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Activities and results from the year



Shorre A.
Photo: Bo B. Randulff & Even Kleppa / Equinor

Activities and results in 2021

Reference is made to the letter of assignment to Petoro AS for 2021, and to the business plan for Petoro AS. The targets set in the letter of assignment and Petoro's performance in relation to these are presented below.

Safeguarding the state's direct participating interests

Petoro shall be an active partner that helps maximise the value of the SDFI portfolio through comprehensive assessments. The work shall be focused on areas and tasks where the company, based on the portfolio and in interaction with other players on the Norwegian shelf, can provide a particular contribution toward increased value creation, considering the state's overall financial interests. In 2021, Petoro will follow up a number of larger projects for improved recovery from mature fields, new development projects and discoveries.

Operational targets

“Petoro will establish operational targets with the aim of maintaining a high level of production in 2021.”

Management parameters: Volume figures. Development over time and description of deviations

Total production reached 1,026 thousand barrels of oil equivalent per day (kboed), an increase of 38 kboed compared with the previous year.

Gas production amounted to 101 million standard cubic metres (mill. scm) per day, an increase of three per cent compared with the same period last year. This increase was mainly caused by increased gas extraction on Troll and Oseberg, partially offset by the production shutdown on Snøhvit following the fire on Melkøya.

Liquids production was 388 kboed, 14 kboed higher than the previous year. The increase was mainly caused by higher production capacity and accelerated production on Johan Sverdrup, as well as production from the Snorre Expansion

Project. This increase was partially offset by natural production decline on several mature fields.

Production from mature oil fields continues to dominate liquids production from the SDFI portfolio. Petoro's strategy has four priorities: (1) more wells by increasing drilling efficiency, (2) better understanding of reservoirs, particularly by utilising opportunities for digitalisation, (3) choosing solutions with a long-term perspective in field development, and by (4) increasing the utilisation of the facilities through safe and efficient operations. Through focused follow-up, supported by in-depth professional commitment, Petoro works to reinforce value creation opportunities with emphasis on long-term business development.

“Petoro will prepare operational targets as regards efficient operations.”

Management parameters: Development in operating expenses with description of deviations

Efficiency measures on fields in operation have been an important part of Petoro's work in 2021 as well. The company has been a driving force for efficiency measures and cost reductions, particularly within the area of drilling and wells, as well as operations and maintenance.

Petoro is closely following the development in production expenses, including costs for operation and maintenance of fields and infrastructure. Petoro assesses the cost level of the various items in the licences' budgets and requests efficiency measures, e.g. based on independent benchmark-analyses.

The need for efficiency improvements and cost reductions within the drilling and well service area has been an important issue for Petoro over several years. The company has followed the development in drilling efficiency on ten fixed installations on five selected fields in the portfolio over a number of years. 2021 was yet another weak year for the number of new wells from fixed facilities, and costs per well were at the same level as the year before. The reason for this was that several drilling rigs were unavailable to drill new wells for large parts of the year. This was in part caused by prioritising other activity, such as larger projects and well maintenance, but was also a consequence of technical challenges. In order to realise resources in the mature fields and improve the recovery rate, the drilling efficiency must be increased and the cost per well reduced.

Digitalisation as an instrument to improve and increase competitiveness is high on the strategic agenda of most oil and gas companies and suppliers. Petoro actively uses its role in the joint ventures and on the Norwegian shelf to reinforce the momentum for improvement and contribute to change processes, as well as to facilitate efficient data sharing. Petoro has also employed strategic collaboration with Schlumberger to aim special efforts toward improving quality and streamlining work processes in reservoir modelling.

“Petoro will prepare operational targets as regards safeguarding safety and environmental concerns.”

Management parameters: Serious incidents, CO₂ emissions. Development over time and description of deviations.

The serious incident frequency, defined

as the number of actual and potential serious near-miss incidents per million hours worked, is still too high. There were a total of 22 serious incidents in the SDFI portfolio in 2021, which results in a serious incident frequency of 0.7. This represents an improvement from 0.9 in 2020. Falling objects continue to dominate the range of incidents in raw numbers. The personal injury frequency was 3.8, which is at about the same level as 2021. Petoro is prioritising efforts to improve safety. This stance is clearly communicated through the company's expectations for HSE management and HSE culture in the licences. In a major accident perspective, Petoro focuses on learning across the portfolio, as well as ensuring quality in risk assessments. Over the course of the year, Petoro has carried out multiple digital management visits at selected fields and onshore facilities with a focus on HSE. The Covid-19 pandemic has led to considerable challenges, but the operators have been able to maintain stable and safe operations throughout the year. The pandemic has resulted in certain planned maintenance being postponed. This will be followed up in 2022.

The most important measure to achieve considerable reductions in CO₂ emissions from production on the Norwegian shelf is electrifying installations. The industry has embarked upon a number of initiatives to identify and mature electrification projects. In 2021, Petoro has seen significant activity associated with maturing electrification measures that will contribute to considerable reductions in greenhouse gas emissions from the SDFI portfolio. Electrification of mature fields is a time-critical measure as the projects' income potential is reduced when the remaining operating period is curtailed. Petoro therefore actively works with operators and partnerships to maintain progress on these projects. Several large electrification projects at Snøhvit, Kårstø and Draugen were further matured throughout the year toward planned investment decisions in 2022 and 2023. Assessments have also been made of the opportunity for electrifying other

fields in the portfolio, including Åsgard, Heidrun and Grane. If all the evaluated electrification projects can be realised, they can contribute alongside Hywind Tampen, planned shutdowns and downscalings on fields in reducing the SDFI's share of emissions from the field portfolio by up to 55% by 2030.

Over the course of the year, Petoro will publish a dedicated sustainability report, which will contain emissions to air and sea from the SDFI portfolio. Emissions of carbon dioxide (CO₂) from the SDFI portfolio amounted to 2.81 million tonnes in 2020, a reduction of five per cent from 2019. CO₂ emissions per produced unit were also reduced from 8.4 kg/boe in 2019 to 7.7 kg/boe in 2020. The decline was largely caused by shutting down Melkøya in the fourth quarter. A total of 23 new measures were implemented in 2020 to reduce CO₂ emissions from the SDFI portfolio. The measures are expected to yield CO₂ emission reductions of 100,000 tonnes.

Priority targets and activities in 2021

“Petoro shall contribute to good solutions through separate in-depth work, studies and verifications for further development of the mature fields with important milestones in 2021.”

Management parameters: Initiatives, measures and work initiated by Petoro, achieved results and their effects.

In line with this strategy, the company has paid special attention to the Grane, Heidrun, Maria, Oseberg, Åsgard and Gullfaks fields. Early adoption of technology and technological advances are important in order to increase competitiveness. The primary technology areas Petoro is focusing on include technology to radically increase the drilling pace, optimising the recovery strategy by using new digital tools, next-generation developments with remote operation and low manning, as well as technology to reduce greenhouse gas emissions.

On Åsgard, the company conducted

its own studies in 2021 to identify and specify projects that could help improve the recovery rate. In light of disappointing production following the start-up on Maria, Petoro has taken an active role in identifying measures and concepts to improve production. This ended up with a concept choice for further development in accordance with Petoro's preferred solution. On Grane, Petoro has carried out studies to identify additional resources. This was done using a new methodology which entailed significant streamlining of these types of studies. On Gullfaks, Oseberg and Snorre, the company has carried out its own studies to identify and refine volume bases from new drilling targets. Petoro has also conducted its own studies and analyses in 2021 to ensure equitable ownership interests in connection with the unitisation of Bredablikk.

“Petoro shall contribute to good operational preparations through its own in-depth work, studies and verifications for projects in the implementation phase.”

Management parameters: Initiatives, measures and work initiated by Petoro, achieved results and their effects.

In 2021, the company followed up a substantial portfolio of major development projects in the implementation phase, including Johan Sverdrup phase 2, Johan Castberg, Martin Linge and Troll phase 3. The follow-up has been focused on factors that affect HSE, climate and implementation risk as well as ensuring sound preparations for operations. In addition to these factors, the Cold Return repair project on Snøhvit was followed up closely, with an emphasis on strengthening the facility for further operations and safe implementation of the work.

“Petoro shall contribute to reduced uncertainty in the resource and reserve base through its own in-depth work, studies and verifications for discoveries and fields in the planning phase and comprehensive solutions that preserve future flexibility.”

Management parameters: Initiatives,

measures and work initiated by Petoro, achieved results and their effects.

As regards new fields in the portfolio, the company's efforts are associated with assessing various development solutions leading up to a concept choice. Petoro emphasises the selection of development solutions with the capacity and expansion opportunities to realise the full value potential of each field.

The company conducted its own assessments for new development projects whose resource potential was associated with significant uncertainty. Examples of this include Grosbeak and Wisting.

An investment decision has also been made for Askeladd West as part of the development of the Snøhvit field, and which will help secure the supply of gas to the LNG plant on Melkøya.

“Petoro shall contribute to progressing and maturing discoveries and new projects, through its own in-depth work, studies and verifications, including measures to reduce greenhouse gas emissions.”

Management parameters: Initiatives, measures and work initiated by Petoro, achieved results and their effects.

Early technology adoption and technological advances are important in order to increase competitiveness. The primary technology areas Petoro is focusing on include technology to radically increase the drilling pace, optimising the recovery strategy by using new digital tools, next-generation developments with remote operation and low manning, as well as technology to reduce greenhouse gas emissions.

A plan for development and operation (PDO) was submitted in 2021 for Kristin South phase 1, as well as a change to the PDO for Ormen Lange phase 3, Troll Vest electrification, in addition to Oseberg increased gas capacity and partial electrification.

- The Kristin South phase 1 project is a joint subsea development of the

Lavrans discovery and the southern part of the Kristin field.

- The Ormen Lange phase 3 project aims to improve recovery from the Ormen Lange field. The solution consists of a subsea wet gas compressor, which will provide pressure support to transport the gas from the field to the onshore facility at Nyhamna. There are multiple elements of new technology in the project, and the solution creates opportunities for use on other fields in Petoro's portfolio.
- The Troll Vest electrification project involves switching the power supply on the Troll B and Troll C installations from gas turbine operation to power from shore. This measure will reduce CO₂ emissions from the field by 466,000 tonnes per year and will help ensure very low emissions from production on Troll during the expected remaining lifetime leading up to 2060.
- The Oseberg increased gas capacity and partial electrification project will improve the recovery of gas on the Oseberg field by installing electric compressors on the Oseberg Field Centre, in addition to building a power cable from shore. The new compressor capacity is achieved without CO₂ emissions, and the access to electric power from shore will also help reduce CO₂ emissions from the field by 316,000 tonnes per year.

“Petoro shall contribute to increased drilling efficiency on fields in its portfolio through its own in-depth work, studies and verifications.”

Management parameters: Initiatives, measures and work initiated by Petoro, achieved results and their effects.

Drilling efficiency has been addressed in 2021 as a special topic for the entire field portfolio.

Petoro has been following up drilling efficiency on 10 of the fixed drilling facilities on the mature fields in the portfolio over a long period of time.

2021 was a weak year for the number of new wells from fixed facilities, and costs per well were at the same level as the previous year. The reason for this was that several drilling rigs were unavailable to drill new wells for large parts of the year. This was in part caused by prioritising other activity, such as larger projects and well maintenance, but was also a consequence of technical challenges. In order to realise resources in the mature fields and improve the recovery rate, the drilling efficiency must be increased and the cost per well reduced.

In 2021, Petoro has impacted the establishment of concrete improvement agendas for drilling and wells on selected fields. On Oseberg, Snorre and Gullfaks, they put drilling efficiency in a strategic perspective and contain concrete areas/activities for improvement, including plans for implementation.

Monitoring Equinor's marketing and sale of the state's petroleum

Petoro will monitor to ensure that Equinor conducts the marketing and sale of the state's petroleum alongside its own in accordance with the marketing and sale instructions issued to Equinor ASA. This includes contributing to equitable distribution of revenues and costs between the state and Equinor.

“Petoro will monitor the marketing and sale of the state's petroleum with attention to the market situation, potential differences in interests, as well as issues of significant importance as regards value.”

Management parameters: Describe which initiatives and activities have been carried out and which considerations form the basis for the company's priorities. What results have been achieved through the activities and what impact have they had as regards value.

In 2021, Petoro has prioritised issues within the marketing and sale of both oil and gas. The company has particularly focused on measures to optimise gas production in order to deliver as much gas as possible to the European market, which has been characterised by very

high prices, particularly in the second half of 2021. In addition, the company has paid attention to the extent to which the marketing and sale models satisfy the objectives in the Marketing and Sale Instruction regarding Maximum Value Creation and Equitable Distribution between Equinor and SDFI.

Petoro is concerned with ensuring that the products are marketed and sold in the markets where the highest price can be achieved, in addition to ensuring that the portfolio's flexibility is used to achieve the highest possible value creation. In this context, optimal further development, regularity, utilisation of capacity and flexibility in production facilities and infrastructure are of significant importance in order to achieve maximum value creation.

Selected verifications have been conducted to ensure that the SDFI receives its rightful share of sales-related costs and revenues. The company has also had an extensive dialogue with Equinor associated with monitoring the marketing and sale, including follow-up of shared goals for costs and value creation.

Financial management

“Petoro shall

- **ensure sound financial management and control of SDFI pursuant to the Regulations on Financial Management in Central Government and instructions for financial management of the SDFI**
- **prepare and follow up budgets and forecasts, conduct accountancy and perform periodic variance analyses and reporting on the SDFI's financial standing and development.”**

In 2021, Petoro has ensured sound financial management and control of the SDFI in line with the Regulations on Financial Management in Central Government and instructions for financial management of the SDFI.

The company has furthermore prepared and followed up budgets and forecasts, been responsible for accountancy

through an external accountant and performed periodic variance analyses and reporting on the SDFI's financial standing and development in accordance with deadlines specified in the Allocation Letter.

Petoro also received a clean bill of health from the Office of the Auditor General for 2020.

Efficient operations

Petoro will work systematically to utilise its allocated resources in an efficient manner. The company will prepare operational targets and indicators that demonstrate the efficiency of the company's operations and which can be compared over time.

“Petoro shall carry out its primary tasks in an efficient manner, which includes utilising opportunities for efficient operations by using digital solutions and digital data sharing”

Management parameters: Initiatives, measures and work initiated by Petoro and demonstrating their impact.

Petoro aims to carry out its activities as efficiently as possible. The company has implemented a framework for efficiency measures and improvement. This framework is an integrated part of the company's governance and consists of the following activities:

1. Efficiency and improvement measures are defined in objectives and strategies
2. Senior management is engaged and is fronting the improvement effort
3. The improvement effort is anchored and involves the entire organisation
4. A culture of learning and change has been developed
5. Improvement objectives and activities have been defined and are evaluated continuously
6. Effects of the improvement effort are measured and followed up

The company has organised its primary tasks such that new ownership interests the company receives for stewardship are handled without any increased use of resources. Petoro has chosen to organise its activities with low basic staffing.

45 per cent of the company's cost consumption is linked to the purchase of external goods and services, and the largest areas are ICT, accounting and auditing services, as well as procurement of project-oriented expertise and studies within Petoro's strategic priorities. The company is concerned with facilitating a high level of competition in its tender processes, thus allowing Petoro to achieve the best terms available on the market, as well as close cost follow-up in existing agreements.

In line with the company's digital strategy plan, Petoro works continuously to seize the opportunity for efficiency measures and improvement by using digital tools. The objective is to improve the quality and accessibility of information, reduce time spent on routine tasks and manual operations, streamline reporting and supervisory tasks, as well as to improve the company's impact through better insight, analyses and decision documentation. Last year's examples include the implementation of digital processing of licence settlements and cash calls for the SDFI. Petoro has been working for this for several years and it will reduce the scope of manual processes and the risk of mistakes. Another example is the transition to a system we have developed ourselves to manage objectives using existing functionality in Office 365, which has resulted in Petoro no longer needing to engage an external supplier.

Petoro also addresses efficiency and improvement measures in the joint ventures by following up costs and efficiency measures, e.g. through its strategic prioritisations within drilling efficiency and efficient operations. The efficiency measures in the joint ventures have an impact on Petoro's accounts, albeit through increased cash flow from the SDFI. In the same vein, there is a considerable potential in using digital solutions and increased data sharing within and between the joint ventures to increase value for the SDFI portfolio. Petoro is an active driving force for this effort.