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# EU action to strengthen EU industries while enabling deep decarbonisation

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***NER 300***

***Innovation Fund***

***Role of CCS***

## NER 300

- Co-financing of demo projects in the area of **CCS and Innovative RES technologies** at commercial scale
- Established by the ETS Directive and implemented by the NER300 Decision
- The programme has awarded **€2.1 billion of funding to 38 projects in 19 Member States** through the sale of 300 million EU ETS allowances. This is expected to leverage a further €2.7 billion of private finance

## NER 300: future – Innovation Fund

- In its proposal for a revised ETS adopted on 15 July 2015, the Commission suggests to renew the existing NER 300 by an **Innovation Fund**, which should be endowed with 450 million allowances targeted not only at CCS and innovative RES, but also to innovative energy-intensive industry
- It should be a means of directing further revenues from the ETS towards the demonstration of innovative low-carbon technologies in the industry and power generation sectors

# The **Energy Union's** 5<sup>th</sup> dimension in practise

Research,  
innovation and  
competitiveness  
strategy

Integrated **SET Plan**  
Accelerating the  
energy system  
transformation

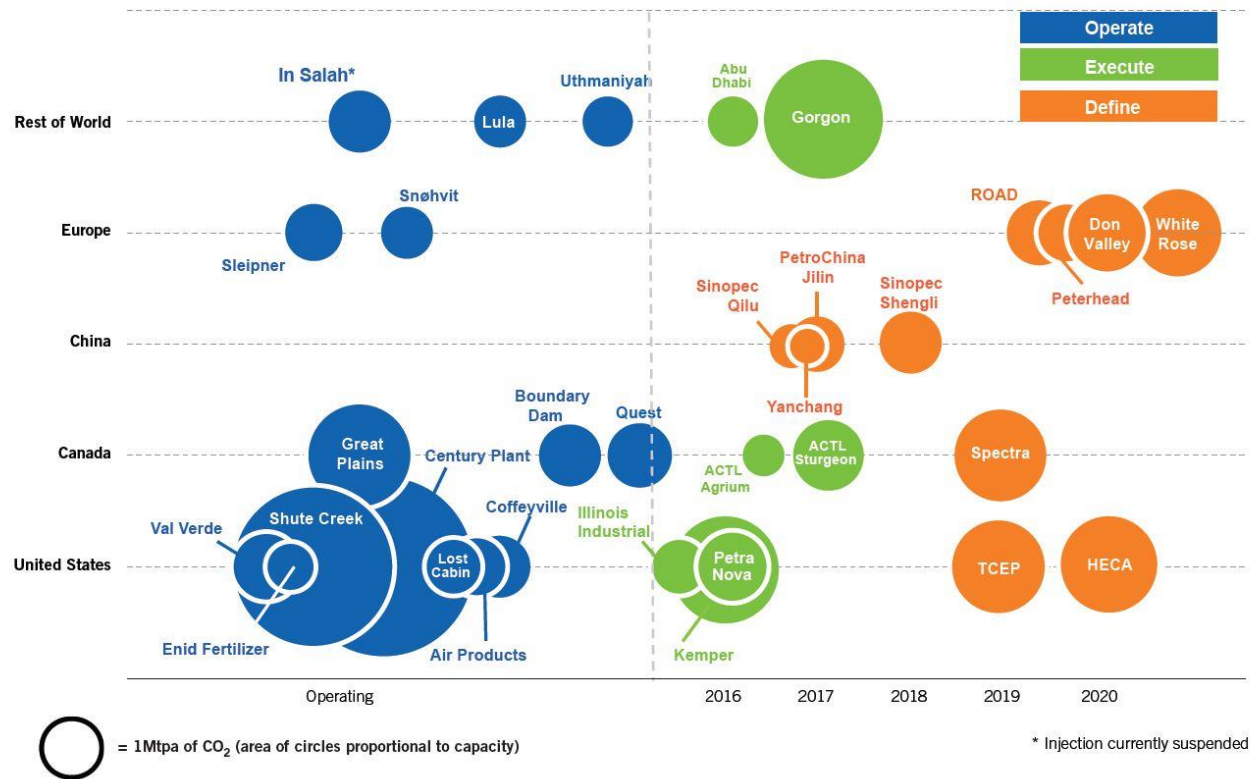
Initiative on EU  
global technology  
and innovation  
**leadership**

Strategic **transport**  
research and  
innovation R&I  
agenda



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# Location of CCS Projects

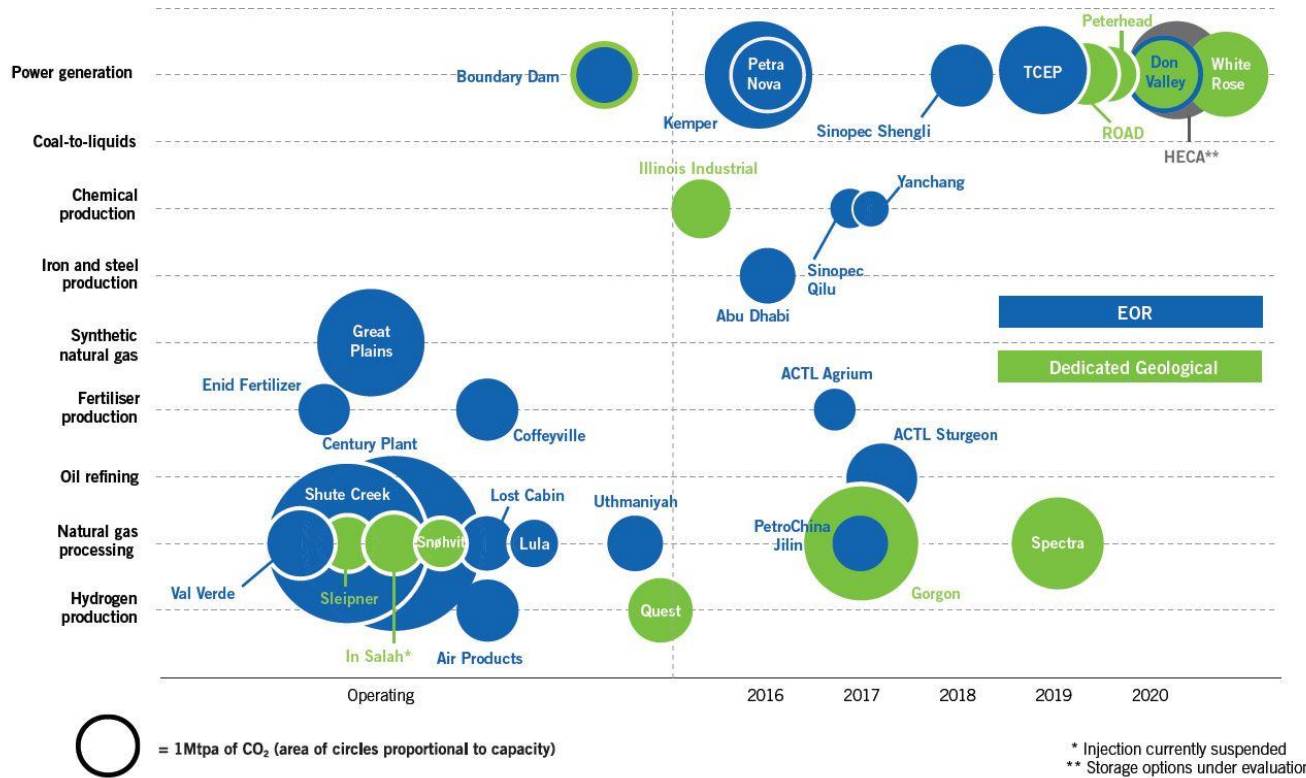


Actual and expected operation dates for large-scale CCS projects in the Operate, Execute and Define stages by region and project lifecycle stage  
 Source: Global CCS Institute, Global Status of CCS 2015



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# Types of CCS Projects

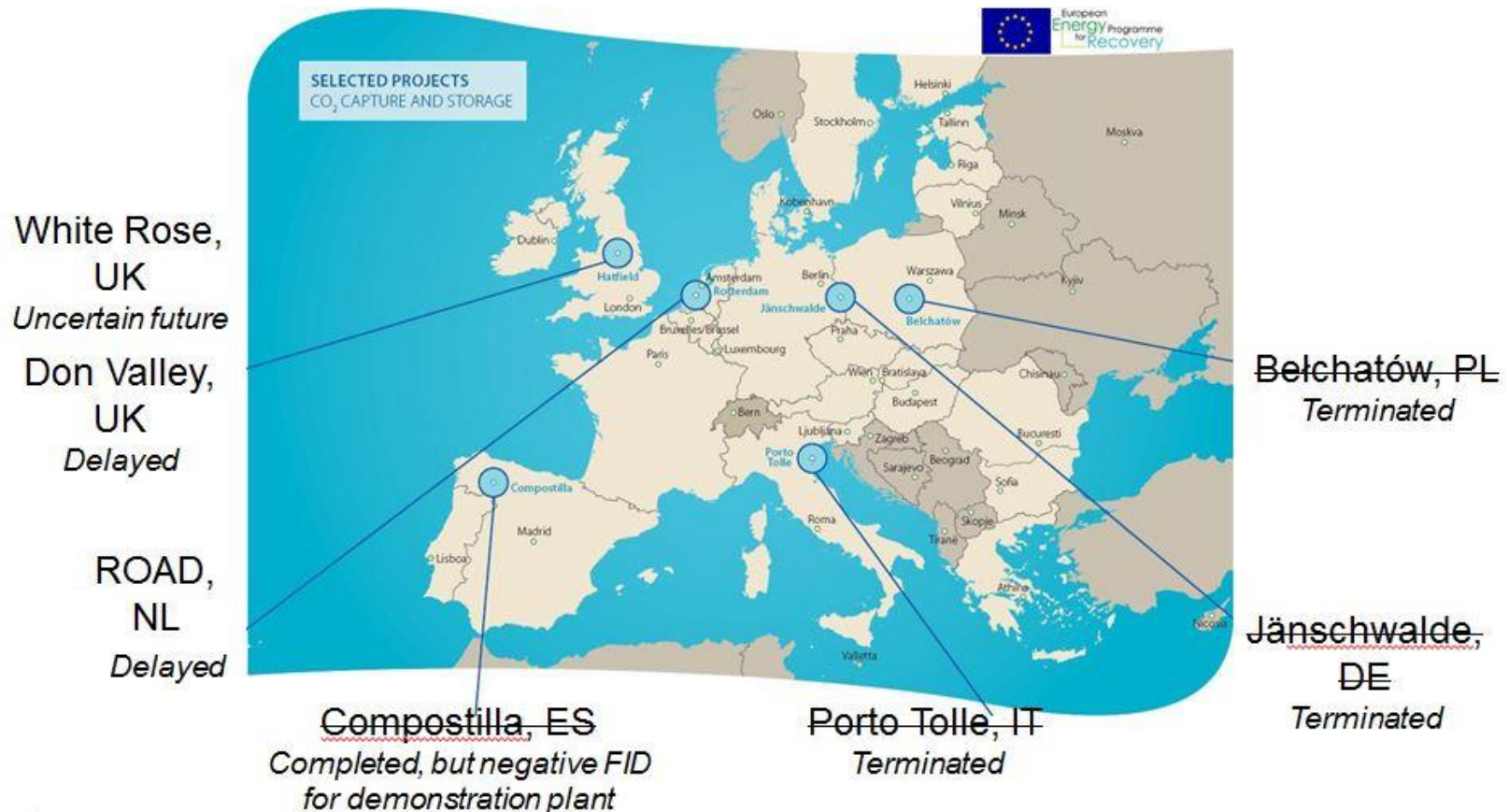


Actual and expected operation dates for large-scale CCS projects by industry and storage type  
Source: Global CCS Institute, Global Status of CCS 2015

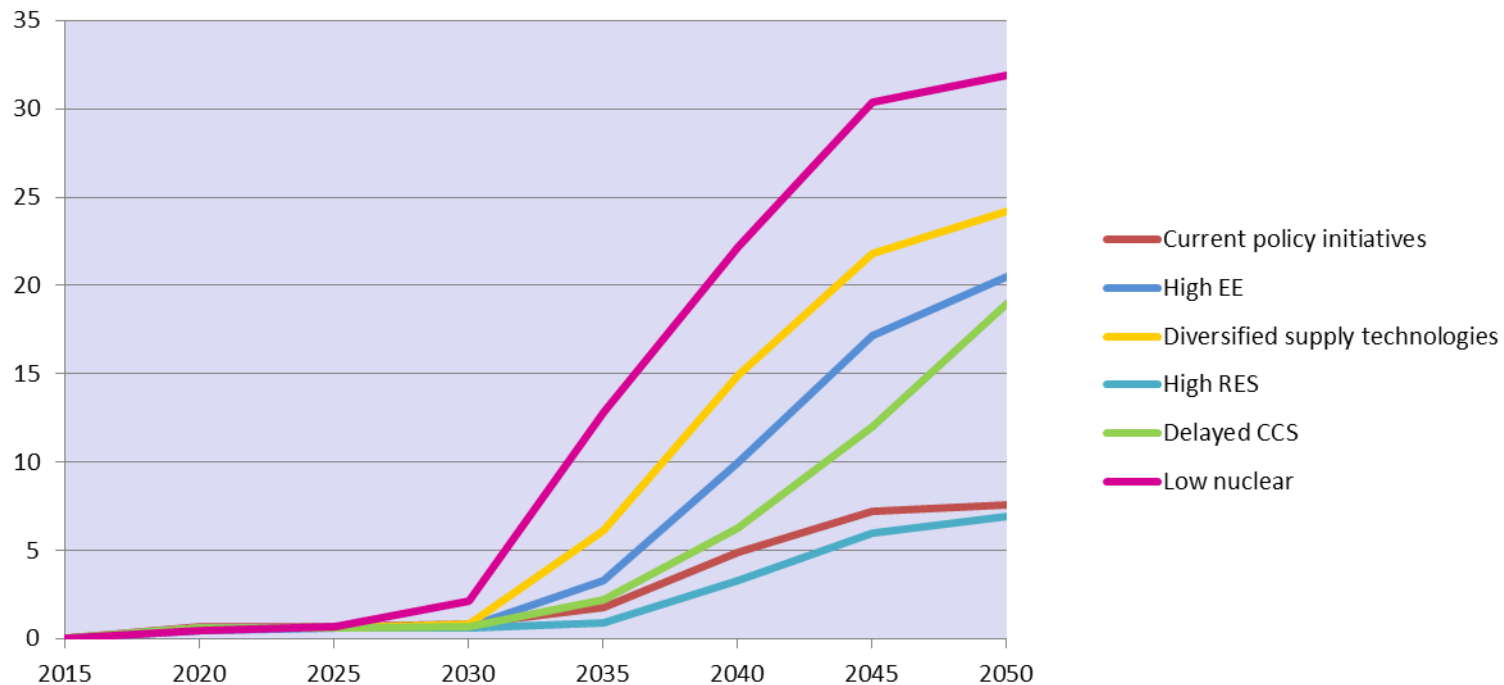


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# CCS Projects Co-Funded by EU



# Role of CCS in the Electricity Mix

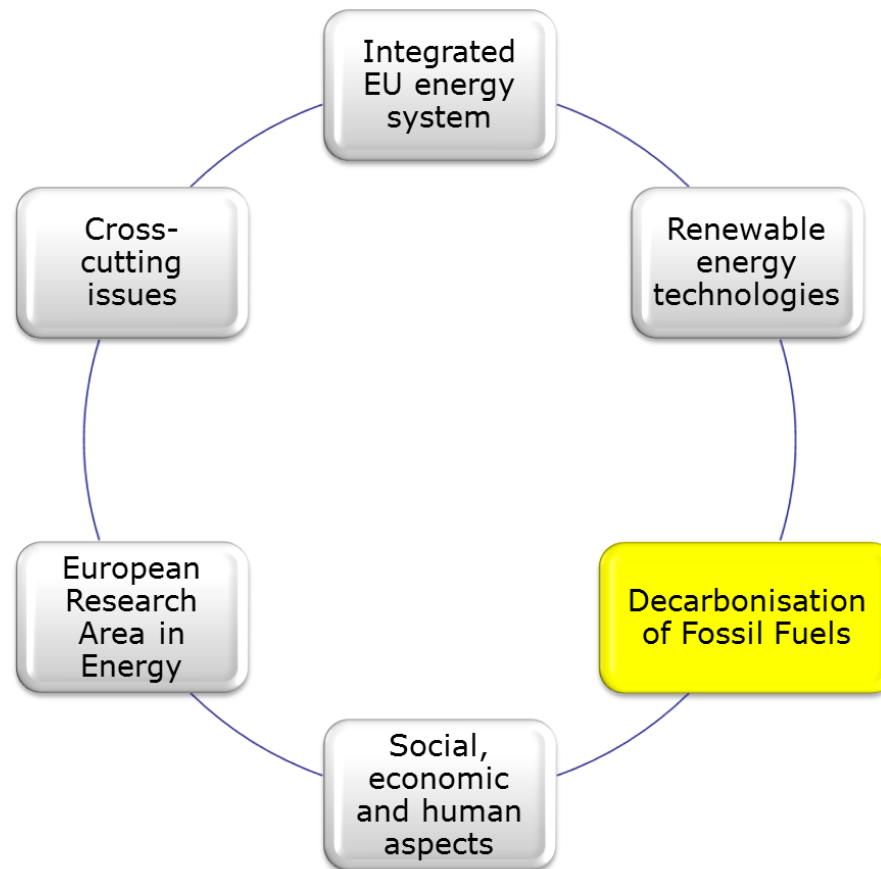


Share of CCS (%) in power generation towards 2050 –  
EU Energy Roadmap 2050

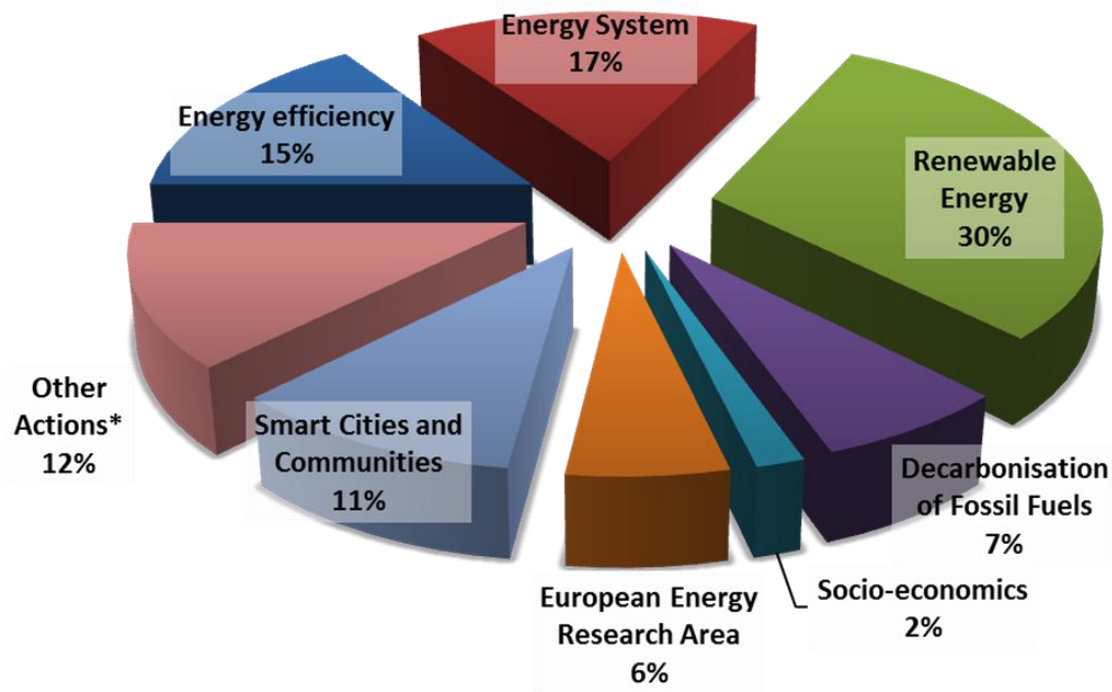
# Reasons for Lack of Progress in EU

Condition	OK?	Comments:
1) Legislative Framework	Yes (?)	Storage enabled by CCS Directive, but Member States can restrict storage
2) Successful Demonstration	-	Worldwide 15 large-scale projects operating, but none in the EU
3) Commercial Viability	No	ETS price too low, no support schemes at Member State level
4) Public Acceptance	-	Challenges particularly with onshore storage
5) Infrastructure	Yes (?)	Potentially Project of Common Interest (PCI), but additional funding needed
6) Innovation	Yes	Horizon 2020, Strategic Energy Technology Plan (SET-Plan)

# Horizon 2020 Energy Challenge



# Indicative Budget Distribution per Area for Energy Calls 2016-2017



**Total budget 2016-2017: EUR 1 344 million**

# Horizon 2020: Ongoing CCS Projects

- Total funding CCS 2014/2015: 75,8 M€

## CCS in Industry

### CEMCAP

CO<sub>2</sub> capture from cement production

EU Contribution 8.8 M€; *Coordinator: SINTEF*

### STEPWISE

SEWGS Technology Platform for cost effective CO<sub>2</sub> reduction in the Iron and Steel Industry

EU Contribution 12.97 M€; *Coordinator: ECN*

### LEILAC

Low Emissions Intensity Lime and Cement

EU Contribution 11,93 M€; *Coordinator: CALIX (EUROPE) (UK)*

# Horizon 2020: Topics 2017

Activities  
supported  
in **2017**

## **LCE-27: Measuring, monitoring and controlling the risks of CCS and unconventional hydrocarbons**

- Scope to be defined in 2016

## **LCE-28: Highly flexible and efficient fossil fuel power plants**

- TRL 3 -> 4-6; Budget EUR 15 million (~ 3-6 M€/project)

## **LCE-29: CCS in industry, including Bio-CCS**

- TRL 4/5 -> 7; \*Budget EUR 20 million (~ 4-9 M€/project)

## **LCE-30: Geological storage pilots**

- TRL 4/5 -> 6; \*Budget EUR 20 million (~ 9-16 M€/project)

# Conclusions

- **New funding instrument in proposal for reform of Emission Trading System: the Innovation Fund**
- **EU, Member States and stakeholders should use SET-Plan governance to align efforts**
- **CCS in Europe needs a new approach**
- **More research needed on CO<sub>2</sub> use: CCU could complement but not replace CCS**
- **More focus on CCS in industrial applications**



# HORIZON 2020

**Thank you for your attention!**

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