

# *LARDERELLO*



## **History of Geothermal Energy in Italy**

Among the many distinctive features of Italy's sustainable regions, Tuscany is geologically blessed with access to geothermal energy. Uses for the geothermal reservoirs dates back to the Romans who used the heat for their famous baths. Centuries later, in 1904, the area near Larderello was used to demonstrate the first successful steam energy conversion using five lightbulbs.<sup>1</sup> Geothermal reservoirs must reach or exceed 180 degrees Celsius in order to be useful for energy production.<sup>2</sup> Today, Italy is the European leader in the field of geothermal energy production, with a total installed capacity of 790 MWe, which is over 95% of all installed capacity in the EU-27.<sup>3</sup> Worldwide, Larderello's production makes up 10% of all geothermal energy.<sup>4</sup>

## Larderello History

Previously referred to as Valle del Diavolo (Devil's Valley), the Geothermal Plant at Larderello is an important component of the Tuscan landscape. Although, it may not greatly contribute to the region's aesthetic beauty, Larderello served as an important engine for energy development in Italy. Home of the first geothermal plant in the world, the plant had to be rebuilt after it was destroyed in World War II. Overall, the Larderello plant has produced geothermal energy for over 90 years.

## Visiting Larderello



Larderello is an important attraction for both its historical and educational features. Located 40 miles south of Volterra, Larderello is fairly isolated but worth the diversion because of its geological and development history and unique landscape. In fact, a book, *Geothermal Larderello: Tuscany, Italy* goes into detail about the patterns of human

settlement and later urban development around Larderello's geothermal plant and also imagines a better future once the site is tapped out. Whether it's for the geologic or human history, Larderello is sure to peak your interest.

## Larderello Museum

In order to enhance your visit to the site of the geothermal plant, Enel has set up a museum with the following features<sup>5</sup>:

- ❖ **Piazza Leopolda**-the factory headquarters
- ❖ **Relief Model Room**- A series of maps, historical and scientific information on panels relief small-scale models of topography and geothermal plant



- **Covered Lagone**- A machine built in 1875 to power the heating systems of boilers and buildings where boron salts were dried.





- **Valle Secolo plant**- A plant built in 1991
- **Demonstration well**- This well was drilled in 1956 and is 740 meter deep (pictured below)



Don't forget to bring a camera to bear witness to this groundbreaking site.

<sup>1</sup> [http://www.ilpalio.org/brief\\_larderello.htm](http://www.ilpalio.org/brief_larderello.htm)

<sup>2</sup> "Larderello." *Encyclopædia Britannica*. 2009. Encyclopædia Britannica Online. 16 Nov. 2009 <<http://www.britannica.com/EBchecked/topic/330501/Larderello>>.

<sup>3</sup> <http://www.europeanenergyforum.eu/archives/european-energy-forum/renewable-energy-matters/visit-of-the-larderello-geothermal-field>

<sup>4</sup> <http://www.time.com/time/printout/0,8816,901030616-457349,00.html>

<sup>5</sup> [http://www.ilpalio.org/brief\\_larderello.htm](http://www.ilpalio.org/brief_larderello.htm)