



International Partnership *for the* Hydrogen Economy



GLOBAL IPHE PROJECT: Renewable Hydrogen Report United States

**IPHE Joint ILC/SC Meeting
December 1-3, 2009
Washington, DC**



Project Description

Creation of a report/brochure on demonstration projects that include renewable production of hydrogen.

Brief outline:

- Summary of renewable hydrogen production methods
- Summaries and pictures of a number of past and current demonstration and R&D projects in different countries using various technologies
- Projects that cover a variety of hydrogen uses, including transportation and stationary power
- Lessons learned from past projects



Sample Project Overview

Renewable Hydrogen Production

ECTOS Bus Demonstration

Reykjavik, Iceland

The ECTOS project, led by Icelandic New Energy, introduced the first pre-commercial hydrogen refueling station in the world. Located in Reykjavik, Iceland, the station provides hydrogen produced with renewable energy to three fuel cell buses serving the city.

When the ECTOS Bus Demonstration began in March 2005, six pre-commercial hydrogen refueling stations had been built and operated. The European Commission 5th Framework Programme sponsored the project and brought together a team of partners spanning Iceland, Germany, The Netherlands, Norway and Sweden. The consortium has plans to conduct preliminary studies on potential social, economic and environmental impacts.

Reykjavik was chosen to be the location of the project because of its strategic characteristics – it is the capital of Iceland with a population of approximately 300,000. It contains a highly educated population with a generally high level of acceptance for a hydrogen infrastructure.

Once the location was chosen, April 2005 marked the beginning of the hydrogen production phase with the opening of the hydrogen refueling station. The plant included a hydrogen compression, storage and dispensing system. By October 2005, the three fuel cell buses had arrived from across the Atlantic and began servicing Reykjavik.

Icons representing the renewable source(s) used in the project

Project Overview

What: ECTOS Bus Demonstration

Who: Icelandic New Energy Ltd.

When: Started: March 2005
Completed: August 2005

Participants: IAEA Country: Iceland

Partner Countries: Germany, The Netherlands, Norway, Sweden

Renewable Technology: Geothermal, Hydropower

Renewable H₂ Production: In the 2 1/2 years of operating the fuel cell buses, the refueling station dispensed nearly 20 tons of compressed hydrogen to run the fuel cell buses.

The energy used to run the fuel cell buses is nearly 100% from geothermal and hydro power. The hydrogen is produced by electrolysis to make possible by renewable resources.

Web: <http://www.ectos.is>

Overview provided for a quick, at-a-glance look of the project

Reference and contacts provided for access to further information

Reference: www.ectos.is

Contacts:

- Name: [Redacted]
- Company: [Redacted]
- Phone #: [Redacted]
- Email: [Redacted]
- Name: [Redacted]
- Company: [Redacted]
- Phone #: [Redacted]
- Email: [Redacted]
- Other(s) (as appropriate): [Redacted]

Flags of nations contributing to the project

Map for visual identification of locations of contributors to the project (primary in blue; partners in green)

Figure 1. Sample of a project highlight covering the ECTOS Bus Demonstration in Reykjavik, Iceland.

October 2007



Accomplishments

- **Draft report introduction completed**
 - Comments from ILC and country reps received and incorporated.
 - WTW data from Germany incorporated
- **15 draft project overviews completed**



Next Steps

- **Incorporate feedback on draft report**
- **Include additional resources for reference (section IV)**
- **Fill in gaps in project summaries**
- **Publish report on website**
- **Continue to add projects on an ongoing basis**

**Please send any comments to
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