LEGISLATION AND REGULATION ANALYSIS COUNTRY BROCHURES

ITALY

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The legislative and regulatory analysis presented in this section covers the conditions for three separate case study sites in the Veneto and Tuscany regions. Specifically the municipalities of Padua, Venice and Florence are described.

GEOTHERMAL LEGISLATION

National legislation d.Lgs 28/2011 defines renewable energy sources, with shallow geothermal energy defined in law D.Legs. 22/2010, art. 10 as 'small local exploitation' (it. Piccole utilizzazioni locali) at regional level.

LOCAL LEGISLATION – PADUA & VENICE

Regional and Provincial Legislation and Regulation are in place for the Padua Municipality but specific to thermal groundwater exploitation.

Regional legislation (n. 11 (BUR n. 35/2001) confers the administration of geothermal resources to the Veneto Region. This provides the basis for the development of local regulations on the exploitation of shallow geothermal resources. These are further discussed below.

LOCAL LEGISLATION – FLORENCE

Regional Law 24.02.2005 (art. 16,comma3, par. h) defines the 'small local exploitations' and defines the Municipality of Florence as the licensing authority. A Declaration of Beginning of Activity for the development of shallow geothermal systems is required. Legislation (L.R. n. 69/2012 has simplified the licensing process to a certified notification of the commencement of works (SCIA - Segnalazione Certificata di Inizio Attività).

LICENSING & PERMITTING PROCEDURES

LICENSING AND PLANNING APPLICATION

Licencing - Padua A certified notification of the commencement of works (SCIA - Segnalazione Certificata di Inizio Attività) is required for geothermal systems where no fluids are pumped out from the reservoirs or aquifers. The cost of the notification is less than €100 and the processing time is generally 90 days.

Licencing - Venice The licensing process is covered by the administration of the Province of Venice that grants a license for ground source heat pump systems where no groundwater is exploited. There are two categories for GSHPs: (1) above and (2) below 50 kW installed capacity. BHEs are all included in class 1. For GSHP and BHE of 100 kW capacity or greater, a thermal impact analysis is required.

Local Legislation – Florence A simplified licensing process comprising a certified notification of the commencement of works (SCIA - Segnalazione Certificata di Inizio Attività) is required within 30 days of the commencement of works. The cost of the notification is less than €100 and the processing time is generally 90 days.

DRILLING PERMITS

Regulations specify that if groundwater is exploited, a request must be submitted to the local department (Genio Civile), according to the law 'Regio Decreto 1775/11.12.1933' (Testo unico delle disposizioni di legge sulle acque e impianti elettrici, 'Comprehensive law regarding water and electrical plants'). The permitting costs are typically less than 100 € (administration costs only) with a processing time of 30 days.

A notification to ISPRA (Institute for the Environmental Protection and Research - Law D.Legs. 464/1984) is required for every borehole deeper than 30m. Notification must be completed within 30 days of the end of the drilling activities.

EIA REQUIREMENTS

There is no specific requirement for an EIA/EIS to be undertaken for closed loop GSHP systems. However an analysis of the underground impacts of the proposed plant may be required for larger scale systems. Requirements for open loop systems are in place and these vary based on the local regulations and the size of the system.

MONITORING REQUIREMENTS

A monitoring requirement for closed ground source heat exchangers is set out in local regulations. This is mandatory for plant sizes above 100kW, with the collection of daily data from the system comprising BHE temperatures (or groundwater temperature), flow rate of the carrier fluid and power consumption of the heat pump and auxiliary systems. A yearly reporting requirement to the responsible authority must be undertaken. In the case of the case study sites in Italy these include Provincia di Venezia & Agenzia Regionale Per l'Ambiente Veneto, Comune di Firenze. The costs of monitoring are dependent on the size of the plant.

REGULATIONS

GSHP SYSTEM REGULATIONS

The UNI (Ente Nazionale Italiano di Unificazione, Italian National Agency of Unification) provide a set of non mandatory rules for the installation of GSHP system. These national technical standards are used as regulatory measures and define temperature and heat extraction rate limits for GSHP systems.

ENVIRONMENTAL

General restrictions for the installation of GHE are applicable at all case study locations. These require all GSHP collectors to be a minimum distance of 200m from any groundwater supply with additional local restrictions imposed based on the specific hydrogeological conditions. Limitations in the local regulations are also applicable in the case of proximity to boundaries and the proposed locations on GHE.

Regulation for open loop system and their expected operational parameters require that groundwater temperatures are not modified more than 3°C from the average aquifer temperature.

BUILDINGS

The transposition of the EPBD is governed by a series of legislative decrees that set the contributions from renewable technologies in buildings. For all the case study sites, the following minimum require-ments are observed:

- 50% for Domestic Hot Water, 35% of Total Energy Demand (50% from January, 1st, 2016) for new residential buildings, new non-domestic buildings and retrofit.
- 35% * 1,1 = 38,5% of Total Energy Demand (50% * 1.1 = 55% from January, 1st, 2016) for public sector buildings

No specific targets are set for the use of GSHP in these regulations.

National guidelines concerning the improvement of energy efficiency measures in cultural heritage buildings, technical specifications on climate control measures specific to heritage buildings (UNI EN 15759-1:2012) along with international standards and best practice guides (CEN/TC 346, CIBSE, ASHRAE, REHVA, AICARR) form the basis for the main requirements for the use of GSHP systems in cultural heritage buildings and are implemented using a case specific assessment.

HEATING & COOLING PLANTS

Heating and cooling plant regulations as set out in Law 248 (2005) are implemented through Ministerial Decree No. 37 that covers the installation of plant equipment in buildings including ground source heat pumps. The FGAS regulations (EC 517/2014) are implemented through the Regolamento di Esecuzione (UE) 2015/2068 regulations at national level. These are applicable in all case study sites.

POLICY CONTEXT

The main objective of the heating and cooling sector in Italy is set out in a national energy action plan published by the Ministry for Economic Development. A target contribution of renewable heat from geothermal heat pumps of 522 ktoe by 2020 has been set in the NREAP for Italy. The recently published progress report in 2015 showed that the expected target for 2014 of 112 ktoe was not achieved with a total contribution of 71 ktoe reported. The Ministry for Economic Development has further set new targets for integrating renewable technologies to produce up to 20% of final consumption by 2020. This is an increase from the NREAP targets of 17% to be reached by 2020. The new 20% target would amount to about 11 MTOE/year. Latest figures for 2013 demonstrate a renewable contribution of 16.7% has already been reached.

STANDARDS & GUIDELINES

A series of technical standards and guideline documents are published by the 'National Italian Institution for the Unification' (Ente Nazionale Italiano di Unificazione, UNI). These cover many aspects of design, installation and construction as well as equipment and materials relating to GSHP installations. Some of these relevant to the case study sites and CHEAPS project are given below.

- UNI 11468:2012 'GSHPs Geothermal systems - Environmental requirements'
- UNI 11467:2012 'GSHPs Geothermal systems - Installation requirements'
- UNI 11466:2012 'GSHPs Geothermal systems - Sizing and planning requirements'

Additional guidelines are provided by RSE SpA (Ricerca sul Sistema Energetico which is an Italian organization managed by the Manager of Energetic Services, Gestore dei Servizi Energetici).

TRAINING & CERTIFICATION

No specific training initiatives have been highlighted as part of the analysis in any of the three case study site locations. However a set of certification schemes are applicable for project designers, where professionals must be enrolled and certified in accordance with legislation DPR 05.06.2001 nr. 328.

Non mandatory certification for drillers and ground contractors (UNI 11517:2013 'GSHPs Geothermal systems - Requirements of acceptance of drilling companies which install geoexchange systems'), installers (UNI 11467:2012 'GSHPs Geothermal systems - Installation requirements') and designers (UNI 11466:2012 'GSHPs Geothermal systems - Sizing and planning requirements') are also in place at national level.

OTHER INFORMATION

Information about geothermal resources is compiled in a database managed by the Ministry of Economic Development. The information portal is hosted through the Institute of Geosciences and Earth Resources of National Research Center (CNR), at the 'geoThopica' web page (http://geothopica.igg.cnr.it/).

Financial support measures for GSHP systems are available in the form of tax deductions. This is governed by specific legislation (Legge di stabilità) that is updated on a yearly basis (D.Lgs 208/28.12.2015). Provisions in the 2015 legislation are such that a 65% or 50% of tax deduction, when a new HP is installed and the building efficiency is improved, can be obtained.