



ANNEX 2

Best practice Identified and transferred

Section	Indication of content
1 Title of the best practice	Calculation of operative performances
2 Precise theme/issue tackled by the practice	Calculation of operative performances (COP/EER) for HVAC systems, in order to consider deviation in respect of the nominal conditions.
3 Objectives of the best practice	<p>The operative performance (COP/EER) of HVAC systems in buildings mainly depends on the current situation of the equipment which supplies heating or cooling to the terminal units. COP/EER will depend on the maintenance of this equipment; on the temperature deviation between conditioned areas of the building and external conditions; and as well on the partial load. Usually, calculations of energy consumption only consider nominal conditions “COP/EER” specified by HVAC equipment manufacturers forgetting an important deviation in respect to the operative conditions. This deviation often leads to a calculation of theoretical energy demand which is higher than the actual values. This will then lead to incorrect calculations for improvements focused on the efficiency of the building’s HVAC systems.</p> <p>The main objective of this best practice is to ensure that the SEA methodology and tool provide a way of conducting energy audits which calculate the operative performances (COP/EER) for HVAC systems of buildings. This approach aims to encourage energy consulting firms to use the SEA tool to calculate operative performances COP/EER of HVAC systems. This will allow users to obtain approximate values of energy demand through the relation between this factor and the energy consumption. Calculation of operative performances COP/EER will permit consulting firms to quantify proposals focused on improving the efficiency of HVAC systems.</p>
4 Location	This best practice applies to all partner regions – Modena (Italy), South East England (UK), Andalucía (Spain) and

	Malopolska (Poland).
5 Detailed description of the best practice	This best practice comes from the necessity to quantify operative performances COP/EER of HVAC systems due to the complexity of measurement. Considering operative performances as unknown factors, the SEA methodology may allow users to calculate these factors once the user has validated the theoretical energy demand, cross-checking theoretical energy consumption with energy consumption shown on energy bills. Operative performances (COP/EER) of HVAC systems may be measured directly via equipment, instead of being calculated by the SEA tool if users want to calculate other unknown factors (such as infiltrations, input & output temperatures, air flow, and electrical consumption).
6 Evaluation	<p>The SEA methodology should lead to an increased uptake of energy audits in public buildings, as it will include measurements of operative performances COP/EER which in most of cases are not included in current energy audits.</p> <p>Analysis of the state of the art of energy auditing in partner regions has shown that very few consulting firms measure or calculate the operative performances of HVAC systems. Success of this best practice will be confirmed by the quantification of different proposals to improve the efficiency of these HVAC equipments (e.g. preventive maintenance, optimal set).</p>
7 Lessons learnt from the best practice	Current energy audits performed in GENERATION partner regions do not usually consider operative performances COP/EER of HVAC systems due to the complexity of measurement. Calculation or measurement of operative performances will enable the SEA methodology to quantify proposals of efficiency improvement focused on the performance of HVAC systems.
8 Contact information	<p>Contact: valcaide@iat.es</p> <p>Website: www.environmentcentre.com/GENERATION/BestPractice</p>
9 Other possible interesting information	
10. Best practice	The “ Calculation of operative performances ” will be

transferred	promoted at project events, to partners' local authority contacts, through the project Advisory Board and on the website.
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