



RESHeat Energy System for Residential Building Heating and Electricity Production

Research and Innovation Action

H2020-LC-SC3-EE-2020-1

Dissemination and Communication Plan (DCP) and Data Management Plan (DMP)

Deliverable D6.1

Work Package 6: Dissemination, Communication and Exploitation

Authors:

Petar Sabev Varbanov, Jiří Jaromír Klemeš, Milan Hemzal,
Sustainable Process Integration Laboratory (SPIL),
NETME Centre, Faculty of Mechanical Engineering,
Brno University of Technology (BUT), Brno, Czech Republic



Paweł Ocioń

Department of Energy, Faculty of Environmental and Energy Engineering,
Cracow University of Technology, Cracow, Poland



Approved by: Paweł Ocioń (S&T Coordinator), Piotr Cisek (Quality Manager)

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1 Executive Summary

This is the update of the Dissemination and Communication Plan and the Data Management Plan at Month 24 of the RESHeat project (November 2022). The plan follows the goals and the general structure already given in Annex 1 of the Grant Agreement for the project. It sets out preliminary specific personal allocations for performing the planned actions. More detailed dates for completing the actions are specified for the closer deadlines. The next version of the plan will be due at M36 (November 2023). **All actions marked as complete can be found in “D6.4 Report from dissemination and communication activities”.**

2 Dissemination and Communication Plan (DCP)

2.1 Target stakeholders

The selection of the target groups depends directly on the involved business workflows. This analysis has already been performed at the proposal stage, and the stakeholders are described in Annex 1 of the Grant Agreement, as presented in Figure 1.

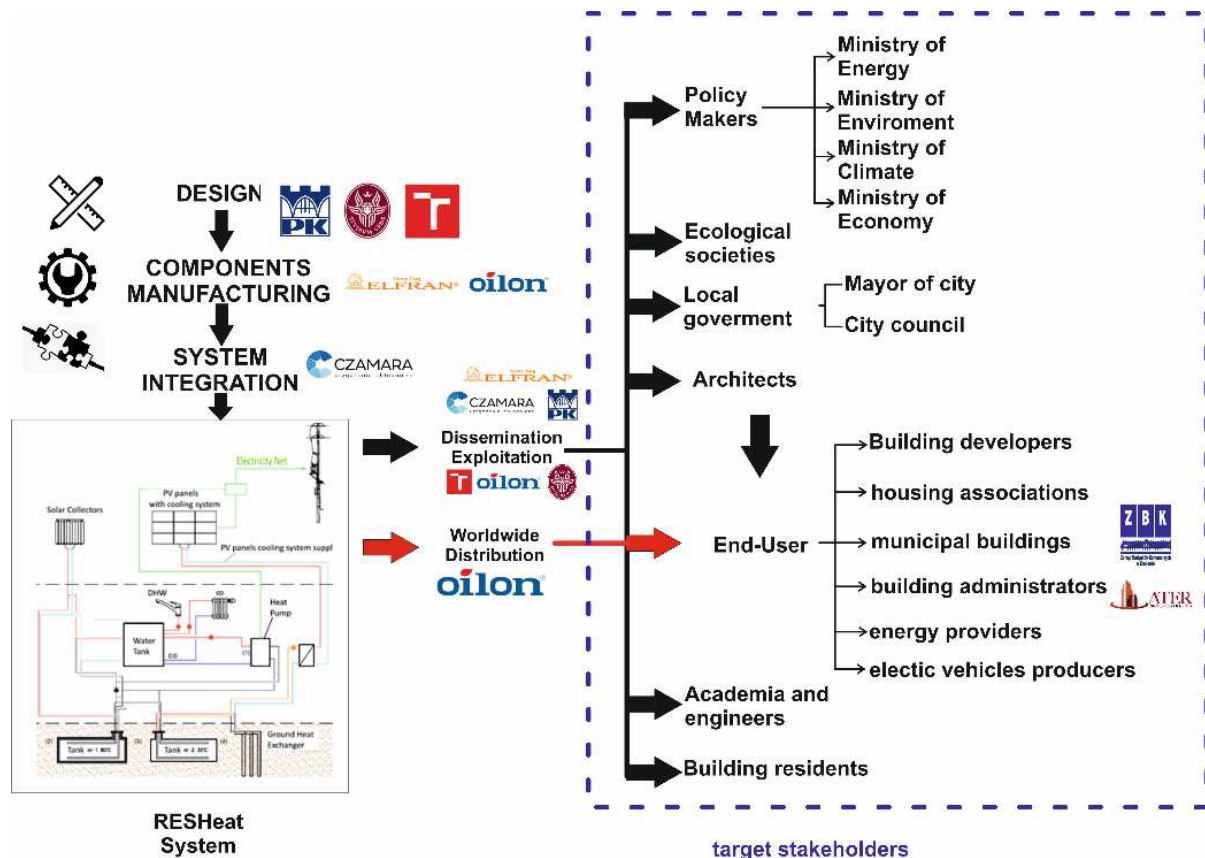


Figure 1. Target stakeholders for the RESHeat project related to the main business workflows

2.1.1 Selected stakeholders for RESHeat

In summary, the following stakeholders are targeted by the DCP:

1. **Policy Makers**, including EU Countries – governmental ministries are dealing with energy, environment, climate, and economy. In some countries, there are also ministries for regional development and buildings.

2. **Ecological Societies** from EU Countries and similar entities advocate emission/footprint reduction and environmental protection.
3. **Local (regional) governments** of EU cities, in their role as aggregate representatives of the final users, to implement larger-scale energy savings and energy cost savings for heating and cooling buildings and by providing electricity charging services to, e.g. electric vehicles.
4. **Architects** and building design professionals (including Civil Engineers) set up how buildings function – including energy management- as the stakeholders.
5. **End users** (e.g. construction companies, housing associations; owners/managers/administrators of buildings – municipal, commercial, residential, administrative)
6. **Academia and Engineers** – internationally
7. **Building residents** (also, by implication – the employees working in municipal, commercial, residential, and administrative buildings)

A more advanced list of the end user instances:

- Residential buildings
- Hotels and hospitality establishments
- SPA and wellness establishments
- Industrial sites
- Commercial (e.g. shopping centres), administrative and municipal buildings
- Greenhouses

2.1.2 Dissemination and communication goals applied to the targeted stakeholders

The selected stakeholders are targeted with different goals depending on their roles concerning the business workflows of RESHeat. The mapping of the stakeholders to the goals is shown in Table 1.

2.2 The proposition of the business proposals to the potential stakeholders

This section summarises the current draft of the potential business proposals to the potential customers of the system. This is the necessary basis for building the DCP, as it forms the subject of the dissemination and communication activities.

Core products and services:

- (1) RESHeat system components – heat pumps, sun-tracking PV panels, solar thermal collectors, thermal energy storage, electrical energy storage
- (2) RESHeat system design and system integration
- (3) System maintenance, upgrades
- (4) Training of system managers and operators based on the customers (end users)
- (5) System managers and operators based at the RESHeat consortium and its successors – internal training and offer their services to the end users

Additional services and co-benefits:

- (6) Electric car charging

Table 1. Summary of the dissemination and communication goals

Stakeholders	Goals	Expected effects/impacts
Policy Makers	Subsidy and incentive policies; Reduction/removal of business barriers; Support for the RESHeat technology solutions	It is easier for the end users to purchase RESHeat products and services.
Ecological Societies	Propagate the RESHeat message via their dissemination channels. Knowledge transfer programme for promoting RESHeat services.	Amplification of the main message for savings of energy/cost, renewables utilisation, emission reduction
Local (regional) Governments	Additional services such as electricity charging. Liaise with architects, building designers, end users and other stakeholders	Additional revenues, enhanced promotion of the offered system and services
Architects and building design professionals	To be contacted after obtaining support from Local Governments. Convince them to use the RESHeat systems for energy and emission-efficient building energy management.	Enable embedding the RESHeat systems in their building designs; potential additional benefits – reducing the dependency on fuel supply.
End users	Demonstrate the benefits of the proposed system and its services: reduced cost, fast ROI, reduced emissions, and improved energy security for the end users.	Adoption of the RESHeat system and its services, achievement of the planned environmental, social and economic benefits
Academia and Engineers	Dissemination of the theoretical, pilot and implementation results of the RESHeat project	Further propagation of the knowledge, know-how and promotion of the services
Building residents	Demonstrate the benefits of the proposed system and its services in terms of reduced cost, fast ROI, reduced emissions, and improved energy security for the end users.	Wider adoption of the RESHeat system and its services, achievement of the planned environmental, social and economic benefits

2.3 Description of the plan

The summary of the planned actions and the overall time frame is given in Table 2. The end months of the delivery intervals have been adjusted to reflect the completed and pending tasks as of Month 24 and the setbacks resulting from the COVID-19 lockdowns in Europe, which were in effect until April 2022. Detailed planning with the indications of already completed actions is grouped by stakeholder types.

Table 2. A summary of the actions

Stakeholders	Channels	Message/Goal
Polymakers (Ministries of energy/environment)	Ministry representatives PL, IT, CZ, FI	RESHeat has high GHG reduction potential and can benefit from financial support and administration relief
Environmental protection societies	Meetings with the societies, RESHeat workshop in Brno (BUT, CZ)	Illustrate the environmental benefits of the system. Promotion via the societies and media channels
Local governments	Meetings with mayors, city councils, and Mayors' representatives invited to the conferences – e.g. PRES'21	Illustrate the financial savings and obtain support for contacting residents and building administrators as potential users
Architects	Meet/conferences for building designers from PL, CZ, IT, FI, AT	Convince architects of the benefits of reduced utilities and investment. Reach end users via the architects.
Building developers/administrators, energy suppliers, EV manufacturers	Workshops in PL and in IT, stakeholder meetings	Attract building developers and administrators as potential customers. Reach end users via EV manufacturers.
Academia and engineers	Journal IF publications, conference papers	Disseminate the results and their demonstration
End users/residents	Social media, website, TV, newsletters, personal contacts; suggested: testimonials	Convince residents that they save money and emissions and can benefit from EV charging at a reduced cost

2.3.1 Publicity and visibility of the RESHeat project

An essential dissemination component is the general publicity for increasing the project's visibility. This is designed to complement the planned actions regarding building residents and the professional engineering community. Each of the project partners uses local media, in addition to social media, after each significant conference related to the RESHeat project.

2.3.2 Policymakers

The interaction with the policymakers has been planned in two ways – direct meetings (Table 3) and invitations to participate in the conferences (Table 4), at which RESHeat will be presented and/or demonstrated.

The meetings in the Czech Republic have been completed and reported in the second review report for Month 32.

- Dr Jiri Gregor met with Lukáš Dubec - statutory deputy governor, responsible for environmental tasks within the South Moravian Region (Table 3).
- Dr Jana Martincova met with the Minister of Environment of the Czech Republic, presented the RESheat project, and invited him to participate in the SPIL'23 conference (1-3 November 2023). Minister Hladik took part in the conference remotely (Table 4).

Table 3. Direct meetings with policymakers

No.	Meeting	Venue	Participants	Period	Status
1	Meeting with the Ministry of Climate and Environment, Poland Meeting with the Ministry of Development, Poland	Warsaw	ELFRAN, CZAMARA, CUT	M1-M12	Completed M6
2	Meeting with the Ministry of Environment and Ministry of Industry and Trade of the Czech Republic	Prague	BUT	M27-M28	Completed M32

Table 4. Plan to invite Policymakers to conferences

No.	Conference	Venue	Inviter	Period	Status
1	Invitation for the <i>Ministry of Climate and Environment of Poland</i> for RESHeat Special Session at the conference on Energy, Fuels and Environment	Cracow	CUT	M1-M12	Completed
2	Invitation of the <i>Ministry of Energy and Environment and the Ministry of Industry and Trade of the Czech Republic</i> for RESHeat Special Session at SPIL'23 in Mikulov, including Internet conferencing.	Brno	BUT	M28-M36	Completed M32

2.3.3 Ecological Societies

Both appointment meetings and workshops will be used to interact with these stakeholders. To minimise the costs and environmental footprints of these interactions, emphasis will be put on using conference venues to organise the planned events. Since, with one exception, external contacts were unwilling to travel. Online meetings will be offered as equal options in addition to in-person meetings. The plan summary is given in Table 5, and the implementation plan envisages the following:

- Entry 1: Professor Pawel Ocloń from CUT presented on 6th June 2023 a keynote lecture on the **RESHeat system for energy polygeneration** at the Retrofit Hub conference organised by Ms Alicja Haller from the Polish Green Buildings Council. The contact was established by Mr. Marcin Paradyż from ZBK. More than 70 participants took part in the online session.
- Entry 2: Prof. Ocloń met with a Leader of the meeting, Andrzej Guła, a Leader of the Cracow Smog Alert, on 22nd February 2023.
- Entry 3: The meetings with the environmental protection groups in the Czech Republic were planned by BUT for M12-M24. The relevant societies and agencies have been identified and contacted by Ing Milan Hemzal. Localisation and update of the RESHeat Project presentation have been done, and the presentation was sent to the most critical eco-organisations in the Czech

Republic. The most important eco-organisations and eco-business representatives were constantly approached July 2021 – November 2022 with an offer to attend the conferences organised in Brno. One of the counterparts (Centrum pasivního domu, <https://www.pasivnidomy.cz/>) agreed to a meeting on 5th December 2022, and Ing Milan Hemzal met with them in Prague on that day, presenting the RESheat project.

- Entry 4: (**Completed**) BUT organised a joint workshop to engage these stakeholders. Two venues were used as the environment for hosting the workshop: PRES'22 (organised in September 2022 – M22 of the project) and the SPIL'22 annual conference (organised in November 2022 – M24), organised by Prof Dr Jiří Jaromír Klemeš with the support of Prof Dr Petar Sabev Varbanov.

Table 5. Plan for interacting with Ecological Societies

No.	Meetings	Venue	Inviter	Period	Status
1	Meeting with the Polish Green Building Council	Online	CUT, ZBK	M32	Completed M31
2	Meeting with Andrzej Guła, a Leader of Cracow Smog Alert	Krakow	CUT	M26	Completed M27
3	Meeting with environmental protection groups from the Czech Republic	Prague	BUT	M12-M36	Completed M25
4	Workshop on RESHeat concept and RESHeat application ecological and economic benefits	Brno	BUT	M14-M24	Completed M24

The Communication and Exploitation Manager of RESHeat exploited the use of the venues of the conferences PRES, MPSU, SDEWES, and SPLITECH – for the years 2022 and 2023 and is planning to continue in 2024 for engaging the ecological societies in addition to the core plan.

2.3.4 Local (regional) Governments

Following the plan configuration, the interactions with the local governments have been planned within two main channels - direct meetings (Table 6) and the invitation to conferences (Table 7). In October 2021, there was a municipal election for the Mayor of Rome. Prof Andrea Vallati, after contacting several municipalities, has managed to schedule and make a meeting with representatives of the local government of Lazio at a seminar with representatives of the government of Denmark.

The local authorities of Brno were reached in January 2023, and in February 2023, Prof Petar Varbanov met with the Mayor of Brno, JUDr. Markéta Vaňková on 2 February 2023, in the Brno City Hall. Prof Varbanov took part in the official programme of the meeting and, within the networking part of the event, had meetings with the Mayor and more discussions with advisors to the Mayor and representatives of the City Council (Table 6, items 3 and 4). Prof Varbanov also conveyed that the city authority representatives will be welcome at the RESHeat Workshop, which was to be held in November 2023 as a main event of the SPIL'23 conference (Table 7, item 2).

Table 6. Planned meetings with local government representatives

No.	Meeting	Venue	Participants	Period	Status
1	Meeting with Cracow City Council representatives. Delegated to Professor Pawel Ocoń from CUT and Mr Marek Czamara from CZAMARA. The meetings were planned to take place in July 2021.	Cracow	CUT, CZAMARA,	M18	Completed
2	Meeting with the Mayor of Cracow City or his representative. Delegated to Professor Pawel Ocoń from CUT and Mr Marek Czamara from CZAMARA. The meetings were planned to take place in September 2021.	Cracow	CUT, CZAMARA, ELFRAN	M19- M20	Completed
3	Meeting with Brno City Council representatives.	Brno	BUT	M25- M36	Completed M27
4	Meeting with the Mayor of Brno City or their representatives.	Brno	BUT	M25- M36	Completed M27
5	Meeting with Italian regional representatives. Delegated to Prof Andrea Vallati from SAPIENZA.	Rome	SAPIENZA	M25-36	Completed M11
6	Meeting with Italian regional representatives.	Rome	SAPIENZA	M25- M36	Completed M11

Table 7. Planned conference venues to invite local government representatives

No.	Conference	Venue	Part.	Period	Status
1	Invitation of the Mayor of Brno, Mayor of Prague, their representatives, or other municipalities for RESHeat Special Session at the SPIL'23 conference in Brno (November 2023, in-person or online).	Brno, Prague	BUT	M25- M36	Completed M27

2.3.5 Architects and building design professionals

The dissemination and communication work with architects and building designers will follow the schedule in Table 8. These activities are aimed at Year 4 of the project, which starts in December 2023.

Table 8. Planned meetings with architects and building designers

No.	Meeting	Venue	Part.	Period	Status
1	Meeting with architects and representatives of building design companies from Poland	Cracow	CUT,	M25- M36	Completed
2	Meeting with architects and representatives of building design companies from the Czech Republic	Brno, Prague	BUT	M37- M45	Pending
3	Meeting with architects and representatives of building design companies from Italy	Rome, Florence, Milan	SAPI ENZA	M25- M36	Completed M11



Figure 2. Poster of the workshop organised for 5th December 2023 in Rome

The direct meetings with architects and building designers, following the schedule in Table 8, will be organised in two stages as follows:

Stage 1: Identification of the counterparts to meet. This has to be completed by M39 (February 2024).

Stage 2: Arrangement and conducting of the meeting. The meetings should occur in M37-M45 (December 2023-August 2024). Prof Andrea Vallati from SAPIENZA is organising a workshop with the participation of architects to take place in Rome on 5 December 2023 (Figure 2).

The following distribution of the activities in Table 8 is planned:

- (1) Meeting the representatives of the sector in Poland has been managed by Professor Pawel Ochoń from CUT, Mr Marek Czamara from CZAMARA, and Franciszek Ścisłowicz from ELFRAN.
- (2) Meeting the representatives of the sector in the Czech Republic will be managed by Prof Petar Sabev Varbanov and Dr Sarka Zemanova from BUT. Preliminary, the Czech Sustainable Houses¹ Society has been identified as one potential counterpart.
- (3) Meeting the representatives of the sector in Italy. Prof Andrea Vallati from SAPIENZA presented the RESHeat project to Michele Morganti (an architect from SAPIENZA) in October 2021 (M11).

¹ <https://www.cs dum.cz/en.html>

2.3.6 End users

The end users (constructors, builders, and building managers) will be engaged in the next stage. There will be two types of interactions – direct meetings/fairs and workshops. The goal of the direct meetings (Table 9) is to establish initial contacts with representative actors on the market and form the target groups for the workshops. An additional channel of recruiting stakeholders for the target groups will be the participation of RESHeat partners in trade fairs (Table 10). After the groups' formation, the workshops will be carried out (Table 11) to provide the stakeholders in the target groups with the necessary information, knowledge and evidence of the main parameters of the RESHeat system so that they can make informed decisions for acquiring and using the system, as well as to recommend it to colleagues.

Table 9. Planned meetings with End-Users

No.	Meeting	Venue	Participant	Period
1	Meetings with building developers, residential buildings administrators, and public utility buildings administrators from Poland	Cracow, Warsaw, Nowy Sącz, Nowy Targ, Limanowa, Warsaw, Katowice	CUT, CZAMARA, ELFRAN	M40-M48
2	Meetings with building developers, residential buildings administrators, and public utility buildings administrators from the Czech Republic	Brno, Prague and interested cities in CZ	BUT, CZAMARA	M40-M48
4	Meeting with architects and representatives of building design companies from Italy	Rome, Milan, Florence, Torino	SAPIENZA	M40-M48

The specific plan for forming the target groups will be as follows. First, the direct meetings, according to Table 9, will be planned in detail and executed. The potential contacts for each of the entries in Table 9 will be identified by M39 (February 2024). They will be contacted and engaged in the interval M40-M41 (March-April 2024), negotiating with each contact the participation in the target group. The responsibilities will be allocated as follows:

- (1) Professor Pawel Ocloń from CUT will manage the identification of the list of stakeholders for Poland, supported by Mr Marek Czamara from CZAMARA and Mr Franciszek Ścisłowicz from ELFRAN.
- (2) Mr Jiri Klemes and Dr Sarka Zemanova from BUT will manage the identification of the list of stakeholders for the Czech Republic, supported by Mr Marek Czamara from CZAMARA.
- (3) Prof Andrea Vallati from SAPIENZA will manage the identification of the list of stakeholders for Italy.

Mr Marek Czamara from CZAMARA company has agreed on the RESHeat system replication with three companies:

1. SKŁODOWSCY sp. z o.o. ODDZIAŁ PRODUKCYJNY, Nienały Szymany 11, 07-323, Zaręby Kościelne.
2. DOEHLER Sp. z o.o. Zakład w Jasienicy Jasienica 91, 27-670 Łoniów, Poland.
3. Geod Przedsiębiorstwo Wielobranżowe Michał Wójcik Skośna 12, 30-383, Kraków.

Table 10. Planned participation in trade fairs

No.	Trade fair name	Location	Participant	Period
1	Warsaw Eco-Power Expo; expected cost 5,000-7,000 EUR, allocated from the budget of ELFRAN.	Warsaw	CZAMARA, ELFRAN, CUT	M40-M48
2	Green Power – Renewable Energy Trade Fairs; expected cost 5,000-7,000 EUR, allocated from the budget of CZAMARA	Poznań	CZAMARA, ELFRAN, CUT	M40-M48
3	Progetto Fuoco International fairs of wood-burning systems and equipment for producing heat and Energy, Verona, Italy, with approx. 75,000 visitors ; expected cost up to 10,000 EUR (2300 advertising), allocated from the budgets of ATER and SAPIENZA	Verona	SAPIENZA, ATER	M40-M48

In parallel with the direct meetings, the RESHeat project partners will also campaign to attract stakeholders and disseminate the system information at international fairs. These actions will be completed in two stages:

- a) Identification and confirmation of the trade fair venues to be used by M38 (January 2024). This will involve confirmation of the dates of the venues pre-selected in Table 10. Suppose their organisers discontinue some of those venues, or if they are organised outside the time frame suitable for the current plan. In that case, the responsible RESHeat partners will identify comparable replacement venues. The target venues have to be sufficiently large – similar to the current selection, with several participants in the thousands of visitors.
- b) The organisation of the fair participation and active engagement of potential stakeholders during the fair participation. The participation should occur during the period M40-M45 (March 2024 – August 2024), leaving a sufficient time window for organising the workshops.

Following Table 10, the following implementation and replanning actions are assigned:

- (1) Marek Czamara from CZAMARA will manage the fair selection and participation concerning Poland, supported by Franciszek Ścisłowicz from ELFRAN, Marcin Paradyż from ZBK, and Professor Pawel Ocioń from CUT.
- (2) Professor Pawel Ocioń (CUT) and Prof Andrea Vallati from SAPIENZA will manage the fair selection and participation concerning Italy (Progetto Fuoco International fair – or its replacement), supported by Raffaele Fusco from ATER.
- (3) Depending on the arising opportunities and the situation of the currently planned venues, CZAMARA will update the venues to be attended to maximise the utility of the actions within the project budget.

Table 11. Planned workshops dedicated to End-Users

No.	Workshop	Venue	Inviter	Period
1	Workshop for End-Users on RESHeat system demonstration in Cracow	Cracow	CUT, CZAMARA, ZBK	M40-M48
2	Workshop for End-Users on RESHeat system demonstration in Rome	Rome	SAPIENZA, ATER	M40-M48

The workshops listed in Table 11 will be first prepared and then conducted with the selected target groups. The preparation phase will occur during the selection of the target groups in the period M40-

M45 (March 2024 – August 2024). The preparation phase will involve setting up each workshop – selection of the venue dates, in-person organisation, complemented by an organisation of the participation over a virtual platform to be selected – e.g. Zoom, MS Teams, Google Meet, or an alternative platform. Conducting the venues will take place during the last months of the RESHeat project (M46-M48 – i.e. September – November 2024).

The responsibility of the organisation will be as follows:

- (1) Professor Paweł Ocioń will manage the workshop in Cracow from CUT, supported by Mr Marek Czamara from CZAMARA and Marcin Paradyż from ZBK.
- (2) Prof Andrea Vallati will manage the workshop in Rome from SAPIENZA, supported by Raffaele Fusco from ATER.

2.3.7 Academia and Engineers

CUT drives the plan for academic dissemination, BUT and SAPIENZA following the structure of presenting the RESHeat results at conferences. Table 12 lists some of the venues to be used. Dissemination of scientific journal articles will continue – using the journals in Table 13 as options.

The conference platforms will include the venues regularly organised by the academic partners of the RESHeat consortium, as follows:

- BUT organises the Conference on Process Integration annually, Modelling and Optimisation for Energy Saving and Pollution Reduction (PRES, <conferencepres.site>). At the stage of accession to the grant agreement, only PRES'23 was present in the academic dissemination plan. It has been decided to start organising the RESHeat Special session already starting from PRES'21 (31/10 - 3/11/2021) and follow through to PRES'24 in 2024. For the last year of the project, PRES'24 will be used, which will be held at the end of August 2024.
- BUT organises annually a Special Session at the conference SDEWES, organised by the SDEWES Centre of Croatia (<www.sdewes.org>). Prof Dr Petar Sabev Varbanov is a member of the International Scientific Committee of the SDEWES series of conferences.
- BUT also organises the annual SPIL Scientific Conference in Brno, Czech Republic, as a platform to promote Sustainable Process Integration research and solutions.
- CUT is one of the major organisers of the International Conference on Computational Heat Mass and Momentum Transfer (<https://icchmt2021.com/programme/>).
- CUT is the Conference Modern Power Systems and Units – MPSU organiser every three years (<https://wtiue.conrego.pl/en/>).
- The CLES-CE 2022 conference has been used as an additional opportunity to disseminate in Bulgaria (<http://prise-know.science/CLESCE2022/>). Prof Paweł Ocioń presented the project in a discussion panel on 29th August 2022 with all conference participants (about 50). The project partners will be open to continuing the collaboration with this conference.

Table 12. Planned conferences for the presentation of RESHeat results to academia and engineers

Conference	Venue	Participants	Period
(1) PRES'21, PRES'22, PRES'23 (completed) PRES'24: Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction (organised by BUT) with over 500 participants attending. Allocated to Prof Dr Petar Sabev Varbanov from BUT, supported by Professor Pawel Ocloń from CUT.	Brno. Prague	BUT, CUT	M11- M48
(2) SDEWES 2022 and 2023 (completed), SDEWES 2024 (Rome) Conference on Sustainable Development of Energy, Water and Environmental Systems (co-organised by BUT) with over 600 participants attending. Allocated to Prof Dr Petar Sabev Varbanov from BUT, supported by Professor Pawel Oclon from CUT.	Dubrovnik	BUT, CUT	M20- M48
(3) ICCHMT International Conference on Computational Heat Mass and Momentum Transfer (co-organised by CUT) with over 300 participants . This will be managed by Professor Pawel Ocloń from CUT.	Paris, Cracow	CUT	M40- M48
(4) SPIL'24 Conference with over 150 participants attending . Allocated to Prof Dr Petar Sabev Varbanov from BUT.	Brno	BUT	M40- M48
(5) MPSU Conference Modern Power Systems and Units, with over 200 participants attending . The 2024 edition will be used by Professor Pawel Ocloń from CUT, supported by Prof Dr Petar Sabev Varbanov from BUT.	Cracow	CUT, BUT	M6- M48

Table 13. Planned journal articles for dissemination of RESHeat results to academia and engineers

Journal	Publisher	Participants	Period
Energy and Buildings	Elsevier	SAPIENZA, CUT	M25-M48
Journal of Cleaner Production	Elsevier	BUT, CUT	M25-M48
Energy	Elsevier	BUT, CUT, SAPIENZA	M25-M48
Energies (Open Access)	MDPI	SAPIENZA, BUT, CUT	M25-M48
Renewable Energy	Elsevier	CUT, SAPIENZA	M25-M48
Solar Energy	Elsevier	CUT, SAPIENZA	M25-M48
Renewable and Sustainable Energy Reviews	Elsevier	BUT	M25-M48
Energy Conversion and Management	Elsevier	CUT, BUT, SAPIENZA	M25-M48
Chemical Engineering Transactions (Open Access)	AIDIC	CUT, BUT, SAPIENZA	M25-M48

The promotion of the project at the conferences takes the form of conference presentations. BUT and CUT organise regular panel discussions on RESHeat-related topics at the PRES, SPIL and MPSU conferences. The articles plan is given in Table 13, where the management of the publications on behalf of the partners is allocated to SAPIENZA - Prof Andrea Vallati, CUT - Professor Pawel Ocloń, BUT - Prof Dr Petar Sabev Varbanov. The already published articles exceed 20 as of M36, and approximately 3-5 more are planned for the last 12 months of the project. A balance will be aimed between the Open

Access (OA) and the subscription modes of the publication since the OA mode reaches more readers. However, the higher Impact Factor journals publish predominantly in subscription mode for the foreseeable future.

Table 14. Communication plan for building residents

	Channel	Details	Participant	Period
1	Social media	Twitter, LinkedIn and Facebook accounts of the RESHeat project	SAPIENZA, CUT	M40-M48
2	Project website	Public domain for stakeholders with videos demonstrating RESHeat solution	CUT, BUT, SAPIENZA	M13-M48
3	Mass media	YouTube account of RESHeat, where the RESHeat videos will be available for wider publicity	BUT, CUT, SAPIENZA	M13-M48
4	National and local TV	Broadcasts on RESHeat solution in national/local TVs of Poland, Italy, Finland and the Czech Republic	SAPIENZA, BUT, CUT, ZBK	M40-M48
5	National and local press	Articles for the national and local press of Poland, Italy, Finland and the Czech Republic on RESHeat system for building heating and cooling	SAPIENZA, BUT, CUT., ZBK	M40-M48
6	Personal conversation	During the project, we plan to organise meetings with building residents in Poland, the Czech Republic, Italy and Finland to explain the benefits of using RESHeat projects.	SAPIENZA, CUT, CZAMARA, ELFRAN, BUT	M40-M48

2.3.8 Building residents

Last but not least, we would like to approach **Building residents** through social media (Facebook, Twitter, Youtube), the public domain of the project website, as well as national and local TV and newspapers. Channels to reach building residents are given in Table 14.

The RESHeat message to them will be that:

- a) RESHeat system for heating and cooling of buildings that are fully based on Renewable Energy Sources allows energy savings, pollution reduction and much money for building residents
- b) RESHeat system allows charging electrical cars free of costs
- c) RESHeat system has a positive impact on building resident's health

The plan is to establish the relevant links to the National and Local TV and with National and local press by M24 (November 2022). The active popularisation of the project results in these media will proceed from M40 (March 2024).

The project website has been functional since M13 (December 2021). Similarly, all materials presented at conferences and workshops are regularly uploaded to the RESHeat YouTube channel. The partners involved in the dissemination are requested to upload all further materials within two weeks of the respective conference and workshop venues and within two weeks of publishing the relevant scientific articles.

The partners will use all conferences, workshops and fairs to complete the communication goal of item 6 in Table 14. The management of the actions in Table 14 for the partners is allocated as

- SAPIENZA - Prof Andrea Vallati,

- CUT - Professor Pawel Ocioń,
- BUT – Prof. Petar Sabev Varbanov,
- ZBK - Marcin Paradyż,
- CZAMARA - Marek Czamara,
- ELFRAN - Franciszek Ścisłowicz.

2.3.9 Planned change in dissemination strategy as of 1st December 2023

The dissemination strategy is being changed to emphasise maximisation of the replication and result exploitation opportunities. Below are the main points to be followed. They will be updated periodically in the course of the remaining project time.

- Organisation of dedicated Workshops for the Industry (to find new customers). Building developers from Poland, the Czech Republic, and Italy will be contacted.
- Organization of an Industrial Workshop in Brno by BUT to find potential customers for RESHeat systems in the Czech Republic
- One-day Workshop for Industry demonstration of RESHeat system in Cracow organised by CUT, CZAMARA and ZBK
- Budget allocation to allow participation in trade fairs for RESHeat project commercialising partner CZAMARA
- Intensified contact with Local Governments to convince them to RESHeat system implementation
- Finding a potential cooperation with big industry (for example, ORLEN) for co-funding of further developments of the RESHeat system
- Since 20 papers related to the RESHeat project have been published up to now, as well as more than 20 Conference participations, it is necessary to present and publish only the major RESHeat project results (for example, comparison of mathematical modelling of RESHeat system with measurement results from demo sites). The funding saved should be directed to intensify the engagement of building developers and industrial partners.
- Marek Czamara from CZAMARA company will be nominated as a Dissemination and Exploitation Manager in the last year of the project. The Universities cannot find sufficient commercial partners for RESHeat system replication. CZAMARA company, after completion of demo sites, is able to put significant effort in this direction. Dedicated funds should be allocated to CZAMARA company for those activities.

3 Data Management Plan (DMP)

According to the official guide on data management for Horizon 2020 (EC, 2020), Open Access publishing is an obligation in Horizon 2020. Concerning data – the Commission is running a flexible pilot, which has been taken as the basis of the current plan.

The Horizon 2020 guidelines require the beneficiaries to make their research data findable, accessible, interoperable and reusable (FAIR) to ensure it is soundly managed. Good research data management is not a goal but rather the key conduit leading to knowledge discovery and innovation and subsequent data and knowledge integration and reuse.

In order to make research data findable, accessible, interoperable and reusable (FAIR), a DMP should include information on:

- The handling of research data during and after the end of the project
- What data have been collected, processed and/or generated
- Which methodology and standards would be applied
- Whether data would be shared/made open access and
- How data are curated and preserved (including after the end of the project).

This plan uses the structure recommended in the template provided by the Horizon 2020 team (H2020, 2016). The template questions are kept in order to adhere to the template logic as closely as possible. All items required for production and delivery by this plan shall be delivered to the authorised contacts of BUT (as the Leader of WP6) and CUT (as the Coordinator).

The current version is the last update of the Data Management Plan according to the project implementation plan.

3.1 Data Summary

The potential data sets to be recorded and deposited include the following:

- WP1, D1.1; WP3, D3.1: Database of the RESHeat system components
- WP3, D3.1: Sample weather data for selected European countries
- WP4, D4.2 and D4.4: RESHeat operation measurements/logs for the demo sites in Poland and in Italy
- WP5, D5.2: LCA evaluation – datasets of the results

It is planned to define the data structures and the possible data connections between those datasets. After each of the items defined here is delivered, the current document will be updated to a new version by BUT (responsible – Dr Petar Sabev Varbanov) and CUT (responsible – Professor Pawel Ocloń), containing the specifications within the current section.

The allocation of the responsibilities follows the cited deliverables. The timing for producing the specifications as soon as possible after the production of those deliverables or to enable the data deposition is as follows:

- (1) An initial dataset specification of RESHeat system components from WP1, D1.1. Responsible: Mr Marek Czamara from CZAMARA, deadline: M6 (**completed May 2021**);
- (2) An updated dataset specification of RESHeat system components from WP3, D3.1. Responsible: Dr Piotr Cisek from CUT, deadline: M16 (**completed March 2022**);
- (3) Weather dataset specification from selected European countries for use in the RESHeat modelling software, from WP3, D3.1. Responsible: Dr Piotr Cisek from CUT, deadline: M16 (**completed March 2022**);
- (4) The specification of the RESHeat operation measurements/logs dataset from WP4, D4.2 and D4.4. Tasks 4.2 and 4.4, which will produce D4.2 and D4.4, start at M37 (December 2023). However, there needs to be more time to develop the specification. Therefore, the deadline for this specification is moved back to M28 (February 2023). The responsibility for providing these specifications is allocated to the person responsible for the deliverables, Mr Marek Czamara from CZAMARA.
- (5) The specification for the dataset of the LCA evaluation results is the responsibility of Dr Petar Sabev Varbanov from BUT, deadline M36 (November 2023), which stems from the completion of D5.1 (environmental footprints assessment protocol), which should provide sufficient information for defining the dataset structure.

3.1.1 Master data management

As part of the specifications, the partners should follow the ethical principles of data management:

- Keep secure and confidential the personal and contact data of the end users and residents who have agreed to be involved in the demo sites
- The questionnaire for personal data processing has been prepared by CUT and given to the building residents of their demo site by ZBK for completion.

The personal data, the data measured and collected from the demo sites, as well as the derivative data from calculations will be stored securely on two servers:

- (1) A dedicated master data server at the CZAMARA company premises (RAID secured)
- (2) A dedicated backup (mirror) data store at CUT file servers

The servers will be protected by state-of-the-art access defences, allowing access only to authorised operators. These measures are to ensure the protection of personal data and project data. The designed database will separate the personnel from the project data as much as possible to allow their secure and efficient management. The operator roles and privileges will be defined and instated based on the data structure.

3.1.2 Propagation to public access

Selected data from the demo sites will be made publicly available. The CZAMARA company will select the data. The following principles will be observed:

- Personal data privacy protection – the personal data will be anonymised
- Essential demonstration data will be provided in raw logs and processed formats
- The final decision for data selection will be made after consultation with experts on privacy and trade secrets security

- The published data set will be separated from the master data set. Any data flows from the master data set to the published data set will be minimised, and during data transfers, the public data set will be isolated from public access.

3.1.3 IT data management

RESHeat data and measurement data are collected on CZAMARA's servers, according to GDPR (General Data Protection Regulations):

- Measurement data is secured on an encrypted link. The measurement data will be stored on disk for at least three years,
- The communication system with RESHeat installations in Krakow and Limanowa is secured with a login and password. It will also be the same with the installation in Palombara Sabina,
- The RESHeat system monitoring is online. The energy management centre is located at CZAMARA company,
- The link to communication with the energy centre is encrypted, which protects against hacking attacks. A dedicated router encrypts the connections,
- Apartment numbers are encrypted. No sensitive data of residents will be provided,
- Metering data is uploaded to CZAMARA's server; the meter readings are then processed and converted and only then fed into the energy management system,
- Due to the safety of the buildings' energy infrastructure, metering data will be provided by CZAMARA with several days delay in the form of xls files,
- Residents sign a consent to participate in the measurements (signed for Krakow and Limanowa),
- The control platform of the system is managed by CZAMARA company, giving access to ELFRAN and Cracow University of Technology access to data from the SCADA system (readings of electricity, heat energy, readings from thermocouples, manometers, COP of the heat pump, readings from collectors),
- Apartment numbers are encrypted and will not be shared with outside parties. Personal data is anonymised.
- The procedure to manage data bridges will be prepared.
- Data bridges will be managed by a person announced by the Consortium if they exist
- Deliverables are stored at the Teams account of CUT; only Consortium representatives with a dedicated link registered as CUT servers can access them.

3.2 Further updates of the DMP

The DMP has been updated further following Annex 1 of the Grant Agreement. This is Update 2 in M36 (November 2023). Further updates will be made if they become necessary.

4 References

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