Take aways from the 10 Priority Actions covered in streamSAVE

May 17th, 2023 Elisabeth Böck (Austrian Energy Agency)



This project has received funding from the Horizon 2020 programme under grant agreement n°890147. The content of this presentation reflects only the author's view. The European Commission is not responsible for any use that may be made of the information it contains.



Guidance document

General aspects of:

- Estimation of energy savings:
 - Differences in savings calculation for Article 3 & Article 7
 - Definition of a baseline
 - Approaches for cumulating energy savings under Article 7
 - Correction for behavioural effects
- Estimation of relevant costs connected to energy savings actions
- Estimation of GHG savings



Coordination and Support Action H2020-LC-SC3-EE-2019

Standardized saving methodologies

Energy, CO2 savings and costs

Deliverable D2.2 - first PA round

Version N°1

Autors: Elisabeth Böck (AEA), Christoph Ploiner (AEA), Angelika Melmuka (AEA), Nele Renders (VITO), Erika Meynaerts (VITO), Kelsey van Maris (VITO) Pedro Moura (ISR), Carlos Patrão (ISR), Maria Logez Arias (CIRCE), Cristina Gonzalo Tirado (CIRCE), Gema Dilano Ballesteros (CIRCE)

Image: Autor Strain S



All 16 newly developed bottom-up calculation methodologies, including indicative values

- Estimation of energy savings:
 - Differences in savings calculation for Article 3 & Article 7
 - Definition of a baseline
 - Approaches for cumulating energy savings under Article 7
 - Correction for behavioural effects
- Estimation of relevant costs connected to energy savings actions
- Estimation of GHG savings



Coordination and Support Action H2020-LC-SC3-EE-2019

Standardized saving methodologies

Energy, CO₂ savings and costs

Deliverable D2.2 - first PA round

Version N°1



Heat Recovery in industry

- Target: Using excess heat to feed:
 - back into the same process
 - another on-site application
 - into a district heating grid

Ø Objectives & Benefits

- Preparing a guidance on how such savings achieved can be accounted for under the EED
- Assist stakeholders in identifying what energy streams need to be considered and how to normalize measured data
- Reduce fuel input and energy cost of industrial processes
- External presentations on heat recovery in streamSAVE:
 - Savings calculation for heat recovery in industry to supply another site: a best practice example from Austria (Johann Geyer, ENERTEC, Austria)





Building Automation and Control Systems

Target

- Installation of Building Automation and Control Systems (BACS) in residential and non-residential buildings for:
 - Heating
 - Cooling
 - Hot Water
 - Lighting
 - Ventilation

Ø Objectives & Benefits

- More effective use of energy in these areas due to automation
- Detection and diagnosis of inefficient operation
- Increased comfort and convenience for building inhabitants/users

External presentations on BACS in streamSAVE:

- French standardised calculation methods for energy savings from BACS (Hadrien Serougne, ADEME, France)
- BAC classes (Bonnie Brook, eu.bac)





Industrial & Commercial Refrigeration

Target

- Replacement of old, electrically operated compression refrigeration units (water- or air-chilled) with more efficient equipment
- Based on Seasonal Performance Ratio (SEPR)

Ø Objectives & Benefits

- Common uniform methodology to calculate the savings achieved by such replacements
- Help identify the baseline to be considered when calculating such savings
- External presentations on refrigeration in streamSAVE:
 - Calculation methods for refrigeration systems in the French white certificates scheme (Jean-Sébastien Broc, IEECP)





Electric Vehicles

Target

- Fuel switching between conventional and electric vehicles
- Savings ensured with higher conversion efficiency
- Fuel switching between fossil fuels and electricity, which is increasingly generated based on renewable resources

Ø Objectives & Benefits

- To develop a common uniform methodology to calculate the savings with electric vehicles (fuel switching)
- Considering different types of vehicles (cars, vans, buses, trucks) and different options of fuel (including hybrid options)

External presentations on electric vehicles in streamSAVE:

 Well-to-Wheels analysis of future automotive fuels and powertrains in the European context" (Matteo Prussi, DENER -Politecnico di Torino, Italy)





Public Lighting

Target

- Road Lighting
- Offers two options:
 - Simplified Approach for savings calculation, including indicative values
 - Engineering approach, using data from implemented projects
- Possibility to account for lighting control systems

Ø Objectives & Benefits

- Offer different calculation approaches to be used depending on data availability
- External presentations on public lighting in streamSAVE:
 - Monitoring and verification of energy savings due to renovation of outdoor lighting systems – case study Slovenia (Dr. Boris Sucic, Jozef Stefan Institute, Slovenia)



Anticipated motor replacement

Target

- Replacement of existing electrical motors with more efficient ones
- Target sector: industry

Ø Objectives & Benefits

- Offer a calculation formula and indicative calculation values for:
 - Motors replaced before the end of their lifetime
 - Motors replaced after the end of their lifetime
 - ightarrow different approaches to baseline definition
- Also include savings generated by the installation of a variable speed control (VSD)

External presentations on motor replacement in streamSAVE:

- Electric motor systems detailed in Dutch energy savings policy (Maarten van Werkhoven, TPA adviseurs, the Netherlands)
- Energy savings in motor systems experience from Switzerland (Rita Werle, Impact Energy, Switzerland)



Behavioural changes

Target

- Non-investment energy savings actions targeting behavioural change, for example:
 - Feedback on energy use
 - Feedback and tailored advice
- For residential sector, including electricity, electricity for heating and gas for heating

Objectives & Benefits

- Provide average energy consumption per household for electricity, electricity for heating and gas for heating
- Benchmarks for energy savings that can be achieved with such actions – actual savings should be determined by randomised control trials

External presentations on behavioural changes in streamSAVE:

- Methodology to assess the impacts of behavioural changes from the NUDGE pilot projects (Dr. Stratos Keranidis, domX, Greece)
- US experience with measuring energy savings from behavioural programmes (Adam Thomas, Principal Consultant at ADM Associates)



Actions alleviating energy poverty

Target

- Thermal refurbishment of buildings for EPOV households
- Renewable heating systems for EPOV households
- Behavioural change for EPOV households

Objectives & Benefits

- Introduction of factors to account for different energy consumption and resulting savings in EPOV households, compared to 'average household' (prebound effect).
- More realistic savings calculation in this area

External presentations on energy poverty in streamSAVE:

- Energy poverty quantitative measurement: methodology and case studies in Italy (Anna Realini, RSE - Ricerca sul Sistema Energetico)
- Modelling real world energy savings in UK policy appraisal challenges and potential approaches (Avishek Banerjee, BEIS, UK)
- Insights from the National research program on energy poverty in the Netherlands (Anika Batenburg and Arianne J. van der Wal, TNO, the Netherlands)
- The French framework on energy efficiency measures for energy poverty alleviation (Ute Dubois, ISG International Business School, France)
- Joint Event with SocialWatt on Energy Poverty



Modal shift in freight transport

Target

- Modal shift in freight transport from road to rail
- Objectives & Benefits
 - Offer Member States an overview of the overall potential of shiftable freight transport and resulting energy savings
 - Cannot be used to calculate the savings generated by single actions implemented, but offers some relevant calculation values

External presentations on modal shift in streamSAVE:

- Calculation methods about modal shift for freight transport Examples from the French white certificates scheme (Caroline Meunier, Total Energies, France)
- Opportunities and impacts of developing modal shift for freight (Conor Feighan, European Rail Freight Association)
- The example of the Ferrobonus and Marebonus programmes in Italy (Maria Lelli, ENEA – Italian Agency for New Technologies, Energy and Sustainable Economic Development)
- Discussing options to reduce the energy consumption and GHG emissions from road freight (James Nix, Transport & Environment)



Small-scale renewable heating technologies

Target

- Replacement of conventional heating systems with heat pumps or biomass boilers
- Both residential and non-residential sector

Ø Objectives & Benefits

- Offer a standardized calculation formula and
- Offer EU-wide values for the baseline situation, efficiency of the new heating system as well as the space heating and hot water demand.

External presentations on RES heating in streamSAVE:

- Insights from the 'REPLACE your Heating System Calculator' (Dr. Gašper Stegnar, Jožef Stefan Institute, Slovenia)
- Example of the calculation methods for heat pumps used in Greece (Christos Tourkolias, CRES, Greece)



streamSAVE Training Module

The Training Module is available on the streamSAVE platform.

It provides online calculation templates for the 16 developed bottom-up calculation methodologies, including:

- Indicative calculation values
- data on costs
- estimations of GHG emission reduction

Register here:

https://streamsave.flexx.camp/signup-0818ml

Thank you

Get in touch for more information!





Project coordinator - Nele Renders, VITO



All project reports will be available for download on the streamSAVE website **www.streamsave.eu**



Email the project at contact@streamsave.eu



Follow the project on LinkedIn @streamSAVEH2020



Follow the project on Twitter @stream_save