

# Tsunami alert system urged

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An early warning system for tsunamis, the possibility of underground storage of carbon dioxide and an assessment of our geothermal energy potential 5km down are just a few of the innovative ideas proposed in a new initiative on the geosciences.

The goal is to focus research and development efforts over the seven-year National Development Plan 2007-2013. But it is also meant to highlight the importance of Ireland's geoscience sector, says Dr Peadar McArdle, the director of the Geological Survey of Ireland.

Launched last week by the Minister for Communications, Marine and Natural Resources, Noel Dempsey, the joint document prepared by the GSI and the Royal Irish Academy notes the high value of the geoscience sector on this island.

The sector includes natural resources such as gas, but also aggregates used for building, quarried stone, advanced geotechnical services, building materials, and research.

"The reality is geoscience actually has a very significant role in the economy. The industry is worth €2 billion a year to the Irish economy," explains McArdle, who is also a member of the Academy's Committee for the Geosciences.

The GSI and the RIA decided to develop a "coherent vision" of the current and future role of the sector given the first major State funding designated for geoscience.

The NDP provided €33 million and at the launch the Minister announced a further €10 million for a new research initiative called the Griffith Geoscience Research Awards Scheme.

The document, Putting Our Knowledge of the Earth to Work for Ireland, highlights four key areas, energy, environment, marine and infrastructure. It suggests how these four can be pursued in the context of research and economic development and "to make the case we really can have a national impact in these areas", says Dr McArdle.

It proposes a comprehensive evaluation of our potential geothermal energy resources with an all island study to depths of up to five kilometres.

It argues for a study of offshore deep geology to promote the development of oil and gas reserves.

There are a range of issues considered under the environment including a close look at "the potential for storing carbon permanently in deep geological structures", he says. "It would be a major contribution to our Kyoto obligations."

Ground water supplies are another consideration and threats to them posed by climate change. Some parts of the country are highly dependent on ground water supplies.

"They are vulnerable in some areas," he says, for example to sea water incursion into a coastal aquifer due to over exploitation.

Research collaboration is an important part of the document, which describes joint research activities involving bodies such as Met Éireann and the Marine Institute.

For example, the Institute will join with the Survey in new and more detailed studies of inshore geology.

These will match up with existing deep seabed surveys conducted by the Institute over the past few years, says Dr McArdle.

These surveys would also help support maritime safety, for example, by mapping shifting sand banks. Assessments of these banks could provide new sources of aggregates or sites for new wind farms as have been built off the Arklow coast.

Experts in the geosciences already provide geological studies for city planners, road construction and aggregate retrieval, which support Ireland's infrastructure development.

But the document also argues for the development of high-resolution monitoring networks for natural hazards such as landslides, urban subsidence, tsunamis and indoor radon.

Tsunamis may seem a remote threat given our distance from seismic hot-spots. Yet the threat is real and there is ample evidence of past tsunami events.