



## Fonterra Co-operative Group

24 December 2012

Submission to the Gas Industry Company Ltd regarding the “Statement of Proposal – amendments to the Gas Governance (Critical Contingency Management) Regulations 2008”



**Dairy for life**

## Fonterra Co-operative Group at a glance

1. Fonterra Co-operative Group (“Fonterra”) thanks the Gas Industry Company Ltd (“GIC”) for the opportunity to provide input into the proposed amendments to the Gas Governance (Critical Contingency Management) Regulations 2008 (“CCM”) as outlined in the statement of proposal (“SOP”).
2. Fonterra is the world’s largest processor and exporter of dairy products and is at the heart of the New Zealand dairy industry, and the dairy industry is at the heart of the New Zealand economy.
3. Fonterra is owned by nearly 11,000 New Zealand dairy farmers who supply us with more than 14 billion litres of milk each year. Fonterra and the farmers are intrinsically linked – the farms are the start of the supply chain for Fonterra.
4. Natural gas is Fonterra’s fuel of choice where it is economically available and Fonterra has 21 processing sites dependent on gas supply, four of those via co-generation plants, collectively requiring around 13 PJ of gas a year.

## Summary of Key Points

5. In a critical contingency event (“critical event”) there is going to be hardship and economic loss, the objective of the CCM should be firstly, to minimise and mitigate any health and safety, and environment issues; and secondly, to minimise the economic loss.
6. Fonterra supports domestic gas supply having the highest priority (Band 7), followed closely by Band 6 and Band 5.
7. Fonterra supports the status quo where the risk of environmental damage is a valid reason to qualify for essential service provider (“ESP”) status.
8. Fonterra is concerned about the size of the reviewed Band 3 and specifically with the suggestion that the critical contingency operator (“CCO”) decides the shut-down and start-up sequence within this large Band 3.
9. Fonterra proposes a process for Band 3, which will assist with having arrangements in place before they are needed so that the CCO can focus on managing the critical event itself.
10. If a sustained gas outage occurs that results in the gas supply to the dairy industry not being restored then this could result in dairy herds or regions of dairy herds being forcibly dried off. This impact remains long after the gas has been restored, and would have a significant impact to the NZ economy with economic loss potentially in the billions of dollars. Any environmental damage that may have occurred from disposing of milk on farm also remains after the gas has been restored.
11. Diesel is likely to be the back-up fuel used by industrial consumers in the event of a gas outage. The availability of this as a fuel source needs to be investigated further as there will be increased demand of this fuel source in a gas critical event.
12. Fonterra believes the dairy industry needs to be supplied gas to ensure a safe and environmentally secure shut down with the ability to complete critical processing.
13. During this submission, Fonterra has attempted to align our responses to the specific questions asked, although many of our responses are linked to each other as they relate to the design of the CCM.

**Q2: Do you agree with the Gas Industry Co proposal to combine bands 2 and 3? If not, please provide your reasons.**

14. Fonterra supports in principle the combination of curtailment bands 2 and 3 (section 5.2) on the basis that it removes the disincentive to install alternative fuel capability as noted in our earlier submission<sup>1</sup>.
15. However, Fonterra has concerns regarding the practicality of this as the number of users and volume of gas in band 3 will be large due to combining users from bands 2, band 3, as well as those users that may no longer qualify as an essential service provider (ESP) under the proposed changes.
16. The analysis performed by NZIER shows that the dairy industry adds value of ~\$100/GJ. Fonterra's analysis shows that the cost of un-served energy to the dairy industry is approximately \$580/GJ.
17. Fonterra disagrees with the conclusion in section 5.3 that the dairy processing industry "...is difficult to distinguish from other, high value-adding industries in terms of gas market policy. This lack of differentiation, together with the scale of the dairy processing sector, presents significant obstacles to granting dairy factories priority access to gas".
18. Fonterra proposes that dairy processing can and should be differentiated from other consumers on the following basis:
- 18.1. Milk is an uncontrollable raw material;
- 18.1.1. Once a cow has calved, milk production is initiated. Calving typically occurs in June – August, and the majority of farms will have a lactation period of 300 days. Some farms will produce milk for 365 days and are referred to as "winter milkers". A lactating cow must be milked at least daily to prevent significant animal health and welfare issues occurring.
- 18.1.2. The peak of the season (the time when the most amount of milk is collected from the farms), varies from year to year and is difficult to predict when this will occur, and the volume of milk that will be at the peak.
- 18.1.3. Once a cow has been milked, the milk must be collected and processed within 72 hours (see section 18.2 of this submission for further details).
- 18.1.4. The 2010/2011 was a record year for dairy in New Zealand<sup>2</sup> and highlights the variability and unpredictable nature of the volume of milk that is required to be processed (also could refer to this as showing how uncontrollable milk is as a raw material for dairy processing):
- 18.1.4.1. Total number of New Zealand dairy cows: Increased by 132,000 to just over 4.5 million cows (4,528,736) – an increase of 3 percent over the 2009/2010 season.
- 18.1.4.2. Average production per cow: Increased 5 per cent – to an average of 334 kilograms milksolids (comprising 190 kilograms milkfat and 144 kilograms protein).

<sup>1</sup> Fonterra Co-operative Group Submission to the Gas Industry Company on suggested changes to the Gas Critical Contingency Management Regulations noted this disincentive in paragraphs 17-22 under the heading "Rewarding those with back-up options".

<sup>2</sup> Reference: New Zealand Dairy Statistics 2010-11.

18.1.4.3. Milk processed by New Zealand dairy companies: 17.3 billion litres, with the total milksolids processed increasing from 1.44 billion kilograms in 2009/2010 to 1.51 billion kilograms.

18.1.5. Other industries can control when and how much of their raw material they will process – e.g. the Meat industry can put animals back on the farm and delay processing until gas supply resumes; the Wood industry can cease cutting down trees and the trees that have been cut, can be stored and processed at a later date.

18.2. Milk is a perishable raw material;

18.2.1. There are strict quality controls for the manufacture of dairy products to ensure that it is a safe food product. Various dairy products are manufactured and can be consumed by all ages around the world. One of these quality controls is the timeframe for milk to be collected from farms and stored prior to being processed.

18.2.2. Legislative requirements under the Animal Products Act 1999 state that milk should be stored on farm for no longer than 48 hours. Storage time may extend to a maximum of 72 hours as a one off exception after risks have been assessed and wholesomeness demonstrated.

18.2.3. If milk is not collected and processed within this timeframe, the milk will degrade and microbiological growth will occur, which will make it unsuitable for processing into products for human consumption.

18.2.4. Therefore installing larger vats to store milk on-farm is not a viable option in the event of a sustained gas outage.

18.3. If milk is not processed into dairy products and has to be disposed of on-farms, then this can have major environmental impacts<sup>3</sup>;

18.3.1. Farms ability to store and then dispose of milk at an appropriate dilution rate is limited. It will depend on available storage volume, soil type, climatic conditions, availability of water for dilution and the conditions of their resource consent or regional council rules. Milk is not identified to be farm dairy effluent and therefore would not be considered in council conditions for effluent disposal.

18.3.2. There are several environmental impacts of milk disposal, including:

18.3.2.1. Waterway damage: Direct discharge of milk to waterways will potentially be ecologically catastrophic. Due to a very high Biological Oxygen Demand (“BOD”) milk will strip dissolved oxygen from water resulting in devastating effects on oxygen requiring aquatic plants and animals. It will also have a significant effect on the colour and turbidity and therefore aesthetic value of the water body.

18.3.2.2. Soil damage: Milk must be applied to soil at a dilution rate that matches the soil microbial activity and plant uptake ability to break it down. Applying milk at a rate in

<sup>3</sup> GIC commissioned the “Low Environmental Impact – Review of methods for and impacts of raw milk disposal” report (“the Lowe report”). Paragraphs 18.3.1 to 18.3.4 of this submission summarise Fonterra’s view of the different methods available for disposing of milk and the associated environmental impacts.

excess of the soils capacity to do this could result in undesirable odour, reduction in soil infiltration rates, overland flow to water, clogging of soil pores and surface.

18.3.2.3. Odours: Continuous and lengthy disposal of milk into farm effluent storage systems will also result in undesirable odours. The length of severity of these odours will be dependent on the volume and timeframe of milk disposed along with the size of the effluent storage system.

18.3.3. Milk disposal on-farms could also result in a breach of the Resource Management Act 1991 (“RMA”). Section 15 of the RMA requires all contaminants that are discharged to land or water to be done so under the banner of an environmental standard, expressly stated rule in a plan or resource consent. Disposing of milk outside of these provisions would mean a breach of the RMA. Resource consent for such a discharge is unlikely to be granted. We are reliant on individual regional councils deciding at the time of the incident how they will manage this non-compliance.

18.3.4. The Lowe report proposes that one mitigation approach for on-farm milk disposal is to enlarge the farm’s effluent ponds. This is not a viable option as it would be encouraging our farmers to plan for undertaking an illegal activity.

18.4. Milk is a different raw material to others as once milking ceases then production cannot be switched back on and has significant economic impact.

18.4.1. There is no tap to stop milk production coming off the farms, nor is there a tap to turn it back on if milking of cows ceases prematurely in a season. This means milk processing sites are absolutely dependent on an uninterrupted energy supply.

18.4.2. For every herd forcibly dried off due to a sustained gas outage which occurred 35% of the way through the season (i.e. the October 2011 scenario), it would result in an approximate \$0.7 million loss per herd<sup>4</sup>.

18.4.3. If the gas outage results in dairy herds or regions of dairy herds having to be dried off, then this impact remains well after the gas has been restored, with a significant financial impact to the NZ economy that is potentially in the billions.

**Q3: Do you consider that the option of trading gas usage rights during a critical contingency is worth exploring? Please explain your reasoning.**

19. Fonterra does not support the proposal in section 5.3 of the SOP regarding the introduction of “trading ‘rights’ to gas consumption”.

20. Instead, Fonterra proposes that band 3 consumers should be differentiated into two different bands. This is explained further in response to question 6.

**Q4: Do you agree that regulation 53(1)(d)(ii) and 53(2) provide the necessary flexibility for the CCO to respond to changing circumstances?**

21. Although regulation 53(2) grants the CCO broad discretion to ‘direct curtailment of only a subset of load within a curtailment band’, we believe that a preferred approach is to differentiate the band 3 users to assist with

<sup>4</sup> Assumes 410 cows in the average herd, 350kg MS/cow/annum and the lost income from each kg MS lost is \$7. Calculation:  $410 \times 350 \times 7 \times 65\% = \$0.7M$  per herd.  
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identifying who gas is restored to. As noted earlier, the CCO will be focusing on managing the situation and should not be overwhelmed with requests from band 3 users seeking their gas supply to be restored.

**Q6: Are the proposed categories appropriate? Are there any additional categories that you think should be included? If so, please provide your justification.**

22. Fonterra supports the status quo remaining regarding the curtailment band categories.
23. Fonterra agrees in principle that the curtailment bands should protect domestic consumers first, closely followed by critical care providers, and then those users that contribute to public health and safety.
24. Preventing damage to the environment, as captured in the status quo, should remain as a category and should follow those users that contribute to public health and safety.
25. If the status quo cannot remain, then the band 3 users should be differentiated, as noted earlier.
26. Band 3 is too large to be brought efficiently back into service in one block. The CCO is tasked with managing the critical event and should not be required to decide which segments (or regions) within Band 3 have priority to the limited supplies of gas.
27. Fonterra strongly believes that to leave the restart sequence for Band 3 to the CCO in preference to stating it in the CCM, leaves this restart process open to inefficiencies and to the decision making abilities of the CCO. The CCO is likely to face challenges regarding which band 3 users have their gas restored.
28. Fonterra believes that the solution to this issue is to breakdown Band 3 into at least Bands 3B and 3A where Band 3B has priority over Band 3A when gas supply is restored in a critical event. Suggested differentiation of band 3:
  - 28.1. Band 3A: all consumers, excluding essential service providers and *band 3B consumers*, who consume more than 10TJ per annum and up to 15TJ per day;
  - 28.2. Band 3B: all consumers, excluding essential service providers, who consume more than 10TJ per annum and up to 15TJ per day and the *consumer processes an uncontrollable perishable raw material that if not processed would cause major environmental impacts and significant economic loss.*
29. Economic loss is more than simply loss of profits. To be in Band 3B, a firm or enterprise must be able to demonstrate an irrecoverable loss of raw materials, costs associated with the loss of this raw material including disposal of those unprocessed raw materials, and that there is a risk to the environment if it is not processed.
30. In circumstances where milk has to be disposed of, if it is not controlled, it can cause major environmental damage – refer to paragraph 18 of this submission.
31. Fonterra believes that there are several benefits of differentiating the band 3 consumers:
  - 31.1. As noted earlier in paragraph 15, under the proposed changes there will be a large number of consumers and large volume of gas in band 3. This will require a lot of gas to be available before any of the band 3 consumers would start to have their gas supply restored. In Fonterra’s view, if there is gas available to be restored, then this should be done on the above basis, rather than waiting for a larger volume of gas to be available to allow all the users to be restored at the same time. As outlined above, the longer that gas is unavailable for dairy processing, then the higher the risk that environmental damage could occur and that dairy herds would need to be dried off with a significant economic impact to New Zealand.

- 31.2. During a critical event, the CCO will be under pressure to manage the situation. If the bands are more prescriptive then it will assist the CCO to effect curtailment in an efficient manner with pre-planning able to be carried out with certainty (i.e. businesses can conduct their own risk assessments and make investment decisions) and assist with decision making for gas restoration (both partial and full).
- 31.3. This is a less complex solution than the proposed trading of gas rights which will require both time and money to establish such a regime, whereas applying further definition to the banding could be done easily, quickly, and cheaply.
- 31.4. This is consistent with the banding approach and aligns with the rationale for classifying users on both the volume of their consumption, and the economic efficiency of curtailment bands. The CCM regulations recognise that there are instances where the requirement for certain users to curtail gas may cause disproportionate harm or social cost, and hence may justify priority access to gas during an event. It also achieves allocative efficiency and the objective of the gas industry “to ensure that gas is delivered to existing and new customers in a safe, efficient, fair, reliable, and environmentally sustainable manner”<sup>5</sup>. It also provides dynamic efficiency, as it reduces the likelihood of resilience investments being made, to address this short term issue, in situations where the resilience investment does not make sense as a commercial investment.
32. Fonterra would like to correct your point in section 6.2 of the SOP regarding the flow-on environmental effects (page 42), that “the problem arises not at the dairy factories, which are the gas users, but because milk may not be collected from farms”. Milk is not collected from farms during a gas outage as the milk cannot be processed. The collection of the milk would concentrate the problem at the dairy factories. Dairy factories are designed to process milk, not to dispose of large volumes of milk that was unable to be processed.

**Q8. Are there any other criteria for MLC designation that you feel would be appropriate? Please include your justification for any that you consider should be added.**

33. Fonterra agrees that it is appropriate to broaden the MLC criteria to include health and safety, animal welfare, and completion of critical processing.
34. For the dairy industry, having access to some gas before a complete shutdown of the dairy factory in a critical event, will enable some parts of the factory to operate to process the milk that is already on site or on its way to site before the milk perishes.
35. Once the milk is in the tanker it is difficult to dispose of it in an environmentally safe manner. With the required 1 to 10 dilution required for milk before disposing to land that equates to over 250,000 litres of water required per tanker load of milk. Sites would struggle to supply such large volumes of water and would not have the irrigation facilities or land area to cope with such large volumes.

**Q12: Do you agree with the above evaluation of options? If not, please give your reasons.**

36. Fonterra agrees that the designation of ESP or MLC status should be on a per-ICP basis and agree in principle that consumers should apply for these designations.
37. As noted in our earlier submission, Fonterra has concerns about the specifics of the application process<sup>6</sup> regarding the information that is to be provided and how the evaluation of ESP or MLC designation is made. This

<sup>5</sup> The Government Policy Statement on Gas Governance, clause 9, as outlined in Section 2.1 of the GIC SOP.

<sup>6</sup> Fonterra Co-operative Group Submission to the Gas Industry Company on suggested changes to the Gas Critical Contingency Management Regulations states the concerns in paragraphs 12-16 under the heading “Applications for ESP status”.

process must be transparent and objective, and also include a process for review of decisions regarding the designation or not of ESP or MLC status.

**Q13: Do you agree with the 9-month timeframe for transitioning to the new ESP and MLC arrangements?**

38. Yes, a transition period is required to allow consumers to make alternative arrangements.

**Q14: Do you agree with the tight provisions for designations during a critical contingency event?**

39. Yes, this will assist the CCO with managing the critical contingency event.

40. As noted earlier, if numerous consumers have installed diesel back-up and during the critical contingency event, the diesel supply runs out, will those consumers now qualify to be designated as ESP or MLC customer under the proposed amendments?

**Q15: Do you agree that the communications framework outlined above is the minimum that should be provided for in terms of public communications during a contingency event? If not, please give your reasons.**

41. The proposal to make information publicly available is a good suggestion as a filter (via Retailers) should not be applied regarding what is happening in a critical event. The more information that is available will assist consumers with managing their business in the event of a gas outage.

42. Currently, the Critical Contingency Communication Plan and Information Guides prepared by the CCO and transmission system operator ("TSO") do not require major users of gas to be notified directly of an actual or potential critical contingency ('large users' as defined in the regulations are on the list). Fonterra proposes that major users are added to the schedule of stakeholders to be notified.

43. With regards to transparency during a critical event, there seems to be no requirement that the asset owner of the failed asset needs to disclose the options being considered for repair and what economic considerations are being taken into account. For example, a repair solution combining a quick fix to stabilise the system and then undertaking a long term repair solution during off peak hours may be more expensive for the asset owner but will prevent wider economic loss. In comparison, a permanent but lengthy fix may be more economic for the asset owner but result in overall economic loss and a longer gas outage. Fonterra proposes that priority should be placed on taking steps to restore gas supply, then look at the longer term repair solution.