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Important international policy frameworks related to energy

And how they are supported by Energy Accounts

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Policy relevance and general uses of SEEA Energy Accounts

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- SEEA-Energy can **inform policy decisions** related to the supply and use of energy.
- SEEA-Energy supports a **richer understanding** of the role of energy in the economy including potentially identifying the key drivers of change.
- The SEEA-Energy framework supports the **development of models and scenarios** that can be used to assess the impact of possible policies both within a country and between countries.

Source: UNSD

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Guiding policy makers

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- SEEA-Energy can provide a range of measures to guide policymakers in assessing the overall performance of energy providers including information on capital outlays.
- SEEA-Energy is a good starting point for descriptions of the environmental pressures arising from the production and use of energy - both in terms of those related to depletion of non-renewable energy resources, as well as environmental degradation arising from energy-related emissions
- SEEA-Energy allows to analyse the question "Do we have an affordable economically and environmentally sustainable energy supply?" from many angles

Source: UNSD

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Energy Accounts and the SDGs

SDG 7 – Ensure Access to Affordable, Reliable, Sustainable and Modern Energy for All

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Target	Indicator	Tier
7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.1.1 Proportion of population with access to electricity	Tier I
	7.1.2 Proportion of population with primary reliance on clean fuels and technology	Tier I
7.2 By 2030, increase substantially the share of renewable energy in the global energy mix	7.2.1 Renewable energy share in the total final energy consumption	Tier I
7.3 By 2030, double the global rate of improvement in energy efficiency	7.3.1 Energy intensity measured in terms of primary energy and GDP	Tier I
7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote investment in energy infrastructure and clean energy technology	7.a.1 International financial flows to developing countries in support of clean energy research and development and renewable energy production, including in hybrid systems	Tier II
7.b By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, in particular least developed countries, small island developing States and landlocked developing countries, in accordance with their respective programmes of support	7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services	Tier III

SDG 7 indicators linked with SEEA

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- **7.1.1 Proportion of population with access to electricity:**
  - Household surveys required to assess household access
  - SEEA-Accounts (PSUT, Asset, Economic) provide much contextual information on the magnitude of electricity consumption by households relative to other sectors, as well as information on government and private spending on electricity services and associate infrastructure.
- **7.1.2 Proportion of population with primary reliance on clean fuels and technology:**
  - Household surveys required to assess household reliance on clean fuels
  - SEEA-Accounts (PSUT, Asset, Economic) provide much contextual information on the magnitude of consumption of such fuels by households relative to other sectors, as well as information on government and private spending on provision of services and associate infrastructure.
- **7.2.1 Renewable energy share in the total final energy consumption**
  - Can be calculated from PSUT
- **7.3.1 Energy intensity measured in terms of primary energy and GDP**
  - Can be calculated from PSUT and SNA
- **7.b.1 Investments in energy efficiency as a proportion of GDP and the amount of foreign direct investment in financial transfer for infrastructure and technology to sustainable development services**
  - Economic accounts (EPEA)

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Note on Energy Balances and Energy Accounts

Ideally, you have both available

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The SDG methodologies refer to the use of energy balances, but also Energy Accounts can be used!

SEEA-Energy is not designed to replace existing types of energy information. Rather its linkages and connections provide an additional and broader perspective and hence add value to the information already available

Main communalities and differences of Energy Balances and Energy Accounts:

Energy Balances	Energy Accounts
Based on energy statistics	Based on energy statistics and balances
Supply and use balances	Supply and use balances
Various formats (IEA, Eurostat, UN)	National accounts SUT format
Sectors and industries (ISIC)	Industries (ISIC)
Rearrangement of industries' energy use according to purpose (transport, autor-producers and heat for sale)	No re-arrangement of industries' energy use
Detailed description of energy sector including technologies	Energy "sector" described by ISIC. No description of technologies
All transport in one separate sector	Own account transportation included in industries' activities
Territory principle	Resident principle
Statistical differences	No statistical differences
Physical	Physical and monetary

SEEA is an important statistical framework for monitoring the SDGs in an integrated way

SEEA provides an integrated architecture for SDGs (and other frameworks)

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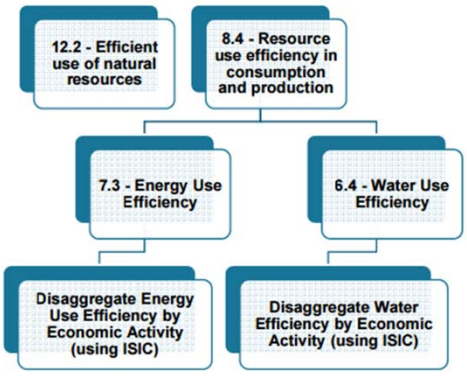
Integrated monitoring for the SDGs requires methodological consistency.

SEEA should be the basis for:

1. The development of coherent environmental-economic SDG indicators
2. The disaggregation of SDG indicators to inform national policy (spatial, sectoral, etc.)



Source: UNSD

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Other international (policy) frameworks using Energy Accounts

Some examples

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- **Green Growth/Green Economy**
- **Natural Capital Accounting / WAVES**
- **Climate change policies**
- **UNECE core set of Climate Change-related Indicators**
- **Well-being indicators**
- **Wealth accounting**
- **Europe 2020**

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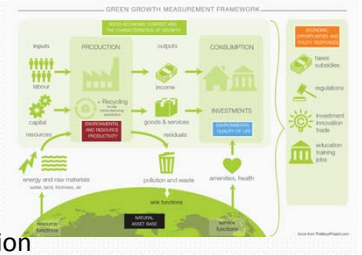
Other international (policy) frameworks using Energy Accounts

Green Growth / Green Economy

STATISTICS

Green Growth/Green Economy



- Energy productivity, GDP per unit of TPES
- Energy intensity, TPES per capita
- TPES, index 2000=100
- TPES
- Renewable energy supply, % TPES
- Renewable electricity, % total electricity generation
- Energy consumption in agriculture, % total energy consumption
- Energy consumption in services, % total energy consumption
- Energy consumption in industry, % total energy consumption
- Energy consumption in transport, % total energy consumption
- Energy consumption in other sectors, % total energy consumption

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Other international (policy) frameworks using Energy Accounts

Wealth Accounting and the Valuation of Ecosystem Services (WAVES)

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- Promotes sustainable development worldwide through the implementation of comprehensive wealth accounting that focuses on the value of natural capital and integration of "green accounting" in more conventional development planning analysis
- **Uses SEEA as the underlying statistical framework**
- Enables more informed decision making - targeting Ministries of Finance and Planning and Central Banks - to support sustainable development and genuine green growth trajectories.
- Specific objectives:
  - Implement natural capital accounting based on the UN's System of Environmental and Economic Accounting (SEEA) in 6-10 countries.
  - Incorporate the accounts into policy analysis and development planning.
  - Develop internationally accepted and standardized guidelines for the implementation of ecosystem accounting.
  - Promote widespread adoption of natural capital accounting beyond the pilot countries through a broad platform provided by the partnership

WAVES

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Other international (policy) frameworks using Energy Accounts

UNECE initial Set of core Climate Change-related Indicators

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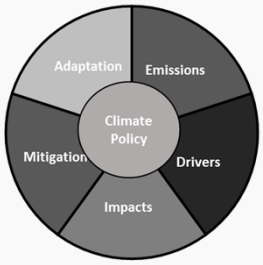
- Upon request of NSOs, and under the auspices of the Conference of European Statisticians an UNECE Task Force developed and initial set of 39 core climate change-related Indicators.
- Purpose of the set of indicators:
  - Paint the picture of most relevant CC-related phenomena
  - Be internationally comparable
- Criteria for selection of indicators: Relevance, methodological soundness, data availability
- A well aligned set of indicators:
  - 75% linked with the Framework for Development of Environment Statistics
  - Over 50% can be produced from the System of Environmental Economic Accounting
  - 25% are SDG indicators
  - 10% are Sendai Framework indicators
- Energy-related indicators:
  - Total primary energy supply (TPES)
  - Share of fossil fuels in total primary energy supply (TPES)
  - Total energy intensity of production activities
  - Energy consumption by households / capita
  - Renewable energy share in the total final energy consumption

Adopted by CES in June 2017



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UNECE initial set of core climate change-related indicators

39 indicators with definitions and sources

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DOMAIN	SUB DOMAIN	INDICATOR
DRIVERS	National total	1. Total primary energy supply (TPES) 2. Share of fossil fuels in total primary energy supply (TPES) 3. Losses of land covered by (semi-) natural vegetation 4. Total support for fossil fuels / GDP
	Production	5. Total energy intensity of production activities 6. CO2 intensity of energy for the economy 7. Emission intensity of agricultural commodities
	Consumption	8. Energy consumption by households / capita
EMISSIONS	National total	9. Total GHG emissions 10. CO2 emissions from fuel combustion 11. GHG emissions from land use
	Production	12. Total GHG emissions of production activities 13. GHG emission intensity of production activities
	Consumption	14. Direct GHG emissions from households 15. Carbon footprint
IMPACTS	Physical Conditions	16. Annual average surface temperature 17. Percentage of land area suffering from unusual wet or dry conditions (Standard Precipitation Index)
	Water resources	18. Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
	Land, Land Cover, Ecosystems and Biodiversity	19. Cumulative number of alien species 20. Carbon stock in soil 21. Proportion of land that is degraded over total land area
	Extreme Events and Disasters	22. Number of deaths and missing persons attributed to hydro-meteorological disasters, per 100,000 population 23. Occurrence of extreme weather events 24. Direct economic loss attributed to hydro-meteorological disasters in relation to GDP 25. Number of people whose destroyed dwellings were attributed to hydro-meteorological disasters
	Human settlements and human health	26. Distribution of cases of vector-borne diseases 27. Heat-related mortality
	Agriculture, forestry and fishery	28. Direct agricultural loss attributed to hydro-meteorological disasters

UNECE initial set of core climate change-related indicators

39 indicators with definitions and sources

STATISTICS

DOMAIN	SUB DOMAIN	INDICATOR
MITIGATION	Energy resources	29. Renewable energy share in the total final energy consumption
	Expenditures	30. Share of climate change mitigation expenditure relative to GDP
	Environmental Governance and Regulation	31. Share of energy and transport related taxes as percentage of total taxes and social contributions 32. Total climate change related subsidies and similar transfers / GDP 33. Average carbon price 34. Mobilized amount of USD per year starting in 2020 accountable towards the USD 100 billion commitment
ADAPTATION	Expenditures	35. Share of government adaptation expenditure to GDP
	Water resources	36. Change in water use efficiency over time
	Human settlements and human health	37. Proportion of population living in dwellings with air conditioners or air conditioning
	Agriculture, forestry and fishery	38. Progress towards sustainable forest management 39. Proportion of agricultural area under productive and sustainable agriculture

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Conclusions

Don't see SEEA Energy as an information silo

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- **Part of an integrated architecture** with other environmental-economic accounts and SNA to measure SDGs and other policy frameworks
- It serves **multiple purposes**
  - International policy frameworks
  - Analysis, models, scenarios
  - National policies
- Does not replace existing information systems (e.g. energy statistics or energy balances); it **provides an additional and broader perspective** and adds value to the information already available

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Thank you!

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