

## Linking energy balances and energy accounts

System of  
Environmental  
Economic  
Accounting

# Remember this one?

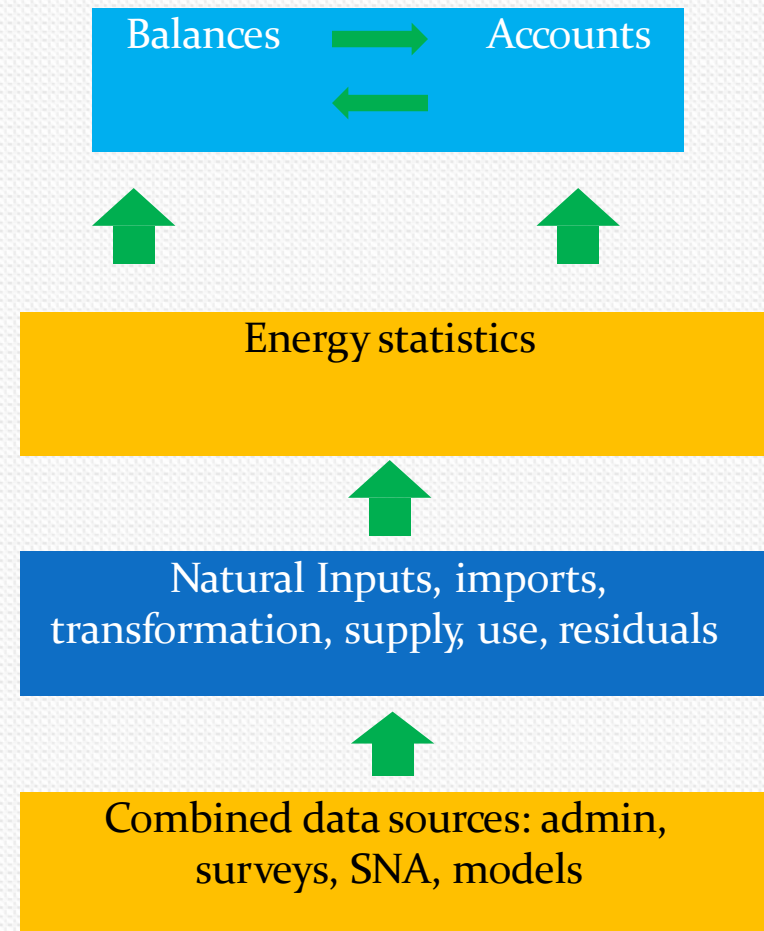
Use the same data

- Many flows are identical in balances and accounts

Important differences

- Terminology
- Territory vs residence principle
- Treatment of transport

Note: Purpose of accounts is comprehensiveness and consistency with SNA



# Terminology: Energy supply

- Supply in the energy balance:

**Total energy supply =**

- + Primary energy production
- + Import of primary and secondary energy
- Export of primary and secondary energy
- International (aviation and marine) bunkers
- Stock changes

- Supply in the energy account:

**Supply = output + imports**

# Terminology: Energy use and storage

## **Final consumption:**

- Energy balance: Refers to the use of fuels, electricity and heat delivered to final consumers being it industries or households.
- Energy accounts: Refers to household use of energy only

## **Use in the energy account:**

- Intermediate consumption, households final consumption, exports, international bunkers and stock changes are considered uses of energy

## **Storage**

Stocks and changes in stocks (energy balance)

***EQUALS***

Inventories and changes in inventories (energy accounts)

# Territory vs residence principle

	<b>Residents</b>	<b>Non-residents</b>	
<b>National territory</b>	Sold on territory to resident units	Sold on territory to non-residents (foreign, tourists, transport companies, embassies)	<b>Energy statistics and balances</b>
<b>Rest of the World</b>	Sold to residents operating abroad (tourists, transport companies, etc.)		
	<b>SEEA-Energy</b>		

# Actual difference – territory vs. residence principle

	1000 tonnes
Total emissions originating from the Danish territory (IPCC-emission inventory)	54 568
+ Emissions caused by Danish operated vehicles abroad	1 905
+ Emissions caused by Danish operated planes abroad	1 105
+ Emissions caused by Danish operated ships abroad	35 084
+ Other differences in emissions from transport and cross border trade	612
= Total Emissions from Danish economic activities (Environmental Accounts)	93 274

- An extreme case, but still .....

# An overview

## **Energy Balances**

Based on energy statistics

Supply and use balances

Various formats (IEA, Eurostat, UN)

Sectors and industries (ISIC)

Rearrangement of industries' energy use according to purpose (transport, auto-producers and heat for sale)

Detailed description of energy sector including technologies

All transport in one separate sector

Territory principle

Statistical differences

Physical

## **Energy Accounts**

Based on energy statistics and balances

Supply and use balances

Uses national accounts SUT format

Industries classified by ISIC

No re-arrangement of industries' energy use

Energy "sector" described by ISIC  
No description of technologies

Own account transportation included in industries' activities

Resident principle

No statistical differences

Physical and monetary

# Energy balance -> Energy account

- Adjustments to the resident principle
  - Energy use by residents abroad: Needs to be added to the imports in the supply table and added to the use of energy in the relevant industry in the use table
  - Energy use by non-residents on the territory: Needs to be added to the exports in the use table
- Breakdown by ISIC industries
  - The primary production of energy in the top block of the energy balance needs to be broken down by ISIC industries in the energy accounts supply table
  - The use of energy in the sectors in the middle and lower blocks of the energy balance also needs to be broken down by ISIC industries in the energy accounts use table
  - The latter also goes for the use of energy accounted for in the transport sector part of the energy balances lower block. Whereas in the energy balance, the transport is grouped into a single sector, in the energy accounts, the use of energy for transport purposes is broken down by the ISIC industries and the households