LG/10/10

DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS
STATISTICS DIVISION
UNITED NATIONS

10th London Group on Environmental Accounting
New York, 19-21 June 2006
United Nations Secretariat Building, Conference Room C

The Dutch Energy Accounts

Sjoerd Schenau

Centraal Bureau voor de Statistiek/ Statistics Netherlands
Department of National Accounts
P.O. Box 4000
2270 JM Voorburg

The Dutch energy accounts

Sjoerd Schenau

Abstract - The energy accounts represent a system in which energy data, in both monetary and physical terms, have been integrated into the national accounting framework. The supply and use tables, part of the system of National Accounts, provide an overall accounting structure for the energy accounts in values and quantities. The energy accounts can be used, either directly or via calculations using economic modelling, to analyse energy use and production in relation to different economic activities in society. The energy accounts constitute an integrated part of the System of Environmental and Economic Accounts (SEEA). In this study a new methodology is presented to compile the energy accounts for the Netherlands. Physical data, derived from the energy statistics, have been combined with price information to calculate the monetary energy values. These energy values have subsequently been implemented into the System of National Accounts. By combining these two data sources, a systematic framework is created containing consistent and harmonised monetary and physical energy data.

1.1 Introduction

National Statistical offices usually produce two kinds of energy statistics. Firstly, the energy statistics provide data on the physical energy flows within a country. The physical energy flows are usually presented in the form of balances, that show how much energy is produced and consumed, and are consistent on different levels. Secondly, energy commodities are recorded in the National accounts. Here, the monetary flows associated with energy commodities that occur within the national economy are shown.

Ideally, data from the physical energy statistics should be consistent with the monetary data from the National accounts. There are however two main reasons why this is not the case. First of all, differences in classifications and definitions make a direct comparison between the two data sets impossible. Secondly, the source information for these two statistics usually originate from two different and separate data flows. This causes all kinds of inconsistencies, for example because of differences in the sample size of the underlying survey, up scaling factors, consistency procedures etc.

In order to circumvent these problems the so-called *energy accounts* have been developed. The energy accounts represent a consistent framework in which energy data, both in monetary and physical terms, have been integrated into the national accounting framework. The supply and use tables, part of the system of National Accounts, provide an overall accounting structure for the energy accounts in values and quantities. The energy accounts are based on the international framework called the System of Environmental and Economic Accounts (SEEA2003). This framework is an extension of the System of National accounts (SNA).

Energy accounts have been produced by a number of countries, among others Denmark, Finland, Norway, United Kingdom, Germany, South Africa, Australia and New Zealand. In October 2002, EU countries agreed upon a table on the physical energy use to be included in the NAMEA-air standard tables from 2003 onwards (see NAMEA-air compilation guide Eurostat)[1]. This table covers only the demand side and focuses on the energy use that causes emissions to air, i.e. only energy combusted. Energy products transformed in another form of energy or used as raw material are not taken into consideration.

[1] In 2006 Eurostat proposed to exclude the energy accounts from the standard tables for NAME-air, in order to simplify the questionnaire. However, after discussions among member states the tables were reinserted into the questionnaire, and can now be filled in on a voluntary basis

In the Netherlands, following a pilot project in 1999 (Verduin, 2000), energy accounts have been developed from 2005 onwards. The aim of this project was twofold. First of all, the energy accounts provide a complete overview of the supply and use of energy commodities of the Dutch economy. Figures are presented for 58 industries, covering the whole economy, households, stock changes and imports and exports. These data can be used by policy makers to evaluate questions regarding the energy input, efficiency etc. The energy accounts can be used, either directly or via calculations using economic modelling, to analyse energy use and production in relation to different economic activities in society. Furthermore, the energy accounts can be used to make reliable estimates for air emissions related to energy combustion processes. The second purpose of this project was to provide the National accounts with better monetary data for the supply and use tables on energy commodities. By directly linking the physical data with the monetary National accounts the quality is greatly improved. Because this project was performed during a revision period of the National Accounts, these newly calculated and harmonised data could be inserted into the National accounts. The compilation of the energy accounts has now been fully incorporated in the working process of the National accounts.

The main objective of this paper is to describe the methodology of the Dutch energy accounts and to discuss the obtained results. In chapter 2 the main concepts of the energy accounts in general are discussed. The compilation of the Dutch energy accounts consist of three subsequent steps, which are described in chapter 3. In chapter 4 the main results are presented in the structure of an aggregated supply and use table for the year 2003. In chapter 5 some possibilities of the energy accounts are shown such as the construction of indicators and analysis. Finally, chapter 6 sums up with some conclusions.

1.2 Energy accounts in SEEA2003

In SEEA2003 energy accounts are mentioned only briefly. Energy accounts are part of the material flow accounts (chapter 3), but are not discussed separately. In chapter 4.2 (hybrid flow accounts) the energy accounts of one country, namely Denmark, are discussed and illustrated with some tables (4-45 to 4.73). The focus is mainly on the how the energy accounts can be used for the compilation of the air emission accounts.

The energy accounts, however, deserve a special treatment. Firstly, the use of energy is essential for the economy because nearly all economic activities are connected to either the direct on indirect consumption of energy. Energy accounts provide the means to give an overview of all energy flows and related monetary transactions in the economy within a consistent framework. Secondly, unlike other products,

energy commodities can be converted into a single unit, namely the energy content (joules) of the commodity. In this way all energy products can easily be aggregated.

The energy accounts could be extended in the SEEA with the following issues:

- General concepts
- Data sources needed for the compilation of the energy accounts
- Methodological issues: harmonisation of classifications, energy conversion factors, integration of various data sources, compilation of the monetary supply and use tables, etc.
- More country examples: South Africa, Germany, Norway, Finland, Australia, The Netherlands, etc.
- Treatment of renewable energy
- How to use the energy accounts for the compilation of the air emission accounts
- Other uses of the energy accounts, development of indicators

This paper deals with the methodology of the energy accounts of the Netherlands. This report however could be used, together with the reports of other countries, to generate a more general description of the energy accounts which can be used as guideline for the update of the SEEA handbook.

2. General concepts

The energy accounts are material flow accounts (MFA), which are an integral part of the integrated system economic and environmental accounts (SEEA). These accounts have been developed to determine the complex relationships that exist between the economy, the environment and society. The energy accounts consist of so called hybrid supply and use tables (SEEA 4-6). These hybrid tables bring together physical and monetary data in comparable terms. In the physical dimension energy can be recorded in both units of weight (mln kg, mln ae, mln kWh) and energetic equivalents (PJ).

The supply of energy commodities is defined as domestic production plus import of the various energy products. The use of energy commodities is defined as intermediate use by industries (classified by NACE), plus household consumption, inventory changes and exports. Like in the supply and use tables of the National accounts, the supply and use of energy are always balanced.

The energy accounts are compiled according to the definitions of the National Accounts (SNA93). Therefore, the accounts give an complete overview of the total energy supply and energy consumption of a national economy.

It is important to underline the fundamental differences between the energy statistics (ESN, Energy supply in the Netherlands, in Dutch: De Nederlandse Energiehuishouding, NEH) and the National accounts, and thus the energy accounts:

1. The National accounts are based on the resident principle whereas the energy statistics are based on the territory principle. Accordingly, in the energy accounts all economic agents of a country are included regardless whether they are operating within the national territory or abroad. The resident principle guarantees that macroeconomic indicators such as Domestic Product and National income are comparable between countries and can be summated straightforwardly over countries. Accordingly, energy purchase by residents for mobile sources that occurs abroad is taken into account. This includes bunkering of gasoline and fuel oil by ships and the purchase of motor fuels by tourists. In the National accounts these purchases are recorded as imports. In addition, the energy purchases by non-residents is not part of the domestic use and is recorded as export. Both energy use residents abroad as the energy use by non residents is shown separately from respectively the total import en export in the energy accounts.
2. The Energy accounts show how much energy products are sold and purchased. This is not always equal to the amounts that are produced and used within a business unit or a industry, as is recorded in the ESN. Internal use (i.e. energy produced and used within the same business unit) is not recorded in the National accounts, as there is no complementary monetary flow associated with it.
3. Primary energy commodities (such as coal, natural gas or crude oil) are transformed into so called secondary energy commodities (such as motor oil, electricity etc.). If the energy contents of the different commodities are added together then the gross energy consumption overestimates the "real" energy consumption because the same energy is counted twice. As a result, the energy accounts cannot be used to determine the total net energy use of an industry or a country. An additional table has to be compiled to calculate the net energy consumption (see chapter 2.3)
4. In the energy balances all energy use related to transport activities are placed under a separate item. In the National accounts the energy consumption by transport is attributed to the industry that is using it.

2. Methodology

The energy accounts are compiled in three subsequent steps (Figure 1):

1. The calculation of the physical supply and use tables from the ESN
2. The calculation of the monetary supply and use tables for the National accounts
3. Completion of the physical accounts

In these steps different data sources are integrated to construct a harmonised data system. In de following section, these individual steps are discussed.

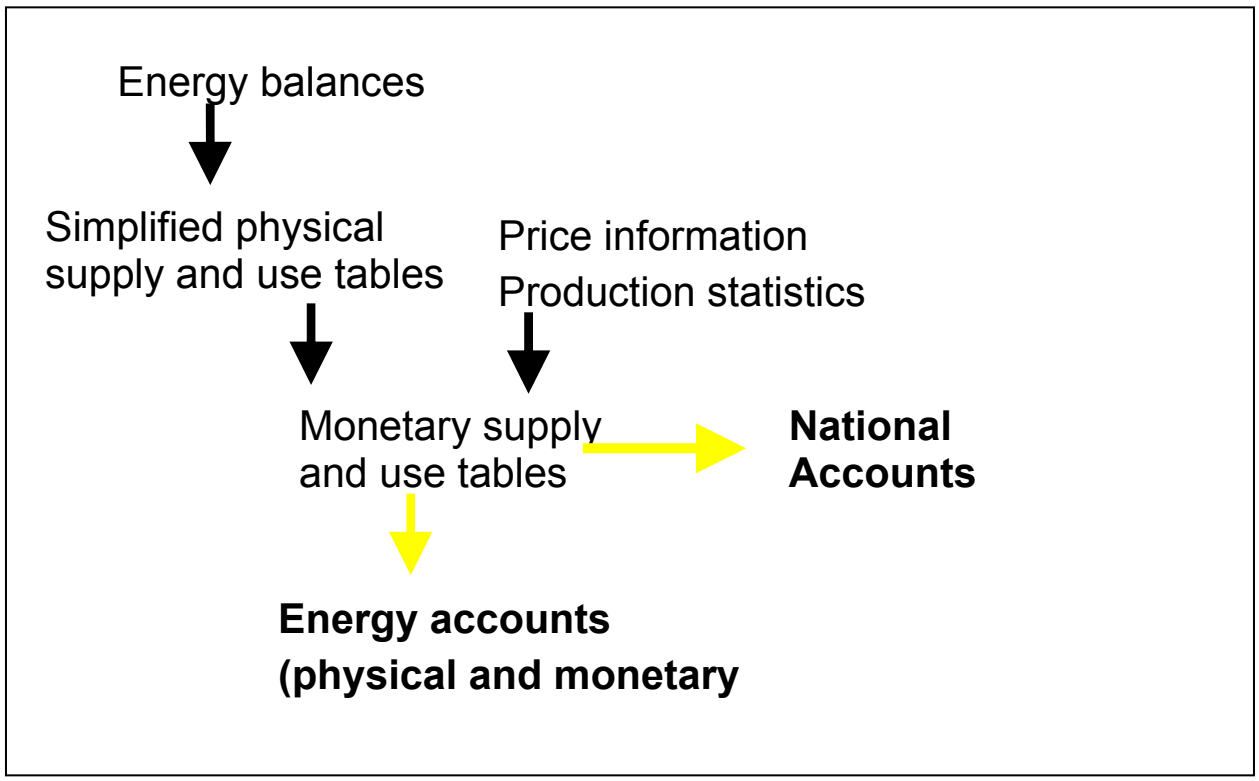

Figure 1: overview of the methodology

2. 1 The calculation of the physical supply and use tables from the ESN

The ESN provides in the form of energy flow accounts a complete overview of the supply and use of energy in the Netherlands. On a detailed level by industry and by energy source the receipts, the aim of use and the total deliverance of the energy source is recorded. The main parameter in the ESN is the consumption balance, which is computed on two levels. The first one is calculated on micro level (as a

result of a survey) as extraction + receipts – deliveries + stock changes. The second one is computed on macro level: extraction + imports – exports – bunkering + stock changes. The ESN covers all energy commodities in the Netherlands. Renewable energy sources (solar energy, water power, biofuels), which are until now of relative little importance for total energy use in the Netherlands, are not listed separately but are included as electricity or steam production.

Thanks to its comprehensive description of energy production and use, as well as its depth of breakdown, the ESN is a highly suitable source of data for drawing up NA supply and use tables. However, due to the differences in definitions, concepts and classifications some adaptations of the ESN are essential to make up supply and use tables in terms of the NA. The following steps can be distinguished in the translating procedure:

1. Harmonisation of industry and energy source classifications
2. Conceptual translation of the ESN into NA supply and use tables
3. Conceptual translation of import / export data from ESN data into NA

2.1.1 Harmonisation of industry and energy source classifications

The used industry classification in the ESN was not uniquely transformable to the classification used in the NA. However, it was possible to aggregate both classification to a common level. As a result groups of industry branches of both systems were made comparable. These groups were denoted with a special code and name. The same problem did arise with the classification of energy resources. Also in this case a common level of aggregation was necessary.

As recommended in the SEEA (4-15) a distinction was made between primary energy sources (fossil fuels, renewable energy) and secondary energy sources such as electricity and refined petroleum products which have been formed from the transformation of primary energy sources. Renewable energy sources, such as water power and solar energy, are not considered in the present study. They will be added to the energy accounts in a future project.

Energy sources used as fuel for transport purposes are functionally recorded in the ESN. However, the data are broken-down by type of transport and by type of fuel. For road traffic the total delivery is recorded for the three relevant fuels: motor gasoline, diesel and LPG. For inland and seagoing shipping the total delivery of diesel oil and fuel oil (>= 15 cSt) is recorded. In the case of aviation the total amount of jet fuel is known. Fuel used by air planes and ships delivered in the Netherlands but intended to be used

abroad (outside the Dutch boarder) is separately recorded as bunkering. In the system of National Accounts all these total levels of fuels have to be attributed to the various industries/companies consuming the fuel. In this stage of the data adaptations the fuels for transport were allocated the functional "branch of industry" transport.

2.1.2 Calculation of supply and use tables in physical units on the basis of the ESN according to the definitions of the NA

In the drawing up of the physical supply and use tables it is important to stay as close as possible to the conventions of the National accounts. As was already mentioned, the concepts and definitions used in the ESN differ from the NA. Therefore it is impossible to calculate the supply and use in terms of the NA in a straightforward way.

The supply and use on a business level were calculated as follows:

1. Supply equals production + domestic extraction. The (intermediate) use equals use for energy conversion purposes + final energy use
2. If production is larger than the total delivery, then supply is taken as equal to the total delivery. The (intermediate) use is taken equal to use (final use + use for conversion purposes) + delivery - production
3. When negative values for (intermediate) use are calculated these are corrected for. The (intermediate) use was set to zero and a correction is made in the stock changes to keep the supply / use in balance

Subsequently, the database was aggregated to the industry level and energy source level discussed in section 2.1.1 and a physical supply and use table was created. In addition, a table was made for the stock changes. These three tables constitute the basis for the compilation of the monetary supply and use tables.

2.1.3 Conceptual translation of import / export data from ESN data into NA

Import and export of energy products is differently treated in the ESN and the National accounts. The ESN records all energy commodities entering or leaving the national territory. This includes energy goods entering the customs entrepot. For the Netherlands this is very important. In Rotterdam, one on the largest harbours in the world, are to be exported again. In the national account goods entering and leaving the customs entrepot are excluded from the international trade statistics, as the customs entrepot is considered

not to be part of the national economy (see figure 2). Accordingly, the physical import / export data have to be corrected to make them correspond to NA definitions.

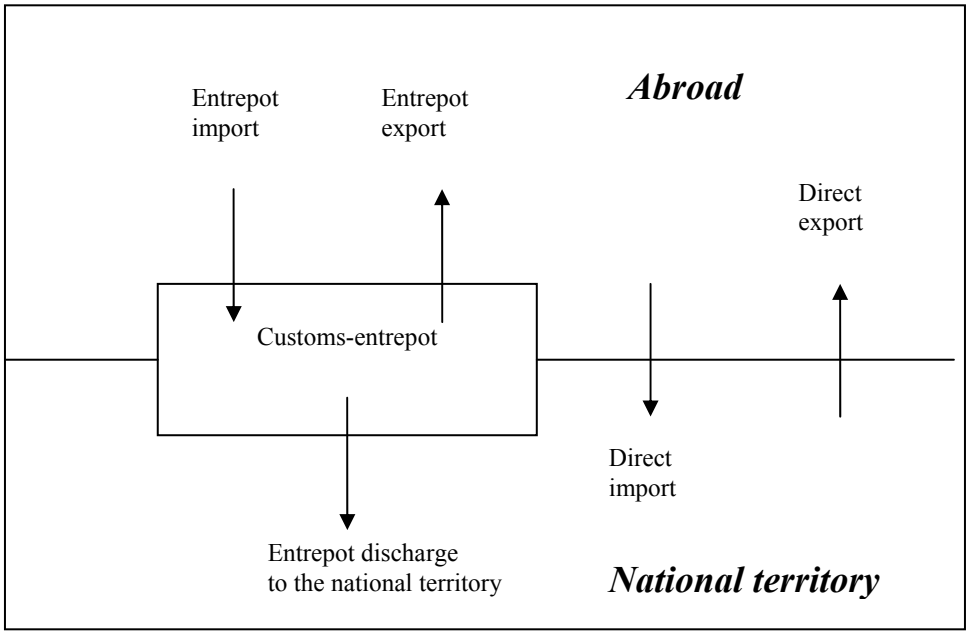

Figure 2: different treatment of imports and exports in the ESN and the National accounts.

The corrected imports and export were added to the physical supply and use tables created in the previous section.

2.2. The calculation of the monetary supply and use tables from the physical ESN tables

The compilation of the monetary supply and use tables consist of two step: 1) combining the physical data with price information to calculate the monetary values, 2) balancing the system

2.2.1 Calculating the monetary values

The monetary values for energy production and energy use are calculated by multiplying the physical values obtained from the ESN by the price (producers prices and purchaser's prices) of the commodity. The purchasers' price is the price of a product paid by a buyer, excluding VAT. The producers' price is

the purchasers' price minus trade and transport margins and excises. The following data sources on energy prices are available:

1) *Foreign trade statistics.* The foreign trade statistics provide information on imports and exports in both monetary as physical terms. With these information the import and export prices can be calculated. Problems may arise with classification. Furthermore, these prices may not always be used to determine the internal production prices.
2) *Production statistics (PRODCOM).* Average purchase prices for energy carriers for manufacturing companies.
3) *Energy prices derived from the energy statistics*. Within the collection of energy statistics, a large number of prices of energy sources are available for individual producers and users.
4) *Consumer prices for motor fuels.* These prices include taxes and transport and trade margins, but do not include VAT.

2.2.2 Balancing the system

To the supply table, data on taxes (excises and other product related energy taxes) and transport and trade margins have to be added. The supply of an energy product should balance the use of this product. In case of a small difference the prices were re-evaluated. Serious differences were investigated further and if necessary adaptations are made for the imports or exports.

2.3.1 Completing the physical accounts

As a last step, the physical supply and use table have to be completed. First of all, the number of industry branches has to match that of the monetary data. Both the monetary as physical tables are produced for the same economic classification. These industries are broken down into 58 branches, which corresponds to the publication level for the National Accounts, allowing a direct comparison with all major macro-economic parameters. Households are shown underneath the industries and are broken down into transport and other activities (mainly heating). Secondly, the physical use of motor fuels for the different industries was be calculated by using the monetary distribution over the different industry branches. Finally, the system has to be balanced. It was chosen to correct for the export data to balance the system.

2.3.2 Constructing the net energy use table

As discussed in section 2, the energy accounts show all energy flows within the economy. As primary energy sources are converted into secondary energy sources, for example the conversion of coal into electricity, this causes double counting. The total energy use (gross energy use) by industry is therefore not equal to the total "final" or net energy consumption. This net energy use is interesting as this figure provides information of the real energy consumption within a industry or country, and because this net energy use is needed for the calculation of the air emissions.

A final energy use table can be constructed by combining the physical use table with information about final energy consumption from the energy balances. Only for certain industries, where energy conversion plays an important role (refineries, chemical industry, electricity producers, etc.) the energy use from the energy use table has to be substituted by the final energy use of that industry. In addition, a column has to be added for energy losses upon conversion (also calculated from the energy balances). The exports, as calculated in the use table can be added to give the total energy use of the national economy (see Annex 2).

The net energy use table is still based on the resident principle and therefore provides the total energy consumption of the national economy. However, as the real energy consumption is recorded (and not the total amount purchased), the direct link with the monetary use table is lost. The net energy use table can be balanced with a supply table which records domestic energy extraction and imports.

4. Results

The Dutch energy accounts now consist of eight tables:

1. Physical supply table in mln kg or mln ae
2. Physical supply table in PJ
3. Monetary supply table in mln euro
4. Physical use table in mln kg or mln ae
5. Physical use table in PJ
6. Monetary use table in mln euro
7. Physical net energy use table in PJ
8. Physical net energy supply table in PJ

In Annex 2 the aggregated hybrid supply and use tables for 2003 and the final energy use table are show.

5. What can we do with the energy accounts ?

Energy accounts give detailed information on energy production, conversion and consumption of the economy. Energy accounts therefore provide answers to questions such as:

- What is the level of direct energy consumption of industries and private households ? What are the different energy sources that are used and how is this changing over time ?
- What is the total energy input for the economy ? How much is delivered by imports and how much by domestic extraction ? How much does renewable energy contribute to the total energy production ?
- How much is paid for energy by industries and private households ? What are the price differences ?
- What is the relation between energy consumption and other economic parameters ? How energy intensive are particular industries (energy compared to output) and how is this changing over time?

Indicators

There is a wide range of energy indicators that are relevant for the different social, economic and environmental dimensions (IAEA, 2005). Energy indicators reflect ratios or quantities and, at a disaggregated level, describe the links between energy consumption, human and economic activities and environmental imparts (Unander, 2005). By dividing energy consumption data by values quantifying the activity that drives the demand for energy, so-called energy intensities can be constructed. These intensities are more useful in tracking changes in end-use over time, or differences among countries, than extensive non-normalized quantities. Because the energy accounts have been harmonised with National accounts classifications and definitions, the physical data can be directly compared with macro-economic parameters like values added, total production, labour force data etc. Therefore, energy accounts are particularly suited te derive indicators. An example is the energy intensity, defined as PJ per value added. Figure 3 shows the energy intensity for a number of industries in the Netherlands for 2003.

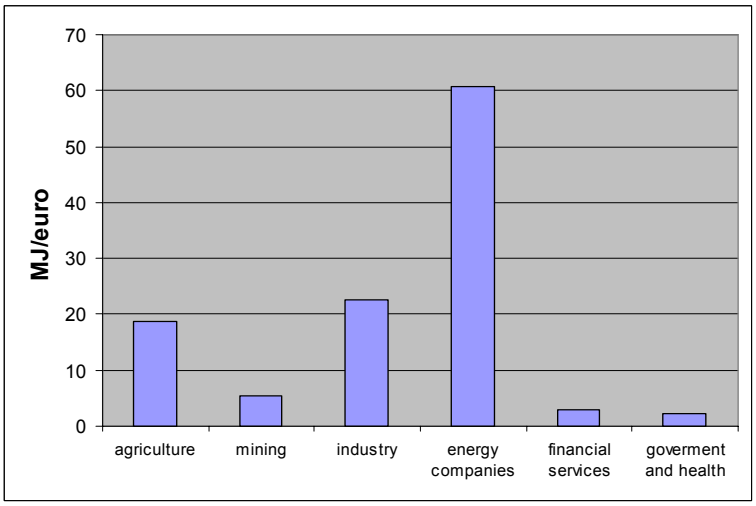

Figure 3: energy intensity (MJ/euro) per industry (2003)

Analyses

As the energy accounts are compiled as supply and use tables of the National accounts, IO analysis can be a powerful tool for different kinds of analysis. Figure 4 shows the energy consumption assigned to final demand categories. In addition the indirect effect (energy consumption associated with imports) has been calculated.

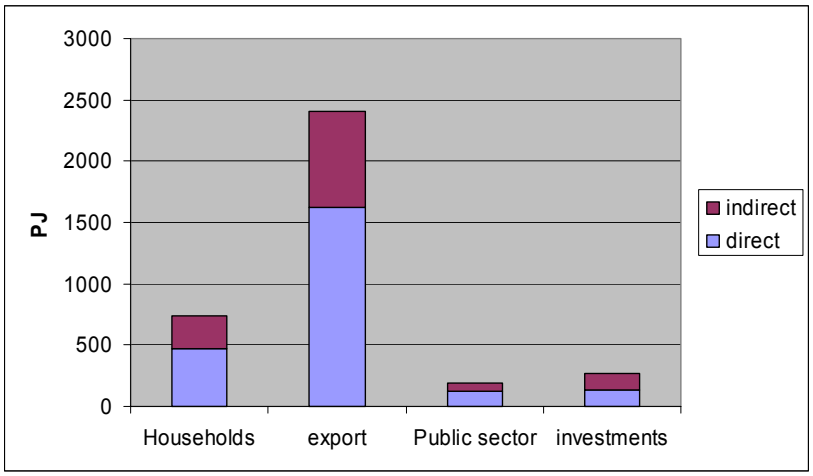

Figure 4: Direct and indirect energy consumption attributed to the final demand categories (2003)

Emission accounts

In the energy accounts all energy flows are recorded that occur within the economic sphere. The accounts can be extended by including the residuals related to energy combustion (CO_2, NOx, SO_2, etc). The energy use table enables NAMEA users to investigate in detail the connection between air emissions and energy use, industry by industry and by household consumption purpose. The air emission accounts can be directly linked to the energy accounts (see Eurostat compilation guide NAMEA-air). Therefore, data on energy consumption are extensively used for the compilation of NAMEA type air accounts, either combining energy accounts by industry with relevant emission factors or apportioning inventory-based air emission data thanks to energy statistics. The air emission accounts are annually produced for the Netherlands, but are not discussed in this study.

6. Conclusions

Energy accounts provide detailed physical and monetary information on the energy flows that occur within a national economy. As it is part of an integrated framework, the data can be compared to all kind of macro-economic variables. Indicators for energy can be easily derived from the energy accounts.

The approach followed here has a number of important advantages:

- The compilation of the energy accounts has been fully integrated into the working process of the National accounts. The quality of the monetary data on energy commodities was greatly improved, as they are now directly linked to the physical energy balances. Energy accounts, in their own right, can thus give an important contribution to the national accounts.
- Energy use and production was not calculated on the industry branch level, but on the business unit level. This is in line with National accounts definitions and makes de calculation of supply and use of energy commodities more accurate.
- The physical data are fully consistent with the monetary data.

References

ABS (Australian Bureau of statistics), 2000, *Energy and emission accounts*

CBS, (Statistics Netherlands) (2005), *National Accounts 2004*, SDU-publishers, The Hague.

Eurostat (2003), *Environmental Accounts 2003 – Present state and future developmen*t, Doc. ENV/072/8, Joint Meeting of the Working Groups "Environmental Statistics" and "Environmental Accounts" Joint Eurostat/EFTA group, 10-12 September 2003, Eurostat (Luxemburg).

IAEA (2005). *Energy indicators for sustainable development: Methodologies and Guidelines.*

Statistics New Zealand. *Energy flow account 1996-1999*

SEEA, (2003). *System of integrated environmental and economic accounting 2003,* Commission of the European Communities, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations & World Bank (2003). Final draft circulated for information prior to official editing, United Nations, New York.

Unander, F. (2005). Energy indicators and sustainable development: the international energy agency approach. *Natural Resources Forum 29*, 377-391

Verduin, H. (2000), *Integration of energy statistics in the National Accounts.* Statistics Netherlands, Voorburg.

ANNEX 1: Classifications for the energy accounts

1) Energy sources

1 **Hard coal and lignite**
2 **Coal Cokes**
3 **Blast furnace gas**
4 **Cokes gas**
5 **crude oil**
6 **Natural gas condensate**
7 **other gasses**
8 **LPG, propane, butane**
9 **liquid gas (LPG) for cars**
10 **Naphtha's**
11 **Oil aromatics**
12 **Jetfuel and kerosine**
13 **Motor gasoline**
14 **petroleum**
15 **Diesel oil (used as raw material)**
16 **Diesel oil (for cars)**
17 **Diesel oil (other uses)**
18 **Fuel oil**
19 **Lubricants and greases**
20 **bitumen**
21 **Petroleum residuals**
22 **natural gas**
23 **electricity**
24 **steam/hot water**
25 **biogas**

2) Industries

Agriculture, forestry and fishing

- **Arable farming**
- **Horticulture**
- **Cattle breeding**
- **Other agriculture**
- **Fisheries**

Mining and quarrying

- **Oil and gas**
- **Other mining and quarrying**

Manufacturing

- **Manufacture of food products, beverages and tobacco**
- **Manufacture of textile and leather products**
- **Manufacture of paper and paper products**
- **Publishing and printing**
- **Manufacture of petroleum products**
- **Manufacture of basic chemicals and man-made fibres**
- **Manufacture of chemical products**
- **Manufacture of rubber and plastic products**
- **Manufacture of basic metals**
- **Manufacture of fabricated metal products**
- **Manufacture of machinery and equipment n.e.c.**
- **Manufacture of electrical and optical equipment**
- **Manufacture of transport equipment**
- **Manufacture of wood products**
- **Manufacture of bulding materials**
- **Other manufacturing**
- **Waste recycling**

Electricity, gas and water supply

- **Electricity supply**
- **Water supply**

Construction

- **Construction of buildings**
- **Civil engineering**
- **Building installation and completion**

Trade, hotels, restaurants and repair

- **Trade and repair of motor vehicles/cycles**
- **Wholesale trade (excl. motor vehicles/cycles)**
- **Retail trade and repair (excl. motor vehicles/cycles)**
- **Hotels and restaurants**

Transport, storage and communication

- Land transport
- Water transport
- Air transport
- Supporting transport activities
- Post and telecommunications

- Financial and business activities
  - Banking
  - Insurance and pension funding
  - Activities auxiliary to financial intermediation
  - Real estate activities
  - Renting of movables
  - Computer and related activities
  - Research and development
  - Legal and economic activities
  - Architectural and engineering activities
  - Advertising
  - Activities of employment agencies
  - Other business activities

- General government
  - Public administration and social security
  - Defence activities
  - Subsidized education

- Care and other service activities
  - Health and social work activities
  - Sewage and refuse disposal services
  - Recreational, cultural and sporting activities
  - Private households with employed persons

Consumption of households

- own transport
- other consumption

export

- Supply to non residents

trade stocks

ANNEX 2: Supply and use tables for energy for the Netherlands

	Coal etc.	Crude oil	Natural gas	Motorfuels	Other oilproducts	Electricity	Steam and hot water	Total	Total
	PJ	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*mln euro*
Domestic production									
Mining and quarrying	0	133	2415	0	0	0	0	2548	11754
Manufacture of petroleum products	0	0	0	857	1678	3	9	2547	14336
Manufacture of basic chemicals	0	2	0	0	408	2	10	422	1896
Manufacture of basic metals	9	0	0	0	23	1	0	34	82
Other manufacturing	0	0	0	0	0	4	3	7	12
Electricity, gas and water supply	0	0	0	0	0	293	135	428	21016
Wholesale trade (excl. motor vehicles/cycles)	0	0	0	52	13	0	0	66	398
Sewage and refuse disposal services	0	0	0	0	0	8	11	19	193
Imports	639	2455	526	310	1050	75	0	5055	22522
Taxes and margins									11031
Total	**649**	**2590**	**2941**	**1219**	**3173**	**386**	**169**	**11126**	**83240**

Hybrid Supply Table for energy (2003)

	Coal etc.	Crude oil	Natural gas	Motorfuels	Other oilproducts	Electricity	Steam and hot water	Total	Total
									mln
Intermediate use	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*euro*
Agriculture, forestry and fishing	0	0	124	2	34	14	13	188	1630
Mining and quarrying	0	1	228	1	1	10	7	248	1167
Manufacture of petroleum products	0	2316	38	38	303	3	0	2700	12240
Manufacture of basic chemicals	7	217	188	3	645	33	96	1189	
Manufacture of basic metals	124	0	17	0	4	31	0	176	663
Other manufacturing	3	0	158	13	27	66	17	284	2919
Electricity, gas and water supply	267	0	408	0	64	19	13	770	12848
Construction	3	0	4	6	18	2	0	32	417
Trade, hotels, restaurants and repair	0	0	72	16	64	43	4	199	2428
Transport, storage and communication	0	0	7	110	267	13	0	397	3729
Financial and business activities	0	0	25	42	0	16	2	85	1465
General government	0	0	36	11	6	17	0	70	1042
Care and other service activities	0	0	61	10	0	20	10	101	1455
Consumption of households	0	0	335	247	4	84	7	678	14454
Exports	245	57	1241	711	1753	15	0	4022	20726
changes in stock (retail)	0	-1	0	7	-20	0	0	-14	-54
Totaal	**649**	**2590**	**2941**	**1219**	**3173**	**386**	**169**	**11126**	**83240**

Hybrid Use Table for energy (2003)

	Crude oil	Natural gas	Motorfuels	Other oilproducts	Electricity	Steam and hot water	losses due to conversion	Total
Intermediate use	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	*PJ*	PJ	*PJ*
Agriculture, forestry and fishing	0	124	2	34	14	20	0	195
Mining and quarrying	0	36	1	1	10	7	0	56
Manufacture of petroleum products	0	9	7	80	9	21	64	190
Manufacture of basic chemicals	0	142	3	407	38	116	24	731
Manufacture of basic metals	0	15	0	13	31	4	14	143
Other manufacturing	0	112	13	24	83	46	9	291
Electricity, gas and water supply	0	2	0	0	20	5	353	381
Construction	0	4	6	18	2	0	0	32
Trade, hotels, restaurants and repair	0	72	16	1	29	4	0	122
Transport, storage and communication	0	7	110	267	13	0	0	397
Financial and business activities	0	25	42	0	16	2	0	85
General government	0	36	11	6	17	0	0	70
Care and other service activities	0	61	10	0	20	10	40	141
Consumption of households	0	335	247	4	84	7		678
Exports	57	1241	711	1753	15	0		4022
Changes in stock (retail)	-1	0	7	-20	0	0		-14
Totaal	**56**	**2220**	**1187**	**2591**	**402**	**242**	**505**	**7522**

Final Use Table for energy (2003)