

Ofgem RIIO2 Methodology Consultation

Treatment of Environment, Sustainability & Low-Carbon

Submission to Ofgem from Sustainability First

26 February 2019

Introduction

Sustainability First has taken an active interest in Ofgem's approach in the RIIO2 price control process on the treatment of the environment, sustainability and low-carbon.

This paper looks at Ofgem's handling of these topics in the 200-page RIIO2 methodology document¹, the separate sector annexes for electricity transmission (ET), gas transmission (GT), gas distribution (GD), and the electricity system operator (ESO) – plus Ofgem's updated Business Plan Guidance². This package of core RIIO2 documents was published in December 2018 for consultation - and will shape the investment plans and approaches to low carbon by our GB energy networks for years to come.

We hope that colleagues engaged in the RIIO2 process will find this paper of help - be these in Ofgem, those involved in the enhanced stakeholder engagement process, in the energy network companies and among stakeholders more widely. Views expressed in this paper are solely those of Sustainability First.

Sustainability First contact : judith.ward@sustainabilityfirst.org.uk

Background – RIIO1 Framework and low-carbon

Across the four network sectors (ET, GT, GD and ED), the RIIO1 framework includes a mix of incentives for better outcomes on the environment and sustainability, including on low-carbon. Sustainability First analysis³ showed that the RIIO1 environmental incentives together formed a fragmented patchwork which :

- Failed to give a strong signal overall to the companies or wider stakeholders - in particular on low-carbon facilitation.

¹ <https://www.ofgem.gov.uk/publications-and-updates/riio-2-sector-specific-methodology-consultation>

² https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_business_plans_-_updated_guidance_december_2018_vs_4.pdf

³ A low carbon incentive in RIIO2. Sustainability First Discussion Paper. May 2018.
https://www.sustainabilityfirst.org.uk/images/publications/other/Sustainability_First_Low_Carbon_Incentive_in_RIIO2_Discussion_Paper_FINAL_web.pdf

- Gave too little attention to overall reporting on environmental outcomes in-the-round. Across the RIIO1 period there is inconsistent reporting on network contribution to greenhouse gas reduction – and insufficient coordination and visibility of that information.
- Gave generous incentives for stakeholder engagement and satisfaction. These permitted over-reward of some outreach activity which arguably should be ‘business-as-usual’.

For RIIO2, Sustainability First has urged Ofgem to tackle these shortcomings in the main RIIO2 Methodology Document and the Business Plan Guidance. In particular, via more consistency and coherence, stronger messaging, and more ambition and visibility for low-carbon outcomes. Plus, more demanding reporting requirements.

RIIO2 – Ofgem’s overall methodology approach to the environment and low-carbon

Outcome 3 (page 25, main document)

‘Network companies must enable the transition towards a smart, flexible, low-cost and low-carbon energy system for all consumers and network users’

Sustainability First welcomes the prominence given by Ofgem to this outcome – as one of three over-arching outcomes for RIIO2. Both the main methodology document⁴ and Ofgem’s Business Plan Guidance⁵ to the companies each refer to Outcome 3. Disappointingly thereafter they do not discuss Ofgem’s overall expectation on approaches to delivery of Outcome 3, nor provide a high-level framework. Rather, **Ofgem has wholly ‘devolved’ treatment of the environment, sustainability and low-carbon to each separate sector methodology document.** This undermines coherence and consistency.

Customers increasingly care about the environment, sustainability and low-carbon delivery - as well as on matters of price, affordability and service. Ofgem’s principal objective in statute⁶ explicitly defines consumer and future consumer interests as including their interests, inter al, in the reduction of greenhouse gas emissions. As such, Ofgem has a clear duty to give these issues full consideration. Ofgem needs to ensure that their approach to network regulation aligns well with government’s Clean Growth Strategy and the trajectory implied by the fourth and fifth carbon budgets – and to clearly articulate this.

Both the main methodology document and Business Plan Guidance therefore need a short **statement of principle on the environment, sustainability and low-carbon facilitation – common across all of the RIIO2 methodologies.** This statement must reflect clear ambition from Ofgem, send a strong and coordinated signal to the companies, reflect a whole-systems approach which looks beyond individual sector-silos, and frame more clearly what a ‘right-balance’ might look like in their regulatory approach as between business-as-usual, carrot and stick - to deliver consumer benefit.

⁴ <https://www.ofgem.gov.uk/publications-and-updates/riio-2-sector-specific-methodology-consultation>

⁵ https://www.ofgem.gov.uk/system/files/docs/2018/12/riio-2_business_plans_-_updated_guidance_december_2018_vs_4.pdf

⁶ <https://www.legislation.gov.uk/ukpga/1989/29/section/3A>

Such a statement will help Ofgem, the Challenge Group and User Groups / company Consumer Engagement Groups (CEGs) to form a clearer view of the overall adequacy of Business Plan proposals in delivering Outcome 3 – be this at company level, at sector level, cross-sector or for whole-system.

As a minimum, the statement should ensure :

1. **Clear framing and strong high-level messaging from Ofgem on its ambitions for a central role in each sector methodology in ensuring that the companies deliver on the environment and the low-carbon energy transition in an efficient and coordinated way, in line with Outcome 3.**

The Ofgem main methodology and Business Plan Guidance do not provide a high-level framework within which to shape coherent sector-level approaches to delivery of Outcome 3 and whole system. The absence of a high-level ‘across-the-board’ framing of Ofgem’s overall approach on the environment and the low-carbon energy transition is a significant shortcoming.

*It is currently necessary to look across **six** documents (BP guidance, main methodology, each sector methodology - ET, GT, GD and ESO) – and at a significant level of detail - to understand Ofgem’s methodological approach to the environment, sustainability and low-carbon for RIIO2.*

In this regard, Ofgem appears to have over-looked key lessons from their methodological approach on RIIO1 environment incentives (weak sector signalling – especially on low-carbon, fragmented incentives and little cross-sector coherence).

2. **A clearly stated expectation from Ofgem of a *broadly consistent* and *aligned approach* across each sector methodology on the environment and low-carbon transition – while recognising specific sector needs and difference.**

At the moment sector difference seems to drive each individual methodology rather than vice-verce. This is especially so for the GD methodology.

3. **Each sector methodology to reflect a ‘right overall balance’ in the chosen mix of approaches to deliver better environment and low-carbon outcomes for that sector. Consideration ‘*in-the-round*’ of the respective roles of : licence obligations, appropriate and stretching standards, quantifiable targets, the Business Plan incentive, Business Plan baseline price control deliverables, and which outputs to be explicitly incentivised (be this via financial, reputational and / or bespoke incentives).**

The ET methodology does address this mix of inputs to company environment outcomes in a well-considered way. Also GT, to a lesser extent.

The draft GD methodology does not currently look sufficiently ‘in-the-round’ at the likely impacts in combination of licence obligations, price control deliverables and output incentives to deliver the low carbon transition. This is particularly so for how the repex programme (as a main GD price control deliverable) in practice sits alongside other incentives which could support a greater ambition on green-house gas reduction by gas distribution networks.

Bespoke incentives : the company CEGs (consumer engagement groups) should challenge companies on whether ‘bespoke’ environment / low-carbon incentives truly go ‘above and beyond’ as an additional contribution to the low-carbon transition.

4. **Annual Reporting Framework** : for RIIO2, annual environmental impact reporting to be required as a standard licence condition for ET, GT and GD as a key building block of the low-carbon energy transition. Ofgem to signal a demanding expectation, as for DNOs in ED1, for clear and comparable approaches to environmental performance reporting as a business plan requirement, broadly consistent across each sector. Business Carbon Footprint (BCF) reporting to be retained for each sector within the new annual environmental impact reporting framework.

Annual environmental impact reporting requirements should be a RIIO2 standard licence condition to allow clear assessments and comparisons - at company-level, sector-level and cross-sector. Such reporting requirements should form key inputs to future whole-system assessments - be these emissions which the networks directly control or not. External stakeholder review of green-house gas impacts associated with energy network operations must be made easier.

Annual environment reporting is a standard licence condition for each DNO in ED1– both in detail to Ofgem⁷ plus a published report.

For RIIO2, the methodology approaches and incentives proposed on environmental impact reporting (for ET, GT, GD and ESO) are not consistent or aligned across each of the four sector methodologies – albeit each company will continue to report to Ofgem on its main green-house gas impacts (losses, SF6, methane leakage). Nor is it clear how environmental reporting requirements will link to new licence conditions on future whole-system reporting [para 5.33 Main Doc].

*At present, **only the ET methodology** introduces a new reporting framework and a more demanding expectation than in RIIO1 for annual environmental performance reporting (including Business Carbon Footprint reporting) - across both direct and indirect carbon impacts. **This approach should be common across all the network sectors - and therefore also adopted for GT and GD.***

Business Carbon Footprint reporting : The focus of BCF reporting is not chiefly on the role that the networks play in facilitation of the low-carbon transition. Rather, BCF reporting is a measure of how a responsible company tackles its own green-house gas emissions⁸. In this sense BCF continues to offer a worthwhile internal and external measure.

In RIIO1, BCF reporting is the only common environmental incentive (reputational) across all sectors (ET, GT, GD & ED). From an informational stand-point, BCF reporting in RIIO1 - and its subsequent analysis and publication by company and also by sector (including by Ofgem in its sector-specific RIIO-1 Annual Reports) is somewhat patchy in practice.

For RIIO2, ET proposes to retain BCF reporting within the new annual environmental impact reporting. For GT, Ofgem questions continued BCF reporting – and does not propose a broader environmental performance reporting framework as per DNOs or that proposed for ET-2. And for GD, there seems no explicit BCF reporting requirement

⁷ ED1 – Standard Licence Condition 47. As specified by Ofgem’s Regulatory Instructions and Guidance – Annex J Environment and Innovation and The Environment Report Guidance Document. V2 21.03.18

⁸ BCF reports on the green-house gas impacts of buildings’ energy-use, operational and business transport, fugitive emissions and fuel combustion.

Business Carbon Footprint (BCF) reporting should be retained for each sector within new annual environmental impact reporting requirements for RIIO-2.

Electricity Distribution RIIO-1 reporting on the environment : in RIIO-1, electricity distribution networks provide Ofgem with detailed environmental data under their standard licence condition for annual environmental reporting (SLC 47). To support preparation of the ED-2 sector methodology on the environment and low-carbon, Ofgem's sector-specific annual reports for the ED-1 periods 2017-18 and 2018-19 need concerted analysis – to ensure that high-level RIIO-1 lessons on the environment are learned to inform preparation of the draft methodology for ED-2.

5. **ED2 : clear signalling on the environment and low-carbon** - in any statement of principles on the framework for environment and low-carbon for RIIO2 for inclusion in Ofgem's main methodology document, Ofgem must make clear **that the principles also point to Ofgem's likely high-level approach on treatment of the environment and low-carbon for ED2.**

Currently no acknowledgement in the main methodology document or elsewhere that the methodological approach for the environment and low-carbon for ED2 can be expected to be broadly consistent and aligned with the sector methodologies for ET, GT, GDN and ESO.

6. **A clear statement of how Ofgem proposes to ensure a coherent approach across (1) the RIIO2 sector reporting arrangements on the environment and low-carbon – together with the separate RIIO2 approaches for (2) whole-system (3) innovation funding and (4) the future role of the ESO.**

Across the methodology documents, links between the sector environment methodologies - and the methodology approaches on whole-system, on innovation funding, and on the remit of the ESO - are under-developed.

Environment and low-carbon outcomes need to be framed as a core outcome for 'Business as Usual' in RIIO2 – and not just framed as an outcome of innovation.

One helpful approach for Ofgem to consider could be to look further at how to link (1) production of annual environment reports for each sector with (2) the suggested whole-systems incentive on 'co-ordination and information sharing'⁹ with (3) an ongoing role for company Consumer Engagement Groups to review both company and sector-wide annual environment reports.

⁹ Main methodology – para 5.11. p.35

Approaches in RIIO2 Sector Methodologies on ‘Deliver an Environmentally Sustainable Network’

Summary

The main focus of this note is treatment of low-carbon and green-house gas emissions in the Ofgem RIIO2 methodologies. Although related questions arise, this note does not discuss RIIO2 proposals on :

- Visual amenity
- Stakeholder engagement and stakeholder satisfaction
- Ending RIIO1 discretionary awards¹⁰
- Detailed design of particular RIIO2 incentives (so, whether financial / reputational / bespoke incentives)

Treatment of the environment, sustainability and low-carbon need more attention by Ofgem to achieve a *broadly aligned and consistent approach* across the four sector methodologies (ET, GT, GDN and ESO). Just as for RIIO1, the Ofgem methodologies risk poor coherence in their overall approach to the environment and low-carbon delivery. Each RIIO2 methodology needs to give a clear and consistent signal that low carbon facilitation and support of the energy transition is a significant and desired outcome for RIIO2 delivery. Alignment with the intention of the government’s Clean Growth Strategy, with the trajectory implied by the fourth and fifth carbon budgets and the National Planning Policy Framework on achieving sustainable development needs to be clear in the main Methodology Document and the Business Plan Guidance.

Sustainability First is largely supportive of the approach outlined for the environment in the RIIO2 Electricity Transmission (ET) methodology.

The ET approach should be adopted as the ‘benchmark model’ for the other sectors – including the gas distribution networks. The GD methodology on environment, sustainability and low-carbon is out of step with ET and GT, and falls short on approaches to incentivisation, ambition and general tone.

Looking across the four methodologies¹¹ :

Electricity Transmission

In general, Ofgem proposes a well-considered methodology approach for ET. Ofgem reviewed RIIO1 outcomes and has stepped-back to consider environmental impacts for ET ‘in-the-round’. Ofgem has sought to achieve a ‘right overall balance’ between licence obligations, appropriate and stretching standards, quantifiable targets, business plan baseline price-control deliverables - plus identifying outputs that may warrant further explicit incentivisation (be this via financial, reputational or bespoke incentives). Ofgem has coupled this approach with more demanding requirements for annual environmental impact reporting – both company-specific and sector-wide.

¹⁰ ET Environmental Discretionary Award, GD Discretionary Award (Stakeholders)

¹¹ See Annex I for Ofgem’s RIIO2 output and incentive proposals

One matter for Ofgem still to address is how the Business Plan incentive and the environment methodology for ET will integrate in a coherent way. For example, Ofgem note that in setting outputs and incentives they will need to consider interactions with other components of the price control including the proposed Business Plan incentive (ET 4.42). Ofgem will therefore wish to consider any such interaction with the proposal for a bespoke environmental output delivery incentive (ET 4.31-32) – including avoiding potential ‘double reward’.

ET should be taken as the ‘environmental benchmark’ for the GT and GD sector methodologies.

Where feasible and desirable, this would ensure some basic high-level alignment, consistency and comparability. Ofgem should justify departure from the ET methodology approach for the other sectors (rather than vice-versa).

Gas Transmission

Broadly mirrors the proposed ET methodology approach. Notes upfront that the high-level objective ‘is for network owners to mitigate the impact of their networks on the environment and to support the transition to a low-carbon energy future’. (GT p 32). Uses a considered mix of business plan price control deliverables (compressor emission reductions (statutory requirement)) and incentives (venting, shrinkage). Ofgem queries how far business carbon footprint reporting (BCF) remains relevant for GT – and therefore whether this should remain an ongoing requirement. But, unlike for ET, Ofgem does not put forward a demanding alternative framework for environmental performance reporting. **Annual environmental impact reporting should be required for GT as a standard licence condition, just as for ET - with BCF reporting within this.**

Gas Distribution

The GD methodology on the environment and the energy transition fails to add up to more than the sum of its parts. A narrow approach is taken and in this sense the methodology risks not driving a more ambitious GDN culture on low-carbon facilitation.

Ofgem should step back and ask itself whether the GDN methodology could be better framed – on a more rounded basis as per ET & GT. The GD methodology needs to stimulate efficient ‘additional’ steps by GDNs on a ‘least-regrets’ basis to reduce their green-house gas emissions. This should both be via Business Plan price control deliverables and also encouraged via explicit incentives where appropriate.

The GD methodology notes upfront that a high-level objective ‘is for network owners to mitigate the impact of their networks and business activities on the environment and to support the transition to a low-carbon energy future’. (GD p 56). The methodology also notes key challenges for GDN focus as : ‘decarbonisation of heat, as well as the reduction in gas lost through the network’ (GD p 57).

Central to Ofgem thinking on GDN environment methodology is that 95 % of GDN carbon emissions - as reported via the Business Carbon Footprint process – result from shrinkage (leakage). Ofgem takes the view that GDN green-house gas reductions are therefore very largely already addressed via the replex programme¹². Ofgem therefore proposes a three-fold approach in its RII02 GDN environment methodology :

¹² Ofgem state that replacing an iron main with a plastic main can reduce leakage rate by 96%.

- A *reformed* incentive to reduce shrinkage – this would address potential concerns about RIIO1 ‘out-performance’ linked to double-counting of benefits w.r.t repex (albeit the model used to calculate usage may already adjust for repex impact). The reformed incentive would be part-reputational; and potentially financial - where ‘non-repex’ measures could *additionally* reduce shrinkage.
- ‘Mechanisms to allow the price control to be responsive to future policy decisions on the decarbonisation of heat’ – *but no explicit output to be incentivised at present*;
- *Possible bespoke outputs for business plans* to support the delivery of environmental incentives.

Shrinkage and Leakage - repex and other incentives : the role of repex as a central means of effective green-house management by GDNs is understood. But, the GD methodology risks complacency. Methane is an extremely potent green-house gas - ~30-times more potent as a heat-trapping gas than CO². **A stronger overall expectation and message is needed from Ofgem on the importance of GDNs tackling their green-house gas reduction through continuing to be proactive on leakage.** Any reformed incentive must ensure that that GDNs look actively and ‘in-the-round’ at leakage reduction - both across repex and also at other effective and efficient actions such as pressure management and gas conditioning¹³.

GDNs also need to be incentivised to look at the other elements of shrinkage (i.e. reducing theft; own-use). These each add to the volumes of gas fed into the system and hence to customer costs, even where shrinkage may not create a direct environmental impact¹⁴.

Framing the GDN environmental methodology ‘in the round’ : unlike the ET and GT methodologies, Ofgem does not work-through in-the-round what a ‘right-balance’ might look like for GDNs as between licence obligations, appropriate and stretching standards, quantifiable targets, the Business Plan incentive, Business Plan baseline price control deliverables and outputs which are to be explicitly incentivised (be this financial, reputational and / or bespoke incentives). **Approaches in the GD methodology to green-house gas reduction, low-carbon facilitation and more demanding annual environmental impact reporting need to be framed more clearly – and must also be more clearly articulated and communicated by Ofgem.**

GD Environmental Performance Reporting – although introduced for ED1, the GD methodology does not discuss what benefit more comprehensive approaches to environmental impact reporting could bring in RIIO2 – i.e annual reporting on the environmental impact of business plan price control deliverables; more meaningful ways to tackle reporting on GDN Business Carbon Footprint; more prominence given to reporting on bio-methane connections and the wider narrative around bio-methane¹⁵. **In its GD methodology, Ofgem should revisit requirements on reporting on green-house gas reduction and low-carbon facilitation. Ideally, the GD methodology should align with the comprehensive framework approach already required for ED-1 and proposed for ET-2.** This is relevant, because approaches to reporting on electrical losses raise similar questions to reporting on gas shrinkage / repex and leakage.

¹³ In GD1 the leakage incentive is aligned to the cost of carbon, aiming to ensure that companies take any actions that are cost effective to reduce methane emissions. Ofgem has concerns about the basis of the models used to strip out the effects of repex (and avoid double rewarding) but it should be possible to address this given the materiality of methane leakage.

¹⁴ Linking the shrinkage incentive to the costs of gas as per GD1 has an economic rationale

¹⁵ Bio-methane connections to be reported on, but no longer a formal RIIO2 output – GD para 4.50

Least-regrets steps – gas network ‘futures’ may be uncertain beyond RIIO2 time-frames, and the case for future-facing GDN investment needs to be demonstrated. Nevertheless, there are ‘least regrets’ steps within RIIO2 GDN business plans - on both the investment and operations-side - which could serve to promote reduced green-house gas emissions and low-carbon facilitation. Such steps need not entail significant new or additional spend, nor place GDN efficiency at risk. **It may be helpful to make clearer in the methodology that *network-wide* and / or *sector-wide* initiatives to promote lower carbon solutions *overall* could be incentivised either via business plan outputs or explicit incentives¹⁶.**

For example, **least-regrets steps** on :

- **Biomethane** : to promote and facilitate the right conditions for more bio-methane connections (which may be relevant given that the stakeholder element of the Gas Discretionary Reward Scheme is to end). The downgrade by Ofgem of biomethane connections - to no longer being a formal RIIO output - sends a poor signal to GDNs about the importance of being proactive on bio-methane. A focus on the bio-methane volumes injected - rather than simply the number of connections - would help to send a more appropriate signal¹⁷. A focus on injected volumes might also prompt GDNs to consider the environmental trade-offs between being more supportive of additional compressor installation (subject to appropriate cost-allocations) against bio-methane flaring.
- **Heat de-carbonisation** (GD 4.30 – 4.41) – despite highlighting heat de-carbonisation as a key challenge, **the GD methodology reflects a very low-key and cautious message overall on Ofgem expectations on GDNs’ role in RIIO2 time-frames in facilitating or accelerating development of low-carbon heat.**

The Committee on Climate Change¹⁸ identified a number of ‘low-regrets’ approaches across different decarbonisation pathways: energy efficiency across UK building stock, low-carbon heat networks in heat dense areas, low-carbon new buildings, and biomethane injection into the gas-grid. The CCC also identifies heat-decarbonisation as a main gap in meeting the 4th and 5th carbon budgets¹⁹. Low-regrets approaches on heat decarbonisation are also necessary to deliver on the government’s Clean Growth Strategy.

The GD methodology allows for ‘Low- and no-regrets’ heat decarbonisation projects to be proposed via business plans, which is welcome (e.g mechanical isolation valves installed to support future hydrogen conversion and / or phased decommissioning). More widely, the GDN methodology points to innovation funds, uncertainty mechanisms (eg w.r.t new heat-network development) or a possible re-opener once government heat policy is clarified.

Nevertheless, the GD methodology should display a greater ambition for heat-decarbonisation in RIIO2. This might include a potential business plan requirement for GDNs to consider low and no-regrets heat de-carbonisation projects.

The GD environment methodology on heat-decarbonisation **also fails to link across to two other relevant RIIO2 elements on :**

- (1) **Energy Efficiency** (where the main methodology document para 5.17. p 35) states that ‘In general, we do not think network consumers should directly fund the

¹⁶ But not bespoke incentives

¹⁷ And would also draw on ED1 lessons, where renewable generation is connected but then constrained off.

¹⁸ CCC. Next steps for decarbonising heat. 2016

¹⁹ 4th Carbon Budget - 2023-27. 5th Carbon Budget - 2028-2032

insulation of houses and buildings, or to deliver savings for transport system users. However, we are *keen to understand where such wider actions would deliver benefits for consumers, and what potential benefits may arise from these measures* – and

- (2) **The Fuel Poor Network Extension Scheme** (GD 3.47-76) – which proposes a more targeted scheme – *but to retain the FPNES as a price control deliverable*.

The GD environment methodology needs to make a clearer link between RIIO2 approaches on heat-decarbonisation, energy efficiency and the Fuel Poor Network Extension scheme (FPNES). In so doing, Ofgem should clearly signal that well-justified proposals on low-carbon heat development (e.g district heating) can be treated as business plan deliverables and outputs, and in particular where these are well-targeted to serve customers in vulnerable circumstances and / or those in greatest need. On the FPNES, thought is also needed by GDNs – together with the relevant DNO - on potential ‘whole system’ approaches, including on whether a new gas connection is the most appropriate local solution in terms of low-carbon heat. Similarly, thought is needed on links to support available to install measures via ECO3 or other local efficiency schemes – to support possible ‘whole-house’ approaches where an FPNES connection is considered.

On **energy efficiency in general**, Ofgem should clarify that while they do not consider an ‘Eco-type’ obligation to be on the agenda for the energy networks, that non-pipe and wire alternatives can nevertheless be on the table for consideration where network reinforcement can demonstrably be avoided.

Electricity System Operator

ESO p.12. 3.2 – ‘Outcomes we want to see’

‘For RIIO2, we want to ensure the ESO has a framework that enables it to play a leading, proactive and coordinating role in the transformation to a low carbon energy system by delivering sustainable, resilient and affordable services that provide value for existing and future consumers. The ESO should achieve this through its direct activities and through its ability to influence the whole system’.

The approach is captured through four ESO roles and principles : **facilitating whole system outcomes**; managing system balance & operability; facilitating competitive markets; supporting competition in networks.

On Whole System, the two principles are (ESO p 13) :

Principle 5 : coordinate across system boundaries to deliver efficient network planning and development

Principle 6 : coordinate effectively to ensure efficient whole system operation and optimal use of resources.

The ESO methodology document discusses how a ‘whole-system’ incentive might be constructed.

Beyond this, the ESO methodology is silent on : incentive and output approaches to delivery of Outcome 3 ; on environmental and low-carbon incentives and outputs in general ; on environmental reporting; and important, how the ESO would be expected to take account of annual environmental impact reporting from the ET, GT, GD (and ED) sectors in facilitating whole system outcomes.

Sustainability First

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www.sustainabilityfirst.org.uk

Sustainability First contact on this paper – judith.ward@sustainabilityfirst.org.uk

ANNEX I – EXTRACTS FROM OFGEM SECTOR METHODOLOGIES ON ENVIRONMENT, SUSTAINABILITY & LOW-CARBON

ET - Annex. Section 4 (pp 35-55) : ‘Deliver an environmentally sustainable network’

This proposes **that the ET environmental framework should focus on decarbonisation of the energy system** (4.4). Also visual amenity and engagement on new transmission projects. This would be achieved as follows.

- **Embed efficient environmental mitigation in Business Plan** - price control deliverables to determine what to be delivered from baseline funding
- **Make environmental impacts more transparent** – via reputational incentives & annual environmental performance reporting (w ongoing scrutiny by user group).
- **Address worst sources of network GHG emissions** (SF6 in HV equipment) – via stretching base-line targets and output delivery incentives.
- **Consider additional incentives** – some of which may be bespoke – if agreed with User Groups – and in delivery of low-carbon energy transition –if ‘additional’ and ‘above and beyond’.

ET Annex. P 37 Table 6: Summary of potential outputs for consideration in RIIO-ET2 Output name	Output type*	Company driven target**	Comparison to RIIO-1
Common outputs (expected to apply to all companies)			
Environmental considerations embedded in business plans (incl. for example BCF, losses and SF6)	Price Control Deliverable	Yes	n/a
Annual environmental performance reporting (incl. BCF and losses)	Licence Obligation	No	Revised RIIO-1 output
Sulphur hexafluoride (SF6) and other IIG leakage	Output Delivery Incentive (Financial)	No	Revised RIIO-1 output
Mitigating visual amenity impacts in designated areas	PCD	Yes	Revised RIIO-1 output
Bespoke outputs (companies should consider for potential inclusion in their Business Plan; though not just limited to these areas)			
Additional contribution to low carbon transition	ODI(Financial /Reputational)	Yes	New outputs

** Company driven target signifies an output where we expect to see extensive company-led engagement (including with their User Group) to justify a stretching performance target. This could lead to performance targets varying by companies.

- Ofgem does not expect large increases in baseline spending as a result of the environmental components in the Business Plans (eg as per incremental costs of low-loss transformers) (ET 4.17)
- Companies required to agree performance indicators for each area – plus some common cross-sector metrics (ET 4.18).
- Interactions with other policy areas to be identified - and potential for duplication / double-funding minimised – including on SF6, losses, refurbishment, whole-system and innovation funding (ET 4.25). Would need to adjust target baseline in Business Plan to avoid double-counting.
- Consulting on how far incentive arrangements should capture ‘wider’ environmental impacts (climate change, local pollution, resource waste, biodiversity loss / natural capital, general visual amenity) (ET 4.20)

Table 7: RIIO-ET1 environmental output measures	Output type*
Output name	
Business carbon footprint from network and related business activities	Reputational incentive
Energy losses from transporting electricity across transmission network	Reputational incentive
Leakage of sulphur hexafluoride gas from network equipment	Financial incentive
Environmental discretionary reward scheme to increase companies' focus on strategic environmental considerations and facilitating the low carbon energy system	Financial incentive
Mitigating visual amenity impacts of pre-existing infrastructure in designated areas	Reputational incentive with efficient project funding

Gas Transmission. page 34

Table 6: Proposed outputs to support the delivery of an environmentally sustainable network for RIIO-GT2 Output name	Output type*	Company driven target**	Comparison to RIIO-1
Compressor emissions	PCD	No	New output
GHG emissions (Venting)	ODI(F)	No	Revised RIIO-1 output
NTS shrinkage	ODI(F)	No	Revised RIIO-1 output
BCF reporting (potential output)	ODI(R)	Yes	Revised RIIO-1 output
Low carbon energy systems and decarbonisation of heat (potential output)	ODI/LO/PCD	Yes	New output
Bespoke outputs (companies should consider for potential inclusion in their Business Plan; though not just limited to these areas)			
Specific output and incentives that will support the delivery of environmental objectives	For companies to consider	Yes	new output

GT p 33. Para 4.4

We are now consulting on the set of outputs and other price control measures that we propose to put in place for the RIIO-2 price control to support the delivery of these objectives. These are summarised below:

- Compressor emissions:** The operation of gas turbine-driven compressors on NGGT's network releases a significant amount of GHGs (carbon monoxide and nitrous oxides). NGGT is under statutory obligations to reduce these emissions. While NGGT's compliance with environmental legislation is enforced by the environmental regulators (i.e. the Environment Agency (in England), the Scottish Environment Protection Agency and Natural Resources Wales), we propose to ensure that NGGT is adequately funded for emissions reduction projects and that NGGT is held to account for the delivery of these projects through the use of Price Control Deliverables.

- **GHG emissions (venting):** Gas is released (vented) when compressor units on the transmission system are de-pressurised, which they might need to be from time to time for the efficient operation of the transmission system. The release of gas contributes to GHG emissions. We are proposing to retain a GHG emissions (venting) incentive mechanism that would apply to NGGT in its role as the gas system operator. This proposed mechanism would set ambitious targets for NGGT to meet and includes financial penalties if emissions exceed those targets.
- **NTS shrinkage:** Shrinkage on the transmission system refers to the difference between the amount of gas injected into the transmission system and the amount of gas taken out by users of the system (including operators of distribution networks). This includes ‘own use’ gas (i.e. gas used as fuel for NGGT’s compressors) and gas lost from the network through leaks. We are proposing to retain a shrinkage incentive mechanism that would apply to NGGT in its role as the gas system operator, and encourages NGGT to reduce the amount of shrinkage on the NTS.
- **Business carbon footprint (BCF) reporting:** As part of the RIIO-1 price control, we required NGGT to report annually on its business carbon footprint, which is the total GHG impact of its business activities, including those related to energy used for business purposes. This allows Ofgem, customers and stakeholders to monitor NGGT’s performance in this area. There are no financial rewards or penalties attached this requirement. We are considering whether to retain this reporting requirement as part of the RIIO-2 price control.

GTQ16. We welcome views on whether further regulatory mechanisms are needed to drive NGGT to be more proactive in reducing its impact on the environment and contributing to the transition to the low carbon energy system.

Gas Distribution Networks – GD pp 56-66

GD p.58

Table 31: Summary of RIIO-2 proposed outputs Output name	Output type*	Company driven target**	Comparison to RIIO-1
Common outputs (expected to apply to all companies)			
Shrinkage	ODI(F) or ODI(R)	Yes	Revised RIIO-1 output
Bespoke outputs (companies should consider for potential inclusion in their Business Plan; though not just limited to these areas)			
Specific output and incentives that will support the delivery of environmental objectives	For companies to consider	Yes	new RIIO-2 output

ODI(R/F) = Output Delivery Incentive (Reputational/Financial), PCD=Price Control Deliverable,
LO=Licence Obligation

ANNEX II – OFGEM METHODOLOGY - ENVIRONMENT QUESTIONS

ELECTRICITY TRANSMISSION - Questions on Environment – Main Doc. Pages 196-198

Chapter 4 questions – Deliver an environmentally sustainable network

General output questions

ETQ29. What are your views on the overall outputs package considered for this output category?

ETQ30. For each potential output considered (where relevant):

- a) Is it of benefit to consumers, and why?
- b) How, and at what level should we set targets? (e.g. should these be relative/absolute)
- c) What are your views on the design of the incentive? (e.g. reward/penalty/size of allowance)
- d) Where we set out options, what are your views on them and please explain whether there are further options we should consider?

ETQ31. What other outputs should we be considering, if any?

ETQ32. What are your views on the RIIO-ET1 outputs that we propose to remove?

In addition to the above questions, where relevant, please see the supplementary output specific questions below.

ET Supplementary output specific questions

Environmental framework - Business Plans and annual monitoring

ETQ33. Do you have any views on the extent to which company activities relating to environmental impacts should be embedded in Business Plans?

ETQ34. We invite views on whether the proposed environmental impact categories are appropriate areas to focus on. Are there any areas that should be excluded and/ or other areas that should be covered? We also invite views on the potential indicators and/ or metrics that are appropriate for each environmental impact category.

ETQ35. We welcome views on the option of an annual reporting framework to increase transparency of the transmission networks' impact on the environment.

Potential for bespoke ODIs around the low carbon transition

ETQ36. We welcome views on whether we should introduce an option for the TOs to develop bespoke ODIs with stakeholders for delivering an additional contribution to the low carbon transition.

ETQ37. We invite views on the kind of activities, not captured elsewhere, that could be captured through such ODIs.

ETQ38. We invite views on how such an ODI might operate, and any other factors we should take into account in considering bespoke ODI for the low carbon transition.

SF6 and other insulation and interruption gases (IIG) leakage

ETQ39. We welcome views on whether we should retain a financial reward and penalty incentive for the leakage of SF6 in RIIO-ET2, or move to a penalty only or reputational incentive.

ETQ40. We welcome views on the potential impact of a move away from a financial incentive (or move to penalty-only) on TO behaviours.

ETQ41. We invite views on whether leakage from other IIGs should also be captured in the incentive measure.

ETQ42. We welcome views on whether some leakage events should continue to be excluded from the incentive.

Electricity losses from the transmission network

ETQ43. Do you have any views on the proposed approach for integrating any losses reporting requirements into the proposed Business Plan and annual public reporting framework?

ETQ44. Do you have any views on the introduction of a target or measure for improving metering at and the energy efficiency of substations? How could this work in practice?

Visual amenity impacts of transmission infrastructure

ETQ45. We welcome views on incentivising the TOs' engagement with stakeholders on the development of new transmission projects through our stakeholder engagement proposals, for example through the use of a survey.

ETQ46. Do you have views on the retaining the existing scheme to mitigate the visual impact of pre-existing transmission infrastructure in designated areas? Do you agree that any decision to implement new funding arrangements should be subject to updated analysis around willingness to pay?

ETQ47. Do you agree with our proposals to modify the implementation process by which funding requests for mitigation projects are submitted and approved? Consultation - RIIO-2

ETQ48. We welcome stakeholders' views on any other considerations they think are relevant to policy development for visual amenity issues in RIIO-ET2.

GAS TRANSMISSION - Questions On Environment – Main Doc – page 192

Chapter 4 questions – Deliver an environmentally sustainable network

General output questions

GTQ12. What are your views on the overall outputs package considered for this output category?

- a. For each potential output considered (where relevant):
- b. Is it of benefit to consumers, and why?
- c. How, and at what level should we set targets? (e.g. should these be relative/absolute).
- d. What are your views on the design of the incentive? (e.g. reward/penalty/size of allowance).

GTQ13. Where we set out options, what are your views on them and please explain whether there are further options we should consider.

GTQ14. What other outputs should we be considering, if any?

GTQ15. What are your views on the RIIO-1 outputs that we propose to remove?

GTQ16. We welcome views on whether further regulatory mechanisms are needed to drive NGGT to be more proactive in reducing its impact on the environment and contributing to the transition to the low carbon energy system.

In addition to the above questions, where relevant, please see the supplementary output specific questions below.

Supplementary output specific questions

NTS Shrinkage

GTQ17. Do you think that the 'compressor fuel use' element of the shrinkage incentive should be included within NGGT's baseline Totex allowance?

To what extent do you think elements of shrinkage are within the control of National Grid Gas

Low carbon energy systems and decarbonisation of heat

GTQ18. Do you have any views on how NGGT's can make a contribution to the transition to a low carbon energy system and support the decarbonisation of heat?

Opportunity to propose bespoke outputs

GTQ19. Do you think we should consider proposals from NGGT for additional outputs and incentives to support our environmental objectives?

GAS DISTRIBUTION NETWORKS - Questions On Environment – Main Doc – page 188

Chapter 4 questions – Deliver an environmentally sustainable network

General output questions

GDQ26. What are your views on the overall outputs package considered for this output category?

GDQ27. For each potential output considered (where relevant):

- a) Is it of benefit to consumers, and why?
- b) How, and at what level should we set targets? (e.g. should these be relative/absolute)
- c) What are your views on the design of the incentive? (e.g. reward/penalty/size of allowance)
- d) Where we set out options, what are your views on them and please explain whether there are further options we should consider?

GDQ28. What other outputs should we be considering, if any?

GDQ29. What are your views on the RIIO-GD1 outputs that we propose to remove?

GDQ30. What are your views on the priorities we've identified for the gas distribution sector in delivering an environmentally sustainable network? Should measures proposed for electricity and gas transmission, such as BCF reporting and strategies for including in Business Plans, also apply to gas distribution?

In addition to the above questions, where relevant, please see the supplementary output specific questions below.

Supplementary output specific questions

Decarbonisation of heat

GDQ31. Do you agree with our proposed approaches to funding GDN activities over RIIO-GD2 related to Heat decarbonisation?

Distributed Gas Connections Guide and distributed gas information strategies

GDQ32. Are the GDNs' Distributed Gas Connections Guides and distributed gas information strategies helpful and effective? If not, how could they be improved?

GDN - Questions on Fuel Poor Network Extension Scheme – main doc. Page 187**Fuel Poor Network Extension Scheme**

GDQ10. What should we include in the FPNES eligibility criteria in RIIO-GD2 to facilitate a well targeted, but effective scheme?

GDQ11. How should we incentivise the GDNs to improve the targeting of the FPNES?

GDQ12. How can we ensure that the FPNES is better coordinated with other funding sources to provide a whole house solution for the household?

GDQ13. What are your views on us requiring or incentivising the GDNs to ensure that households receiving FPNES connections also achieve a target level of energy efficiency?

GDQ14. Do you think the value of the FPNES voucher would need to be amended if the targeting of the scheme is increased? Please provide any evidence to support your view.

Energy Efficiency - Main Methodology Document – page 35

Providing clarity on 'whole system' scope

5.14 We recognise the importance of clarity on the boundaries of the term 'whole system' in the context of the RIIO-2 price control. Some stakeholders believe these should be drawn broadly to encompass energy and additional sectors, such as waste, water, transport, and heat – with some also including activities 'behind the meter'. At the other end of the spectrum, there are stakeholders who prefer a much narrower definition that limits the 'whole system' to distribution and transmission networks, with separate application in gas and electricity sectors.

5.15 Our proposed approach is to provide a whole system scope that adopts a narrow focus on coordination of investment planning and operational delivery between the ESO, the GSO and the four network sectors (gas transmission, electricity transmission, gas distribution and electricity distribution).

5.16 A broader scope could include other parts of the energy system (e.g. heat), as well as other sectors (e.g. transport, waste). We recognise that there may be circumstances where the application of a broader scope could deliver net benefits for energy consumers.

5.17 In general, we do not think network consumers should directly fund the insulation of houses and buildings, or to deliver savings for transport system users. However, we are keen to understand where such wider actions would deliver benefits for consumers, and what potential benefits may arise from these measures.

CSQ9. What views do you have on our proposed approach to adopt a narrow focus for whole systems in the RIIO-2 price control, as set out above?

CSQ10. Where might there be benefits through adopting a broader scope for some mechanisms? Please provide evidence.