

The background of the slide features a close-up, slightly blurred image of interlocking mechanical gears. One gear in the foreground is blue, while the others are a light tan or cream color. The lighting creates a soft, diffused effect across the scene.

# **Gas Distribution Safety and Reliability workshop + Repex review workshop**

15 November 2010

# Agenda

## **Part 1: Safety & Reliability**

- Safety - primary outputs and secondary deliverables
- Reliability – primary outputs and secondary deliverables
- Network output measure development

## **Part 2: Repex review**

- Centrica/Frontier presentation on:  
    “Evaluating the gas mains replacement programme”
- HSE/Ofgem update on repex review project

## RIO-GD1 – Proposed Safety Outputs

Output sub-category	Primary Output	Secondary Deliverable	Incentive
<b>Mains replacement</b>	<ul style="list-style-type: none"> <li>• Change in iron mains risk score</li> </ul>	<ul style="list-style-type: none"> <li>• Gas in Buildings</li> <li>• Number of fractures</li> <li>• Length of main off risk</li> </ul>	No additional incentive mechanism – GDNs need to ensure compliance with agreed HSE plan (under PSR 13).
<b>Emergency Response</b>	<ul style="list-style-type: none"> <li>• % uncontrolled gas escapes attended to within 1hr</li> <li>• % controlled gas escapes attended to within 2hr</li> </ul>		No incentive mechanism; compliance issue
<b>Repair</b>	<ul style="list-style-type: none"> <li>• Change in risk score associated with type of gas escape and time taken to repair</li> </ul>	<ul style="list-style-type: none"> <li>• Percentage preventions undertaken within 12 hours</li> </ul>	No incentive mechanism; compliance issue
<b>Major Accident Hazard Prevention</b>	<ul style="list-style-type: none"> <li>• (GSMR) Safety case accepted by HSE</li> <li>• (COMAH) Safety report reviewed by HSE</li> </ul>	<ul style="list-style-type: none"> <li>• Completion of statutory inspection and maintenance regime</li> <li>• No. of (RIDDOR) reportable loss of gas incidents for key GDN sites</li> </ul>	No incentive mechanism; compliance issue

## **GDNs' latest comments on proposed safety outputs**

- Repair output category. It was noted that one network does not currently capture a risk score for immediate action escapes. This would need to be taken into account with any cross GDN comparison.
- Statutory Inspection/maintenance regime – initial view of the GDN's is to include:- ME2 metering under UNC; Discharge consents; PSSR; LP Storage Factories Act 2 yearly inspection.
- Comment at the bottom of slide pack, didn't think the risk primary measure is still an outstanding issue.

## RIO-GD1 – Proposed Reliability Outputs

Output Category	Primary Output	Secondary Deliverable	Notes/ Incentives
<b>Loss of Supply</b>	<ul style="list-style-type: none"> <li>Number and duration of interruptions (planned; unplanned; 3<sup>rd</sup> party)</li> </ul>	<ul style="list-style-type: none"> <li>Development of health indices and failure indices (5 asset categories)</li> </ul>	(i) Primarily incentivised under existing Guaranteed Standards (change the value?). (iii) Looking to develop secondary measures for use at RIO-GD1 (with aim to develop a mechanism for “claw-back” as per DPCR5)
<b>Network Capacity</b>	<ul style="list-style-type: none"> <li>Managing 1 in 20 Obligations<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>Asset utilisation</li> <li>Existing capacity outputs Incentive (Exit +Interruptions)</li> </ul>	(i) Considering changes to (a) GDPCR1 “equalisation of incentives” policy, inc. option value; (b) whether GDNs should bear demand risk.
<b>Network Reliability</b>	<ul style="list-style-type: none"> <li>Maintaining operational performance</li> </ul>	<ul style="list-style-type: none"> <li>No. and value of offtake meter error reports (shipper driven)</li> <li>Faults over [x] days old</li> </ul>	No incentive mechanism
<b>Data Accuracy</b>	<ul style="list-style-type: none"> <li>Maintaining network records</li> </ul>	<ul style="list-style-type: none"> <li>%age of records updated within 42 days of work completion</li> <li>No. of error reports raised by 3<sup>rd</sup> party contractors working on GDN assets</li> </ul>	No incentive mechanism

<sup>1</sup> The GDNs are required to design their networks to maintain supplies under 1 in 20 peak day conditions where the 1 in 20 peak day demand is the level of demand that would be exceeded in one out of 20 winters

# GDNs' latest comments on proposed reliability outputs

## Loss of supply

- The 'claw back' mechanism has not been discussed and is therefore potentially an outstanding issue.
- Materially large scale interruptions (>250) are an outstanding issue due to the massive investment needs that this would generate.

## Network Reliability

- 'Value' of off-take meter errors needs to be 'energy value' as cost information is not known by the GDN at the time.
- Fault secondary should read 'Number faults x duration' as opposed to fault over a certain age.
- NGG has circulated some early definitions, but some work is needed to refine these.

## Network Reliability – Fault categories and definitions

- Following last w/g GDNs provided slide pack detailing a selection of fault categories and descriptions common between the GDNs, which could be measured in a consistent approach.
- An ongoing collaborative exercise is in place in order to define the detailed measures, from an asset/component perspective and the associated timescales to measure fault resolution against.
- GDNs indicate an update on this process would be provided at this meeting.

### Categories

- Telemetered faults
- PSSR inspection faults

### Definitions

- Measurable faults on non-linear >7bar and storage assets, raised through telemetry (TM) and PSSR inspections reports against the following assets:
  - Pressure control/safety systems (e.g. firing of SS valve - TM, SS fires out of range - PSSR)
  - Pre-heating systems (e.g. low temperature - TM)
  - Odorant systems (e.g. fault in system - TM)
  - Meter systems (e.g. inaccurate measurement - TM)
  - Filter systems (e.g. DP beyond acceptable range - TM, corrosion on filter body - PSSR)
  - Holder stations (e.g. Control system failure - TM)
  - Electrical & Instrumentation (e.g. telemetry failure - TM)
  - Pig traps/block valves (e.g. valve failing to operate - TM, corrosion on asset body - PSSR)
- All faults that result from:
  - Loss of telemetry/power
  - Failure of component/equipment
  - Human factor
  - 3<sup>rd</sup> party interference

## Network risk

- Our preference is for an overall reliability assessment/risk metric to be pursued in the long-term. However, we acknowledge this may not be achievable in RIIO-GD1. A pragmatic approach is for GDNs to have a framework for describing how risk management processes are incorporated with NOMs when making asset management decisions.
- Framework should:
  - Build on DPCR5
  - Be established up front
  - Incorporate a measure of criticality
  - Include how the GDNs will articulate the case for spending a marginal pound across asset categories.



## Network risk – Issues

- **Asset condition:**
  - Should be described through an asset health index (DPCR5). We need to understand how GDN has made an assessment of condition.
- **Asset criticality:**
  - Need a measure that ranks the criticality of assets
  - Consider whether and how the criticality ranking differ across primary assets.
  - How would GDNs articulate prioritising expenditure across assets groups?

# Risk/Criticality Matrix

Health Index	Description
HI1	New or as new
HI2	Good or serviceable condition
HI3	Deterioration requires assessment and monitoring
HI4	Material deterioration, intervention requires consideration
HI5	End of serviceable life, intervention required

Criticality Index	Description
CI1	Low
CI2	Medium
CI3	High
CI4	Very high

Risk Index	Description
RI1	Very low risk
RI2	Low risk
RI3	Medium risk
RI4	High risk
RI5	Very high risk

DPCR5

Develop matrix for secondary asset types (take account of materiality where possible)

	CI4	CI3	CI2	CI1
HI5	RI5	RI4	RI3	RI3
HI4	RI4	RI3	RI2	RI2
HI3	RI2	RI2	RI2	RI1
HI2	RI1	RI1	RI1	RI1
HI1	RI1	RI1	RI1	RI1

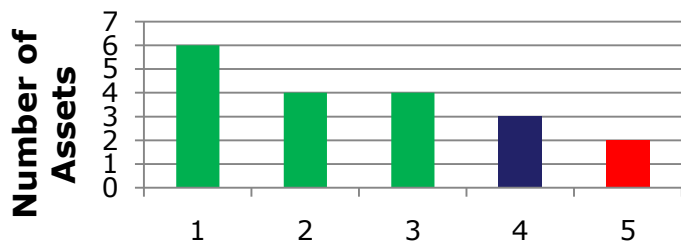
Gas Distribution NOMs  
(RIIO-GD1)

## Year 0/Year 8 with Investment/Year 8 no Investment

	Asset Health (HI)					Criticality (HI)				Risk (RI)				
	HI1	HI2	HI3	HI4	HI5	CI1	CI2	CI3	CI4	RI1	RI2	RI3	RI4	RI5
Remote Isolation Valve 1	1					1				1				
Remote Isolation Valve 2	1						1			1				
Remote Isolation Valve 3	1							1		1				
Remote Isolation Valve 4	1								1	1				
Remote Isolation Valve 5	1					1				1				
Remote Isolation Valve 6	1						1			1				
Remote Isolation Valve 7		1						1		1				
Remote Isolation Valve 8		1							1	1				
Remote Isolation Valve 9		1				1				1				
Remote Isolation Valve 10		1					1			1				
Remote Isolation Valve 11			1					1			1			
Remote Isolation Valve 12			1						1		1			
Remote Isolation Valve 13			1			1				1				
Remote Isolation Valve 14			1				1				1			
Remote Isolation Valve 15				1				1				1		
Remote Isolation Valve 16				1					1				1	
Remote Isolation Valve 17				1		1					1			
Remote Isolation Valve 18							1					1		
Remote Isolation Valve 19					1			1					1	
Remote Isolation Valve 20					1				1					1
Total	6	4	4	3	2	5	5	5	5	11	4	2	2	1

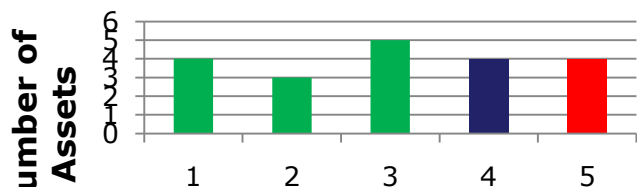
## DPCR5

### Year 0 Health Index



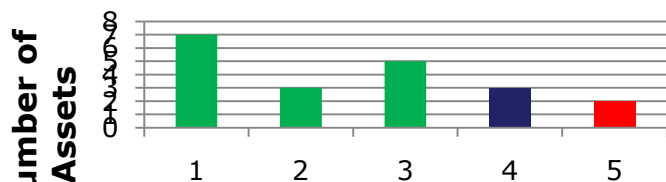
### Heath Index

### Year 8 Health Index - No Investment



### Heath Index

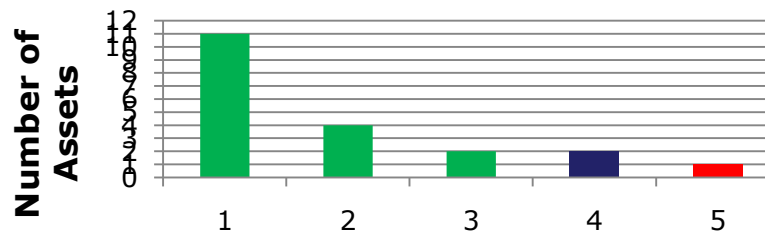
### Year 8 Health Index - With Investment



### Heath Index

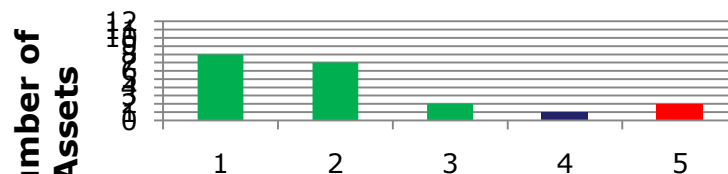
## RIIO-GD1 objective

### Year 0 Risk Index



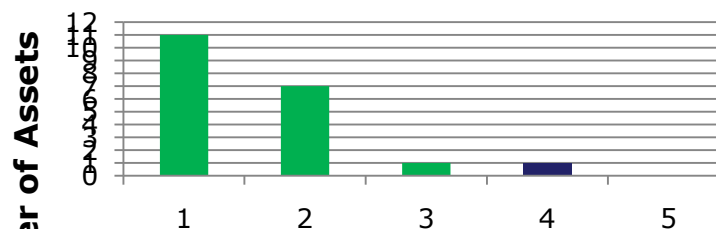
### Risk Index

### Year 8 Risk Index - No Investment



### Risk Index

### Year 8 Risk Index - With Investment



### Risk Index

Current

Forecast degradation

Forecast price control package



Promoting choice and value  
for all gas and electricity customers