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Item 7

Energy reserves in official energy statistics

Olav Ljones, Deputy Director General Statistics Norway. Chair Oslo Group
olj@ssb.no

1. Introduction. Classifications are cornerstones in the system for official statistics. It is a 100% necessary tool. They are necessary for comparison also internationally. Official statistics collects data from many sources – data that may be generated for other purposes than official statistics. It is extremely helpful if other systems for classifications are compatible/coherent with the systems for classifications used in official statistics. This process of UNFC has been a very positive experience. Sigurd Heiberg, Charlotte Griffiths and others have been extremely positive to cooperate with the statistical community.

2. In 2005 at UN Statistics Commission Statistics Norway presented a programme review on energy statistics. As a follow up – the Oslo Group on energy statistics was created. The Inter Secretariat Working Group InterEnerStat was also established. The following year a report on oil statistics was presented to the Statistical Commission. The task for Oslo Group is among other things to update the UNSD handbook from 1982. In all these reports little or nothing is said about reserves. Why so – or did we forget reserves?

3. Official statistics may traditionally be said to be **human activity** oriented. We study for example the fish that is captured and not the stock of fishes. Other government institutions are given the task to monitor the resources fish, energy or minerals. We as official statisticians study the oil produced, exported and imported and used in different processes by household or companies. This is what may be called flows. So also in NA- the production and use is among the most important variables in the published NA figures. There are also accounts within NA that measure capital. In the debate about sustainability the concept of national wealth has been introduced, but still this is not in the core of the user interest for NA.

Quality principles are important for official statistics and crucial elements are: Relevance, accuracy, **independency**, timeliness, equal access, quality declarations and transparency, data collection and response burden, consistency and coherence.

4. Environment and resources statistics. This is regarded to be a new and still developing field of official statistics. But as a newcomer – it has a rather long history – e.g. in Norway back to the 1970s. In Norway the first phase included ambitious plans for data and statistics on natural resources, fish, forests, sand, oil and gas etc. Later – in the 1980s after an internal evaluation the focus was shifted to some extent away from the most ambitious plans for statistics on physical resources. 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.

5. Balances and accounts. After the oil crisis in the 1970 the first efforts to put together in tables of full balances of energy occurred. The tabulation – the energy balance - had the ambition to include all supply and all use. Some energy – fossil fuels – is used as input in production of energy (transformation) The UN Handbook from 1982 is an important document.

6. Global and national economy. Energy and reserves are among the global variables. Energy balances follows the territory principle while national accounts follow the residence principle. For Norway with a big merchant fleet and perhaps with fossil reserves outside the national territory – it may be important differences between the two principles

7. Environment statistics and accounts. One weak point with environment statistics may have been that the picture that is painted is fragmented - lack of comparability and tables measured in various physical units. It was natural to try to build a more consistent and coherent systems – accounts, and to measure in comparable units – money value. This led to the efforts to put together System for environmental economic accounting – SEEA. A white cover version from 2003 was produced (Integrated Environmental and Economic Accounting 2003). Energy and energy balances and energy accounts are covered by this manuscript. The work plan includes a special volume on energy SEEA-E The work is organised in the London Group. Information will be found at <http://unstats.un.org/unsd/envaccounting/londongroup/>

Energy Statistics is an important field of statistics. Energy markets have important impacts for economy, environment etc. After the programme review in Statistical Commission 2005 one outcome was the creation of a city group (UNSC) – the Oslo Group. Information will be found at www.og.ssb.no The other decision by Statistical Commission was to create an Inter secretariat Working Group – The Inter Ener Stat.

One objective is revision of handbooks . The new will be IRES (International Recommendation Energy Statistics and ESCM. Energy Statistics Compilers Manual. It is also a clear objective to reach harmonised classifications and definitions. This work is organised under Inter Ener Stat (Chaired by IEA) Information at www.interenerstat.org/

8. Official Statistics is produced in all countries, Official statistics may be produced by the national statistical office (NSO) like Statistics Canada or Statistics Norway, or it may be produced by governmental offices/directorates. Energy statistics is an example of statistics that in many countries are produced outside the NSO. There is an active international cooperation in the field of official statistics, UN (including UNECE), Eurostat, OECD, IMF etc. One objective is to establish more international comparable statistics. Standards and classifications are important instruments. IEA plays an important role. There are international committees of experts from the organisations and from the NSOs. To strengthen the involvement of experts from NSOs the so called city groups have been established. The London Group works with SEEA and SEEA-E. The Oslo Group works with energy statistics and the outcome will be updated handbooks IRES and ESCM. Information will be found at.

A high level committee of expert UNCEEA – has the responsibility to coordinate the work with SEEA including energy. Quality criteria are important and official statistic need data – collected from household, business and government sector. It is important that data capture is included in the strategy for official statistics.

9. The title of my intervention is “Energy reserves in official energy statistics”. First I will see how reserves are treated in basic Norwegian oil statistics. There are some few examples of standard tables.

43 Historic production in abandoned fields and fields on stream per 31 December 2007¹

Name of _____ **Original recoverable reserves**

Oil, Gas, NGL, Condensate, Total
million billion million million million million
Sm³ Sm³ tons million Sm³ Sm³ Sm³ Discovery
o.e.² year³

Total sold and delivered 3 283 1 233 107 92 4 811

Total abandoned fields. 38 229 4 1 275

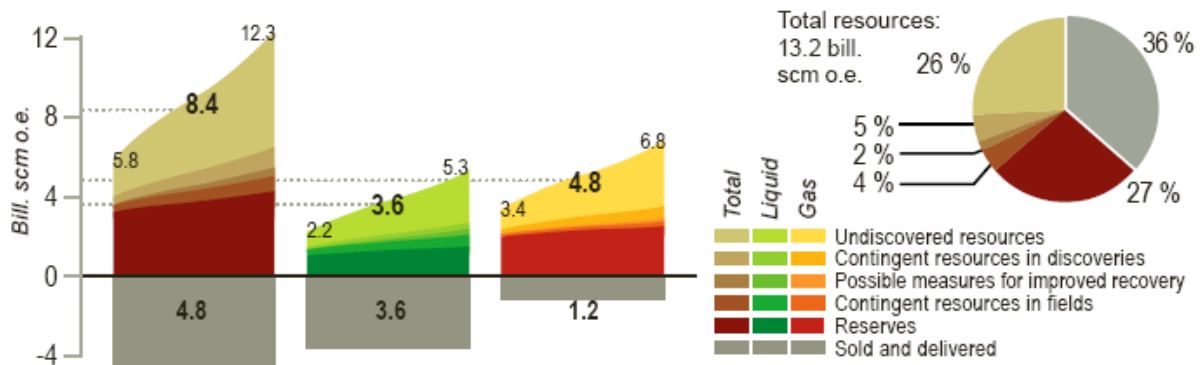
And

44 Original recoverable reserves and remaining reserves in fields in production per 31 December 20

Name of field	Original ²					Residual ⁵				
	Oil, million Sm ³	Gas, billion Sm ³	NGL, million tons	Condensate, million Sm ³	Total million Sm ³ o.e. ³	Oil, million Sm ³	Gas, billion Sm ³	NGL, million tons	Condensate, million Sm ³	Total million Sm ³ o.e. ³
Total	4 257.2	3 316.4	227.0	142.4	8 147.2	1 012.5	2 312.5	123.9	51.7	3 612.0

This is a yearly Norwegian official statistics – and data are delivered by the Norwegian Petroleum Directorate.

Facts (publication) from The Norwegian Petroleum Directorate



How is data and statistics reserves presented in other statistical publications (jun T)

10. The concept of reserves and **how much reserves** do we have? International coordination

Basically the SEEA has an understanding of reserves as a measure of physical reserves that may be measured. For some resources this may be a usable starting point. For others it may be argued that the idea of a well defined quantity of mineral reserves (sub soil) may be misleading. I read UNFC as a statement that for Fossil energy and Mineral reserves we need to include the concept of projects to understand that what may be beneficial to society is a result (outcome) of a project. This makes the reserves an endogenous variable. To understand the variations in the estimates of reserves we then need a model for decomposition of the causes behind variations in reserves. It is not fully obvious that figures of reserves are easy to understand as official statistics. This has to be discussed further.

11. Stocks should not be mixed with reserves. Stocks are e.g. oil that has been produced but still not used.

12 The concept of non renewable energy – is linked to the idea of limited resources/reserves. This means that in energy classifications the concept of reserves should be mirrored in the set of definitions of non-renewable energy carriers

13. What type of fossil energy or mineral reserves ? The type of Fossil energy and mineral reserves in the data set of reserves could be expected to be mirrored in the set of definitions of energy flows. That is the energy commodity classification. Is this easy to fulfil?

14 How to collect data on reserves. In SEEA this is discussed and the proposal is to include only commercial recoverable reserves since valuation is a part of SEEA.

15. If this UNFC standard is approved by accounting standards as IFRS – this may give usable and comparable data included in the business accounts. These accounts will be an important data source for official statistics . The development along this path should be monitored by the official statistical community

16, Conclusions

The contacts between UNFC and the official statistics family has to continue. Conclusions have to be elaborated.

Relevance , transparency and understandable concepts are important elements. Data collection should be 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 is defined in physical terms but it may be possible to use the project concept. This has to be discussed more.

If UNFC is integrated in public accounts (IFRS) relevant data for statistics will be available. This may be a very fruitful development.