



# REEM Technology and Innovation Workshop Renewable Energy Integration Roadmap

The power sector has a new vision for the energy future of Europe – electricity to be decarbonised well before 2050

# VISION FOR THE EUROPEAN ELECTRICITY INDUSTRY

**WE, THE EUROPEAN ELECTRICITY INDUSTRY, COMMIT**  
to playing a key role to enable and sustain:

- A vibrant, competitive European economy, reliably powered by clean, carbon-neutral energy
- A smart, energy efficient and truly sustainable society for all citizens of Europe

## Power sector commitments

The European power sector is fully committed to the Paris Agreement and EU Climate objectives



April 2017: eurelectric stated its intention not to invest in new-build coal-fired power plants after 2020



February 2018: power sector vision to be carbon-neutral well before mid-century



## How to achieve this vision

### WE BELIEVE THAT ELECTRICITY IS THE KEY TO

- customer value
- competiveness
- energy security
- social and environmental sustainability

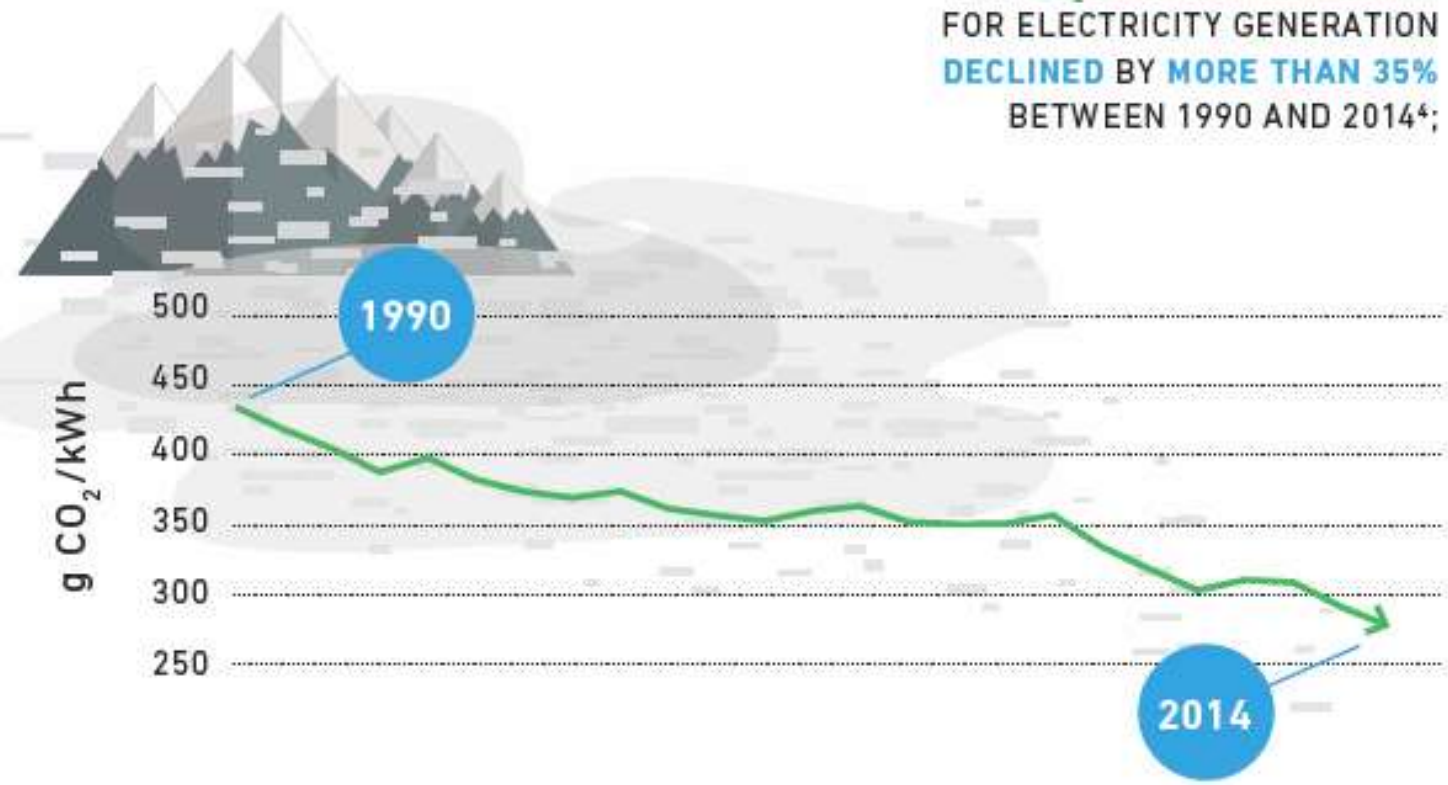
### WE WILL LEAD THE COST-EFFECTIVE ENERGY TRANSITION

- to invest in clean power generation and transition-enabling solutions
- to transform the energy system to make it more responsible, resilient and efficient
- to accelerate the energy transition in other economic sectors
- to ember sustainability in all parts of our value chain
- to innovate and discover cutting-edge business models



# We are decarbonizing electricity at an unprecedented pace

THE CO<sub>2</sub> EMISSION INTENSITY FOR ELECTRICITY GENERATION DECLINED BY MORE THAN 35% BETWEEN 1990 AND 2014;



## Electricity is already the clean solution today

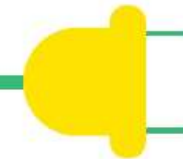
IN 2015

44% FOSSIL FUELS

27% NUCLEAR

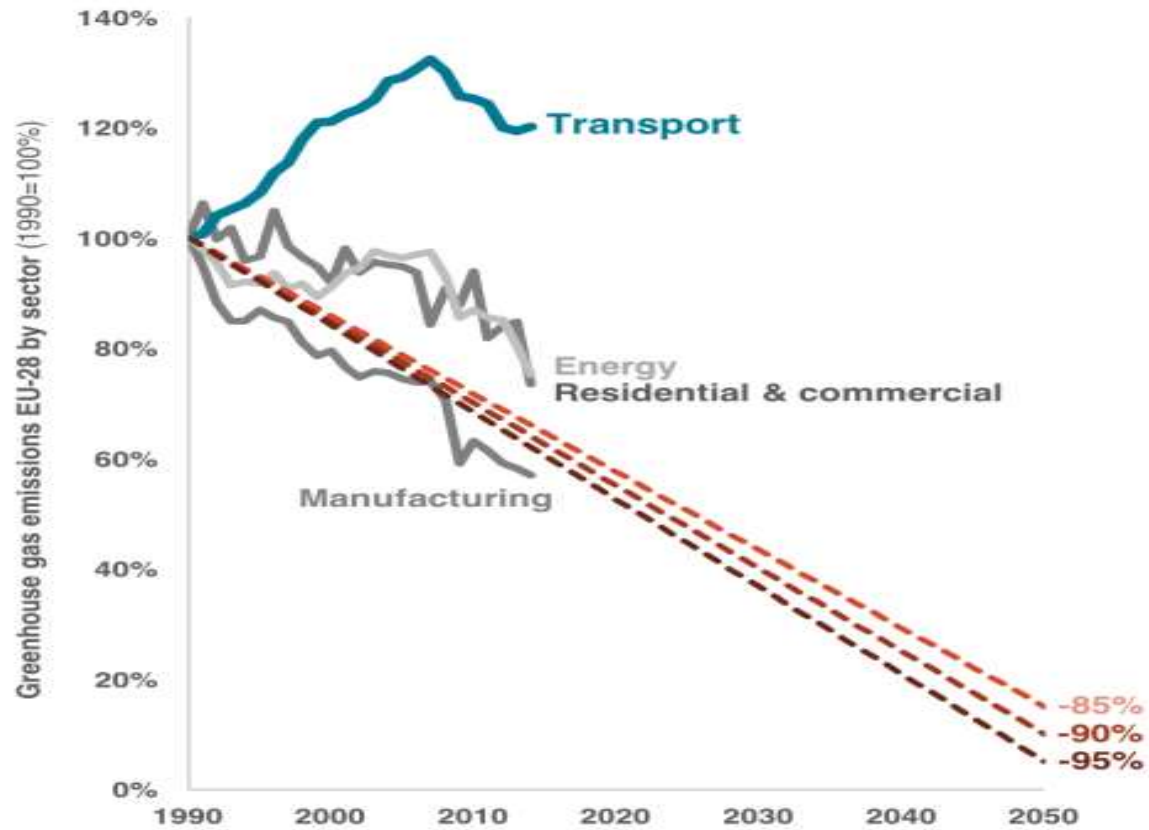
29% RENEWABLES

56% CARBON-FREE



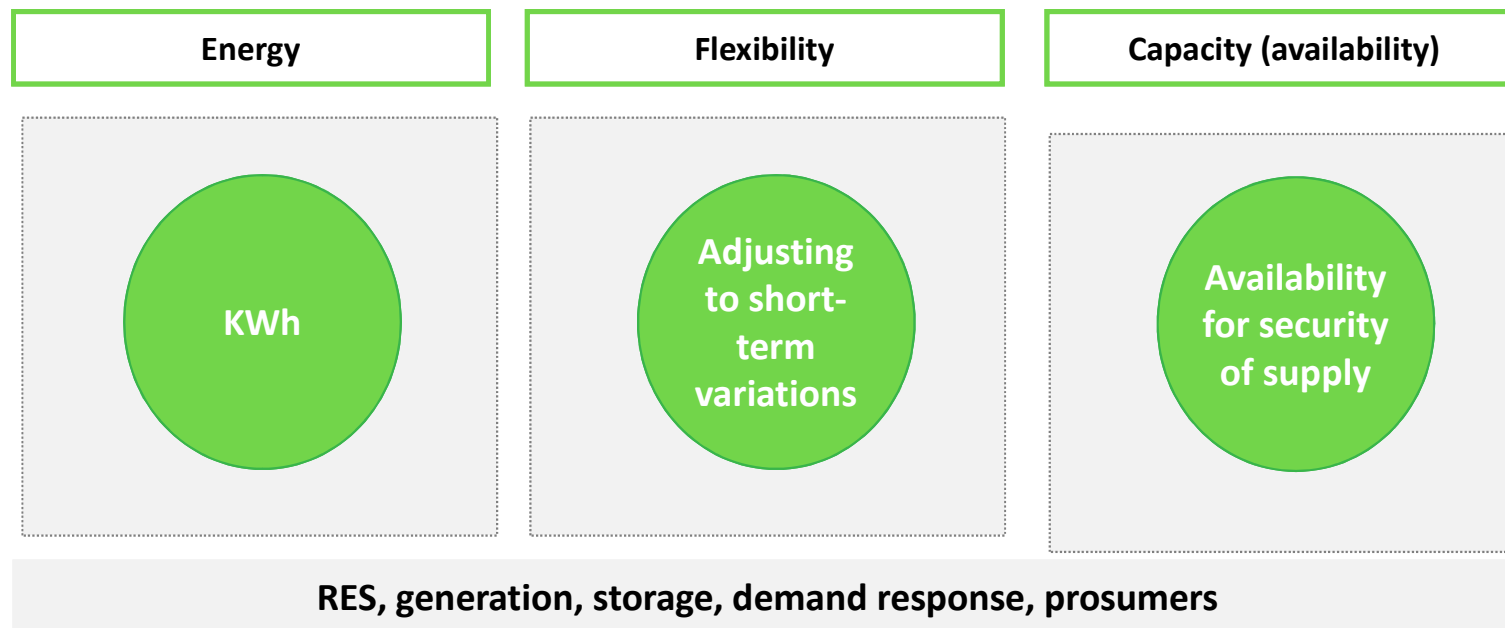
EQUIVALENT TO  
50g CO<sub>2</sub>/KM

## How to decarbonize the EU economy tomorrow?



Source: ICCT graph, data EEA 2016

## We especially need a future proof market design that values energy, flexibility and availability





# RES integration in the electricity market requires a level-playing field with other technologies

The Clean Energy Package calls for equal conditions of RES/CHP with other market participants

## Priority Dispatch

*"Dispatching of power generation facilities and demand response shall be non-discriminatory and market based"*

Article 11

## Priority Access

*"The resources (...) shall be selected amongst (...) facilities submitting offers (...) using market-based mechanisms and be financially compensated"*

Article 12

## Balancing responsibilities

*"All market participants shall aim for system balance and shall be financially responsible for imbalances they cause in the system"*

Article 4

New exemptions  
(for small RES/CHP and demonstration projects)



Non-market based mechanisms should – at best – be a transitory regime



New exemptions  
(for small RES/CHP and demonstration projects)



Non-retroactivity



Conditions for non-market based mechanisms are insufficiently defined



Non-retroactivity



There is no voluntary mechanism to forego priority against appropriate compensation



In non-market based decisions, there should be full financial payment for lost revenues/costs



Mechanism for voluntary acceptance against appropriate compensation



## Network access & congestion management

### What we suspect

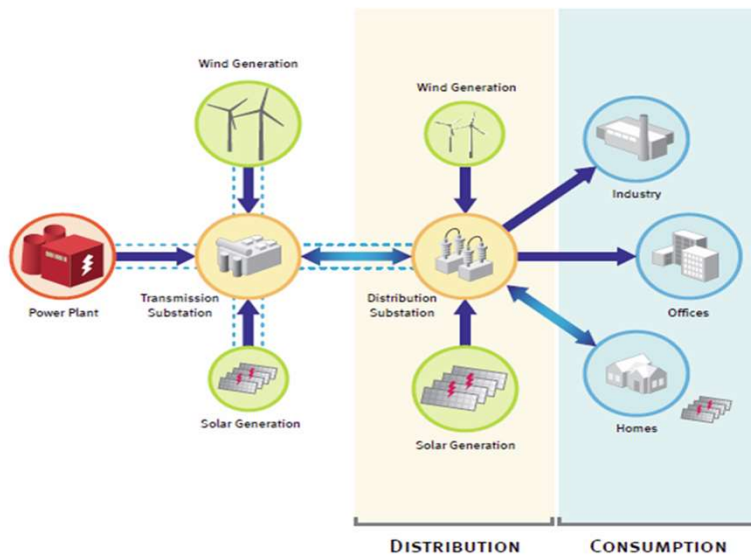
- The level of cross-border capacities offered to the market seems low.
- We suspect that congestion problems are solved with reduction of cross border capacity allocated to the market.

### What we want as market parties

- More transparency is needed to understand capacity allocation by TSOs and to detect sub-optimality.
- More cross-border capacities:
- Use the existing infrastructure in the most efficient way;
- Welfare consideration is currently not optimal.

# Flexibility in the energy transition - DSOs

## Power system of TODAY



## Smart system of TOMORROW

