



Emergency Management Arrangements –
Industry Workshop
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Part A: Update and revised approach to emergency management

Part B: MPOC and the NGOCP

Part C: Key design issues

Part D: Wrap-up

Part A: Update and revised approach to emergency management

Jul 2006	Discussion paper “Review of Gas Emergency Arrangements”
Oct 2006	Submissions Analysis Review of Gas Emergency Arrangements
20 Oct 2006	Presentation to industry
Taking stock and revising approach in light of feedback	
Feb/May 2007	Developing revised approach
Apr/May 2007	Meetings with network operators
May 2007	Specifying proposed changes

Key themes from submissions analysis (October 2006)

- Overwhelming support for Gas Industry Co to proceed with developing arrangements now
- All agree must be mandatory and need clear triggers and rules for operation
- Some concern with proposal to base on updated version of current NGOCP
- Clear need for some form of emergency pricing regime – differing views on how this should be achieved
- Mixed views over whether should be pan-industry agreement or regulations

Proposed basis for moving forward

- Comments in submissions suggested we needed to re-examine the approach to emergency management
- Developed a revised approach to address the deficiencies identified in submissions
- Now proposing a hybrid approach that combines:
 - A mandatory framework based on regulations
 - Industry arrangements to provide the details
- Piggy-back on MPOC mechanisms where possible

Developing revised approach

- Examined arrangements in other jurisdictions (UK, Ireland, Victoria)
- Developed an understanding of how MPOC processes work (with help from Tricia Spence)
- Met with network operators to discuss possibilities
- Received advice on legal coverage provided under Gas Act
- Proposed approach developed – what we are presenting today

Plan going forward

Today	Present proposal to industry
Today & next week	Receive comments
Jun 2007	Drafting Statement of Proposal
Jul 2007	Issue Statement of Proposal for consultation
Aug 2007	Recommendation to Minister of Energy
Nov to Feb	Regulations come into effect
2008	Industry participants prepare emergency plans

Case for intervention: Potential Market Failures

Problem Area	Description
Lack of a mandatory arrangement	<p>It is important that, during an emergency, all participants will comply with the emergency arrangements.</p> <p>The lack of ready agreement on NGOCP creates uncertainty about whether shippers and consumers can or will comply with directions during an emergency.</p>
NGOCP not suited to a post-Maui era	<p>NGOCP is focussed on Maui and MPOC and submissions suggest that it is inadequate for dealing with reduced flexibility from Maui and a multiple gas field environment in the post-Maui era.</p>
Lack of legal clarity	<p>The current arrangements lack clearly defined roles and obligations during an emergency and this creates ambiguity about curtailment obligations and liability.</p>
Inadequate arrangements to pay for gas during an emergency	<p>Current arrangements provide no recognition of the value of gas during an emergency and this could create perverse incentives for security of supply in both the short-term and the long-term.</p>

Case for intervention: Regulatory objective

- Regulatory objective:
“that arrangements are in place to achieve effective handling of a gas emergency situation without compromising long-term security of supply”

Framework for revised approach

Gas Act: Empowering provisions
under 43F(2)(a)(vi)



Emergency Management Regulations (EMR)

- Define a Gas Contingency (GC)
- Role of Emergency Operator (EO)
- Powers to direct under a GC
- Preparation of Emergency Management Plans (EMP)
- Consultation process
- Approval of EMPs
- Curtailment criteria
- Emergency pricing arrangements

Emergency Management Plans (EMP)

Emergency Operator

- Thresholds for declaring a GC
- Define curtailment bands
- Processes to be followed during a GC
- Restoration process

Transmission Network Owners (TNO)

- Minimum pressures and linepack
- Process to be followed during a GC
- Restoration process
- Communication protocols



Regulatory framework to resolve
uncertainty with current arrangements



Industry arrangements to deal with
emergencies

Revised approach: how it addresses the potential market failures (slide 1 of 2)

Problem Area	How Problem is Addressed by Framework
Lack of a mandatory arrangement	<p>The EMR will establish clear obligations on all participants to comply with emergency management arrangements during a Gas Contingency. The regulations will override existing contractual commitments during the period of the emergency.</p> <p>This should remove the uncertainty about whether shippers and consumers will comply with directions during a Gas Contingency.</p>
NGOCP not suited to a post-Maui era	<p>The EMR will establish a clear legal framework that potentially encompasses all suppliers and pipeline networks.</p> <p>The Emergency Operator and/or network owners will be required to produce an EMP that will meet the requirements and criteria set out in the EMR.</p> <p>This allows the expert operating staff to design a durable and robust arrangement that will suit the post-Maui era.</p>

Revised approach: how it addresses the potential market failures (slide 2 of 2)

Problem Area	How Problem is Addressed by Framework
Lack of legal clarity	<p>The EMR will establish clear powers, roles and obligations for all participants.</p> <p>Participants complying with directions under an approved EMP are likely to have reduced scope for consequential liability to consumers, relative to the current situation.</p> <p>It may be possible for the regulations to limit the liability of participants if they are complying with directions.</p>
Inadequate arrangements to pay for gas during an emergency	<p>The EMR will provide for an emergency price to cash-out any quantity mismatches.</p> <p>This should provide good long-term incentives for participants to consider back-up arrangements and fairly compensate those parties who end up losing access to contracted gas during a gas contingency.</p>

- Feedback on discussion paper – a key theme was how MPOC handles contingency events
- In essence, MPOC uses commercial incentives to manage supply failures
- Objectives:
 - only intervene with emergency arrangements at time(s) of market failure
 - ensure possibility of intervention does not distort the commercial arrangements
- Need to identify the extent to which MPOC is able to manage contingency events

Managing Events beyond MPOC's Scope

- At times of market failure, mandatory arrangements are required:
 - reliable communication arrangements
 - power to direct load shedding
 - means to ensure compliance
- However, must preserve commercial incentives:
 - parties should be no better off after emergency triggered than they would have been had they been able to trade in the commercial market
 - better to come to a commercial arrangement before the emergency is triggered
- Series of design issues to address

Part B: MPOC and the NGOCP

The Relationship Between the MPOC and the NGOCP



Topics

- Defining an ‘emergency’
- Maui Pipeline Open Access overview
- Stabilising the Pipeline (under MPOC)
- Emergency (Phase 2): MPOC Force Majeure
- Gas Accounting after an emergency (Phase 2)

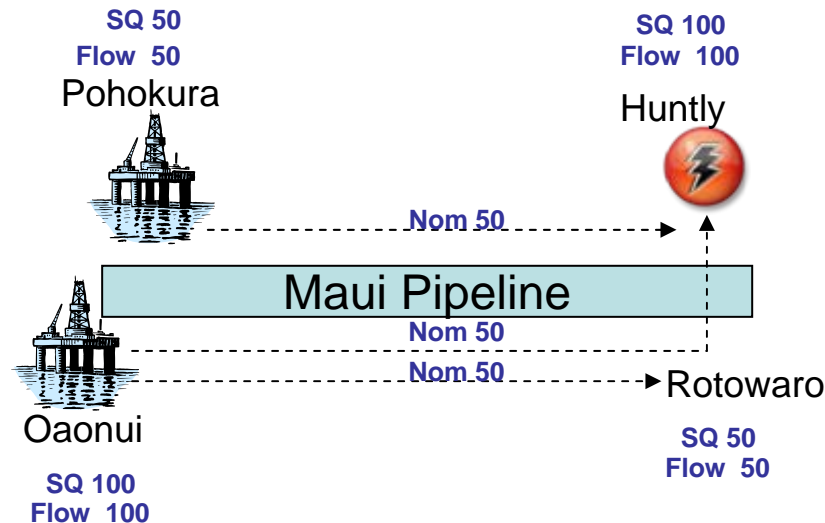
What is an 'emergency'?

- An emergency under the MPOC is not necessarily an emergency under the NGOCP
- MPOC
 - Uses the Contingency Volume to try and stabilise the pipeline in a Contingency Event which may include an 'Emergency' as defined by the MPOC
 - Once the situation has become a NGOCP emergency (as distinct from the MPOC Emergency), FM is declared under the MPOC
 - No express provisions in the MPOC for the management of the pipeline during FM
- Therefore, emergency, as referred to in this presentation means:
 - Phase 2 has been declared under the NGOCP due to linepack levels dropping below the emergency linepack limit; and
 - There is an FM under the MPOC

Emergency under the NGCOP = FM under the MPOC

Maui Pipeline Open Access

- Transmission Services are provided on the Maui Pipeline under the MPOC on a non-discriminatory open access basis
- MPOC 6.4 (a) Each Shipper shall have good title (either in its own right or acting as an agent) to all of that Shipper's Approved Nominations at the time of injection at Receipt Points
- MPOC 12.1 Each Welded Party shall inject or off-take a quantity of Gas from a Welded Point on a Day equivalent to the Scheduled Quantity for that Welded Point



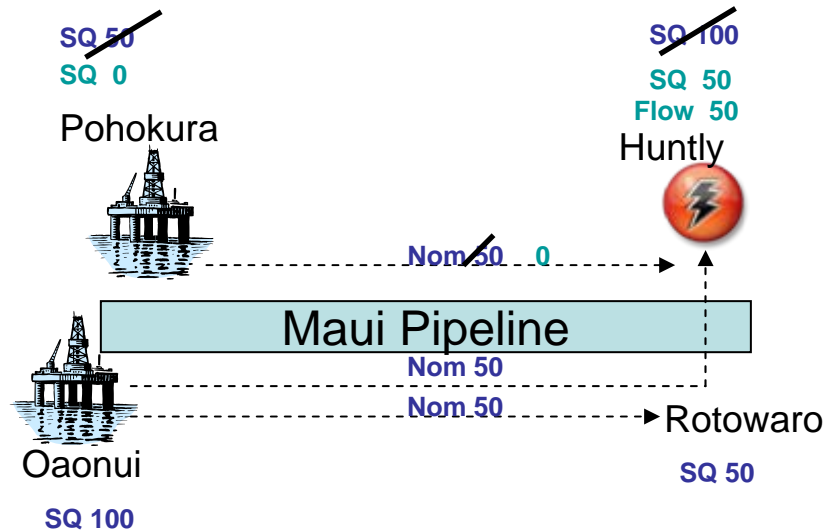
- **Shipper Nominations and Welded Party Scheduled Quantities**

- **Welded Point Flow Quantities**

- Flows Equal Scheduled Quantities
 - Total Pipeline Receipt Scheduled Quantity = 150
 - Total Pipeline Delivery Scheduled Quantity = 150
 - Pipeline Balanced

Maui Pipeline Open Access: Interruption to Supply Pipeline Response under MPOC to Stabilise the Pipeline

- Interruption of Supply could lead to a Contingency Event (phase 1 NGOCP) whereby;
- Scheduled Quantities at Receipt Points and Delivery Points may be curtailed to reflect changes in supply
- OFOs may be issued to ensure Welded Parties flow to the adjusted Welded Point Scheduled Quantity



- **Nominated and Scheduled Quantities**
- **Event at Pohokura results in interruption to supply Contingency Event (MPOC sect 15) activated and Phase 1 NGOCP declared Scheduled Quantity at Pohokura Receipt Point reduced to 0 Associated Nominations and Delivery Point SQs are reduced OFO issued to Delivery Point Welded Party**
- **Delivery Welded Party complies with OFO, flows to SQ**
- **Pipeline balanced**

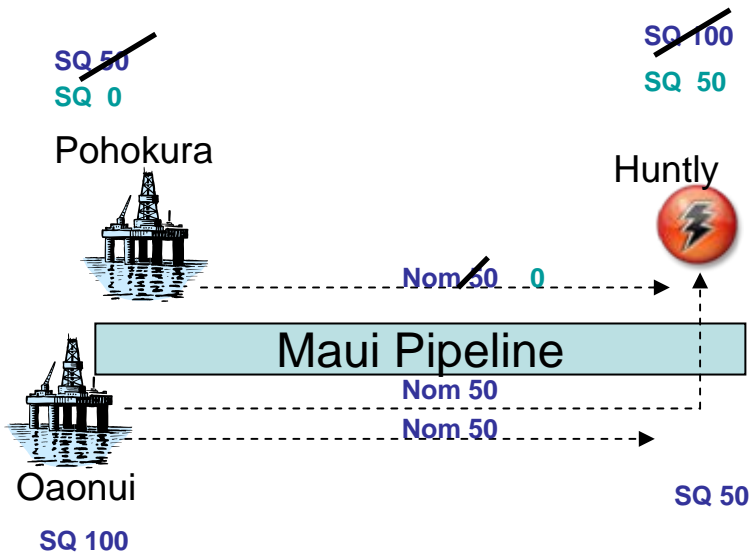
Maui Pipeline Open Access: Interruption to Supply Stabilising the Pipeline Through Parties Self Managing

- MPOC contains mechanisms that enable parties to balance themselves so that supply will equal demand
- These mechanisms are designed to assist in the prevention of a phase 2 emergency

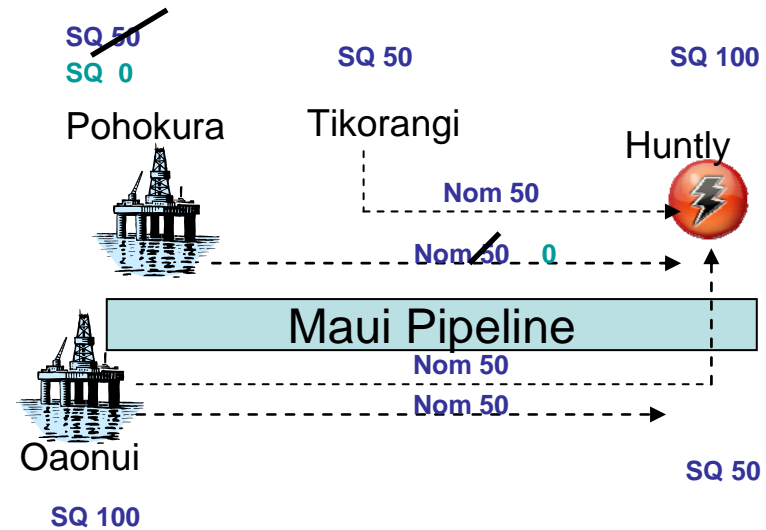
Curtailment during ID 1



Renom during ID 2

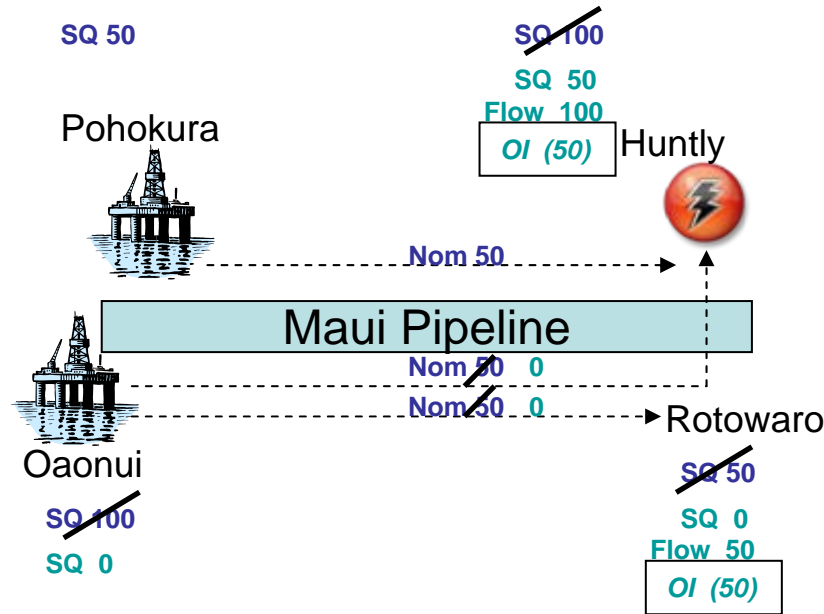


- Nominated and Scheduled Quantities
- Event at Pohokura results in MPOC sect. 15 contingency (Phase 1)



- Huntly sources additional supply from the market to meet its demand requirements
- Nomination is submitted during ID 2
- Pipeline Balanced

Maui Pipeline Open Access: Interruption to Supply Parties Do Not Self Manage

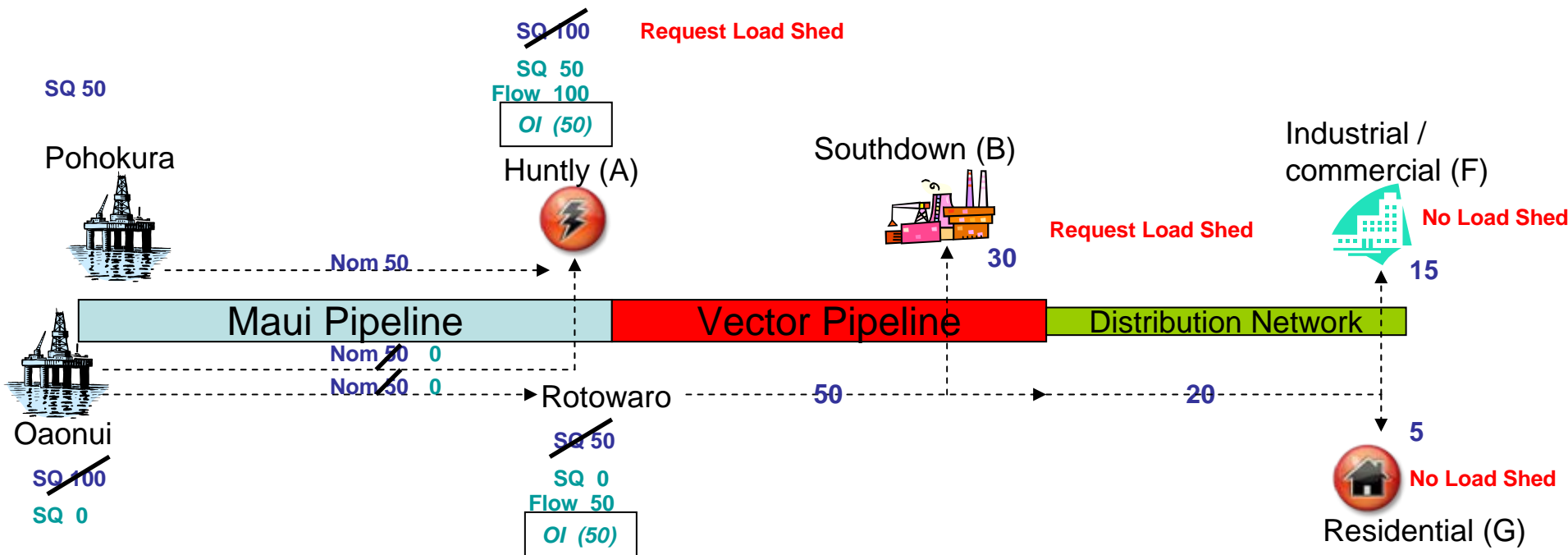


- **Nominated and Scheduled Quantities**
- **Event at Oaonui results in MPOC sect. 15 contingency (Phase 1)**
Receipt Point Scheduled Quantity at Oaonui reduced to 0
Associated Nominations and Delivery Point SQs are reduced
OFO issued to Delivery Point Welded Parties
- **Delivery Welded Parties do not self manage and flow in excess of Welded Point SQs, which is in breach of the MPOC**

Emergency (Phase 2) = MPOC Force Majeure

“Where the MPOC Ends and the NGOCP Begins”

- To the extent parties do not or cannot self manage, linepack levels could fall to such an extent that an emergency (Phase 2) is declared
- Once the situation has become an emergency, FM is declared under the MPOC

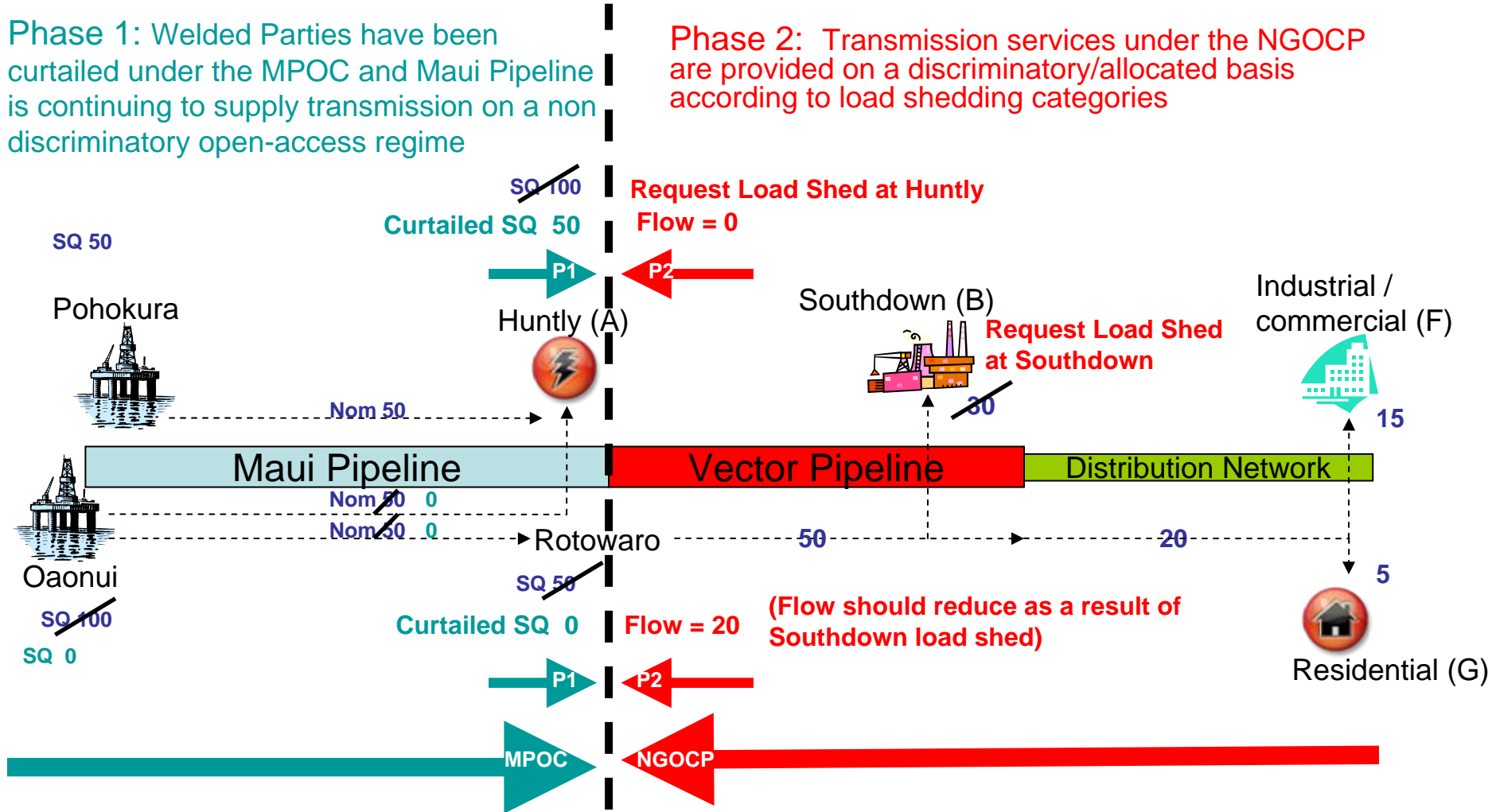


- Parties do not self manage and flow quantities in excess of SQ
- Quantities continue to flow on Vector Pipeline and distribution network
- Linepack level falls below Emergency Linepack Limits
- Phase 2 emergency declared under NGOCP - Request Load Shedding
- Triggers FM under MPOC

Interface between MPOC and NGOCP

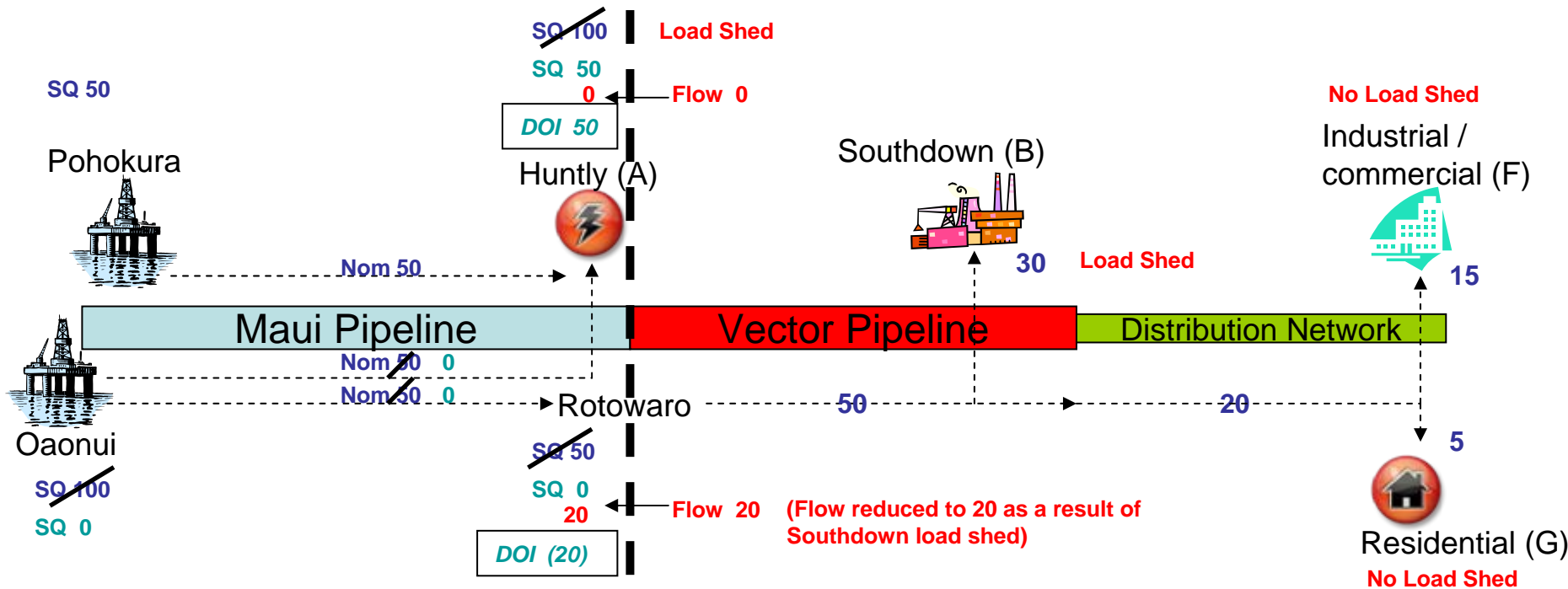
Phase 1: Welded Parties have been curtailed under the MPOC and Maui Pipeline is continuing to supply transmission on a non discriminatory open-access regime

Phase 2: Transmission services under the NGOCP are provided on a discriminatory/allocated basis according to load shedding categories



Interface between MPOC and NGOCP

- Scheduled Quantities have not been reduced during phase 2 of the NGOCP
- However, the measured flow that occurs during phase 2 will be used to calculate the Operational Imbalances and Incentives Pool Debits



- **Phase 2 Load Shed**
- Daily Operational Imbalances on Maui Pipeline at Huntly and Rotowaro will be calculated based on the MPOC Phase 1 Scheduled Quantities and the NGOCP Phase 2 Flow Quantities

Gas Accounting after an emergency (Phase 2)

- Current calculations of Incentives Pool Debits and Operational Imbalances will combine phase 1 and phase 2 activity
 - Possible reconciliation will be required to determine
 - Operational Imbalances and Incentives Pool Debits during phase 1 (prior to the emergency)
 - Operational Imbalances and Incentives Pool Debits during phase 2 (emergency)
- Interface between the NGOCP and MPOC will need to address
 - MPOC management of Incentives Pool Debits and Operational Imbalances during an FM
 - Parties actions under MPOC phase 1 resulting in Incentives Pool Debits and Operational Imbalances may cause phase 2
 - Parties may not be liable for Incentives Pool Debits incurred during an emergency
 - It is uncertain how Operational Imbalances are to be treated given the resulting imbalances after phase 2
- These issues will need to be addressed to ensure compatibility between the NGOCP and the MPOC

Part C: Key design issues

- 1. Overview of new arrangements**
2. Components of new arrangements

Key elements are:

- One party needs to take charge: the Emergency Operator (EO)
- Have a start and an end: EO to declare when a GC is triggered, and to terminate a GC
- Need to have plans already in place to implement curtailment of consumers according to a prearranged order
- Clean-up afterwards

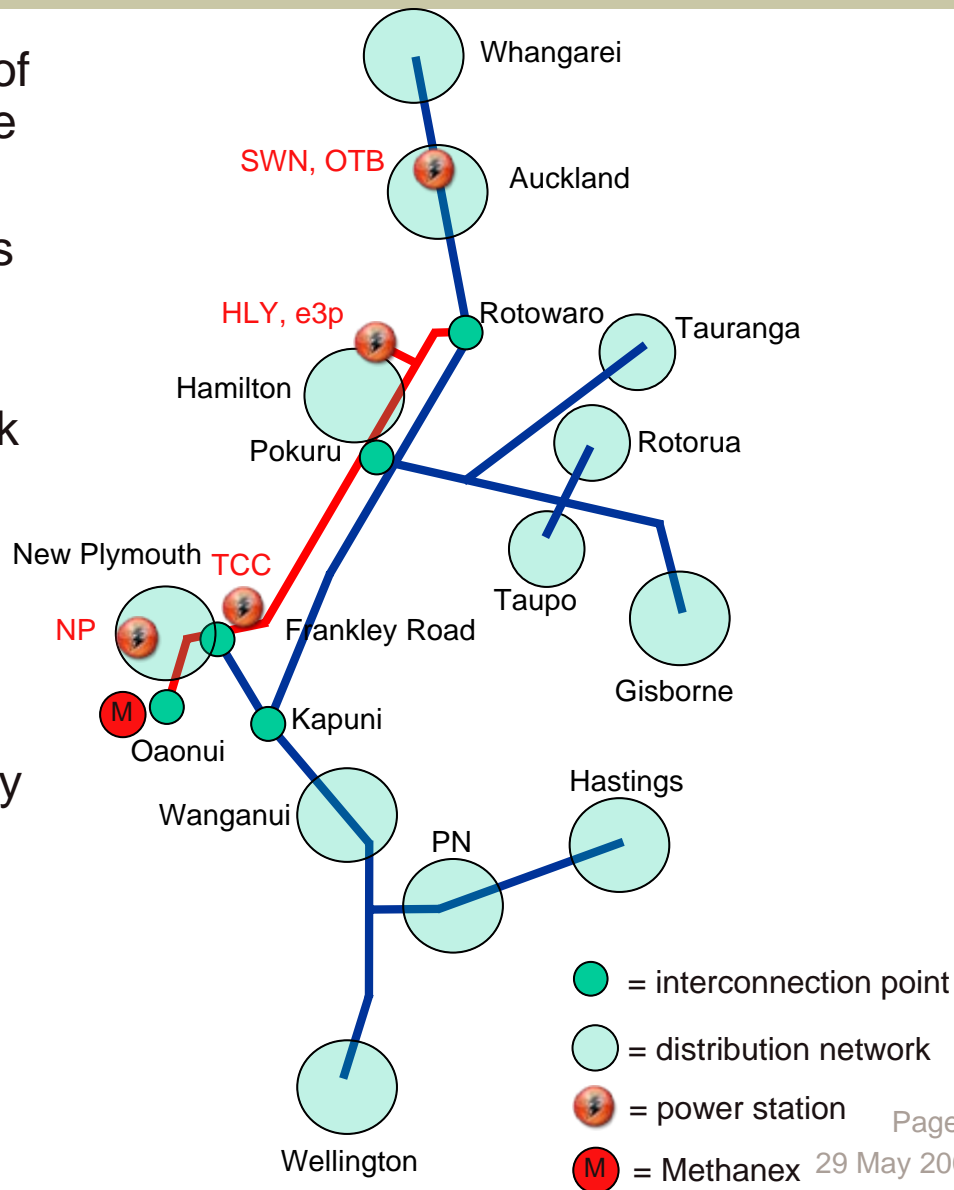
- Emergency management arrangements cover a large-scale security of supply emergency
- Actions taken in a security emergency are to curtail supply to consumers to preserve security of supply on the network as a whole
- Gas Industry Co is pursuing security using its powers for wholesale markets under the Gas Act 43F(2)(a)(vi)
- Safety is a separate matter managed under other provisions of the Gas Act and other legislation

National & Regional emergencies

- National emergency caused by a loss of supply or an event (e.g. damage) to the onshore transmission system
- National emergency potentially impacts all the gas networks
- Regional emergency – only the supply on that part of the transmission network is affected.

National and regional emergencies are covered by the proposed regulations

- Distribution system event affects supply within a distribution network.
- Distribution event is not covered by proposed emergency arrangements



1. Overview of new arrangements
- 2. Components of new arrangements**

1. Gas Contingency definition
2. Roles and coverage
3. Triggering a GC
4. Planning process
5. Curtailment
6. Communications
7. Reporting
8. Emergency pricing
9. Compliance

1. Gas Contingency definition

What	Why	How
Whenever there is a need to intervene in the normal commercial arrangements in order to:	<ul style="list-style-type: none"> •preserve the secure operation of the system as a whole 	<ul style="list-style-type: none"> •by progressively curtailing load in an agreed order of priority

- Trigger for a GC on a transmission network will be specified in the Emergency Management Plan produced by the Transmission Network Owner

2a. Roles and coverage

Industry Participants	Role in emergency management
Emergency Operator (EO)	Prepares EO Plan and triggers Gas Contingencies. Directs curtailment as necessary
Transmission Network Owners (TNO)	Prepare EM Plans
Retailers	Provide information and customer details as necessary and assist EO during emergency. Implement curtailment
Distributors	None (still implement own n/w management plans)
Consumers	Comply with curtailment instructions

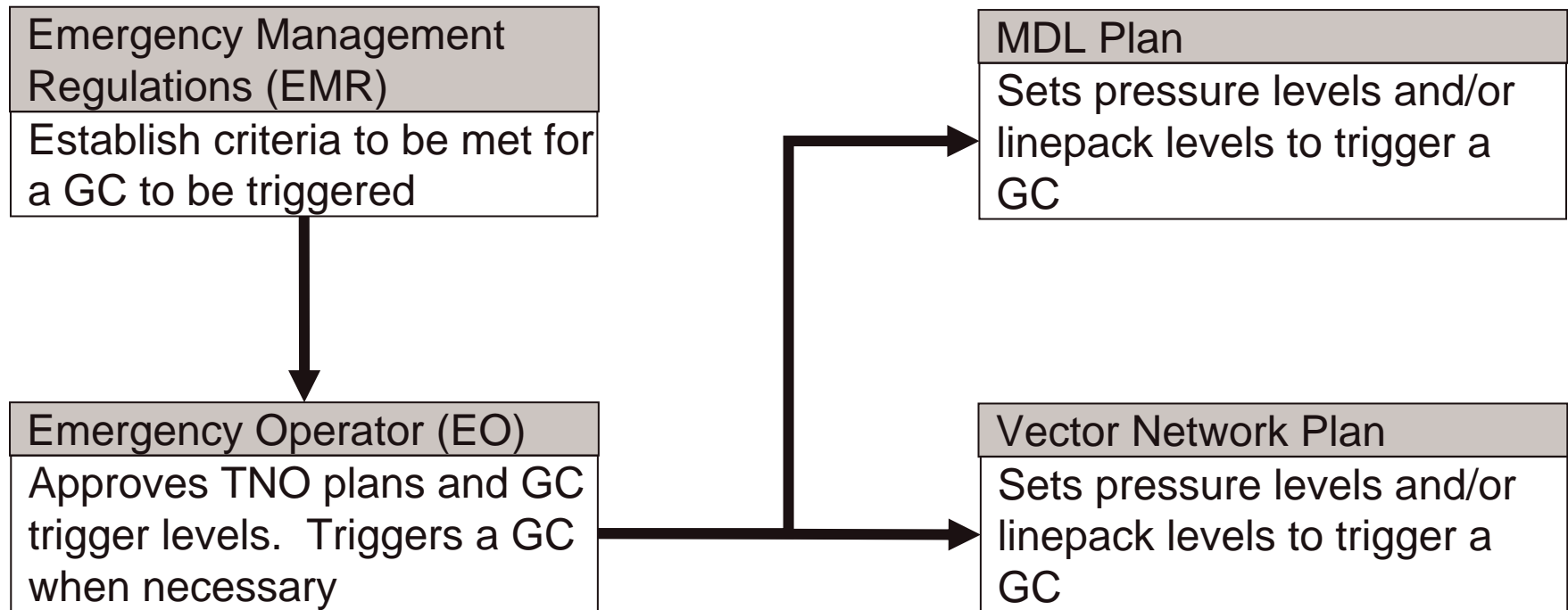
2b. Emergency Operator

- Emergency Operator (EO) is a role performed by a single party on behalf of the industry
- EO is the party that is responsible for:
 - Declaring when a GC is triggered
 - Operating the transmission system during a GC
 - Directing others parties to curtail load
 - Lifting a GC
- EO is:
 - Operating according to EMPs supplied by TNOs
 - Not making commercial decisions (role is that of technical operator)

2c. Retailer and consumers

- Retailer undertakes the curtailment of its consumers when instructed to do so by the EO
- Every year each retailer is required to supply EO with the total volume load of its customers in each band of the curtailment schedule, on each distribution network
- Each retailer required to maintain:
 - Emergency contact details for customers with consumption >2TJ/annum
 - List of:
 - Essential Service Providers
 - Minimal Load Consumers

3. Triggering a GC



4. Planning processes

- Transmission network owners each produce an EMP
- EO produces an EO Plan. EO Plan describes how it triggers emergencies and communicates with industry
- Publication and approval of plans:

Plan	Prepare	Approval
Emergency Operator	EO Plan	GIC
MDL Network Plan	MDL	EO
Vector Network Plan	Vector Network Owner	GIC on advice from EO

5a. Curtailment bands

- Existing Category Definitions (in Appendix A to NGOCP)
- Volume bands are used for load shedding in other jurisdictions: no revision proposed to overall order
- Look at updating Category Definitions and proposing some changes:
 - Curtailment of transmission connected consumers (Major Plant): distinguish between plant with and without alternative fuel capability;
 - Distinction between categories B, C and D not appear meaningful: combine into single band;
 - The cost of interruption to industrial load (e.g. plant damage) can be reduced by maintaining a small proportion of supply: introduce Minimal Load Consumer who may maintain minimal load to mitigate costs of damage (up until the point that interruption cuts deeper)
- Cost-benefit analysis is required to justify the category bands and the order of curtailment. For now existing NGOCP bands with above changes seems sensible

5b. Curtailment bands – current thinking

Existing Arrangements		Proposal		
NGOCP Category	Description	Curtailment Band (NGOCP Category)	Consumption	Description
Major Plant	>15TJ/day, Direct Supply	1a (Major Plant)	>15TJ/day	Direct supply with alternative fuel capability
		1b (Major Plant)	>15TJ/day	Direct supply without alternative fuel capability
A	>10TJ, with alternative fuel facilities	2 (A)	>10TJ/annum	Industrial and commercial consumers with alternative fuel capability
B	>10TJ, curtailment will not affect plant or product			
C	>10TJ, curtailment could cause product loss			
D	>10TJ, curtailment could cause plant damage/ environmental damage	3 (B,C,D)	>10TJ	Without alternative fuel capability. Minimal Load Consumers allowed up to [20%] max to maintain essential processes and prevent plant damage
E	>2TJ and <10TJ, not in category F	4 (E)	2 to 10TJ	Includes any residual load taken by Minimal Load Consumers
F	>2TJ classed as essential service	5 (F)	>2TJ	Essential service providers
G	<2TJ all consumers	6 (G)	<2TJ	All other consumers

6. Communications

- EO required to have communications plan for emergency
- OATIS used to communicate with welded parties and with shippers
- Retailers required to maintain list of emergency contact details for consumers with consumption >2TJ/annum
- Retailers contact consumers under instruction from EO

7. Reporting

- Following a GC, the EO is required to produce a report to be published on the web
- EO reports to GIC on results of simulation exercises

8a. Emergency price

- During a GC imbalance quantities are determined by existing industry processes (may require some manual work around). Imbalances take account of demand that has been curtailed through GC process
- An emergency price applies to all imbalances during a GC
- The emergency price is determined by an independent decision maker after the event. Decision maker chosen either by either:
 - Agreement of retailers; or
 - Gas Industry Co to nominate

8b. Emergency price

- Emergency price set by independent decision maker with regard to a hierarchy process:

Suggested principles for setting emergency price

Emergency price set with reference to a hierarchy of prices:

1. Prices in wholesale gas market at time of GC
2. Prices in gas wholesale market (days/weeks) leading up to GC
3. Prices in wholesale electricity market used to impute a gas price
4. Economic cost to sectors that were interrupted (NB Power generation included in 3.)

- Independent decision maker to decide the appropriate source of prices and which of the prices are sufficiently robust. Greater weighting to be given to prices higher up the hierarchy (where available)
- No cap on emergency price set in advance

9. Compliance

- Compliance regime (as for Switching and Registry) should apply
- EO should report any non-compliance it observes
- Network operators obliged to report non-compliance to EO
- Participants should enforce compliance on EO
- Penalties determined by Rulings Panel

Part D: Wrap-up

- Revised approach to implementing emergency arrangements
- Hybrid approach proposed:
 - Regulations provide certainty and clarity of roles and obligations
 - Industry arrangements to prescribe details
- Emergency Operator to be established
- Transmission Network Owners to prepare Emergency Management Plans

Next Steps

- Comments welcome over the next week
 - Please email to Ian Dempster
ian.dempster@gasindustry.co.nz
- Slides will be on Gas Industry Co website
- Aiming for Statement of Proposal in late July
- Thank you for your contribution today 😊