

WP3 – Common tools

D7 – Specification for tools for diagnosis

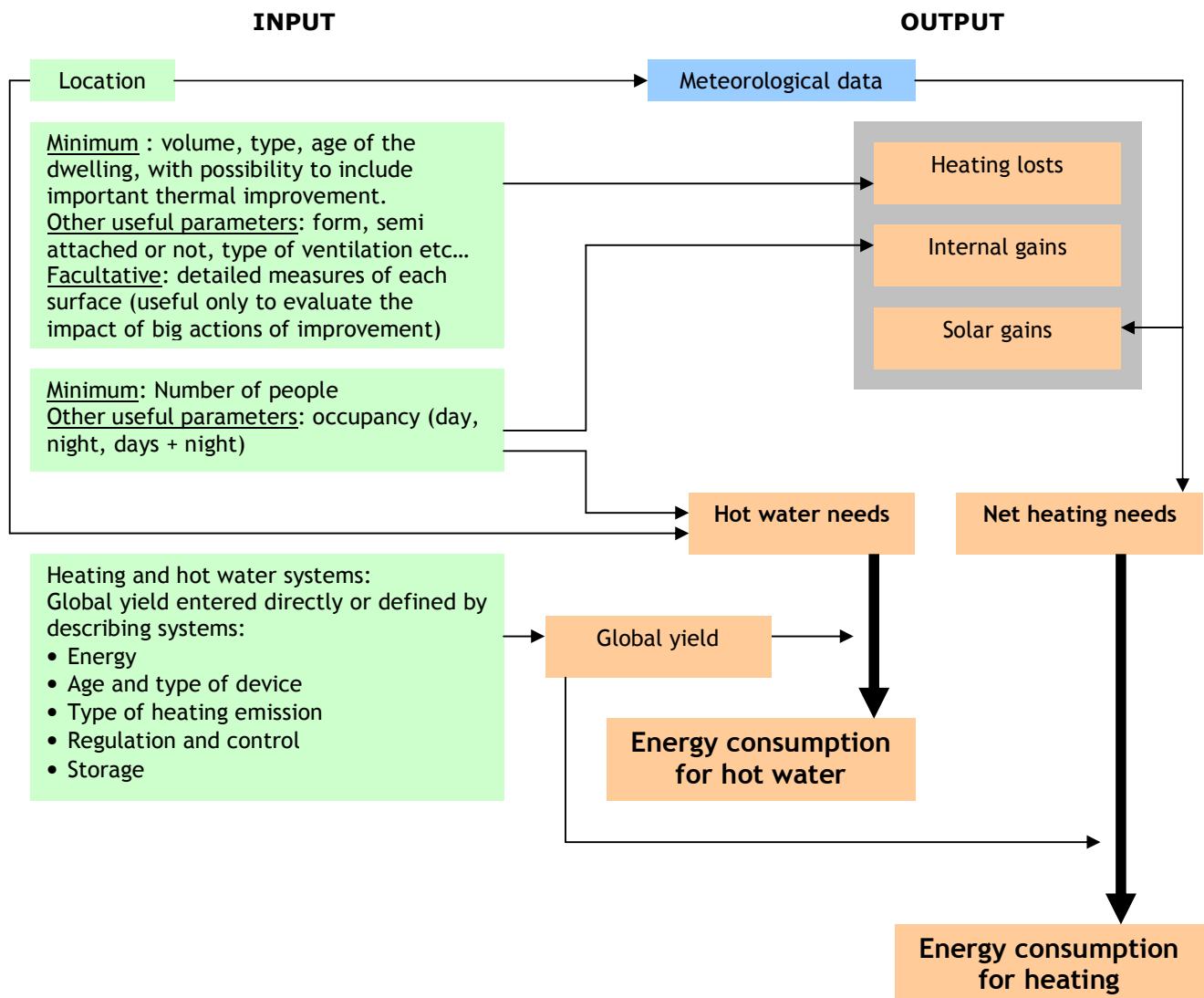
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Common specifications

Building envelope, heating systems and hot sanitary waters

Objective: to estimate savings generated by insulation works and improvement of ventilation, heating and hot water systems.

Energy consumption will be analysed in a classical way:

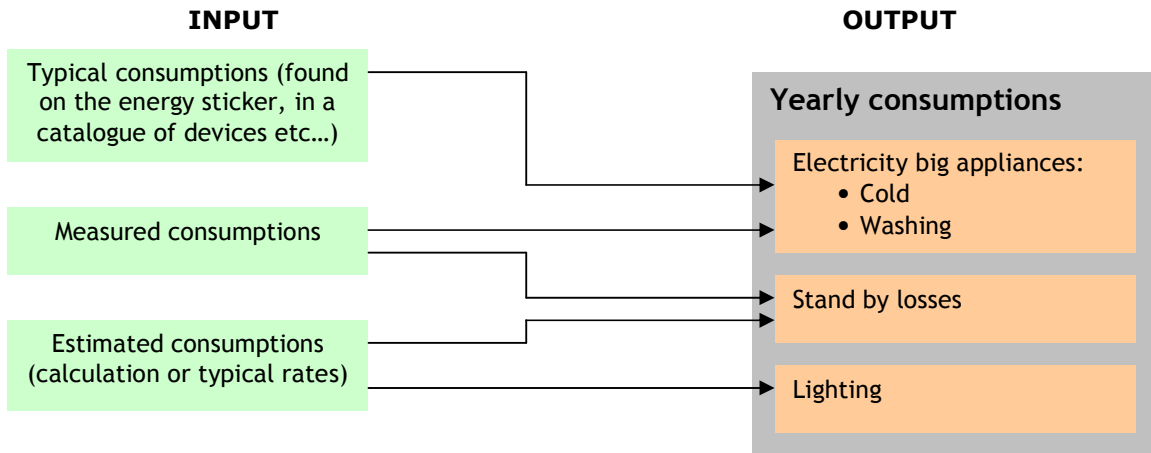


Requirements:

- The software would not necessary require to enter all housing measures. Estimations should be done according to the age and the type of dwelling, the main last drastic renovation etc...
- The software should allow easy comparisons between the situation before the diagnostic and recommendations.
- Training needs
 - General background: good knowledge in energy and science of heat
 - Specific training for using the tool: no more than 2 days
- Time needed par household: 0,5 to 2 hours

Electricity

Objectives: to estimate consumption per using and to estimate potential savings per using



Requirements:

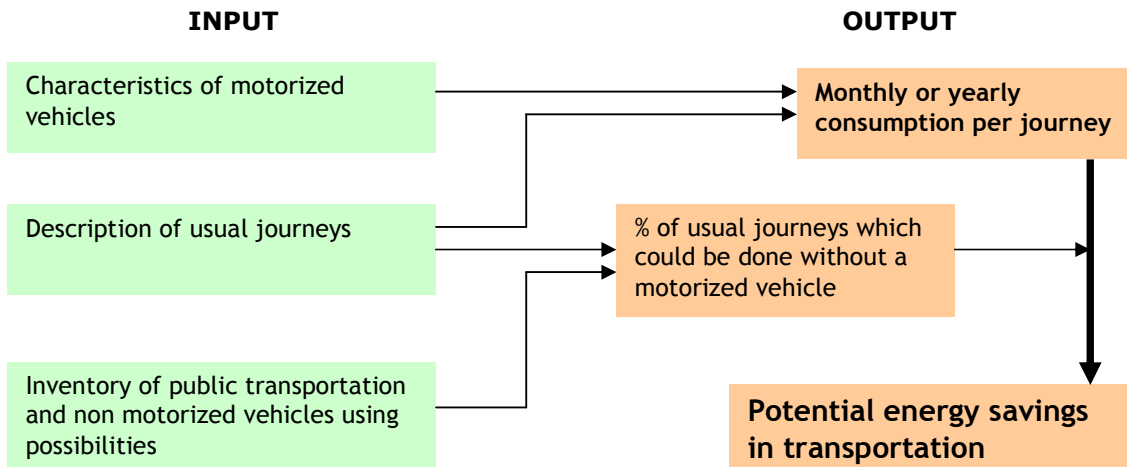
- The software should allow easy comparisons between the situation before the diagnostic and recommendations.
- Time needed par household: 0,5 to 2 hours

Remark: a tool used in Sparwatt project is translated from German to English in the framework of this workpackage. It will be used by partners who doesn't have appropriated tool.

Transportation

Objectives:

- to estimate the energy consumption for usual journeys;
- to define a % of km done by an individual motorized car which could be done by public transportation or a none motorized vehicles;
- to evaluate energy savings generated by this "km saving".



Synthesis of tools used by partners

	Envelop	Heating and hot water system	Electricity	Transportation
FLAME	Dialogie	Dialogie	Dialogie Sparwatt (to be tested)	Autodiag. ADEME Eco n'home questionnaire
MVE	Dialogie	Dialogie	Dialogie Sparwatt (to be tested)	Autodiag. ADEME Eco n'home questionnaire
GEFOSAT	Dialogie	Dialogie	Dialogie Sparwatt (to be tested)	Autodiag. ADEME Eco n'home questionnaire
KLIBA	KliBA heating certification	KliBA heating certification	Sparwatt	Eco n'home questionnaire
LEA	NHER	NHER	Sparwatt	Eco n'home questionnaire
MEA	NHER	NHER	Sparwatt	MEA tool
e-ster	e-ster tool	e-ster tool	e-ster tool	Eco n'home questionnaire
AGENEAL	No tool available in Portugal	Regression Model (Germany)	Sparwatt	AGENEAL tool Eco n'home questionnaire
EAA	Class	Class or Lesosai	Sparwatt (to be tested)	Eco n'home questionnaire

DIALOGIE (Fr.)

Developed by ADEME

This software has been designed for the French energy information network.

Field	Envelope	Heating and hot water	Electricity
Input	Location <u>Level 1</u> : only type, age and volume of building <u>Level 2</u> : age and general form of the building, main renovations: wall, windows, roof, floor with the date, number of floors, independent or semi attached, by one side, two side etc..., and if they are known, surfaces of wall, roof, floor and window. <u>Level 3</u> : complete description of the envelope with an exhaustive library of materials. Measurement is needed here.	<u>Level 1</u> : age of the dwelling, energy used <u>Level 2</u> : description of systems with lists of systems (central, divided etc...), devices (boiler, stove etc...), energy, emission system (radiator, heating floor), type of control.	<u>Level 1</u> : with national rates of using <u>Level 2</u> : with different rates of using (light, normal, strong, personalized) par type of appliances (Cold, washing etc...) <u>Level 3</u> : detailed description of each appliances
Output	Gross and net heating needs, with many other details Total energy consumption with four parameters: <ul style="list-style-type: none">- Primary energy- Final energy- CO2- Cost	Global yield Energy consumption	Estimation of energy consumption per using
Estimation of savings	First a basic issue is entered, corresponding to the actual situation. Secondly variants could be entered for each recommendation. A graph permits to compare all the variants and the actual situation.		
Requirements	Good basic knowledge in energy and science of heat 2 days of specific training are required to use this software At the moment, this software could be used only by the French energy information network.		
Time/household	0,5 to 3 hours		
Language	French		
Will be used by	FLAME, MVE, GEFOSAT		

Heating Certification (De.)

Developed by ifeu

This software has been designed for several municipalities in Germany.

Field	Envelope	Heating and hot water
Input	type, age and volume of building, number of personnes, surfaces of wall, roof, floor and window. retrofitting measures carried out, description of the heating system (central, divided etc...), devices (boiler, stove etc...), type of control. Energy-consumption of the last two years	
Output	Calculation of the energy ratio Evaluation of the insulation quality Suggestion of energy saving meausres for the envelope Suggestion of energy saving meausres for the heating system Suggestion for the use of renewables	
Estimation of savings	Assesment of the measures regarding to energy, cost and CO2-emissions reduction effects	
Requirements	datas of the envelope materials from the Heidelberg Building Typology, the typology distinguishes 24 very common types of building, classified according their type of use and construction date	
Time/household	2 to 3 hours	
Language	German	
Will be used by	KliBA	

NHER (UK)

Developed by

Field	Envelope	Heating and hot water
Input	<ul style="list-style-type: none">- A built in U-value calculator- Modelling of specific occupancy and behaviour- Application of standard improvement options and analysis of their benefits- Surface condensation analysis- Interstitial condensation analysis- Cold snap analysis	
Output	Reduction in carbon dioxide emissions Financial savings to householder	
Estimation of savings		
Requirements	Specific training and authorisation is needed	
Time/household	1,5 hours	
Language	English	
Will be used by	LEA - MEA	

Class (It)

Developer by Provincia di Milano (IT)

This software has been designed for the residential buildings of the Milano Province.

Field	Envelope	Heating and hot water
Input	Location Use of the building Floors and volumes of building Building main technical features Wall, roof, floor and windows thermal data, evaluated using an internal Data Base.	Heating: Type and power of the heat generator, description of systems with lists of systems (central, divided etc...), devices (boiler, stove etc...), energy, emission system (radiator, heating floor), type of control. Hot water: use of the building, n. of inhabitants, description of systems with lists of systems. Solar systems: Typology (active, passive, surface, etc).
Output	Gross and net heating needs. Building Class based on the yearly energy consumption, rated from A (< 15 kWh/m ² /year) to G (> 160 kWh/m ² /year) Short summary of the results	Global yield Energy consumption
Estimation of savings	It is necessary to compare the data before and after the intervention	
Requirements	Good basic knowledge in energy and science of heat 1 days of specific training are required to use this software At the moment, this software could be used only by the Italian energy information network.	
Time/household	0,5 to 2 hours	
Language	Italian	
Will be used by	EAA	

e-ster tool (Be)

Developed by e-ster

Field	Envelope	Heating and hot water	Electricity
Input	- yearly fuel consumption - roughly estimated surfaces and type of the building envelope (per part) - many details of heating & DHW installation (long checklist)		- Short-term measurements of 6 to 10 appliances (1 to 3 weeks) + instant measurements of leaking losses ("stand-by losses") of 10 to 20 appliances - Inventory of 7 most used light points - Questionnaire with ca. 100 questions
Output	- Assessment of existing situation - Recommendations for improvement		- End-use split (based on measurements) - Assessment of existing situation - Recommendations
Estimation of savings			
Requirements			
Time/household	2,5 hours		
Language	Dutch		
Will be used by			

Sparwatt (De)

Developed by Sparwatt

Field	Electricity
Input	<ul style="list-style-type: none">- instant measurements of leaking losses ("stand-by losses") of 10 to 20 appliances- visual inspection of all large appliances, if necessary measurement of the appliance (1 to 2 weeks)- Inventory of most used light points- electricity consumption
Output	<ul style="list-style-type: none">- End use split- Assessment of existing situation- Recommendations
Estimation of savings	Assesment of the measures regarding to energy, cost and CO2-emissions reduction effects
Requirements	Electricity meters for measurements
Time/household	2 hours
Language	German – In English soon
Will be used by	GEFOSAT (for test), KliBA

Autodiagnostic ADEME

Developed by ADEME

Free using on www.ademe.fr

Field	Transportation
Input	Type of car, distance of journeys, type of journey (urban/rural)
Output	Total cost of using car using one year (fuel, insurance, depreciation, etc...)
Estimation of savings	To be calculated
Requirements	None
Time/household	5 min.
Language	French
Will be used by	GEFOSAT

Eco n' home questionnaire

Developed by Eco n' home partners

Specific questionnaire on transportation is designed in the framework of D6 (GEFOSAT and the Energy local agency of Grenoble for FLAME)