

The logo features the words "energy" and "visions" stacked vertically. "energy" is in a yellow-to-orange gradient, and "visions" is in red. To the left is a stylized sun with yellow and orange rays. The background of the logo is a dark blue and black space scene with a bright light source.

energy  
visions

2050

## European Climate and Energy Policies - boosting the energy RTD&D

Kai Sipilä, VTT



Business from technology

## CONTENT

- EU policies, the 2020 targets in climate and energy packet
- Acceleration to market introduction by 2020, EU Strategic Energy Technology plan
- Recovery Plan
- Frame work programme
- Recommendations and conclusions

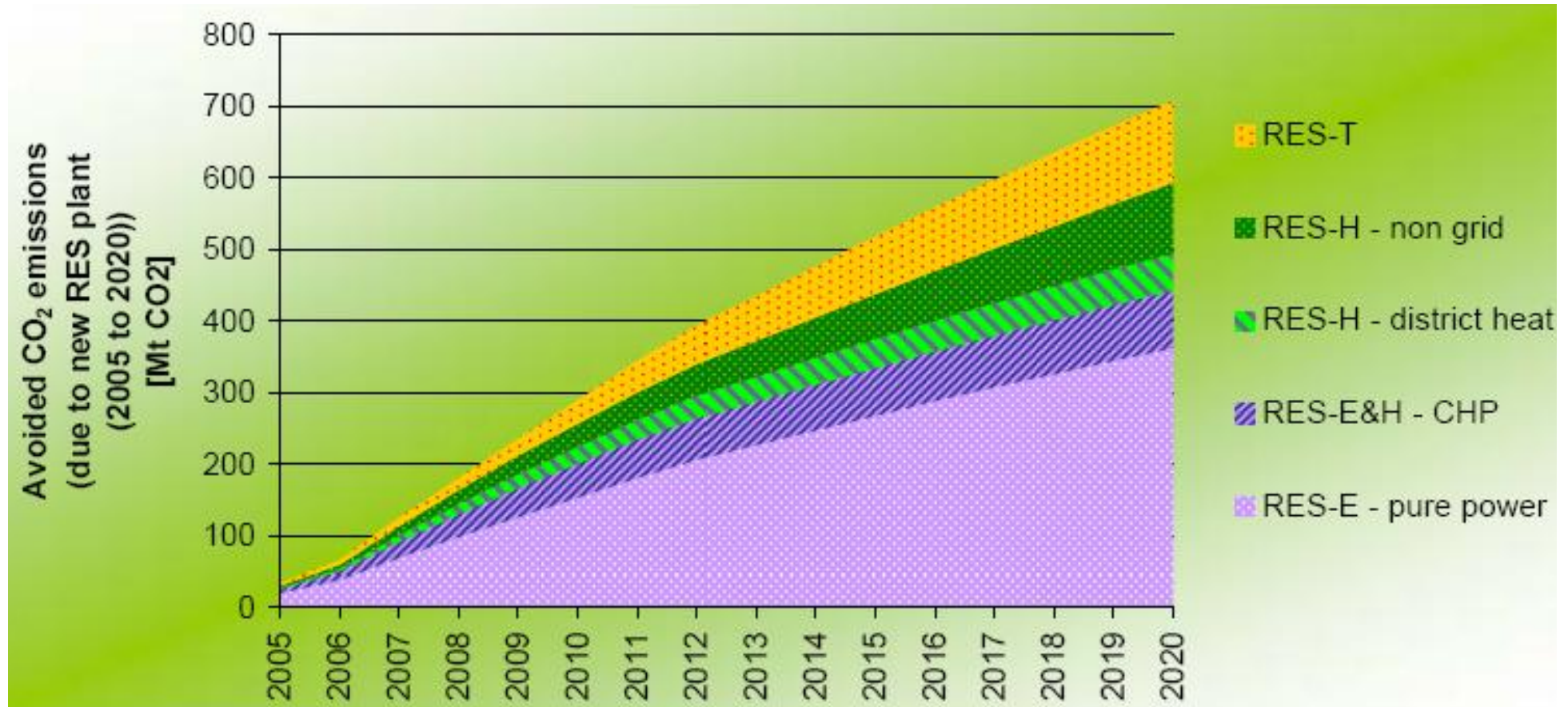


## CURRENT TARGETS AND DRIVERS

- The European climate and energy packet approved in December 2008
  - 20% GHG reduction by 2020
  - 20% energy efficiency
  - share of renewable energy to 20%
  - 10% renewable energy in transport
- National targets given for Finland:
  - Finland 16% GHG reduction in non emission trading sector and +9.5%-units RES to 38% share of energy consumption
- Post Kyoto targets, 80 % CO<sub>2</sub> reduction by 2050...

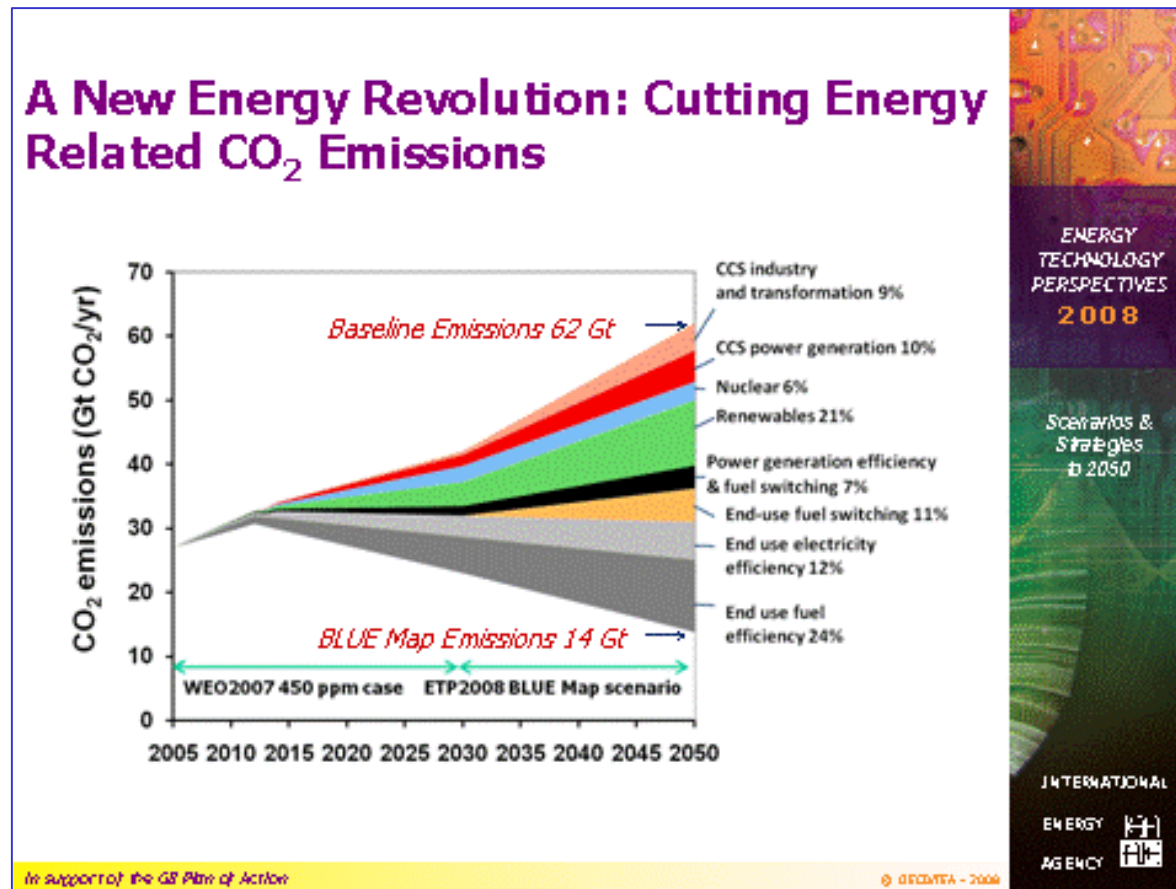


# EUROPEAN TARGETS TO REDUCE GREENHOUSE GAS EMISSIONS - ALL ACTIONS ARE NEEDED



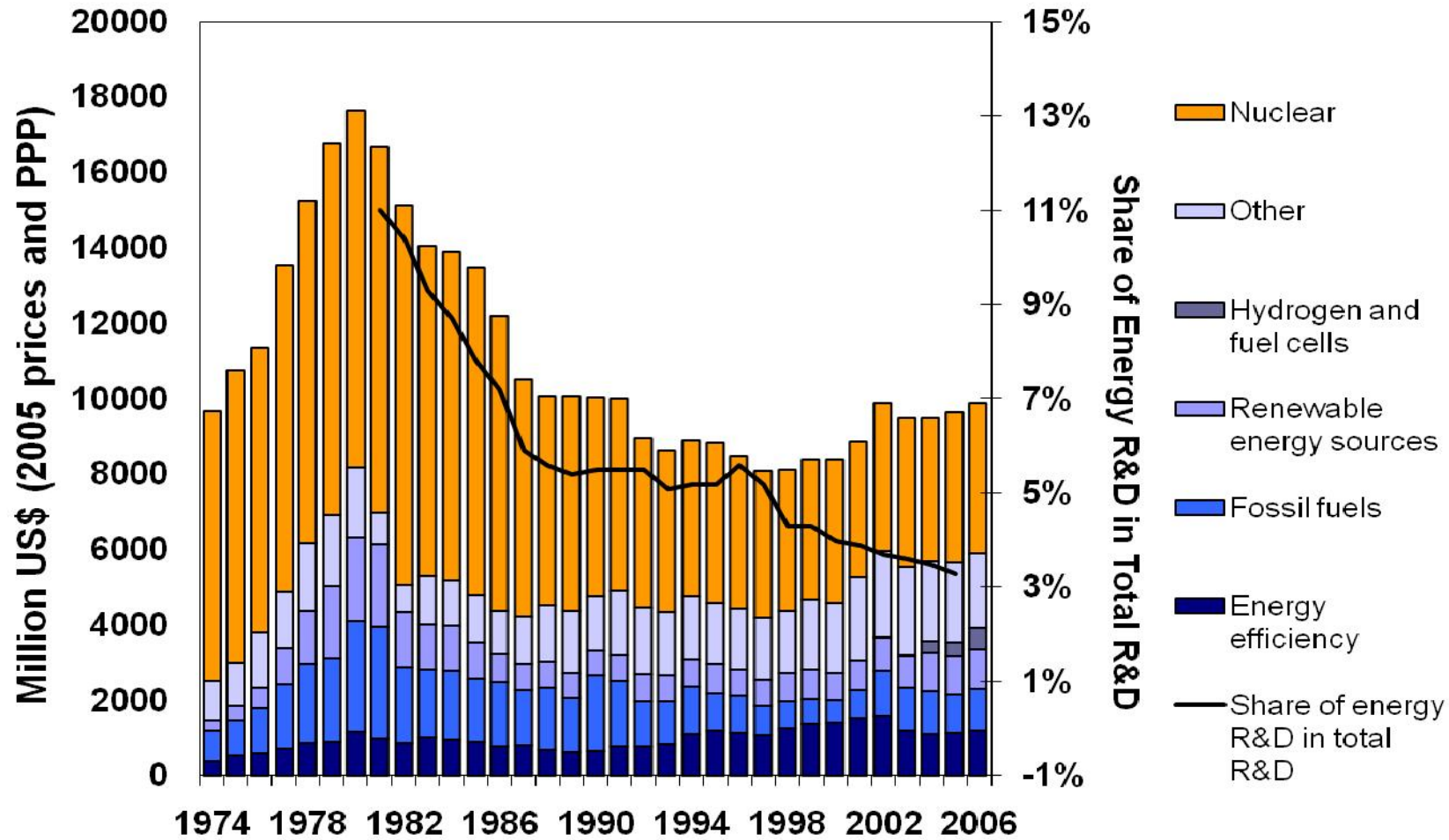
T corresponds to the transport sector, H heat and E electricity.

# CLIMATE POLICY AND DEEP GLOBAL GREEN HOUSE GAS REDUCTION 50 – 80 % BY 2050

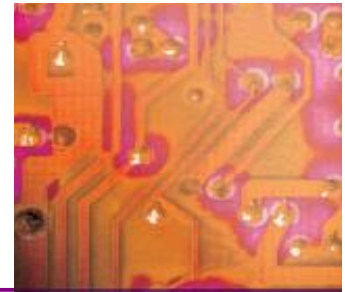


Source: François Nguyen, IEA

# PUBLIC SECTOR ENERGY R&D IN IEA COUNTRIES – USD 10 BLN/YR



Source: François Nguyen, IEA



ENERGY  
TECHNOLOGY  
PERSPECTIVES  
2008

Scenarios &  
Strategies  
to 2050

INTERNATIONAL

ENERGY

AGENCY

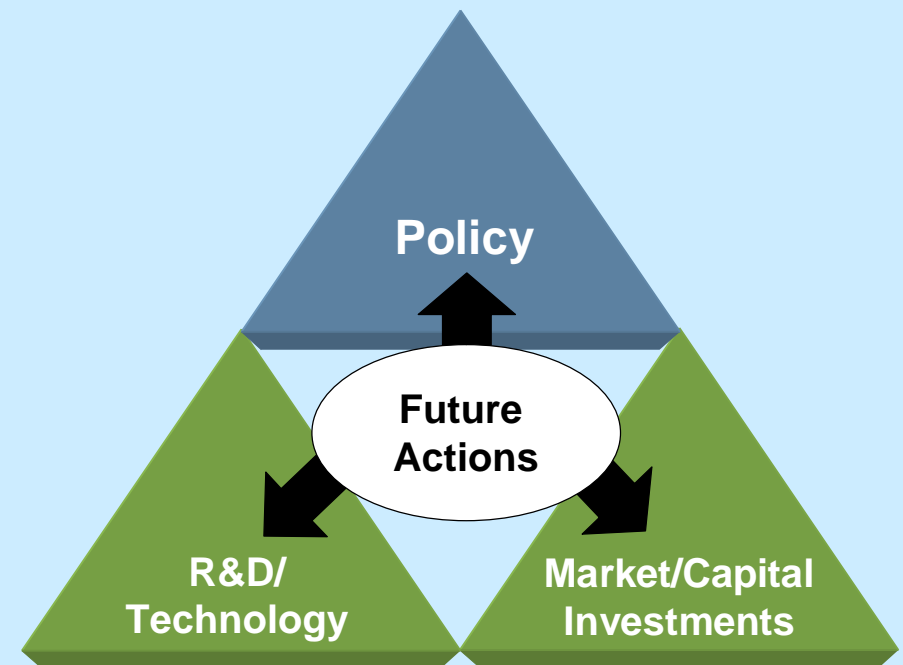


## ACCELERATION OF MARKET INTRODUCTION OF NEW TECHNOLOGIES TO 2020

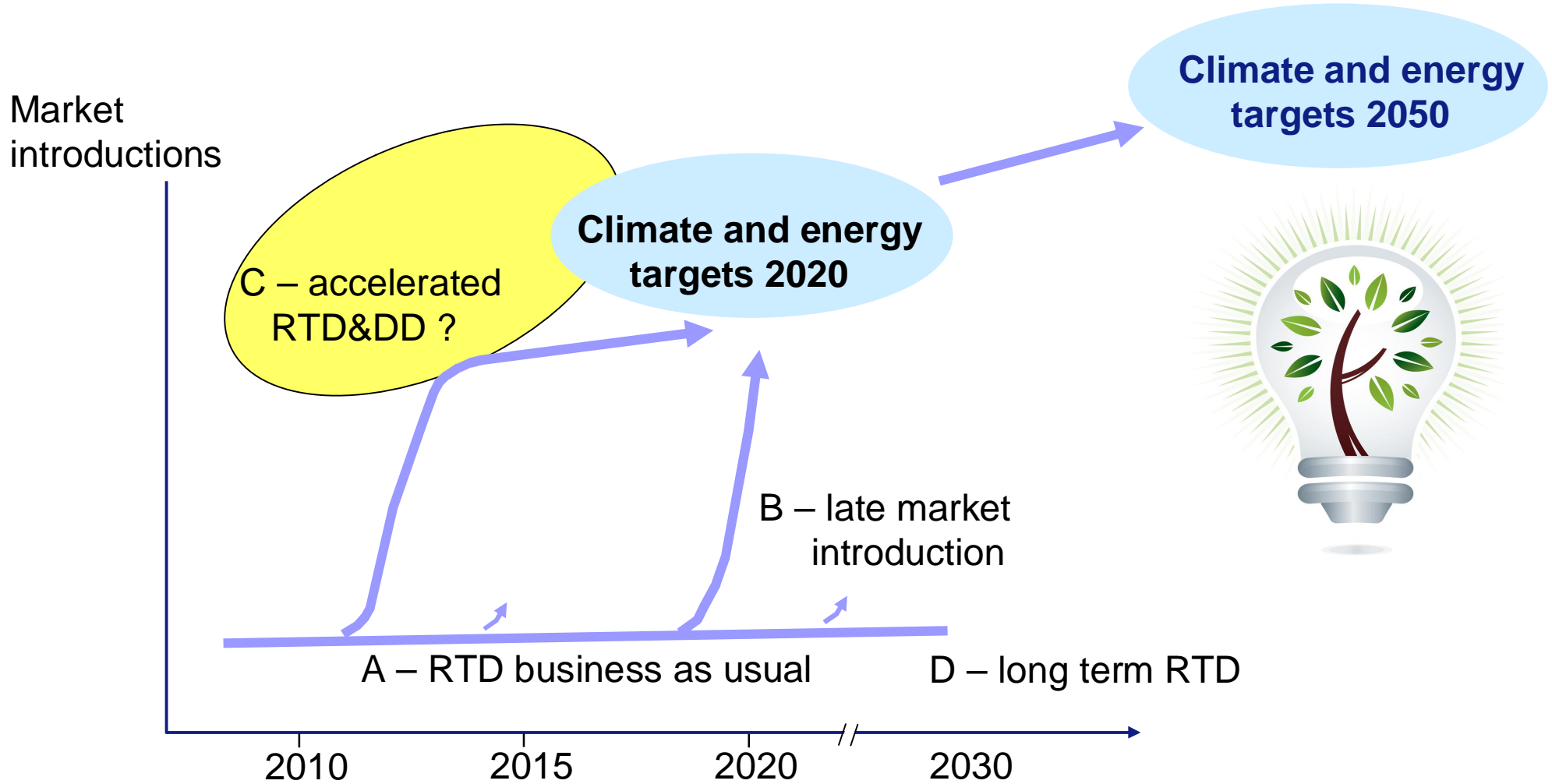
### EU SET-Strategic Energy Technology Plan for 2020

- European industrial initiatives
  - Large demonstration actions supported by RTD
  - Typical budget 2–15 B€ in 2010–2020 for eight demonstration programmes
- EERA - European Energy Research Alliance started

### US Department of Energy



# ROUTES TO 2020 TARGETS





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# FP7 ENERGY WORKPROGRAMME 2010 - SUPPORT TO SET-PLAN -

## **European Industrial Initiative on CCS**

- Identification and testing of sites for CO<sub>2</sub> storage to implement the large-scale CCS demonstrators; trans-national cooperation and networking of the relevant players in CO<sub>2</sub> storage in a wide European context; Site abandonment; Public acceptance.

## **European Industrial Initiative on Smart Grids**

- Tests of Smart Energy Networks with a sizeable user base of thousands of users, research on pan-European networks to contribute to connect sources from deep offshore wind and solar energy from Mediterranean countries, cross-cutting research to develop electricity storage within the most promising contexts.

## **Solar Europe Initiative**

- Material for high temperature solar receiver operation for CSP and solar cells on very thin crystalline wafers.



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# FP7 ENERGY WORKPROGRAMME 2010 - SUPPORT TO SET-PLAN -

## **European Wind Initiative**

- The focus would be on very large turbine based on new concepts, materials and generators and on offshore deployment.

## **European Bioenergy Initiative**

- Large scale bioenergy research activities are foreseen as a means to overcome the technology bottlenecks and market implementation

## **Support to the European Energy Research Alliance**

- Support Action to foster the development of the Alliance.

## **Energy efficiency**

- Valorisation of low temperature heat through the development of innovative components able to take heat produced from various sources, such as waste heat from industrial processes or solar thermal heat, in order to produce energy valuable to the consumer including cooling applications.



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# INFORMATION

**Manufuture Technology Platform**  
[www.manufuture.org](http://www.manufuture.org)

**European Construction Technology Platform**  
[www.ecctp.org](http://www.ecctp.org)

**Energy Efficient Buildings Association**  
[www.e2b-jti.eu](http://www.e2b-jti.eu)

**ERTRAC - Road Transport Technology Platform**  
[www.ertrac.org](http://www.ertrac.org)

**EU Transport Research**  
[ec.europa.eu/research/transport/](http://ec.europa.eu/research/transport/)

**FP7 Research programmes and projects**  
[cordis.europa.eu](http://cordis.europa.eu)



## CONCLUSIONS

- European 2020 targets need accelerated energy RTD&D and market introduction
- European Industrial Initiatives and national demonstration instruments starting in 2010
- European and national economy recovery plans are also supporting new energy technologies in some countries
- For innovative Finnish technologies in wind, advanced bioenergy, CCS and GEN IV Nuclear, a total investment volume of > 1 000 million euro by 2015
- In energy industry the first commercial scale demonstration plants are important for the market introduction, typical investment 50–300 M€...
- In addition to technology development, VTT actively interacts with industry and policy actors to accelerate deployment of new energy solutions to meet the global 2020 targets and 2050 visions.