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**Economic Commission for Europe**

## Committee on Environmental Policy

**Working Group on Environmental  
Monitoring and Assessment****Seventeenth session**

Geneva, 7 and 8 September 2015

Item 4 of the provisional agenda

**Report on progress in establishing the Shared Environmental  
Information System in the pan-European region<sup>1</sup>****Note by the Secretariat***Summary*

In response to the decision by ministers in Astana to keep the pan-European environment under review by establishing a regular process of environmental assessment and to develop Shared Environmental Information Systems (SEIS) across the region, the Economic Commission for Europe (ECE) Committee on Environmental Policy (CEP) mandated the Working Group on Environmental Monitoring and Assessment to review progress in the establishment of SEIS, based on the adopted SEIS targets and performance indicators. The Working Group was further mandated to prepare an evaluation report on progress made by the pan-European countries in establishing SEIS. Such a report should be submitted to CEP at its twenty first session for consideration before it is submitted to the Eighth Environment for Europe (EfE) Ministerial Conference in Batumi in June 2016

This report was prepared by the secretariat as a desk study to assist the Working Group to prepare its own report for consideration by the CEP in October 2015.

<sup>1</sup> This paper was not formally edited.

GE.15-14961(E)



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## I. Introduction

1. The ministers of environment from the pan-European region present at the Seventh Environment for Europe Ministerial Conference (Astana, 21–23 September 2011) recognized the challenges to access the data and information necessary for the generation of environmental assessments and decided to address them. They committed to establish a regular process of environmental assessment for the pan-European region<sup>2</sup> based on the Shared Environmental Information System (SEIS) — an approach that, with the support of modern technologies such as the Internet, would link all existing data and information flows relevant at the country and international levels in support of the regular environmental assessment process.

2. The United Nations Economic Commission for Europe (ECE) Committee for Environmental Policy (CEP) has been overseeing the efforts taken in the pan-European region to establish a regular environmental assessment process and to develop SEIS including by setting up a Group of Friends of SEIS to provide it with recommendations. CEP at its twentieth session (Geneva, 28–31 October 2014) adopted targets and performance indicators for measuring the progress in establishing and operating SEIS as developed by the Friends of SEIS. It further mandated the Working Group on Environmental Monitoring and Assessment (Working Group) to review the progress in the establishment of SEIS, based on the adopted targets and performance indicators, with a view to preparing an assessment report for the Eighth Environment for Europe (EfE) Ministerial Conference in Batumi in June 2016. An initial version of that report should be submitted to CEP at its twenty first session for its consideration.

3. To be able to prepare the progress report the Working Group had to define the content – i.e. specific data sets – for the pan-European SEIS. In addition, the Working Group needed to provide the countries with a reporting mechanism for the collection of information necessary to evaluate SEIS development in accordance with the SEIS targets and performance indicators.

4. The Working Group agreed at its sixteenth session (Istanbul, 16–17 April 2015) on the initial SEIS content consisting of 67 specific data sets, of which 25 refer to the theme of air pollution and ozone depletion, 4 to climate change, 20 to water, 4 to biodiversity, 2 to land and soil, 4 to energy and 8 to waste. It further agreed that it would evaluate the pan-European countries performance in establishing SEIS in 2015 by verifying the production and on-line sharing of the 67 data sets.

5. The Working Group also accepted a concept of a reporting mechanism for evaluating the effective production and on-line sharing of the agreed data sets in accordance with the SEIS targets and performance indicators. The reporting mechanism requires that each SEIS data set is evaluated on five elements: on-line accessibility, update regularity, application of a standard production methodology, data interpretation availability and information on data source. That evaluation is to be done by SEIS focal points in the ECE countries and reviewed by the European Environment Agency (EEA)<sup>3</sup> for its member countries and by ECE secretariat for the countries of South-Eastern and Eastern Europe, Caucasus and Central Asia and other pan-European countries not covered by EEA.

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<sup>2</sup> The pan-European region under the Environment for Europe Process covers the full membership of the United Nations Economic Commission for Europe (ECE), i.e. its 56 ECE member States.

<sup>3</sup> EEA members are the ECE countries members of the European Union as well as Iceland, Lichtenstein, Norway, Switzerland and Turkey.

6. The current report contains a desk study evaluating SEIS establishment in the pan-European region. It was prepared by the secretariat to support the discussion by the Working Group on the review of progress in the establishment of SEIS and to serve as a basis for the Working Group to elaborate its report for consideration by CEP at its 21<sup>st</sup> session.

## **II. Evaluation of performance in developing the Shared Environmental Information System in the pan-European region**

7. The evaluation of performance in developing SEIS has been made as part of an exercise aimed at testing the SEIS reporting mechanism. During the testing, the availability and accessibility of 67 SEIS data sets and related information were rated for 53 pan-European countries: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Tajikistan, the former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom, United States and Uzbekistan as well as Kosovo<sup>4</sup>. Each data set was rated on five elements of the SEIS reporting mechanism. Only data sets published, i.e. accessible on-line (as assessed with the first element) were assessed on the remaining four elements.

8. The reporting mechanism was designed to also help countries identify performance gaps in data production and sharing in accordance with the SEIS targets and performance indicators and to assess over time the progress made in addressing these gaps. This function would be operational for country use once the reporting mechanism is available as a simple electronic application.

9. For the purpose of the test, an excel table was developed and pre-filled by the secretariat<sup>5</sup> for each data set and each of the five rating elements with the value of 1 if the necessary information under each rating element was found available on-line or with the value of 0 for the opposite case. In particular, for the element of update regularity, the rating of 1 was given when time series not older than 2013 for data sets subject to annual update were published. For the element of application of standard production methodology, it was not verified whether the methodology used was in line with the internationally-accepted methodology for a particular data set. For the element of data interpretation, the content was not evaluated, i.e. whether it included data assessment versus policy targets and whether such interpretation was available not only in local language but also in an international language (English or Russian). The evaluation done was more quantitative, focusing on whether the information was provided or not.

10. The pan-European countries have been requested to verify the pre-filling carried out as part of the exercise. At the time of preparation of this document, only 9 countries<sup>6</sup>

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<sup>4</sup> All references to Kosovo in this report should be understood to be in the context of United Nations Security Council resolution 1244 (1999)

<sup>5</sup> United Nations Environment Programme provided support in prefilling the tables.

<sup>6</sup> Azerbaijan, Armenia, Belarus, Bosnia and Herzegovina, France, Republic of Moldova, Russian Federation, Serbia and the former Yugoslav Republic of Macedonia

provided the secretariat with their review of the excel tables and validated their status of SEIS establishment related to the list of 67 data sets as of August 2015.

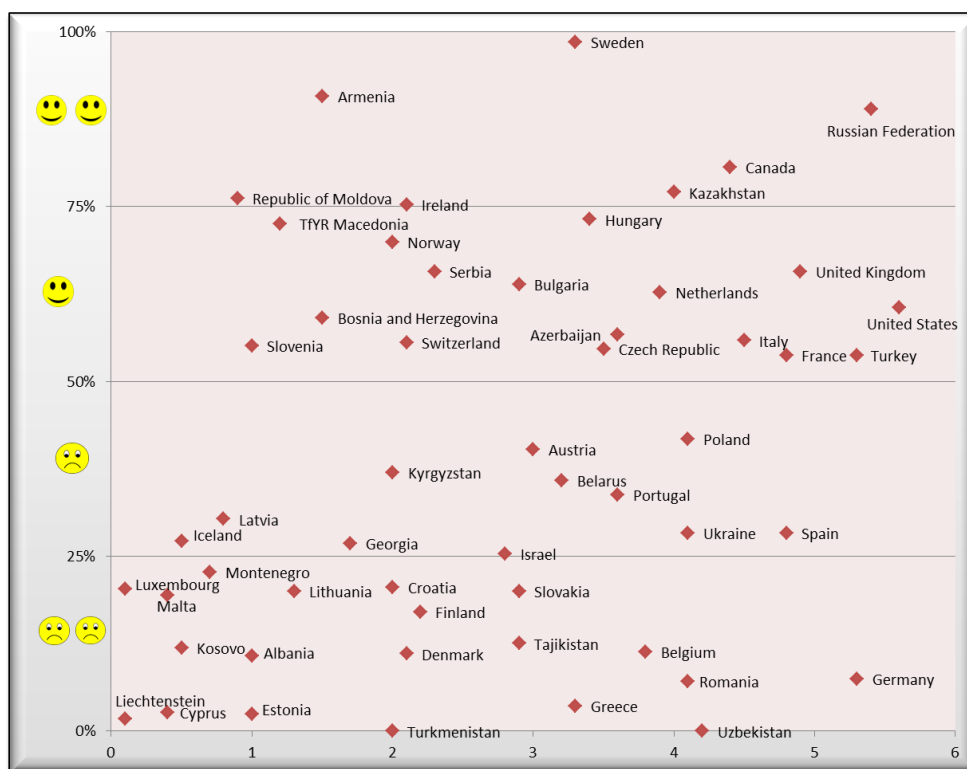
**A. Overall performance**

11. From the 67 SEIS data sets and related information, on average, 40 per cent were made available and accessible by 53 pan-European countries and Kosovo as of August 2015.

12. There are several countries that made nearly all or the majority of the 67 data sets and related information available and accessible on-line: Sweden (99 per cent data sets and information made available), Armenia (91 per cent), Russian Federation (89 per cent), Canada (81 per cent), Kazakhstan (77 per cent), Moldova (76 per cent) and Ireland (75 per cent). On the other side of the scale are countries that as of August had no data sets available on-line: Turkmenistan and Uzbekistan.

13. The overall country performance on SEIS is presented in figure 1. In order to include all countries within one figure and, at the same time distribute the countries along the x axis, the distribution was made according to the population size of the country. Information on performance per data set is provided in Annex I.

Figure 1  
Overall performance in establishing SEIS



Source: ECE.

14. The purpose of the figure is to provide a baseline against which the progress in establishing SEIS is to be evaluated in the next year for every country. The goal for any country would be to improve its SEIS performance or, where there is already high performance, to maintain it.

15. The overall performance, as shown above for the baseline, is expected to improve after reviews by all countries of the pre-filled excel tables. As the secretariat carried out a desk study, some of the data sets might not have been found even though they may be published on-line.

#### **B. Performance by thematic areas and data sets**

16. The availability and accessibility of the data sets and related information do vary per data thematic areas. The average thematic area performance is above the overall average for climate change (11 percentage points above), biodiversity (10 percentage points above), energy (6 percentage points above), and air pollution and ozone depletion (2 percentage points above).

17. Below the overall average are the thematic areas of land (6 percentage points below), water (7 percentage points below) and waste (3 percentage points below).

18. Looking at individual data sets and related information, the air emission of nitrogen oxides and of sulphur dioxide and related information are most broadly available and accessible from all the 67 data sets. On average, nearly eight out of ten countries (80 per cent of countries) have these emissions data and related information available and accessible on-line. They are followed by other air emission data (carbon monoxide, ammonia and non-methane volatile organic compounds), biodiversity data (total areas under protection), greenhouse gas emission data, and air quality data (concentration of nitrogen dioxide and of sulphur dioxide) that are made available and accessible on average by six out of ten countries (60 per cent of countries). Figure 2 presents a list of 20 data sets with the highest performance score.

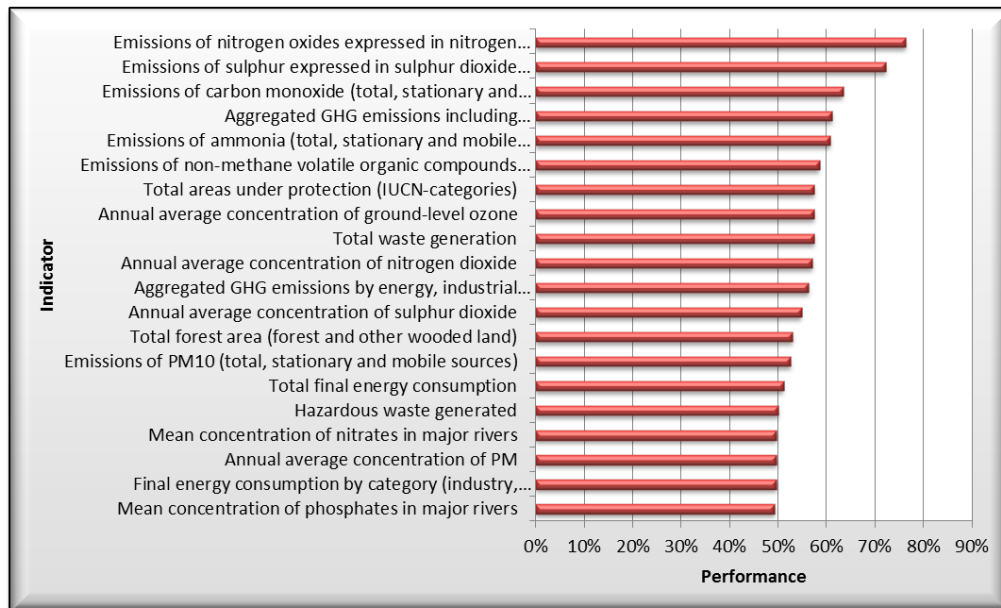
19. On the other side of the scale, with availability and accessibility of data and related information at the level of 1 out of 10 countries (10 per cent of countries) are water and waste data: population connected and not-connected to water supply industry and hazardous waste exported. These are followed by other water and waste as well as POPs air emission data with availability and accessibility at the level of 2 of 10 countries (20 per cent of countries). Figure 3 presents a list of 20 data sets with lowest performance score.

#### **C. Performance by rating elements**

20. When the data sets are published on-line, generally countries also provide information on the methodology used for their production and on data source as well data interpretation. On average, interpretation is provided for nearly every data set published, the information on data source for more than 9 out of 10 data sets published and the link to applied methodology in nearly 9 out of 10 data sets published.

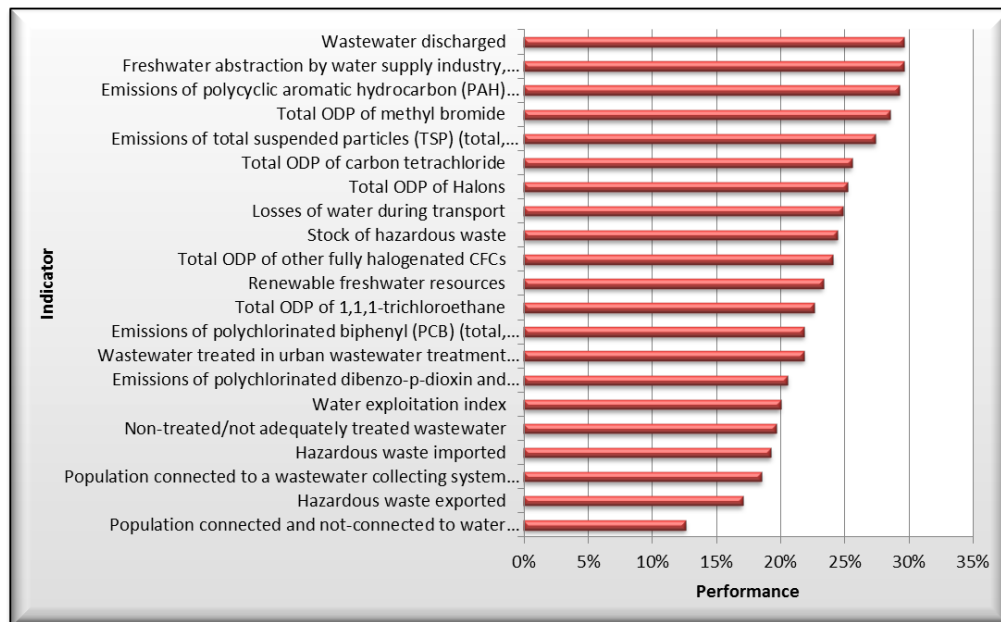
21. Regarding data interpretation, it was provided at least for 90 per cent of data sets published. For 35 data sets all the data publishing countries provided such interpretation, i.e. the score reached 100 per cent.

Figure 2  
SEIS data sets with highest performance score



Source: ECE

Figure 3  
SEIS data sets with lowest performance score



Source: ECE

22. Information on data source was provided for 75 per cent or more of the data sets published and for 22 data sets the score reached 100 per cent.

23. Similarly, regarding links to or information about the data production methodologies, such were provided at least for 70% of published data. For 12 data sets a score of 100 per cent was reached.

24. The rating with regard to application of methodology may decline when the methodology applied is assessed also against its fulfilment of internationally accepted standards. Similarly for the data interpretation, it may decline if the aspects of interpretation availability in local and international languages or assessment in achieving policy targets are taken into account.

25. The regularity of updating data sets seems to cause some problems. On average for 1 out of 4 data sets the provided time series are not up-to-date, i.e. times series more recent than 2012 have not been made available. For nine data sets, at least in 30 per cent of cases the data was not up to date. There is no single data for which all the data publishing countries would have provided updated time series.

### **III. Conclusions and the way forward**

26. This report shows that seven countries achieved a relatively high level of SEIS performance, while there are a few countries that until August 2015 have not published any of the agreed data sets.

27. There are several data sets which are published by only a limited number of countries. Also updating the data with most recent time series can be considered as not fully satisfactory. On the other hand, providing links to data methodologies, data interpretation and data source does not seem to be an issue for countries.

28. At the same time, the current evaluation has not considered fulfilment of internationally accepted standards for data set production. Neither the type nor quality of data interpretation was evaluated. (see para 9). This needs to be rectified in the next evaluation round.

29. The evaluation of country performance was done as part of the testing of the SEIS reporting mechanism by the secretariat pre-filling records with the on-line availability and accessibility of SEIS data sets and related information. The pre-filling requires review by countries and confirmation of their status on SEIS performance vis-à-vis the 67 SEIS data sets. Only nine pan European countries did the review, while 44 countries as well as Kosovo still need to do it. It is expected that after the country review the overall SEIS performance should improve.

30. Once the review is done by all the pan-European countries, the analysis as provided in the document will be updated to show the confirmed state of performance of the pan-European countries in establishing SEIS.

31. That state will serve then as a baseline against which assessment will be done in the next years to evaluate countries progress in establishing SEIS. The baseline will also serve to assess countries performance related to the effective operation of SEIS for all data sets made available and accessible on-line.

32. Countries will be thus evaluated routinely against their past SEIS performance and the goal for the countries would be to improve it from year to year for countries who may consider its performance as not yet satisfactory or to maintain it for countries who have achieved already a high level of performance.

33. Overall, the goal is that all pan-European countries would first achieve and then maintain high SEIS level of performance.







Number	Indicator	KAZ	KGZ	TJK	TCM	UZB	ARM	GEO	AZE	BLR	MDA	RUS	UKR	ALB	BHR	KOSOVO	MKD	MNE	SRB	AUT	BEL	BGR	HRV	CYP	CZE	DNK	EST	FIN	FR	DEU	GRC	HUN	IRL	ITA	LVA	LTU	LUX	MLT	NLD	POL	PRT	ROU	SVK	SVN	ESP	SWE	GBR	LIE	ISR	NOR	TUR	CHE	USA	CAN	ISR		
41	Mean concentration of phosphates in major rivers	0.4	1	0	0	0	1	0.6	1	1	1	1	0	0	0.8	0	1	0.8	1	0	0	1	0	0	1	0	0	0.8	0.8	0	0	1	1	0	0.6	0.8	0.6	0	1	0.8	0	0	0	1	0	1	0	0	0.8	1	0	0	1	1	0.8		
42	Mean concentration of nitrates in major rivers	0.4	1	0	0	0	1	0.6	1	1	1	1	0	0.8	0.8	0	1	0.8	1	0	0	1	0	0	1	0	0	0.8	0.8	0	0	1	1	0	0.6	0.8	0	0	1	0.8	0	0	0	1	0	1	0	0	0.8	1	0	0	1	1	0.8		
43	Mean concentration of total phosphorus in major lakes	1	0	0	0	0	1	0.6	1	1	1	0.8	0	0.8	0.8	0	1	0	1	0	0	1	0	0	1	0	0	0.8	0	0	0	1	3.4	0	0.6	0.8	0	0	1	0.8	0	0	0	0.6	0	1	0	0	0	1	0	1	1	0	0.8		
44	Mean concentration of nitrates in surface water	1	0	0	0	0	1	0.6	1	0	1	0.8	0	0.8	0.8	0	1	0	1	0	0	1	0	0	1	0	0	0.8	0	0	0	1	1	0	0.6	0.8	0	0	1	0.8	0	0	0	0	0	1	0	0	0	1	0	0	1	1	0.8		
45	Mean concentration of nitrates in groundwater	1	0	0	0	0	0.8	0	0	0	1	0.8	0	0	0.8	0	0	0	1	0	0	1	0	0	1	0	0	0.8	0.8	0	0	1	1	0.8	0.6	0	0	0	0.6	0.8	0	0	0	0.8	0	1	0	0	0	1	0	1	1	1	0.8		
46	Population connected to a wastewater collecting system (with and without treatment facilities)	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0.8	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0.8	0.8	0	0	0.8	0	0	0	0.8	0	1	0	0	0	0	0	0	1	0	0	0	
47	Wastewater treated in urban wastewater treatment plants (primary, secondary, tertiary)	0	0	0	0	0	1	0	0	0	0	0.8	0	0	1	0	0.8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0.8	0.8	0	0	0	0	0	0.8	0	1	0	0	0	0	0.8	1	0	1	0			
48	Wastewater discharged	1	0	0	0	0	1	0	1	0	1	1	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0.8	0	0	1	1	0	0	0.8	0	0	0	0.8	0	0	0.8	0	0	1	0	0	0	0	0.8	0	0	1	0		
49	Non-treated/not adequately treated wastewater	1	0	0	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0.8	0	1	0	0	0	0	0.8	0	0	1	0			
50	Total areas under protection (IUCN-categories)	1	1	1	0	0	1	0.8	1	1	1	1	0	0	1	0	1	0	1	1	0	1	0	0	0	0	0	0.8	0	0	0.4	1	1	0.8	0.8	0	0	0.6	1	0.8	1	0.4	0	0.8	1	1	1	0	1	1	0.8	0	1	1	0		
51	Total forest area (forest and other wooded land)	1	0	1	0	0	1	0	1	0	1	1	0	0	1	0	1	0	1	1	0	1	0	0	1	0	0.2	0	0	0	0	1	1	1	0.8	0	0.6	0	1	0.8	1	0.4	0	1	1	1	1	0	0	1	0.8	1	1	1	0		
52	Number of species protected — mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi, algae	1	0	1	0	0	1	0.6	0	1	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0	1	0	0	0.8	1	0	0.4	0	1	1	0.8	0	0	0	1	0.8	0	0	0	0	0	0	1	1	0	0	1	0	1	1	1	0.8
53	Number of species threatened — mammals, birds, fishes, reptiles, amphibians, invertebrates, vascular plants, mosses, lichens, fungi, algae	1	0	1	0	0	1	0.6	0	1	1	1	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0.8	1	0	0.4	0	1	1	0	0	0	0	0.8	0.8	0	0	0	0.8	0	1	1	0	0.8	1	0	1	1	1	0.8	
54	Total land uptake	1	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	0	1	0	0	1	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0.8	0.8	1	0	0	0	0	0	1	0	0	0	1	0.8	1	0	0	0.6	
55	Land uptake by mining and quarrying, construction, manufacturing, technical infrastructure, transport and storage infrastructure, residential including recreational, landfills	1	0	0	0	0	1	0	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0.8	0.8	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	
56	Total final energy consumption	1	0.8	0	0	0	1	0	1	0	1	1	0	0	0.8	1	1	0.8	1	1	0	1	0	0	1	0	0	0	1	0	0.6	1	1	1	0	0	0	0	1	0	1	0	0.6	0.8	0	1	1	0	1	0	0.8	0	1	1	0		

number	data sets	KAZ	KGZ	TJK	TKM	UZB	ARM	GEO	AZE	BLR	MDA	RUS	UKR	ALB	BHR	KOSOVO	MKD	MNE	SRB	AUT	BEL	BGR	HRV	CYP	CZE	DNK	EST	FIN	FRA	DEU	GRC	HUN	IRL	ITA	LVA	LTU	LUX	MLT	NLD	POL	PRT	ROU	SVK	SVN	ESP	SWE	GBR	LIE	ISL	NOR	TUR	CHE	USA	CAN	ISR			
57	Final energy consumption by category (industry, transport, households, commercial and public services, agriculture forestry and fishery, non-specified, non-energy use)	1	0.8	0	0	0	1	0	1	0	1	1	0	0	0.8	1	1	0.8	1	1	0	1	0	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	1	0	1	0	0.8	0.8	0	1	1	0	1	0	0.8	0	1	1	0			
58	Total primary energy supply (production, export, import, bins, stock changes)	0	0	0	0	0	1	0	1	0	1	0.8	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	1	0	0.6	0	1	1	0	0	0	0	1	0.8	1	0	0	1	0	1	1	0	0	0	0.8	0	0	0.8	0	1	1	0
59	Total primary energy supply by source (coal, crude oil, oil products, natural gas, nuclear energy, hydropower, geothermal and solar energy, biofuels and waste, electricity, and heat)	0	0	0	0	0	1	0	1	0	1	0.8	0	0	1	1	1	0	1	1	0	1	1	0	0	0	0	0	1	0	0	0	1	1	1	0	0	0	0	1	0	1	0	0.8	0	0	1	1	0	0	0	0.8	0	1	1	0		
60	Total waste generation	1	0	0	0	0	1	0	1	1	1	1	1	0	1	0	1	0	0	1	0	1	0	0	1	0.8	0	0	0.8	0	0	1	1	1	0	0	0.8	0	0.8	0.8	1	0	0.8	0.8	1	1	1	0	1	0.8	0.8	1	1	1	0.8			
61	Waste generation by source (agriculture forestry and fishery; mining and quarrying; manufacturing; electricity, gas, steam and air conditioning supply; construction; other economic activities; households)	1	1	0	0	0	1	0	1	0	1	1	1	0	0.8	0	1	0	0	1	0	0	0	0	0	1	0	0	0.8	0	0	1	1	1	0	0	0	0	0.8	0.8	1	0	0.8	0	0.8	1	1	1	0	1	0.8	0.8	0	1	1	0		
62	Hazardous waste generated	1	1	0	0	0	1	0	1	0	1	1	1	0	1	0	1	0.8	0	0	0	0	1	0	0	1	0	0	0.8	0	0	1	1	1	0.8	0	0.8	0	0.8	0	0	0	0.8	0.8	1	1	1	0	0	0.8	0.8	0	1	1	0.8			
63	Hazardous waste imported	1	0	0	0	0	1	0	0	0	0	0.8	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	1	0	0	0	0	1	1	0	0	0	0.8	0	1	1	0			
64	Hazardous waste exported	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0	0	1	0	0	0	0	1	0	0	0	0.8	0	1	1	0				
65	Total hazardous waste treated or disposed	1	1	0	0	0	1	0	1	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0.6	0	0	0	0	0	0	0	1	1	1	0.8	0	0.8	0	0	0	0	0	0.8	0	1	1	0	0	0.8	0.8	1	1	1	0.8			
66	Hazardous waste treated or disposed of which recycling, incineration, landfilling, other disposal	1	0	0	0	0	1	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	0	0	0.6	0	0	0.6	0	0.8	0	0	1	0	1	0	0	0	0	0.8	0	0	0	0	0.8	0	1	1	0	0	0.8	0.8	1	1	1	0.8		
67	Stock of hazardous waste	1	0	0	0	0	1	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0.8	0	0	1	0	0	0	0.8	0.8	0	1	0	0.8	
Aggregated score		77%	37%	13%	0%	0%	91%	27%	57%	36%	76%	89%	28%	11%	59%	12%	73%	23%	66%	40%	11%	64%	21%	3%	55%	11%	2%	17%	54%	7%	4%	73%	75%	56%	30%	20%	20%	19%	63%	42%	34%	7%	20%	55%	28%	99%	66%	2%	27%	70%	54%	56%	61%	81%	25%			

1 – data set and related information fully available.

0.2, 0.4, 0.6, 0.8 – information related to the update regularity, application of standard production methodology, data interpretation and/or data source not available.