Incentives:
- RIIO-2 proposals

Wednesday 20th November 2019

nationalgrid

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 incentive proposals?

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

Agenda

1. What we've heard so far
2. Summary of all our RIIO-2 incentive proposals
3. Demand forecasting – amended proposals
4. Maintenance – extended scheme parameters
5. Capacity constraint management – more scheme details

1

What we've heard so far

nationalgrid

Stakeholders told us: Incentives in principle

Broadly agree that the right areas within business are incentivised

Stakeholders expect us to be economic and efficient.

Delivering performance in those incentivised areas is important

Incentives must only be for outperformance of BAU

There should be rewards for performance in important areas but determining the level of performance and reward is very difficult.

It is hard to know whether we are delivering beyond BAU

Caps & collars should be subject to review but not annual

It is hard to know what caps and collars are appropriate

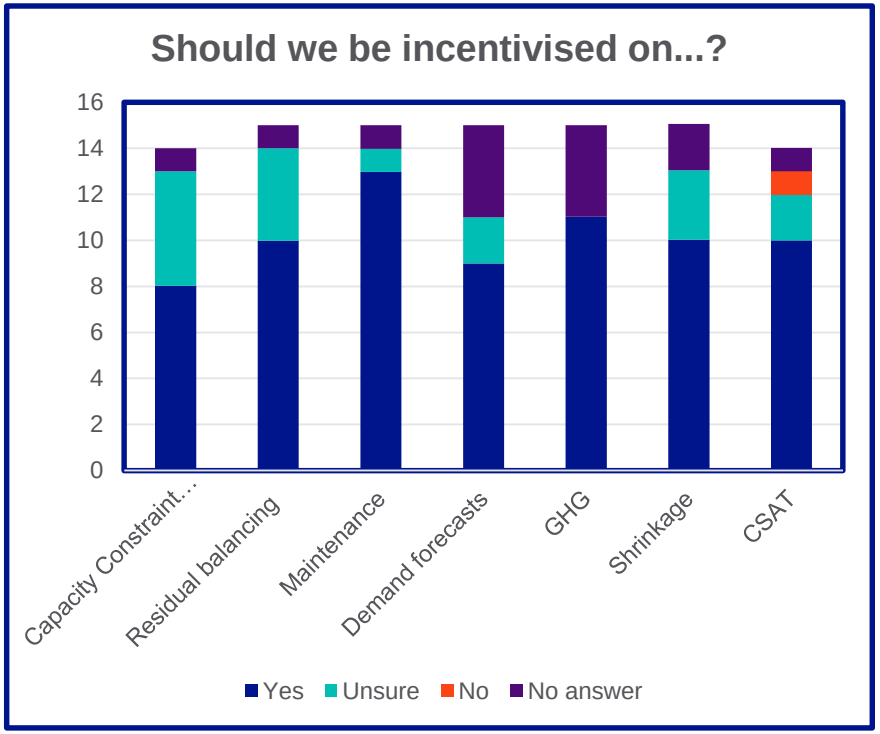
Building in more challenge: Recognition that in reducing the caps & collars we would get less reward for the same performance.

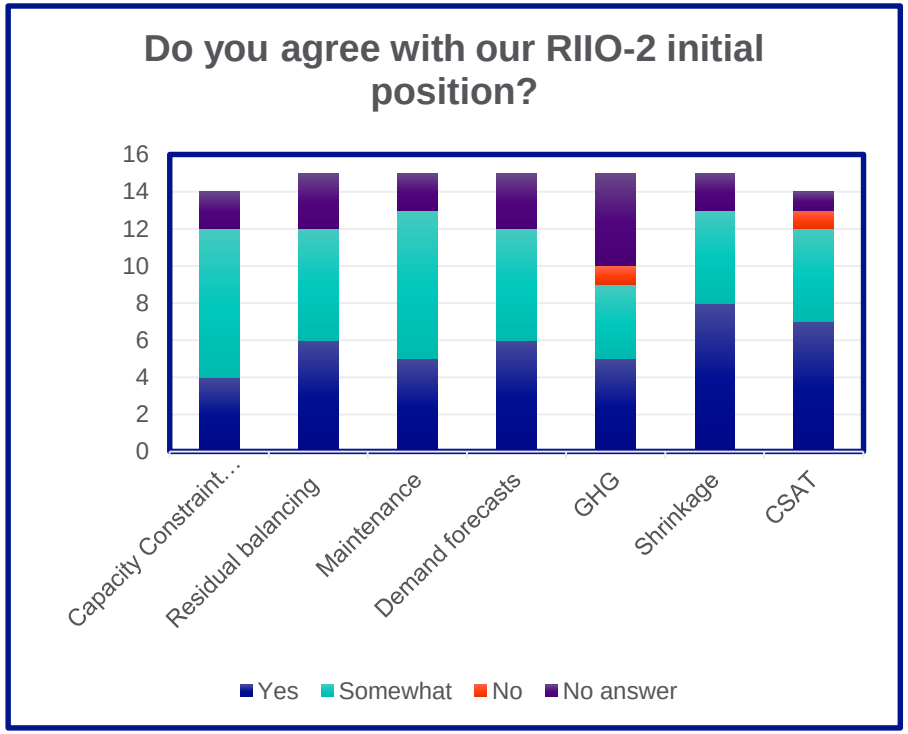
Support for Incentives to be symmetrical

Consistent outperformance indicates the targets were wrong.

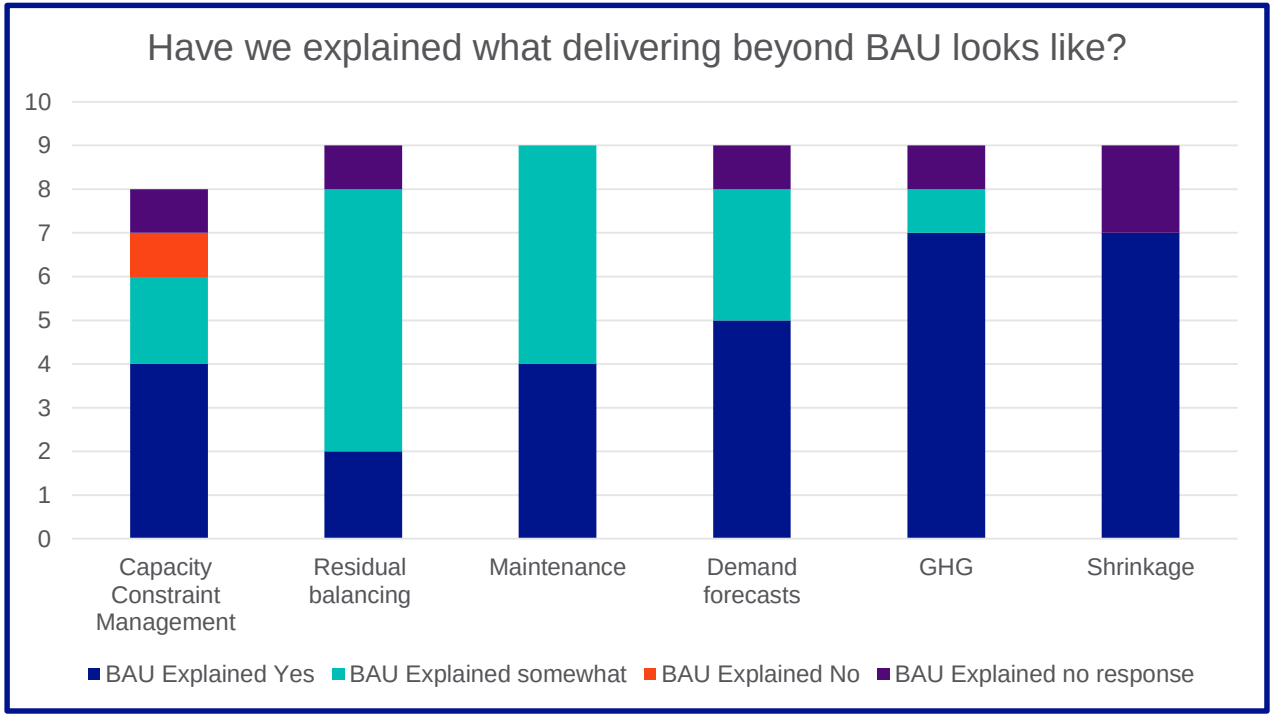
Caps should be at the right level so as not to limit performance

Webinar 1 and 2 Combined Feedback



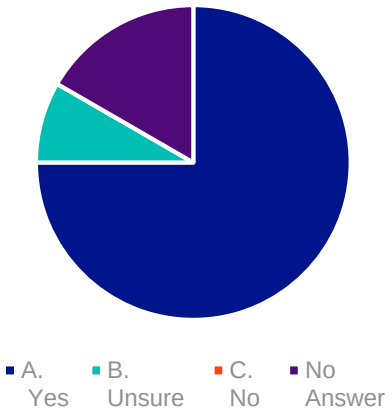


Webinar 2 Responses



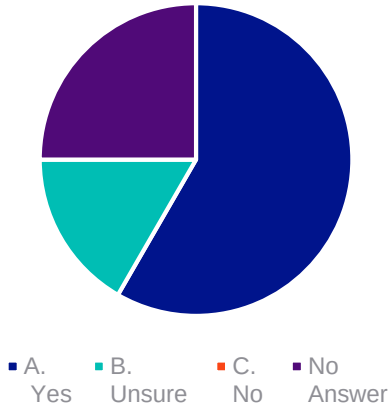
Webinar 3: Capacity Constraint Management your feedback

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



- Clear explanation
- Good summary
- Overview clear but want to read more detail

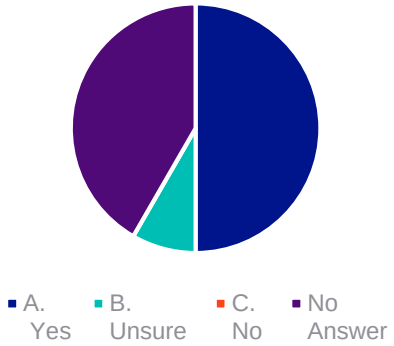
Have we clearly articulated our risk modelling approach?



- Good summary, adequately covered
- Number of events declared-what is an event?
- Magnitude of disruption. Volume of entry/exit constrained.
- Estimate cost of CCM based on historic cost

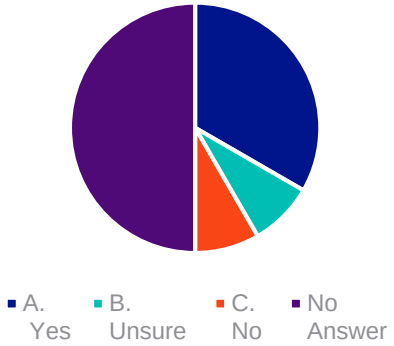
Webinar 3: Capacity Constraint Management your feedback 2/2

Have we clearly articulated our CCM position?



- Fairly simple to explain

Do you agree with our position in principle?



- Seems it will drive the right behaviours in terms of managing risk. Making interruptible/off-peak penalty only makes sense too
- hopefully incentivises NG to not scale back under testing conditions
- Time to consider the appropriateness of the skew to the risk reward of a 1 year reopener on reaching floor. But 2 years if the cap is reached
- I think that there needs to be more justification of the scheme parameters and the scale of the incentive. How will changes in patterns of behaviour influence the scheme in the price control period? How will renewable gas sources influence the scheme?

2

RIIO-2 Incentive Summary

nationalgrid

RIIO-2 financial incentive summary 1

Incentive		Cap (£m)	Collar (£m)	Target	Comments
Capacity constraint management	RIIO-1	26.3	78.8	-£28.9m	**Option A:** cost target equal to modelled risk output (average) with symmetrical caps and collars **Option B:** Remove a level of risk as 'BAU' from cost target with lower symmetrical caps and collars **Option A and B:** Remove revenue from scheme where we scale back interruptible/off-peak capacity
	RIIO-2 option A	40	40	-£45.6m (average)	
	RIIO-2 option B	20	20	-£22.1m (average)	
Demand forecasting	RIIO-1	20	2.5	~8.5mcm/d (D-1) 13.4mcm/d(D2 to 5)	Tougher to achieve against by reducing the performance gradient, reducing the cap (both financial and volume)
	RIIO-2	8	2.5		
Residual balancing	RIIO-1	2	3.5	LPM: 2.8 mcm/d PPM: 1.5% of SAP	Tougher to achieve against by reducing performance gradient. Amend the linepack component of the scheme to drive the right behaviour during seasonal transitions
	RIIO-2	1.6	2.8	LPM: 5.6 & 2.8 mcm/d PPM: as per RIIO-1	

Note: Assumes RIIO-1 sharing factors

RIIO-2 financial incentive summary 2

Incentive		Cap (£m)	Collar (£m)	Target	Comments
Maintenance days	RIIO-1	0.7	1	Use of days: 11 Changes: 7.25%	Expand to cover the wider range of maintenance activities
	RIIO-2	1.2	1.5	As per RIIO-1 plus 75% for alignment of non-RVO works	
NTS shrinkage	RIIO-1	7	7	Methodology based	Include access to seasonal markets to drive further consumer savings for RIIO-2
	RIIO-2	5	5		
GHG emissions (venting)	RIIO-1	0	Unlimited	2,897 metric tonnes	Includes more penal rates with an upside to encourage further performance improvements
	RIIO-2	1.5	1.5		
Customer satisfaction	RIIO-1	8.5/10	5.3/10	6.9/10	Retain amended incentive with a tougher target
	RIIO-2	8.5/10	7.1/10	7.8/10	
Environmental Action plans	RIIO-2	2.5	2.5	EAP commitment	A potential new ODI to incentivise additional performance above and beyond our baseline communities in our Environmental Action Plan

Note: Assumes RIIO-1 sharing factors

RIIO-2 Reputational incentive summary

Incentive		Comments
Stakeholder experience	RIIO-1	Newly proposed reputational ODI replacing previous stakeholder satisfaction incentive.
	RIIO-2	
Quality of community engagement	RIIO-1	Newly proposed reputational ODI measuring our engagement with communities around construction projects
	RIIO-2	

3

Demand Forecasting

nationalgrid

Demand forecasting RIIO-2 incentive changes

What's changed since we last spoke to you?

- In our previous webinars, we proposed reducing the financial scheme cap from **£20m** (RIIO-1) to **£16m** (£8m per scheme), which was welcomed by stakeholders
- We have now reduced this further to **£8m** (£4m per scheme)
- We have also introduced a performance cap (mcm) of **4.5 mcm** and **6.85 mcm** for **D-1** and **D2-5** respectively (i.e. the £4m cap is reached at an annual forecast error of 4.5 mcm/d and 6.85 mcm/d)

Why?

- To achieve the scheme caps under RIIO-1, we would need to forecast demand on every day with a zero percent error (unachievable)
- Stakeholders have told us that the scheme cap is theoretical and appears too high when compared to other incentives
- We therefore propose reducing the cap (both financial and volume accuracy) to a lower level.

How have we determined the revised metrics?

- We considered our RIIO-1 performance to date in determining an appropriate cap :

	D-1 performance		D-2 to D-5 performance	
Performance	**mcm**	**£ (m)**	**mcm**	**£ (m)**
Worst	8.9	-0.9	13.5	0.2
Average	8.4	1.1	12.6	1.2
Best	7.8	2.0	12.1	2.2

- This shows that our incentive returns to date have been significantly below our proposed RIIO-2 caps of £4m per scheme and 4.5 mcm (D-1) and 6.85 mcm (D-2 to D-5) respectively .
- As previously detailed, we have also made the scheme tougher to perform against by reducing the performance gradient by 20%.
- In addition, we have seen increasing levels of demand volatility which we expect to continue (i.e. the volume of actual demand change from one day to the next), meaning the scheme is naturally becoming more stretching.

Quick poll

Do you agree with our revised Demand Forecasting proposals?

Yes | **Somewhat** | **No**

Please give a reason for your answer

4

Maintenance

nationalgrid

Maintenance RIIO-2 incentive changes

What's changed since we last spoke to you?

- Based upon your support for the scheme and incorporating additional maintenance activities, we have increased our target for the proposed alignment of additional maintenance activities from 10% (as previously detailed) to 75%
- We have clarified what this new incentive component covers and how performance will be measured (see later slide)

Why?

- We are continually challenging ourselves to ensure our RIIO-2 proposals are stretching, transparent and easily baselined
- We recognised that our previous proposal of 10% was based upon our Shallow incentive review proposals from 2017, did not take account of our recent performance and was unclear as to how performance would be measured against the 10% target

How have we determined the revised target for additional maintenance activities?

- The incentive rewards us for the reduction of Maintenance Days from the baseline target set each year and penalises us if we utilise more maintenance days than the baseline target. The baseline target number of days will be determined annually by applying 75% to the number of customer impacting days that would require customer isolation, and therefore use of a maintenance day in accordance with UNC (excluding RVOs)
- To establish an appropriate target, we have carried out analysis on the number of customer impacting maintenance events (excluding RVOs) across the last 5 years:

Year	No. of customer impacting jobs	Number aligned	Maintenance days used	%
2019/20	101	71	30	70.3
2018/19	153	153	0	100
2017/18	243	196	47	80.66
2016/17	198	165	33	83.33
2015/16	47	29	18	61.7

- This shows that under RIIO-1 we aligned between 61 and 100 percent of work.
- Under RIIO-2, the proposed volume of planned maintenance is 2 to 3 times higher than RIIO-1
- We consider 75% alignment is a tough but fair target, comparable to RIIO-1 performance to date, with additional stretch due to the additional RIIO-2 planned maintenance volumes.

Quick poll

Do you agree with our revised maintenance incentive proposals?

Yes | **Somewhat** | **No**

Please give a reason for your answer

6

Constraint Management Risk analysis

nationalgrid

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) and excluded the broader maintenance risk from our central forecast of ~£47m p.a (subject to the TO business plan being accepted).

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 (South East) Entry:

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

SW (South Wales) Entry:

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

SO (Southern) 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			Costs (£m)		
Year	Region	Avg	Max	P90	Avg	Max	P90
21/22	SW Entry	8	22	9	30.7	117.2	40.7
	SE Entry	2	18	3	2.8	153.4	4.0
	SO Exit	4	37	8	6.3	83.3	18.0
	Total	14	77	20	39.8	353.9	62.7
22/23	SW Entry	9	22	10	32.6	103.9	43.4
	SE Entry	1	28	4	5.1	150.9	13.0
	SO Exit	4	24	9	5.8	103.4	17.2
	Total	14	74	23	43.4	358.1	73.5
23/24	SW Entry	9	26	13	35.8	151.6	54.7
	SE Entry	3	36	5	6.8	169.8	18.9
	SO Exit	4	25	7	3.8	93.9	11.9
	Total	16	87	25	46.3	415.3	85.6
24/25	SW Entry	11	31	15	41.0	143.0	65.2
	SE Entry	3	28	6	7.7	188.2	27.0
	SO Exit	3	22	6	3.1	89.0	10.0
	Total	17	81	27	51.8	420.2	102.2
25/26	SW Entry	11	34	15	44.0	149.4	70.0
	SE Entry	4	33	6	10.5	234.1	31.4
	SO Exit	2	19	5	2.2	74.7	6.9
	Total	17	86	26	56.6	458.2	108.3

- An “event” is where the risk analysis identified a day where flows were above capability
- We have excluded risk associated to planned maintenance from our central averaged case (as per earlier slide)
- Using an average could be viewed as a conservative view of risk, as it discounts low probability high cost events, or pessimistic as it averages the risk for all probabilities. However, we believe the average provides a reasonable approximation of the RIIO-2 constraint risk.
- Assumes a constraint price of ~2p/kWh and that 50% of Entry constraints will be managed through locational sell actions

Key points

1 Risk

- Our overall combined analysis has between 14 to 17 days constraint events per annum on average.

2 Comprehensive

- RIIO-2 analysis is more comprehensive than RIIO-1
- Based upon greater levels of computer processing power (RIIO-1 ~8GB of data. RIIO-2 ~300GB of data)
- 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

Quick poll

Have we clearly articulated our risk modelling approach?

Yes | **Somewhat** | **No**

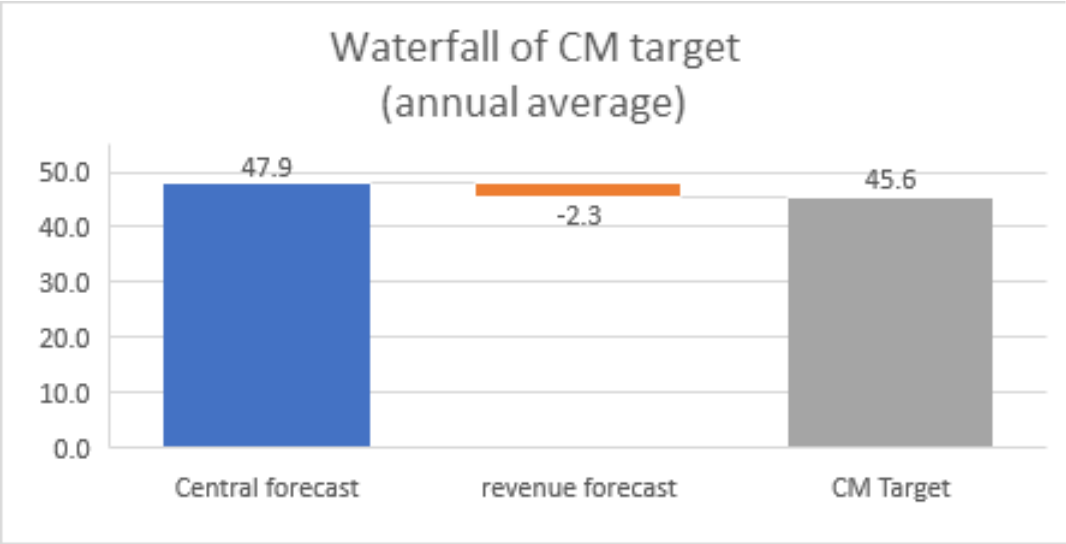
Please give a reason for your answer

7

Scheme target, cap and collar options

nationalgrid

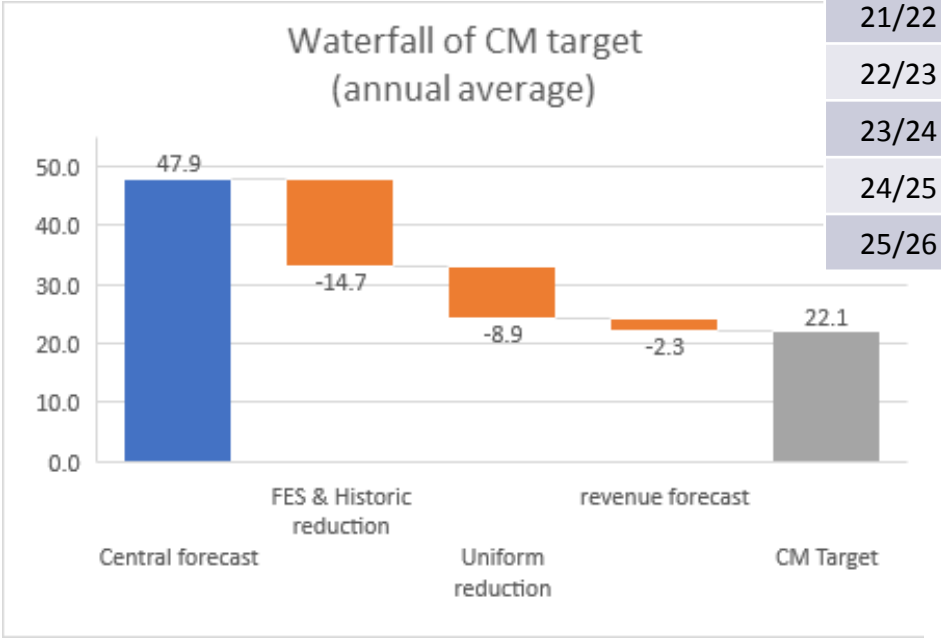
Option A annual scheme target - Summary



Year	A Total "average" risk (£m)	B Forecast Revenue (£m)	A-B Annual Cost Target (£m)	% of total risk
21/22	39.8	2.3	**37.5**	94%
22/23	43.4	2.3	**41.1**	95%
23/24	46.8	2.3	**44.5**	95%
24/25	52.3	2.3	**50.0**	96%
25/26	57.1	2.3	**54.8**	96%

Note: Additional specific £0.5m risk identified for 2023/24 onwards due to identified plant works

Option B annual scheme target - Summary



Year	Total "average" risk (£m)	A reduction FES & Historic (£m)	B Uniform reduction (£m)	C Forecast Revenue (£m)	A+B-C Annual Cost Target (£m)	% of total risk
21/22	39.8	4.9	15.6	2.3	**18.2**	46%
22/23	43.4	5.8	16.1	2.3	**19.6**	45%
23/24	46.8	7.0	16.9	2.3	**21.6**	46%
24/25	52.3	8.9	17.4	2.3	**24.0**	46%
25/26	57.1	9.6	19.6	2.3	**26.9**	47%

Note: Additional specific £0.5m risk identified for 2023/24 onwards due to identified plant works

Option A - Scheme target rationale

- We believe it's right to consider an option that assumes a target based purely upon the RIIO-2 risk analysis.
- Compared to option B, this does not assume our RIIO-1 performance as a proxy for RIIO-2 managed risk, given that RIIO-2 is a different operating environment to RIIO-1.
- This is ultimately the risk we believe we will be managing in the RIIO-2 period on behalf of consumers.
- Importantly, under both options we expect to be managing the same level of risk. Option A fully recognises and funds this risk (based upon an “average” scenario which could be viewed as conservative).

We’d welcome views as to whether you believe this approach to determining the cost target is reasonable.

Option B - Scheme target rationale – FES and Historic

- We believe managing a proportion of constraint risk as BAU and excluding this from our CM cost target allowance should be considered.
- To determine how much risk could be removed as “BAU”, we first looked at our RIIO-1 business plan forecast and compared this to the number of Entry / Exit scale back actions we have taken to date.
  - scaling back interruptible / off-peak capacity is generally the 1st commercial constraint action we take
  - Excludes commercial contracts we have entered
- RIIO-1 forecast **~12** events per annum. RIIO-1 actual ~**4** days per annum of scale backs **(33%)**
- As such, we have removed **67%** of cost from the average combination forecast (excluding Uniform analysis) and the incentive cost target. Reduces the cost target by around £14.7m per annum.
- We recognise that the RIIO-2 outlook and risk analysis is different to RIIO-1. As such using RIIO-1 performance as a proxy for RIIO-2 managed risk is imperfect and carries an inherent risk.

We’d welcome views as to whether you believe reducing the cost target is reasonable.

Option B - Scheme target rationale – South Wales Uniform risk

- As uniform, by its nature, is less reflective of RIIO-1 behaviour, we have adopted a different approach.
- Instead, we have conducted the combination risk analysis with and without the uniform distribution to determine the contribution of “uniform” to the average cost.
- We believe we can manage an element of “uniform” risk as BAU through management focus, operational planning and commercial insight.
- We have analysed the reduction in frequency of South Wales constraint events, assuming we can manage a volume of capability shortfall without commercial constraint management tools.
- On average, this analysis reduced the combination average risk by a further ~£9m per annum (~35% reduction of Uniform constraint costs).

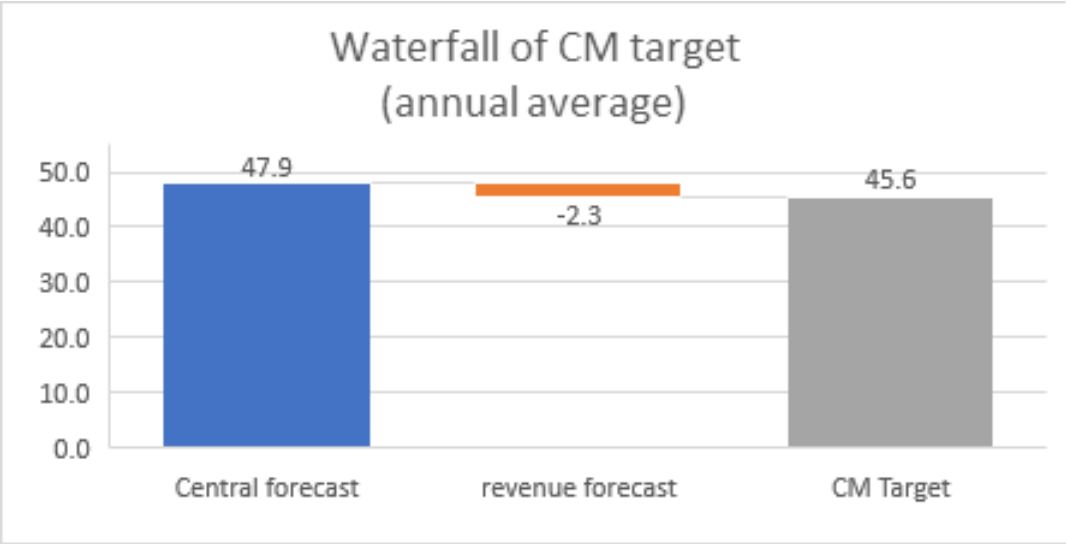
Option A and B Proposed way forward – Revenues

- To forecast the level of revenues we could expect in RIIO-2, we have looked at the revenues to date into the scheme for RIIO-1:

CM revenue component	2012/ 13	2013/ 14	2014/ 15	2015/ 16	2016/ 17	2017/ 18	2018/ 19
Entry Overrun revenue	£502,270	£121,077	£350,415	£635,569	£1,375,899	£2,299,116	£391,142
Daily obligated Entry	£68,905	£128,566	£121,831	£76,053	£323,715	£332,598	£201,383
Interruptible Entry	£337,355	£414,434	£343,429	£277,434	£916,263	£578,390	£513,063
Non-ob Entry	£1,100,801	£1,063,107	£733,681	£492,497	£361,124	£184,878	£148,804
Daily Obligated Exit	N/A	£12,671	£93,353	£109,910	£73,074	£331,968	£59,413
Off-peak exit	N/A	£49	£10,114	£68,349	£0	£170	£389
Non-ob exit	N/A	£1,253,945	£761,117	£293,651	£474,970	£742,725	£800,553
Total	**£2,009,331**	**£2,993,849**	**£2,413,940**	**£1,953,462**	**£3,525,045**	**£4,469,845**	**£2,114,747**

- We consider that the 2016/17 and 2017/18 revenues are outliers as they resulted from shipper errors resulting in high entry overrun costs.
- We shouldn't assume such errors will repeat, therefore using the average from the remaining years, it is reasonable to assume total revenues of around £2.3m per annum into the scheme in the absence of framework changes.
- We therefore propose to remove £2.3m per annum from our cost target.

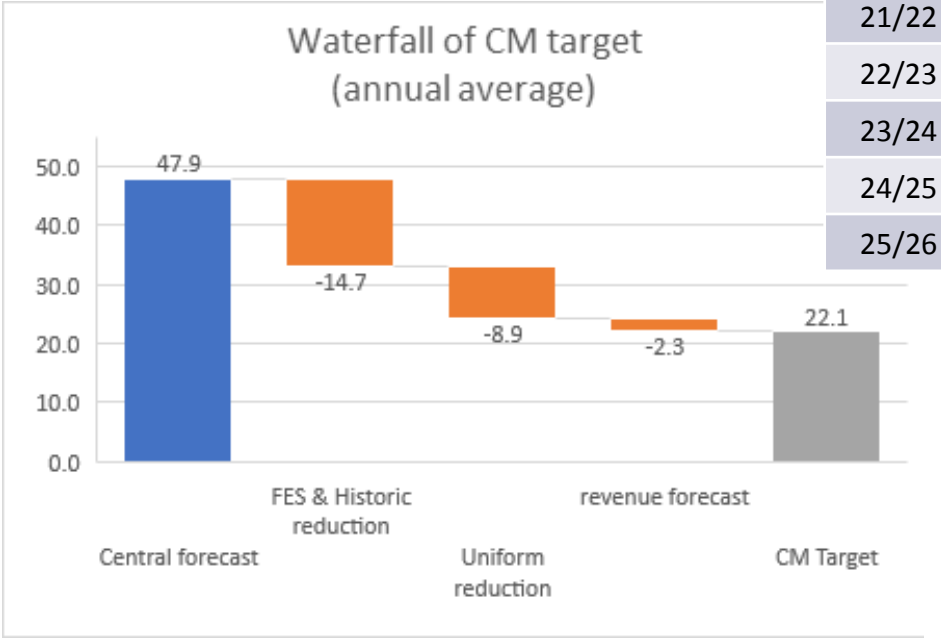
Option A annual scheme target - Summary



Year	A Total "average" risk (£m)	B Forecast Revenue (£m)	A-B Annual Cost Target (£m)	% of total risk
21/22	39.8	2.3	**37.5**	94%
22/23	43.4	2.3	**41.1**	95%
23/24	46.8	2.3	**44.5**	95%
24/25	52.3	2.3	**50.0**	96%
25/26	57.1	2.3	**54.8**	96%

Note: Additional specific £0.5m risk identified for 2023/24 onwards due to identified plant works

Option B annual scheme target - Summary



Year	Total "average" risk (£m)	A reduction FES & Historic (£m)	B Uniform reduction (£m)	C Forecast Revenue (£m)	A+B-C Annual Cost Target (£m)	% of total risk
21/22	39.8	4.9	15.6	2.3	**18.2**	46%
22/23	43.4	5.8	16.1	2.3	**19.6**	45%
23/24	46.8	7.0	16.9	2.3	**21.6**	46%
24/25	52.3	8.9	17.4	2.3	**24.0**	46%
25/26	57.1	9.6	19.6	2.3	**26.9**	47%

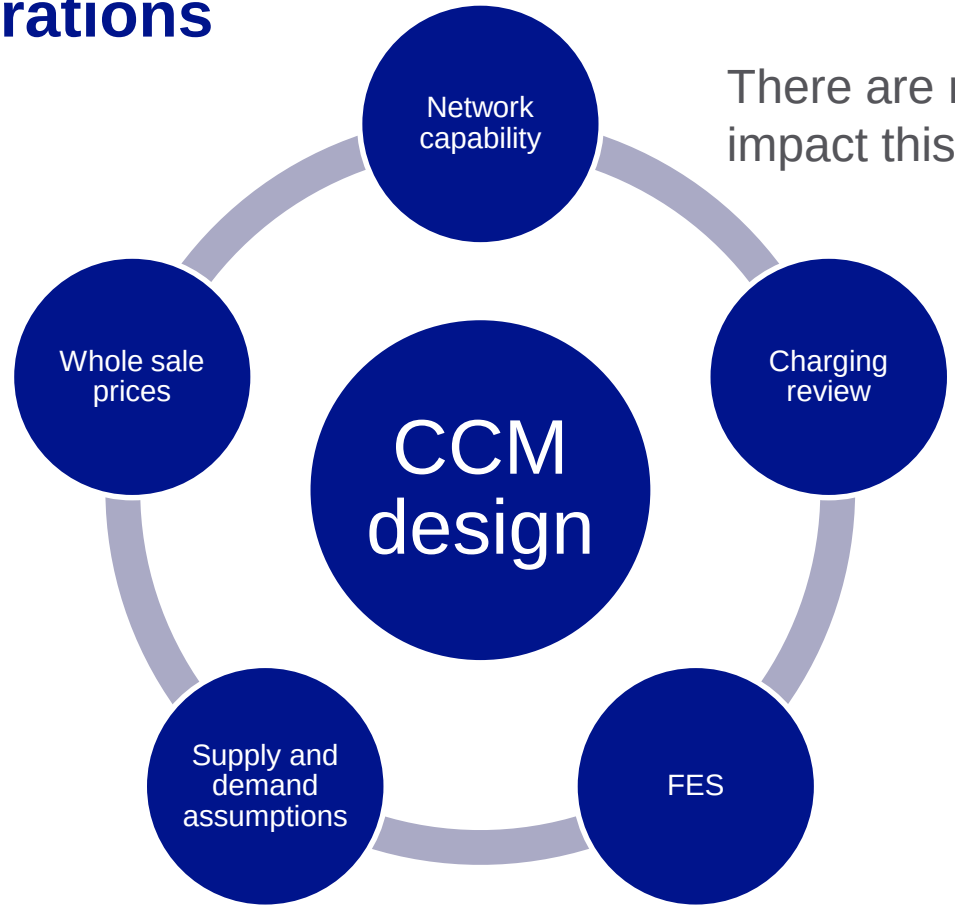
Note: Additional specific £0.5m risk identified for 2023/24 onwards due to identified plant works

Option A and B - Scheme Cap and Collar

- We consider the scheme cap should be high enough to mean capping out under the scheme is considered unlikely, given that capping out could consequently result in a performance plateau, but should also be set low enough to ensure windfall gains don't occur and revenue can be returned to customer and consumers.
  - Option A – We consider a scheme cap of £40m is appropriate for RIIO-2.
  - Option B - We consider a scheme cap of £20m is appropriate for RIIO-2.

- We consider a symmetrical cap and collar is appropriate to ensure balanced focus under the scheme with regards to risk and reward.

Key considerations



There are many factors that will impact this mechanism

Option A and B proposed way forward – re openers

- Whilst a scheme that has several “reopener” triggers should be avoided, it would be appropriate that upon reopening the scheme, we factor in the key considerations from the previous slide.

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 high impact / low probability costs are incurred (e.g. one-off asset health costs not explicitly included within the allowances)

Constraint Management scheme design – Option A

Scheme is based on:	• Expected modelled risk in RIIO-2
Our proposal:	• A symmetrical Cap and Collar of £40m • Removing forecast revenues from the scheme target (£2.3m per annum) • An annual cost target of between £37.5 and £54.3m (avg £45.6m) • 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 element of the 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

Constraint Management scheme design – Option B

Scheme is based on:	• Expected risk in RIIO-2 • Learnings from RIIO-1 in terms of how we managed risk against forecast
Our proposal:	• A symmetrical Cap and Collar of £20m • Removing a proportion (~50%) of constraint cost as BAU managed risk. • Removing forecast revenues from the scheme target (£2.3m per annum) • An annual cost target of between £18.2 and £26.9m (avg £22.1m) • 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 element of the 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 options?

Yes | Somewhat | No

Please give a reason for your answer

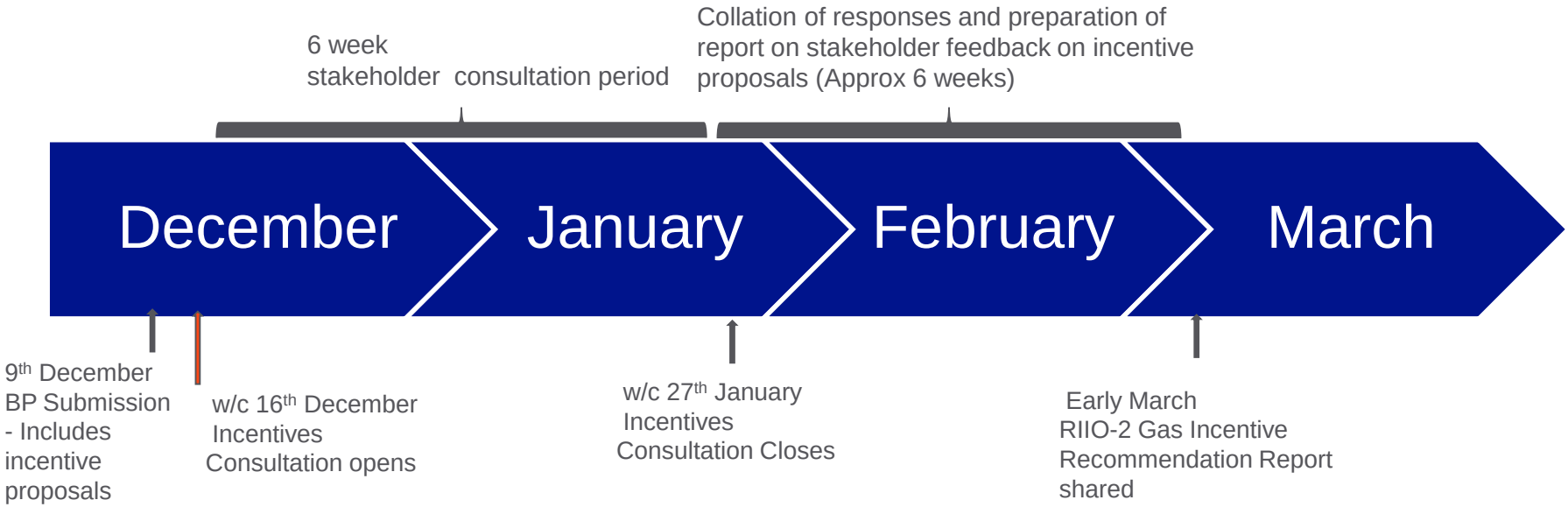
What is your preferred option?

Option A | Option B | Other

If other please specify


QUESTIONS

RIIO2 Incentives Stakeholder Consultation- Proposed




nationalgrid
Thank You

nationalgrid