

**DNO ASA**

**ANNUAL STATEMENT OF RESERVES AND  
RESOURCES**

**2018**



---

*Bjørn Dale*  
*Managing Director*

Oslo, 11 February 2019

# DNO ASA ANNUAL STATEMENT OF RESERVES AND RESOURCES 2018

## Table of contents

<b>1</b>	<b>Introduction.....</b>	<b>3</b>
<b>2</b>	<b>Overview.....</b>	<b>3</b>
2.1	DNO's Company Working Interest Reserves and Resources .....	3
2.2	Kurdistan Region of Iraq .....	3
2.3	Norway .....	5
2.4	Oman .....	5
2.5	Tunisia.....	5
2.6	United Kingdom .....	5
2.7	Yemen .....	5
<b>3</b>	<b>Management Discussion and Analysis.....</b>	<b>5</b>
3.1	Disclaimer.....	5
3.2	Assumptions and Methodology .....	6
3.3	Oil Price .....	6
3.4	Ownership.....	6
<b>4</b>	<b>Annex .....</b>	<b>8</b>
	Table 1 – Remaining reserves at yearend 2018 (Gross, CWI and NE) .....	8
	Table 2 – Reserves development 2017-2018 (CWI).....	9
	Table 3 – Contingent resources (2C) at yearend 2018 (Gross and CWI).....	10

## **1 Introduction**

This reserves and resources evaluation report has been prepared in accordance with Oslo Stock Exchange listing and disclosure requirements, Circular No. 1/2013.

The report provides the status of hydrocarbon reserves and contingent resources at yearend 2018 for DNO ASA ("DNO"). International petroleum consultants DeGolyer and MacNaughton (D&M) carried out the annual independent assessment of the Tawke license in the Kurdistan region of Iraq containing the Tawke and Peshkabir fields. The Company internally assessed the remaining licenses.

## **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. DNO's recorded contingent resources are included as class 4 (in the planning phase), class 5 (development likely but undecided), class 6 (development unlikely) and class 7 (not yet evaluated) under the Norwegian Petroleum Directorate (NPD) classification system.

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, Company Working Interest (CWI) and Net Entitlement (NE) basis at yearend 2018. Table 2 shows changes in CWI reserves between yearend 2017 and yearend 2018. Table 3 shows a summary of remaining 2C resources on a gross and CWI basis at yearend 2018.

### **2.1 DNO's Company Working Interest Reserves and Resources**

At yearend 2018, DNO's CWI 1P reserves stood at 239.7 million barrels of oil (MMbbls), unchanged from 239.8 MMbbls at yearend 2017, after adjusting for production during the year and technical revisions. On a 2P reserves basis, DNO's CWI reserves stood at 376.1 MMbbls, down 8.0 MMbbls from 384.1 MMbbls at yearend 2017. On a 3P reserves basis, DNO's CWI reserves were 538.9 MMbbls, compared to 665.7 MMbbls at yearend 2017. DNO's CWI 2C resources were 76.8 million barrels of oil equivalent (MMboe), compared to 98.9 MMboe at yearend 2017.

DNO's CWI production in 2018 was 29.9 MMboe (of which 29.1 MMbbls in Kurdistan and the balance in Oman), up from 26.9 MMboe in 2017 (of which 26.1 MMbbls in Kurdistan and the balance in Oman).

The Company's CWI yearend 2018 Reserve Life Index (R/P) stood at 8.2 years on a 1P reserves basis, 12.9 years on a 2P reserves basis and 18.5 years on a 3P reserves basis.

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

On a CWI basis at yearend 2018, 1P reserves in the Company's three Kurdistan licenses totaled 239.7 MMbbls (239.8 MMbbls at yearend 2017), 2P reserves totaled 376.1 MMbbls (384.1 MMbbls at yearend 2017) and 3P reserves totaled 538.9 MMbbls (665.7 MMbbls at yearend 2017). The CWI 2C resources were 55.8 MMbbls, compared to 67.2 MMbbls at yearend 2017.

#### **2.2.1 Tawke and Peshkabir Fields**

At the Tawke license containing the Tawke and Peshkabir fields, at yearend 2018 gross 1P reserves stood at 348.0 MMbbls (239.7 MMbbls on a CWI basis), unchanged from 348.3 MMbbls (239.8 MMbbls

on a CWI basis) at yearend 2017. At yearend 2018 gross 2P reserves stood at 501.9 MMbbls (344.3 MMbbls on a CWI basis), compared to 512.6 MMbbls (352.3 MMbbls on a CWI basis) at yearend 2017. At yearend 2018 gross 3P reserves stood at 696.8 MMbbls (476.6 MMbbls on a CWI basis), compared to 880.0 MMbbls (602.9 MMbbls on a CWI basis) at yearend 2017.

At the Tawke field, at yearend 2018 gross 1P reserves stood at 293.8 MMbbls (201.8 MMbbls on a CWI basis), compared to 335.3 MMbbls (230.7 MMbbls on a CWI basis) at yearend 2017. The year-to-year change in gross volumes was due to the net effect of 2018 field production of 31.2 MMbbls and a downward technical revision of 10.4 MMbbls. Tawke field cumulative production since inception stood at 255.0 MMbbls at yearend 2018.

Gross 2P reserves at the Tawke field at yearend 2018 stood at 375.8 MMbbls (257.2 MMbbls on a CWI basis), compared to 437.5 MMbbls (300.2 MMbbls on a CWI basis) at yearend 2017, after adjusting for 2018 field production and a downward technical revision of 30.6 MMbbls.

Gross 3P reserves at the Tawke field stood at 476.5 MMbbls (325.2 MMbbls on a CWI basis) at yearend 2018, compared to 587.7 MMbbls (402.2 MMbbls on a CWI basis) at yearend 2017, after adjusting for 2018 field production and a technical downward revision of 80.0 MMbbls.

Gross 2C resources at the Tawke field were recorded at 74.5 MMbbls (50.3 MMbbls on a CWI basis) at yearend 2018, compared to 91.4 MMbbls (61.7 MMbbls on a CWI basis) at yearend 2017.

At the Peshkabir field, at yearend 2018 gross 1P reserves stood at 54.2 MMbbls (37.9 MMbbls on a CWI basis) from 13.0 MMbbls (9.1 MMbbls on a CWI basis) at yearend 2017. The year-to-year change in gross volumes was due to the net effect of 2018 field production of 10.1 MMbbls and an upward technical revision of 51.3 MMbbls. Peshkabir field cumulative production since inception stood at 11.3 MMbbls at yearend 2018.

Gross 2P reserves at the Peshkabir field stood at 126.1 MMbbls (87.1 MMbbls on a CWI basis) at yearend 2018, compared to 75.1 MMbbls (52.1 MMbbls on a CWI basis) at yearend 2017, after adjusting for 2018 field production and an upward technical revision of 61.1 MMbbls.

Gross 3P reserves at the Peshkabir field stood at 220.2 MMbbls (151.4 MMbbls on a CWI basis), compared to 292.3 MMbbls (200.7 MMbbls on a CWI basis) at yearend 2017, after adjusting for 2018 field production and a technical downward revision of 62.0 MMbbls.

No 2C resources were recorded for the Peshkabir field at yearend 2018. Notwithstanding the discovery of a gas cap and existence of solution gas at the Peshkabir field, no gas reserves or contingent resources are booked as the Company plans to utilize this gas for enhanced oil recovery at the Tawke field.

Effective from 1 August 2017, DNO was assigned the 20 percent interest in the Tawke license held by the Kurdistan Regional Government as part of a landmark settlement of receivables owed to the Company for past oil deliveries. Following the settlement, DNO holds a 75 percent interest in the Tawke license containing the Tawke and Peshkabir fields. DNO's share of profit oil increased from 55 percent to 75 percent, while its share of the cost oil remained 75 percent. This is in addition to three percent of aggregate Tawke license revenues payable from 1 August 2017 until 31 July 2022. DNO's CWI reserves and resources reflect this settlement agreement.

## **2.2.2 Benenan and Bastora Fields**

Estimates of oil-in-place at the Erbil license containing the Benenan and Bastora fields stand at more than two billion barrels. At yearend 2018, gross 2P reserves at the Benenan and Bastora fields totaled 68.4 MMbbls (31.8 MMbbls on a CWI basis), gross 3P reserves totaled 134.1 MMbbls (62.3 MMbbls on a CWI basis) and gross 2C resources totaled 11.9 MMbbls (5.5 MMbbls on a CWI basis) at yearend 2018. No 1P reserves were recorded at either field.

## **2.3 Norway**

DNO's portfolio of 21 licenses in Norway held 2C resources of 7.6 MMboe on a CWI basis at yearend 2018.

## **2.4 Oman**

At Block 8, DNO operated Oman's only developed offshore oil and gas fields, Bukha and West Bukha with production in 2018 totaling 1.6 MMboe. As anticipated, the Company relinquished these assets on expiry of the license on 3 January 2019. CWI reserves and contingent resources at Block 8 were previously written down to zero at yearend 2017.

## **2.5 Tunisia**

DNO exited Tunisia through the sale of its Tunisia subsidiary in July 2018 and the Company no longer carries any reserves or contingent resources attributable to Tunisia.

## **2.6 United Kingdom**

In the United Kingdom, the Company relinquished the P1982 license in 2018 and currently holds only the P2074 license which held 2C resources of 8.5 MMbbls on a CWI basis at yearend 2018.

## **2.7 Yemen**

Production start-up at the Yaalen field at Block 47 in Yemen, currently under force majeure, remains on hold. At yearend 2018, gross 2C resources at Block 47 stood at 6.2 MMbbls (4.8 MMbbls on a CWI basis), unchanged from yearend 2017.

# **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>1,2</sup> and comply with Oslo Stock Exchange disclosure requirements, Circular No. 1/2013.

Reported reserves fall within class 1-3 of the NPD classification and 2C resources fall within class 4-7 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 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 Price**

The Intercontinental Exchange (ICE) forward curve for Brent crude (adjusted for quality and transportation differentials) was used as the basis for calculating remaining reserves.

### **3.4 Ownership**

DNO's interest 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.

---

<sup>1</sup> For a full description of these guidelines and definitions, see [www.spe.org](http://www.spe.org)

<sup>2</sup> <https://www.spe.org/en/industry/petroleum-resources-management-system-2018/>

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). NE reserves are based on economic evaluation of the license agreements, incorporating projections of future production, costs and oil prices. NE volumes may therefore fluctuate over time, even though there are no changes in the underlying gross and CWI 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.

DNO believes that reporting CWI volumes facilitates the comparison of reserves and resources across countries and regions that have different tax regulations or tax regimes. CWI volumes include DNO's additional share of cost oil resulting from recovery of its advances towards the government carried interest (if any).

## 4 Annex

**Table 1 – Remaining reserves at yearend 2018 (Gross, CWI and NE)**

Asset	Proven (1P)			Proven + Probable (2P)			Proven + Probable + Possible (3P)		
	Gross	CWI	NE	Gross	CWI	NE	Gross	CWI	NE
	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)
<b>Developed Assets</b>									
Kurdistan, Tawke field	116.8	80.8	30.2	140.4	96.1	31.7	180.1	122.9	34.1
Kurdistan, Peshkibir field	34.8	24.3	12.2	68.3	47.2	15.9	95.6	65.8	18.6
<b>Total Developed</b>		<b>105.1</b>	<b>42.4</b>		<b>143.3</b>	<b>47.5</b>		<b>188.6</b>	<b>52.8</b>
<b>Under Development Assets</b>									
Kurdistan, Tawke field	176.9	121.0	43.5	235.4	161.1	53.1	296.5	202.3	56.2
Kurdistan, Peshkibir field	19.4	13.6	2.1	57.7	39.9	13.4	124.6	85.6	24.3
Kurdistan, Bastora field				10.9	5.1	3.2	15.9	7.4	3.5
Kurdistan, Benenan field				57.4	26.7	16.6	118.2	55.0	26.2
<b>Total Under Development</b>		<b>134.6</b>	<b>45.6</b>		<b>232.8</b>	<b>86.3</b>		<b>350.3</b>	<b>110.2</b>
<b>TOTAL DNO ASA</b>		<b>239.7</b>	<b>88.0</b>		<b>376.1</b>	<b>133.8</b>		<b>538.9</b>	<b>163.0</b>

CWI and 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). CWI 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 prices. NE reserves may therefore fluctuate over time, even if there are no changes in the underlying gross and CWI volumes.

Following the Kurdistan Receivables Settlement Agreement effective 1 August 2017, DNO's interest in the Tawke license increased to 75 percent plus, until 31 July 2022, three percent of aggregate license revenues. CWI and NE reserves in the table above include the reserves attributable to DNO from this settlement agreement.

**Table 2 – Reserves development 2017-2018 (CWI)**

DNO ASA	Developed Assets			Under Development Assets			TOTAL		
	1P	2P	3P	1P	2P	3P	1P	2P	3P
	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)	(MMbbls)
<b>Balance as of Yearend 2017</b>	<b>126.4</b>	<b>159.8</b>	<b>237.8</b>	<b>113.4</b>	<b>224.2</b>	<b>427.9</b>	<b>239.8</b>	<b>384.1</b>	<b>665.7</b>
Production	-29.1	-29.1	-29.1				-29.1	-29.1	-29.1
Acquisitions									
Divestments									
Extensions and discoveries									
New developments									
Revision of previous estimates	7.8	12.6	-20.1	21.2	8.6	-77.6	28.9	21.2	-97.7
<b>Balance as of Yearend 2018</b>	<b>105.1</b>	<b>143.3</b>	<b>188.6</b>	<b>134.6</b>	<b>232.8</b>	<b>350.3</b>	<b>239.7</b>	<b>376.1</b>	<b>538.9</b>

CWI 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).

CWI reserves in the table above include the reserves attributable to DNO from the Kurdistan Receivables Settlement Agreement.

**Table 3 – Contingent resources (2C) at yearend 2018 (Gross and CWI)**

Asset	2C Resources	
	Gross	CWI
	(MMboe)	(MMboe)
Kurdistan	86.4	55.8
Tawke PSC	74.5	50.3
Erbil PSC	11.9	5.5
Yemen	6.2	4.8
UK	34.0	8.5
Norway	40.0	7.6
<b>TOTAL DNO ASA</b>		<b>76.8</b>

CWI 2C resources are net to DNO after royalty and reflect DNO's additional share of cost oil covering its advances towards the government carried interest (if any).