

National iESA versions

Deliverable no: D5.4
Work package no: WP 5
Work package title: Design-Implementation of the IMPAWATT web portal
WP leader: SEnerCon GmbH
Author: Claudia Julius, SEnerCon GmbH
Dissemination level: PU

IMPAWATT **IMPlémentAtion 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
29.11.2019	V1	SEN	PLA	
18.02.2020	V2	SEN		
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	3
2	Access to national iESA versions:	3
3	iESA adaptation	5
4	Relation to other activities in the project	5
5	Partners' contribution	5
6	Annex:	7
6.1	Energy carriers applied in companies in Italy	7
6.2	Energy carriers applied in companies in Austria	8
6.3	Energy carriers applied in companies in France.....	9
6.4	Energy carriers applied by companies in Switzerland.....	10
6.5	Energy carriers applied in companies in Finland.....	11

List of figures

Figure 1: Link to iESA from the Impawatt monitoring section	3
Figure 2: German/Austrian iESA adapted and branded to Impawatt	4
Figure 3: Italian iESA adapted and branded to Impawatt	4
Figure 4: French and Swiss iESA adapted and branded to Impawatt.....	4
Figure 5: Finish/English iESA adapted and branded to Impawatt	5

1 Executive summary

Based on D5.3 Report on national particularities to be taken into account to adapt the interactive Energy Savings Account (iESA) to the conditions in Switzerland and Finland, the iESA has been adapted for both countries. For Switzerland iESA is offered in three languages (French, Italian and German), for Finland iESA is offered as English version. Regarding the other national iESA versions for Italy, France and Austria, the versions that were produced during the IEE project European Enterprises Climate Cup were used, only missing text content resulting from iESA updates was translated and parameters on energy carriers (CO2 coefficients, scaling factors to convert into kWh) were provided by partners and integrated into the iESA backend. All national iESA versions were linked to the respective national Impawatt portals and are accessible from the monitoring part of the Impawatt platforms.

2 Access to national iESA versions:

The following links lead to the different national iESA versions if a user has registered and logged in to an account:

Austria: <https://at.impawatt.com/iesaMonitoring>

Finland: <https://fi.impawatt.com/iesaMonitoring>

France: <https://fr.impawatt.com/iesaMonitoring>

Germany: <https://de.impawatt.com/iesaMonitoring>

Italy: <https://it.impawatt.com/iesaMonitoring>

Switzerland: <https://ch.impawatt.com/iesaMonitoring>

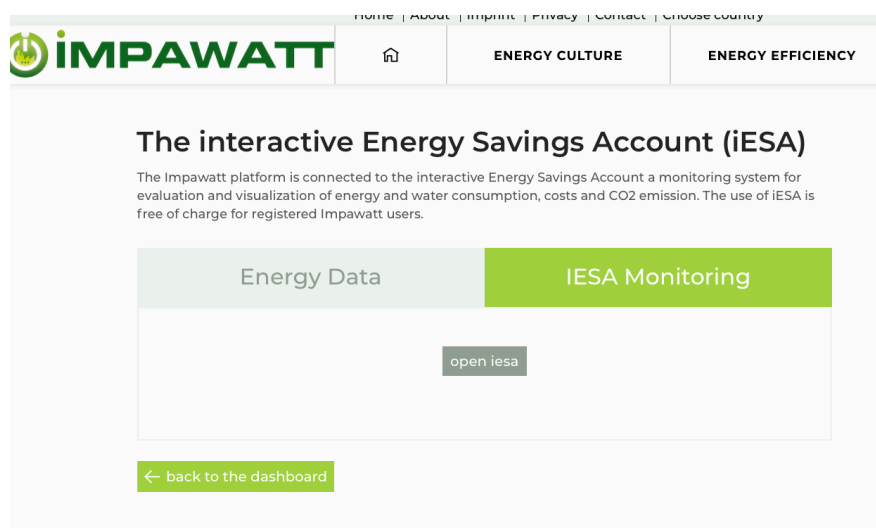


Figure 1: Link to iESA from the Impawatt monitoring section

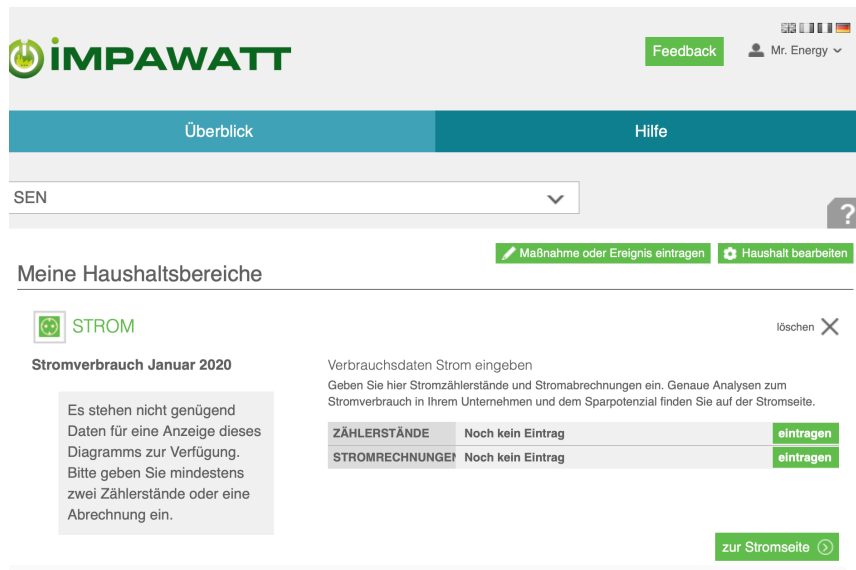


Figure 2: German/Austrian iESA adapted and branded to Impawatt

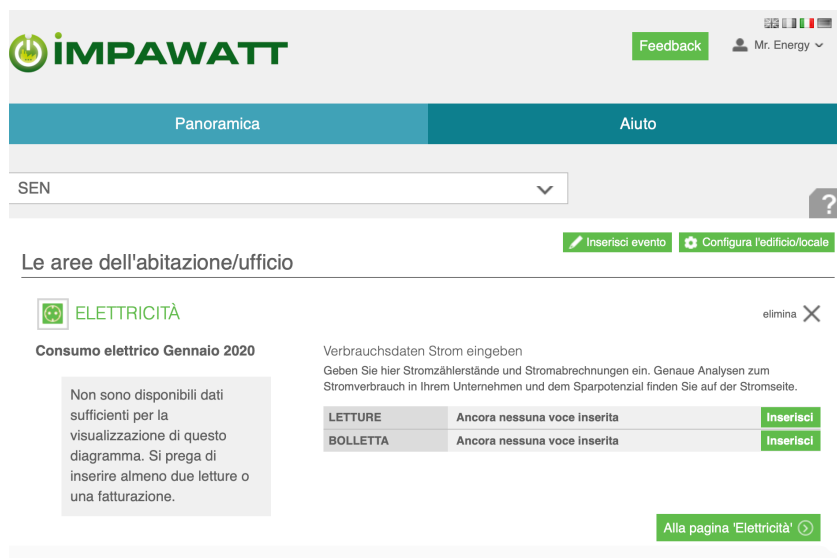


Figure 3: Italian iESA adapted and branded to Impawatt

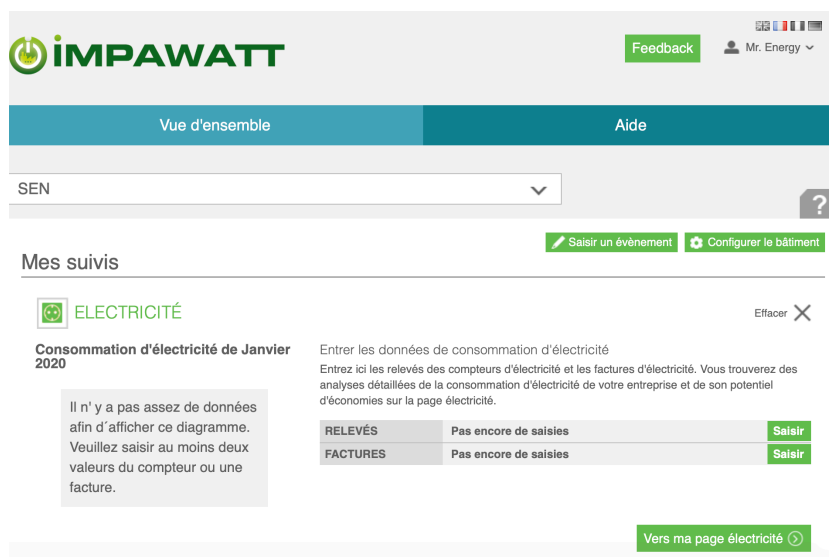


Figure 4: French and Swiss iESA adapted and branded to Impawatt

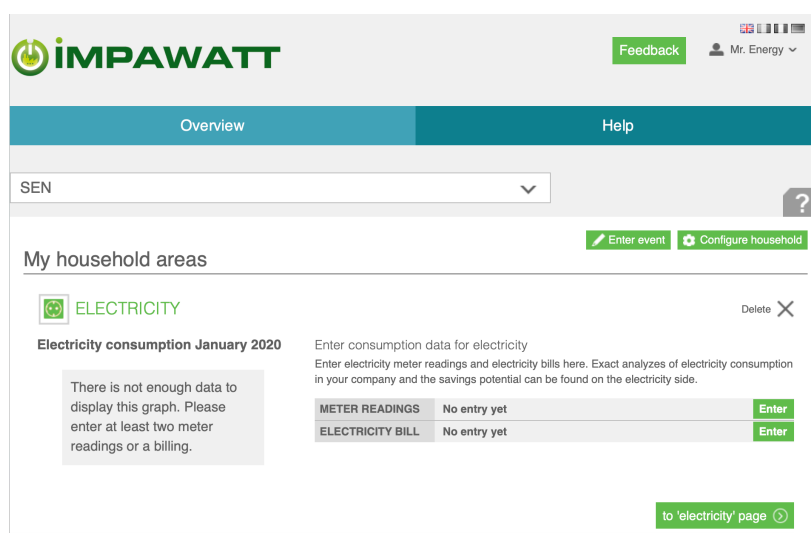


Figure 5: Finish/English iESA adapted and branded to Impawatt

3 iESA adaptation

The French, Austrian and Italian iESA basic version which has been produced during the Intelligent Energy Europe project European Enterprises Climate Cup (EECC) had to be updated by actual CO₂-coefficients, scaling factors (energy carrier units into kWh) and new text content that had to be translated because iESA had been modified since the end of the EECC project.

The translation was done using Excel templates by SEnerCon and partners. The parameters regarding CO₂-coefficients and scaling factors were provided by partners and integrated into the iESA backend. They are attached to the Annex of this document.

The Finnish iESA was not translated into Finnish as most employees speak English and are able to use the platform in English. For Switzerland iESA is offered as German, French and Italian version.

The Finnish and Swiss platforms have been adapted based on national particularities and solutions that are compiled in the Report on national particularities for iESA adaptation to Switzerland and Finland which is available on the project website by the following link:

https://www.impawatt.com/wp-content/uploads/2019/12/IMPAWATT-Report-on-national-particularities-for-iESA-adaptation-to-Switzerland-and-Finland_final.pdf

4 Relation to other activities in the project

Companies using the Impawatt platform can monitor their energy consumption and energy efficiency improvements planned and implemented within the monitoring part of the Impawatt platform. Companies, especially offices, aiming at a more detailed monitoring including different energy meters, may use the iESA in addition to the platforms' energy monitoring features.

5 Partners' contribution

Partners provided updated parameters on energy carriers and related CO₂-coefficients and scaling factors to convert common units applied for the energy carriers into kWh. The parameters for all

countries can be found in the Annex. Partners tested their national iESA version and reported on eventual bugs and missing text translations.

6 Annex:

6.1 Energy carriers applied in companies in Italy

Energy carrier	Unit	Scaling factor to convert to kWh (if applied)	CO ₂ coefficient kg/MWh	Comment / e.g. Source, if available
District Heating	MWh	1000	360*	*in the absence of values declared by the operator
Electricity	MWh	1000	308,1	<i>Fattori di emissione per la produzione ed il consumo di energia elettrica in Italia, ISPRA (2017)</i>
Wood pellets and briquettes	1000 kg = t	5,3 kWh/kg	340,6	<i>Fattori di emissione per le sorgenti di combustione stazionarie in Italia, ISPRA (2017)</i>
Natural gas	1000 Sm ³	9,6 kWh/Sm ³	207,7	<i>Fattori di emissione per le sorgenti di combustione stazionarie in Italia, ISPRA (2017)</i>
Fuel oil	1000 kg = t	11,9 kWh/kg	264,9	<i>Fattori di emissione per le sorgenti di combustione stazionarie in Italia, ISPRA (2017)</i>

6.2 Energy carriers applied in companies in Austria

Energy carrier	Unit	Scaling factor to convert to kWh (if applied)	CO2 coefficient kg/MWh (total: direct plus indirect)	Comment / e.g. Source, if available
District Heating	MWh	1000	203 kg/MWh	https://secure.umweltbundesamt.at/co2mon/co2mon.html
Electricity	MWh	1000	258	https://secure.umweltbundesamt.at/co2mon/co2mon.html
Wood pellets and briquettes	1000 kg = t	5 kWh/kg 5000 kWh/t	38	https://secure.umweltbundesamt.at/co2mon/co2mon.html
Natural gas	1000 m ³	10,1 kWh/Nm ³ ¹ 10100 kWh/1000 Nm³	271	https://secure.umweltbundesamt.at/co2mon/co2mon.html
Fuel oil	1000 kg = t	Heizöl Extraleicht: 11,89 kWh/kg 11890 kWh/t	337	https://secure.umweltbundesamt.at/co2mon/co2mon.html

¹ One standard cubic meter (Nm³) of gas is the quantity of a gas contained in a volume of 1 m³ at 1.01325 bar and 273.15 K (0 °C). Since the mass is constant at 1 bar and 8 bar pressure as already described, the contained standard volume is therefore also constant.

6.3 Energy carriers applied in companies in France

Energy carrier	Unit	Scaling factor to convert to kWh (if applied)	CO2 coefficient	Comment
Heavy fuel oil	Tonne or MWh	11,6 MWh/tonne	272 kg/MWh	
Gas	m3 or MWh	9,69 kWh/m3	204 kg /MWh	
District Heating	MWh	-	It really depends on the heating networks	Is it possible to leave a field that can be completed according to the city's district heating?
Electricity (average)	kWh -MWh	-	78 kg/MWh	
Wood pellets	tonne	4,6 MWh/tonne	-	
Firewood (stems and split firewood)	Stere	1,68 MWh/stere	-	
Domestic fuel oil	m3 ou kWh	10 MWh/m3	272 kg/MWh	
Propane	kWh ou m3	0,254 kWh/m3	204 kg/MWh	
Butane	kWh ou m3	0,328 kWh/m3	233 kg/MWh	

6.4 Energy carriers applied by companies in Switzerland

Energy carrier	Unit	Scaling factor to convert to kWh (if applied)	CO2 coefficient	Comment
Fuel	Liter	1 liter = 9.9 kWh Hu	277 kg CO2/MWh Hu	https://www.energie-umwelt.ch/tools/835-einheiten-umrechner-fuer-verschiedene-heizenergie-und https://www.energieschweiz.ch/media/309179/richtlinie_zielvereinbarungen_mit_dem_bund_zur_steigerung_der_energieeffizienz.pdf
Gas	kWh ho oder m3	11.43 kWh Ho/m3 or 10.32 kWh Hu/m3,	202 kh CO2 /MWh Hu	Scaling m3 kWh depends on gaz and altitude. http://www.swissgas.ch/fileadmin/user_upload/swissgas/downloads/Erdgaseigenschaften_2017_SG_F.pdf
District Heating Supplier 1	kWh		von 0 kg CO2/MWh bis 205 kg CO2/MWh, see list of federal office for energ.	
District Heating Supplier 2	kWh			
District Heating Supplier x	kWh			
Wood pellets	kg	4.8 kWh/kg	0	https://www.holzenergie.ch/uploads/tx_ttproducts/datasheet/403energieinhalt_graueEnergie_DFI_05.pdf , CO2 wird generell als 0 emissionen betrachtet.
Wood chips	m3	700-1000 kWh/m3	0	
Mean renewable electricity mix	kWh		9 kg CO2/MWh	https://www.bafu.admin.ch/bafu/de/home/themen/klima/klimawandel--fragen-und-antworten.html
Mean user electricity mix	kWh		169 kg CO2/MWh	https://www.bafu.admin.ch/bafu/de/home/themen/klima/klimawandel--fragen-und-antworten.html

6.5 Energy carriers applied in companies in Finland

Energy carrier	Unit	Scaling factor to convert to kWh (if applied)	CO2 coefficient	Comment
District Heating Supplier 1 (average in 2017)	MWh	1000	149 kg CO2/MWh	
District Heating Supplier 2 (group with lowest emissions)	MWh	1000	20 kg CO2/MWh	https://www.motiva.fi/files/14691/Erillistuotannon_paikkakunnat_2018.pdf
District Heating Supplier 3 (group with highest emissions)	MWh	1000	450 kg CO2/MWh	https://www.motiva.fi/files/14691/Erillistuotannon_paikkakunnat_2018.pdf
Electricity (average in 2016)	MWh	1000	164 kg CO2/MWh	https://www.motiva.fi/files/14691/Erillistuotannon_paikkakunnat_2018.pdf
Peat pellets and briquettes	1000 kg = t	18 GJ/t * 278 kWh/GJ = 5000	97 t CO2/TJ = 349 kg CO2/MWh	http://www.stat.fi/statistic/media/uploads/tup/khkinv/khkaasut_poltt_oaineluokitus_2018.xlsx
Natural gas	1000 m3	36,5 GJ/1000 m3 * 278 kWh/GJ = 10100	55.3 t CO2/TJ = 199 kg CO2/MWh	http://www.stat.fi/statistic/media/uploads/tup/khkinv/khkaasut_poltt_oaineluokitus_2018.xlsx
Firewood (stems and split firewood)	1000 kg = t	14 GJ/t * 278 kWh/GJ = 3900	109.6 t CO2/TJ = 395 kg CO2/MWh	http://www.stat.fi/statistic/media/uploads/tup/khkinv/khkaasut_poltt_oaineluokitus_2018.xlsx
Light fuel oil	1000 kg = t	42,5 GJ/t * 278 kWh/GJ = 11800	261 kg CO2/MWh	https://www.motiva.fi/files/6817/CO2-laskenta_yksittainen_kohde.pdf