



# **Regulation of Geothermal District Heating in Italy**

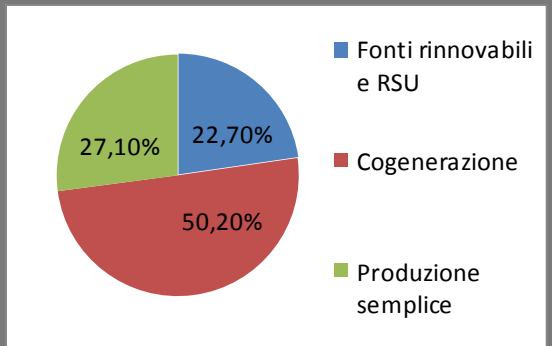
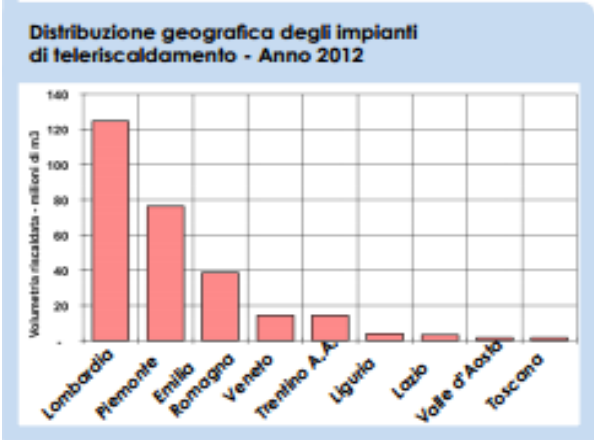
**Brussels, September 22, 2014**

**Lorenzo Spadoni Vicepresident**

# Summary:

- Quick summary of Italian DHC
- Regulatory Issues
- Conclusions

DH systems: 109  
 Heated vol. (Mm<sup>3</sup>): 279  
 Delivered heat (TWh): 8  
 Delivered cool (TWh): 0,1  
 EE CHP (TWh): 5,6  
 Networks (km): 3161  
 Substations: 57492



**ENERGY AND ENVIRONMENTAL BALANCE**

**Primary energy savings  
440.000 TOE (-24%)**

**Avoided CO2 Emissions:  
1.434.000 t (-28%)**

## Today state of DHC systems in Italy

Tuscany

COMUNE	RETI PRESENTI	ANNO DI INIZIO ESERCIZIO O STATO DELL'ARTE	UTENZE COMPLESSIVE
POMARANCE (PI)	CAPOLUOGO	2002	2.600
	LARDERELLO	1955	
	MONTECERBOLI	1996	
	LUSTIGNANO	1998	
	SERRAZZANI	1998	
	SAN DALMAZIO	2002	
CASTELNUOVO DI VAL DI CECINA (PI)	CAPOLUOGO	1985	1.083
	SASSO PISANO	1995	
	MONTECASTELLI	2009	
MONTEROTONDO MARITTIMO (GR)	-	1996	499
SANTA FIORA (GR)	-	2005	840
MONTEVERDI MARITTIMO (PI)	CAPOLUOGO	PRIMA PARTE: 2013	ATTUALI: 45
	CANNETO	COMPLETAMENTO: 2014	STIMA: 450
MONTIERI (GR)	-	2014	425 (STIMA)
RADICONDOLI (SI)	CAPOLUOGO	2015-2016	543 (STIMA)
	BELFORTE		
CHIUSDINO (SI)	-	LAVORI DI REALIZZAZIONE IN FASE DI GARA, COMPLETAMENTO PREVISTO: 2017	387 (STIMA)

Emilia Romagna

**Ferrara: medium enthalpy geothermal well**

Lombardy

**Milano: low enthalpy groundwater**

**Main geothermal DH systems**

## Existing



T of Geothermal Fluid

100-105° C

Thermal nominal Power

14 MWt

Heat recovered

75 GWh/y

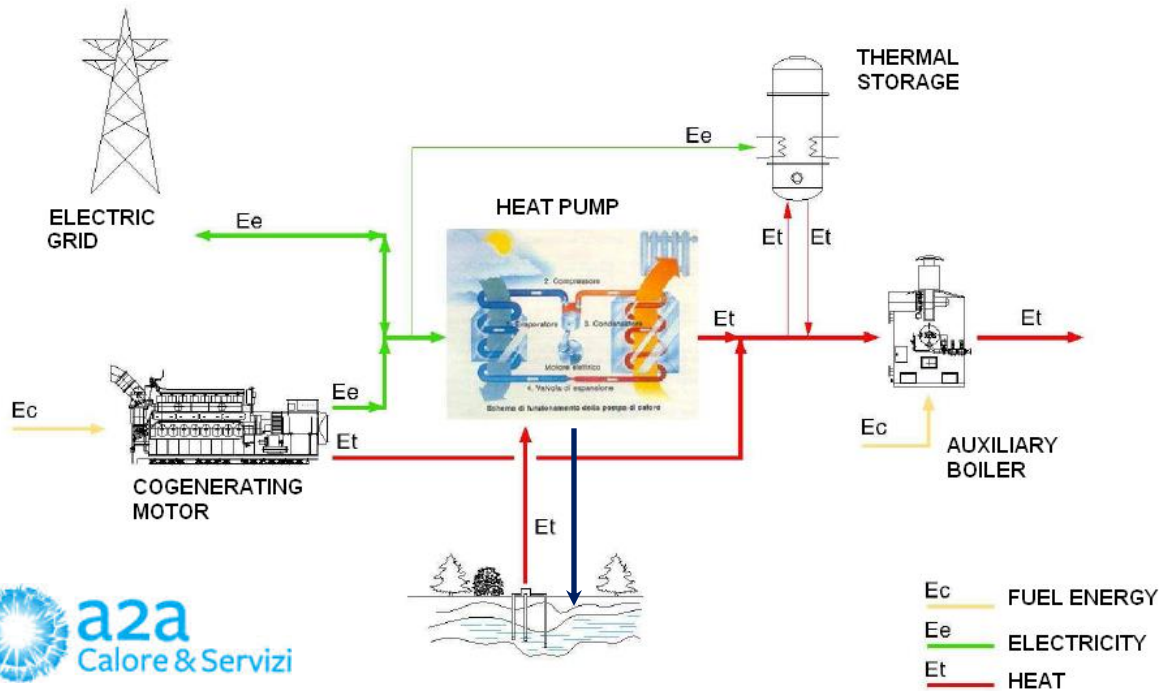
## New Development

- ❑ ***Solar District Heating (SDH)***  
about 1 MWt (base-load) for the D.H. network
- ❑ ***New Geothermal Source (→ project "Metageo")***  
2 Extraction Wells + 1 for re-introducing the fluid in the ground (total 14 MWt)
- ❑ ***ORC System for electric power production***  
1 MWe generator
- ❑ ***2+2 thermal energy storages***
- ❑ ***1 Back-up Thermal Station***  
3 boilers (each of them of 14 MWt)

**Ferrara Geothermal DH**



# Geothermal DH in Milan: Canavese and Famagosta plants



- **Milan geothermal DH plants have been designed specifically to enhance the use the geothermal energy from ground water, a renewable energy resource which is plentiful in the area of Milan.**
- **The plants are based on a combination of high efficiency CHP system and geothermal heat pumps. Each one can deliver over 110 GWht/year of thermal energy to costumers.**
- **The geothermal DH system reaches the deep centre of the town (Royal Palace, Court Hall)**

# Summary:

- Quick summary of Italian DHC
- Regulatory Issues
- Conclusions



Debate about DHC regulation has lasted for a long time (more than 2 years)

Different positions between Market Authority (AGCM) and Energy Authority (AEEGSI)

## Recent development in DHC regulation:

AEEGSI, within 24 months and on the basis of guidelines to be stated by the Government, will define:

- a. Standards for reliability and safety of the DHC service (included measure systems);
- b. Criteria for connection and disconnection fees;
- c. Criteria for publication of the commercial conditions;
- d. Conditions for integration of new heat production unit in DHC systems to promote the recovery of the locally available heat on a cost-benefit basis.



Cogenerated heat should not be counted as a part of the energy mix in combination with waste heat and renewable heat.

Example: a DHC system using 50 % of cogenerated heat and 49 % renewable energy or waste heat is **NOT EFFICIENT**.

Mistake to be corrected.

## EED Misimplementation

### Efficient DHC – EED Definition

“a district heating or cooling system using at least 50 % *renewable energy*,  
50 % *waste heat*,  
75 % *cogenerated heat* or  
50 % of a **combination of such energy and heat**”.

### Efficient DHC – Italian Definition

“a district heating or cooling system using at least 50 % *renewable energy* or,  
50 % *waste heat* or,  
50 % of a **mix of the above**, or  
75 % **cogenerated heat**.”

Authorization issues  
for a geothermal field:

Regional basis

EIE procedure

30 years permit

Public interest  
(expropriation)

Contribution to  
municipalities (325-  
650 €/km<sup>2</sup>)

## Specific rules for Geothermal DHC

*Law n. 488 23/12/1988*

*introduction of a tax benefit mechanism for  
renewable DHC costumers.*

*Government Decree 20/2/2014:*

*15% reduction of the tax benefit*

*DHC costumers can save taxes for an amount of  
0,02194 €/kwh on the price of the heat coming  
from a DHC system using biomass or geothermal  
energy.*

*In addition: VAT reduction from 22 to 10 % for  
residential costumers of a CHP/renewable DHC  
system*

# Summary:

- Quick summary of Italian DHC
- Regulatory Issues
- Conclusions

## Conclusions:

- The growth of District Heating in Italy has been quite strong in recent years.
- Customers of renewable DHC systems can benefit for specific benefits (tax and VAT reduction).
- Anyway uncertainties introduced by
  - ✓ recent legislative developments (still in progress) on regulatory issues
  - ✓ EED misimplementation
  - ✓ reduction of the fund for DHC infrastructure developmentcould impact in a negative way in future investment in the sector.



[www.airu.it](http://www.airu.it)

***We believe in using  
energy better***



[www.euroheat.org](http://www.euroheat.org)