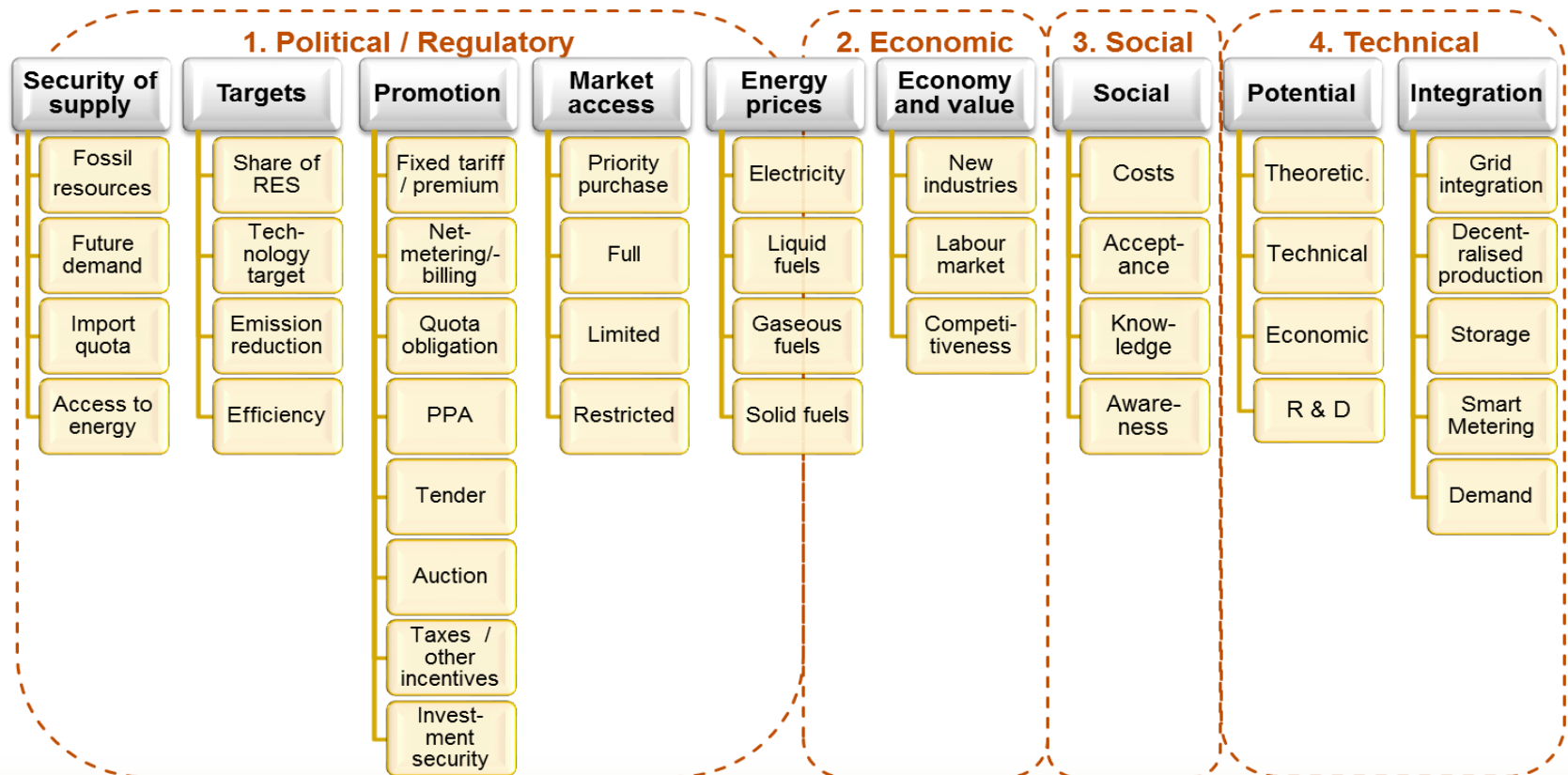


## Objectives of the report.

- Different mechanisms and instruments promote the introduction of renewable energies.
- However, underlying political, economic, technical and social key factors determine the initial situation of each energy market and have a strong influence on the future perspectives of each technology and field of application.
- Against this background, the report
  - examines the status of selected technologies and applications in all UNECE member states and policy instruments in force as well as trends in international RE development.
  - gives an overview of which policies and measures may work in different contexts.
- Furthermore, case studies from six selected countries (Albania, France, Germany, Kazakhstan, Turkey, USA ) highlight lessons learned and future challenges as well as possible strategies or pathways.
- Proposals: Activities to exchange best practices within UNECE GERE.



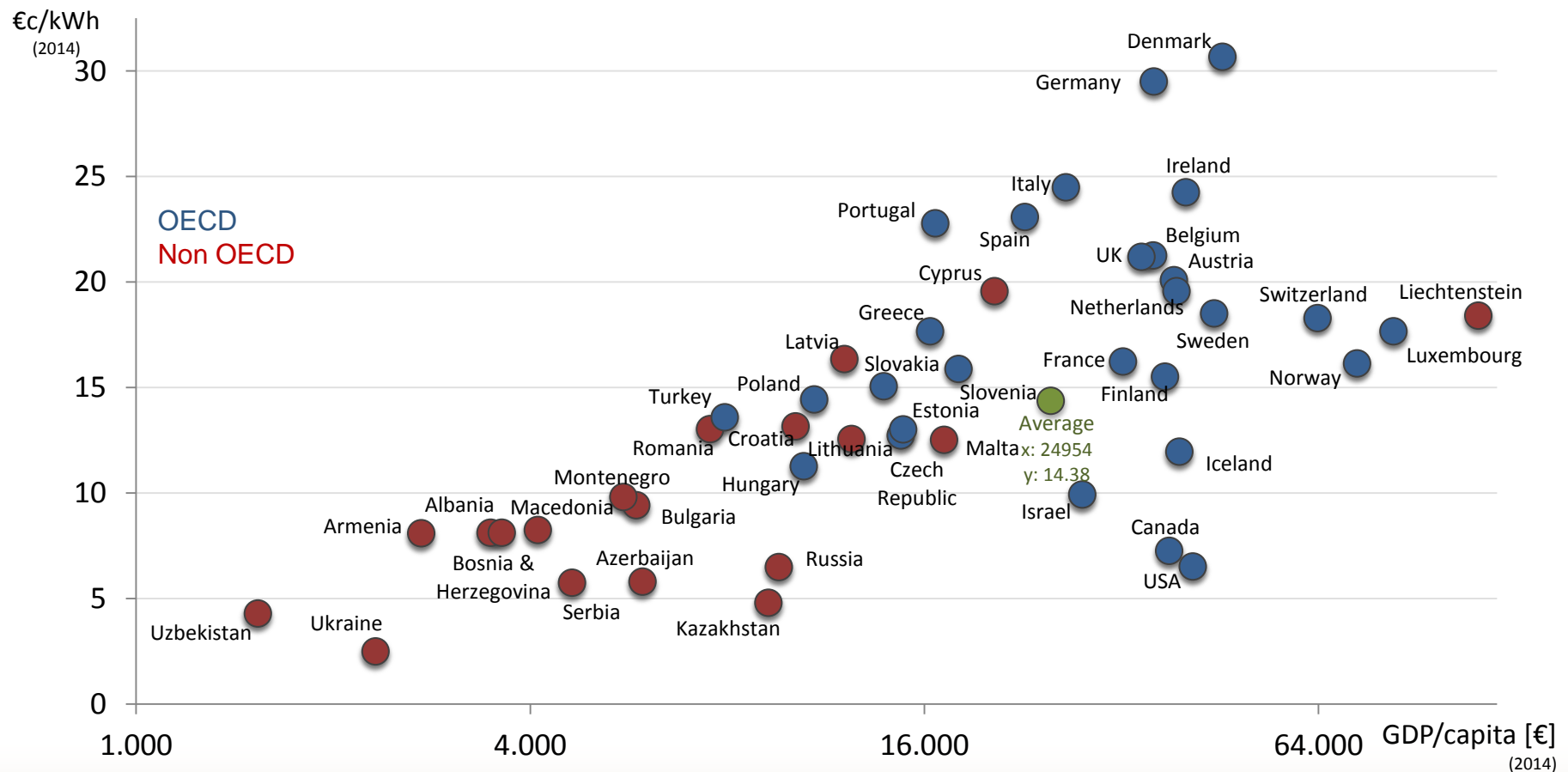
## Structure matters: There is not the „one blueprint“ for successful energy transition.



Source: dena.



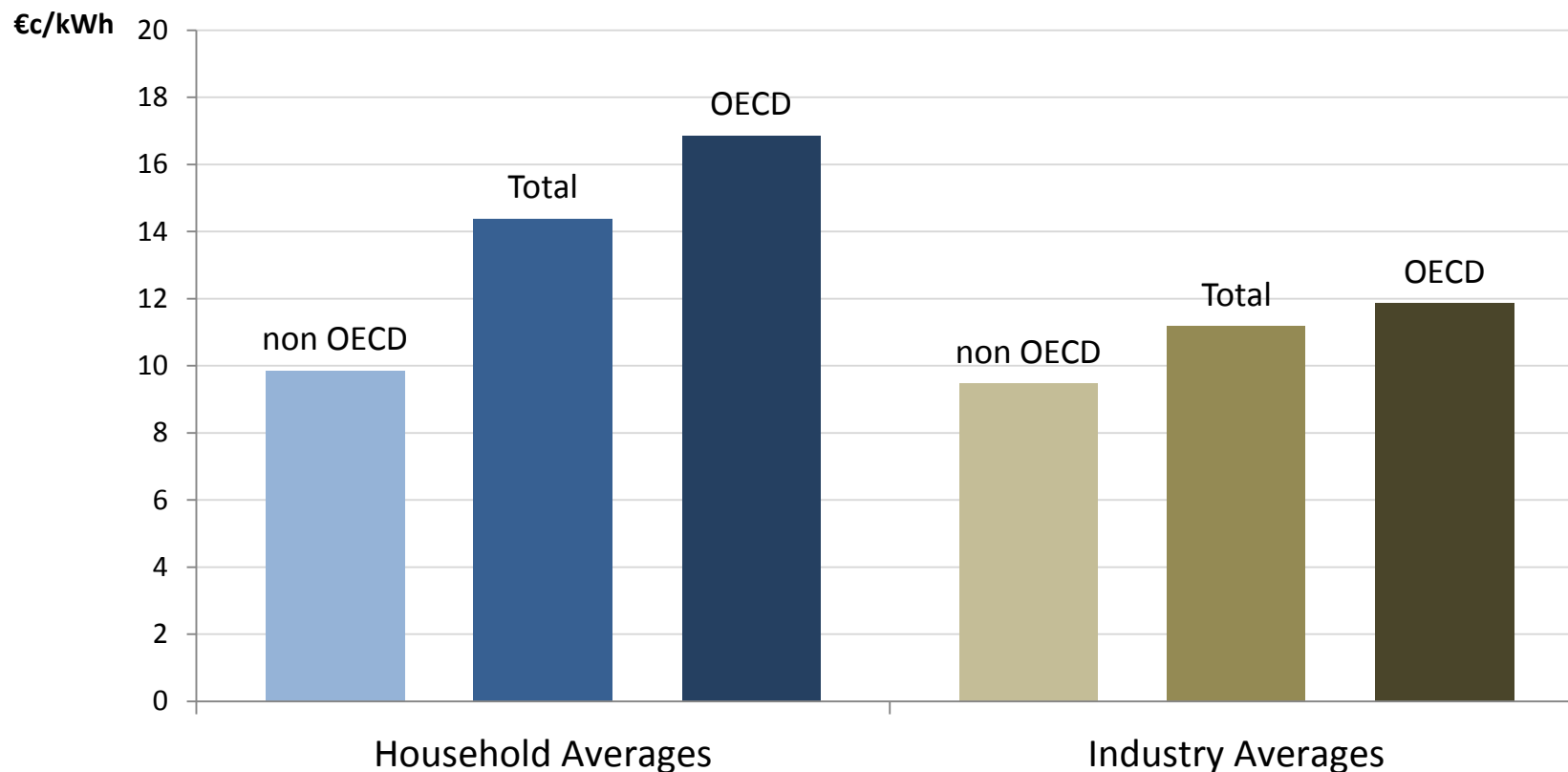
## Example: Average prices for private households (incl. taxes).



Data sources: Eurostat, World Bank and other.



## Example: Average electricity prices 2014 (incl. taxes).



Data sources: Eurostat and other.



## Policy landscape: market access and promotion schemes.

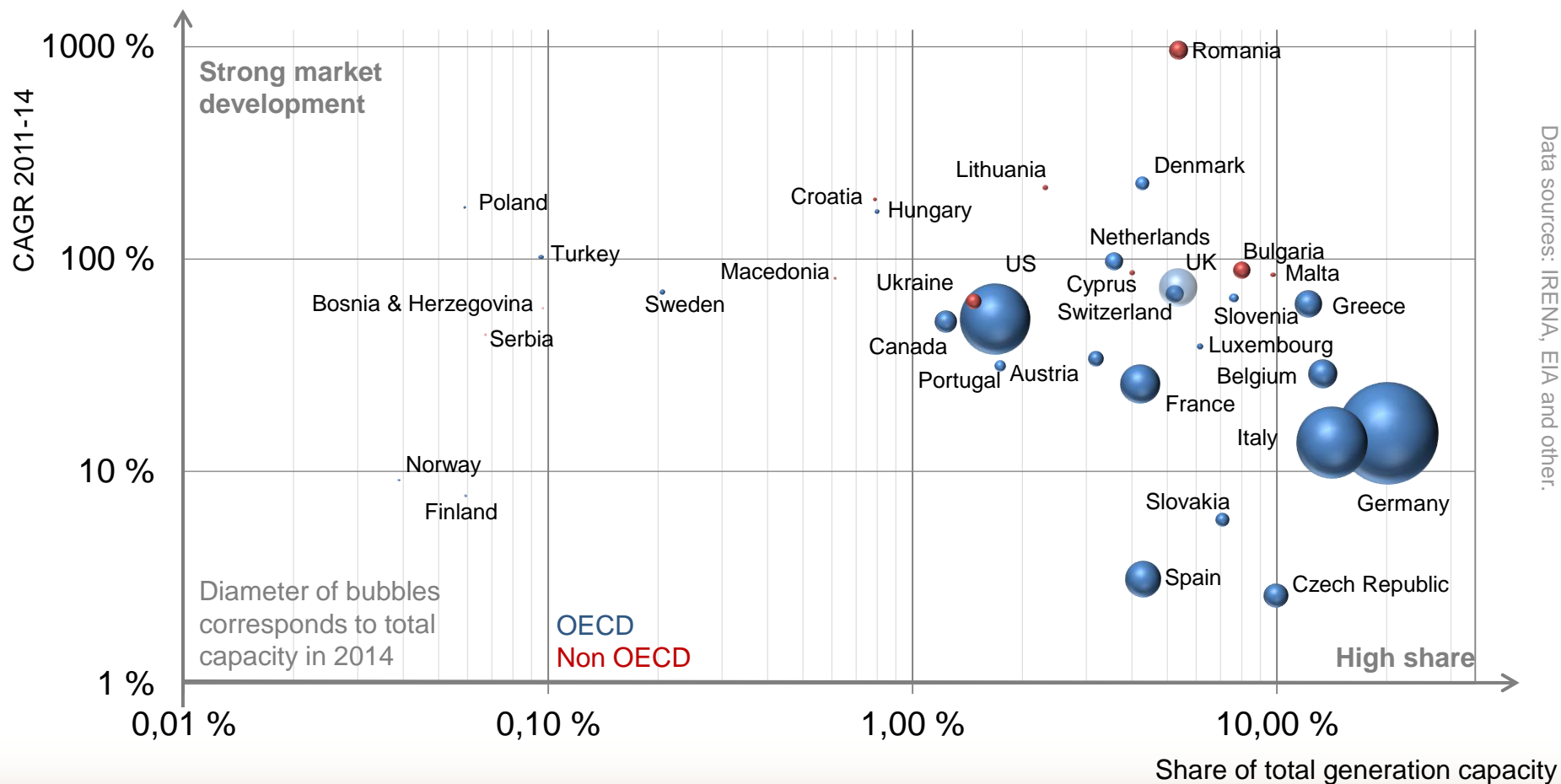
Measures	UNECE member countries that have measures in force*
Official expansion goals	44
Grid access	30
Grid access with capacity limits	12
Priority feed-in for renewables	27
Feed-in tariff or premium	41
Renewable Portfolio Standard / Quota System	11
Green certificates	10
Auctions	11
Tenders	14
Net Metering / Net Billing	11
Investment incentives / tax benefits / subsidies	44

\*Not included: Andorra, Liechtenstein, Monaco, San Marino

Source: dena and other.



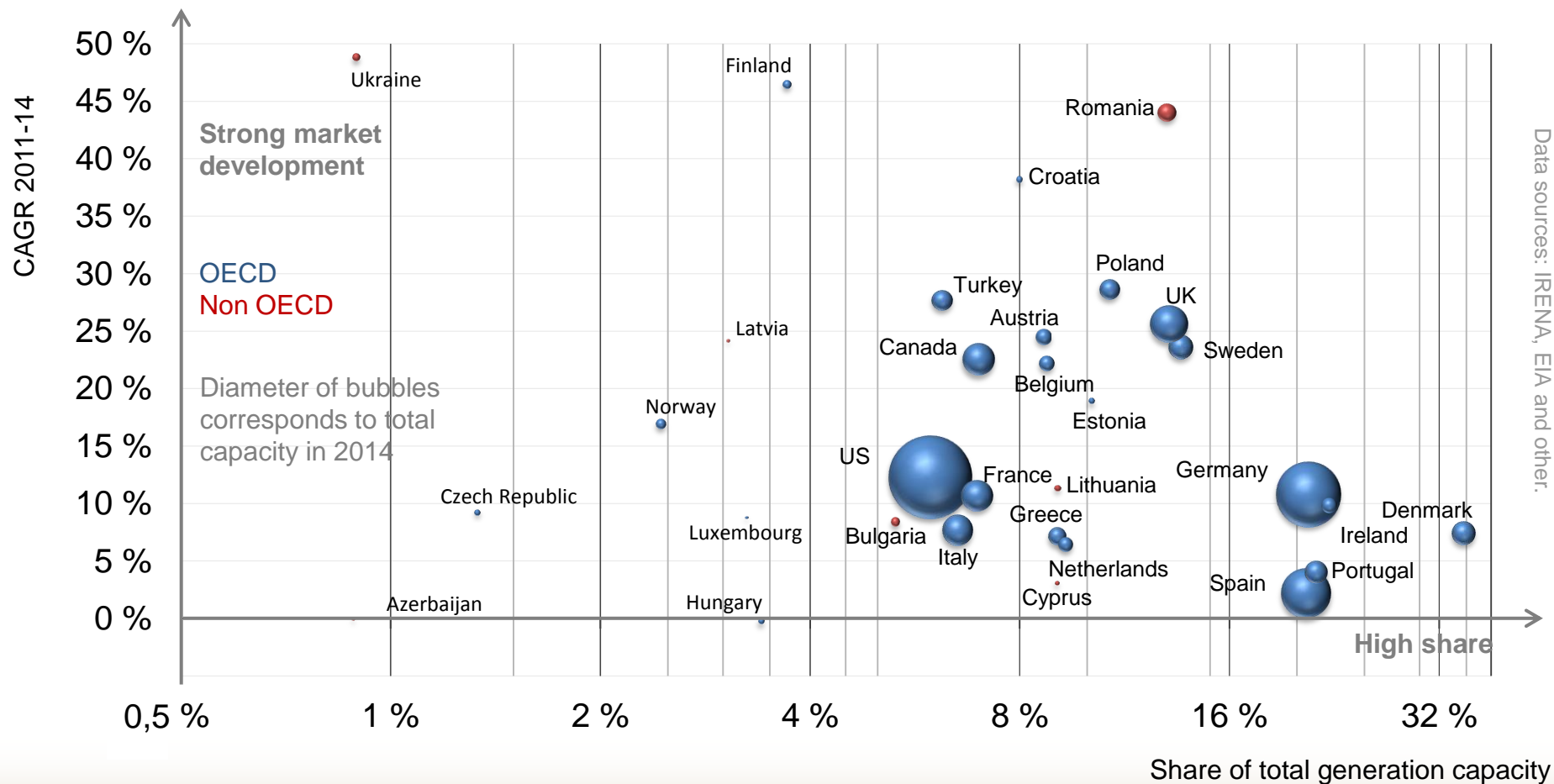
## Status of Photovoltaics in UNECE Region.







## Status of Wind-Onshore in UNECE Region.





## Case study: Turkey.

- **Share of renewable energies in total power generation:** 4 % of total power generation (excl. hydropower, 2013).
- Technologies: Mainly hydro, wind and PV, other resources play a minor role; 1 GW of geothermal capacity for heat generation.
- **Latest policy developments:** Renewable Energy Action Plan, based on several previous strategic guidelines:
  - Feed-in tariff (Currency USD) and Net-metering
  - Local content
  - Legal framework for private sector electricity generation
  - Tenders
  - January 2015 release of 2015-2019 Strategic Plan, aims at fostering even more private sector investment
- **Challenges / Outlook:**
  - Bring Turkey's energy strategy in line with the EU's 2009 Renewables Directive
  - Turkey's grid needs more technical and administrative measures to guarantee grid connection for increasing number of large scale RE
  - Continuous monitoring of level of FiT and its structure



## Case study: Kazakhstan.

- **Share of renewable energies in total power generation:** 0.62 % (excl. hydropower, 2014).
- Technologies: Mainly hydro, 50 MW of wind, 35 MW of PV; no RE heat (excl. traditional bioenergy).
- **Latest policy developments:** Presidential edict “On the Concept of the Transition of The Republic of Kazakhstan to a Green Economy”
  - RE targets
  - FiT
  - RE producers exempt from paying for transmission
  - Grid operators (electricity and heat) have to offtake any renewable energy generated
  - Financial support programme for small-scale RE systems
- **Challenges / Outlook:**
  - Currently very low share of “new” RE
  - Absence of pilot and reference projects
  - Lack of experience in implementing RE projects, with offtake contracts and financing
  - Little social acceptance
  - Uncertainty about the development of tariffs
  - No technical norms or quality control systems for the use of RE



# Thank you for your attention!

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