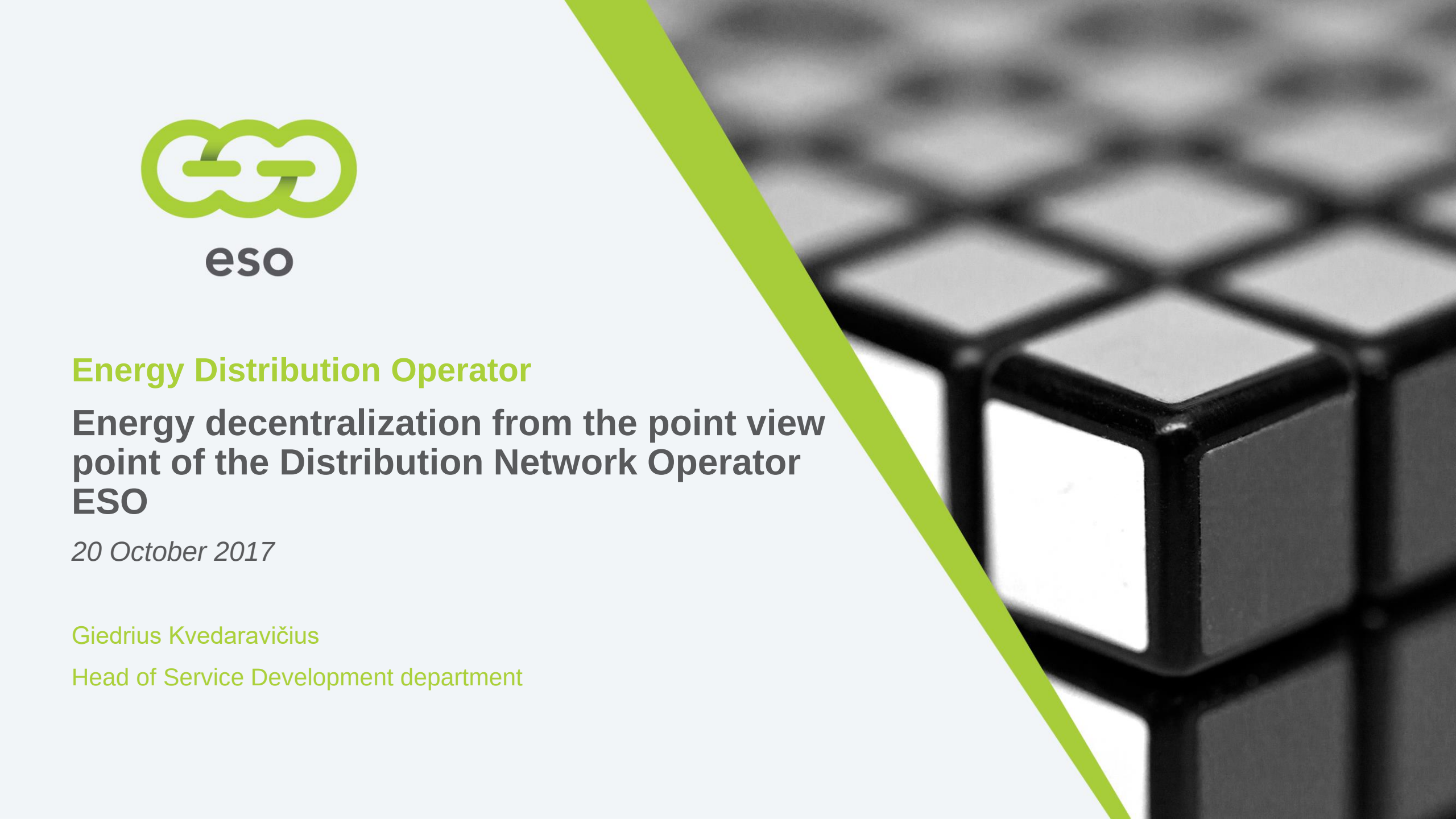


Energy Distribution Operator

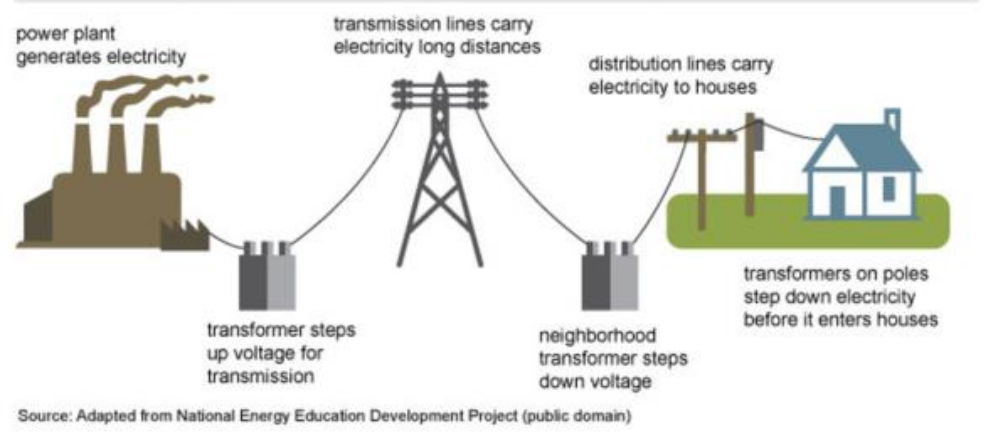
Energy decentralization from the point view point of the Distribution Network Operator ESO

20 October 2017

Giedrius Kvedaravičius

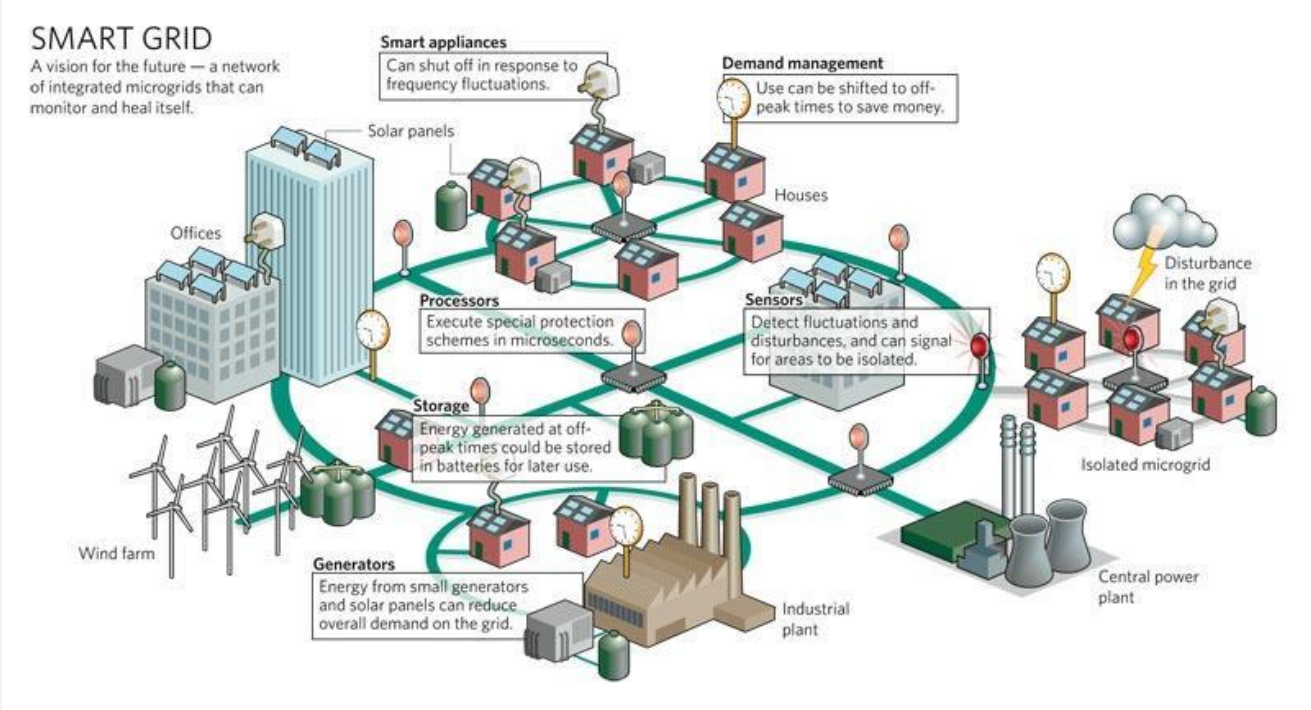
Head of Service Development department

DSO role is changing in the electricity system



- ✓ Linear model from production to consumption
- ✓ Clear market participant roles
- ✓ Centralized production and decentralized consumption
- ✓ Conventional industry infrastructure

- ✓ Customer engagement and decentralization
- ✓ Higher requirements for power supply and reliability
- ✓ Automatization and digitalization (big data)
- ✓ Electrification
- ✓ (near) Real time operations



DSO is taking active steps to address the challenges

Smart meters

- ✓ Big data producer
- ✓ Real time data
- ✓ Smart grid enabler
- ✓ New pricing models

Data hub

- ✓ Central database for electricity market
- ✓ Platform for advanced services provision
- ✓ Regulation of system participants relation

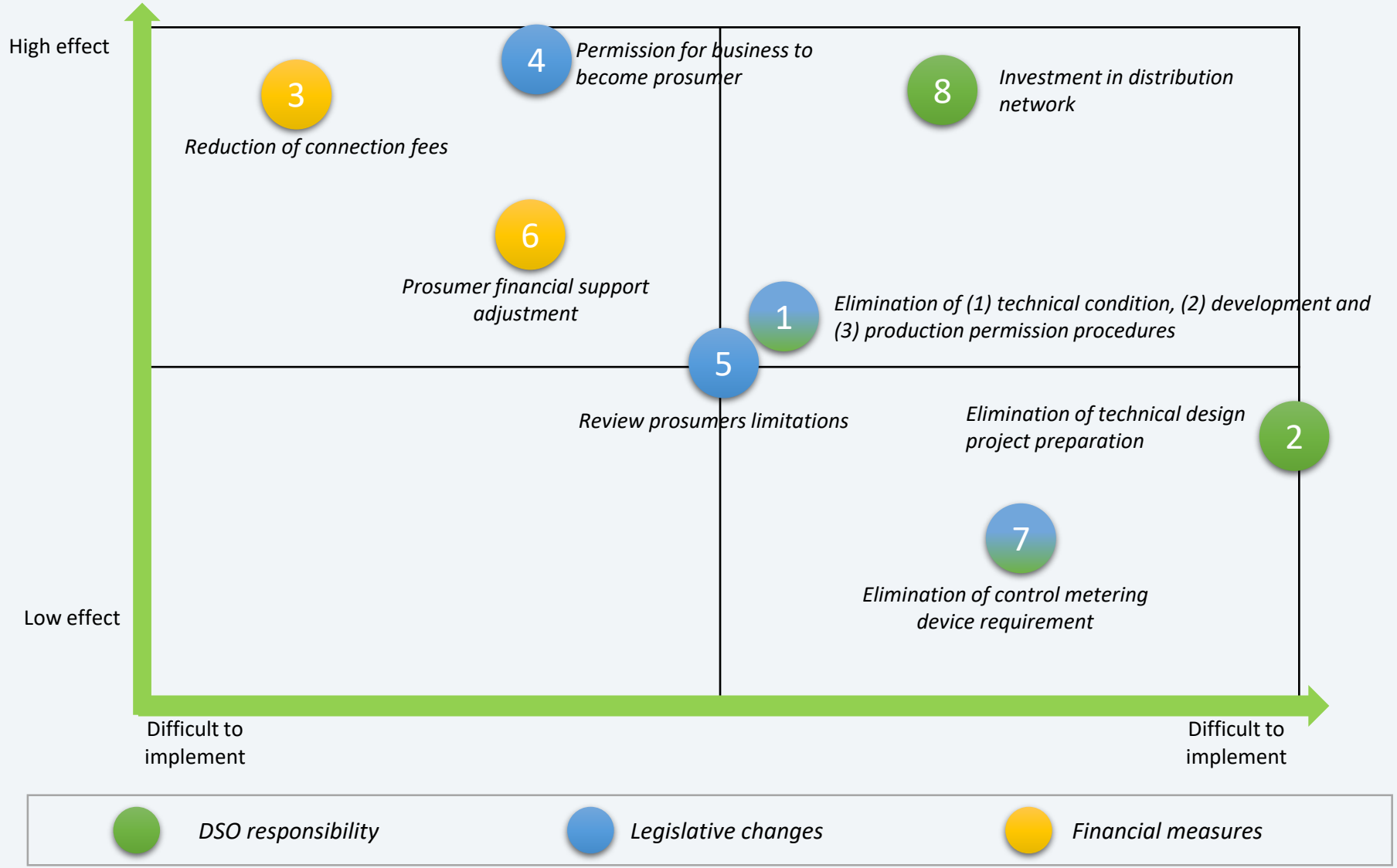
Smart grid

- ✓ Self-healing network
- ✓ Automatic voltage management
- ✓ New services technological enabler (i.e. DSR)

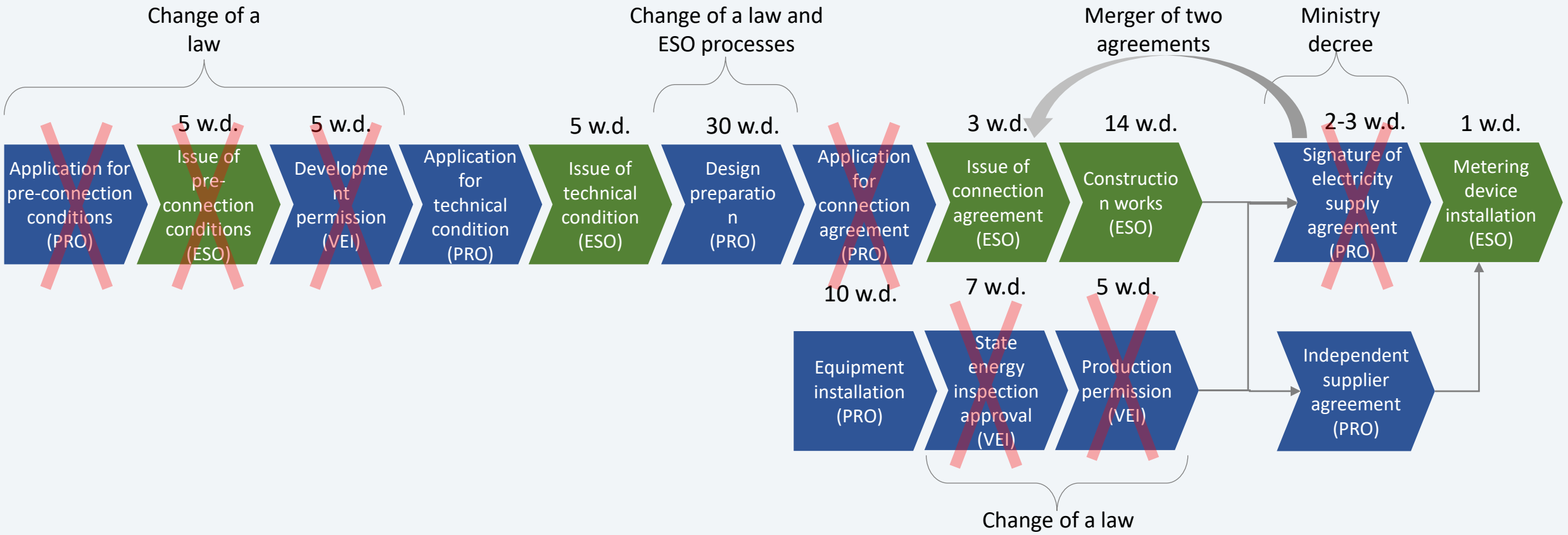
8 steps prosumers promotion plan

- ✓ Optimizing connection process to the grid
- ✓ Review of financial incentives and market model
- ✓ Spread of information and education

ESO 8 steps prosumers‘ promotion plan

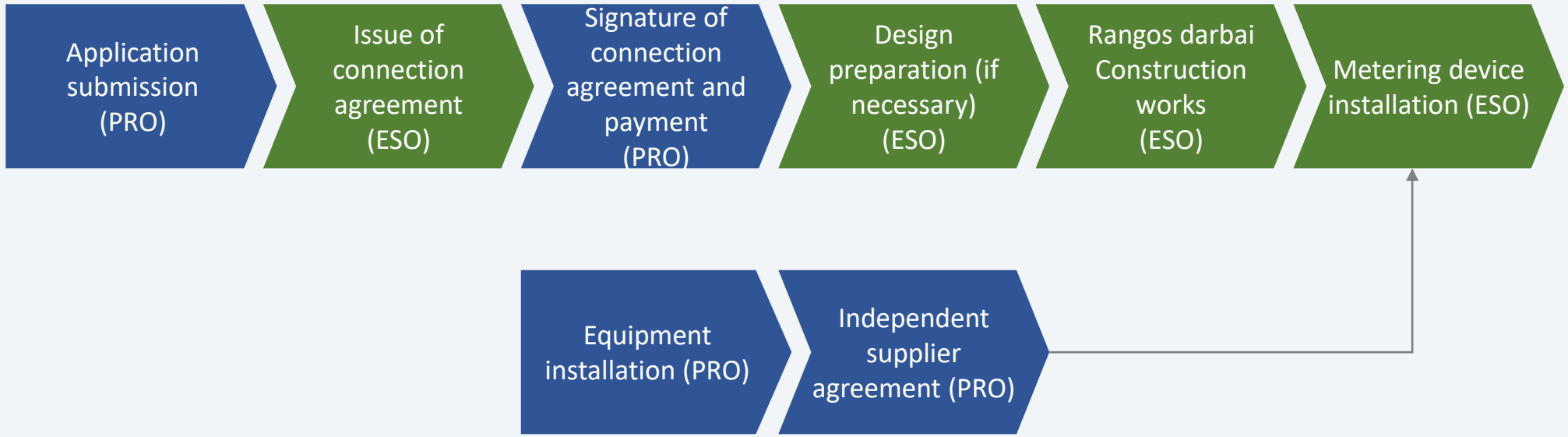


Simplification of the prosumer's connection process was vital



Process reduced from 7 to 3 months and total prosumer cost decreased by 1000 EUR on average. Furthermore, prosumer experiences lower administrative burden as procedures number was reduced from 9 to 3.

Final process after ESO's 8 steps plan implementation



Higher maturity business models are more important than financial support in Lithuania

Business models

1st generation

Sell/ purchase of the equipment

- ✓ High initial investment
- ✓ Customer responsible for technological and financial risks

Current situation in Lithuania

2nd generation

Lease of the equipment

- ✓ Low initial investment
- ✓ Customer responsible for technological and financial risks

3rd generation

„Solar city“ model

- ✓ No initial investment
- ✓ 3rd party responsible for technological and financial risks
- ✓ Customer responsible for electricity „bill“

Support mechanisms

1st generation

Financial support - tariffs

- ✓ State aid
- ✓ Used in immature markets for start of technology
- ✓ Requires periodic review in order to avoid „bubbles“

2nd generation

Net metering

- ✓ Transitional support mechanism
- ✓ Investment subsidies used for promotion of technology

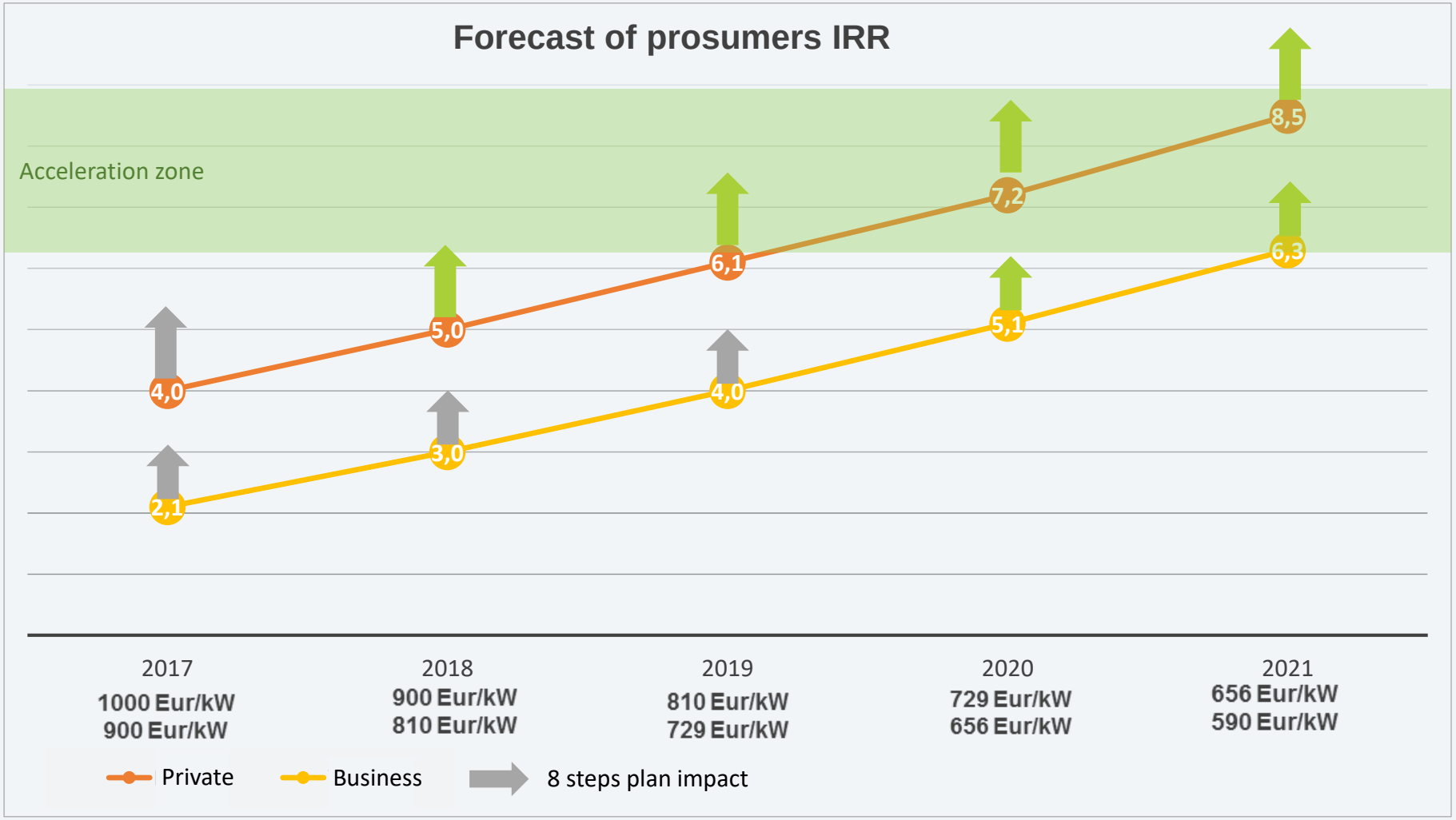
Current situation in Lithuania

3rd generation

Production „as consumed“

- ✓ Focused on energy efficient solutions
- ✓ Optimal infrastructure development
- ✓ **Sustainable renewable energy development**

Projected timeline of prosumers business case



Because we care

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