Capacity Constraint Management Incentive

Tuesday 22nd October 2019

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Who we are…

Mike Wassell

RIIO-2 Incentives Manager

Carol Carlin

GSO RIIO-2 Commercial Strategy Manager

Jenny Pemberton

RIIO 2 Stakeholder Engagement Manager

Logistics

- Should last for approximately an hour and a half
- Polling via Webex
- Your questions are welcomed throughout via chat function
- All callers will be placed on mute
- Slides will be circulated after the call

Quick Poll – Getting to know you

1. **Please tell us your name**

2. Which of the following best describes you / your organisation?

3. On a scale of A to E, where A is know nothing and E is know a great deal, how much would you say you know about National Grid Gas Transmission's Capacity Constraint Management Incentive?

A. Know nothing

B.

C.

D.

E. Know a great deal

Quick Poll – Impact and Interest

On a scale of A to E, where A is not impacted at all and E is impacted a great deal, how impacted are you or those you represent) by Incentives?

A. Not impacted at all
B.
C.
D.
E. Impacted a great deal

On a scale of A to E, where A is not interested at all and E is interested a great deal, how interested are you (or those you represent) by Incentives?

A. Not interested at all
B.
C.
D.
E. Interested a great deal

1

Stakeholder feedback

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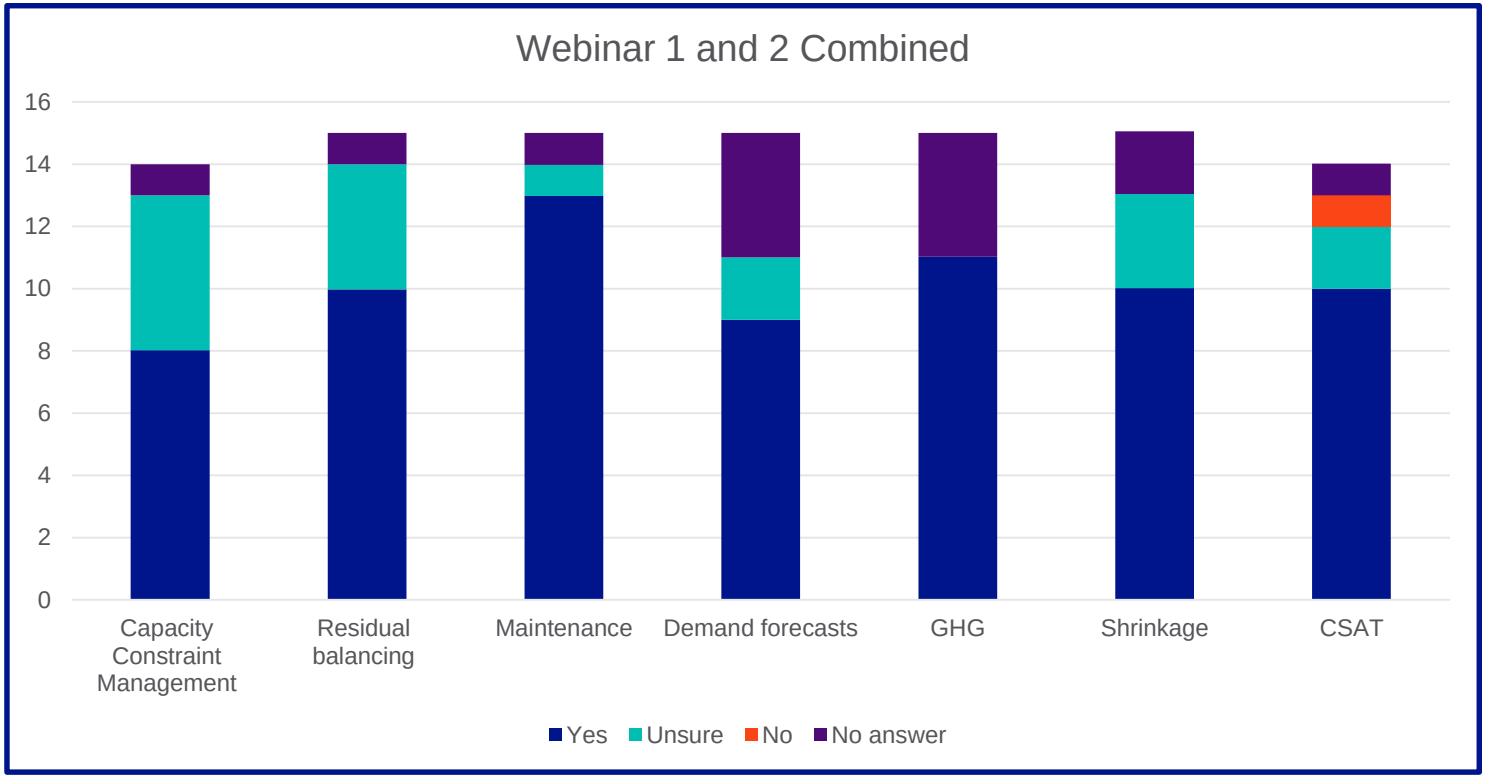
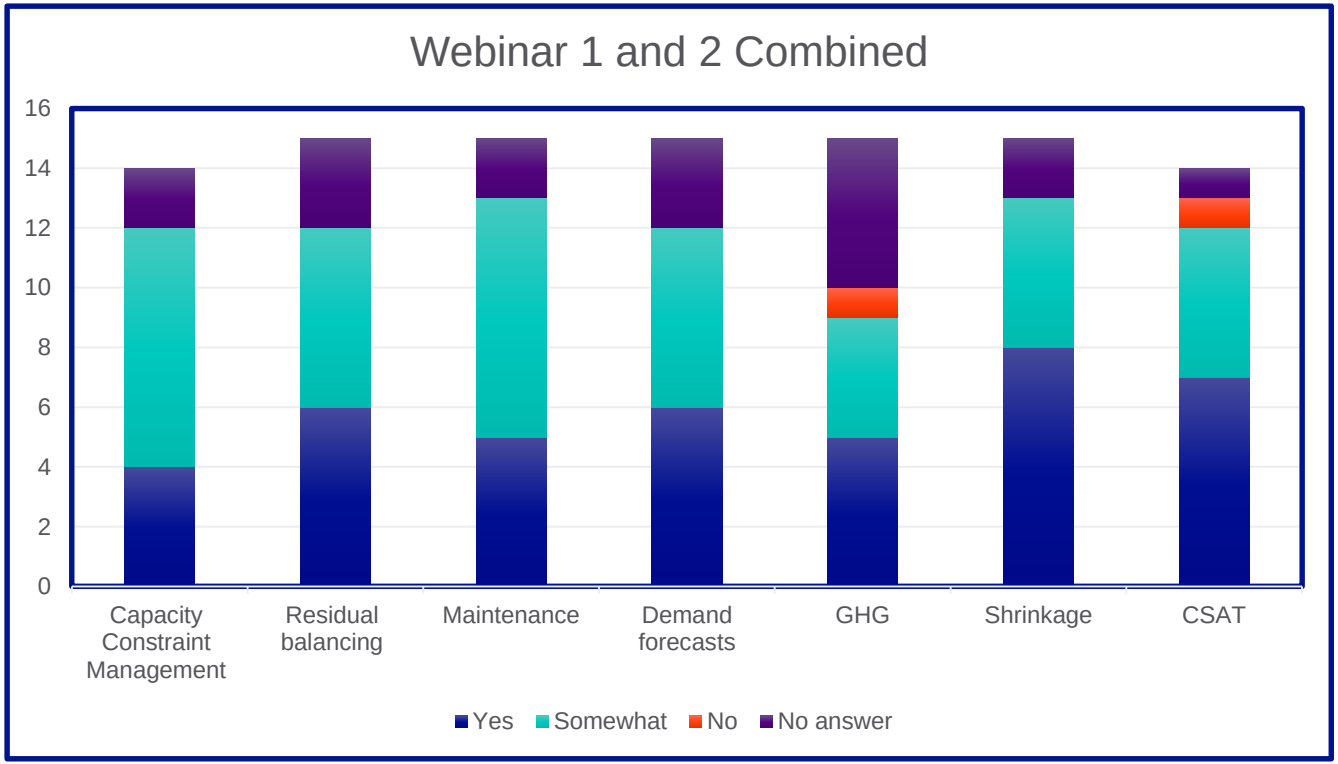
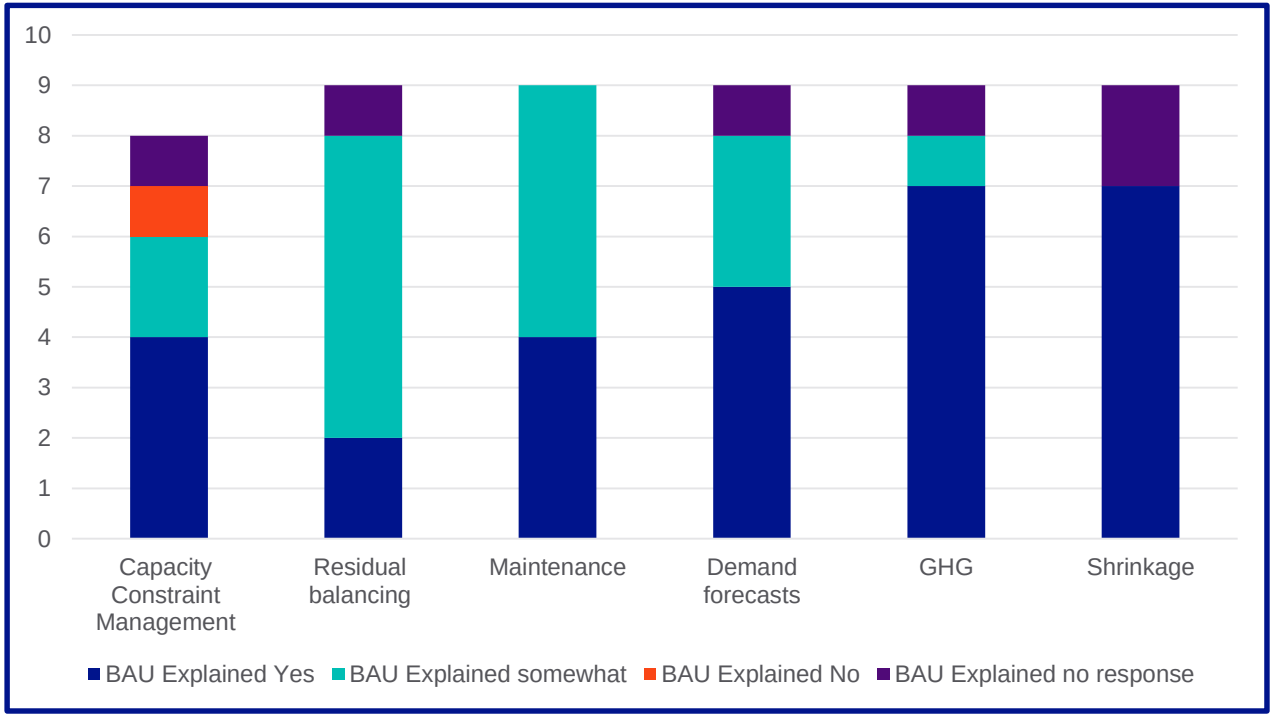
Should we be financially incentivised on...?



Do you agree with our RIIO-2 initial position?



Have we explained BAU?



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Capacity constraint management – a reminder

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Capacity Constraint Management

We are obligated to release Entry and Exit capacity at around double peak demand (top down regime). Flows of gas at these levels cannot be physically accommodated concurrently meaning there is an inherent risk to be managed as part of the regime.

RIIO-1 Incentive

- Target cost (Revenue – Costs) of £22m (in 09/10 prices) based on expected constraint costs
- Cap and Collar on incentive reward +£20m/-£60m (in 2009/10 prices)
- Encourages us to take on risk, minimise commercial actions and ensure investment decisions are balanced against risk

RIIO-2 Initial position

- Retaining the cap, collar, and target principles of the operational buy back scheme.
- Retaining the existing cost and revenue components of the scheme.
- Retaining the incremental buy back element of the scheme as-is.
- Retaining the accelerated release mechanism as-is.
- Remove a proportion of interruptible / off-peak capacity revenue where we scale back.
- Incorporating network capability outputs to inform constraint risk.

No Incentive (BAU)	Incentive (exceeding BAU)	Value for Consumers

• Less likely to release non-obligated capacity
• Tend towards more risk aversion in NGG decision making
• More likely that commercial decisions are made closer to real time and more frequent actions (more risk averse)
	• More likely to take on risk in releasing capacity over and above obligations
	• Realigning outages at cost to NGG to mitigate / manage potential constraints
	• More likely to take on risk in key investment decisions
	• Less risk averse in carrying out constraint management actions
		• Facilitates customers being able to bring gas on and off the network when and where they want, meaning the cheapest gas can be sourced with minimal disruption:
		  • Improved quality of service
		  • Lower consumer bills
		  • Improved safety and reliability

Capacity Constraint Management BAU

1 Operating the Network

- Run different compression
- Release less non-obligated capacity
- Take commercial actions earlier or later
- Less incentive to try innovative operational solutions
- Weaken contract negotiation position
- Could disproportionally impact smaller shippers by the smearing of constraint costs.

2 Constraint Management

- Socialised cost > NG act differently > Shippers know this and may act accordingly
- Ofgem decides how NG mitigate risk based on their funding of asset based solution > if NG get financed then we would likely invest to mitigate risk > if NG do not get funded then we would likely take out more contracts
- Discourages temporary build/asset solution

3 CBAs

- Involve regulator more in decision making process > only act on strong evidence that Ofgem will remunerate
- Increase stakeholder engagement > time & cost
- Additional risk factor enters into CBA
- Use commercial solutions closer to real time

4 Asset management

- Pass through to consumers increased job costs and time scales > greater uncertainty of project cost
- Reputational damage only governing factor for NG > trade this off against project costs
- Increased asset intervention if we are funded, use contracts if not funded adequately for asset investment > take less risk on asset performance

How have we performed?

Value (£m)	13/14 (£m)	14/15 (£m)	15/16 (£m)	16/17 (£m)	17/18 (£m)	18/19 (£m)
+25 to -76.4*	12.6	12.6	12.6	13.3	14.2	13.8

*2018/19 values including RPI.

3

How does the scheme work?

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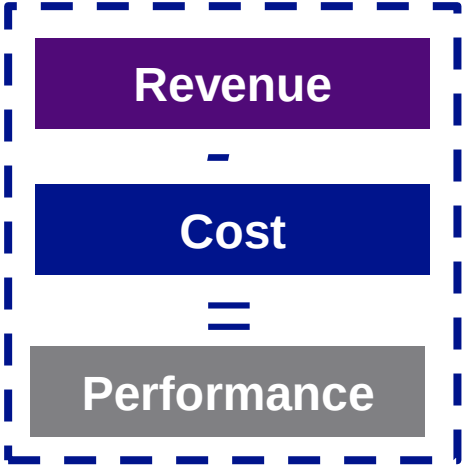
How the current Capacity Constraint Management mechanism works

- The scheme is a traditional, target, cap and collar scheme
- Performance is measured annually
- Performance is determined by summing up several cost and revenue components over the year, comparing the value to the target and applying a sharing factor (subject to cap and collar)

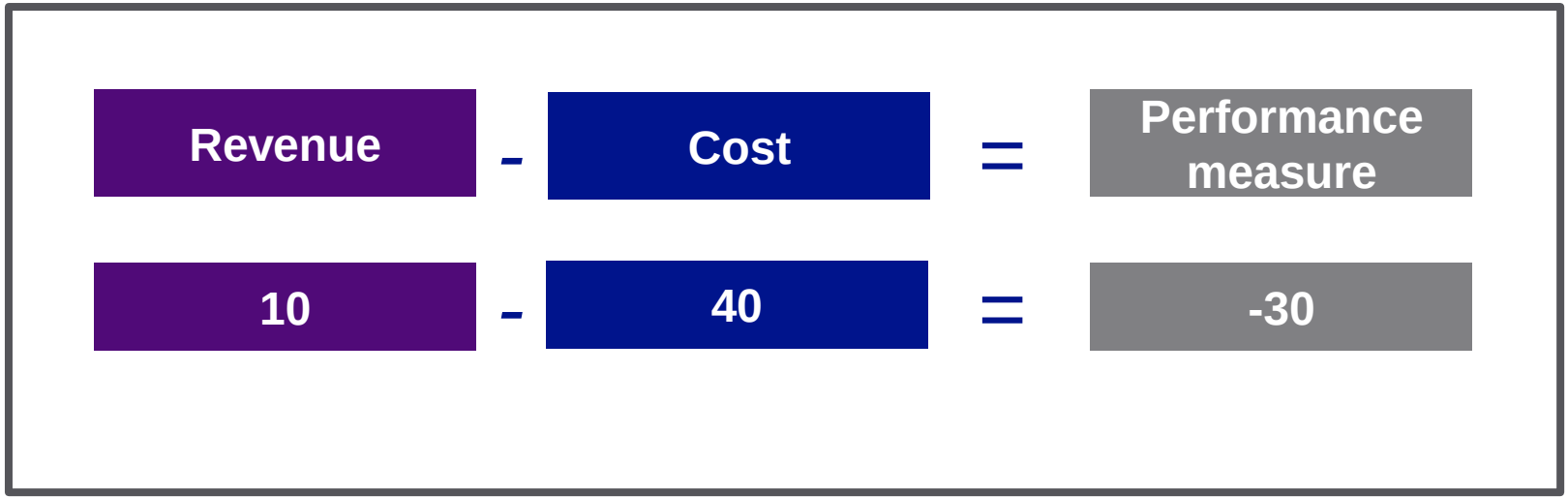


Cost components
Capacity buy back costs
Locational buys
Offtake flow reduction costs
Other constraint costs (e.g. turn down contracts)

Revenue components
Sales of within day firm entry and exit capacity
Sales of interruptible and off-peak capacity
Entry capacity overruns charges
Sales of non-obligated entry and exit capacity
Locational Sells and PRI charges

How the CCM mechanism works – simple example

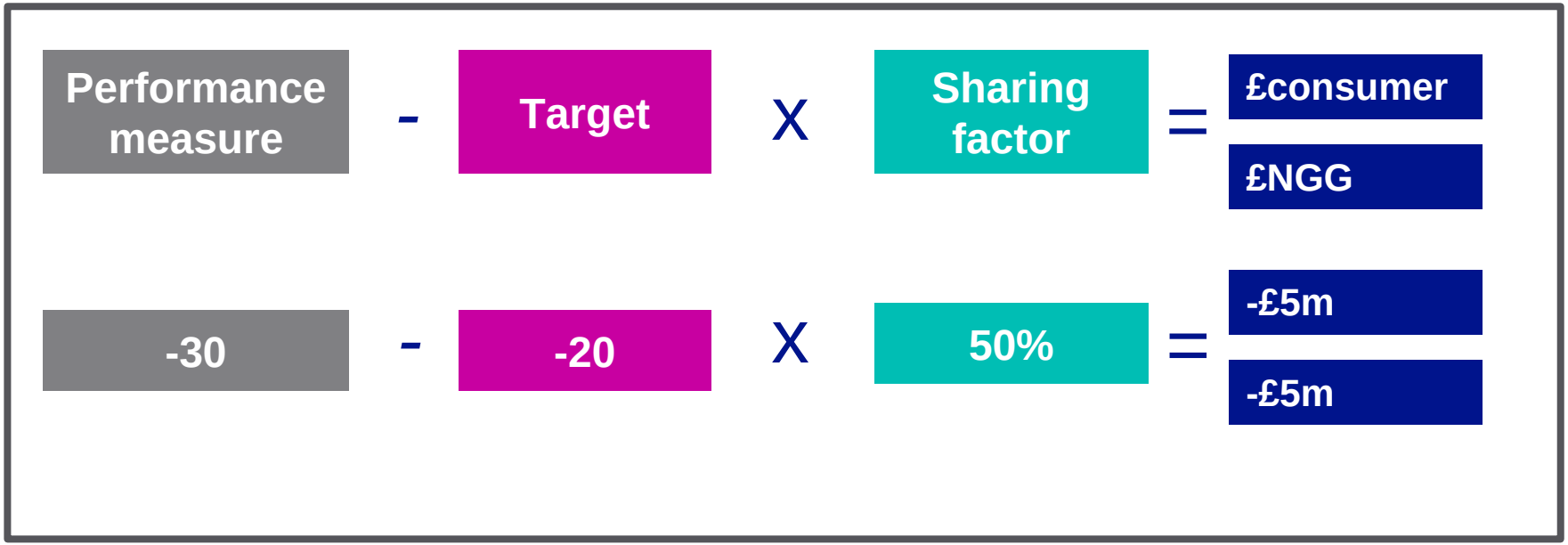
Target: -20	Cap: 20	Collar: -20	Sharing factor: 50%



Figures are for illustrative purposes only

How the CCM mechanism works – simple example

Target: -20	Cap: 20	Collar: -20	Sharing factor: 50%

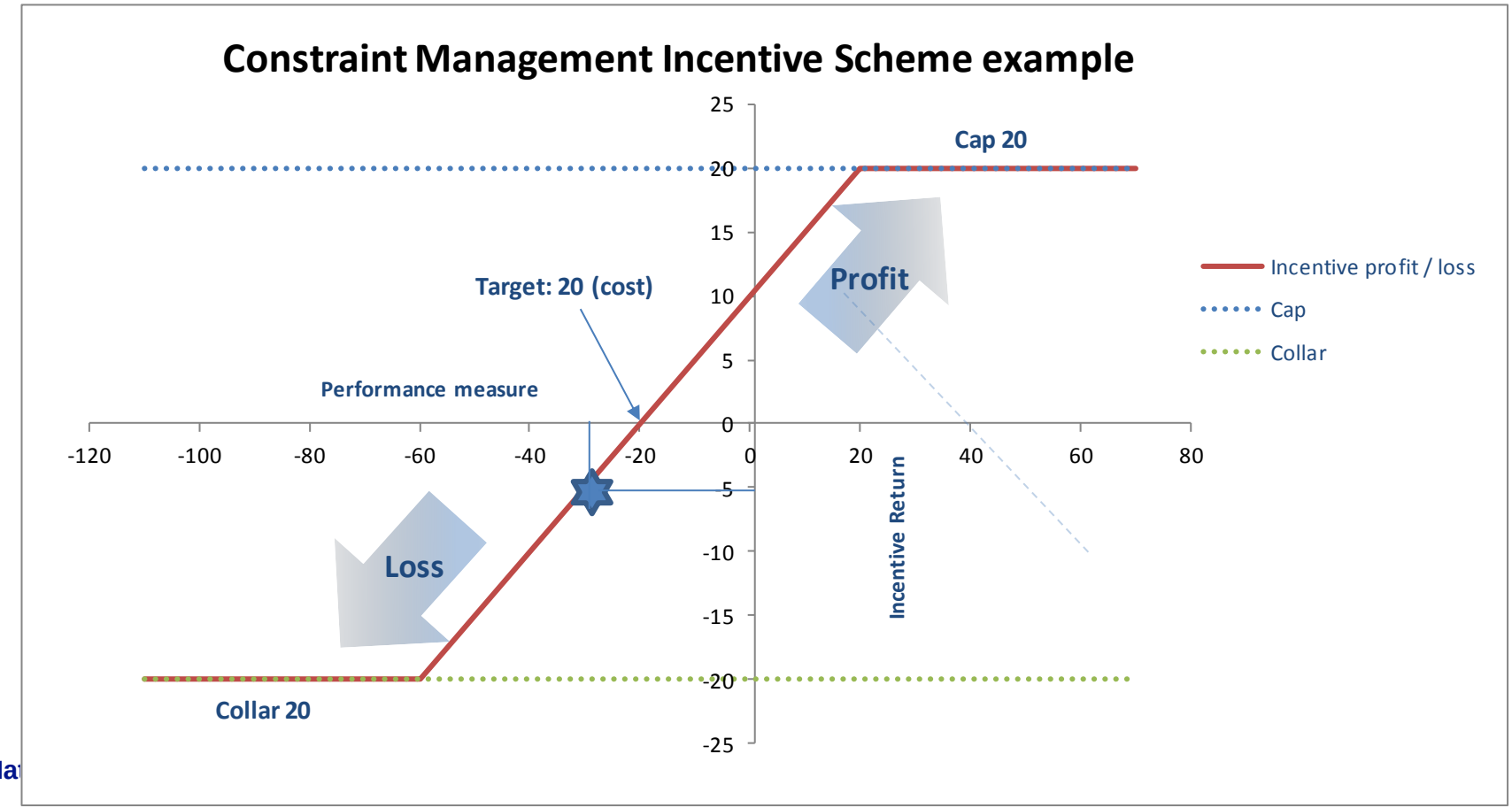


Figures are for illustrative purposes only

How the CCM mechanism works – simple example

- Lets consider a theoretical constraint management scheme with the following annual metrics:
  - Target = **-20** (cost) Cap = **20** Collar = -**20** (cost) Sharing factor: **50%**
- Over the year, we have incurred constraint costs of **40** and revenues into the scheme of **10**
- Our performance measure is determined by netting the revenues and costs: **10 – 40 = -30**
- Our incentive income then considers the performance measure against the target, cap and collar and applies the sharing factor up to the cap and collar values.
  - If the performance is in excess of the cap or collar, then the excess is shared 100% to customers, the remainder being subject to the sharing factor.
- In this example, the performance measure is greater than the collar, and less than the cap, meaning our incentive performance is:
  - Performance measure – target x sharing factor
  - **(-30+20) * 50% = -£5m** (i.e. we lose £5m under the scheme).

The RIIO-1 scheme (2018/19 measures)



Quick poll

Have we clearly articulated how the capacity constraint management scheme works?

Yes | **Unsure** | **No**

Please give a reason for your answer

What more information would you like?

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RIIO-2 risk analysis summary

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We have run Monte Carlo analysis across four layers:

1. **Intact network risk:** this looks at risk associated to supply and demand patterns and assumes the whole network is available 100% of the time
2. **Compressor reliability:** We know our compressors are not available all the time and may not start when we need them. Using our RIIO1 compressor reliability data, we ran risk analysis to quantify the associated risk from unplanned compressor failure.
3. **Maintenance:** overlaying our RIIO-2 proposed maintenance plans (2 to 3 times RIIO-1 volume). We have excluded any risk associated to pipeline inspections as we aim to manage this risk as BAU (risk was included for RIIO-1)
4. **Total** (**proposed approach):** combining each of the three layers above into a single analysis (i.e. each monte-carlo run could land on intact, compressor reliability or maintenance) rather than adding up the risk associated to each of the three layers

RIIO-2 analysis - supply and demand data sets

FES

Four FES scenarios with a high continent and high LNG bias (8 scenarios in total)

~10 constraint events per annum

Uniform

For South Wales, replaces the FES South Wales supply forecast with a uniform distribution (0 to ~86 mcm/d) as a proxy for non-seasonal behaviour

~60 constraint events per annum

Historic

Replaced the FES supply scenarios for the South East and South Wales with historic supplies as a proxy for RIIO-2 supply behaviour

~14 constraint events per annum

Combination (our proposed approach)

- Combination of the above **~14 to 17 constraint events per annum**
- This runs further Monte Carlo on the Uniform, historic and FES data sets
- Weighted towards FES (8 FES scenarios vs 1 uniform and 1 historic)

SE Entry:

Excludes Uniform as we have not seen such variability in SE flow and as such believe this risk should be excluded

SW Entry:

FES, historic and Uniform are included as we consider each of these supply scenarios are realistic

SO Exit:

Only use FES as historic closely matches FES and exit zone flows typically follow similar patterns based upon weather and demand

RIIO-2 analysis outputs summary (combination)

The analysis shows risk of constraints in:

- South Wales (Entry)
- South East (Entry)
- Southern (exit)
- Scotland (Exit)

- Scotland risk is marginal and towards the back end of RIIO-2
- We have currently discounted it from the risk analysis outputs for RIIO-2, but this will need to be considered for RIIO-3

Combination Summary

		Events		
Year	Region	Average	Max	P90
21/22	SW Entry	8	22	9
	SE Entry	2	18	3
	SO Exit	4	37	8
	Total	14	77	20
22/23	SW Entry	9	22	10
	SE Entry	1	28	4
	SO Exit	4	24	9
	Total	14	74	23
23/24	SW Entry	9	26	13
	SE Entry	3	36	5
	SO Exit	4	25	7
	Total	16	87	25
24/25	SW Entry	11	31	15
	SE Entry	3	28	6
	SO Exit	3	22	6
	Total	17	81	27
25/26	SW Entry	11	24	15
	SE Entry	4	33	6
	SO Exit	2	19	5
	Total	17	86	26

Key points

1 Risk

- Our overall combined analysis has a similar level of days risk to the RIIO-1 risk forecast

2 Comprehensive

- RIIO-2 analysis is more comprehensive than RIIO-1
- Based upon greater levels of computer processing power
- Incorporates the network capability work

3 RIIO-1 experience

- South Wales entry flows can vary between min and max flow
- Can take up a large proportion of summer demand

4 RIIO-2 scheme

- We believe a proportion of risk can be managed as BAU
- Not propose inclusion into the RIIO-2 scheme target

Quick poll

Have we clearly articulated our risk modelling approach?

Yes | **Unsure** | **No**

Please give a reason for your answer

What more information would you like?

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Scheme design – initial position

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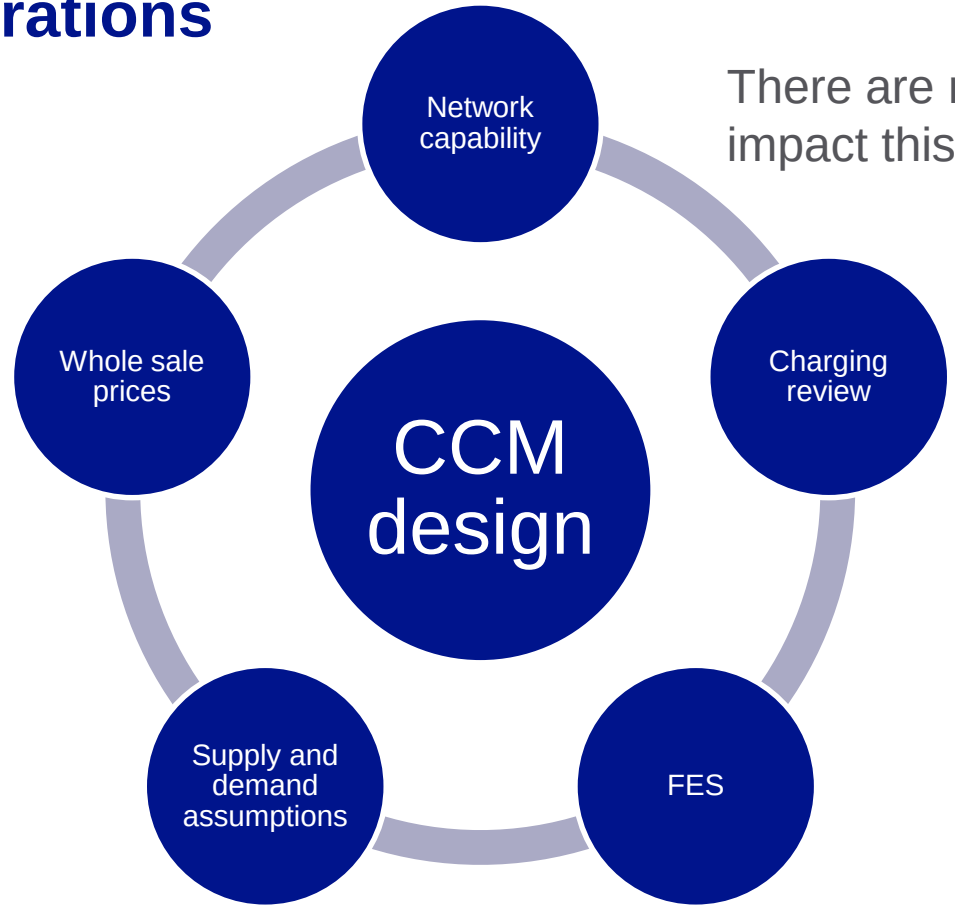
Key considerations



There are many factors that will impact this mechanism

Proposed way forward

- Whilst a scheme that has several “reopener” triggers should be avoided, it would be appropriate that upon reopening the scheme all variables are considered

Recommendation:

- A generic scheme target reopener can be triggered if we cap out under the scheme two years in a row or collar out in any single year
- Retain the existing RIIO-1 ability to reopen the target if certain costs are incurred (e.g. one off asset health costs)

Constraint Management scheme design – initial position

Scheme is based on:

- Expected risk in RIIO-2
- Learnings from RIIO-1 in terms of how we managed risk against forecast

Our proposals:

- A symmetrical Cap and Collar
- Remove revenue where we scale back interruptible and/or off-peak capacity
  - (e.g. if we scale back 5% of capacity, we reduce the associated scheme revenue by 5%)
- A scheme target reopener can be triggered if we cap out under the scheme two years in a row or collar out in any single year
- We are not currently proposing any changes to the incremental buyback (100% downside) and accelerated release (100% upside) elements to the scheme

Quick poll

Have we clearly articulated our capacity constraint management scheme position?

Yes | Unsure | No

Please give a reason for your answer

Do you agree with our position in principle?

Yes | Somewhat | No

Please give a reason for your answer


QUESTIONS

Next steps

We will be undertaking a consultation with stakeholders on the scheme design and metrics

Timescales and how to have your voice heard will be communicated shortly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Thank You

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