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ProSTO policy paper

Solar Thermal Ordinances: Making a commitment to local sustainable energy

A cost-effective energy policy for local authorities

ProSTO PARTNERS' STATEMENT

We, the ProSTO project partners: Ambiente Italia, City of Stuttgart, Solites, Lisboa E-Nova, LNEG, SPES, Bionet, Lazio Region, Reseda, ESTIF, Giurgiu City Hall, ASTER Consulting; support the wider adoption and implementation of solar ordinances in Europe. We call for the speedy adoption by all EU Member States of best practice regulations making it mandatory, at least where existing buildings are substantially renovated, new buildings are built or heating systems are replaced, that a minimum share of the heating requirement is met from renewable sources in general and from solar thermal energy in particular.

We call on the EU institutions to actively encourage the introduction of solar/renewable heat ordinances, using all the leverage provided by the National Renewable Energy Action Plans (NREAPs), the implementation the Energy Performance of Buildings Directive (EPBD) and the forthcoming eco design /energy labelling of water and space heating systems regulations.

INTRODUCTION

Solar thermal ordinances (STOs) are by-laws stipulating that a minimum share of the heating demand be covered by solar energy. They usually apply to new buildings, those undergoing major renovation and/or when heating system are replaced.

Solar thermal was the first renewable heat source to have been the subject of an obligation in various building codes and regulations. While this paper focuses on solar ordinances; it should be clear that the ProSTO partners favour the general introduction of renewable heat obligations.

LEGISLATIVE BACKGROUND

Representing over half the total European final energy demand the importance of heating and cooling has been clearly highlighted in the Renewable Energy Sources ("RES") Directive. While the National Renewable Energy Action Plans (NREAPs) require that member states list existing measures promoting renewable heat, they offer very few guidelines, recommendations or best practices. An appropriate public policy framework is crucial for the uptake of renewables in transport, electricity production and renewable heating and cooling. In June, 2007, during debates

on the prospective EU Directive on Renewable Energies, the European Parliament ITRE Committee urged the Commission to “speed up the widespread adoption in all Member States of best practice regulations making it compulsory, at least where existing buildings are substantially renovated and new buildings built, for a minimum share of the heating requirement to be met from renewable sources, as in an increasing number of regions and municipalities”.

The introduction in the recently adopted Energy Performance of Buildings Directives of new concepts such as “net zero energy building” and “energy production from renewable energy sources on site”, represent a significant breakthrough for renewable heat obligations.

Finally, the forthcoming legislation concerning energy efficiency and labelling measures for space and water heating systems; completes the framework of legislations which should encourage the market uptake of solar thermal and renewable heat.

OBJECTIVES: Effective solar/renewable heat obligations

Although solar ordinances are the single most powerful instrument for promoting the use of renewables, they have a profound effect on the solar thermal market’s structure. Therefore, to maximise their benefits, they require an appropriate regulatory framework.

In a market where solar thermal becomes mandatory, promoters and customers will tend to go for the cheapest possible solution, while building owners will try to circumvent the obligation through exemptions. The real impact of any regulation strongly depends on its technical parameters and control procedures. Policy makers considering adopting or revising a solar obligation will have to address these issues and to this end useful examples as well as guidelines can be found in the documents produced by the ProSTO project (Blue print, brochure, toolbox, etc..).

As regards obligations, end-users will tend to question the solar systems’ operation and react more negatively than in a voluntary market. Construction companies responsible for choosing the products and their installation may have the attitude that they are simply fulfilling a regulation. Without appropriate quality assurance measures, it is likely that some construction companies will install cheaper products, resulting in disappointing lower solar yield being produced. This could not only undermine public acceptance of the obligation, but also, possibly, of solar technology in general. For this reason it is essential to concentrate all efforts on good awareness-raising campaigns, supported by acknowledged entities and by relevant stakeholders from both the construction sector and the solar thermal industry.

It is vital, therefore, that the regulations adopted ensure state-of-the-art products, planning, installation and maintenance of the system, guaranteeing the same high level of customer satisfaction as in the current voluntary market. A STO must incorporate adequate quality insurance measures for components and system configuration, installation works, guarantee and after-sales service, and third party monitoring of installed systems samples. Detailed analysis and guidelines for the different components of a quality assurance scheme for solar obligations are covered in more detail in the study “ProSTO State of the Art Report”, downloadable free at http://www.solarordinances.eu/STOToolbox/Context/tabid/80/Default.aspx.

Solar ordinances should be easily applicable to all buildings subject to the obligation, therefore cover only key applications such as hot water systems and in some cases space heating. They do not usually deal with a large part of the potential uses of solar thermal, i.e.: space heating and cooling, industrial processes, water desalination, as well as existing buildings not undergoing major renovation. While indirect, positive, effects of solar obligations on these applications can be expected, flanking measures focused on the voluntary market are necessary to complement them. These measures should include financial incentives, awareness-raising and training, as well as demonstration projects and special support schemes for innovative applications like renewable cooling or solar process heat.

BENEFITS: Solar ordinances - a valuable and cost-effective tool

Obviously, solar thermal as a renewable heat source is particularly suitable in some geographic areas. However, everywhere in Europe and globally, solar thermal provides an unlimited, freely available energy source. A decade ago, the idea of making the use of solar or renewable energy compulsory sounded radical and politically unrealistic in most regions of the world. Currently, solar obligations have been adopted or are being considered in a number of countries, regions and municipalities in Europe and beyond. The international trend towards the adoption of solar ordinances is well justified by the many benefits they bring, e.g.:

- STOs foster the creation of a minimum critical mass in the solar market and bring about economies of scale that also favour the voluntary market in most buildings that are not generally subject to the obligation.
- STOs help solving the owner–tenant dilemma and send a strong signal to both end-users and professionals involved in the construction and heating sectors. Buildings are usually planned with an investment horizon of a few decades, though experience shows that many last far longer. Considering the amount of energy needed to erect buildings, it can be assumed that by the second half of the 21st century building conservation will be paramount, although not yet reflected in the economic rationale of today's developers. Many future new buildings will last into the 22nd century and then fossil fuels used for heating may be too costly or scarce. In the long-term – with some 40% of the EU's energy demand originating from buildings, and heating representing the lion's share – buildings are key to any comprehensive energy policy and, ultimately, 100% of their energy needs has to be covered by renewable energy sources. In particular, solar can make a significant immediate contribution to the energy consumed for domestic hot water.
- STOs have a very limited impact on public budgets. Promoting renewable energy sources through public sector financial incentives is increasingly difficult as markets grow. However, a key benefit of solar obligations is that they have a very limited impact on public funds, as the main costs are borne by building developers or owners. If the certification scheme of the energy performance of buildings runs successfully, owners will be able to pass the costs on to the building users, who in their turn will benefit from reduced energy bills. Adapting the building stock will be a slow process but at least new buildings, and those undergoing major renovations, should meet modern requirements and, consequently, a solar or renewable heat obligation will help prepare the building stock for the post-oil and gas era.

RECOMMENDATIONS

To achieve the necessary and effective implementation of solar ordinances/renewable heat obligations throughout Europe:

Government and public authorities at all levels should

- Strongly recommend and actively promote the introduction of solar ordinances/renewable heat obligations.

The Commission should:

- Strongly recommend and actively promote the introduction of solar ordinances/renewable heat obligations within the framework of the implementation of both the RES and the EPB directives.
- Undertake a review of Member States buildings strategies to assess complementary measures (e.g. financial incentives) necessary to improve the overall EPBD's effectiveness, including good practice. Ensure that there are adequate enforcement systems in place and assess regularly and independently whether enforcement is effective.

The European Parliament should:

- Ensure continuous supervision of the implementation and effectiveness of both the RES and the EPB directives.

The Member States at a national level should:

- Put in place the legal and regulatory framework for solar ordinances/renewable obligations, including flanking measures for quality control, installers' training/certification and incentives.
- Use solar obligations and renewable heat obligations as part of the implementation of both the RES and the EPB directives.
- Empower and involve regional and local authorities in implementing and adapting renewable solar obligations adopted at national level.
- Provide incentives or rewards for new buildings or renovations, when national or regional building standards are surpassed.
- Implement demonstration projects for net zero energy requirements or net zero carbon buildings, and lead by example when refurbishing existing buildings.
- Support the STO with a communication campaign targeting professionals and end users on the principles and benefits of solar thermal systems.

With the adoption and implementation of both the RES and EPB directives, renewable heat and energy efficiency will be at the forefront of the political scene at the European, national or local level. The ProSTO consortium is convinced that now is the right time for member states and the EU to follow the pioneers' leading examples and actually implement the simplest and most effective policy measure: The solar thermal ordinance.

This policy paper was elaborated within the framework of the ProSTO project

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