

Title: Carbon Capture and Storage – the new market in the Netherlands?

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Abstract

The International Energy Agency (IEA) projects that energy-related CO₂ emissions may grow by 130% until 2050 in the absence of new policies. This increase will largely be a result of increased fossil fuel usage. The Intergovernmental Panel on Climate Change (IPCC) indicates that such a rise in emissions could lead to a temperature increase in the range of 4-7°C, with major impacts on the environment and human activity.

Various estimates of the economic impact of such a temperature increase have been reported, expected annual economic damage (in the absence of new policies) ranging between US\$20 trillion and US\$25 trillion by 2100.

There is a large consensus that a major decrease in CO₂ emissions is needed by 2050 to limit the expected temperature rise. Only then damages can significantly be eliminated. Meeting this formidable challenge will take an energy technology revolution. The massive changes will involve enhanced energy efficiency, increased renewable energies but also decarbonization of power generation from fossil fuels. In the power and industrial sectors alone, CCS could contribute nearly one-fifth of the reductions needed to halve back greenhouse gas emissions by 2050, and this at reasonable cost. Most of the major world economies recognize this and have CCS technology development programs designed to achieve commercial deployment. The Netherlands has committed to a number of small CCS pilots and two large scale demo's. To support these pilots and demo's the CATO-2 R&D consortium has been established. This consortium will execute a 60 MEuro research program over the next 5 years covering the full CCS chain.

The CATO-2 program incorporates over 30 parties from industry and academia and addresses capture, transport, and storage of CO₂ as well as issues related to legislation, safety and public perception.

The paper will give an overview of global CCS activities and subsequently zoom in on those activities executed in and planned for the Netherlands. Focus will be on the R&D perspective in general and the CATO-2 perspective in particular.

Biography

Jan Brouwer graduated from Utrecht University in 1988 and started his professional career as an associate professor in Exploration Geophysics. From 1992 till 2001 he worked as R&D manager at OYO, focussing mainly on reflection seismic exploration. After he joined TNO-Netherlands Organisation for Applied Scientific Research in 2001 he has been active in both Exploration and Production programmes. From 2006-2009 he was engaged as managing director of the joint TNO-SHELL- TU-DELFT research programme ISAPP (Integrated System Approach Petroleum Production). Since September 2009 he is the director of the national CCS research program CATO-2.