https://www.og21.no/strategi-og-analyser/og21-strategien-2021/the-need-for-new-technology-to-improve-competitiveness/a-maturing-ncs-with-many-small-discoveries-substantial-resources-in-existing-fields-and-still-the-opportunity-for-large-discoveries/?downloadChapter=true

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OG21 Strategy - A New Chapter

1. Executive summary
2. The future of petroleu in the energy transitio
3. The nee new tec to impro competi
   - 3.1 What m an oil a gas pro compe
   - 3.2 Contin safety improv in a tim chang
   - 3.3 Opera GHG emissi to be reduce
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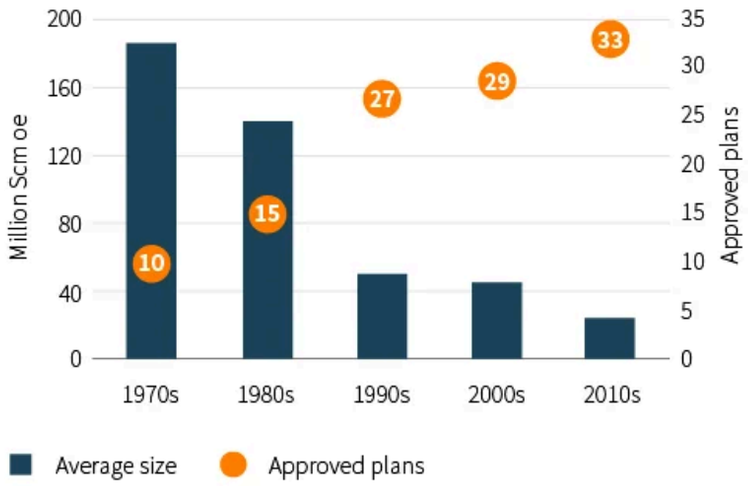
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A maturing NCS with many small discoveries, substantial resources in existing fields and still the opportunity for large discoveries

3.4.1 Many discoveries on the NCS, but the average size is decreasing

The NCS is maturing, which the average field development size per decade from the 70'ies and until today as shown in Figure 22, clearly indicates. At the same time the number of field developments per decade has increased (NPD, 2019).

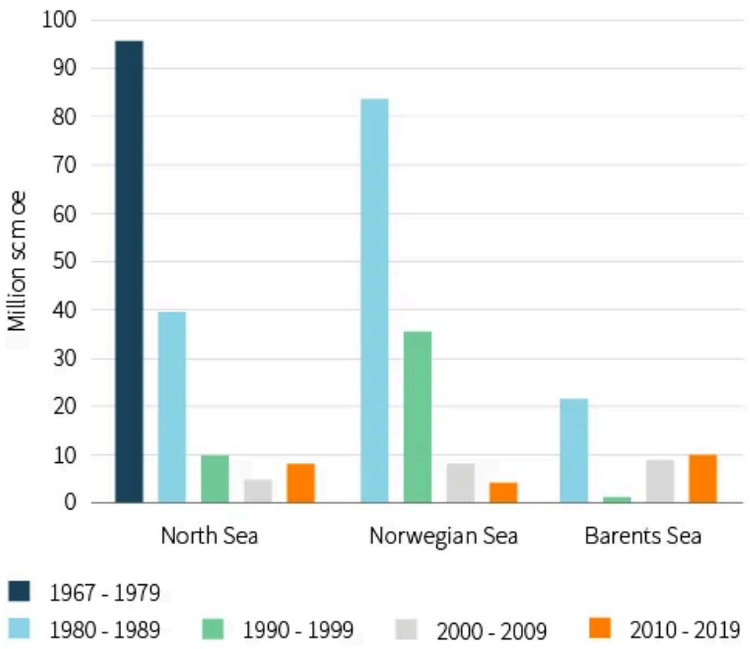
Figure 22. Average size at first PDO and number of approved development plans (NPD, 2019)



The large fields in the North Sea and the Norwegian Sea were mainly developed during the 70's and 80's, see Figure 23. With a few exceptions, notably the Johan Sver field discovered in 2011, the discoveries and field developments have since then been relatively smaller. The Norwegian part of the Barents Sea is less explored, and a si creaming curve for that basin is still not observed.

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Figure 23. Development of average discovery size by region (NPD, 2020)



The NCS discovery portfolio in 2018 consisted of 85 discoveries with an average size of 49 million boe (NPD, 2019). The average discovery in 2019 and 2020 was approximately of the same size, see Figure 25. The average discovery on the NCS is small compared to many other provinces in the world, but the exploration success r high.

Figure 24. Discoveries by sea area and expected recoverable resources at 31 Desember 2018 (NPD, 2019)

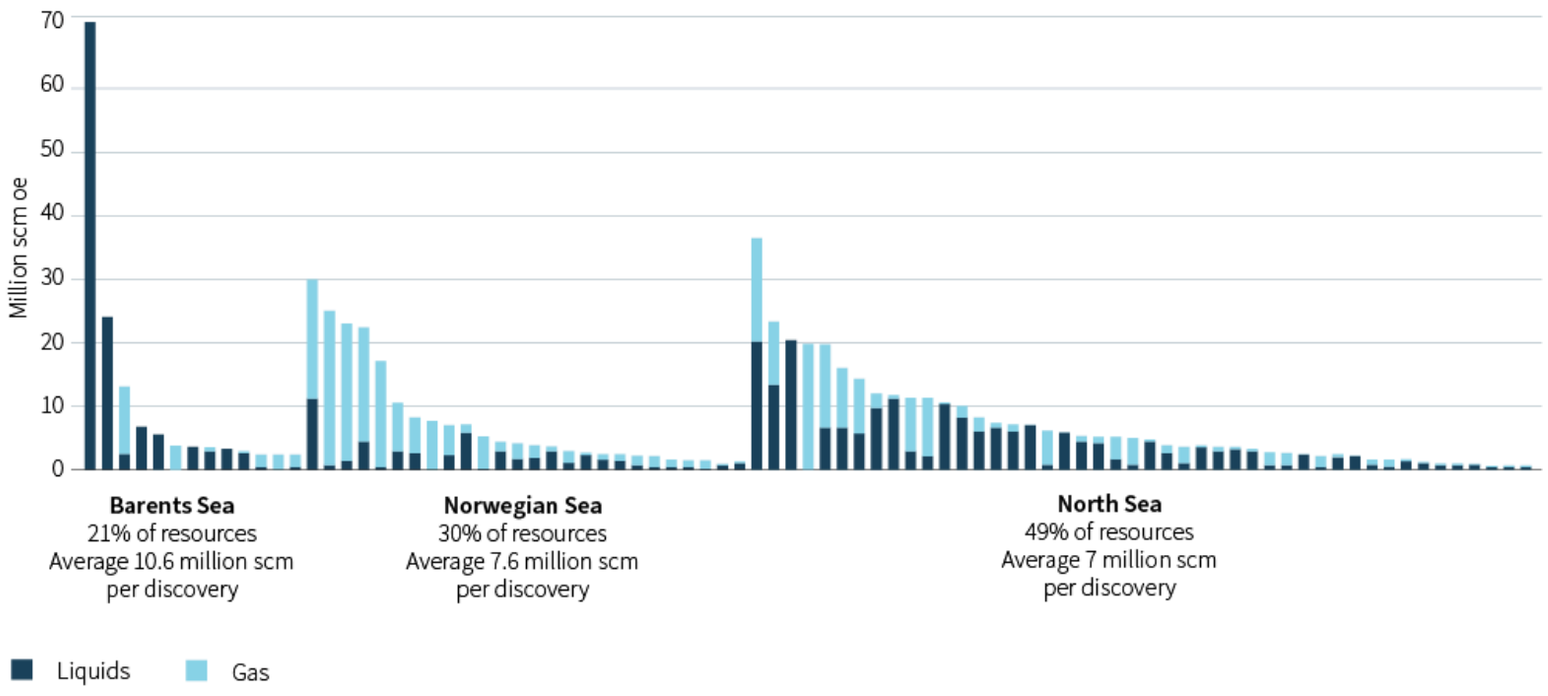
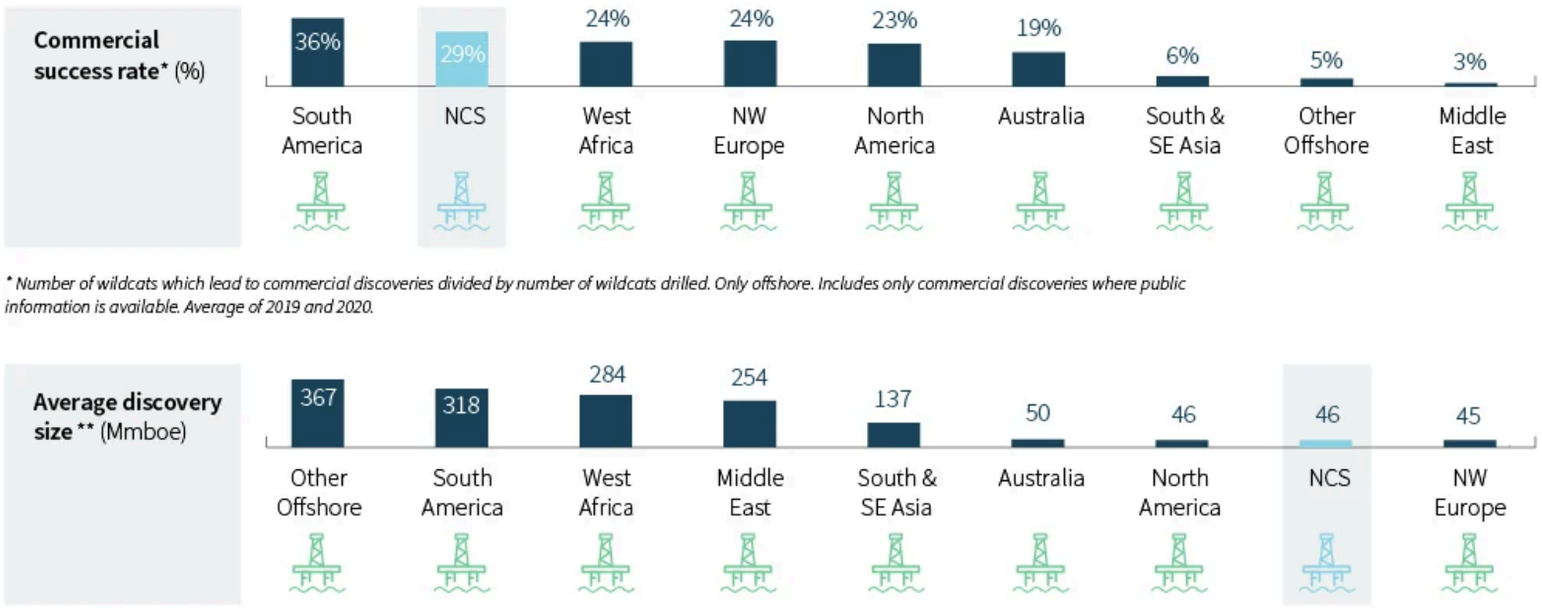


Figure 25. High exploration success rate in 2019/2020, but average discovery rate is relatively small (Rystad Energy, 2021)

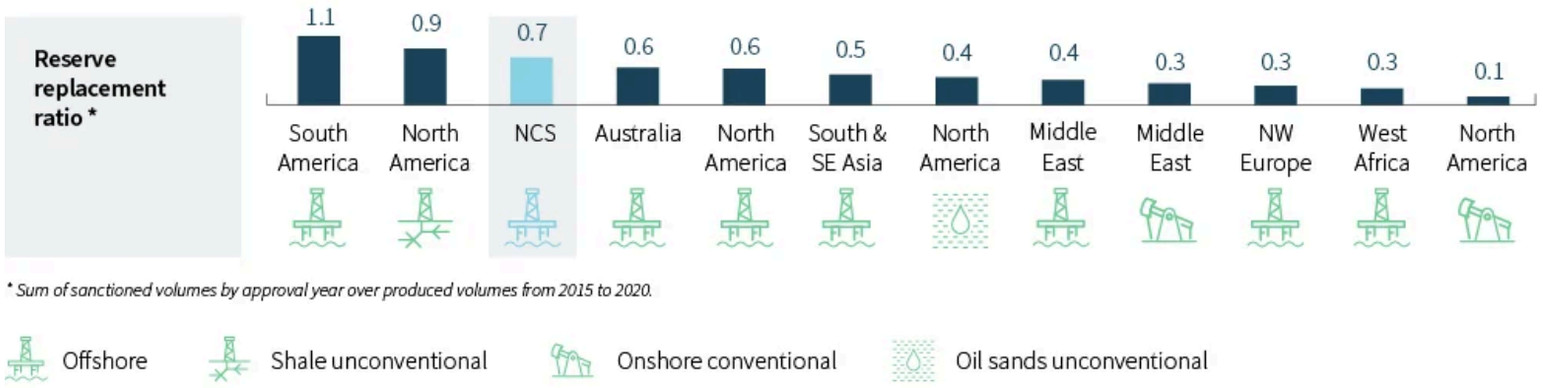


** Number of wildcats which lead to commercial discoveries divided by number of wildcats drilled. Only offshore. Includes only commercial discoveries where public information is available. Average of 2019 and 2020.*

*** Only offshore. Includes only commercial discoveries where public information is available. Average of 2019 and 2020.*

With a reserves replacement ratio (RRR) of 0.7, new discoveries on the NCS have not been able to replace the production over the last 5 years, as Figure 26 shows. In a context, the RRR is competitive though. The RRR does not reflect reserves growth in existing fields.

Figure 26. NCS reserve replacement ratio higher than most other regions
(Rystad Energy, 2021)



** Sum of sanctioned volumes by approval year over produced volumes from 2015 to 2020.*

3.4.2 Existing infrastructure key to further NCS development

Existing infrastructure is key to the further NCS development:

- Realizing the large contingent resources in existing fields, indicated in Figure 2 in Section 4.
- Realizing the large portfolio of smaller discoveries that would require tie-back to a host.
- It encourages further exploration in the proximity of potential hubs.

Contingent resources in existing fields are of the same magnitude as the contingent resources in the discovery portfolio. Historically, operators in collaboration with supp the NCS have been able to realize such resources with great success.

Looking forward, there are numerous projects in the pipeline that would improve oil recovery (IOR) from existing fields – Figure 27 shows specific but undecided project reported to the NPD. Wells are the most important measure to realize new resources from existing oil fields, whereas low-pressure production is the measure that is favo gas fields.

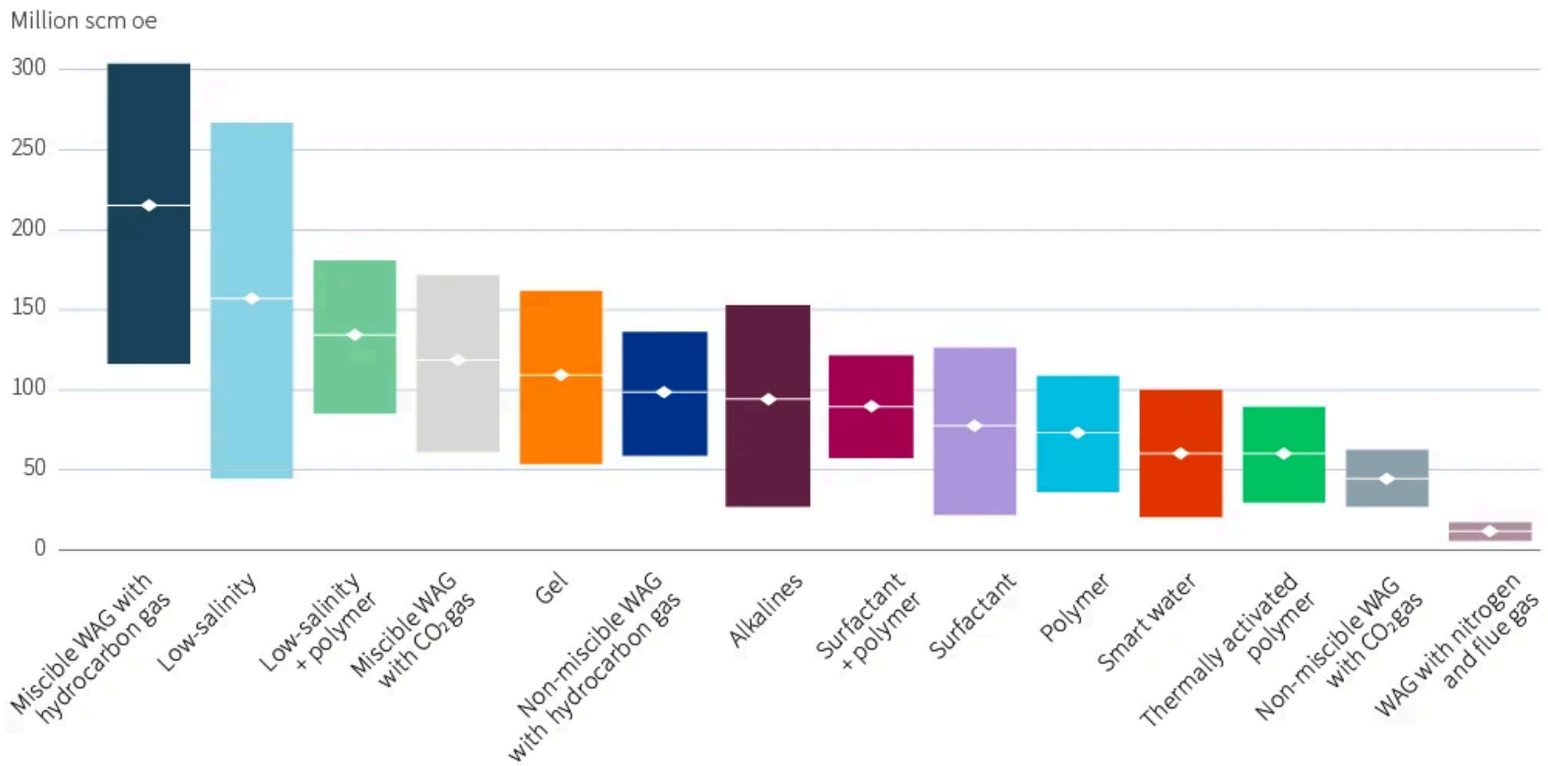
Figure 27. Projects and estimated recoverable volumes for oil by project category (NPD, 2019)



In addition, there is a substantial potential for improved recovery related to more advanced methods, the so-called Enhanced Oil Recovery (EOR) methods, see Figure 2 figure presents the scaled potential for specific EOR methods summed up for 27 discoveries and fields included in an NPD study on the EOR potential (NPD, 2019). The potential reflects operational criteria as well as economics.

Despite the potential large volumes such measures could provide, there are only few projects currently being considered, as Figure 27 shows.

Figure 28. Potential volumes from Enhanced Recovery Methods on the NCS (NPD, 2019)



IOR and EOR methods can provide large added volumes. When it comes to investment decisions, many of the methods fall short because of either high costs and/or hig emissions.

Most of the 85 discoveries in the NCS portfolio are too small to justify stand-alone developments, and would therefore require tie-back to existing infrastructure to beco realized, as Figure 29 suggests. 86% of the discoveries are within a 40 km distance to a possible host discovery. Only 4 of the 85 discoveries are further than 60 km aw a potential host facility.

The size distribution of the discoveries and the proximity to potential host facilities, illustrate the importance of efficiently utilizing existing infrastructure for the further development of the NCS (NPD, 2019).

Figure 29. Resources and distances to possible host facilities for discoveries in the NCS portfolio (NPD, 2019)

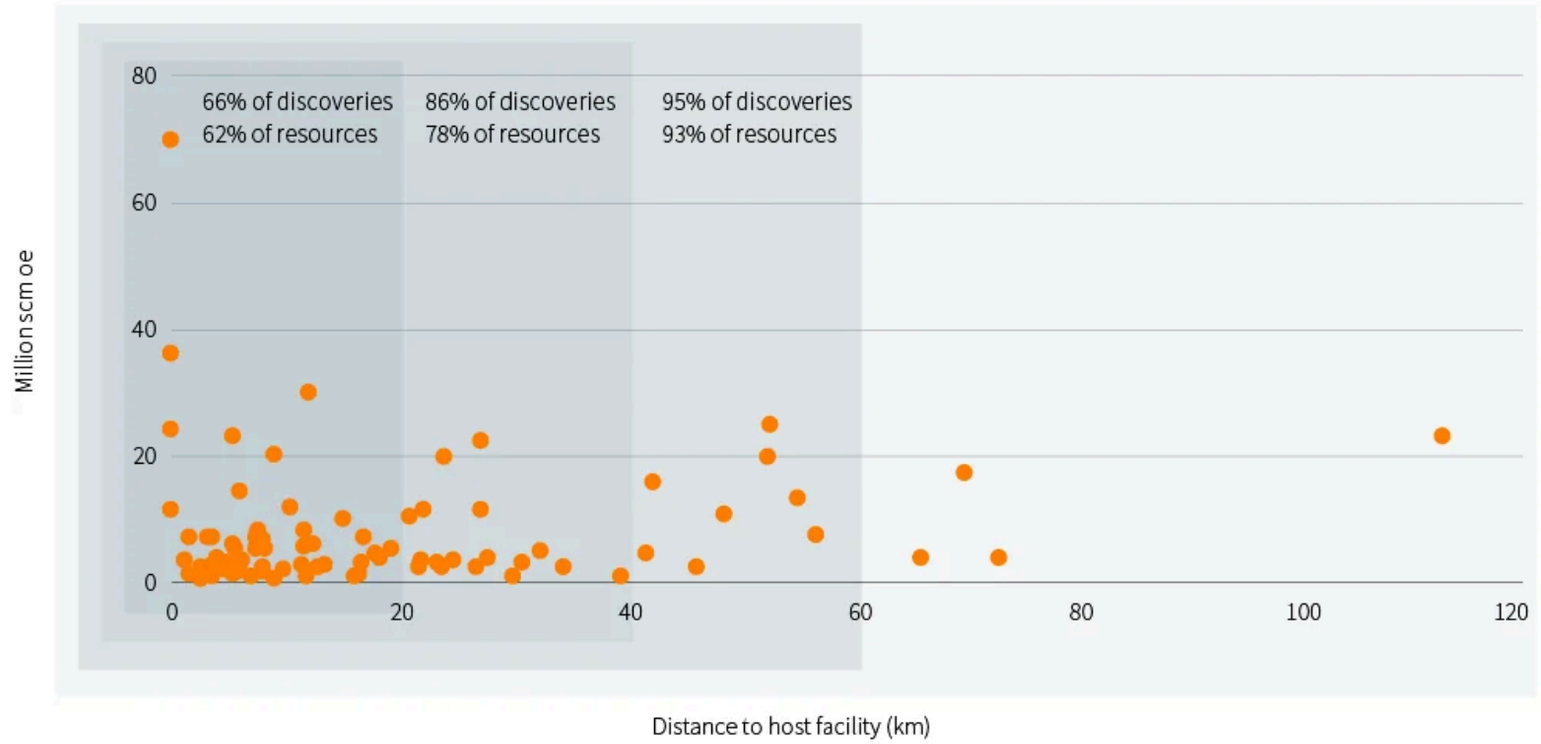
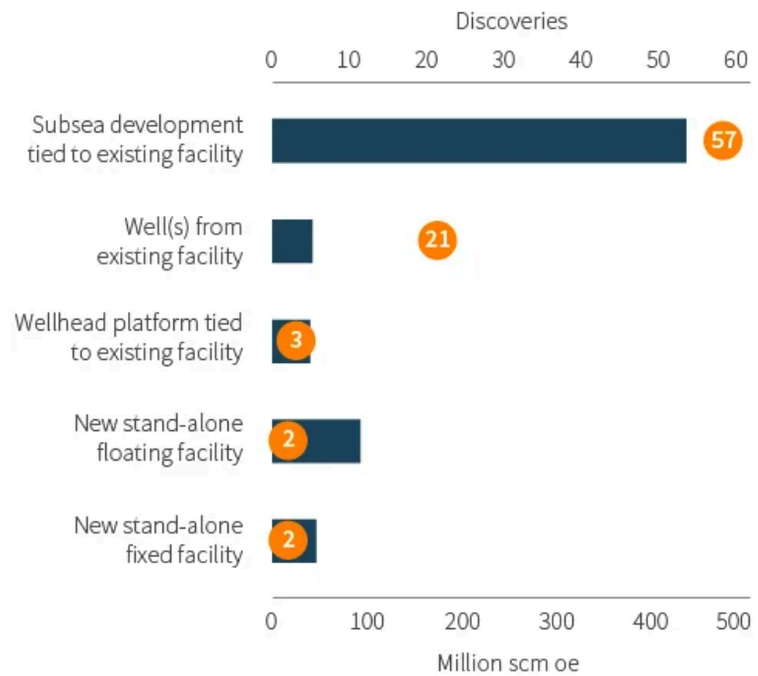
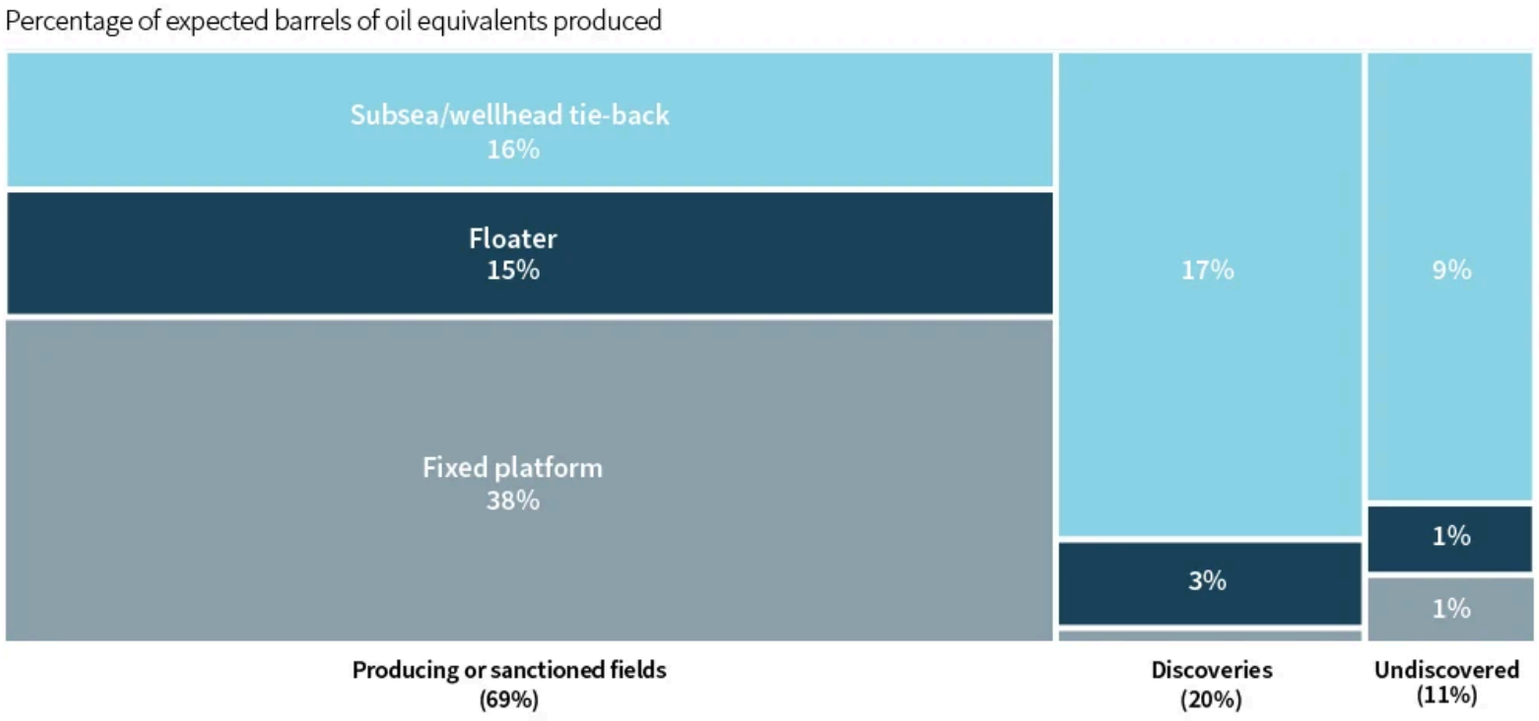


Figure 30. Most probable development solution for discoveries (NPD, 2019)



Realizing more resources on the NCS is a cross-functional task involving subsurface, drilling and well, and facilities disciplines, in close collaboration with safety and exte environmental groups. This is reflected in the OG21 technology priorities described in Section 4.

Figure 31. Expected production from the NCS 2021-2050 (Rystad Energy, 2021)



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Meldinger ved utskriftstidspunkt 7. november 2026, kl. 07.49 CET

Det ble ikke vist noen globale meldinger eller andre viktige meldinger da dette dokumentet ble skrevet ut.