

Energy reserves in official energy statistics

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Introduction

- Classifications are cornerstones in the system for official statistics.
- Important to establish links between classifications outside statistics and the statistical classifications
- UNFC, Sigurd Heiberg and Charlotte Griffiths have been very cooperative

Background

- Two reports by Statistics Norway on energy statistics, discussed at UN Statistical Commission 2005 and 2006
- Update UN Handbook "Concepts and methods in Energy Statistics, with special reference to energy accounts and balances" (The task for the Oslo Group)
- Energy Statistics Manual, IEA & Eurostat (2005)
- Resources and reserves are not discussed
- Not forgotten – but a different scope.

Official statistics

- Main focus – describe man made activities
- The oil produced and used – not the reserves
- Flows and stocks
- Limited interest on reserves or resources
- Quality principles are important and crucial elements are: Relevance, accuracy, **independency**, timeliness, equal access, quality declarations and transparency, data collection and response burden, consistence and coherence.

Environment and resources statistics

- Still environment statistics is said to be a new field of official statistics, after more than 30 years
- Statistics on natural resources
- Resources and reserves
- The focus was shifted – less on resources
- PSR (Pressure- State-Response) to DPSIR (Driving Forces-environmental Pressure-State of environment-environmental Impacts-Response)
- New and recent efforts to describe sustainability by official statistics (indicators) and the total capital approach may increase the importance of data on resources/reserves

Balances and accounts

- After oil crisis in the 1970s the idea of tables of full balances of energy
- To include all supply and all use
- Transformation of energy into other energy forms
- UN Handbook from 1982
- IEA/Eurostat Energy Statistics Manual

Global and national economy

- Energy and reserves are among the global variables
- Energy balances based on the territory principle
- National accounts based on residence principle

Environment statistics and accounts

- The picture is fragmented - lack of comparability and tables measured in various physical units
- A more consistent and coherent systems – accounts, and to measure in comparable units – money value.
- The answer – SEEA. And with a special volume SEEA-E
- The London Group
(<http://unstats.un.org/unsd/envaccounting/londongroup/>)

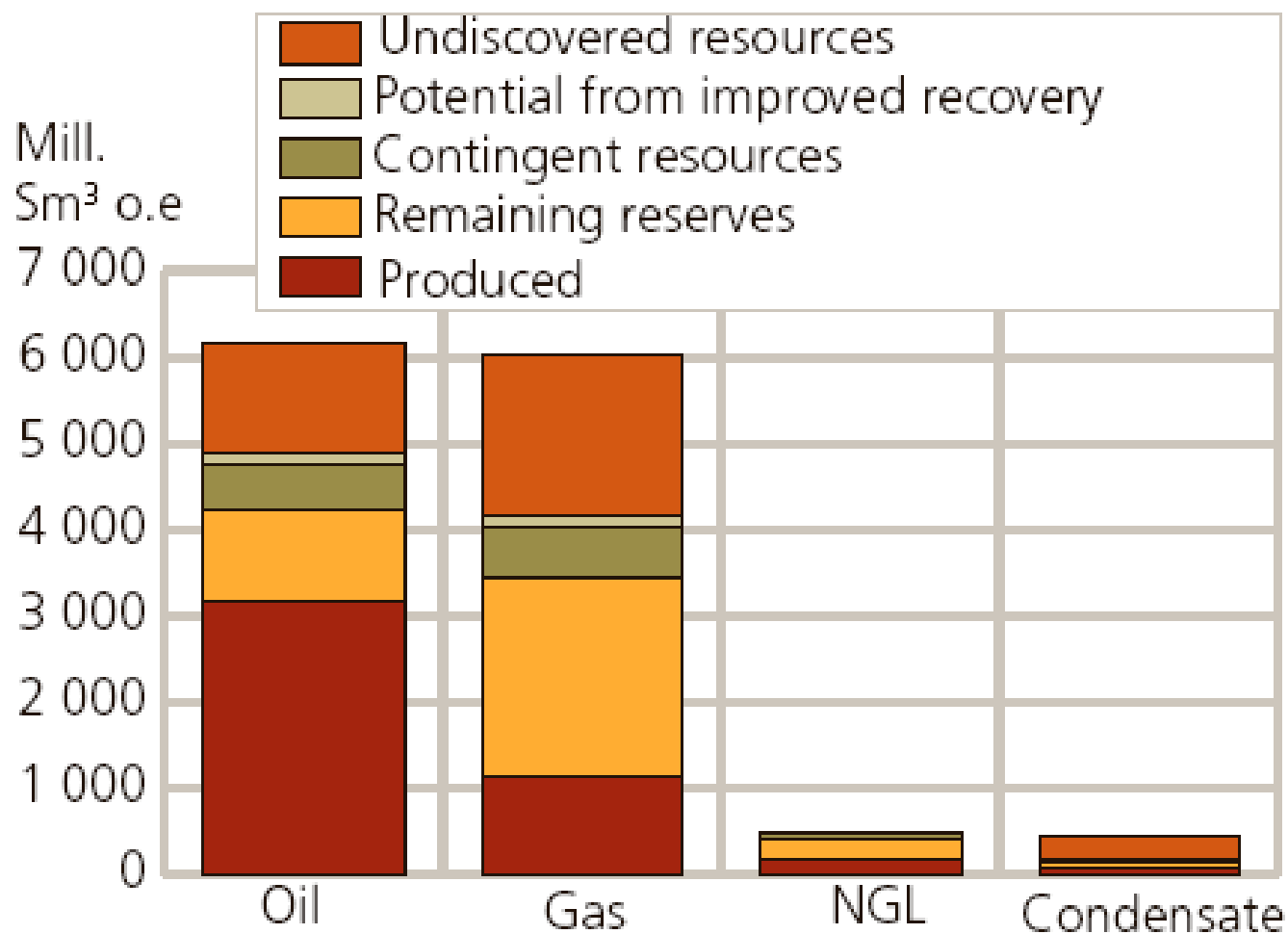
Energy Statistics

- Important field for economics, environment etc
- After the programme review in Statistical Commission 2005, The creation of a city group (UNSC) – the Oslo Group (<http://www.og.ssb.no/>), and Inter Ener Stat (www.interenerstat.org/).
- The objective – revision of handbook . The outcome: IRES and ESCM
- Harmonised classifications and definitions.
- Official energy statistics- what does that mean?

How reserves are treated in basic Norwegian oil statistics.

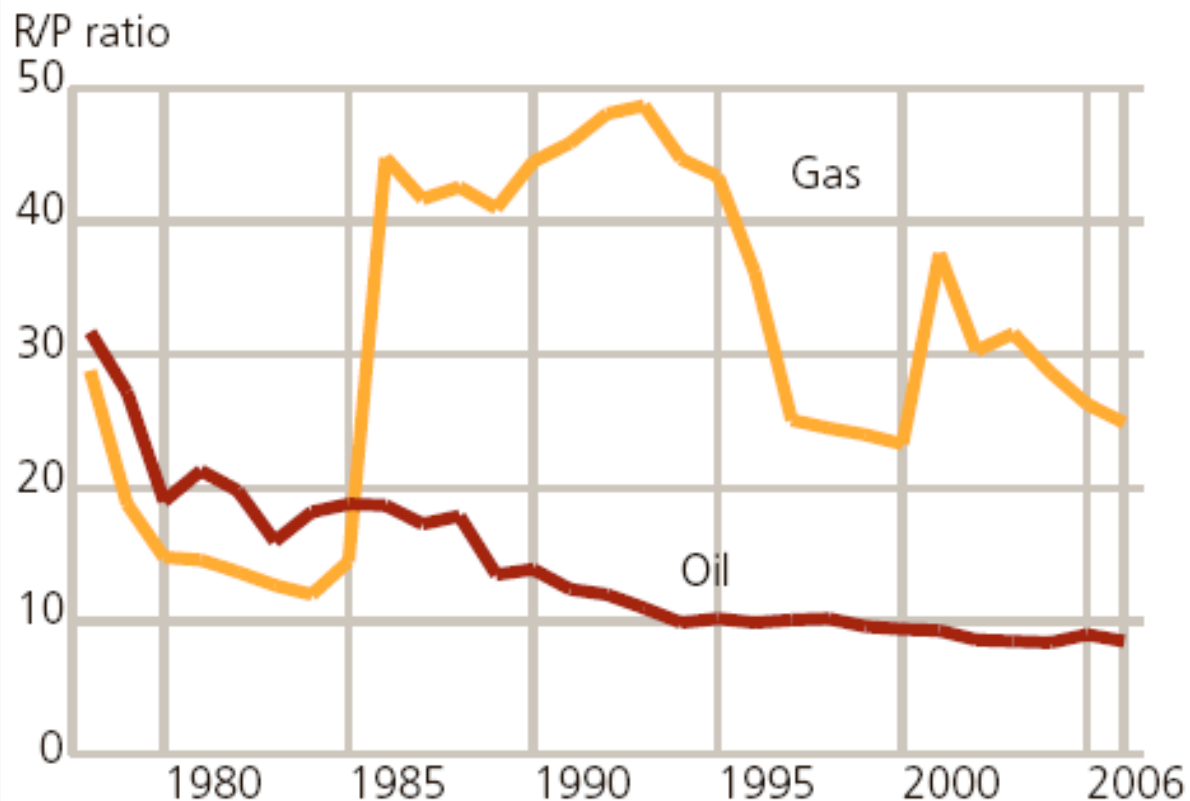
- 43 Historic production in abandoned fields and fields on stream per 31 December 20071
- 44 Original recoverable reserves and remaining reserves in fields in production per 31 December 20071

Figure 3.2. Norway's oil and gas resources, 31 December 2006. Million Sm³ o.e.



Source: OED/OD (2007).

Figure 3.3. R/P ratio^{1,2} for Norwegian oil and gas reserves. 1978-2006

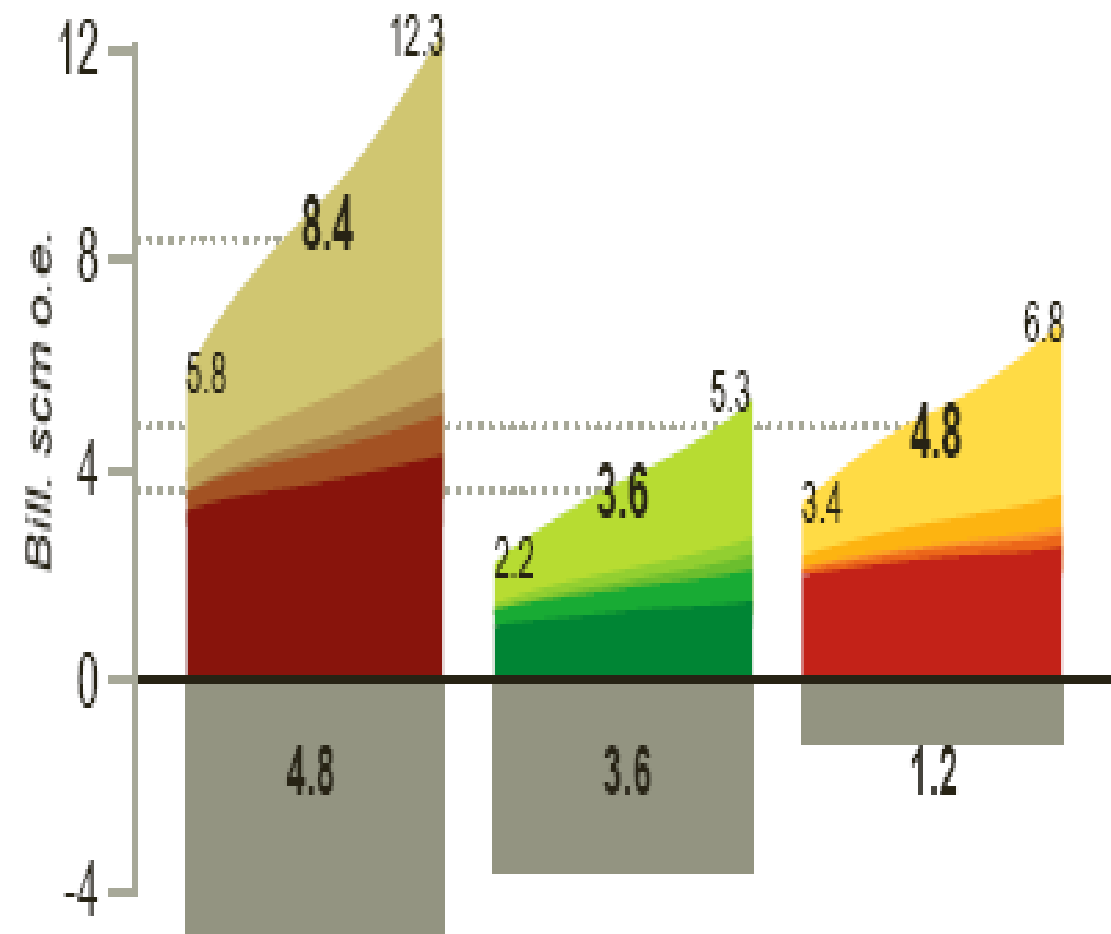


¹ The R/P ratio, or the ratio between reserves and the current annual rate of production, indicates how many years it will take before the reserves are exhausted.

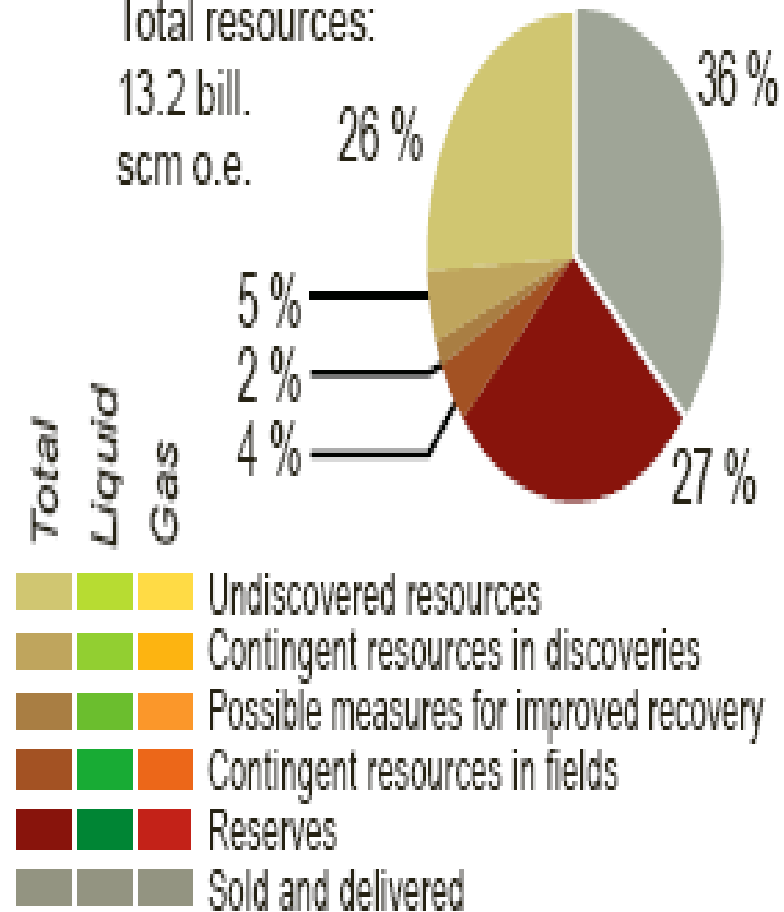
² Because of a change in the classification system for petroleum resources, there is a break in the time series between 2000 and 2001

Source: Energy statistics from Statistics Norway and Norwegian Petroleum Directorate.

Facts – Norwegian Petroleum Directorate



Total resources:
13.2 bill.
scm o.e.



- Total**
- Liquid**
- Gas**
- Undiscovered resources
- Contingent resources in discoveries
- Possible measures for improved recovery
- Contingent resources in fields
- Reserves
- Sold and delivered

Comments on reserve statistics

- A need for improvement how reserves and resources are published in NOS
- Metadata
- Quality checking by SN?
- How to treat the process from resources, reserves, to production, use/consumption,
- Conceptual understanding of losses and flaring etc.
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UN Framework – UNFC- a solution also for statistics?

- **how much reserves** do we have (physical measure)?
- idea of a well defined quantity of mineral reserves (sub soil) may be misleading
- we need to include the concept of projects
- **The value** will be determined by E, F and G dimensions
- To understand the variations in the estimates of reserves we then need a model for decomposition of the causes behind variations in reserves
- For NA – value of project is OK
- For resource accounting – if we really need physical measurement of quantity - this have to be discussed further

What type of fossil energy or mineral reserves

- If possible, we want a consistent system of classifications with energy products etc
- Inter Ener Stat work with harmonising classifications

How to collect data on reserves

- Important part of official statistics strategy
- Data from government, secret sources – or transparent parts of public accounts
- If the UNFC standard is approved by accounting standards as IFRS – a new situation is created.
- The concept of non renewable energy – is linked to the idea of limited resources/reserves

Tentative conclusions

- The contacts between UNFC and official statistics has to continue. Conclusions have to be elaborated.
- Relevance , transparency and understandable are important elements.
- Electronically operational.
- The concept of non renewable energy sources are important. Is the limited resources measurable in physical terms. SEEA wants physical measures. NA wants value (volume x price) . Traditionally volume in physical terms but it may be possible to use the project concept. Has to be discussed more.
- If UNFC is integrated in public accounts (IFRS) relevant data for statistics will be available