





Climate changes and brings new challenges to the energy sector...

! Production changes:

- increased share of electricity from RES
- generation migration from transmission to distribution

! Consumption changes:

- increased Demand Side Response (DSR)
- *increased used of new appliances (EV)*
- > customers becoming prosumers

! Technology changes:

- >Smart solutions
- > Energy storages

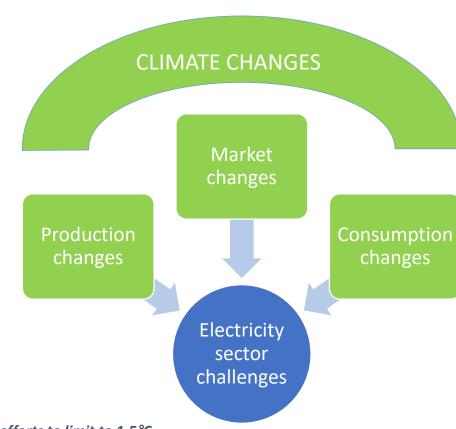
! Market integration:

> increased cross-border trade

! Climate changes:

Paris agreement

- **▶** Long-term temperature goal (Article 2.1 Paris Agreement)
 - to hold temperature increase to well below 2°C, and pursue efforts to limit to 1.5°C
- Long-term mitigation goal (Article 4.1 Paris Agreement)
 - Global emissions to peak as soon as possible
 - Net zero emissions in the second half of the Century





Clean Energy Package – consists of 8 legislative acts

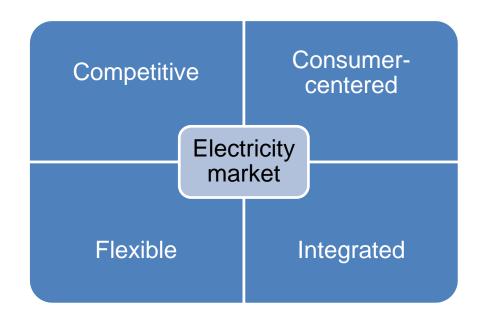
Clean energy for all Europeans package - legislative process					
	European Commission Proposal	EU Inter-institutional Negotiations	European Parliament Adoption	Council Adoption	Official Journal Publication
Energy Performance in Buildings	<u>30/11/2016</u>	Political Agreement	17/04/2018	14/05/2018	19/06/2018 - Directive (EU) 2018/844
Renewable Energy	<u>30/11/2016</u>	Political Agreement	13/11/2018	04/12/2008	21/12/2018 - Directive (EU) 2018/2001
Energy Efficiency	<u>30/11/2016</u>	Political Agreement	<u>13/11/2018</u>	04/12/2018	21/12/2018 - Directive (EU) 2018/2002
Governance of the Energy Union	<u>30/11/2016</u>	Political Agreement	<u>13/11/2018</u>	04/12/2018	21/12/2018 - Regulation (EU) 2018/1999
Electricity Regulation	<u>30/11/2016</u>	Political Agreement	<u>26/03/2019</u>	22/05/2019	14/06/2019 - Regulation (EU) 2019/943
Electricity Directive	30/11/2016	Political Agreement	<u>26/03/2019</u>	22/05/2019	14/06/2019 - Directive (EU) 2019/944
Risk Preparedness	<u>30/11/2016</u>	Political Agreement	<u>26/03/2019</u>	22/05/2019	14/06/2019 - Regulation (EU) 2019/941
ACER	<u>30/11/2016</u>	Political Agreement	<u>26/03/2019</u>	<u>22/05/2019</u>	14/06/2019 - Regulation (EU) 2019/942

Electricity Market Design

Source: https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/clean-energy-all-europeans



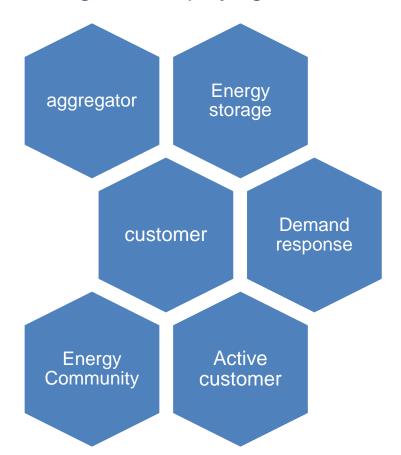
New market design for the energy transition





New market design – level playing field for all market participants

Market participant natural or legal person who buys, sells or generates electricity, who is engaged in aggregation or who is an operator of demand response or energy storage, including through the placing of orders to trade, in one or more electricity markets, including in balancing market (Electricity Regulation)





Empowering of customers

Electricity Directive empowers customers:

- Every customer who has a smart meter installed can request to conclude a dynamic electricity price contract with at least one supplier and with every supplier that that has more than 200 000 final customers (Art. 11)
- at least household customers, and microenterprises with an expected yearly consumption of below 100 000 kWh, shall have access, free of charge, to at least one tool comparing the offers of suppliers, including offers for dynamic electricity price contracts (Art. 14)
- All customers are free to purchase and sell electricity services, including aggregation, independently from their supply contract and from an electricity undertaking of their choice, including final customers who want to conclude aggregation contract (Art. 13)
- Final customers, including those offering demand response through aggregation, to participate alongside producers in a non-discriminatory manner in all electricity markets (Art. 17)



Making market fit for new market participants

Electricity Regulation:

- Art. 8 Trade on day-ahead and intraday markets
 - NEMOs shall provide products for trading in day-ahead and intraday markets which are sufficiently small in size, with minimum bid sizes of 500 kW or less, to allow for the effective participation of demand-side response, energy storage and small-scale renewables including direct participation by customers.
 - By 1 January 2021, the imbalance settlement period shall be 15 minutes in all scheduling areas, unless regulatory authorities have granted a derogation or an exemption. Derogations may be granted only until 31 December 2024.
 - From 1 January 2025, the imbalance settlement period shall not exceed 30 minutes where an exemption has been granted by all the regulatory authorities within a synchronous area.



Smart metering systems (ED Art. 19-22)

The Electricity Directive defines a detailed framework for smart metering systems (Art. 19-22) aimed at promoting and supporting the active participation of customers in the market, including:

- requirements for smart metering system functionalities, where the cost-benefit analysis was positive or where they are systematically deployed after 4 July 2019, are defined.
- Where the impact assessment for the deployment of smart metering systems was negative and they are not systematically deployed, it should be ensured that every final customer is entitled on request and at its cost to have a smart meter installed, or their existing meter upgraded under fair, reasonable and cost-effective conditions.



Incentive for DSO to use flexibility (ED Art. 32)

MS to provide regulatory framework for DSO to have incentive to procure flexibility services in a marketbased, non-discriminatory and transparent rules

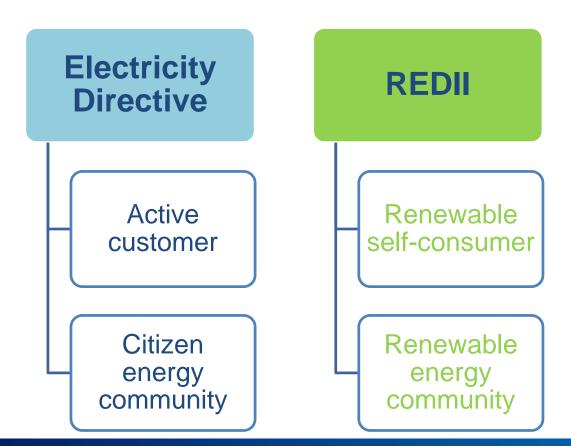
> DSO, subject to NRA approval, or NRA itself to establish a specification for the flexibility services procured, and where appropriate, standardized market products, at least at national level

> > DSO shall exchange data and coordinate with TSO in order to ensure an optimal utilization of resources, to ensure the secure and efficient operation of the system and to facilitate market development

> > > The network development plan, to be published every two years shall provide transparency on the medium and long-term flexibility services needed

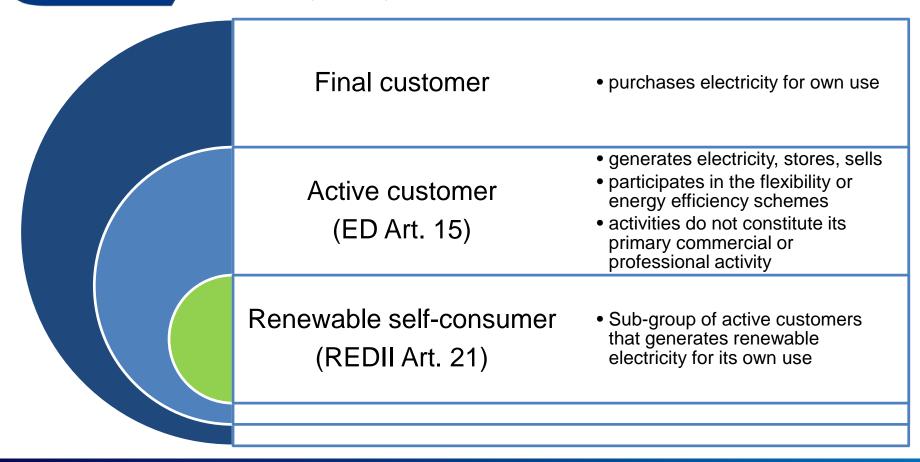


Interaction between ED and REDII





Active participation of customers



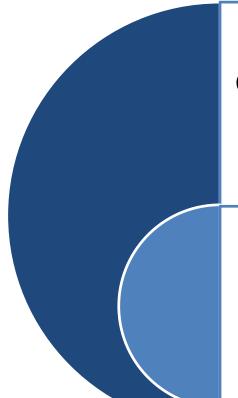


Active participation – general principles

- Electricity Directive (Art. 15) and REDII (Art. 21) define general principles:
- All final are entitled to act as active customers (ED Art. 15) or renewable self-consumers (REDII Art. 21) and
- should not be subject to discriminatory and disproportionate procedures, charges, technical and administrative requirements, and network charges that are not cost reflective
- Active customers and renewable self-consumers may act individually or as a group of jointly acting customers
 - Jointly acting renewable self-consumers a group of at least two jointly acting renewable self-consumers in the same building or multi-apartment block
- may operate directly or through aggregation
 - a function performed by a natural or legal person who combines multiple customer loads or generated electricity for sale, purchase or auction in any electricity market;



Active customers and renewable self-consumers



Citizen energy community (ED Art. 16)

- open and voluntary participation
- shareholders: natural persons, local authorities including municipalities or SME
- Primary purpose environmental, economic or social community benefit rather than profit
- generation (incl. RES) and other energy services

Renewable energy communities (REDII Art. 22)

- Sub-group of CEC
- Shareholders are located in the proximity of res project that are owned and developed
- Produce, consume, store and sell renewable energy (all forms of RES, not only electricity)



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