

KeepCool II

Introducing sustainable summer comfort in the public sector – A contribution to the implementation of the EEE-ESD



The Directive on Energy End-use Efficiency and Energy Services (EEE-ESD), Article 5, requires the Member States' public sector bodies and agencies to provide an exemplary role in improving energy efficiency. The rationale behind this article is that public authorities represent a considerable market power that may support the transformation of markets towards energy efficiency.

The aim of this work package is to support the Member States in implementing this requirement with a focus on the reduction of energy consumption due to the use of sustainable summer comfort solutions. The work package refers directly to the measures prescribed in the Directive resp. in its Annex VI by delivering:

- guidelines for public procurement that take into account energy savings from sustainable summer solutions as possible assessment criteria;
- support for the definition of public buildings to be purchased or rented that reflect the criteria of sustainable summer comfort;
- compilation of best practice examples relating to the integration of energy efficiency issues – in this case of sustainable summer aspects – into public building administrations.

The results of the work package will be summarised in a compendium on different strategies to amplify sustainable summer comfort issues in public buildings, which will serve as repository of ideas for the actual implementation of Article 5 of the EEE-ESD.

The work package will take into account the changing framework conditions of the public building sector, which may be described by an increasing trend towards "outsourcing", meaning that on the one hand public agencies are increasingly becoming tenants in privately owned buildings and on the other hand the remaining building stock is very often managed by publicly owned companies, with comparably loose link-up to general policy processes.

Guidelines for public procurement

The following procurement processes have major influence on sustainable summer comfort issues in public administration:

- procurement of services with respect to new construction and comprehensive refurbishment of public buildings;
- procurement of equipment with high internal loads (mainly office equipment and lighting).

The linking element is the integration of a life-cycle-cost perspective into the procurement process. The task consist of the following sub-tasks.

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Guidelines for public procurement of designers and planners that are capable to handle sustainable summer comfort solutions through an "Integrated Energy Design Process"

To ensure the development of buildings that ensure sustainable summer comfort within this IED process, several activities must be carried out:

- Definition of criteria regarding sustainable summer comfort;
- Assessment of the (summer-related) energy performance of the building in draft planning phase;
- Calculations for heat and cooling demand and suggestions for improvements are necessary in the first steps;
- For the detailed planning, assessments with energy simulation and life cycle costs calculations are required;
- Quality assurance during the construction phase with newly developed guarantee models will top the process off.

Guidelines for integrating sustainable summer comfort into public procurement schemes for office equipment and lighting

The main challenge is to integrate product characteristics such as energy efficiency, energy cost and internal loads into the product requirements and to attribute them a certain value during the evaluation. Therefore the guideline will consist of the following elements:

- Assessment of product labels that may support the integration (e.g. Energy Star);
- Compendium of examples for technical specifications that can be used for the integration of sustainable summer comfort matters (the technical specification have been largely already developed in existing projects);
- Different evaluation criteria for sustainable summer comfort: Here results from work package 4 will be used, in particular to develop a concept of a "bonus" for reduced cooling load that energy efficient equipment and lighting provide;
- Different ways to integration of evaluation criteria for sustainable summer comfort into the overall product evaluation.
- The inclusion of other products and systems contributing to cooling loads will be investigated.

Both guidelines will be based on the "Handbook on Green Public Procurement" published by the European Commission, DG Environment in 2005 and represent a further development of this handbook in the context of the specific procurement processes that are of major relevance for the implementation of sustainable summer comfort.

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Recommendations for "codes of conducts" for public agencies when acting as tenants and as landlords

Since public agencies are increasingly becoming tenants in privately owned buildings or in buildings owned by other public agencies, in this task, models will be developed with the main elements for drafting "codes of conduct" for public agencies:

- as tenants. These include energy management strategies when using equipment but can also include special requirements to the landlords for the premises to rent;
- as landlords. These include own energy management and O&M strategies, as well as special requirements imposed to tenants, public or private.

In this respect, the "codes of conduct" refer mainly to sustainable summer comfort solutions relevant during the operation phase of a building, such as:

- application of the adaptive comfort model in real life (definition of set-points, comfort policy to allow individual adaptation etc.);
- definition of benchmarks for summer-related energy demand resp. consumption;
- correct use of equipment in order to reduce internal loads;
- correct use of night ventilation, shutter systems and other sustainable cooling solutions if available.

As codes of conducts are very specific to the national situations, and to illustrate how to use the main elements of the model developed, two national case studies will be prepared for Austria and for Sweden.

Best practice examples

Good practices from the public sector will be compiled. Shining examples that will be made transparent in detail among others are inter alia:

- Implementation of a "code of conduct" at Middlebury College, where the College
 - commits to give priority to heat load reducing mechanisms instead of introducing mechanical cooling;
 - encourages individual adaptation during heat wave periods (e.g. relaxed dress codes, fans etc.);
 - gives exact guidance on the use of mechanically cooled spaces.
- Policy adopted by the Japanese government to allow resp. to support individual adaptation by suspending the usual dress codes during hot summer season;
- Public procurement procedures in Norway, where a national act of 1997 describes that in every public procurement LCC has to be taken into account.

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Compendium "Strategies for sustainable summer comfort in public buildings"

In this task the results of the work of task 3.1, 3.2 and 3.3. will be summarised in a well structured and accessible way. The compendium will serve as list of potential measures for the integration of sustainable summer comfort into the management of public buildings and will therefore support the implementation of Article 5 of EEE-ESD in the EU member states.

Outcome of this work package

Facilitate the implementation of the EEE-ESD, article 5 on energy end-use efficiency in the public sector by providing a compendium on strategies for sustainable summer comfort in public buildings including guidelines for public procurement, recommendation for "codes of conduct", that minimise cooling demand during the operation phase of a building and description of best practice examples from the public sector on the integration of sustainable summer comfort into building management strategies. The compendium will be disseminated not only to policy makers and public authorities but also to non-public building companies, which may be in the information, too.

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