



# Accelerating the energy transition

## *EU perspective*



**IEA GOT Workshop**

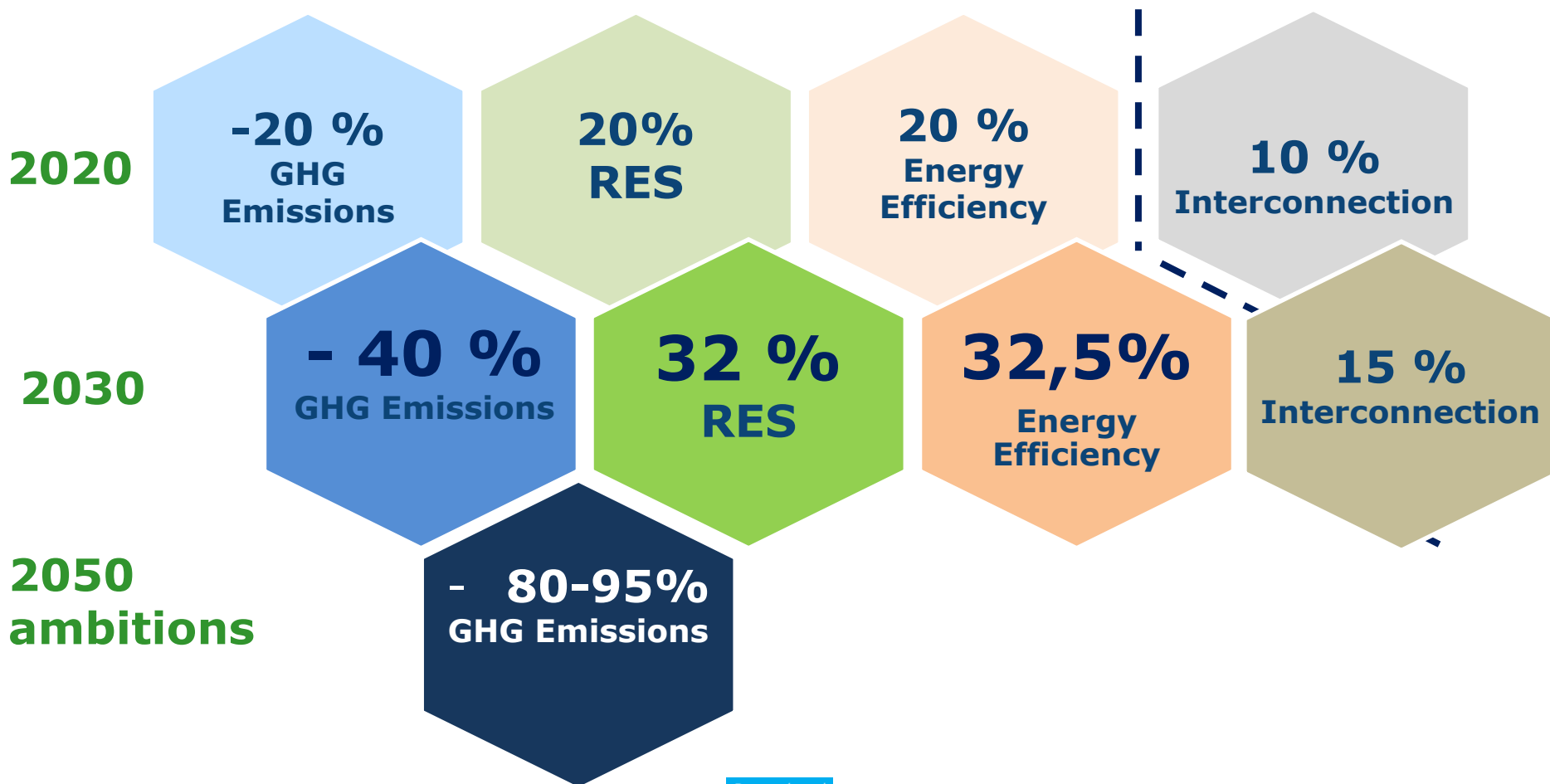
*11 October 2018*

**José COTTA**  
European Commission,  
DG Research and Innovation



European  
Commission

# European Climate & Energy Targets



# The EU energy system in transition

- The EU's goal is 80-95% decarbonisation by 2050...
- ...and should even reach 100% by 2050 to stay within 1,5°C
- This means 'renewables first', with remaining fossil fuel fully decarbonised through CCUS
- Remaining fossil fuel power plants must be highly flexible to back-up and balance these fluctuating renewables
- A 'systems approach' addressing electricity, heating, smart grids, transport and energy-intensive industry
- Deep electrification of transport and industry requires sector coupling

# Hydrogen will play an important role

## We need smart solutions for

- Renewable hydrogen
- ‘Blue’ hydrogen from natural gas with CCS
- Hydrogen for steel making (replacing coal)
- Power-to-X (gas, liquids, chemicals)
- Utilisation of captured CO<sub>2</sub> (CCU)
- Long-term, large-scale energy storage

# Research & Innovation is key

- We need to accelerate the energy transition
- Horizon 2020 addresses all enabling technologies for deep decarbonisation
- Horizon Europe will strengthen this through a stronger cross-sectoral design and approach
- Preparations for Horizon Europe are ongoing

# Horizon Europe

is the Commission proposal for a **€ 100 billion** research and innovation funding programme for seven years (2021-2027)



**to strengthen the EU's scientific and technological bases**



**to boost Europe's innovation capacity, competitiveness and jobs**



**to deliver on citizens' priorities and sustain our socio-economic model and values**

Additional **€ 4.1 billion** are proposed to be allocated for defence research, in a separate proposal for a European Defence Fund

# Horizon Europe: evolution not revolution



## Pillar 1 Open Science

European Research Council

Marie Skłodowska-Curie  
Actions

Research Infrastructures



## Pillar 2 Global Challenges and Industrial Competitiveness

### Clusters

- Health
  - Inclusive and Secure Society
  - Digital and Industry
  - Climate, Energy and Mobility
  - Food and natural resources
- Joint Research Centre



## Pillar 3 Open Innovation

European Innovation Council

European innovation  
ecosystems

European Institute of Innovation  
and Technology

## Strengthening the European Research Area

Sharing excellence

Reforming and Enhancing the European R&I system

## Pillar 2

# Global Challenges & Industrial Competitiveness:

boosting key technologies and solutions underpinning EU policies & Sustainable Development Goals

<b>Clusters</b> implemented through usual calls, <b>missions &amp; partnerships</b>	Budget (€ billion)
Health	€ 7.7
Inclusive and Secure Societies	€ 2.8
Digital and Industry	€ 15
Climate, Energy and Mobility	€ 15
Food and Natural Resources	€ 10
<b>Joint Research Centre</b> supports European policies with independent scientific evidence & technical support throughout the policy cycle	€ 2.2



# Area “Energy Supply”

## Broad Lines:

- ✓ **Renewable energy technologies and solutions for power generation, heating and cooling, sustainable transport fuels and intermediate carriers**
- ✓ **Disruptive renewable energy technologies**
- ✓ **Reduction of GHG-emissions from fossil fuel-based power generation via CO<sub>2</sub> capture, utilisation and storage (CCUS).**

# Area “Energy Storage”

## Broad Lines:

- ✓ **Liquid and gaseous renewable fuels for daily to seasonal storage**
- ✓ **Batteries and the EU value chain, including design, manufacturing technologies, reuse and recycling**
- ✓ **Low-carbon hydrogen technologies, including electrolysers and fuel cells, and the EU value chain**



# Thank you!

#HorizonEU

<http://ec.europa.eu/horizon-europe>