GreenPaths: European Knowledge Hub on Just Transition Pathways

https://www.greenpaths.info

Title: Set of enhanced indicators for assessing the social impacts of green transitions

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Introduction

Executive Summary

The D2.1 report provides an overview of the indicators that were selected to assess the impacts of green transition. It consists of a collection of improved and refined indicators that can be used to evaluate the social effects of transitioning towards environmentally sustainable practices. These indicators are designed to capture a wider range of social impacts, such as employment, social protection, and equity, among others.

This deliverable is part of the second work package of GreenPaths, a Horizon Europe project aimed at tackling the intricate and multi-faceted aspects of the just transition. The policy interventions taken for a just transition can have progressive and regressive effects and to assess the efficacy and depth of these interventions, it becomes necessary to measure and assess these impacts, whether economic, social or distributional. Thus, indicators provide a means to systematically assess and evaluate the social impacts of green transitions. By quantifying various dimensions such as agriculture, industrial production and employment, indicators allow researchers, policymakers, and other stakeholders to ascertain the effectiveness of green transition policies and initiatives in fostering positive social developments.

There are two aims of this task: firstly, to provide a set of indicators that relay the social impact of just transition policy interventions, and secondly to contribute to the elaboration of a rigorous and comprehensive analytical framework for future deliverables and for the implementation of a set of 15 case studies.

Intended audience

This deliverable is of interest to members of the GreenPaths consortium who will use the indicators in their work in future deliverables. Secondly, it is potentially of interest to stakeholders outside the GreenPaths consortium interested in just green transition, particularly researchers engaged in similar projects, members of civil society organisations and policymakers, who want to gain a better understanding of how the social impacts of just transitions can be measured.

Reading recommendations

This deliverable has two outputs: the first is the list of indicators in an Excel file. This file has seven sheets namely, ‘Index’, ‘Project Information’, ‘Description’, ‘Structure’, ‘Taxonomy’, ‘Indicators available’, and ‘Indicators unavailable’. There are two types of indicators: those available indicators identified in reliable data repositories ('available indicators’) and those indicators suggested as assessment mechanisms to be collected for the convenience of the GreenPaths project or any other similar project (‘unavailable indicators'). This complete set of indicators will be available in data repositories detailed below (see section 5.1).

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The second output of this deliverable is this report, which has five sections. The first section details the process employed to collect the indicators and the sources used. The second section describes the features listed for each indicator, and the third section is on the taxonomy, breaking down the main dimensions and categories of the indicators. The fourth section is on the additional indicators and reports, beyond the list of collected indicators, and section five provides the indicators' database.

Scope

A total of 277 existing indicators have been identified through the selected sources (*available indicators*). The data repositories and the criteria to use them as sources are explained in section 1.1. and 1.2. Besides the selected references, a total of 42 indicators have been suggested (*unavailable indicators*) based on the results of the search and the outputs of WP1. The complete list makes a total of 319 indicators that may help to contextualize the evaluation of just transition policies and their social impact.

Approach

With a diverse group of partners working on this deliverable, it was important to ensure that every partner was working to their strengths. Therefore, the structure of the task was similar to that of Deliverable 1.1, with each partner working on the sector that was their expertise. The knowledge gained in 1.1 on how fair green transition policy interventions are linked to environmental sustainability and social well-being was integral to this task. Based on this knowledge, a set of important categories and dimensions was extracted. The collected indicators are based on these categories and dimensions, highlighting how the social impacts of green transitions may be measured by stakeholders.

The results of this deliverable will be used to create a comprehensive methodological and analytical framework, that will later help in the implementation of the case studies. Externally, this deliverable will provide stakeholders with a valuable list of indicators, covering important categories and dimensions. By highlighting the interconnectedness of environmental policies and societal well-being, this deliverable aims to equip policymakers, researchers, and stakeholders with insights vital for producing inclusive and effective strategies for sustainable development.

Keywords

green initiatives; social impacts; sustainability; assessment; indicators

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1 Sources

1.1 Selection criteria

The selection of sources for the indicators is a critical step that aims to ensure data's integrity, relevance, and comprehensiveness. The criteria for selecting sources for the European Green Deal indicators were established with a focus on official databases. These sources were chosen based on their:

- **Authority:** The source must be recognized by international bodies and experts in the field.
- **Accuracy:** The data provided must be precise and error-free.
- **Timeliness:** The information must be current and regularly updated.
- **Coverage:** The source should cover a wide range of areas pertinent to the Green Deal, such as finance, trade, agriculture, and industrial policy.
- **Accessibility:** The data should be readily available for public access and scrutiny.

1.2 List of sources

The following databases were identified as primary sources for the indicators:

Eurobarometer: The Eurobarometer is a public opinion survey conducted by the European Commission and other EU institutions. It monitors key trends relevant to the European Union, including socio-political events, and analyzes long-term trends in attitudes related to European affairs. The Eurobarometer on fairness perceptions on the green transition provides insights into Europeans' perceptions of the fairness and the impact of green transition policies, essential for policymakers to ensure that the Green Deal is equitable and has broad public support.

European Social Survey (ESS): The European Social Survey is an academically driven cross-national survey that measures the attitudes, beliefs, and behavior patterns of Europe's populations. It contributes to comparative social science research and is a critical pillar of the European Research Area. The ESS offers insights into public opinion on environmental issues, the perceived impact of climate change, and the social acceptability of green policies, which are crucial for understanding public support for the Green Deal initiatives.

Eurostat: As the statistical office of the European Union, Eurostat offers a wealth of data on various aspects of European societies, economies, and environments. It enables comparisons between countries and regions on a range of topics, including economy, finance, population, social conditions, and environmental issues. For the Green Deal, Eurostat provides data on energy consumption, renewable energy sources, greenhouse gas emissions, and waste management, supporting the monitoring of progress towards sustainability targets.

Organisation for Economic Co-operation and Development (OECD): The OECD provides a broad range of statistics that inform policies for sustainable economic development, offering reliable and harmonized data on the environment. Its data on green growth indicators, environmental performance, and socio-economic conditions are essential for assessing the effectiveness of the Green Deal, helping to compare progress across countries and guide international cooperation on environmental issues. The OECD Green Growth Indicators help countries assess and compare their progress towards green growth, combining green growth features with accounting principles and the pressure-state-response model. These indicators are

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key to evaluating the progress of OECD member countries towards green growth and sustainable development.

Our World in Data: It is a project that aims to make the knowledge on the world's largest problems accessible and understandable. It provides research and data on a wide range of topics, including climate change, poverty, disease, and war. For the Green Deal, it offers data-driven insights into how the world is changing and the progress being made on key environmental and social issues.

University of Gothenburg (UG): Quality of Government Environmental Indicators (QoG-EI) Dataset: It is a compilation of major freely available indicators measuring environmental performance of countries over time. The QoG-EI dataset is open and available, free of charge and without a need to register. These indicators include the presence and strictness of environmental policies, the level of pressure on the environment (such as ecological footprint and emission levels), and public opinion on environmental matters. The dataset also includes background geographical data such as the annual average rainfall and the size of land area, among others.

UNSD: Global Set of Climate Change Statistics and Indicators: It is a framework developed by the United Nations Statistics Division to guide countries in preparing their own sets of climate change statistics and indicators. It was adopted to support the implementation of the Paris Agreement and the Enhanced Transparency Framework. This set provides a standardized approach for countries to monitor climate change impacts, adaptation, and mitigation actions. This set of indicators is particularly important as it aligns with international efforts to track progress on climate action.

World Bank: The World Bank offers a comprehensive set of global development indicators, including detailed environmental data. Its databases support critical management decisions and provide key statistical information for operational activities, applying internationally accepted standards for a consistent and reliable source of information. The World Bank's data is pivotal for placing the EU's Green Deal in a global context and ensuring alignment with broader sustainability goals. The World Bank Environment Indicators cover a range of topics, including energy production, greenhouse gas emissions, and natural resource use, helping monitor progress on Sustainable Development Goals related to the environment. They illuminate the environmental challenges and opportunities faced by nations, vital for understanding the environmental impact of economic activities and guiding sustainable practices.

Table 1. Primary sources

Source	Link
EU Green Deal statistics	https://ec.europa.eu/eurostat/cache/egd-statistics/
Eurobarometer SP527: Fairness perceptions of the green transition	https://europa.eu/eurobarometer/surveys/detail/2672
European Social Survey (ESS)	https://www.europeansocialsurvey.org/data
Eurostat	https://ec.europa.eu/eurostat/data/database
OECD Data	https://data.oecd.org/
Our World in Data	https://ourworldindata.org/

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Source	Link
University of Gothenburg (UG): Quality of Governmental Environmental Indicators (QoG-EI) Dataset	https://www.gu.se/en/quality-government/qog-data/data-downloads/environmental-indicators-dataset
UNSD: Global Set of Climate Change Statistics and Indicators	https://unstats.un.org/unsd/envstats/climatechange.cshtml
World Bank Open Data	https://data.worldbank.org/

Each of these databases contributes a unique perspective and set of data that, when combined, provide a comprehensive view of the European Green Deal's progress and challenges. They are critical tools for ensuring that the transition to a sustainable future is based on solid evidence and broad societal support.

In addition to the primary sources, a supplementary search was conducted to fill any gaps in the data landscape. This search aimed to identify and incorporate additional authoritative sources that could provide specific indicators not covered by the main databases. The goal was to create a comprehensive and multi-dimensional set of indicators that fully encapsulate the breadth and depth of the European Green Deal's objectives.

The careful selection of sources for the European Green Deal indicators is a testament to the commitment to transparency, accountability, and evidence-based policymaking. By drawing from these reputable databases, the indicators constructed offer a reliable and nuanced picture of Europe's green transition, enabling informed decisions and targeted actions towards a sustainable future.

1.3 Results for each source

Table 2 shows the number of indicators extracted from the main sources listed above.

Table 2. Main sources and number of indicators listed

Source	Number of indicators
World Bank	70
Eurostat	66
FAO	48
OECD	37
The QoG Institute	23
Other sources	33
Total	**277**

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2 Features

2.1 Features for each indicator

In order to facilitate the navigation through the list of indicators and the selection of those most adequate for each potential exploitation, the document includes a set of features for each reference. The file contains different columns which allow for filtering and ordering the indicators.

Table 3 shows the list of features described for each indicator. The taxonomy referred in the columns 'main dimension', 'category', 'dimension 2' and 'dimension 3' is detailed below (*see section 3*). For the subset of *unavailable indicators*, the labels 'SOURCE', 'LINK', 'FROM', 'UNTIL', and 'FORMAT', are not detailed, since they do not apply.

Table 3. Features listed for each indicator

Label	Description
CODE	Code for the indicator
ID	Short name of the indicator
NAME	Complete name of the indicator
DESCRIPTION	Description of the indicator
TYPE	Quantitative / Qualitative
UNIT	Unit of measure
SOURCE	Organization that provides the information
LINK	Link to the data
BREAKDOWN	Breakdown details available for segmented analyses.
FROM	Time coverage: availability of the data (starting year)
UNTIL	Time coverage: availability of the data (last year)
PERIODICITY	How often is being updated the data
GEOGRAPHICAL	Geographical reach: Maximum geographical level of analysis
MAIN DIMENSION	Classification according to taxonomy (1st level) Main option
CATEGORY	Classification according to taxonomy (2nd level)
DIMENSION 2	Classification according to taxonomy (1st level) secondary option (1)
DIMENSION 3	Classification according to taxonomy (1st level) secondary option (2)
COMMENTS	Additional comments / notes
FORMAT	Exportable formats

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3 Taxonomy

3.1 Main dimensions and categories of the indicators

With the purpose of optimizing the usefulness of the indicators listed, they have been classified by dimensions (first level of classification) and categories (second level of classification). The set of 16 dimensions is largely based on the topics identified in D1.1. Each indicator was classified into one main dimension from the following list:

1. Accessibility and inclusion
2. Agriculture
3. Behaviour
4. Climate
5. Employment
6. Energy
7. Equality
8. Finance
9. Food
10. Industrial production
11. Land use
12. Policy
13. Social Welfare
14. Taxation
15. Trade
16. Transport
17. Urban infrastructure

During the selection and classification, for each indicator there was the possibility to assign up to two additional secondary dimensions, reflected in the columns 'DIMENSION 2' and 'DIMENSION 3'.

Within the main dimension, a second level of classification was conducted through the column 'CATEGORY'. The complete list of dimensions and categories (for the main dimension assigned) is the following:

Accessibility and inclusion

Disability

Migration

Social inclusion

Agriculture

Agricultural employment

Agricultural energy use

Agricultural land use

Agriculture and environment

Other

Sustainable food production

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Behaviour

- Attitudes
- Perceptions

Employment

- EGSS
- Gender
- Job creation / loss
- Job quality
- Skills
- Sustainability of labour
- Youth

Energy

- Coal mine closure
- Energy consumption
- Energy efficiency
- Energy employment
- Energy poverty
- Energy RD&D
- Just transition
- Phase out fossil fuels
- Renewable energy sources
- Rights of indigenous people

Equality

- Energy poverty
- Income inequality
- Rural-urban gap

Finance

- Banking sector
- Capital formation and investment
- Consumption
- Costs of climate change
- Development banks
- Expenditures and revenues
- Government finances
- Macroeconomic indicator

Food

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- Food information
- Food security
- Food waste
- Health
- Provision of healthy food
- Sustainable food production

Industrial production

- Employment in industry
- Energy consumption and carbon emissions in industry
- Growth of industry
- Investment and turnover in industry
- Public expenditure on industry
- Socio-economic situation in industrial regions

Land use

- Agricultural land use
- Forest area
- Green infrastructure

Policy

- Involvement of stakeholders
- Other
- Policy design and management
- Regulations

Social Welfare

- Energy poverty
- Environment
- Health
- Housing
- Poverty
- Public expenditure

Taxation

- Taxes

Trade

- Exports and imports
- Growth of FDI
- Growth of trade and trade balance
- Stakeholders' satisfaction on trade and trade policies

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Structure of trade

Trade agreements

Trade barriers

Trade prices

Transport

Air transport

Infrastructure

Public transport

Utilization patterns

Vehicles

Urban infrastructure

Other

Spatial injustices

Urban design

Urban waste

3.2 Results for the main dimension assigned

This task revealed the broad availability of macroeconomic indicators in comparison to other indicators showing social aspects and subjective perceptions. Moreover, the publication of data that gives information about Just Transition public policies performance, climate change contextual aspects, and Green Transition variables is still rather scarce.

Table 4 shows the distribution of the main dimensions assigned to the full list of indicators (n=319, including both available and unavailable items). Finance, food, energy and agriculture are the most present topics in the list as first choice.

Table 4. Distribution of the main dimension assigned (full list of indicators)

Dimension (first choice)	Number of indicators
Accessibility and inclusion	4
Agriculture	31
Behaviour	23
Employment	13
Energy	30
Equality	7
Finance	45
Food	34
Industrial production	22
Land use	9
Policy	13
Social Welfare	21
Taxation	14

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Dimension (first choice)	Number of indicators
Trade	27
Transport	17
Urban infrastructure	9
TOTAL	**319**

Table 5 shows the distribution of the main dimensions assigned to the subset of *available indicators* (n=277). Finance, food, energy and agriculture are the most present topics in the list as first choice.

Table 5. Distribution of the main dimension assigned (subset of available indicators)

Dimension (first choice)	Number of indicators
Accessibility and inclusion	4
Agriculture	29
Behaviour	20
Employment	10
Energy	27
Equality	7
Finance	39
Food	30
Industrial production	20
Land use	8
Policy	4
Social Welfare	21
Taxation	10
Trade	22
Transport	17
Urban infrastructure	9
TOTAL	**277**

Table 6 shows the distribution of the main dimensions assigned to the subset of *unavailable indicators* (n=42). Finance, food, energy and agriculture are the most present topics in the list as first choice.

Table 6. Distribution of the main dimension assigned (subset of unavailable indicators)

Dimension (first choice)	Number of indicators
Agriculture	2
Behaviour	3
Employment	3
Energy	3
Finance	6
Food	4
Industrial production	2

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Dimension (first choice)	Number of indicators
Land use	1
Policy	9
Taxation	4
Trade	5
TOTAL	**42**

4 More data on green and just transition

4.1 Additional indicators and reports

Besides the datasets found in acknowledged repositories, during the execution of the task several assessment frameworks, data collections and reports were found. These are not necessarily available or ready-to-work as conventional datasets to be downloaded, edited and analysed with data analysis software. However, they contain valuable information (aggregated data, graphs, presentations, etc.) with relevant information on Green and Just Transitions. Table 7 includes some of the references found.

Table 7. Additional references with data

Authors / Organization	Name	Description	Link
LinkedIn	An Action Plan for Climate Change	LinkedIn's Global Green Skills Report	https://linkedin.github.io/global-green-report-2022/
United Nations	SDG Indicators	Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development	https://unstats.un.org/sdgs/indicators/indicators-list/
EC, Directorate-General for Energy	Europeans' attitudes on EU energy policy	This survey seeks to gauge EU citizens' opinions about aspects of EU energy policy in order to: - Review what citizens think EU energy policy is about currently and what it should aim to achieve; - Assess awareness of and effectiveness of current energy efficiency labelling; - Investigate what citizens believe the EU's priorities for energy policy should be in the next decade.	https://data.europa.eu/doi/10.2833/500568
EC, Directorate-General for Communication, Directorate-General for Climate Action	Special Eurobarometer 490 – Climate Change	Special Eurobarometer on Climate Change that includes: Perceptions of climate change; Taking action on climate change; Attitudes to actions to fight climate change, the transition to clean energy and reducing fossil fuel imports; Looking to the future;	https://climate.ec.europa.eu/system/files/2019-09/report_summary_2019_en.pdf

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Authors / Organization	Name	Description	Link
Holz, Christian, Eric Kemp-Benedict, Tom Athanasiou and Sivan Kartha / EcoEquity and Stockholm Environment Institute	Climate Equity Reference Calculator	The Climate Equity Reference Calculator is a general online equity reference tool and database that systematically applies a generalized and transparent equity reference framework with the goal of quantitatively examining the problem of national fair shares in a global effort to rapidly reduce greenhouse gas emissions.	https://calculator.climateequityreference.org/
IPE	DEGROWTH DONUT: Indicators	At the Institute for Political Ecology, the doughnut visualization has been reshaped to reflect the constraints of a safe, just, and sustainable degrowth transition by rethinking the idea of thresholds and planetary boundaries. IPE's degrowth donut is broken up into three broad segments – the biophysical, the cultural and the socio-economic – each of which covers three or four thematic areas in up to eleven indicators.	https://ipe.hr/en/projects/super-donut/indicators/
European Commission: DG Environment	8th Environment Action Programme (EAP)	The action programme reiterates the EU's long-term vision to 2050 of living well and within planetary boundaries. It sets out priority objectives for 2030 and the conditions needed to achieve these. On 26 July 2022, the Commission adopted a list of headline indicators to monitor progress towards the EU's environment and climate goals. These follow the structure of the 8th EAP.	https://environment.ec.europa.eu/strategy/environment-action-programme-2030_en
ISSP	International Social Survey Programme	The ISSP is a cross-national collaboration programme conducting annual surveys on diverse topics relevant to social sciences.	https://issp.org/

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5 Indicators database

5.1 Links to the full list of indicators

While the simple list of collected indicators is to be found below (*see Annex: list of indicators*) the full database of indicators with all the details, features and links can be consulted and downloaded in these two data repositories:

OPEN SCIENCE FRAMEWORK[1]:

The Open Science Framework (OSF) is an open source software project that facilitates open collaboration in science research hosted by the Center for Open Science (COS). The COS was founded in 2013 to start, scale, and sustain open research practices that will democratize access to research, improve inclusion of all stakeholders, enhance accountability to research integrity, facilitate the self-corrective process of science, expand transparency and sharing of all research content, and improve research rigor and reproducibility.

Link to the excel file hosted in OSF

DOI: 10.17605/OSF.IO/E42GV
DOI URL: https://doi.org/10.17605/OSF.IO/E42GV
Project and file: https://osf.io/kzv46
Direct download: https://osf.io/download/kzv46/

MENDELEY DATA[2]:

Mendeley Data is an open, free-to-use research data repository, which enables researchers to make their research data publicly available. Benefits of sharing research data include complying with funder mandates, enabling reuse by other researchers, and increasing the reproducibility, transparency and trust of the original research. Mendeley Data is part of Elsevier, a Dutch academic publishing company specializing in scientific, technical, and medical content. The Mendeley Data communal data repository is powered by Digital Commons Data.

Link to the excel file hosted in MENDELEY DATA

Reserved DOI[3]: 10.17632/4fr3my2dny.1
DOI URL: https://doi.org/10.17632/4fr3my2dny.1

[1] https://osf.io/
[2] https://data.mendeley.com/
[3] This DOI is reserved but not active. The file is currently in moderation.

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Discussion and next steps

This task was mainly aimed at collecting indicators for the evaluation and contextualization of the impact of green transition policies. However, like other GreenPaths tasks within WP1 and WP2 it also contributed to reveal the flaws and gaps of research about interventions aimed at mitigating climate change. There is far more information available on economic growth, conceived in this context as 'green growth', than data on sustainability or social impact. This may respond to the habit of systematically generating governmental statistics to measure macroeconomic performance. However, the abundance of data for the assessment of economic growth/green growth could give hints of the prevalence of traditional indicators as cornerstones for decision-making, in detriment of sustainability and social impact aspects. Deepening on this question is crucial also for the tasks of the fifth work package of the GreenPaths project, which deals with the co-design of desirable green transition pathways.

The list of 'unavailable indicators' reveals the need for collecting (or making publicly available) more data on public policy performance, sustainability and perceptions or attitudes towards just transition interventions. Incorporating the concerns, views, doubts, and perspectives of stakeholders into the design of climate change action implies the study of the population and their stances on green transition public policies at different levels. However, the collection and integration of indicators needs to be framed through sound and structured analytical frameworks. For this end, the GreenPaths project, through T2.4 foresees the elaboration of a rigorous and comprehensive analytical framework. This output will both provide a key reference for the understanding of the social impacts of just transition policies and a tool for the implementation of the case studies to be carried out in the context of WP3.

Next steps include the incorporation of the list of indicators into Task 2.4. of the GreenPaths project (a rigorous and analytical framework for the implementation of the case studies) but also working on the gaps revealed by the list of indicators, which would lead to the improvement and refinement of public policies.

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Annex: list of indicators

Annex I: Available indicators

Table 8. List of 'available indicators'

CODE	NAME
AV_1_1	Access to clean fuels and technologies for cooking, total
AV_2_1	Access to clean fuels and technologies for cooking, rural
AV_3_1	Access to clean fuels and technologies for cooking, urban
AV_4_1	Access to electricity
AV_5_2	Access to public transport - FUAs
AV_6_3	Number of obese adults
AV_7_3	Prevalence of obesity in the adult population
AV_10_5	Agree by 2050 sustainable energy, products and services will be affordable
AV_11_3	Employment in agriculture, female
AV_12_3	Direct on-farm energy consumption
AV_13_3	Agricultural land (% of land area)
AV_14_3	Agricultural land (sq. km)
AV_15_3	Agriculture value added per worker
AV_16_3	Agriculture freshwater extraction
AV_17_3	Agricultural irrigated land (% of total agricultural land)
AV_18_6	Air emissions accounts by NACE Rev. 2 activity
AV_19_6	Perception of air pollution as a big problem
AV_20_2	Air passenger transport routes
AV_21_2	Air transport CO2 emissions
AV_22_2	Air transport, passengers carried
AV_23_1	Alternative and nuclear energy (% of total energy use)
AV_24_3	Arable land and permanent crops
AV_25_6	Arrears in utility bills
AV_26_5	Commercial banks and other lending
AV_27_4	Binding coverage, all products
AV_29_5	Portfolio investment, bonds
AV_30_4	Cost to import, border compliance
AV_31_2	Built-up density
AV_36_3	Child employment in agriculture (% of economically active children ages 7-14)
AV_37_3	Child employment in agriculture, female (% of female economically active children ages 7-14)
AV_38_3	Child employment in agriculture, male (% of male economically active children ages 7-14)
AV_39_3	CH4 emissions from energy use in agriculture
AV_40_3	CH4 emissions from crops
AV_41_3	CH4 emissions from enteric fermentation
AV_42_3	CH4 emissions from livestock
AV_43_3	CH4 from manure management

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CODE	NAME
AV_44_3	Percentage of children under 5 years of age who are overweight
AV_45_3	Percentage of children under 5 years of age who are stunted
AV_46_3	Number of children under 5 years of age who are stunted
AV_47_3	Percentage of children under 5 years affected by wasting
AV_48_3	Number of children under 5 years affected by wasting
AV_49_5	Climate related economic losses
AV_50_5	Climate policy support in regions dependent on carbon-intensive industries
AV_51_3	CO2 emissions from energy use in agriculture
AV_52_3	Emissions from pre and post agricultural production
AV_53_6	Population living in dwellings comfortably cool in summer time
AV_54_6	Population living in dwellings comfortably warm in winter time
AV_55_5	Final consumption expenditure of environmental protection services / resource management products
AV_56_6	Welfare costs of premature mortalities from exposure to ambient PM2.5
AV_57_3	Cost of a healthy diet
AV_58_4	Current account balance
AV_59_6	Disability by sex, age and income quintile
AV_60_4	Cost to import, documentary compliance
AV_61_6	Dwellings with energy label A
AV_62_6	Easiness to find a house
AV_63_6	Easiness to find a job
AV_64_5	How likely to buy most energy efficient home appliance
AV_65_6	Employment in the environmental goods and services sector
AV_66_1	Access to electricity, rural
AV_67_1	Access to electricity, urban
AV_68_1	Electric power consumption
AV_69_1	Time required to get electricity (days)
AV_70_3	Share of emissions, by activity
AV_71_3	Share of employment in agriculture, forestry and fishing by sub-sector
AV_72_5	Employment in regions dependent on carbon-intensive industries
AV_73_6	Employment rates by sex, age and NUTS 2 regions
AV_74_3	Employment in agriculture, forestry, and fishing by age
AV_75_3	Employment in agriculture, forestry, and fishing by status in employment
AV_76_1	Energy intensity level of primary energy (MJ/$2017 PPP GDP)
AV_77_1	Energy intensity of GDP in purchasing power standards (PPS)
AV_78_1	Energy use (kg of oil equivalent per capita)
AV_79_3	Emissions from energy use in agriculture
AV_80_1	Energy use (kg of oil equivalent) per $1,000 GDP
AV_81_6	Energy expenses by income quintile
AV_82_5	National expenditure on environmental protection by institutional sector
AV_83_5	Support of environmental parties in regions dependent on carbon-intensive industries
AV_84_5	Environmentally related ODA
AV_85_5	Worry about environment vs jobs in regions dependent on carbon-intensive industries
AV_86_5	Environmental protection related ancillary output

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CODE	NAME
AV_87_5	Investment grants and other capital transfers for environmental protection, received
AV_88_5	Environmental protection and resource management related ancillary output
AV_89_5	National expenditure on environmental protection
AV_90_5	Environmental protection / resource management output
AV_91_5	Current transfers for environmental protection, received
AV_92_5	Current and capital transfers for environmental protection, paid / received
AV_94_3	Environmental performance of agriculture - nutrients balances
AV_95_5	Intermediate consumption of EP services
AV_96_6	Population living in a dwelling equipped with air conditioning
AV_97_6	Population living in a dwelling equipped with heating facilities
AV_98_6	Excess winter mortality/deaths
AV_99_5	Export of environmental protection services / resource management products
AV_100_4	Exports of goods and services
AV_101_4	Structure of exports, by geographical origin
AV_102_4	Export unit value index
AV_103_4	Exports, by type of product
AV_104_5	Support for the increase of investments in public transport infrastructure
AV_105_5	Support for subsidies to people to help make their homes more energy efficient
AV_106_5	Support for subsidies to renewable energy to reduce climate change
AV_107_5	Support for taxing products and services that contribute most to climate change, and redistributing revenues to the poorest
AV_108_5	Support for increase taxes on fossil fuels to reduce climate change
AV_109_4	Net inflows of foreign direct investment
AV_110_4	Net outflows of foreign direct investment
AV_111_3	Share of females in total employment in agriculture, forestry and fishing
AV_112_6	Perception of the city as committed with climate change
AV_113_1	Final energy consumption
AV_114_5	Net official financial flows from bilateral sources
AV_115_5	Net official financial flows - IMF, Concessional /IMF, Non-concessional
AV_116_5	Net official financial flows from multilateral sources
AV_117_5	Net official financial flows - Regional Development Banks, Concessional/ Non-concessional
AV_118_5	Net official financial flows - Regional Development Banks, other institutions
AV_119_5	Net official financial flows - World Bank, IDA / World Bank, IBRD
AV_120_5	Finance performance indicator
AV_121_6	Air pollution exposure (PM2.5)
AV_122_5	Firms using banks to finance working capital
AV_123_5	Number of visits or required meetings with tax officials - by firms
AV_124_5	Time spent by firms dealing with the requirements of government regulations
AV_127_3	Food loss index
AV_129_3	Prevalence of severe food insecurity in the female adult population
AV_130_3	Number of severely food insecure female adults
AV_131_3	Prevalence of severe food insecurity in the male adult population
AV_132_3	Number of severely food insecure male adults

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CODE	NAME
AV_133_3	Number of severely food insecure people
AV_134_3	Prevalence of severe food insecurity in the population
AV_135_3	Prevalence of moderate or severe food insecurity in the population (%)
AV_136_3	Prevalence of severe food insecurity in the total population
AV_137_3	Food Price Index
AV_138_3	Forest area (% of land area)
AV_139_1	Fossil fuel energy consumption (% of total)
AV_140_1	Electricity production from oil, gas and coal sources (% of total)
AV_141_5	GDP growth of regions dependent on carbon-intensive industries
AV_142_6	Gender employment gap
AV_143_5	Gross fixed capital formation on cleaner environmental protection assets (integrated technologies)
AV_144_5	Gross fixed capital formation on specific environmental protection assets (end of pipe technologies)
AV_147_6	General government expenditure by function
AV_148_5	Central Government net investment in nonfinancial assets
AV_149_5	Grants and other revenue (central gov. Revenue)
AV_151_2	Green areas
AV_152_2	Satisfaction with green spaces
AV_160_6	Satisfaction with health care
AV_161_2	Heat stress
AV_162_6	High share of energy expenditure in income (2M)
AV_163_6	Inability to keep home adequately warm
AV_164_2	Waste generated by households
AV_165_4	Number of IEAs in force, not counting terminated IEAs
AV_166_5	Import of environmental protection services / resource management products
AV_167_4	Imports of goods and services
AV_168_4	Structure of imports, by geographical origin
AV_169_4	Import unit value index
AV_170_4	Imports, by type of product
AV_171_6	Income by degree of urbanisation
AV_172_6	Income distribution
AV_173_5	CO2 emissions from manufacturing industry and construction
AV_174_5	Energy consumption in industry
AV_175_5	Greenhouse gas emissions from industry
AV_176_5	Gross fixed capital formation on specific environmental protection assets in industry
AV_177_5	Value added per worker in industry
AV_178_4	Increase of consumer prices
AV_179_5	Inflation, GDP deflator
AV_180_5	Intermediate consumption of environmental protection services by corporations as specialist producers
AV_181_5	Intermediate consumption of environmental protection services / resource management products
AV_182_5	Interest rate - Deposit
AV_183_5	Interest rate - Lending

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CODE	NAME
AV_184_5	Interest rate - Real
AV_185_6	Satisfaction with the personal job situation
AV_191_6	Low absolute energy expenditure (M/2)
AV_192_6	Long-term unemployment rate by sex
AV_193_5	Employment in industry, by activity branch
AV_194_5	Gross fixed capital formation in industry
AV_195_5	Hours worked in industry, by activity branch
AV_196_5	Number of enterprises in industry, by activity branch
AV_197_5	Turnover in industry, by activity branch
AV_198_5	Value added in manufacturing
AV_199_5	Production in industry, by activity branch
AV_200_5	Wages in industry, by activity branch
AV_202_3	Mean weekly hours worked per employed person in agriculture, forestry and fishing
AV_203_3	Mean weekly hours worked per employee in agriculture, forestry and fishing
AV_205_1	Coal Mine Closure
AV_206_3	Prevalence of moderate or severe food insecurity in the total population
AV_207_3	Number of moderately or severely food insecure people
AV_208_3	Prevalence of moderate or severe food insecurity in the female adult population
AV_209_3	Number of moderately or severely food insecure female adults
AV_210_3	Prevalence of moderate or severe food insecurity in the male adult population
AV_211_3	Number of moderately or severely food insecure male adults
AV_212_5	Given money to an environmental group
AV_213_6	Mortality from exposure to ambient PM2.5
AV_214_2	Motorisation rate
AV_215_2	Generation of municipal waste per capita
AV_216_3	N2O emissions from energy use in agriculture
AV_217_3	N2O emissions from crops
AV_218_3	N2O emissions from Livestock
AV_219_3	N2O emissions from manure management
AV_220_3	N2O from manure left on pasture
AV_221_3	N2O from manure applied to soils
AV_222_6	Young people neither in employment nor in education and training by sex (NEET)
AV_223_4	Number of IEAs entered into force for the first time
AV_224_6	Satisfaction with the noise levels
AV_225_6	Perception of noise as a big problem
AV_226_3	Number of people unable to afford a healthy diet
AV_227_3	Number of people undernourished
AV_228_1	Electricity production from nuclear sources (% of total)
AV_229_5	ODA - all sectors - climate change mitigation
AV_230_1	Electricity production from oil sources (% of total)
AV_231_3	Organic crop area by agricultural production methods and crops
AV_232_3	Organic farming
AV_233_4	Other taxes
AV_236_6	Personal health

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CODE	NAME
AV_238_5	Policy instruments for reduction of CO2 emissions from heavy industry
AV_241_6	Population covered by the Covenant of Mayors for Climate & Energy signatories
AV_242_5	Population growth of regions dependent on carbon-intensive industries
AV_243_2	Population density
AV_244_3	Percentage of the population unable to afford a healthy diet
AV_245_5	At-risk-of-poverty-rate and social exclusion in regions dependent on carbon-intensive industries
AV_246_1	Primary energy consumption
AV_247_3	Prevalence of undernourishment
AV_248_5	Public expenditure on industry
AV_249_1	Public Energy Technology RD&D Budget
AV_250_2	Affordability of public transport
AV_251_2	Satisfaction with public transport
AV_252_2	Easiness to get the public transport
AV_253_2	Perception of frequency of public transport
AV_254_2	Reliability of public transport
AV_255_2	Safety of public transport
AV_256_1	Private Energy Technology RD&D Budget
AV_257_6	Satisfaction with the quality of the air
AV_258_5	Energy public RD&D budget
AV_259_5	Environmentally related R&D expenditure
AV_260_5	Fossil fuel public RD&D budget (excluding CCS)
AV_261_5	Environmentally related government R&D budget, % total government R&D
AV_262_5	Renewable energy public RD&D budget
AV_263_5	Gross domestic expenditure on R&D by sector
AV_264_2	Recycling rate of municipal waste
AV_265_1	Electricity production from renewable sources, excluding hydroelectric (kWh)
AV_266_1	Renewable Energy Employment 2022
AV_267_1	Renewable energy consumption (% of total final energy consumption)
AV_268_1	Renewable electricity output (% of total electricity output)
AV_270_6	Risk of poverty or social exclusion
AV_271_6	Risk of poverty or social exclusion by degree of urbanisation
AV_272_5	Risk premium on lending
AV_273_6	Population exposure to river flooding
AV_274_6	Population exposure to wildfires
AV_275_2	Length of roads
AV_278_5	Signed petitions about environmental issues in regions dependent on carbon-intensive industries
AV_279_6	Skills requirements and skills match: under skilling
AV_280_6	Skills requirements and skills match: change in skills needs
AV_281_5	Social contributions (central government revenue)
AV_282_3	Share of population that cannot afford a nutrient adequate diet
AV_284_5	Climate policy support: subsidies (mean)
AV_285_4	Climate policy support: taxes (mean)

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CODE	NAME
AV_288_5	Population having taken part in a protest/demonstration about environmental issues in regions dependent on carbon-intensive industries
AV_289_4	Tariff rate, applied, weighted mean, all products
AV_290_4	Climate change related tax revenue
AV_291_4	Environmentally related tax revenue
AV_292_4	Share of environmental taxes in total tax revenues
AV_293_4	Taxes on goods and services
AV_294_4	Taxes on income, profits and capital gains
AV_295_4	Taxes on international trade
AV_296_5	Time required to obtain an operating license
AV_297_1	Total Energy Technology RD&D Budget
AV_299_4	Trade openness
AV_302_3	Transgenic Crops
AV_303_2	Most used means of transport
AV_304_2	Modal split of inland freight transport
AV_305_2	Modal split of inland passenger transport
AV_306_2	Road, rail and navigable inland waterways networks
AV_307_3	Prevalence of undernourishment (% of population)
AV_308_6	Unemployment rate by disability status
AV_309_5	Unemployment rate in regions dependent on carbon-intensive industries
AV_310_4	Unwillingness to cut in standard of living
AV_311_4	Unwillingness to pay higher prices
AV_312_5	Unwillingness to pay higher taxes
AV_313_2	Urban heat island
AV_314_4	VAT and other taxes less subsidies on EP services / RM products
AV_315_6	Weather related displacements: average annual displacement
AV_316_6	Weather related displacements: new displacements
AV_317_5	Willing to pay higher energy prices to speed up the green transition
AV_318_5	How worried, energy too expensive for many people
AV_319_2	Zero-emission vehicles

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Annex II: Unavailable indicators

Table 9. List of 'unavailable indicators'

CODE	NAME
NAV_8_1	Annual Energy Employment by Gender, Country
NAV_9_1	Annual energy employment of indigenous people, by Country
NAV_28_5	Biodiversity Financing Index
NAV_32_4	Carbon border adjustment mechanism
NAV_33_4	Carbon leakage of trade
NAV_34_4	Carbon Tax Coverage
NAV_35_6	Commitment to fight climate change
NAV_93_4	Environmental Tax Revenue (% of GDP)
NAV_125_3	Access to food information
NAV_126_3	Food literacy
NAV_128_3	Food in public institutions
NAV_145_4	Green Fiscal Reform Progression Index
NAV_146_5	Green Investment Ratio
NAV_150_3	Share of green infrastructure
NAV_153_5	Green Bond Penetration
NAV_154_6	Green job volume
NAV_155_6	Demand of green skills
NAV_156_6	Incorporation of social protection in Green Transition policy (presence)
NAV_157_6	Incorporation of social protection in Green Transition policy (resource allocation)
NAV_158_5	Green standards met
NAV_159_4	Green Tax Index
NAV_186_6	Elimination of jobs as a consequence of Green Transition policies
NAV_187_1	Just transition funding in coal producing region, by country
NAV_188_6	Just Transition policies performance
NAV_189_5	Just transition funds related to industry
NAV_190_6	Living conditions after participating in a Just Transition programme
NAV_201_5	MDBs green finance
NAV_204_6	Types of measures and policies to be adopted to fight climate change
NAV_234_5	Participation of local governments with environmental policies
NAV_235_5	Participation of trade unions in environmental policies
NAV_237_3	Share of pesticide free crops
NAV_239_6	Levels of participation in the design of Just Transition policies
NAV_240_6	Prioritization preferences: economic, social, environmental objectives
NAV_269_5	Renewable Energy Investment Gap
NAV_276_5	Satisfaction of local governments with environmental policies
NAV_277_5	Satisfaction of trade unions in environmental policies
NAV_283_5	Subsidies to green and to just transition in industry
NAV_286_3	Share of food produced sustainably
NAV_287_5	Sustainable Agriculture Financing
NAV_298_4	Enforcement and disputes on trade related to environmental issues

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CODE	NAME
NAV_300_4	Protests on trade and trade policies
NAV_301_4	Sanctions on trade related to environmental issues

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