InterEnerStat revised definitions flows and products
Comments Statistics Netherlands

General comment

Statistics Netherlands welcomes the ambition of international organisations involved in energy information/statistics to strive for harmonisation of definitions. Having one internationally agreed set of definitions it is much easier for individual countries to supply energy information to different international organisations (as in the case of the Netherlands to Eurostat, IEA and UN).
Furthermore working with the same definitions statistical results published by different international organisations will be the same or at least consistent wit each other. This is a big advantage for the users of international energy statistics, among which policy makers (no longer debate on differences in published figures!).

Comments on Introductory notes

Primary or secondary electricity

In the documents the question is raised whether electricity should be completely secondary or partly primary and partly secondary. Both are possible, but we think it is better to consider all electricity as secondary, because this enables a more simple, comprehensive presentation of energy balances.
If electricity is considered as a secondary source, there should also be a primary source for all electricity production. This is not trivial in the case of hydro power, wind and solar pv. We suggest to assume a conversion efficiency of 100% for hydro power , wind and solar pv, which is current practice by IEA and Eurostat. Alternatively, one may agree internationally on a fixed efficiency of (40% or 33%), making hydro, wind and pv more or less comparable with thermal and nuclear electricity production.

Comments on definitions of flows

Production

It is true that production of biofuels is often deduced from consumption (last remark revised definition). However, the situation is changing. Nowadays there is considerable trade of bio-ethanol, biodiesel and wood-pellets.

Transformation sector

The transformation sector and underlying subsectors are defined as (an enumeration of) activities. This means that not only actors (statistical units) are involved which are classified in ISIC in these activities according to their main activity, but also actors in other ISIC-areas with transformation as secondary or minor activity (at least: if we understand the proposed definitions right!).
In some subsectors it is mentioned more or less explicitly (electricity and heat producers with main activity producers and autoproducers; petroleum refineries where reference to "industrial" is removed so as not to exclude mini-refineries), but not in the general definition of transformation.
To avoid confusion this could be added there too: 'All activities according to the definition have to be included irrespective of the ISIC-code of the actors'. (In the Netherlands we call this the functional approach, in contrast with the institutional approach.)

Moreover the addition ‘sector’ in the heading ‘transformation sector’ could suggest an ISIC group or class (institutional approach), which is just not the case. We suggest to use the heading ‘transformation’ only.

Energy sector
With this heading one would expect a definition of the ‘energy sector’ itself. This is not the case. In fact a definition is given of ‘energy consumption by the energy sector’ and this should therefore be the heading to our opinion to avoid confusion.
Furthermore at the end of the definition some kind of description is given of the energy sector in terms of ISIC-branches. This is confusing because only main activity actors seems to be intended here (institutional approach), therefore defined in a different way than the ‘transformation sector’. Now, in the definition it is not clear what the relation is between ‘energy sector’ and ‘transformation sector’.

Comments on definitions of products

Hierarchical classification of energy products

We suggest to make for the international energy statistics a hierarchical classification. This approach was already suggested in the draft Chapter 3 of the IRES Manual. Now it becomes easier to relate energy carriers to other statistical classifications. Think of the Trade Nomenclature or the Central Product Classification. Further, this classification makes one more aware of the relations between energy carriers. For the Dutch new data processing tool, we recently made a strictly hierarchical classification of the energy carriers. This was based on the 15 years old classification in use until now. Strictly hierarchical means all sub-items sum up to the highest item, which is energy.

Six main energy carriers
For the Dutch system we chose six main energy carriers

1. Coal
2. Oil
3. Natural Gas
4. Renewables
5. Nuclear energy and other sources
6. Electricity and Heat

Three possible subdivisions
Next we distinguished three possible subdivisions according the nature of the energy carrier. This was amongst others based on the classification for renewables and waste (p. 116 of the Energy Statistics Manual). Which subdivision to choose, depends on the main energy carrier.

i. Electricity and/or Heat
ii. Primary Fuels
iii. Secondary Fuels

This results in the following structure:

Main energy carrier	***Subdivision 1***	***Subdivision 2***
Coal	Primary coal	Coal products
Oil	Crude	Oil Products
Natural gas		
Renewables	Electricity/Heat	Biofuels[2)]

Nuclear energy and other sources	Electricity/Heat	Fuels
Electricity and heat[1)]		

[1)] This implies these are secundary energy carriers, without any reference to the energy source they are produced from.
[2)] The detailed classification for this subdivision is already made on page 12 of the document on revised definitions of products, 13-02-2009.

Appendix 1 contains a detailed listing of energy carriers.

Renewable energy products

Implications of new EU-directive for renewable energy.
Recently, political agreement was obtained on the EU renewable energy directive with mandatory targets for 2020. This directive intends to use Eurostat energy statistics (based on the joint IEA/Eurostat/UN questionnaires) for target accounting. However, for some items the definitions for renewable energy in the directive differ from the current IEA/Eurostat definitions. For example, the EU introduces aerothemal and hydrothermal energy as renewable energy sources exploited by heat pumps. It would be good to systematically check the differences between the new EU directive the definitions of the InterEnerStat group for two reasons: Firstly, to make the differences explicit and secondly to try to find out if the differences could be reduced.

Biomass, bio-energy or biofuels?
In the document all three headings are used. We think this is a bit confusing. We think it would be good to use either " biomass", or "bio-energy" or "biofuels". It is hard to decide which is the best. A disadvantage of biofuels may be that it is sometimes used as refering to liquid biofuels only. A disadvantage of biomass may be that it sometimes is used as refering to feedstocks of biofuel production plants. A disadvantge of bio-energy is that there is not an analogous category "oil-energy".

Distinction in solid, liquid and gaseous biomass/bio-energy/biofuels
We think it is a good idea to introduce this main classification of biomass/bio-energy/biofuels.

Further break down of solid biomass/bio-energy/biofuels
We are not convinced yet that the details of the classification on p. 12 is the best solution. Firstly, the main idea of the further break down does not become clear from the headings. Secondly, the distinction between specialised wastes and agrofuels is not clear and thirdly, we cannot find a reasoning behind this break down. Why is bagasse introduced? Why are wood pellets not introduced?

Municipal waste
For us, the distinction between municipal waste and industrial waste/solid biomass is not entirely clear from the proposed definitions. In the IEA/Eurostat manual municipal waste is defined as incinerated in specific installations''. The notion of specific installation (intended to incinerate mixed wastes) is essential, because waste could also be incinerated as co-firing in coal plants or in installation designed for specific kinds of waste (waste wood). In the last two cases, we assume that it should industrial waste and/or biomass.

Animal fats

For animal fats it is not clear whether they should be classified as liquids or solid. At ambient temperatures these are solid. However, at combustion temperatures these are liquid. Also caloric value is similar to vegetal oils. Currently, we record these fats as solids, as recommended by Eurostat and the IEA. However, we experience that the industry tends to consider these fats as liquids, because the combustion properties resemble the vegetable oils.

Biogasoline
Both bio-ethanol and bio-ETBE are mentioned as being part of biogasoline. However, the renewable fracttion of bio-ETBE is produced from bio-ethanol. This may easily result in under reporting or double accounting, if one country produces bio-ethanol (e.g. Brazil) and exports this to another country which produces ETBE (e.g. the Netherlands). Who should count what, given the fact that Brazil does not know what is going to happen with the exported ethanol? A solution may be to decide that only bio-ethanol production is counted as primary production and that the conversion of bio-ethanol to ETBE is either neglected or explicitly incorporated as a transformation.

Geothermal energy
Both in the old and the new definition it is not clear whether "shallow" geothermal energy should be included. To ensure comparability of statistical results, we think that the guidelines should be explicit, whether to include or omit shallow geothermal energy. Several countries (e.g. Netherlands, Sweden, Korea) have "shallow" geothermal energy. This possible part of geothermal energy is extracted from the near-surface layers (< 300 m) of the earth, has relatively low temperatures (<20 degrees Celcius), indirectly originates from the sun (actively or passively stored in summer and used in winter) and is used often via heat pumps, whose heat is not sold. The IGA does not pay much attention to this form of geothermal energy. In the new EU directive geothermal energy is defined as "energy stored in the form of heat beneath the surface of solid earth". .

Additives/Oxygenates (p. 76)
- The new definition states that this compound is added to a product modify the properties. However, currently biofuels are increasingly important additive for gasoline and diesel. The addition of these biofuels is driven by policies which have other aims than modifing the quality of the fuels.
- Currently, all additives/oxygenates are treated as primary energy by IEA/Eurostat. This is also suggested by the order in the product list of the proposed definitions. However, part of the additives are produced from other energy commodities, and therefore it would be logical to treat these as secondary product.. Maybe it is a good idea to separate the fossil and bio-additives, because the fossil additives are usually secondary and the bio-additives are primary.

Difference between other recovered gases and refinary gas in the petrochemical industry
The difference between other recovered gases and refinary gas in the petrochemical industry is not clear to us.

Appendix 1 Energy Classification (draft)

Energy

1. Coal
  -Primary Coal
    --Hard Coal
      ---Anthracite
      ---Cokes Coal
      ---Bituminous Coal
      ---Patent Fuel*)
    --Brown Coal
      ---Sub-bituminous Coal
      ---Lignite
      ---Briquettes*)
    --Peat
  -Products
    --Solid
      ---Coke Oven Coke
      ---Gas Coke
    --Gaseous
      ---Gas-works Gas
      ---Coke Oven Gas
      ---Blast Furnace Gas
2. Oil
  -Crude
    --Crude oil
    --NGL
    --Feedstock**)
    --Fossil additives*)
    --Other hydrocarbons
  -Products
    --LPG
    --Naphta
    --Gasoline
      ---Motor gasoline
      ---Aviation gasoline
      ---Gasoline type jet fuel
    --Kerosene
      ---Kerosene type jet fuel
      ---Other kerosene
    --Gas/Diesel Oil
      ---Transport diesel
      ---Heating and other gasoil
    --Residual Fuel Oil
      ---Residual Fuel Oil, low-sulphur
      ---Residual Fuel Oil, low-sulphur
    --Other products
      ---Refinery gas
      ---Ethane
      ---White spirit and SBP
      ---Lubricants
      ---Paraffin waxes
      ---Bitumen
      ---Petroleum coke
      ---Other
3. Natural Gas

4. Renewables
  -Electricity/Heat
    --Water
    --Wind
    --Solar
    --Tidal
    --Geothermal
    --Heat pumps
  -Biofuels
    --Solid
      ---Wood and wood residues
      ---AFF residues
      ---Charcoal
      ---Non-AFF residues
    --Liquid
      ---Biogasoline
      ---Biodiesel
      ---Black liquor
      ---Other
    --Gaseous
      ---Landfill gas
      ---Sewage sludge gas
      ---Other
5. Nuclear energy and other sources
  -Electricity/Heat
    --Nuclear heat
    --Other
  -Fuels
    --Industrial waste (non-renewable)
    --Municipal waste (non-renewable)
    --Hydrogen
    --Other
6. Electricity and Heat
  -Electricity
  -Heat

*) Possibly these compounds should be considered as secondary product. The classification helps to facilitate the discussion.
**) Possibly this should be considered as a flow: Refinary intake of oil products.