

Could carbon capture replace cuts?

By Dominic Laurie

Europe business reporter, BBC News, Norway

If there's a country that's really made the most of its fossil fuel resources, Norway is a good candidate for the prize.

Proceeds from its energy industry fund world-leading healthcare and welfare systems.

They have also created the second-biggest sovereign wealth fund in the world.

But there is a snag.

Rising emissions from oil and gas rigs, and from onshore power plants, sit uncomfortably with Norway's sense of itself as a country with a green conscience.

Its ambition is to be a carbon neutral nation in just 22 years' time.

Drill a well

Hard to be green and rich, you might think. But Norway's leaders insist they can achieve it, largely because they are planning to capture carbon as it is released, then store it under the seabed.

Carbon capture and storage, alongside carbon trading schemes, should be a major weapon in the European Commission's arsenal as it sets out to ensure emissions are cut by 20% by 2020 from what they were in 1990.

Norway, outside the European Union but nevertheless covered by all its climate change mechanism, has been doing it for more than a decade at the Sleipner rig in the North Sea.

"The gas in the Sleipner west field has 9% carbon dioxide," explains Helge Smaamo, who manages the rig for the Norwegian energy giant Statoil.

"We have to get that down to 2%, because gas burns much better at 2% than at 9%, so we separate a lot of it out by chemical processes.

"We then absorb the gas, put it under huge pressure and inject it under the seabed by drilling a well."

Delayed project

Now an international race is on to do the same for onshore power plants.

This is more difficult, although finding a way to capture the emissions created by burning oil, coal and gas for energy could offer a huge prize, in the form of billion-dollar contracts worldwide.

Until recently, Norway seemed to be in pole position.

The plan had been to open a test facility in 2010 at a proposed gas plant on the west coast and a full-scale version would follow four years later.

It would be built alongside Norway's dirtiest oil refinery at Mongstad - amazingly tucked in between a sapphire-blue fjord and the white snow-covered mountains.

But the site remains just a pile of rubble at present. The energy companies backing the project prompted a one-year delay when they recently failed to commit the required funds.

Political risks

And they are not the only ones not quite sold on the technology.

Environmental campaigners Greenpeace also have doubts.

"We have concerns about leakage - either slow leakage or catastrophic abrupt releases of carbon dioxide," explains Greenpeace's EU policy director for climate and energy, Mahi Sideridou.

"There are the uncertainties, too, about availability and about cost.

"But there's also the political risk being posed, that if you give financial and political priority to carbon capture and storage, you're not giving as much emphasis to the real solutions on the table like energy efficiency and renewable energy."

Vital technology

There are sceptics and procrastinators, but there are also former doubting Thomases who are now discovering the faith.

For many years, the UK government was not that sold on carbon capture.

However, in the last few weeks, it has announced that it will fund the total set-up costs of a UK-based project to capture and store emissions from a coal plant.

"It's not just another technology," says UK energy minister Malcolm Wicks. "This is absolutely vital.

"The world will be burning fossil fuels - oil, gas, coal - for 100 or more years.

"Unless we can find ways of capturing that carbon dioxide, all is lost."

The UK government still will not say how much money it is offering to the winner.

As with Norway, money is turning out to be a bit of a dirty word in the world of carbon capture.

The EU Commission's green energy announcements this week could change that.

A higher price on carbon, via a stiffer emissions trading scheme, could make these schemes look much more financially attractive.

Signals that governments could give more state aid to these projects will also help more of them get off the ground.

If those guarantees do not come, then a full-scale facility at a fossil fuel power plant in Europe will remain the stuff of Norwegian fairy tales.