

RIIO-ET Policy Working Group

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16/08/2018

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We will be publishing our RII0-ET sector methodology in December 2018.

- These Working Group session will provide input to our policy development on outputs and incentive.
- Our starting point for this is understanding what was set at RII01 and what building a picture of changes/ developments since RII01 which we will need to factor into RII02 policy design.

Purpose of today's session is to kick off discussions around outputs and incentives for RII0-ET2.

- We will be focusing discussions around existing outputs and incentives and what we can learn from the RII0-ET1 experience:
 - ✓ Intention is to focus on “lessons learnt” rather than on individual Transmission Operator performance under specific incentives.
- We will not be able to cover all outputs today eg connections, wider works and losses:
 - ✓ These will be covered at later sessions; or
 - ✓ Some outputs/ issues may best be covered at cross-sector level in a first instance (e.g. whole-system outputs, innovation, NOMs).
- To encourage open and transparent debate, this session (and all future sessions of this group) will operate under Chatham House Rule.
- Similarly, the materials presented today are intended to stimulate discussion only and do not represent the views of Ofgem/ the Gas and Electricity Markets Authority (GEMA).

By the end of the day we would like to have achieved the following:

- Identified which of the existing measures we may want to consider retaining/ tweaking/ discarding and where we may need to consider new measures;
- Identified which measures we may want to retain as a sector-wide measure, and areas where there may be potential for company-specific metrics;
- Identified potential interactions with areas not covered (e.g. whole systems/ innovation etc);
- Identified next steps on items covered in meeting.

Key questions to consider throughout today's session

- Are RII01 incentives achieving their overall purpose?
- What measures should we retain/ tweak/ discard?
- What has changed since RII01/ what new developments do we need to consider?
- What measures should be comparable across ET and in what areas should we consider bespoke outputs?
- How does each individual measure fit within the broader package of outputs/ incentives?
How do we achieve the right balance?
- What measures should be financially incentivized, what measures should be reputational?
- What is the right balance between rewards and penalties?

RIO2 Outputs and Incentives

Update on current Ofgem thinking

August 2018

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- The materials in this slide pack represent our **initial views** and are designed to provide an **early steer** only.
- There will be opportunities to provide formal feedback at a later stage.

We want to provide stakeholders with an initial steer on:

- *Output categories for R1102:*
 - ✓ We are proposing to consolidate and simplify existing output categories.
- *Principles for setting outputs and incentives at R1102:*
 - ✓ R1101 principles remain broadly fit for purpose, and we are proposing to build on these further to capture recent lessons learnt/ developments.
- *Output types and companies’/ stakeholders’ roles in shaping these:*
 - ✓ Output Delivery Incentives (ODIs): we propose to set a number of common metrics within each sector, determined by Ofgem through stakeholder engagement/ consultation. There will also be opportunities for companies to put forward proposals for individual ODIs in collaboration with their stakeholders and customer/user groups.
 - ✓ Price Control Deliverables: we expect companies to work closely with stakeholders and their customer/ user groups to put forward proposals. Consequences for non-delivery will be determined by Ofgem through stakeholder engagement consultation.
 - ✓ Licence obligations: Ofgem intends to set minimum standards and associated licence obligations in consultation with stakeholders.

- The role of the different groups can be described as follows:

Ofgem - decision-maker

Sector-specific Working Groups

Core role: support development of common outputs and incentives, and approach to cost assessment

Input to Ofgem policy development

Independent RIO2 Challenge Group

Core role: Support Ofgem's Business Plans assessment

Output: independent report

Network Operators

Independent User Groups/ Company Groups

Core role: provide challenge to company Business Plans + support development of bespoke outputs

Output: independent report

Network Operator stakeholder engagement

- We are looking to make the output categories for RIO2 as intuitive and simple as possible, reducing overlap and potential confusion.
- We are proposing to consolidate existing output categories into three new categories as described below
- We welcome early views from stakeholders; there will be further opportunities to provide formal feedback at a later stage.

Improve the Customer Experience

- *All consumers, including those who are vulnerable, should receive a safe, high quality, and reliable service*

Support the energy system transition

- *Network companies have to enable the transition to a low carbon, consumer-focused energy system*

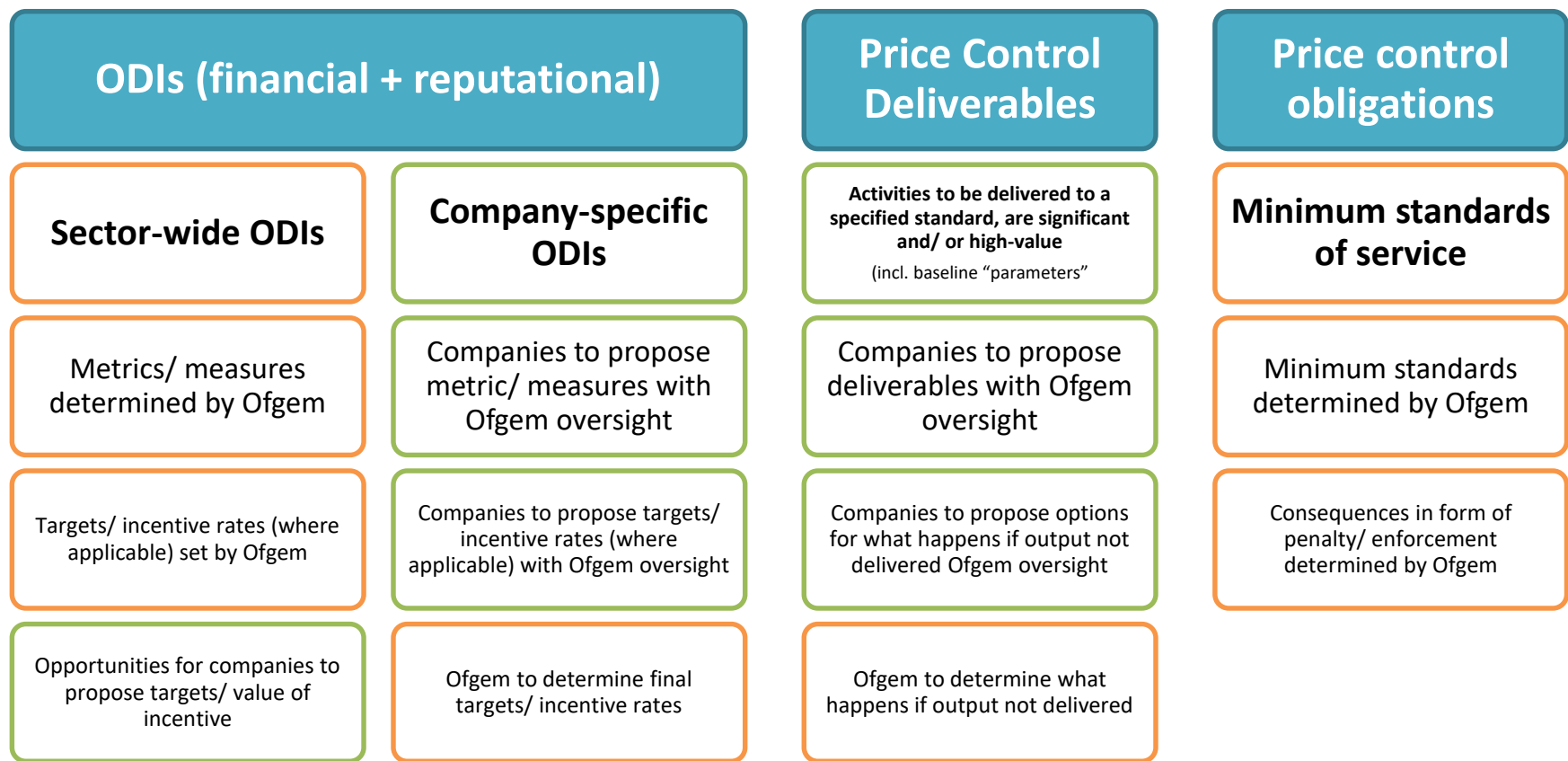
Improve the network and its operation

- *A network in better condition will be safer, greener, more reliable, and more responsive to change*

- For illustrative purposes, we have mapped existing and potential future output measures to the three new proposed output category.
- Some measures may fall into more than one output category

	GD	GT	ET	ED
<p>Improve the customer experience</p> <p><i>All consumers, including those who are vulnerable, should receive a high quality, safe and reliable service</i></p>	Interruptions Guaranteed standards Customer surveys Complaints Stkhldr engagement Carbon monoxide safety Emergency response Vulnerable customers FPNES Connections	Stakeholder surveys Reliability Stkhldr engagement Connections	Stakeholder surveys Stkhldr engagement Connections	Customer surveys Stkhldr engagement Interruptions Complaints Guaranteed standards Worst-served customers Vulnerable customers Connections
<p>Support the energy system transition</p> <p><i>Network companies have to enable the transition to a low carbon, consumer-focused energy system</i></p>	Low carbon - Energy efficiency - Green gas - Green company ops Whole system outcomes Innovation - Baseline & bespoke Asset stranding Network extensions	Whole system outcomes Low carbon (compressor emissions) Asset stranding Network extensions	Whole system outcomes Low carbon - SF6 - EDR - Losses Visual impact Asset stranding Network extensions	Whole system outcomes Low carbon - SF6 -Oil leakage - Energy efficiency -Losses Visual impact Asset stranding Network extensions
<p>Improve the network</p> <p><i>A network in better condition will be safer, greener, more reliable, and more responsive to change</i></p>	NOMs Repex MOBs Shrinkage Workforce resilience	NOMs Physical/cyber security Workforce resilience	NOMs Physical/cyber security Workforce resilience Reliability	NOMs Load index Workforce resilience

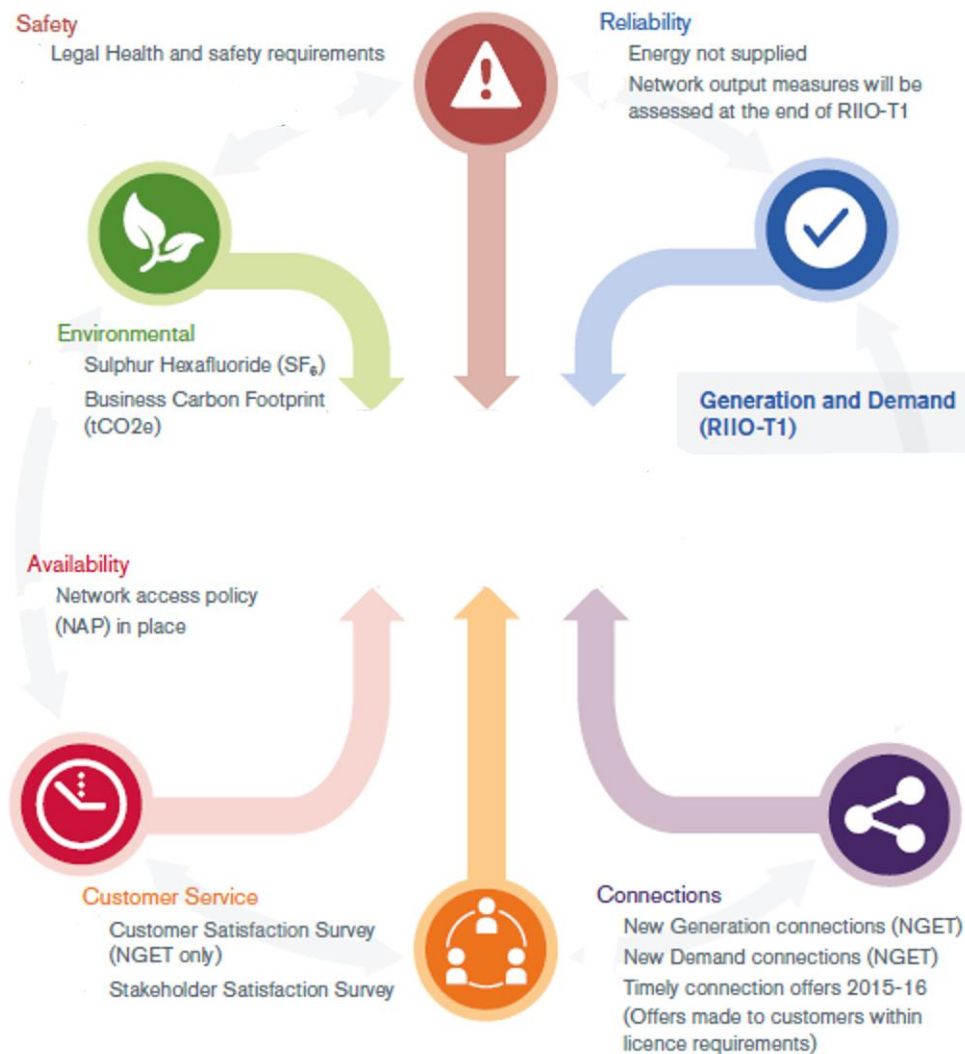
- In our R1102 Framework Decision, we identified three types of outputs
- In this slide, we describe the role we expect Ofgem and companies to play in terms of proposing/ setting outputs.
- **Ultimately Ofgem will retain final decision-making on all aspects of the price control settlement.**



- All activities led by Ofgem (orange) will involve significant stakeholder engagement and consultation.
- We expect companies to engage proactively and make extensive use of their user/ customer groups in developing and putting forward proposals (green). The onus is on the companies to put forward evidence-based proposals.

- We will provide stakeholders with an opportunity to engage formally on the following:
 - ✓ Output categories
 - ✓ Output types (ODIs/ Price Control Deliverables/ licence obligations)
 - ✓ Roles of each party (Ofgem vs. companies vs. stakeholders and customer/ user groups)
- We are considering running a workshop with interested stakeholders in September 2018 to further develop some of these areas.
- Further information will be available on our website soon.

RIIO-ET1 Output package at a glance (i)



Today we will cover the following existing outputs/ measures:

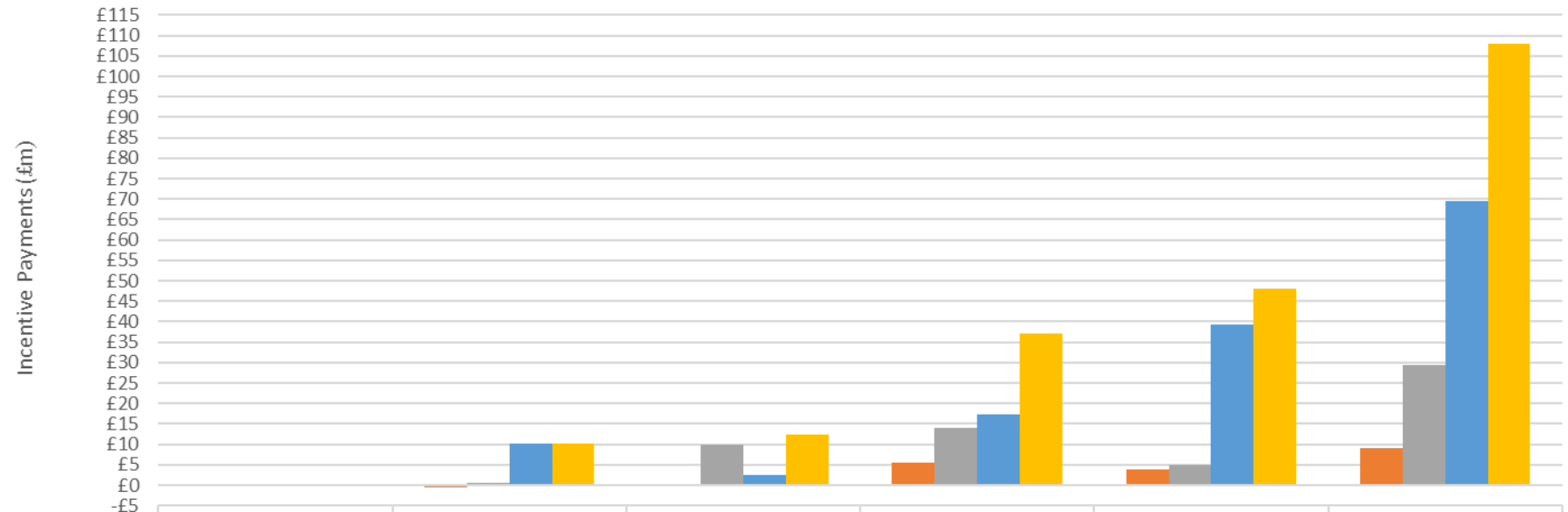
- Business Carbon Footprint
- Sulphur Hexafluoride (SF₆)
- Environmental Discretionary Reward
- Visual Amenity
- Energy Not Supplied
- Stakeholder Satisfaction Survey

Other outputs/ measures and policy issues will be covered in future sessions or separately:

- Losses
- Connections
- Availability
- Stakeholder Engagement Incentive
- Whole systems
- Innovation
- NOMs
- Wider Works

RIIO-ET1 Output package at a glance (ii)

Cumulative Incentive payments (2016-17 prices)



	Timely connections	Sulphur Hexafluoride, SF6	Environmental Discretionary Reward	Energy Not Supplied	Stakeholder satisfaction surveys and engagement discretionary reward	Total all mechanisms
■ SHE Transmission	£0.0	-£0.5	£0.0	£5.6	£3.9	£9.0
■ SPT	£0.1	£0.6	£9.9	£14.0	£4.9	£29.5
■ NGET	£0.0	£10.2	£2.5	£17.4	£39.3	£69.5
■ Total	£0.1	£10.3	£12.4	£37.0	£48.1	£107.9

Business Carbon Footprint

James Tyrrell
16/08/2018

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Useful definitions:

- **Business Carbon Footprint (BCF):** A measure of greenhouse gas emissions from all activities across a company, including energy used in buildings, logistics and company owned vehicles.
- **Scope 1 emissions:** Direct emissions, eg fuel consumption in company vehicles
- **Scope 2 emissions:** Indirect, mainly Electricity consumption
- **Scope 3 emissions:** Indirect emissions (not included in Scope 2) that occur in the value chain of the reporting company (i.e. contractor emissions).



A **reputational** reporting requirement that requires TOs to publish their annual Business Carbon Footprint.

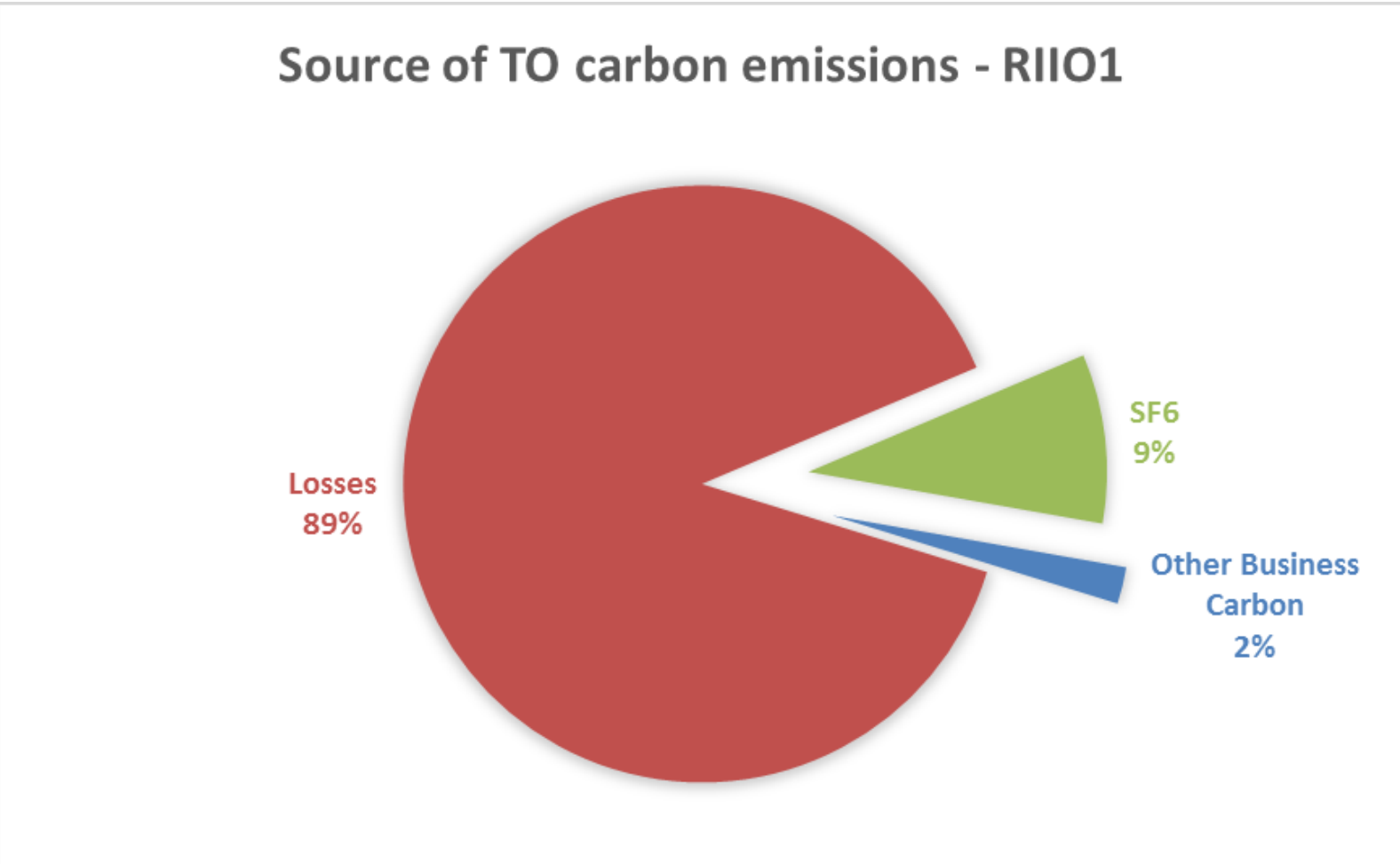


Aimed at increasing transparency of TO reporting of Greenhouse Gas Emissions



Improve accuracy of reporting

Transmission Operator Commitments under RII0-ET1	
NGET	Publish BCF accounts at business level annually over RII0-T1.
SPT	BCF baseline for RII0-T1. Commitment to develop business level reporting system and to review carbon reduction opportunities and control strategies during RII0-T1.
SHE-T	To incorporate carbon reduction into investment planning and use the new innovation supporting mechanisms to challenge this further. They will consult stakeholders on proposals in their summer 2012 Stakeholder Consultation.



- Noting that the TOs may have less control over some components of BCF (i.e. losses and system operation), and that the reporting requirement is not financially incentivised. How has this requirement influenced business practices?
- We are looking at whether we can set up some appropriate measures for making cross-sector comparisons. What would some appropriate metrics be?
- Should there be a future BCF incentive focussed purely on TO business greenhouse gases (GHG) performance (i.e. not include losses and SF6, but include Scope 3 (contractor) emissions)? What should this look like for RII02?



Sulphur Hexafluoride (SF₆)

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16/08/2018

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What is SF₆ and where is it used

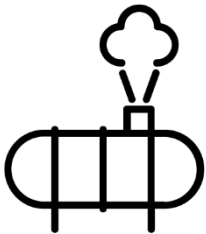


- **SF₆**: Sulphur Hexafluoride, a Greenhouse Gas with Global Warming Potential of approximately 23,900 tCO₂e.
- **How is it used:** SF₆ is used in electrical switchgear, transformers and substations for electrical insulation, arc quenching and as a cooling medium.
- **Why SF₆:** It is used because it is extremely chemically stable, non-flammable and highly electronegative.

To **financially** incentivise Transmission Operators to **reduce leakage of SF₆ as a % of SF₆ inventory.**



Drive companies to fully consider lifetime costs when making decisions about SF₆ assets.



Reduce leakage rates of SF₆ equipment operating on the system



Improve management of assets

SF₆ targets for and performance for RII0-ET1

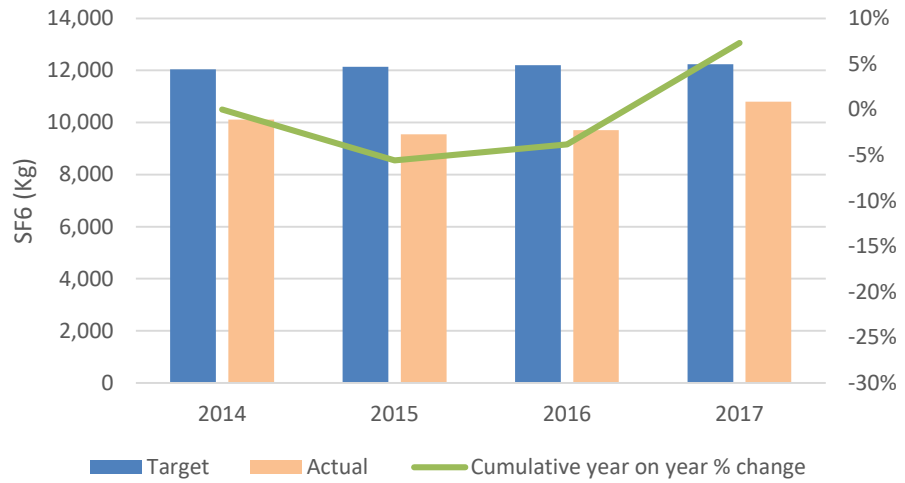
- The SF₆ leakage baseline is different for each TO.
- Baselines adjust each year depending on new assets added to the network.
- Differences to baseline are subject to a reward/penalty based on the non-traded carbon price for carbon equivalent emissions.

SF₆ baseline target and leakage for Transmission Companies since 2013-14

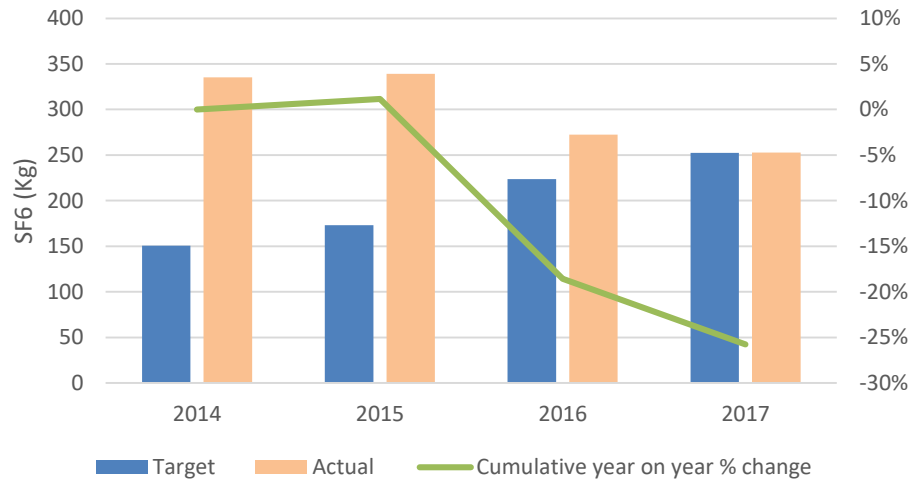
	NGET		SHE-T		SPT	
	Target (Kg leakage)	Leakage (Kg)	Target (Kg leakage)	Leakage (Kg)	Target (Kg leakage)	Leakage (Kg)
2014	12,037	10,110	151	335	573	730
2015	12,139	9,544	173	339	592	495
2016	12,199	9,713	224	272	619	441
2017	12,242	10,795	253	253	707	388

TO performance during RIIO-ET1

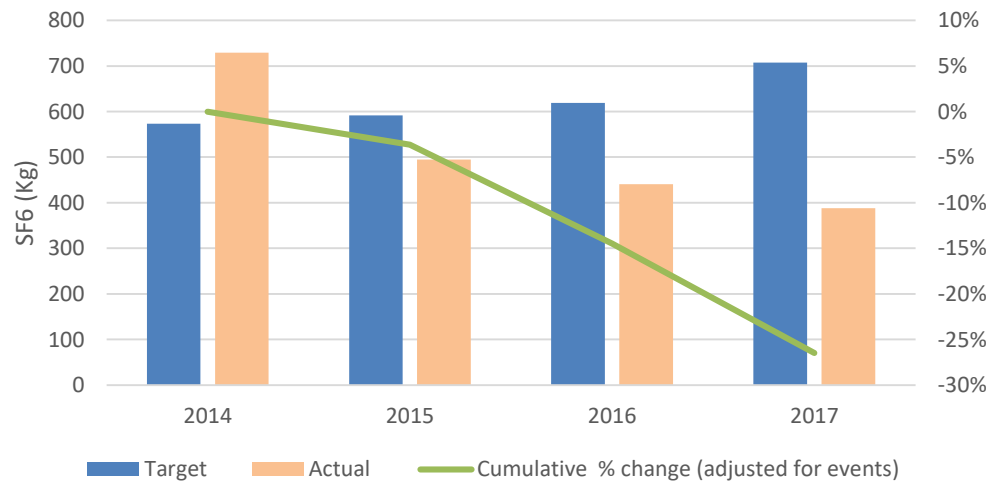
NGET SF6 leakage against target



SHE-T SF6 leakage against target



SPT SF6 leakage against target



- How has this output driven business practices and performance?
- Have TOs been deliberately targeting a progressive reduction and if so how have they been achieving this?
- Given the future direction of SF₆ and the rise of potential alternatives, if we are going to continue incentivising reductions in SF₆ leakage what should this look like for RII02? Or should we consider a different incentive?



Environmental Discretionary Reward Scheme

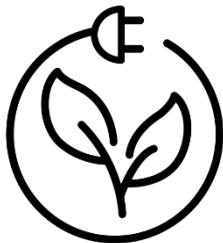
James Tyrrell
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The EDR scheme is a reputational and financial incentive. Its purpose is to **sharpen the TOs' focus on strategic environmental considerations and organisational and cultural changes to facilitate growth in low carbon energy.**



Encourage high standards in environmental management



Facilitate TOs to move to low carbon energy system

- A key environmental incentive under the RII0-T1 price control (£32m available over T1, £4m/year).
- It is a voluntary ex post financial incentive, and applies to electricity TOs and the SO 'internal' functions (ie not balancing)
- There are 80 questions that companies have to answer across 7 categories each year.

- TOs are assessed based on:
 - Executive-level annual statement (marked as "Satisfactory" or "Unsatisfactory")
 - Performance against criteria, based on evidence submitted to Ofgem.

Three scoring categories:

- 'engaged' (0 to 49%);
- 'proactive' (50% to 69%); and
- 'leadership' (70% plus).

EDR performance to date

	Year 1 (2013-14)	Year 2 (2014-15)	Year 3 (2015-16)	Year 4 (2016-17)
SPT	Engaged	Engaged	Leadership (£4m)	Leadership (£4m)
NGET	Engaged	Leadership (£2m)	Proactive	Proactive
SHE-T	Engaged	Proactive	Engaged	Proactive

- Engaged <=50%
- Proactive 51-69%
- Leadership >=70%

- How has this output driven TO business practices and performance?
- What has been the TO's experience of the EDR process? Are there any learnings from the EDR?
- How can the process be improved?
- What should a future low carbon system planning incentive look like for RII02?
- Has anyone been involved in the Sustainability First discussions and if so do you have any views on their proposals?



Visual Amenity Impacts

Anna Kulhavy



What is visual amenity and why does it matter



- Grid infrastructure comprises overhead lines, supported on steel pylons, as well as substations which connect generation and link different voltage power systems.
- The prominent visual nature of the network infrastructure can frequently affect the visual amenity of the host landscape.
- The effects can also be spread across a wide area because of the linear nature of the overhead lines.
- Some stakeholders say that the impacts of the transmission grid on landscape and visual amenity can adversely affect the socio-economic well-being of local communities.

Overview of RII0-ET1 policies on visual amenity

	1. New transmission projects	2. Existing transmission infrastructure
Objective	Efficiently meet planning requirements	Efficiently reduce visual amenity impacts of existing lines on protected landscapes
Price control mechanism	Funding arrangements for other installation methods subject to justification that alternative is economic and efficient	£500 million in RII01 to deliver mitigation projects. Must evaluate and work with stakeholders to select efficient projects
Rationale	TO responsible for obtaining development/planning consent	Approximately 1,750 circuit kilometres of overhead lines in national parks, AONBs and national scenic areas in GB
	UK government guidance doesn't define where OHL are acceptable or not. TO to evaluate impacts & costs on case by case basis	TOs and Ofgem have duties in relation to protected areas. Stakeholders also told us that consumers will benefit from reducing impact in areas with highest visual amenity value.
	TO consults statutory bodies and stakeholders on evaluation and decides on the design that is acceptable in planning terms	Hypothesis tested by conducting willingness to pay (WTP) for mitigation measures. Survey results showed sufficient WTP to deliver mitigation projects during price control.

How have companies responded?

Meeting planning requirements for new projects: some observations

- Long, complex and sensitive process to develop proposals for new transmission lines
- Many factors to consider – statutory obligations, security standards, technical feasibility, environmental impacts, cost, network availability etc.
- TOs have sought to address VA impacts on some projects where these are considered unacceptable in planning terms.
- Nonetheless some stakeholders get very frustrated about how the visual & socio-economic impacts are taken into account in the development of proposals.

Mitigating impacts of existing infrastructure in protected areas

TO activity	Progress
Working with stakeholders to identify and evaluate projects	✓
Prioritised pipeline of potential mitigation projects	✓
Actively developing funding requests to deliver mitigation outputs	✓

Meeting planning requirements of new transmission projects

- What do stakeholders think of the RII01 policy objective in respect of new transmission projects?
- What policy objective do stakeholders think the next price control should have in respect of new transmission projects?

Mitigating impacts of existing transmission infrastructure in protected areas

- Do stakeholders think the TOs should continue to deliver mitigation outputs in protected areas in next price control?
- If so, how should the amount of money available for delivering these outputs be set?
- How should the scheme operate? Should TOs submit funding requests during the price control as is the case in RII01? Or should TOs consult stakeholders on specific projects (and expenditure) as part of their business plan development?



Reliability

Energy Not Supplied

Cissie Liu
16/08/2018

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What is Energy Not Supplied (ENS)

Useful definitions:

- **Energy not supplied:** The volume of energy to customers that is lost as a result of faults or failures on the network.
- **Loss of Supply event:** any event on the Licensee's transmission system that results in an actual unsupplied energy event to a customer or customers
- **Value of Lost Load (VOLL):** the theoretical price that consumers would be willing to **accept** and to **pay** to maintain supply.

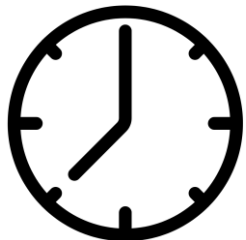


The purpose of the reliability financial incentive is to ensure Transmission Operators **mitigate and minimise the impact of any Loss of Supply to energy consumers**

(ie are incentivised to minimise failure and restore supplies as soon as possible after an incident).



Reduce demand lost (MWh)



Reduce duration of power cuts

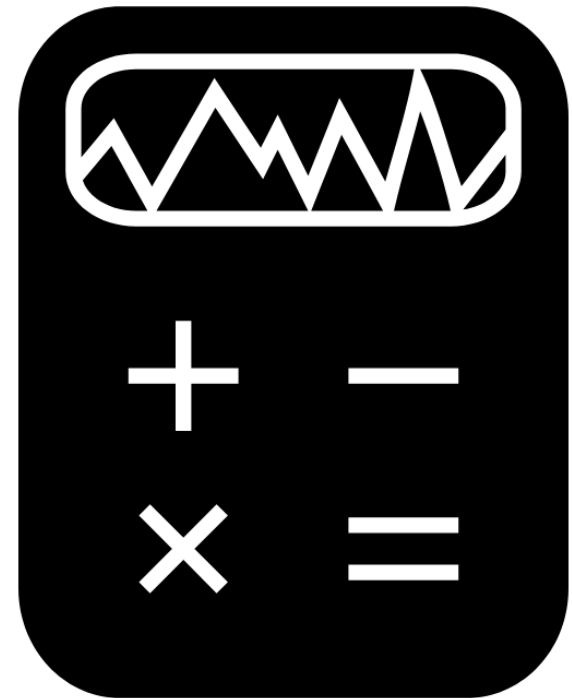
ENS Baseline Target Output for Transmission Companies

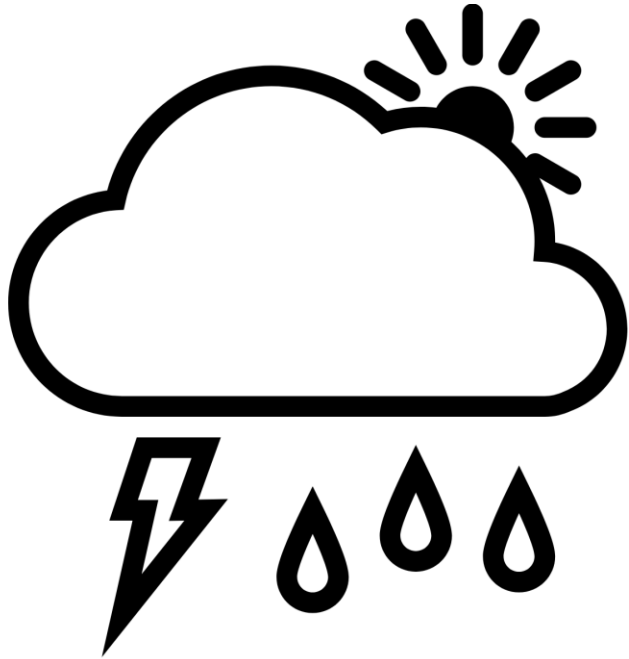
		
<p>316 MWh</p>	<p>120 MWh</p>	<p>225 MWh</p>

- Incentive rate for ENS for all TOs: **£16,000/MWh**. It is based on an estimate of the **value of lost load (VoLL)**.
- A collar on financial penalties/rewards is in place which limits the maximum penalty/reward to 3% of allowed revenues.

How is ENS calculated (by TOs)

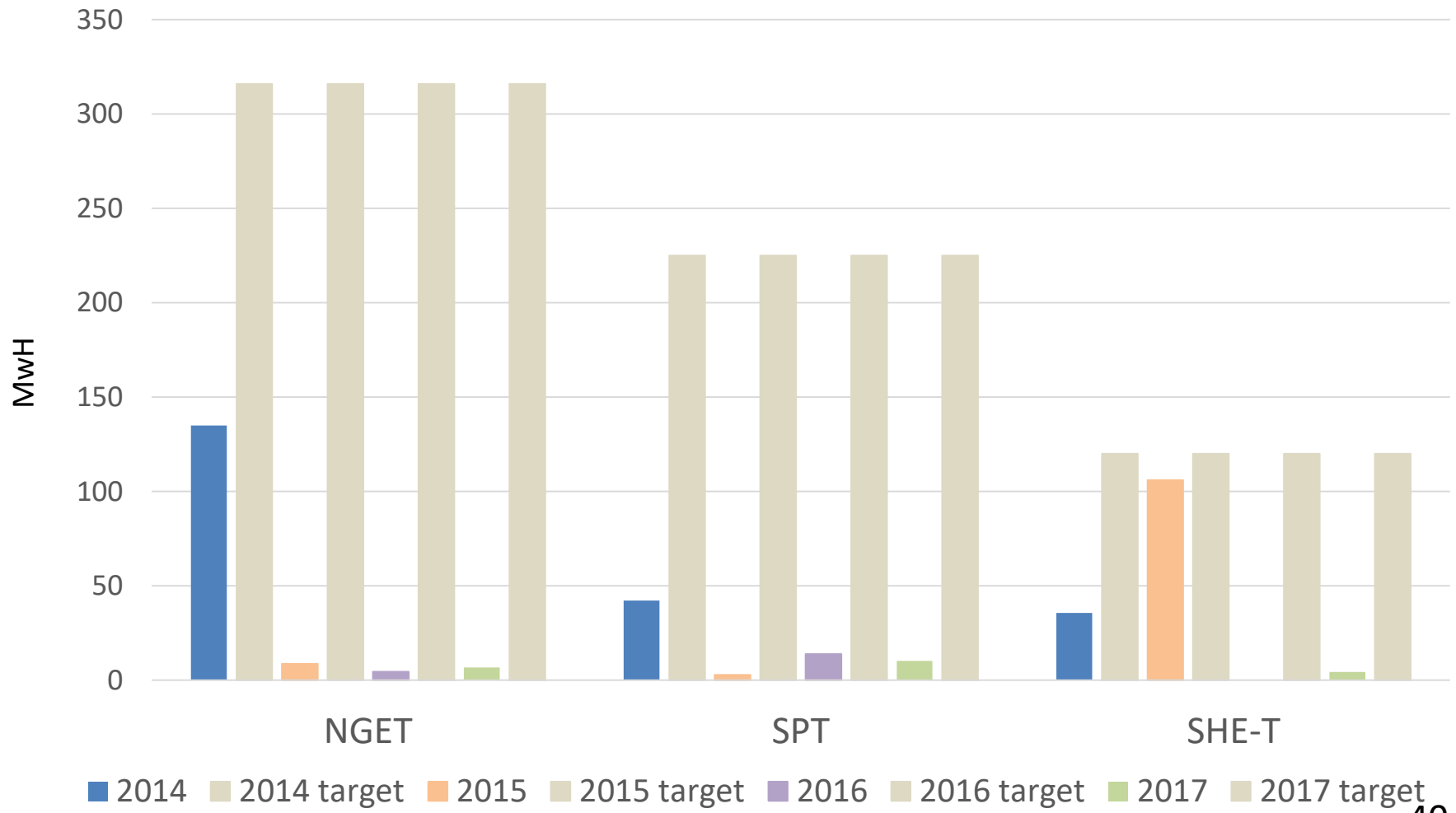
- Two dimensions to ENS— **duration of the event (hours)** and **demand lost (MW)**. This product gives us energy not supplied in MWh.
- TOs have in place a [methodology statement](#) approved by Ofgem on how to report on ENS
- Energy not supplied cannot be metered or measured directly. It must be estimated using various information from sources.

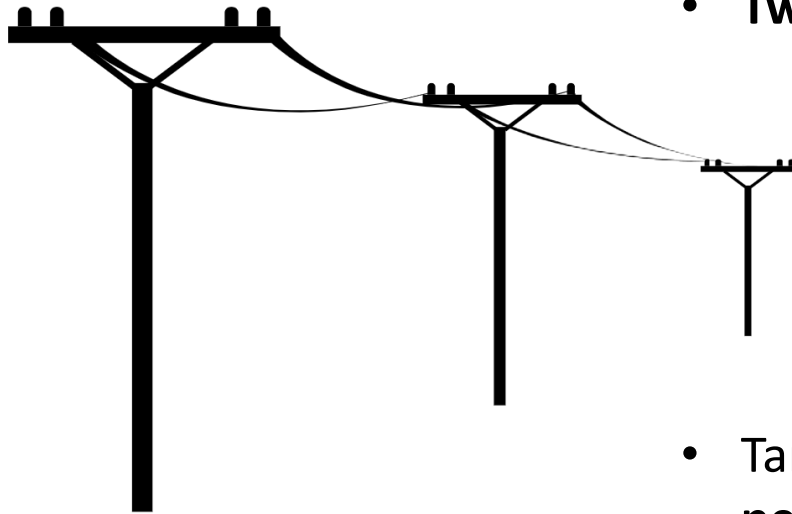




- Not all loss of supply events are included in incentive. These are called excluded events.
- **Excluded Events:** Events not included in the incentive (eg events less than 3 minutes, exceptional events).
 - **Exceptional Events:** Events outside reasonable control of the Licensee (eg Severe weather, vandalism, terrorist act, etc)

Volume of ENS - TO Targets vs. Performance 2014-17





- **Interruption Incentive Scheme**
- **Two targets are set for each DNO:**
 1. The number of **customer interruptions (CI)**
 2. the number of **customer minutes lost (CML)**
- Targets were based on DNO **historical performance and industry performance**
- Incentive Rate different for each TO
- **Annual improvement factor**

- Reliability on the Transmission networks (as measured by ENS) is very high. What new challenges do you foresee for RII02 and how should we amend the ENS mechanism to reflect these? (e.g. challenges on the generation side)
- What kind of actions have been undertaken in order to reduce ENS?
- How should targets and incentives rates should be set? What do you think of the use of VoLL in setting incentive rates.
- How suitable is the ENS calculation method?
- How suitable is the definition of “exceptional events”?
- Are there any learnings from the Electricity Distribution experience?



Stakeholder Satisfaction Output

Eilidh Alexander
16/08/2018



What are we trying to achieve



Objectives:

1. Incentivise TOs to become more outwardly focused
2. Incentivise TOs to be more responsive to stakeholders needs



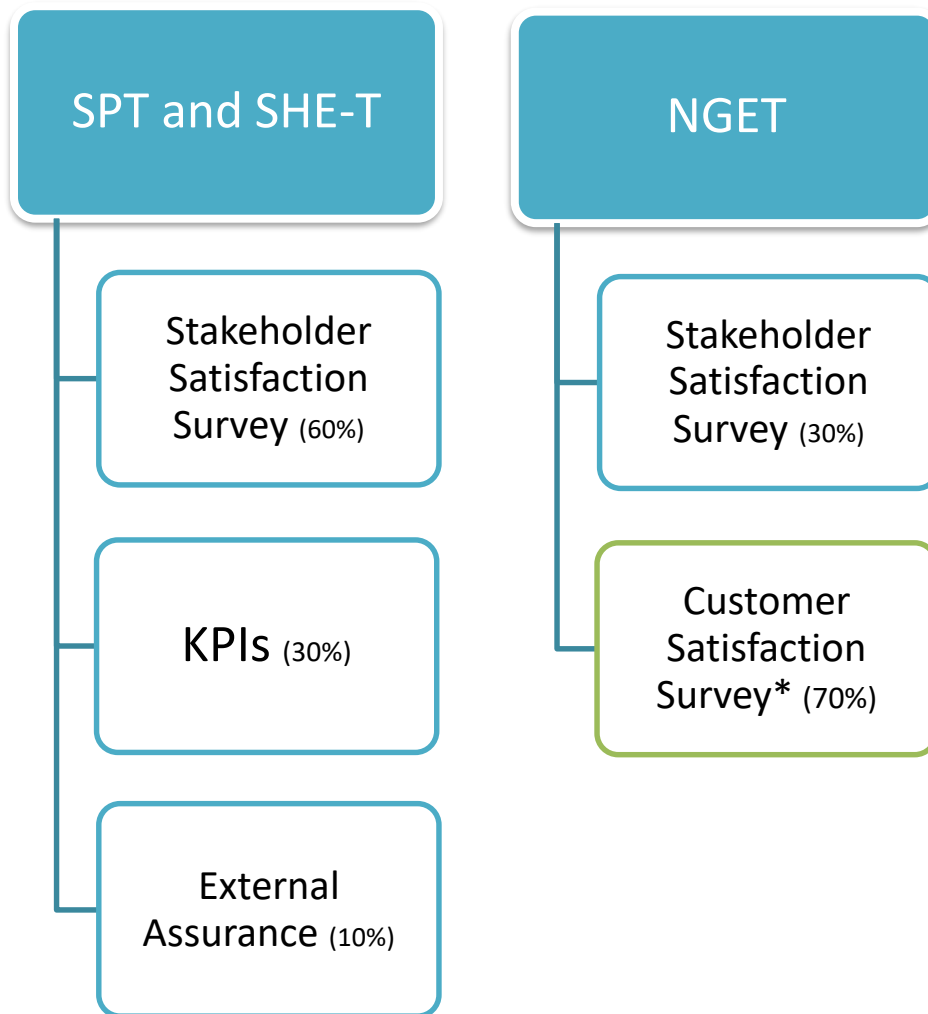
Background of the decisions of the Stakeholder Satisfaction Output (SSO)

1. New performance measure to the RII0 price control, introduced as a financial incentive
2. Years 1-3 acted as 'pilot years' to determine appropriate measures of the output going forward.
3. The SSO went live in 2016/2017 and will run from years 4-8 of the price control.

How does the incentive work

- **Customer Satisfaction Survey**
 - ✓ NGET's output operates under a different structure as the SO has the ability to interact with their customers. Customer Satisfaction Output is therefore exclusive to NGET.
- **Stakeholder Satisfaction Survey:**
 - ✓ TO's are only obligated to include 1 question in their surveys that asks 'overall stakeholder satisfaction to be rated on a scale of 1 to 10, when 1 is low and 10 is high.'
- **Key Performance Indicators**
 - ✓ Proposed by the TO
 - ✓ Scored from 0-100
- **External Assurance:**
 - ✓ External Assurance methodology set by the TO and assessed by an external auditor
 - ✓ Assessment outcomes:
 - Non-compliant with stakeholder strategy
 - Compliant with stakeholder strategy
 - Exceeding stakeholder strategy

Components of the Stakeholder Satisfaction Output (SSO)



*not relevant to RII0-T2 discussions

The baseline for all of the components was determined by the average of performance results in years 1-3.



	SPT	SHE-T	NGET
Baseline Stakeholder Satisfaction Survey	7.4	7.4	7.4
Cap/ Collar	+/-1.6	+/-1.6	+/-1.6
Baseline KPIs	69	89	N/A
KPI Cap/Collar	+/-16	+/-11	N/A

→ Combination of these components delivers a reward/penalty of +/-1% of the annual revenue

How is the incentive performing..?



Stakeholder Satisfaction Survey

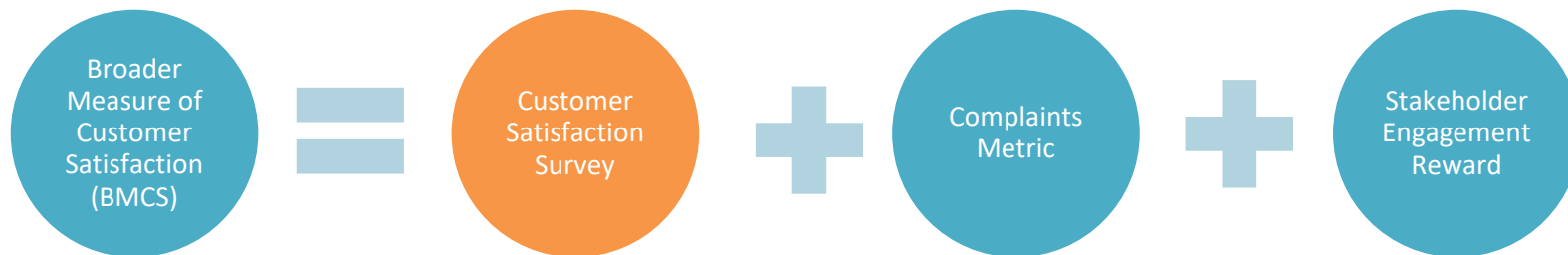
- All TOs achieved scores above the targets in 16/17!
- TO's were rewarded for their performance



Difficult to conclude the performance of the SSO and the TOs at this early stage

Stakeholder Satisfaction Output Scores (2016/2017)

	NGET		SHE-T		SPT	
	Actual	Target	Actual	Target	Actual	Target
	Stakeholder Satisfaction Survey	7.7	7.4	8.7	7.4	7.9
Key Performance Indicators			69	89	77	69
External Assurance				Compliant		Exceedingly compliant



Customer Satisfaction Survey – Electricity Distribution (ED):

- Surveys scores are collated quarterly and the questions are determined by Ofgem. Maximum reward/penalty for the surveys are +/-1% of annual revenue. Target for all components is 8.2
- Survey Components:
 - ✓ Supply Interruptions Element
 - ✓ Connections Element
 - ✓ General Enquiries Elements

Gas Distribution (GD):

- Surveys are carried out monthly and the questions are determined by Ofgem. Maximum reward/penalty for the surveys are +/-0.5% of annual revenue.
- Survey Components:
 - ✓ Planned work (Target 8.09)
 - ✓ Emergency and Repair (Target 8.81)
 - ✓ Connections (Target 8.04)

Under the current arrangements, has the Stakeholder Satisfaction Output actually driven TO behaviours?

- What actions have been taken to meet KPIs, improve the survey scores and comply with external assurance?
- Have these actions led to improvements in TO performance?

Has this output sufficiently captured the performance of the TOs in improving their stakeholder satisfaction?

- Should a more 'hands on' approach be taken to set the various components of SSO?
- Are the components of SSO an appropriate demonstration of 'good' stakeholder satisfaction levels?
- Going forward into RII02, should we develop a standardised set of components for all TOs?
- Are there other forms of measuring stakeholder satisfaction?

- What measures should we retain/ tweak/ discard?
- Are there any new measures we should be considering?
- What has changed since RII01/ what new developments do we need to consider?
- How does each individual measure fit within the broader package of outputs/ incentives?
How do we achieve the right balance?
- What measures should be financially incentivized, what measures should be reputational?
- What is the right balance between rewards and penalties?

Upcoming meetings:

- Next meeting scheduled for 7 September – what should focus of meeting be?
- Ofgem to provide detailed plan for upcoming meetings

Terms of reference:

- Please send comments in writing by COP Friday 24 August

AOB?