stream SAVE

Coordination and Support Action

H2020-LC-SC3-EE-2019

Validation of streamSAVE platform: Training Module

Deliverable D4.4

Version N°2

Authors: Alberto José Moreno Pérez (CIRCE), Alberto Mur Rodrigo (CIRCE)

@streamsaveh2020

@stream_save

www.streamsave.eu

contact@streamsave.eu

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Document Information

Grant agreement	890147
Project title	Streamlining Energy Savings Calculations
Project acronym	streamSAVE
Project coordinator	Nele Renders, VITO/EnergyVille
Project duration	1st September 2020 – 31st August 2023 (36 months)
Related work package	WP 4 – Capacity Support
Related task(s)	Task 4.3 –Testing of and validation of the streamSAVE Platform
Lead organisation	CIRCE
Contributing partner(s)	LGI, AEA, VITO, CRES, ECI, ISR-UC, JSI, SEVEn, LEA, IEECP
Due date	30th of November 2022
Submission date	22nd of February 2023
Dissemination level	Public

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Abbreviations and acronyms

Acronym	Description
CSF	Capacity Support Facility in streamSAVE
BACS	Building Automation and Control System
EED	Energy Efficiency Directive
EV	Electric Vehicle
GHG	Greenhouse gas
ICE	Internal Combustion Engine
MS	European Member State
PA	Priority Action
WP	Work Package

Summary

The Knowledge Facility of streamSAVE is developing streamlined calculation methodologies for 10 savings actions, the so-called Priority Actions, which are presented in D2.2 Guidance on standardized saving methodologies. Next to a general guidance on energy savings calculations for both Article 3 and 7 EED and information on how to assess costs and GHG emissions reduction related to the Priority Actions, the guidance provides 16 newly developed bottom-up calculation methodologies featuring indicative calculation values, data on costs and estimations of GHG emission reduction. This Knowledge Facility develops 10 Priority Actions over two rounds of experience sharing and capacity building. The Priority Actions under analysis are:

–   Heat recovery (district heating and excess heat from industry);

–   Building Automation and Control Systems (BACS);

–   Commercial and Industrial refrigeration system;

–   Electric vehicles (private & public EVs);

–   Lighting systems and public lighting;

–   Accelerated motor replacement;

–   Providing feedback about energy use and tailored advice towards households: behavioural changes;

–   Energy efficiency actions alleviating energy poverty;

–   Modal shift in freight transport (from road to rail);

–   Small-scale renewable central heating technologies.

The main objective of the testing and validation of the streamSAVE's Training Module is to provide the streamSAVE community with a robust, clear, and user-friendly tool to support stakeholders' responsibilities and activities in frame of Article 3 and Article 7 of the Energy Efficiency Directive (EED). In the Training Module, the calculation tools are arranged in such a way that the user can estimate the savings of streamSAVE's 10 Priority Actions both online and by downloading the excel templates. The results of testing and validation of the Training Module are presented in this report, covering the two rounds of Priority Actions. The validation of the platform is based on stakeholders' feedback and experiences, collected by means of a short questionnaire which users could complete while testing the Training Module for one or several actions. This questionnaire collected feedback on the Training Module's usability and required effort; its credibility of the outcomes; and whether the derived results are concise enough to make them a valuable input for the stakeholders' activities. For this purpose, stakeholders covering multiple EU countries were invited to participate in this process (email campaigns, webinars and personal email exchange). The feedback as well as resulting improvements are described in this report.

Keywords

Validation, testing, questionnaire, feedback, energy saving calculation improvements, training module, platform

Introduction

About streamSAVE

Energy efficiency is one of the five key dimensions of the Energy Union, and consequently of the Member States' National Energy and Climate Plans. The Energy Efficiency Directive sets the 2020 and 2030 energy efficiency targets and a series of measures that contributes to their achievement within the Union. The streamSAVE project streamlines energy savings calculations and provides the support needed to increase Member States' chances of successfully and consistently meeting their energy efficiency targets. The streamSAVE project specifically focuses on Article 3 and 7 of the EED which are devoted to energy efficiency targets and national energy savings obligations, respectively.

Given the importance of deemed savings approaches in Member States' EED reporting streamSAVE focuses on streamlining bottom-up calculations methodologies of standardized technical actions. streamSAVE offers these savings methodologies in a transparent and streamlined way, not only to improve the comparability of savings and related costs between Member States (MS), but also between both EED articles. The savings actions are targeted to those measures with high energy saving potential and considered as priority issues by Member States MS, the so-called *Priority Actions*.

More broadly, the project aims at fostering transnational knowledge and dialogue between public authorities, technology experts, and market actors. The key stakeholders will improve their energy savings calculation skills and ensure thus the sustainability and replicability of the streamSAVE results towards all European Member States.

Validation of the Training Module as part of streamSAVE's platform

To support public authorities and key stakeholders on improving their energy savings calculation skills and ensure thus the sustainability and replicability of the streamSAVE results towards all European Member States, the streamSAVE platform facilitates the exchange of knowledge and experiences among Member States according to three axes: knowledge facility, peer-to-peer dialogues, and capacity support facility. In this respect, the platform is structured in three modules:

− **Knowledge and support Facility[1]:** This module includes all resources on streamSAVE activities concerning energy savings' calculations. streamSAVE aims to assist Member States in their efforts to deliver rapidly scalable savings and increase their chances of successfully meeting energy efficiency targets under Article 3 and 7 of the Energy Efficiency Directive (EED). A series of activities are carried out with the intent of improving the energy saving methodologies capacities and skills of stakeholders across Europe. The user can find more information and outcomes of these activities, such as the D2.2 Guidance on standard savings methodologies in this module.

− **Online Forum[2]:** This module promotes the exchange of knowledge and experiences among stakeholders to extend the peer-to-peer dialogues per Priority Action (PA) and to increase community participation. An equally important goal of the module is to make stakeholders feel comfortable when using the module to share their findings in the

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[1] streamSAVE's Knowledge and support facility, [Online]. Available: https://streamsave.flexx.camp/support
[2] streamSAVE's Forum, [Online]. Available: https://streamsave.flexx.camp/forum

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scope of energy savings methodologies, as well as having a sense that the platform is useful for their daily activities. Public authorities, technology experts and market actors are brought together in dialogue groups to foster this transnational knowledge exchange on technical PA across Europe. The forum enables discussions among the actors or stakeholders who have registered.

- **Training Module[3]:** to discover and practice the streamSAVE methodologies for each PA on energy savings estimations and cost effectiveness. In this respect, streamSAVE project is providing assistance to Member States to align national energy savings estimates with actual energy savings achieved. Given the importance of deemed savings approaches in Member States' EED reporting, streamSAVE is focused on the bottom-up calculations methodologies of the 10 actions. The Training module offers the possibility to make such savings calculations in an easy and intuitive way, both online and by downloading an easy-to-use excel template. The user can discover and practice the methodologies for each Priority Action in the Training Module. In order to access this module, it is necessary to register on the streamSAVE platform.

streamSAVE targets a total of **10 Priority Actions over two rounds** of experience sharing and capacity building. The ten Priority Actions under analysis are:

- Heat recovery (district heating and excess heat from industry)
- Building Automation and Control Systems (BACS)
- Commercial and Industrial Refrigeration System
- Electric Vehicles (private & public EVs)
- Public Lighting Systems
- Accelerated motor replacement;
- Providing feedback about energy use and tailored advice towards households: behavioural changes;
- Energy efficiency actions alleviating energy poverty;
- Modal shift in freight transport (from road to rail);
- Small-scale renewable central heating technologies.

In line with streamSAVE's Guidance (D2.2), the Training Module includes the 16 newly developed bottom-up calculation methodologies featuring indicative calculation values, data on costs and estimations of GHG emission reduction for the 10 Priority Actions.

The testing and validation process referred to in this document mainly concerns the Training Module. Stakeholders' involvement during this validation step ensures the usability and optimal operation of the Training Module, resulting in an improved and more user-friendly platform. This stakeholder involvement was mainly ensured by means of the **PA Working Groups**, as part of the Capacity Support Facility, in each of the 10 streamSAVE partner countries. These working groups gathered technical and country experts from the streamSAVE project, as well as the implementing authorities (and/or technical experts) from the partner countries involved (see D4.3 on Capacity Support Facility, for more information on the process). Once the Training Module was available online, the working groups gave their **feedback by completing a short questionnaire** while testing one or more

[3] streamSAVE's Training, [Online]. Available: https://streamsave.flexx.camp/training

calculation methodologies in each of the 10 partner countries. This way, the methodologies could be tested and understood, faults could be detected, next to an evaluation of the user-friendliness and robustness of methodologies (both for formulas and for indicative values being suggested), etc. This document summarises the main stakeholders needs as reported in the feedback questionnaires, and tries to reply to the feedback collected, resulting in an improved platform.

The following chapters of the document detail how the testing and subsequent validation were done both for the first and second round of PA.

Figure 1. Training Module within streamSAVE platform.

Chapter 1   Questionnaire to collect stakeholders' feedback

1.1 First round of Priority Actions

To collect the feedback from the streamSAVE stakeholders while testing & validating the Training Module, a short questionnaire was developed as part of the project activities. The testing aimed to gather information to support the following purposes:

– To achieve better trust between the platform and the users;

– To improve the interaction between the platform and the users;

– To illustrate the overall satisfaction of the users;

– To validate the importance and credibility of the platform; and,

– To detect aspects that are not understood or are not correctly reflected in the Training Module to carry out the calculations.

The questionnaire has been designed with a simple structure consisting of three sections. The sections covered the user's basic needs in terms of navigation experience and overall satisfaction to be able to perform the savings calculations correctly:

– User-friendliness and Navigation;

– Level of Clarity and Credibility for the PA that you tested;

– About giving value.

The template of the questionnaire is included in Annex 1 of this report and was made available to stakeholders via the PA Working Groups (streamSAVE partners) or could be downloaded from the platform (the first round for collecting feedback was open from October 2021 to December 2021). Some of the questions are answered with "Yes/No" answers, while others are used to rate a particular feature on a scale from 0 to 10 (least to most satisfactory). In addition, there is the possibility to comment on a particular feature and give suggestions on how to improve it.

For the testing, public authorities and key stakeholders in the 10 partner Member States were consulted, mainly via the PA Working Groups so streamSAVE partners could first explain to them the Training Module and then gather feedback via the questionnaire. For the Priority Actions of the first round , each respondent was able to rate and show their opinion of the module in general within the section "About User-friendliness and Navigation"; while in the following sections, they could rate the Training Module for the specific methodologies or actions they have tested. However, respondents were encouraged to test and validate as many methodologies as the Training Module entails.

1.2 Second round of Priority Actions

In the first round of Priority Actions, the process of gathering feedback was not automated. More specifically, the feedback had to be sent through a Microsoft Word document (email) from which the answers of each respondent had to be compiled manually to collect an overview from all answers and consolidate it.

During the second round of PA, the process was however automated by using Microsoft Forms. This automated process entails several advantages compared to the previous

method both for the streamSAVE consortium (analysing the results) as well as the respondents: no manual data collection in the process is still needed, respondents can complete the questionnaire in a user-friendly manner who no longer need to download an individual Microsoft Word file, complete and email it to the streamSAVE consortium.

This new version of the questionnaire includes the 16 developed bottom-up calculation methodologies available so the users can select up to one PA and methodology each time they send feedback. Despite including all the available methodologies from the first and second PA rounds, the survey focuses its attention to the methodologies of the second PA round:

– Heat recovery for on-site use in industry - feedback of excess heat into a process

– Heat recovery for on-site use in industry - use of excess heat for on-site applications

– Heat recovery for feed-in to a district heating grid

– Building Automation and Control Systems in residential and non-residential buildings

– Energy efficient compression refrigeration units

– Fuel Switching to Electric Vehicles

– Energy efficient road lighting systems – engineering approach

– Energy efficient road lighting systems – simplified approach

– Anticipated motor replacement

– Feedback and tailored advice in the residential sector

– Thermally improved building envelope of refurbished buildings for energy poor households

– Small-scale renewable heating in buildings for energy poor households

– Behaviour measures addressing energy-poor households

– Freight Transport: modal shift potentials from road to rail per Member State

– Heat pumps for heating and hot water

– Biomass boilers for heating and hot water

The elements that are collected by the Microsoft Forms form include the following: identification of the user (organisation and role of the respondent regarding EED), the PA and methodology for which the user wants to share feedback, feedback about clarity, accuracy and completeness of the PA tested as well as possible improvements, comparison with other savings methodologies, general suggestions and added value of the platform.

Similar to the first round of PA, stakeholders gave their feedback mainly via the PA Working groups of the Capacity Support Facility in the 10 streamSAVE partner countries. The questionnaire ran from 7th November, 2022, and the due date for ending the feedback collection was 30th November, 2022. However, with the objective of maximizing the participation of the users in the process of sending their feedback, an extension until 15th of December, 2022 was foreseen.

Chapter 2 Feedback received during the Capacity Support Facility

In this Chapter, the collected feedback is summarized, so areas for improvements, and the validity or credibility of the methodologies could be identified.

2.1 First round of Priority Actions

With the participation and support of the consulted stakeholders in several Member States, it was possible to collect 11 valid questionnaires. This section shows the results of the Training Module testing, based on these 11 answers. Depending on the needs and requirements of the Member States involved, each response could cover one or several PAs. Electric Vehicles was by far the PA that raised most interest, as the number of responses shows.

Priority Action (1st Round)	Heat Recovery	BACS	Refrigeration	Lighting	Electric Vehicle
Number of responses	3	4	1	3	8

Table 1. Level of testing of PA.

For each of the sections, stakeholders were asked to rate (0-10) their overall satisfaction on:

– The usability of the Training Module;

– The clarity of the content; and,

– Probability of website recommendation.

In this respect, considering all the questionnaires collected, the average score for each of the sections in shown in the table below.

About User-friendliness and Navigation	Level of Clarity and Credibility for the PA that you tested	About giving value
7,5	7,8	8,3

Table 2. General score by section.

With the aim of improving the user-experience and validity of the methods on the Training Module, all collected feedback was reviewed. As previously mentioned, some of the respondents considered several actions, so the level of clarity and credibility, as well as about giving value, were evaluated for different PA. In that sense, some comments could be cross-cutting and cover either the Training Module as a whole, or PA-specific calculation methodologies. After reviewing the questionnaires, the comments were collected for further evaluation. A summary of most relevant feedback is given below. In addition, these comments resulted in a list of actions which is shown in the next Chapter 3.

2.1.1 Cross-cutting comments

– The need to check the data and values provided as input values in the calculations of the different methodologies;

– Try to facilitate the movement and use of the Training Module with a restart/edit button;

– Within some methodologies, the tables do not have titles and it is not known what they refer to;

– The list of energy carriers is not well understood and does not distinguish between technologies, what is critical for some PAs;

– Need for more information or explanation about the behavioural factors;

– Lack of understanding for some variables in the formulas;

– Requirement to show examples on how to use as well as typical values to be used in calculations (e.g., the difference between EU indicative and project or country specific values);

– Possibility of including more user guidance;

– Doubts and technical aspects of the methodology. Request for FAQ section within the Training Module or add specific questions of the Training Module in the FAQ section of the streamSAVE platform; and,

– Improve visual aspects of the module, such as highlighting the boxes to be filled in by the user, including graphs or showing the results in a more visible way.

2.1.2 Comments concerning specific PA

– **Heat Recovery:** Some input data are considered complex. Waste heat recovery is considered by some users to be a very complex measure, as in many cases it combines the processes itself, space heating and heat injection into district heating.

– **Building Automation Control Systems:**

   o Need for clarification or explanations of the variables used;

   o need for clarification for the behavioural effects factor; and,

   o The selection of the EU region is a bit complicated.

– **Industrial and commercial Refrigeration:** Make it possible to limit the values entered for the power of the equipment analysed, according to the technology introduced, since the methodology is developed for power ratings up to 600kW in the case of air-chilled, and up to 1500kW for water-chilled.

– **Lighting systems**

   o Road Lighting Engineering Approach: Need to include headings in both the excel template and Training Module. Review of the indicative values for operating time. As suggested by a user, it could be the maximum number of hours per year, to give maximum freedom in the calculation, or be more restrictive. In addition, a different approach might be needed, when using indicative values.

   o Road Lighting Simplified Approach: Check the value range.

   o Lack of understanding of some assumptions, e.g., the use of a defined value in lm/W, for the sake of simplicity.

– **Electric Vehicle**

  o Energy carriers menu should be adapted to this technology;

  o More detailed information about the factor of behavioural measures;

  o Make the specific case of PHEV clearer (plug-in hybrid EV). It is no possible to evaluate the implementation of PHEV versus ICE vehicle; and,

  o Possible option of using other units, such as tep.

2.2 Second round of Priority Actions

With the participation and support of the consulted stakeholders in several Member States, it was possible to collect 13 valid questionnaire responses for this round. This section shows the results of the testing the Training Module for the second round of PA.

13	12	9	5
Responses	Organisations	Countries	Priority Actions

Country	PA tested	Responses
Croatia	Behavioural Changes	1
Czech Republic	Energy Poverty	1
Slovenia	Energy Poverty	2
Austria	Modal Shift	1
Greece	Modal Shift	2
Portugal	Modal Shift	1
Austria	Motor Replacement	1
Netherlands	Motor Replacement	1
Czech Republic	Small-Scale renewable heating technologies	1
France	Small-Scale renewable heating technologies	1
Spain	Small-Scale renewable heating technologies	1
Total		**13**

For each of the tested PA, stakeholders were asked to rate (poor – excellent) their overall satisfaction level on:

– Clarity;

– Correctness and accuracy (credibility); and,

– Completeness.

This differs from the categories planned in 1st PA Round, searching for a higher quality of responses. In this respect, considering all the questionnaires collected, the average score for each of the sections in shown in the tables below.

Level of clarity	Level of correctness and accuracy (credibility)	Level of completeness
7	8	9

Table 3. Overall satisfaction level.

Priority Action	Level of clarity	Level of correctness and accuracy (credibility)	Level of completeness
Small-scale renewable heating technologies	6	6.5	7.5
Motor Replacement	7	4	7
Modal Shift	7	7	7
Energy Poverty	8.5	8.5	8.5
Behavioural Changes	10	8	10

Table 4. Rating per Priority Action.

The general opinion that users have is that the new Priority Actions (and corresponding methodologies) are mostly easy to use, considered as credible or accurate and present the necessary elements for users to calculate savings (complete). In addition, most respondents have given good scores to the different sections of the forms that allow to perform the calculation (incl. input fields as well as results fields), being the costs of the action the section with the lowest scores. Another remark was that extra explanation on the formulas or on the input fields could be useful, as to improve the clarity of the Training Module.

When asking the users how useful and practical the Training Module is, most of them have expressed a positive opinion about how much they will use the training module in future or how likely is it that they will recommed the tool to other users.

However, some users have raised concerns on applying the streamSAVE suggested values for their national EED methodologies, as the indicative values are not always properly reflecting the national situations sufficiently. For these cases, users have the oportunity to use their own values instead of the proposed by the methodology. The necessity of defining better standardized values has been suggested by some respondents. In some situations, the values reported by the methodologies can be far from real situation, and should therefore be reviewed under the specific circumstances as to better reflect the actual savings (although, it would be reasonable to keep the values as standardized as possible, so the values can be applied to a wide range of use cases).

Improvements were suggested for each of the Priority Actions of the 2nd round, of which the main suggestions are summarized below.

PA Modal Shift

- A lack of explanation is found in multiple sections, as well as a lack of options values in some drop-down lists;

- There might be a misunderstanding regarding the use of national values and EU values (e.g., in the cases where EU values indicate a too low potential, the national values inputs should be a good option to increase accuracy); and,

- The methodology does not take into account the destination country and its infrastructures.

PA Motor Replacement

- There has been found a lack of explanation of the formulas and, in general, the different input fields;

- The units in which the values of some input (or result) fields appear are not clear enough. Despite seeming to be something implicit in the comparison itself, the difference between EU values and national values doesn't appear as something obvious;

- Other parts of the drivetrain could be included as well in the methodology (possible research could be conducted to see how many users would be really interested in this expansion of the methodology before starting to create/design new calculation formulas and methodologies).

PA Small-scale renewable heating technologies (heat pumps)

- Although there is already the possibility of using EU values instead of indicative values, an example with prefilled input values could be a good way of giving the user an idea of how to complete the fields; and,

- A lack of explanation is found in multiple sections, such as the cost structure.

PA Energy Poverty

- A lack of explanation is found in multiple sections, such as the cost structure.

- Having to fill in again the values when correcting/selecting another energy carrier has been reported to be a problem and disadvantage when it comes to testing the methodology and performing the calculations; and,

- The usage of the national catalogue (Austrian catalogue) has been improved thanks to the values reported & calculated in the streamSAVE platform.

PA on behavioural changes

- The updated indicative value has been noticed as something positive with respect to the standardized equation. EPEC has also been received as something new and useful. The user detected that UFEC needs to be updated for their national methodology.

Chapter 3   Improvements of the Platform

After the feedback was analysed, it was translated into possible changes that could be implemented into the streamSAVE platform. From all the changes that arose from the analysis, a set of changes was agreed to be implemented by the streamSAVE consortium. The changes and updates implemented are listed in this chapter.

3.1 First round of Priority Actions

1. New button with "Refresh/Reset" action

With this improvement, all inputs are reset, and users can go back to their inputs and modify only what they want to update or change, instead of removing or modifying all information.

Figure 2. Refresh/Reset button in the calculation tool.

Figure 3. Refresh of the data input.

2. Button with link to Training Module in the other platform modules

Previously it was only at the top of the Forum page. To further improve the functionality, it was added to other sections as well, such as in the Knowledge and support Facility.

Figure 4. Link to the Training Module.

3. Update of the Calculation Methodologies and related excel templates

Particular sections of the excels templates, describing the calculation methodologies and integrated in the Training Module, were modified. With the aim to facilitate data input, as well as to avoid possible calculation mistakes, the excels – and subsequent methodologies in the Platform - associated to each methodology have been reviewed. In this way, the aim is to ensure that no mistakes are made when entering data, and to prevent the user from entering erroneous data (i.e., out of range data) (see Figure 5). The user is also provided with a practical guide detailing each of the methodologies, their application, formulas, and reference values (cf. D2.2 Guidance on standard savings methodologies). At the same time, for each of the values to be entered, an information tab is available by hovering the mouse over the information sign 🛈 .

Figure 5. Improvements to the input of data for the calculations (example: Refrigeration methodology).

Moreover, some titles and names have been renamed to make them easier to understand.

Figure 6. Renamed titles.

In addition, the explanations included in the information signs have been more detailed to improve the understanding of the indicators.

Figure 7. Improved information boxes.

4. Training Module FAQs

Questions for clarifications that were raised quite often by the respondents, are included into the Frequently Asked Questions FAQ section of the streamSAVE platform, to increase the user-friendliness and understanding of the Training Module.

Figure 8. FAQ section in the streamSAVE platform – New questions on Training Module.

Question 1 - What is the purpose of the Training Module?

The Training Module is a streamSAVE resource where you can discover and practice the streamSAVE methodologies for each Priority Action on energy savings estimations and cost effectiveness.

In this way, Member States can consult and use the streamSAVE output data and methodologies in the way they prefer to comply with own needs and EED reporting obligations.

Question 2 - Which are the different methodologies developed in the Training Module currently available?

The Training Module provides 8 newly developed bottom-up calculation methodologies featuring indicative calculation values, data on costs and estimations of GHG emission reduction. The following methodologies have been prepared:

- Heat recovery for on-site use in industry - feedback of excess heat into a process
- Heat recovery for on-site use in industry - use of excess heat for on-site applications
- Heat recovery for feed-in to a district heating grid
- Building Automation and Control Systems in residential and non-residential buildings
- Energy efficient compression refrigeration units
- Fuel Switching to Electric Vehicles
- Energy efficient road lighting systems – engineering approach
- Energy efficient road lighting systems – simplified approach

The second round of actions, focusing on 5 new Priority Actions, is also online on the Training Module since March 2022, resulting in 8 newly calculation methodologies:

- Anticipated motor replacement

- Feedback and tailored advice in the residential sector

- Thermally improved building envelope of refurbished buildings for energy poor households

- Small-scale renewable heating in buildings for energy poor households

- Behaviour measures addressing energy-poor households

- Freight Transport: modal shift potentials from road to rail per Member State

- Heat pumps for heating and hot water

- Biomass boilers for heating and hot water

Question 3 - Which are the required steps to do a calculation in the Training Module?

STEP 1: Select the methodology for one Priority Action and click on the button 'Calculate'.

STEP 2: Fill info and do the calculation. Each of the calculation forms has the following elements:

- *Practical guidance*. A detailed description of each methodology (including data sources) can be found in the report "Guidance on savings calculation methodologies, including indicative values".

- *Excel template.* For each methodology, the savings calculation can be done either online, or downloaded via a blank excel template.

- *Data input & Energy Carriers*. Once the calculation of a methodology is accessed, the main information on the methodology, main characteristics of the formulas and data to be entered are visualised. For each of the data inputs or automatically generated values, an information signal "i" is available, which by passing the mouse cursor over it, launches an explanatory message about the data to be included. Whenever possible, streamSAVE has prepared **indicative calculation values based on EU-averages** in order to help with a rough assessment of savings that can be achieved. However, it is **advised to use national data** (in case available) in order to increase the accuracy and the level of detail of the calculations. The Training Module, therefore, offers two columns to complete, one for entering National Data, and the other including the suggested EU indicative values. The calculation can be performed as long as at least one column is filled out completely. For the calculation of primary energy and CO_2 savings, national data or EU averages can also be used to calculate the conversion factors corresponding to the energy carriers used. A detailed description of each methodology (including data sources) can be found in the report "Guidance on savings calculation methodologies, including indicative values".

- *Calculate*. Once the values have been entered, press the Calculator button to go to the results page. All your calculations are saved within the streamSAVE platform, but only accessible via your user account.

STEP 3: Download results (.xlsx file)

Regardless of the selected methodology, it is possible to identify the following elements:

- Share my result. Pressing the "Share my result" button will generate a link in your clipboard with which you can share the results tab. Only registered users will have access to this functionality.

- Practical guidance. Same as in step 2

- Excel template. Same as in step 2

- Download results for Excel. By pressing the" Download results for Excel" button, it is possible to download the spreadsheet with the results for greater convenience.

- New calculation for this data. The "new calculation for this data" button allows you to come back to the calculation form page and make modifications to your calculations.

- Give methodology feedback. A questionnaire download will be launched to be fulfilled.

- Data input. The section data input shows the values introduced in the calculation form.

- Calculation results. The calculation results section shows indicators obtained for your calculation case.

- Cost related to the action. The costs section shows indicative values for the actions described.

Question 4 - Are the training results saved on the streamSAVE platform?

Yes. Registered users can save the results of their calculations (only visible to the registered user). In this way, the user can compile multiple scenarios or estimates. Furthermore, there is the possibility of eliminating those results that are not interesting by clicking on the trash icon in the upper right corner.

5. Improved listing of energy carriers

The most conventional energy sources are introduced at the beginning of the selection list, so users can more easily find relevant energy carriers for their action.
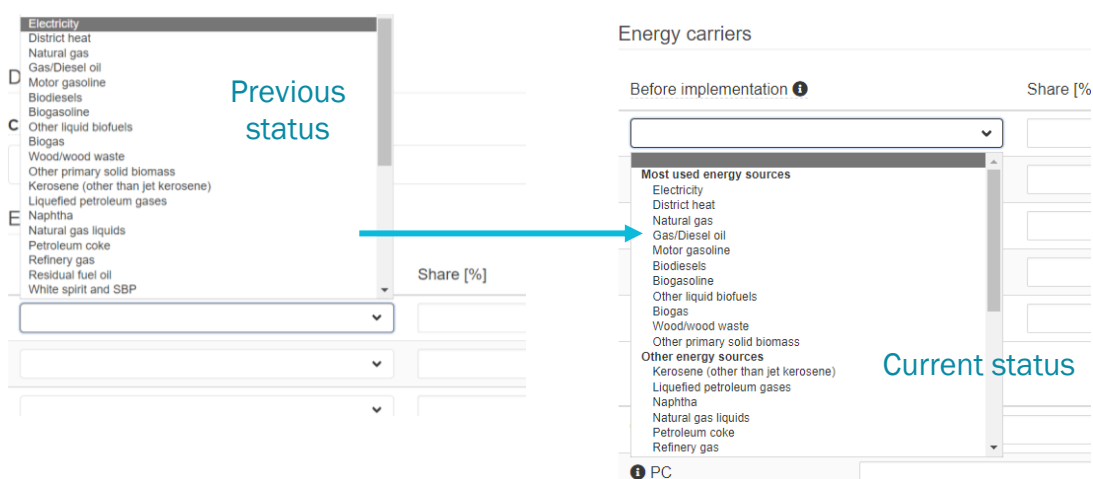
Figure 9. Updated list of energy sources to be selected.

3.2   Second round of Priority Actions

In this section, the improvements made as a result of the feedback collected through the use of the Microsoft Forms questionnaire are presented, showing how the affected items were before the change and after the change.

1. Landing page of the Training Module

This changes relates to the text that appears at the beginning of the landing page of the Training Module, as to better explain to the user how to enter the EU indicative values versus national values. The screenshots below show the difference between how the text was before the change and how the text is after the change:

Figure 10. Status of the text before the changes.

Figure 11. Actual status of the landing page text within the Training Module.

2. No additional changes were made

In the second round of PA, no extra changes were made compared to the first round, as overall less suggestions for improvement were made, or solutions similar to the first round could be applied.

Conclusions

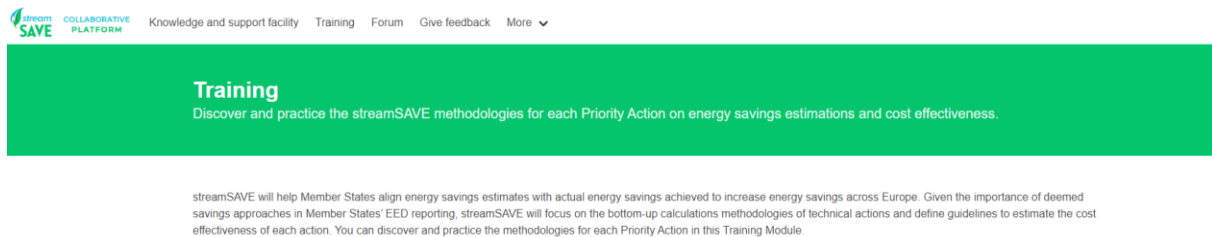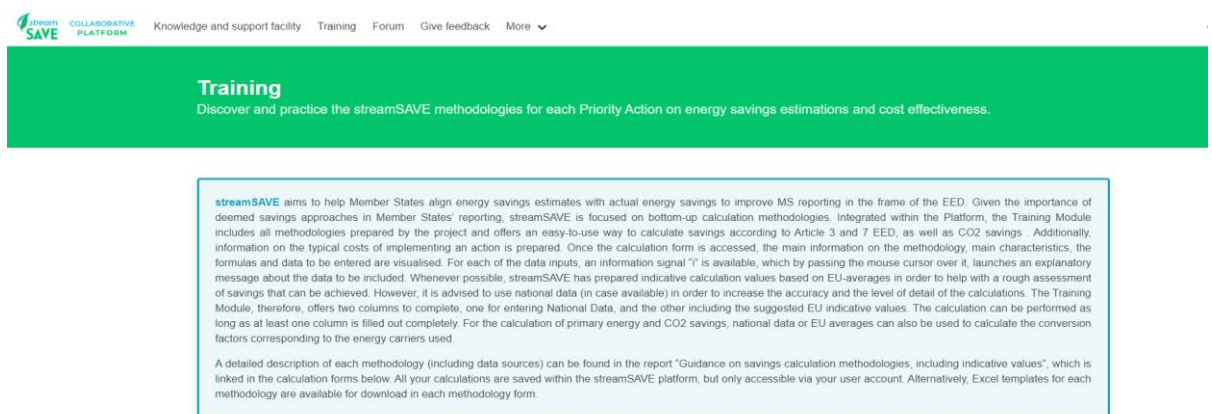After extensive work in the project to determine a set of bottom-up calculation methodologies during the first round of five PAs (with a total of 8 methodologies) and the second round of five PAs (with a total of 9 methodologies), the project has carried out different actions to promote and share the work done with public authorities and other key stakeholders.

In order to test and validate the results presented in the Training Module, as well as its usability, the streamSAVE consortium appreciates the feedback from all stakeholders received. Feedback about the use of the Training Module has been expressed by filling in a Word questionnaire for the first PA round; and in an improved manner by means of an online web-based questionnaire for the second PA round. Thanks to the support and collaboration of the users who have tested the platform, it has been possible to make several modifications to improve the Training Modules' functionalities. Examples are modifying the introduction to the Training Module, and the multiple explanations/definitions given on the specific methodologies

This document reflects the feedback received, as well as the updates to the functionalities that have been implemented in the platform so far (January 2023), covering both the first and second PA round of the project.

In general, the tool is considered user-friendly and practical by its users, who have reported they will use the methodology for their countries and use cases, and also that they will update their countries' tools and methodologies based on the knowledge extracted from the streamSAVE's Training Module. Nevertheless, for some Priority Actions and methodologies users have detected a lack of explanation for specific parameters or input fields. The list of energy carriers and, for example, the units in which some of the inputs were offered to the users (power range dropdown menu in the Anticipated motor replacement methodology, or the unit dmnl that appears in multiple methodologies). Hereto, explanation was added by the consortium to the excel templates and related online methodologies, as well as to the landing page of the Training Module. In addition, clearer reference was made to the streamSAVE Guidance on standardized savings methodologies (D2.2). Nothing of the Training Module has been remarked as malfunctioning, although some aspects have been marked as not desirable, such as having to refill some inputs when selecting another energy carrier after returning to the actual calculation.

Overall, the Training Module and its contents are considered credible and complete, which means the Module presents the important elements for users to calculate Member States' deemed savings in relation to EED reporting on Article 3 and 7 of the EED.

Annex 1 – First round of PA: CSF Word form questionnaire

The Training Module of the streamSAVE platform provides 8 newly developed bottom-up calculation methodologies for our <u>first round of Priority Actions</u> featuring indicative calculation values, data on costs and estimations of GHG emission reduction. In order to improve the performance of our streamSAVE methodologies on the platform, we would like to know your feedback about the current state of the Training Module. Hereto, it would be much appreciated if you can test the methodologies for multiple Priority Actions and complete this short 5-minutes questionnaire. If you have any questions, don't hesitate to ask to the streamSAVE partners.

We would like to thank you in advance for your input!

The Training Module can be found here: https://streamsave.flexx.camp/training

Completed questionnaires and technical questions can be sent to feedback@streamsave.eu

Name of your organisation?	Click or tap here to enter text.
Country	Click or tap here to enter text.

About User-friendliness and Navigation

On a scale of 0-10, how would you rate the usability of our website? Could you easily complete the methodology for your specific action or policy?	1-10
What elements of the Training module should become more user-friendly? Click or tap here to enter text.	
Were you able to find links easily? Were you able to navigate to other pages easily?	☐ Yes ☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	
Is the organization of the website intuitive? When selecting your preferred option(s), did the selection boxes work well?	☐ Yes ☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	
Could you easily share and/or download your results (in excel)?	☐ Yes ☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	

Priority Action nº X

Which use case did you test?	
Which priority action did you test?	NAME
Which specific savings methodology?	General
Which values did you test?	☐ National values ☐ EU indicative values ☐ Both national and EU indicative values

Level of Clarity and Credibility for the PA that you tested

On a scale of 1-10 how do you rate the clarity of the content?	
Overall	1-10
Related to the standardized savings methodology (formula)	1-10
Related to the data input & indicative values, incl. cost parameters	1-10
Related to the results	1-10
Please indicate how we can improve the clarity Click or tap here to enter text.	
Are the following elements of the platform credible or not?	
standardized methodology (formula)	☐Yes☐ No
data input	☐Yes☐ No
Results	☐Yes☐ No
If NO, can you please specify what didn't work well and/or how we can improve? Click or tap here to enter text.	
Does it cover all elements you expect from a standardized methodology?	☐Yes☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	
Are the methodologies described at a sufficient level of detail?	☐Yes☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	

About giving value

Did this page help you?	☐Yes ☐ No
If NO, please indicate how we can improve Click or tap here to enter text.	
On a scale of 1-10, how likely are you to recommend our website to your colleagues?	1-10
Will you use the methodology to apply or to improve the savings' estimations of your specific action or policy measure?	☐Yes ☐ No
Please explain Click or tap here to enter text.	
Do you have any other suggestions or comments?	
Click or tap here to enter text.	

Annex 2 – Second round of PA: CSF online form questionnaire

It should be clarified that the user has accepted the privacy policy of the platform in order to be able to fill out the online questionnaire, which is GDPR compliant. Therefore, it is enough to have accepted these terms without the need to add any additional ones in the header of the questionnaire. The last online web-based version of the questionnaire is accessible here on the streamSAVE platform.

Testing and Validating the Training Module on streamSAVE platform

The Training Module of the streamSAVE platform provides newly developed bottom-up calculation methodologies for our **second round of Priority Actions** featuring indicative calculation values, data on costs and estimations of GHG emission reduction. In order to improve the performance of our streamSAVE methodologies on the platform, we would like to know your feedback about the Training Module. Hereto, it would be much appreciated if you can test the methodologies for multiple Priority Actions and complete this short 5-minutes questionnaire. If you have any questions, don't hesitate to ask to the streamSAVE partners.

We would like to thank you in advance for your input!

The Training Module can be found here: https://streamsave.flexx.camp/training

Technical questions can be sent to feedback@streamsave.eu

After having finished the questionnaire, we invite you to test other Priority Actions and methodologies so that the Training Module can continue growing thanks to your help.

...

* Obligatorio

Your privacy is important to us!

As a streamSAVE platform registered user, you gave your consent on both personal and non-personal data use, and shared basic information related to your country practices in relation to energy savings calculations, according to the streamSAVE privacy policy and terms of use.
You are free to withdraw your consent at any time by contacting the streamSAVE Consortium at contact@streamsave.eu

1

I agree to participate in the research study.

I understand the purpose and nature of this study and I am participating voluntarily.
With this consent, you are informed that the questionnaire results can be sent to control bodies and any other competent authorities of the streamSAVE Project and to the rest of the consortium partners in order to comply with the control requirements under obligations in the frame of the Project, and will be kept until the end of the Project and for the limited periods of the responsibilities that may result enforceable.

I understand that this survey is anonymous and no personal data is meant to be collected.
I grant permission for the use and process of the data generated from this survey in lieu of the Project, in compliance with all applicable laws and regulations, including in publications arising from it.

I understand that the survey is carried out by CIRCE (as requested by project partner and Coordinator VITO) -using this Microsoft Form (having its own privacy policy https://support.microsoft.com/en-us/office/security-and-privacy-in-microsoft-forms-7e57f9ba-4aeb-4b1b-9e21-b75318532cd9). All information related to the survey is stored in CIRCE.
*

○ Yes

○ No

Who are you?

2

Name of your organisation? *

Escriba su respuesta

3

Country *

Escriba su respuesta

4

What describes best the type of organization? *

○ Public authority: Ministry/Member State Officials

○ Energy Agency

○ Other public Authority/Administration

○ Regulatory body

○ Energy distributors

○ Retail energy sales companies

○ Transport fuel distributors or transport fuel retailers

○ Technical associations

○ University/Research Institutions

○ Industry associations

○ Standardisation body

○ NGOs

○ Other

5

Please fill in the type of organziation that best fits your case

Escriba su respuesta

6

What is your responsibility concerning EED implementation? *

◯ Implementing Public Authority

◯ Participating party

◯ Entrusted party

◯ Obligated party

◯ Technology provider

◯ Research/Technology expertise

◉ Other

7

Please fill in the responsibility that best fits your case

Escriba su respuesta

8

How did you learn about streamSAVE platform?

Escriba su respuesta

PRIORITY ACTION

Which case did you test ?

9

Which priority action did you test?
*

- ◉ Motor Replacement
- ○ Behavioural Changes
- ○ Modal Shift
- ○ Small-Scale renewable heating technologies
- ○ Energy Poverty

10

Which specific savings methodology? *

- ○ Motor Replacement: Anticipated motor replacement

11

Which values did you test? *

- ☑ National values
- ☐ EU indicative values
- ☐ national and EU indicative values

Level of Clarity, Credibility and Completeness for the PA that you tested

In the following questions, we would like to understand if you experience the Training Module as being clear, accurate and complete.

The image below shows the different blocks for which we would like to know your opinion: savings formula (block 1), the sections where you can enter the necessary data (block 2) and where you can read the results & costs related to the action (block 3).

Level of Clarity, Credibility and Completeness for the PA that you tested

Were you able to estimate energy savings for the selected Priority Action in an adequate way? The following questions rate the different sections of a Priority Action

Clarity

How self-explanatory are the streamSAVE methodology and indicative values, when estimating the energy savings for the selected Priority Action?

12

What's your overall rating of the level of clarity?

	Poor	Fair	Good	Very good	Excellent	Don't know
Clarity	○	○	○	○	○	○

13

What's your rating per section? How clear are ...?

	Poor	Fair	Good	Very good	Excellent	Don't know
Standardized savings formula	○	○	○	○	○	○
How data should be introduced?	○	○	○	○	○	○
Costs of the action	○	○	○	○	○	○
Indicative values (national or EU)	○	○	○	○	○	○
Calculation results (national or EU)	○	○	○	○	○	○
Shares of energy carriers	○	○	○	○	○	○

Clarity

How self-explanatory are the streamSAVE methodology and indicative values, when estimating the energy savings for the selected Priority Action?

14

Can you please clarify your suggestions for improvements (e.g., need for extra explanation, extra savings parameter in formula or improve an EU indicative value)?

Escriba su respuesta

Correctness and accuracy

How close are the methodologies and indicative values to real world situations?

15

What's your overall rating of the level of accuracy?

	Poor	Fair	Good	Very good	Excellent	Don't know
Accuracy/correctness	○	○	○	○	○	○

16

What's your rating per section? How acurate are the following sections?

	Poor	Fair	Good	Very good	Excellent	Don't know
Standardized savings formula	○	○	○	○	○	○
Calculation results (national or EU)	○	○	○	○	○	○
Indicative values (national or EU)	○	○	○	○	○	○
Shares of energy carriers	○	○	○	○	○	○
Costs of the action	○	○	○	○	○	○
Data input	○	○	○	○	○	○

Correctness and accuracy

How close are the methodologies and indicative values to real world situations?

17

Can you please clarify your suggestions for improvements (e.g., need for extra explanation, extra savings parameter in formula or improve an EU indicative value)?

Escriba su respuesta

Completeness

18

Does the Training Module cover all elements you need for estimating savings of the action by means of a standardized methodology?

○ Yes, completely

○ Yes, almost completely

○ Undecided

◉ No, partially not

○ No, totally not

19

Can you please specify what elements are missing and/or how we can improve (e.g., need for extra savings formula or parameters to reflect better the savings)?

> Escriba su respuesta

Comparison with other, existing saving methodologies

In this section of the questionnaire, we would like to understand how you consider the streamSAVE methodologies in comparison to other existing, standardized methodologies (e.g., existing methodologies applied by different countries).

20

In the past, did you apply other standardized methodology(s) to estimate the savings of the action? *

○ Yes

◉ No

About giving value

21

Do you consider this Training Module is helpful for your activities? *

- ⚪ Yes
- 🔘 No

22

Please indicate how we can improve

Escriba su respuesta

23

Would you recommend the training module to your colleagues?

	Yes	Maybe	No	I don't know
	⚪	⚪	⚪	⚪

24

Will you use the methodology to apply or to improve the savings' estimations of your specific action or policy measure? *

- ⚪ Yes
- ⚪ Maybe
- ⚪ I don't know
- ⚪ No

CONTACT THE PROJECT

🐦 @stream_save

in @streamsaveh2020

✉ contact@streamsave.eu

🌐 www.streamsave.eu