

List of issues for the SEEA-E

The list of issues for the SEEA-E presented below has been developed on the basis of the issue list discussed at the First Meeting of the United Nations Committee of Expert on Environment-Economic Accounting (New York, 22-23 June 2006)¹, the Special Session of the London Group on Energy Accounts (Rome, 17-19 December 2007)², at the Third Meeting of the Oslo Group on Energy Statistics (Vienna, 4-6 February 2008)³.

Issue 1. Classification of energy resources

Issue 1a. Classification of assets for energy resources

An agreed classification of energy resources is fundamental for the development of standard tables on asset accounts for energy resources. The SEEA-2003 distinguishes, in its asset classification, mineral and energy resources into the following categories: EA.111 Fossil fuels; EA.112 Metallic minerals; and EA.113 Non-metallic minerals. The SEEA asset classifications has to be revisited and to make sure that the categories are mutually exclusive (e.g. coal is a fossil fuel and a non-metallic mineral) and extended to include also new forms of energy (e.g. nuclear energy and renewable energy).

Issues 1b. Categorization of resources

The SEEA-2003 provides a categorization of resources based on the geological and economic characteristics of the deposits, into proven, probable and possible. This categorization is based on the McKelvey box. More recently, the development of United Nations Framework Classification for Fossil Energy and Mineral Resources (UNFC) was endorsed by the United Nations Economic and Social Council (ECOSOC) which recommended its application worldwide. The UNFC, in addition to the geological and economic characteristics of the deposits, introduces a third dimension, which is linked to the project feasibility. As a result, there is a need for the SEEA-E to develop a categorization of resources based on the UNFC.

Aggregation over energy resources over different fields and with heterogeneous quality is an additional issue to be addressed.

Issue 2. Valuation of energy resources

In absence of market prices the net present value method has been identified as being the preferred valuation method for energy resources. Some general methodological recommendation on how best to implement the net present value still need to be developed. They include, for example a discussion on the rate of return to capital, the rationale behind the choice of the discount rate, the calculation of the resources rent in case of joint production (e.g. in the case of a combined silver and copper mine), the treatment of fluctuations in resource rents over relatively short periods of time, volatility and negative resource rents, the use of moving averages of resource rents, determining the extraction profiles and constant price valuations of stocks.

¹ <http://unstats.un.org/unsd/envaccounting/ceea/meetings/UNCEEA-1-10.pdf>

² <http://unstats.un.org/unsd/envaccounting/londongroup/meeting12.asp?sID=2>

³ http://www.ssb.no/english/conference/ocg/vienna/2c_paper.pdf

Issue 3. Renewable energy resource stocks

Renewable energy resources have become increasingly important. Some have argued that for renewable energy resources there may be a stock which would be the expected generation of renewable energy depending on the technology. Not including the stock of renewable resources in the stock may provide an unbalanced view of total stock of energy available in the country.

Issue 4. Decommissioning costs and recording ownership of mineral-related assets

The SEEA-2003 suggested more than one option in recording decommissioning costs and recording of ownership of mineral-related assets. According to SNA 2008, decommissioning costs (terminal costs) lead to the creation of a fixed asset which has to be recorded as gross fixed capital formation in the asset accounts. Similarly, the asset account should in each period reflect a consumption of this fixed asset. The gross fixed capital formation are recorded at the end of the life time of the related asset, while the recording of the consumption of fixed capital takes place during the life time of the fixed asset. In order to estimate and record the consumption of fixed capital before the terminal costs actually has taken place it is necessary to estimate an expected terminal cost, which can be used as basis for the calculation of consumption of fixed capital.

The SEEA-E will have to be updated to reflect the changes in the SNA 2008.

Issue 5. Classification/disaggregation of economic activities

In the supply and use tables for energy, the relevant breakdown of industries for the standard and supplementary tables has to be identified and mapped to the International Standard Industrial Classification of All Economic Activities, Revision 4 (ISIC Rev. 4). The breakdown has to include the relevant economic activities on the supply side, such as, for example, economic activities for the extraction of energy resources, transformation/conversion of primary energy products and supply of energy products and the relevant activities on the use side.

The starting points should be the detailed industry breakdown used in energy statistics which distinguishes three groups of industries (which are called in energy statistics terminology “sectors”) and within each group a detailed list of industries is identified. The main groups are: the “transformations sector” (broadly corresponding to activities dealing with the conversion of energy to other forms), “energy sector” (corresponding to energy producing activities - e.g. for heating, lighting and operation of all equipment used in the extraction process, for traction and for distribution). in the supply of energy) and “end-user sector” (industry, transport, residential, commercial/public services, agriculture/forestry, fishing and non specified).

Issue 6. Classification/disaggregation and definition of energy products

The list of energy products to be included in the supply and use tables has to be identified and mapped into international classifications of products such as the Central Product Classification (CPC ver. 2) and the Harmonized System Codes (HS).

The distinction between primary and secondary energy products is often made in energy statistics to distinguish energy products that are “either extracted or captured directly from natural resources such as crude oil, hard coal, natural gas – primary; or are produced from primary sources – secondary” (OECD/IEA/Eurostat 2005⁴). Some countries distinguish between primary and secondary products in their energy accounts. It is relevant to have this distinction in the standard tables for energy accounts.

Issue 7. Classification of energy use by purpose

In energy statistics and balances a distinction is generally made in the use of energy products between “non-energy use”, “final energy use” and “transformation input”. Depending on how energy products are defined, there may be the need to cover in the supply and use table not only the supply and use of ‘energy products’ (as output of the ‘energy industry’), but also the supply and use of (the main) non-energy products which are used for energy purposes. In this regard it is particularly important to develop a classification of products by purpose (i.e. for energy and non-energy purposes) and to define the boundary of the non-energy products to consider. It should be said that the supply and use tables for non-energy products will include only the part of non-energy products used for energy purposes.

Non-energy use (of energy products) refers to the use of energy products as raw materials in the chemical, petrochemical and other industries, not for the purpose to produce energy (e.g. bitumen used for asphalt). Final energy use refers to the use of energy products for energy purposes. It excludes the use of energy product for transformation into other forms of energy. Transformation input refers to the conversion of primary forms of energy to secondary and further transformation (e.g. coking coal to coke, crude oil to petroleum products, and heavy fuel oil to electricity).

Issue 8. Energy losses (e.g. in distribution, storage, etc.)

Losses of energy (in the storage, distribution system, transformation) are an important indicator of the efficiency of the distribution/storage/transformation system and allow for a mass balance of the energy flow. The question is should the physical supply and use table record explicitly these flows and how to record them. In the case of water, the supplementary physical supply and use tables explicitly identify the losses in distribution which are allocated to the supplier. The same should be done for energy. Different types of losses, including flaring should be analyzed in order to develop a proper recording for these flows in the supply and use tables.

Issue 9. Conversion factors

At present there exist different conversion factors which are applied to convert energy products among different units. There is a need to obtain an international agreed set of conversion factors to ensure international comparability if different measurement units are used by different countries. In this regards, the work of the Oslo Group will be an important input to the work on the SEEA – E.

⁴ 2005, OECD/IEA/Eurostat *Energy Statistics Manual*.

Issue 10. Double counting

Detailed supply-use tables include all types of energy, i.e. primary energy products as coal and crude oil on one hand and transformed/converted types of energy like petrol and heating and electricity. This leads to a double counting when all uses of energy are added in the sense that the same energy is counted more than once. A standard way of recording energy supply and use should be developed (net , gross or both).

Issue 11. Permits to access the resources and emission permits

The treatment of permits leases and licenses to access natural resources and emission permits has changed in the SNA 2008 as opposed to the 1993 SNA and the SEEA-2003. The SEEA-E should analyse the recommendations of the SNA 2008 and decide whether to follow them or depart from them, in particular for what concerns the treatment of emission permits which are in the SNA 2008 treated as taxes and not as permits.

Issue 12. Recording of natural resource depletion for a non-renewable resource

A characteristic of the SEEA-2003 is the provision of multiple options including a number of aspects of natural resource depletion. A statistical standard requires that these options be replaced with unambiguous accounting recommendations. This include:

- i. identifying the income element;
- ii. recording of mineral exploration and mineral deposits;
- iii. recording of additions and subtractions from resource stocks;
- iv. recording of asset ownership;
- v. recording of depletion.

All these options need to be translated into unambiguous accounting recommendations. It is expected that these will together lead to clear cut recommendations on the compilation of depletion adjusted national accounts aggregates (product, income and saving).