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# SIEC revision from the perspective of energy statistics and balances

*Meeting of the UNCEISC*

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26 October 2023



# Context

- A global consultation on a consolidated list of issues was carried out in the 1<sup>st</sup> half of 2023
- To help organize the ensuing discussion, a taxonomy of issues was proposed:
  - Meta-issues
  - Issues clearly within the scope of the revision
  - Issues not clearly within or without the scope (decided by convention)
  - Issues dependent on a revision of SIEC framework\*
  - Issues clearly outside the revision's scope (to be dealt with in methodological guidelines – an IRES revision perhaps)

\* a reviewed SIEC's scope, principles, concepts and criteria is a pre-requisite to consider certain individual topics, as they would fall outside of the scope otherwise

# Meta-issues

- Some issues can be viewed as a meta-issue or a cross-cutting issue, given their broad aspect:
  - **Harmonization with CPC**
  - **Review of SIEC structure, scope, principles, concepts and criteria** (SIEC framework, so to speak)
  - **Improve focus on renewables**
- The review of SIEC framework needs to happen before the focused discussion of issues that depend on a change (such as non-energy use of renewables, and maybe issues treated “by convention”)
- However, while reviewing the SIEC framework, it is advisable to have in mind the implications, not only in terms of identified issues, but also if we are not opening the door to other less desirable changes (unintended consequences)

# Issues clearly within the scope of SIEC Revision

These issues are clearly within the scope of the revision (even if the decision on the issue may result in no change), without judgement as to their individual relevance:

- Hydrogen (and possible disaggregation according to production processes)
- Ammonia and other “hydrogen carriers”
- Breakdown of renewables and wastes, including:
  - Renaming/restructuring of 6 Waste, 61 Industrial Waste and 62 Municipal Waste, as well as 515 Other vegetal material and residues
  - Breakdown of 511 - wood and wood products
  - Breakdown of 52 – liquid biofuels
  - Breakdown of 53 – biogases
  - Add a residual category under 53-Biogases.
- Distinction between liquefied and compressed natural gas
- Synthetic fuels
- Classification of “concentrated coal”
- Classification of “wet gas”
- Review the definition of Brown coal. Does reflectance matter?
- Oil shale and oil sands. Should they be at Section level in SIEC? Or can they be under Coal or Oil?



# Issues “by convention”

More discussion is needed in order to determine whether these issues fall within the scope of SIEC (and the current revision). Certainly a SIEC framework change can facilitate their inclusion in the classification.

- **Cooling as an energy product**
- **Disaggregation of electricity and heat by source**
- **Treatment of blending** (are new SIEC products such as E10, E25 going to be proposed?)
- **Classification of mixed biofuels** (from wiki – seems to be the same issue as the one above on blending)



# Issues dependent on the revision of SIEC framework

- These issues are currently outside the scope of SIEC, but might become within scope if a new framework allows them:
  - **Reporting of non-energy use of renewables where they replace fossil fuels**
  - **Treatment if same physical product is used for different purposes, e.g. road diesel vs. heating and other gasoil.**

Note: by SIEC framework, we mean its structure, scope, principles, concepts and criteria. Most of it is integrated in the text of IRES. Changes in the framework will need to be incorporated in a future IRES revision.



# Issues clearly out of scope of the current SIEC Revision

These issues are clearly outside the scope of a SIEC revision (for which TT-SIEC has the authority), but they are or may be worth discussing in the context of energy statistics, which is InterEnerStat's (or Oslo Group's) realm:

- **Consider reporting food and tobacco separately**
- **Electricity production by sector**
- **Breaking down solar PV (and its electricity production) by capacity**
- **Electric batteries and storage**
- **Electric vehicles (EVs)**



# Purpose and scope of SIEC (1/4)

- As described in IRES paras 3.5-3.12, SIEC is intended to be a multipurpose classification, meaning that individual SIEC products and aggregates:
  - are defined to be suitable for the production of energy statistics under different country circumstances, and
  - are relevant for the presentation and analysis of energy data in various policy and analytical contexts.
- SIEC aims to cover all products necessary to provide a comprehensive picture of the production, transformation and consumption of energy throughout an economy. Thus the scope of SIEC consists of the following:
  - (a) Fuels that are produced/generated by an economic unit (including households), and are used or might be used as sources of energy; and
  - (b) Electricity that is generated by an economic unit (including households), and heat generated and sold to third parties by an economic unit.



# Purpose and scope of SIEC (2/4): fuel coverage (1/2)

- The fuel coverage is as follow:
  - i. All fossil fuels are within the scope of SIEC whether or not they are used for energy purposes, but an exception is made for peat used for non-energy purposes, which should be excluded.
  - ii. Products derived from fossil fuels are always within the scope of SIEC when used (or intended to be used) for energy purposes, i.e. as fuels.
  - iii. Products derived from fossil fuels used (or intended to be used) for non-energy purposes are within the scope only if they are the output of energy industries (e.g. refineries, gas plants or coal mining, coal manufacturing industries). They are included because they explain how much an apparent supply of energy is used for other purposes and allow for a complete assessment of the industries involved.
- The term fuel refers to energy sources, whether primary or secondary, that must be subjected to combustion or fission in order to release for use the energy stored up in them.

# Purpose and scope of SIEC (3/4): fuel coverage (2/2)

- One example of products in category (iii) mentioned above are lubricants produced during the refining of crude oil. Even though they are ordinarily used for non-energy purposes, their production and consumption are recorded in energy statistics as this allows for the monitoring of the different products obtained from the refinery intake of crude oil and the assessment of the part of crude oil used for non-energy purposes. This is of relevance to energy planners, provided that the consumption of these products is explicitly identified as non-energy use. On the other hand, plastics, even if derived from a fossil fuel such as crude oil, are not considered within the scope of SIEC as they are not an output of the refinery but are obtained by further processing of refinery products by other industries.
- Some fuels such as waste, agricultural crops or other biomass are not of fossil origin. Such products are within the scope of SIEC only when used for energy purposes. Thus, the inclusion of these products in total energy production depends on their use, i.e. it is derived from demand-side information.
- In IRES, the term energy product is defined as any product covered by the scope of SIEC, as formulated above. It should be noted that, while SIEC provides definitions for all energy products, the scope of individual applications of energy statistics may cover just a subset of SIEC. For example, while SIEC includes nuclear fuels in the scope of energy products, they are not used in energy balances.



# Purpose and scope of SIEC (3/4): boundary of energy products

- The description of the boundary of the universe of energy products is not always straightforward. For example, corncobs can be:
  - (1) combusted directly to produce heat;
  - (2) used in the production of ethanol as a biofuel,
  - (3) consumed as food, or
  - (4) thrown away as waste.
- To assist countries in the delineation of energy products, IRES presents the SIEC, as well as the definitions of such products (see chapter III). According to the scope of SIEC, corncobs, as such, are considered energy products for the purpose of energy statistics only in case (1) above, that is when they are combusted directly to produce heat (c.f. paragraph 3.10). In all other cases, they either do not fall within the boundary of energy statistics (when used as a source of food), or they enter the boundary of energy statistics as a different product (e.g. ethanol).





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# Thank you.

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