A European Heat Density Map

The Hotmaps Project

The goal of Hotmaps is to develop an open source heating and cooling mapping and planning toolbox and to provide default data for EU28 at national and local level. These data and tool allow public authorities and stakeholders to identify, analyse, model and map resources and solutions to supply energy needs within their territory of responsibility in a resource and cost efficient way. These results will help authorities to develop heating and cooling strategies on local, regional and national scale which are in line with RES and CO2-Emission targets on national and EU level.

A European Heat Density Map

Closing existing data gaps: heating and cooling dataset available for the EU-28

The dataset lays the foundation for the Hotmaps tool. The developed data set covers all EU-28 countries (plus Norway, Switzerland and Iceland) and estimates based on a top-down approach the energy needs for heating, cooling and domestic hot water preparation, as well as underlying key indicators such as population, value added, heated gross floor area, heated building volume, share of buildings per construction periods or heating and cooling degree days on a 100x100 m level.

Key input data

The datasets builds on statistical data of the national buildings stock such as number buildings, floor area, as well as technical data such as u-values and specific energy needs (also provided at Gitlab). Furthermore, the resulting calculated final energy demand is calibrated to the national energy balances. For the distribution on the local level, calculated spatial data, such as population and value added a long with spatial data extracted from satellite images such as building footprint, land sealing rates or Corine land cover data and building data from the opensreetmap database are used.

Application within the Hotmaps toolbox

Besides accessing the developed data set directly (provided at Gitlab) using GIS-tools such as QGIS, the analyses can also be performed using the Hotmaps Toolbox, which is currently under development.

Referenced literature and key input data

- Eurostat, “Gross value added at basic prices by NUTS 3 regions” (namo_1d_3gpes) Eurostat, 2016.

Conclusion

Even though the developed data set builds on available, generic data on the local building stock rather than on actual measurements, it can be used as a valuable starting point for regions, for which such data are not available or accessible.