System of Environmental-Economic Accounting for Energy (SEEA-E)

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Background

In 2005 the UN Statistical Commission endorsed the plan to elevate the *System of integrated Environmental and Economic Accounting* (SEEA) to an international statistical standard under the coordination of the UNCEEA

The SEEA contains various modules of accounts including energy accounts

In 2007 consensus emerged for the preparation of a publication on energy accounts (SEEA-E) and related emissions accounts

Process

UNSD has embarked on the drafting of the SEEA-E as part of its regular work programme in beginning of 2008

A Global Assessment of Energy Accounts asked for detailed country practices in compilation

A drafting group with experts on energy statistics and energy accounts has been established to assist UNSD in developing SEEA-E

A website has been created:

http://unstats.un.org/unsd/envaccounting/seeae

An expert group meeting will be held to review the complete draft SEEA-E

The UNCEEA will submit the SEEA-E for adoption to the UN Statistical Commission

Coverage of the SEEA-E

- Agreed concepts, definitions, classifications, accounting rules and valuation principles
- Physical and monetary accounts for energy resource stocks
- Physical and monetary flow accounts related to energy
- Accounts for energy-related air emissions
- Bridge tables with energy balances and emission inventories

Draft outline of SEEA-E

Chapter 1: Introduction.

Chapter 2: The SEEA-E framework

Chapter 3: Physical asset accounts

Chapter 4: Monetary asset accounts

Chapter 5: Physical flow accounts

Chapter 6: Monetary flow accounts

Chapter 7: Air emission accounts for energy related emissions

Chapter 8: Hybrid accounts

Chapter 9: Applications of energy accounts

Asset accounts

Physical and monetary asset accounts for energy resources (below ground)

- Record the opening and closing stocks as well as changes in stocks of energy resources in the accounting period due to extraction, discoveries, reclassification or natural causes etc.
- Monetary asset accounts show the value of energy resources
  - Allow for the calculation of depletion of energy resources
    - When linked to income measures environmentally-adjusted aggregates (e.g. environmentally-adjusted value added and genuine savings) can be derived
  - Provide an indication of the contribution of energy resources to the wealth of a nation

Inventories of energy products (above ground)

Flow accounts

Physical flow accounts for energy

- Provide information by economic activity (i.e. ISIC) of the use of energy products for energy and non-energy purposes and the use of renewable resources for energy purposes (e.g. bio fuels) as input in production and consumption
- Presented in the form of supply and use tables

Energy-related air emission accounts

- Provide information of the energy-related emissions by economic activity (i.e. ISIC)

Flow accounts (2)

Monetary flow accounts separately identify energy-related transactions that are already part of the conventional economic accounts. These include for example:

- Costs associated with the energy extraction and distribution
- Costs and fees paid by the users
- Energy-related taxes and subsidies
- Leases and licenses for access to the energy resources etc.

Hybrid accounts juxtapose physical information of the supply and use tables with the monetary supply and use tables of the conventional economic accounts. Useful for analytical purposes (e.g. energy efficiency indicators, etc.)

SEEA-E and IRES

SEEA-E

A standard for physical and monetary energy accounts

Will serve as an input in the revised **SEEA**

IRES

Definitions, classifications, agreed data items, data collection strategy, data quality.

ESCM (*Energy Statistics Compilers Manual)*

Compilation guide: Best practices, examples of data collection methods

While IRES will comply to the extent possible with the SEEA-E conceptual structure and data needs, SEEA-E will develop its accounting standards on the basis of the IRES

SEEA-E and Energy Statistics

Understanding the differences between energy balances and energy accounts:

- Perspective: technology vs activity
- Terminology (e.g. stocks)
- Concepts: territory vs residence
- Classifications
  - Transactions (e.g. supply)
  - Products

Bridge tables as a way forward

Some difference

Energy Statistics	Energy Balances	Energy Accounts
Based on primary statistics Production, Foreign trade, Business surveys, Specific surveys	Based on energy statistics	Based on energy statistics and balances
(No specific format)	Supply and use balances Various formats (IEA, Eurostat, UN)	Supply and use balances SNA supply and use table format
Territory principle	Territory principle	Resident principle
	Statistical differences	No statistical differences
Physical	Physical	Physical and monetary

Some differences (2)

Energy Statistics and Balances

Technologies:
power stations,
combined heat and power stations,
heat plants,
auto-producers,
gas works,
petroleum refineries,
coke-oven plants, etc.

Industries (ISIC)
But some **rearrangement** of industries' energy use according to purpose:
e.g. all transport in one separate sector

Energy Accounts

No description of technologies,
Focus on economic activities

Industries (ISIC)
No re-arrangement of industries' energy use
Own account transportation included in industries' activities

The link between **imports** according to the SEEA and the energy balances

Imports (SEEA)
= Imports (energy balances)
+ Energy products purchased by residents abroad

Of which:

Bunkering of oil abroad for sea transport and fishing vessels

Bunkering of jet fuel and kerosene abroad for air transport

Refuelling of gasoline and diesel for land transport

Tourists' and businessmen's purchase of energy abroad including fuel for private cars

Energy purchased by military bases on foreign territories

Energy purchased by national embassies abroad

The link between **exports** according to the SEEA and the energy balances

Exports (SEEA)

= Exports (energy balances)

+ Energy products sold to non-residents on domestic territory

Of which :

Foreign ships' and fishing vessels' bunkering of oil on territory

Foreign planes bunkering of fuel and kerosene on territory

Foreign vehicles' refuelling of gasoline and diesel on territory

Foreign tourists' and businessmen's purchase of energy on territory including fuel for private cars

Energy sold to foreign military bases on national territory

Energy sold to foreign embassies on national territory

Different concepts of supply (and corresponding use)

SEEA	Difference	**Energy balances**
Supply		Supply (energy balances)
=		=
Output		Output
+ Imports (SEEA)	- Energy purchased by residents abroad	+ Imports (general trade)
	+ Inventory decrease	+ Inventory decrease
	- Exports (general trade)	- Exports (general trade)
	- International marine bunkers	- International marine bunkers

For more information contact

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Thank you for your attention !