



System of Environmental Economic Accounting



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Economic
Accounting

UNSD Balances-to-Accounts Tool

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BACKGROUND



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Background

- UNSD overseeing the work on energy as part of UN Committee of Experts on Environmental Economic Accounting (UNCEEAA) Area C on data
- Tool to go from IEA energy balances to physical supply and use table for energy developed
 - > Physical supply and use table from the SEEA-Energy Technical Note
- Testing with countries is ongoing but more testing needed
- UNSD to synthesize testing results and SEEA Central Framework Technical Committee to review the tool
- UNCEEAA will then be asked to endorse the tool

Testing

- Tool provides first-estimate of energy accounts without auxiliary data; inputting auxiliary data to improve estimate
- Auxiliary data:
 - **Ministry of energy and other energy data providers**
 - Other statistical data (vehicle registers, traffic statistics, etc)
 - 5 Joint IEA/Eurostat/UNECE Annual Questionnaire may provide a starting point (particularly memo items and notes)
- Compare energy accounts produced by tool to energy accounts compiled by other means



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AUXILIARY INFORMATION



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Flaring and venting

- Information on the flaring and venting of natural gas is not explicitly included in IEA energy balances
- Needed for accounts—energy residuals during extraction
 - Supplied by industries
 - Used by environment
- Possible data sources:
 - Joint IEA/Eurostat/UNECE Energy Questionnaires
 - UNSD energy statistics database may include data on flaring and venting of natural gas

Nuclear fuel

- Extraction of nuclear inputs outside scope of IEA energy balances
 - Nuclear heat is shown under production of primary products in energy balances
- **Domestic mining industry (ISIC B) assumed to extract and produce unless fuel is imported (most cases)**
- Adjustment to split “production” figure in energy balances, using auxiliary data to calculate shares of extracted, imported and stocked nuclear fuel

Primary solid biofuels

- “Primary solid biofuels” in balances are not extracted by a single industry
- However, products within “primary solid biofuels” can each be linked to an ISIC
- Auxiliary data request is to break down “primary solid biofuels” into:
 - Fuelwood, wood residues and by-products (**assigned by default**)
 - Bagasse
 - Animal waste
 - Black liquor
 - Other vegetal materials and residues

Product in IEA detailed energy balance	SIEC		Target ISIC for « production »
	Code	Label	
Primary solid biofuels	511	Fuelwood, wood residues and by- products	A (ISIC 02)
	5120	Bagasse	A (ISIC 01)
	5130	Animal waste	C (ISIC 10)
	5140	Black liquor	C (ISIC 17)
	5150	Other vegetal material and residues	A (ISIC 01)

Statistical differences

- Statistical differences are flow of IEA energy balances, while it is a matter of compilation practice for accounts
- **Default setting is to assign statistical difference to accumulation in physical supply and use table**
- If data is available to distribute the difference among various sectors of economy, households, rest of world, it can be used

Autoproducers

- Balances provide separate flows for main activity producers and autoproducers of electricity and heat inside the transformation block
- For accounts, need to distribute autoproducers to various industries
- Auxiliary data is needed to distribute the figures from the balances to ISIC B, C and/or D (**default setting is to attribute to ISIC D**)
- Possible data source:
 - 5 Joint IEA/Eurostat/UNECE Annual Questionnaire may provide a starting point, as it asks for data on the net electricity and heat production by autoproducers

Non-specified transformation

- Transformation: primary forms of energy to secondary forms
- Balances:
 - Transformation processes broken down by 21 different processes
 - However, there is also a “non-specified (transformation)”, which does not specify a transformation process
- Accounts
 - Sufficient level of detail to allocate transformation to industries for PSUT, except in case of “non-specified (transformation)”
 - Thus, for “non-specified (energy)” uses, need to allocate the use of these products to respective industries—ISIC B, C and/or D (**default setting is ISIC C**)

Non-specified (energy) user of energy

- Balances
 - Balances include separately the own use of energy by energy sector (energy used in support of extraction and transformation activities)
 - However, there is also a “non-specified (energy)”, which does not specify an industry user
- Accounts
 - Own use of energy products by energy sector in the balances is shown as end use of energy products in the accounts
 - Thus, for “non-specified (energy)” uses, need to allocate the use of these products to respective industries—ISIC B, C and/or D (**default setting is ISIC D**)

Losses

- In balances, losses from distribution, transmission and transport are aggregated together into a single flow
- In accounts, energy residuals from losses need to be allocated to specific industry
- Auxiliary data to allocate losses to correct industry for accounts is likely difficult
- If no auxiliary data, data will allocate losses on the basis of assuming association between products and industries

Non-energy use

- In balances, non-energy use of energy products is too aggregated to allocate to industries in the PSUT
- Need to identify non-energy use by sector for:
 - Industry/transformation/energy (**default is ISIC C**)
 - Use in transport (**default is ISIC H**)
 - Other (**default is “Other industries”**)

Energy flow in IEA detailed energy balance	Target column in PSUT
Non-energy use	
Non-energy use industry/transformation/energy	B
	C
	D
	Other
Memo: non-energy use chemical/petrochemical	C (ISIC 20)
Non-energy use in transport	A
	B
	C
	D
	H
	Other
Non-energy use in other	Households
	A
	C
	H
	Other
	Households

Transport

- Balances:
 - All energy use related to road, rail, air, sea and pipeline transport placed under aggregate item “transport”
 - Territory principle—does not take into account nationality of operator
- Accounts:
 - Two sets of auxiliary data requested—adjustment for territory/residence principle and ISIC allocation

Transport: residence adjustment

- Adjustment for imports/exports of fuel:
 - Fuel purchased on territory by non-resident units (to be deducted)
 - Resident units' transport fuel purchased abroad (to be added)
- Not limited to international bunkers

Transport: Road

- Road transport cannot be easily allocated to any one specific ISIC category when it occurs as an ancillary activity
- Possible data sources include:
 - Traffic statistics
 - National vehicle registers
 - Detailed monetary use tables providing info on use of fuels per industry
 - Taxes
- Auxiliary data also requested for “non-specified (transport)” **(default of ISIC H)**

Energy flow in IEA detailed energy balance	Target column in PSUT
Supply	
International marine bunkers	H (ISIC H50)
International aviation bunkers	H (ISIC 51)
Final consumption	
Domestic aviation	H (ISIC 51)
Road	A
	B
	C
	D
	H
	Other
	Households
Rail	H (ISIC 49)
Pipeline transport	H (ISIC 49)
Domestic navigation	H (ISIC H50)
Non-specified (transport)	A
	B
	C
	D
	H
	Other
	Households
Other	
Fishing	A (ISIC 03)

Final consumption

- Final energy consumption in balances pertains to deliveries of energy products to consumers, excluding uses for transformation and own-use in energy sector (end use in accounts)
- Potential difficulties for commercial and public services sector and “non-specified (other)”
- Default for commercial and public services sector is “other industries”
- Default for “non-specified (other)” is ISIC C

Energy flow in IEA detailed energy balance	Target column in PSUT
Industry	
Iron and steel	C (ISIC 24)
Chemical and Petrochemical	C (ISIC 20 and 21)
Non-ferrous metals	C (ISIC 24)
Non-metallic minerals	C (ISIC 23)
Transport equipment	C (ISIC 29 and 30)
Machinery	C (ISIC 25 to 28)
Mining and quarrying	B (ISIC 07, 08 and 099)
Food and tobacco	C (ISIC 10 to 12)
Pulp, paper and print	C (ISIC 17 and 18)
Wood and wood products	C (ISIC 16)
Construction	Other industries (ISIC 41 to 43)
Textile and leather	C (ISIC 13 to 15)
Non-specified (industry)	C (ISIC 22, 31 and 32)
Other	
Residential	Households
Commercial and public services	C
	H
	Other
Agriculture/Forestry	A (ISIC 01 and 02)
Non-specified (Other)	A
	B
	C
	D
	H
	Other
	HH



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NEXT STEPS



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Next steps

- Pre-filled tool sent to countries
- Addition of auxiliary data and your pilot energy accounts requested by Monday, February 17th
- Overall quality judgement of tool, suggestions for improvement
- UNSD to compare tool results to pilot energy accounts
- Overall assessment of tool



THANK YOU

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