

10 on-site or workshops training and 10 live webinars per partner

Deliverable no: D6.5
Work package no: WP 6
Work package title: Testing and assessment
WP leader: Planair SA
Author: Martine Felber-Yannick Riesen, Planair SA
Dissemination level: PU

IMPAWATT **IMpLeMentAtion Work and Actions To change the energy culTure**

Grant Agreement number:
785041-IMPAWATT – H2020-EE-2016-2017/H2020-EE-2017-CSA-PPI
Start date: 01.06.2018
Duration: 30 months

Document History

Date	Version	Prepared by	Approved by	Notes
31.03.2021	V1	PLA	SEN	
Add date		Choose sname		
Add date		Choose sname		

“The sole responsibility for the content of this publication lies with the IMPAWATT project consortium. It does not necessarily reflect the opinion of the European Union. Neither EASME nor the European Commission are responsible for any use that may be made of the information contained therein”.

Contents

1	Executive summary - PLA	4
2	Introduction - PLA.....	4
2.1	Purpose of this document	4
2.2	Relation to other activities in the project	4
2.3	Partners' contribution	4
3	PLA - Switzerland.....	4
3.1	On site actions (IMPAWATT+ group).....	4
3.1.1	Concept.....	4
3.1.2	Acquisition.....	5
3.1.3	Actions.....	5
3.2	Online support (IMPAWATT group)	5
3.3	Capacity building workshops.....	5
3.4	Webinars	6
4	AEA - Austria.....	7
4.1	On site actions (IMPAWATT+ group).....	7
4.2	Online support (IMPAWATT group)	8
4.3	Capacity building workshops.....	8
4.4	Webinars	8
5	ENVIPARK - Italy.....	9
5.1	On site actions (IMPAWATT+ group).....	9
5.2	Online support (IMPAWATT group)	10
5.3	Capacity building workshops.....	10
5.4	Webinars	10
6	SENERCON - Germany	12
6.1	On site actions (IMPAWATT+ group).....	12
6.2	Online support (IMPAWATT group)	12
6.3	Capacity building workshops.....	13
6.4	Webinars	13
7	VTT - Finland.....	16
7.1	On site actions (IMPAWATT+ group).....	16
7.2	Online support (IMPAWATT group)	16
7.3	Capacity building workshops.....	17
7.4	Webinars	17
8	CCI – France	18
8.1	On site actions (IMPAWATT+ group).....	18
8.1.1	Concept.....	18

8.1.2	Acquisition	18
8.1.3	Actions	19
8.2	Online support (IMPAWATT group)	20
8.3	Capacity building workshops	20
8.4	Webinars	20

1 Executive summary

The IMPAWATT project has developed the Energy Platform and fed it with more than 200 documents translated into the languages of the participating countries: the IMPAWATT toolbox. It offers different resources/content/tools for capacity building and staff training material, and is aimed at company energy managers as well as external energy consultants. To test and evaluate it, it was proposed to a panel of companies to register. Several actions were carried out to encourage them to actively participate. These companies are therefore the early adopters.

In a practical way, the companies were divided in two groups: one called IMPAWATT+ was closely supported with an onsite audit, which led to the proposal of concrete measures to be implemented. The IMPAWATT group received an online presentation of the platform. Both groups were proposed capacity building workshops and invited to webinars.

The COVID crisis did not help to organize the activities, but many actions have been realized online instead of onsite. Consequently, it turned out that webinars were particularly well suited to reach our target group. A special effort was put on their realization and most of the people trained have been reached through this means.

This deliverable presents the activities carried out with and for the companies during the project and highlights the results, experiences, lessons learned and successes of this test phase.

2 Introduction

2.1 Purpose of this document

This deliverable describes all measures taken to accompany the companies participating in IMPAWATT (see D6.4 for companies lists) during the course of the project. General lesson learned and a general conclusion can be found there.

2.2 Relation to other activities in the project

In WPs 2, 3 and 4, the documents dedicated to the platform users were created, in WP5 the platform itself was created. The WP6, testing and assessment implements the results of these WPs with the participating companies.

2.3 Partners' contribution

All partners have participated to the development of the platform and its content as well to the testing, support and services to companies. Moreover, they have recruited the participating companies in their country and run the programme with them.

3 PLA - Switzerland

3.1 On site actions (IMPAWATT+ group)

3.1.1 Concept

In Switzerland, the concept for the IMPAWATT+ group consisted of an on-site visit by an energy auditor. The on-site visit consisted of:

- Presentation of the IMPAWATT platform
- Discussion around energy consumption of the site

- Visit of the building including production and utilities

After the visit some missing information were asked to the company. Finally, the energy auditor entered a list of potential energy efficiency measures, with energy consumption, investment and payback time estimation on the IMPAWATT Platform. This list was then briefly presented during a web call.

Those action were 100 % financed by the IMPAWATT program and hence free for the companies.

3.1.2 Acquisition

As a first steps several hundred of emails were sent to companies of Planair address book to present the IMPAWATT platform and propose to the company the free energy audits as described above. It was difficult to convince companies to participate to the programme even with a free audit/energy check-up. Hence, in a second step, we phoned to the most promising ones and personal contacts were also activated.

Moreover, the IMPAWATT program with capacity building activities and energy check-up were also advertised in newsletter, social media (LinkedIn) and company visits.

3.1.3 Actions

17 company participated to the IMPAWATT+ group with energy check-up. For each company on site visits could be organized. In general, the energy audits covered the whole site. There were a few companies that had already undergone an energy-audit before, but there was some specific topics for which the auditor could help them to find more efficiency measures and calculate their savings. In several cases, during the visit, a capacity building workshop was directly organised on topics of interest to the company.

In Switzerland, more than 44 energy efficiency measures were identified thanks to the IMPAWATT program. 8 measures were already implemented during the project duration. This corresponds to 1500 MWh/years of planned energy savings and 1008 MWh of savings already implemented. The recommended measures included technical ones such as optimizing air compressors, changing heat source and optimization of setting points, as well as capacity building measures, such as increasing awareness of employees regarding energy efficiency to increase their energy culture.

3.2 Online support (IMPAWATT group)

More than 16 companies participated in the IMPAWATT group and subscribed to the platform. Although proposed to the companies, no online support was asked.

3.3 Capacity building workshops

Most of the capacity building workshops were organised during the visit of the energy auditor before the visits. Before the workshop, Planair proposed a set of topics from the IMPAWATT platform and asked the company for which one they wanted a workshop. In general, companies chose 1 to 3 topics for which the energy auditor created a new PowerPoint presentation completely adapted to the company. Most of the slides were issued from the IMPAWATT platform presentations. It came out that this customization is a key point and has not to be neglected in terms of preparation time.

The number of attendees varied from 1 to 10 and a median of 2, typically, the person in charge for energy and a member of the board. This relatively small number can be explained by the fact that companies don't want to spent too much hour-men for this activity but also because of the COVID which limited the number of people.

As presentations were adapted to the company and the audience relatively small, those workshops allowed interactive exchange between presenters and attendees to directly apply the knowledge to the companies.

The topics chosen by the companies are listed in Table 1. Optimisation of setpoints was the most asked and proposed topic as it allows relatively interesting energy and CO₂ savings with almost no investment. Renewables and especially photovoltaics attracted a lot of attention as companies tend to self-consume almost all of their production which allows interesting payback times.

Topics	Number of presentations
Optimisation of setpoints	4
Renewables	3
Compressed air	3
Heating	1
Heat recovery	1
Lights	1
Energy management	1

Table 1 List of workshop topics, note that some companies had several topics.

Due to the COVID-19 situation, 2 capacity building workshops were performed online.

According to the interviews and the survey, the attendees declared that they learned useful facts. Most trained person were energy responsible of the company. Note that only 5 people in Switzerland who answered the survey attended to such a capacity building action.

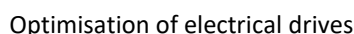
3.4 Webinars

Ten webinars were organized in the frame of the IMPAWATT project. The companies could access to them through subscription. During the webinar, a specialist of the given topic presented shortly the IMPAWATT project and then, during about 30 minutes the specific topic. Finally, the attendees could ask questions through the chat that were directly answered. The webinars were recorded and made available through the IMPAWATT Platform and a dedicated [Youtube channel](#).

The presentations were mainly based on those of IMPAWATT platform, however they were extended and adapted to meet the specific webinar requirements.

The Webinars were organized in collaboration with the Energy Agency (EnAW). Invitation was sent through the EnAW, Planair and the IMPAWATT channels in the forms of Emails and LinkedIn posts.

The following topics were addressed and presented in French:



Monitoring



Photovoltaics



Financial aspects of energy efficiency



Setting optimisations



Building envelope



Cooling



E-mobility



Energy management



After each live webinar, surveys were organized to obtain a feedback. The quality, usefulness of the content received good ratings (between 4 to 5 with 5 as best rate). Most participants found the duration well suited.

Finally, webinars turned out to be good capacity building tool especially during the COVID crisis. More than 145 persons attended the live webinars and an equivalent¹ of 152 persons followed the webinars in replay mode in Switzerland. The Youtube channel has now 33 subscriptions and the videos 1300 views. The format of relatively short (30 minutes) webinars turned out to be appreciated by the attendees.

4 AEA - Austria

4.1 On site actions (IMPAWATT+ group)

For several companies focused audits were conducted: compressed air, steam systems, ventilation systems and hydraulic systems. For compressed air, steam systems and hydraulic systems external

¹ Equivalent means that the number of views was multiplied by the average of relative view duration. E.g. for a video with 40 views and an average viewing duration of 10 minutes over a total of 30 minutes only 13 person with increased capacity are taken into account.

experts supported the audit or were on-site as the AEA expert (due to COVID) supported the audit via organisation: dates, contact to experts, selection of topics, web conference or telephone calls and data collection, final summary of results.

For other companies workshops were conducted, mainly for the topics energy management and energy culture (employee information and awareness raising). These workshops were done either onsite or via telephone calls and/or web conferences. The workshops were combined with awareness raising actions, on-site visits and/or detailed discussion on potential saving measures.

Though the time available for conducting energy audits within such a project is limited, interesting results were found.

4.2 Online support (IMPAWATT group)

The online support of IMPAWATT companies was mainly, done via telephone calls. IMPAWATT companies in most cases participated either in at least one webinar or in one case almost all webinars and tried out elements of the platform, e.g. the energy culture survey.

Companies from the IMPAWATT group that were part of a group of companies (holding), in which other companies were IMPAWATT+ companies were integrated in the initiatives by the central energy manager of the holding, e.g. the energy culture survey, and participated in the workshops.

The most successful modules were the energy culture survey and the webinars, esp. the general topics.

4.3 Capacity building workshops

The workshops were conducted mainly for the IMPAWATT+ group, with participants from other companies of the same holding company. The topics included energy management and energy culture (employee information and awareness raising), steam, compressed air and heat distribution (hydraulic). These workshops were done either onsite or per web conference. The workshops had a 1-2 hours theory part, and a 1-2 hours “practical part”. This part consisted of discussion on saving measures or on-site visits of the respective system. For several workshops, in addition to IMPAWATT speakers, external experts were invited as speakers and for the site-visit.

The idea to hold workshops on-site with external support (either IMPAWATT group or in combination with external speakers) is considered as big success. The feedback of the companies was very good. Some companies already booked further training activities with the external speakers/companies.

4.4 Webinars

The webinars were held between May 26 to July 7 2020, on Tuesdays, 10:00. Ten different topics were chosen from the IMPAWATT-basket: general introduction to the platform with information how to register and find and use the documents, energy efficiency in offices, buildings, energy management energy culture, lighting, e-mobility, steam systems, compressed air systems, labelling.

On average, 40 persons registered for the webinars. The webinars lasted one hour, with 30-40 minutes of presentation and a short response to the chat-questions. Speakers were experts from the AEA, for one topic an additional guest speaker was invited. The most successful modules were the most general ones: introduction to platform, energy management, energy culture and information on labelling.

As quite a lot of persons attended several or almost all webinars, AEA considers the webinars as a big success.

Topic	Date	Number of registrations
Einführung in die IMPAWATT Plattform (Introduction to IMPAWATT Platform)	Tuesday, 26. May 2020, 10:00	41
Energiesparen im Büro (Energy Saving in Office Building)	Friday, 29. May 2020, 10:00	36
Energiemanagement (Energymanagement)	Tuesday, 02. June 2020, 10:00	47
Gebäudesanierung (Building Renovation)	Friday, 05. June 2020, 10:00	29
Optimierung von Dampfsystemen (Optimisation of Steam Systems)	Tuesday, 09. June 2020, 10:00	29
.Energiekultur (Energy Culture)	Tuesday, 16. June 2020, 10:00	40
E-Mobilität in Unternehmen (E-Mobility)	Friday, 19. Juni 2020, 10:00	31
Beleuchtungsoptimierung (Optimisation of Lighting Systems)	Tuesday, 23. June 2020, 10:00	38
Optimierung von Druckluftanlagen (Optimisation of Compressed Air Systems)	Tuesday, 30. June 2020, 10:00	40

Table 2 : Webinars list

5 ENVIPARK - Italy

5.1 On site actions (IMPAWATT+ group)

The engagement of the companies started before the beginning of the project, and the first activities were implemented on the ones that already expressed their interest.

Further marketing activities were conducted through direct mailing to all the members of the CLEVER cluster and the other 6 regional clusters of innovation, Envipark's newsletter and social media, and finally direct contacts of Envipark's staff deriving from former project and supporting activities.

The list of the companies originally selected for the IMPAWATT+ group changed during the project, due to change of availability of the companies themselves. When this happened, the companies were replaced with other ones which showed interest after being contacted.

The onsite activities for IMPAWATT+ group consisted in the presentation of the project and the IMPAWATT platform, together with a walk around on the site aimed to identify the main energy users and equipment. Available energy consumption information was requested to the companies, to support them in the input of data on the platform and estimate the potential impact of the efficiency measures.

Some of the companies the on-site visit was replaced by a phone or web assistance, aimed to check and discuss with the companies the available energy information, the measures already planned or implemented. They were directly supported in uploading the information on the platform, explaining the logic of the platform and the opportunities coming from the technical materials available, the training resources (quizzes and surveys) and the dashboard for the visualization of energy consumption and the relation with the energy measures.

Where no energy audit was available, the energy consumption was derived from energy bills or former studies (Life Cycle Analysis or similar), considering also measures preliminary identified through energy check-ups.

Due to their duration in relation to the time when they were planned, most of the planned actions will be fully implemented only after the end of IMPAWATT project.

5.2 Online support (IMPAWATT group)

The engagement activity for the IMPAWATT group was the same than for the IMPAWATT+ group.

The IMPAWATT group companies were supported through direct presentation of the platform during dedicated meeting, telephone calls or web meetings. Not all the support actions ended with the registration on the platform. Most of the companies also participated in the webinars and some to the IMPAWATT workshops in the form of technology providers.

5.3 Capacity building workshops

The workshops were organized in the form of web conferences, in collaboration with specific technology providers, with the following structure and a total duration of about 1 – 1,5 hours:

- Presentation of IMPAWATT project and introduction to the specific energy efficiency topic/technology (IMPAWATT partner)
- Presentation of the possible measures for energy efficiency for the proposed topic, including concrete examples of application (Identified technology provider)
- Discussion with the participants on the contents and experiences presented

All the workshop were promoted to the IMPAWATT, IMPAWATT+ and participants to the IMPAWATT webinars, and the video recordings are available on the LinkedIn channel of IMPAWATT project and YouTube channel of ENVIPARK. Some of the companies involved in the workshop were part of the IMPAWATT group.

In the discussion session there was the possibility for the participants to raise questions on the application of the technologies presented and about the implementation costs.

The format was very appreciated by the participants and the companies engaged, and the availability of registrations will maximize the impact also after the end of the project. Furthermore, the workshops allowed the identification of future topics and best practices to consider for the platform development in the exploitation phase.

This kind of approach can be considered successful.

5.4 Webinars

The webinars were hold between May 6 2020 and July 15 2020, on Wednesdays, at 16:00.

Ten different topics were identified:

1. Contents and functionalities of the IMPAWATT platform for energy managers
2. Energy culture and energy behaviour inside organizations. The tools of the IMPAWATT project
3. LCA and environmental labels for energy efficiency in the supply chain and procurement process
4. Energy efficiency of lightning and office activities
5. Energy efficiency of the building envelope and climatization plants
6. Energy efficiency of cooling and ventilation equipment and processes
7. Efficient production and distribution of compressed air
8. Energy efficiency in steam-related processes
9. Energy efficient solutions for transport and logistic processes of organizations

10. Energy Performance Contracts (EPC) for the improvement of energy efficiency




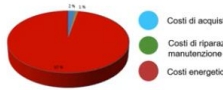
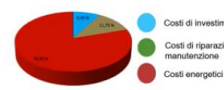


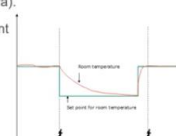

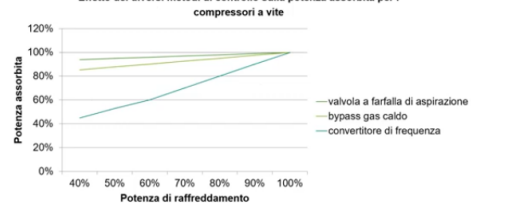

The webinars were promoted via different channels: direct contacts of IMPAWATT associated companies, CLEVER cluster members and Envipark's newsletter, with the collaboration of some of the stakeholders which are part of Envipark's network (Chamber of Commerce, Regional Industry association)

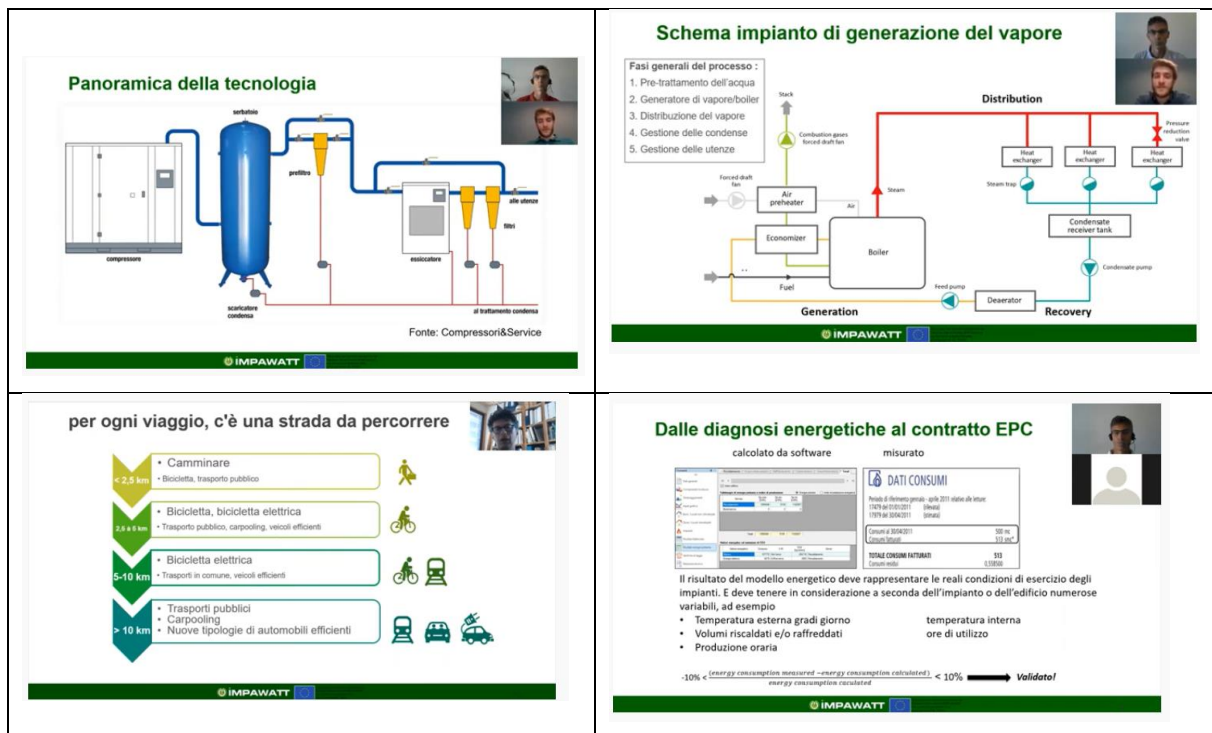
More than 100 people registered in total, with a total participation of 48 members of different organisations.

The webinars lasted about one hour, with 30-40 minutes of presentation (including an introduction to the IMPAWATT project) and a short session of questions and answers.

Speakers were experts from Environment Park.

All the webinars were also registered and uploaded both on the [YouTube channel of Environment Park](#) and the [LinkedIn page of IMPAWATT](#) project, to maximize the visibility and dissemination of the contents.

<h3>A chi è rivolta ?</h3> <p>La piattaforma è rivolta innanzitutto alle persone che hanno in capo la gestione energetica, denominati "Mrs" or "Mr Energy" dell'azienda, ma anche consulenti energetici esterni.</p> <p>Sulla piattaforma, Lei/Lui troverà materiale utile per:</p> <ul style="list-style-type: none"> Attuare raccomandazioni e consigli per l'efficienza energetica Monitorare e controllare i consumi energetici Migliorare le abilità e conoscenza del personale delle varie aree e funzioni aziendali: acquisti, manutenzione, produzione, risorse umane, comunicazione 	<h3>Le azioni: soluzioni basate sul gioco (serious game)</h3> <ul style="list-style-type: none"> Coinvolgono l'utente in modo attivo, favorendo la consapevolezza e la responsabilizzazione Esempi: energy teams, mini-concorsi interni, ... Utilizzo di app (es. <i>Energy chicken game</i>)  <p>Energy Chicken Animation, https://www.youtube.com/watch?v=ZIQO08h4cB4</p> 
<h3>LCC per sistemi con un fabbisogno energetico</h3> <ul style="list-style-type: none"> La quota dei costi energetici dei costi del ciclo di vita di un singolo motore può raggiungere il 95%. I costi di acquisto di un motore da 15 kW rappresentano il 5% dei costi totali del ciclo di vita. Per altri sistemi (ad es. compressore d'aria compressa) è compreso tra il 50 e l'80% (per ore di funzionamento tra 1000-6000 h 7,5 kW compressore). <div style="display: flex; justify-content: space-around;"> <div> <p>Costi del ciclo di vita di un singolo motore elettrico</p>  </div> <div> <p>Costi del ciclo di vita di un sistema ad aria compressa</p>  </div> </div> 	<h3>Ottimizzazione dell'uso della luce diurna: Introduzione</h3> <p>In generale per gli edifici industriali l'uso della luce naturale è relativamente raro.</p> <p>Vantaggio di un uso naturale superiore:</p> <ul style="list-style-type: none"> Miglioramento del comfort e della salute dei lavoratori; Miglioramento del guadagno di calore solare; Riduzione del consumo di energia elettrica per il servizio di illuminazione. <p>Svantaggi:</p> <ul style="list-style-type: none"> L'uso della luce naturale dipende dall'orario, dalla stagione e dal tempo; Pericolo di abbagliamento e surriscaldamento; Gestione complicata; La luce artificiale è ancora necessaria  
<h3>Panoramica della tecnologia</h3> <ul style="list-style-type: none"> Risparmio di energia: ottimizzare il set point Ridurre i flussi d'aria nei periodi di assenza Impostare due valori per il set point (vedi figura). Usare avanzati metodi per cambiare il set point Considerare i periodi di lunga assenza  	<h3>Regolazione del compressore</h3> <p>Effetto dei diversi metodi di controllo sulla potenza assorbita per i compressori a vite</p>  <p>Source: Kulturen, K., Mar, O., Horneth, C.: Leitfaden für Energieaudits in Kältesystemen, Klimaaktiv energieeffiziente betriebe, Wien 2017</p> 



6 SENERCON - Germany

6.1 On site actions (IMPAWATT+ group)

In Germany it was challenging to recruit companies, even though cost-free onsite visits and audits were offered to companies. SENERCON used its network of companies which took part to former projects or audits and offered IMPAWATT to interested energy consulting companies which are business partners. Additionally, companies belonging to green associations and endorsement organisations like the local chamber of commerce in Berlin and Munich as well as green enterprises associations like "Unternehmensgrün" were contacted and asked for support to disseminate the project. Some companies started their registration at the IMPAWATT platform but did not finalize it, some explained their commitment to take part in emails but did not register. But, finally, SENERCON could find companies that were ready to participate; some of them had several company locations which were visited.

In four companies a first appointment was arranged in order to introduce the project and the benefits for participating companies and to explain how the platform works and how it is assisting companies in their path towards an improved energy efficiency and culture. In three companies the project and the platform were introduced online because of the Covid situation.

The theoretical introduction was followed by an on-site visit at IMPAWATT+ companies in order to identify the main energy consumers and the daily business of the company.

After an assessment of the information and data collected during the visits, recommendations for energy savings were given and explained to the companies.

6.2 Online support (IMPAWATT group)

Most companies needed support for filling in the monitoring section of the platform, e.g., measures planned or implemented, calculation of energy savings. This had in most cases to be implemented by SENERCON's staff. Also, the energy monitoring section with the iESA had to be explained.

In some cases, the registration failed as the automatically sent email including the link for the confirmation of the registration landed in the spam folder of the company. Thus, for some companies SENERCon also assisted in the registration of the platform by online calls with screen-sharing.

The behaviour survey and the quizzes as well as the procedure to invite employees had to be explained to the companies during online calls with screen-sharing.

6.3 Capacity building workshops

Due to Covid-19 it was difficult to organise workshops at companies as for some companies nearly the whole team worked in home office. Thus, the workshops were mainly replaced by the webinars including Q&A sessions. Additionally, during the on-site visits at companies, a kind of workshop for the efficient use of energy in offices were organized after the assessment of energy consumers. This was the case for three companies which belong to the office sector or at least have an office space. During the “workshops” SENERCon explained the main energy consumers in offices and where the energy efficiency potentials are and also discussed with the staff of the company where they see possibilities for improvements and where to their opinion the barriers hindering an implementation are. This approach was appreciated by the management and thus successful.

Another workshop/webinar on energy management was organised in 2 companies also using the presentation on the IMPAWATT platform and explaining the cycles of energy management. It was discussed with the management of the companies how they could start the energy management activities taking into account measures that had already been implemented.

6.4 Webinars

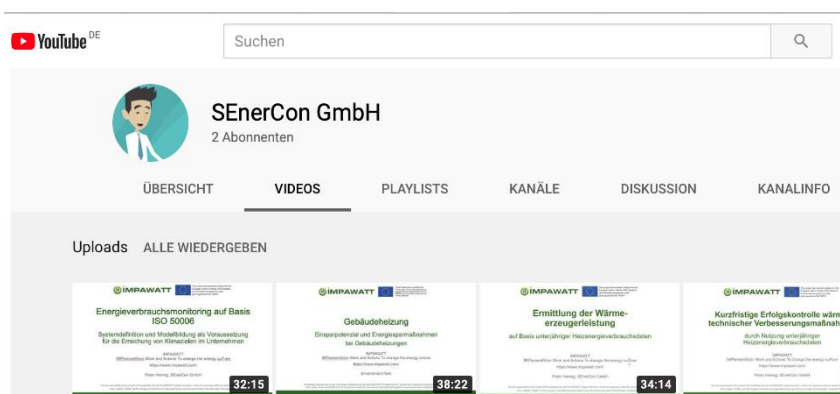
Ten webinars with different topics using the presentations of the IMPAWATT platform as well as own presentations of SENERCon’s energy experts were offered to all IMPAWATT and IMPAWATT+ companies and the general public of interested companies and stakeholders. For the subscription to a seminar a simple email to the German contact point was required. Subsequently an invitation link to the webinar was returned. During the one-hour lasting webinar an energy topic was introduced by an energy expert of SENERCon’s team including a question-and-answer session. For most of the webinar a topic and the respective presentation of the IMPAWATT platform was used. Additionally, SENERCon’s experts presented new technologies and approaches to improve the energy efficiency and to evaluate energy efficiency measures in short term after their implementation. In Table 3 the single webinar topics including number of registrations and participants are listed:

Topic	Date	Participants	Link Youtube
Short-term success control after thermo-technical improvement measures	14.10.2020 11:00 -12:00	7	https://youtu.be/YY5dDMP-yN8
Energy efficiency in the office	21.10.2020 11:00 -12:00	3	https://youtu.be/eQS4623pBnU
Building heating and building envelope	28.10.2020 11:00 -12:00	4	https://youtu.be/hNjfxWW_tQk
Determination of heat generator output on the basis of consumption data during the year	04.11.2020 11:00 -12:00	3	https://youtu.be/1IWCNHKoTkA

Energy consumption monitoring on the basis of ISO 50006	25.11.2020 11:00 -12:00	2	https://youtu.be/CA75zemWYfM
Saving heating energy through the use of weather forecast controls	02.12.2020 11:00 -12:00	2	https://youtu.be/tPdOC6NvU30
Design of photovoltaic systems for commercial buildings	16.12.2020 11:00 -12:00	2	https://youtu.be/0xRrSo7oLzk
Energy management	10.02.2021 10:00 -11:00	3	https://youtu.be/rcccuLdlclk
Optimization of heat distribution	17.02.2021 10:00 -11:00	3	https://youtu.be/7fSKXmgK3nk
Lighting systems	23.02.2021 10:00 -11:00	3	https://youtu.be/gVj9SYsqoyM

Table 3 : IMPAWATT webinars

The webinars were recorded and made accessible through the IMPAWATT Platform by a link to [SEnerCon's YouTube channel](#) (see also table 3 for the single links).



In general, the feedback to the webinars was good, some webinars were considered too extensive (e.g., energy efficiency in offices) although the presentations of the IMPAWATT portal were already shortened. This should be taken into account for the original presentations of the platform, which could be available as long version to train Mr. or Ms. Energy and as shorter version for being presented to the whole team (also including non-experts).

The webinars were disseminated by sending invitation letters to the IHK Munich as by using co2online information channels (co2online is a company belonging to SEnerCon which is very active in online energy campaigning with a large partner network). The following flyer on the next page was used for dissemination.



Online Workshops zum Thema Energieeffizienz und erneuerbare Energien für Industrie und Dienstleistungen

Referenten: Dipl.-Ing. Peter Hennig, SenerCon GmbH Berlin
Dipl.-Ing. Christian Reher, SenerCon GmbH Berlin

Oktober 2020 bis Februar 2021 (online)

Kostenlose Registrierung: Senden Sie uns eine E-Mail an
contact@impawatt.com

Zum Impawatt Projekt

Im Rahmen des Projektes wurde die Informations- und Lern-Plattform <https://de.impawatt.com> zu den Themen Energieeffizienz und erneuerbare Energien, Energieunternehmenskultur und nachhaltige Lieferkette in sechs Ländern entwickelt. Die Inhalte stehen als Fact-Sheets, Präsentationen, Lern-Quize, Mitarbeiterumfragen und Rechen tools teilnehmenden Unternehmen kostenlos zur Verfügung. Zusätzlich werden online Workshops und Vor-Ort- Energieberatungen – beides ebenfalls kostenlos – angeboten.

Themen und Termine

14.10.2020 11:00 -12:00	Kurzfristige Erfolgskontrolle nach wärmetechnischen Verbesserungsmaßnahmen	Peter Hennig
21.10.2020 11:00 -12:00	Energieeffizienz im Büro	Christian Reher
28.10.2020 11:00 -12:00	Gebäudeheizung und Gebäudehülle	Christian Reher
04.11.2020 11:00 -12:00	Ermittlung der Wärmeerzeugerleistung auf Basis unterjähriger Verbrauchsdaten	Peter Hennig
25.11.2020 11:00 -12:00	Energieverbrauchs-Monitoring auf Basis von der ISO 50006	Peter Hennig
02.12.2020 11:00 -12:00	Heizenergie sparen durch den Einsatz von Wetterprognosesteuerungen	Peter Hennig
16.12.2020 11:00 -12:00	Auslegung von Photovoltaik-Anlagen für Gewerbe	Peter Hennig
10.02.2021 10:00 -11:00	Energiemanagement	Christian Reher
17.02.2021 10:00 -11:00	Optimierung der Wärmeverteilung	Christian Reher
23.02.2021 10:00 -11:00	Beleuchtungssysteme	Christian Reher

It was not easy for SENERCON to gain participants for the webinars, thus, most participants were from the IMPAWATT+ or IMPAWATT companies. A reason for this could be that SENERCON is not that active in energy business clusters like the other partners.

7 VTT - Finland

7.1 On site actions (IMPAWATT+ group)

VTT successfully reached and surpassed the intended target for recruiting companies for IMPAWATT+ group. The team (working on IMPAWATT) contacted potential companies through collaboration with VTT's marketing department while the team also contacted companies through their own individual contacts. These SMEs did not have a designated role of the Energy Manager, therefore the meeting was also an opportunity to inform the person about managing energy efficiency and answer questions that he/she had. The companies belonged to the sectors highlighted in Table 4. The meetings were held in February - March 2020. The discussion topics included Energy Management, Heating of Buildings and Envelope, and Renewables. In addition, VTT also conducted the energy culture survey with four companies (Company 1 - 4).

	Sector
Company 1	Lifecycle solutions
Company 2	Smart infrastructure
Company 3	Construction & real estate
Company 4	Software solutions
Company 5	Education
Company 6	Research organization

Table 4: IMPAWATT+ Group Finland

7.2 Online support (IMPAWATT group)

VTT began recruiting companies for IMPAWATT well before the start of the pandemic through the marketing department and personal contacts. Therefore, VTT team was able to have first thorough discussions in person. However, follow up discussions were held via teleconference due to the pandemic. VTT adopted a similar approach to recruitment as done with IMPAWATT+ group, that is, reaching out to companies through the marketing department and through personnel network. IMPAWATT group companies belong to the sectors highlighted in Table 5. The main discussion topic was Energy Management and use of the platform in the best possible way. The IMPAWATT group consists of both SMEs and larger enterprises.

	Sector
Company 1	Material manufacturer
Company 2	Consultancy (design and architecture)
Company 3	Real estate manager of university property
Company 4	Real estate owner in the forest area
Company 5	Association for engineers
Company 6	Automation

Company 7	Farm
Company 8	Environmental school
Company 9	Material manufacturer

Table 5: IMPAWATT Group Finland

7.3 Capacity building workshops

The discussions with the companies also served as an opportunity to raise awareness and inform the persons how to access information through the platform. VTT was able to combine introduction of the project with raising awareness and providing technical information about how to manage energy within the company. The companies raised points such as, new ways to control carbon footprint, involving the guests to manage their carbon footprint in the forest, installation of PV panels at a farm, and building renovation limitations.

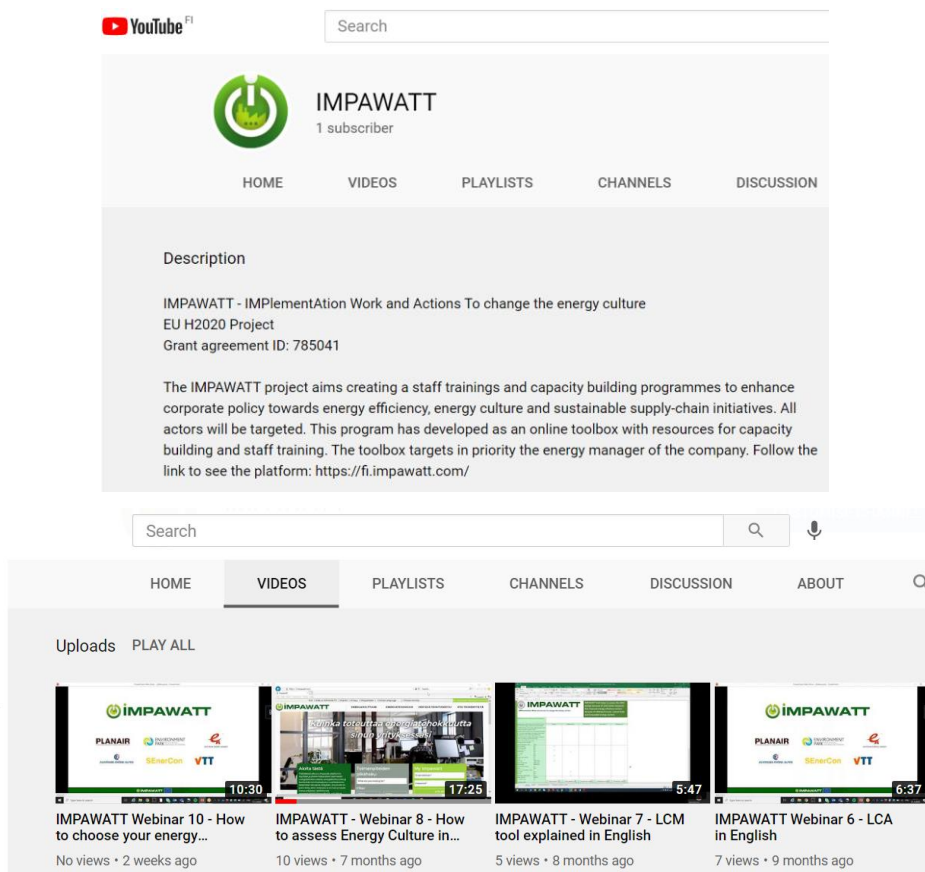
7.4 Webinars

VTT successfully arranged 10 webinars based on different topics to help the audience understand the purpose of the project and follow the webinars without any difficulty. The webinars began during the summer 2020 and were disseminated through social media. The following topics were selected for the webinars.

	Topic	Date	Link
Webinar 1	Platform Introduction	May 7th, 2020	https://www.linkedin.com/feed/update/urn:li:activity:6664152843395579904/
Webinar 2	How to use the Search Box	May 15 th , 2020	https://www.linkedin.com/feed/update/urn:li:activity:6667041253273686016/
Webinar 3	Platform Introduction (In Finnish)	May 20th, 2020	https://www.linkedin.com/feed/update/urn:li:activity:6668809815390740480/
Webinar 4	Lifecycle assessment (In Finnish)	May 25th, 2020	https://www.linkedin.com/feed/update/urn:li:activity:6670636640056160256/
Webinar 5	Lifecycle Quiz (in Finnish)	June 11th, 2020	https://www.linkedin.com/feed/update/urn:li:activity:6676848692152041473/
Webinar 6	Lifecycle (in English)	June 29th, 2020	https://www.linkedin.com/feed/update/urn:li:activity:6683309075964530688/
Webinar 7	Lifecycle management tool explained in English	July 8 th , 2020	https://www.linkedin.com/feed/update/urn:li:activity:6686553945239826432/
Webinar 8	How to assess energy culture in your company	August 20 th , 2020	https://www.linkedin.com/feed/update/urn:li:activity:6702135121870413824/
Webinar 9	How to make a timeline	February 26 th , 2021	https://www.linkedin.com/feed/update/urn:li:activity:6771051998595866624/
Webinar 10	How to plan energy measures	March 16 th , 2021	https://www.linkedin.com/feed/update/urn:li:activity:6777538751376744448/

Table 6 : list of webinars

The following Youtube channel for Finland was setup to enable dissemination of webinars.



8 CCI – France

8.1 On site actions (IMPAWATT+ group)

8.1.1 Concept

In France, the concept for the IMPAWATT Plus group consisted of an onsite visit during the period without lockdown or of virtual exchanges during the lockdown periods.

They consisted of:

- Presentation of IMPAWATT
- Discussion around energy consumption of the site
- Visit of the building (except during the lockdown phases)

After the visit some missing information were asked to the company. Finally, the energy auditor entered a list of potential energy efficiency measures, with energy consumption, investment and payback time estimation on the IMPAWATT platform. This list was then briefly presented during a web call or physically when it was possible.

Those action were 100 % financed by the IMPAWATT program and hence free of charge for the companies.

8.1.2 Acquisition

We have organized conferences, participated to events where we could present IMPAWATT, published a press release and made various promotion through our website and social network.

Besides these global promotional actions, the promotion has mainly been done at local level through the local Chambers of Commerce of the Auvergne Rhône-Alpes region.

The chamber of Commerce Auvergne Rhône-Alpes has 370 000 registered member companies and is working with local chambers based in the various territories of the region (French departments). The promotion has mainly been done at local level by the chambers who already have direct contact with their members and have a knowledge of their needs, including in the field of energy efficiency.

This method was effective and we were able to go beyond our target with 73 companies which registered to the French Platform, exceeding then our initial target of 65 companies.

8.1.3 Actions

30 Companies are participating to the IMPAWATT+ group, which matches our target.

For each company, on site visits could be organized except during the lockdown phases.

These companies benefited from a personal support in order to rationalize their energy consumption.

The service provided aimed to identify the main consumption items, find sources of energy savings and induce virtuous behaviour as part of good practices.

Since each company has a different level of maturity regarding their reflexion on energy saving, the service was tailored in order to match their level of maturity in terms of energy saving analysis.

- For the companies without prior action in the field of energy saving, the aim was to draw up an initial assessment of the company's overall energy situation; to analyse the breakdown of consumption and associated costs by type of energy and by consumption item (air conditioning, heating, ventilation, lighting, etc.) based on the gross consumption data collected from the documents provided by the company manager.
- For the companies which already have launched some previous energy analysis, they could be supported on specific energy topic saving which they already identified, eg. lighting, compressed air, cooling or other technical topics.

For most of these companies, the audit led to recommendations for energy saving actions in various topics. Altogether, the energy experts from the CCI expressed 118 energy saving recommendations. The most expressed recommendations have been:

- energy management (36 %)
- lighting (17%)
- compressed air (14%)
- building envelope (8%).

These energy saving recommendations correspond to an amount of **1 381 433,60** KWh of planned energy savings

Summary of the recommendation and energy saving by topic

Theme	Number of energy savings recommendation	KWh/year
Energy management	43	898 878
Lighting system	20	214 250
Compressed air	16	130 620
Buildings	8	3 500
Cooling system	6	84 500
Hot water	5	210

Process	5	
Heating	4	36 400
Other equipments	4	3 225
Mobility	3	9 850
Ventilation	2	
Air conditioning	1	
Transports/handling	1	
Steam	0	
Total	118	1 381 433

8.2 Online support (IMPAWATT group)

We managed to have 47 companies in this group, exceeding therefore our target of 35 companies

All companies of this group are registered on the French IMPAWATT Platform

For a majority of companies, they made the registration further to a phone/web contact with an energy adviser of the Chamber of Commerce.

For the others, the registration was done thanks to the global dissemination by mail, social networks and press release, or through the participation to webinars or events.

8.3 Capacity building workshops

The discussions with the companies also served as an opportunity to raise awareness and inform the persons how to access information through the platform.

The CCI was able to combine introduction of the project with raising awareness and providing technical information about how to manage energy within the company during each on site visits made.

- For the 30 companies of the IMPAWATT + group
AND
- For 37 other companies

The following points were raised during the capacity building workshops.

- Presentation of the platform and the way to use it in a tailor-made way
- General introduction about energy management
 - o Knowledge and follow-up of the energy consumption of the company
 - o Impact for the supply chain: anticipation of energy costs of the material
 - o Development of an energy action plan with a regular follow-up
 - o Implication of all category of staff (office, production, purchase service, human resources, management)
 - o The energy market: a better knowledge of the opportunities for lower costs for gas, fuel, electricity, plus a presentation of the main financial support available

8.4 Webinars

10 webinars were organized in the frame of the IMPAWATT project.

They gathered 252 participants.


During the webinar, a specialist of the given topic presented shortly the IMPAWATT project and then, the specific topic. Finally, the attendees could ask questions through the chat that were directly answered.

WEBINAR CCI

Date	Topic	Number of participants
20/01/2020	Energy management in the companies	19
06/07/2020	Reduce the impact of digital	35
12/10/2020	Suppression of the special energy tariffs for gaz and electricity	12
13/10/2020	Sustainable supply chain	6
17/11/2020	Heat recovery	29
21/01/2021	Hydrogene	29
27/01/2021	Awareness raising Energy Management	17
08/02/2021	Wood energy	27
26/02/2021	Cooling and heating	15
30/03/2021	Identification of the energy Financial support	63

Examples of Webinars



<ul style="list-style-type: none"> Journée QSE : Réduire l'impact énergétique du numérique en entreprise 	<ul style="list-style-type: none"> Fin des tarifs bleus d'électricité : suis-je concerné ? 