

Fuel Conservation Initiatives

Introduction

This document provides information on the fuel conservation initiatives British Columbia Ferry Services Inc. ("BC Ferries" or the "Company") expects to pursue during the first two years of performance term two (2008/09 and 2009/10).

Fuel is an important cost element for BC Ferries, being the Company's second largest operating expense. BC Ferries has and continues to actively manage its fuel consumption.

In performance term one, the British Columbia Ferries Commissioner (the "Commissioner") required that BC Ferries provide a plan to the Commission identifying fuel saving measures taken and those proposed over the subsequent two fiscal years (2006/07 and 2007/08) that would result in a reduction of 1% from the 2005/06 base level of fuel consumption in fiscal 2006/07 and a further 1% in fiscal 2007/08. BC Ferries submitted its *Fuel Consumption Reduction Plan* (the "Plan") to the Commissioner on June 15, 2006 and provided annual updates on the Company's results in achieving the fuel savings targets.

In each of fiscal 2006/07 and 2007/08, BC Ferries achieved more fuel savings than were targeted in the Plan. Over the two year term of the Plan, the total reduction in fuel consumption was 7.8 million litres, which was over twice the original cumulative target (see Table 1 below).

**Table 1
Targeted and Actual Fuel Savings**

Fuel Consumption Reduction Plan			
Base Year Fuel Consumption (litres)		Target Fuel Savings (litres)	Actual Fuel Savings (litres)
2005/06	115,657,242		
		2006/07	1,156,572
		2007/08	2,313,145
		Total	3,469,717
			7,812,198

While fiscal 2007/08 was the final year of the Plan, the significance of fuel costs to BC Ferries' operation is such that fuel conservation measures will continue to be an important issue of the Company going forward.

Building on its success in achieving the fuel consumption reduction targets set out in the Plan, BC Ferries actively continues to explore opportunities for reducing fuel consumption and, in accordance with Memorandum 24(A) issued by the Commissioner on July 16, 2008, herein provides information on the possible fuel conservation initiatives that will be pursued in the first two years of performance term two.

Fuel Conservation Initiatives

The following is the list of fuel conservation initiatives BC Ferries expects to pursue in 2008/09 and 2009/10. The initiatives include a continuation and expansion of measures successfully implemented in the Plan, as well as new areas of focus in terms of exploring opportunities for further fuel savings.

Building on Performance Term One Fuel Consumption Initiatives

BC Ferries achieved fuel savings in 2006/07 and 2007/08 in accordance with the Plan and fuel conservation initiatives identified in the Plan. BC Ferries expects to continue to focus on these initiatives, with the expectation that they will continue to yield further fuel savings in the next two years. The specific fuel conservation initiatives include the following:

Best Operating Practices - On-time performance

Maintaining on-time performance saves fuel since vessels are not running at full speed trying to catch up and remain on schedule. Accordingly, BC Ferries will continue to focus on improving the on-time performance of the fleet, without comprising safety, in order to yield fuel savings.

Electronic speed control - ESP 1000 fuel monitors

Certain fuel monitors have the ability to automatically control propeller pitch and engine speed to optimize fuel efficiency. The *Queen of Alberni* underwent a trial system for new fuel monitor technology using the ESP 1000 fuel monitor in fiscal 2005/06 which resulted in 7% fuel savings. Based on the success of the trial, BC Ferries began a program to install ESP 1000 fuel monitors on a number of the larger vessels. Due to technical issues, further implementation of this initiative was temporarily deferred and, in some instances over 2007/08, the monitors on some vessels were turned off.

BC Ferries has now completed a review of the program and has determined it will continue with the implementation and use of the monitors. By the end of October, 2008, BC Ferries had returned the ESP 1000 to active mode on the following vessels: *Queen of Coquitlam*, *Queen of Burnaby*, *Queen of Oak Bay* and *Queen of Surrey*. In addition, the following vessels will have the ESP 1000 activated when they return from refit: *Queen of Alberni*, *Queen of New Westminster* and *Queen of Cowichan*.

Hull Re-surfacing

Resurfacing a vessel's hull reduces drag and requires less power to move a vessel through the water. In 2008/09, the *Quinsam* will have hull re-surfacing work completed during drydocking and refit.

Over 2009/10, it is expected that eleven vessels will be drydocked. The majority of these vessels will receive a hull cleaning and include: *Queen of Alberni*, *Queen of Chilliwack*, *North Island Princess*, *Nimkish*, *Mayne Queen*, *Powell River Queen*, *Skeena Queen* and the *Coastal Renaissance*.

In addition, three vessels will have their hulls fully blasted and re-coated, which is expected to result in further fuel savings. The vessels include: *Kwuna*, *Tacheck* and *Tenaka*.

New Fuel Conservation Initiatives

In addition to the initiatives previously identified, BC Ferries has begun to implement new fuel savings initiatives in 2008/09. These include the following:

Operating Improvements – Coastal Class and C Class

BC Ferries expects to improve fuel consumption on the C-Class and Coastal Class vessels through greater information sharing between each of the crews and resulting operational improvements. By understanding how one (or more) crews are achieving improvements in fuel consumption, all crews can improve their fuel burn.

In addition, BC Ferries has implemented a program on the Coastal Class vessels to replace all halogen lighting with LEDs. The lights will be changed from 700 lightsx50 Watts to 700 lightsx3 watts which reduces the power requirement of the generators and results in fuel savings.

Operating Improvements – Engine Warm Ups:

BC Ferries has implemented an initiative where the main engine warm-up period at the beginning of the day has been reduced on all vessels. The result is less fuel burned in dock prior to the first departure.

Operating Improvements - Route 30

For operating the Coastal Class vessel on the Duke Point to Tsawwassen route (route 30) the following initiatives will be implemented:

- BC Ferries is in the process of optimizing the navigational path or track that the vessel sails. Utilizing this track enables the vessel to follow the shortest path, thereby enabling lower average crossing speeds and therefore lower fuel consumption,
- By utilizing the track, the need for the vessel to operate in mode 2 is minimized (mode 2 engages both fore and aft propellers resulting in additional fuel consumption; mode 1 engages only the aft propeller) while still allowing for maximum operational safety, and,
- BC Ferries will establish an operating protocol for the use of both speed and track pilot.

BC Ferries will consider implementing similar efficiencies on other routes (and vessels) once more experience has been gained and tangible results have been achieved from these initiatives.

Exploring Other Opportunities

BC Ferries will continue to analyse and review new opportunities to achieve fuel consumption savings and, if these opportunities are proven to be both financially and operationally acceptable, BC Ferries will look to implementing them. A specific example of further initiatives BC Ferries is exploring include:

Terminal Shore Power

Some vessels run generators all night to keep power to the vessel. BC Ferries is considering using a ship to shore cable connection to maintain power. This would facilitate shutting down the vessel's generators, thereby reducing fuel consumption.

Conclusion

BC Ferries has and continues to be active in its efforts to explore fuel conservation initiatives. The foregoing sets out the fuel conservation initiatives BC Ferries expects to pursue in 2008/09 and 2009/10. BC Ferries will report progress with the implementation of these initiatives annually to the Commissioner.

*Source: Report provided to the BC Ferry Commissioner
by BC Ferries by email on November 17, 2008.*