

Our File/N/Réf. 14-8-2000  
Your File/V/Réf.

DATE: 15 June 2000

TO/DEST: Co-ordinator, Transit Services Committee

FROM/EXP. General Manager

SUBJECT/OBJET: **HYDROGEN POWERED BALLARD BUSES**

---

### **DEPARTMENTAL RECOMMENDATION**

**That the Transit Services Committee receive this report for information.**

### **BACKGROUND**

In response to an Inquiry made by Commissioner J. Legendre's at the Transit Services Committee meeting of 22 March, a progress report on the current status of this technology has been compiled.

#### **Current Trial**

##### **Chicago**

On March 23<sup>rd</sup>, 2000 Ballard Power System Inc. and the Chicago Transit Authority announced the successful conclusion of the world's first fuel cell bus demonstration and testing program after two years of operation.

Three buses powered by Ballard fuel cells have clocked 5,000 hours in revenue service, covered over 30,000 miles (48,000 km) and carried more than 100,000 passengers. This equates to 16,000 km/year of service per bus. Our new Orion VI buses will clock over 100,000 km/year/bus this year.

The Chicago bus experience has enabled XCELLSIS Fuel Cell Engine Inc. to design and plan the construction of the next generation of fuel cell engine that is simpler in design, easier to maintain and half the weight of the engine used in Chicago.

A bus using the new XCELLSIS pre-commercial fuel cell engine will enter trial revenue service in Palm Springs under the California fuel cell partnership. This trial is expected to continue until year 2003.

### Vancouver

Ballard will complete a second two-year program involving another three buses in revenue service in Vancouver.

In November 1999 Mr. Gary Strachan, P.Eng, of the Coast Mountain Bus Company Ltd. in Vancouver made a presentation to the CUTA Fall Conference which highlighted the following:

- 3 buses logged an average of 15,266 km/year.
- 3 mechanics were required at all times to support the 3 buses.
- Refuelling time averaged 3 hours per bus.
- Fuel cell buses may be competitive with clean diesel buses by year 2010.
- We are still at the P3 stage of development leading to the P5 commercial stage of possible competitive bus prices.
- Cost of a fuel cell bus is currently 3 times the cost of diesel bus and not expected to be competitive for 10 years.

Data and reports on the Chicago, Vancouver and later Palm Springs trials will be available through APTA and CUTA sources.

### CONCLUSION

This technology is still in the early development stages. Regardless of the funding and capital costs, it would require a large effort on OC Transpo's part to keep these prototype buses in operation. In addition, it would require significant cost to install and maintain the support systems such as the hydrogen servicing station. Such a trial would also coincide with the introduction of 2 new bus types. In the near term, OC Transpo's effort should be directed towards rationalizing its fleet to reduce cost through the successful introduction of new low floor, clean diesel buses and diesel electric light rail.

It is therefore concluded that it would be in the best interest of the Commission and the taxpayer not to get involved with the prototype development at this time.

*Approved by  
Gordon Diamond*