

**DNO ASA**

**ANNUAL STATEMENT OF RESERVES AND  
RESOURCES**

**2021**



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# DNO ASA ANNUAL STATEMENT OF RESERVES AND RESOURCES 2021

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## **1 Introduction**

This reserves and resources evaluation report has been prepared in accordance with Oslo Stock Exchange listing and disclosure requirements<sup>1</sup>.

The report provides the status of hydrocarbon reserves and contingent resources at yearend 2021 for DNO ASA ("DNO"). International petroleum consultants DeGolyer and MacNaughton (D&M) carried out an independent assessment of the Tawke license (containing the Tawke and Peshkabir fields) and the Baeshiqa license (containing the Baeshiqa and Zartik structures) in the Kurdistan region of Iraq. International petroleum consultants Gaffney, Cline & Associates (GCA) carried out an independent assessment of DNO's licenses in Norway and the United Kingdom (UK). The Company internally assessed Yemen Block 47.

## **2 Overview**

Volumes classified as reserves are those quantities of oil and gas anticipated to be commercially recovered from known accumulations from a given date to the end of the field life and within the license period.

Contingent resources are those quantities of oil and gas estimated on a given date to be potentially recoverable from known accumulations, but not currently considered to be commercially recoverable or where a field development plan has not yet been submitted. Under the Norwegian Petroleum Directorate (NPD) classification system, DNO's recorded contingent resources are included as class 4 (in the planning phase), class 5 (development likely but undecided) and class 7 (not yet evaluated).

In the attached Annex, Table 1 shows a summary of remaining proven (1P), proven and probable (2P) and proven, probable and possible (3P) reserves on a gross, net and Net Entitlement (NE) basis at yearend 2021. Table 2 shows changes in net reserves between yearend 2020 and yearend 2021. Table 3 shows a summary of remaining contingent (2C) resources on a gross and net basis at yearend 2021.

### **2.1 Net Reserves, Resources and Production**

At yearend 2021, DNO's net 1P reserves stood at 196.1 million barrels of oil equivalent (MMboe), compared to 216.9 MMboe at yearend 2020, after adjusting for production during the year and upward technical revisions. On a 2P reserves basis, DNO's net reserves stood at 321.4 MMboe, compared to 359.9 MMboe at yearend 2020. On a 3P reserves basis, DNO's net reserves were 420.6 MMboe, compared to 549.6 MMboe at yearend 2020. DNO's net 2C resources were 189.5 MMboe, compared to 151.3 MMboe at yearend 2020.

DNO's net production in 2021 totaled 34.5 MMboe (of which 29.8 million barrels of oil (MMbbls) in Kurdistan, 4.5 MMboe in Norway and the balance in the UK), compared to 36.6 MMboe in 2020 (of which 30.3 MMbbls in Kurdistan, 6.0 MMboe in Norway and the balance in the UK).

The Company's net yearend 2021 Reserve Life Index (R/P) stood at 5.7 years on a 1P reserves basis, 9.3 years on a 2P reserves basis and 12.2 years on a 3P reserves basis.

### **2.2 Kurdistan Region of Iraq**

On a net basis at yearend 2021, 1P reserves in the Company's Kurdistan portfolio totaled 162.2 MMbbls (175.8 MMbbls at yearend 2020), 2P reserves totaled 267.4 MMbbls (295.4 MMbbls at yearend 2020) and 3P reserves totaled 348.5 MMbbls (453.7 MMbbls at yearend 2020). Net 2C resources were 71.3 MMbbls, compared to 26.9 MMbbls at yearend 2020.

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<sup>1</sup> [https://www.oslobors.no/ob\\_eng/Oslo-Boers/Regulations/Oslo-Rule-Book-II-Issuer-Rules](https://www.oslobors.no/ob_eng/Oslo-Boers/Regulations/Oslo-Rule-Book-II-Issuer-Rules)

### **2.2.1 Tawke License**

At the Tawke license containing the Tawke and Peshkabir fields, at yearend 2021 gross 1P reserves stood at 216.2 MMbbls (162.2 MMbbls on a net basis), compared to 234.4 MMbbls (175.8 MMbbls on a net basis) at yearend 2020. At yearend 2021 gross 2P reserves stood at 356.6 MMbbls (267.4 MMbbls on a net basis), compared to 393.9 MMbbls (295.4 MMbbls on a net basis) at yearend 2020. At yearend 2021 gross 3P reserves stood at 464.7 MMbbls (348.5 MMbbls on a net basis), compared to 604.9 MMbbls (453.7 MMbbls on a net basis) at yearend 2020. At yearend 2021 gross 2C resources stood at 47.6 MMbbls (35.7 MMbbls on a net basis), compared to 17.7 MMbbls (13.3 MMbbls on a net basis) at yearend 2020.

At the Tawke field, gross 1P reserves stood at 151.9 MMbbls (113.9 MMbbls on a net basis) at yearend 2021, compared to 173.2 MMbbls (129.9 MMbbls on a net basis) at yearend 2020. The year-to-year change in gross volumes was due to the net effect of 2021 field production of 17.1 MMbbls and also a downward technical revision of 4.1 MMbbls. Tawke field cumulative production since inception stood at 318.3 MMbbls at yearend 2021.

Gross 2P reserves at the Tawke field stood at 235.2 MMbbls (176.4 MMbbls on a net basis) at yearend 2021, compared to 268.5 MMbbls (201.4 MMbbls on a net basis) at yearend 2020, after adjusting for 2021 field production and also a downward technical revision of 16.1 MMbbls.

Gross 3P reserves at the Tawke field stood at 287.7 MMbbls (215.8 MMbbls on a net basis) at yearend 2021, compared to 404.1 MMbbls (303.1 MMbbls on a net basis) at yearend 2020, after adjusting for 2021 field production and also a downward technical revision of 99.3 MMbbls.

Gross 2C resources at the Tawke field were recorded at 17.7 MMbbls (13.3 MMbbls on a net basis) at yearend 2021, unchanged from yearend 2020.

At the Peshkabir field, at yearend 2021 gross 1P reserves stood at 64.3 MMbbls (48.2 MMbbls on a net basis) up from 61.2 MMbbls (45.9 MMbbls on a net basis) at yearend 2020. The year-to-year change in gross volumes was due to the net effect of 2021 field production of 22.6 MMbbls and also an upward technical revision of 25.6 MMbbls. Peshkabir field cumulative production since inception stood at 73.4 MMbbls at yearend 2021.

Gross 2P reserves at the Peshkabir field stood at 121.3 MMbbls (91.0 MMbbls on a net basis) at yearend 2021, down from 125.4 MMbbls (94.0 MMbbls on a net basis) at yearend 2020, after adjusting for 2021 field production and also an upward technical revision of 18.5 MMbbls.

Gross 3P reserves at the Peshkabir field stood at 177.0 MMbbls (132.7 MMbbls on a net basis) at yearend 2021, compared to 200.7 MMbbls (150.6 MMbbls on a net basis) at yearend 2020, after adjusting for 2021 field production and also a downward technical revision of 1.2 MMbbls.

Gross 2C resources at the Peshkabir field were recorded at 29.8 MMbbls (22.4 MMbbls on a net basis) at yearend 2021. No 2C resources were recorded for the Peshkabir field at yearend 2020.

### **2.2.2 Baeshiqa License**

The Baeshiqa license contains two large structures with multiple independent stacked target reservoirs, including in the Cretaceous, Jurassic and Triassic formations. The structures at Baeshiqa and Zartik have the potential to be part of a single accumulation of hydrocarbons at one or more of the geological formation intervals.

At the Baeshiqa structure and following a discovery in 2019, testing and appraisal of the Baeshiqa-2 exploration well was concluded in 2020. The well tested hydrocarbons to surface from multiple Jurassic and Triassic zones. The Company performed additional appraisal studies in 2021.

At yearend 2021 gross 2C resources at the Baeshiqa structure stood at 48.4 MMbbls (31.0 MMbbls on a net basis), compared to 37.8 MMbbls (12.1 MMbbls on a net basis) at yearend 2020.

At the Zartik structure, the Company completed drilling and testing of Zartik-1 exploration well in 2020. The well tested hydrocarbons to surface from several Jurassic zones. The Company performed additional appraisal studies in 2021.

At yearend 2021 gross 2C resources at the Zartik structure stood at 7.4 MMbbls (4.7 MMbbls on a net basis), compared to 4.7 MMbbls (1.5 MMbbls on a net basis) at yearend 2020.

At the license level and at yearend 2021, gross 2C resources stood at 55.7 MMbbls (35.7 MMbbls on a net basis), compared to 42.5 MMbbls (13.6 MMbbls on a net basis) at yearend 2020.

In 2021, DNO increased its participation interest in the Baeshiqa license to 64 percent from 32 percent. In addition, DNO applied for and received the government's approval for the first phase of the development plan of the license.

Baeshiqa license volumes were recorded as contingent resources at yearend 2021, pending acquisition of 3D seismic, additional drilling and production start up, all of which are planned for 2022.

## **2.3 Norway and United Kingdom**

At yearend 2021, DNO held 73 licenses in Norway in various stages of exploration, development and production. Across its Norway portfolio and on a net basis, DNO's 1P reserves totaled 33.2 MMboe, 2P reserves stood at 52.3 MMboe, 3P reserves totaled 70.2 MMboe and 2C resources stood at 112.2 MMboe.

In 2021, DNO had an active exploration and appraisal program in Norway resulting in the Røver Nord discovery in License PL923 and increasing the size of the 2020 Bergknapp discovery in License PL836 S. Gross 2C resources at these licenses stood at 40.5 MMboe (8.1 MMboe on a net basis) and 83.5 MMboe (25.1 MMboe on a net basis), respectively.

On a net basis, at yearend 2020 DNO's portfolio of 76 licenses in Norway held 1P reserves of 40.0 MMboe, 2P reserves of 63.1 MMboe, 3P reserves of 94.0 MMboe and 2C resources of 118.7 MMboe.

In the UK, DNO held 11 licenses at yearend 2021. On a net basis, 1P reserves totaled 0.7 MMboe, 2P reserves stood at 1.6 MMboe, 3P reserves totaled 1.9 MMboe and 2C resources stood at 1.1 MMboe.

At yearend 2020, DNO held 16 licenses in the UK with 1P reserves of 1.0 MMboe, 2P reserves of 1.4 MMboe, 3P reserves of 1.9 MMboe and 2C resources of 0.9 MMbbls, all on a net basis.

## **2.4 Yemen**

Production start up at the Yaalen field at Block 47 in Yemen, currently under force majeure, remains on hold. At yearend 2021, gross 2C resources at Block 47 stood at 6.2 MMbbls (4.8 MMbbls on a net basis), unchanged from yearend 2020.

# **3 Management Discussion and Analysis**

## **3.1 Disclaimer**

The report, including this Management's Discussion and Analysis (MD&A), contains and was prepared, *inter alia*, on the basis of forward-looking information and statements. Such information and statements are based on management's current assumptions, expectations, estimates and projections and are therefore subject to risks and uncertainties that could cause actual results, performance or events to differ materially. The Company can give no assurance that those assumptions, expectations,

estimates and projections will occur or be realized and readers should not place undue reliance on forward-looking statements. Forward-looking statements are generally identifiable by their use of terms such as “expect”, “believe”, “estimate”, “may”, “plan”, “could”, “will”, “intend”, “schedule” and similar terms or expressions. There are a number of factors that could cause actual results or events to differ materially from those underlying forward-looking information and statements. These factors include, among others: technical, geological and geotechnical conditions; economic and market conditions in or affecting the geographic areas and industries that are or will be major markets for DNO; oil and gas price fluctuations; market acceptance of new products and services; changes in laws and governmental regulations; political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities; delays or advancements in the approval of projects and delays in the reimbursement for shared costs; the risk of doing business in developing countries and countries subject to national or international sanctions; fluctuations in interest rates or currency exchange rates; and other such factors that may be discussed from time to time in the MD&A. All forward-looking statements contained in the report, including this MD&A, are expressly qualified in their entirety by the cautionary statements contained in this disclaimer. Additionally, DNO makes no representation or warranty, expressed or implied, as to the accuracy, reliability or completeness of these forward-looking statements and the MD&A, and neither DNO nor any of its directors, officers or employees will have any liability to the readers resulting from reliance on these forward-looking statements and this MD&A.

### **3.2 Assumptions and Methodology**

DNO’s reserves updates are completed in accordance with standard guidelines advised by the Society of Petroleum Engineers (SPE)<sup>2,3</sup> and comply with Oslo Stock Exchange disclosure requirements, Circular No. 1/2013.

Reported reserves fall within class 1-3 of the Norwegian Petroleum Directorate (NPD) classification and 2C resources fall within classes 4, 5 and 7 of the NPD classification.

The estimation and auditing of reserves are undertaken in accordance with generally accepted engineering and evaluation principles. It should be noted that reserves information is imprecise due to inherent uncertainties in – and the limited nature of – data upon which the reserves are predicated.

DNO has a reserves review committee consisting of competent professional geoscientists, engineers and economists to facilitate the review and reporting process and ensure compliance with standards and procedures. The committee collects and coordinates the review of all technical data and provides a full report of the Company’s reserves and resources to the Managing Director for review and approval.

Economically recoverable reserves have been calculated based on input for the technical reserves and economic parameters such as license terms and projected future oil and gas prices. The reserves reported here are restricted to those volumes expected to be economically recovered prior to the expiry date of the respective licenses.

### **3.3 Oil and Gas Prices**

D&M and GCA generate and utilize oil and gas price forecasts as the basis for their independent calculations of remaining DNO reserves and resources.

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<sup>2</sup> For a full description of these guidelines and definitions, see [www.spe.org](http://www.spe.org)

<sup>3</sup> <https://www.spe.org/en/industry/petroleum-resources-management-system-2018/>

### **3.4 Ownership**

DNO's participation in certain licenses is governed by a Production Sharing Contract (PSC), which sets out the manner in which oil and gas production is shared between the government and the license holder.

DNO and its joint venture partners typically bear all risks and costs of exploration, development and production in these licenses. In return, if exploration is successful, DNO and its partners recover their share of investments and operating costs from what is referred to as "cost oil", being a percentage of oil and gas produced and sold after deduction of the government royalty (if any). In addition to cost oil, DNO and its partners are entitled to receive a share of the remaining production, after payment of the royalty (if any) and deduction of cost oil, which is referred to as "profit oil". Profit oil is shared among the government, DNO and its partners in accordance with the percentages set out in each PSC.

DNO's NE reserves in the licenses governed by a PSC comprise the Company's entitlement to cost oil and profit oil. DNO's entitlement to cost oil includes its advances towards the government carried interest (if any). DNO's NE volumes include also reserves attributed to the three percent of gross Tawke license production under the August 2017 Receivables Settlement Agreement. NE reserves are based on economic evaluation of the license agreements, incorporating projections of future production, costs and oil and gas prices. NE volumes may therefore fluctuate over time, even though there are no changes in the underlying gross and net volumes.

The government may also have a participating interest in the license through a government-controlled enterprise. If so, the government will receive a corresponding share of cost oil (unless the government's share of costs is advanced or carried by the other partners) and profit oil through the government-controlled enterprise.

Effective from 2021, the Company reports its net production, reserves and resources based on the participation interest in all of its licenses. Prior to 2021 and for the licenses governed by PSCs, the Company reported its net figures after royalty and included DNO's additional share of cost oil covering its advances towards the government carried interest (if any) as well as volumes attributed to the three percent of gross Tawke license production under the August 2017 Receivables Settlement Agreement. The main reason for the change is to improve comparability with peer companies and to show the Company's share of production before the government take. All 2020 figures in this report are updated accordingly.

At yearend 2021, all of the Company's interests in licenses in Kurdistan and Yemen were governed by PSCs. Net reserves in these licenses reflect pre-tax shares while NE reserves reflect post-tax shares.

Net and NE reserves in DNO's licenses not governed by PSCs (Norway and the UK) are equivalent and reflect pre-tax shares.

## 4 Annex

**Table 1 – Remaining reserves at yearend 2021 (gross, net and NE)**

Asset (Region, Field)	Proven (1P)			Proven + Probable (2P)			Proven + Probable + Possible (3P)		
	Gross	Net	NE	Gross	Net	NE	Gross	Net	NE
	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)
<b>Developed Assets</b>									
Kurdistan, Tawke	61.4	46.1	16.0	90.1	67.6	19.6	111.3	83.5	21.3
Kurdistan, Peshkabir	61.5	46.1	16.0	76.0	57.0	16.6	97.6	73.2	18.6
<b>Kurdistan Developed</b>	<b>122.9</b>	<b>92.2</b>	<b>32.1</b>	<b>166.2</b>	<b>124.6</b>	<b>36.2</b>	<b>208.9</b>	<b>156.7</b>	<b>39.9</b>
Norway, Alve	16.2	5.2	5.2	24.9	8.0	8.0	36.4	11.7	11.7
Norway, Brage	9.5	1.4	1.4	16.7	2.4	2.4	21.3	3.0	3.0
Norway, Marulk	5.6	0.9	0.9	9.4	1.6	1.6	14.7	2.5	2.5
Norway, Oda	6.9	1.0	1.0	13.6	2.0	2.0	19.4	2.9	2.9
Norway, Ringhorne East	2.0	0.5	0.5	2.5	0.6	0.6	3.0	0.7	0.7
Norway, Tambar	3.4	1.5	1.5	8.4	3.8	3.8	12.1	5.4	5.4
Norway, Tambar East	0.0	0.0	0.0	0.5	0.2	0.2	0.7	0.3	0.3
Norway, Trym	3.9	1.9	1.9	6.4	3.2	3.2	9.7	4.8	4.8
Norway, Ula	6.9	1.4	1.4	26.1	5.2	5.2	31.6	6.3	6.3
Norway, Vilje	7.7	2.2	2.2	12.9	3.7	3.7	21.1	6.1	6.1
<b>Norway Developed</b>	<b>62.2</b>	<b>16.1</b>	<b>16.1</b>	<b>121.4</b>	<b>30.7</b>	<b>30.7</b>	<b>170.0</b>	<b>43.7</b>	<b>43.7</b>
UK, Blane	1.3	0.6	0.6	3.2	1.4	1.4	3.7	1.6	1.6
UK, Enoch	0.8	0.1	0.1	1.4	0.2	0.2	2.0	0.3	0.3
<b>UK Developed</b>	<b>2.1</b>	<b>0.7</b>	<b>0.7</b>	<b>4.6</b>	<b>1.6</b>	<b>1.6</b>	<b>5.7</b>	<b>1.9</b>	<b>1.9</b>
<b>Total Developed</b>		<b>108.9</b>	<b>48.9</b>		<b>156.9</b>	<b>68.5</b>		<b>202.3</b>	<b>85.6</b>
<b>Under Development Assets</b>									
Kurdistan, Tawke	90.5	67.9	23.7	145.1	108.8	31.6	176.4	132.3	33.7
Kurdistan, Peshkabir	2.8	2.1	0.7	45.3	34.0	9.9	79.4	59.6	15.2
<b>Kurdistan Under Development</b>	<b>93.3</b>	<b>70.0</b>	<b>24.4</b>	<b>190.4</b>	<b>142.8</b>	<b>41.5</b>	<b>255.8</b>	<b>191.9</b>	<b>48.9</b>
Norway, Brasse	26.8	13.4	13.4	34.2	17.1	17.1	42.4	21.2	21.2
Norway, Fenja	49.9	3.7	3.7	60.8	4.6	4.6	69.9	5.2	5.2
<b>Norway Under Development</b>	<b>76.7</b>	<b>17.2</b>	<b>17.2</b>	<b>95.0</b>	<b>21.6</b>	<b>21.6</b>	<b>112.3</b>	<b>26.5</b>	<b>26.5</b>
<b>Total Under Development</b>		<b>87.1</b>	<b>41.5</b>		<b>164.4</b>	<b>63.2</b>		<b>218.3</b>	<b>75.4</b>
<b>TOTAL DNO ASA</b>		<b>196.1</b>	<b>90.4</b>		<b>321.4</b>	<b>131.7</b>		<b>420.6</b>	<b>160.9</b>

Net reserves in DNO's licenses governed by PSCs (Kurdistan and Yemen) are based on the participation interest. NE reserves are net to DNO after royalty and include DNO's additional share of cost oil covering its advances towards the government carried interest (if any) as well as volumes attributed to the three percent of gross Tawke license production under the August 2017 Receivables Settlement Agreement. Net reserves reflect pre-tax shares while NE reserves reflect post-tax shares. NE reserves are based on economic evaluation of the license agreements, incorporating projections of future production, costs and oil and gas prices. NE reserves may therefore fluctuate over time, even if there are no changes in the underlying gross and net volumes.

Net and NE reserves in DNO's licenses not governed by PSCs (Norway and the UK) are equivalent and reflect pre-tax shares.



**Table 2 – Reserves development 2020-2021 (net)**

DNO ASA	Developed Assets			Under Development			TOTAL		
	1P	2P	3P	1P	2P	3P	1P	2P	3P
	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)	(MMboe)
<b>Balance as of Yearend 2020</b>	<b>132.7</b>	<b>155.4</b>	<b>235.1</b>	<b>84.1</b>	<b>204.5</b>	<b>314.5</b>	<b>216.9</b>	<b>359.9</b>	<b>549.6</b>
Production	-34.5	-34.5	-34.5				-34.5	-34.5	-34.5
Acquisitions									
Divestments									
Extentions and discoveries									
New developments									
Revision of previous estimates	10.7	36.0	1.7	3.0	-40.0	-96.2	13.7	-4.0	-94.4
<b>Balance as of Yearend 2021</b>	<b>108.9</b>	<b>157.0</b>	<b>202.3</b>	<b>87.1</b>	<b>164.4</b>	<b>218.3</b>	<b>196.1</b>	<b>321.4</b>	<b>420.6</b>

**Table 3 – Contingent resources (2C) at yearend 2021 (gross and net)**

Asset	2C Resources	
	Gross	Net
	(MMboe)	(MMboe)
Kurdistan	103.3	71.3
Tawke PSC	47.6	35.7
Baeshiqah PSC	55.7	35.7
Norway	443.2	112.2
UK	3.8	1.1
Yemen	6.2	4.8
<b>TOTAL DNO ASA</b>		<b>189.5</b>