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E U R O P A

Mapping CCS in Greece **Report Summary**

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Energy production and emission breakdown from different fossil fuels

	% of power generation	TWh (electricity)	CO2 emissions (million tonnes) from electricity
Coal	53 %	32 264	40,28
Gas	17,50 %	10 610	4,25
Oil	16 %	9 601	6,42
Total	86,50 %	52 475	76,93

Scenarios for different greenhouse gas reduction trajectories

There is no governmental scenario regarding Greece's emissions after 2010, apart from reports from NGO's. The different available greenhouse gas (GHG) reduction scenarios for Greece are provided below;

Title	Organisation	Years covered	Brief description
2nd National program for GHG emissions reduction	Ministry of Environment Physical Planning and Public Works	2000-2010	This plan defines policies and measures in different sectors necessary for Greece to meet its Kyoto targets (25% increase of GHG). In 2006, a draft report for updating the 2nd National Plan was presented but it has not been formally adopted yet.
1st Report on the long term energy planning	Ministry of Development	2008-2020	This report defines energy strategies to be used to respond to global warming. The main three strategies outlined are; increasing the use of natural gas, building more efficient lignite plants and investing heavily in renewable energy.
Green Revolution without coal, without nuclear, without problem	Greenpeace	2008-2050	According to Greenpeace Greece can lower its CO2 emissions by 41% by 2020 and 85% by 2050, using renewable sources of energy. Renewable sources can cover Greece's electricity production by 52% until 2020 and 87% by 2050
Solutions for climate change: sustainability vision for Greece until 2050	WWF	2008-2050	According to this scenario Greece can limit emissions by 67% by 2050. By 2050 electricity needs could be covered; 58% from renewable energy, 23% from natural gas and just 16% by lignite.

New Thermal Power Plants

According to the 2009-2014 PPC operational planning, six new thermal power plants would be built by 2014. These plants would be capture-ready. Plans to construct two hard-coal units have been defeated.

Units	Gas	Power (MW)	Goal year	State
Aliveri V	Natural Gas	417	2010	Permit to build in selected location obtained. The unit is expected to commence operations by 2011

Megalopoli V	Natural Gas	750-835	2012	The offers to build this unit have been filed and a decision by PPC is expected soon
Florina II	Lignite	450	2013	There was a calling by PPC for offers in February 2009 but no company declared interest. Failure attributed to the plant's limited power of 450 MW
Ptolemaida	Lignite	450	2014	In order to commence operations by 2014 a permit would have to be obtained by the end of this year
Aliveri VI	Hard-coal	700-800	2014	Cancelled
Larimna I	Hard-coal	700-800	2015	Cancelled

State of regulatory process for CCS

Implementation of the CO₂ storage directive has not started yet. The two Ministries responsible for this would be principally the Ministry of Environment Physical Planning and Public Works, but also the Ministry of Development. Details for officers potentially influencing the procedure are provided below;

Name	Position	Contact details
Ministry of Environment Physical Planning and Public Works		
Mr. Ioannis Vournas	Director of Environment Department	tel. 2106457990
Mrs. Elpida Politi	Head of Department for EU Affairs and Emissions Trading	tel. 2108089275 email. epoliti@ekpaa.gr
Ministry of Development		
Mr. Loukas Georgalas	Director of Energy Policy Department	tel. 2106969809
Mr. Christos Pippas	Director of Energy Saving and Renewables	tel. 2106969401

National CCS supporting programs and plans for full-scale CCS

- By the end of 2009 the Ministry of Development will provide 3 million Euros and petroleum companies' data to IGME to conduct extensive CO₂ storage site research. The research is projected to last until 2012. The funding of this research will be provided by the NSRF 2007-2013.
- Some bilateral projects have been funded under the **Operational Programme "Competitiveness"** such as: Cooperation between Greece and USA on Carbon Dioxide Mineralization / Cooperation between Greece and Czech Republic on assessment of CO₂ storage potential.
- Aim of the **Technology Platform of W. Macedonia** under the 'Competitiveness' programme is to identify barriers for developing low emission power production, including CCS.
- Greek research groups, such as IGME, CERTH and Athens Polytechnic have participated in projects of the EU framework, including GESTCO, ENCAP, CASTOR, CACHET, and FENCO-ERA.NET.

There are currently no specific plans for full-scale CCS. The main reasons for that are;

- Perceived danger due to high seismic activity
- Lack of CO₂ storage sites research
- Lack of a coherent and centralised national Climate Change strategy
- The impression that CCS is an expensive and premature technology.