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Guidance

RIIO-2 Environmental Reporting Guidance Version 1.0

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This RIIO-2 Environmental Reporting Guidance document covers the Annual Environmental Report (AER) that is a licence obligation introduced as part of the RIIO-2 gas transmission, electricity transmission and gas distribution price control.

This document is for the gas transmission, electricity transmission and gas distribution licensees, and interested stakeholders, who want to know about the requirements for publishing the AER. The Guidance sets out a template for AER that the licensee should use as a basis for its AER. The template covers the structure and content, including the topics to be covered, and the preferred reporting methodologies that the transmission and gas distribution licensees should be working to adopt over the course of RIIO-2.

Contents

Context

Ofgem is the Office of Gas and Electricity Markets, which regulates the gas and electricity industries in Great Britain. Our principal objective is to protect the interests of existing and future gas and electricity consumers. Consumers' interests are taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply, and in the fulfilment of relevant statutory objectives when we are carrying out our functions as the gas and electricity regulator of Great Britain.

We work in in various ways to protect the interests of consumers and one way in which we do so is by regulating the network companies though price controls. We set price controls to specify the services and level of performance that the network companies must provide for users and consumers and to restrict the amount of money that the network companies can recover through network charges over the length of a price control period.

1. Introduction

Background

1.1. In December 2020 we published our RIIO-2 Final Determinations for the transmission and gas distribution price controls. These set out the key elements of the price control from 1 April 2021 to 31 March 2026. This included a licence obligation for the gas transmission, electricity transmission and gas distribution licence holders to publish an Annual Environmental Report (AER).

Annual Environmental Report Obligations

1.2. Special Condition 9.1 (SpC 9.1) of the gas transmission (GT), electricity transmission (ET) and gas distribution (GD) licences require the licence holder (licensee) to prepare and publish an AER. The licensee must prepare their AER in accordance with the Environmental Reporting Guidance (Guidance).

1.3. This document constitutes the Environmental Reporting Guidance referred to in Part B of SpC 9.1 and may be amended in accordance with the process described in SpC 9.1.11.

What is the purpose of the Guidance

1.4. This Guidance is to help the licensee comply with their licence obligation to publish an AER. We have included in chapter 3 of this Guidance a template for the structure, content and key performance indicators (KPIs) to ensure that the licensee's AER focuses on material environmental matters, is relevant, easy to understand, accurate and, where possible, is comparable across licensees.

1.5. The AER will ensure each licensee is accountable on a yearly basis for implementing their RIIO-2 Environmental Action Plan Commitments, their approach to environmental management and their environmental performance during RIIO-2.

1.6. We consider that this will enhance the reputational incentives on the licensee and provide accountability and transparency for stakeholders that the licensee is delivering against their RIIO-2 Environmental Action Plan Commitments.

1.7. Where defined words and expressions are used in this Guidance they are capitalised and have the same meaning as in the ET, GT and GD licences.

2. General instructions and requirements

Purpose of the AER

2.1. The purpose of the AER is to provide a yearly update to interested stakeholders on:

2.1.1. the licensee's progress in achieving the EAP Commitments set out in their RIIO-2 Environmental Action Plan,[1]

2.1.2. their performance in specified environment-related aspects of their price control, and

2.1.3. an annual update on the environmental impacts of the network.

Principles for reporting

2.2. The licensee should apply the following principles when collecting and reporting on environmental impacts in the AER:[2]

2.2.1. **Relevant**: Ensure the data collected and reported reflects the relevant environmental impacts of the company for the impact categories specified within this Guidance.

2.2.2. **Quantitative**: Ideally performance is measured, and compared over time and to a target to reduce a particular impact or achieve a positive outcome. In this way the effectiveness of the licensee's EAP Commitments, environmental policies and management systems can be evaluated and validated. Where appropriate, each environmental impact in chapter 3 of this Guidance proposes the measures to be used for that subject area. Quantitative information should be accompanied

[1] In the price control review for RIIO-2, we adopted a cross-sector environmental framework. As part of this, the gas transmission, electricity transmission and gas distribution companies had to include an Environmental Action Plan (EAP) as part of their Business Plan. The companies included proposals in their EAPs to improve their environmental performance or mitigate the adverse impact of network activities on the environment.

[2] Drawn from accounting principles and the internationally-recognised Greenhouse Gas Protocol Corporate Accounting and Reporting Standard from the World Resources Institute and World Business Council for Sustainable Development, known as the "GHG Protocol Corporate Standard"

by a narrative, explaining its purpose, impacts, and giving comparators where appropriate.

2.2.3. **Qualitative**: If quantitative data cannot be included for a relevant environmental impact because, for example, data is not available and/or KPI development is ongoing, the licensee should include a qualitative explanation. This should cover the materiality of the environmental impact, changes in impact compared to the previous year, and whether the licensee has plans to report quantitative data or a KPI in a future AER.

2.2.4. **Accuracy**: Seek to reduce uncertainties in reported figures where practical. Achieve sufficient accuracy to ensure confidence as to the integrity of the reported information.

2.2.5. **Completeness**: Quantify and report on all the sources of relevant environmental impact within the reporting boundary that have been defined in this Guidance. Disclose and justify any specific exclusions.

2.2.6. **Consistent**: Licensees to use common methodologies to allow for meaningful comparisons of environmental impact data over time with regards to the performance of the licensee and in comparison to other licensees. Document any changes to the data, changes in the reporting boundary, methods, or any other relevant factors.

2.2.7. **Comparable**: Report data using accepted objective KPIs across the licensees (as specified in this Guidance). If no KPI exists then the licensee should use appropriate narrative to explain their methodology for reporting. Use of accepted KPIs will help stakeholders to compare performance across licensees.

2.2.8. **Transparent**: Address relevant issues in a factual and coherent manner, keeping a record of all assumptions, calculations, and methodologies used. Report on any relevant assumptions and make appropriate references to methodologies and data sources used.

Reporting boundary

2.3. A licensee that forms part of a larger corporate group must provide a brief introduction outlining the structure of the group. The commentary must detail which companies are within the reporting boundary for the purpose of the AER.

2.4. If primary data is collected for a corporate group and then apportioned to the licensee then the licensee must explain the methodology.

Report type and availability

2.5. Ideally, the licensee's AER would be a a single document and should aim to be no longer than 50 pages in length (excluding appendices). A licensee's AER can form a part of a broader report or existing report, as long as the AER component of that report is clearly presented as the licensee's AER, and is prepared in accordance with this Guidance.

2.6. In cases where a corporate group covers multiple licensees, a single AER can be published for the group. For example, a SGN report could cover SGN Scotland and SGN Southern as the licensees in the SGN group. This Guidance specifies where information must be provided at the individual licensee level. An AER prepared for a corporate group may be longer in length than for a single licensee, but should not be as long as the total length if each licensee were to report individually.

2.7. In accordance with SpC 9.1.6, the AER must be published on each licensee's website.

Reporting date

2.8. On, or before, 1 October 2022 and yearly by each subsequent 1 October, the licensee must publish their AER for the reporting year.

Reporting year

2.9. The licensee's AER must include information and data for the preceding financial year of RIIO-2 (1 April to 31 March).

Scope of the AER

2.10. The AER should provide stakeholders with a reasonable picture of the licensee's environmental activities. This includes reporting on progress implementing EAP Commitments, and their EAP targets, where applicable. The licensee should also use the AER to demonstrate to stakeholders what steps or activities they have undertaken to manage, and if possible reduce, their environmental impact more generally.

2.11. The structure, content and KPIs described in this Guidance should be the basis for the licensee's AER. Most of the specified categories and KPIs are mandatory reporting requirements for the licensee's AER. However, there are some impact areas and KPIs that we consider it is desirable that the licensee include, but are not essential. These are stated in the chapter 3 as optional. We encourage the licensee to include these KPIs in their AER in order to provide a fuller overview on the environmental aspects and impacts of the licensee's network activities.

2.12. This Guidance sets out the broad scope of the AER. There may be instances where the licensee may make enhancements to their AER reporting where they consider that it is appropriate to do so. Over time, industry practice may evolve with regards to environmental reporting, and we expect licensees to consider these developments in their AER.

2.13. A licensee may make enhancements to their AER beyond those specified in this Guidance. Where a licensee does so for an aspect of their AER that relates solely to their activities, we expect the licensee to explain the change in reporting, figures and/or parameters used. If the development or change is applicable to other licensees, then we expect the licensees to work together at a sector level to determine the appropriate consistent reporting practice.

2.14. Below are some illustrative examples.

2.14.1. A licensee may include additional discretionary content where this is in response to their stakeholders' interests, or to address bespoke elements of their EAP commitments.

2.14.2. A licensee may also report in their AER on additional environmental impacts that are company or regionally specific to it (ie are relevant to the licensee but are not so relevant for the sector as a whole). In doing so, the

licensee should follow the principles set out in paragraph 2.2 and explain their methodology for reporting the impact.

2.14.3. If two or more licensees in a sector identify a common environmental aspect/impact they consider is a material omission from the AER, the licensees may include this in their respective AERs as long as they agree and adopt a consistent reporting methodology, .

2.14.4. Similarly, if two or more licensees consider that a KPI specified in chapter 3 of this Guidance needs further development, the licensees should work together to determine and agree the most appropriate metric. In such cases, the licensee should disclose and explain in their AER any specific exclusions, as well as their plans for reporting the KPIs in future.

2.14.5. Conversely, the licensee might be unable to include all of the KPIs that are specified in this Guidance in their AER, particularly in the early years of RIIO-2, because the underlying data is not available, or KPI development is ongoing or due to geographical differences, etc. In such cases, the licensee should disclose and explain any specific exclusions, and their plans for reporting the KPIs in future if they are material to the licensee's network.

2.15. The licensee may also include in their AER links to other publicly available documents and include summaries of key information.

3. Annual Environmmental Report template

Section summary

This section sets out a template for the structure, the environmental impact areas and KPIs that should form the basis of the licensee's AER.

Introduction

Who we are

3.1. In this section the licensee should give an overview of the company and the environmental context it operates. Aim for a maximum of two pages.

Managing Director/Chief Executive message

3.2. This section should set out a statement or commentary by a senior leader in the company on the key achievements of preceding regulatory year, and areas for improvement. Aim for one page.

Our environmental responsibilities

3.3. This section should summarise the licensee's role in looking after the environment, including external and internal drivers, its strategy for delivering an environmentally sustainable network and alignment with relevant environmental goals. Aim for a maximum of four pages.

Dashboard indicators

3.4. Each licensee must include a section covering key environmental performance indicators. It is desirable, but not essential, that the licensee include all the indicators listed below where these are relevant for their sector. We indicate where it is optional for the licensee to report on an indicator. Aim for a maximum of four pages.

No.	Impact and KPI	Unit
I.1	***Contribution to energy system decarbonisation***	
I.1.1	Annual addition of low carbon and rewewable energy capacity connected to the network – OPTIONAL for GT & ET	Standard cubic metres per hour (SCMH)- gas MW - elec
I.1.2	Annual investment in ongoing innovation activities that are primarily supporting decarbonisation and/or protecting the environment - OPTIONAL for all	£m
I.2	***Climate change impacts***	
I.2.1	Licensee's long-term greenhouse gas reduction target, aligned with a science based methodology, and where possible validated externally such as with the SBTi or equivalent	% reduction against baseline
I.2.2	Annual change in licensee's business carbon footprint excluding losses/shrinkage in comparison to its end of RIIO-2 target	%
I.2.3	Annual change in Insulation and Interruption Gas emissions (ET only)	%
I.2.4	Annual change in compressor emissions (GT only)	%
I.2.5	Annual change in total shrinkage (GD only)	%
I.3	***Resource use and waste***	
I.3.1	Annual total waste (office, network depots, construction)	tonnes
I.3.2	Fate of waste: reduced, prepared for re-use, recycled, other recovery, to landfill	% of total waste
I.4	***Sustainable procurement***	
I.4.1	Proportion of suppliers meeting the licensee's environmental supplier code or equivalent	% of
I.5	***Local environment***	
I.5.1	Annual investment in schemes to enhance/restore local environmental quality	£m
I.5.2	Land area being treated in schemes to enhance/restore local environmental quality	hectares
I.5.3	Net change in biodiversity units from network development projects granted planning consent in the year that impact the local environment	% change
I.5.4	Number of reportable environmental incidents – OPTIONAL for all	Number

EAP Commitments and environmental impacts

EAP Commitments

3.5. The licensee must include a table listing all their RIIO-2 EAP Commitments. The table should set out for each EAP Commitment:

3.5.1. one sentence description

3.5.2. one sentence summary of the expected benefit or outcome

3.5.3. key milestones for implementing the EAP Commitment over the course of RIIO-2

3.5.4. a red/amber/green status indicator on progress against the implementation milestones in RIIO-2, where:

- red indicates progress against milestones is at significant risk and highly likely to be missed;
- amber indicates progress is delayed but likely to be achievable before the end of the price control period; and
- green indicates progress against the implementation milestones is on track.

3.5.5. a brief explanation (one to two sentences) for any amber or red indicator

3.6. Ideally, the recommended length of this section is no longer than five pages.

Table 1 – Status update on EAP commitments

EAP commitment	Description and expected benefit	Target year	Implementation milestones	RAG indicator	Status update

Environmental impacts

3.7. The licensee must include each of the environmental impacts specified in this remainder of this chapter in its AER, unless otherwised specified. **Where applicable, each environmental topic should include the following**:

3.7.1. A short introduction, that provides some context of the materiality of the environmental area.

3.7.2. A status update on the implementation of any RIIO-2 EAP Commitments and targets, Price Control Deliverables, Output Delivery Incentives and Uncertainty Mechanisms that are relevant to the topic area.

3.7.3. Measures of impact or activity as specified, including annual time series data where this is available.

3.7.4. Measures of performance trends such as intensity ratios or normalised data as specified in the following sections.

3.7.5. Additional KPIs or qualitative narrative where this is in response to the licensee's stakeholders' interests or to address bespoke elements of the licensee's EAP Commitments.

3.7.6. Tables as specified below, and we also encourage the licensee to also use visuals such as charts to show actual performance relative to the target performance level for the end of RIIO-2.

3.7.7. A short narrative on performance in reporting year that explains any changes in level and trends.

3.7.8. One or two relevant case studies.

Decarbonisation

Biomethane and other low carbon gas connections (GD only)

3.8. The gas distribution licensees must report on the following:

3.8.1. Connections data for the reporting year, including a breakdown of the different gases that are included in 'Other green gas' as per Table 2.

3.8.2. A summary of licensees' green gas connections processes and awareness of ongoing issues, as well as the overarching strategy to address these.

3.8.3. Relevant internal KPIs in relation to green gas connections.

3.8.4. An update on ongoing work to improve and standardise low carbon gas connections methodologies including collaborative efforts across networks.

3.8.5. Engagement events with relevant stakeholders in the reporting year and any learnings of best practice. Licensees should also outline any upcoming stakeholder events in the forthcoming year and the objectives of these.

Table 2 –Connections activity for low carbon sources of gas

	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Biomethane connections						
Enquiries	Number					
Connection studies	Number					
Capacity of connection studies	SCMH					
Connections	Number					
Capacity connected	SCMH					
Volume (energy value) of biomethane injected	GWh					
Average monthly flow rate (all connections)[3]	SCMH					
Other green gas						

[3] Irrespective of connection date.

Enquiries	Number					
Connection studies	Number					
Capacity of connection studies	SCMH					
Connections	Number					
Capacity connected	SCMH					
Volume (energy value) of other green gas injected	GWh					
Average monthly flow rate (all connections)[4]	SCMH					

Biomethane and other low carbon gas connections (GT only)

3.9. The gas transmission licensee must report on connections in the reporting year, including a breakdown of the different gases that are included in 'Other green gas' as per Table 3.

Table 3 –Connections activity for low carbon sources of gas

	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Biomethane connections						
Enquiries	Number					
Connections	Number					
Capacity connected	SCMH					
Average monthly flow rate	SCMH					
Volume of biomethane injected	GWh					

[4] Irrespective of connection date.

Other green gas						
Enquiries	Number					
Connections	Number					
Capacity connected	SCMH					

Connecting low carbon generation (ET only) - optional

3.10. The electricity transmission licensees may report on the following:

3.10.1. New connections of renewable and low carbon generation to the licensee's network in the reporting year.

3.10.2. Low carbon generation as a percentage of total generation connected to the licensee's transmisson network.

3.10.3. The number of connection offers accepted.

3.10.4. The average time the licensee took to develop and issue a generation connection offer for customers.

3.10.5. The licensee's score from the Quality of Connections ODI survey.

Table 4 – Low carbon generation connections activity

	Unit	**2021/22**	2022/23	2023/24	2024/25	2025/26
New low carbon generation connections	MW					
Low carbon share of generation	%					
Average time to issue connection offer	Days					
Connection offers accepted	Number					

Quality of Connections ODI score	Score (1-10)					
Quality of Connections ODI Target						

Innovating for decarbonisation and to protect the environment – optional

3.11. It is desirable, but not essential, for the licensee to report on up to three ongoing innovation projects or activities that are contributing positively to the low carbon transition, and/or to protecting the environment. This should summarise:

3.11.1. the issue or barrier that the innovation aims to address.

3.11.2. what has been achieved in the year.

3.11.3. the expected benefits of the innovation.

3.11.4. the timescales and next steps.

Table 5 – Innovating to support the low carbon transition and to protect the environment

Innovation	Issue or barrier	Annual achievements	Expected benefits	Timescales

3.12. The interpretation of innovation activities in this question can be taken broadly. For example, this could range from the first of a kind trial, through to the roll out of an innovation.

Climate change impact

Business carbon footprint - scope 1 and scope 2

3.13. The licensee must clearly state their long-term Science-Based Target, or equivalent target, for greenhouse gas reduction.[5] In addition, the licensee must state the reduction target for their scope 1 and 2 business carbon footprint (BCF) excluding losses/shrinkage at the end of RIIO-2 (which may be interpolated from their SBT or equivalent long-term target).

3.14. The licensee must report on all Scope 1 and Scope 2 emissions on an "operational control" basis, ie report all emissions from operations on which the licensee has authority to introduce and implement its operating policy.

3.15. Reporting should be in total tCO2e in the following areas:

3.15.1. Building energy use

3.15.2. Operational transport

3.15.3. Fugitive emissions

3.15.4. Fuel combustion

3.16. ET licensees must report on transmission losses[6] and GD licensees must report on shrinkage.

3.17. All the relevant BCF scope 1 and 2 emissions at licensee level must be reported in the AER using the relevant data from the regulatory reporting pack.[7]

[5] An equivalent target to a SBT is a greenhouse gas reduction target that is aligned with the climate change science goal of limiting global warming to well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit warming to 1.5 degrees.
[6] Some licensees may have included this as scope 3 emissions and are welcome to report this in their scope 3 section instead.
[7] The regulatory instructions and guidance (RIGs) for RIIO-2 have not yet been published. The current RIGs for GD can be found here: https://www.ofgem.gov.uk/publications-and-updates/direction-make-modifications-regulatory-instructions-and-guidance-rigs-riio-gd1-version-70 and for ET here:

Table 6 - Scope 1 and 2 emissions

Emissions in tCO2e	Specific area	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26
Buildng energy use	Building - electricity						
	Building – other fuels						
	Substation electricity						
Operational transport	Road						
	Sea						
	Air						
Fugitive emissions	IIGs						
Fuel combustion	Diesel						
	Gas						
Electricity losses/Gas shrinkage							
Total excluding losses/shrinkage							
Total including shrinkage/losses							

3.18. The licensee should also include the following charts:

3.18.1. A stacked column chart to showing the composition of total scope 1 and 2 emissions excluding losses/shrinkage over time. This chart should include the licensee's BCF target for the end of RIIO-2.

https://www.ofgem.gov.uk/publications-and-updates/direction-modify-regulatory-instructions-and-guidance-rigs-riio-et1-version-72 and for GT here: https://www.ofgem.gov.uk/publications-and-updates/direction-modify-regulatory-instructions-and-guidance-rigs-riio-gt1-version-72

3.18.2. A column chart showing the evolution over time of the CO2e intensity of an operational mile travelled expressed in kgCO2/mile.[8]

Shrinkage (GT only)

3.19. The gas transmission licensee must report on:

3.19.1. Compressor fuel usage: the energy used to run compressors to manage pressures within the gas transmission system. This can either be gas or electricity, depending on the power source for the specific compressor.

3.19.2. Calorific value shrinkage: This is caused where multiple sources of gas with different calorific values are transported and delivered through different offtakes. When the energy is billed, the calorific value of all the gas is capped at a set quantity above the lowest calorific value, hence there will be some energy that has been delivered but not billed.

3.19.3. Unaccounted for gas: This is the remaining quantity of gas which is unallocated after taking into account all measured inputs and outputs from the system.[9]

3.19.4. Natural Gas Vented from all Compressors: Natural Gas Vented should be calculated in accordance with the Greenhouse Gas Emissions Calculation Methodology.[10]

3.20. The gas transmission licensee must also report on the projects undertaken by the licensee to investigate the accuracy of measurements at NTS entry and exit points, and any activity related to investigation and analysis of data to identify causes of gas that is unaccounted for as above.

[8] Helicopter miles where relevant should be reported separately.
[9] The amount of gas (GWh) that remains unaccounted for after the Entry Close-out Date following the assessment of NTS Shrinkage performed in accordance with the Uniform Network Code[9] which is the legal and contractual framework to supply and transport gas
[10] The gas transmission licensee is required according to License condition 5.6 part E to maintain a GHG emission calculation methodology approved by the authority.

Table 7: Breakdown of GT Shrinkage (GT)

	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Compressor fuel usage	GWh					
Calorific value shrinkage	GWh					
Unaccounted for gas	GWh					
Natural Gas vented from all compressors	Tonnes					

Shrinkage (GD only)

3.21. The gas distribution licensees must report on:

3.21.1. Annual levels of gas leakage from the distribution system, reflecting the volume of methane lost into the atmosphere from fugitive emissions and venting. These should reported as set out in Tables 8 and 9, including:

3.21.1.1. The volumes of gas lost from each source of leakage, expressed in GWh;

3.21.1.2. The leakage component of the overall shrinkage ODI-R target; and

3.21.1.3. The tCO2e volumes for the above values, using the conversion factor included with the table to reflect the GWP of unburned gas.[11]

3.21.2. Annual volumes for the other sources of shrinkage (own use gas and theft), and associated tCO2e volumes for these (using the given conversion factor for burned gas), as set out in Tables 10 and 11.

[11] This conversion factor is based on the GWP factor for methane that is currently available on the BEIS website. We expect this figure to be amended during the price control period. If this occurs, we will consult on how this will affect the reported emissions.

3.21.3. Any activities undertaken during the year (other than theft investigations) that are expected to materially affect shrinkage volumes, but which are not reflected in the calculations of the Shrinkage & Leakage Model.[12]

Table 8: Leakage volumes

GWh	2021/22	2022/23	2023/24	2024/25	2025/26
Low Pressure Mains					
Medium Pressure Mains					
Services					
AGIs					
Interference					
Total					
Target Total					

Table 9: Leakage emissions

Conversion factor: 1,226.42 tCO_2e/GWh[13]

tCO_2e	2021/22	2022/23	2023/24	2024/25	2025/26
Total					
Target Total					

Table 10: Other shrinkage volumes

GWh	2021/22	2022/23	2023/24	2024/25	2025/26
Own Use					
Theft					
Total					

[12] A definition for The Shrinkage and Leakage Model is contained in the gas distribution Licence. We consider changes of 1 GWh or more to be material, though licensees should also use their own judgement in determining this, and should explain their thinking.

[13] The following assumptions are used to determine the quoted conversion factor:

CV MJ/m3 natural gas:	39.6
% of CH4 in natural gas:	82.97%
Density of CH4 in kg/m3:	0.656
Global Warming Potential of CH4 in tCO2e:	25
Proportion of CO2 in natural gas:	2.4%
Density of CO2 kg/m3:	1.98

Table 11: Other shrinkage emissions

Conversion factor: 183.85 tCO_2e/GWh[14]

GWh	2021/22	2022/23	2023/24	2024/25	2025/26
Own Use					
Theft					
Total					

Electricity transmission losses

3.22. The electricity transmission licensees must report on:

3.22.1. Annual transmission losses[15] from the licensee's transmission network in TWh, as a percentage of total electricity transmitted, and in tonnes of CO2e.

3.22.2. A short narrative on the actions or interventions in the reporting year that the licensee completed from its Losses Strategy[16] and the expected benefit of those.

3.22.3. Any changes or revisions the licensee has made to its RIIO-2 Transmission Losses Strategy.

Table 10 – Electricity transmission losses

	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Annual losses	TWh					
Share of total electricity	%					
CO2 emissions	TCO2e					

[14] Source: BEIS Greenhouse Gas Reporting Conversion Factors 2020.
[15] Measured as the difference between the units of electricity metered on entry to the licensee's transmission system and the units of electricity metered on leaving that system;
[16] All ET licensees submitted a Transmission Losses Strategy as part of their RIIO-2 Business Plans.

Insulation and Interruption Gas (IIG) emissions – ET only

3.23. The electricity transmission licensees must report on:

3.23.1. Annual IIG leakage from the licensee's transmission network in tonnes of CO2e and as a percentage of total inventory.[17]

3.23.2. Interventions in the year that the licensee has completed from its Insulation and Interruption Gas Reduction Strategy[18], submitted as part of its EAP commitments, including an estimate of the impact of those activities on CO2e emissions.

Table 11 – IIG emissions

IIG type		2021/22	2022/23	2023/24	2024/25	2025/26
Total IIG emissions	TCO2e					
Licensee to specify IIG emissions	TCO2e					
Licensee to specify IIG emissions	TCO2e					
Leakage rate	%					
Interventions per annum	Number					
Estimated impact of interventions	TCO2e avoided or abated					

[17] IIG emissions data in the AER are to be reported on the same basis as the licensee's IIG methodology submitted to Ofgem under Part B of Special Condition 4.3 (Insulation and Interruption Gas emissions output delivery incentive) of the Transmission Licence.
[18] Some insulation and interruption gases (IIG) used in electricity switchgear can have a potent greenhouse gas warming potential. All ET licensees submitted a IIG Strategy to reduce emissions through asset management practices and procurement of alternatives when commercially available.

Business carbon footprint - Scope 3 emissions[19]

3.24. At the start of RIIO-2, the level and quality of reporting on scope 3 emissions will likely vary between sectors as well as between companies in the same sector. This is because of differences in coverage, ie the categories[20] that the licensees currently report on, the methodologies used to calculate scope 3 emissions, as well as the availability and quality of data. As a result, there is likely to some variation across the licensees' scope 3 emissions reporting in the first few years of RIIO-2.

3.25. Nonetheless, we expect all licensees' scope 3 emissions reporting to evolve and to improve over RIIO-2. Over the course of RIIO-2 we expect each licensee to:

3.25.1. complete a screening exercise to identify the most relevant scope 3 emissions for their network

3.25.2. develop a programme, based on its screening results, to improve the calculation of their scope 3 emissions, in terms of completeness, accuracy and quality, and

3.25.3. to increase the coverage and quality of their annual on scope 3 emissions reporting.

Screening scope 3 emissions

3.26. Ahead of the first AER, companies should complete a screening of their scope 3 emissions preferably in line with the GHG Protocol: Technical Guidance for Calculating Scope 3 Emissions (V1).[21] We expect the screening to cover all upstream and downstream categories defined in the Protocol.

[19] The GHG Protocol (see below) defines scope 3 emissions as all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions (p. 28) . For network companies this includes for example contractors/ suppliers' transportation.
[20]The Greenhouse Gas Protocol Technical Guidance for Calculating Scope 3 Emissions (v1) identifies 15 reporting categories for scope 3 emissions.
[21] Page 11 in the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (v1)

3.27. Based on its scope 3 emissions screening results, the licensee must identify the upstream and downstream categories which are relevant to the company. The licensee should identify data issues (both in terms of gaps in coverage as well as quality) as well as material emissions (relative to overall scope 3 emissions).

Improvement programme

3.28. It is desirable that the licensee should also outline in the AER its programme and milestones to improve its scope 3 emissons data quality over time. Improvement should focus on scope (for example coverage - % of contractors reporting) and/or quality (for example – moving from financial spend based data to the collation of emissions data for products and services provided by suppliers and contractors).

3.29. We expect that by the second half of RIIO-2, the licensee's calculation of all material scope 3 emissions will have improved significantly such that there is better consistency in the reporting methodologies used by the licensees across networks and sectors. The licensee should include progress updates on its reporting improvements in the AER, including updates on initiatives, change in policies, changes to approach to contractors etc.

3.30. Where relevant and applicable, some licensee's may also set, and report on, science based targets for scope three emissions during RIIO-2.[22]

Reporting requirements in AER

3.31. In the first AER, the licensee must include the results of the screening exercise. The licensee must present the results in appropriate data tables and in charts.

3.32. The licensee also should include narrative on the material categories relevant to its network as well as a summary of the most significant issues it faces in calculating its scope three emissions. Supplementary information on the screening methodology, data used (financial spend vs emissions data), and any estimatations or assumptions should be included in the AER as specified in the additional requirements below.

[22] Companies that have a SBT for scope 1 and 2 emissions are required to set a SBT for their scope 3 emissions if the latter is 40% or more of their overall GHG emissions. Some licensee's also have committed to set a SBT for their scope 3 emissions as part of their EAP.

3.33. In addition, the licensee must outline its planned programme to improve its scope 3 emissions reporting.

3.34. From the second AER onwards, licensees should report on their annual scope 3 emissions in the material categories that are most relevant to their network. We expect that scope 3 emission covering at least the first seven of the upstream categories will be included in the AER of all licensees.[23] Deviation from these categories should be explained.

3.35. The licensee must present scope 3 emissions in appropriate data tables, with supporting visuals such as charts. For example, a stacked column chart to present the composition of total scope 3 emissons over time.

3.36. Any significant changes in emissions between reporting years should be explained. If the reason is external to actual emissions such as changes to data source or coverage this should be clearly flagged.

3.37. Changes to methodologies may also cause year on year changes, however we don't expect such changes to be made unless necesary. For transparency, and if possible, the licensee may re-state its scope 3 emissions based on updated methodology.

Excluded areas

3.38. End user emissions are not required to be reported as part of this section; however licensees may chose to report on this.

3.39. Emissions offsetting also is not required to be reported in this section. Licensees that wish to report in this area should do so in line with the GHG protocol for project accounting.

Reporting requirement: additional information

3.40. Assumptions, methodologies and data sources used in the calculation of scope 3 emissions must be summarised in an appendix to the AER (see table directly below). Any changes to the methodology or data source should also be flagged clearly, for example as a

[23] We expect licensees to report on seven of the eight "upstream" categories in line with the GHG Protocol but recognise that the last scope 3 category includes "upstream leased assets" which may not be relevant to all licensees.

result of improvement of database from one year to another, or change from assumptions base to real data base as a result of improvements to the data collection process.

3.41. If the data collected is not complete (for example, if information is extracted from a portion of the activity - % of contractors or % of projects), this should be flagged as part of the methodology. The approach should be clearly explained and justified.

Appendix 1: Scope 3 categories: methodology, assumption and data source[24]

Category	Methodology and assumptions	Data source	Confidence in data (completeness and accuracy): RAG rating
Purchased goods and services			
Capital goods			
Fuel and energy related activity[25]			
Upstream transportation and distribution			
Waste generated in operations			
Business travel			
Employee commuting			

3.42. Using Red Amber Green (RAG) rating to describe confidence in data: this is a qualitative measure and will be based on the licensee's own confidence in the data it collates and reports. This can depend on coverage (eg. what % of contractors contribute to the data),

[24] This table only covers seven of the categories in the GHG protocol (scope 3 emissions). The licensee should add/amend as necessary to reflect its own relevant areas in line with guidance above.
[25] Not included in scope 1 or scope 2

the source (is it based on financial data which may be more indicative, or is the data provided by contractor), as well as maturity of the collation of data (are processes clear/new processes). We expect some changes over time as processes, coverage and/or accuracy in some areas will improve over time.

Embodied carbon[26]

3.43. Embodied carbon (EC) is defined in the UK Green Building Council as *"The total greenhouse gas (GHG) emissions (often simplified to 'carbon') generated to produce a built asset. This includes emissions caused by extraction, manufacture/processing, transportation and assembly of every product and element in an asset"*. [27]

3.44. Where applicable, the licensee must report in the AER on EC of new construction projects that have been completed in the reporting year.[28] Licensees within each sector should collaborate to ensure consistency in reporting methodology and reported units within the gas and electricity transmission sectors, and also within the gas distribution networks. We also expect some cross-sector consistency to develop throughout RIIO-2.

3.45. The licensee must report on their EC using bar charts. Charts should at least include annual EC. Reporting could also be against individual projects.

3.46. Methodology and assumptions and data sources (see below) should clearly be set out in an annex.

3.47. We recognise developing methodologies alongside other licensees, as well as developing appropriate database and/or training staff and/or contractors may take time, and thus we do not expect full data in the first and second years of the price control period, but we expect more information to be available as we progress through the price control period. Licensees should set out their plans and their progress in this area.

[26] We recognise that there may be overlap between elements of scope 3 emissions and embodied carbon (for example, transportation of materials by contractors) and thus these are reported separately and are not required to be "added up")
[27] Embodied carbon:developing a client brief: https://www.ukgbc.org/wp-content/uploads/2017/09/UK-GBC-EC-Developing-Client-Brief.pdf
[28] Projects where building started during the RIIO-2 price control period.

3.48. We recognise that licensees may chose to report only on new projects that reach a certain threshold (for example based on £m spend). This should be clearly flagged.

Embodied carbon: reporting on the "final design" versus "as built"

3.49. There are two ways to estimate EC of a project: one is based on its "final design", and the other is based on the way it was eventually constructed ("as built"). These estimations may differ as the "final design" of a project will not necessary match the final project "as built". A project can often diverge from "final design" as a result of changes made to adjust and optimise construction work.

3.50. The EC information of an "as built" project can sometimes be less reliable or complete because contractors and suppliers working on the project may not be in a position to report EC accurately. On the other hand, if suppliers are able to report this data, it could be more accurate as it is based on actual data rather than assumptions made at the design stage (for example, the amount of concrete actually used on a site could differ from that included in the final design).

3.51. Where applicable, the licensees must report on the EC of a project based on "as built". We also encourage licensees where possible to also report on estimated EC based on "final design" if this information is available. Commentary explaining the main drivers for difference between the two figures is welcome. If a licensee has a target for EC in new projects, it should clarify whether the target is for the "final design", "as built" or both.

3.52. Given the time lag between design and project completion, which can span over several years, both assessments of EC should be reported alongside each other when the project is completed in a reporting year.

3.53. We recognise that some of the final designs have been completed during RIIO-1 while staff were not yet trained to collate relevant information, and thus acknowledge that this information may not be readily available.

3.54. We note that some of the information will not be readily available to accurately assess EC, particularly for "as built" stage. Where this is the case, the licensee should seek information from suppliers, or if not available, from carbon databases such (ICE, DEFRA, etc.). Any assumptions should be clearly flagged in the report

3.55. Some types of construction works such as street works may not include a detailed design stage and so the reporting of EC will only cover the "as built" measure.

3.56. The licensee must set out clearly its plan and milestones to improve data collection from its supply chain, including any changes to policy and or procurement strategy, and report on its progress against this plan.

Methodology and reporting units

3.57. To ensure consistency in reporting and use of terminology, methodologies and reporting for EC should be in alignment with Publicly Available Specification (PAS) 2080 where this is possible.[29]

3.58. The licensee should use tCO2e/£m as the default embodied carbon reporting unit. When reporting on cables, overhead lines (OHL) and pipes[30] tCO2e/km should be used. Additional reporting metrics can be considered. For example, tCO2e/kV for substations may be used by ET and GT licensees. Linear assets may form part of a larger project which includes other asset types and therefore the whole project would use the "tCO2e/£m" metric for consistency. However, the linear assets for this project should also be reported in a sub-table with the proposed "tCO2e/km" metric.

3.59. When reporting on progress against targets and/or reporting on initiatives to reduce or avoid embodied carbon, licensees should explain what actions have been taken – for example changes to design, material selection and/or optioneering.

Sustainable procurement, resource use and waste

Supply chain

3.60. Sustainable procurement is a new area of reporting for RIIO-2. We recognise that this may result in new information gathering systems needing to be established or futher developed within the RIIO-2 period, prior to full reporting in this area.

[29] *"PAS 2080:2016 Carbon management in infrastructure"* is a carbon management framework available for purchase online here: https://shop.bsigroup.com/ProductDetail?pid=000000000030323493 .
[30] GT and GD licensees only.

3.61. We think it is a challenge to establish common reporting metrics for supply chains that will vary by, for example, the products and services procured by each licensee. As a result, the comparability of reporting on supply chain procurement may be limited in the first few years of reporting.

3.62. Nonetheless, this section should provide guidance where procurement contracts are to be renewed to further consider sustainability in company procurement processes, with a view to improve reporting in this area over RIIO-2. The metrics outlined below represent common areas of reporting on which the licensee will ideally provide information where this data is available to them, and focus on improving efforts to its capture data.

3.63. For supply chain, the licensee should report on progress made in integrating environmental sustainability in their procurement practices where data is available, including[31]:

3.63.1. A description of the overarching strategy to address environmental sustainability in procurement and actions in the previous reporting year to embed this into practices, such as developments to the licensee's supplier code[32] (or equivalent), KPIs, or pre-qualification questionnaires (PQQ) in tender processes. This could also include collaborative work among network companies or following ISO guidelines.[33]

3.63.2. The percentage of suppliers (by value) meeting the licensee's environmental supplier code.

3.63.3. The percentage of suppliers (by value) that have their own sustainability metrics or KPIs.

3.63.4. Relevant internal KPIs in relation to sustainability in the supply chain.

[31] ISO 20400 provides guidance to companies regarding integrating sustainability into procurement processes. ISO 14040 provides guidance to companies undertaking lice cycle assessments.
[32] Supplier codes of conduct ensure company suppliers have responsible and sustainable production processes.
[33] For example, ISO 14000 provides guidelines regarding environmental management systems, eco labelling, environmental auditing, performance evaluation and environmental aspects in product standards and life cycle assessments.

3.63.5. Relevant events with in the previous reporting year and any learnings of best practice, including engagement with stakeholders or case study outcomes. We think this is an area that will evolve over time and it may be useful for companies to provide further analysis on their supply chain and the goods and services procured from suppliers where data is available. [34] We welcome companies to include further information in their supply chain reporting that could include, for example, the key areas of expenditure (by value) in the previous reporting year and commentary on any known environmental impacts of or efforts to reduce this where this is possible.

Table 12 – Sustainable procurement performance indicators

Supply chain	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Percentage of suppliers (by value) meeting licensee's supplier code	%					
Percentage of suppliers (by value) that have their own sustainability metrics or KPIs.	%					

Efficient resource use and waste

3.64. There are strong and clear links between measures taken to improve resource efficiency and those to minimise waste. [35] We recognise for some licensees, this will be a new area of reporting that will evolve over time. We have therefore not mandated the methodology in which the licensee provides information, but expect that licensees are transparent on how they have collected data where this is available.

[34] Example guidance of a process that can be used to determine the environmental impacts of the supply chain can be found here.
[35] WRAP and Zero Waste Scotland provide guidance to businesses in the UK with regard to looking at and improving resource efficiency.

3.65. The licensee must report in their AER:

3.65.1. Actions it has taken to improve resource efficiency[36], waste prevention and the diversion of waste from landfill.

3.65.2. The key materials (maximum of 10) by value and/or mass[37] consumed directly by the company and where relevant, the supply chain. Licencees should comment on the environmental impact of materials where possible. [38]

3.65.3. The total metric tonnes of waste produced directly by the company within the reporting year. Companies may provide a breakdown of how they segregate the waste streams that contribute to this total where useful. [39]

3.65.4. The final destination of total waste reported, as allocated by the licensee in the reporting year – e.g. % reduced, % prepared for re-use, % recycled, % other recovery, % to landfill by weight, volume, or best available data. [40]

3.66. We would like to see further development in this areas as reporting matures and encourage licensees to include their own metrics relevant to their organisations and reporting systems where this could be of interest to stakeholders.

3.67. Where the licensee reports on categories within resource use and waste, they should present information in the formats that are most appropriate for them, such as data tables, visuals and charts. Licensees may also use a normalisation reporting unit for these figures where appropriate such as t/£m.

Table 13 – Total waste

	2021/22	2022/23	2023/24	2024/25	2025/26
Total metric tonnes of waste					

[36] Defined as company use of materials.
[37] kg, litres or m³
[38] For example, whether materials are raw, renewable, recyclable, reuseable or repairable.
[39] For example, metal, wood, organics, dry mixed recyclables , hazardous, and/or general.
[40] Information on applying the Waste Hierarchy can be found here.

produced directly by the company					

Local environment

Climate change resilience – optional

3.68. Based on feedback we have received from wider stakeholders about their interest in this topic, it would be desirable, but not essential, for the licensee to also report on its climate change resilience and adaptation activities. Where relevant, this could include reporting on:

3.68.1. Physical asset protection interventions (the licensee to define physical protection categories relevant to their network in Table 14).

3.68.2. A high level summary of research, monitoring and ongoing analysis undertaken by the licensee on the climate change risks across its network.

Table 14 – Climate change adaptation activities

Activities	2021/22	2022/23	2023/24	2024/25	2025/26
Licensee to define					
Licensee to define					

3.69. Climate change resilience projects can be long term. Therefore, the licensee may decide to only periodically report as and when is new information is available.

Enhancing the local environment

3.70. The licensee must report on the following:

3.70.1. Schemes the licensee has initiated to enhance or restore environmental quality and/or biodiversity on network sites within the reporting year. This could include land remediation schemes.

3.70.2. Schemes to enhance the environment in the local community (ie sites that are not owned by the licensee or its corporate group) that the licensee has initiated or contributed to within the reporting year.

Table 15 – Schemes to enhance or restore local environmental value

Scheme name	Location	Description	Environmental benefit	Timescales

3.71. We would like to see all licensees move towards adopting a formal natural capital valuation (NCV) tool over the course of RIIO-2 to provide better information about the provision of ecosystem services from long-term land assets they hold. However, we note that NCV is an evolving methodology, and is also resource intensive to implement. Therefore, we consider it would not be proportionate to require every licensee to report a NCV of its land holdings in the AER. [41]

3.72. Only licensees that have an EAP commitment, an Output Delivery Incentive or a Consumer Value Proposition included in their RIIO-2 price control, that is directly linked to a measure of NCV, will be required to report on this measure. In such cases, we expect the licensee to include summary information on a portfolio basis for:

3.72.1. The type and condition of natural assets.

3.72.2. The type and quantity of ecosystem services – provisioning, regulating and cultural ecosystem services.

3.72.3. A valuation of the annual flow of ecosystem services.

3.72.4. A statement on any services excluded from the valuation because, for example, there isn't an existing valuation methodology.

[41] There is a big range in the size of land holdings held by the different licensees.

3.72.5. A valuation of the natural capital assets.

3.73. We note that some licensees have EAP commitments to work towards adopting a natural capital asset valuation tool over the course of RIIO-2 to incorporate this information in business planning process. [42] We have set out some principles for the development of ecosystem and natural capital asset reporting in Appendix 1 to help guide convergence in the approaches taken by the licensees. We also encourage the licensees to provide updates on their progress developing and implementing these tools as part of their AER.

Biodiversity

3.74. The licensee must report on the impact on biodiversity from network development projects that affect the local environment where, in the reporting year, the final design of a project receives external approval from a relevant planning authority.

3.75. For applicable projects meeting the requirements of the preceding paragraph, the licensee must report on:

3.75.1. The initial baseline assessment of biodiversity units.

3.75.2. The post intervention assessment of biodiversity units.

3.75.3. The total net percentage change in biodiversity.

Table 16 – Impact on biodiversity

Project description	Baseline units	Post intervention units	Total net unit change	Percentage net change

[42] We note that the BSI is developing a British Standard on natural capital accounting (BS 8632).

3.76. It would be desirable, but not essential, for the licensee to also report on projects that affect the local environment that are not subject to external consents but instead proceed from within the licensee's internal governance process for capital project delivery.

3.77. Biodiversity units should be calculated using the latest DEFRA Biodiversity Metric for projects in England. [43] Adaptations to the DEFRA Biodiversity Metric may be necessary to ensure it is suitable for projects in Scotland and Wales. In such cases, the licensee should explain any modifications and provide links to further detail on these.

3.78. We consider that it would be best practice for the licensee to also disclose the de-minimus area limits it considers are not appropriate for monitoring and reporting on in its AER.

Visual amenity schemes in designated areas (ET only)

3.79. The electricity transmission licensees must report annually on the following:

Table 17 – Visual amenity schemes in designated areas

	Unit	2021/22	2022/23	2023/24	2024/25	2025/26
Removal of overhead lines	km					
Non-technical mitigation projects started in year	number					
Non-technical mitigation project	£m					

[43] A new version of the DEFRA Biodiversity Metric (3.0) is expected to be released in the spring and is likely to remain a stable version for at least 3 years.

Oil top ups from fluid-filled cables and transformers (ET only)

3.80. It desirable, but not essential, that the electricity transmission licensees report on oil top ups of:

3.80.1. Fluid filled cables, and

3.80.2. Transformers.

Table 18 – Oil top ups

	2021/22	2022/23	2023/24	2024/25	2025/26
Oil in service (litres)					
Cable oil top up (litres)					
Transformer oil top ups (litres)					

Environmental incidents - optional

3.81. It is desirable but not essential that the licensee report on:

3.81.1. the number and type of environmental incidents which it has reported to the relevant environmental regulatory authority (eg Environmental Agency, Scottish Environmental Protection Agency) in the year.

3.81.2. the action taken by environmental regulators across the following categories:

3.81.2.1. Warning Letters;

3.81.2.2. Formal undertakings, Enforcement notices, monetary penalties; and

3.81.2.3. Prosecution.

Table 19 – Reportable Environmental incidents

		2021/22	2022/23	2023/24	2024/25	2025/26
Licensee to define incident type	Number					
Licensee to define incident type	Number					
Licensee to define action (if needed)	Number					

Statement on scope and quality of data

3.82. In this section, the licensee must include some narrative about the scope and quality of the data and information included in its AER.

Scope

3.83. The licensee must advise on the completeness of the specified information in the AER, where this has not already been done so in the other sections of the AER. If there are any data gaps for any of the specified environmental topics within the licensee's reporting boundary, it should explain the reasons for the omission.

Quality

3.84. The licensee must outline the data assurance process it has undertaken on the specified data and information published in the AER. The licensee should also highlight whether or not the AER or some of the information reported in the AER has received an independent external assurance review. Although not essential, we would encourage the

licensee to do so, and to include the associated external review statement as an appendix to the AER.

3.85. The licensee should also highlight if it has made any changes to the collection, estimation and reporting of performance data contained in the AER, where this has not already been done so in the other sections of the AER.

Appendix 1

Principles for the development of natural capital reporting N

1.1. Include land assets that the company has management control over. May also include impact on assets beyond those in direct control, where practical.

1.2. Adopt a geographic and habitat-based approach.

1.3. Identify indicators of habitat based on suitability for describing natural capital and measuring change. Select datasets that most closely depict the preferred indicators.

1.4. Evaluate both extent and quality of physical natural asset to derive a natural capital asset register.

1.5. Align ecosystem service categories on the Common International Classification of Ecosystem Services (CICES) (consistent with the approach taken by the Office of National Statistics).

1.6. Identify the relative significance of the ecosystem services derived from land assets.

1.7. Adopt an integrated (or hybrid) assessment of the benefits from all service categories ie both quantitative and qualitative.

1.8. Indicate the degree of confidence for final estimated values.