Recording losses in the revised SEEA
- Issue 16 -

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Outline

- Typology of losses
- Recording of losses in the 2008 SNA
- Recording of losses in the SEEAW
- Proposal for recording losses in the revised SEEA

Typology of losses

- Losses during extraction/abstraction
- Losses during distribution
- Losses during storage
- Losses during conversion/transformation
- Losses due to theft

Losses during extraction

- Occur between the time of extraction (e.g. flaring and venting) or before the natural resource reaches the establishment where it is processed
- They may be unwanted or necessary to maintain the safety of the system (e.g. flaring and venting)

Losses during distribution

- Occur between a point of extraction and a point of use of reuse
- May be caused by:
  - Evaporation of water from open channels used for distribution
  - Leakages
  - Loss of heat during transport of steam
  - Other causes

Losses during storage

- Losses of energy products and materials held in storage
- May be caused by:
  - Evaporation
  - Leakages of fuels
  - Wastage
  - Accidental damage

Losses during conversion

- Occur when one product is used as an input in the production process to produce another energy product
- Related to the production process
- Conceptually not a loss in the SNA
- Need for mass/energy balance between input and output

Losses due to theft

- Water, electricity and other materials taken illegally from the distribution network or from storage
- Special case of losses in distribution and in storage
- Discussed separately because the products stolen remain within the economy while other losses return in various forms back to the environment

Recording losses in 2008 SNA - Losses during extraction and distribution

- They do not enter the system because there is no economic transactions
- Output represents the value of the sale and is recorded net of losses

Recording losses in 2008 SNA - Losses during storage

Asset accounts

- Withdrawal from inventory (if regular and expected)
- Other changes in volume of assets n.e.c. (if extraordinary)

Supply and use tables

- Withdrawal from inventory and are deducted from the output

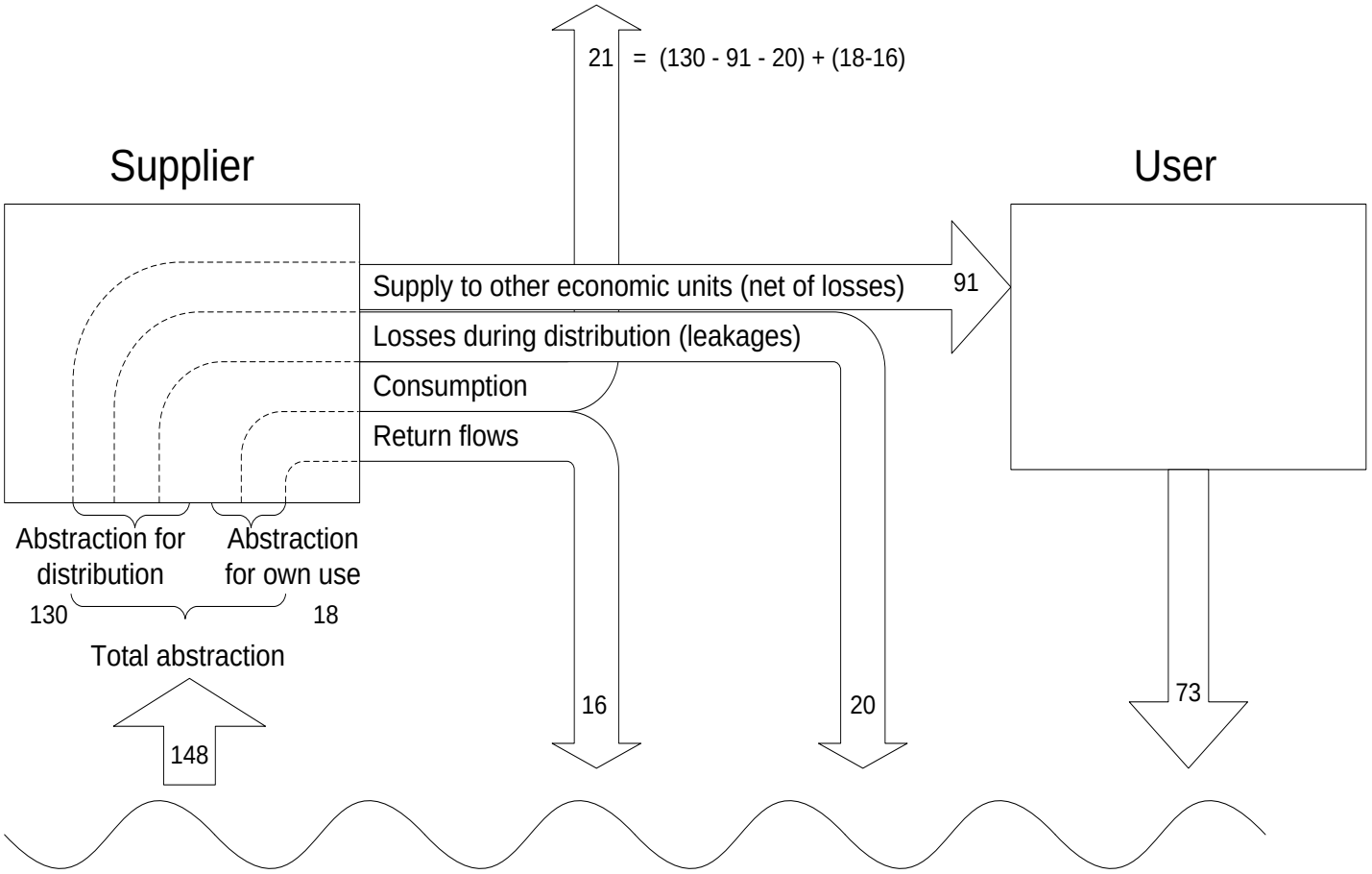
Recording losses in 2008 SNA – Losses due to theft

- Theft is not a transaction as there is no mutual agreement between the parties involved
- Special case of losses in distribution and storage – same recording as in the previous cases
- Output is calculated net of theft

Recording losses in the SEEA-2003 and SEEAW

- SEEA-2003: No specific mention of losses
- SEEAW – only losses in distribution are relevant
- Supply and use of water within the economy is recorded NET of losses in line with the SNA convention
- Flows within the economy are fully consistent with the SNA monetary flows
- Losses are recorded either as a flow back to the hydrological system (leakages) or as water consumption
- Water consumption is the part of water that is not returned to the inland water resources or to the sea. It is water that is evaporated or that remains in the economy (incorporated into products).

Recording losses in the SEEAW



SEEAW – Recording of losses - SUT

Use table

		ISIC		
		ISIC 1 (user)	ISIC 36 (supplier)	Total
From the environment	U1 - Total Abstraction:		148	148
	Abstraction for own use		18	18
	Abstraction for distribution		130	130
Within the economy	U2 – Use of water received from other economic units	91	0	91
U=U1+U2 - **Total use of water**		91	148	239

Supply table

		ISIC		
		ISIC 1 (user)	ISIC 36 (supplier)	Total
Within the economy	S1 - Supply of water to other economic units	0	91	91
From the economy	S2 - Total returns	73	36	109
	Losses in distribution (leakages)		20	20
	Other returns		16	16
S=S1+S2 - **Total supply of water**		73	127	200
Consumption (= U - S)		18	21	39
Of which: Losses in distribution (evaporation, theft, etc.)			19	19

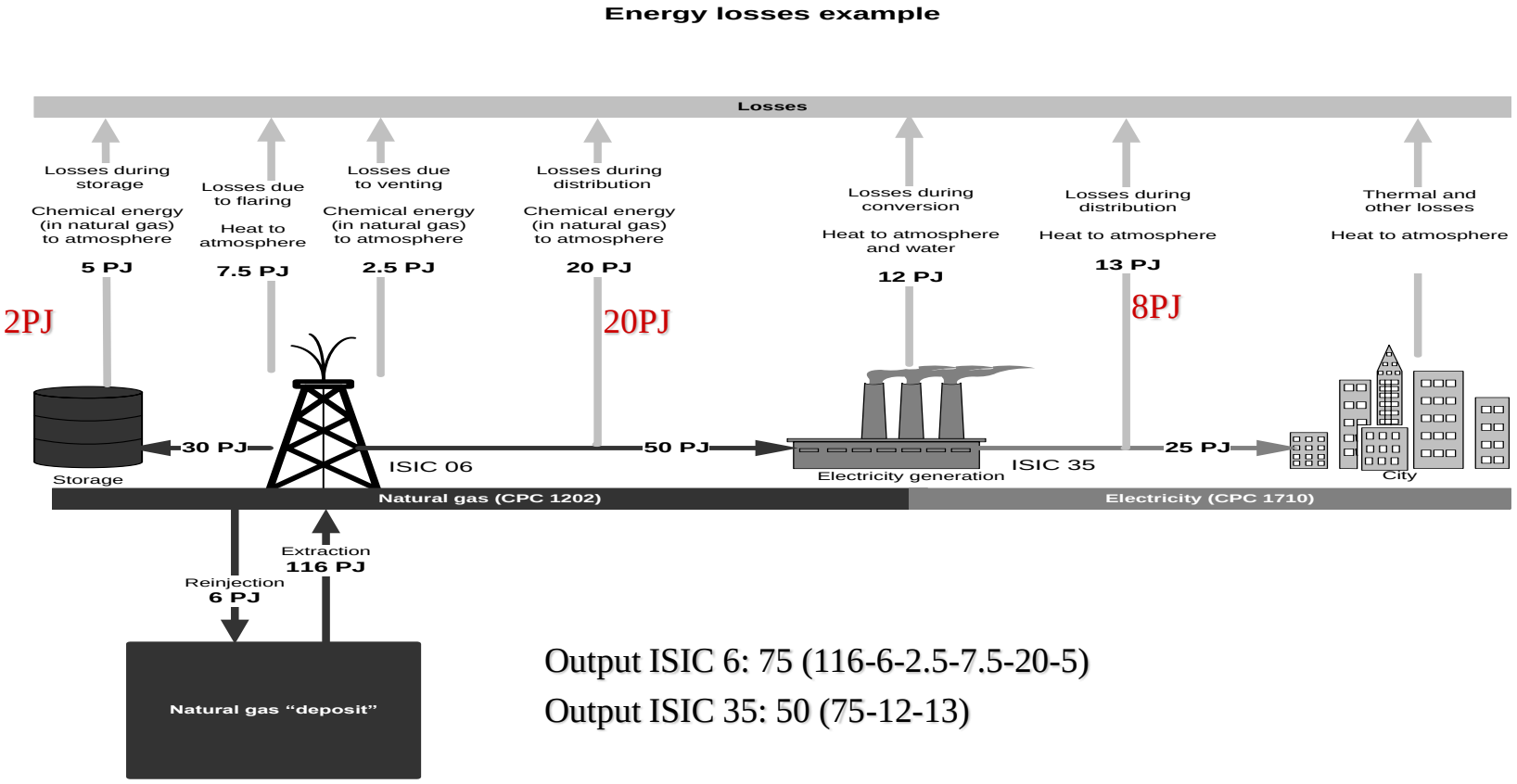
SEEAW – Gross supply and theft Supplementary table

Supply table			
	ISIC		
	ISIC 1 (user)	ISIC 36 (supplier)	Total
S – (Net) Supply of water to other economic units		91	91
L - Losses in distribution (=L1.+L2.)		39	39
L1. Leakages		20	20
L2. Other (e.g. evaporation, apparent losses, theft, other losses)		19	19
Gross supply within the economy (= S + L)		130	130

Recording losses in revised SEEA A proposal

- Flows within the economy remain consistent with the SNA (flows are recorded net of losses)
- All losses are separately identified either in the portion of the supply table showing flows back to the environment or in supplementary items (balancing items) (e.g. theft since it remains within the economy)
- Losses are recorded by economic activity (ISIC) and by product
- Supplementary supply and use tables showing gross flows including for theft are presented

Example for energy



Output ISIC 6: 75 (116-6-2.5-7.5-20-5)

Output ISIC 35: 50 (75-12-13)

Physical use table

		Industries (by ISIC categories)			Households	Changes in inventories	Total
		6	35	Total			
From the environment	U1 - Total extraction						
	Natural gas	116		116			116
Within the economy	U2 - Use of energy products		50	50	25	25	100
	Natural gas		50	50		25	75
	Electricity				25		25
U=U1+U2 - **Total use**		116	50	166	25	25	216

Physical supply table

		Industries (by ISIC categories)			Households	Changes in inventories	Total
		6	35	Total			
Within the economy	S - Supply	75	25	100			100
	Natural gas	75		75			75
	Electricity		25	25			25
To the environment	L – Losses	29	17	46			46
	L.1- Losses during extraction	16		16			16
	Reinjection	6		6			6
	Flaring	7.5		7.5			7.5
	Venting	2.5		2.5			2.5
	L.2- Losses during distribution (excluding theft)	10	5	15			15
	L.3- Losses during storage (excluding theft)	3		3			3
	L.4- Losses during conversion		12	12			12
S - **Total supply** (= S+L)		104	42	146			146
Balancing item (= U-S)		12	8	20	25	25	20
Theft							
During distribution		10	8	18			18
During storage		2		2			2

Balancing item

- Balancing item is the difference between total use and total supply
- It represent materials that remain within the economy (in inventory, final use, theft)
- Advantages of this recording
  - SEEA flows are fully consistent with SNA flows
  - Theft is not a flow from the environment to the economy but stays within the economy
  - Recording fully consistent with the water case

Gross supply of energy

Supply table			
	ISIC		
	ISIC 6	ISIC 35	Total
S – (Net) Supply of water to other economic units	75	25	100
L – Losses (including theft)	41	25	66
L.1- Losses during extraction	16		16
Reinjection	6		6
Flaring	7.5		7.5
Venting	2.5		2.5
L.2- Losses during distribution	10	5	15
L.3- Losses during storage	3		3
L.4- Losses during conversion		12	12
L.5- Theft	12	8	20
Gross supply within the economy (= S + L)	116	50	166

Supplementary physical supply table for theft

		Industries (by ISIC categories)				
		1	6	35	36	Total
Within the economy	(Net) Supply					
	Natural gas		75			75
	Theft during distribution		*10*			*10*
	Theft during storage		*2*			*2*
	Electricity			25		25
	Theft during distribution			*8*		*8*
	Gross supply					
	Natural gas		87			87
	Electricity			33		33

Supplementary physical use table for theft

		Industries (by ISIC categories)					Households	Total
		1	6	35	36	Total		
Within the economy	Use							
	Natural gas	2		50	10	62	25	87
	Theft	*2*			*10*	*12*		*12*
	Electricity						33	33
	Theft						*8*	*8*

Recording losses in revised SEEA A proposal

- Flows within the economy are recorded net of losses
- All losses are separately identified either in the portion of the supply table showing flows back to the environment or in supplementary items (balancing items) (e.g. theft since it remains within the economy)
- Losses are recorded by economic activity (ISIC) and by product
- Supplementary supply and use tables showing gross flows including for theft are presented

Advantages of the proposal

- Standard tables consistent with the SNA flows
- All losses, including theft are separately identified and can be re-aggregated in supplementary tables for analytical purposes (gross recording and theft)

Disadvantages of proposal

- Energy statistics record
  - Flows of primary products net of losses
  - Flows of secondary products including losses
- Inconsistency with the recording of energy statistics for secondary products
- Analytically is useful to show gross output
- Issue is currently being discussed by InterEnerStat

Questions to the London Group

- Does the London Group agree with the typology of losses presented in Section B?
- Does the London Group considers useful a table on the presentation of gross supply (Tables 2 and 5)?
- Does the London Group agree with the suggested recording of losses during extraction, distribution, storage and conversion as presented in Tables 3 and 5?
- Does the London Group agree with the supplementary table for theft?