

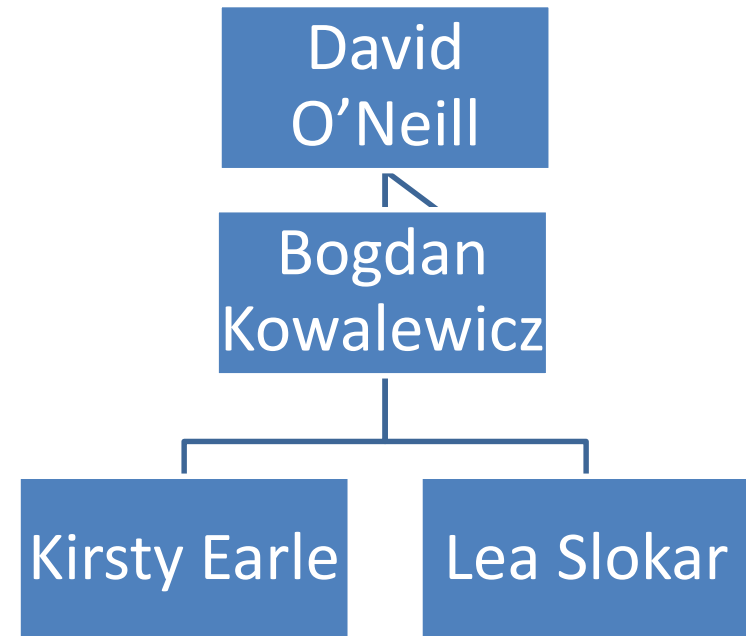
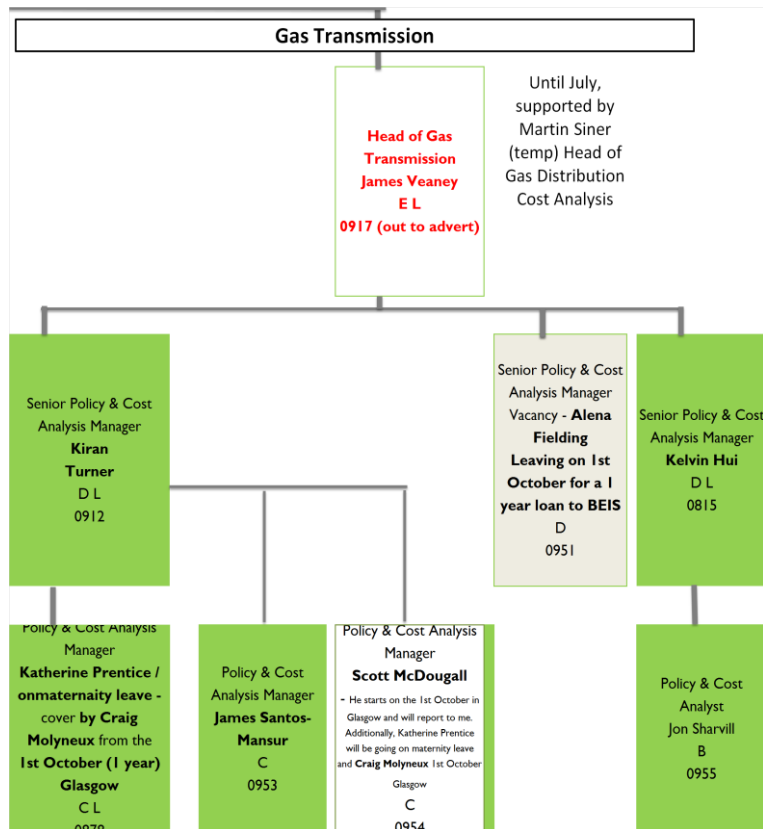
# RIIO-GT2

## Policy Working Group

SO incentives, baseline capacity and access arrangements, environmental outputs and incentives



Time	Item
9:30 – 9:40	Introductions
9:30 - 12:00	SO Incentives
12:00 - 12:30	Lunch
12:30 - 1:30	Baselines and Access Arrangements
1:30 – 2:00	National Grid present current thinking from stakeholders
2:00 - 2:15	<u>Coffee Break</u>
2:15- 3:00	Environmental Outputs
3:00 - 3:15	AOB

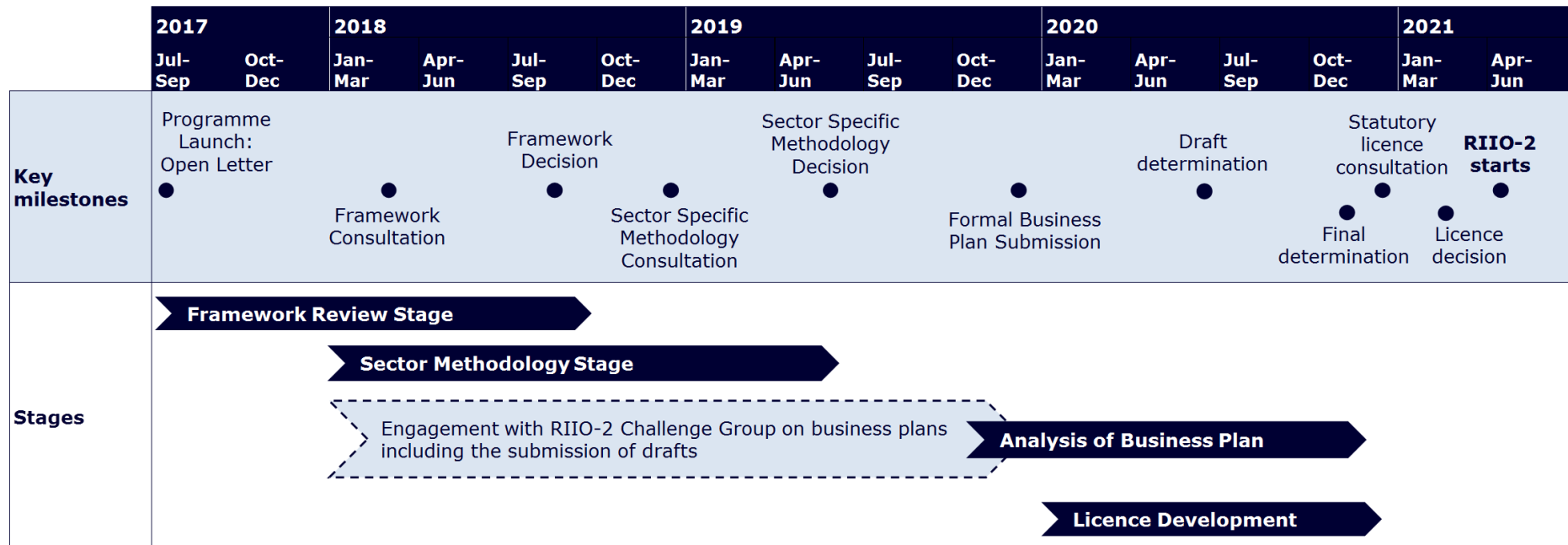


- **Inform GT business plan submissions**
  - ✓ **Content**
  - ✓ **Form**
  - ✓ **Evidential base required**
- **Inform development of Policy and Outputs**
- **Forum for Ofgem, NGGT and stakeholders to jointly inform policy for RII02.**

- Group is an advisory body, not a decision making body. Ofgem is under no obligation to accept views raised by the group
- While consensus is welcome in some areas, it is not the aim of the PWG
- Membership comprises Ofgem, NGGT representatives and other interested parties
  - ✓ Expectation that members will be active participants
  - ✓ Chatham House Rules apply
  - ✓ Discussions not binding on GEMA
  - ✓ The meetings will be minuted, with views and opinions not-attributed
  - ✓ minutes will be disseminated to those who could not attend and published on Ofgem's website

...

## Indicative High-Level RIIO-2 Plan for ET, GT, GD and ESO Sectors

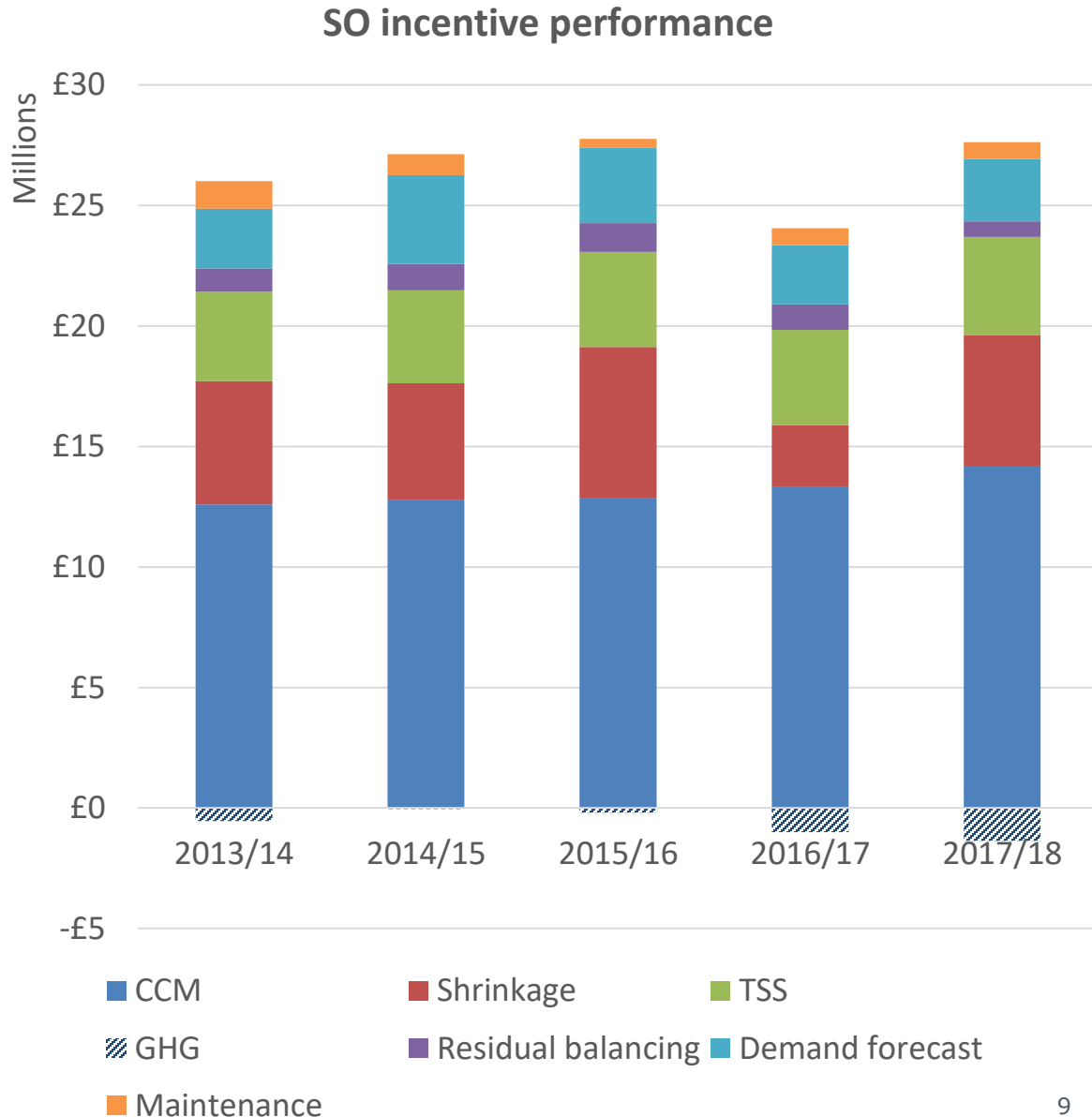


# **Gas System Operator incentives**

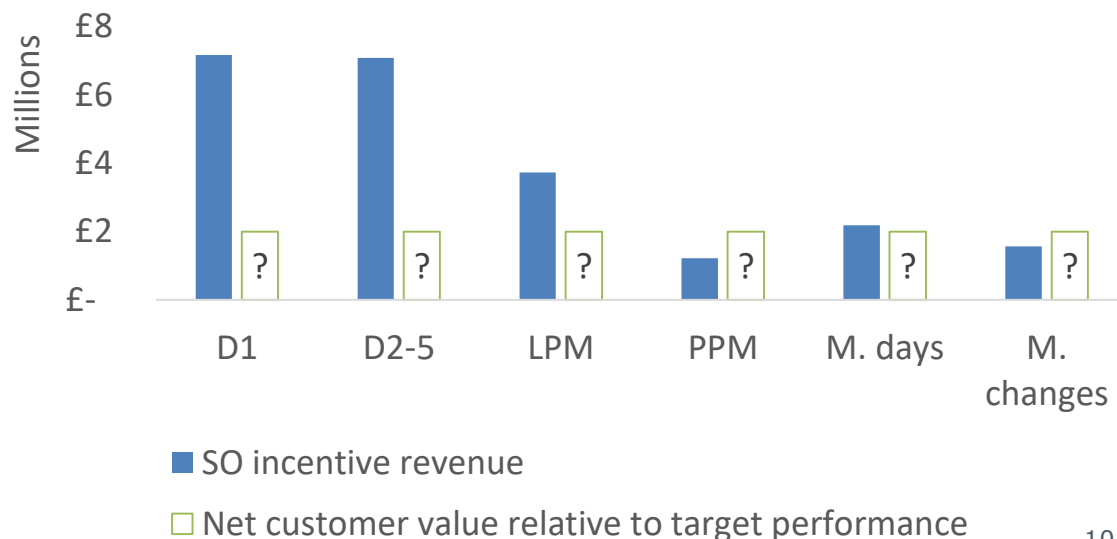
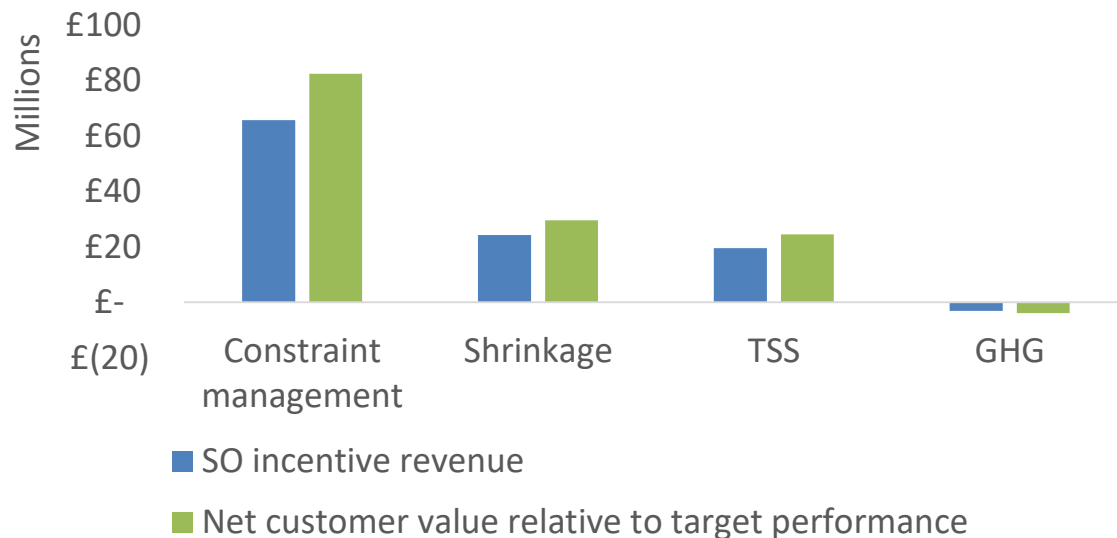
- The SO has made c.£25m each year so far from RIIO-1 incentives - adding c.1% to NGGT's RORE.
- NGG has out-performed every target in every year of RIIO-T1 so far except for GHG emissions (downside only).
- Initial analysis shows that there is a case for:
  - retaining Capacity Constraint Management, residual balancing and demand forecasting incentives with more challenging targets;
  - redesigning GHG/venting incentive; and
  - removing or redesigning maintenance incentives.



- The SO has received c.£25m per year of allowed revenue from incentives over RII0-1.
- Performance has been above target for every year & every incentive - except GHG/venting.
- Most SO incentive revenue has come from the three cost minimisation schemes.
- Transport Support Services (TSS) scheme expired on 30 Sept 2018.

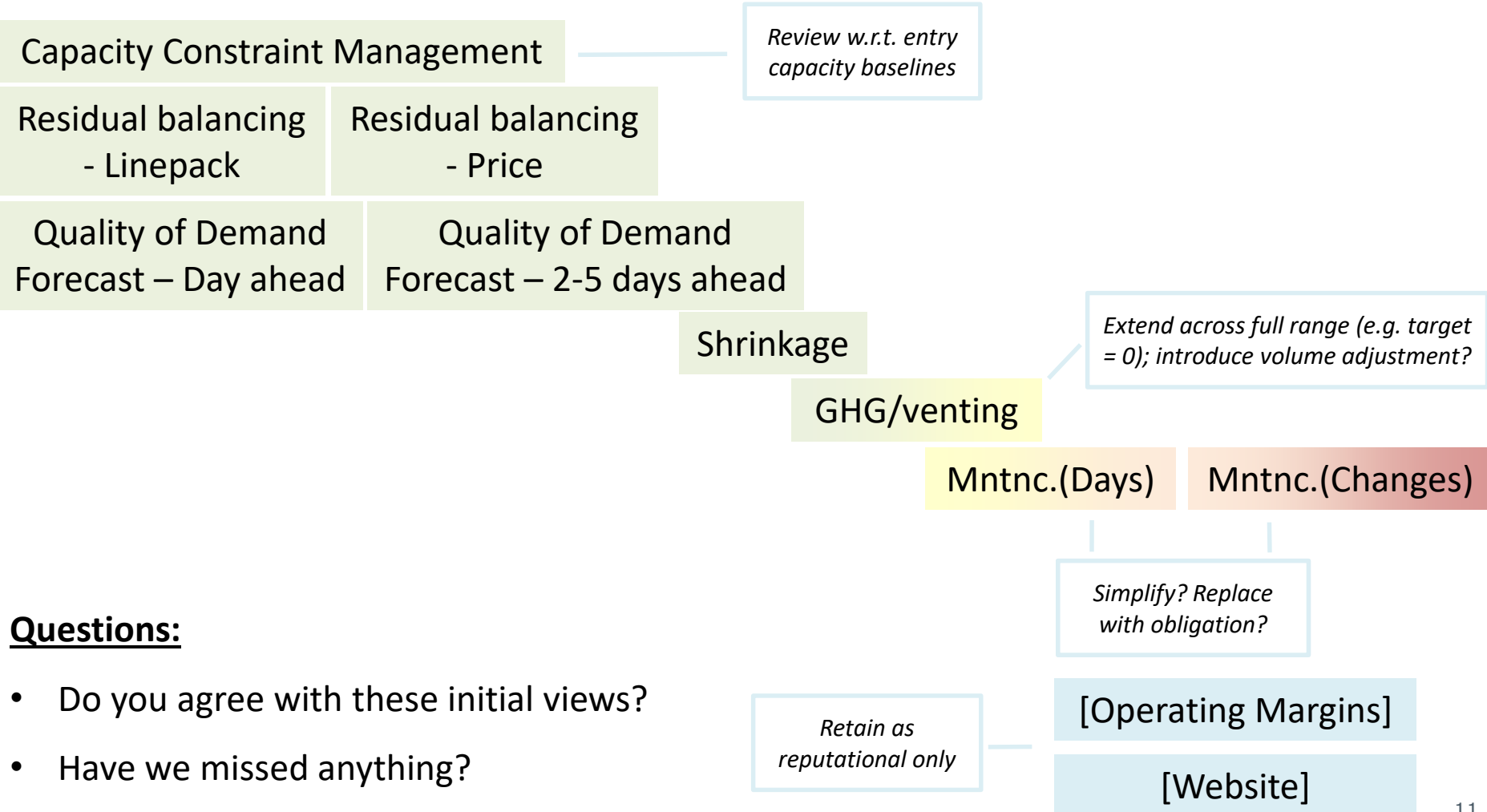


- Measuring customer value from incentives is difficult because counterfactual is unknown.
- If targets are a good counterfactual, incentives have generated £133m of net consumer value over 5 years (*not including outcomes whose value is unclear*).
- But if performance has been unaffected by incentives, net consumer value could be negative (e.g. TSS).



**Renew**  
*but tighten targets / reassess rates*

**Discontinue**  
*or change design*



**Questions:**

- Do you agree with these initial views?
- Have we missed anything?

Would an **ESO-style** 'evaluative ex-post' incentive scheme be appropriate for the GSO?

Is there any **conflict** between the two given Grid's changing legal structure?

### **GSO incentives**

- Mechanistic
- Set ex-ante
- Long precedent
- c. +£60m / - £90m

### **GSO background**

- Remains part of NGGT
- ↓ capacity requirements
- High certainty around network developments (potential for 'step-change' in terms of decarbonisation)

### **ESO incentives (as of 2017/18)**

- Evaluative (GEMA makes final decision)
- Determined ex-post
- Unproven
- +/- £30m

### **ESO background**

- Legally separated from NGET
- ↑ capacity requirements
- Low certainty around network developments

- Do you agree that the **overall incentive structure** should remain (i.e. multiple mechanistic ex-ante schemes)?
- Do you agree that we do not move to an ESO-style 'broad evaluative ex-post' incentive scheme, but keep the option open depending on how NG plc chooses to structure itself and other developments?
- Do you agree that SO incentives should be **aligned with the price control cycle** (i.e. set for 5 years with uncertainty mechanisms)?
- Do you agree that the GSO's **overall exposure to incentives** is currently towards the upper end of what would seem appropriate (currently adding 1% to RORE)?
- Do you have any suggestions for **new incentives**?

- Are we **over/under-incentivising** outcomes?
- Are incentives **disproportionate** given costs required?

Incentive	Avg. incentive rev. p.a.	Current outcome value
Maintenance (days used)	£436,800	£25,000 per maintenance day used (var.)
Maintenance (changes)	£312,375	£50,000 per change to maintenance plans
Demand forecasting (D1)	£1,456,721	£1,764,700 per mcm Avg. error currently ~8mcm
Demand forecasting (D2-5)	£1,415,755	£729,927 per mcm Avg. error currently ~12mcm
Balancing (LPM)	£745,894	£2,519 per mcm change per day
Balancing (PPM)	£242,884	£1,000 per percentage point high-low market offer price spread per day (var.)

- Do you agree with our initial views on **individual incentives**?

Incentive	Straw man proposals	WG comments
CCM	Retain; set more challenging target; review w.r.t. baselines	
Shrinkage	Retain; review target	
GHG / venting	Retain; extend over full range; remove volume risk	
Balancing (LPM & PPM)	Retain; review value	
Demand forecasting (D1 & D2-5)	Retain; set more challenging targets; review value	
Maintenance (days & changes)	Replace with obligation	
[Website / Operating margins]	Retain as reputational-only	

# **ANNEXES**

## ***Review, by incentive***



## SO incentives: Focus on Capacity Constraint Management

**Purpose:** ↑ efficient SO constraint mgmt.

**Introduced:** 2013/14

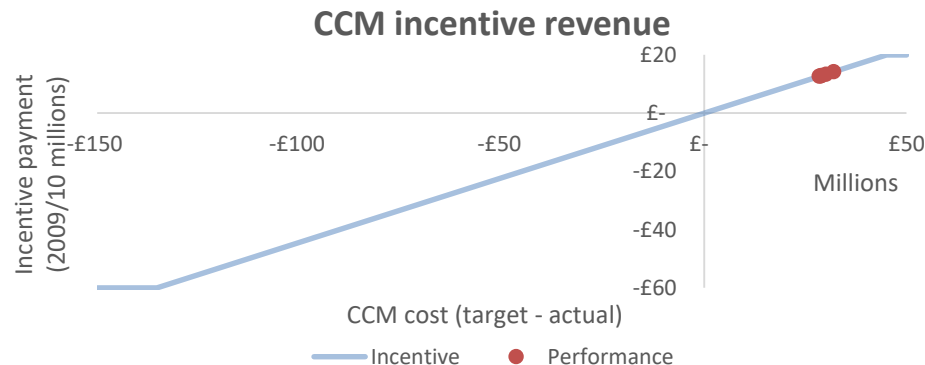
**Perf. Measure:** Net CM operational costs

**Target:** £22m (£09/10)

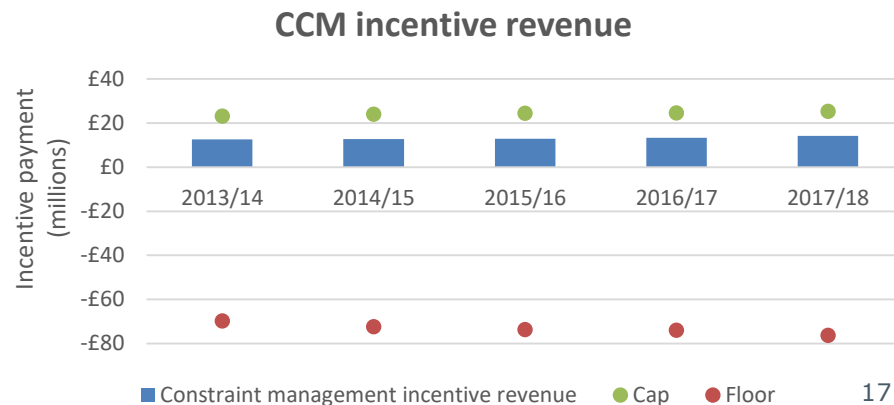
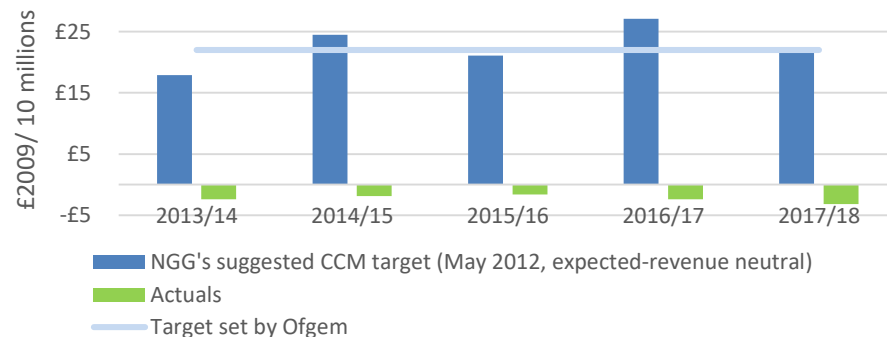
**Inc.Cap:** £20m (£09/10)

**Inc.Floor:** -£60m (£09/10)

- Based on NGG's forecasts, intended to be expected-revenue neutral.
- NGG has far out-performed own forecasts (revenues > costs every year).
- Risk of low probability / high cost capacity constraint event.



### CCM performance (vs target / NGG forecast)



## SO incentives: Focus on Maintenance (changes & use of days)

**Purpose:** Internalise cost of maintenance duration & changes to agreed plans.

**Introduced:** 2013/14

**Perf. Measure:** plan changes / use of days

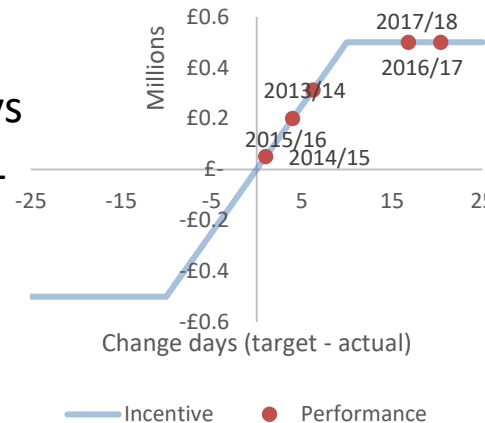
**Target:** fraction of forecast workload / 11

**Inc.Cap:** £0.5m / £0.215m

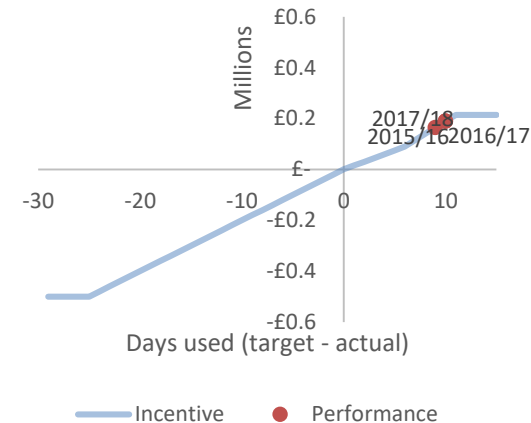
**Inc.Floor:** -£0.5m / -£0.5m

- NGG has not made a single change to agreed maintenance plans in RIIO-T1.
- 'Changes' target based on NGG's own forecast of workload days – risk of gaming.
- Not clear why 'use of days' scheme has a variable incentive rate.
- Combined cap may reduce clarity.
- NB: Use of days scheme parameters tightened in 2016/17.

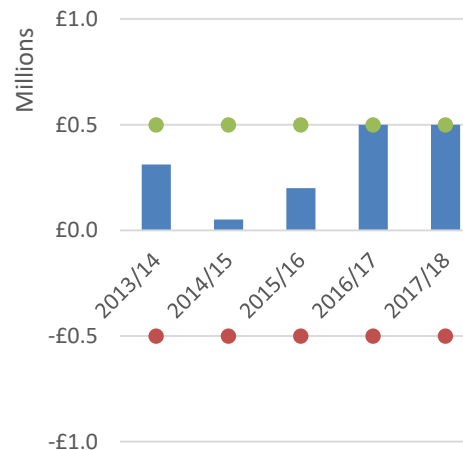
**Maintenance - changes incentive**



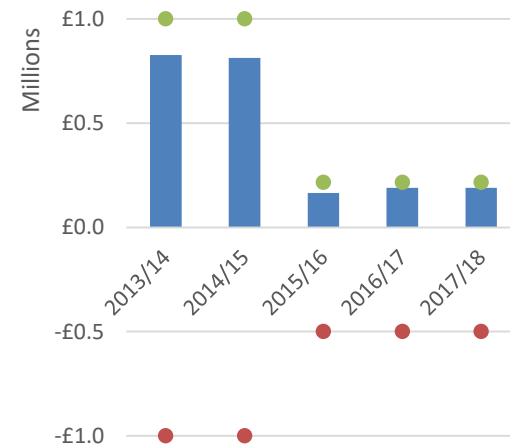
**Maintenance - use of days incentive**



**Maintenance – changes**



**Maintenance – use of days**



## SO incentives: Focus on GHG emissions / venting

**Purpose:** Internalise environmental cost of venting

**Introduced:** 2013/14

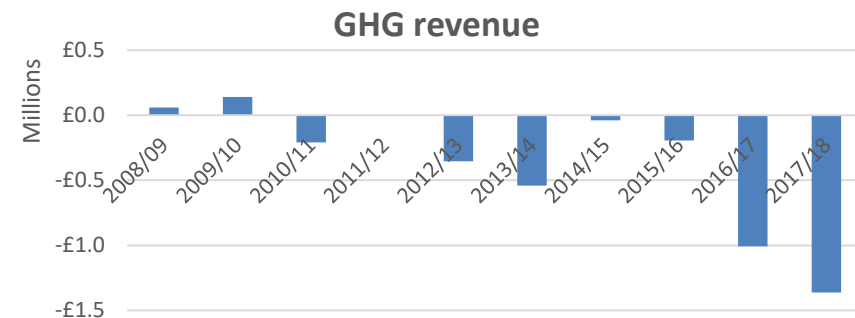
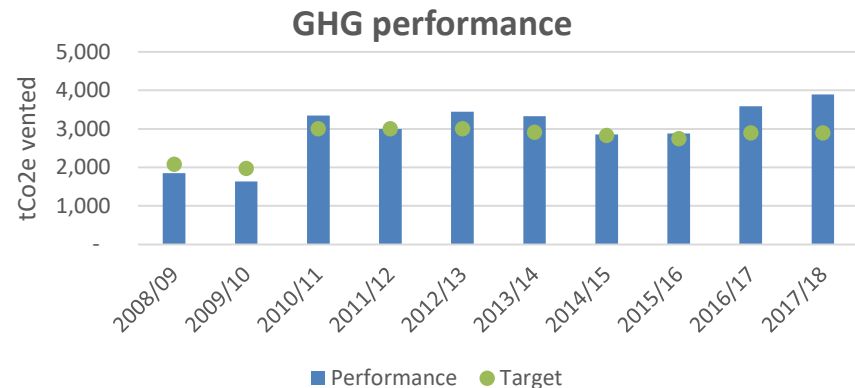
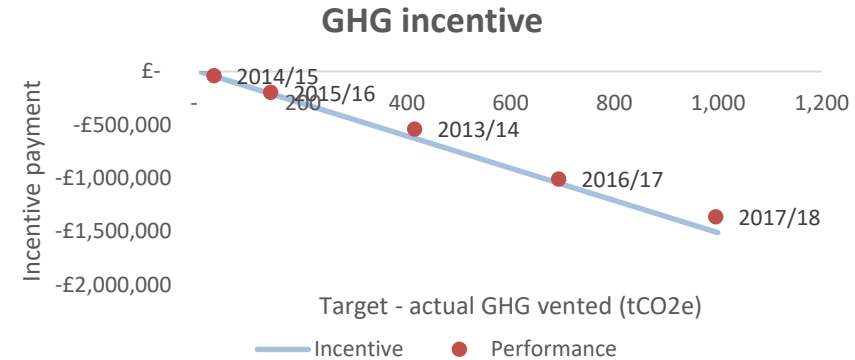
**Perf. Measure:** Tonnes vented from NTS compressors

**Target:** ~3,000 (variable)

**Inc.Cap:** £0

**Inc.Floor:** -

- Only target not being beaten in RIIO-T1.
- No incentive to out-perform target.
- One-sided incentive appropriate?
- NTCC \* sharing factor appropriate?
- Adjust for volume risk?



**Purpose:** Minimise cost of shrinkage

**Introduced:** 2002/03

**Perf. Measure:** Cost of shrinkage

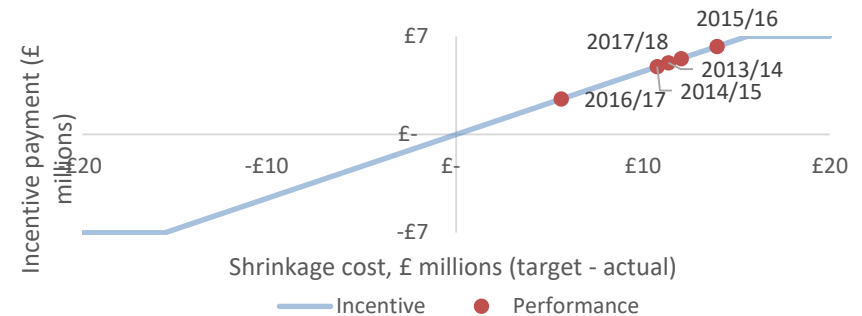
**Target:** Energy Procurement Target + adjustments

**Inc.Cap:** £7m

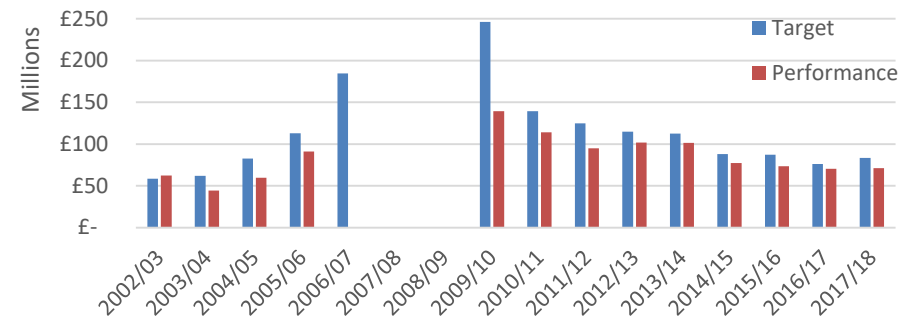
**Inc.Floor:** -£7m

- Established incentive.
- Target & performance falling since 2009.
- Target not sufficiently challenging?

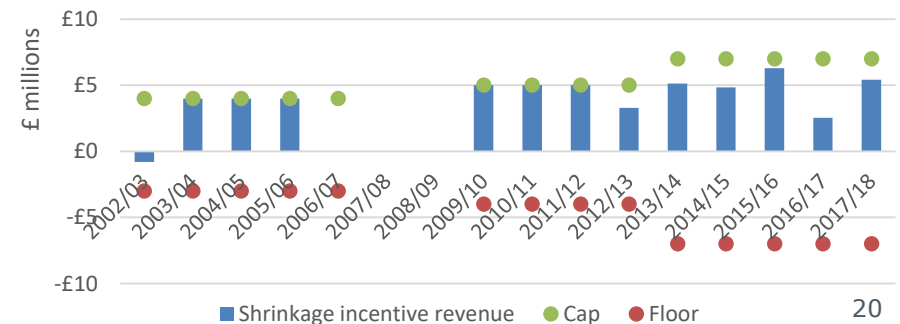
**Shrinkage incentive**



**Shrinkage performance**



**Shrinkage revenue**



## SO incentives: Focus on residual balancing (linepack & price)

**Purpose:** ↑ daily balancing & minimise impact on market prices

**Introduced:** ?

**Perf. Measure:** PPM - highest-lowest price / SAP; LPM - starting-closing linepack

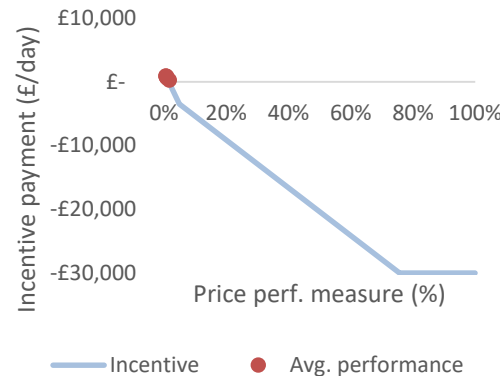
**Target:** PPM - 1.5%; LPM - 2.8mcm

**Inc.Cap:** £2m (combined)

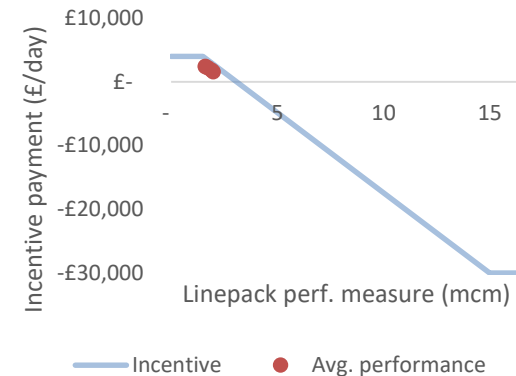
**Inc.Floor:** -£3.5m (combined)

- Established incentive.
- Why combined cap & floor?
- Unclear whether values placed on outcomes are appropriate.

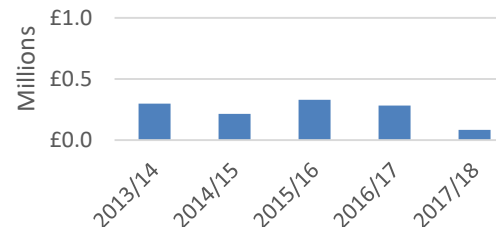
**PPM incentive**



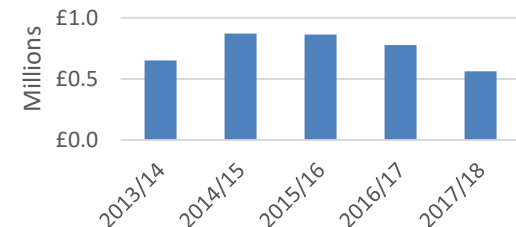
**LPM incentive**



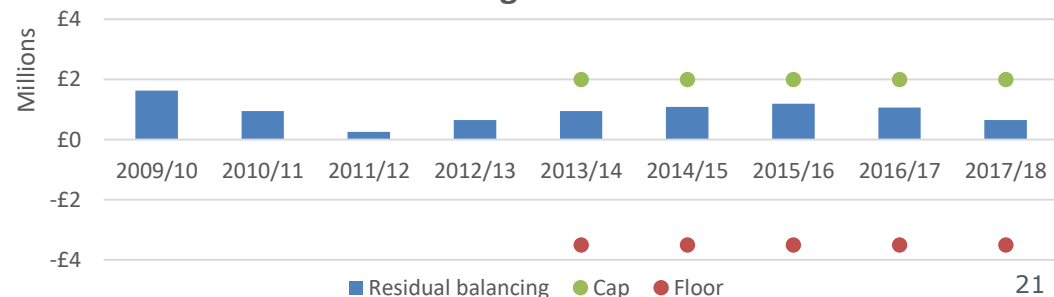
**PPM revenue**



**LPM revenue**



**Residual balancing revenue - combined**



## SO incentives: Focus on Demand Forecast Quality (D-1/D2-5)

**Purpose:** ↑ forecast accuracy

**Introduced:** 2006 (D1 from 2013/14)

**Perf. Measure:** Average forecast error

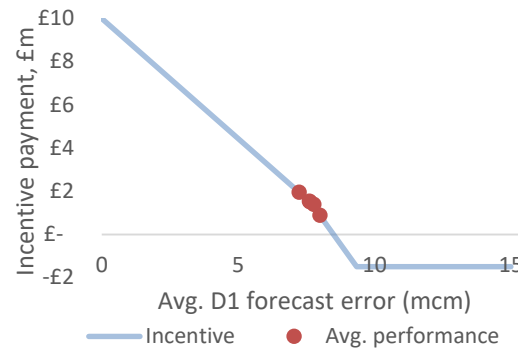
**Target:** D1 - 0.85 mcm + 'storage adjustment'; D2-5 - 13.7 mcm

**Inc.Cap:** D1 - £10m; D2-5 - £10m

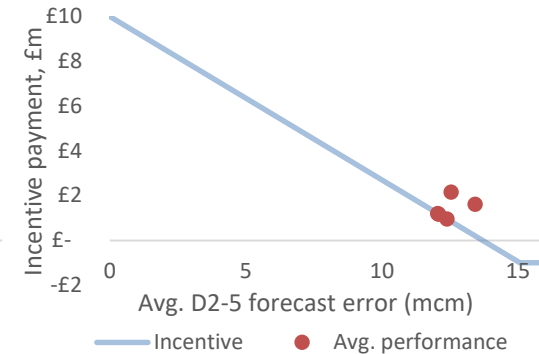
**Inc.Floor:** D1 - -£1.5m; D2-5 - -£1m

- Introduction of D2-5 seems effective.
- Unclear what NGG is doing to improve performance.
- Unclear whether values placed on outcomes are appropriate.

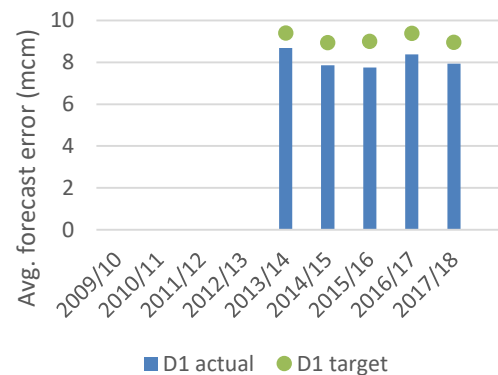
**D1 incentive**



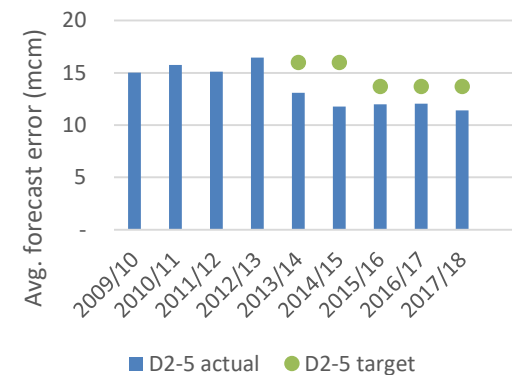
**D2-4 incentive**



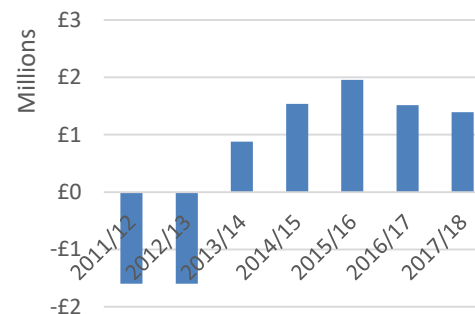
**D1 performance**



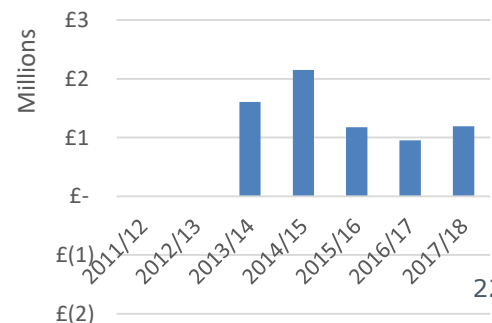
**D2-5 performance**



**D1 revenue**



**D2-5 revenue**



## SO incentives: Focus on Transportation Support Services

**Purpose:** Minimise TSS cost

**Introduced:** 2013/14 [expired Oct 2018]

**Perf. Measure:** TSS costs

**Target:** £7.23m (£09/10)

**Inc.Cap:** £3.2m (£09/10)

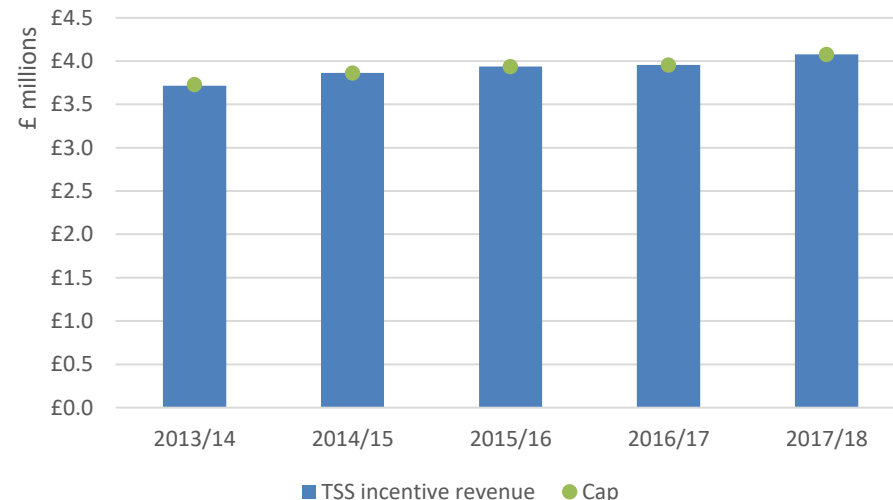
**Inc.Floor:** -

- TSS incentive maxed out in every year but one.
- £7.23m target based on NGG's forecast. Soon became apparent that TSS was not necessary.
- Actual cost just £30,031 in five years.
- Licence did not include TSS in special condition on uncertainty.

TSS incentive



Revenue



## SO incentives: Focus on Operating Margins

**Purpose:** Minimise cost of procuring OM

**Introduced:** 2003/04; alternated between financial & reputational (now reputational)

**Perf. Measure:** OM cost

**Target:** [£12m]

**Inc.Cap:** [£1m @ 45%]

**Inc.Floor:** [-£1.5m @ 22.5%]

- NGG proposed resuming financial incentive in 2017 – citing ↓c.50% in OM costs
  - 23% fall in required OM volumes
  - 34% fall in average OM price
- Negative response to consultation.
- NGG stated its intention to “review this as part of the RIIO-T2 process”.

Diagram 1: Overall Operating Margins Service Costs

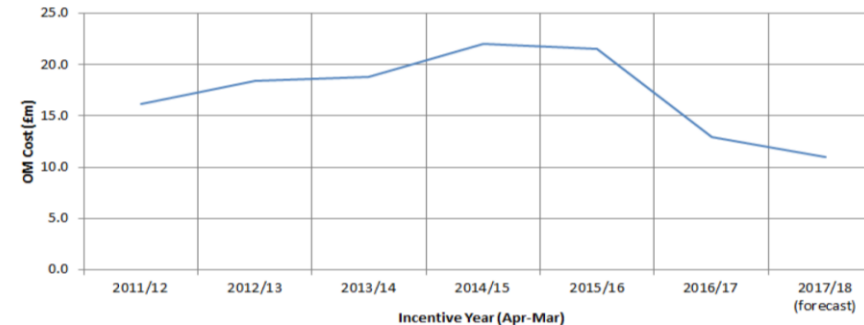


Diagram 2: Proposed scheme showing incentive slope

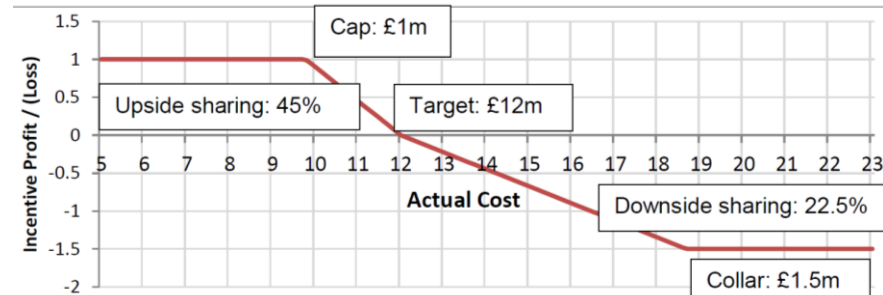


Diagram 3: Incentive scheme timeline





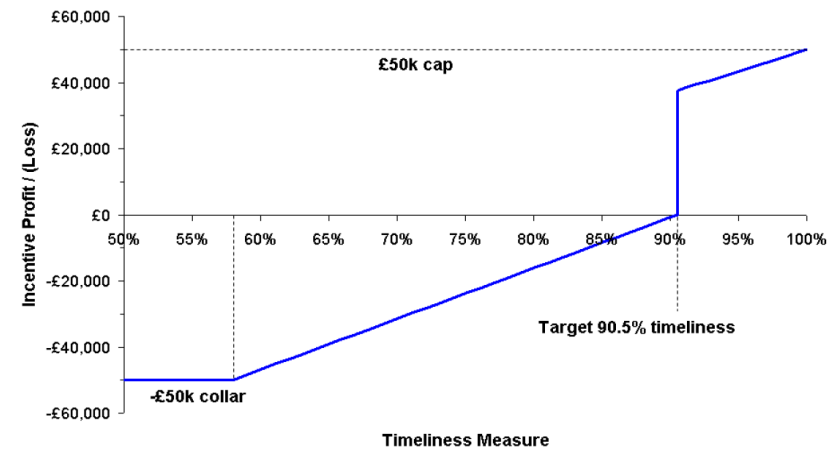
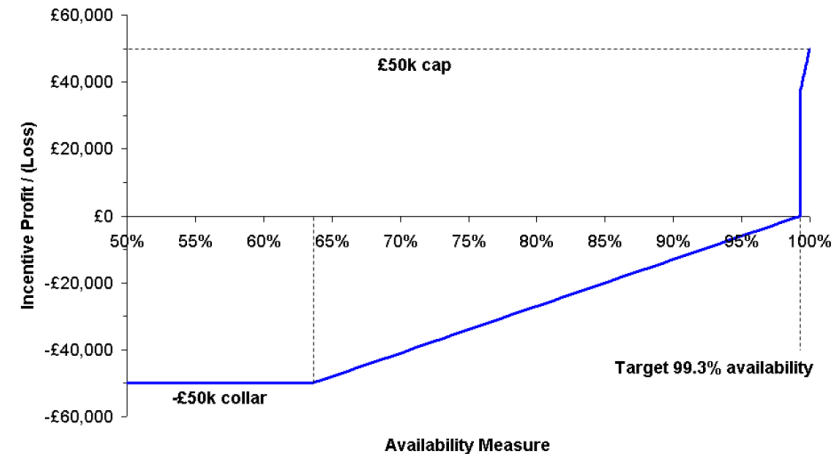
## SO incentives: Focus on Website timeliness & availability

**Purpose:** Improve timeliness & availability of information on NG's website

**Introduced:** 2002/03 (reduced in 2006/07, reputational since 2013/14)

**Perf. Measure:** Availability of 3 pages / timeliness of 4 data items against obligatory schedule

- Currently reputational only, as proposed by NGG at start of RIIO1.
- Previously large (c. £16m over four years to 2005/06). Then reduced to c. £0.1m in 2006.



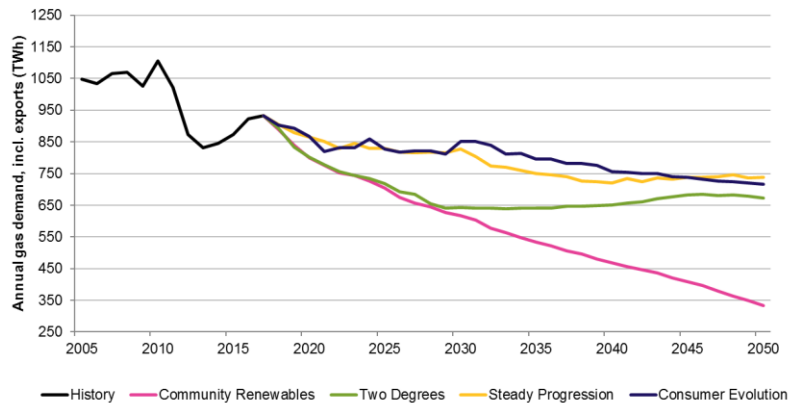
# **Capacity baselines and access arrangements**

- Why we are looking at baselines now - drivers for change
- Ofgem thinking
- Capacity substitution
- Transmission charges
- Outline plan
  
- Appendix
  - Why were baselines introduced?
  - System characteristics
  - Forecast gas demand
  - Current regime and drivers for change

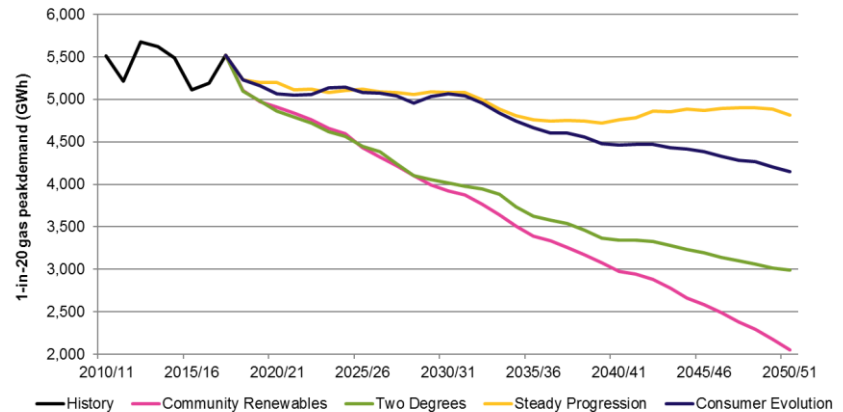
## Capacity baselines and access arrangements: What is the issue and why does it need to be looked at now

### 1) Demand is falling and the NTS is largely unconstrained.

Annual gas demand (TWh)



1-in-20 diversified peak gas demand



Source: National Grid – 2018 Future Energy Scenarios

- All of NGG's scenarios show zero growth in the size of the network
- Most show differing degrees of decline over different timescales

➔ With little NTS expansion, allocating *existing* capacity efficiently is a key challenge

## Capacity baselines and access arrangements: What is the issue and why does it need to be looked at now

2) Existing entry baselines and capacity allocation methodology were designed for a constrained network which was expanding

Introduced for the Transco price control in 2002 (TPCR3)

- As part of the price control **18 entry point specific baselines** were set for 2002 – 2007.
- TPCR **TO allowance was linked** to these baselines.
- Baselines were non-transferable (and this did not change until the 2007 – 2012 price control, with the introduction of capacity trade, transfer and **substitution**)

## Capacity baselines and access arrangements: What is the issue and why does it need to be looked at now

### 3) No revision to the regime has occurred since 2008

- a revision to the review conducted for TPCR4

	2002	2007	2013
	Transco price control	TPCR4	RIIO-T1
Baselines	Baselines took forecast need into account, i.e. they were variable and the table in the licence had values for each year of the price control : notion of SO and TO baselines	Baselines were revised downwards and set flat (no variation year on year unless triggered by incremental capacity needs)  Introduction of <b>substitution</b> allowed unused capacity to be moved	<b>No change was implemented for RIIO; baselines remained unaltered</b>

- Without reform there could be a long term inefficiency placed upon the network and could give rise to consumer detriment, i.e. over-investment

## Capacity baselines and access arrangements: What is the issue and why does it need to be looked at now

### 4) Current **point-to-point substitution regime** is **overly cumbersome**

→ Substitution requests are subject to Ofgem's approval

- Entry capacity substitution and allows unused baseline capacity to be moved to another entry point on a permanent basis. This has been very successful and since its introduction **all** incremental capacity requests have been met in this way.

NGG receives no funding for substituting capacity

..... but **users need to pass an economic test (and make a firm financial user commitment) even for capacity substitution, where no investment is needed.** This may no longer be necessary given that the capacity is already there and the NTS has the capability to deliver it.

Should all substitution require an economic test ?

- Changing **access arrangements**, possibly to incorporate **zonal baselines** is a natural progression of entry capacity substitution.
- Changing to **zonal baselines** would remove this barrier and make existing capacity more readily available.

⇒ Baselines describe a principal output in NGG's licence

⇒ Baselines fulfil a dual role: they form an integral part of the  
(i) revenue restriction and (ii) auction arrangements

- Baselines (regardless of the level of utilisation) place an enduring obligation on NGG
- NGG has to take the obligated level into account in system planning, as opposed to forecast levels of capacity need
- Preserving high baselines (which are underutilised) could lead to investment to meet the obligation rather than to plan for forecast need
- As aggregate system demand falls the capacity margin increases, reducing the overall risk to NGG of being unable to deliver capacity and incur buyback cost
- High baselines (and low utilisation) discourage shippers from booking long-term capacity



**RIIO-2 gives an opportunity to re-set baselines** and improve access arrangements for RIIO-2

Our **preferred option** is to **revise baselines and access arrangements**: reform access regime, remove potential barriers, improve use of existing assets. This would require:

- National Grid to undertake an analysis and revision of current baselines and propose a new methodology for example: a Zonal-based Access Regime, which Ofgem would review.
- NGG to lead on developing industry arrangements and engaging with stakeholders via Transmission Workgroup and similar forums.
- An option would be to create a new licence condition which outlines the principles by which we would like NGGT to review baselines and set up access arrangements

**Is there a potential charging impact?**

- This is thought to be limited - existing capacity up to the aggregate baseline can be purchased with no change to current arrangements
- Changes to the way capacity substitution is effected should not imply a change to charging
- Currently reforms are being applied to charging to implement the Tariff Network Code. There may be a need for the revised charges, at a future date, to reflect these arrangements but this will be dependent on the model adopted.

## Capacity baselines and access arrangements: What potential reform could look like

### Current

Nodal Baselines
Individual entry points have a specific baseline
Unused capacity can move around – but needs user commitment
Capacity substitution only occurs if the economic test is passed and requires lead times to deliver
Unused baselines remain and can cause distortions
New connections still have to pass the economic test to access capacity which already exists
No incentive for shippers to book long-term capacity

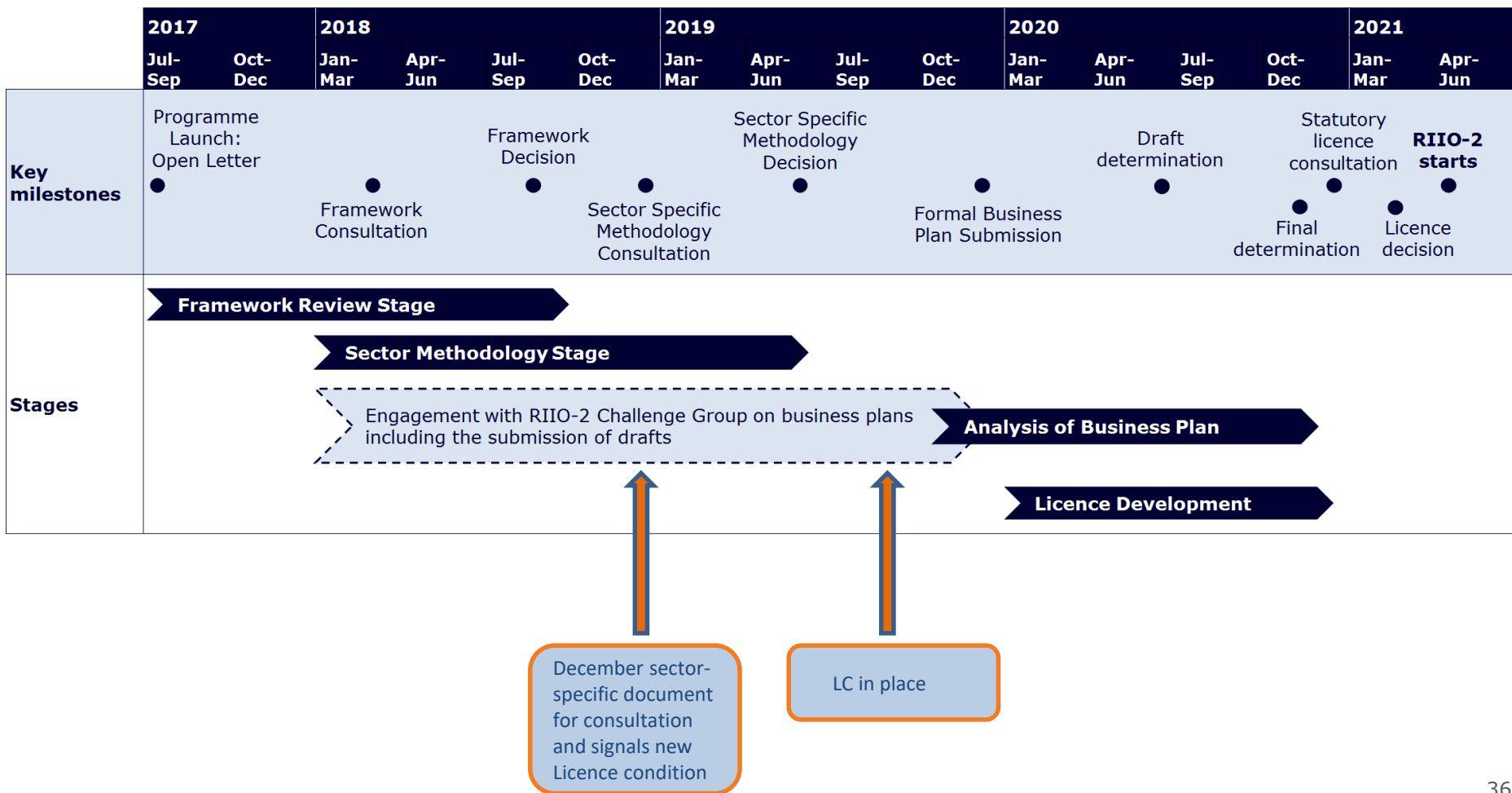


### One Possibility

Zonal Baselines ?
Entry points aggregated into zones with a zonal baseline
Unused capacity would be available for any user to purchase within the zone; i.e. moving capacity around is routine
Substitution would largely only apply to inter-zonal transfer
New connections, including shale and biomethane, are facilitated
Encourages shippers to book long-term capacity if they want certainty about its availability

Baselines and access review follow the RIIO-2 timeline

**Indicative High-Level RIIO-2 Plan for ET, GT, GD and ESO Sectors**



# **Environmental Outputs & Incentives**

## Overview

### **Ofgem's principle objective:**

"Protect the interests of existing and future consumers, including their interests in the reduction of greenhouse gases in the security of supply of gas and electricity to them"

### **RIIO-1 Price Control Objective**

Encourage energy network companies to:

- Play a full role in delivery of a sustainable energy sector
- Deliver value for money network services for existing and future customers

### **RIIO-2 Price Control Objective**

- Ensure that network companies develop and maintain a reliable, safe and secure network that is flexible in **supporting the transition to a low-carbon future**

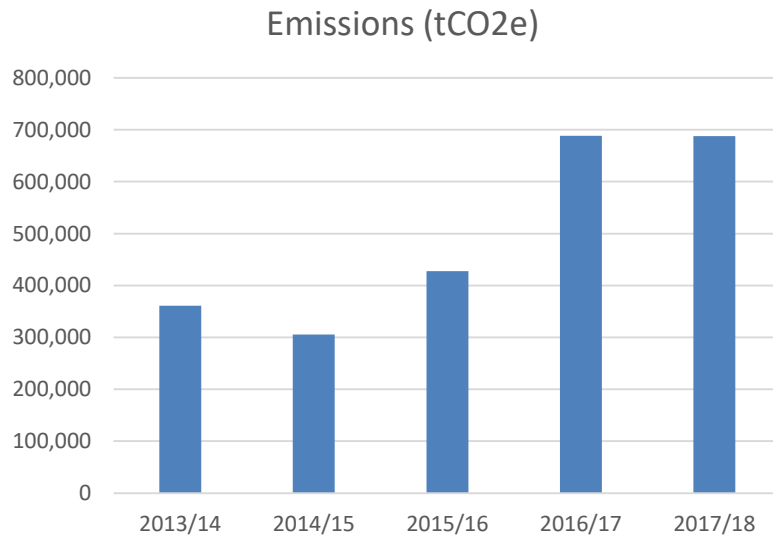
## Business Carbon Footprint (BCF)

- Non-license condition
- RIIO-T1: Final Proposals. Ref 169/12.
- Incentive is designed to encourage NG to reduce its level of carbon-based emissions at a business level throughout the RIIO-1 period
- Incentive is **reputational only**, with the only regulatory requirement being that NG report on its BCF to enable accurate reporting and monitoring
- NG set voluntary target to reduce Scope 1 and Scope 2 GHG emissions by 45% across the business by 2020, based on 1990 levels



## RIO-T1 Performance

Year	2013/14	2014/15	2015/16	2016/17	2017/18
Emissions (t)	360,924	305,363	427,493	688,534	688,126



- General upward trend in BCF emissions throughout the RIO-1 period
- NG on course to meet 45% reduction target by 2020, but have doubts about meeting 2050 targets set by government

## Incentive Analysis

- **Current reputational-only incentive appears to be having little to no effect on performance**
- **Given the incentive is reputational only , and NG's monopolistic position means customers have no feasible alternative choice but to use NG's services, difficult to see how reputational-only incentive has any tangible effect on NG or customer behaviour**
- **Stakeholder feedback prior to T1 stated that NG should only invest in the minimum to ensure legislative compliance. Is this still the case?**
- **Would a financial incentive be a feasible alternative to encourage reductions in NG's business carbon footprint?**

## RIIO-T2: Cross-sector Environmental Output

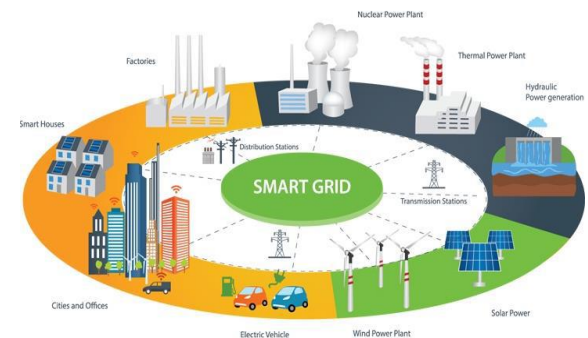
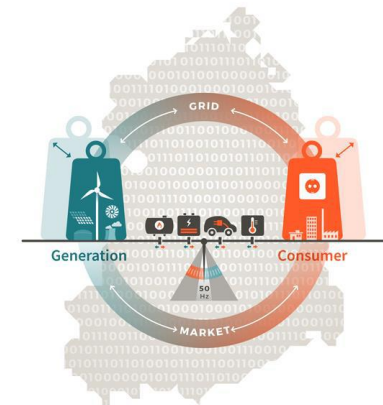
## Low-Carbon Transition

- Supporting the transition is one of the key aims of the RIIO price control
- Fragmented nature of the current incentives in RIIO-1 does not provide a coherent or necessarily strong signal to the networks on carbon reduction
- Current environmental incentives have not had the profile - with stakeholders or within the companies – that other incentives have had
- Gaps in the current framework (eg energy efficiency) and the potential for misalignment across sectors
- A mix of sector-specific incentives, but only one cross-sector incentive for BCF, which is reputational only

Incentive name	Sector	Type of incentive	Description
Business Carbon Footprint	All	Reputational	The business carbon footprint measure separately identifies: <ul style="list-style-type: none"> <li>• emissions directly related to the day-to-day business activities of network business.</li> <li>• emissions which arise from operating the network, including the CO2 emissions from losses of electricity or shrinkage of gas that occur as a result of transporting energy on the network.</li> <li>• emissions due to third party contractors carrying out business activities on behalf of the network.</li> </ul>
Environmental Discretionary Reward	ET Qualitative every year (Rolling £4m pot, £32m max)	Qualitative - Judged by a panel	Separate scores awarded for connections, innovation, network development approach, direct environmental impact, business greenhouse gases, strategic understanding and whole system planning.
SF6 Greenhouse gas emissions	ET	Quantitative (linked to cost of carbon)	Focus on SF6 leakage when compared to a baseline target. Target calculated as a percent target leakage rate of assets. Incentive given as a difference between actual SF6 emissions and baseline target. Penalty applies for emissions over target.
Losses Report	ET	Reputational	Aims to encourage additional actions to understand and manage losses (which have an environmental as well as cost impact)
Losses discretionary Reward	ED - Qualitative (worth £32m in 3 tranches over the price control)	Qualitative –Judged by Ofgem	Aims to encourage additional actions to understand and manage losses (which have an environmental as well as cost impact) In tranche 1 all companies rewarded but only half the maximum reward was given on average.
Incentive on Connections Engagement (ICE)	ED	Qualitative (penalty only)	Intended to capture how well DNOs are engaging with small generators (and others) looking to connect.
Environmental Report	ED	Reputational	Sets out the range of activities the company is doing on the environmental front including on carbon reduction
SF6 GHG Emissions/ Oil usage in FFCs	ED	Reputational	SF6 is a Green-house gas. Leakage of oil used in fluid-filled cables (FFCs) is an environmental hazard
Gas Discretionary Reward Scheme (DRS)	GD Qualitative – every 3 years (max £12m over price control)	Qualitative - Judged by a panel	Covers action to address social, carbon monoxide and environmental issues. Environmental initiatives can span daily operations, an innovative approach to network planning and initiatives that tackle environmental impacts such as leakage / shrinkage.
Provision of biomethane connections	GD	Reputational	Focus on delivery of effective process and reporting on numbers of connections.
Shrinkage incentive and Environmental Emissions Incentive	GD	Quantitative (linked to price of gas – has been worth c 20m pa combined)	Encourages reduced leakage through pipes (delivering environmental as well as cost benefit)

- Sustainability First has developed a proposal for an over-arching cross-sectoral Low-Carbon Incentive explicitly focusing on:
  - Connecting low carbon energy sources
  - Reducing carbon emissions from network operation
  - Reducing/de-carbonising demand
- Sustainability First's preferred approach is a qualitative assessment underpinned by metrics:
  - Targets set by the licensee and validated by a panel
  - Panel judges performance against targets
  - Panel determines the size of the financial reward

## Sustainability *first*



## Discussion Points

- What role should price control play in the environmental space?
- What is not already covered in this space which should be considered for RIIO2?
- What should be the focus of the environmental approach in RIIO-2?
  - Improved status quo? (Current approach, updated targets based on T1)
  - Low Carbon Incentive? (Sustainability First approach)
  - Hybrid? (Mix of qual/quant metrics; cross-sector where possible)
- Is a focus on low carbon sufficient or should we consider a broader sustainability approach? Or any other approach (eg reduce energy consumption, energy efficiency, other environmental impacts)
- If consumers are already paying for a sustainable network – are additional incentives needed / good value for consumers?
- What value should be placed on actual performance improvements vs behavioural improvements?
- There are a number of challenges with assessing qualitative metrics. What is the right mix between qualitative and quantitative metrics? Is there a better methodology for assessing qualitative metrics than panel assessments?

**Our core purpose is to ensure that all consumers can get good value and service from the energy market. In support of this we favour market solutions where practical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.**

**We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.**