Bristol Solar Potential Analysis 2019

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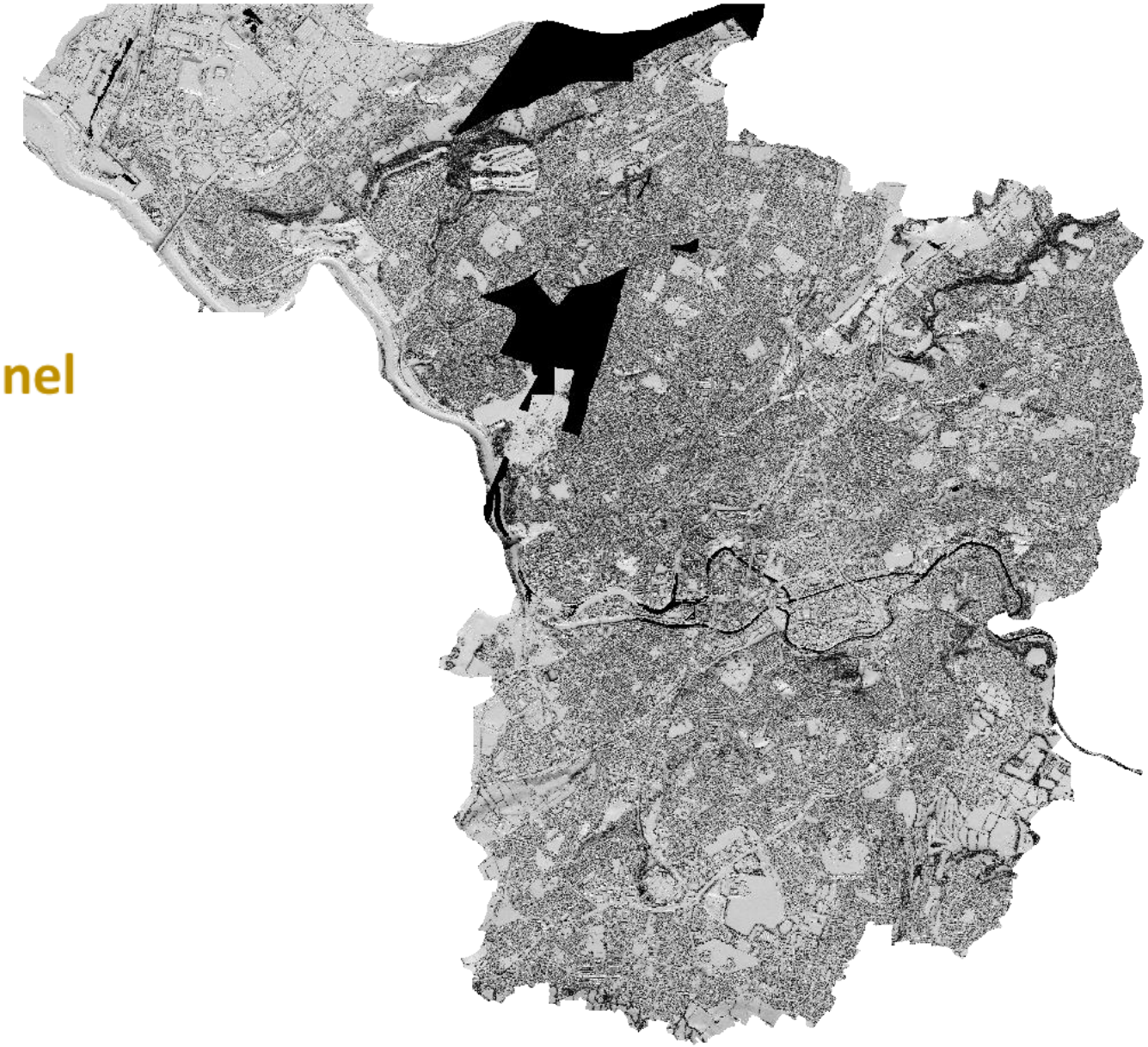
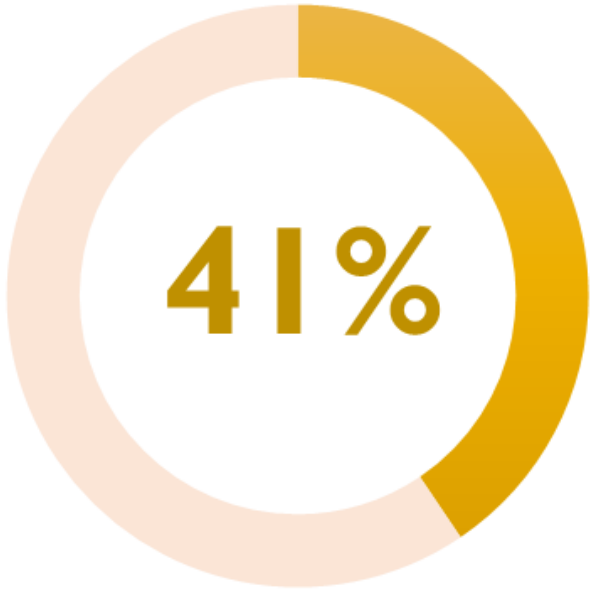
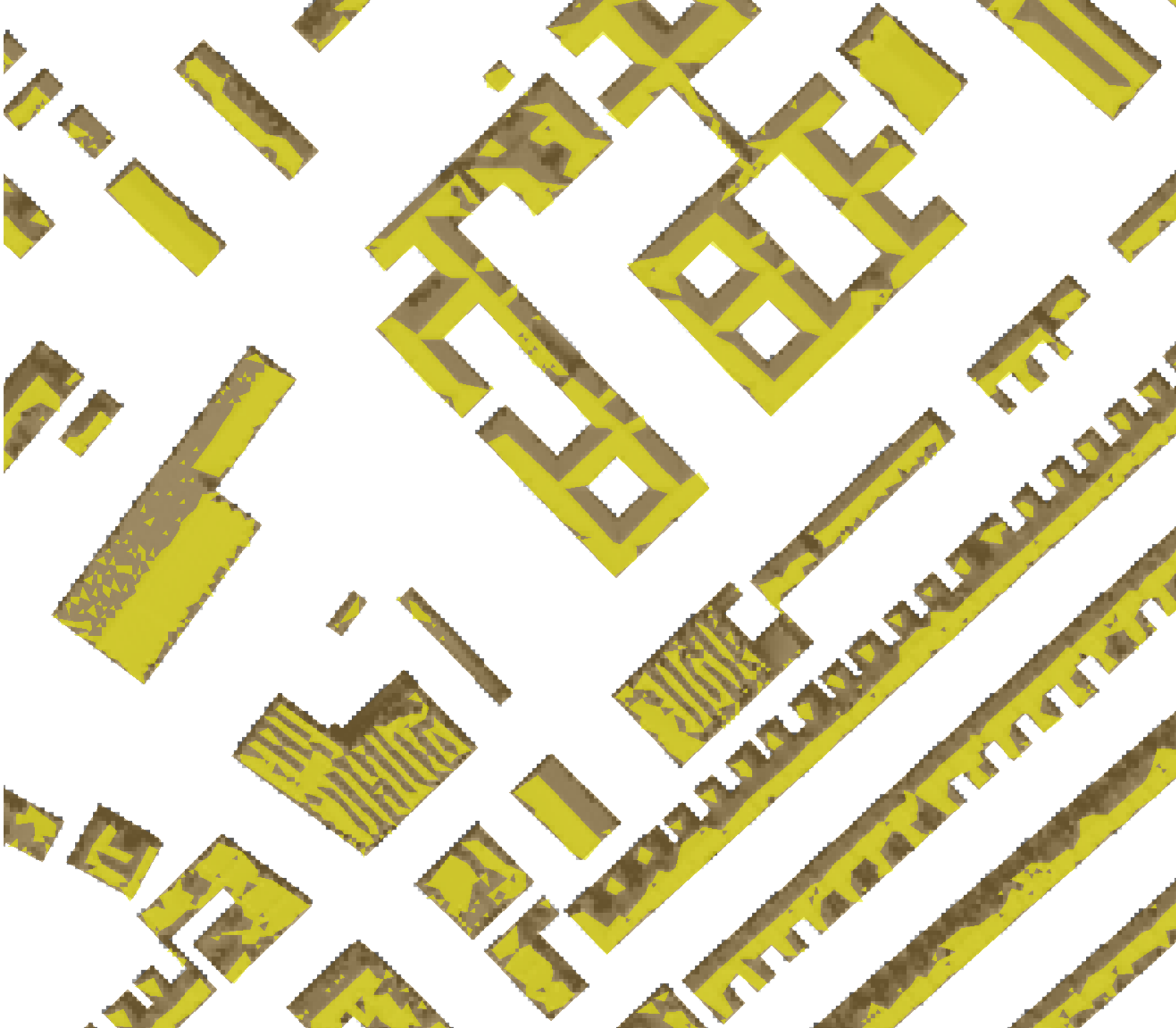
Rooftops suitable for solar panel

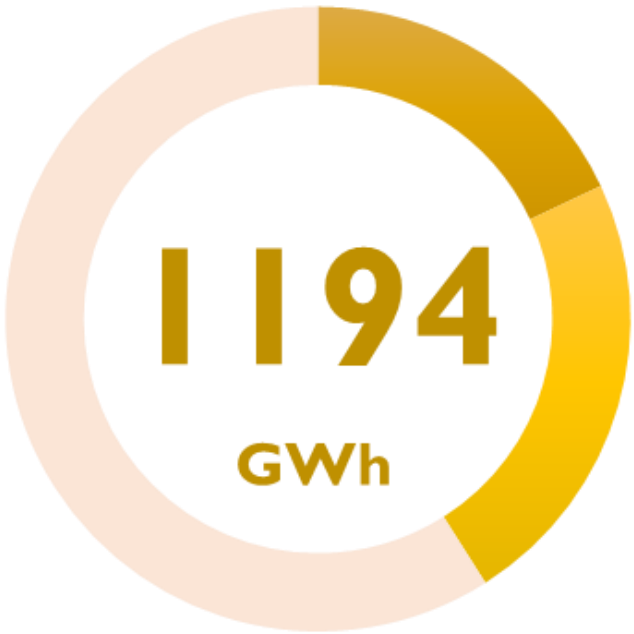


Usable Bristol roofspace





Generated energy



CO2 saved

Money saved

Tools

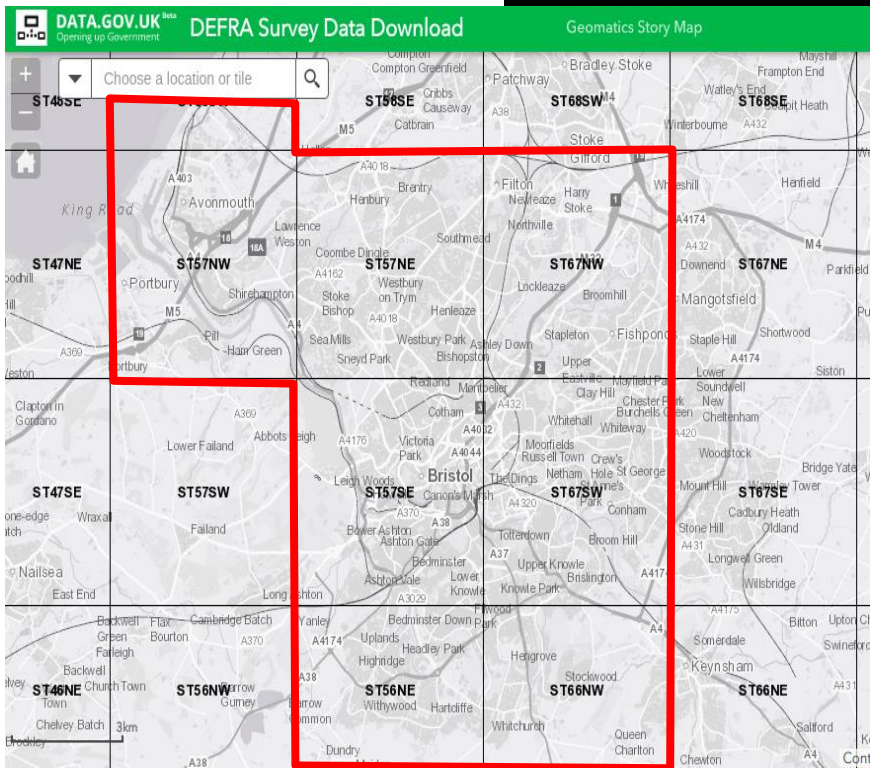
packages(Raster, velox, sp, gdalUtils, RSAGA, rgdal, parallel (multi-core processing in R))

Potential Incoming Solar Radiation (PISR) function takes three parameters to take into consideration shading effects;

- **Elevation data (LiDAR - Digital Surface Model)**
- **Aspect -** compass direction that a slope faces
- **Slope** - angle of inclination to the horizontal

Process

- Download LiDAR data - Digital Surface Model (1m resolution)
- Mosaic all the small tiles within each tileset
- Transform each tile into the SAGA format
- Apply the PISR function to each tileset



- Mosaic all tilesets together
- Raster algebra magic

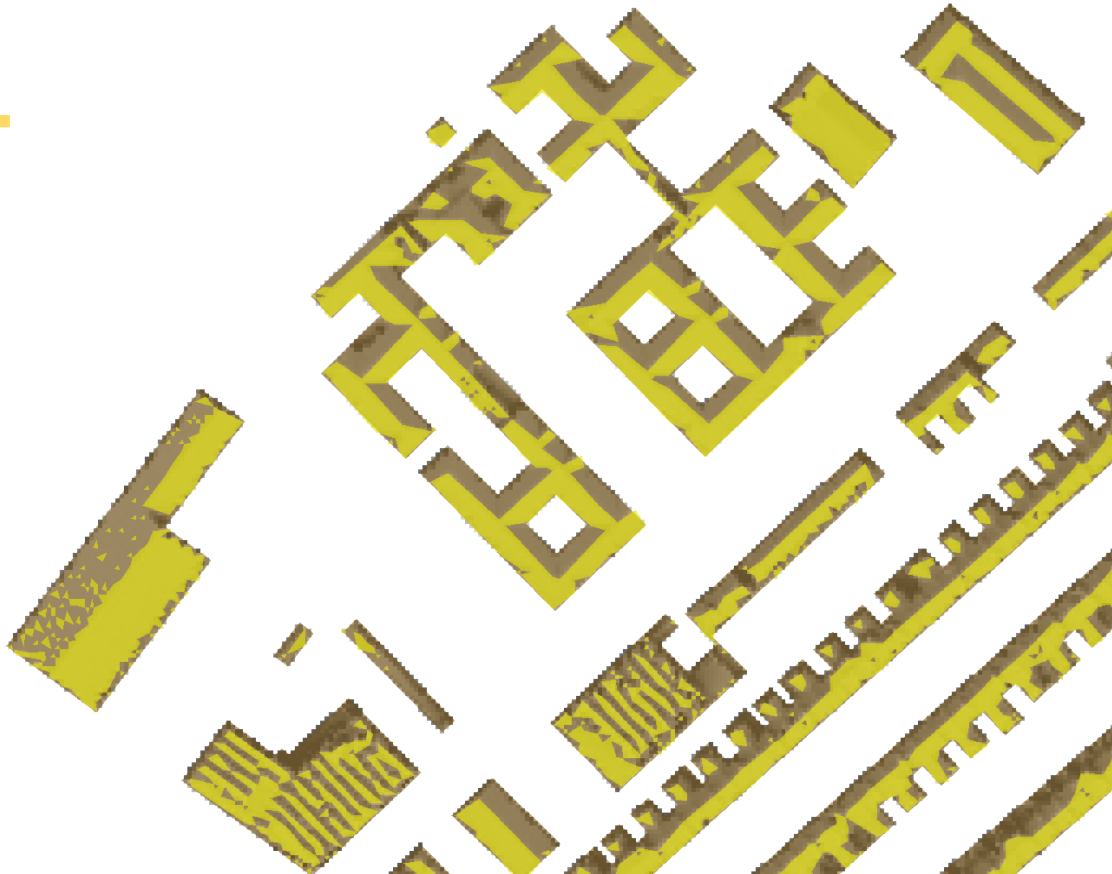
1. **SUM** of irradiance for **whole roof**
2. **SUM** of Irradiance for **high irradiance area**
3. **Area** of the **high radiance area**

- Place the panels on the roof

Key

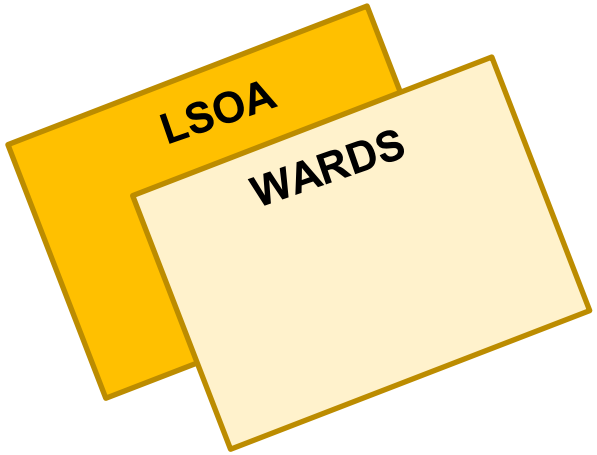
Suitable roof area

Not suitable roof area

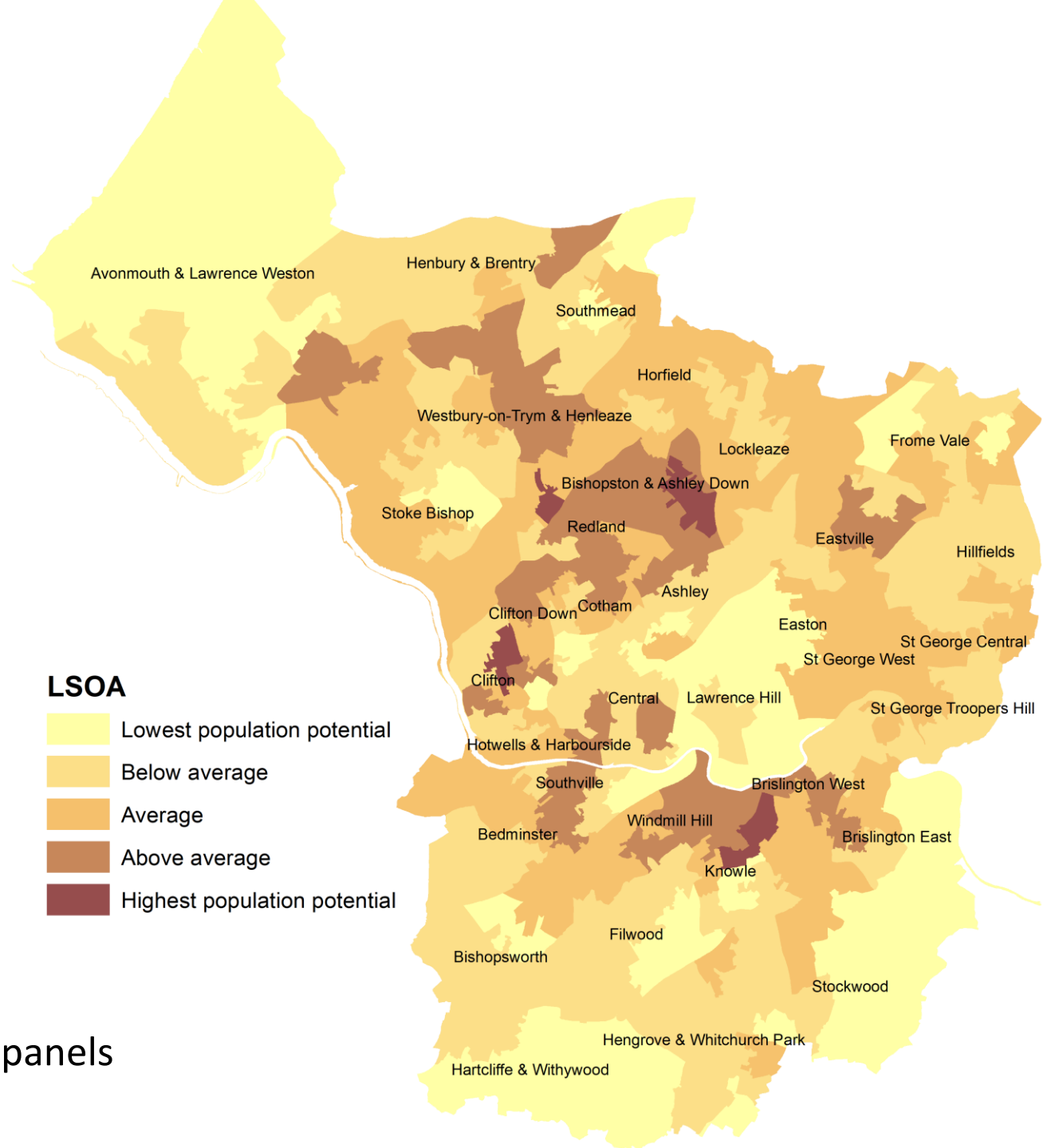


- Data wrangling and aggregation

- Add open source Geodemographics



- Created **Index of peoples potential** for solar panels



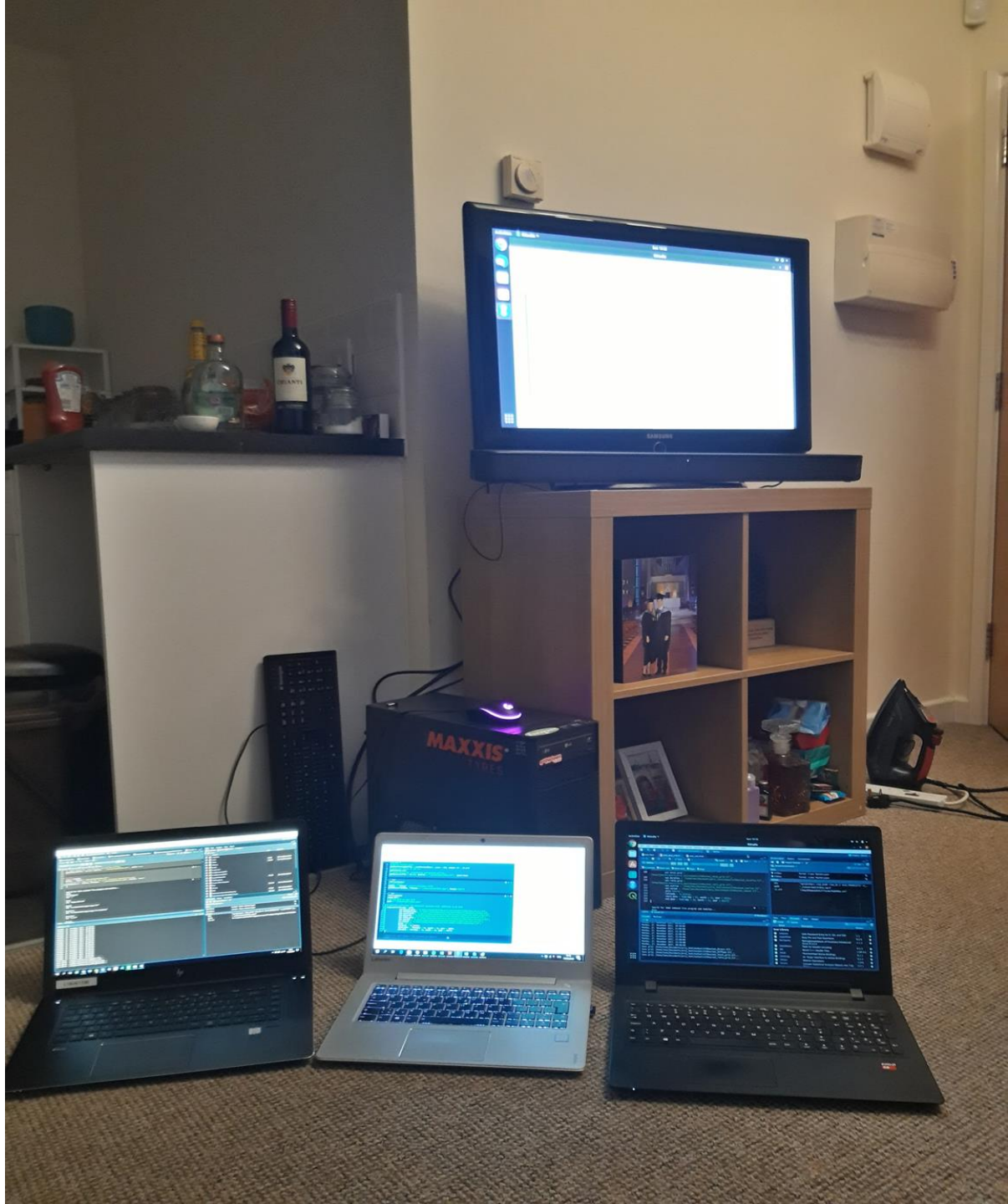
Proof

Open Source DATA

Open Source SOFTWARE

Commodity HARDWARE

Automatized High Accuracy Geocomputation



Let’s get interactive


Q
A