Spanish view to early support policies in a changing world

EC CCS Network

Ponferrada, 09/06/2011

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MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO

1. A changing world
2. Challenges for Europe
3. The Spanish way
4. Objectives and achievements

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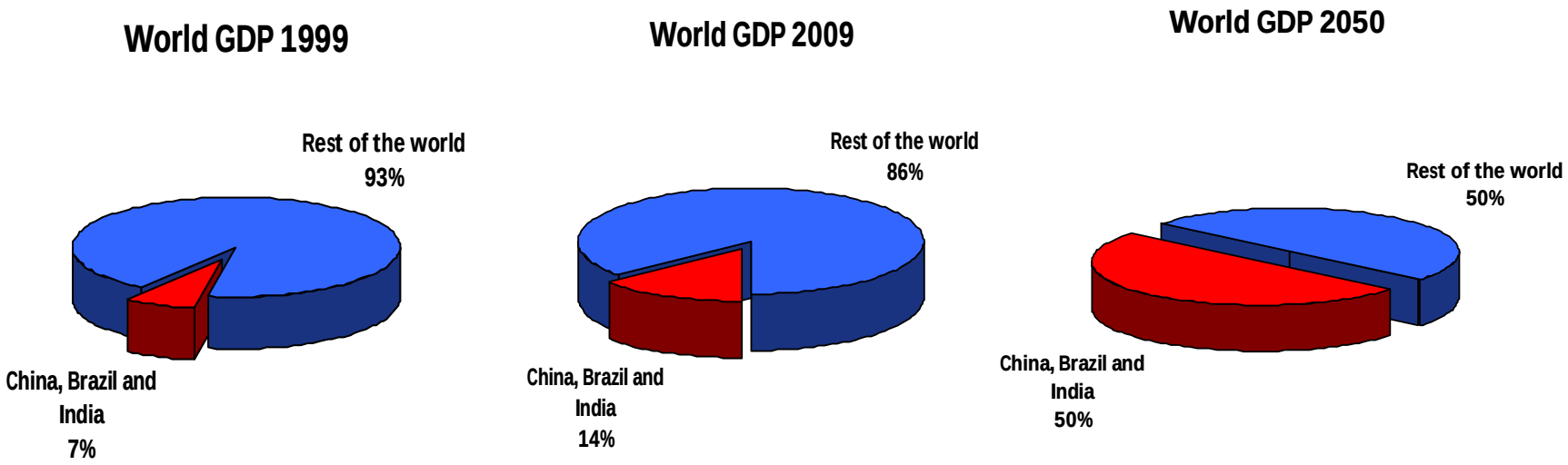
A changing world

The world is changing…and the crisis is accelerating the change.



China, India and Brazil have doubled their share in world GDP in the last ten years and, according to several forecasts, by 2050 they will become half the world GDP.

A changing world

The new economic and financial background is changing the political field

From G8

to G20

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Challenges for Europe

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In this new framework Europe starts from a difficult situation

To its economic weaknesses (low growth, financial problems, population aging …) Europe must add several external dependencies:

- Energy
- Other Raw Materials
- Industry

All these factors challenge Europe's geostrategic position

Challenges for Europe: Energy Dependence

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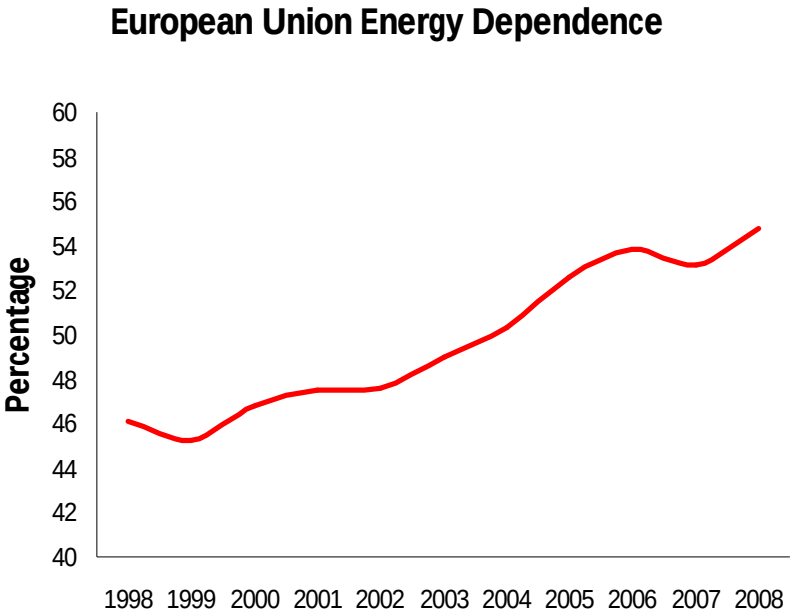
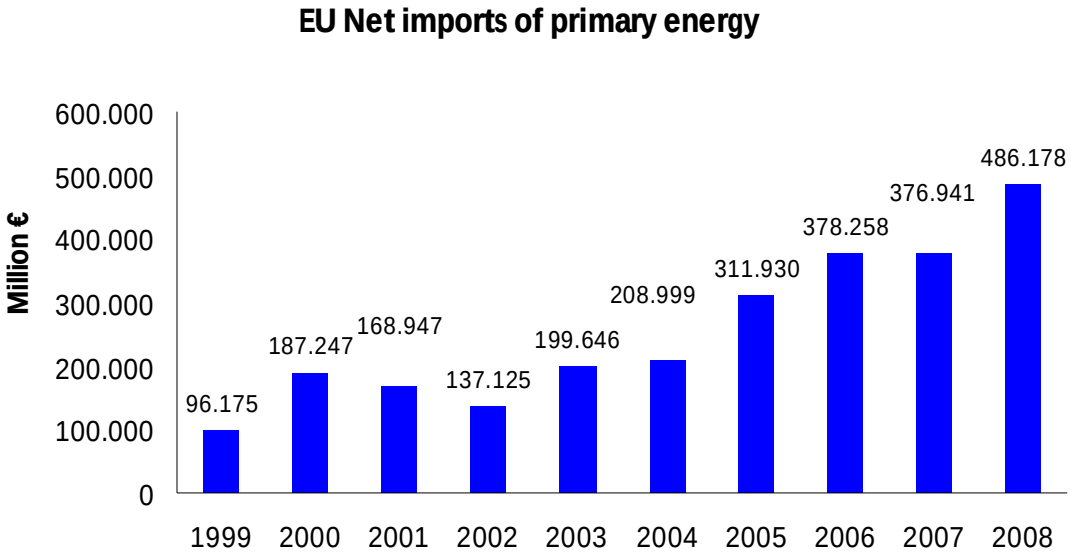


In the last ten years the EU's energy dependence has increased almost 10 points.

An increase of 30 € in oil prices (what the IEA expects for the next 10 years) will mean an additional annual transfer of 132.000 M€ to oil producing countries.

The EU annual budget sums up to 140.000 M€.



Energy dependence, together with rising oil prices, have multiplied the EU's energy import bill **by 5** in the last 10 years

Challenges for Europe: Energy Dependence

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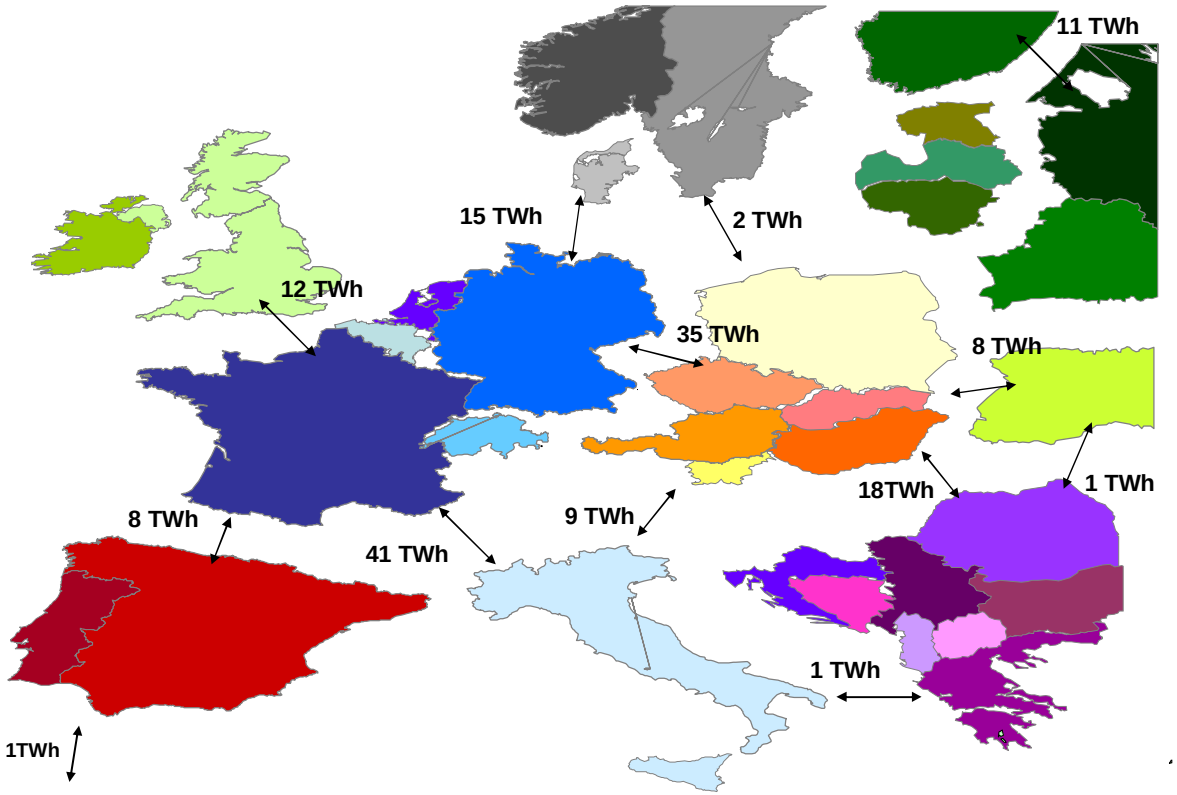
Not a single energy market:



key regional electric connections capacity in Europe

X% % Cross-border electricity between regions

Challenges for Europe: GHG reduction

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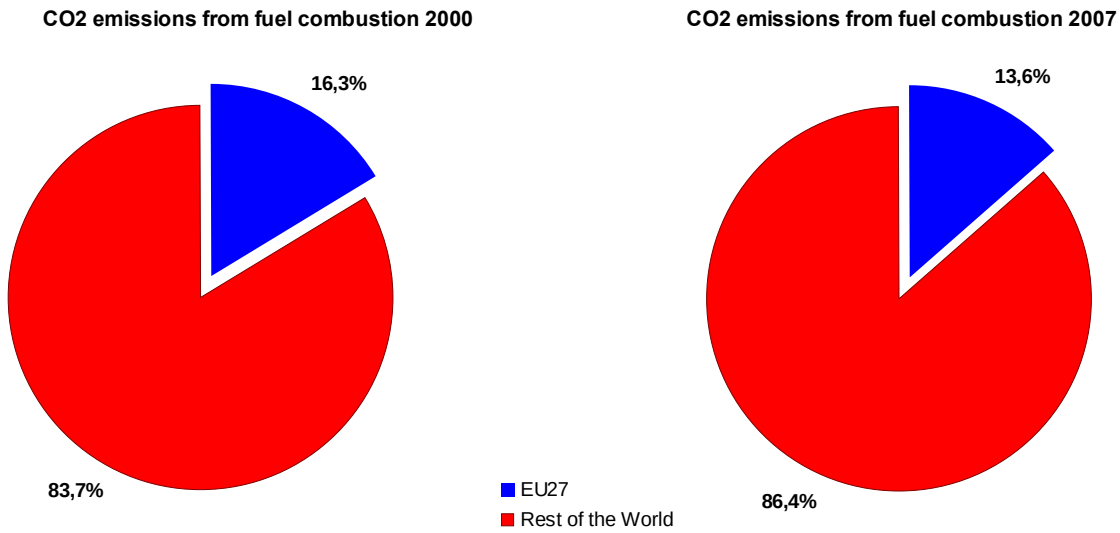
GHG reduction world leaders:

We pollute less, now we need the rest of the World to keep track



Challenges for Europe: energy price

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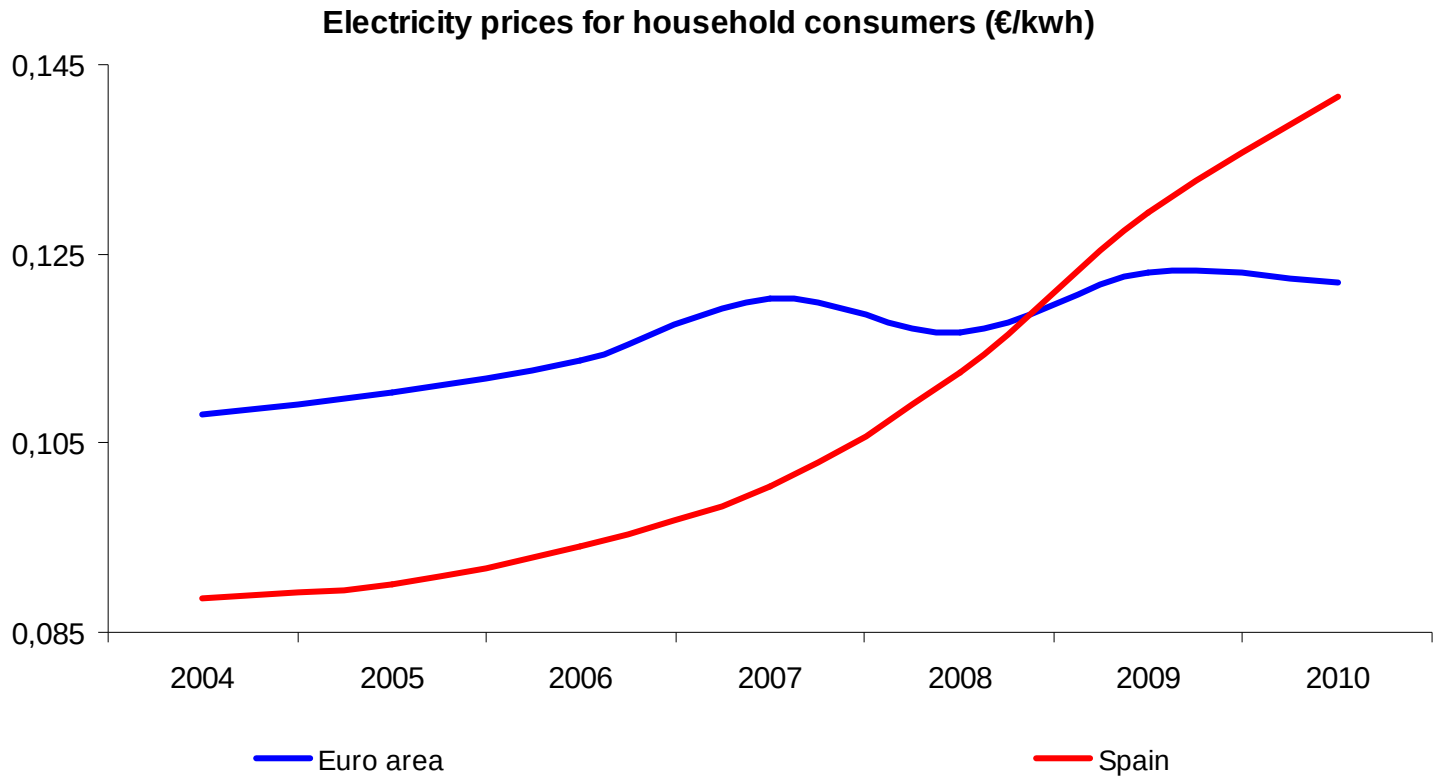
A changing world brings complexity to energy prices:

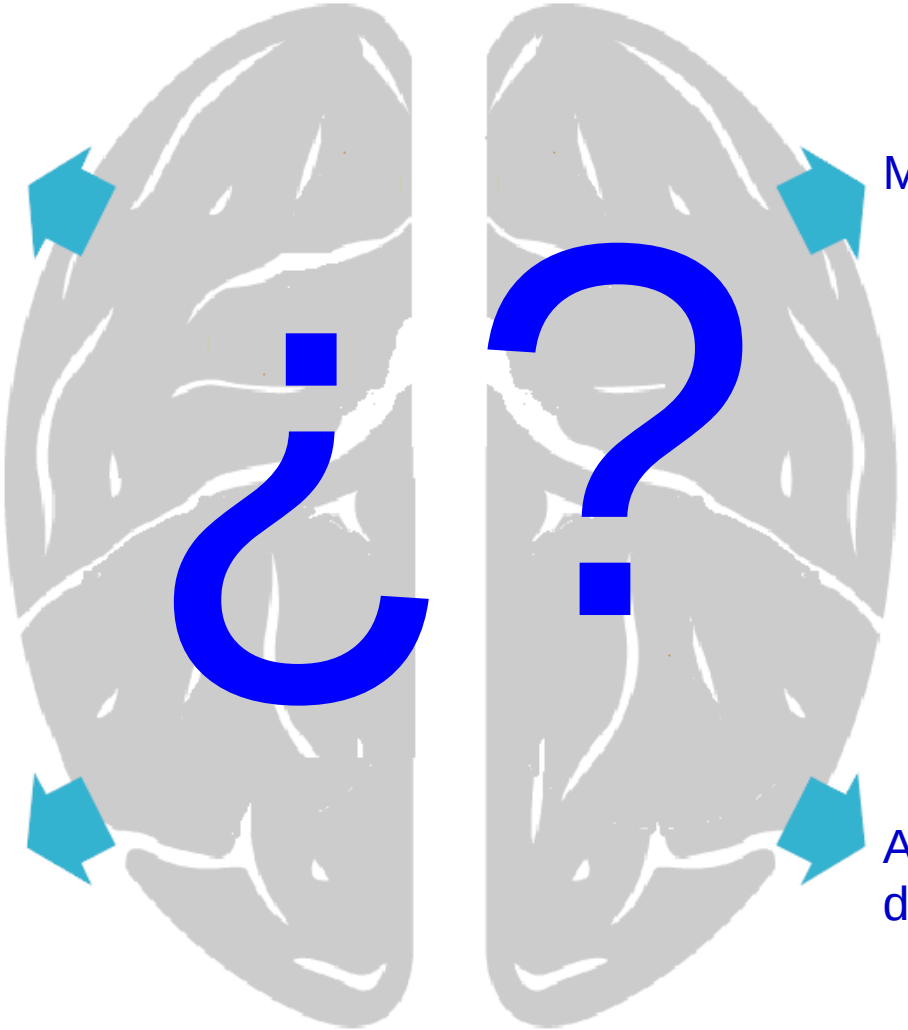


Challenges for Europe

We want to keep a strong and dynamic energy sector and we want:

Climate change prevention

Market efficiency



Fiscal discipline

Acceptable dependence

Can we make all these goals compatible?

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The answer to these challenges is

MORE

United, Europe may better manage its energy uncertainties through:

- Promote low carbon domestic energy resources
- EU single voice
- More interconnections
- A common regulatory framework

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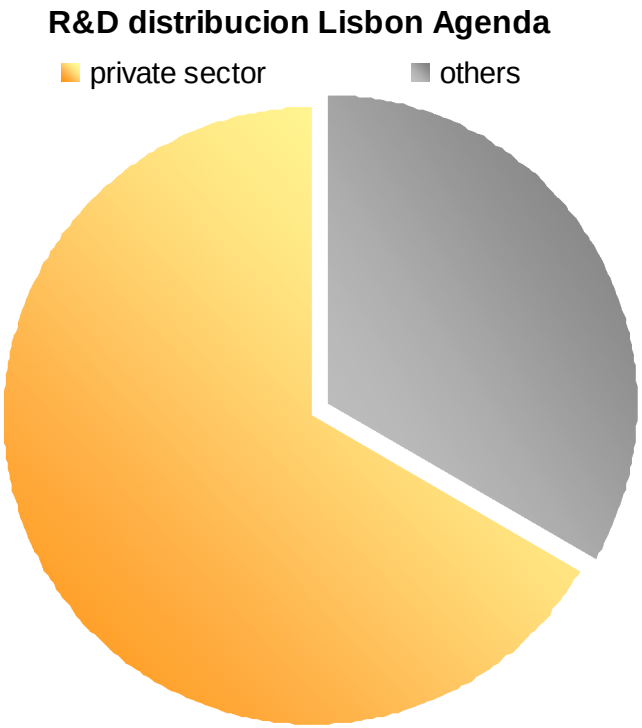
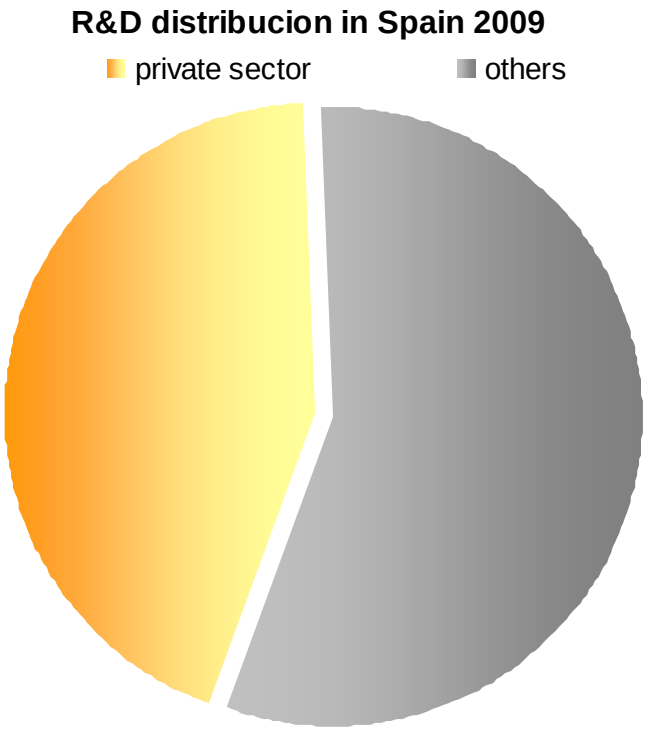
Some relevant facts





Some relevant facts

Some relevant facts

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cener
national renewable energy centre

2010, 20.676 MW wind just after Germany in Eurpe and 4º rank in the world.

2010, 1st time european wind production leader 42.9 Twh

Ciemat PSA

2010 solar world leader. 532 MW thermal solar installed in Spain.

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ciudad de la energía

ELCOGAS

Still to be written.

Some relevant facts

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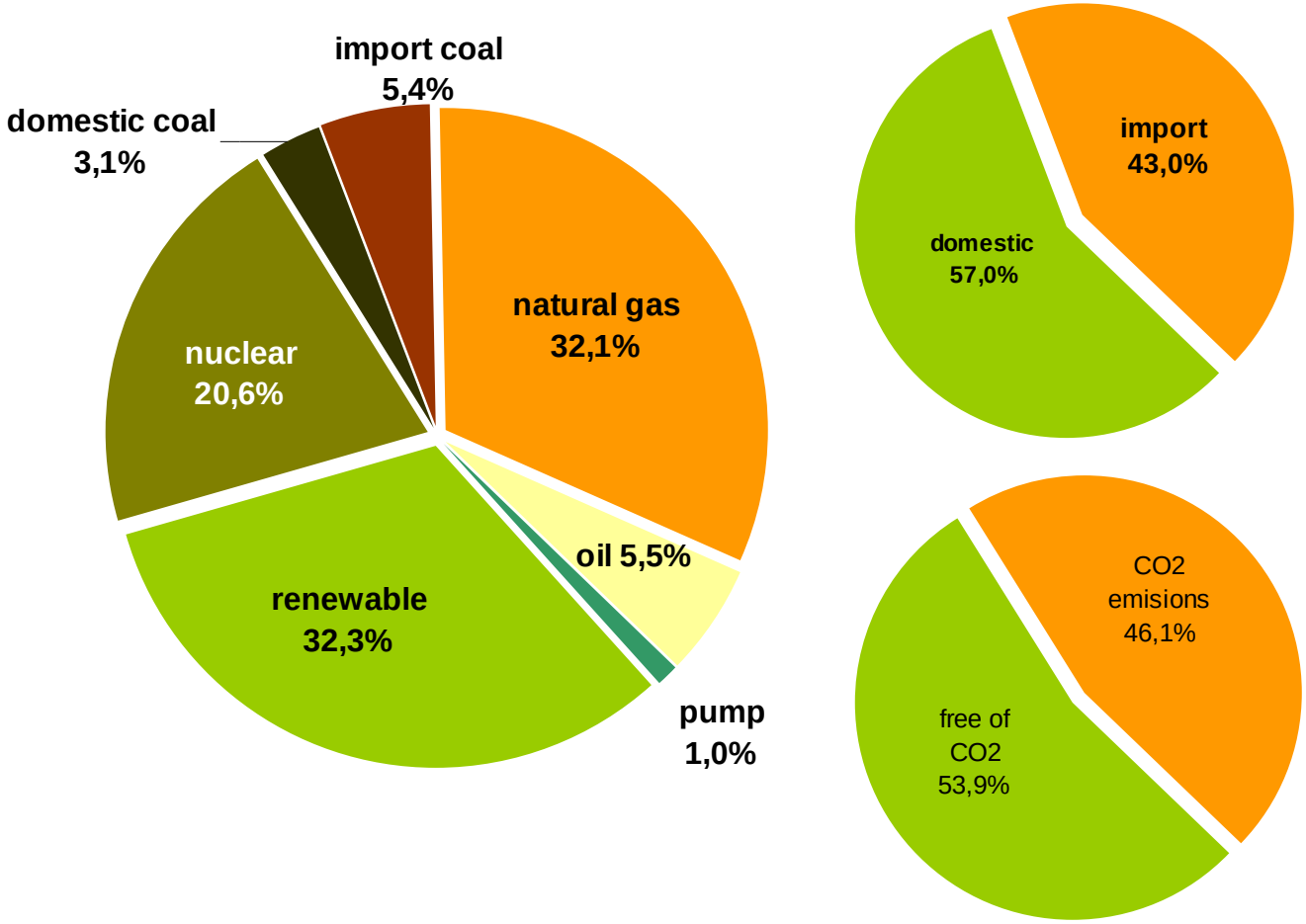
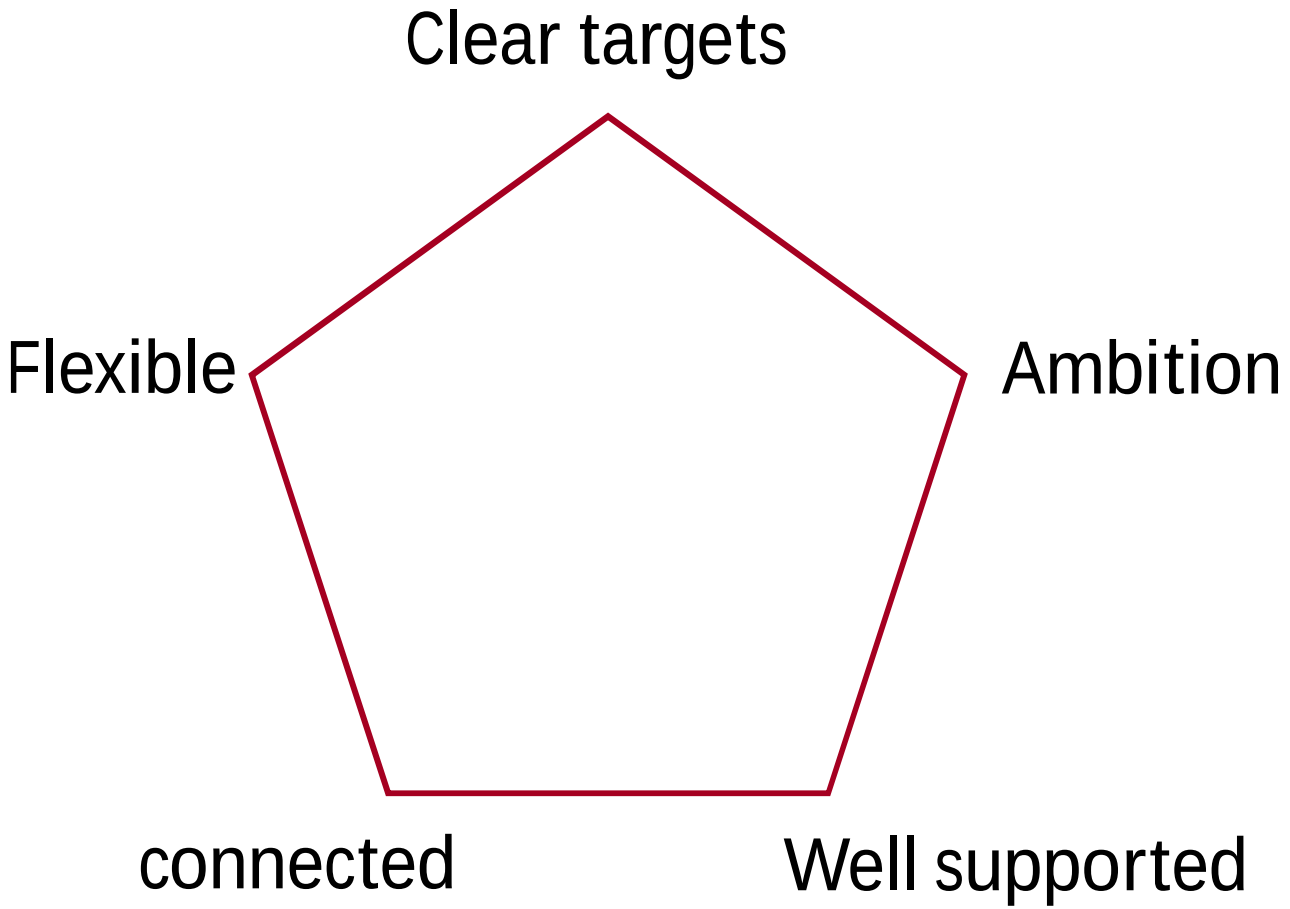
electric production mix in Spain 2010



What is needed?



Clear targets

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Low carbon economy is one of the main goals of Spanish energy policy and has identified **CCS** as an important strategic technology to help Europe and Spain achieve the carbon free blueprint

CIUDEN´s CCS program main objectives are the research, development and demonstration of efficient, cost effective and reliable CCS through the design and operation of a large scale integrated test facility for advanced technologies on CO2 capture in coal power generation

Ambition

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CIUDEN´s CCS program will place Spain at the forefront of world's CCS development

Initiatives.

Well supported

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CCS is part of our future energy mix. This opinion is share by current Government, majority of the political parties, Unions and business representatives.

CIUDEN´s CCS program is sufficiently finance by Government.

CIUDEN has become part of the local community.

Connected

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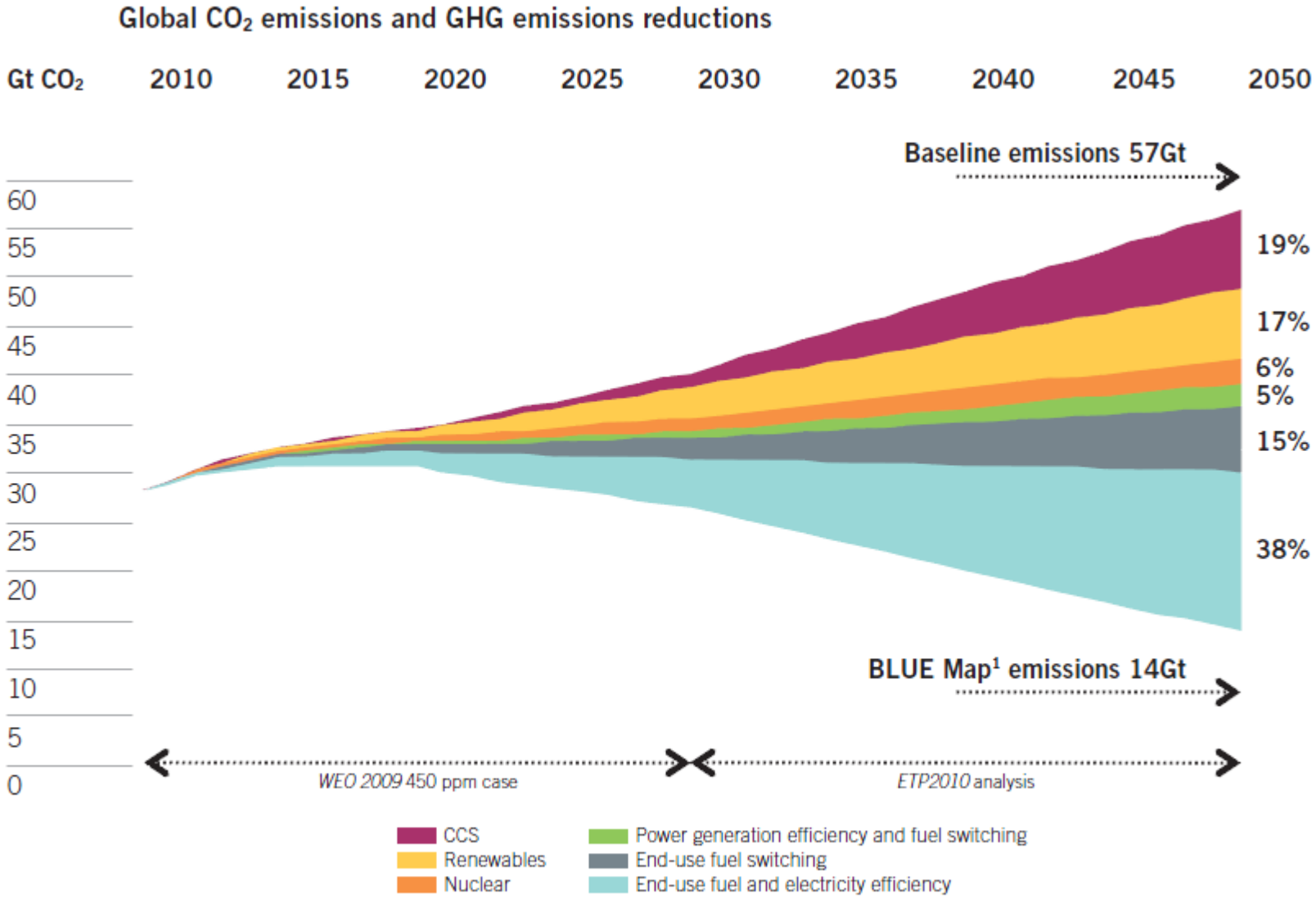

[1] Blue Map scenario reduces all global energy related emissions to half their current levels by 2050 (IEA 2008).

Flexible

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From a national pilot project to a European demonstration plant

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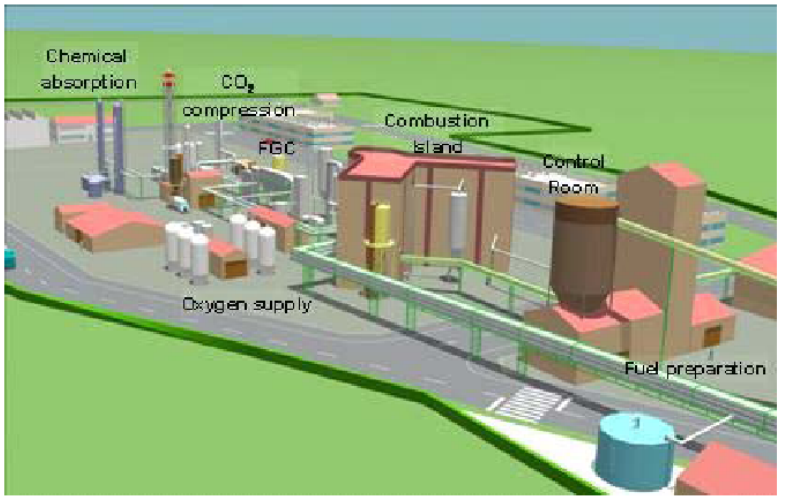
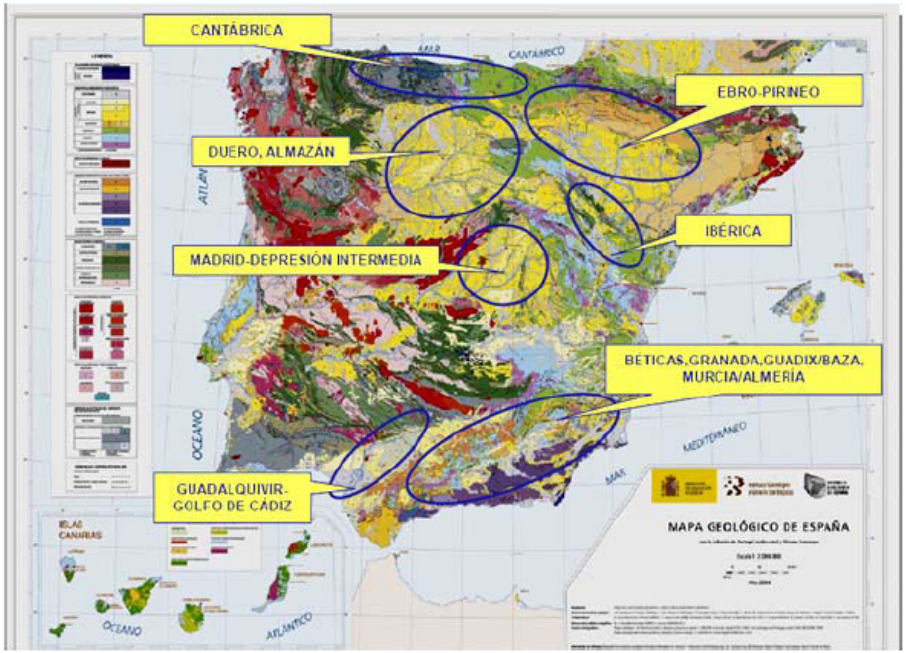
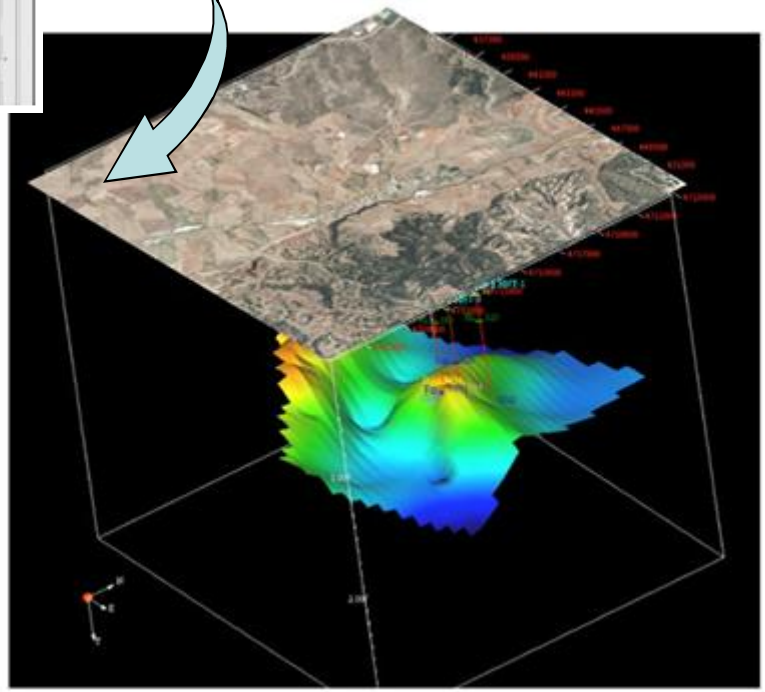
Objectives and achievements



Objectives and achievements





Objectives and achievements

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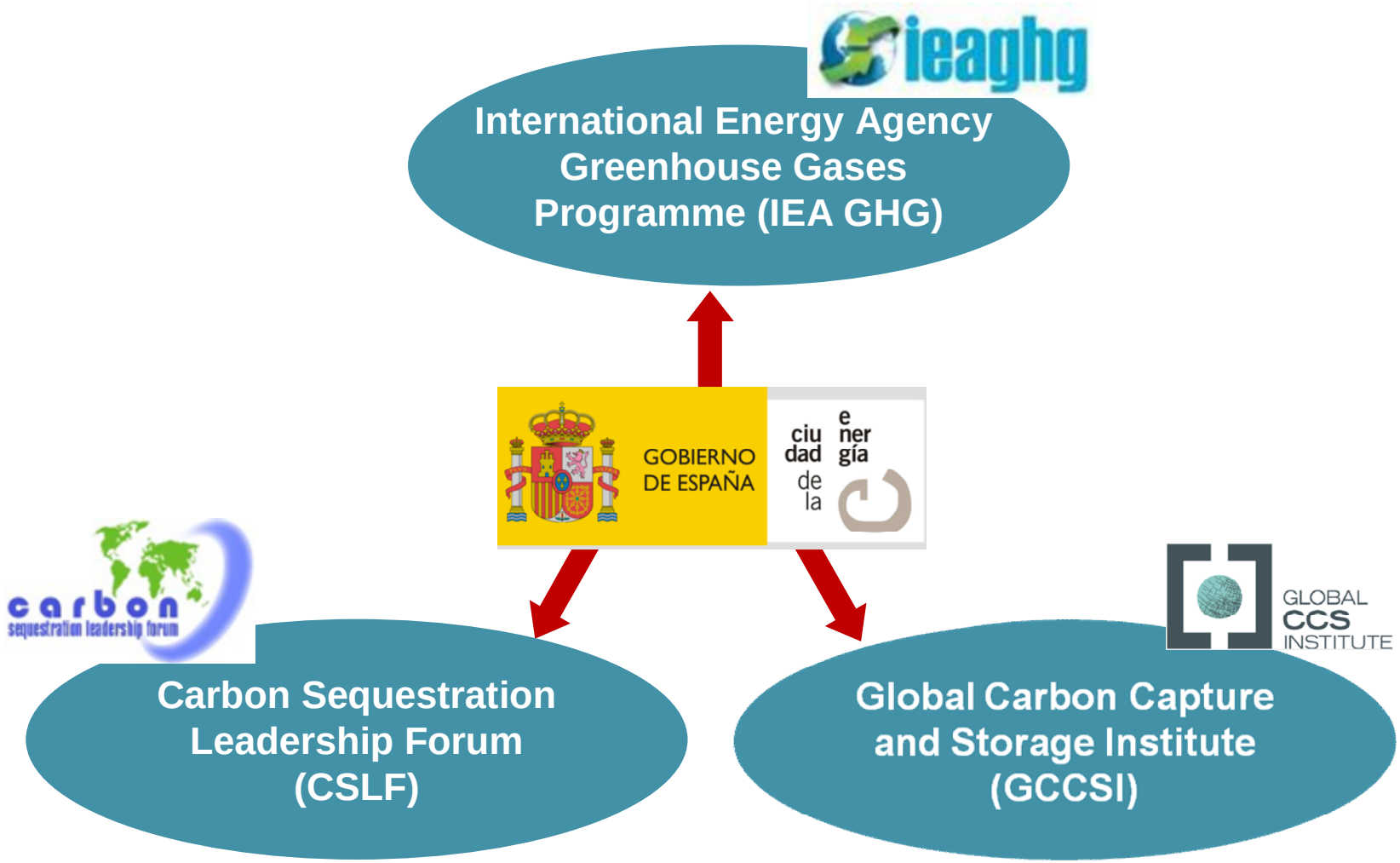
CIUDEN´s presence in international CCS institutions



Objectives and achievements

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CIUDEN´s presence in EU CCS institutions

Energy SET PLAN

EERA European Energy Research Alliance

ECCSEL European Carbon Dioxide Capture and Storage Laboratory Infrastructure

ccsnetwork.eu ★connect ★construct ★share

European CCS demonstration project Network

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FENCONET Fossil Energy Coalition

Fossil Energy Coalition Network

European Commission Energy

Berlin Forum on Fossil Fuels

pteco2 Plataforma Tecnológica Española del CO2

Plataforma Tecnológica Española del CO2

Zep Zero emissions platform

European Technology Platform for Zero Emission Fossil Fuel Power Plants

Objectives and achievements

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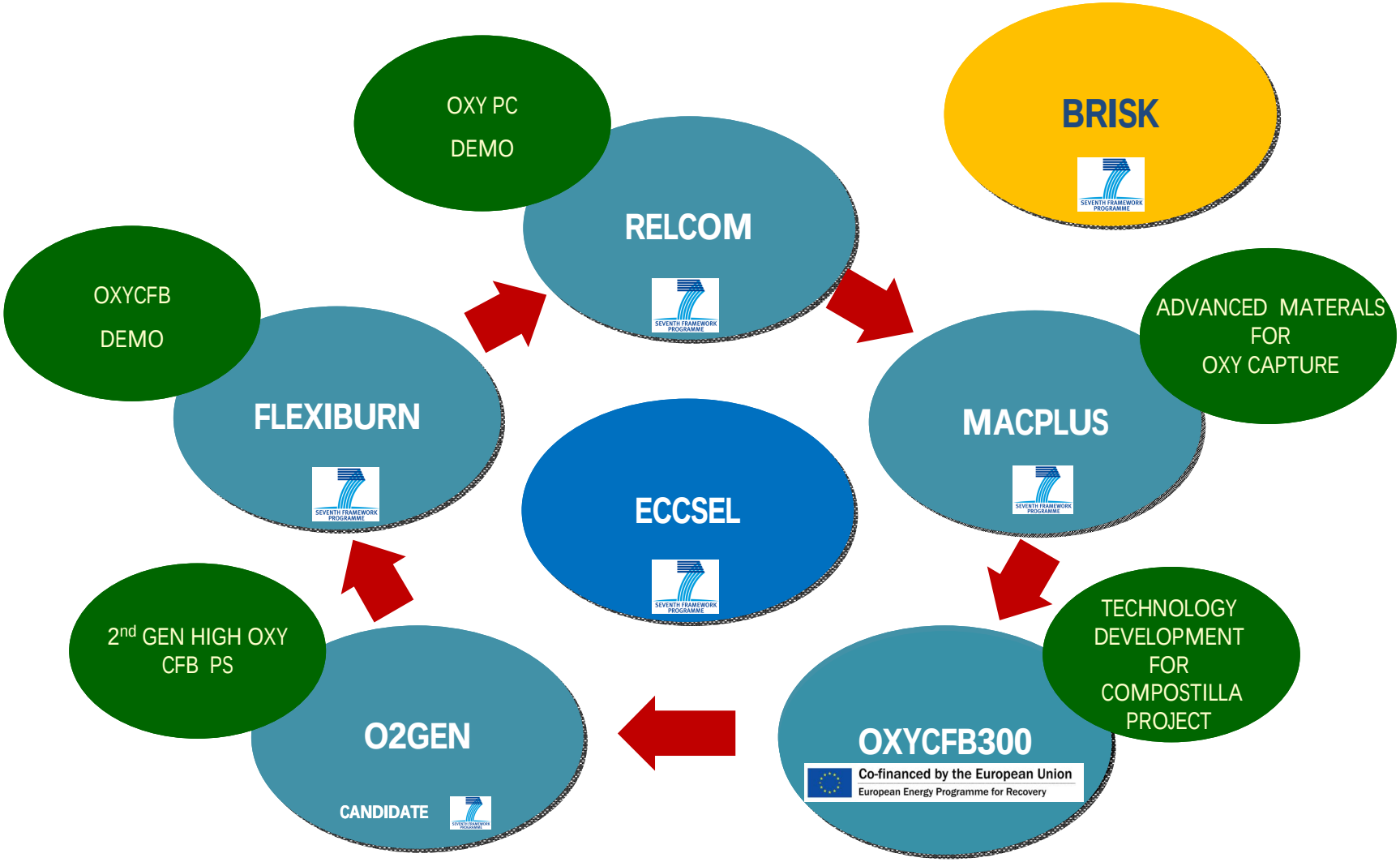
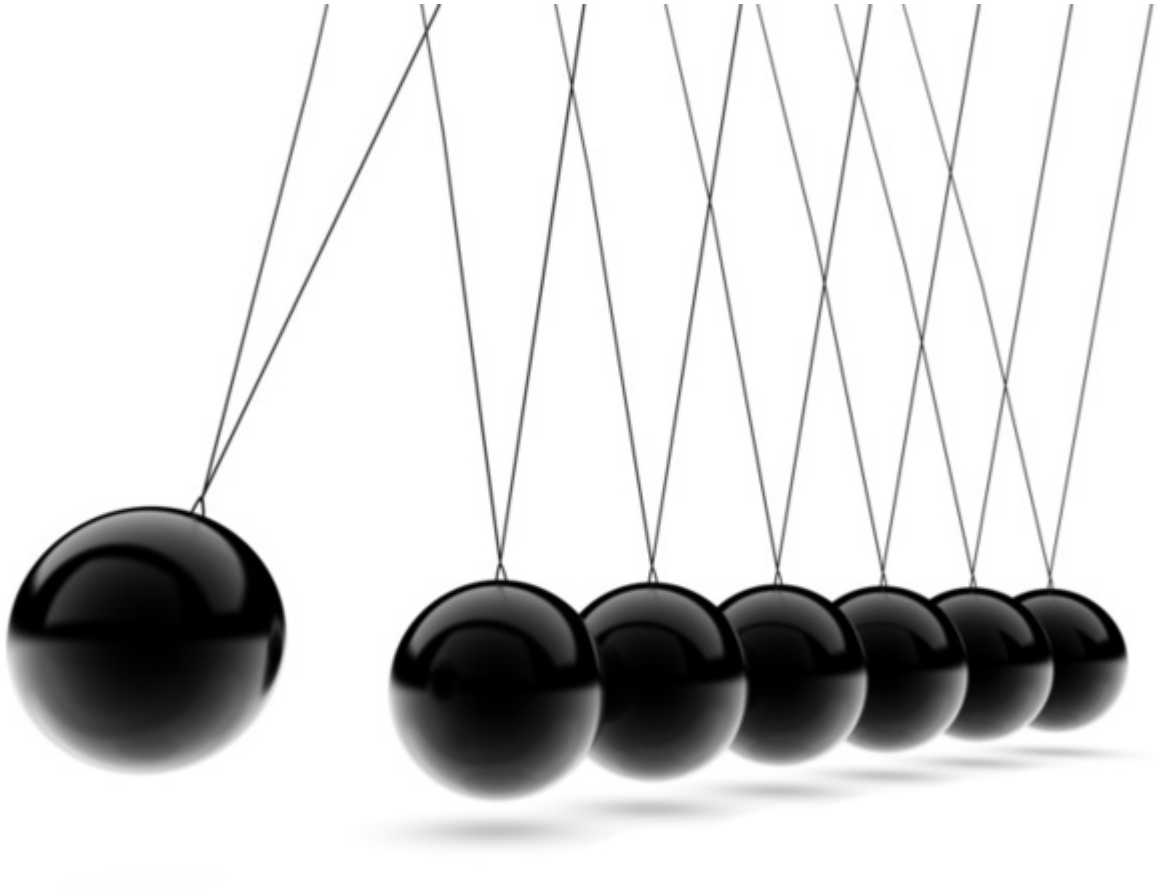
The rationale for CIUDEN'S on-going R&D programme



Objectives and achievements



Conclusion

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To summarize

- The world is changing and has deep implications to the European energy mix.
- Spain support an European CCS solution as part of the path towards a low carbon society
- Spanish Government backs the lack of private R&D and in 2006 launch CIUDEN
- 2011, CIUDEN´s CCS is a reality. It is a Spanish CCS installation to an European Scale and with an international projection

CIUDEN would not be true without a clear analysis, an accurate need's identification process and an early support strategy

Thank you for your attention

Pedro Palencia,
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Ministry of Industry, Tourism and Commerce, Spain
ppalencias@mityc.es

EC CCS Network
Ponferrada, 09/06/2011

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