

# Canadian Hydrogen Village aims at early adopters

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**Regional strategies are all the rage in the world of sustainable mobility, whether Energy Valley in the Netherlands, or Hydrogen Village in the greater Toronto area, Canada. The focus on hydrogen and fuel cells in Hydrogen Village is only temporary: the village is open to a connection with nuclear, wind or solar power initiatives on a similar basis. What has been achieved after 3,5 years?**

[P13 Image 1](#)

The end-user is the starting point of all activities of Hydrogen Village. Goal is to create early commercial markets, find stakeholders, inform the public and encourage investments in and further development of hydrogen and fuel cell applications. Sustainable mobility is one of many possible applications.

## **Random**

Whether the regional approach is more than a random approach remains uncertain, but a greener world has to start at some level. Meanwhile, the concept of Hydrogen Village in itself is very locally based. A fuel cell or an ICE driven generator recombines oxygen and hydrogen and thus generates electricity. This electricity can be used directly by surrounding residential, office, and industrial buildings and vehicle fleets.

## **Connection**

Hydrogen Village is a public-private partnership, funded by all participating parties. At the June 2003 Hydrogen and Fuel Cells Conference in Vancouver president Pierre Rivard of the Canadian corporation Hydrogenics introduced the concept.

Hydrogenics, which is entirely dedicated to the same goals as Hydrogen Village, was at that time already working together with the City of Toronto to demonstrate hydrogen and fuel cell technologies. The connection was prolonged and extended with another team: Siemens Westinghouse and Ontario Power Generation (OPG) together with the University of Toronto at Mississauga (UTM). Together, these parties drafted Hydrogen Village.

## **Achievements**

So what actual achievements can Hydrogen Village claim after 3,5 years? Various projects were installed over the years, ranging from backup power systems with longer than average operating

capacities, to a vehicle refuelling station including utility vehicles that refuel at it and which are also to be used as portable 12 kW remote power supplies. Furthermore, a delivery van that operates at full highway speed and fuel cell-powered forklifts have been produced. The forklifts can operate longer than their electric equivalents and can do without battery changes or endless recharging.

At the consumer's level, but not on the mobility level, 12 student's townhouses at University of Toronto at Mississauga are powered and heated by in total 4 solid oxide fuel cells (SOFCs). One unit runs on hydrogen alone, the others run on natural gas. Excess heat of the SOFCs (they operate at ~850° C) is used for water and space heating.

### **Early adopters**

Small scale projects all of them, but then again, Hydrogen Village is still in the phase in which the public consists mainly of early adopters. They are the ones the currently participating parties hope will take an interest. They could cause cost reduction through cost sharing. Other key stakeholders are energy or utility companies, environmental advocacy groups, more governments and industrial parties and, needless to say, new investors of any kind.