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Q1

Privacy Information

Respondent skipped this question

Page 4: Submitter information

Q2

Name

[REDACTED]

Q3

Organisation and role (if submitting on behalf of a company or organisation)

Independent

Q4

Email Address

[REDACTED]

Q5

Are you happy for MBIE to contact you, if we have questions about your submission?

- Yes

Q6

Please clearly indicate if you are making this submission as an individual, or on behalf of a company or organisation.

- Individual

Page 5: Transitioning our gas sector

Q7

How can New Zealand transition to a smaller gas market over time?

All resources are finite, so eventually the existing natural gas market will diminish. However, if managed properly, this should not occur in New Zealand for several decades. LNG import is not a realistic proposition for NZ, both in terms of cost and also vulnerability, as a very small player, to availability and supply issues. Biogas can only be a minor and costly contributor to gas supply. Therefore, there should be a focus on encouraging gas exploration, both on and offshore.

Q8

What is needed to ensure fossil gas availability over the transition period?

Fossil gas presumably refers to what has always been called natural gas, ie derived by geochemical processes from buried organic matter (plant, animal and marine life). The process of permitting areas of the NZ economic zone to enable those prepared to invest in the high risk proposition of gas and oil exploration, together with a stable regulatory and fiscal regime which enables the explorers to get a fair return on their investment, is all that is required. Such a regime applied until about a decade ago, but was prejudiced by faulty political thinking. Rebuilding that investment confidence is a top priority.

Q9

What factors do you see driving decisions to invest or wind down fossil gas production?

At the present time, the existing regime, which has stopped offshore exploration and limited onshore exploration, is a license to print money for the owners of gas reserves. This situation will lead to ever increasing real costs of gas, which in itself will tend to dampen demand. There is no action required by government other than as listed in 7) and 8) above.

Q10

Does the Government have a role in enabling continued investment in the gas sector to meet energy security needs?

- Yes

Q11

Could you explain why you gave that answer?

Government needs to urgently rebuild investment confidence, and install an efficient and fair regulatory regime, which makes decisions without the undue delays which have also marred its credibility over the last few years.

Q12

Does the Government have a role in supporting vulnerable residential consumers as network fossil gas use declines?

- Yes

Q13

Could you explain why you gave that answer?

Successive governments have adopted policies which have led to soaring gas and electricity prices, which have been the instigators of energy poverty for many in society, as well as unnecessarily reducing NZ's economic status to that approaching third world. While correcting this sorry situation will take decades, it is morally obligatory on government to support those who are suffering from this economic mismanagement.

Q14

What role do you see for gas in the electricity generation market going forward?

In the foreshadowed absence of coal, gas will be essential, both for providing baseload power, reactive power to maintain the grid, and for providing back-up to the intermittent sources - wind and solar.

Q15

What would need to be in place to allow gas to play this role in the electricity market?

It is a great shame that two highly thermally efficient combined cycle gas power stations, namely Southdown and Otahuhu, were forced to close before the end of their economic life. The intermittent sources, wind and solar, are effectively parasitic inasmuch as they can supply power when operating but do not when its not. This means that other power stations must provide backup on such occasions. This means that their revenue to operating cost ratio worsens, to the point where they are forced to close. This could be overcome by requiring wind and solar users to bear the full cost of supply. That could be by means of requiring them to sell a large proportion of their output on long term contracts, which would require them to have backup available at all times.

Q16

Do you think fossil gas can play a role in providing security of supply and/or price stability in the electricity market? Why / Why not?

See my answers to questions 14. and 15.

Q17

Do you see alternative technology options offering credible options to replace fossil gas in electricity generation over time? Why / Why not?

Gas is the perfect transition option to a lower carbon future. It is efficient and has lesser CO2 emissions than coal. On a full cycle basis, and considering the EROEI of wind and solar, it is quite comparable to those sources in terms of CO2 emissions. In the longer term, ie to 2050, I see small, modular nuclear power reactors as being well suited to New Zealand's low emissions future. Due to their rapid construction costs, their fail-safe operating modes and their flexibility in sizing, they could be placed near to the major demand centres across New Zealand. This would provide safe, zero emission power, dispatchable on a continuous basis; and due to its flexibility of placement, could significantly cut the large power losses incurred by NZ's transmission system, which presently has a large separation between the main supply and demand centres. I see no credible alternatives to gas (other than coal, of which NZ has lots) to providing stable and cost-effective electricity. Geothermal, while a good baseload generator, has its own problems in the form of absence of a permitting system for geothermal exploitation, and reaching its limits

Q18

If you believe additional investment in fossil gas infrastructure is needed, how do you think this should be funded?

Set the right regulatory and economic markers, hang out the welcome flags to oil and gas producers, as is done in most countries in the world, and let the companies which know what they are doing, get on with it.

Page 6: Key Issues and Opportunities

Q19

How important do you think biogas is for reducing emissions from fossil gas?

- (no label)
Not at all Important

Q20

Why did you give this rating?

Biogas is at best a very minor contributor. The Reporoa plant, as an example, indicates it will be a heavy net emitter of CO₂. And on a full cycle basis, much worse than natural ('fossil') gas. The volumes it can add to gas supply are small.

Q21

Do you see biogas being used as a substitute for fossil gas?

- No

Q22

If YES, how?

Biogas can only contribute to gas supply to a very minor extent, due to cost and logistics of manufacture and distribution. It looks like being a serious net CO₂ emitter, due to collection and processing emissions. Stick to natural gas, it's a much better option.

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Q23

How important do you think hydrogen is for reducing emissions from fossil gas use?

- (no label)
Not at all important

Q24

Why did you give this rating?

Hydrogen is not a source of energy, it is a store of energy. It has to be manufactured. The most efficient process is from natural gas (methane), but why not just use the methane directly rather than lose some 40% of the energy in generating the hydrogen? Generating hydrogen by electrolysis of seawater is even more wasteful. Hydro is best used as a direct generator of energy, and the idea of using wind or solar on the occasions when the grid is unable to take all their generation is fanciful - the economics of generation, storage and distribution (hydrogen is a sneaky little molecule which can escape from pipelines and inadequate storage very easily). The capital costs per unit of energy are extremely high. Bespoke wind or solar power would be inordinately expensive.

Q25

Do you see hydrogen being used as a substitute for fossil gas?

- Yes

Q26

If YES, how?

Hydrogen is a promiscuous little molecule - it attaches itself to other molecules very easily. So to a minor percentage it can be blended into pipeline gas. However, this may create problems with respect to pipeline gas specification, which must be adhered to for safety reasons.

Q27

What else can be done to accelerate the replacement of fossil gas with low-emissions alternative gases?

Ammonia is a possible alternative. Huge amounts are manufactured and transported for fertiliser purposes. However, the standard Haber-Bosch process of manufacture produces a lot of CO₂. It can be manufactured from electricity, and given its ease of storage, transport and distribution, it is a much preferable option to hydrogen. The economics of bespoke wind or solar for ammonia generation is worth looking at. Exposure to ammonia can be a health hazard, but it is safe to store with well proven technology, and its smell gives it away if it leaks. And a hydrogen fire is also pretty hazardous to health.

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Q28

How important is a renewable gas trading scheme to supporting the uptake of renewable gases?

- (no label)
Somewhat Important

Q29

Why did you give this rating?

A trading market needs liquidity, ie lots of players and lots of volume. For the reasons I have already stated, that situation is unlikely to occur.

Q30

What role do you see for the Government in supporting such a scheme?

None, other than in setting up such market and underwriting its costs. That, however, is not a good idea, as subsidies in general are misapplications of limited capital.

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Q31

How important do you think carbon capture, utilisation and storage is for reducing emissions from fossil gas use?

- (no label)
Moderately Important

Q32

Why did you give this rating?

This can be done in depleted fields, of which Kapuni is the most obvious, and has the added benefit of potentially improving recovery of gas and oil. Also by injection into coal measures or dunite or similar. However, the volume that can be stored is limited. It is not a long term solution to what is a non-critical problem.

Q33

What do you think are the most significant barriers to the use of carbon capture, utilisation and storage in New Zealand?

Cost

Q34

Do you see any risks in the use of carbon capture, utilisation and storage in New Zealand?

If done properly, then well established oil field practice and good regulatory requirements should ensure there are no problems.

Q35

In what ways do you think carbon capture, utilisation and storage can be used to reduce emissions from the use of fossil gas?

It is a limited fix to a non-existent problem in the NZ context.

Q36

If you have any other views on the use of carbon capture, utilisation and storage, please comment here:

Respondent skipped this question

Page 10: Options to increase capacity and flexibility of gas supply

Q37

What role do you see for gas storage as we transition to a low emissions economy?

Gas storage is useful in ensuring security of supply at all times.

Q38

How important do you think increasing gas storage capacity is for supporting the security of gas supply?

- (no label)
Moderately Important

Q39

Why did you give it this rating?

See answer to 38.

Q40

What should the role for government be in the gas storage market?

Other than regulatory control, I dont see a role for government.

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Q41

Our position is that LNG importation is not a viable option for New Zealand. Do you agree or disagree with this position?

- Agree

Q42

Please explain why you chose your answer?

It's a matter of both cost (which Contact and Genesis looked at years ago, and rejected the idea) and of supply. NZ is a very small gas market a long way from suppliers, who have other, larger markets to service. NZ would be at the tenuous end of the supply line.

Q43

What risks do you anticipate if the New Zealand gas market was tethered to the international price of gas?

There's plenty of gas worldwide. And its use is steadily growing, as most countries see it as a good, limited emissions way, to transition to future energy supply systems. But as per my answer to 42. NZ will be vulnerable to supply and will pay over the world price due to its small market size

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Q44

Is there any other information you would like to provide to inform the development of the Gas Transition Plan?

NZ has ~0.07% of the world population, and emits ~0.13% of the world's CO2 emissions, while producing a volume of food sufficient to feed ten times its population. Whatever, the effect of increasing atmospheric CO2 on lower troposphere temperature is, it's obvious from the above figures that NZ can double or halve its CO2 emissions and make no difference to that temperature. Since most countries are not meeting their self-imposed goals under the Paris Agreement, and that the BRICS nations, which reject the Paris Agreement anyway, now represent 60% of the world population and nearly 50% of its GDP, it is clear that there is no rationale for NZ's drive to net zero other than as an exercise in virtue signaling by the few at the expense and wellbeing of all New Zealanders. Natural gas (demonized as 'fossil gas' in this questionnaire) is accepted by a majority of nations as the most effective fuel source in transitioning to a lower CO2 emissions future. It is clean, benchmarks well for CO2 emissions against any other energy option on a full cycle basis, yet is demonized in this questionnaire, which seeks to define a path to eliminate natural gas. I say this has got to stop, and everyone should recognize that whatever our energy future is, gas is a good way of getting there, and is to be encouraged.