

## Re-use & Decommissioning hand-out

The power of collaboration

2022

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## Preface



**Jacqueline Vaessen**  
General Manager  
Nexstep

I am honoured to write the preface to the fifth Re-use and Decommissioning handout, which I consider quite a festive moment. Unfortunately, circumstances in the world are not all festive. After being released from most of the COVID-19 restrictions and getting ready for return to a 'new normal', the world was shocked by the Russian invasion of Ukraine. This war affects us all, mostly of course all the victims of the war in Ukraine, but we feel it in the entire world, for example in the tremendous increase in prices for oil and gas. It once again stresses the importance of domestic oil and gas production, therefore exploration and production in the North Sea will remain important for our energy mix.

This handout gives an overview of the oil and gas infrastructure that is forecasted to be decommissioned during the next decade. Looking into the future, we once again see a slight shift of decommissioning. This can be explained by the difficult years 2020 and 2021, with extremely low prices, the COVID-19 pandemic, and the problems with restrictions on emissions of nitrogen-based compounds which delayed or restricted decommissioning activities. We do however see a transformation in this pattern. In 2022 several decommissioning activities are taking place and we will highlight some of them in this report.

I am happy that after years of preparation the joint campaign contract for decommissioning of Mud Line Suspension wells has been awarded in January this year. This is a major achievement for Nexstep and a breakthrough being the first project worldwide in which so many operators will jointly decommission wells. It is

## Collaboration became the guiding principle for our activities within Nexstep

a perfect example of Nexstep's role in facilitating and stimulating effective and good value decommissioning. I am grateful to everyone who worked so hard to make this possible.

The title of this handout is "The power of collaboration" and the joint campaign is an excellent example of this. Collaboration became the guiding principle for our activities within Nexstep. And we have shaped that collaboration in many ways; in our collaboration with the heavy lifters that led to the portal, in the joint trials for Through Tubing Cementation, in the joint search for the hydrogen pilot, in the collaboration with NOGAT and NGT for the comparative assessment et cetera. Since the beginning of Nexstep we have organised shared learning sessions and the database now contains over 350 learnings. Shared learnings are a valuable asset to the industry, but it would be even better if we could incorporate lessons learnt in a decommissioning project still in preparation. Therefore we started the Peer Assist initiative. You can read all about it in this report. It promises to be a valuable tool.

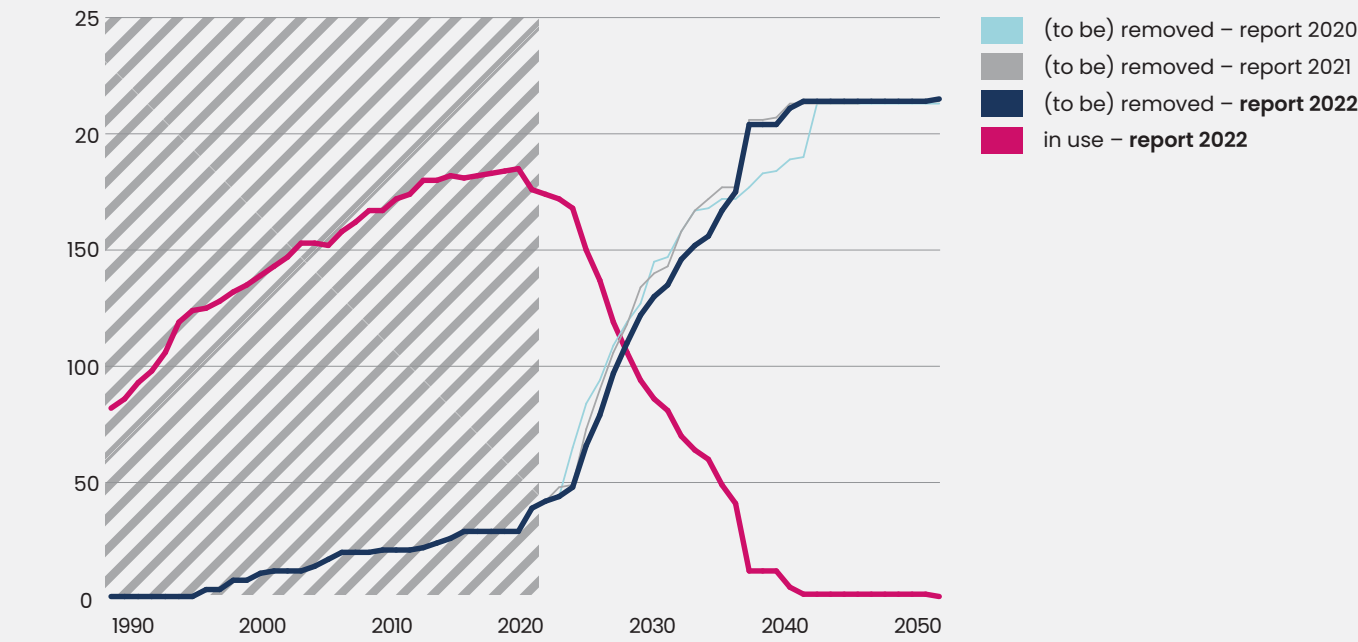
This is the last time I will be writing this preface, as I will be leaving Nexstep after the handout of this report. Looking back on the past four and a half years I can say that we have come a long way. So many achievements, and we achieved that all together! Thanks to everyone I have worked with in the past years and who helped bring Nexstep to where it is today. I feel confident that Nexstep will thrive in the years to come, and I will be following it closely.

I would like to refer to our fifth Re-use and Decommissioning report, which can be found at [www.nexstep.nl](http://www.nexstep.nl)

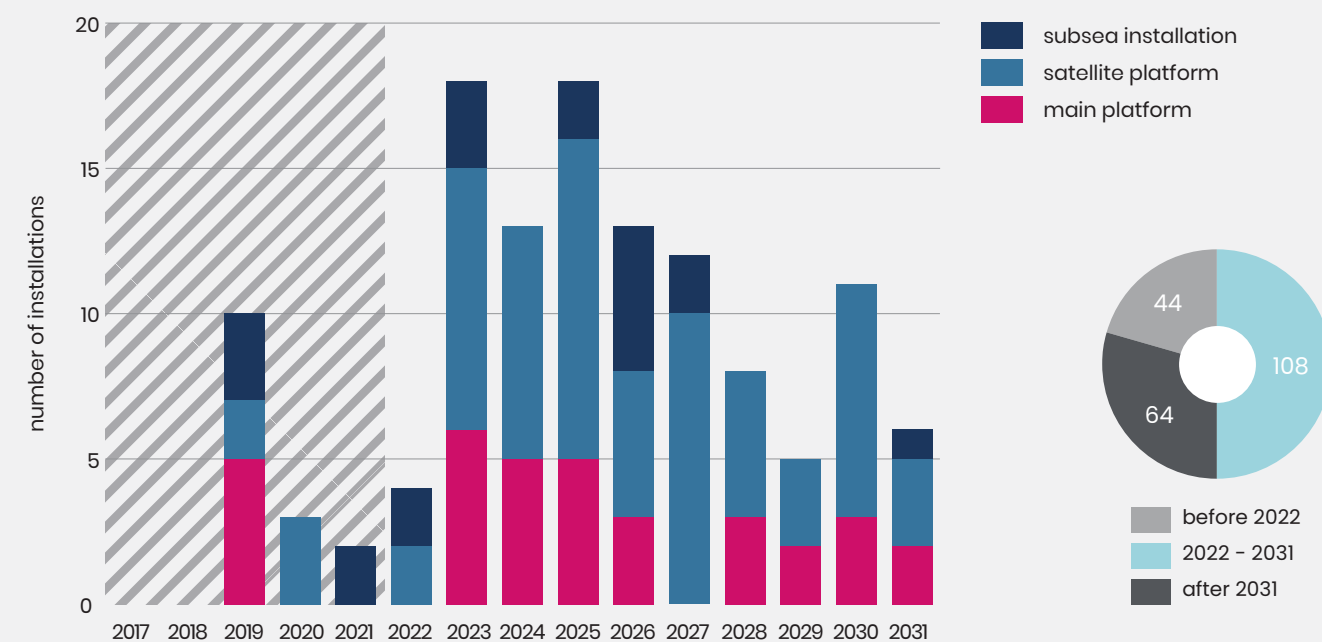
## Key figures

Each year we see a further delay in the forecasted decommissioning offshore. This may be expected to continue with the upturn of offshore development following the current focus on security of supply and the high prices for oil and gas. The low activity level since 2019 is nevertheless expected to be followed with an increase in decommissioning activity as operators are currently tendering and awarding contracts for removal of several installations as part of a larger campaign.

Number of installed and removed offshore installations

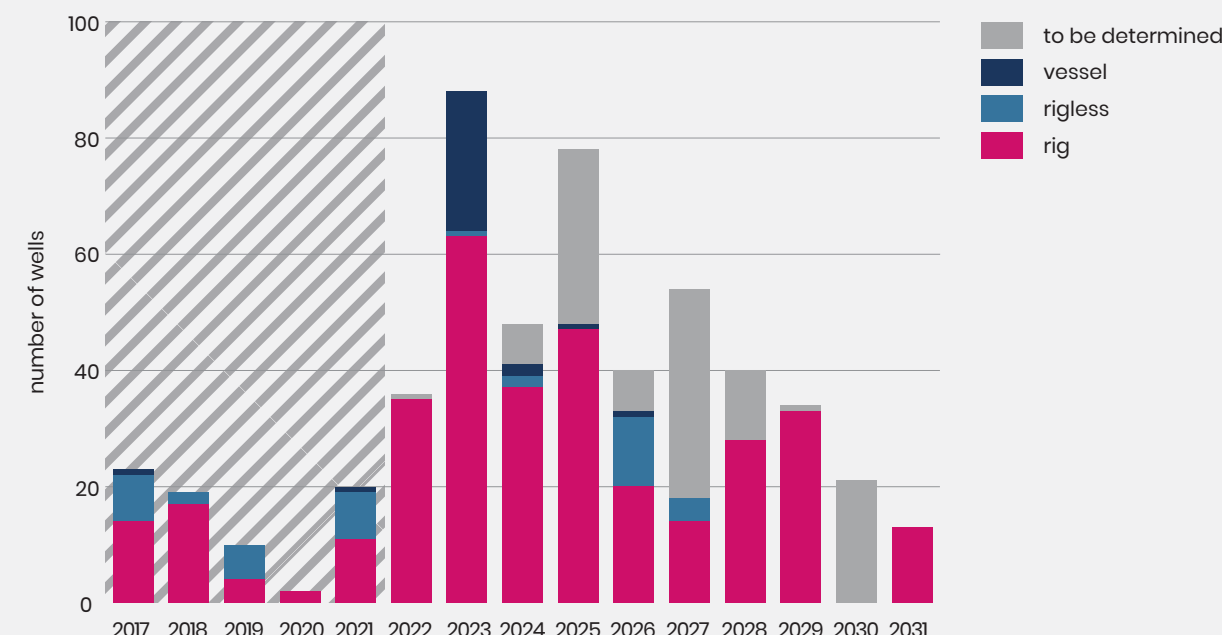


Realised and forecasted decommissioning – offshore installations by type



In April 2022 the first joint campaign for mudline suspension wells was launched with an underwater survey of 44 wells and the surrounding seabed. The decommissioning of at least 24 of these wells is planned for 2023 and will be executed using a vessel instead of a jack-up rig, as the work scope is relatively limited. The campaign is a joint effort initiated by Nexstep, and involves operators NAM, Neptune Energy, TotalEnergies, Wintershall Noordzee, Petrogas and ONE-Dyas.

Realised and forecasted decommissioning – offshore wells by decommissioning method



## Interview



**Hans Vijlbrief**  
Secretary of State  
for Mining

**You have recently been appointed as Secretary of State for Mining. How did you become aware of Nexstep's activities?**

"I have been updated about Nexstep and am impressed by the possibilities of reusing existing infrastructure and using it for the energy transition."

**What do you find most surprising about Nexstep?**

"How quickly Nexstep has come to concrete projects and results. Nexstep has put the opportunities for reuse and abandonment on the map."

**The title of this report is "The power of collaboration". In January 2022 the first joint campaign for abandoning wells has been awarded. Do you see more opportunities for collaboration?**

"This campaign will lead to substantial reductions in abandonment costs of wells due to the fact that collaboration between operators is stimulated. It is great that this is the worldwide first campaign with so many operators. And, as a country, we are showing that it can and should be improved. We should also try to apply this collaboration in other fields, such as CO<sub>2</sub> storage and hydrogen production and transport."

**Sometimes there is a gap between the time infrastructure becomes obsolete and the timing of possible reuse. The current Mining Act is supporting this, but in the public opinion it is often viewed as a way to postpone decommissioning. What is your vision on that?**

"That certainly is a point of attention. The scope of the Mining Act is to stimulate re-use and in no way giving the possibility to get out of the clearance obligation."

## Nexstep has put the opportunities for re-use and abandonment on the map

We will investigate the potential of reusing existing mining locations and infrastructure, onshore as well as offshore. In this way we want to gain insight into the technical and economic feasibility of re-use and how it can contribute to making gas infrastructure more sustainable, by using it for green gas and hydrogen."

**How do you see the future of the gas industry?**

"The coming years we will still need natural gas. That is why we will continue to extract gas from the small fields in the Netherlands, but only if that can be done in a safe and responsible way. At the same time, we want to make the gas value chain more sustainable by scaling up the production of green gas and hydrogen. The knowledge and skills of the employees in the gas sector can be used to accelerate the transition to sustainable heat and to be able to store CO<sub>2</sub>."

**What do you think is the added value of Nexstep?**

"Nexstep can bring relevant parties in the gas sector together and facilitate good collaboration between them. We don't have much time to realize the energy transition, so if Nexstep can provide acceleration and a more efficient deployment of resources, this is an enormous added value."

**How do you see Nexstep's role in the future? Where do you see the biggest opportunities for Nexstep?**

"Nexstep can play an important role in providing a sustainable repurposing of existing infrastructure. In case infrastructure turns out to be superfluous, Nexstep can help to remove it as efficiently as possible."





## Overview of achievements in five-year Nexstep

### Public face of decommissioning

When Nexstep was set-up one of its tasks was to become the public face of decommissioning. We did that by giving presentations on various conferences all over Europe. We issued our yearly re-use & decommissioning report which makes the planning of decommissioning transparent, but also contains interviews and articles that highlight various decommissioning and re-use projects. In June 2019 Dutch national television (Nieuwsuur) broadcasted on the relocation of E18-A to D12-B with spectacular footage, really putting decommissioning in the spotlight. In October 2019, Nexstep received the



Offshore Energy Public Outreach award, a recognition for all our efforts to put decommissioning on the map.

### Standard 45

Legislation and the current state of the art were not well aligned in wells decommissioning. Nexstep set up a working group that has adapted the Mining Regulation in this area into unambiguous regulations and that has become more effective. It led to industry Standard 45. Standard 45 describes many special situations that were previously unclear; after all, the reality is multi-colored, and each well is unique. The goal is always to put every well out of use as effectively and sustainably as possible. Thanks to the new industry Standard 45, Nexstep has created a sector-wide structure that is ready for the future. The approach is now also comparable to those in other North Sea countries.

### Joint Campaign

Collaboration in decommissioning of wells can lead to a substantial reduction of costs. Nexstep started on joint decommissioning of Mud Line Suspensions (MLS wells), which have been drilled for exploration purposes but never made it to a production well. A total of 40 wells were considered suitable for a vessel based decommissioning campaign. In 2021 the tender was released to a list of selected bidders. Early 2022 the campaign was awarded to Oceaneering.

### Shared Learnings



Ever since the start of Nexstep, shared learning sessions have been held, in which operators present lessons learnt from a recent decommissioning project. At the moment, the database contains over 350 learnings, and Nexstep community members are actively encouraged to use them. Shared learnings have proved their added value to the Nexstep community, however we wanted to incorporate learnings in decommissioning projects still in preparation. In 2021 we organised the first Peer Assist, in which experienced decommissioning managers reflected on a project in preparation by Total Energies. It proved to be a success with over one hundred recommendations made. In 2022 two more Peer Assists have been organized, and more will follow!

### Comparative assessment

The current Mining Act states that an offshore pipeline can be left in place, unless the Minister of Economic Affairs and Climate Policy determines that it must be removed. It was crucial for the oil and gas sector to develop a methodology to determine the decommissioning requirements for pipelines. The Comparative Assessment (CA) method developed by Nexstep is a structured approach to determine for each pipeline (or part thereof) whether it should be removed or can be left in place based on several criteria. The framework provides a roadmap (method) and script for the operator to answer this question for a to-be-decommissioned pipeline based on a societal cost/benefit analysis. With this framework, the sector can deal with the decommissioning of pipelines, and every operator can use this information for internal decision making for pipeline



decommissioning policy in an unambiguous, traceable, comparable and transparent manner.

### Through tubing cementation

Through tubing cementation (TTC) is a widely used abandonment technique for abandoning wells in the UK and elsewhere but is not a common technique in the Netherlands. It involves using the production tubing to easily put cement columns in the well. This technique is more efficient and safer, and it reduces waste and emissions. Under suitable conditions, it can be performed without a drilling rig. It will contribute greatly to the Road to 30%, while fulfilling Nexstep's HSE goals.

In 2021, two TTC field trials have been jointly funded by Nexstep members and performed on land by NAM. The trials were successful, and the results have been documented and shared with Nexstep members and State Supervision of Mines (SSM). The joint funding by Nexstep and sharing the results amongst members, proved to be a very efficient way of taking a step forward in getting this technique approved in the Netherlands.

## The Power of Collaboration

## Overview of achievements in five-year Nexstep



### Developing an online web portal on facilities removal

Nexstep's Facilities Committee has had a series of consultations with the Dutch heavy lift contractors' community in which the latter indicated that planning is crucial to them. Currently they have no means of access to a detailed decommissioning forecast, and most information is obtained through "word of mouth". An online tool would enable heavy lift contractors to get a better understanding of the upcoming workload in the future. Without disclosing any commercial information and with minimum additional effort, the information provided will keep all parties in the loop and grant the same level of information to removal contractors. This will enable the service industry to identify synergies in decommissioning projects from different operators, resulting in improved efficiency and hence reduction in decommissioning costs.

### PosHYdon

Offshore hydrogen can play an important role in reaching the Paris agreement but has never been tested in a real offshore environment. We decided to investigate the possibility of offshore hydrogen production on a producing platform. In the 3P2GO project, four operators, TNO and Nexstep conducted a feasibility study and Neptune's Q13-A was the most suitable candidate to host the pilot. It was followed up by the PosHYdon project, the world's first offshore green hydrogen pilot on a producing platform.

### An innovative decision-making model for repurpose options of offshore oil and gas infrastructure

In 2020 our graduate intern Dennie Kleijweg finalised his graduation project within Nexstep. His detailed design of a decision-making model for repurpose options of offshore oil and gas infrastructure enables Nexstep to map which oil and gas infrastructure could become available for other uses. During ten years an increasing number of oil and gas fields will reach the end of their economic life in the Netherlands and the wells, platforms and installations will then be decommissioned. In some cases, infrastructure is scheduled to be decommissioned before the options for re-use are available. The model will help Nexstep visualise which offshore platforms may be re-used.

### Decommissioning database offers operators more options

Nexstep's database was set up with the objective to promote cooperation between operators and reducing the costs of decommissioning activities in the North Sea. Operators submit general information about the infrastructure and forecasted timing of its decommissioning. This transparency allows operators to identify opportunities to combine the decommissioning of similar platforms into a joint campaign. The database also contains realised costs of offshore decommissioning activities (from 2015) and the expected costs for future projects, broken down for wells, pipelines and installations. This information is presented through an anonymised cost benchmark available to the Nexstep members.

### Alternative electrification

In 2021 a study was executed on alternative electrification of platforms, carried out by DMEC (Dutch Marine Energy Council). The aim was to find out if electrification of lighthouse mode platforms can be done with marine energy. Marine energy offers important reliability and predictability advantages compared to solar and wind, also during winter months. Unfortunately, the business case for lighthouse mode was not feasible, mainly due to the very low power demand of a light house mode platform. But some very promising techniques were identified. At this moment a pilot is under discussion at a platform in the North Sea.

### Industry-wide meeting on platform electrification

In May 2019 Nexstep organised a workshop on electrification, with TNO, Tennet, and several operators to share knowledge on electrification of offshore platforms. Only one platform is electrified, other operators are involved in studies, but are struggling to complete the business case. According to the Electricity Act, all wind energy, for example, must be brought ashore and emission reductions can only be traded at ETS prices. During the workshop an inventory was made of the stumbling blocks with regard to electrification. Nexstep brought it to the attention of the Ministry of Economic Affairs and Climate Policy in a letter.

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