

# Output case 104

## Mapping of potential solar panel ground areas

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**Case owner:** PP2 Environment Office of Lappeenranta Region

### Background and motives

Target is to create a template and method, how to map and evaluate potential solar panel ground areas. Test case 104 was to map these areas for the city of Lappeenranta. According to strategy of Lappeenranta, target is to increase amount of renewable energy forms (i.e. solar panels) up to 150 MW until year 2033. Current amount (=in the end of year 2018) of solar panels in Lappeenranta area is about 3 MW and they are mostly placed on the roof of different buildings (industrial, public, commercial, private). Furthermore increasing the amount of wind power mills is not allowed at Lappeenranta area due to military reasons, because they disturb military radars near the state border.

### Method

Mapping of potential solar panel ground areas was carried out in several steps. First step was to investigate ground areas by using all available existing map material as desktop research. Goal was to map preliminary at least 30 interesting and potential ground areas inside the Lappeenranta municipality borders. Additionally the secondary goal was to create criterias to evaluate and rank these areas with convenient template. For the evaluation purposes an excel sheet was established including columns for every criterias, which were defined as follows:

- area registration and identification details
- name of area
- exact address of area
- total square-m<sup>2</sup> of area

- estimation square-m<sup>2</sup> of area, which can be utilized
- owner of area (priorized city owned & other public owned areas)
- evaluation of ground & soil quality
- city master plan exists (yes / no)
- current usage
- existing obstacles
- potential energy user located in the neighborhood
- master power line (min 110 kV) located in the neighborhood
- threat of vandalism
- nature issues, flora & fauna, endangered species
- opinion of neighbors and citizens
- public visibility and imago issues
- historical values
- logistical issues (roads etc...)
- easiness for maintenance work
- capability to survive of extreme weather conditions
- sun light shadowing conditions

On the third step all mapped areas were visited, reviewed and photographed during the summer 2018. Based on criterias above, the written summary and total ranking was given to all evaluated areas. As the result of evaluation, there was established a list of “Top twelve” areas, which were suggested to take into further investigation and also presented to local stakeholders.

## Result

Excel based template and criterias how evaluate potential solar panel areas. Template was tested in the city of Lappeenranta and it is ready for use in all project partner countries.

**ANNEX:** Template for evaluation of potential solar panel ground areas.