Geophysical Research Abstracts
Vol. 18, EGU2016-2493, 2016
EGU General Assembly 2016

Geo-energy Test Beds: part of the European Plate Observing System

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For 2020, the EU has committed to cutting its greenhouse gas emissions to 20% below 1990 levels and further cuts are being decided for 2050. This commitment is one of the headline targets of the Europe 2020 growth strategy and is being implemented through binding legislation. This decarbonisation of the EU economy is one dimension of an overall EU energy and climate framework that is mutually interlinked with the need to ensure energy security, promote a fully integrated energy market, promote energy efficiency and promote research innovation and competitiveness.

Power generation will have to take a particularly large part in emissions reductions (-54 to -68% by 2030 and -93 to -99% by 2050), mainly by focussing on increasing surface renewables (wind, tidal and solar) but also on carbon capture and storage on fossil fuel and biofuel power plants, shale gas, nuclear and geothermal power.

All the above generation technologies share common geological challenges around containment, safety and environmental sustainability. In a densely populated continent, this means that high levels of subsurface management are needed to fully realise the energy potential. In response to this need, across Europe, public and private sector funded, experimental test and monitoring facilities and infrastructures (Geo-energy Test Beds, GETB) are being developed. These GETB investigate the processes, technology and practices that facilitate the sustainable exploitation of Geo-energy resources and are of intense interest to the public and regulators alike.

The vision of EPOS IP Work Package 17 (wp17) is to promote research and innovation in Geo-energy that reflects core European energy priorities through provision of virtual access to data and protocols and trans-national access to GETB experiments. This will be achieved through provision of access to continuous strategic observations, promotion of the integrated use of data and models from European GETB, development of underpinning research services and facilitating transnational roadmap planning for Geo-energy research priorities.

In the first instance the main action of wp17 will be to build a consortium, formalised by MoU, of 12-15 existing and new GETB infrastructures. The MoU will provide the framework in which access to data and services can be developed.