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## ENEL: FIRST HYDROGEN-FUELLED POWER NOW ON LINE IN VENICE

- *New 100% hydrogen-fuelled generation plant at the Fusina power plant successfully up and running*
- *Hydrogen pipeline now in service between the power plant and Polimeri Europa*

**Venice, August 14<sup>th</sup> 2009** - Two landmark events have been achieved at Enel's hydrogen-fuelled power plant near Venice. Just a few days after the new hydrogen pipeline supplied by Polimeri Europa (ENI) went into service, the power plant has successfully begun generating power fuelled 100% by hydrogen.

The people of Venice are the first in the world to benefit from power generated by the world's largest industrial-sized "zero emissions" power plant: Enel's 100% hydrogen-fuelled plant at Fusina.

After the building site was officially opened in April 2008, infrastructure and technology work was carried out on schedule. Initial testing of the turbine using methane gas was conducted in the spring of 2009 and now - after the completion of the special pipeline - the plant has switched to 100% hydrogen fuelling

The initial input of electricity onto the grid from the fully operational plant is a world-beating technological achievement. No plant of this type had ever even been tested before. The combustor was specifically developed exclusively for this project by Enel's Research team, in partnership with General Electric Oil & Gas - Nuovo Pignone.

The Fusina hydrogen plant has a capacity of 12 MW, as well as an additional 4 MW generated through re-use of heated gas produced by the hydrogen-fuelled turbine in the existing coal-fired plant. The electricity generated, equal to about 60 million kWh a year, will be sufficient to meet the needs of 20,000 households, and avoid more than 17,000 metric tons of CO<sub>2</sub> emissions a year. In accordance with an agreement signed in 2008, the hydrogen used to fuel the Enel power plant is provided by the Polimeri Europa cracker (ENI), which utilizes hydrogen to run its own plants.

The plant, which is the first of its kind in the world, is located at Enel's "Andrea Palladio" Fusina plant, thanks to a supply of hydrogen produced as a by-product in the manufacturing process at the adjacent petrochemical facility of Porto Marghera (Venice).

The plant is just one project under the aegis of Hydrogen Park, a consortium formed in 2003 on the initiative of the Venice Industrial Union with about 4 million euros in funding from the Region of Veneto and the Ministry for the Environment. The consortium seeks to

promote the development and implementation of hydrogen technologies in transportation and electricity generation in the Porto Marghera area.

The “Andrea Palladio” plant stands as a symbol of Enel’s commitment and determination to meet the challenge of generating abundant electricity at competitive costs, while at the same time respecting the environment. In addition to its hydrogen-fuelled plant, Fusina is a trailblazer because it has made its entire generating cycle environmentally-friendly, safely using every year 70,000 metric tons of RDF (refuse-derived fuel), a fuel obtained from separated solid waste. The equivalent of the waste produced by 300,000 people is used in place of coal to fuel the plant’s boilers. Not only does this recover the energy contained in the waste, it avoids sending the waste to landfill sites.