



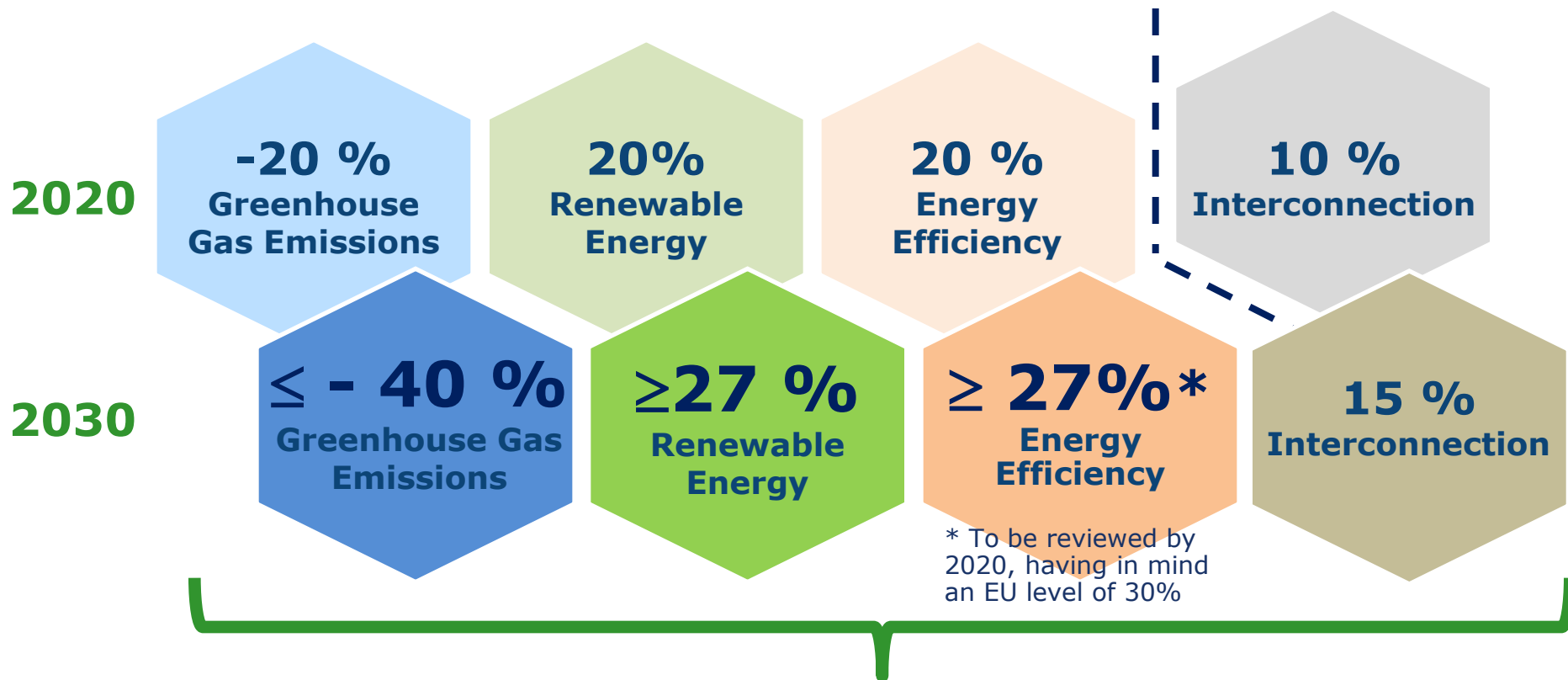
# Country updates: European Union

**IEA 7th International CCS Regulatory  
Network Meeting  
Paris, 22 April 2015**

**Maria Velkova, Policy officer  
Low Carbon Technologies Unit  
DG Climate Action**

- 1. Recent policy developments**
2. Implementation of the CCS Directive
3. Review of the CCS Directive

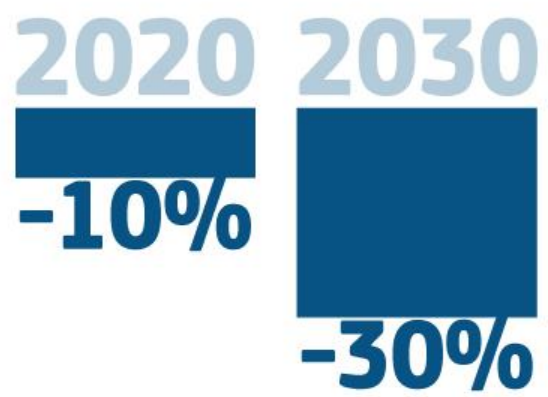
## Agreed headline targets 2030 Framework for Climate and Energy



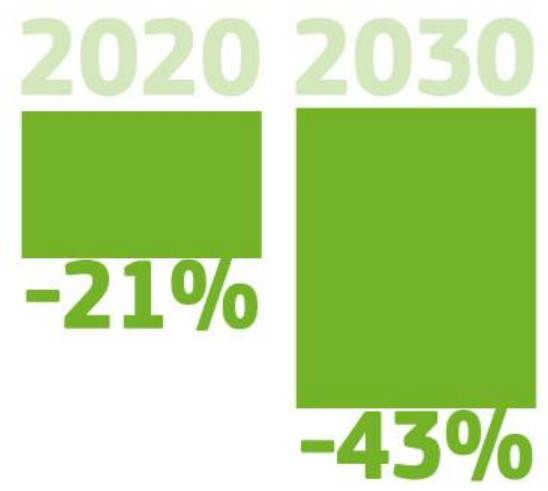
**New governance system + indicators**

# Emission reductions in ETS and non-ETS

**EMISSION  
REDUCTIONS  
IN ETS AND  
NON-ETS  
COMPARED TO 2005**



**NON-ETS**  
INCLUDING ROAD TRANSPORT, HOUSING, AGRICULTURE etc.



**ETS**  
INCLUDING POWER/ENERGY SECTOR & INDUSTRY

# The European carbon market after 2020

## Well-functioning reformed EU ETS as the main instrument

Cap to decline with **2.2 %** from 2021 onwards

**Free allocation** to prevent carbon leakage **continued**

**Redistribution:** 90 % among all 28 Member States / 10 % among lower income Member States

**Innovation fund** created ("**NER400**")

**Modernisation fund** set up

GHG Emissions



# Innovation fund

Support for low-carbon demonstration

400 million allowances, amount depending on carbon price

Building on **existing NER300** programme for carbon capture and storage and renewables

**New: extension of scope** to low carbon innovation in industrial sectors

Open for **projects in all Member States**

# Energy Union

## A Framework Strategy for a Resilient Energy Union with a Forward-Looking Climate Change Policy, 25.02.2015, COM(2015)80

- ✓ Energy security, solidarity and trust
- ✓ A fully integrated European energy market
- ✓ Energy efficiency contributing to moderation of demand
- ✓ Decarbonising the economy
- ✓ Research, Innovation and Competitiveness

# Energy Union

- ✓ A **forward-looking approach to CCS** and CCU for the **power and industrial sectors**, which will be **critical to reaching the 2050 climate objectives in a cost-effective way**.
- ✓ This will require an **enabling policy framework**, including a reformed **ETS** and the new **Innovation Fund**, to increase business and investor clarity, which is needed to further develop this technology.



1.Recent policy developments

**2.Implementation of the CCS Directive**

3.Review of the CCS Directive

# CCS Directive – state of transposition

- By 2013 all Member States notified transposing measures
- Transposition deemed complete for all Member States except one
- Conformity check *ongoing*
  - Full conformity confirmed so far for 6 Member States

1. Recent policy developments
2. Implementation of the CCS Directive
- 3. Review of the CCS Directive**

# Review of the CCS Directive

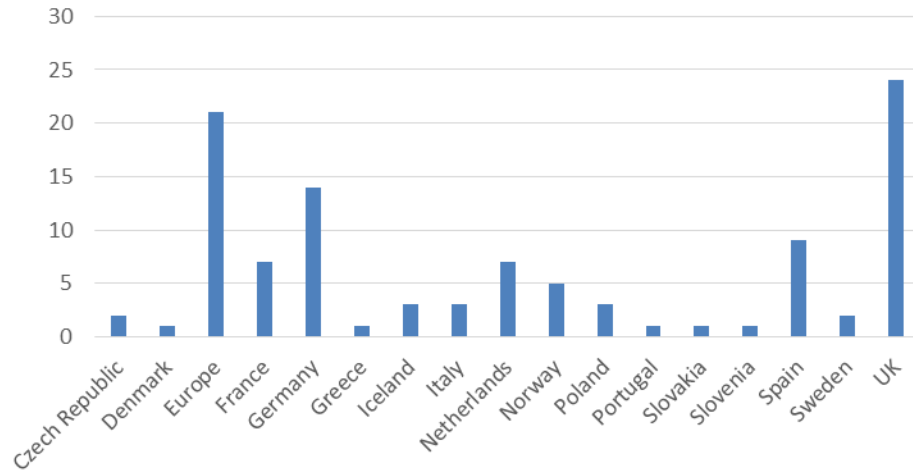
- Art 38 requests review report by March 2015
- Is Directive fit-for-purpose? – part of REFIT programme to assess effectiveness, relevance, efficiency, coherence and EU-added value of EU law
- But also consideration of broader objectives of the Directive related to the EU energy & climate policy framework

## Evaluation study by consultants

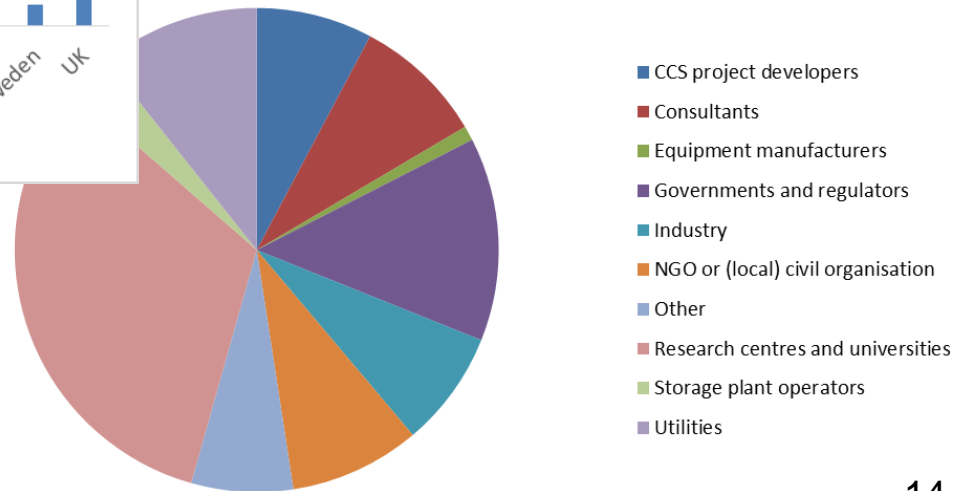
- Triple-E Consulting, Ricardo-AEA and TNO
- Geographic scope: European Economic Area
- Method: Literature review and case studies, on-line consultation, interviews, focus groups, 2 stakeholder meetings
- Goal: Retrospective assessment and possible improvements to the current legal and policy framework and/or its application by the national authorities and industry
- Timeline: April – December 2014

# Stakeholder consultation statistics

Total responses = 105



## Stakeholder Analysis



# Methodological limitations

- Limited experience with application of the Directive
  - **ROAD – the only project with practical experience with the Directive**
  - **The operational European examples either started before the CCS Directive or are below the 100kt of CO<sub>2</sub> stored threshold for R&D projects**

# CCS State of play

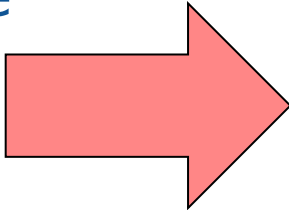
**Art. 38**

2011	EUROPE	EOR	
		NON-EOR	Sleipner and Snøhvit (Norway)
	NORTH AMERICA	EOR	
		NON-EOR	
	REST OF THE WORLD	EOR	
		NON-EOR	
FEBRUARY 2014	EUROPE	EOR	
		NON-EOR	Sleipner and Snøhvit (Norway) and ROAD
	NORTH AMERICA	EOR	
		NON-EOR	
	REST OF THE WORLD	EOR	
		NON-EOR	

Operate   
 Execute   
 Possible financial investment decision during 2014  
 Natural gas processing   
 Power Generation   
 Other industries   
 Iron and steel production



# Objectives of the CCS Directive

- To manage CCS environment, health and safety (EHS) risks
  - To internalise the positive externalities of CCS deployment
  - To remove legal barriers and to ensure a common approach
  - To help address public acceptance concerns
  - To help increase the speed and scale of CCS uptake
- 
- Objectives **appropriate**
  - Directive provides **enabling framework**
  - Limited contribution to establish **CCS infrastructure** or define its **role in the EU's climate and energy policy**
  - Very limited impact on **public acceptance** and increasing **uptake of CCS**

# Permanence of storage

- Not sufficient practical experience yet
- Results from R&D storage sites indicate safe and long-time storage is possible
- Knowledge has advanced on reduction of risks

# No particular issues found (1)

**Art. 38**

- Storage site assessment criteria (Annex I) generally viewed as acceptable
- CO<sub>2</sub> stream acceptance criteria
- Criteria for site monitoring plans (Annex II) are workable
- Transfer of responsibility

## No particular issues found (2)

**Art. 38**

- Third party access (Articles 21&22)
  - Trans-boundary issues (Article 24)
  - Need for further regulation on transport
- ➡ **MS have the necessary flexibility for interpretation, it is too early for any update, so no action needed**

# Storage permits

**Art. 38**

- Some concerns regarding the high level of detail before FID
  - ▶ **A flexible approach is possible**
- Some burden of referring the permits to EC for review
  - ▶ **However, necessary at this stage**
- A multidisciplinary set of skills is required
  - ▶ **Information on the applications made can be made publically available**

# Financial security and financial mechanism

- **Articles 19 and 20 give high level of flexibility** as to what financial security site operators should provide
- Serious concerns among developers regarding Guidance Document (GD4) even if not legally binding
- However, the liability issues are a much less significant barrier than the general economics of CCS and **opening GD4 can create uncertainty**
- Workable solutions are possible: ROAD

# Article 33: Readiness to retrofit for CO<sub>2</sub> capture

**Art. 38**

- Data from MS consenting process is readily-available only for UK
  - In UK and FR: all new power plants have to be ready for retrofit
  - UK: a guidance note what plant developers should consider and demonstrate in their retrofit for CO<sub>2</sub> capture checks
  - 'commercial viability' - likely main reason why retrofit for CO<sub>2</sub> capture is not being fully investigated or required
- ➡ **Effectiveness could be improved – Directive or GD5**

# Industrial CCS

- Decarbonising many large industrial processes is only currently possible via CCS
- Could ease public acceptance to CCS in general
- Kick-starter role vs. slow mover
- NGO support
- The Directive does not limit or encourage industrial CCS
  - **Could be included in Article 33**
  - **Further enabling policy would be useful**



# Emission performance standards (EPS)

**Art. 38**

- US, CA, UK, EIB have introduced EPS
- Risk of undermining the ETS vs giving a predictable trajectory and therefore certainty over emission performance
- May lead to switching from coal to gas with no meaningful impact on the uptake of CCS
- May lead to prolonging of life of inefficient plants
  - ➡ **Not necessary nor practicable**

# Conclusions on the Directive

- Need for CCS remains high while progress has been slow
- The Directive has had little influence on this
- The CCS Directive is an enabling mechanism for CCS but not the main mechanism
  - ▶ **The Directive is fit-for-purpose**
- A revision of the Directive can only occur after more experience is gained with CCS in Europe
- Revising the Directive will create increased regulatory risk and additional delays
  - ▶ **Possible to update the Guidance Documents**
  - ▶ **Possible to consider a limited amendment to only Article 33 or a new GD on capture readiness**

# Conclusions on the enabling policy

## ► Strong support and clear signals at MS and EU level for this innovative technology

- General governance
- Financial support
- Regulatory support

## ► Guiding principles for support measures

- Technology neutral
- EC and MS complementarity
- Coherence of short and long-term measures

# 1. General governance

- No positive FID yet
  - Current enabling policy did not enable the original aspiration of 12 CCS demonstration plants by 2015
  - Request for developing long-term goals for CCS deployment
- **A long-term view in MS national plans for competitive, secure and sustainable energy under the Governance of 2030 Framework for Climate and Energy**
  - **Mapping key clusters of CO<sub>2</sub> sources and sinks and advancing knowledge on CO<sub>2</sub> storage capacity**
  - **Facilitating international support for CCS demonstration projects**

## 2. Financial support for CCS

- Current European policy framework not sufficient for immediate CCS deployment
- More pro-active policy is called for at both EU and MS level
- Coherent short and long-term financial support

- **ETS - the mechanism to support CCS in the long-run**
- **To expand EU funding for CCS demonstration projects – Innovation fund (NER 400)**
- **To continue research through H2020**

## 3. Regulatory support for CCS

- Diverse stakeholder views on stricter 'enforcing' policies
- CCS is not commercially viable yet, however needed
- More research needed on best approach, breaking 'new ground'

► **To strengthen CO<sub>2</sub> capture retrofit provision (Article 33)**

## Next steps

Streamlining current planning and reporting requirements under the Energy Union, including:

- ▶ the prospective report on the performance of the CCS Directive;
- ▶ an energy and climate-related technology and innovation strategy, including for carbon capture and storage, as requested by 19 March 2015 European Council

## More information

### ***DG CLIMA:***

<http://ec.europa.eu/clima/policies/lowcarbon/ccs>

[CLIMA-CCS-DIRECTIVE@ec.europa.eu](mailto:CLIMA-CCS-DIRECTIVE@ec.europa.eu)

### ***Evaluation by consultants:***

<http://www.ccs-directive-evaluation.eu/>

***Thank you for your attention!***