Introduction

This submission is made in response to the Ministerial Council on Energy (MCE) Issues Paper, "National Gas Emergency Response Protocol", October 2004.

As the body responsible for the operation of the Victorian principal gas transmission system and the Victorian gas spot market, VENCorp welcomes the MCE's initiative in seeking to establish a National Gas Emergency Response Protocol. Based on VENCorp's operational experience and knowledge of ongoing system and market developments, it is our view that the development of a co-ordinated National Gas Emergency Response Protocol is necessary to ensure that:

a) market mechanisms have the maximum opportunity to respond in the event of emergency incidents; and that

b) where Government intervention is required, then this takes place in a co-ordinated and predictable fashion so as to minimise commercial uncertainty for industry participants and customers.

Many of the issues discussed in this submission are also addressed in VENCorp's September 2004 submission to the MCE's "Draft Gas Market Principles" consultation paper.

1. Protocol Objective, Scope and Coverage

VENCorp generally accepts the proposed objectives, scope and coverage for the Protocol, as set out in section 1.2 of the Issues paper.

However, VENCorp notes that the scope set out in section 1.2.2 specifically recognizes:

- NEMMCO, as the electricity operator of the NEM; and
- the relevant system operators (unspecified as to whether this refers to gas or electricity) in Western Australia, Tasmania and the Northern Territory,

yet there is no mention of the gas system or market operators in Victoria, NSW, South Australia and Queensland. Of all the operators, it is the gas system and market operators in these States that will likely be impacted most by the proposed national protocol.

2. Gas Emergencies – General Discussion

Gas markets in southeast Australia are no longer characterised by isolated, single source of supply, point-to-point pipelines. Significant gas pipeline, storage and supply development has taken place in Victoria over the past six years. This has included new pipeline interconnections from Victorian supply sources to Tasmania, South Australia and NSW. While these developments have improved the diversity of gas supplies, they have also increased the interaction and inter-dependency between the various jurisdictional markets. A significant emergency incident at any one of the major sources of gas supply, or on any one of the major interconnected pipelines, will now almost certainly have some impact across multiple jurisdictions.

Some industry participants appear to draw comfort from the industry response to the explosion and fire at the Moomba gas processing plant on 1 January 2004, citing this as evidence that industry is able to respond effectively to such emergencies through bilateral commercial arrangements, without the need for Government "intrusion".

However, VENCorp considers that Government and industry would be misguided to draw significant comfort from the outworkings of this incident.

As indicated in section 2.4 of the Issues Paper, it is VENCorp's understanding that there *was* jurisdictional intervention in this case, through the allocation of the remaining available Moomba supplies to ensure adequate supply to South Australia, which left shippers to seek alternative supplies for NSW gas customers via the Eastern Gas Pipeline (EGP). It was also fortunate that the incident coincided with the availability of the SEAGas pipeline, which enabled additional gas supplies to be made available for South Australia from the TXU (now SPI) gas storage facility at Port Campbell. In January, with Victorian gas demand averaging less than 500TJ/day, it was possible for industry participants to arrange such additional supplies from Victoria to support NSW and South Australian requirements. However, this situation would have been far more problematic had it occurred in mid-winter, with daily gas demands in Victoria potentially in excess of 1000TJ/day. In this event, gas supplies would have been unable to meet gas demand on the interconnected system. Furthermore, there would be a practical inability to physically curtail the large domestic gas demand in Victoria.

Therefore, while the increased diversity of gas supplies may increase the opportunity for a market-driven response to an emergency, the effectiveness of that market response will be subject to the availability of demand, supply and transport capacity information, the liquidity of short-term trading arrangements and the potential for pricing signals to drive an appropriate market response. Even so, due to the concentration of major supply sources in southeast Australia, there will inevitably be potential for emergency circumstances where curtailment of gas customers is required.

It is for situations such as these that VENCorp considers it essential that Governments and industry work together to establish emergency response protocols that set out a coordinated, fast, flexible and (to the extent practical) predictable process for intervention by each of the system operators and by Governments. This view was well expressed in the recent ERAA submission[1] in response to the MCE's consultation paper on "Draft Gas Market Principles":

> *"Processes and procedures need to be put in place to deal with a range of generic emergency or constraint events. These process (sic) and procedures need to be well understood by those parties (jurisdictions, industry and customers) that will be impacted by events and, given any specific event, these parties may reasonably anticipate the outcome. The intent is to bring predictability and cohesion to circumstances where severe system constraints create a vast range of predominantly disparate jurisdictional (and commercial) drivers".*

VENCorp understands that the objectives of the MCE in seeking to develop a National Gas Emergency Response Protocol are not to increase but to minimise the need for, and the commercial impacts of, Government intervention in gas emergencies. It aims to do this through:

- Maximising the opportunity and capability of market-driven responses to clear the market by commercial reallocation of available supplies and gas usage requirements (demand side response); and
- Providing greater clarity across jurisdictions in terms of:
    - the criteria or "triggers" for Government involvement;

[1] ERAA, "An Australian Wholesale Gas Market – Its Justification, Framework and Governance", September 2004

- information requirements and availability;
- the nature of measures to be taken by Governments when intervening, and how these are coordinated between jurisdictions;
- the use of emergency powers by Governments; and
- commercial outcomes in the event of Government intervention.

It would be possible to achieve some improvement in the coordinated response to emergency incidents through development of an emergency response protocol alone. However, in order to achieve all of the above objectives, VENCorp again concurs with the following views expressed by ERAA[2]:

> *"Whilst some parties see the development of a wholesale gas market and the development of emergency procedures as independent, it is the ERAA position that there needs to be a continuous commercial discipline over the market regardless of the market circumstances. These commercial mechanisms can't be developed independently of each other, they need to act as a continuum, with well-defined and agreed processes to allow the transition from a functioning wholesale gas market to a "market" where intervention occurs".*

3. The MCE Gas Emergency Protocol Working Group's Issues

The following comments are provided in relation to each of the Issues identified in section 3 of the Issues Paper:

3.1 How effective is the market in managing a gas shortfall?

A spot market for gas has operated in Victoria since March 1999. In general, the Victorian spot market arrangements have proven effective in enabling market-driven responses to interruptions to gas supplies and high peaks in daily gas demand. There has, however, been one situation, on 22 July 2002, where the market-driven response was inadequate in ensuring security of the gas transmission system and VENCorp was required to intervene by curtailing customer gas usage[3].

VENCorp's Gas Market Pricing and Balancing Review[4] has recommended changes to the spot market arrangements to enable the market to best meet the evolving requirements of increasingly complex and interconnected gas and electricity markets in south-eastern Australia.

Nevertheless, regardless of the pricing signals provided, it is recognized that there will continue to be potential for situations to arise where the market will fail to clear, or be unable to respond quickly enough to avoid threats to system security. To cover these situations, Victoria has in place published curtailment guidelines and tables, and emergency management procedures, with both VENCorp and the Office of Gas Safety having legislated powers to intervene and curtail gas usage.

Other than on the Victorian principal transmission system, wholesale gas trading is undertaken through bilateral contracting arrangements, with little or no transparent price

[2] ERAA, "An Australian Wholesale Gas Market – Its Justification, Framework and Governance", September 2004

[3] see VENCorp, "*Market and System Operations Report 3 and 22 July 2002",* 9 September 2002

[4] VENCorp, "Gas Market Pricing and Balancing Review, Final Recommendations to Government", 30 June 2004

discovery mechanisms to provide a clear indication of the value of gas at any given time or location.

VENCorp does not, however, advocate adoption of the Victorian spot market arrangements on a national basis, nor do we advocate establishment of a single centralised national gas system operator. VENCorp's views in this regard were expressed in its September 2004 submission to the MCE consultation paper on "Draft Gas Market Principles", in particular:

> *"The main shortcoming in the facilitation of inter-pipeline gas trading in south-east Australia is the lack of transparent pricing mechanisms and signals on all interconnecting pipelines. Any attempt to create a uniform, centrally operated, national set of pricing and balancing arrangements that suits all pipelines (similar to the approach in the National Electricity market), will prove problematic at best and unachievable in the near future. Improved facilitation of inter-pipeline trading would most efficiently be achieved by requiring each pipeline to implement its own preferred transparent, short term (at least daily) pricing and trading mechanism, and to make information on market and system operations publicly and readily available."*

Nevertheless, in light of the increasingly complex and interconnected nature of the south-east Australian gas market, and significant new gas fired power generation development, VENCorp agrees with the ERAA submission on the MCE's Draft Gas Market Principles consultation paper where it contends that:

"the key deliverable of a wholesale gas market is a simple mechanism that allows for the publishing of the marginal price for gas in any one trading period that truly reflects the value of gas, at a specific location, in that period",

and argues that, in the Australian context:

"there is insufficient market liquidity and depth for a simple bilateral market to set a market price for gas that truly reflects the value of that gas, at a point, at a point in time, on all occasions".

Importantly, the main issue for a *national* gas emergency response is not so much how effective the market arrangements are in managing gas shortfalls in each jurisdiction or on each pipeline individually, but how effective are the arrangements in coordinating an emergency response across jurisdictions and pipelines?

- *How can market activities be communicated to responsible agencies?*

Updates on plant and pipeline capacities, scheduled flows, actual flows, linepack and price (where available), should be made available by pipeline operators using a bulletin board-type approach.

Should industry be reluctant to make this information publicly available, for reasons of commercial confidentiality, then this could be done through a secure web-page or each of the pipeline operators could be required to provide this information daily, and in a consistent format, to a responsible agency on a confidential basis. Even if the responsible agency or Governments only used this information infrequently, during emergencies, it would be useful to have a collated full record of recent market information and trends to assist in managing such emergencies across the interconnected pipeline system.

- *Whether there are any other barriers to market effectiveness?*
- *Whether market support mechanisms could be introduced that would allow participants to respond to emergencies in a manner that precludes Government involvement?*

VENCorp concurs with the Issues Paper that the absence of a liquid short-term wholesale gas trading market with transparent price signals is a barrier to the effectiveness of a market-driven response so as to minimize the requirements for system operator or Government intervention.

In saying this, VENCorp acknowledges and supports the role that bilateral contracting arrangements play in the orderly operation of the market and in facilitating investment. However, bilateral contracting arrangements and spot markets are not incompatible or mutually exclusive. This is evidenced in the Victorian gas spot market where (as far as VENCorp is aware) all gas provided through the principal transmission system and traded through the spot market is subject to some form of bilateral contract at the point of production or storage. Customers are also able to, and do, enter into long-term bilateral contract arrangements with shippers.

The existence of a spot market, however, provides a valuable, "automatic" mechanism for clearing the market where short term supply capabilities and demand requirements deviate from the longer term contract positions – as they inevitably will in emergency situations.

VENCorp believes that the gas market framework proposed by the ERAA, in its submission on the MCE's Draft Gas Market Principles[5], to be worthy of further consideration.

It is extremely unlikely that any short-term trading arrangements will be capable of entirely precluding the possibility for Government involvement. ERAA states[6]:

> *"even with a wholesale gas market, there are parties (mass market retail customers) that are not directly impacted by the wholesale price and therefore won't respond to price signals – regardless of the price.*
>
> *Retailers recognise that in such circumstances, if supply to essential services is threatened or the integrity of the gas supply system is at risk, that it is appropriate for the management of the gas demand to be centrally coordinated."*

Nevertheless, such arrangements are required to provide the maximum flexibility and opportunity for a market response, leaving operator and Government intervention as a last resort measure. They will also provide the best opportunity for such last resort intervention to be undertaken in a manner that minimises unmanageable commercial impacts on industry participants.

3.2 How can information on supply and demand be shared?

- *Requirements for information sharing*

The Issues Paper makes reference to the inter-jurisdictional taskforce that was set up in response to the January 2004 Moomba incident to liaise with gas producers, pipeline operators, gas retailers, customers and industry, in order to monitor, assess and take any necessary steps to manage the day to day and longer term implications for gas supplies.

[5] ERAA, "An Australian Wholesale Gas Market – Its Justification, Framework and Governance", September 2004

[6] ibid

The taskforce was impeded in this activity by the lack of ready access to supply/demand details, information regarding pipeline capacities on a day-to-day basis, linepack quantities, operating limits, storage levels, gas plant production capabilities, etc. As a result, it took a period of days, rather than hours, to compile a reasonably complete picture.

It is essential that this type of information is made readily available to interconnected system operators, Governments and responsible agencies for the following purposes:

1. system incidents, emergencies, and even unusual operating or market conditions at any major supply facility or on any single pipeline can have flow-on impacts on interconnecting pipelines;
2. prior to Government intervention, and as a means of mitigating against premature Government intervention, sufficient information needs to be provided by industry to give Governments comfort and confidence that industry has the capability to manage and meet market requirements; and
3. should Government intervention be necessary, to enable appropriate decision making to be based on the best possible intelligence on system and market conditions, allowing steps to be taken to protect the best interests of the wider community, while minimizing (to the extent practical) impacts of such intervention on commercial outcomes.

- *How could this information be made available?*

Static data on system and market conditions should be made available through the publication of annual planning statements or reports. For example, under the National Electricity Code, NEMMCO is required to compile and publish an annual "Statement of Opportunities" and an "Annual National Transmission Statement". Similarly, under the Victorian Gas Industry Market and System Operations Rules, VENCorp is required to produce and publish an Annual Planning Review in respect of the Victorian principal gas transmission system. VENCorp also publishes a set of "System Security Guidelines", which describe the secure operating envelope for the principal transmission system, and Curtailment Tables that are developed in consultation with Government and indicate the priority of customer curtailment in the event of an emergency.

All system operators could publish documents such as these, or they could be required to provide a defined set of information in a standardised format to a central agency/coordinator to publish. Where appropriate, the presentation of this information could be managed in a way that is sensitive to the commercial sensitivity of data to individual parties.

To be useful in managing gas supply shortfalls, this data would need to be updated or capable of being updated and published on a daily basis. For example, simple publication by producers, storage providers or pipeline owners of available uncontracted, "firm" or "non-firm" capacity, may be of limited value in assisting in the management of an emergency unless this information is updated during the emergency to reflect actual physical operational conditions and capacity at that time.

As a minimum, even if the data was not normally published on a daily basis, systems and processes should be put in place to facilitate its production and provision to responsible agencies in the event of an emergency, or an emergency threat being called by any interconnected system operator.

- *Which option would provide the most effective exchange of information in an emergency?*

There is probably a range of practical options, but an electronic bulletin board-type mechanism may provide a suitable mechanism, allowing ready access for updating and sharing of information.

Such a bulletin board could be hosted on an existing Government or industry organization website, or could be set up as a "stand-alone" facility. Its administration could be through a "national coordinator" which could alternatively be provided through Government or industry itself. Provided it adequately met the requirements of Governments, provision and administration by industry would likely be the preferred approach.

Ideally, for transparency, at least some details would need to be made publicly available. However, it is recognized that for the information to be of optimum use during emergencies it may need to include details that are commercially sensitive. Access to such information by the general public or industry at large would need to be prevented, but should be made available as required by Governments and/or responsible agencies at times of emergency.

- *What information should be shared and by/with whom?*
- *When should information be shared?*

Subject to commercial confidentiality issues discussed above and issues of legal liability, given the propensity for a major gas emergency to have impacts across the entire interconnected pipeline system, as much operational and market information as possible should be shared among (or be available to) all gas market participants at all times.

3.3 What are the options for timing of Government involvement under a protocol?

- *At what stage in a gas emergency would it be most appropriate for Government(s):*
  - *to receive information from industry?*

    If an electronic bulletin board-type approach, or even a standard pro-forma approach, is adopted, then it ought to be possible for system operators to provide an update of a basic set of information on supply, demand and delivery capability every day, at minimal or no cost. Governments may choose not to access or use this data on a daily basis, or unless an emergency occurs. However, since emergencies by their nature are often sudden and unexpected, maintaining a daily database would appear to be a prudent measure that would ensure that recent historical data is readily on hand to assist in management of emergencies from their onset.

  - *to inform other jurisdictions with the potential to be affected or to provide assistance*

    Other jurisdictions, interconnected system operators and market participants should be advised of unusual operating conditions or emergency threats at the earliest opportunity. It would be valuable to establish an agreed and consistent notification process that enabled a coordinated escalation of market and Government preparedness, market response and activation of emergency procedures.

– *to become involved in decision making for sharing limited gas supplies and in giving directions to gas suppliers and consumers?*

In principle, Governments should not intervene until such time as it is clear that the industry cannot manage the situation through normal market or commercial mechanisms. In practice, this is a difficult call. Emergencies can escalate very quickly and by the time it is clear that market forces are unable to manage the situation it may be too late to protect or mitigate the impacts on wider community interests. It is, therefore, difficult to be prescriptive about this. This is the very reason that there needs to be ongoing sharing of information between industry and Governments on system and market conditions and an agreed protocol with a process that escalates through market response, operator actions and Government involvement.

The protocol should nevertheless attempt to establish some consistent and predictable process for Government involvement with some pre-defined triggers. Useful triggers could be "we won't have enough gas to maintain positive pressure in the networks", or "we don't have enough gas to supply essential services (e.g. hospitals)".

The key to knowing when commencement of Government involvement is appropriate is ongoing dialogue and information sharing both prior to, during and after the incident. It is also important for all of the affected Government and industry parties to participate in emergency preparedness activities to practice and be familiar with the response.

3.4 What are appropriate principles for gas sharing between jurisdictions?

This is not a simple issue and will require substantial further thought and consultation between Governments, industry and customers.

The Issues Paper refers to the principles that have been established for "sharing the pain" across jurisdictions in the load-shedding arrangements for the National Electricity Market. However, this highlights a fundamental difference between operational limitations on the gas and electricity supply systems. On the electricity system it is possible to have rolling load shedding of customer load, including residential demand, through switching out sections of the distribution systems. Such an approach is not possible on the gas system. It is not practical to curtail and restore domestic/residential gas usage on a frequent or short-term basis. This was done in Victoria following the Longford explosion in 1998, but is a drastic and costly exercise with attendant safety risks that need to be carefully managed.

This fact also needs to be recognized in relation to the example quoted in the Issues Paper as follows:

> *"New South Wales may be reluctant to curtail industrial gas use, with its attendant loss of industrial production, to enable Victorian residential demand to be met, particularly in winter"*

Only in very rare circumstances would it be possible to have direct control over residential gas usage. Governments can, however, use their emergency powers to impose voluntary or mandatory restrictions (although policing such restrictions is another issue).

Through consultation between jurisdictional Governments, industry and customers, it should be possible to develop a consistent and coordinated framework for curtailment across jurisdictions, i.e. a form of national curtailment tables to be implemented by the interconnected system operators, according to agreed and pre-defined trigger criteria. This would involve identification and agreement on what comprise essential services (e.g. hospitals), prioritization of industrial, commercial and residential usage, and consideration of gas usage for electricity generation.

Such arrangements would need to consider the practicalities outlined above. Often, when decisions are made to curtail customer gas usage, this requires a prompt response with significant reduction in gas usage to ensure that minimum pressure limits on gas pipelines are not breached, so as to avoid potentially catastrophic implications. Such a response can only practically be delivered by large and directly controllable gas users – normally large industrial customers or gas fired power stations. Consideration of voluntary or mandatory restrictions on domestic gas usage could only practically be considered as an option for a longer-term response.

In the case of the Moomba incident in January 2004, the inter-jurisdictional taskforce was concerned not just with the issue of short-term supplies to NSW and South Australia, but the potential impacts on the supply capability to meet the subsequent Victorian winter peak if gas storages were depleted.

Consideration of curtailment arrangements will also need to give equal consideration to the subsequent restoration process. Experience following the Longford explosion in 1998 demonstrated that this exercise is just as problematic as the curtailment.

3.5 How should demand for gas-fired power generation be managed during an emergency?

In practice, as noted in the previous section, gas fired power generation will be placed high up on the curtailment tables, i.e. be among the first customers to be curtailed. This is because they are the largest directly controllable gas users and most have dual fuel capability.

However, in principle, gas fired power stations represent an ideal, price sensitive, controllable gas user, with the ability to provide an effective market-driven demand side response to gas supply shortages and emergencies. Even if prices in the NEM were extremely high, gas fired power stations with dual fuel capability would have some incentive to convert their operation to use alternative fuel if there were effective price signals in the gas market to reflect the scarcity value under emergency conditions. Such pricing signals could be provided either through a spot market mechanism or through some form of default pricing of gas following the declaration of an emergency. With potentially very high prices in the NEM, the lack of any scarcity pricing signals for gas usage will provide no incentives on gas fired power stations to comply with operator or Government directions to curtail their gas usage and/or switch over to alternative fuel quickly.

While it may achieve a valid societal objective of ensuring essential gas and electricity supplies are maintained, it is also inequitable for system operators or Governments to differentiate curtailment directions to gas fired power stations with or without dual fuel capability, without some form of financial compensation. To do so would create perverse incentives on power stations, *not* to install or maintain a dual fuel capability.

Thus, while control of gas usage by gas fired power stations is a significant tool for system operators and Governments in managing gas emergencies, the most effective means of

effecting this would be through commercial drivers imposed by way of transparent and responsive gas pricing signals.

3.6 How can market participants' commercial rights be better recognized?

The best way to achieve this is through a transparent, preferably market-based mechanism that sets the scarcity price of gas and thereby provides automatic financial compensation to users whose rights to gas supplies are affected, or effectively overridden to maintain supply other users during emergencies.

Even if it is not possible to maintain operation of an effective spot market pricing mechanism during a major emergency (which may be a likely outcome), then it is possible to set a "default" or "administered" price, or price cap, that will be applied in such circumstances. The existence of a predetermined price that is activated in accordance with pre-defined trigger criteria will enable participants to contract around this to mitigate their commercial risks of such events.

3.7 Are current jurisdictional emergency powers effective?

VENCorp is not well placed to comment on the effectiveness of emergency powers in other jurisdictions. As far as Victoria is concerned, operational experience suggests that the Government's emergency powers are effective for managing gas emergencies within the State.

However, the main issue for consideration in the current context is not so much are the emergency powers effective in each jurisdiction in isolation, but how effective are they in combination in managing a coordinated response to an inter-jurisdictional emergency.

Governments and industry gained some insights in this regard during and following the Moomba incident in January 2004, and this has been one of the key drivers for the current MCE process to review the need and form for a National Gas Emergency Response Protocol.

3.8 What is the most appropriate scope for a protocol?

Subject to clarification of the failure to recognize the gas system operators, as discussed above in section 1, VENCorp is generally comfortable with the scope proposed by the MCE in the Consultation paper.

As part of the consideration to the commercial impacts on participants and customers, development of a protocol would need to give careful consideration to issues of liability, including the provision of protections from liability to industry participants in giving effect to, or complying with, directions given under the Governments' emergency powers and the protocol.

3.9 What is the most appropriate form for a protocol?

VENCorp has no fixed views at this time on the preferred form for a protocol.

However, a Memorandum of Understanding between the jurisdictional Governments, that is made public in order to provide as much clarity and certainty as possible, is probably an appropriate instrument for giving effect to a protocol. It is not envisaged that industry participants need to be party to the protocol, but should be consulted in its development.

3.10 What is the most appropriate content for a protocol?

- *Are there other matters that should be covered by the Protocol?*

In addition to the proposed content listed in section 3.10 of the Consultation Paper, the Protocol should also include:

- Criteria/triggers for its activation
- Reference to a coordinated or national curtailment procedure and tables (either as a schedule to the protocol or a separate but related document)
- Gas supply and market and restoration procedures, following removal of the emergency conditions
- Requirements to review the Protocol periodically, and following emergency events.

3.11 What are the most appropriate / effective emergency communications protocols?

- *What needs to be communicated in the event of a gas supply emergency?*
- *Are existing jurisdictional communications arrangements with industry a suitable basis for inter-jurisdictional communications?*

The question of what needs to be communicated in the event of an emergency is dealt with in previous sections of this submission.

VENCorp considers that the framework in place in Victoria is a sound model that provides for the orderly and coordinated escalation of emergencies, involvement of Government and industry consultation through the Gas Emergency Management Group.

We are not currently in a position to comment on what is in place in other jurisdictions and/or how effectively these individual jurisdictional communications arrangements might interface.

3.12 What support mechanisms are necessary?

- *Would a National Gas Supply Plan enable emergencies to be better managed?*
- *What are the costs and benefits of appointing a National Gas Emergency Co-ordinator?*
- *Is an industry Code of Conduct or equivalent necessary to facilitate information sharing in an emergency?*

A cost effective process, with clear accountability, is required for co-ordination and publication of the type of system and market information discussed in section 3.2.

It is expected that there will be a need for some form of "command organization" structure to give effect to the Protocol in the event of inter-jurisdictional emergencies. It may be possible for individual system operators and/or responsible agencies each to assume the lead role for managing the incident on their respective pipelines. However, the Protocol may need to consider some principles to be applied in assigning the lead role to a particular jurisdiction, or other responsible agency, in managing an incident that affects multiple jurisdictions, depending upon the circumstances of the emergency and the ultimate nature of the Protocol.

Whether this requires a formal "National Gas Supply Plan" or establishment of a new entity as a "National Gas Emergency Co-ordinator" is a matter for further consideration.