

## Development of a web-based software application

Subject:	<b>Thuringian Solar Calculator</b>
Description:	Development of a web-based software application "Thuringian Solar Calculator"
Date:	20.11.2018
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Document download:	<a href="http://www.solar-district-heating.eu/en/knowledge-database/">www.solar-district-heating.eu/en/knowledge-database/</a>

### Summary description of the instrument

Region: **Thuringia, Germany (A-Region)**

Partners involved: Thuringian Energy- and GreenTech Agency (ThEGA), Geoplex GIS GmbH

Short description of the measure: Development of a web-based software application called "Thüringer Solarrechner" ("Thuringian Solar Calculator")

### Initial situation

The Free State of Thuringia wants to cover its own energy consumption on a yearly balance with a mix of renewable energies until 2040. Therefore a certain amount of effort not only within the power sector but within the heating sector as well is necessary. One important cornerstone is the reduction of greenhouse gas emissions by heat supply from renewable energies, such as solar thermal.

An examination of the regional heat supply system, which is dominated amongst others by district heating systems, revealed that the potentials of biomass in Thuringia are nearly exploited – but those of solar thermal are not tapped yet. Currently, one pilot solar district heating plant in Jena-Pößneck is in operation, while other solar district heating projects are under conception and several feasibility studies concerning the integration of renewable energies within the heating system at regional level are in progress. The Thuringian Ministry of Environment, Energy and Nature Conservation (TMUEN) is pursuing several activities to support the market roll-out of renewable energy sources and solar district heating, for example due to providing a free of charge webbased software application, called "Thüringer Solarrechner" ("Thuringian Solar Calculator"), which was developed by the Geoplex GIS GmbH.



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### Objectives

Providing the "Thuringian Solar Calculator" aims at an increasing generation of heat and power from solar energy in Thuringia. Therefore, the web-based software application "Thuringian Solar Calculator" should support different user groups to exploit the potentials of solar energy. More concrete, the "Thuringian Solar Calculator" should support stakeholders to identify potential areas for installing solar thermal collectors or photovoltaic modules due to the calculations of the yield and the economics of possible solar thermal and photovoltaic plants on any roof or open area in Thuringia. These calculations are based on the latest GIS data, instructed by the Thuringian Office for Surveying and Geoinformation (TLVermGeo).

Concerning solar district heating, beside roof areas also any open area in Thuringia can be chosen for calculations by marking a certain polygon-shaped area manually. The allocation of this area with solar thermal collectors runs automatically but adjustments such as adding, removing or shifting collector modules can be taken into account. Also the type of solar thermal collectors (flat plate or vacuum tube collector) can be chosen for calculations. Solar yield and costs for investing are calculated and results can be printed and saved as PDF-document.

Due to its flexible usage possibilities (solar thermal or photovoltaic / roof or open area), the "Thuringian Solar Calculator" has different target groups: Concerning the implementation of solar thermal collectors or photovoltaic modules on roof areas, potential users are basically private house owners, companies, public authorities and housing companies. Concerning the implementation of solar thermal or photovoltaic plants on open areas, municipal utilities, cooperatives, project planning and development companies, as well as operators of industrial parks and other companies with available appropriate areas are foreseen as potential users.

### Measures and actions

The "Thuringian Solar Calculator" was published in the end of May 2018. Before, a beta version was under automatically and manually examination.

A detailed concept for public relation activities in May and June 2018 has been developed in cooperation with the Thuringian Energy- and GreenTech Agency (ThEGA) to inform potential users as well as multipliers about the implementation of the "Thuringian Solar Calculator". This concept includes for example the offer of information events and workshops, the printing of leaflets and brochures and the presentation of the "Thuringian Solar Calculator" online and at fairs.

Furthermore, the concept of the "Thuringian Solar Calculator" already has been presented at several SDHp2m-events in 2018.



*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691624*

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### Barriers and opportunities

The implementation of a free of charge webbased software application for the identification of areas for the installation of solar thermal collectors might be a helpful tool for the exploitation of the potentials of solar energy in Thuringia. Thus, to achieve a high impact from this measure, it is necessary to inform potential users and multipliers about the release of the “Thuringian Solar Calculator” and its range of functions.

Furthermore it is important to support stakeholders with the usage of the “Thuringian Solar Calculator”. On this account, the “Thuringian Solar Calculator” will be linked to the “Servicestelle Solar” (Solar Service Center) at the Thuringian Energy- and GreenTech Agency (ThEGA), which offers practically oriented consulting e.g. for municipalities, citizen and companies concerning the identification of potential areas for implementing solar thermal and photovoltaic plants, correlating business models and subsidiy possibilities.

### Results

The “Thuringian Solar Calculator” has been is in test phase and was published in the end of May 2018. Only after a few weeks more than 20.000 users had access to this tool.

In combination with the “Servicestelle Solar” the “Thuringian Solar Calculator” builds an important element for the support of regional stakeholders with initiating, planning and developing solar energy projects.

The tool is available in German Language: [www.solarrechner-thueringen.de](http://www.solarrechner-thueringen.de)

### Lessons learned

The feedback from stakeholders concerning the providing of the “Thuringian Solar Calculator” at SDHp2m-events was only positive.

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