



# Wales lures green firms

## Former coal mining nation positions itself as a renewable energy power

By JANE WARDELL  
ASSOCIATED PRESS

### Wales is "committed to the renewables goal."

DAVID JONES, vice president of International Business Wales

MILFORD HAVEN, Wales — Blustery winds threaten to topple Iain Russell off the dock into the narrow stretch of water connecting the Irish Sea and the Atlantic Ocean.

But those gusts are a key reason his company, Wave Dragon Ltd., plans to anchor the world's largest wave energy converter several miles out to sea off this small town on the southwestern Welsh coast.

More than a century after the industrial revolution's coal mines and steel works turned Wales' lush green valleys into stark black hills, the strong winds that batter its coastline are playing a major part in the local government's plan to turn the country green again.

By 2025, Wales wants to generate all its electricity from renewable sources and even become a net exporter of power.

Wales is betting that two huge projects — a \$30-billion tidal barrage in the Severn Estuary and the largest biomass plant in the world in Port Talbot — will produce most of the electricity needed to reach its 2025 target.

For the rest, the local government is hoping that its natural winds, streamlined bureaucracy, access to skilled labor, proximity to universities and government funding will prove enticing to companies in both the renewables and clean technology sectors.

Going green could make or break Wales following the death of the mining industry in the 1980s. While Cardiff has blossomed from a provincial city into a significant capital in recent years under a retail- and services-led boom, rural Wales has limped along on tourism and agriculture.

A parade of companies deciding to make products from cars to cell phone chargers in Wales shows that the strategy is paying off.

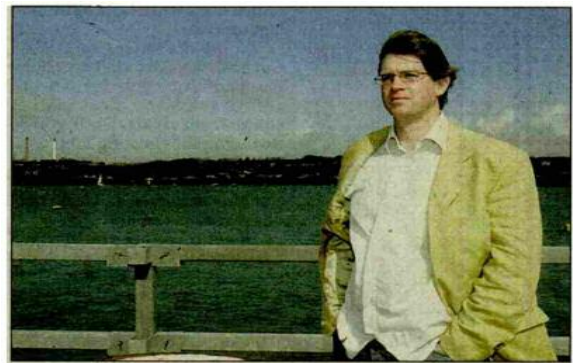
Wave Dragon was encouraged to move its headquarters from Denmark to Wales in part by a \$10-million grant from the Welsh European Funding Office.

"The funding dried up in Denmark, so we started looking elsewhere," said Russell. "We also discovered how much more wave energy there is here than in the North Sea."

The company plans to locate its wave energy converter about 2 miles to 3 miles off the Welsh coast for testing over three to five years. The barge produces electricity directly from the power of the water by first enhancing, then pulling in oncoming waves to turbines in the bottom of the structure.

Russell said that the project could produce enough electricity each year during the testing phase to meet the demands of between 2,500 and 2,000 homes.

The company hopes to



Iain Russell, British manager of Wave Dragon Wales Ltd., plans to build the world's largest wave-energy converter off the Welsh coast.

eventually sink around 10 of the structures some 10 miles to 12 miles out to sea to form Britain's first commercial wave energy farm — but the plan is dependent on nearly \$71 million of extra funding Wave Dragon is seeking from private sources.

Wales' government is "very committed to the renewables goal, but we need the cutting-edge technologies that the private sector can offer," said David Jones, vice president of International Business Wales, the trade and investment arm of the Welsh Assembly.

Mining, once a mainstay of the economy, is no longer a major source of revenue or employment in Wales. The economy is now underpinned largely by the services and production industries. Agriculture, forestry and fishing also contribute to a lesser degree.

In 1979, Wales' gross domestic product was 93% of the British average. That has since fallen to 77%. Over the same period, Ireland — the so-called Celtic tiger — has seen its GDP go from 60% of the British average to 104% because of low corporate tax, investment in higher education and EU membership.

Wales hopes to emulate that success with its state funding for renewables and clean technology.

On the outskirts of Cardiff, where G24 Innovations makes silicon-free thin film solar cells to charge mobile phones, the company is planning to install a massive wind turbine in its parking lot later this year.

That will enable the factory to run on renewable energy and eventually sell electricity back to the grid — making it one of the first factories in the world to use renewable energy to make a renewable product.

G24 is initially targeting the African and Indian markets, where mobile phone penetration is growing but electricity grids are in short supply. The company already has a contract with Vodacom in Tanzania, Lesotho and Kenya.

