

Scope of a STO

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Description:	A STO is the provision that solar thermal (or other renewable energy sources) should cover at least a minimum share of the hot water or total heat consumption of the buildings. This document discusses various approaches of how the scope of the STO can be set, i.e. the definition of which type of buildings should be covered under the STO.
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Introduction

While it is generally desirable to include almost all buildings in a Solar Thermal Obligation, a local authority will have to ask itself where it wants to set the limits. The first STO ever, an Israeli law of 1980, covered only residential buildings up to a height of no more than 27m. Higher buildings and in any case no non-residential buildings fall under that law.

The following should help local authorities specify the scope of its STO. It may wish to start with only a part of the total building market and foresee stepwise extensions to eventually cover any building.

Buildings to be covered by the STO

Type of use

- residential
- non-residential
 - public/non-commercial (e.g. schools, hospitals, sports facilities...)
 - commercial (e.g. shops, hotels,...)
 - industrial (e.g. the buildings of manufacturing plants, but not the manufacturing processes themselves)

Recommendation: To achieve a high impact, the STO should cover all types of buildings. Instead of completely excluding certain types of buildings, the STO could differentiate the specific quantitative requirement for each building type (see Tool-ID 3.2.1 “Quantitative obligation and calculation procedures” for more details).

Age

- new-built
- existing

Recommendation: While it seems natural to start with new buildings only (“no building should be newly erected without using solar thermal energy”), more than 90% of the buildings existing in 2020 exist already today. Without extending the STO also to existing buildings, most of the energy use in buildings – 40% of Europe’s energy demand – remain unaffected by the STO.

For existing buildings the obligation should be based on major renovations of the whole building and to the exchange of the heating system. These two events are best suited for the retrofitting of solar thermal into existing buildings. The voluntary retrofitting at other times should be publicly encouraged through flanking measures (see below)

Size/amount of energy-use:

- size (e.g. square meter of usable floor area, height, number of apartments,...)
- energy usage (e.g. only buildings that use at least x kWh of primary energy per year, or whose carbon-footprint is at least...)

Recommendation: The size of a building typically has a strong impact on its overall energy demand. But even in a small or a very energy efficient house, there remains a demand for e.g. domestic hot water. As covering the hot water demand can be easily achieved with solar thermal technology, a STO should cover even such small and/or efficient buildings.

Other parameters or possible exemptions:

- buildings used as places of worship and for religious activities
- temporary buildings
- monument protected buildings
- shading

Recommendation: Keeping in mind that a STO is enacted to save considerable amounts of conventional energy, it is important to note that any exemptions should be very closely defined, in order to avoid easy loopholes in the regulation. Not every monument protected building needs to be exempted from the STO. There are very aesthetic examples of how solar thermal collectors have been fitted into protected buildings – or where they were installed in places, which are not normally visible from the street or surrounding. Where solar thermal would really be too obtrusive or otherwise impractical (e.g. because of shading from surrounding buildings or trees), an alternative energy supply with other renewable energy sources should be required (e.g. wood pellet boilers, geothermal heating systems).

Need for flanking measures to address buildings and applications not covered by the STO

STOs address the energy need in the building sector. As shown above, there will always be buildings which are (partly) excluded from the STO.

Recommendation: These exemptions should be as closely defined as possible in order to not undermine the intention of the STO (saving considerable amounts of conventional energy). In these situations, flanking measures should be put in place to encourage the use of solar thermal energy on a voluntary basis, e.g. through awareness-raising campaigns, the availability of independent advice on the purchase of solar thermal solutions, and through financial incentives (see also Tool on “Financial Incentives to complement a STO”).

Imprint

Edited by:	Uwe Trenkner (ESTIF)
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See www.solarordinances.eu for more information on solar thermal ordinances and the ProSTO project.

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