

Revision of the Guidelines for the Application of Environmental Indicators

Status of work and proposed decisions



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Rationale

Why a review of the indicators and online guidelines?



The JTF requested the Secretariat to review the ECE set of environmental indicators and the associated Guidelines to

- **inform better the recent global policies** (such as 2030 Agenda, Paris Agreement and Sendai Framework for Disaster-risk Reduction)
- **link them with statistical frameworks**, such as the United Nations Framework for the Development of Environment Statistics and the System of Environmental-Economic Accounting
- **increase user-friendliness** of the metadata

Guidelines for the Application of Environmental Indicators

The Joint Task Force revised the Guidelines for the Application of Environmental Indicators in Eastern Europe, Caucasus, Central Asia and South-Eastern Europe. With this revision the online version of the Guidelines was created.

In the Online Guidelines each indicator is presented through three files: description of the indicator, table for the production of the indicator, and glossary of terms.

The latest update for each indicator is indicated with a relevant date.

Indicator	Description	Production	Glossary of terms
A. Air pollution and ozone depletion			
A1. Emissions of pollutants into the atmospheric air (updated October 2014)	PDF	XLS	PDF
A2. Ambient air quality in urban areas (updated October 2014)	PDF	XLS	PDF
A3. Consumption of ozone-depleting substances (updated October 2014)	PDF	XLS	PDF
B. Climate change			
B1. Air temperature (updated October 2014)	PDF	XLS	PDF
B2. Atmospheric precipitation (updated October 2014)	PDF	XLS	PDF
B3. Greenhouse gas emissions (updated October 2014)	PDF	XLS	PDF
C. Water			
C1. Renewable freshwater resources (updated October 2014)	PDF	XLS	PDF
C2. Freshwater abstraction (updated October 2014)	PDF	XLS	PDF
C3. Total water use (updated October 2014)	PDF	XLS	PDF
C4. Household water use per capita (updated October 2014)	PDF	XLS	PDF
C5. Water supply industry and population connected to water supply industry (updated October 2014)	PDF	XLS	PDF
C6. Connection of population to public water supply	Integrated into C5		
C7. Water losses (updated October 2014)	PDF	XLS	PDF
C8. Reuse and recycling of freshwater (updated October 2014)	PDF	XLS	PDF
C9. Drinking water quality (updated October 2014)	PDF	XLS	PDF
C10. BOD and concentration of ammonium in rivers (updated October 2014)	PDF	XLS	PDF
C11. Nutrients in freshwater (updated October 2014)	PDF	XLS	PDF
C12. Nutrients in coastal seawaters (updated October 2014)	PDF	XLS	PDF

Conclusion of discussions at 16th session of JTFESI

October 2019



- Secretariat presented document ECE/CEP-CES/GE.1/2019/4 which discussed
 - Required amendments
 - New policy information needs
 - New international statistical standards and frameworks
 - Modification of international questionnaires, methodological guidelines and classifications
 - Improving user-friendliness of Guidelines and structure of the metadata
 - Procedure and priorities
 - Structure and content of the metadata

Related documents prepared by the Joint Task Force and the Secretariat for 17th Session of JTFESI

Guidelines and metadata sheets



- Revised Guidelines for the Application of Environmental Indicators (ECE/CEP-CES/GE.1/2020/3)
- Metadata sheets of 42 indicators in pdf format (of which 28 also available in Russian language)

Documents are available at

- Meeting website: <http://www.unece.org/index.php?id=53474>
- Wiki page:
<https://statswiki.unece.org/display/JTFEI/Revised+Guidelines+for+the+Application+of+Environmental+Indicators>

Revision process has been multi-dimensional



1. Distinction between “indicators” and “data and statistics”, using the definitions used in the UN Framework for the Development of Environment Statistics (FDES) – presented and discussed at 16th session of JTFESI
2. Presentation of the indicators according to FDES structure
3. Review of the list of indicators
4. Update of indicator metadata, including filling of some “placeholders”
5. All information stored in a bilingual database (English and Russian)

1. Distinction between indicators, data and statistics

Already discussed at 16th session (October 2019)



G. Energy

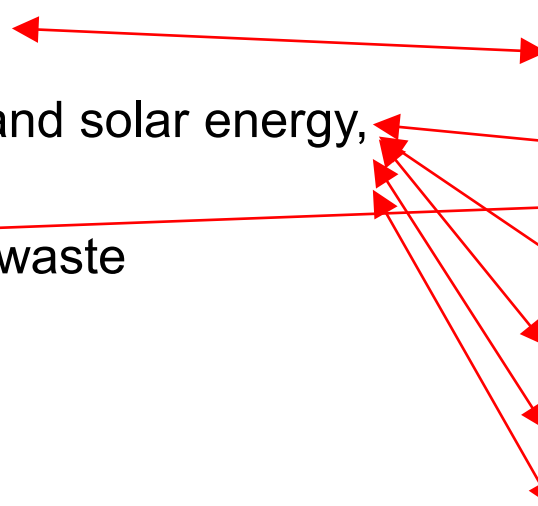
G1. Final energy consumption	PDF	XLS	PDF
G2. Total primary energy supply	PDF	XLS	PDF
G3. Energy intensity	PDF	XLS	PDF
G4. Renewable energy supply	PDF	XLS	PDF

Data items to calculate G2 (all in ktoe):

- Coal
- Crude oil
- Oil products
- Natural gas
- Nuclear energy
- Hydropower
- Geothermal and solar energy, etc.
- Biofuels and waste
- Electricity
- Heat

Data items to calculate G4 (all in ktoe):

- Hydropower
- Biomass
- Biofuels
- Wind power
- Solar power
- Geothermal energy
- Other renewables



2. Presentation of indicators according to FDES structure

Currently used environmental themes
(<http://www.unece.org/env/indicators.html>)



■ **Currently** the indicators are presented under 10 environmental themes:

- A – Air pollution and ozone depletion
- B – Climate change
- C – Water
- D – Biodiversity
- E – Land and soil
- F – Agriculture
- G – Energy
- H – Transport
- I – Waste
- J – Environmental financing

Why does it make sense to change that?

1. The “classification” is tailor made and is not used in other indicator frameworks or statistical frameworks (e.g. FDES)
2. There are overlaps. E.g. climate change is a cross-cutting issue
3. The scope is very different for each theme, e.g. “C. Water” includes freshwater resources, water use, freshwater quality, access to water-related services, wastewater treatment and quality of coastal waters
4. What to do with new indicators, in particular if they are cross-cutting (e.g. related to circular economy or disaster impact)?

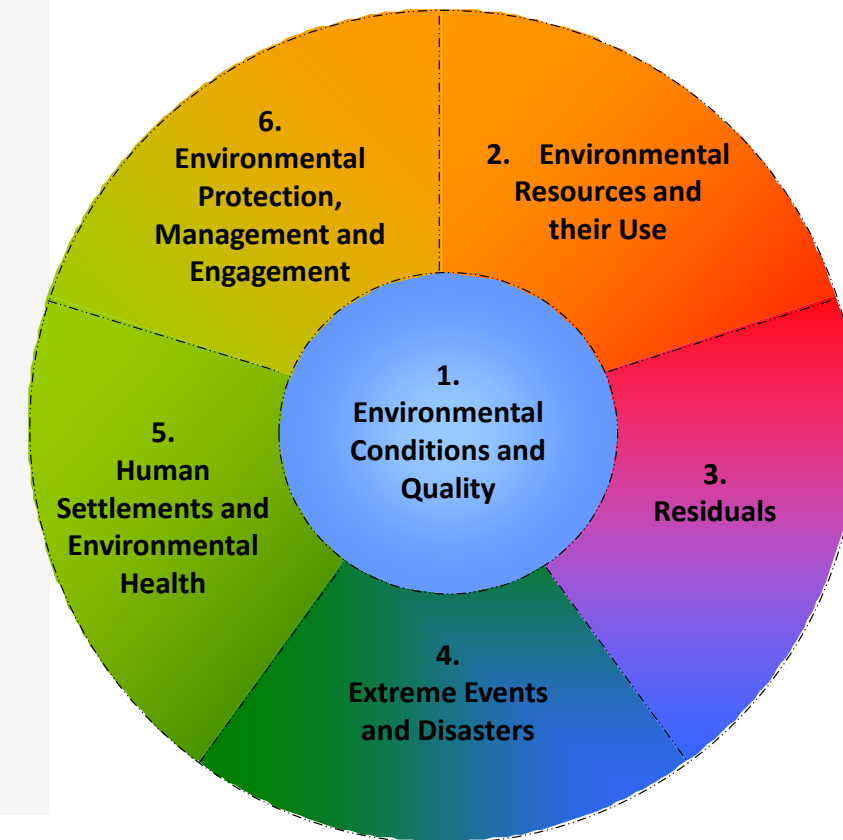
2. Presentation of indicators according to FDES structure

Benefits of aligning it with the UN FDES



Some benefits of using the structure of the FDES for the list of recommended UNECE Environmental Indicators:

1. Using a globally agreed structure
2. FDES defines environmental indicators, data and statistics
3. FDES is broad, comprehensive and integrative. It defines the overall scope of environment statistics, thus can be used to identify information gaps and to set priorities
4. It can handle “cross-cutting issues”, such as climate change, COVID-19 or circular economy
5. New indicators can easily be added
6. Supports implementation of environmental statistics
7. Methodological guidelines are available



2. Presentation of indicators according to FDES structure

Example: Climate change-related indicators



Indicator theme “B. Climate change” currently includes indicators on physical conditions of the atmosphere (B1. and B2) and air emissions (B3). This is problematic from several points of view:

1. Greenhouse gas emissions are missing in indicator theme “A. Air pollution and ozone depletion”.
2. Climate change is a cross-cutting issue with a broad scope, including climate change drivers, emissions, impacts, mitigation and adaptation.

Therefore, it is proposed, in alignment with FDES, to remove indicator theme “B. Climate change” and to distribute the indicators to other areas (called “topics” in the newly proposed structure).

OLD STRUCTURE

B. Climate change

B1. Air temperature (updated October 2014)

B2. Atmospheric precipitation (updated October 2014)

B3. Greenhouse gas emissions (updated October 2014)

NEWLY PROPOSED STRUCTURE

Topic “Atmosphere, climate and weather”
(component “Environmental conditions and quality”,
sub-component “Physical conditions”)

Topic “Emissions of greenhouse gases” (component
“Residuals”, sub-component “Emissions to air”)

2. Presentation of indicators according to FDES

Example (full list available at <https://statswiki.unece.org/display/JTFEI/Revised+Guidelines+for+the+Application+of+Environmental+Indicators>)



statswiki.unece.org/display/JTFEI/Revised+Guidelines+for+the+Application+of+Environmental+Indicators



Spaces **Create** Search ? Log in

Component	Sub-component	Topic	ID	Indicator (English)	
Human settlements and environmental health	Human settlements	Access to selected basic services	C-6.1	Share of total population (urban and rural) connected to the water supply industry	Доля населения (и
			I-4.1	Total population served by municipal waste collection	Численность насе

Originally part of environmental theme “C. Water”

Originally part of environmental theme “I. Waste”

3. Review of the list of indicators

Taking into account new information requirements and indicator frameworks



1. Replacement of indicators with similar ones, examples:

Original UNECE indicator	Similar indicator from more recent indicator frameworks
Water exploitation index	SDG 6.4.2 Level of water stress: freshwater withdrawal as a proportion of available freshwater resources
Waste re-used and recycled	SDG 12.5.1 National recycling rate, tons of material recycled
Average annual deviations from average temperature	WMO and UNECE set of CC-related indicators: Mean temperature anomaly (compared to climate normal 1961 - 1990)

2. Adding indicators for new areas of relevance, e.g.

- Climate change (cross-cutting), e.g. “J-1.4 Share of energy and transport related taxes in total taxes and social contributions”
- Exposure to ambient pollution (e.g. “A-2.6 Mortality rate attributed to household and ambient air pollution” (SDG indicator 3.9.1)

4. Update of Indicator Metadata

Why is this indicator needed? How to compile it? Existing guidelines and international databases?



- JTF agreed to not change the structure significantly
- New elements in the metadata:
 - FDES topic
 - Link to SDGs (related indicators)
 - Data and statistics needed to compile the indicator
 - International databases containing the indicator
- Update of policy references, technical reference documents, classifications, improvement of methodological description etc.

5. Bilingual database

All information needed for compiling the metadata is maintained in a database



- All data are maintained in English and Russian in a database

Metadata of the UNECE Environmental Indicators

Edit and search data

Edit indicator metadata sheets

Edit data and statistics metadata

Edit reference documents

Edit international databases

Export data

Metadata sheets (pdf)

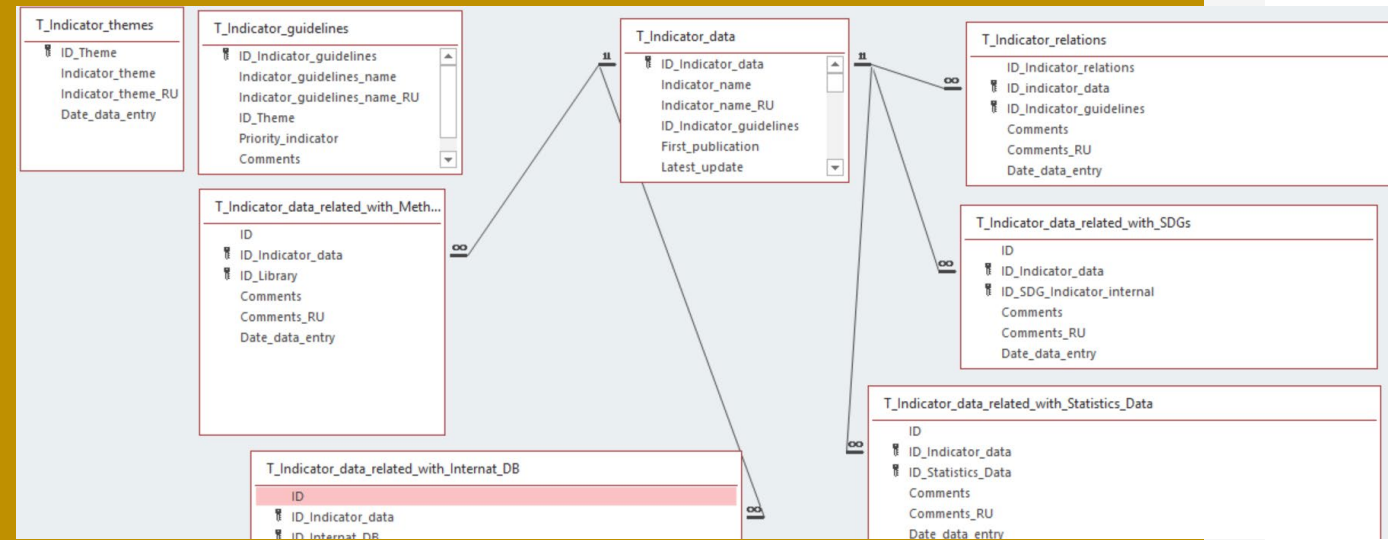
References (xls)

Data and statistics metadata (xls)

Data and statistics metadata (pdf)

Print indicator sheet (EN)

Print indicator sheet (RU)



Presentation of selected illustrative indicators

G-1.1 Total final consumption of energy



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Indicator theme (old) **G Energy**
 Component (FDES) **2: Environmental Resources and their Use**
 Sub-component (FDES) **2.2: Energy Resources**
 Indicator topic (FDES) **2.2.2: Production, trade and consumption of energy**

Indicator **G-1.1 Total final consumption (TFC) of energy**

ID and name in indicator guidelines **G1** Final energy consumption

First publication Latest update 5/2/2019

Indicator definition The sum of consumption of energy by the different end-use sectors. TFC is broken down into energy demand in the following sectors: industry, transport, households, services, agriculture and other (including non-energy use). It excludes international marine and aviation bunkers, except at world level where it is included in the transport sector. (Source: International Energy Agency (IEA))

Unit of measure kilotons of oil equivalent (ktoe)

Coverage All national energy consumers

Spatial aggregation National territory

Reference period Calendar year

Update frequency Annual

Relation to other indicators of the UNECE guidelines

ID	Name of indicator in online guidelines	Comments
G2	Total primary energy supply	
G3	Energy intensity	

Inherited from old metadata structure. Do we really need this?

Presentation of selected illustrative indicators

G-1.1 Total final consumption of energy (cont.)

Purpose This indicator represents a driving forces indicator and shows trends in total final consumption of energy. The trend in final consumption of energy provides a broad indication of progress in reducing consumption of energy and associated environmental impacts. It can be used to help monitor and assess the success of key policies that attempt to influence consumption of energy and energy efficiency.

The difference with "final energy consumption" (indicator G-1.2) is that here non-energy uses are included.

Policy context SDG 7 and policy references listed below

Link with SDG indicators

SDG indicators	Comments
7.2.1 Renewable energy share in the total final energy consumption	Total final energy

Policy references

Title and weblink	Comments
1979 ECE Convention on Long--range Transboundary Air Pollution (CLRTAP) https://www.unece.org/environmental-policy/conventions/envlrtapwelcome/the-air-convention-and-its-protocols/the-convention-and-its-achievements.html	requires the implementation of concrete measures to reduce emissions of pollutants into the air, including those originating in fuel combustion.
Paris Agreement https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement	

References are maintained in a separate table of the database with more detailed information, e.g. authors, publication date, etc. This will become an annex of the printed version of the "Guidelines"

Presentation of selected illustrative indicators

G-1.1 Total final consumption of energy (cont.)

Indicator **G-1.1 Total final consumption (TFC) of energy**

Methodology for indicator calculation

Total final consumption of energy = final energy consumption + non-energy use

Final energy consumption is calculated as the sum of final energy consumption from different economic sectors and households. Final energy consumption includes the consumption of transformed energy (electric power, public heating, petroleum products, coke, etc.) and primary fuels such as natural gas and renewable energy sources (solar energy, biomass, etc.). Final energy consumption in industry includes consumption in all industrial sectors except the “energy sector”. Final energy consumption in transport includes consumption in all types of transportation (rail, road, public transport in cities, pipeline and air transport and inland and maritime navigation). Final energy consumption in households includes quantities consumed by households, excluding the consumption of motor fuels for personal transport. Household consumption includes all use of electricity and use of fuels for space and water heating. Final energy consumption in commercial and public services includes consumption by public administration and private services. Final energy consumption in agriculture consists of quantities consumed by agriculture, including engines used for agricultural transportation.

Final energy consumption in fisheries consists of quantities consumed by the fishing industry, excluding fishing on the high seas.

Non-energy use covers those fuels that are used as raw materials in the different sectors and are not consumed as a fuel or transformed into another fuel. The relative contribution of a specific sector can be measured by the ratio of final energy consumption from that specific sector to the total final energy consumption calculated for a calendar year.

Methodology references

Title of the reference document	Link
International Recommendations for Energy Statistics	https://unstats.un.org/unsd/energy/ires/
Energy Statistics Manual	https://webstore.iea.org/energy-statistics-manual

References are maintained in a separate table of the database with more detailed information, e.g. authors, publication date, etc. This will become an annex of the printed version of the “Guidelines”

Presentation of selected illustrative indicators

G-1.1 Total final consumption of energy (cont.)



Data and statistics needed to compile the indicator

ID	Data item	FDES topic
20	Final energy consumption: Industry	2.2.2: Production, trade and consumption of energy
21	Final energy consumption: Transport	2.2.2: Production, trade and consumption of energy
22	Final energy consumption: Households	2.2.2: Production, trade and consumption of energy
25	Final energy consumption: Commercial and public services	2.2.2: Production, trade and consumption of energy
27	Final energy consumption: Non-specified use of energy	2.2.2: Production, trade and consumption of energy
28	Final energy consumption: total national	2.2.2: Production, trade and consumption of energy
29	Non-energy use: total	2.2.2: Production, trade and consumption of energy

Comments

The indicator has been renamed from "total final energy consumption" to "Total final consumption of energy" to align it with the terminology used in the IEA energy balances, and to distinguish it from "Final energy consumption" (indicator G-1.2) which excludes non-energy uses

Data items (data and statistics) to compile the indicators are maintained in a separate table of the database with more detailed information (e.g. unit of measurement, methodological guidance, etc.).

Each data item can serve the production of multiple indicators, but needs to be described only once

Presentation of selected illustrative indicators

C-3.1 Total freshwater available for use

Indicator theme (old) **C Water**

Component (FDES) **2: Environmental Resources and their Use**

Sub-component (FDES) **2.6: Water Resources**

Indicator topic (FDES) **2.6.2: Abstraction, use and returns of water**

Indicator **C-3.1 Total freshwater available for use**

ID and name in indicator guidelines **C3 Total freshwater use**

First publication **10/15/2019** Latest update

Indicator definition This indicator shows the availability of freshwater from various sources (freshwater abstracted, desalinated water, reused water, net imports of water)

Unit of measure **million m3**

Coverage **Freshwater**

Spatial aggregation **National territory**

Reference period **Calendar year**

Update frequency **Annual**

Relation to other indicators of the UNECE guidelines

ID	Name of indicator in online guidelines	Comments
C1	Renewable freshwater resources	
C2	Freshwater abstraction	
C7	Water losses	
C8	Reuse and recycling of freshwater	

Presentation of selected illustrative indicators

C-3.1 Total freshwater available for use (cont.)

Purpose	The indicator provides a measure of the pressure on the environment in terms of water abstraction from different sources (including freshwater abstracted, desalinated water, reused water, and with regard to water losses).	
Policy context	<p>The availability of water for meeting basic human needs is a prerequisite for life, health and economic development. This indicator is important for defining the level of development of water economy services and the degree of water accessibility to cover the needs of population and society. The indicator also helps to identify trends in water use.</p> <p>SDGs target 6.4: By 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity and substantially reduce the number of people suffering from water scarcity .</p>	
Link with SDG indicators		
Policy references		
Title and weblink		Comments
Convention on the Protection and Use of Transboundary Watercourses and International Lakes		
https://www.unece.org/env/water/text/text.html		
Integrated Water Resources Management		
http://www.gwp.org/the-challenge/what-is-iwrm/		
Environmental Strategy of countries of Eastern Europe, Caucasus and Central Asia		
https://www.unece.org/env/efe/Kiev/proceedings/html/Item7a.e.html		

Presentation of selected illustrative indicators

C-3.1 Total freshwater available for use (cont.)

Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for the Community action in the field of water policy

https://ec.europa.eu/environment/water/water-framework/index_en.html

Transforming our world: the 2030 Agenda for Sustainable Development

<https://sustainabledevelopment.un.org/post2015/transformingourworld>

Methodology for indicator calculation = Freshwater abstracted + Desalinated water + Reused water + Imports of water - Exports of water

Methodology references

Title of the reference document	Link
UNSD/United Nations Environment Programme Questionnaire 2018 on Environment Statistics - section "Water"	https://unstats.un.org/unsd/envstats/questionnaire
International Recommendations for Water Statistics	https://seea.un.org/content/seea-water
System of Environmental-Economic Accounting for Water	https://seea.un.org/content/seea-water

Data and statistics needed to compile the indicator

ID	Data item	FDES topic
166	Fresh surface water abstracted: total	2.6.2: Abstraction, use and returns of water
167	Fresh groundwater abstracted: total	2.6.2: Abstraction, use and returns of water
179	Desalinated water	2.6.2: Abstraction, use and returns of water
180	Reused water	2.6.2: Abstraction, use and returns of water
181	Imports of water	2.6.2: Abstraction, use and returns of water
182	Exports of water	2.6.2: Abstraction, use and returns of water

What is the status of work and what comes next?



- Secretariat with help of selected JTF members managed to produce drafts of 42 indicators, 28 of which already translated into Russian
- Some editorial improvements in some cases needed
- JTF members are invited to review and provide substantive comments by end of November
- Remaining indicators (ca. 120, including new proposals) will be gradually finalised and sent to JTF for comments
- Agreed versions of metadata will be made available at a dedicated UNECE webpage
- Comments received by JTF members will be taken into account.

Proposed decisions



- JTF agrees with the structure and content of the revised guidelines as proposed by the Secretariat. This concerns in particular:
 - a) The distinction of indicators from data and statistics needed to compile them;
 - b) The presentation of the set of environmental indicators following the structure of the FDES
 - c) Including tier I and tier II indicators of the UNECE core set of climate change-related indicators
- JTF asked the Secretariat to continue with its review of indicators and to establish a “silent procedure” with members of the JTF for approval of finalised metadata. The 42 indicators presented at the 17th session of the JTF will be considered as final if no substantive comments are received from JTF members by 30 November 2020.
- JTF asked the Secretariat to publish finalised indicator metadata according to the agreed structure on a dedicated UNECE website.

Questions to all of you during the lunch break
Please open www.menti.com and enter code 32 56 19 4



1. How much do you agree with the following statements (on a scale from 1 (strongly disagree) to 5 (strongly agree); Please click “skip” in case you do not want to answer a specific question.
 - Using the structure of the FDES for presenting the set of indicators is useful
 - There are important thematic areas which are not covered by the current list of indicators
 - The structure and content of the indicator metadata are useful
 - I agree with the presented way forward
2. Do you have any comments regarding the revision process (e.g. which thematic areas are currently not properly addressed by the set of indicators, comments related to specific indicators, explain if you “strongly disagree” with something, etc.).

Thank you!

Michael Nagy
Statistician

UNECE

26 October 2020, Geneva

