Third Working Group Meeting of COST Action TU1405 Geothermal Applications for Buildings and Infrastructure GABI – Joint meeting WG2 & WG 3

Minutes of the meeting
6-7 December 2016

Attendees:

Matteo Baralis (Italy)

Grzegorz Ryżyński (Poland)

Wiesław Kozdrój (Poland)

Oleksandra Pedchenko (UK)

Marco Barla (Italy)

Konstantnos Tsagarakis (Greece)

Amaryllis Mavragani (Greece)

Yvon Delerablee (France)

Francesco Antolini (Italy)

Miroslav Kljajic (Serbia)

Aleksandar Andjezkovic (Serbia)

Minutes:

The WG 3 meeting was organized in three different sessions dedicated to: (a) Sharing information and presentation on work in progress by WG2 & 3 members, (b) Future actions of the WGs (separate meetings for WG2 & WG3) and (c) Table of contents for guidelines (separate meetings for WG2 & WG3).

(a) Sharing information and presentation on work in progress by WG2 & 3 members.

During the first session (joint meeting with WG2) the following 8 presentations on work in progress were given by WG2 & 3 members or invited local researchers:

- Alessandra Insana (Italy) - 'An experimental site of energy tunnel linings'
- Julia Cavarero (Italy) - 'Application of energy tunnels to the city of Warsaw' (follow up of the first year STSM Italy-Poland)
- Alessandro Casasso (Italy) - 'A quantitative methodology for the estimation of shallow geothermal potential'
- Matteo Baralis (Italy) - 'City scale interaction of shallow geothermal systems'
- Nicolo Giordano (Italy) - 'Ground thermal energy storage: a living lab in Torino'
- Grzegorz Ryżyński (Poland) - 'City-scale perspective for thermoactive structures in Warsaw'
- Wiesław Kozdrój (Poland) - 'The GEOPLASMA-CE project on Shallow Geothermal Energy'

- Oleksandra Pedchenko (UK) - 'Progress updates on her reseach'

Short discussions took place after the presentations.

(b) Future actions of the WGs (separate meetings for WG2 & WG3)

A discussion took place on completed and new STSMs mentioning the following ones:

- Alice DiDonna & Marco Barla POLITO-PGI February 2016 (finished)
- Yvon Delerable (IFFSTAR-POLITO) 5-18th February 2017. Research on thermal exchange of diaphragm walls and thermal plume (approved)
- Matteo Baralis (POLITO-PGI) February 2017. Follow up of STSM from 2016, joint research on thermal influence of energy geostructures at city scale, comparison between Warsaw and Torino; follow up on modeling for Warsaw Metro. (planned)

(c) Table of contents for guidelines (separate meetings for WG2 & WG3)

The table of contents of the guidelines were discussed once more. Key points were identified for each section. Responsible persons for each section were identified as shown in the following table.

Sustainability and urban planning

Paragraph	**Responsible person**	**Preliminary key points**
1. Long term behaviour (Thermoactive geostructure scale)	Sasha & Yvon	*Short paragraph describing what written in WG2 and identifies what needs to be added to deal with district and city scale. Maybe the title could be rephrased to make it more specific.*
1.1. Definition of initial state (with or without ground water flow)	Sasha & Grzegorz	
1.2. Modification of initial state		
1.2.1. Mechanical effects	Yvon	
1.2.2. Managing/maintaining the reservoir (e.g. recharging)	Yvon	
1.2.3. Measuring/monitoring	Francesco	
1.2.4. Modelling	Matteo	
2. Interference (District scale)	Marco	*How do we identify interference among adjacent geostructures? Definition of buffer zone or minimum distances. Actions needed to minimize.*
2.1. Reason of interference (classification on type of structure, thermal or non thermal)	Matteo & Sasha	
2.2. Managing the interference (goal to minimise)	Matteo & Grzegorz	
2.3. Case studies (Torino, Belgium, Zurich, Deltares)	Francesco, Jannis, Robert,…	*Intesa tower Torino*
3. Rational urban planning (City scale)	Grzegorz	
3.1. Thermoactive structures in the urban context	Grzegorz	*Location of thermoactive structures within the city*

		Need for communication and methodology
3.2. Methodology to assist authorities (tools, what is existing and what is needed)	Grzegorz & Matteo	*Description of similar methodologies (e.g. BHE) not directly applicable* *GIS analysis* *Indications for geostructures (depth, key parameters,...)*
3.2. Integration with other source of energy or other clients	Miroslav & Aleksandar	
4. Impact assessment of thermoactive geostructures	Amaryllis & Konstantinos	
4.1 Social aspects	Amaryllis & Konstantinos	
4.2 Economic aspects	Amaryllis & Konstantinos	
4.3 Environmental aspects	Amaryllis & Konstantinos	

Each responsible person should review and write key points and an initial short text (few lines) by the 20th of February.

The need to coordinate contents related to modelling and legislation issues with the other WGs emerged. A skype call among WG leaders will be planned to this end. This will take place before the Warsaw meeting.

It was decided to **create a Dropbox folder for WG3** for sharing documents and table of contents. It will provided by the Polito group.

The discussion moved to the legislation chapter (Review of legislation practices in Europe) with the intent to identify which WG should deal with this task, not to make overlaps. It seems reasonable to place this in separate chapter (maybe at the beginning – tbd. with all WG leders).

Konstantinos has prepared the questionnaire for legislation practices (the outcome of the 2016's STSM between Greece and Cyprus). It is planned that the questionnaire will be tested by selected WG4 members: Grzegorz, Sasha, Matteo and Yvon. First results deadline: 20 March 2017 (Warsaw Meeting).

It was also agreed to harmonise the questionnaire content with GEOPLASMA-CE questionnaires and ReGeoCities project (Grzegorz and Wiesław): Deadline: 20 February 2017.

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