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# ***Listing and disclosure requirements for oil and natural gas companies***

## LISTING AND DISCLOSURE REQUIREMENTS FOR OIL AND NATURAL GAS COMPANIES

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## 1. Introduction

### 1.1 General

Oslo Børs hereby introduces a revised set of guidelines and requirements for oil and natural gas companies, i.e. a revision of Circular 9/2009, inter alia to align it more with the ESMA rules for the consistent implementation of Commission Regulation (EC) No 809/2004 implementing the Prospectus Directive.

The revised guidelines will become mandatory requirements with effect from 1 January 2014, i.e. including the annual statement of reserves and resources to be reported by relevant companies per yearend 2013. Until this date, the companies can either comply with Circular 9/2009 with regards to annual reserve and resource reporting, or chose an early adoption of this Circular.

This Circular covers:

- 1) the specific listing requirements for oil and natural gas companies applying for listing on Oslo Børs or Oslo Axess; and
- 2) the disclosure requirements for hydrocarbon reserves and resources for oil and natural gas companies currently listed on Oslo Børs or on Oslo Axess.

This revised Circular opens up for optional reporting of more information for contingent and prospective resources. The executive summary in the next section briefly sets out the requirements.

Circular 9/2009 also covered disclosure requirements and guidelines of results from exploration drilling. However, the trade association Norsk Olje og Gass (the Norwegian Oil and Gas Association, formerly known as Oljeindustriens Landsforening - the Norwegian Oil Industry Association) is evaluating a new practice for disclosure of the results from exploration drilling. The intention is to finalise such guidelines in the first part of 2013. Oslo Børs is assisting the Norwegian Oil and Gas Association in its consideration of this matter. Thus, any references to disclosure requirements for drilling of exploration and appraisal wells are no longer part of this Circular, and will be addressed separately when Norsk Olje og Gass has come up with its guidelines.

Following the Executive Summary set out in section 1.2, the companies covered by the Circular are defined in section 1.3. In section 1.4, the key concepts are presented. In section 3, specific guidelines are laid down for the listed companies' mandatory reporting of reserves and resources.

Oslo Børs may grant exemptions from the expert report requirements.

The framework drawn up in the Circular is envisaged to hold benefits for both issuers and investors. Not only may increased comparability of reserves data be of great value to investors, but increased accessibility of reserves data (and its inherent value and bearing on the share price) and a more widespread understanding of relevant technical information might also attract more investors and liquidity to individual issuers and to the sector as a whole.

The Executive Summary in the next section (section 1.2) presents the main features of the Circular.

## 1.2 Executive summary

This Circular deals with oil and natural gas companies as defined in section 1.3.

In section 2 the Circular sets out the *specific listing requirements* for oil and natural gas companies, which basically is that the company should prepare a status of its reserves (and possibly resources) and include an independent expert report, upon listing. This listing criteria is mirroring the equivalent requirement as set out by the prospectus rules, which also requires an independent expert report (a “competent persons report”) upon listing. Thus, the statement of reserves (including the independent expert report) has to be approved by both Finanstilsynet<sup>1</sup> and Oslo Børs prior to listing. Oslo Børs has to the extent possible aligned its rules to the prospectus rules.

The requirement for a reserve (and possibly resource) report applies for oil and natural gas companies, as well as pure exploration companies, and is identical for listing on both Oslo Børs and Oslo Axess. An exemption from an independent expert report might be granted by Oslo Børs if the issuer is already admitted to trading on either a regulated market, an equivalent overseas market, or an appropriate multi-lateral trading facility, again mirroring the ESMA requirements<sup>2</sup>

Specific *annual reserve reporting requirements* for listed companies are set out in section 3.

Listed oil and gas companies should report the reserves in an *Annual Statement of Reserves and Resources* (in brief the “ASR”). It is optional for companies with only *possible reserves, contingent and/or prospective resources* to report such figures annually. However, such companies (which includes pure exploration companies) are nonetheless advised to report annually – following the format of the ASR – any status of resources that is considered relevant for the company and its investors, as the ESMA rules provides an exemption from an independent expert report in any prospectus if the issuer can demonstrate that it reported and published annually “details” of its mineral resources “and where applicable reserves (presented separately) and exploration results/prospects” in accordance with one of the accepted reporting standards.

As would be clear from what is described above, oil and gas companies will both upon listing and subsequent to listing have to comply with two sets of rules with regards to reporting of reserves and resources, the prospectus rules (but only when a prospectus is triggered) managed by Finanstilsynet, and Oslo Børs’ requirements as set out in this Circular. Oslo Børs has to the extent possible aligned its rules to the prospectus rules.

The ASR should be published<sup>3</sup> at the latest simultaneously with publication of the annual report, or alternatively at such date specified in the reserve reporting regulations that the company is subject to on another exchange or marketplace. The ASR should include *reserves* and possibly *resources* in tables. It is optional to report possible reserves, contingent and prospective resources, if so such reporting should be in tables as set out in this Circular accompanied with relevant disclaimers.

The ASR should furthermore include *a narrative* (management discussion and analysis,

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<sup>1</sup> Finanstilsynet – the Financial Supervisory Authority of Norway, FSA.

<sup>2</sup> When this Circular refers to “ESMA requirements” or “ESMA rules”, it is a reference to sections 131-133 covering “mineral companies” in the ESMA rules for the consistent implementation of Commission Regulation (EC) No 809/2004 implementing the Prospectus Directive, which can be found here: [http://www.esma.europa.eu/system/files/11\\_81.pdf](http://www.esma.europa.eu/system/files/11_81.pdf). ESMA (ref sections 131-133) requires the so-called “mineral companies”, which covers oil and natural gas companies, to set out what details should be provided for reserves and resources, and to what extent an independent, competent persons report is to be included in any listing and/or offer prospectus. For this Circular an independent, competent persons report is equivalent to an “independent experts report”.

<sup>3</sup> The ASR should be published under category “Petroleum Reserves”.

the MD&A) with key assumptions, and a report from an *independent* expert as the main rule. (Alternatively, an adequate internal organisation can provide this report). The ASR should be signed by the CEO of the company. Should the company's own reserve estimate for a field differ substantially from the reserve estimates made public by the operator of the field, the deviation should be explained to the extent possible. (For contingent and prospective resources a disclaimer would state that other partners might have different estimates).

Companies being subject to reserves reporting obligations on other exchanges or regulated marketplaces where their securities are listed, such as companies filing reserves estimates in accordance with SEC requirements in the US, may publish the relevant reports as a substitute for the ASR.

When discussing reserves and resources in its on-going communication with the market (e.g. in news releases and presentation material) listed companies should always *incorporate a reference* to the most recently filed ASR.

Annex I explains - in an educational way - the rationale for classifying reserves and resources, and compares the main classification systems that currently are applied worldwide. Annex II deals - in more technical terms - with the estimation of reserves and resources, and the handling of uncertainties. Annex III provides the reporting format of reserves, to be applied in the annual statement of reserve reporting. Annex IV provides definitions, abbreviations, units and conversion factors for the industry. Note that especially annex I should help new investors understand the basics of the classification of reserves and resources.

### **1.3 Application of the Circular**

This Circular applies to oil and natural gas companies with shares listed on Oslo Børs or Oslo Axess and to companies which have applied for such listing as further specified in section 2, 3 and 4.

References to 'Oslo Børs' or 'the stock exchange' should be read as references to both Oslo Børs and Oslo Axess. The requirements in this Circular are the same irrespective of whether the company is listed on Oslo Børs or Oslo Axess.

*Oil and natural gas companies* are those companies whose principal activity is or is planned to be the exploration and/or production of hydrocarbons.

The Circular applies without regard to whether the company has Norway as its home or host state, cf. section 5-4 of the STA and section 13 of the Continuing Obligations. The Circular also applies both to primary and secondary listed companies.

### **1.4 Key concepts – reserves and resources**

For oil and natural gas companies listed on Oslo Børs or on Oslo Axess it is mandatory to report reserves annually. Reporting of probable reserves, contingent and prospective resources in the ASR is optional, as long as this is in line with what is required in this Circular.

It is therefore necessary to take a closer look at these concepts. In this Circular the SPE PRMS definitions are used as a point of reference when discussing reserves, resources and other key concepts, but this does not preclude the use of other classification systems by the companies. The full set of the SPE definitions (the SPE/WPC/AAPG/SPEE Petroleum Resources Management System document, referred to as the "SPE PRMS") is included in Annex I. <sup>4</sup>

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<sup>4</sup> The Society of Petroleum Engineers (SPE) is a not-for-profit professional organization providing a global reference system for the exploration, development and production of oil and gas resources. This classification

The SPE's definition of these categories is here set out for easy reference:

Category	Definition as set by SPE	Comments by Oslo Børs
<b>Prospective Resources</b>	Those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.	These are potential, undiscovered quantities of petroleum. No drilling has been undertaken.
<b>Contingent Resources</b>	Contingent Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies.	This is petroleum that has been discovered by drilling. But it is currently not considered commercially recoverable to develop the project(s), as there might not be currently any viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality.
<b>Reserves</b>	Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: They must be discovered, recoverable, commercial, and remaining (as of a given date) based on the development project(s) applied.	Reserves are characterized by the following: <ul style="list-style-type: none"> <li>- it is petroleum that has been discovered by drilling</li> <li>- these volumes can be recovered both technically and commercially</li> <li>- if these reserves are not already developed and in operation, a plan for development and operation is underway (PDO)</li> </ul>

Please see Annex I for more detailed definitions.

The notion "petroleum" is defined by SPE as a naturally occurring mixture consisting of hydrocarbons in the gaseous, liquid, or solid phase. This definition covers the more popular notions "oil" and "natural gas".

As is shown in the table above, prospective resources are an estimated volume (taking the recovery factor into account), associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target. The drilling target has been sufficiently defined through seismic and other activities, but the proof of the pudding – drilling into the reservoir to verify any hydrocarbons – remains to be done.

## 2. Listing Requirements

In addition to the general requirements for listing on Oslo Børs set out in the Listing Rules, a specific mandatory listing requirement for mineral companies is set out in section 2.2.6, cf. section 3.4 third subsection no 33 of the Listing Rules<sup>5</sup>, which reads:

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system is called PRMS, the Petroleum Resources Management System. It can be found here: [http://www.spe.org/industry/docs/PRMS\\_Guidelines\\_Nov2011.pdf](http://www.spe.org/industry/docs/PRMS_Guidelines_Nov2011.pdf)

<sup>5</sup> Corresponding provisions are set out in section 2.2.6, cf. section 3.4 third subsection no 32 of the Oslo Axess Listing Rules. Note that the Listing Rules and Continuing Obligations are subject to a consultation process unrelated to this Circular, revised listing rules may come into place by July 2013. The references herein might therefore change.

*“Companies that meet the definition of “mineral companies” in the ESMA update of CESR's recommendation on prospectuses must provide the information mentioned in Paragraph 132 of the recommendation and a report by an independent expert as required by Paragraph 133. A report on reserves prepared in accordance with the guidelines issued by Oslo Børs will be assumed to satisfy the requirements of Paragraph 132 and Paragraph 133. Oslo Børs may consent to the use of a report on reserves prepared in accordance with other guidelines, as well as – on the basis of an application – approve that companies already listed on another recognised market place and that have reported reserves/resources on a continuous basis in accordance with recognised reporting standards are exempted from the requirement of providing an expert report as part of the listing process.”*

The information required by the ESMA provision is in broad terms *details of the reserves and/or resources, and an independent expert's report.*

For listing purposes of oil and natural gas companies a *reserve report* prepared in accordance with the requirements set out in section 3.3 (equivalent to an Annual Statement of Reserves and Resources), will be assumed to satisfy the requirements of section 132 in the ESMA recommendation. An *expert report* prepared in accordance with section 3.5 will furthermore be assumed to satisfy the requirements of section 133 in the ESMA recommendation. (Note, however, that the option to present an expert report prepared by *internal* experts does not apply in connection with the *listing* of the company, as this expert has to be independent).

Oslo Børs might grant an exemption from an *expert report* for companies listed on another recognised market place, this provision corresponds to a large degree with ESMA's exemption. Thus, what Oslo Børs requires upon listing mirrors to a large degree what ESMA requires for the listing prospectus.

Oslo Børs is prescribing the use of classification systems widely recognised and in use throughout the Oil and Gas industry internationally, for the reporting of reserves and resources. The following classification systems are pre-approved<sup>6</sup>:

- 1) the SPE PRMS classification system (the SPE/WPC/AAPG/SPEE *Petroleum Resources Management System document*)
- 2) SEC (ie reporting in line with the US Securities and Exchanges Commissions requirements)
- 3) NPD (ie reporting in line with the Norwegian Petroleum Directorate's requirements)
- 4) NI 51-101 (reporting in line with Canadian National Instrument 51-101)

Companies considering to list on Oslo Børs or Oslo Axess and that have a classification system different from the standards set out above, should consult Oslo Børs prior to the listing process being initiated, for any approval of the classification system in accordance with the Listing Rules.

The Circular does not establish any new or revised set of definitions and/or classification criteria for reserves and resources, but prescribes the application of classification systems widely recognised and in use throughout the oil and gas industry internationally. These classification systems are listed in section 2 below, and also discussed in Annex I.

The statement of reserves should be dated no more than six months prior to the date of the introductory report, cf. section 3.1 third subsection of the Listing Rules, provided the management confirms in the introductory report that no material changes have occurred

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<sup>6</sup> The reporting should be based on the most recently approved classification system and definitions, and reference should be made to this fact.

since the date of the competent persons report, the omission of which would make the competent persons report misleading.<sup>7</sup>

### 3. Disclosure requirements for reserves and resources

#### 3.1 Introduction

Oslo Børs introduced with Circular 9/2009 annual reserve reporting as a mandatory obligation for such companies by the inclusion of the following provision in the Continuing Obligations (section 3.7):

#### 3.7 Annual Statement of Reserves

- (1) *Companies whose principal activity is or is planned to be the exploration and/or production of hydrocarbons (oil and natural gas companies) should annually publish updated reserve figures and an Annual Statement of Reserves in accordance with guidelines set out by the exchange.<sup>8</sup>*
- (2) *The Annual Statement of Reserves should be published at the latest simultaneously with publication of the annual report or at such date specified in the reserve reporting regulations that the company is subject to on another exchange or marketplace.*
- (3) *The Annual Statement of Reserves may be prepared in Norwegian, English, Swedish or Danish.*

In this section 3, the reporting obligations are described in more detail.

In addition to setting out the mandatory reporting obligations, this section also sets out what the companies can opt to report of additional information (marked "Optional"), and what information the companies should not report.

#### 3.2 Rationale for ongoing disclosure of reserves and resources

What a company produces of oil or gas is important information for the investors. What is equally important is the amount of reserves and/or resources the company has in stock, for future production. Thus, the disclosure and reporting of reserves is an important feature for oil and natural gas companies.

Levels of disclosure do however vary worldwide. Certain foreign regulatory entities prohibit the additional disclosure of *unproved reserves* (i.e. *Probable* and *Possible*) as well as contingent and prospective resources. It is the opinion of Oslo Børs as regulator that an overly conservative approach to reserves reporting may be just as misleading as an overly optimistic one, if the result is that the market at large does not have the ability to analyse the less conservative but perhaps more relevant data which to a greater extent forms the basis for the company's internal evaluation and actual decision making.

One of the most basic motives behind the presence of disclosure requirements is to ensure that the economic value of the event or information in question – and equally important; the probability of it being realised – is shared with the market. If too strict a requirement is applied to the probability aspect resulting in the information being

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<sup>7</sup> It should be noted that the equivalent ESMA/prospectus requirements are identical.

<sup>8</sup> For comparison; ESMA defines "mineral companies" as "companies with material mineral projects. The materiality of mineral projects should be assessed having regard to all the company's mineral projects relative to the issuer and its group taken as a whole." ESMA's definition includes mining companies as well, and since Oslo Børs addresses only oil and natural gas companies Oslo Børs' definition is more to the point.



withheld, the consequence is that the market at large is denied the opportunity to value this information properly. As long as the underlying framework of definitions and classification criteria is widely known, the expected outcome (the probability-weighted sum of alternative outcomes associated with various probabilities) and thereby the estimated economic value of the relevant information, is generally for the buyers and sellers of financial instruments to decide within the dynamics of a liquid, efficient and regulated market.

The hydrocarbon reserves of an upstream oil and/or gas company are of critical importance to the valuation of such a company, and therefore to the trading in its shares and other related financial instruments. Investors relate to reserves as an approximation to a company's long-term value and thus any material change in a company's reported reserves will have a profound effect on the share price.

Today, *reserves* are typically accounted for by an unaudited note to the financial statements. On an ongoing and ad-hoc basis, reserves are addressed under the issuer's general and continuous disclosure requirements. Furthermore, the fundamentals of reserve estimations have an indirect, but nonetheless notable impact on the company's financial statements as the capitalized exploration and investments in the balance sheet are normally depreciated quarterly based on the "unit-of-production method"<sup>9</sup>.

The rationale to allow annual reporting of *contingent resources* in tables (and with relevant disclaimers as set out in this Circular) is that this represents considerable values for the companies. The development of contingent resources into reserves is of high priority for oil companies. It is therefore of importance that both investors and the top management of the company are looking at the same set of figures.

The rationale to allow annual reporting of *prospective resources* in tables (and with relevant disclaimers as set out in this Circular) is that this might be the only assets an E & P company might have, and that to allow such reporting would align the disclosure rules with the ESMA requirements.

### **3.3 Mandatory reporting of the Annual Statement of Reserves and Resources**

Oslo Børs has introduced an obligation for oil and natural gas companies to publish its reserves annually, in a report called the company's *Annual Statement of Reserves and Resources* (the "ASR"). It is optional to report *possible reserves and resources*.

The reporting period for reserves balance, production volumes etc. should as a starting point be the calendar year, but if the date of the underlying reserves estimation falls outside of the fourth quarter, this date may also be used as the (annual) start/end of the reporting period. The date of the underlying reserves estimation should be stated throughout the ASR wherever relevant.

Companies which are subject to similar reporting requirements on other exchanges or regulated marketplaces where their securities are listed may publish the relevant report as a substitute for the ASR. If such report constitutes a full annual report the company must procure that the relevant chapters are extracted to form the substitute document. Alternatively, if the full report is published the company should simultaneously disclose detailed and precise references to where the contents substituting the ASR may be found.

The ASR, or the relevant substitute document, shall be published and filed in accordance with the Continuing Obligations.<sup>10</sup>

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<sup>9</sup> The unit of production method is defined in Annex IV, in "Main definitions".

<sup>10</sup> See section 5.1, 5.2 and – for companies with Norway as their host state - section 13.2.2 and 13.3.3 of the Continuing Obligations. The ASR should be stored/filed under the disclosure category "Petroleum Reserves".

### **3.4 Optional: Reporting of possible reserves, contingent and prospective resources**

It is optional for the oil and gas companies to report possible reserves, contingent and prospective resources in the annual ASR.

However, companies with only possible reserves, contingent and/or prospective resources are nonetheless advised to report annually – with the format of an ASR report - what is considered relevant for the company and its investors. The reason is that the ESMA rules provides an exemption from an independent expert report in any prospectus if the issuer can demonstrate that it reported and published annually “details” of its mineral resources “and where applicable reserves (presented separately) and exploration results/prospects” in accordance with one of the accepted reporting standards.

Oslo Børs assumes that the ASR will fulfill ESMA’s requirements<sup>11</sup>, both in relation to an annual reporting and with regards to the details of reserves/resources.

### **3.5 Expert report of reserves and resources**

#### ***3.5.1 General***

An independent third party expert should provide a report on the reserve and resource figures in the ASR. The expert’s report should be an integrated part of the ASR.

#### ***3.5.2 Qualifications of the independent expert***

The expert<sup>12</sup> should possess the required competency requirements as prescribed by the chosen reporting standards. If such requirements are not prescribed by the reporting standard then the expert should fulfil the following requirements:

- (i) Be professionally qualified and a member in good standing of an appropriate recognised professional association, institution or body relevant to the activity being undertaken, and who is subject to the enforceable rules of conduct;
- (ii) Have at least five years’ relevant professional experience in the estimation, assessment and evaluation of hydrocarbons being or to be exploited by the company and to the activity which that person is undertaking.

In addition, the expert should be independent of the company, its directors, senior management and its other advisers, and does not have an equity interest in the company or in any of the mineral assets being evaluated and is not remunerated by way of a fee that is linked to the admission or value of the issuer.

Oslo Børs may grant exemptions from the requirements set out above.

#### ***3.5.3 Format of the expert report***

The format of the independent expert report should be in line with the chosen reporting standard. If the company has chosen a classification system without any such format requirements, the expert report should set out what work (the scope) has been

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The same category should be used if the company only has exploration licenses and/or only resources and is still preparing an ASR. Note that the Continuing Obligations are subject to a consultation process unrelated to this Circular, revised listing rules may come into place by July 2013. The references herein might therefore change.

<sup>11</sup> Such reporting should presumably be in line with reporting standards – SPE, Norwegian Petroleum Directorate etc – accepted by ESMA.

<sup>12</sup> The qualifications for the independent expert are identical to ESMA’s corresponding requirements, in section 133 i). While ESMA refers to “competent person”, this Circular refers to “independent expert”, but the qualifications remain the same.

performed by the expert (or by the company), that he is independent of the company, its directors, senior management and its other advisers, and whether he has an equity interest in the company. Furthermore that the reserve and resource figures reported in the ASR are as defined by the chosen classification system.

#### **3.5.4 Scope of work**

For companies that have chosen a reporting standard with no specific requirements regulating the expert report, the following is accepted by Oslo Børs:

- (i) The independent expert can report on (in line with the format of the expert report as set out above) figures *which have been prepared by the company*.
- (ii) The independent expert can also *both prepare and report on* the figures.

While the alternative set out in (ii) might raise questions about the independence of the expert, Oslo Børs nonetheless believes that the expert would be sufficiently independent. In any case the process (the scope of work) should be set out in the expert report itself.

The company should obtain and keep documentation supporting the company's view that the expert is sufficiently qualified and independent, and provide it to Oslo Børs upon request.

#### **3.5.5 The alternative to an independent expert report; an internal organisation is responsible**

Alternatively, if the company has set up an adequate internal organisation responsible for the preparation of reserves/resource data as well as the relevant supervisory body and/or control systems on a corporate level, it is sufficient that the qualifications for the internal expert confirming the figures is presented, together with a description of the internal organisation.

#### **3.5.6 Possible reserves and resources optional**

Reporting of *possible reserves, contingent resources and/or prospective resources* is optional. Should the company decide to include such figures in the ASR, the independent expert (or the internal organisation) should provide a report on these figures.

Furthermore, figures for contingent resources and prospective resources should be accompanied by disclaimers. Appendix 3 sets out the format of the reporting for contingent resources and prospective resources

### **3.6 Reporting deadline for the Reserves and the ASR**

The ASR should be published at the latest simultaneously with publication of the annual report or at such date specified in the reserve reporting regulations that the company is subject to on another exchange or marketplace, cf. section 3.8 below.

### **3.7 Contents of the Annual Statement of Reserves and Resources**

#### **3.7.1 General**

The ASR should contain a brief description of the classification system applied and relevant references thereto, as well as definitions of reserves and contingent resources covered by the ASR. Definitions and classification criteria are to a certain extent subject to interpretation, and the ASR should also provide information on such interpretations and how these have been applied. Any reporting should be based on the most recently approved classification system and definitions, and reference should be made to this fact.

Should a company after listing on Oslo Børs opt for a classification system/reporting standard different from what was applied per date of listing, the company should clearly state that this new standard is different from the standard used per entry for listing. The reasons for the change of system should be explained in the ASR. Such a classification system has – in any case - to be widely recognised and in use throughout the oil and gas industry internationally.

Furthermore, the ASR should provide investors with a variety of qualitative and quantitative information,<sup>13</sup> including but not limited to the items set out in section 3.7.2 to 3.7.6 below.

### **3.7.2 Quantitative information concerning Reserves**

The ASR should contain quantitative information covering the following areas:

**Reserves:** Reserves segmented in a way that the company considers most appropriate, i.e. reserves per geographical region, asset, project or field. Data should be presented for both developed and undeveloped reserves, and for each category a conservative estimate (i.e. *P90* or *Proved*)<sup>14</sup> and a best estimate (i.e. *P50* or *Proved plus Probable*) should be presented, or a range.

Reporting of *possible* reserves is optional.

**Reserves development:** How reserves have developed throughout the calendar year, including an opening balance, produced volumes, acquisitions, additions, new developments and revisions of previous estimates given; as well as a closing balance at year end.

Reserves and reserve development should be presented in table formats (see Annex III).

Should the company decide not to present reserves in table formats, the specific reasons for this should be detailed.

Section 3.10 below provides further details regarding the principles for reporting of reserves.

### **3.7.3 Disclosure of Prospective and Contingent Resources (optional)**

**Format:** Resources should be presented in table format. Prospective resources should not be mixed with contingent resources. Resources should be presented on a P50 or Best Estimate basis, or as a range. Furthermore, only risk weighted prospective resources should be added up. Unrisked prospective resources should not be added up. A disclaimer should be included.

Annex III sets out further details for the format.

### **3.7.4 Future production and investment horizon (optional)**

In addition to the quantitative information as outlined above, Oslo Børs recommends that quantitative information regarding the company's future production and investments should be included in the ASR. This information, although not directly related to reserves estimation, will provide investors and the market at large with information of high analytical value to the estimation of the present value of existing reserves.

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<sup>13</sup> Please refer to Annex III for a reporting format for quantitative information.

<sup>14</sup> Please see Annex II herein for an explanation of categories and terminology such as P90, P50, P10, Proved or 1P, Proved+Probable or 2P and Proved+Probable+Possible or 3P.

Companies which opt to include such information are encouraged to provide data covering the previous two calendar years, current year estimate, and subsequent years for which estimates exist. Actual figures and estimates should be presented for production (of actual products and/or, as a minimum, production in *mboe*), and for significant CAPEX (major investments, excluding working capital) and work commitments.

### **3.7.5 MD&A**

The ASR should contain a Management's Discussion and Analysis (MD&A) of the figures presented, including a comprehensive discussion covering the technical and economic assumptions on which the reserve estimates are made. Section 3.10 sets out additional details regarding reserves.

The MD&A should include an introductory statement of responsibility clearly identifying the third party experts that has supervised and reviewed the reserves data, or alternatively; the internal organisation responsible for the preparation of reserves data as well as the relevant supervisory body and/or control systems on a corporate level. The MD&A should in any case be signed by the company's Chief Executive Officer.

The ASR should contain a minimum of "forward-looking statements" and/or contingencies, but the MD&A should nonetheless contain a general disclaimer regarding such statements, also covering all assumptions made in the estimates presented.

*Should the Chief Executive Officer decide not sign the ASR, the ASR should be signed by another member of the management and the reasons for this should be set out in the ASR.*

### **3.7.6 Prudent disclosure**

Should any such information discussed in the above sections meet the criteria of 'inside information' as set out in the Securities Trading Act section 3-2, such information would nonetheless have to be disclosed in accordance with the Securities Trading Act section 5-1, 5-2 and 5-3, regardless of what is discussed in this Circular.

## **3.8 Special considerations for issuers listed on other exchanges**

Companies being subject to reserves and/or resource reporting obligations on other exchanges or regulated marketplaces where their securities are listed, such as companies filing reserves estimates in accordance with SEC requirements in the US, may publish the relevant reports as a substitute for the ASR.

## **3.9 Reporting units**

The following units are most commonly used as reporting units:

- Liquids: mmbbl (million barrels)
- Gas: bcm/bcf (billion cubic metres/feet)
- Oil equivalents: mmboe (million barrels of oil equivalents)

Barrels (bbl) should be equivalent to Stock Tank Barrels (stb), i.e. barrels of oil at surface pressure and otherwise standard conditions. LPG should be converted into o.e. by price equivalent

Oil equivalents (o.e.) should be used when quantities of oil, gas, NGL and condensate resources are to be added up. Such summation may take place by employing a common property, energy. The term "oil equivalents" is linked with the amount of energy liberated by combustion of the various kinds of petroleum.

In the case of non-conventional hydrocarbons, these should be reported in units of mboe,

and be based on the same general principles and requirements as set out herein.

Please see Annex IV for a list of abbreviations and conversion factors.

### 3.10 Reporting of reserves, detailed requirements

Based on the general requirements for the ASR set out in the preceding sections, we will in the following discuss in more detail certain issues relating to reporting of reserves.

- **Economic requirements:** Reserves (of any category) may be assigned only to those volumes that are economically recoverable. The economic, fiscal and financial conditions under which these estimates are prepared should preferably and generally be those which are considered to be a reasonable outlook on the future.

The use of management's best estimate for the price is recommended, as this would align the calculations for reserves more in line with both the management's view and the SPE PRMS system. The chosen alternative should be clearly stated. If actual commodity price hedging or other relevant hedging is in place or to be applied, the effects of hedging may be taken into account, providing that information about such hedging (including its effect on price assumptions) should be provided in notes and/or in the MD&A.

If required by securities regulators or other agencies, other prices and costs also may be used. In any event, the fiscal assumptions used in the preparation of reserves estimates must be disclosed.

If some or all of the future production has been sold forward/hedged for a certain price, the price and volume should be disclosed.

- **Development stage and commitment:** Reserves may be assigned only to those volumes where a Plan for Development and Operation (PDO) has at least been filed (but not necessarily approved) by relevant authorities (or where similar development approval has been granted by relevant authorities, cf. "Regulatory considerations below"). If the approval of a PDO may be anticipated with reasonable certainty and within a predictable lead time of its filing, reserves *may* be assigned to the volumes in question prior to the filing of a PDO, providing the licence holder or partners have decided upon and committed financial resources towards the commercial development of the volumes in question.
- **Operator's reserve estimate:** Should the company's own reserve estimate for a field differ substantially from the disclosed reserve estimates made public by the operator of the field, the deviation should be explained in the ASR to the extent possible.
- **Relative ownership, entitlement or working interest:** As a general principle all reporting should include information as to the reporting company's rights in respect of the asset or licence in question. Reserves figures should be stated as net or gross, always with accompanying information about the company's corresponding working interest. Reserves covered by a Production Sharing Contracts (PSCs or PSAs), as well as other forms of contract regimes, should be calculated on an entitlement basis.
- **Drilling requirements:** Reserves (of any category) may be assigned only to known accumulations that have been proven by drilling and penetration, or otherwise fulfil requirements for classification as reserves.
- **Testing requirements:** Confirmation of commercial productivity of an accumulation by production or a formation test has in the past been required for classification of reserves as *Proved*. However, new SEC regulations allow the use of "reliable

technology" other than well penetrations to establish oil and gas reserves as proved. Furthermore, an accumulation can be one continuous reservoir, or several reservoir sections where reservoir- and/or pressure continuity has been tested and established. In the absence of such confirmation from production or formation testing, (alternatively the use of "reliable technology" as outlined by SEC), *Probable* and/or *Possible* reserves may be assigned to an accumulation on the basis of well logs and/or core analysis that indicate that the zone is hydrocarbon bearing and is analogous to other reservoirs in the immediate area that have demonstrated commercial productivity by actual production or formation testing.

- **Regulatory considerations:** In general, reserves may be assigned only in instances where production or development of those reserves is not prohibited by governmental regulation. This provision would, for instance, preclude the assignment of reserves in designated environmentally sensitive areas. Reserves may be assigned in instances where regulatory restraints may be removed subject to satisfaction of minor conditions. In such cases, the classification of such reserves should reflect the risk associated with the project approval.
- **Disclosure of key assumptions:** All main quantitative input, including key assumptions made in the process of reserves calculation, should be disclosed as notes to tables and, where appropriate, in the MD&A.

### 3.11 Interim updates of reserve and resource up/downgrades

In the event of acquisitions and disposals resulting in material changes to the company's reserves, it is the view of Oslo Børs that this will be adequately covered by general on-going disclosure requirements, providing that news releases issued in conjunction with such events include the necessary reserves data and refer to the previously filed ASR. wherever relevant.

### 3.12 Requirements for subsequent and continuing disclosure

When discussing reserves and resources in its on-going communication with the market (e.g. in news releases and presentation material) listed companies should always incorporate a reference to the most recently filed ASR.

The term *reserves* should not be used in relation to un-risked quantities or estimates, nor when referring to quantities of a sub economic, sub commercial and/or undiscovered nature. A brief disclaimer should point investors to the current ASR as previously filed with Oslo Børs.<sup>15</sup>

As a general principle, Oslo Børs advocates the use of resource estimates that are risked (adjusted for risks and uncertainties) according to industry standards. The quantification of un-risked volumes can be viewed as being optimistic beyond reason, and may thus be potentially misleading.

*P50, Mean or Proved plus Probable* reserves as well as *P90 or Proved* may be referred to and discussed on a stand-alone basis. However, when referring to *P10* reserves, contingent resources or upside potential of any category, related to a field or project where *P90 or Proved* reserves has been calculated, information about the latter should be included in brackets or in the discussion itself.

Disclosure regarding reserves, resources and/or resource potential should always clearly distinguish between new and previously issued information.

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<sup>15</sup> Available at [www.newsweb.no](http://www.newsweb.no).

## ANNEX I – Reserves and Resource classification systems

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### Reserves and Resources – the basics

It is the intention of Oslo Børs, and of this Circular, not to establish any new or revised set of definitions and/or classification criteria, but to prescribe the application of definitions and criteria widely recognised and in use throughout the Oil and Gas industry internationally, and to ensure the uniform adoption of reporting standards according to the principles set out herein.

This annex sets out the various classification systems, which are compared for the benefit of the investors.

It is however useful to have the SPE/WPC/AAPG/SPEE definitions (the SPE PRMS document, approved by the SPE Board in March 2007) as an initial point of reference, as this classification system is widely applied.

On a general level, investors should therefore be able to relate to the various terminologies used in describing Resources and Reserves referring to the following definitions in accordance with the SPE PRMS framework (*in Italic*):

#### **Reserves**

*RESERVES are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: they must be discovered, recoverable, commercial, and remaining (as of the evaluation date) based on the development project(s) applied. Reserves are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by development and production status.*

All reserve estimates involve some degree of uncertainty. The uncertainty depends chiefly on the amount of reliable geologic and engineering data available at the time of the estimate and the interpretation of these data. The relative degree of uncertainty may be conveyed by placing reserves into one of two principal classifications, either proved or unproved. Unproved reserves are less certain to be recovered than proved reserves and may be further sub-classified as probable and possible reserves to denote progressively increasing uncertainty in their recoverability. Estimated recoverable quantities from known accumulations which do not fulfil the requirement of commerciality should be classified as Contingent Resources, as defined below.

Depending on the resource and reserves classification system used, reserves may be divided into sub-classes as follows: Reserves may be sub-divided into *developed* and *undeveloped* depending on the presence of infrastructure (pipelines or other installations) required for commercial production. Reserves may also be subdivided into *producing* and *non-producing*, depending on their production status; and (as required by the SEC) into *commercial* and *non-commercial* depending on production permitting status.



### **Contingent Resources**

*CONTINGENT RESOURCES* are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies. Contingent Resources may include, for example, projects for which there are currently no viable markets, or where commercial recovery is dependent on technology under development, or where evaluation of the accumulation is insufficient to clearly assess commerciality. Contingent Resources are further categorized in accordance with the level of certainty associated with the estimates and may be sub-classified based on project maturity and/or characterized by their economic status.

### **Prospective Resources**

*PROSPECTIVE RESOURCES* are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of discovery and a chance of development. Prospective Resources are further subdivided in accordance with the level of certainty associated with recoverable estimates assuming their discovery and development and may be sub-classified based on project maturity.

## **General classification approach**

There are a number of different classification systems in use in various parts of the world, and there are different classification systems for (other) mineral resources than for hydrocarbon resources. Nearly all of these systems, however, do have many common features in their approach to classification of resources and reserves. The diagram below is a graphical presentation of the basic fundamentals these systems have in common, by way of a (modified) McKelvey<sup>16</sup> box:

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<sup>16</sup> Most resource classification systems relate in some way or another to the general recommendations published by V.E. McKelvey in 1972 for the classification of subsurface natural resources.

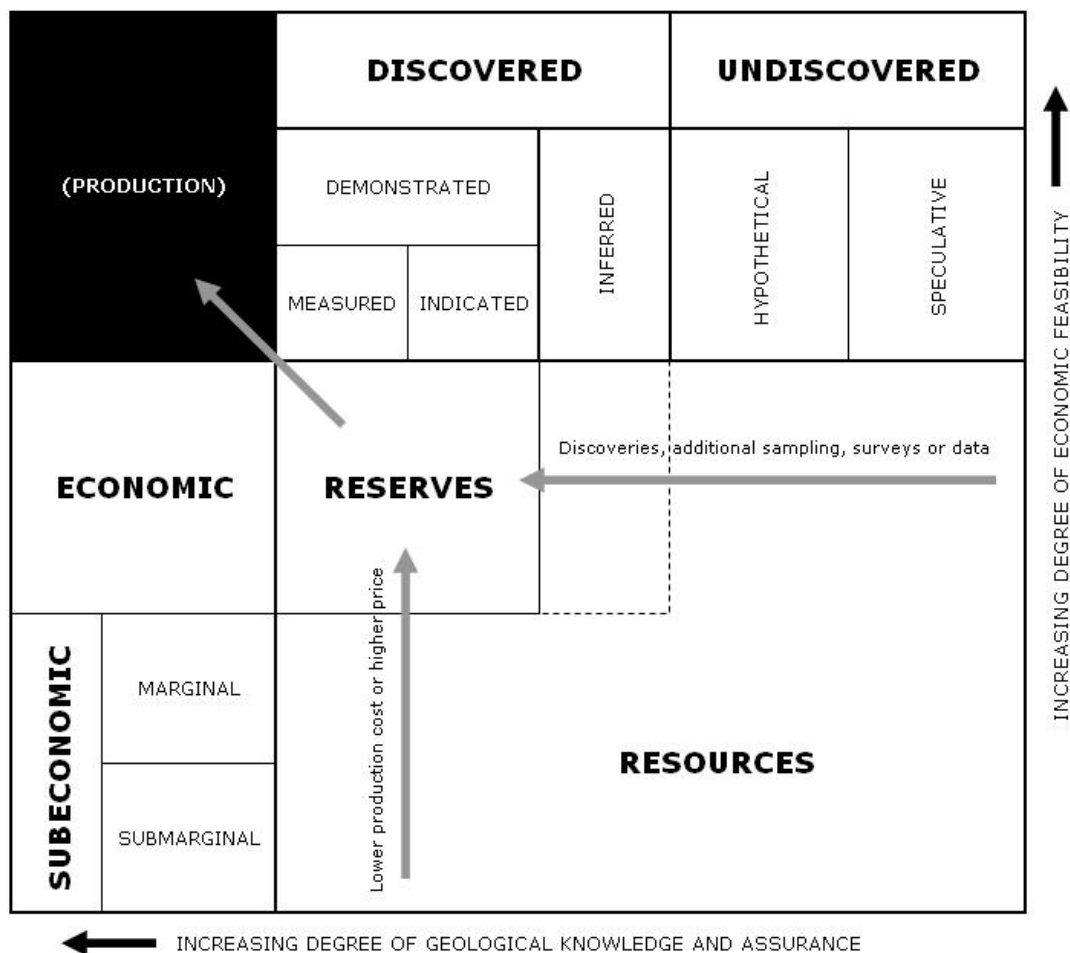


Fig. 1 – Illustrative McKelvey box

The key features of this approach is that resources are categorised along two axes, one related to economic feasibility (i.e. from sub-economic *resources* to demonstrably economic *reserves*) and one related to geological and technical uncertainty (e.g. from *undiscovered* via *Possible* and *Probable* to *Proved reserves*).

Resources may be categorised as a product of their position relative to the two axes, e.g. *demonstrated* (but still) *sub-economic*, or *hypothetical* (but) *economic* (if present). The subset of *resources* that can be geologically estimated with a reasonable degree of certainty, and that holds the greatest potential for economically feasible extraction/production with current technology and prices, is the portion of *resources* we refer to as *reserves*. (Note that the concepts “demonstrated”, “measured”, “indicated” and “inferred” relates to the mining sector, and not to the oil sector).

### The main classification systems (NPD, SPE and SEC) compared

Several classification systems have been developed over the years. The main classification systems are compared below.

In 1997, the Society of Petroleum Engineers (SPE) and the World Petroleum Council (WPC) published its Reserves Definitions. In February 2000, the SPE and the WPC together with the American Association of Petroleum Geologists (AAPG) published resources definitions that cover the full range of petroleum reserves and resources.

A revised classification system and definitions – the “Petroleum Resources Management System” (SPE PRMS) – was approved by the SPE Board in March 2007.

This revised system for defining reserves and resources was developed over more than two years, with SPE working with World Petroleum Council (WPC), American Association of Petroleum Geologists (AAPG) and Society of Petroleum Evaluation Engineers (SPEE). These SPE PRMS definitions provide a useful point of reference in terms of widely recognised and commonly applied definitions and classification criteria. Please refer to the SPE website for further guidance of the Petroleum Resources Management System: <http://www.spe.org/spe-app/spe/industry/reserves/prms.htm>.

In its classification system SPE is now also emphasising the “project approach” to development of reserves and resources. The “project approach” aligns the SPE PRMS system with the NPD classification system, see description of the NPD system below.

The SPE PRMS provides valuable and in-depth definitions of key concepts of the oil industry, like reserves, contingent resources, prospective resources, unrecoverable petroleum, prospects, lead, play etc.

The figure below is a graphical representation of the SPE/WPC/AAPG/SPEE resources classification system. The system defines the major recoverable resources classes: Production, Reserves, Contingent Resources, and Prospective Resources, as well as Unrecoverable petroleum.

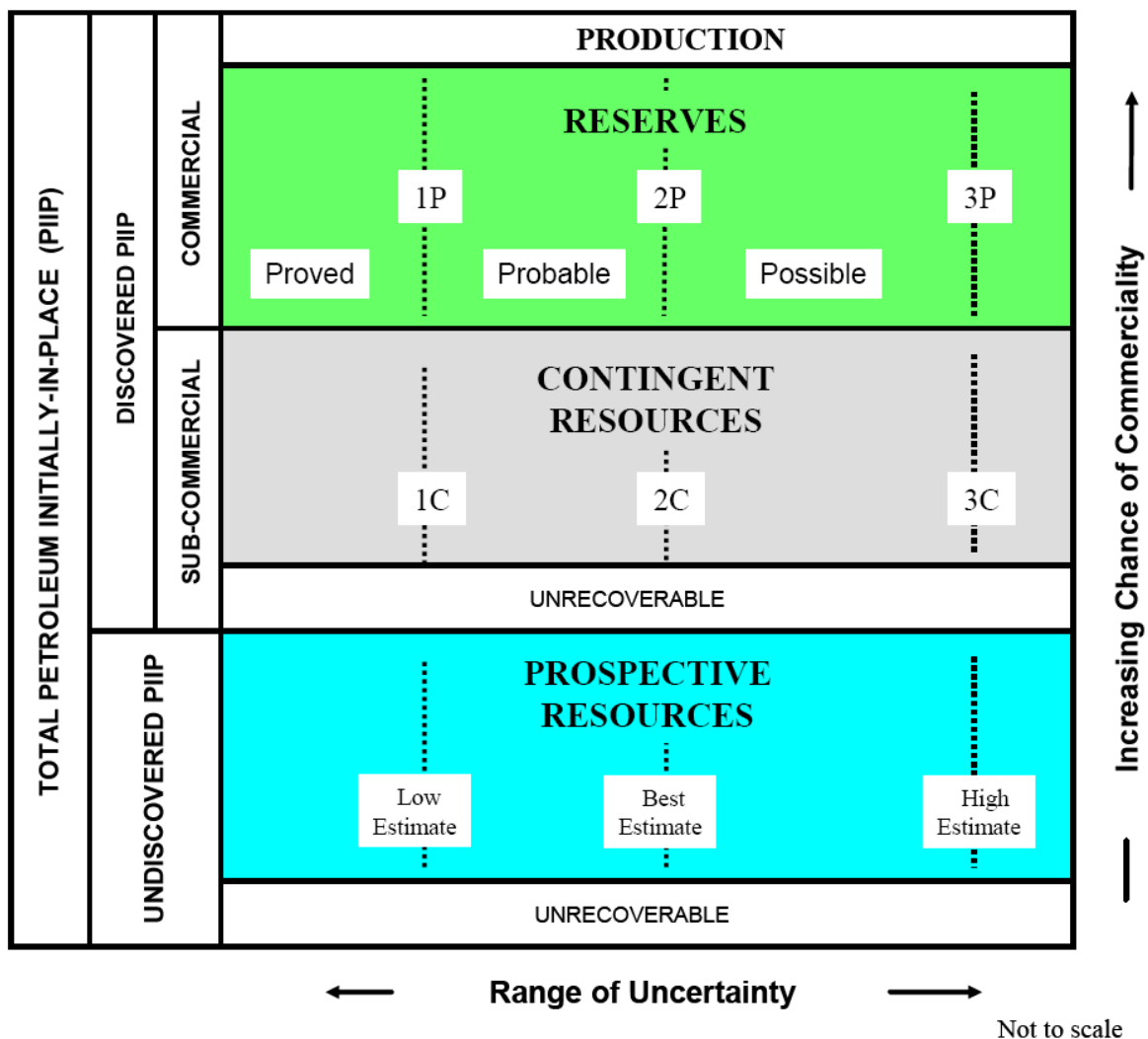


Fig. 2 – Overview major classes of the SPE PRMS system

For Reserves, the general cumulative terms low/best/high estimates are denoted as 1P/2P/3P, respectively. The associated incremental quantities are termed Proved, Probable and Possible. Reserves are a subset of, and must be viewed within context of, the complete resources classification system. While the categorization criteria are proposed specifically for Reserves, in most cases, they can be equally applied to Contingent and Prospective Resources conditional upon their satisfying the criteria for discovery and/or development. For Contingent Resources, the general cumulative terms low/best/high estimates are denoted as 1C/2C/3C respectively. For Prospective Resources, the general cumulative terms low/best/high estimates apply. No specific terms are defined for incremental quantities within Contingent and Prospective Resources.

In 2001, the Norwegian Petroleum Directorate (NPD) published a comprehensive classification system for resources and reserves to be applied to all reporting by operators and licence holders on the Norwegian Continental Shelf (NCS). The NPD classification system and definitions follows the main structure of the SPE PRMS definitions and classification criteria. In general, the NPD classification system is based on categories that differentiate projects aimed to produce petroleum based on their maturity towards full production status. These categories may also be viewed as qualitative measures of commercial risk or chance of reaching commercial production.

How the SPE PRMS and the NPD classification systems correlate is illustrated in figure 3 below. Note that the NPD *reserves* categories (category 1 through 3) are categorised by project maturity (towards commercial production), and that a low (P90) and a high (P10) value could be presented for each reserves category in addition to the base estimate, as required by NPD for the annual reporting to NPD of reserves and contingent resources. SPE PRMS *reserves* are split into categories<sup>17</sup> referred to as 1P (P90), 2P (P50) and 3P (P10) quantities; but no sub-division is made relative to project maturity. In the revised definitions approved in March 2007 the SPE incorporated an additional subdivision to align it with the project maturity division that is currently in use by NPD (described above).

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<sup>17</sup> 1P (reserves) is an abbreviation of *Proved* reserves, and represents the conservative estimate. Please see Annex II herein for an explanation of categories and terminology such as P90, P50, P10, Proved or 1P, Proved+Probable or 2P and Proved+Probable+Possible or 3P.

SPE PRMS 2007		NPD 2001		
Production		Project status category		
		S		Sold and delivered
RESERVES	On Production	1	In production	
	Approved for Development	2 F/A	Approved PDO	
	Justified for Development	3 F/A	Licencees have decided to recover	
CONTINGENT RESOURCES	Development Pending	4 F/A	In the planning phase	
	Development unclarified or on Hold	5 F/A	Recovery likely but undecided	
	Development not Viable	7 F/A	Not yet evaluated	
Unrecoverable		6	Recovery not very likely	
PROSPECTIVE RESOURCES	Prospect	8	Prospect	
	Lead	9	Lead and Play	
	Play			
		UNDISCOVERED RESOURCES		

Fig. 3 – SPE and NPD classification systems compared

Public reporting to the US Securities and Exchanges Commission (SEC) is based on the initial SPE/WPC system, but has up until recently only allowed reporting of proven reserves (1P)<sup>18</sup>. Since unproved reserves and contingent resources were not disclosed, vast quantities of hydrocarbon resources were currently not recognized by the SEC system. Also, SEC *Proved* reserves were not necessarily the same as SPE PRMS *Proved* reserves because SPE PRMS allows potential use of a broader range of technologies to verify *Proved* reserves and allows use of average prices rather than the price on the last day of the year for year-end reporting purposes. The SPE PRMS thus presented a more complete picture of the future than the SEC system. However, in December 29, 2008 SEC announced new regulations that modernized its reporting requirements. SEC now allows companies to disclose their probable and possible reserves to investors. Furthermore, SEC permits the use of new technologies to determine proved reserves if those technologies have been demonstrated empirically to lead to reliable conclusions about reserves volumes. The new SEC disclosure principles also require companies to report the independence and qualifications of a reserves preparer or auditor, to file reports when a third party is relied upon to prepare reserves estimates or conduct a reserves audit; and to report oil and gas reserves using an average price based upon the prior 12-month period rather than year-end prices. The use of the average price will – according to SEC - maximize the comparability of reserves estimates among companies and mitigate the distortion of the estimates that arises when using a single pricing date. Oslo Børs emphasizes that the above description is based on documents published by SEC and should not be relied upon as advice as to the contents of the new SEC reporting requirements.

There are also differences related to the permitting processes between the NCS and the US. Recoverable volumes that would be classified as non-commercial reserves by the SEC in the absence of government and regulatory approval (upon the granting of which

the volumes would be commercial) would be classified as reserves (category 3) by the NPD when the decision and commitment to develop is made by the operator/licence holder. For the NCS, the subsequent government approval is merely related to the alignment of interests and not a question of whether the company will be allowed to develop the discovery, as the licences granted covers both exploration and production. Please refer to the NPD website<sup>19</sup> for the complete classification system including definitions.

Furthermore, there are differences in the classification criteria for reserves. The NPD system allows for the base estimate<sup>20</sup> to be calculated either by deterministic<sup>21</sup> or by stochastic<sup>22</sup> method, and if the latter approach is applied, the base value should correspond to the mean value. Regardless of which approach has been used to arrive at the base estimate, a high estimate and a low estimate may be calculated, applying either NPD or SPE definitions and corresponding classification criteria.

### **Other classification systems and future developments**

Worldwide quite a few classification systems exist, both for the classification of hydrocarbons and for minerals (ore, gold, silver, coal etc).

In 2000, the SPE and the WPC jointly published a document addressing the need for an international standard for the oil industry. In 2004, the SPE developed its vision for such a standard, stating that the goal was *"To have a set of reserves and resource definitions (and associated set of estimating guidelines, which are current best practices) universally adopted by the oil industry, international financial organisations and regulatory reporting bodies."* The SPE subsequently established two subcommittees, the Definitions Subcommittee and the Mapping Subcommittee, for the purpose of clarifying and/or revising the existing SPE Reserves and Resources definitions from 1997. The Mapping Subcommittee completed its study of reserves/resource classification systems in October 2005. The study included the mapping of the relative correlation of status categories, as well as the correlation of certainty classes for discovered volumes. The following classification systems and international agencies were the subject of the study:

- US Security and Exchange Commission (SEC - 1978)
- UK Statement of Recommended Practices (SORP -2001)
- Canadian Security Administrators (CSA -2002)
- Russian Ministry of Natural Resources (RF - 2005)
- China Petroleum Reserves Office (PRO – 2005)
- Norwegian Petroleum Directorate (NPD – 2001)
- United States Geological Survey (USGS - 1980)
- United Nations Framework Classification (UNFC - 2004)

A revised SPE/WPC/AAPG/SPEE classification system and definitions – the "Petroleum Resources Management System" (SPE PRMS) – was approved by the SPE Board in March 2007. This revised system for defining reserves and resources was developed over more than two years, with SPE working with World Petroleum Council (WPC), American Association of Petroleum Geologists (AAPG) and Society of Petroleum Evaluation Engineers (SPEE).

Most classification systems are based on the two main axis of the McKelvey box, while the UNFC (United Nations Framework Classification for Fossil Energy and Mineral Resources) system is based on three-dimensional classification of resources/reserves

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<sup>19</sup> Please see <http://www.npd.no> for the NPD classification system, and for general information.

<sup>20</sup> NPD *base estimate* corresponds with SPE *best estimate*.

<sup>21</sup> Please see Annex II

<sup>22</sup> Please see Annex II

along three distinct axis of Economy (current commercial viability or potential for economic recovery), Feasibility (current project stage or level of technical feasibility) and Geology (level of detail in current exploration data and geological knowledge), respectively.

For companies with hydrocarbon reserves and licences in jurisdictions where reserves and resources would typically be classified by neither the SEC nor the NPD system, please refer to the SPE website for the Final Report by the Mapping Subcommittee of the SPE Oil and Gas Reserves Committee, for a detailed discussion of the idiosyncrasies of the various systems, and their relative correlation and comparability.

In the past years a process has been initiated to establish a classification system encompassing both the petroleum and mining sectors. This work has been undertaken by the United Nations Economic Commission for Europe (UNECE) through the Ad Hoc Group of Experts on the harmonization of Reserves/Resources Terminology (AHGE) who developed the UN Framework Classification. In 2004 the United Nations Economic and Social Council (ECOSOC), which is at the same level as UN Security Council, endorsed and recommended to the UN member countries and international organizations to use the UNFC system. The UNFC serves the needs for classification at a global level (for energy and mineral supply studies), for governments (resources management and policy formulation), for industry (business process management) and for financial reporting.

The project has been assisted by several professional organizations, like SPE, AAPG, CRIRSCO, IVSC and others.

The International Accounting Standards Board (IASB), in considering the development of a new Accounting Standard for the Extractive Activities as part of its International Financial Reporting Standards (IFRS), in 2006 challenged CRIRSCO and the SPE Oil and Gas Reserves Committee (SPE OGRC) to converge their definitions of reserves to ease the financial reporting. The CRIRSCO and SPE OGRC mapped the CRIRSCO Template and the SPE PRMS to each other providing a result for further convergence. CRIRSCO and SPE OGRC continue to work together to assist the UNECE AHGE through MoU to interpret the needs of the two industries and to establish the main points of similarity for potential future convergence.

It is expected that IASB at some point would come up with International Financial Reporting Standards (IFSR) setting out the specific accounting and reporting requirements for the combined mining and the hydrocarbon industries. Per date of this Circular the requirements of any such future IFRS have not been determined.

In any case, the UNECE AHGE, in 2007 established a Mapping Task Force with the mandate to map the UNFC with the CRIRSCO Template, SPE PRMS and the Russian Federation Classification and to propose measures to ensure highest degree of compliance between the systems. The CRIRSCO and SPE convergence mapping formed basis for this mapping to UNFC and both CRIRSCO and SPE OGRC participated in the Mapping Task Force. This very comprehensive mapping, between the different systems, resulted in proposal to change definitions of categories in the UNFC making them brief and generic. As a result definitions of categories in petroleum and minerals are identical. Classes of commodities (minerals and petroleum), reflecting classes in established classifications, are defined by combinations of categories. A Revision Task Force is currently in its final stage in developing a revised UNFC, taking into consideration comments to the draft revised UNFC that have been received after a public hearing period. A proposal to developing specifications and guidelines to the UNFC, based upon commodity specific guidelines already developed or in the making by CRIRSCO and SPE OGRC, will also be made by the RTF.

## ANNEX II – Estimation of reserves and resources

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### General

This annex sets out the mathematical approaches to estimating the reserves and resources, and how uncertainties are taken into account. It is important that listed companies communicate as explicit and intelligible as possible how reported estimates have been derived and calculated.

### Deterministic vs. Probabilistic

There are several approaches to the estimation of resources and reserves. These approaches are usually referred to as either *deterministic* or *probabilistic*, or a combination of the two.

The method of estimation of reserves or resources is called **deterministic** when discrete values for a set of input parameters is used in an estimation model which produces discrete outcomes for a set of output parameters.

The method of estimation is called **probabilistic** or **stochastic** when continuous distributions are used to represent the inherent uncertainty of each input parameter, and a statistical simulation process is used to calculate resulting distributions for each output parameter (as opposed to discrete outcomes).

The intricacy of the chosen estimation process may vary from simple appraisals (qualitative) to more complex processes and systems of mathematical equations (quantitative).

Reserve estimates – whether calculated through probabilistic or deterministic estimation – involve varying degrees of uncertainty depending largely on the amount and interpretation of reliable geological and engineering data available. The relative degree of uncertainty for the deterministic approach can be conveyed by broadly placing reserve estimates into three categories, ranging from a conservative estimate to an optimistic estimate of economically recoverable quantities:

- 1P (“*Proved* reserves”; low estimate),
- 2P (“*Proved plus Probable* reserves”; base estimate or best estimate) and
- 3P (“*Proved plus Probable plus Possible* reserves”; high estimate).

The base estimate exceeds and includes the low estimate, and the high estimate exceeds and includes the low and the base estimate, hence these reserve categories are commonly referred to as 1P (*Proved*), 2P (*Proved + Probable*) and 3P (*Proved + Probable + Possible*). The “P” in 1P refers not to probability, but to the fact that the estimate contains only one of the three categories, in this case only the low estimate.

*Proved* reserves are those reserves which geological and engineering data demonstrate with reasonable certainty to be recoverable in futures years from known reservoirs under existing economic and operating conditions. *Probable* reserves and *Possible* reserves are also based on geological and engineering data, but are considered less certain to be recovered than *Proved* reserves due to regulations, technical, contractual and economic considerations precluding such reserves from being classified as *Proved*. *Probable* reserves are estimates of reserves which analysis of geological and engineering data suggests are more likely than not to be recoverable. *Possible* reserves are estimates of reserves which analysis of geological and engineering data suggest are less likely to be recovered than *Probable* reserves.



The relative degree of uncertainty for the probabilistic approach may also be conveyed by broadly placing reserve estimates into three categories:

- P90 (low estimate),
- P50 (base estimate) and
- P10 (high estimate).

These estimates denote that there should be at least 90%, 50% and 10% probability that the actual reserves that will be economically recoverable will equal or exceed the *P90*, *P50* and *P10* estimates, respectively. In other words, *P50* means that the probability that the actual quantities recoverable will exceed the estimate, or fall short of the estimate, is equal. The “P” in this instance refers to the statistical probability, or degree of certainty, assigned to the estimate.

### **Aggregation of quantities and associated probabilities**

When calculating and reporting aggregate reserve estimates on a field or regional level, there are a few issues that any investor relying on such information should be aware of.

Regardless of which estimation method is used for the individual reserves estimate – deterministic or probabilistic - arithmetical aggregation of reserve estimates reduces the initial degree of certainty. For example: Adding P90 reserves from a number of individual fields will not produce an aggregate P90 reserve figure, but will result in a higher probability factor (i.e. an even *more conservative* estimate) for the aggregate. How much the P-factor will increase, depends on the number of fields to be aggregated, and the statistical distributions of the individual field. The only case when arithmetic aggregating across fields/regions would produce an aggregate figure with the P-factor intact is when calculating an aggregate *P50* or *base estimate* for fields whose reserves distributions are symmetric (which is highly unlikely).

The same principle applies when aggregating *Proved* reserves: The inherent probability associated with *Proved* reserves will increase if quantities are aggregated arithmetically, or alternatively, if the inherent probability factor is to be maintained in the aggregate, the aggregate quantity will normally be greater than the arithmetic sum of the parts.

One way of managing the aggregation issues described above is employing a *probabilistic* approach, similar to the process used for estimating reserves, as described above. This method samples input distributions (e.g. recoverable volumes of hydrocarbons for each field) to generate results distributions (e.g. aggregated volumes across fields). The statistical properties of the result distribution provide estimates such as *mean* (expected outcome), *mode* (most likely outcome), variance, P90 (low estimate), *P50* (base estimate) and P10 (high estimate) etc.

Uncertainties associated with reserves estimates may thus be addressed using either a *probabilistic* or *deterministic* approach to data analysis and reserves estimation. The SPE recognizes that deterministic estimates, although they are qualitative in nature, also contain some sort of inferred probability. Calibration tests using both methods of calculation and estimation are recommended by the SPE in order to ensure that the quantities assigned to each reserve class (at project or field level) are adequately similar regardless of method and approach.

### **Probabilistic aggregation level for reporting purposes**

Although full, portfolio-level, probabilistic aggregation might be considered most appropriate in terms of internal management of a company’s reserves and asset

portfolio, it may not be equally appropriate for the purpose of external reporting and reserves disclosure.

Oslo Børs considers the project or field level to be the most relevant and perhaps optimal reporting level, even if the presentation of reserves by major geographical region may be the typical choice of major oil companies. Regardless of reporting level, it is important that listed companies communicate as explicit and intelligible as possible how reported estimates have been derived and calculated.

## ANNEX III – Reporting format

This annex sets out a format (see tables 1, 2 and 3 below) for the disclosure of reserves.

**Table 1 – Reserves by geographical region, project, field or asset**

Table 1

<b>Reserves</b>										
<b>Developed assets</b>										
As of DDMMYY (date of report/estimate)	<b>1P / P90</b>					<b>2P / P50</b>				
	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe
<b>Field/region</b>										
<b>Field/region</b>										
<b>Field/region</b>										
<b>Total</b>										
<b>Under development (Transitional assets)</b>										
As of DDMMYY	<b>1P / P90</b>					<b>2P / P50</b>				
	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe
<b>Field/region</b>										
<b>Field/region</b>										
<b>Field/region</b>										
<b>Total</b>										
<b>Non-developed assets</b>										
As of DDMMYY	<b>1P / P90</b>					<b>2P / P50</b>				
	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe	Liquids (mdbl)	Gas (bcm)	mboe	Interest %	Net mboe
<b>Field/region</b>										
<b>Field/region</b>										
<b>Field/region</b>										
<b>Total</b>										

Notes (may also refer to information found in the MD&A):

- The source of reserve figures, i.e. in-house expertise or 3<sup>rd</sup> party consultants.
- Any royalties etc. included in net figures.
- Joint Venture and/or PSC/PSA key details summarized.
- Key quantitative input and assumptions made.

Reporting of *possible* reserves is optional.

**Table 2 – Aggregate reserves, production, developments and adjustments**

Table 2

<b>Reserves development</b>						
Net attributable mboe. Calendar years, reporting as of year end.	<b>Developed assets</b>		<b>Under development (Transitional assets)</b>		<b>Non-developed assets</b>	
	1P / P90	2P / P50	1P / P90	2P / P50	1P / P90	2P / P50
	<b>Balance (previous ASR) as of year end last full year</b>					
<b>Production</b>						
<b>Acquisitions/disposals</b>						
<b>Extensions and discoveries</b>						
<b>New developments</b>						
<b>Revisions of previous estimates</b>						
<b>Balance (current ASR or interim update) as of DDMMYY</b>						

Notes (may also refer to information found in the MD&A):

- Comments on any adjustments (i.e. acquisitions/disposals, extensions, developments and (especially) revisions), made since previous ASR.
- Basis for adjustments, i.e change in operator's, JV partner's, or own estimates.

The category "Under development" is not applied by some classification systems, and is therefore optional. It should be applied in relation to classification systems where this category is defined. Furthermore, this category might be defined differently in the various classification systems. Thus, a definition of the category should be provided in the ASR.

### **Table 3 - Reporting of contingent resources - optional**

For each license or field it should be clearly stated what are the primary risk factors for developing the resources into reserves. Only a minimum of primary factors should be given to why the resources cannot be classified as reserves. (It could be factors like higher oil price would be required for any development, no infrastructure is currently in place, technical impediments, PDO is awaiting etc).

*Contingent resources* should be presented in table as follows. Resources should be presented on a P50 or Best Estimate basis, or as a range.

(Table headlines can be rephrased without changing the substance. When “mean amounts” are used, this might be stated).

Fields or licenses	Participation/ ownership	Estimated amount (or range) of contingent resources	Primary risk factors for development into reserves	Review of independent experts or internal org.

It should be clearly stated whether it is an independent expert that has reviewed the resources, or an adequate internal organization.

The same information can as well be included together with the description of the relevant field/license.

The following disclaimer should be made for *contingent resources*:

**Contingent resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations, but the applied project(s) are not yet considered mature enough for commercial development due to one or more contingencies.**

**There is no certainty that it will be considered commercially viable to produce any portion of these resources.**

**Other partners involved in this (these) license(s) might have different estimates of contingent resources.**

It should be noted that if the license partners have decided to file a plan for development and operation of the field (a PDO), the contingent resources can be reclassified to reserves even though the PDO has yet not been approved by the authorities. <sup>23</sup> It can be instances – with very large discoveries – where it is apparent that the discoveries would be developed, but that the discoveries are still technically “contingent resources”. This could then be addressed in writing directly in relation to the discovery.

The disclaimer should be included close to the table setting out the contingent resources, either immediately prior to the table or after.

**Table 4 - Reporting of prospective resources - optional**

For *prospective resources* the main issue is whether there is petroleum at all exist in the prospect. Thus, the focus should therefore be on the drilling program and when exploration wells are to be drilled. Furthermore, prospective resources should not be mixed with contingent resources. Resources should be presented on a P50 or Best Estimate basis, or as a range.

<sup>23</sup> Reclassification from contingent resources to reserves hinges on whether approval of a PDO may be anticipated with reasonable certainty and within a predictable lead time of its filing, and provided that the license holder or partners have decided upon and committed financial resources towards the commercial development of the volumes in question. In NPDs classification system this will be contingent resources converted from category 4F to 3F; “Reserves that the license holders have decided to recover”. See the NPD system above.

(Table headlines can be rephrased without changing the substance. When “mean amounts” are used, this might be stated).

License or prospect	Participation/ownership	Maturity	Expected drilling date	Optional: Probability of discovery	Optional: Gross estimated unrisks recoverable mmboe (or range)	Gross estimated risked recoverable mmboe (or range)	Net estimated risked recoverable mmboe (or range)	Review of independent experts or internal org.

Below the categories are described further, to provide additional guidance:

“Participation/participation”; percentage of participation/ownership in license.

“Maturity”; the company should state whether the license is in a *drill or drop* situation, has a *firm drilling obligation* towards the authorities or whether *funding for drilling and a rig has been secured and approved* by the partnership. The dates for drill or drop decisions and other material commitments should be stated.

“Expected drilling date”; here the company should state the most precise information available, like for instance “July 2013”, or “summer 2014”, “2015”, alternatively “not decided” or similar wording.

“Probability of discovery” is the estimated probability of discovering recoverable hydrocarbons when drilling with volumes amounting to a range, of which the gross estimated unrisks recoverable (see below) represents the Mean or P50 volume of the range. (Disclosure of this information is optional).

“Gross estimated unrisks recoverable mmboe”: This is equivalent to undiscovered, recoverable quantities of petroleum, not risk-weighted. The figures reflect estimated recoverable volumes of oil or gas/condensate in place taking into account an estimated recovery factor. (Disclosure of this information is optional, if the probability of discovery has been stated).

“Gross estimated risked recoverable mmboe”: The quantities have been risk-weighted, i.e. they reflect estimated recoverable volumes multiplied by the probability of making a discovery.

“Net estimated risked recoverable mmboe”: This is equivalent to the company’s share of “gross estimated risked recoverable mmboe”, ie a figure netted to the company’s ownership.

“Review of independent experts”: It should be clearly stated whether it is an independent expert that has reviewed the resources, or an adequate internal organization. If the resource figures are based on the operators’ figures (but nonetheless reviewed by an independent expert or an adequate internal organization) this can be stated.

Furthermore, only risk weighted prospective resources should be added up. Unrisks prospective resources should not be added up.

For prospective resources, the following disclaimer should be set out:

**Prospective resources are quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.**

**There is no certainty that any hydrocarbons will be discovered when exploration well(s) is/are being drilled. Furthermore, should any hydrocarbons be discovered there is no assurance that it is commercially viable to produce any portion of these resources.**

**Other partners involved in this (these) exploration license(s) might have different estimates of prospective resources.**

The disclaimer should be included close to the table setting out the prospective resources, either immediately prior to the table or after.

## **ANNEX IV – Definitions, abbreviations, units and conversion factors**

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This annex sets out various definitions, abbreviations, units and conversion factors widely used by the industry.

### **Abbreviations of oil and gas units**

#### Oil and Natural Gas Liquids

bbbl	Barrel(s)
mmbbl	Thousand barrels
mmbbl	Million barrels
bpd	barrels per day
NGL	natural gas liquids
LPG	Liquid petroleum gas
LNG	Liquefied natural gas

#### Natural Gas units

mmcf	million cubic feet
bcf	billion cubic feet
bcm	billion cubic metres
mcf/d	thousand cubic feet per day
mmcf/d	million cubic feet per day
mBTU	million British Thermal Units
Bcf	billion cubic feet

### **Conversion factors**

The following table sets forth certain standard conversions from Standard Imperial Units to the International System of Units (or metric units). Conversion factors are approximations.

<u>From</u>	<u>To</u>	<u>Multiply By</u>
Mcf	Cubic metres	28.317
Cubic metres	Cubic feet	35.315
Bbls	Cubic metres	0.159
Cubic metres	Bbls oil	6.290
Feet	Metres	0.305
Metres	Feet	3.281
Miles	Kilometres	1.609
Kilometres	Miles	0.621
Acres	Hectares	0.405
Hectares	Acres	2.471



## Main definitions

1C	Denotes low estimate scenario of Contingent Resources.
2C	Denotes best estimate scenario of Contingent Resources.
3C	Denotes high estimate scenario of Contingent Resources.
1P	Taken to be equivalent to Proved Reserves; denotes low estimate scenario of Reserves.
2P	Taken to be equivalent to the sum of Proved plus Probable Reserves; denotes best estimate scenario of Reserves.
3P	Taken to be equivalent to the sum of Proved plus Probable plus Possible Reserves; denotes high estimate scenario of reserves.
Accumulation	An individual body of naturally occurring petroleum in a reservoir.
AAPG	the American Association of Petroleum Geologists.
°API	an indication of the specific gravity of crude oil measured on the API gravity scale. Liquid petroleum with a specified gravity of 28° API or higher is generally referred to as light crude oil.
Appraisal well	A well drilled to confirm the size or quality (commercial potential) of a hydrocarbon discovery. Before development, a discovery is likely to need at least two or three such wells (see delineation well and exploration well).
ASR	Annual Statement of Reserves, report to be filed annually to the Oslo Stock Exchange.
CAPEX	Capital expenses.
CAD	Canadian Dollar.
boe	barrel of oil equivalent of natural gas and crude oil on the basis of 1 BOE for 6 (unless otherwise stated) Mcf of natural gas (this conversion factor is an industry accepted norm and is not based on either energy content or current prices).
boe/d	barrel of oil equivalent per day.
Contingent Resources	Those quantities of petroleum estimated, as of a given date, to be potentially recoverable from known accumulations by application of development projects but which are not currently considered to be commercially recoverable due to one or more contingencies.
Deterministic Estimate	The method of estimation of Reserves or Resources is called deterministic if a discrete estimate(s) is made based on known geoscience, engineering, and economic data.
E & P	Exploration and production.
Entitlement	That portion of future production (and thus resources) legally accruing to a lessee or contractor under the terms of the development and production contract with a lessor.
Exploration	Prospecting for undiscovered petroleum.
Exploration well	A well drilled to test a potential but unproven hydrocarbon trap or structure where good reservoir rock and a seal or closure combine with a potential source of hydrocarbons (see appraisal well and delineation well).
Field	An area consisting of a single reservoir or multiple reservoirs all grouped on, or related to, the same individual geological structural feature and/or stratigraphic condition. There may be two or more reservoirs in a field

	that are separated vertically by intervening impermeable rock, laterally by local geologic barriers, or both. The term may be defined differently by individual regulatory authorities.
Flow Test	An operation on a well designed to demonstrate the existence of moveable petroleum in a reservoir by establishing flow to the surface and/or to provide an indication of the potential productivity of that reservoir (such as a wireline formation test).
Form 20-F	annual filing required of non-US listed companies, including reserve information, filed to the US Security Commission (SEC).
Form 10-K	annual filing required of US listed companies, including reserve information, filed to the US Security Commission (SEC).
Form NI 51-101	report detailing reserves for Canadian listed companies, filed annually to the Canadian Security Commission report detailing reserves for Canadian listed companies, filed annually to the Canadian Security Commission.
GJ High Estimate	Gigajoule. With respect to resource categorization, this is considered to be an optimistic estimate of the quantity that will actually be recovered from an accumulation by a project. If probabilistic methods are used, there should be at least a 10% probability (P10) that the quantities actually recovered will equal or exceed the high estimate.
Hydrocarbons	Hydrocarbons are chemical compounds consisting wholly of hydrogen and carbon.
Known Accumulation	An accumulation is an individual body of petroleum-in-place. The key requirement to consider an accumulation as "known," and hence containing Reserves or Contingent Resources, is that it must have been discovered, that is, penetrated by a well that has established through testing, sampling, or logging the existence of a significant quantity of recoverable hydrocarbons.
Lead	A project associated with a potential accumulation that is currently poorly defined and requires more data acquisition and/or evaluation in order to be classified as a prospect. A project maturity sub-class that reflects the actions required to move a project toward commercial production.
Low Estimate	With respect to resource categorization, this is considered to be a conservative estimate of the quantity that will actually be recovered from the accumulation by a project. If probabilistic methods are used, there should be at least a 90% probability (P90) that the quantities actually recovered will equal or exceed the low estimate.
m <sup>3</sup>	cubic metres.
MBOE	Millions of Barrels of Oil Equivalent.
MD&A	Management Discussion and Analysis.
NCS	the Norwegian Continental Shelf.
Net-Back	Linkage of input resource to the market price of the refined products.
NOK	Norwegian Kroner.
NPD	the Norwegian Petroleum Directorate.

NPV	Net Present Value.
OIP	oil in place.
GIP	gas in place.
OGRC	Oil and Gas Reserves Committee.
Petroleum Initially-in-Place	Petroleum Initially-in-Place is the total quantity of petroleum that is estimated to exist originally in naturally occurring reservoirs. Crude Oil-in-place, Natural Gas-in-place and Natural Bitumen-in-place are defined in the same manner (see Resources). (Also referred as Total Resource Base or Hydrocarbon Endowment).
PIIP	See Petroleum Initially-in-Place.
Play	A project associated with a prospective trend of potential prospects, but which requires more data acquisition and/or evaluation in order to define specific leads or prospects. A project maturity sub-class that reflects the actions required to move a project toward commercial production.
Possible Reserves	An incremental category of estimated recoverable volumes associated with a defined degree of uncertainty. Possible Reserves are those additional reserves which analysis of geoscience and engineering data suggest are less likely to be recoverable than Probable Reserves. The total quantities ultimately recovered from the project have a low probability to exceed the sum of Proved plus Probable plus Possible (3P), which is equivalent to the high estimate scenario. When probabilistic methods are used, there should be at least a 10% probability that the actual quantities recovered will equal or exceed the 3P estimate.
Probable Reserves	An incremental category of estimated recoverable volumes associated with a defined degree of uncertainty. Probable Reserves are those additional Reserves that are less likely to be recovered than Proved Reserves but more certain to be recovered than Possible Reserves. It is equally likely that actual remaining quantities recovered will be greater than or less than the sum of the estimated Proved plus Probable Reserves (2P). In this context, when probabilistic methods are used, there should be at least a 50% probability that the actual quantities recovered will equal or exceed the 2P estimate.
Production	Production is the cumulative quantity of petroleum that has been actually recovered over a defined time period. While all recoverable resource estimates and production are reported in terms of the sales product specifications, raw production quantities (sales and non-sales, including non-hydrocarbons) are also measured to support engineering analyses requiring reservoir voidage calculations.
Production-Sharing Contract	In a production-sharing contract between a contractor and a host government, the contractor typically bears all risk and costs for exploration, development, and production. In return, if exploration is successful, the contractor is given the opportunity to recover the incurred investment from production, subject to specific limits and terms. Ownership is retained by the host government; however, the

Profit Split	<p>contractor normally receives title to the prescribed share of the volumes as they are produced.</p> <p>Under a typical production-sharing agreement, the contractor is responsible for the field development and all exploration and development expenses. In return, the contractor is entitled to a share of the remaining profit oil or gas. The contractor receives payment in oil or gas production and is exposed to both technical and market risks.</p>
Project	<p>Represents the link between the petroleum accumulation and the decisionmaking process, including budget allocation. A project may, for example, constitute the development of a single reservoir or field, or an incremental development in a producing field, or the integrated development of a group of several fields and associated facilities with a common ownership. In general, an individual project will represent a specific maturity level at which a decision is made on whether or not to proceed (i.e., spend money), and there should be an associated range of estimate.</p>
Prospect	<p>A project associated with a potential accumulation that is sufficiently well defined to represent a viable drilling target. A project maturity sub-class that reflects the actions required to move a project toward commercial production.</p>
Prospective Resources	<p>Those quantities of petroleum which are estimated, as of a given date, to be potentially recoverable from undiscovered accumulations.</p>
Proved Reserves	<p>An incremental category of estimated recoverable volumes associated with a defined degree of uncertainty Proved Reserves are those quantities of petroleum which, by analysis of geoscience and engineering data, can be estimated with reasonable certainty to be commercially recoverable, from a given date forward, from known reservoirs and under defined economic conditions, operating methods, and government regulations. If deterministic methods are used, the term reasonable certainty is intended to express a high degree of confidence that the quantities will be recovered. If probabilistic methods are used, there should be at least a 90% probability that the quantities actually recovered will equal or exceed the estimate. Often referred to as 1P, also as "Proven."</p>
PDO Recovery factor	<p>Plan for Development and Operation.</p> <p>(RF) the ratio between the volumes of hydrocarbons produced and produceable from a reservoir, and the hydrocarbons originally in place.</p>
Recoverable Resources	<p>Those quantities of hydrocarbons that are estimated to be producible from discovered or undiscovered accumulations.</p>
Reserve Replacement Ratio	<p>The RRR is one measure of oil company performance. It shows the ratio of new reserves added to the inventory (from exploration/upgrading from resources/acquisitions)</p>

Reserves	<p>compared to oil produced. Ideally this ratio should be greater than 100 percent. Less than 100 % implies that the company is not able to replace what it is producing.</p> <p>Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions. Reserves must further satisfy four criteria: They must be discovered, recoverable, commercial, and remaining (as of a given date) based on the development project(s) applied.</p>
Reservoir	<p>A subsurface rock formation containing an individual and separate natural accumulation of moveable petroleum that is confined by impermeable rocks/formations and is characterized by a single-pressure system.</p>
Resources	<p>The term "resources" as used herein is intended to encompass all quantities of petroleum (recoverable and unrecoverable) naturally occurring on or within the Earth's crust, discovered and undiscovered, plus those quantities already produced. Further, it includes all types of petroleum whether currently considered "conventional" or "unconventional" (see Total Petroleum Initially-in-Place).</p>
Resources Categories	<p>Subdivisions of estimates of resources to be recovered by a project(s) to indicate the associated degrees of uncertainty. Categories reflect uncertainties in the total petroleum remaining within the accumulation (in-place resources), that portion of the in-place petroleum that can be recovered by applying a defined development project or projects, and variations in the conditions that may impact commercial development (e.g., market availability, contractual changes).</p>
Resources Classes	<p>Subdivisions of Resources that indicate the relative maturity of the development projects being applied to yield the recoverable quantity estimates. Project maturity may be indicated qualitatively by allocation to classes and sub-classes and/or quantitatively by associating a project's estimated chance of reaching producing status.</p>
Royalty	<p>Royalty refers to payments that are due to the host government or mineral owner (lessor) in return for depletion of the reservoirs and the producer (lessee/contractor) for having access to the petroleum resources. Many agreements allow for the producer to lift the royalty volumes, sell them on behalf of the royalty owner, and pay the proceeds to the owner. Some agreements provide for the royalty to be taken only in kind by the royalty owner.</p>
SEC	<p>the US Securities and Exchange Commission. The primary US regulatory agency for the securities industry.</p>
SPE	<p>the Society of Petroleum Engineers.</p>
Securities and Trading Act	<p>The Norwegian Act on Securities Trading entered into force partly on November 1, 2007 and partly on January 1, 2008.</p>
Stochastic	<p>Adjective defining a process involving or containing a random variable or variables or involving chance or probability such as a stochastic stimulation.</p>

Sub-Commercial	A project is Sub-Commercial if the degree of commitment is such that the accumulation is not expected to be developed and placed on production within a reasonable time frame. While 5 years is recommended as a benchmark, a longer time frame could be applied where, for example, development of economic projects are deferred at the option of the producer for, among other things, market-related reasons, or to meet contractual or strategic objectives. Discovered sub-commercial projects are classified as Contingent Resources.
UNCF Unit-of-production Method	UN Framework Classification.  Producing assets should be depreciated over their expected total production using a unit of production basis. The-unit of production-basis is the most appropriate amortisation method because it reflects the pattern of consumption of the economic benefits of the reserves. The units-of-production method determines the useful life of an asset based on the units of production. Each period, the units of production determine the depreciation expense, generally speaking. Has 10 % of the reserves been produced during the year, the unit of production method requires a depreciation of 10 % of the remaining book value of the investments/capitalised costs.
USD Working Interest	US Dollar. A company's equity interest in a project before reduction for royalties or production share owed to others under the applicable fiscal terms.
WPC	World Petroleum Council (WPC).

Many of the definitions given above are fetched from the SPE PRMS classification system. See additional definitions at [www.spe.org](http://www.spe.org).





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