

English version

Re-use & decommissioning report

Glossary with icons



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Decommissioning of offshore installations takes several years, because the wells are first permanently abandoned. Firstly, the wells are plugged and the pipelines for the process installations are depressurised. In most cases, the topsides and pipelines will then be cleaned. Next, the subsea installations and the topsides can then be removed.



Stand-alone wells

These are wells that were used in the past for exploration and that have not yet been completely decommissioned.



Platform wells

These are wells that are accessible from an installation above the surface.



Subsea installation wells

Wells for which the installations and infrastructure are on the sea bed while the controls are managed from the main platform.

1.1 Methods for decommissioning offshore wells



Ship

A ship with a drilling installation which uses an anchor or dynamic positioning to stay in place can conduct decommissioning activities.



Rigless

Decommissioning by using the crane present at the platform.



Jack-up rig A floating drilling platform with jackup legs. The drilling installation is positioned over the existing platform.

2 Offshore installations

During the construction of the installations in the North Sea, the topsides were fitted using crane vessels. At the time, these ships did not have the capacity that modern ships have, so that older topsides were fitted in separate modules. When removing these topsides, it will have to be done in reverse order. This is why the choice of the crane vessel is based on the heaviest module on the platform.

Because Dutch offshore installations are relatively small and light, a larger section of the crane fleet will be available for decommissioning

operations. It is also worth noting here that the same fleet is also used for the construction of wind farms, for example. Good planning and cooperation with other operators and the builders of wind farms will be necessary.

Dutch offshore installations are almost always made of steel. This means that in the next ten years, 300.000 tonnes of steel will be brought to shore. An estimated 95% of this will be recycled.



Subsea installation

Equipment on the sea bed connected to subsea well(s) or part of pipelines.



Satellite platform

Mostly unmanned installations with wells connected to the main platform by pipelines.



Main platform

Manned platform which in most cases also has a gas treatment facility, a compressor station and accommodation for employees.

3 Offshore pipelines

Offshore pipelines can be divided into interfield, intrafield and trunk pipelines. The trunk pipelines will remain in operation until the last connected field ceases production.



Umbilical

An outer pipeline containing several smaller lines for liquids and cables.



Intrafield

Often smaller pipelines between the installations at a single field. These pipelines are sometimes also used to transport liquids used during production. The diameter varies between 5 and 15 centimeters for liquid pipelines and 15 to 25 centimeters for gas pipelines.



Interfield

Pipelines between the various fields and blocks, from 5 to 20 kilometers long, that transport hydrocarbons to another platform for processing and ultimately transport the product to shore.



Trunkline

Large pipeline that transports hydrocarbons from a main platform to shore. These pipelines can be more than 150 kilometers long and often have a large diameter of about 70 to 122 centimetres. Pipelines of this type are often shared with other main platforms that are connected to it.

4 Onshore locations

The onshore pipelines are usually located underground. Just like offshore pipelines, we can make a distinction between inter- and intrafield pipelines. The first category will be decommissioned if production from the related field stops. The second category remains in operation until the last connected field ceases production. The pipelines will become available for possible re-use once the transport of gas has finished. If it is not clear whether re-use will be possible, they could be temporarily preserved. If ultimately, re-use is not possible, the pipelines will be decommissioned in consultation with local stakeholders. Depending on the specific circumstances, this could vary from leaving in place to complete removal.



Compression installation

A compressor is used to pressurise gas for transport to and within the Gasunie network. The national gas grid is kept at high pressure in the main pipes, approximately 70 bar, to help prevent energy losses during transport.

Metering installation

An installation where the volume of hydrocarbons is measured, often just before transfer to another party, such as Gasunie, or for transport by water or via pipeline to a refinery for further processing and sale.



Processing installation

An installation where gas or oil are separated, purified and dried before sale.



Injection station

A location where fluids are pumped into the deep subsoil. This may concern the injection of gases and liquids. In many cases, however, it concerns produced water injection. Produced water is water that comes up during the production of oil and gas. After separation of usable profitable substances, the water is injected back into the deep subsoi



Scraper station

A location with an inlet connection to a pipeline where a scraper or inline inspection tool can be launched in the pipeline for the cleaning or inspection of the pipeline. In many cases, this facility is already built into the processing installation, but sometimes it is at a separate location in the field, for example, in oil systems where there is a lot of wax deposits in the pipeline. The scraper station prevents pipelines from clogging up. Furthermore, these set-ups are used to launch and re-capture inspection equipment to detect possible damage to the pipelines.



A large number of wells, platforms and pipelines are approaching the end of their economic life. This means installations that can be reused will become available and can therefore make a contribution to the energy transition in the Netherlands. For this reason, it is important to map out now which installations are suitable for re-use and which options are most feasible.





Carbon capture and storage

Dutch offshore gas fields have the potential to store more than 1.600 million tonnes of CO_2 . 30 to 50 platforms and reservoirs, and a large number of pipelines are suitable for storing CO_2 in these gas fields. Combined with the relative density of heavy industry along the coast, this means that the Netherlands could reduce its greenhouse gas emissions more quickly and meet its climate objective.



Geothermal energy

Of the 500 onshore oil and gas locations, 120 have the potential for geothermal energy. Geothermal energy is seen as one of the solutions for heating the built environment, greenhouse horticulture and light industry.



Hydrogen production

Converting wind energy to hydrogen has two benefits. The transport of energy in the form of molecules is more efficient and therefore more cost-effective than in the form of electrons. What's more, wind energy can be stored as hydrogen when supply exceeds demand.



Offshore electrification

Electrification of centrally located platforms is absolutely essential for offshore carbon storage and hydrogen production. A non-electrified platform will have no energy supply of its own once gas production ends. Furthermore, electrification of the ten largest platforms results in an immediate reduction of 0.5 to 1 million tonnes of CO_2 per year.