

Before Hearing Commissioners

under: the Resource Management Act 1991

in the matter of: the hearing of submissions and further submissions on
the 'Proposed Canterbury Air Regional Plan'

and: **Lyttelton Port Company Limited**
Submitter

Statement of evidence of Kim Kelleher

Date: 22 October 2015

STATEMENT OF EVIDENCE OF ANDREW PURVES

INTRODUCTION

- 1 My full name is Kim Therese Kelleher.
- 2 I am the Environmental Manager for Lyttelton Port of Christchurch.
- 3 I have held this position since 2010.
- 4 I hold the qualification of degree of Applied Science (Coastal Management).
- 5 I am familiar with LPC's infrastructure and operations and I am authorised to give evidence on its behalf.

SCOPE OF EVIDENCE

- 6 My evidence will provide a brief description of Lyttelton Port's operations and discuss:
 - 6.1 The role of the generators at Lyttelton Port; and
 - 6.2 The handling of bulk solid materials exported and imported through the Port.

ROLE AND SIGNIFICANCE OF LYTTTELTON PORT

- 7 The Port of Lyttelton ('the Port') is the major deep-water port in the South Island and is at the hub of regional trade. The Port caters for a diverse range of containerised, bulk and break bulk trades and offers shipping services to exporters and importers, 24 hours a day, 365 days a year.
- 8 LPC was formed in 1988 to manage the Port of Lyttelton.
- 9 LPC employs approximately 500 staff in operational, management and administration roles. Furthermore, there are approximately 1000 people employed by companies operating at Lyttelton Port.
- 10 CityDepot on Chapmans Road was also purchased in 2005 to provide an 'inland port' that would link with the Lyttelton Container Terminal. CityDepot is an integral component within the infrastructure of Lyttelton Port of Christchurch, and cannot be distinguished in a functional or operational sense from the remainder of Port activities.
- 11 LPC also has a second inland container depot, MidlandPort at Rolleston. The 27 ha site is being developed now and will provide a rail link to the port. It services the increasing freight requirements of mid-Canterbury largely resulting from irrigation of the Canterbury plains and is further important aspect of LPC's operations.

GENERATORS

Introduction

- 12 Many port operations are dependent on electricity. These include:
- 12.1 The loading and unloading of ships by the electric powered container cranes;
 - 12.2 The computer based container tracking system;
 - 12.3 Refrigerated containers;
 - 12.4 The coal export operation, including the train unloader, stacker, reclaimer, conveyors, ship-loader and associated computer controls;
 - 12.5 The pumping of oil and LPG and product; and
 - 12.6 Communications and port security.
- 13 Lyttelton is supplied by two 11,000 volt supply lines from Heathcote. Both supply-lines are run on a paired pole arrangement.
- 14 LPC perceive the supply to Lyttelton as vulnerable as the loss of one pole in any pair would interrupt both supply lines.
- 15 As consequence, LPC operates two 800 kVA diesel fired electricity generators. The purpose of these generators is to:
- 15.1 Provide an emergency supply; and
 - 15.2 Enable network load shedding in winter to take load off the supply network in order to reduce Orion's peak load.
- 16 I discuss these further below.

Emergency Role

- 17 The generation of power in an emergency situation is an important function for the port's generators. If a failure in the power supply network occurred, the generators provide the means to supply power to limited port operations. They are also a resource that could be used in a Civil Defence emergency.
- 18 A problem with emergency generators is that long periods of inactivity lead to reliability problems. I understand for example that fuel can sit in the fuel racks leading to fuel problems and electrical problems occur particularly on the low voltage side.
- 19 Generators work best and most reliably when they run regularly under good load conditions (i.e. to a minimum of 70% capacity). LPC has experience of a backup generator failing despite routine testing in an unloaded condition.

- 20 I understand if load shedding was not allowed or unworkable restrictions placed on their use, the reliable performance of the generators in an emergency could be compromised.
- 21 During power outages the generators for example can supply power to refrigerated containers. Spoiling of cargo would occur if power was not restored in time. These containers can include frozen products of significant value. Another example would be restoring some power to the container cranes so that a crane is not left compromised i.e. being locked onto a container.
- 22 Damage to the supply lines over the hill could result in a lengthy interruption to power supply especially if storm weather conditions are present or there is a civil defence emergency.

Network Load Shedding (Orion's demand control period)

- 23 As mentioned earlier, load shedding is carried out in winter to take load off the supply network in order to reduce Orion's peak network load. During Orion's demand control period, the generators automatically start via a signal from Orion.
- 24 Demand control periods are used by Orion to lower the peak demand for power in the port and thus avoid or defer upgrading the supply network to Lyttelton. There are significant financial benefits for LPC in having the ability to control the demand on the supply network.
- 25 Load shedding is only available for major customers and on Banks Peninsula and I believe LPC is the only customer that is in a position to be able to take advantage of the financial benefits of load shedding.

Bulk Cargo Handling

- 26 Lyttelton Port of Christchurch is a major gateway for export and imports serving Canterbury and beyond and it handles large tonnages of bulk materials, unlike other strategic infrastructure. The tonnage of bulk materials handled at the Port from August 2014 to September 2015, and which is potentially dusty, was as follows:
- 26.1 Coal - ~1.5 million
- 26.2 Logs¹ - ~500,000
- 26.3 Fertiliser - ~385,000
- 26.4 Grain (including palm kernel) ~170,000
- 26.5 Gypsum - ~85,000
- 26.6 Soy Bean - ~20,778
- 27 These products are a fundamental to the primary production and coal mining sectors either as exports or supporting imports.

¹ The bark from the logs can be dusty


- 28 Lyttelton Port suffered significant damage as a result of the Canterbury Earthquake sequence. The damage and subsequent repair programme at Cashin Quay has resulted in vessels being diverted into the inner Harbour. Given the inner Harbour wharves are in close proximity to Lyttelton township it can be a challenge to manage the bulk material that are potentially dusty.
- 29 LPC has received the following complaints relating to the generation of dust from logs and fertiliser and stock feed in the last three years:
- 2013 = 4
 - 2014 = 6
 - 2015 = 1
- 30 Environment Canterbury has issued two abatement notices relating to the handling of bulk materials: the first was in April 2014 and the second was in April 2015. The notices were issued in response to an individual complainant making repeated complaints.
- 31 The first related to generation of dust from log truck movements on port land parallel to Norwich Quay. In response LPC has carried out the following initiatives:
- 31.1 The implementation of a Port User Environmental Excellence Programme (Healthy Harbours) to assist all the stevedores (who handle logs) to upgrade their environmental management plans to improve the way dust is a managed;
 - 31.2 The sealing of the main Lyttelton log yard so that they can be regularly swept;
 - 31.3 The installation of water sprayers; and
 - 31.4 The expansion of port's water cart operations.
- 32 The second related to unloading of palm kernel used for stock feed. In addition to the Port User Environmental Excellence Programme LPC also has carried out the following:
- 32.1 The introduction of a new meteorological risk forecasting system (with the Meteorological Service) and installed additional anemometers to provide more accurate weather information so that dust risk can be more accurately predicted and actions taken in a timely way to prevent unwanted emissions;
 - 32.2 The addition of three further port services staff who now monitor shipments for dust emissions out of normal hours (in addition to 8-5 Mon – Fri);
 - 32.3 The trialling and future adoption of water sprayers on a hopper; and
 - 32.4 The introduction of a water mist gantry boom that is used for trucks to drive under as they exit the wharf. This minimises dust generation from the truck body and top of the tarpaulins covering the loads.
- 33 I accept that there will be a need for rules concerning the management of dust emissions associated with the handling of bulk materials but would be concerned

if the rules required an assessment of effects in the coastal marine area for which there have been no issues previously identified. **Mr Purves** discusses why he considers the rule in the existing Plan should be reinstated.

Conclusion

- 34 To conclude:
- 34.1 It is important to ensure generators will run reliably in an emergency situation;
 - 34.2 There are significant financial implications for LPC in not allowing load shedding use of generators;
 - 34.3 The power supply lines to Lyttelton are vulnerable to failure and may not be able to be repaired immediately, and the increased risk of failure of the generators in an emergency through not allowing load shedding could have consequences for our customers and their cargo;
 - 34.4 The Port is an essential gateway for export and import of bulk materials and is fundamental to the primary productive and coal mining sectors;
 - 34.5 There has been significant investment made by LPC to better manage these materials; and
 - 34.6 While there needs to be rules to manage bulk materials that are potentially dusty, it is also important that particular circumstances of the port are recognised given its strategic importance.

Dated: 22 October 2015



Kim Kelleher