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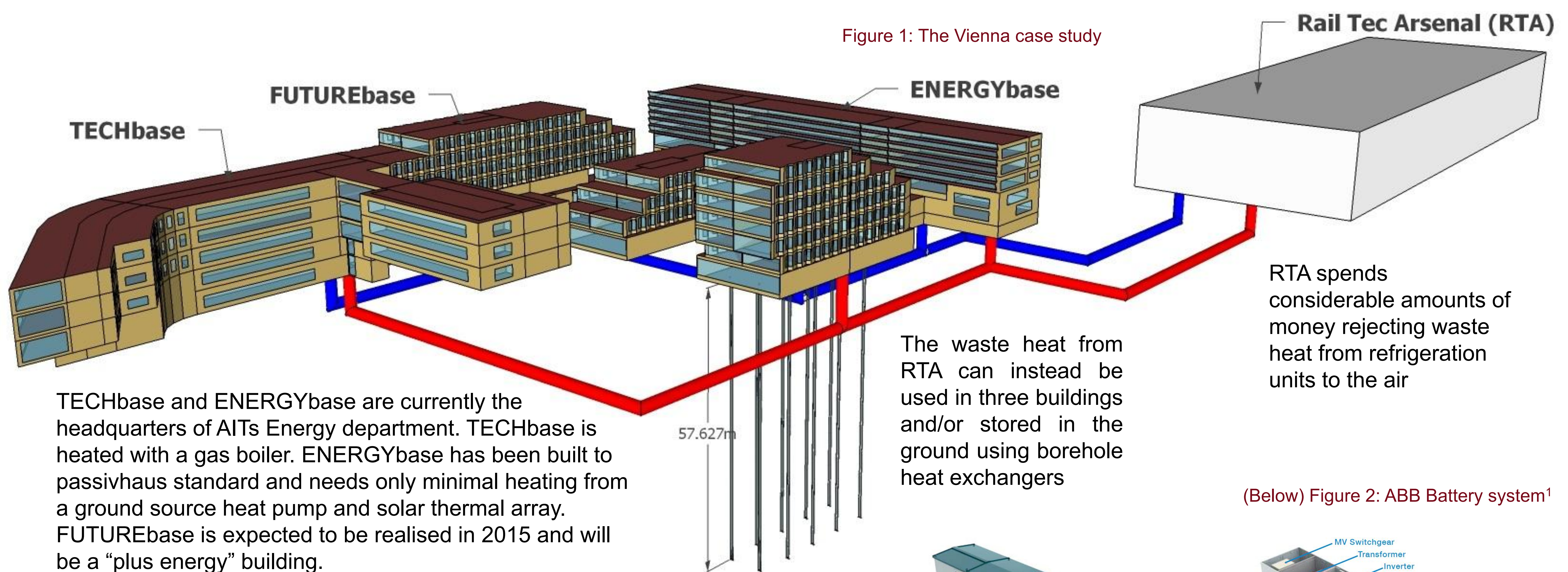
OVERVIEW

The CITYOPT mission is to optimise energy systems in smart cities. This European project will create a set of applications and related guidelines that support efficient planning, detailed design and operation of energy systems in urban districts. The project addresses energy system optimisation in different life cycle phases. It will consider appropriate service business models, privacy and trust. This will be supported by a user-centred design approach. All stakeholders including cities' decision makers, facility managers, and citizens will be involved throughout all phases of the project.

- Dynamic Process Simulation Software.
- Developed by VTT and Fortum
- Detailed modelling of thermal hydraulics, comprehensive component libraries, dynamic system response simulation.
- Used in CITYOPT to optimise the whole system, from the components to the operation of the waste heat/district heat distribution and electricity demand.

Apros

VIENNA CASE STUDY



(Below) Figure 2: ABB Battery system¹

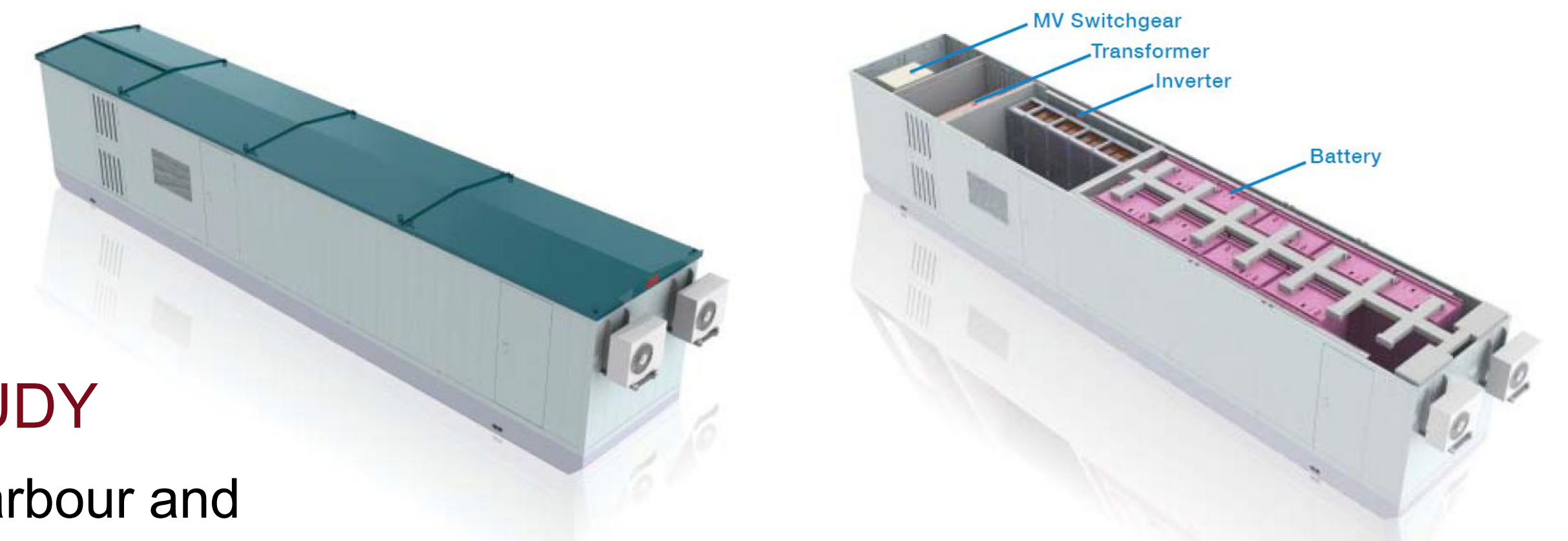
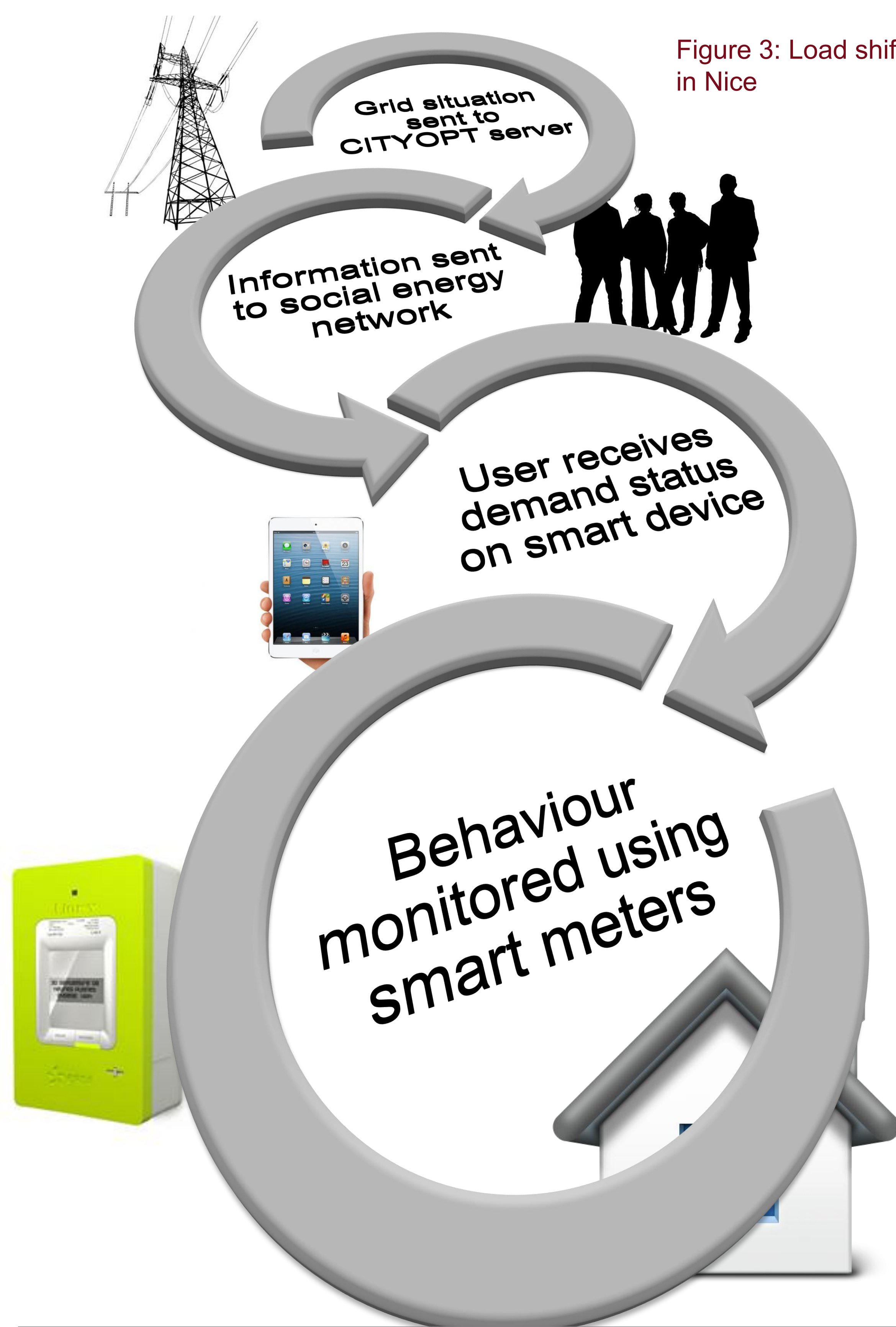


Figure 3: Load shifting sequence in Nice



HELSINKI CASE STUDY

Kalasatama, a former harbour and industrial area in the east of the city. In CITYOPT different electricity storage solutions and business models will be evaluated. An example of one possible technology is shown in Figure 2.

In addition, Östersundom is expected to grow from 2,000 inhabitants to 70,000 by 2050. However the energy density of the area will still be low. CITYOPT will look at how to implement and optimise a district heating and cooling network supplied by renewables.

NICE CASE STUDY

Nice depends on a single high voltage powerline running from Marseille to Menton. During the summer peak season the population can double. This poses difficulties for the electricity supplier EDF. A possible solution to this is the deployment of flexible load shifting. By notifying users of high demand using smart devices it is hoped they will be able to move possible non essential tasks such as switching on a washing machine to a time of lower demand. This is coupled with the deployment of Linky smart meters² (Figure 3, green meter) being rolled out across France which enable CITYOPT and the utility to monitor users behaviour more accurately.

PROJECT PARTNERS



CITYOPT is co-funded by the European Commission under the 7th Framework Programme



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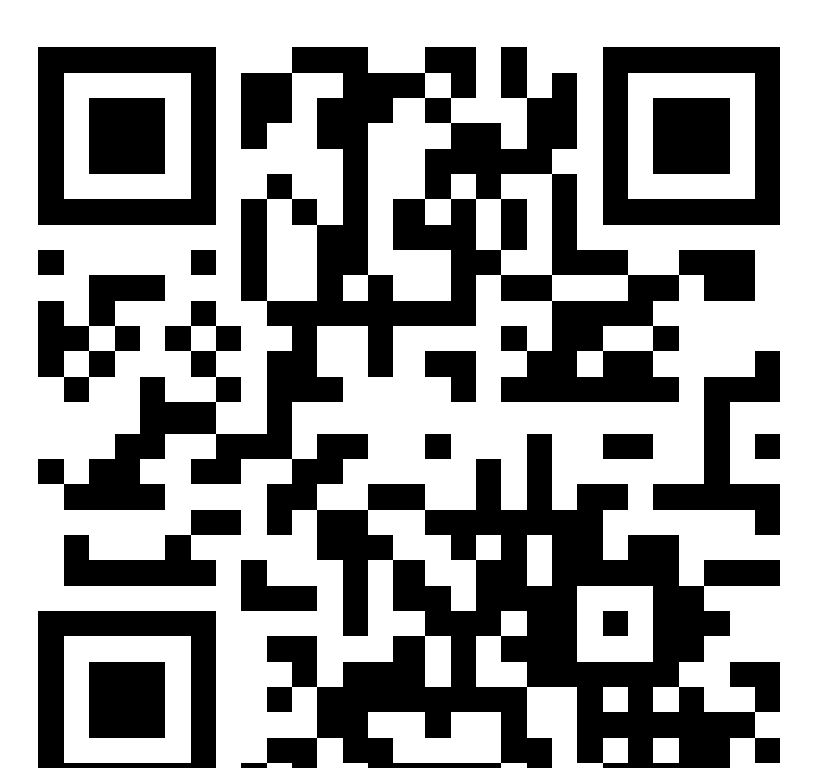


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REFERENCES

1. ABB Energy storage solutions (2014), <http://new.abb.com/smartgrids/smart-grid-technologies/energy-storage-solutions>
2. EDRF (2010), Smart meters, EDRF continues deploying Linky, http://www.erdf.fr/medias/dossiers_presse/DP_ERDF_210610_1_EN.pdf