

Geothermal Business Forum ITALY - HUNGARY

29/06/2022 Larderello (PI, Italy) and On-Line, 10:30 CET



Programme:

- Welcome and introduction
- Presentation DTE2V- Technological District Energy and Green Economy of Tuscany Region, managing body Co.Svi.G. Scrl
- Presentation CAPES - Cluster of Applied Earth Sciences, managing body GEOCHEM
- Speech session of Italian geothermal companies
- Speech session of Hungarian geothermal companies



29 June 2022 – Geothermal Business Forum Italy - Hungary

DTE2V – the Technology Cluster on Energy and Green Economy of the Tuscany Region

Dario Bonciani – geothermal and international projects



www.dte-toscana.it

DTE²V – the Technology Cluster on Energy and Green Economy of the Tuscany Region



Managing Body: CoSviG – Consortium for the Development of Geothermal Areas

Objectives:

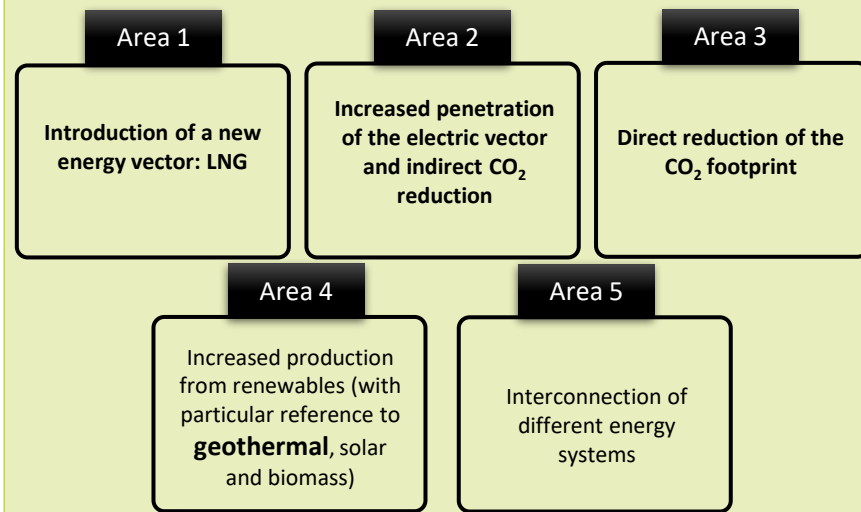
To promote, encourage and disseminate the innovation, sharing structures and knowledge, skills and know-how, through a public-private governance, with the final aim of strengthening the competitiveness of the regional energy and green economy sectors.

The DTE²V groups more than 160 subjects involved in the energy and green economy sector in Tuscany, including research institutions, laboratories and companies.

Services for our members

1. Technology disclosure and dissemination
2. Business matching and creation of partnerships
3. Creation and promotion of sectoral expertises
4. Search for funding for innovation
5. Business internationalization
6. Capacity building

Thematic areas of the DTE²V





www.dte-toscana.it

DTE²V – Matrix of services and technologies of our geothermal cluster members

			POWER GENERATION SUPPLY CHAIN	DIRECT HEAT USE SUPPLY CHAIN	SHALLOW GEOTHERMAL ENERGY
SUBSURFACE SYSTEMS	TECHNOLGIES	EGS	2	2	0
		BHE	5	4	7
		STORAGE	4	3	4
		DRILLING TECHNOLOGIES	8	2	3
		REINJECTION	9	3	4
	SERVICES	RESERVOIR/AQUIFER MODELING	13	7	7
		RESOURCE EXPLORATION	11	4	6
SURFACE SYSTEMS	TECHNOLGIES	DRILLING	2	6	6
		BINARY CYCLES	10	3	0
		HEAT EXCHANGERS	13	10	5
		PUMP AND THERMAL ENERGY STORAGE	10	7	3
		HEATING AND COOLING	12	7	2
		HYDRO-PNEUMATIC DEVICES	-	-	5
		HYBRID SYSTEMS	10	1	0
		PLANT DESIGN	7	6	8
		SCALING AND CORROSION PREVENTION	11	5	2
		IMPACT REDUCTION	8	6	0
CHALLENGES	TECHNOLGIES	REUSE OF WASTE PRODUCTS	13	3	5
		DEMO SITES & LABS	2	1	0
		SEISMICITY	10	5	5
	SERVICES AND MONITORING	LCA	3	2	3
		LANDSCAPE	3	2	2
		ICT and SENSORS	4	0	1
		SOIL USE	1	0	0
		CONSULTANCY FOR AUTHORIZATIONS AND EIA	2	1	2
		INVOLVEMENT OF LOCAL COMMUNITIES	4	4	2
		CAPACITY BUILDING	3	3	2
			8	6	6

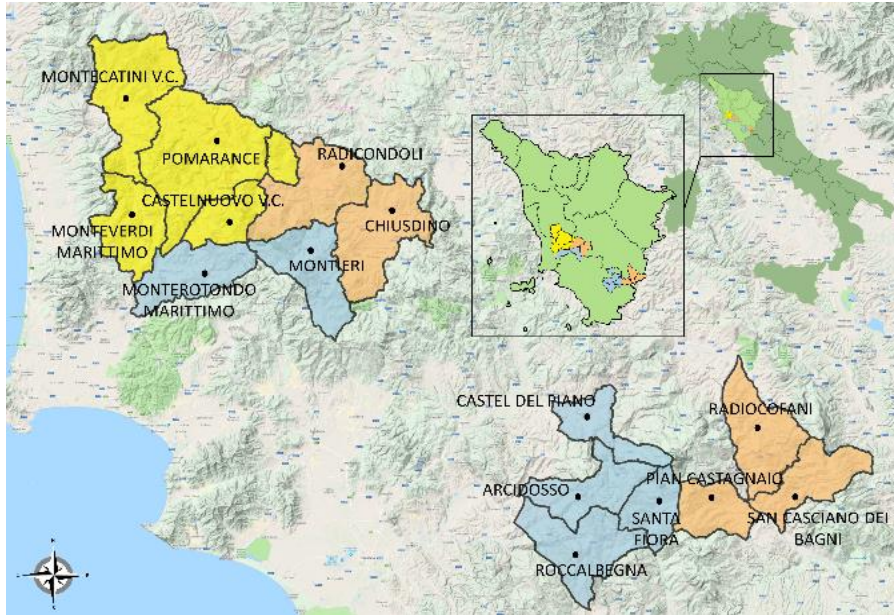
We aim at promoting business opportunities for our member companies, throughout the whole deep geothermal supply chain



DTE²V – Map of capabilities and interest of our geothermal members

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Geothermal Energy in Tuscany



Tuscany can be considered the world cradle of geothermal energy

Power generation

- **34 plants**
- **total capacity 916 MWe**
- **Production of around 6.000 GWh in 2020**
- **more than 30% of the regional electricity demand**

Geothermal District Heating

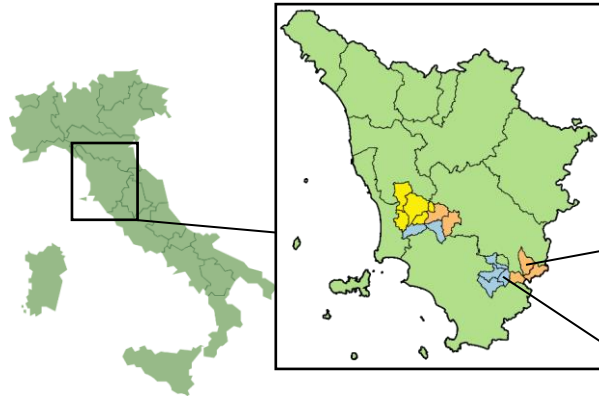
- **21 geoDH (more other planned systems)**
- **total capacity around 148 MWt**
- **About 147 GWht produced in 2020**
- **More than 5.000 users connected**

Direct uses for production processes

- **Diaries, brewery, greenhouses, cured pork meat factory**
- **Other pilot projects: Spirulina microalgae, reuse of geothermal CO₂**



Geothermal Power Generation



Val di Paglia (Sorgenia geothermal),
9,99 MW binary power plant.
Under approval



Bagnore 4 (Enel Green
Power): 40 MW flash
geothermal powerplant built
in 2014

Direct uses of geothermal energy

Breweries



Green Houses



Microalgae cultivation



Dairies



14 geoDH + 6 planned systems



Co.Svi.G. – about us



www.cosvig.it

CoSviG is a consortium company, whose capital is entirely public.

It was founded in 1988, with the aim of promoting the local socio-economic development and to cooperate with Local Authorities, coordinating their technical and financial fulfilments linked to the use of royalties resulting from geothermal exploitation for power generation.

CoSviG is a public company, owned by:

- **14 Municipalities**
- **2 provinces**
- **4 consortium of municipalities**
- **Tuscany Region**

CoSviG has today an important role as operational arm of its shareholders, to coordinate and enhance efforts to promote a local development model, grounded on sustainable development criteria and economic vocations of the territories.

A roadmap for sustainability was set up grounding on:

- Efforts towards
 - diversification in production
 - use of energy from renewable sources, mainly geothermal
- Combination of
 - social, cultural and environmental characteristics of these areas
 - technological innovation.



Co.Svi.G. – our main activities at local and regional level

Main initiatives of CoSviG

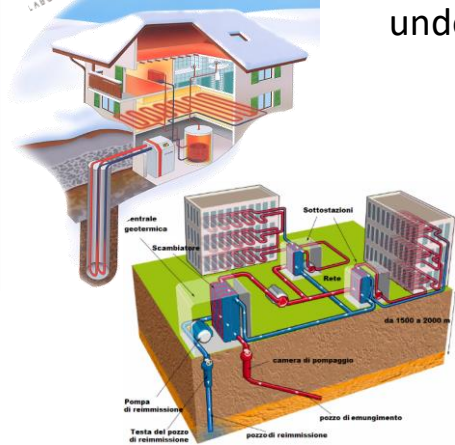
- **Promotion of renewables**, closely linked to local peculiarities and with focus on geothermal energy and its direct heat uses
- **Promotion and investments** in commercial and tourism sector and enhancement of rural economy
- Founding member of the **Tuscan Renewable Energy Food Community**
- **GeotermiaNews**, to provide information and news on geothermal energy and renewables
- Management of **structures for applied research and for the technology transfer on renewables and energy efficiency**, in order to preserve an high local know-how level on energy related issues
- **Technology Cluster on Energy and Green Economy (DTE²V)** of the Tuscany Region



A centre of advanced expertise in geothermal energy.

Dissemination of innovation and technology transfer, to promote the use of heat from underground and its direct uses.

- ✓ Measurement and characterization of geothermal resources and fluids
- ✓ Studies on materials and test of innovative plant solutions
- ✓ Geothermal heat pump systems
- ✓ Energy diagnoses
- ✓ Maintenance of district heating systems
- ✓ Best practices and support to the development of production facilities for direct uses of geothermal heat



Thank you for your kind attention!

Dario Bonciani

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