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HOTMAPS

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Q&A SESSION : USING OWN DATA FOR H&C PLANNING

JUNE 30, 2020

Background

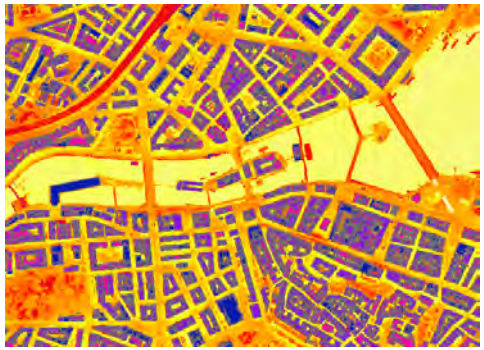
The city of Geneva, has to realize its own **territorial energy planning**, based on the *cantonal energy master plan*, proposed by the Cantonal Energy Agency (OCEN) and on the *Cantonal Climate Plan*.

3 priority targets

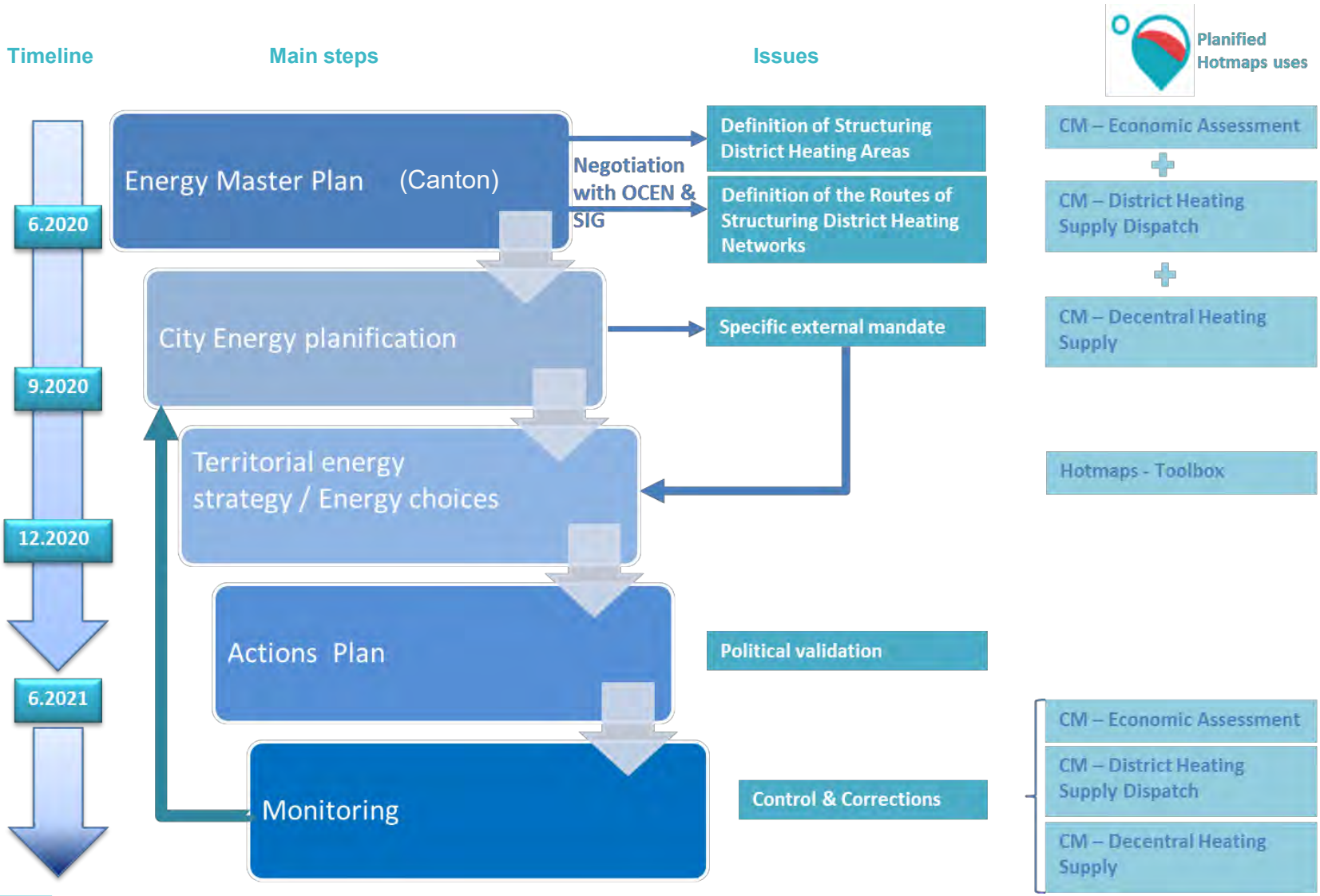
- Controlling and reducing energy demand
- Developing local non-fossil energies → HOTMAPS
- Planning energy infrastructures → HOTMAPS

A high-performance geo-referenced information system

SITG | LE TERRITOIRE GENEVOIS À LA CARTE

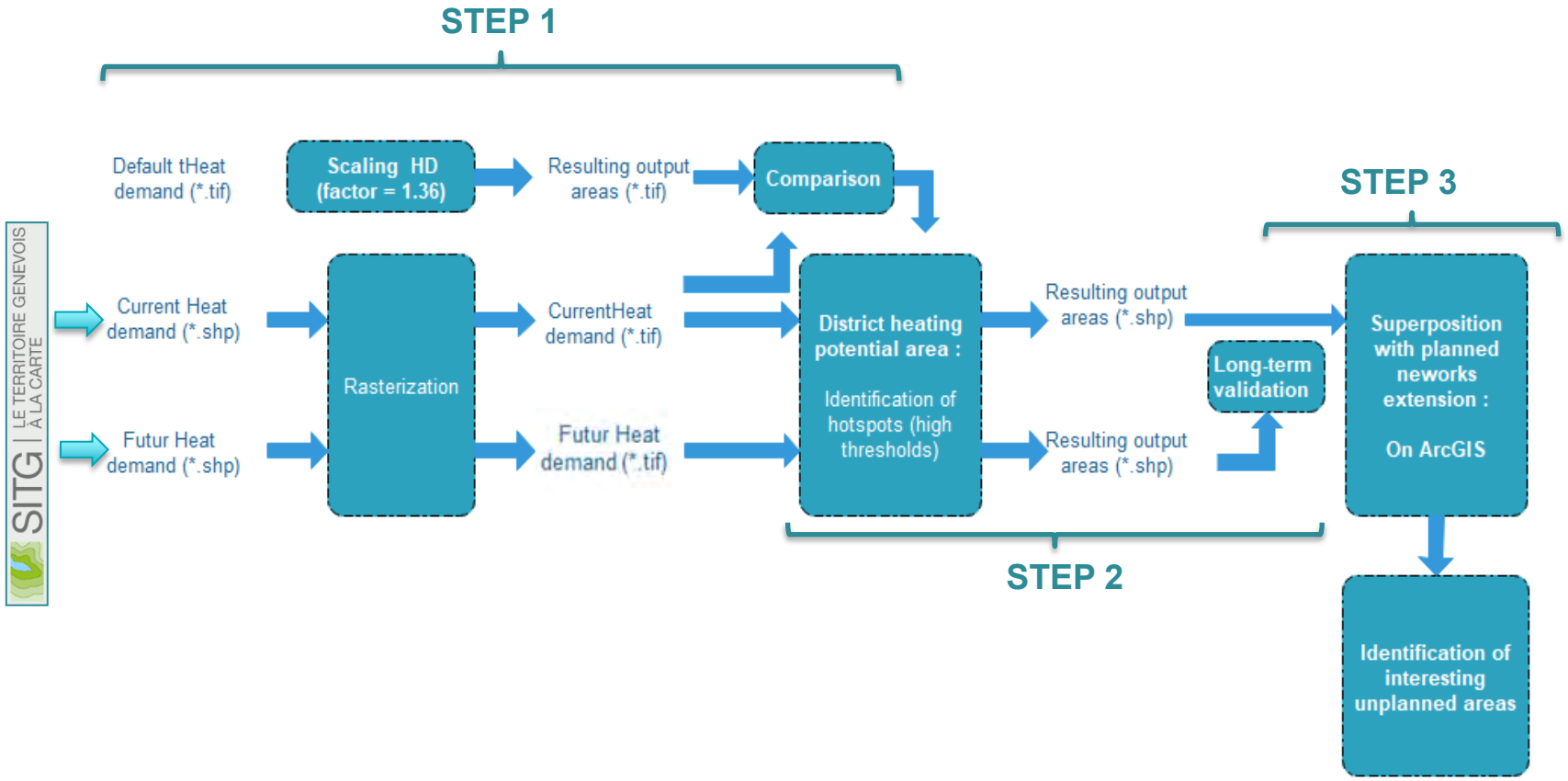


Geneva planning roadmaps



Using own data – step by step

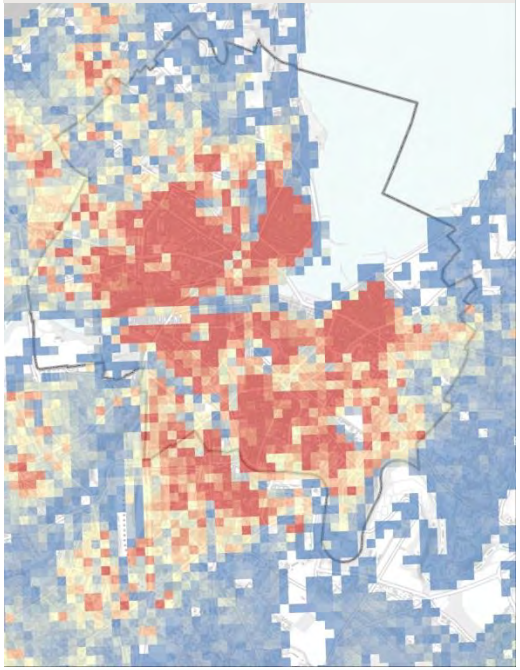
DH hotspots identification



Using own data – step 1

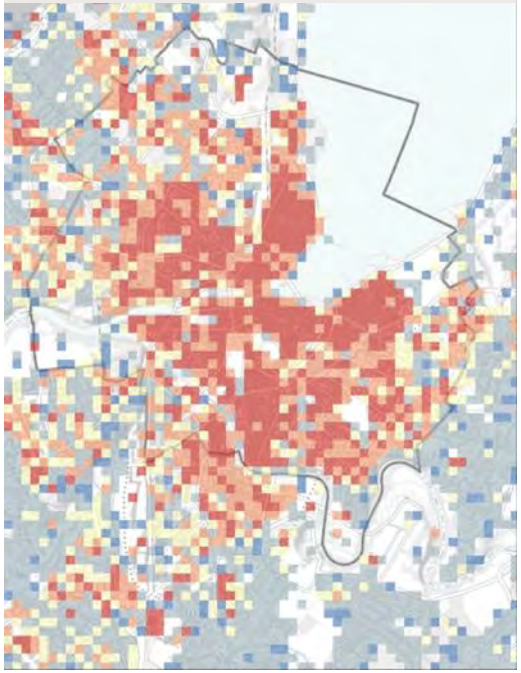
Change the heat demand reference

Default dataset heat demand



- Scaling Heat demand, factor 1.36

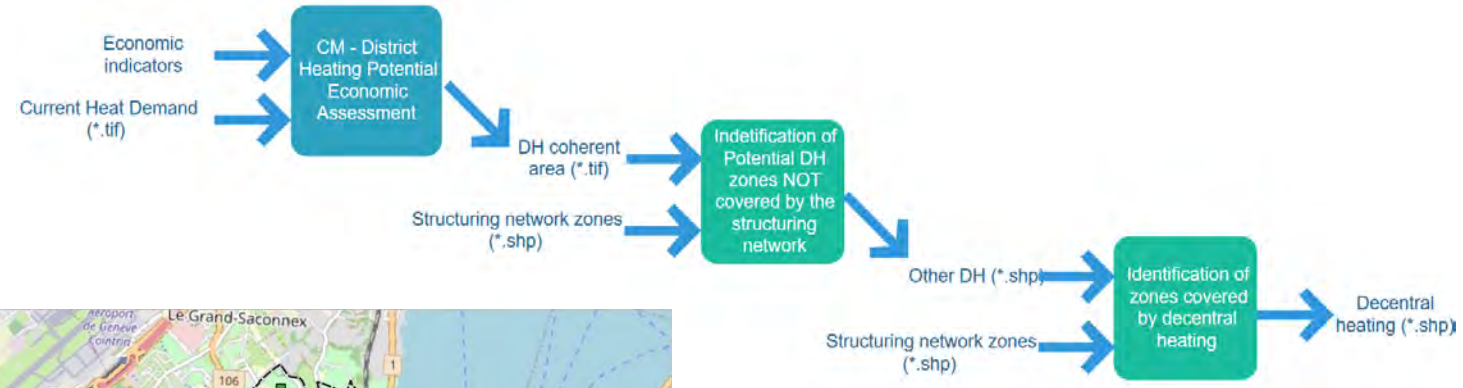
Personnal Layer heat demand

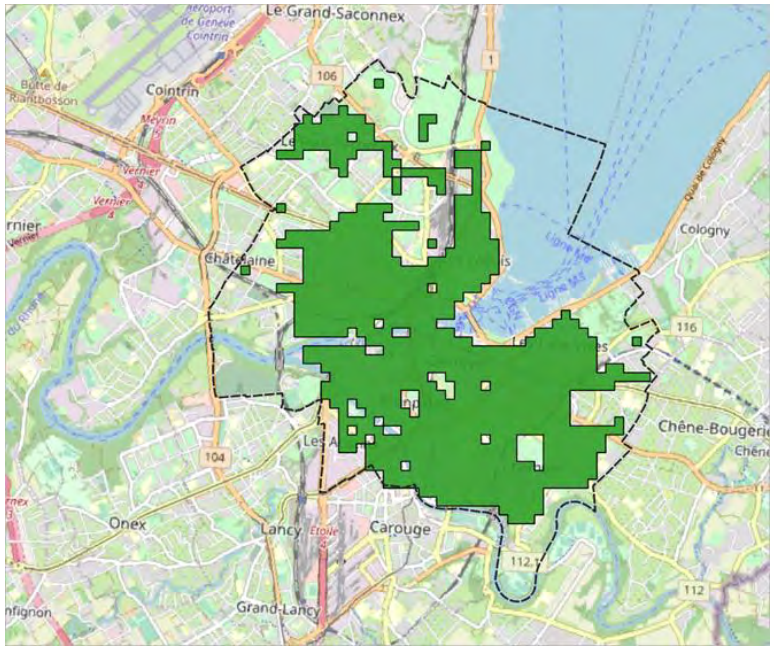


- Using current (2015) heat demand layer (vector)
- Rasterization in a .tif picture
- Using as the reference heat demand map in the Toolbox

Using own data – step 2

Definition of coherent district heating supply areas





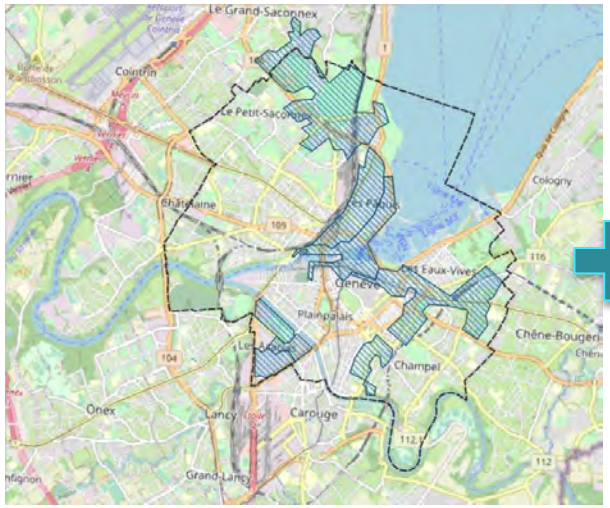
Identification of the most interesting area for DH -> push costs to the max in the module :

- Cost ceiling: 15 EUR/MWh
- Construction cost constant: 10’000 EUR/m
- Construction cost: coefficient 25’000 EUR/m2
- Interest rate: 5%

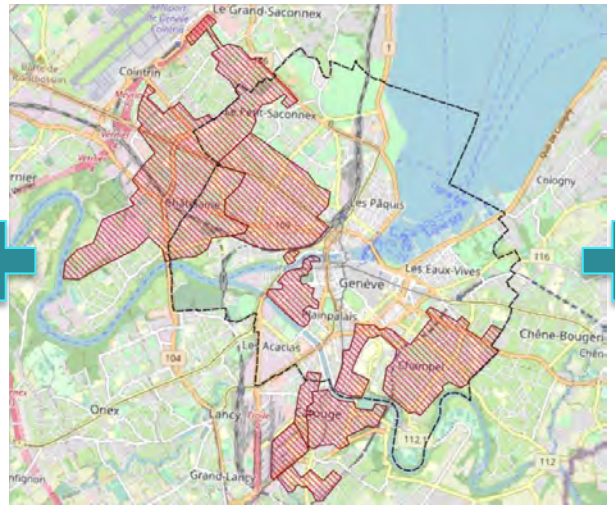
Using own data – step 3

Overlay of planned networks extensions & non HD areas

Structuring Networks Areas

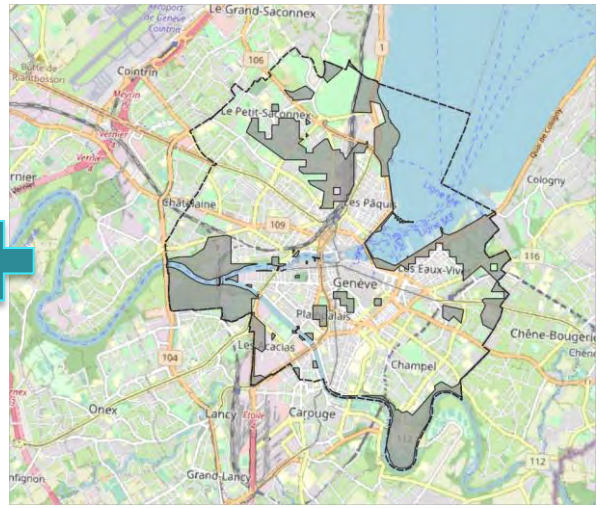


Low-temperature structuring networks GeniLac



High-temperature structuring networks

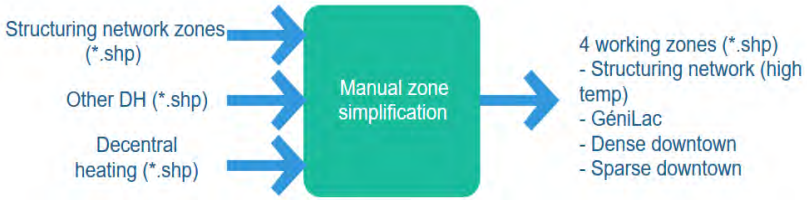
Decentral heating area

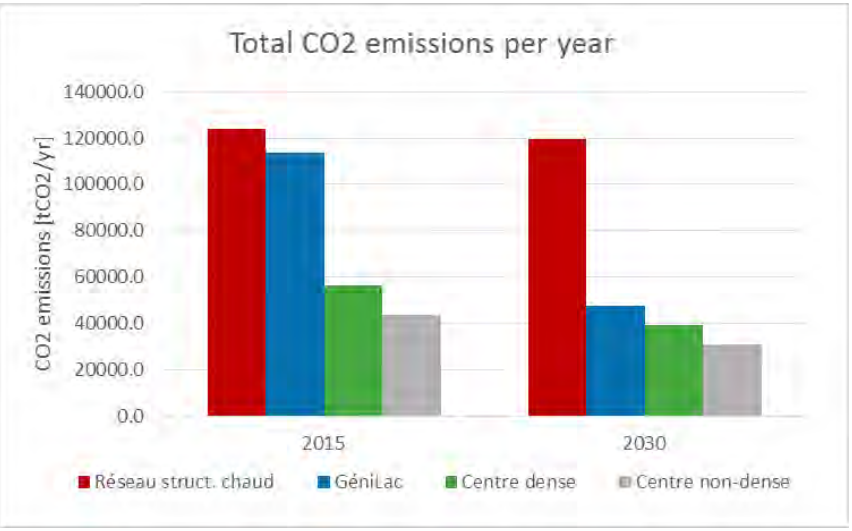


Insufficiently dense areas for DH

Using own data – step 3

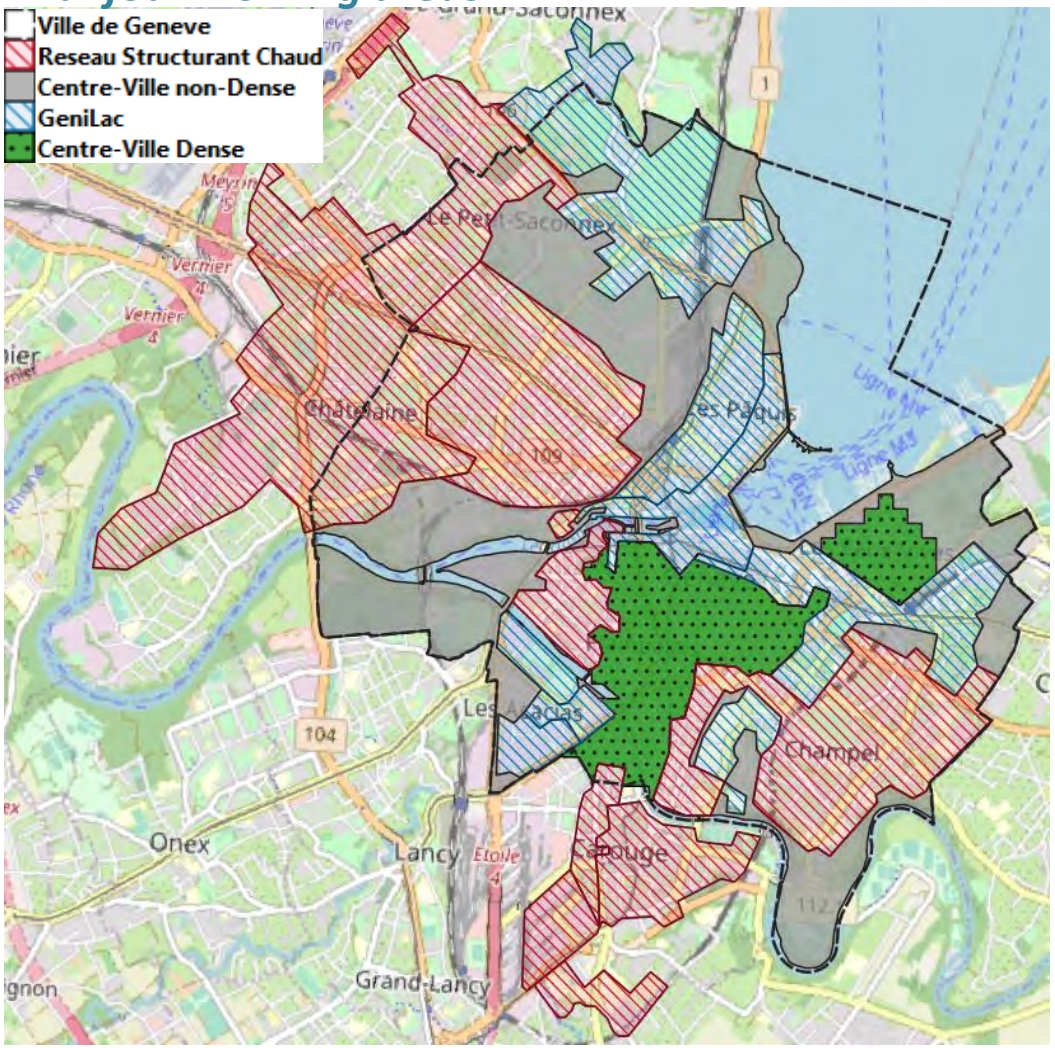
Manual simplification



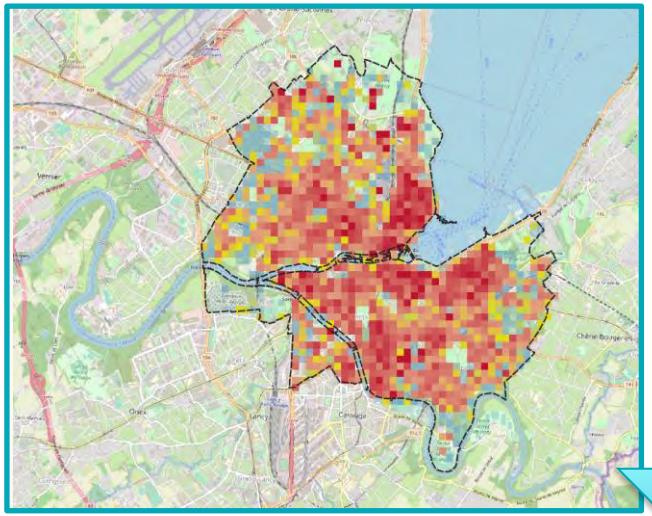


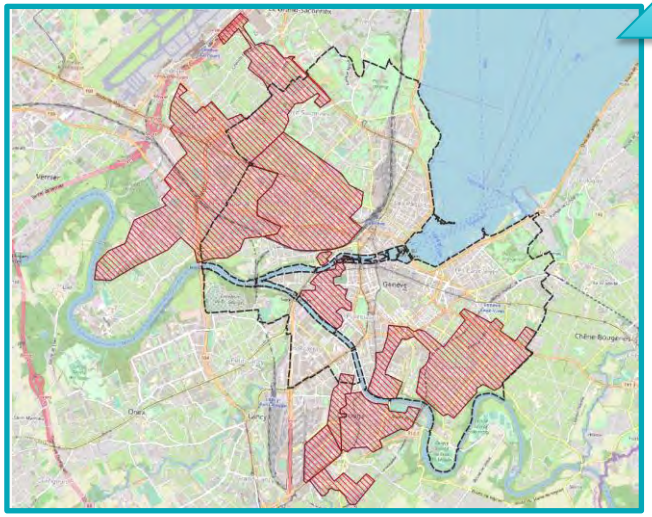
Example of results on a BAU scenario

Final four working areas

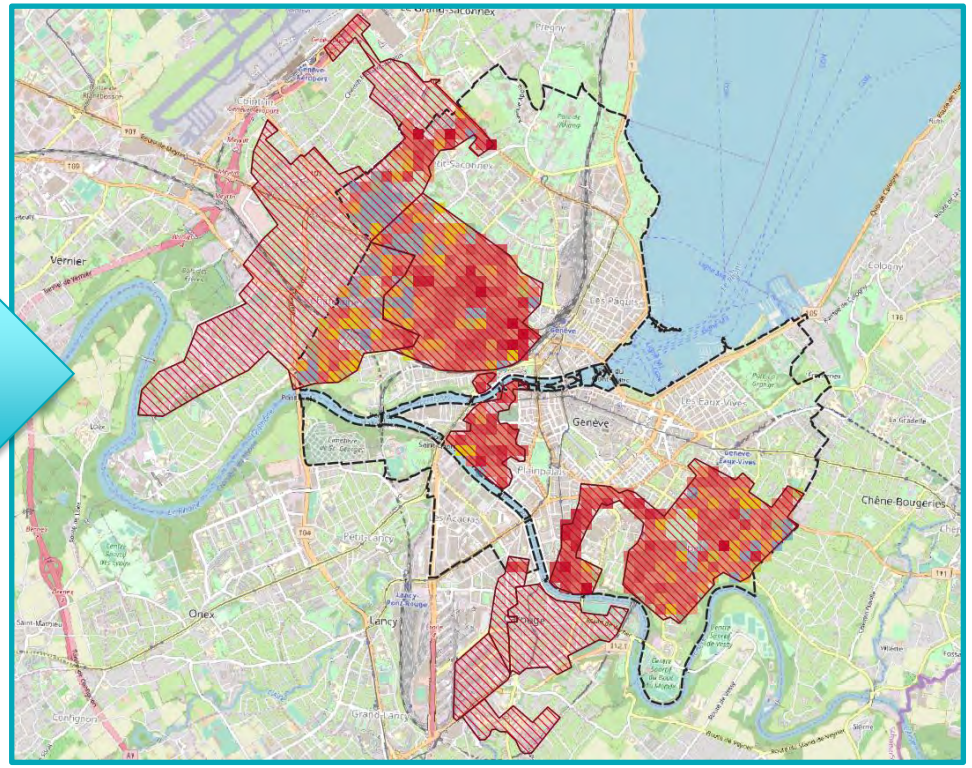


Heat demand for segmented territory analysis with Hotmaps: *.tif layer creation

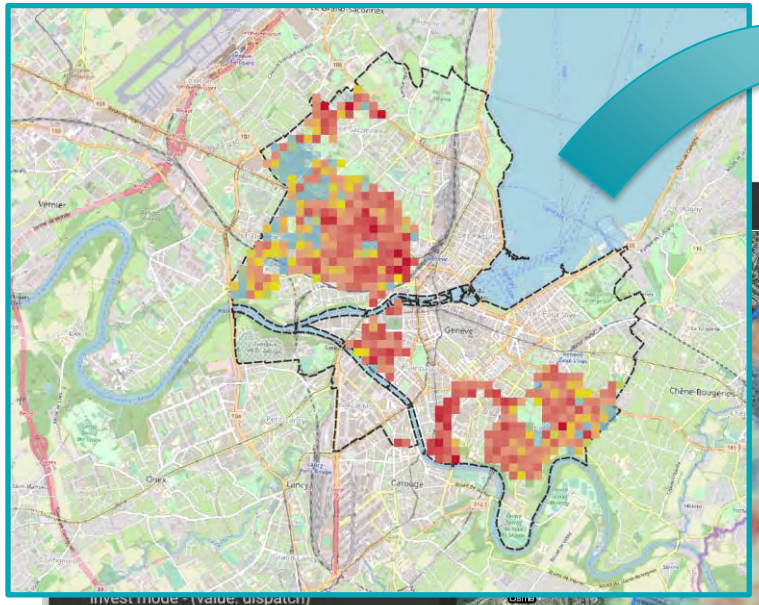




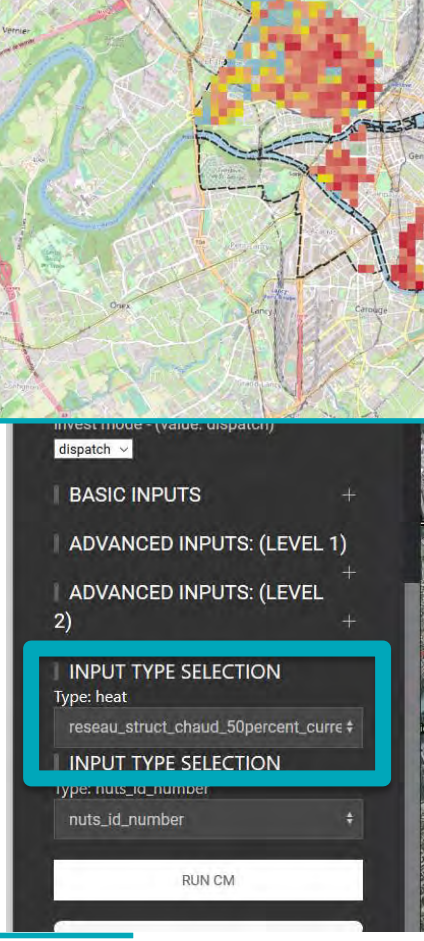
CLIP

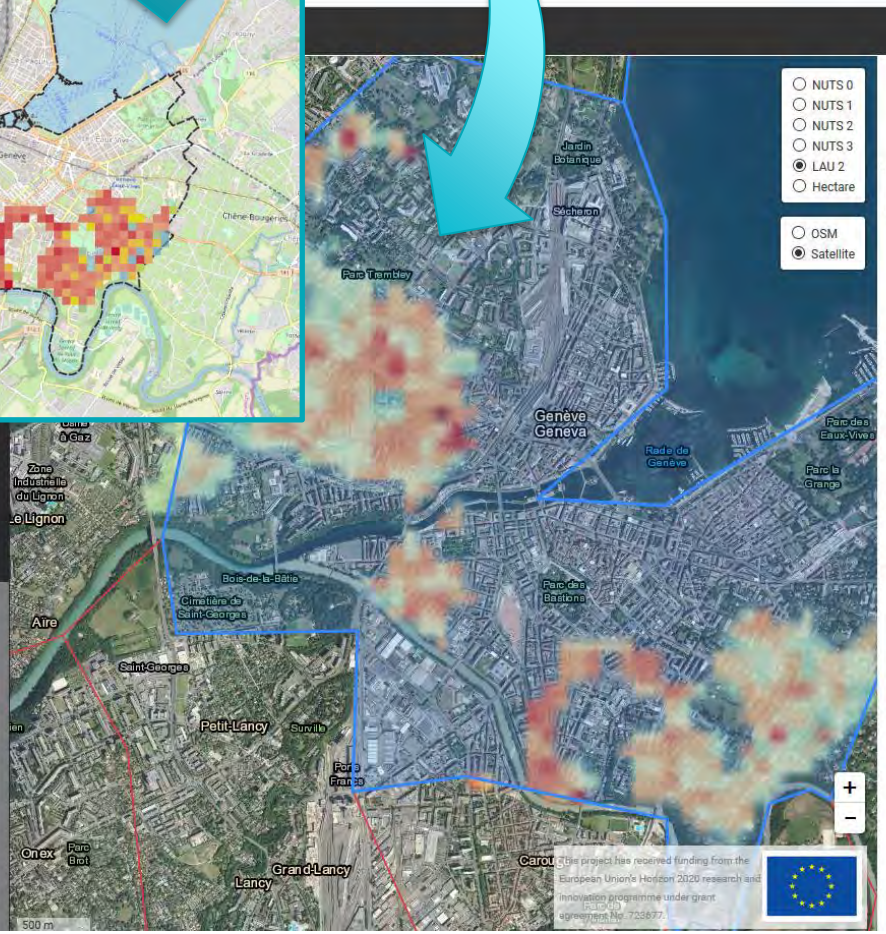


Heat demand for segmented territory analysis: DH supply dispatch tool example



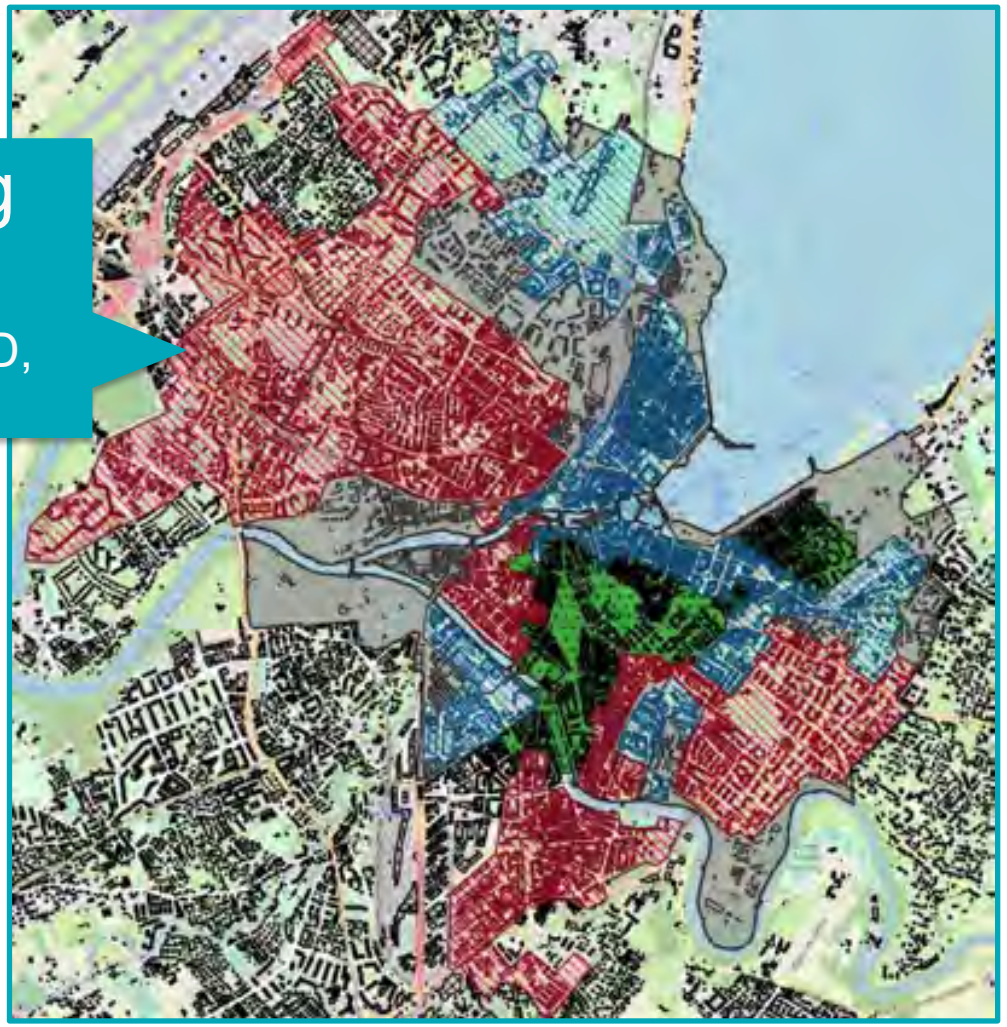
*50%





Average building type estimation for single run with Decentral heating tool

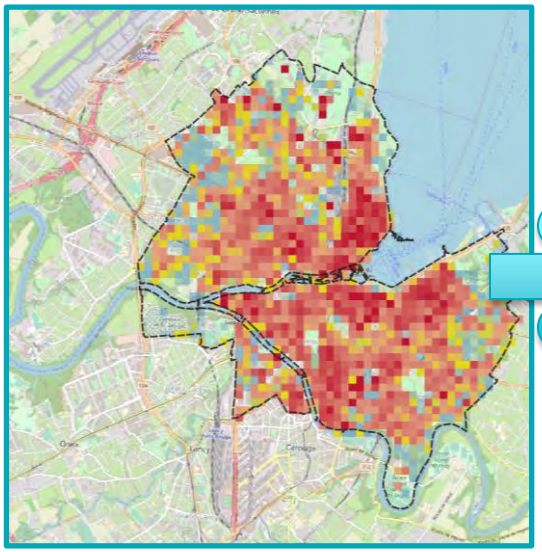
Individual building details:
Area, floors number, Zone ID, etc…

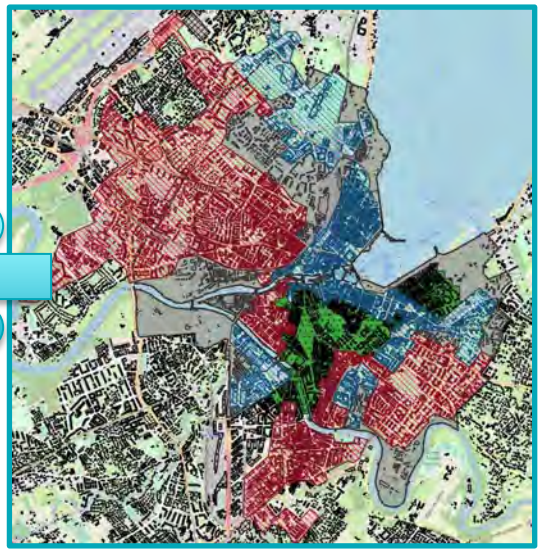


Total GFA =

$$\Sigma area * floors$$

Average building type estimation for single run with Decentral heating tool





Average heat density per m2

Hotmaps
CH
Building Stock