

Belgium reveals artificial island plan for wind energy

January 20 2013, by Nancy Owano

(Phys.org)—Belgium is to build an artificial island made of sand three km off the Belgian coast. This will be a doughnut-shaped structure designed to store wind energy once the plan gets a final go-ahead. This North Sea island would work as an offshore substation; it would take five years or more to build. The plan was announced earlier this week in a presentation at the port of Zeebrugge by Johan Vande Lanotte, Belgium's North Sea minister.

The initiative is best understood in the light of Belgium's experience with [nuclear power](#) and energy needs.

In 2011, around 57 percent of Belgium's energy came from nuclear power but, as with other countries with a heightened awareness of risks post-[Fukushima](#), envisions an exit from nuclear power as soon as enough energy from alternative sources becomes available, according to Reuters.

Also, Belgium's nuclear power operator shut down reactors last year in order to investigate cracks found. The potential cracks were found in inspections last year at the base of the [reactor vessel](#) at Doel 3, near Antwerp, and at Tihange 2, near Liege. Earlier this month, there were reports of a restart of the two Belgian nuclear power plants, but the nuclear regulator this month said that it wanted more information before it could make a final [decision](#) on whether to restart the two reactors,

Meanwhile, a study, commissioned by the Green Party group in the [European Parliament](#) said that: "A possible failure of the reactor due to

sudden crack growth in case of local thermal stresses cannot be excluded and would have catastrophic consequences." The [study](#) said that restarting the two [nuclear power plants](#) shut since the discovery of micro-cracks in their reactor vessels could be a hazardous move.

If the artificial island goes to plan, Belgium could generate 2,300 MW from its network of North Sea [wind farms](#), replacing a significant part of either of its two nuclear sites, Doel and Tihange.

Belgium has lots of energy from the wind mills, said a government spokesperson, but it can get lost during periods of low demand; insufficient ways to store the wind power have been a problem, and wind power in turn has been an inferior alternative to nuclear and fossil fuel. A donut-shaped artificial island could efficiently store energy when demand would exceed supply. The water would be let back into the reservoir through turbines, regenerating the electricity to be sent back to the mainland.

Belgium only produces about four percent of its energy from wind power, but the European [Wind Energy](#) Association predicted that Belgium could expand capacity to over 4,000 megawatts by 2020.

More information: www.reuters.com/article/2013/01/20/us-belgium-artificial-island-energy-idUSL6N0AM7GU20130117
phys.org/news/2013-01-experts-belgian-nuclear.html

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