



Partners

The DYNAMIS consortium has been established by leading European enterprises and RTD providers comprising 29 legal entities spread within 8 EU Member States, and Norway, Switzerland and Bulgaria.

The consortium exhibits a full value chain of stakeholders and can be thought of as four inter-related islands of proficiency organised for joint actions towards demonstration of large-scale co-production of hydrogen and power:

RTD providers

SINTEF
JRC- Institute of Energy
Fraunhofer ISI
Institut Français du Pétrole
British Geological Survey
ECOFYS
Geological survey of Denmark and Greenland (GEUS)
TNO
IEA GHG
Bundesanstalt für Geowissenschaften und Rohstoffe (BGR)
Technical University of Sofia
Norwegian University of Science and Technology (NTNU)

Technology providers

ALSTOM
SIEMENS
L'AIR LIQUIDE
Etudes et Productions Schlumberger
Progressive Energy

Energy providers (in power generation and fossil fuel supply)

STATOIL
BP International
Store Norske Spitsbergen Grubekompani (SNSK)
Vattenfall
E.ON UK
ENDESA
ENEL

Financing institution

Société Générale



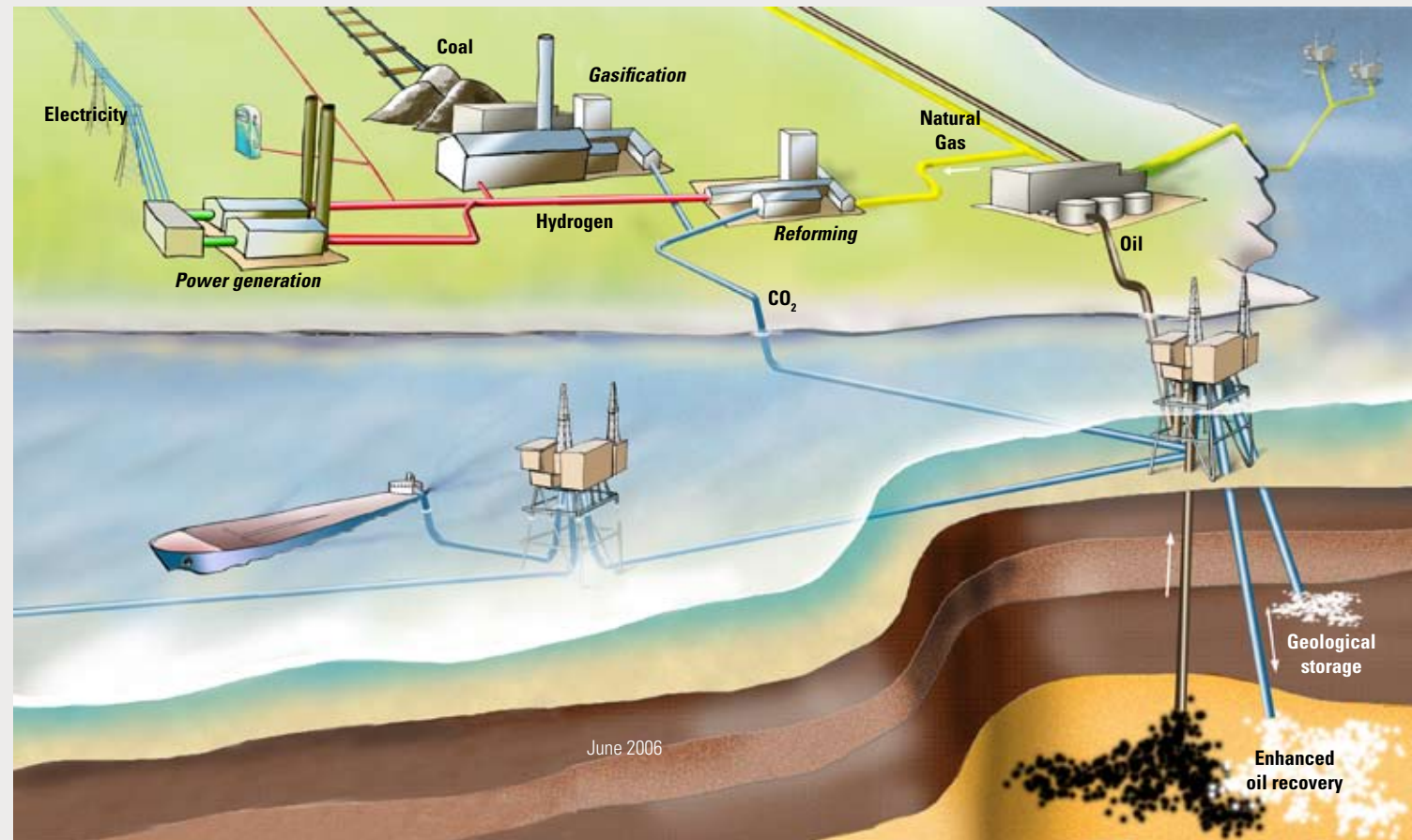
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Towards Hydrogen and Electricity Production with Carbon Dioxide Capture and Storage

First phase of the HYPOGEN project



Objective

DYNAMIS is the first phase of HYPOGEN, part of European Commission's Quick-Start Programme for the Initiative for Growth. Foreseen to take 10-20 years, HYPOGEN has the goal of providing Europe with a realistic and economically viable route to the hydrogen economy.

The main objective is to prepare the ground for large-scale European facilities producing hydrogen and electricity from fossil fuels with CO₂ capture and permanent geological storage or, eventually, to be used for enhanced oil or gas recovery.

DYNAMIS is designed to rank the options and reduce the risk element for subsequent development of a full-scale pilot plant by industry post-2008.

Challenges/Problems addressed

Fossil fuels will remain the prevalent energy supply for Europe over the foreseeable future (2015-2020) despite their drawback in the context of climate change issue. In order for Europe to comply with the Kyoto Protocol there is a need for new low emission technologies - including decarbonised fuels and the use of hydrogen as an energy vector. In this perspective it becomes mandatory to enable efficient ways of isolating the CO₂ and storing it safely (for thousands of years) at reasonable cost and efficiency.

DYNAMIS undertakes to investigate viable routes to large-scale cost-effective hydrogen production with integrated CO₂ management for use in either power production or other aspects of society.

Expected achievements/ impact

DYNAMIS undertakes by 2008 to substantiate that the following targets can be deemed achievable for practical operation by 2012:

- Power generation in the 400 MW class using advanced flow cycle(s) with hydrogen-fuelled gas turbines in the 250-300 MW class.
- Hydrogen export corresponding to 0-50 MW.
- Produced hydrogen will be in accordance with the specifications of a European hydrogen infrastructure.
- 90% CO₂ capture rate envisaged
- 50% capture cost reduction envisaged reckoned from a (current) level of €50-60 per tonne of CO₂ captured.

Progress to date/Results

DYNAMIS started 1 March 2006. By June four - five promising locations for the demonstration plant will be determined for further and more detailed investigation.

Time span:	2006 – 2009
Total budget:	EUR 7,461 million
EC funding:	EUR 4,0 million
Contract no:	019672

