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Deliverable D8.5

Second Report on implementation of Training, Education and Dissemination activities

WP8 – T8.1

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Document History

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This document was verified by the project Coordinator and not submitted to an internal review because:

- (a) its format was subject of a preliminary debate in the Consortium (the TED Strategy and the TED Plan already reported in M6),
- (b) its content is a synthesis of all partners own reports / filled in tables (attached).

The versions 1-R and 2-R represent the versions 1 and 2 with the Coordinator observations.

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Publishable summary

The *GEO4CIVHIC D8.5 Second report on implementation of TED activities* is a public document delivered in the context of WP8, Task 8.1 – Development of the Training, Education and Dissemination Plan with regard to the yearly reporting of the mentioned activities in M24 (March 31st, 2020).

This document has the purpose to inform about the progress in the implementation of the actions included in TED Plan in the second year of the project namely in M12-M24. The target groups for this document are all the identified stakeholders in the TED Strategy:

- Shallow geothermal specialists: Geologists, Manufacturers for GSHP Equipment, GSHP applications designers, GSHP Researchers
- Constructors, architects, building, structural and H&C engineers, technicians and installers
- Energy and Environment Agencies
- Historical buildings and Monument protection specialists
- Regulatory authorities in energy and H&C
- Local authorities and energy decision makers at local, regional and national level
- Real estate investors and funding institutions
- Lawyers (specialised in environment, construction)
- Ecologists, opinion formers, media
- Building owners representatives and general public interested in energy savings and ecology
- *Undergraduate and PhD students*

The **main conclusions** of the D8.5 - Second report on implementation of TED activities are the following:

1. All the project partners initiated actions in the second year of the project as it is reflected in the TED implementation synthesis included in the core of this deliverable and in their own detailed reports in Appendix.
2. The intensity, density and consistency of the partners' TED activity are increasing from year #1 to year #4, as concrete research results are obtained in GEO4CIVHIC. In the first half of the project (year #1 and year #2) the TED activity is focussed in promoting the objectives and the partners and in the second half of the project, as research results begin to emerge, the activity focuses on promoting the concrete results of the research activities.
3. In the first two years of the project, a significant TED effort was located on the shoulders of the Coordinator and of the WP8 leader, who were deeply involved in disseminating the initial project information and in making the project known on the research market.
4. All the identified and potential stakeholders were taken into account with a clear preoccupation to sending to each the suitable information in respect of the GDPR rules.
5. In the second year of the project, the spearhead of the dissemination actions continued to be the project website but also the direct presence of the partners in national and international scientific, technic and commercial events.

Abbreviations

GEO4CIVHIC	Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings
TED	Training, Education and Dissemination

Introduction - Main TED activities implemented in M12-M24

In **GEO4CIVHIC** project the lead partner of WP8 is **Romanian Geoexchange Society**.

The duration of WP8 is 48 months (M1-M48). Task T8.1 duration is also 48 months, of which 6 months for planning and the rest for implementation and reporting (M7-M48).

The TED planning activity was developed in M1-M6 (April – September 2018) and included the following steps:

1. Strategy creation by WP8 leading partner;
2. Debate and approval of the TED Strategy by partners;
3. Partners TED Plans elaboration according the TED Strategy;
4. Consortium TED Plan elaboration as a synthesis of the partners TED plans;
5. Reporting and delivering D8.3 – TED Plan to EC..

In the implementation period of time, 4 deliverables are meant to report the progress of TED Plan:

1. After the first 12 months for the period M1 - M12 – Deliverable D8.4 – First TED Report
2. After the second year of the project for the period M13 - M24 – **Deliverable D8.5 – Second TED Report – THIS DOCUMENT**
3. After the third year of the project for the period M25 - M36 – Deliverable D8.8 – Third TED Report
4. At the end of the project for the period M37 - M48 – Deliverable D8.12 – Final TED Report.

1. Synthesis of TED activities implemented in M13 - M24

The synthesis of the planned and of implemented actions is presented below in the format set by TED Strategy. The synthesis was realized based on partners TED reports which are integrally included in the Appendix.

In the “Reporting Area” – Column [3], the light yellow colour cells present the implemented actions for planned dissemination methods in M13-M24. In the same column, the light blue colour cells present the implemented actions in M13-M24 **in advance**. In the white colour cells are presented the N/A - Not Applicable actions (yet).

The column [C] of the table is presenting in details all the activities reported in the partners reports. Due to the complexity, the project website issue was also presented in a separate sub-chapter, at the end of this table.

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned action(s)	Planned dead-lines	Implemented actions
0	1	2	3
1. Training courses	1. The partners appointed by the GA as responsible for the training activity included in their organization TED Plans the task to organize the national workshops and training courses both for specialists and for non-specialists , as follows: Spain – UPV Germany – FAU Romania – PIETRE EDIL Greece – CRES Belgium – GEOGREEN (French) and GALLETTI (Dutch) Ireland – GEOSERV Switzerland – SUPSI Italy – UNIPD Summer / winter school – UNESCO and CNR 2. The WP leaders: WP1 - UNIPD, WP2 - FAU, WP3 – GALLETTI, WP4 – TECNALIA, WP5 – RED, WP6 – GEOSERV, WP7 – SOL, WP8 - RGS and the coordinator, WP9 – CNR included in their TED Plans the task to “train the trainers” for all the partners, before the national course sessions. 3. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to promote the national training courses.	Year #4 M37- M47	N/A

<p>2. Training tools: Manual / Manual Historical buildings / Brochure</p>	<ol style="list-style-type: none"> The leaders of the research WPs: UNIPD, FAU, GALLETTI, TECNALIA, RED, GEOSERV, SOL and UNESCO (for a Special Manual for Historic Buildings with the support of CNR-ISAC) included in their TED Plans the task to elaborate the corresponding chapters in all the training tools (Manuals and Brochures) and the corresponding short movies. The partners appointed as members of PSC – Project Specific Committees) according GA: CNR, UNIPD, RED, SOLINTEL and RGS included in their TED Plans the task of verification of all the training tool aspects: scientific, technic, administrative, financial, legal etc. The partner having English as native language: GEOSERV included in its own TED Plan the task of linguistic verification of all the training tools. The partners included in their TED Plans the (supporting) translation task for the training tools as follows: Spanish – UPV with TECNALIA support German – FAU with UBeG support Romanian – PIETRE EDIL with RGS support Greek – CRES French – GEOGREEN Italian – UNIPD with CNR support The partner responsible for editing the training tools: RGS included this task in its TED Plan. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the tasks related to printing and distributing appropriate training tools to their own stakeholders in the local events. 	<p>Year #3 M25- M36</p>	<p>Even if the Training Tool elaboration starting point was set by the GA in M25, in M12 – Management Meeting in Malta, the partners had the first consistent debate on training manuals. At that time, the partners advanced a lot of ideas regarding the training tools approach, both for the content and for the elaboration responsibility, management and timing.</p> <p>Then, in M18 - Management Meeting in Dublin the responsible partner for T8.2 – Training Courses (in which the Training Manual activity is included) - RGS started the presentation of a draft of training tools elaboration frame procedure, launching the debate of the main aspects requesting the partners decision.</p> <p>The scope was to define the unitary approach, to set preliminary responsibilities and timing and to clarify all the aspects of the Grant Agreement regarding these issues, including the interface with the European Centre of Excellence task.</p> <p>This first draft of the procedure was prepared as a management meeting presentation and was included in the private area of the website, as all the other internal documents of the meeting.</p> <p>For M24 – Management Meeting in Erlangen, the Task responsible prepared a presentation in which a detailed Elaboration Procedure was included starting from the fact that M25 should be the starting moment for training tools elaboration.</p> <p>This final procedure was conceived as an working instrument setting all the aspects regarding the objectives, the resources, the responsibilities, the timing, the formats, the interfaces that will allow to efficiently create representative and utile training tools by the partners involved in this task.</p> <p>The working procedure was verified by the Coordinator and stored in the private area of the website in order to be debated / approved in the postponed management meeting (Erlangen).</p> <p>NB – The M24 - Erlangen management meeting was postponed sine-die due to Coronavirus interdictions. After the debates in the next management meeting, the frame procedure will become a working procedure and its provisions will be implemented by the partners.</p> <p>On the 25th of March a Skype meeting on the training tools issue gathered the responsible partner RGS and the project coordinator representatives. The main decision was that the Training Manual keeps the training structure of the modules in European Centres of Excellence. The main elaboration responsibility was directly nominated to 10 specialists in the project. Each of the 9 chapters will have maximum 20-25 pages, each of the 4 volumes will have maximum 50-60 pages. The editing operation will be realized by a professional organization only for the ENGLISH training manual and for the ENGLISH Technical Brochure, not for 6 translated manuals and brochures. RGS will be responsible for the interfaces management and will collect the FINAL texts, tables and graphics from the responsible authors and will transmit them to the professional editor. All these decisions will be included in the procedure that will be approved by the next management meeting in Erlangen.</p>
<p>3. Project website / Partners websites / Social media / Project logo</p>	<ol style="list-style-type: none"> As main responsible for the project website, RGS included in its TED Plan its creation and continuous update. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to continuously and promptly supply the website responsible and administrator with all the information regarding the project progress and accomplishments. All the project partners : CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to continuously and promptly inform their own stakeholders about the project progress and accomplishments through all social media environments and their own organization websites, creating special options in the menu and including links to the GEO4CIVHIC website. 	<p>M1 – M48</p>	<p>The project website geo4civhic.eu was finalized in M6 and is continuously updated since than.</p> <p>In the period M12-M24 the project website was supplied by the partners with information and data about events in which they directly participated, with the files and data reflecting the internal work (management meeting agendas, presentations and minutes) and with the finalized deliverable. The partners also included information about GEO4CIVHIC in their own websites.</p> <p>The main events included in the project website and in which the partners presented the content of the GEO4CIVHIC project during the reported period of time are the following:</p> <ul style="list-style-type: none"> ▪ REHVA 13th Congress CLIMA – Bucharest - Romania – May 2019 ▪ European Geothermal Congress - The Hague – The Netherlands – June 2019 ▪ SET Plan & ENVE Conference – Bucharest – Romania – June 2019 ▪ Shallow Geothermal Energy days – Brussels – Belgium – September 2019 ▪ 18th month Management Meeting – Dublin – Ireland – October 2019 ▪ “Long Night Science” FAU – Erlangen, Nurnberg and Furth – Germany – October 2019 ▪ Renewable Energy Expo “Key Energy” – Rimini – Italy – November 2019 ▪ “Ecomondo” Fair – Rimini – Italy – November 2029

			<ul style="list-style-type: none"> Geothermie Kongress – Munich – Germany – November 2029 50th Congress for HVAC of the Serbian HVAC Association – Belgrade – Serbia – December 2019 <p>Social media Environments - FB, LinkedIn, Twitter and Instagram were also activated and supplied with information: Facebook: https://www.facebook.com/pg/geo4civhic, Twitter: https://twitter.com/GEO4CIVHIC, LinkedIn: https://www.linkedin.com/company/geo4civhic, YouTube: https://www.youtube.com/channel/UC69rkfTegUOzjgOgN1xD9bg</p> <p>The website and social media activity will be separately and largely presented in the next sub-chapters of this deliverable.</p>
4. Demo site information / Demo software products and tools	The WP5 leader RED and the other partners involved in the demo cases: CNR, UNIPD, UPV, GALLETTI, FAU, TECNALIA, GEOSERV, HYDRA, TKI, GEOGREEN, UNESCO, PIETRE, DLH, CRES, SUPSI, RGS included in their own TED Plans the tasks of supplying and disseminating the information for the real cases and virtual cases studies in order to be used for identification, analyses and modelling activities and for the stakeholders information.	M25-M48	N/A
5. Scientific / Technical Articles in specialized media	<ol style="list-style-type: none"> All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of informing the national and European specialized media through minimum 3-6 articles on the project duration. All the partners included in their TED Plans the obligation to communicate the publication and to upload the articles in the GEO4CIVHIC project website. CNR, UNIPD, RED and GALLETTI included in their TED Plan the task of cooperating in the creation of articles for Scientific publications. 	M7-M48	<p>In the reported period of time M13-M24, a large number of partners, especially CNR, UNIPD, RED, GEOSERV and GALLETTI, is taking part in the creation of scientific publications. Subsequently the national and European specialized body will be informed and the publication will be uploaded in the GEO4CIVHIC project website.</p> <p>At the same time, some partners contributed in the elaboration of articles for specialized media in which they presented the GEO4CIVHIC project from objectives to results.</p> <p>They were:</p> <p>GEOSERV - Contribution to 'Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC' – EGC2019 M15</p> <p>GALLETTI - Contribute to technical Article: Manuscript ID: energies-552626 - Title: ENERGETIC AND EXERGETIC ANALYSIS OF LOW GWP REFRIGERANTS AS SUBSTITUTES FOR R410A IN GROUND SOURCE HEAT PUMPS (GSHP), in cooperation with CNR, UNIPD, RED, CRES.</p> <p>THYSSEN - Technical publication „Development of a compact, rotation-vibration drilling head to install co-axial heat exchangers in urban areas“, in cooperation with FAU, HYDRA, RED, GEOSERV, GEO GREEN, UNIPD, ISAC.</p>
6. Scientific / Technical Movies	The Coordinator CNR and the WP leaders WP1 - UNIPD, WP2 - FAU, WP3 – GALLETTI, WP4 – TECNALIA, WP5 – RED, WP6 – GEOSERV, WP7 – SOL included in their TED Plans the task of exemplifying and completing the information they included in each chapter of the Manuals with relevant short scientific and technical movies. All the other partners included in their TED plan the task of cooperating at the movies with information / data / images from their own real and virtual demo-cases.	Year #3-4 M25-M36	N/A
7. European Centres of Excellence for shallow geothermal applications	The partners responsible / involved for / in this activity in the GA, meaning: UNIPD, CNR, RED, HYDRA, GALLETTI (South Europe – Italy), FAU, GEOSERV, TKI, UNESCO, UBeG (Central – North Europe – Germany), UPV, SOL, TECNALIA (Western Europe – Spain), RGS and PIETRE (Eastern Europe – Romania) included in their TED Plans the task to implement the action and to support the teaching and knowledge dissemination through them.	Year #4 M37-M48	<p>Due to the intrinsic link between the content and timing of the Training Tools and the objectives of the European Centres of Excellence – EcoE, the first debates between partners on this subject started in the M12 and M18 Management Meetings. The scope was to clarify Task 8.6 - Definition and organisation of “European centres of excellence for shallow geothermal application in civil and historical buildings”.</p> <p>During the Dublin management meeting (M18), main features of the CoE were debated for the first time, and some of them were set-up, such as: definition, core aspects (team, focus area, purpose), benefits and steps in establishing a ECoE. The involved partners focussed on a lot of aspects regarding the (a) objectives, (b) resources during the project duration and after the project finalization, (c) curricula of the courses offered by the ECoE, (d) the implementation aspects etc.</p> <p>After the mentioned management meetings and especially after November 2019 the responsible partners: UPV</p>

			<p>(main responsible – coordinator of the task) and UNIPD, FAU and RGS met in a couple of skype meetings and finally decided on a lot of technical and management aspects.</p> <p>On February 18, 2020, a web conference was organized with the participation of partners RGS, UPV, FAU and RED on the topic – the conclusions of the meeting were synthesized in a minute. The web conference also concluded to organize a special meeting on the ECoE topic during the Erlangen management meeting on March 25th, 2020.</p> <p>On March 24, 2020, due to the postponement of the management meeting in Erlangen, a second web-meeting was initiated by UPV with the participation of all representative partners in this issue: RGS, UPV, UNIPD, FAU, RED and CNR ISAC. The decisions were on the training modules (with consequences on the Training Tools structure), on the module’s responsible persons and on the necessary future cooperation agreement between the 4 ECoEs, as far as their activity is specifically organize based on the regional needs. In the next weeks the approach must substantially progress in order to also allow the Training Tools issue to progress as far as the responsibilities in ECoE training modules and in the training manual must be coherent.</p>
8. Participation in Standardization Bodies	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of contacting their national and the European standardization bodies in order to contribute at the update of the current standards with provisions resulted in the project research activity for historic buildings applications.	Year #3- #4 M25- M48	<p>Some partners in the project are directly involved in the European standardization activity and used their position to continuously present GEO4CIVHIC in these structures. They had a substantial contribution in the standardization activity including in the project technical themes, as follows:</p> <p>GEOSERV - Participation to CEN TC451 on borehole heat exchangers and development of final draft technical standard for public consultation. Input to national Technical Working Committee (NSAI and SEAI) on Heat pumps (NSAI/TC 031/SC 06 – Heat Pumps) for the completion of BHE aspects.</p> <p>UNESCO - Participated in two meetings in May and December 2019 organized by Green Building Council Italia for the possible standardization of the new technologies developed by GEO4CIVHIC.</p> <p>RGS - participated at the regular web-meetings of CEN TC 451 “Water and geothermal boreholes” in which the last working draft was finalized on January 20, 2020. Documents available at https://cen.iso.org/livelink/livelink?func=ll&objId=8429477&objAction=browse (user name and password required for access).</p> <p>UBEG actively cooperated in the following standardization actions:</p> <ul style="list-style-type: none"> • Contribution to German standard VDI 4640 (member of committee): Final work on new edition of VDI 4640-2, released June 2019; finalization and review of English translation for VDI 4640-5 on TRT, release expected spring 2020; participation in new sub-committee VDI 4640-6 on grouting materials, set up in October 2019. • Participation in the committee’s meetings for VDI 4640 - sub-committee VDI 4640-5. • Realization of a Newsletter article (in German) on the release of VDI 4640-2: “eufassung der Richtlinie VDI 4640 Blatt 2 und die Normierung für erdgekoppelte Wärmepumpen. Geothermische Energie 93/19, p. 14-17, Berlin • Permanent communication with members of CEN TC/451 and with the respective German mirror group at DIN.
9. Links with EU Programs / Platforms / Initiatives	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of identify / contact / link / cooperate in a synergic way with and national and European programs, platforms and initiatives.	M7-M48	<p>A lot of partners, especially CNR, UNIPD, UPV, RED, GEOSERV, FAU, RGS, UBeG, UNESCO, PIETRE and DLH, continued to maintain the information exchange with other geothermal projects and ECTP-EGEC-RHC platforms as it is presented in the following lines.</p> <p>CNR – maintained the communication with coordinator partner of GEOFIT H2020 in order to jointly organize an event in the main frame of Sustainable Places 2020 is in progress;</p> <p>UNIPD - participated to the joined activities for the European Shallow Geothermal Mapping meetings;</p> <p>UPV - attendance at all project meetings within H2020-project GEOCOND, as a coordinator and reporting on possible synergies with GEO4CIVHIC. They also participated at all the RHC-ETIP events;</p> <p>RED - won and it is now developing a regional project (POR FESR 2014-2020) with EU, regional and national funds. In this project RED will create a program to help the diffusion and dissemination of the HYDRA-RED method and geothermal activities in the Veneto region in Italy;</p>

			<p>GEOSERV – participated in RHC Geothermal Panel, contribution to non-technical scientific work programme based on the initial results of the GEO4CIVHIC project; presented GEO4CIVHIC Project work programme at joint GeoFIT and Engineers Ireland workshop on geothermal energy in Ireland (M13)</p> <p>FAU - currently working on a cooperation including the national ZIM-Network: Soil2heat http://soil2heat.net),</p> <p>RGS - participated in BE Horizons Cluster was formed as follow-up of the INEA meeting on Oct. 8th, 2019 – attended by the coordinators of the EU funded projects on RES. The partners of the BE Horizons cluster are the following projects: GEO4CIVHIC, Hybrid BioVGE, IDEAS, MAKING-CITY, RE-COGNITION, RES4BUILD, SolBio rev, SWS-Heating, TRI-HP. Cluster’s website: http://www.solbiorev.eu/partner-projects; EUSEW 2020 – GEO4CIVHIC Projects Application for the “INNOVATION” Award – Application No. 3060; Application date 10/02/2020; prepared the application for EUSEW 2020 - “Women in Energy Award” - Application No. 3160; Application date 28/02/2020),</p> <p>UBeG - attended all project meetings within H2020-project GEOCOND, as a partner there. Attended (B Sanner) the meeting of the geothermal panel of RHC-ETIP on 13 June 2019 in den Haag and the webinar of the panel on 15 May 2019, and took part in the virtual meeting of the steering committee of the geothermal panel of RHC-ETIP on 5.3.2019. Co-organised the inter-project workshops on mapping for shallow geothermal (12 June 2019, Den Haag and 25 Sept 2019, Brussels, both mainly for project GEOCOND); further workshop planned for 4 March 2020 in Offenburg, ahead of GeoTherm fair (mainly for GEO4CIVHIC, together with partner UPD), but event postponed in line with postponement of the GeoTherm fair due to Coronavirus);</p> <p>PIETRE Edil - presented GEO4CIVHIC project in all InnoWEE project meetings.</p> <p>DLH - The H2020 national contact point, Mr. Mark Meliak, has been contacted, met and informed about GEO4CIVHIC for further cooperation and synergies.</p>
10. Internal Project meetings	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of actively participation in internal project meetings.	M1-M48	<p>Within the reported period of time all the partners participated at a 2 days management meetings that were organized in Malta (M13) and Dublin (M18) as follows:</p> <ol style="list-style-type: none"> The 12 months Management Meeting was hosted by Din l-Art Helwa in Valletta (Malta), between April 1st and 3rd, 2019. Malta (organized by DLH) https://geo4civhic.eu/events/12-month-management-meeting-in-malta/ The 18th month Management Meeting took place in Dublin, Ireland, between 9th and 11th October, 2019 (organized by GEOSERV_ The H2020 project GEO4CIVHIC _Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings)” https://geo4civhic.eu/events/18-month-management-meeting-in-dublin/ <p>The meetings were organized by the local partners under the supervision of the coordinator. All the partners actively participated in the project management meetings and presented the WP / Tasks in which they are involved or they are leading.</p> <p>The M13 and M18 meetings also included 1 day internal meetings and site visits for the demo cases. The internal meetings were focused on punctual but stringent aspects nominated by WP and task leaders as necessitating longer debates between only directly involved partners.</p> <p>The M24 meeting planed in Erlangen was postponed because of the Coronavirus pandemic. The partners decided to organize online meetings in order to discuss the most crucial points.</p> <p>Supplementary, between November 2019 and March 2020, but especially after the postponement of the meeting in Erlangen, a lot of on-line / skype meetings were organized by groups of partners in order to clarify specific aspects in different work packages, tasks and deliverable content.</p> <p>All the WP leaders participated in the on-line review meeting (M18 report).</p> <p>All the information regarding the meetings: agendas, presence, presentations and minutes were uploaded in the website – PRIVATE area.</p>
11. Congress / Conference / Workshop	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participa-	M7-M48	<p>The participation of almost all project partners in almost all important European and national events in geothermal domain was one of the most visible way to promote the GEO4CIVHIC project.</p> <p>The presentations in congresses, conferences and other scientific, technical events were listed by the</p>

<p>presentations</p>	<p>tion in minimum 2 national and international congresses, conferences and workshops with oral communications / papers /, posters, leaflets and brochures presenting project aims and scope, partial and final results of the project activity. Some partners specified the events: UNIPD (EGC 2019, Geofluid 2018, CLIMA 2019, WGC 2020), RGS (EGC 2019 Den Haag, REHVA Clima 2019 Bucharest), UBeG (GeoTherm Offenburg 2020 and / or 2021, EGC 2019, ISEC 2018 Graz), UNESCO (World Heritage Site of Ferrara and its Po Delta-Angels' gate, World Heritage of Split Croatia).</p>		<p>partners in their reports / inputs and are detailed in the next chapter of the deliverable.</p>
<p>12. National Workshops in partners countries</p>	<p>The partners appointed by the GA as responsible for the training activity included in their TED Programs the task to organize the national workshops as follows: Spain – UPV Germany – FAU Romania – PIETRE EDIL Greece – CRES Belgium – GEOGREEN (French) Ireland – GEOSERV Switzerland – SUPSI Italy – UNIPD Summer / winter school – UNESCO and CNR</p>	<p>Year #3 M37- M48</p>	<p>N/A</p>
<p>13. Poster Sessions</p>	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participation in minimum 2 national and international poster sessions in different national and European events presenting project aims and scope, partial and final results of the project activity.</p>	<p>M7-M48</p>	<p>CNR 1. The Renewable Energy Expo “Key Energy” was organized in Rimini (Italy), between 5-8 November, 2019. ISAC_CNR and RED had displayed a poster presenting both projects GEO4CIVVIC and Cheap-GSHPs. https://geo4civvic.eu/events/key-energy-renewable-energy-expo-2019/ 2. The Cheap-GSHPs and GEO4CIVVIC consortia were represented at the event by the coordinator. A poster presenting both projects (Cheap-GSHPs and GEO4CIVVIC) was displayed during the event. The participants were also distributed leaflets and brochures of the two EU funded projects. https://geo4civvic.eu/events/event-shallow-geothermal-energy-days-september-24-25-2019/ FAU - M19 Long Night of Science https://geo4civvic.eu/events/long-night-of-science-lange-nacht-der-wissenschaften-at-fau/ HYDRA participated with poster in the fairs: 1. Bauma 2019 in Munich (Germany), 8-14/04/2019 2. Ecomondo 2019 in Rimini (Italy), 5-8/11/2019</p>
<p>14. Participation at fairs</p>	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participation in minimum 1 national / European fair and to disseminate information regarding project objectives and results.</p>	<p>M25- M48</p>	<p>CNR - The Renewable Energy Expo “Key Energy” was organized in Rimini (Italy), between 5-8 November, 2019, https://geo4civvic.eu/events/key-energy-renewable-energy-expo-2019/ UPV - It was planned to participate GeoTHERM 2020 in Offenburg, but it has been postponed. Participation in WGC 2020 (Reykjavik, Iceland, April 27 - May 1) is also planned, if not cancelled. GEOSERV - Planned Participation and presentation and the The Smart & Green Building Expo (M24) – now cancelled due to Coronavirus. HYDRA participated in two fairs in 1. Bauma 2019 in Munich (Germany), 8-14/04/2019 2. Ecomondo 2019 in Rimini (Italy), 5-8/11/2019 UBeG – Planed a visit to GeoTherm fair and a participation in related conference in Offenburg on 5-6 March 2020 planned and prepared, however, event postponed on short notice due to Coronavirus measures. SUPSI - Participated at “Ticino Impiantistica” fair (2019-oct-10/12) as reference for the Italian Switzerland of the national Geothermie-Schweiz association; also discussion and presentation of the GEO4CIVVIC project.</p>

			<p>GEOGREEN - Presentation of the project on 15 oct 2019 to FAAST (Think Tank Group) in Brussels</p> <p>SOL – Presented the new technology in a specialized workshop organized during the CEVISAMA fair 2019</p>
<p>15. Flyers / brochures / leaflets / factsheets / semester newsletters</p>	<p>1. As TED responsible partner, RGS included in the TED plan the elaboration of project's leaflet, initial brochure, factsheets, newsletters.</p> <p>2. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the tasks of disseminating the project mentioned documents (leaflet, initial brochure, factsheets, newsletters) and to create their own dissemination tools in the national language: roll-ups, posters, flyers for their own targeted stakeholders.</p>	M7-M48	<p>In the first year of the project RGS with the partners support created the Project leaflet and Brochure, Newsletter #1 and the Factsheet #1 that were uploaded in the project website and reported in D8.1. https://us19.campaign-archive.com/?u=63b53ed865d159e6d793fb7e4&id=a1987e2a0e . CNR coordinated the realization of the mentioned materials and disseminated them in all the events.</p> <p>In M13-M24 all the other partners contributed and reviewed the GEO4CIVHIC brochure and leaflet and distributed them in the scientific events in which they participated, to business partners, to national associations in the respective countries, to different categories of stakeholders, clients and collaborators mainly to those involved in the civil and historical buildings rehabilitation.</p>
<p>16. Press releases</p>	<p>CNR and RGS included in their TED Plans the elaboration of project press releases, of joint press releases with the other EU funded projects for occasional events (congresses, conferences, at regional, national and international level.</p>	M7-M48	<p>CNR - On December 2019 the Press "landslides, cultural heritage, energy saving. The high-tech projects of the CNR of Padua" is released on Rai news. http://futuro24.blog.rainews.it/2019/12/13/futuro24-frane-beni-culturali-risparmio-energetico-i-progetti-high-tech-del-cnr-di-padova/</p> <p>FAU - realized and distributed press releases in M21 https://www.geoenergy.nat.fau.de/2019/12/03/neues-projektvideo-geo4civhic-projekt/ and M20 https://www.geoenergy.nat.fau.de/2019/11/15/ag-oberflaechennahe-geothermie-dgk-2019/</p> <p>CRES – realized and distributed a press release regarding Alexandroupolis virtual demo case that was also presented in local TV channel.</p>
<p>17. Journal articles</p>	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the cooperation in the elaboration of articles in national and European journals in order to present the project partial and final research results.</p>	M7-M48	<p>CNR</p> <p>Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies. https://geo4civhic.eu/wp-content/uploads/2019/10/energies-12-03192.pdf</p> <p>Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps. https://www.mdpi.com/1996-1073/12/18/3538</p> <p>New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps. https://www.adv-geosci.net/49/47/2019/</p> <p>An updated ground thermal properties database for GSHP applications. https://www.sciencedirect.com/science/article/pii/S0375650519301944?via%3Dihub</p> <p>A simulation-based comparison between the thermal behaviour of coaxial. https://www.mdpi.com/1996-1073/12/12/2321</p> <p>Implementation of a geothermal heat pump system in a solar passive house. https://www.e3s-conferences.org/articles/e3sconf/abs/2019/11/e3sconf_enviro2018_07014/e3sconf_enviro2018_07014.html</p> <p>UNIPD</p> <p>Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538</p> <p>New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p> <p>Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies https://www.mdpi.com/1996-1073/12/16/3192</p> <p>Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/10/The-H2020-project-GEO4CIVHIC-Most-Easy-Efficient-and-Low-Cost-Geothermal-Systems-for-Retrofitting-Civil-and-Historical-Buildings.pdf</p>

		<p>A simulation-based comparison between the thermal behavior of coaxial https://www.mdpi.com/1996-1073/12/12/2321</p> <p>RED Journal: Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538</p> <p>Journal: Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies https://www.mdpi.com/1996-1073/12/16/3192</p> <p>A simulation-based comparison between the thermal behavior of coaxial https://www.mdpi.com/1996-1073/12/12/2321</p> <p>GEOSERV Journal: New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p> <p>GALLETTI Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538 New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p> <p>TECNALIA Journal: New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/ https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf</p> <p>THYSSEN EGEC geothermal: „Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC“ https://zenodo.org/record/3557745#XnypY3LSLIU</p> <p>UNESCO Contribution to paper presented at the European Geothermal Congress 2019, Den Haag, The Netherlands, 11-14 June 2019 http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/233.pdf</p> <p>Contribution to the paper “Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies” paper submitted to MDPI journal https://www.mdpi.com/1996-1073/12/16/3192/pdf</p> <p>Contribution with the paper “The H2020 project GEO4CIVHIC – Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings” to the Journal REHVA https://www.rehva.eu/rehva-journal/detail?tx_wbjournals_journaldetail%5Baction%5D=download&tx_wbjournals_journaldetail%5Bcontroller%5D=Journal&tx_wbjournals_journaldetail%5Bjournal%5D=61&cHash=eec673742532fe913a2dbf131c93a6e2</p> <p>RGS Implementation of a geothermal heat pump system in a solar passive house (Conference of the TUCEB Doctoral School, Oct. 2019) https://geo4civhic.eu/wp-content/uploads/2018/11/DSC_2018_paper_17.Final_acknowledgment.pdf</p> <p>Sensitivity analysis using simulations for a ground source heat pump – implementation on a solar passive house (REHVA Clima 2019 Congress, Bucharest – Romania) https://geo4civhic.eu/wp-content/uploads/2019/06/Clima_2019_paper_488-2.pdf</p> <p>CRES - CRES contributed to papers concerning the project and its first results, which were published or submitted.</p>
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			<p>ted for publication in scientific journals and international conferences.</p> <p>Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538</p> <p>New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p> <p>Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Borehole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321</p> <p>HYDRA</p> <p>Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Borehole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321</p> <p>GEOGREEN</p> <p>TAKE PART TO FOLLOWING JOURNAL PUBLICATIONS: "A SIMULATION-BASED COMPARISON BETWEEN THE THERMAL BEHAVIOR OF COAXIAL https://www.mdpi.com/1996-1073/12/12/2321</p> <p>Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Borehole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321</p>
18. E-mails, mailing lists, online discussion lists, blogs	All the project partners have included in their TED Plans the task to realize and continuously update the mailing lists, online discussion list, contact list for newsletter, stakeholders lists for a large dissemination according the GDPR rules.	M1-M48	<p>All the partners continuously updated the E-mails list, mailing dissemination lists, online discussion lists, stakeholders list, national authorities lists, in respect of all applicable regulation regarding GDPR.</p> <p>DLH - Din l-Art Helwa, National Trust of Malta has issued internal newsletters about the project implementation, whenever this had relation to the Maltese demo case. https://dinlartelwa.org/news/din-l-art-helwa-dlh-national-trust-of-malta-has-organised-the-general-meeting-of-the-eu-funded-project-geo4civvic/</p>
19. Deliverables / Reports / other documents according GA	All the WP responsible partners UNIPD, FAU, GALLETTI, TECNALIA, RED, GEOSERV, SOL, RGS and CNR have included in their TED Plans the task to realize / coordinate the elaboration of the 68 deliverables in the project (WP1 – 6, Wp2 – 7, WP3 – 7, WP4 – 13, WP5 – 9, WP6 – 7, WP7 – 6, WP8 – 12, WP9 – 1)..	M1-M48	<p>All the partners participated with technical and scientific material, information and data in the elaboration of the project deliverable, according their obligations stipulated in the GA.</p> <p>All the responsible partners for different deliverables submitted them in EC portal, in due time.</p> <p>All the submitted deliverables were simultaneously uploaded in the website, in public or private area depending on their settings.</p>

2. Details on some activities implemented in M13-M24

2.1 Project website

The project website is available at www.geo4civhic.eu and its elaboration process is largely described in the deliverable D8.2 “Production of project website”.

As responsible for WP8, the **Romanian Geoexchange Society** has undergone the assigned activity regarding the construction, maintenance and update of the project website – as this website shall represent the most important platform for disseminating the information about the projects’ results. The creation of the website contract was done in an early stage of the project life in order to allow the start of the dissemination from the first months of the project.

The **main events** in which the partners participated between M13 and M24 and that are presented in the website at the respective links and are the following:

1. **REHVA 13th World Congress CLIMA - Bucharest (Romania), May 26th - 29th, 2019**
<https://geo4civhic.eu/events/rehva-congress-clima-2019/>
2. **European Geothermal Congress – The Hague (The Netherlands), June 11th – 14th, 2019**
<https://geo4civhic.eu/events/european-geothermal-congress-the-hague-2019/>
3. **SET Plan & ENVE Conference – Bucharest (Romania), June 12th – 14th, 2019**
<https://geo4civhic.eu/events/set-plan-enve-conference-bucharest-12-14-june-2019/>
4. **Shallow Geothermal Energy Days – Brussels (Belgium), September 24th - 25th, 2019**
<https://geo4civhic.eu/events/event-shallow-geothermal-energy-days-september-24-25-2019/>
5. **18th month Management Meeting – Dublin (Ireland), October 9th - 11th, 2019**
<https://geo4civhic.eu/events/18-month-management-meeting-in-dublin/>
6. **„Long Night of Science“ / „Lange Nacht der Wissenschaften“ - Friedrich-Alexander-University (FAU) in Erlangen, Nuremberg and Fürth (Germany), October 19th, 2019**
<https://geo4civhic.eu/events/long-night-of-science-lange-nacht-der-wissenschaften-at-fau/>
7. **Renewable Energy Expo “Key Energy” - Rimini (Italy), November 5th – 8th, 2019**
<https://geo4civhic.eu/events/key-energy-renewable-energy-expo-2019/>
8. **“Ecomondo” Fair - Rimini (Italy), November 5th - 8th, 2019**
<https://geo4civhic.eu/events/ecomondo-2019/>
9. **Geothermie Kongress Munich (Germany) – November 20-21, 2019**
<https://geo4civhic.eu/events/geothermie-kongress-munich-2019/>
10. **50th Congress for Heating, Ventilation and Air Conditioning of the Serbian HVAC Association – Belgrade (Serbia), December 4-6, 2019** <https://geo4civhic.eu/events/50th-congress-for-heating-ventilation-and-air-conditioning-of-the-serbian-hvac-association/>

The articles presented by the project consortium in **scientific journals** were also included in the project website; they are the following:

- **REHVA Journal – August 2019** The H2020 project GEO4CIVHIC – Most Easy, Efficient and Low-Cost Geothermal Systems for Retrofitting Civil and Historical Buildings
<https://geo4civhic.eu/wp-content/uploads/2019/10/The-H2020-project-GEO4CIVHIC-Most->

[Easy-Efficient-and-Low-Cost-Geothermal-Systems-for-Retrofitting-Civil-and-Historical-Buildings.pdf](#)

- **ENERGIES – August 2019** - Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies - <https://geo4civhic.eu/wp-content/uploads/2019/10/energies-12-03192.pdf>

The project consortium also presented GEO4CIVHIC in a multitude of **congresses and conferences articles**; all of them were also presented in the GEO4CIVHIC website. The events are the following (the articles / presentations are separately listed in the next chapter).

1. ***The European Geothermal Congress – The Hague (The Netherlands), June 11-14, 2019***
2. ***REHVA 13th World Congress CLIMA – Bucharest (Romania), May 26-29, 2019 –***
3. ***Conference of the TUCEB Doctoral School – Bucharest (Romania), October 2019***
4. ***Shallow Geothermal Energy Days – Brussels (Belgium), September 2019***
5. ***Conference on Sustainable Development of Energy, Water and Environment Systems, Dubrovnik - 1-5 October, 2019***
6. ***50th Congress for Heating, Ventilation and Air Conditioning of the Serbian HVAC Association – Belgrade (Serbia), December 4-6, 2019***

The activity of the project was also presented / reflected in the **social media channels**:

- **Facebook** link: <https://www.facebook.com/pg/geo4civhic> - 14 posts, 47 followers
- **Twitter** link: <https://twitter.com/GEO4CIVHIC> - 26 posts, 74 followers
- **LinkedIn** link: <https://www.linkedin.com/company/geo4civhic> - 26 posts, 650 followers
- **YouTube** link: <https://www.youtube.com/channel/UC69rkfTegUOzigOgN1xD9bg> 1 post (the animation movie)

All the posts on all the social media channels contains also **links to social media channels of the European Commission, of the Horizon 2020 Program**, or of the specific events to which they are dedicated, such as: [#H2020](#) [#INEA](#) [#geothermal](#) [#research](#) [#innovation](#) [#energy](#) [#science](#) [#geothermie-kongress](#). In this way, the access to a larger number and categories of stakeholders is increased.

The qualitative and quantitative activity in the project website is reflected in the **GEO4CIVHIC Monthly Dashboard** sent to all the partners on the 1st of each month for the previous one. Some conclusions extracted from the dashboard are the following:

- In the second year (M13-M24) the number of visits was double in comparison with the first year (M1-M12): 4494 in year #2, 2220 in year #1;
- In the first year the most visited page was “Consortium compenence” and in the second year the most visited pages were “Events” and “Publications”;
- The visitors countries are predominantly the partners’ countries but also other countries from Europe, Asia and America;
- There is a large majority of visits initiated from the desktop but in year #2 the number of visits initiated from the mobile is increasing.

2.2 Congresses and Conferences presentations

The different presentations / articles were elaborated for the specific purpose of a congress or conference by groups of specialists from different project partners. They are the following:

CNR

1. EGC 2019 congress presentation “Archetype definition for analyzing retrofit solutions in urban areas in Europe” hold at Bucharest in 26-29, May, 2019.
https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf
2. Article: Archetype definition for analyzing retrofit solutions in urban areas in Europe.
https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf
3. The congress “Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project – GEO4CIVHIC” is hold in 14-July -2019.
<https://geo4civhic.eu/wp-content/uploads/2019/06/233.pdf>
4. The article “Economic, geological and technical potential mapping test for GSHP systems in Europe” is published in 14-June-2019. <https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf>
5. The workshop “Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects” is held at Brussels, Belgium in 25.09.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf
6. Article “Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems.” is published in 06.10.2019.
https://geo4civhic.eu/wp-content/uploads/2019/10/Cadelano_et_al_14thSDEWES_abstract.pdf
7. Congress: double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUilVoaXhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

UNIPD

1. EGC 2019 Geological and technical potential mapping test for GSHP systems in Europe. In: Proceedings of the European Geothermal Congress 2019, The Hague, The Netherlands (11-14 June 2019)
2. A Decision Support System (DSS) and a design tool for helping stakeholders and designers in the choice of GSHPs. In: Proceedings of the European Geothermal Congress 2019, The Hague, The Netherlands (11-14 June 2019)
3. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnyyY3LSLIU>
4. Conference: Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems
<https://zenodo.org/record/3557899#.XnuVuHLSLIU>
5. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
6. presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe
https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf
7. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe
https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf
8. Economic, geological and technical potential mapping test for GSHP systems in Europe -
<https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf>
9. Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects
https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf
10. Double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020 (congress)
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUilVoaXhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

[AhXIAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ](https://zenodo.org/record/3557745#.XnypY3LSLIU)

UPV

1. Congress: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>
2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
3. PRESENTATION: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf
4. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf
5. Conference: Optimization methodology of borehole heat exchangers (BHE) according geometric characteristics, material properties and installation and operating cost <https://zenodo.org/record/3558273#.XnuVcnLSLIU>

RED

1. EU Sustainable Energy Week (EUSEW2020) from 2019 June 17th and June 21st. <https://www.eusew.eu/>
2. Congress “Innovative drilling methods, heat pumps and tools to address shallow geothermal in built environment: H2020 project – GEO4CIVHIC” hold in 14-July -2019. <https://geo4civhic.eu/wp-content/uploads/2019/06/233.pdf>
3. The workshop “Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects” is held at Brussels, Belgium in 25.09.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf
4. Article “Impact of Climate Conditions and Energy Prices on Museums Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems.” is published in 06.10.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/Cadelano_et_al_14thSDEWES_abstract.pdf
5. Congress: double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020 <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUiLvoAhXIAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

GEOSERV

1. Energy and Rural Business Show Ireland (M15)
2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
3. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe <https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf>
4. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe <https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf>
5. Congress: double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020 <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUiLvoAhXIAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

GALLETTI

1. Presentation of the project within agents and customers of the Galletti group in M18 during the ISC #3 - International Sales Conference 3rd Edition - the project objectives were presented
2. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>
3. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf

TECNALIA

1. TECNALIA assisted to the CLIMA Congress in Bucharest (M14), where a paper describing the project was presented by CNR - Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>
2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf

THYSSEN

1. Participation at „International Workshop on Mapping Shallow Geothermal Energy for Spatial Energy and Environmental Management Plans – challenges and approaches for the next decade 2021 – 2030” in Offenburg
2. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>

UNESCO

1. Contribution to the presentation at the CLIMA 2019 conference (<https://www.clima2019.org/>) https://www.clima2019.org/uploads/files/PROGRAM%20CLIMA%202019_22.05.2019_final.pdf
2. Contribution to the Der Geothermie congress 2019 https://www.der-geothermiekon-gress.de/fileadmin/user_upload/DGK/DGK_2019/DGK_2019_Programm_DE_20190930_web.pdf
3. Contribution to the European Geothermal Congress 2019 <http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/proceedings-V2-2.pdf>
4. Contribution with the conference “The H2020 project GEO4CIVHIC – Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings” to the Journal REHVA https://www.rehva.eu/rehva-journal/detail?tx_wbjournals_journaldetail%5Baction%5D=download&tx_wbjournals_journaldetail%5Bcontrol%5D=Journal&tx_wbjournals_journaldetail%5Bjournal%5D=61&cHash=eec673742532fe913a2dbf131c93a6e2
5. Contribution to conference presented at the European Geothermal Congress 2019, Den Haag, The Netherlands, 11-14 June 2019 <http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/233.pdf>
6. Mention in CHEAP Deliverable <https://cheap-gshp.eu/wp-content/uploads/2019/05/2019-05-29-Cheap-GSHPs-HB-Manual-ITALIAN-FINAL.pdf>
7. Contribution to the paper “Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies” paper submitted to MDPI journal <https://www.mdpi.com/1996-1073/12/16/3192/pdf>

FAU

1. M 22 Keynote Presentation at the 2nd Forum Erdwärme und Wärmepumpe in Bayern – Gastgeber: Bundesverband Wärmepumpe (BWP) e.V. und Erdwärme Gemeinschaft https://www.geothermie.de/fileadmin/user_upload/Programmflyer_Fachforum-2020_web.pdf
2. **Conference:** Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>

3. **Conference:** H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
4. **Conference:** Economic, geological and technical potential mapping test for GSHP systems in Europe <https://geo4civhic.eu/wp-content/uploads/201906/385.pdf>
5. European drillability mapping for shallow geothermal applications <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUiLvoAhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

RGS

1. **Feasibility considerations regarding the implementation of a GSHP system for an industrial facility** (50th Congress for Heating, Refrigeration and Air Conditioning 2019, Belgrade – Serbia) https://geo4civhic.eu/wp-content/uploads/2019/12/50-KGH_Paper_Robert-Gavriliuc.pdf
2. Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>

CRES

1. Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps <https://www.mdpi.com/1996-1073/12/18/3538>
2. Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>

HYDRA

Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>

UBEG

1. Conference: A NEW EFFORT TO ADDRESS SHALLOW GEOTHERMAL ENERGY SUPPLY IN THE BUILT ENVIRONMENT: H2020-PROJECT GEO4CIVHIC <https://zenodo.org/record/3557769#.Xny2LHLSLIU>
2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
3. Presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf
4. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf
5. Congress: European drillability mapping for shallow geothermal applications <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUiLvoAhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

GEOGREEN

1. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>
2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
3. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe <https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf>
4. DOUBLE U-TUBE BOREHOLE HEAT EXCHANGERS." IN JUNE 2019 AND "EUROPEAN DRILLABILITY MAPPING FOR SHALLOW GEOTHERMAL APPLICATIONS" IN JANUARY 2020 (CONGRESS) <https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUiLvoAhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

[hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUilvoAhXlAxAIHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ)

5. congress: European drillability mapping for shallow geothermal applications
<https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUilvoAhXlAxAIHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ>

DLH

1. DLH being in charge of the organization of the Project end event, would like to plan the merging of the national workshop (M46) for the presentation of the activities implemented at the Msida Bastion Garden in Floriana (Malta – real case study) with the Final Conference (M48). This would increase cost effectiveness and efficiency in our activities.
2. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC <https://zenodo.org/record/3557745#.XnypY3LSLIU>
3. Presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf
4. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf

PIETRE

Participated at CLIMA 2019 CONFERENCE where we distributed 50 GEO4CIVHIC flyers and brochures.

2.3 Other implemented activities by the partners

All the important project documents – meetings agenda, presentations, minutes of meetings and, of course, the due deliverable that were uploaded in EU portal, were also uploaded in the project website, in PUBLIC area <https://geo4civhic.eu/public-publications/> or in PRIVATE area <https://geo4civhic.eu/private-publications/> depending on the GA rules and on their content. The deliverables were finalized and submitted in due time and were uploaded in the website at the address <https://geo4civhic.eu/wp-deliverables/> also depending on their PUBLIC or PRIVATE access setting.

3. Conclusions

The main conclusions regarding the TED activity management are the following:

- The partners made a **special effort to implement in due time** and with the maximum efficiency all of the assumed tasks assumed in the project TED plan, especially in the last 3 months when the direct contacts and therefore the project management were affected by the Coronavirus pandemic.
- The dysfunctionalities culminated at the end of March when the management meeting in Erlangen could no longer be organized. The effort of the partners has focused on **online meetings, teleconferences, skype meetings** which, unfortunately, do not have the same efficiency with the direct meetings and in addition are disproportionately time consuming.
- The cancellation of some of the events where the partners had registered and for which they prepared communications and scientific papers **will continue to affect the implementation of the TED plan** in the next months, which will force the partners to a significant additional effort in years # 3 and # 4.

- However, in the M13-M24 period of time **no negative deviations** from the TED Plan of the project, meaning delays, appeared. Due to the previous assertions, **no corrective actions are necessary**.
- Moreover, three categories of actions were **realized in advance** registering **positive deviations**:
 - Preparation of training tools elaboration,
 - Organization of European Centres of Excellence;
 - Participation in standardization bodies.

References

N/A

Appendix: Partners TED reports

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

CNR-ISAC

TED responsible person in your organization:

Adriana Bernardi

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<ol style="list-style-type: none"> CNR will help the responsible for the training courses in Italy - UNIPD in the national training course for specialists and for non-specialists in Italy. CNR and UNESCO will (co)organize the Summer / winter school courses As Coordinator and WP leader, CNR will (co)organize the “train the trainers” course, before the national course sessions. CNR will promote through its own channels, website and social media channels the national training courses including the Italian courses. 	M37 – M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<ol style="list-style-type: none"> Elaboration / edit of the training manual on the application of innovative shallow geothermal solution for Historical Buildings (English). As member of Project Specific Committee, verification of all the training tool aspects: scientific, technic, administrative, financial, legal etc. Supporting the translation of the training tools in Italian (UNIPD as main responsible). Printing and distributing the training tools to our stakeholders in the international / regional and local events. 	M30 – M36	N/A
3. Project website / Partners websites / Project logo	<ol style="list-style-type: none"> Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVHIC website and synergic project. Participation in the decision of the project logo. 	M6 – M48	The information regarding the project progress and accomplishments is contributed to project website responsible and administrator.
4. Demo site information / Demo software products and tools	CNR will help in the implementation of the DSS and the Applications. CNR will provide data and disseminate Information on the activities implemented at the Residential Building Mariënborg Soest (NETHERLANDS) and Residential Building Alsamora 6 (SPAIN) (Virtual Cases).	M25 – M48	N/A
5. Scientific / Technical Articles in specialized media	<ol style="list-style-type: none"> CNR will take part, together with UNIPD and RED, in the creation of Scientific publications. Informing the national and European specialized media through minimum 3-6 articles (1 or 2 per Year 2-4) on the project duration. Communicate the publication and to upload the articles in the GEO4CIVHIC project website. 	M13 – M48	All CNR is taking part, together with UNIPD and RED, in the creation of scientific publications. Subsequently the national and European specialized will be informed and the publication will be uploaded in the GEO4CIVHIC project website.
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical movies on the real cases and support of the elaboration of the general video of project.	M25 – M48	The preparation of scientific and technical movies on the real cases and support of the elaboration of the general video of the project are in the preliminary phase.
7. European centres of excellence for shallow geothermal applications	CNR together with UNIPD, RED, HYDRA, GALLETI will implement the action and will support the teaching and knowledge dissemination through the South Europe – Italy Centre of Excellence.	M36-M48	The discussion has been initiated.

8. Participation in Standardization Bodies	Communication with Standardization Bodies in Italy on historical building. Contacting the European standardization bodies for an update of the current standards with provisions resulted in the project research activity for historic buildings applications.	M36_M48	N/A
9. Links with EU Programs / Platforms / Initiatives	Coordination of the synergies with other EU/national projects - identify / contact / link / cooperate in a synergic way with and national and European programs, platforms and initiatives.	M1-M48	The communication with coordinator partner of GEOFIT H2020 in order to organize an event in the main frame of Sustainable Places 2020 jointly is in process.
10. Internal Project meetings	Participation and help in the organization of the Agenda of Kick off and semi-annual project meetings (9 meetings in total). Participation in internal meeting needed during the project.	M1- M48	<ol style="list-style-type: none"> 3. The 12 months Management Meeting was hosted by Din I-Art Helwa in Valletta (Malta), between April 1st and 3rd, 2019. Malta (organized by DLH) https://geo4civhic.eu/events/12-month-management-meeting-in-malta/ 4. The 18th month Management Meeting took place in Dublin, Ireland, between 9th and 11th October, 2019 (organized by GEOSERV_ The H2020 project GEO4CIVHIC_ "Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings") https://geo4civhic.eu/events/18-month-management-meeting-in-dublin/ 5. The third meeting in Erlangen has been cancelled <i>because of the coronavirus</i> (The online meeting will be organized in order to discuss the most crucial points.
11. Congress / Conference / Workshop presentations	Participation to national and international conference and meeting with oral communication, posters, leaflets and brochures.	M6- M48	<ol style="list-style-type: none"> 8. The congress presentation "Archetype definition for analyzing retrofit solutions in urban areas in Europe" hold at Bucharest in 26-29, May, 2019. https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf 9. Article: Archetype definition for analyzing retrofit solutions in urban areas in Europe. https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf 10. The congress "Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project – GEO4CIVHIC" is hold in 14-July -2019. https://geo4civhic.eu/wp-content/uploads/2019/06/233.pdf 11. The article "Economic, geological and technical potential mapping test for GSHP systems in Europe" is published in 14-June-2019. https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf 12. The workshop "Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects" is held at Brussels, Belgium in 25.09.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf 13. Article "Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems." is published in 06.10.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/Cadelano_et_al_14thSDEWES_abstract.pdf 14. Congress: double U-tube borehole heat exchangers." In June 2019 and "European Drillability mapping for shallow geothermal applications" in January 2020 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUilv_oAhXlAxAlHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ
12. National Workshops in partners countries	Contribution on the organization of the national workshops in conjunction to the training course in Italy.	M37 - M46	N/A
13. Poster Sessions	Participation in at least one poster sessions	M1-M48	<ol style="list-style-type: none"> 1. The Renewable Energy Expo "Key Energy" was organized in Rimini (Italy), between 5-8 November, 2019. ISAC_CNR and RED had displayed a poster presenting both projects

			<p>GEO4CIVHIC and Cheap-GSHPs_ https://geo4civhic.eu/events/key-energy-renewable-energy-expo-2019/</p> <p>2. The Cheap-GSHPs and GEO4CIVHIC consortia were represented at the event by the coordinator. A poster presenting both projects (Cheap-GSHPs and GEO4CIVHIC) was displayed during the event. The participants were also distributed leaflets and brochures of the two EU funded projects. https://geo4civhic.eu/events/event-shallow-geothermal-energy-days-september-24-25-2019/</p>
14. Participation at fairs	/	/	The Renewable Energy Expo “Key Energy” was organized in Rimini (Italy), between 5-8 November, 2019, https://geo4civhic.eu/events/key-energy-renewable-energy-expo-2019/
15. Flyers / brochures / leaflets / fact-sheets / semester newsletters	CNR will cooperate at the elaboration and translation in Italian of brochures and leaflets. CNR will print the English and Italian versions and will distribute the respective project documents to target groups in Italy	M6-M48	The Renewable Energy Expo “Key Energy” was organized by ISAC_CNR and RED in Rimini (Italy), between 5-8 November, 2019. https://geo4civhic.eu/events/key-energy-renewable-energy-expo-2019/
16. Press releases	CNR will organize Press release and will disseminate it to target groups in Italy and Belgium	M6-M48	On December 2019 the Press “landslides, cultural heritage, energy saving. The high-tech projects of the CNR of Padua” is released on Rai news. http://futuro24.blog.rainews.it/2019/12/13/futuro24-frane-beni-culturali-risparmio-energetico-i-progetti-high-tech-del-cnr-di-padova/
17. Journal articles	Contribution to journal articles	M25 – M48	<p>7. Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies. https://geo4civhic.eu/wp-content/uploads/2019/10/energies-12-03192.pdf</p> <p>8. Energetic and Exegetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps. https://www.mdpi.com/1996-1073/12/18/3538</p> <p>9. New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps. https://www.adv-geosci.net/49/47/2019/</p> <p>10. An updated ground thermal properties database for GSHP applications. https://www.sciencedirect.com/science/article/pii/S0375650519301944?via%3Dihub</p> <p>11. A simulation-based comparison between the thermal behaviour of coaxial. https://www.mdpi.com/1996-1073/12/12/2321</p> <p>12. Implementation of a geothermal heat pump system in a solar passive house. https://www.e3s-conferences.org/articles/e3sconf/abs/2019/11/e3sconf_enviro2018_07014/e3sconf_enviro2018_07014.html</p>
18. E-mails, mailing lists, online discussion lists, blogs	CNR will contribute to disseminate the mailing list for the dissemination activities.	12-48	CNR is collecting the mailing list for the dissemination activities, considering the GDPR regulation.
19. Deliverables / Reports / other documents according GA	CNR is responsible of D1.5, D3.5, D3.6, D3.7, D8.10, D9.1, D9.2, D9.3, D10.1 and D10.2 and will elaborate them and the planned deadlines. CNR will help other partners giving the request information for the task where he’s involved. CNR will check the trend of the project and will intervene when will be necessary. Besides will contact the PO if problems incurred or it’s necessary to do an Amendment	M1-M48	D1.5 and D10.1 are submitted. CNR is helping other partners giving the request information for the task and continuously checking the trend of the project.

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name: UNIPD (DII + DG)

TED responsible person: De Carli Michele and Galgaro Antonio

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned dead-line	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	As WP leader, UNIPD will train the teaching involved partners before the courses session. UNIPD will organize the national training course in Italy, both for specialists and for non-specialists.	M37-M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	Contribution in the elaboration of all the teaching tools (Manuals, Brochures) as WP leader and Task leader. Translation of the training manual in Italian Translation & printout of the technical brochure in Italian	M30-M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project and own project website update and link it in the Padua University involved Departments web-pages	M6 - M48	N/A
4. Demo site information / Demo software products and tools	Dissemination of the information about the national demo site and the other project real and virtual demo cases. As for the software, UNIPD will work in the engine producing spreadsheets and routines for the sizing GHEs and for taking into account the interference between GHEs.	M25-M48	N/A
5. Scientific / Technical Articles in specialized media	Scientific and technical articles on Italian real case and project technologies, and dissemination of the project technological innovations and results on local and national media – at least twice a year starting the second year of the project (6 articles in total). All the articles will be communicated and uploaded in the GEO4CIVHIC project website	M13-M48	N/A
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical short movies about real cases in all the phases from planning to building until the running and performances monitoring Support the elaboration of the general video of the project	M25-M48	N/A
7. European Centres of excellence for shallow geothermal applications	As task leader for South Europe, UNIPD will cooperate in the concept definition and will contribute to carry out the EU centers of excellence for shallow geothermal applications	M36-M48	Preliminary contacts with associations and administrations (UNIGE – Università degli Studi di Genova UGI – Unione Geotermica Italiana, ANIGHP - Geotermia Italia, ANIPA - Associazione Nazionale di Idrogeologia e Pozzi Acqua, CNG -Consiglio Nazionale dei Geologi and private companies operating in the geothermal sector) to form the consortium for the Excellence Center. The UNIPD – Centro studi di Economia e Tecnica dell'Energia Giorgio Levi Cases can host the Excellence Center organization. Preliminary contacts with International partners. List of activities that the Center could propose and develop.
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Italy and Europe	M13-M48	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other running EU/national projects	M6 - M48	Participation to the joined activities for the European Shallow Geothermal Mapping meetings in: 1. The Hague, The Netherlands (within the European Geothermal Congress 2019), 11-14 June 2019 2. Offenburg, Germany (3-5 March 2020) - postponed due to the coronavirus pandemic

10. Internal Project meetings	Participate in kick-off and semiannual project meetings (9 meetings in total). Organization of hosted meetings Participation in the internal meetings, including “training the trainers”	M1 -M 48	Participation to the M12 Project Meeting (La Valletta - Malta) and to the M18 Project meeting (Dublin – Ireland)
11. Congress / Conference / Workshop presentations	Participation to the main national and international Conference and meeting (EGC 2019, Geofluid 2018, CLIMA 2019, WGC 2020)etc.) with oral communication about the project aims and scope and, following, showing the partial and final results of the project activity	M6- M48	<p>Participation to the European Geothermal Congress with: geological and technical potential mapping test for GSHP systems in Europe. In: Proceedings of the European Geothermal Congress 2019, The Hague, The Netherlands (11-14 June 2019)</p> <p>A Decision Support System (DSS) and a design tool for helping stakeholders and designers in the choice of GSHPs. In: Proceedings of the European Geothermal Congress 2019, The Hague, The Netherlands (11-14 June 2019)</p> <ol style="list-style-type: none"> 1. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU 2. Conference: Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems https://zenodo.org/record/3557899#.XnuVuHLSLIU 3. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf 4. presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf 5. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf 6. Economic, geological and technical potential mapping test for GSHP systems in Europe - https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf 7. Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf 8. Double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020 (congress) https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUilVoAhXIAxAIHRYiByoQFjAAegQIAhAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usq=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ
12. National Workshops in partners countries	Organize one national workshop in conjunction to the training course in Italy	M37-M46	Participation to the Workshop organized by Unione Geotermica Italiana, ATI e AIRU at Milano - Italy, Centro Congressi FAST (21 March 2019) entitled “Un volano per lo sviluppo del territorio e una efficace risposta all'inquinamento dei centri urbani ottenuta con una fonte rinnovabile ed energeticamente efficiente”
13. Poster Sessions	Participation in at least two poster sessions	M1 - M48	N/A
14. Participation at fairs	Participation in at least two fairs in Italy	M1 - M48	N/A
15. Flyers / brochures / leaflets / factsheets / semester newsletters	UNIPD will cooperate at the elaboration and translation of the content of all the dissemination tools, will print the English or Italian versions (minimum 50 copies of each document) and will distribute the respective project documents to target groups in Italy	M6-M48	N/A
16. Press releases	UNIPD will cooperate in the elaboration of the Press release by the Coordi-	M6-M48	N/A

	nator and will disseminate it to target groups in Italy UNIPD will Contribute to journal articles	M25-M48	<p>6. Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538</p> <p>7. New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p> <p>8. Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies https://www.mdpi.com/1996-1073/12/16/3192</p> <p>9. Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/10/The-H2020-project-GEO4CIVHIC-Most-Easy-Efficient-and-Low-Cost-Geothermal-Systems-for-Retrofitting-Civil-and-Historical-Buildings.pdf</p> <p>10. A simulation-based comparison between the thermal behavior of coaxial https://www.mdpi.com/1996-1073/12/12/2321</p>
18. E-mails, mailing lists, online discussion lists, blogs	UNIPD will create and periodically update the mailing list for the dissemination directly realized by the project IT system and will ensure the direct Distribution of project information to target groups in Italy by email	M4 - M48	N/A
19. Deliverables / Reports / other documents according GA	As responsible of the following deliverable; D1.3, D1.6, D2.5, D2.6, D3.3, D5.8, D8.11. will elaborate them at the planed deadlines. UNIPD will cooperate with the responsible partners by transmitting information, data for other deliverables and reports working actively in most of the deliverables.	M12-M48	All the Deliverables foreseen in the WP1 in this period have been completed in the planned deadline (D 1.2, D 1.3, D 1.4 and D 1.5).

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

UPV

TED responsible person in your organization:

Javier F. Urchueguía/ Borja Badenes

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	Co-organisation of a training course in Spain with the other local partners (TECNALIA – SOLINTEL)	46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	Cooperation in translation of the training manual into Spanish (with TECNALIA and SOLINTEL) Cooperation in translation into Spanish and printing of the technical brochure (with TECNALIA and SOLINTEL).	36 42	N/A
3. Project website / Partners websites / Project logo	Cooperation in the update of the project website and of their own website.	6-48	Cooperation in the update of the project website and of their own website.
4. Demo site information / Demo software products and tools	Information on Administrative building “Palacete de la Cruz Roja” virtual demo n ^o 2 Cooperation in the design of the Demo site tools.	6-48	Several technical visits have been carried out, where the information on electricity consumption and the building plans for the 3D design of the building have been collected. The thermal envelope for the virtual demo site has been specified.
5. Scientific / Technical Articles in specialized media	Article on virtual demo case n ^o 2 “Palacete de la Cruz Roja” in Spanish media	48	N/A
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical movies	48	N/A
7. European Centers of excellence for shallow geothermal applications	Contribution to EU centers of excellence for shallow geothermal applications	48	N/A
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Spain	48	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects like CHEAP-GSHPs and GEOCOND	1-48	Attendance at all project meetings within H2020-project GEOCOND, as a coordinator and reporting on possible synergies with GEO4CIVVIC. Attendance at RHC-ETIP events.
10. Internal Project meetings	Participation in project meetings (8 meetings in total)	1-48	Participation in project meeting M12 (Malta) and M18 (Dublin)
11. Congress / Conference / Workshop presentations	Cooperation in the 3 international project workshops together with other project partners	24-46	<ol style="list-style-type: none"> 1. Congress: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVVIC https://zenodo.org/record/3557745#.XnypY3LSLIU 2. Conference: H2020 project GEO4CIVVIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civvic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVVIC_03_names.pdf 3. PRESENTATION: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civvic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf 4. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civvic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf 5. Conference: Optimization methodology of borehole heat exchangers (BHE) according geometric characteristics, material properties and installation and operating cost https://zenodo.org/record/3558273#.XnuVcnLSLIU
12. National Workshops in partners countries	Co-organisation of a national workshop in Spain with the other local partners (TECNALIA – SOLINTEL)	46	N/A
13. Poster Sessions	Participation in two poster sessions	1-48	N/A
14. Participation at fairs	Participation at national/international fairs	1-48	It was planned to participate GeoTHERM 2020 in Offenbourg, but it has been postponed. Participa-

			tion in WGC 2020 (Reykjavik, Iceland, April 27 - May 1) is also planned, if not cancelled.
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Distribution of project flyers, brochures, leaflets, factsheets and the project newsletters to target groups (stakeholders) in Spain Cooperation in translation into Spanish and printing (with TECNALIA and SOLINTEL).	46	N/A
16. Press releases	Communication of the press releases to target groups in Spain	45	N/A
17. Journal articles	Contribution to journal articles regarding the results obtained in the project tasks involved	48	N/A
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project newsletter to target groups in Spain by email	12-48	N/A
19. Deliverables / Reports / other documents according GA	<ul style="list-style-type: none"> • D2.4 "Simulation and design of co-axial heat exchangers with regard to performance and costs" (Confidential) • D4.1 "Preliminary analysis and generation of possible different modular solutions description for civil and historical buildings" (Public) • D5.9 "Evaluation of efficiency and viability of installations in individual retrofitted buildings" (confidential) • D7.6 "Report on IPR strategy development and management" (Public) 	<p>18</p> <p>18</p> <p>40</p> <p>48</p>	<p>Deliverables submitted:</p> <ul style="list-style-type: none"> • D2.4 "Simulation and design of co-axial heat exchangers with regard to performance and costs" (Confidential) • D4.1 "Preliminary analysis and generation of possible different modular solutions description for civil and historical buildings" (Public) <p>Contributions in: D1.5</p>

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

RED SRL

TED responsible person in your organization:

GIULIA MEZZASALMA

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	RED will help UNIPD in organize the national training course in Italy Besides will help GEOGREEN and GALLETTI BELGIUM with the organization of the national training course in Belgium	M37 – M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	RED will contribute in the elaboration of the training material and brochure as WP and task Leader. RED will print out brochure and leaflet for dissemination	M30 – M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project website. RED will insert in his website the link for GEO4CIVHIC website. RED will participate in the decision of the project logo.	M6 – M48	Red inserted in his website the link for GEO4CIVHIC website
4. Demo site information / Demo software products and tools	RED will provide (together with GEOGREEN) the information on real demo site in Belgium. RED will disseminate, as WP5 leader, the information about the real and Virtual Demo Site. RED will create the two Application of the project and will help with the engine production of DSS and BEMS. Beside RED will help with dissemination of DSS and will disseminate the Two Applications	M25 – M48	N/A
5. Scientific / Technical Articles in specialized media	RED will take part, together with UNIPD and CNR, in the creation of Scientific publications	M13 – M48	RED is taking part, together with UNIPD and CNR, in the implementation of scientific publications.
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical movies on the real cases and support of the elaboration of the general video of the project.	M36 – M48	N/A
7. European centers of excellence for shallow geothermal applications	Contribution to EU centres of excellence for geothermal applications	M36 – M48	N/A
8. Participation in Standardization Bodies	/	/	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects	M1 - M48	RED won and it is now developing a regional project (POR FESR 2014-2020) with EU, regional and national funds. In this project RED will create a program to help the diffusion and dissemination of the HYDRA-RED method and geothermal activities in the Veneto region in Italy.
10. Internal Project meetings	Participate in Kick off and semi-annual project meetings (9 meetings in total). Participation in internal meeting needed during the project, most of all those regarding real case studies.	M1 - M48	RED participated to the 12 th month GA in Valletta (Malta) from April 1 st to April 3 rd , organized by DLH. RED participated to the 18 th month GA in Dublin (Ireland) from October 9 th to October 11 th , organized by GEOSERV. RED organized some call for WP5 with demo site responsible to organize the installation. RED organized and participated in internal call for WP2, WP3, WP4, WP6 and WP8
11. Congress / Conference / Workshop presentations	Participation to national and international conference and meeting with oral communication, posters, leaflets and brochures.	M6 – M48	1. EU Sustainable Energy Week (EUSEW2020) from 2019 June 17 th and June 21 st . https://www.eusew.eu/ 2. Congress “Innovative drilling methods, heat pumps and tools to address shallow geothermal in built environment: H2020 project – GEO4CIVHIC” hold in 14-July -2019.

			<p>https://geo4civhic.eu/wp-content/uploads/2019/06/233.pdf</p> <p>3. The workshop “Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects Shallow geothermal maps in Cheap-GSHPs and GEO4CIVHIC European Projects” is held at Brussels, Belgium in 25.09.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/E.DiSipio_Mapping_Brussels_25.09.19.pdf</p> <p>4. Article “Impact of Climate Conditions and Energy Prices on Museums Impact of Climate Conditions and Energy Prices on Museums Refurbishments in Different European Countries Based on Geothermal Energy, Electrical Power or Natural Gas Systems.” is published in 06.10.2019. https://geo4civhic.eu/wp-content/uploads/2019/10/Cadelano_et_al_14thSDEWES_abstract.pdf</p> <p>5. Congress: double U-tube borehole heat exchangers.” In June 2019 and “European Drillability mapping for shallow geothermal applications” in January 2020 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUilVoAhXIAxAlHRYiByoQFjAAegQIAhAB&url=https%3A%2F%2Fmeetin.gorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ</p>
12. National Workshops in partners countries	Contribution on the organization of the national workshops in conjunction to the training course in Italy and Belgium	M37 – M46	N/A
13. Poster Sessions	Participation in at least one poster sessions	M1 - M48	N/A
14. Participation at fairs	Participation in at least one fair in Italy	M1 - M48	<p>1. Participation with a stand in KEY ENERGY 2019 in Rimini, Italy from November 5th to November 8th. https://en.kevenenergy.it/</p> <p>2. Participation with a stand in Klimahouse 2020 in Bolzano from January 22nd and January 25th. https://www.fierabolzano.it/en/klimahouse/home</p>
15. Flyers / brochures / leaflets / factsheets / semester newsletters	RED will cooperate at the elaboration and translation of brochures and leaflets. RED will print the English, Italian versions and will distribute the respective project documents to target groups in Italy	M6 – M48	RED printed leaflet and Brochure in Italian, English and Flamish to distribute it during fairs and conferences.
16. Press releases	RED will cooperate in the elaboration of Press release by the Coordinator and will disseminate to target groups in Italy and Belgium	M6 – M48	N/A
17. Journal articles	Contribution to journal articles	M25 – M48	<p>4. Journal: Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538</p> <p>5. Journal: Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies https://www.mdpi.com/1996-1073/12/16/3192</p> <p>6. A simulation-based comparison between the thermal behavior of coaxial https://www.mdpi.com/1996-1073/12/12/2321</p>
18. E-mails, mailing lists, online discussion lists, blogs	RED will contribute to disseminate the mailing list for the dissemination activities.	M12 - M48	RED is collecting the mailing list for the dissemination activities during fairs and conferences, considering the GDPR regulation.
19. Deliverables / Reports / other documents according GA	RED is responsible of D4.9, D4.10 and D4.13 and will elaborate them and the planned deadlines. RED will help other partners giving the request information for the task where he’s involved. RED will coordinate and control the deliverable of WP5.	M1 – M48	RED in WP5 and WP3 is coordinating Padua Pilot and real demo sites activities, supporting all the partner in the organization, planning, development of P&I, purchasing of material, organization of drilling activities, etc. RED provided the information requested by partner. RED developed the template of D4.9 and is developed the drilling application in T4.4.

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION: **GEOSERV**
Responsible person **Ric Pasquali**

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<ol style="list-style-type: none"> As partner appointed by the GA as responsible for the training activity, GEOSERV will organise the national training courses both for specialists and for non-specialists (2 sessions) in Ireland to disseminate the activities and results of the project. As WP leader, GEOSERV will “train the trainers” from all the partners, before the national course sessions. GEOSERV will promote the national training courses through all the suitable and accessible informational channels. 	M37-M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<ol style="list-style-type: none"> As WP leader, GEOSERV will elaborate the corresponding chapters in all the training tools (Manuals and Brochures) and the corresponding short movies with specific information about Irish case study sites. As partner having English as native language, GEOSERV will linguistically verify of all the training tools elaborated in English language. Printing and distributing the training tools to the stakeholders in technical / scientific events. 	Ongoing M1 to M48	N/A
3. Project website / Partners websites / Project logo	<ol style="list-style-type: none"> Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVHIC website and synergic project. Participation in the decision of the project logo 	Ongoing M6 to M48	N/A
4. Demo site information / Demo software products and tools	Development of technical brochures including information on Irish case study sites. Dissemination of this information in heating& cooling industry publications.	Ongoing M1 to M48	Development on MCDA Tool for qualitative assessment of Project technologies to be integrated as part of the DSS (T6.3) - ongoing
5. Scientific / Technical Articles in specialized media	<ol style="list-style-type: none"> Contribution to project publication of scientific articles, drafting and submittal of 3 scientific article on Irish case study site. Communicate the publication and upload the articles in the GEO4CIVHIC project website. 	M12 – M48	Contribution to ‘Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC’ – EGC2019 M15
6. Scientific / Technical Movies	Provide footage and make contributions to project technical and scientific movies based on the Irish case study site experience	M25 – M48	N/A
7. European Centres of excellence for shallow geothermal applica-	GEOSERV together with FAU, TKI, UNESCO and UBeG will implement the action and will support the teaching and info / knowledge	M40 – M48	Discussion of structure and potential contributions by GEOSERV to Excellence Centre for Centre/Northern Europe - ongoing

tions	dissemination through the Central – North Europe – Germany excellence centre.		
8. Participation in Standardization Bodies	NSAI Representative to CEN/TC 451 working group on geothermal collectors in collaboration with other project partners also involved in the same group	Ongoing M1 to M48	Participation to CEN TC451 on borehole heat exchangers and development of final draft technical standard for public consultation. Input to national Technical Working Committee (NSAI and SEAL) on Heat pumps (NSAI/TC 031/SC 06 – Heat Pumps) for the completion of BHE aspects.
9. Links with EU Programs / Platforms / Initiatives	Establish links with other EU Programme and research projects on similar topics. Provide contributions through membership to the Geothermal Panel of the Renewable Heating and Cooling Platform	Ongoing M1 to M48	Participation of RHC Geothermal Panel, contribution to non-technical scientific work programme based on the initial results of the GEO4CIVHIC project Presentation of Project work programme at joint GeoFIT and Engineers Ireland workshop on geothermal energy in Ireland (M13)
10. Internal Project meetings	Participation to 9 Internal project meetings and seminars. Organise up to 5 No. WP6 workshops at internal meetings	Ongoing M1 to M48	2 No. Working meetings organized a part of M12 Management Meeting in Malta and M18 in Dublin. 1 No. Online working meeting held at M20.
11. Congress / Conference / Workshop presentations	Participation at 1 No. International conferences and 2 No. National conferences to disseminate project results	M8 to M48	Presentation of GEO4CIVHIC project at: 1. Energy and Rural Business Show Ireland (M15) 2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf 3. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf 4. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf 5. Congress: double U-tube borehole heat exchangers." In June 2019 and "European Drillability mapping for shallow geothermal applications" in January 2020 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUiLvoAhXlAxAlHRyiByoQFiAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ
12. National Workshops in partners countries	Organise up to 2 No. National Workshops in Ireland to present the project and disseminate results as appropriate	M45	N/A
13. Poster Sessions	Participate in at least 1 No. Poster session presenting Irish case study sites and project background	Ongoing M1 to M48	N/A
14. Participation at fairs	Participate in at least 1 No. Energy and building services fair per annum	Ongoing M8 to M48	Planned Participation and presentation and the The Smart & Green Building Expo (M24) – now cancelled
15. Flyers / brochures / leaflets / factsheets / newsletters	Distribution of project factsheets, project brochures and flyers to selected target audiences in Ireland	M46	N/A
16. Press releases	Issue 2 No. Press releases in Ireland to target stakeholder groups	M46	N/A
17. Journal articles	Contribution to journal articles	M48	Journal: New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/
18. E-mails, mailing lists, online discussion lists, blogs	Project information to be distributed by target email list	From M12 to M48	Distribution of project information through the Geothermal Association of Ireland circulation list and newsletter.
19. Deliverables / Reports / other documents according GA	D5.7 Evaluation of Real Demo Ireland D6.1 Regulatory Analysis D6.2 Report on EIA	M36 M11 M23	Report on the completion of T6.2 on BHE interference was submitted on time at M26 D6.2 (Report on case Study EIA) has been postponed until the completion of the case study sites and the measurements of relevant impacts as part of the installations can be completed (est M32)

GEO4CIVHIC D8.5 Second report on implementation of TED activities

	D6.3 Report on BHE Interference D6.4 Risk Assessment Methodology D6.7 Transferrable Guidelines	M23 M26 M45	
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REPORT on the Training / Education / Dissemination activities developed in M13 - M24

Partner name: **GALLETTI**

TED responsible person: **FABIO POLETTO**

Dissemination Method according TED Strategy	PLANING AREA		REPORTING AREA
	Planned actions Description of the concrete planned action(s)	Planned deadline (year of the project / month)	Implemented actions in M1-M12 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	As WP leader, GALLETTI will train the teaching involved partners before the courses session. GALLETTI will organize the national training course in Italy, both for specialists and for non-specialists.	M37-M46	N/A
2. Training material: Manual / Manual Historical buildings / Brochure	Contribution in the elaboration of all the teaching tools (Manuals, Brochures) as WP leader and Task leader. Translation of the training manual in Italian Translation & printout of the technical brochure in Italian	M30-M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project and own project website update and link it in the GALLETTI BELGIUM web-pages	M6 - M48	N/A
4. Demo site information / Demo software products and tools	Dissemination of the information about the demo sites and the heat pumps installed	M25-M48	N/A
5. Scientific / Technical Articles in specialized media	Scientific and technical articles on the new refrigerants and the innovative heat pumps, as well as dissemination of the project technological innovations and results on local and national media. All the articles will be communicated and uploaded in the GEO4CIVHIC project website	M13-M48	Contribute to technical Article: Manuscript ID: energies-552626 - Title: ENERGETIC AND EXERGETIC ANALYSIS OF LOW GWP REFRIGERANTS AS SUBSTITUTES FOR R410A IN GROUND SOURCE HEAT PUMPS (GSHP) Authors: Sergio Bobbo *, Laura Fedele, Marco Curcio, Anna Bet, Michele De Carli, Giuseppe Emmi, Fabio Poletto, Andrea Tarabotti, Dimitris Mendrinos, Giulia Mezzasalma, Adriana Bernardi
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical short movies about real cases in all the phases from planning to building until the running and performances monitoring. Support the elaboration of the general video of the project	M25-M48	N/A
7. European centres of excellence for shallow geothermal applications	GALLETTI will cooperate in the concept definition and will contribute to the EU centers of excellence for shallow geothermal applications	M36-M48	N/A
8. Participation in Standardization Bodies			N/A
9. Links with EU Programmes / Platforms / Initiatives	Contribution on synergies with other running EU/national projects	M6 - M48	N/A
10. Internal Project meetings	Participate in kick-off and semiannual project meetings (9 meetings in total). Organization of hosted meetings participation in the internal meetings, including "training the trainers"	M1 -M 48	Participated to M12 and M18 Project Meeting (Malta – Dublin)
11. Congress / Conference / Workshop presentations	Participation to workshops which may be organized within Conferences and Congresses by showing the partial and final results of the project activity	M6- M48	Presentation of the project within agents and customers of the Galletti group In M18 during the ISC #3 (International Sales Conference 3rd Edition) the prlject porpouse was presented In M23 was planned the Agent meeting that was postponed due to the COVID-19

			<p>Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf)</p>
12. National Workshops in partners countries	Organize one national workshop in conjunction to the training course in Italy	M37-M46	N/A
13. Poster Sessions	Participation in at least two poster sessions	M1 - M48	N/A
14. Participation at fairs	Participation in at least one fair in Italy	M6 - M48	In M24 was planned the MCE-2020 that was postponed due to the COVID-19
15. Flyers / brochures / leaflets / factsheets / semestral newsletters	GALLETTI will cooperate at the elaboration and translation of the content of all the dissemination tools, will print the English or Flemish versions (minimum 50 copies of each document) and will distribute the respective project documents to target groups in Belgium	M6-M48	N/A
16. Press releases		M6-M48	N/A
17. Journal articles	GALLETTI will Contribute to journal articles	M25-M48	<p>Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538 New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/</p>
18. E-mails, mailing lists, online discussion lists, blogs	GALLETTI will create and periodically update the mailing list for the dissemination directly realized by the project IT system and will ensure the direct distribution of project information to target groups in Belgium by email	M4 - M48	N/A
19. Deliverables / Reports / other documents according GA	As Responsible of the following deliverable; D3.2 and D3.4 will elaborate them at the planned deadlines. GALLETTI will cooperate with the responsible partners transmitting information, data for other deliverable and reports dealing with heat pumps technology and refrigerant fluids.	M12-M48	N/A

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

TECNALIA

TED responsible person in your organization:

Miguel Ángel Antón

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<ol style="list-style-type: none"> TECNALIA will cooperate with UPV in (co)organizing the national training tools in Spain. As VP leader, TECNALIA will “train the trainers” from all the partners, before the national course sessions. TECNALIA will promote the training courses through all accessible informational channels. 	46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<ol style="list-style-type: none"> As WP leader TECNALIA will elaborate the corresponding chapter in all the training tools (Manual and Brochure) and the corresponding short movies. Collaborate with UPV in the translation of the training tools in Spanish. Printout of the training tools in Spanish and distributing them to the stakeholders in the national / local events. 	36 42	N/A
3. Project website / Partners websites / Project logo	<ol style="list-style-type: none"> Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVHIC website and synergic project. Participation in the decision of the project logo 	6 - 48	N/A
4. Demo site information / Demo software products and tools	Information on the software tools developed within the project and dissemination of this information through all suitable channels.	48	N/A
5. Scientific / Technical Articles in specialized media	<ol style="list-style-type: none"> Informing the national and European specialized media through minimum 3 articles on the project duration. Communicate the publication and to upload the articles in the GEO4CIVHIC project website. 	12-48	N/A
6. Scientific / Technical Movies	Contribution to the preparation / realization of scientific and technical movies related to the software tools developed in WP6.	48	N/A
7. European centres of excellence for shallow geothermal applications	TECNALIA together with UPV and SOL will implement the action and to support the teaching and knowledge dissemination through the Western Europe – Spain Centre of Excellence.	36-48	N/A
8. Participation in Standardization Bodies	Contacting the national standardization body for updating the current standards with provisions resulted in the project research activity for historic buildings applications.		N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects. Dissemination of the project in the ECTP (European construction	1 - 48	N/A

	Technology Platform http://www.ectp.org Platform		
10. Internal Project meetings	Participate in semiannual project meetings (9 meetings in total)	1 - 48	TECNALIA Participated in M18 Project Meeting (Dublin), and presented the progress in WP4 during the M20 Review Meeting (held through videoconference).
11. Congress / Conference / Workshop presentations	Presentation of the project results in one congress	46	TECNALIA assisted to the Clima Congress in Bucharest (M14), where a paper describing the project was presented by CNR. 1. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU 2. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
12. National Workshops in partners countries	Collaboration with other Spanish partners in the organization of one national workshop in conjunction to the training course in Spain	46	N/A
13. Poster Sessions			N/A
14. Participation at fairs			N/A
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Distribution of project newsletter to target groups in Spain	48	N/A
16. Press releases	Press release to target groups in Spain	48	N/A
17. Journal articles			Journal: New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/
18. E-mails, mailing lists, online discussion lists, blogs	Contribution with the required information for dissemination emails, mailing-lists, etc.	12 - 48	N/A
19. Deliverables / Reports / other documents according GA	TECNALIA will contribute to the deliverables corresponding to WP4 and WP6 and to the reports with the required information.	1-48	TECNALIA has leaded the redaction of: <ul style="list-style-type: none"> • D4.3 GEO4CIVHIC DSS for Geothermal Retrofit Reference Architecture [M18] • D4.4 BMS for GSHP control and its integration with multiple renewable sources specifications and reference architecture [M24] TECNALIA has participated in the review of the deliverables: <ul style="list-style-type: none"> • D1.2 Drillability mapping and state of the art of the drilling methodologies [M15] • D2.3 Development of a versatile, compact drilling machine to operate in urban areas [M20] • D5.2 Report on data collection, design and preliminary cost-benefit analysis of the real cases [M18]

REPORT on the Training / Education / Dissemination activities developed in M13 - M24

Partner name: **Thyssenkrupp Infrastructure GmbH**

TED responsible person: **Christian Eckhardt**

Dissemination Method according TED strategy	PLANING AREA		REPORTING AREA
	Planned actions Description of the concrete planned action(s)	Planned deadline	M13-M24
0	1	2	4
1. Training courses	TKI will cooperate with FAU in Organizing the training courses in Germany TKI will involve its specialists in “training the trainer” meeting in order to prepare them for the national courses	M36-M48	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	Support in the translation of the training tools into German Printout of the Training Tools – German and distributing them to our stake-holders in different events.	M36-M48	N/A
3. Project website / Partners web-sites / Project logo	Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. Informing the stakeholders about the project progress and accomplish-ments through all social media environments and the organization website, creating special option in the menu and including links to the GEO4CIVHIC website and synergic project. Participation in the decision of the project logo	M1-M48	N/A
4. Demo site information / Demo software products and tools	N/A	-	N/A
5. Scientific / Technical Articles in specialized media	Submission of 2-3 technical publications/Magazines (in cooperation with project partners).	M12-M48	Technical publication „Development of a compact, rotation-vibration drilling head to install co-axial heat exchangers in urban areas” in cooperation with FAU, HYDRA, RED, GeoServ, GEO GREEN, UNIPD, ISAC
6. Scientific / Technical Movies	Contribution to the preparation of technical movies.	M25-M48	N/A
7. European centers of excellence for shallow geothermal applications	TKI together with FAU, GEOSERV, UNESCO and UBeG will implement the action and will support the teaching and info / knowledge dissemination through the Central-North Europe – Germany excellence centre.	M36-M48	N/A
8. Participation in Standardization Bodies	Contacting the national standardization body for updating the current standards with provision resulted in the project research activity for historic buildings applications.	M24-M48	N/A
9. Links with EU Programs / Plat-forms / Initiatives	Contribution on synergies with other projects – identi-fy/contact/link/cooperate in a synergic way with and national and European programs, platforms and initiatives	M1-M48	N/A
10. Internal Project meetings	Participate in semi-annual project meetings	M1-M48	- M12 Meeting Malta - M18 Meeting Dublin - testing of prototype VD80/105 in Firenzuola (09/2019), Molinella (10/2019) and Alsfeld (12/2019)
11. Congress / Conference / Work-shop presentations	Participation in several congresses/conferences	M1-M48	<ul style="list-style-type: none"> Participation at „International Workshop on Mapping Shallow Geothermal Energy for Spatial Energy and Environmental Management Plans – challenges and approaches for the next decade 2021 – 2030” in Offenburg Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#XnypY3LSLIU
12. National Workshops in partners countries	Organize one national Workshop in conjunction to the training course in Germany	M36-M48	N/A

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13. Poster Sessions	Participation in 2 poster sessions	M1-M48	N/A
14. Participation at fairs	Participation at fairs in Germany BAUMA 2019/2022	M1-M48	N/A
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Contribution and distribution of project newsletters , brochures and fact-sheets to target groups in Germany	M46	N/A
16. Press releases	Contribution to 1-2- press releases in Germany	M12-M48	N/A
17. Journal articles	Contribution to journal articles	M1-M48	EGEC geothermal: „Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVVIC” https://zenodo.org/record/3557745#.XnypY3LSLIU
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project’s newsletter to Target groups in Germany	M1-M48	N/A
19. Deliverables / Reports / other documents according GA	D2.2-Development of a compact, Rotation-Vibration drilling head for urban areas	M18	<ul style="list-style-type: none"> o report of D2.2 finished o technical and financial report of reporting period I (M1-M18) completed and hand over o 2 prototype machines VD80 and VD105 delivered

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

UNESCO

TED responsible person in your organization:

Francesca Bampa, Anne Ajoux

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	UNESCO as project partner will (co)organize at least one national training on application of geothermal solutions and tools for sustainability in historical buildings. This will take place at year 4 th of the project life span after the handbook publication.	M37-M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	A special publication arranged by UNESCO will disseminate the results in the application of the technologies to Cultural/Historical buildings as "good practices". This will be one of the main training material for UNESCO summer / winter school.	M30-M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project milestones dissemination via UNESCO and its affiliated branches, organization and bodies' web sites.	M6 - M48	New website https://en.unesco.org/fieldoffice/venice/geo4civhic http://www.unesco.it/it/News/Detail/515
4. Demo site information / Demo software products and tools	Presentation on the activities implemented at the world Heritage Site of Ferrara and its Po Delta- Angels' gate (real demo case) and at the world Heritage of Split Croatia (virtual demo case)	M25-M48	Planned meeting with Ferrara stakeholders (Municipality and Soprintendenza) on 12/3/2020 (postponed)
5. Scientific / Technical Articles in specialized media	Article on the demo cases (virtual-real)	M13-M48	N/A
6. Scientific / Technical Movies	Contribution to the development of scientific and technical movies for the sites under UNESCO competence	M25-M48	A dissemination movie has been produced with Bo Live – Università degli Studi di Padova, available on the web: https://ilbolive.unipd.it/it/news/bioedilizia-padova-futuro-polo-umanistico-green
7. European centres of excellence for shallow geothermal applications	Contribute to support the setting in place of EU Centres of excellence for shallow geothermal applications	M36-M48	<ul style="list-style-type: none"> Two meetings (Dec and May 2019) with Green Building Council Italia for the future "European Centres of excellence for shallow geothermal application in civil and historical buildings". Planned meeting to M24 GA in Erlangen, Germany (postponed)
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Italy and Europe	M13-M48	<ul style="list-style-type: none"> Two meetings (Dec and May 2019) with Green Building Council Italia for the possible standardization of the new technologies developed by GEO4CIVHIC.
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other running EU/national projects	M6 - M48	<ul style="list-style-type: none"> Coordination of the full participation of the GEO4CIVHIC consortium to the CHEAP H2020 final meeting organized and hosted in Venice premises by UNESCO Contribution to CHEAP H2020 Deliverable https://cheap-gshp.eu/wp-content/uploads/2019/05/2019-05-29-Cheap-GSHPs-HB-Manual-ITALIAN-FINAL.pdf
10. Internal Project meetings	Participate in kick-off and semi-annual project meetings (9 meetings in total). Organization of hosted meetings Participation in the internal meetings, including "training the trainers"	M1 -M 48	May 2019 <ul style="list-style-type: none"> Joined GA assembly in Valletta, Malta April 2019 (M12) Joined GA assembly in Dublin, Ireland October 2019 (M 18) Two meetings at CNR and RED in January 2020 (M22) Planned participation at GA Assembly (M24) in Erlangen, Germany
11. Congress / Conference / Workshop presentations	Participation and contributing to relevant national and international Conference, training workshops and meetings	M6- M48	<ul style="list-style-type: none"> Contribution to the presentation at the CLIMA 2019 conference (https://www.clima2019.org/) https://www.clima2019.org/uploads/files/PROGRAM%20CLIMA%202019_22.0

			<p>5.2019 final.pdf</p> <ul style="list-style-type: none"> • Contribution to the Der Geothermie congress 2019 https://www.der-geothermiekon-gress.de/fileadmin/user_upload/DGK/DGK_2019/DGK_2019_Programm_DE_20190930_web.pdf • Contribution to the European Geothermal Congress 2019 http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/proceedings-V2-2.pdf • Contribution with the conference “The H2020 project GEO4CIVHIC – Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings” to the Journal REHVA https://www.rehva.eu/rehva-journal/detail?tx_wbjournals_journaldetail%5Baction%5D=download&tx_wbjournals_journaldetail%5Bcontroller%5D=Journal&tx_wbjournals_journaldetail%5Bjournal%5D=61&cHash=eec673742532fe913a2dbf131c93a6e2 • Contribution to conference presented at the European Geothermal Congress 2019, Den Haag, The Netherlands, 11-14 June 2019 http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/233.pdf • Mention in CHEAP Deliverable https://cheap-gshp.eu/wp-content/uploads/2019/05/2019-05-29-Cheap-GSHPs-HB-Manual-ITALIAN-FINAL.pdf • Contribution to the paper “Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies” paper submitted to MDPI journal https://www.mdpi.com/1996-1073/12/16/3192/pdf
12. National Workshops in partners countries	Not foreseen	M37-M46	N/A
13. Poster Sessions	Not foreseen	M1 - M48	N/A
14. Participation at fairs	Not foreseen	M1 - M48	N/A
15. Flyers / brochures / leaflets / factsheets / newsletters	Distribution of project newsletter to target groups in Europe	M6-M48	N/A
16. Press releases	Press release to target groups in demo sites countries	M6-M48	N/A
17. Journal articles	Contribution to journal articles	M25-M48	<ul style="list-style-type: none"> • Contribution to paper presented at the European Geothermal Congress 2019, Den Haag, The Netherlands, 11-14 June 2019 http://europeangeothermalcongress.eu/wp-content/uploads/2019/07/233.pdf • Contribution to the paper “Improving the Energy Efficiency, Limiting Costs and Reducing CO2 Emissions of a Museum Using Geothermal Energy and Energy Management Policies” paper submitted to MDPI journal https://www.mdpi.com/1996-1073/12/16/3192/pdf • Contribution with the paper “The H2020 project GEO4CIVHIC – Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings” to the Journal REHVA https://www.rehva.eu/rehva-journal

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			nal/detail?tx_wbjournals_journaldetail%5Baction%5D=download&tx_wbjournals_journaldetail%5Bcontroller%5D=Journal&tx_wbjournals_journaldetail%5Bjournal%5D=61&cHash=eec673742532fe913a2dbf131c93a6e2
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of UNESCO Regional Office newsletter "Bridges" inclusive o GEO4CIVHIC related infos to target groups in Europe and world-wide	M4 - M48	<ul style="list-style-type: none"> • Short mention in the Bridges January-June 2019 VNI/2019/PI/H/ https://unesdoc.unesco.org/ark:/48223/pf0000369975
19. Deliverables / Reports / other documents according GA	Distribution of project newsletter to target groups in Europe	M12-M48	<ul style="list-style-type: none"> • Contributed to D5.2 Deliverable D5.2 Report on data collection, design and preliminary cost-benefit analysis of the real cases • Contributed to RP1

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

FAU

TED responsible person in your organization:

David Bertermann

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<ul style="list-style-type: none"> 2. As responsible with the training activity in Germany, FAU will organize the national workshops and training courses both for specialists and for non-specialists. 3. As WP leader, FAU will “train the trainers” from all the partners, before the national course sessions. 4. FAU will largely promote the training courses through accessible information channels / websites. 	36-48	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<ul style="list-style-type: none"> 1. Elaboration of the corresponding chapter in the training tools (Manual and Brochure) and the corresponding short movies. 2. Translation of the training tools into German language (with the other German partners support). 3. Printout of the technical brochure in German language and distribution of the appropriate training tools to the stakeholders in technical and scientific events. 	Years 3 and 4	N/A
8. Project website / Partners websites / Project logo	<ul style="list-style-type: none"> 1. Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. 2. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVHIC website and synergic project. 3. Participation in the decision of the project logo 	6-48	N/A
9. Demo site information / Demo software products and tools	Dissemination of the information on the Paleontological department in Erlangen (Virtual case study).	36	N/A
10. Scientific / Technical Articles in specialized media	<ul style="list-style-type: none"> 1. Submission of 2-3 scientific articles in specialized media (in cooperation with project partners). 2. Communication and upload the articles in project website 	12-48	N/A
11. Scientific / Technical Movies	Contribution to the preparation / realization of scientific and technical movies.	25-48	N/A
12. European centers of excellence for shallow geothermal applications	FAU together with, TKI, UNESCO, GEOSERV and UBeG will implement the action and will support the teaching and info / knowledge dissemination through the Central – North Europe – Germany excellence center.	20-48	Participation and supporting a Skype Conference regarding the legal obstacles concerning the founding of COE especially in Germany
13. Participation in Standardization Bodies	Contacting the national standardization body for updating the current standards with provisions resulted in the project research activity for historic buildings applications.	-	N/A
14. Links with EU Programs /	Contribution on synergies with other EU/national projects - identify	consecutive	Currently working on a cooperation including the national ZIM-Network: Soil2heat

Platforms / Initiatives	/ contact / link / cooperate in a synergic way with and national and European programs, platforms and initiatives		http://soil2heat.net
15. Internal Project meetings	Participate in semi-annual working & project meetings, and at Mid-Term review meetings	consecutive	M 18 Meeting Dublin Several Skype Meetings
16. Congress / Conference / Workshop presentations	Participation in several congresses/conferences	12-48	6. M 22 Keynote Presentation at the 2nd Forum Erdwärme und Wärmepumpe in Bayern – Gastgeber: Bundesverband Wärmepumpe (BWP) e.V. und Erdwärme Gemeinschaft https://www.geothermie.de/fileadmin/user_upload/Programmflyer_Fachforum-2020_web.pdf 7. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU 8. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings) https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf 9. Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe https://geo4civhic.eu/wp-content/uploads/201906/385.pdf 10. European drillability mapping for shallow geothermal applications https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwiQs5vUiLv_oAhXIAxAIHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ
17. National Workshops in partners countries	Organize one national workshop in conjunction to the training course in Germany (In cooperation with TKI & ...)	36-48	N/A
18. Poster Sessions	Participation in two poster sessions	consecutive	M19 Long Night of Science https://geo4civhic.eu/events/long-night-of-science-lange-nacht-der-wissenschaften-at-fau/
19. Participation at fairs	-	-	N/A
20. Flyers / brochures / leaflets / factsheets / semester newsletters	Contribution and distribution of project newsletters, brochures and factsheets to target groups in Germany	46	N/A
21. Press releases	1-2 Press releases in regional level	12-48	M21 https://www.geoenergy.nat.fau.de/2019/12/03/neues-projektvideo-geo4civhic-projekt/ M20 https://www.geoenergy.nat.fau.de/2019/11/15/ag-oberflaechennahe-geothermie-dgk-2019/
22. Journal articles	1 journal release	12-48	Preparing for a paper within the next recording period Journal: New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/
23. E-mails, mailing lists, online discussion lists, blogs	Distribution of project's newsletter to target groups in Germany	consecutive	Contributing news/results of the GEO4CIVHIC-Projekt within our department newsletter
24. Deliverables / Reports / other documents according GA	<ul style="list-style-type: none"> D.2.7 - Overview of the existing very shallow and horizontal solutions D.8.11 - Report on the definition and organization of "European centers of excellence for shallow geothermal application in civil and historical buildings. 	30 - 47	N/A

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name: Romanian Geoexchange Society

Responsible person: Robert gavriiuc

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<p>1. The partners appointed by the GA as responsible for the training activity included in their organization TED Plans the task to organize the national workshops and training courses both for specialists and for non-specialists, as follows: Spain – UPV Germany – FAU Romania – PIETRE EDIL Greece – CRES Belgium – GEOGREEN (French) and GALLETTI (Dutch) Ireland – GEOSERV Switzerland – SUPSI Italy – UNIPD Summer / winter school – UNESCO and CNR</p> <p>2. The WP leaders: WP1 - UNIPD, WP2 - FAU, WP3 – GALLETTI, WP4 – TECNALIA, WP5 – RED, WP6 – GEOSERV, WP7 – SOL, WP8 - RGS and the coordinator, WP9 – CNR included in their TED Plans the task to “train the trainers” for all the part-ners, before the national course sessions.</p> <p>3. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TEC-NALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to promote the national training courses.</p>	<p>Year #4 M37-M47</p>	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<p>1. The leaders of the research WPs: UNIPD, FAU, GALLETTI, TECNALIA, RED, GE-OSERV, SOL and UNESCO (for a Special Manual for Historic Buildings with the support of CNR-ISAC) included in their TED Plans the task to elaborate the corresponding chapters in all the training tools (Manuals and Brochures) and the corresponding short movies.</p> <p>2. The partners appointed as members of PSC – Project Specific Committees) according GA: CNR, UNIPD, RED, SOLINTEL and RGS included in their TED Plans the task of verification of all the training tool aspects: scientific, technic, administrative, financial, legal etc.</p> <p>3. The partner having English as native language: GEOSERV included in its own TED Plan the task of linguistic verification of all the training tools.</p> <p>4. The partners included in their TED Plans the (supporting) translation task for the training tools as follows: Spanish – UPV with TECNALIA support German – FAU with UBeG support Romanian – PIETRE EDIL with RGS support Greek – CRES French – GEOGREEN Dutch - GALLETTI Italian – UNIPD with CNR support</p> <p>5. The partner responsible for editing the training tools: RGS included this task in its TED Plan.</p>	<p>Year #3 M25-M36</p>	<p>In M18 - Management Meeting in Dublin the responsible partner for T8.2 – Training Courses in which the Training Manual activity is included, started the presentation of a draft of Manual elaboration frame procedure. The scope was to define the unitary approach, to set preliminary responsibilities and to clarify all the aspects of the Grant Agreement regarding these issues, including the interface with the European Centre of Excellence task. (the presentation is included in the private area of the website, as all the other internal documents).</p> <p>In M24 – Management Meeting in Erlangen, the Training Manual responsible presented the detailed Manual Elaboration Procedure having in view that M25 should be the starting moment for training tools elaboration. This final procedure is an working instrument setting all the aspects regarding objectives, resources, responsibilities, timing, formats, interfaces that will allow to efficiently create representative and utile training tools by the partners involved in this task. This working procedure was debated in Erlangen meeting and its final version is included in the private area of the project website.</p>

	6. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TEC-NALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the tasks related to printing and distributing appropriate training tools to their own stakeholders in the local events.		
3. Project website / Partners websites / Project logo	<p>1. As main responsible for the project website, RGS included in its TED Plan its creation and continuous update.</p> <p>2. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TEC-NALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to continuously and promptly supply the website responsible and administrator with all the information regarding the project progress and accomplishments.</p> <p>3. All the project partners : CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to continuously and promptly inform their own stakeholders about the project progress and accomplishments through all social media environments and their own organization websites, creating special options in the menu and including links to the GEO4CIVHIC website.</p>	M1-M48	<p>RGS updated the project website including the following events:</p> <ul style="list-style-type: none"> • REHVA CONGRESS CLIMA 2019 https://geo4civhic.eu/events/rehva-congress-clima-2019/ • European Geothermal Congress The Hague (Netherlands) https://geo4civhic.eu/events/european-geothermal-congress-the-hague-2019/ • SET Plan & ENVE Conference Bucharest (Romania) https://geo4civhic.eu/events/set-plan-enve-conference-bucharest-12-14-june-2019/ • Shallow Geothermal Energy Days Bruxelles (Belgium) https://geo4civhic.eu/events/event-shallow-geothermal-energy-days-september-24-25-2019/ • Long Night of Science - FAU Erlangen (Germany) https://geo4civhic.eu/events/long-night-of-science-lange-nacht-der-wissenschaften-at-fau/ • Key Energy Conference – Rimini (Italy) https://geo4civhic.eu/events/key-energy-renewable-energy-expo-2019/ • Ecomondo Expo and Conference – Rimini (Italy) https://geo4civhic.eu/events/ecomondo-2019/ • Geothermie Kongress Munich (Germany) https://geo4civhic.eu/events/geothermie-kongress-munich-2019/ • 50th Congress for HVAC of the Serbian HVAC Association – Belgrade (Serbia) https://geo4civhic.eu/events/50th-congress-for-heating-ventilation-and-air-conditioning-of-the-serbian-hvac-association/ <p>The deliverables due to M24 were uploaded in PUBLIC or PRIVAT area depending on their defined setting.</p> <p>Social media Environments - FB, LinkedIn, Twitter and Instagram were also activated and supplied with information. Facebook link: https://www.facebook.com/pg/geo4civhic Twitter link: https://twitter.com/GEO4CIVHIC LinkedIn link: https://www.linkedin.com/company/geo4civhic Youtube link: https://www.youtube.com/channel/UC69rkfTegUOzjgOgN1xD9bg Important events were also disseminated on the website of the Romanian Geoexchange Society at www.geoexchange.ro</p>
4. Demo site information / Demo software products and tools	The WP5 leader RED and the other partners involved in the demo cases: CNR, UNIPD, UPV, GALLETTI, FAU, TECNALIA, GEOSERV, HYDRA, TKI, GEOGREEN, UNESCO, PIE-TRE, DLH, CRES, SUPSI, RGS included in their own TED Plans the tasks of supplying and disseminating the information for the real cases and virtual cases studies in order to be used for identification, analyzes and modeling activities and for the stakeholders information.	M25-M48	N/A
5. Scientific / Technical	1. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TEC-NALIA, TKI,	M7-M48	N/A

<p>Articles in specialized media</p>	<p>UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of informing the national and European specialized media through minimum 3-6 articles on the project duration.</p> <p>2. All the partners included in their TED Plans the obligation to communicate the publication and to upload the articles in the GEO4CIVHIC project website.</p> <p>3. CNR, UNIPD, RED and GALLETTI included in their TED Plan the task of cooperating in the creation of articles for Scientific publications.</p>		
<p>6. Scientific / Technical Movies</p>	<p>The Coordinator CNR and the WP leaders WP1 - UNIPD, WP2 - FAU, WP3 - GALLETTI, WP4 - TECNALIA, WP5 - RED, WP6 - GEOSERV, WP7 - SOL included in their TED Plans the task of exemplifying and completing the information they included in each chapter of the Manuals with relevant short scientific and technical movies.</p> <p>All the other partners included in their TED plan the task of cooperating at the movies with information / data / images from their own real and virtual demo-cases.</p>	<p>Year #3-4 M25-M36</p>	<p>Management of the animation movie;</p> <ul style="list-style-type: none"> • Technical specifications – Oct. 2019 • Contractor selected: Scienseed (Spain) – Nov. 2019 • Contract concluded and signed – Dec. 2019 • Payment – Dec. 2019 • Animation movie at https://youtu.be/46fZEz2I_lo
<p>7. European Centres of excellence for shallow geothermal applications</p>	<p>The partners responsible / involved for / in this activity in the GA, meaning: UNIPD, CNR, RED, HYDRA, GALLETTI (South Europe – Italy), FAU, GEOSERV, TKI, UNESCO, UBeG (Central – North Europe – Germany), UPV, SOL, TECNALIA (Western Europe – Spain), RGS and PIETRE (Eastern Europe – Romania) included in their TED Plans the task to implement the action and to support the teaching and knowledge dissemination through them.</p>	<p>Year #4 M37-M48</p>	<p>During the Dublin management meeting (M18), main features of the CoE were set-up, such as: definition, core aspects (team, focus area, purpose), benefits and steps in establishing a CoE.</p> <p>On February 18, 2020, a web conference was organized with the participation of partners RGS, UPV, FAU and RED on the topic – conclusions of the meeting synthesized in a minute. The web conference concluded to organize a special meeting on the CoE topic during the Erlangen management meeting on March 25th, 2020.</p> <p>On March 24, 2020 - 11:00 - 13:00 EET - webmeeting on Task 8.6 - Definition and organisation of “European centres of excellence for shallow geothermal application in civil and historical buildings” - organized by UPV Borja Badenes. Participants: RGS (Robert Gavriiliuc), UPV (Javier Urchueguia, Borja Badenes), UNIPD (Antonio Galgaro, Michele Decarli), FAU (David Bertermann), RED (Luc Pokele, Giulia Mezzasalma), CNR ISAC (Adriana Bernardi). Decision on: training modules and their responsible persons, agreement between ECoE.</p>
<p>8. Participation in Standardization Bodies</p>	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of contacting their national and the Europe-an standardization bodies in order to contribute at the update of the current standards with provisions resulted in the project research activity for historic buildings applications.</p>	<p>Year #3-#4 M25-M48</p>	<p>Robert Gavriiliuc participated at the regular web-meetings of CEN TC 451 “Water and geothermal boreholes”.</p> <p>Last working draft finalized on January 20, 2020.</p> <p>Documents available –user name and password required for access - at https://cen.iso.org/livelink/livelink?func=ll&objid=8429477&objAction=browse</p> <p>March 27, 2020 - - 11:00 - 13:00 EET - webmeeting on WP6 - Environmental impact, Risk assessment and Standard Regulations - organized by Geoserv Ric Pasquali. Participants: Geogreen (Jacques Vercreuysse), UBEG (Burkhard Sanner), RED (Luc Pokele, Giulia Mezzasalma), SUPSI (Marco Belliard, Linda Soma), Tecnalia (Arantza ...), CNR ISAC (Adriana Bernardi, Gianluca ...), UNESCO (Francesca Bampa), FAU (David Bertermann), Hydra (Alessandro Bortolin), Pietre Edil (Loredana Fodor), Geoserv (Keith Harling). Decision on standardization contribution and all tasks within WP6.</p>
<p>9. Links with EU Programs / Platforms / Initiatives</p>	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of identify / contact / link / cooperate in a synergic way with and national and European programs, platforms and initiatives.</p>	<p>M7-M48</p>	<ul style="list-style-type: none"> • The BE Horizons Cluster was formed as follow-up of the INEA meeting on Oct. 8th, 2019 – attended by the coordinators of the EU funded projects on RES. • The partners of the BE Horizons cluster are the following projects: GEO4CIVHIC, Hybrid BioVGE, IDEAS, MAKING-CITY, RE-COGNITION, RES4BUILD, SolBio rev,

			<ul style="list-style-type: none"> SWS-Heating, TRI-HP. Cluster's website: http://www.solbiorev.eu/partner-projects EUSEW 2020 – GEO4CIVVIC Projects Application for the "INNOVATION" Award – Application No. 3060; Application date 10/02/2020 EUSEW 2020 - Application for "Women in Energy Award" - Application No. 3160; Application date 28/02/2020
10. Internal Project meetings	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task of actively participation in internal project meetings.	M1-M48	<p>18 months management meeting Dublin (Ireland) https://geo4civvic.eu/events/18-month-management-meeting-in-dublin/</p> <p>24 months management meeting Erlangen (Germany) - postponed</p>
11. Congress / Conference / Workshop presentations	<p>All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participation in minimum 2 national and international congresses, conferences and workshops with oral communications / papers /, posters, leaflets and brochures presenting project aims and scope, partial and final results of the project activity.</p> <p>Some partners specified the events: UNIPD (EGC 2019, Geofluid 2018, CLIMA 2019, WGC 2020), RGS (EGC 2019 Den Haag, REHVA Clima 2019 Bucharest), UBeG (Geo-Therm Offenburg 2020 and / or 2021, EGC 2019, ISEC 2018 Graz), UNESCO (World Heritage Site of Ferrara and its Po Delta- Angels' gate, World Heritage of Split Croatia).</p>	M7-M48	<ol style="list-style-type: none"> Feasibility considerations regarding the implementation of a GSHP system for an industrial facility (50th Congress for Heating, Refrigeration and Air Conditioning 2019, Belgrade – Serbia) https://geo4civvic.eu/wp-content/uploads/2019/12/50-KGH_Paper_Robert-Gavriliuc.pdf Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVVIC https://zenodo.org/record/3557745#.XnyvY3LSLIU
12. National Workshops in partners countries	<p>The partners appointed by the GA as responsible for the training activity included in their TED Programs the task to organize the national workshops as follows:</p> <p>Spain – UPV Germany – FAU Romania – PIETRE EDIL Greece – CRES Belgium – GEOGREEN (French) and GALLETTI (Dutch) Ireland – GEOSERV Switzerland – SUPSI Italy – UNIPD Summer / winter school – UNESCO and CNR</p>	<p>Year #3</p> <p>M37-M48</p>	N/A
13. Poster Sessions	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participation in minimum 2 national and international poster sessions in different national and European events presenting project aims and scope, partial and final results of the project activity.	M7-M48	N/A
14. Participation at fairs	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the participation in minimum 1 national / European fair and to disseminate information regarding project objectives and results.	M25-M48	N/A
15. Flyers / brochures / leaflets / factsheets / semester newsletters	<ol style="list-style-type: none"> As TED responsible partner, RGS included in the TED plan the elaboration of project's leaflet, initial brochure, factsheets, newsletters. All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the tasks of disseminating the project mentioned documents (leaflet, initial brochure, factsheets, newsletters) and to create their own dissemination tools in the national language: roll-ups, posters, flyers for their own targeted stakeholders. 	M7-M48	<p>GEO4CIVVIC Newsletter #2 https://us19.campaign-archive.com/?u=63b53ed865d159e6d793fb7e4&id=f171f22d3a</p> <p>GEO4CIVVIC Factsheet #2 https://geo4civvic.eu/wp-content/uploads/2019/11/GEO4CIVVIC-Project-Factsheet-2.pdf</p>
16. Press releases	CNR and RGS included in their TED Plans the elaboration of project press releases, of joint press releases with the other EU funded projects for occasional events (congresses, conferences, at	M7-M48	N/A

	regional, national and international level.		
17. Journal articles	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the cooperation in the elaboration of articles in national and European journals in order to present the project partial and final research results.	M7-M48	<p>Implementation of a geothermal heat pump system in a solar passive house (Conference of the TUCEB Doctoral School, Oct. 2019) https://geo4civhic.eu/wp-content/uploads/2018/11/DSC_2018_paper_17.Final_acknowledgment.pdf</p> <p>Sensitivity analysis using simulations for a ground source heat pump – implementation on a solar passive house (REHVA Clima 2019 Congress, Bucharest – Romania) https://geo4civhic.eu/wp-content/uploads/2019/06/Clima_2019_paper_488-2.pdf</p>
18. E-mails, mailing lists, online discussion lists, blogs	All the project partners: CNR, UNIPD, UPV, RED, GEOSERV, GALLETTI, TECNALIA, TKI, UNESCO, FAU, RGS, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, SOL, DLH and SUPSI have included in their TED Plans the task to realize and continuously update the mailing lists, online discussion list, contact list for newsletter, stakeholders lists for a large dissemination according the GDPR rules.	M1-M48	N/A
19. Deliverables / Reports / other documents according GA	<p>All the WP responsible partners UNIPD, FAU, GALLETTI, TECNALIA, RED, GEOSERV, SOL, RGS and CNR have included in their TED Plans the task to realize / coordinate the elaboration of the 68 deliverables in the project (WP1 – 6, Wp2 – 7, WP3 – 7, WP4 – 13, WP5 – 9, WP6 – 7, WP7 – 6, WP8 – 12, WP9 – 1).</p> <p>All the other project partners: UPV, TKI, UNESCO, CRES, HYDRA, UBeG, GEOGREEN, PIETRE, DLH and SUPSI have included in their TED Plans the task to realize as task responsible or to cooperate in the elaboration of the 68 deliverables in the project.</p>	M1-M48	All the due deliverable were uploaded in the project website in public or private area from case to case.

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name: CRES
Responsible person: Dimitris Mendrinou

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	2. GRES will organize the training course in Greece. 3. CRES will participate with its specialists that will be trained as trainers for the course in Greece. 4. CRES will promote the national training courses to all the potential stakeholders in Greece.	46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	1. Translation of the training tools in Greek language. 2. Printout of the technical brochure – Greek and distribution to the stakeholders in the local events.	36 42	N/A
3. Project website / Partners websites / Project logo	1. Contribution to project 2. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, 3. Participation in the decision of the project logo	6 - 48	CRES contributed video on the Alexandroupolis virtual case study, which was uploaded on the project website
4. Demo site information / Demo software products and tools	Dissemination of the information on the Museum of natural history of Alexandroupolis (virtual demo case).	36 - 48	Alexandroupolis virtual demo case was presented in local TV channel
5. Scientific / Technical Articles in specialized media	1. Informing the Greek media through minimum 3 articles on the project duration on the Alexandroupolis virtual demo case. 2. Communicating the publication and uploading the articles in the GEO4CIVHIC project website.	48	N/A
6. Scientific / Technical Movies	Contribution to the preparation / realization of scientific movies.	48	N/A
7. European centres of excellence for shallow geothermal	Contribution to EU centers of excellence for shallow geothermal applications.	48	N/A
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Greece	48	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects.	1 - 48	Alexandroupolis virtual demo case summary was uploaded on the Horizon results platform portal of the European Commission
10. Internal Project meetings	Participate in semiannual project meetings (9 meetings in total)	1 - 48	CRES participated with two experts each in project meetings of Malta and Dublin
11. Congress / Conference / Workshop presentations	Presentation on the Museum of natural history of Alexandroupolis virtual demo case	46	Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538 4. Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU
12. National Workshops in partners countries	Organize one national workshop in conjunction to the training course in Greece	46	N/A
13. Poster Sessions	Participation in two poster sessions	1 - 48	N/A
14. Participation at fairs	Participation at fairs in Greece	1 - 48	N/A
15. Flyers / brochures / leaflets / factsheets / newsletters	Distribution of project newsletter to target groups in Greece	46	N/A
16. Press releases	Press release to target groups in Greece	45	Alexandroupolis virtual demo case was presented in local TV channel

17. Journal articles	Contribution to journal articles	46	CRES contributed to papers concerning the project and its first results, which were published or submitted for publication in scientific journals and international conferences. 1. Energetic and Exergetic Analysis of Low Global Warming Potential Refrigerants as Substitutes for R410A in Ground Source Heat Pumps https://www.mdpi.com/1996-1073/12/18/3538 2. New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/ 3. Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Borehole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project newsletter to target groups in Greece by email	12 - 48	Project newsletters 1 and 2 have been distributed to target groups in Greece by email
19. Deliverables / Reports / other documents according GA	1. D3.1 "Mapping of GSHP for cooling and for low and high temperature terminals for heating" (public) 2. Report on performance evaluation of Geo4CivHic solutions in Greek virtual demo site (confidential) 3. D7.1 "Report on LCC Analysis" (confidential)	15 36 47	D3.1 has been submitted Task 5.4.1 is under implementation Implementation of Task 7.1 will start in next period

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name / ORGANIZATION:

Hydra

TED responsible person in your organization:

Davide Righini

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	1. HYDRA will cooperate with the Italian partners in the organization of the national training courses in Italy. 2. HYDRA will organize training courses in all the markets in which it operates, to inform its customers about new machines, equipment and technologies developed during the project. 3. HYDRA will participate with specialists in order to be trained in “train the trainers” courses, before the national course sessions. 4. HYDRA will promote the national training courses and its own courses through all the appropriate channels mainly through the own website and dissemination database.	M37 – M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	1. HYDRA will support elaboration of training material and brochure. 2. HYDRA will print out brochure and leaflet for dissemination to their own stakeholders.	M30 – M36	N/A
3. Project website / Partners websites / Project logo	1. Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. 2. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVHIC website and synergic project. 3. Participation in the decision of the project logo	M6 – M48	Hydra promptly provided to the website responsible materials, such as photos, about its presence at fairs and the dissemination of GEO4CIVHIC project within such fairs.
4. Demo site information / Demo software products and tools	HYDRA will disseminate the information about the real Demo Sites.	M25 – M48	N/A
5. Scientific / Technical Articles in specialized media	1. Inform the national and European specialized media and Scientific publications through minimum 3 articles elaborated together with UNIPD, RED and CNR, 2. Communicate the publication and to upload the articles in the GEO4CIVHIC project website.	M13 – M48	N/A
6. Scientific / Technical Movies	HYDRA will contribute to the preparation /realization of scientific and technical movies on the real cases and support of the elaboration of the general video of the project.	M25 – M48	N/A
7. European centers of excellence for shallow geothermal applications	HYDRA together with UNIPD, CNR, RED, GALLETTI will implement the action and will support the teaching and knowledge dissemination through the South Europe – Italy Center of Excellence.	M36 – M48	N/A
8. Participation in Standardization Bodies	Contacting the national standardization body for updating the current standards with provisions resulted in the project research activity for historic buildings applications.	/	N/A
9. Links with EU Programs / Platforms / Initiatives	Identify / contact / link / cooperate in a synergic way with and national and European programs, platforms and initiatives	M1 - M48	N/A

10. Internal Project meetings	HYDRA will participate in Kick off and semiannual project meetings (9 meetings in total). Participation in internal meeting needed during the project, most of all those regarding real case studies.	M1 - M48	<ul style="list-style-type: none"> • 12th month meeting in La Valletta • 18th month meeting in Dublin • Internal meetings for development of drilling machine and technologies
11. Congress / Conference / Workshop presentations	HYDRA will participate to national and international conference and meeting with oral communication, posters, leaflets and brochures.	M6 – M48	Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU
12. National Workshops in partners countries	HYDRA will contribute Contribution on the organization of the national workshops in conjunction to the training course in Italy	M37 – M46	N/A
13. Poster Sessions	HYDRA will participate Participation in at least three poster sessions	M1 - M48	<ul style="list-style-type: none"> • Bauma 2019 in Munich (Germany), 8-14/04/2019 • Ecomondo 2019 in Rimini (Italy), 5-8/11/2019
14. Participation at fairs	HYDRA will participate with its own exhibition and information spaces at the following international fairs: GEO FLUID - Piacenza from 03/10/2018 to 06/10/2018 ECOMONDO Rimini from 06/10/2018 to 09/10/2018 BAUMA MONACO from 08/04/2019 to 14/04/2019 CTT Moscow from 04/06/2019 to 07/06/2019 MARMOMAC Verona in September 2019	M1 - M48	<ul style="list-style-type: none"> • GEO4CIVHIC poster at Hydra stand at Bauma 2019 • GEO4CIVHIC leaflet at Hydra stand at Ecomondo 2019
15. Flyers / brochures / leaflets / factsheets / semester newsletters	HYDRA will cooperate at the elaboration and translation of brochures and leaflets.	M6 – M48	N/A
16. Press releases	HYDRA will cooperate in the elaboration of the Press release by the Coordinator and will disseminate in all countries in which it operates	M6 – M48	N/A
17. Journal articles	Contribution to journal articles	M25 – M48	Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Bore-hole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321
18. E-mails, mailing lists, online discussion lists, blogs	HYDRA will contribute to disseminate the mailing list for the dissemination activities.	M12 - M48	N/A
19. Deliverables / Reports / other documents according GA	HYDRA will collaborate with the other partners in the realization of the Reports and Deliverables	M1 – M48	<ul style="list-style-type: none"> • Deliverable 2.3 (Development of a versatile, compact drilling machine to operate in urban areas): completed • Contribution to Deliverable 1.2 (Drillability mapping and state of the art of the drilling methodologies): completed • Contribution to Deliverable 2.2 (Development of a compact, rotation vibration drilling head for urban areas): completed • Contribution to Deliverable 2.4 (Simulation and design of co-axial heat exchangers with regard to performance and costs): completed

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name: UBeG
Responsible person: Burkhard Sanner

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	UBeG will assist in German training course to be organized by FAU	46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure			N/A
3. Project website / Partners websites / Project logo	Contribution to project and own website update	6 - 48	Contribution and review to project website updates, link to project website on own website, project publication (EGC2019, see below) for download on own website
4. Demo site information / Demo software products and tools			N/A
5. Scientific / Technical Articles in specialized media	Articles on drilling, grouting, subsurface simulation etc. in technical journals (e.g. bbr, the journal of the German drilling industry)	48	N/A
6. Scientific / Technical Movies			N/A
7. European centers of excellence for shallow geothermal applications	Contribution to EU centers of excellence for shallow geothermal applications	48	Contribution to shaping the plans for centers of excellence by email and during dedicated meeting alongside M18 meeting in October 2019 in Dublin.
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Germany and at CEN	48	Contribution to German standard VDI 4640 (member of committee): Final work on new edition of VDI 4640-2, released June 2019 (B Sanner); finalization and review of English translation for VDI 4640-5 on TRT, release expected spring 2020 (B Sanner, M Sauer); participation in new sub-committee VDI 4640-6 on grouting materials, set up in October 2019 (E Mands). UBeG personnel in VDI 4640: B Sanner retired from VDI 4640 committee in December 2019, E Mands took over; M Sauer continues as member of sub-committee VDI 4640-5. Newsletter article (in German) on the release of VDI 4640-2: Sanner, B., Reuss, M., Koenigsdorff, R. (2019): Neufassung der Richtlinie VDI 4640 Blatt 2 und die Normierung für erdgekoppelte Wärmepumpen. Geothermische Energie 93/19, p. 14-17, Berlin Communication with members of CEN TC/451 and with the respective German mirror group at DIN.
9. Links with EU Programs / Platforms / Initiatives	Link to EU H2020-project GEOCOND, active member of ETIP RHC and ETIP Deep Geothermal, member of EGEC	1 - 48	Attended all project meetings within H2020-project GEOCOND, as a partner there. Attended (B Sanner) the meeting of the geothermal panel of RHC-ETIP on 13 June 2019 in den Haag and the webinar of the panel on 15 May 2019, and took part in the virtual meeting of the steering committee of the geothermal panel of RHC-ETIP on 5.3.2019 Co-organisation of inter-project workshops on mapping for shallow geothermal (12 June 2019, Den Haag and 25 Sept 2019, Brussels, both mainly for project GEOCOND); further workshop planned for 4 March 2020 in Offenburg, ahead of GeoTherm fair (mainly for GEO4CIVHIC, together with partner UPD), but event postponed in line with postponement of the GeoTherm fair due to Coronavirus.
10. Internal Project meetings	Participate in semiannual project meetings (8 meetings in total)	1 - 48	Attended the M12 meeting in Malta in April 2019 (E Mands) and the M18 meeting in Dublin in October (B Sanner), with the respective pre-meeting special sessions.
11. Congress / Conference / Workshop presentations	Presentation (probably on barriers, drilling technology, grouting, and similar); target events: GeoTherm Offenburg (2020 and/or 2021), EGC 2019, other	46	6. Conference: A NEW EFFORT TO ADDRESS SHALLOW GEOTHERMAL ENERGY SUPPLY IN THE BUILT ENVIRONMENT: H2020-PROJECT GEO4CIVHIC https://zenodo.org/record/3557769#.Xny2LHLSLIU

	Contribution to GEO4CIVHIC paper at ISEC 2018, Graz		<p>7. Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings) https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf</p> <p>8. Presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf</p> <p>9. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf</p> <p>10. Congress: European drillability mapping for shallow geothermal applications https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUiLvoAhXIAXAIHRyiByoQFjAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ</p>
12. National Workshops in partners countries			N/A
13. Poster Sessions			N/A
14. Participation at fairs	Contribution to participation at fairs (mainly GeoTherm Offenburg)		Visit to GeoTherm fair and participation in related conference in Offenburg on 5-6 March 2020 planned and prepared, however, event postponed on short notice due to Coronavirus measures.
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Distribution of project newsletter to target groups in Germany	46	N/A
16. Press releases	Translation and distribution of press release to target groups in Germany	45	N/A
17. Journal articles	Contribution to journal articles	48	N/A
18. E-mails, mailing lists, online discussion lists, blogs			N/A
19. Deliverables / Reports / other documents according GA	<ul style="list-style-type: none"> D1.1 "Report on different kind of barriers for shallow geothermal in deep renovation" (public) D2.1 "Overview of vertical geothermal heat exchangers and corresponding drilling machine techniques" (public) D6.6 "Recommendations to CEN Technical Working Groups for the technologies developed" (public) 	<p>9</p> <p>6</p> <p>30</p>	D1.1 and D2.1 already released in last period, D6.6 not due yet; contribution to and review of other deliverables.

REPORT on the Training / Education / Dissemination activities developed in M13-M23

PARTNER name: GEO-GREEN

Responsible person: Jacques VERCRUYSE

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	Organizing one training course in Belgium (French)	M37 - M46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	Contribution in the elaboration of the training material and brochure as task Leader. Translation in French of the training manual and brochure Print out brochure and leaflet for dissemination	M30 - M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project and own website update	M6 - M48	N/A
4. Demo site information / Demo software products and tools	Provide (together with RED) the information on real demo site in Mechelen. Provide information on the castle of Attre virtual demo case	M25 - M48	N/A
5. Scientific / Technical Articles in specialized media	Take part, together with other partners, in the creation of Scientific publications	M13 - M48	N/A
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical movies on the real cases in Belgium	M25 - M48	N/A
7. European centers of excellence for shallow geothermal applications	Contribution to the creation EU centers of excellence for shallow geothermal applications	M36 - M48	N/A
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Belgium	M48	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects	M1 - M48	N/A
10. Internal Project meetings	Participate in Kick off and semiannual project meetings (9 meetings in total). Participation in internal meeting needed during the project, most of all those regarding real case studies.	M1 - M48	Participated KO project meeting M12 (Malta) and M18 Project Meeting (Dublin)
11. Congress / Conference / Workshop presentations	Presentation on castle of Attre virtual demo case & family house in Mechelen, real case	M6 - M48	<ol style="list-style-type: none"> Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings) https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf Conference: Economic, geological and technical potential mapping test for GSHP systems in Europe https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf DOUBLE U-TUBE BOREHOLE HEAT EXCHANGERS." IN JUNE 2019 AND "EUROPEAN DRILLABILITY MAPPING FOR SHALLOW GEOTHERMAL APPLICATIONS" IN JANUARY 2020 (CONGRESS) https://www.google.com/url?sa=t&rct=i&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUiIlyoAhXlAxAlHRyiByoQFjAAegQIA:hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-

			8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ 5. congress: European drillability mapping for shallow geothermal applications https://www.google.com/url?sa=t&rct=i&q=&esrc=s&source=web&cd=1&ved=2ahUKewiQs5vUiLv_oAhXlAxAlHRyiByoQFIAAegQIA-hAB&url=https%3A%2F%2Fmeetingorganizer.copernicus.org%2FEGU2020%2FEGU2020-8584.html%3Fpdf&usg=AOvVaw2EIMTHYxSbe5bwBRZr-1UZ
12. National Workshops in partners countries	Organization of the national workshops in conjunction to the training course in Belgium	M37 – M46	N/A
13. Poster Sessions	Participation in at least one poster sessions	M1 - M48	N/A
14. Participation at fairs	Participation in at least one fair in Belgium	M1 - M48	Presentation of the project on 15 oct 2019 to FAAST (Think Tank Group) in Brussels
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Cooperation at the elaboration and translation of brochures and leaflets. Printing the English and French versions and distribution of the respective project documents to target groups in Belgium	M6 – M48	N/A
16. Press releases	Cooperation in the elaboration of the Press release by the Coordinator and dissemination it to target groups in Belgium	M6 – M48	N/A
17. Journal articles	Contribution to journal articles	M25 – M48	1. TAKE PART TO FOLLOWING JOURNAL PUBLICATIONS: “A SIMULATION-BASED COMPARISON BETWEEN THE THERMAL BEHAVIOR OF COAXIAL https://www.mdpi.com/1996-1073/12/12/2321 2. Simulation-Based Comparison Between the Thermal Behavior of Coaxial and Double U-Tube Borehole Heat Exchangers https://www.mdpi.com/1996-1073/12/12/2321
18. E-mails, mailing lists, online discussion lists, blogs	Contribution to disseminate the mailing list for the dissemination activities	M12 – M48	N/A
19. Deliverables / Reports / other documents according GA	Responsible for D5.6 - Evaluation of performance in real demonstration facility n°3 (confidential)	M36	N/A

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name: PIETRE EDIL

Responsible person: Loredana Fodor

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned dead-line	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	Organise 2 training courses in Romania (one for specialists and one for non-specialist)	Year3 / M35 and Year4 / M47	N/A
2. Training material: Manual / Manual Historical buildings / Brochure	Translation and print of the training manual Translation and print of the technical brochure, flyers Elaboration/production/stamp of the project banner	Year3 / M36	N/A
3. Project website / Partners websites / Project logo	Contribution to project website and own website, Facebook page, linked in, twitter, instagram update <ul style="list-style-type: none"> Pietre Edil will update information on its own site after each meeting of the project Elaboration of the logo of the project Pietre Edil elaborated the FB page of the project – and will continuously update it 	Year 1-Year 4/ M1 – M48 Year1 / M3 Year1 / M3	Pietre Edil is permanently involved in social media projects activities, promoting the GEO4CIVHIC project through the website of the company: http://pietre-edil.ro/ . Pietre created a direct link in the own site to the GEO4CIVHIC site. Pietre Edil was active also in promoting the project by on line campaigngs https://www.facebook.com/pietreedil/ . Also, Pietre is disseminating the project activities by sharing the social media facebook posts of GEO4CIVHIC, being active also with twitter, Instagram and linked in project pages. Pietre received feedbacks from the company site's visitors.
4. Demo site information / Demo software products and tools	Information on virtual demo case	Year2 / M24	Pietre participated by giving inputs with demo site information (Avangard Residential House).
5. Scientific / Technical Articles in specialized media	Publication of one technical article in specialized media	M36-M48	N/A
6. Scientific / Technical Movies	Contribution in making scientific and tehcnical short movies	Year4/ M48	N/A
7. European centers of excellence for shallow geothermal applications	Contribution to EU centers of excellence for shallow geothermal applications	Year4/ M48	N/A
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Romania (RINA Simtex, TUV , Lloyds, SRAC) and with the Romanian Accreditation National body RENAR	Year1-Year4 / M9-M42	N/A
9. Links with EU Programmes / Platforms / Initiatives	Synergies with other EU/national projects	Year1-Year4 / M1-M48	Pietre Edil participated at CLIMA 2019 CONFERENCE https://www.clima2019.org More than 1000 participants & attendees from more than 40 countries. PIETRE presented GEO4CIVHIC project and InnoWEE project, presented by PIETRE.
10. Internal Project meetings	Participate in semiannual project meetings (8 meetings in total)	Year1-Year4 / M1-M48	Pietre Edil attended the 18 month Management Meeting in Dublin.
11. Congress / Conference / Workshop presentations	Participation to one national Congress, Conference or Workshop	Year 4/ M43-M48	Pietre Edil participated at CLIMA 2019 CONFERENCE , where we distributed arour 50 GEO4CIVHIC flyers and brochures. https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf
12. National Workshops in partners countries	Participation to one National workshop in Parteners countries	Year 4/ M43-M48	N/A
13. Poster Sessions	Participation at one poster session	Year 3/ M 35	N/A
14. Participation at fairs	Participation at one fair in Romania	Year 3-Year4	N/A

		/ M35-M36	
15. Flyers / brochures / leaflets / factsheets / semestral newsletters	Distribution of project newsletter to target groups in Romania – <i>(each time we will have the opportunity)</i>	Year 1 –Year 4 / M12-M48	Distribution of cca 70 project’s brochures and circa 70 leaflets to several stakeholders, including Pietre Edil’s clients and collaborators. The special desk created in the office is dedicated to the promotion of Geo4Civhic project.
16. Press releases	Press release to target groups in Romania and/or Europe	M38 – M48	N/A
17. Journal articles	Contribution to journal articles- each time we will be asked by partners Preparation of a journal article with the project’s results	M1-M48 M48	N/A
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project newsletter to target groups in Romania, respecting GDPR regulation	M1-M48	Pietre Edil is active on the BLOG dedicated to Geo4Civhic projects, where information about the project activities are posted.
19. Deliverables / Reports / other documents according GA	D 5.2- “Report on data collection, design and preliminary cost-benefit analysis of the real cases”(Confidential) D5.3 “Report on data collection, preliminary design of the building and/or the HVAC system with related costs of the virtual cases” (Confidential) D7.5 ” Exploitation plan to increase the commercial attractiveness and the penetration of geothermal energy Systems” (Public) D8.9 ” Report on Networking Activities with Architects / Engineers Associations and private stakeholders’ involvement in the process of dissemination” (Public)	M18 M24 M48 M47	D5.3 “Report on data collection, preliminary design of the building and/or the HVAC system with related costs of the virtual cases” (Confidential) - will be delivered until 31.03.2020

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name:

SOLINTEL

TED responsible person in your organization:

Dery Torres; Michele Vavallo

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned dead-line	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	<ol style="list-style-type: none"> Support the organization of training course in Spain. Train our trainers in “train-the-trainers” courses organized in the project. Promote the courses to all our stakeholders in Spain. 	46	N/A
2. Training tools: Manual / Manual Historical buildings / Brochure	<ol style="list-style-type: none"> Support in the translation of the training manual in Spanish. As member of PSC – Project Specific Committees - verification of all the training tool aspects: scientific, technic, administrative, financial, legal etc. Print and distribution of the training tools in Spanish to the stakeholders. 	Year 4	N/A
3. Project website / Partners websites / Project logo	<ol style="list-style-type: none"> Contribution to project website by continuously and promptly supplying the website responsible and administrator with all the information regarding the project progress and accomplishments. Informing the stakeholders about the project progress and accomplishments through all social media environments and the organization website, creating special options in the menu and including links to the GEO4CIVVIC website and synergic project. 	13 - 48	Sharing project website link and information within the SOLINTEL Networks
4. Demo site information / Demo software products and tools	Support the description of Demos, software and tools, dissemination of the information inside the Spanish market.	30-48	N/A
5. Scientific / Technical Articles in specialized media	<ol style="list-style-type: none"> Informing the national and European specialized media through 3 articles on the project duration. Communicate the publication and upload the articles in the GEO4CIVVIC project website. 	13-48	Support in scientific publications when needed
6. Scientific / Technical Movies	Contribution to the preparation of scientific and technical movies.	48	N/A
7. European centers of excellence for shallow geothermal applications	SOL together with UPV and TECNALIA will implement the action and to support the teaching and knowledge dissemination through the Western Europe – Spain Center of Excellence.	48	N/A
8. Participation in Standardization Bodies	Communication with Standardization Bodies in Spain	48	N/A
9. Links with EU Programs / Platforms / Initiatives	Contribution on synergies with other EU/national projects	13 – 48	Networking with other project consortium SOLINTEL is in. Networking with the ECTP.org platform where SOLINTEL is a Member
10. Internal Project meetings	Participate in semi-annual project and review meetings	13 – 48 April 2019 October 2019 December 2019	Participation in the following internal consortium meetings: 12 th Month Meeting celebrated in La Valletta, Malta 18 th Month Meeting celebrated in Dublin, Ireland 1 st REVIEW MEETING celebrated Online due to PO’s issues.
11. Congress / Conference / Workshop presentations	Face to face Internal Workshop presentation into the WP7 framework WP7 Online meeting	24 25 th March 2020 TBD	A An internal workshop was planned to be taken in place the 25 th of March 2020 in order to interact directly with the partners, but it was cancelled due to the Coronavirus in Europe. The agenda was among others: Identification of the New technologies, status of the developments, Key technologies features, potential market and competitors. Also the exploitation plan and the IPR strategy for each technology and related partners.

			So far, an online meeting with all involved partners is planned to be celebrated next April 2020 in order to explain who and how partners have to populate templates regarding the exploitation, IPR and business models.
12. National Workshops in partners countries			N/A
13. Poster Sessions			N/A
14. Participation at fairs	Support in participation in a possible fair in Valencia	13 - 48	Involvement into the technology workshop during the CEVISAMA fair 2019
15. Flyers / brochures / leaflets / factsheets / newsletters	Support the distribution of project newsletter to target groups in Spain	46	N/A
16. Press releases	Support press release to target groups in Spain if possible	45	N/A
17. Journal articles	Contribution		N/A
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project newsletter to target groups in Spain by email	13 - 48	N/A
19. Deliverables / Reports / other documents according GA	<ul style="list-style-type: none"> D7.2 (M47) Cost-effectiveness demonstration (SOL) (PU) D7.3 (M30) Market and Business innovation 1st version (SOL) (PU) D7.4 (M48) Market and Business innovation 2nd version (SOL) (PU) 	47 30 48	Activities in Task 7.3 which results will merge into the D7.3 will start the next April (M25). Dissemination of a specific template among involved partners is planned by beginning of April.

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name:

DLH

TED responsible person in your organization:

Luciano Mulè Stagno

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses		46	NA
2. Training tools: Manual / Manual Historical buildings / Brochure	Further inputs will be provided upon request of the project coordinator	20	Inputs to project brochures have been duly provided
3. Project website / Partners websites / Project logo	Further communications are planned as soon as the implementation of demo activities shall begin. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	6-48	The project website of Din I-Art Helwa, National Trust of Malta
4. Demo site information / Demo software products and tools	Demo site information will be made public and disseminated through DLH communication channels	48	Demo site information have been made public and disseminated through DLH communication channels
5. Scientific / Technical Articles in specialized media	Further communications are planned as soon as the implementation of demo activities shall begin. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	48	There is no room for specialized articles to be published since the applied work on the real demo site of Msida bastion in Floriana is not operational yet.
6. Scientific / Technical Movies	Videos are planned in coordination with the project leader. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	48	There is no room for technical videos to be made since the applied work on the real demo site of Msida bastion in Floriana is not operational yet.
7. European centers of excellence for shallow geothermal applications	DLH intends to provide direct link with the academic world, case in point the Institute of Sustainable Energy of Malta	48	NA
8. Participation in Standardization Bodies	NA	48	NA
9. Links with EU Programs / Platforms / Initiatives	Further discussion will take place with the focal point for the H2020 project in Malta in order to assess possible synergies with other EU projects. Other synergies can be at hand with the national funds for renewable energy in order to foresee a hybridation between solar and geothermal energy.	1-48	The H2020 national contact point, Mr. Mark Meliak, has been contacted, met and informed about GEO4CIVHIC for further cooperation and synergies.
10. Internal Project meetings	Internal project meetings will be attended upon termination of the lockdown and quarantine from coronavirus (24 th project meeting has been canceled). However, project meetings are held through remote communication technologies	1-48	Internal project meetings have been attended accordingly.
11. Congress / Conference / Workshop presentations	DLH being in charge of the organization of the Project end event, would like to plan the merging of the national workshop (M46) for the presentation of the activities implemented at the Msida Bastion Garden in Floriana (Malta – real case study) with the Final Conference (M48). This would increase cost effectiveness and efficiency in our activities.	48	<p>5. DLH being in charge of the organization of the Project end event, would like to plan the merging of the national workshop (M46) for the presentation of the activities implemented at the Msida Bastion Garden in Floriana (Malta – real case study) with the Final Conference (M48). This would increase cost effectiveness and efficiency in our activities.</p> <p>6. Conference: Innovative drilling methods, heat pumps and tools to address shallow geothermal in the built environment: H2020 project - GEO4CIVHIC https://zenodo.org/record/3557745#.XnypY3LSLIU</p> <p>7. Presentation: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf</p> <p>8. Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe</p>

			https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf
12. National Workshops in partners countries	See above	46	N/A
13. Poster Sessions	To be considered with the coordination of the project leader and upon end of quarantine	1-48	NA
14. Participation at fairs	To be considered with the coordination of the project leader and upon end of quarantine	1-48	NA
15. Flyers / brochures / leaflets / factsheets / semester newsletters	DLH is ready to provide inputs whenever requested	46	Contribution to these outputs have been done according to the coordinator requests
16. Press releases	Further communications are planned as soon as the implementation of demo activities shall begin. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	45	There is no room for press release since the bulk of the work namely the applied work on the real demo site of Msida bastion in Floriana is not operational yet.
17. Journal articles	Further communications are planned as soon as the implementation of demo activities shall begin. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	48	There is no room for specialized articles to be published since the bulk of the work namely the applied work on the real demo site of Msida bastion in Floriana is not operational yet.
18. E-mails, mailing lists, online discussion lists, blogs	Further communications are planned as soon as the implementation of demo activities shall begin. For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	12-48	Din l-Art Helwa, National Trust of Malta has issued internal newsletters about the project implementation, whenever this had relation to the Maltese case and involved Malta. https://dinlartelwa.org/news/din-l-art-helwa-dlh-national-trust-of-malta-has-organised-the-general-meeting-of-the-eu-funded-project-geo4civhic/
19. Deliverables / Reports / other documents according GA	D5.4 (M36) Evaluation of performance in real demonstration facility No 1: (DLH) (CO) For the time being, the drilling phase has been delayed to a later date due to coronavirus lockdown	36	D5.4 (M36) Evaluation of performance in real demonstration facility No 1: (DLH) (CO)

REPORT on the Training / Education / Dissemination activities developed in M13-M24

PARTNER name:

SUPSI

TED responsible person in your organization:

Marco Belliardi

Dissemination Method according TED Strategy	PLANNING AREA		REPORTING AREA
	Planned actions Description of the concrete planned actions	Planned deadline	Implemented actions in M13-M24 Detailed description of the concrete implemented actions
0	1	2	3
1. Training courses	Promote the courses at national scale through the specific dissemination channels.	36-48	07-nov-2019. Course on the SIA384/6 standard (Suisse norm on BHEs sizing). GEO4CIVHIC project has also been shown and described during the day. 12-dec-2020. Participation in a lecture at Politecnico di Milano, where SUPSI results of the GEO4CIVHIC project have been showed.
2. Training tools: Manual / Manual Historical buildings / Brochure	Contribution to training tools referred to WP we are involved.	30-48	07-nov-2019. During the course on the SIA384/6, the ETHIC tool developed in D6.3 (WP6) has been presented and divulged to participants (engineers and planners).
3. Project website / Partners websites / Project logo			N/A
4. Demo site information / Demo software products and tools			N/A
5. Scientific / Technical Articles in specialized media			N/A
6. Scientific / Technical Movies			N/A
7. European centers of excellence for shallow geothermal applications			N/A
8. Participation in Standardization Bodies			N/A
9. Links with EU Programs / Platforms / Initiatives			N/A
10. Internal Project meetings			N/A
11. Congress / Conference / Workshop presentations			<ol style="list-style-type: none"> NEW EFFORT TO ADDRESS SHALLOW GEOTHERMAL ENERGY SUPPLY IN THE BUILT ENVIRONMENT: H2020-PROJECT GEO4CIVHIC https://zenodo.org/record/3557769#.Xny2LHLSLIU Conference: H2020 project GEO4CIVHIC (Most Easy, Efficient and Low Cost Geothermal Systems for Retrofitting Civil and Historical Buildings) https://geo4civhic.eu/wp-content/uploads/2019/06/ID_1509180560_01_GEO4CIVHIC_03_names.pdf Presentation: Archetype definition for analyzing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Carnieletto_presentatio_434.pdf Paper: Archetype definition for analysing retrofit solutions in urban areas in Europe https://geo4civhic.eu/wp-content/uploads/2019/07/Clima_2019_paper_434.pdf conference: Economic, geological and technical potential mapping test for GSHP systems in Europe https://geo4civhic.eu/wp-content/uploads/2019/06/385.pdf
12. National Workshops in partners countries			N/A
13. Poster Sessions			N/A

14. Participation at fairs	Participation at fairs in Switzerland focused on shallow geothermal domain	1-48	Participation at "Ticino Impiantistica" fair (2019-oct-10/12) as reference for the Italian Switzerland of the national Geothermie-Schweiz association; also discussion and divulgation of the GEO4CIVHIC project.
15. Flyers / brochures / leaflets / factsheets / semester newsletters	Translation and distribution at national and local level if necessary	1-48	Translation in EN-IT of the T6.2 material and ETHIC tool (necessary for Suisse regional course done in Nov 2019). Translation of all necessary material for the activity.
16. Press releases			N/A
17. Journal articles			New tools to support the designing of efficient and reliable ground source heat exchangers: the Cheap-GSHPs databases and maps https://www.adv-geosci.net/49/47/2019/
18. E-mails, mailing lists, online discussion lists, blogs	Distribution of project newsletter to target groups in Switzerland	1-46	<p>Discussion with the Geothermie-Schweiz association for the publication of the D6.3 abstract on the official web site. Probably it will be done in March 2020.</p> <p>Discussion with SUPSI communication office for the publication of the D6.3 abstract. Probably it will be done in March 2020</p> <p>Dissemination of D6.3 results:</p> <ul style="list-style-type: none"> • http://www.supsi.ch/isaac/eventi-comunicazioni/news/2020/2020-03-05.html (and also posted on SUPSI linkedin web page) • https://geothermie-schweiz.ch/planning-and-implementing-new-ground-source-heat-pump-systems-in-dense-urban-environments/?lang=fr • http://www.supsi.ch/isaac/ricerca-applicata/energia-territorio/GEO4CIVHIC.html (Italian and English)
19. Deliverables / Reports / other documents according GA	D6.3 "Recommendation for the planning and implementation of new GSHP systems in dense urban environment and related tool" (public)	23	Submission and publication of the deliverable