

# Polluter Shell paid for CO2 storage in Dutch town of Barendrecht

by Adelei van der Velden  
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by Adelei van der Velden, freelance journalist

“If they will really follow through on this ridiculous plan, I will definitely move,” says Anne[1]. She is one of the many angry inhabitants of Barendrecht, a Dutch village at some 15 minutes by train to Rotterdam, Europe’s largest harbour. She’s angry because a project is planned to store CO2 in empty gas fields under her hometown of Barendrecht. In the Netherlands the technique is already applied off-shore. Two projects are now initiated under mainland territory, one in the populated area of Barendrecht, the other in an industrial site at Geleen in the southern province of Limburg.

Imagine a friendly residential neighbourhood with 7500 houses built in recent years.[2] Housing here is of high quality. Some of these trendy dwellings actually look like smaller copies of lighthouses and stand at waterfronts. Others have backyards lying along ditches and roofs with very exceptionally large eaves. For obvious reasons these carefully designed neighbourhoods are highly popular among Dutch middle-class families.

Rotterdam and the small town of Barendrecht are in the most densely populated area of Western Europe. This agglomeration of cities is intersected by busy road and railway infrastructure, including several airports, has a vast area of petrochemical industry, steel factories, power stations, two nuclear plants, major facilities for industrial horticulture and a population of 7,5 million inhabitants on a surface of 8923 km<sup>2</sup>.

Since World War II the Netherlands has known a chronic shortage in housing. This shortage made real estate prices rise for decades, but in Barendrecht they are falling. Here downturn in property value is not due to the credit crisis, which by the way did hit Dutch construction industry hard.

It is caused by what the government considers a suitable way to reduce carbon dioxide: storage in two empty gas fields. This is how Royal Dutch Shell wants to get rid of CO2 produced at one of its oil refineries in the harbour of Rotterdam. The project is partnered by NAM, another major producer of natural oil and gas in the Netherlands.

Shell and NAM want to store about 10 million tons of carbon dioxide at a depth of 1700 and 2700 meter under Barendrecht. It will be transported through a pipeline of 17 km (10,5 mile), which on two locations reaches protected natural reserves at a distance of only 200 meters.

The empty gas fields under Barendrecht - in fact layers of porous rock - will be filled one after the other, the first project starting in 2011 and taking three years. The second field would be filled from 2015 and will take 25 years.

CCS in Barendrecht is only one of two CCS initiatives in the Netherlands. The other one is planned for Geleen where the French company GTI GDF Suez starts drilling this year to store CO2 under ammonia production plants, owned by the multinational DSM and distanced at 1 km from residential districts.[3] Remarkably, no one has protested in Geleen. The

Dutch plans are part of a larger initiative by the European Union to create 12 large CCS projects in different European countries.

“Why does it have to happen in populated areas of our hometown?”, citizens in Barendrecht want to know. CCS is advertised by Shell as a clean technology, and this is precisely why many in Barendrecht and the adjacent villages of Ridderkerk and Rhoon are opposed to it: they just don’t buy it.

“All proof of safety with CCS is theoretical,” says British journalist Oscar Reyes, specialized in environmental issues and staff member of the Transnational Institute in Amsterdam. Cees van den Akker, professor emeritus of Delft University in hydrology, gave the same warning in February 2009, while pointing to a study published in 2007 by Dutch governmental groups which stated that the technique is not ready to apply in populated areas.

Protesters in Barendrecht, who repeatedly took to the streets and posed formal objections, succeeded in gaining the support of a variety of political parties, ranging from the green party GroenLinks to the mildly conservative party of Christian democrats, CDA. Last June, after a year of hesitation, the local government also decided to support the citizens opposition. It’s main objection to CCS: no experience with other CCS projects is fully comparable with the one envisaged for Barendrecht.

According to Dutch administrative law, it is up to the local government to establish and modify zoning schemes and approve industrial constructing. This might have posed a complicating factor in the political process for the Secretary of Environment Jacqueline Cramer.

Cramer however, together with her colleague Maria van der Hoeven, the Dutch Secretary of Economic Affairs, has taken precautionary measures. A special settlement was drafted, the so-called “Rijkscoördinatie-regeling” (State Coordination Settlement), granting any Secretary the legal power to overrule decisions made by lower administrative levels. This settlement has been approved by parliament on March 1, a story that went totally unreported by Dutch media.

A mandatory Environmental Impact Report (MER) was published on April 22.[4] The MER-committee who drafted the report, consisted largely of representatives with vested interest in the project, like Shell, NAM and others. Cramer however, as is expected, will use the MER to argue that Barendrecht has nothing to fear.

The MER claims CCS to be safe, reliable and effective. CO2 in dry form contains only 1% of methane and nitrogen, according to Shell, and risks of a sudden blow-out of concentrated CO2 would be minimal, with the chance of a mortal accident of less than 1/1.000.000. A maximum possible elevation of the soil by 2 cm could occur, writes the committee, but would not lead to noticeable environmental effects.

“On a visit to Barendrecht,” says Anne, “one member of the MER committee told us off the record that in other CCS projects monitoring has never really taken place. If you look critical into the information supplied by Shell, you can only conclude one thing. This project is just another way to cash in on the demands by the European Union to reduce CO2 at our cost and that of future generations. It will not bring any fundamental change in the way factories produce. This is a negative incentive, avoiding the essential questions about CO2 production and how to tackle it at its roots.”

In a first statement on the MER the city council pointed out that the most important problems pertaining to safety and the political process, have not been studied or dealt with by the committee. The council warns against overruling the local government's decision by use of the State Coordination Settlement, fearing this will lead to even more opposition among its citizens. It will publish a more elaborate comment in June. After the summer the final decision by Dutch government is expected.

Shell meanwhile, has already been granted a subsidy of 30 million euros (almost 40 million dollars) by the Dutch government, thus reversing the long advocated principle of "the polluter pays" in its opposite of "the polluter is paid". Another thorn in the flesh of the people in Barendrecht.

Dutch environmental groups have warned CCS is not only a costly diversion: it is estimated to cost between 60 and 90 euros per ton. A coal plant of 1000 MW produces about 5 million tons of CO<sub>2</sub> annually. Catching CO<sub>2</sub> before leaving the production facility, reduces effectivity of the production process by 15-30%.

Transport and storage in other less populated areas would make the technique even more expensive. In fact the people at Barendrecht refuse to pay for being on top of an empty gas field close enough to Shell's petrochemical plants.

Political and financial stakes are high. Constructing a pipeline to conduct CO<sub>2</sub> to Barendrecht is very important for Shell and NAM, as they plan to continue building a network of pipelines for carbon dioxide transport under other parts of the Netherlands, connecting plants and storage fields off the coast of Amsterdam and Rotterdam. A next step would be to link up with capture sites in the northern provinces of the Netherlands and Germany.

If Cramer will eventually use the State Coordination Settlement, is nevertheless doubted by many. If anything is typical of Dutch political culture, it is compromise. By tradition the Netherlands has a multi-party system leading to coalition governments, who depend for their longevity on carefully balanced wheeling and dealing between parties. For the people in Barendrecht much will depend on support from national environmental groups and the quality of the backbones of local politicians.

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[1] In order to protect the privacy of the inhabitants the one name used here is fictitious.

[2] A presentation with pictures of this neighbourhood can be found at <http://www.barendrechtarnisselande.nl/>.

[3] An image can be found at [http://www.gti.nl/images/content\\_pictures/afbeelding-co2-opslag-groot.jpg](http://www.gti.nl/images/content_pictures/afbeelding-co2-opslag-groot.jpg) . For further information, see <http://www.gti.nl/en/news/gti-wins-co2-storage-at-dsm>.

[4] Summary Environmental Impact Assessment: Underground storage of CO<sub>2</sub> in Barendrecht (in English):Â [http://www-static.shell.com/static/nld/downloads/co2/engelstalige\\_mer\\_summary.pdf](http://www-static.shell.com/static/nld/downloads/co2/engelstalige_mer_summary.pdf).

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