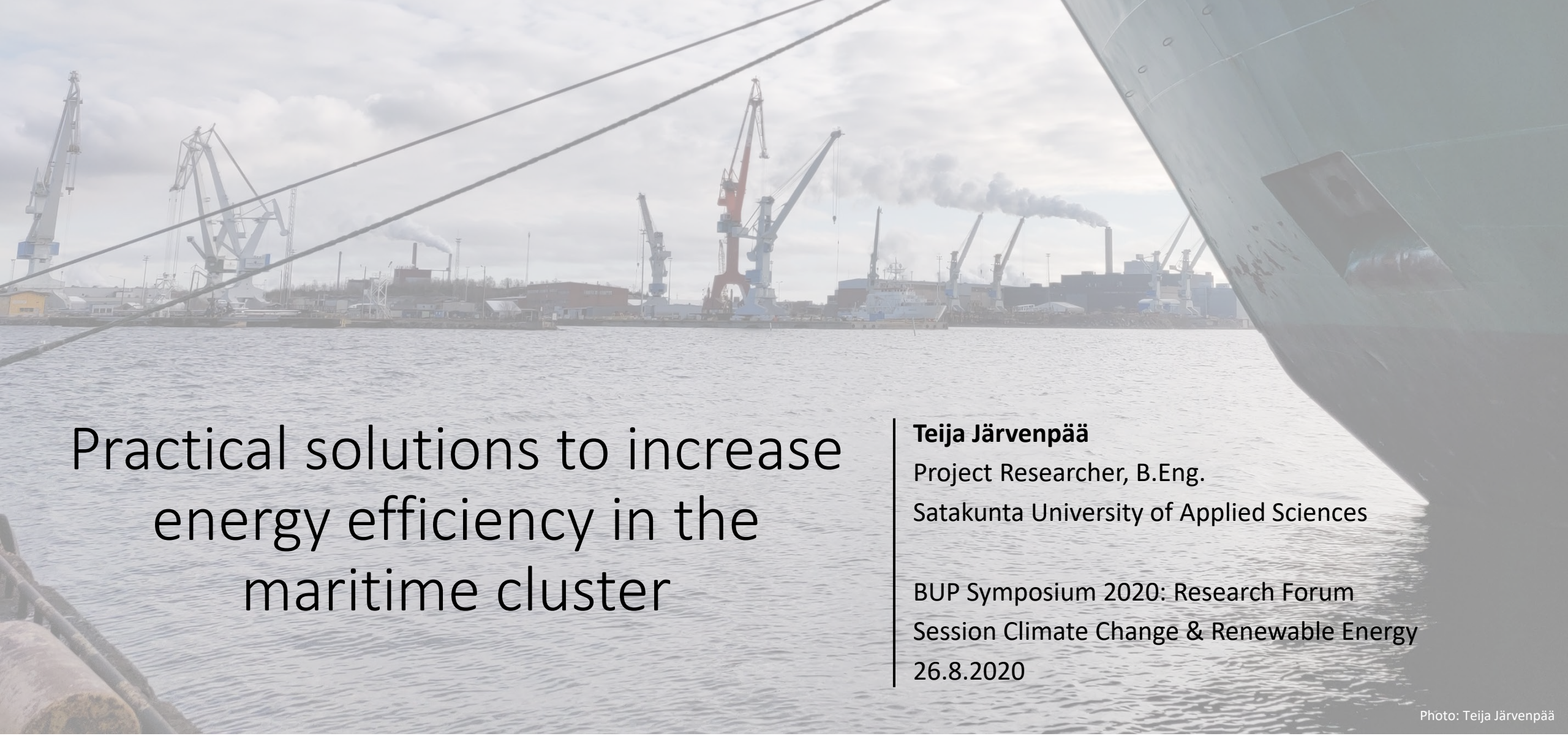

Practical solutions to increase energy efficiency in the maritime cluster

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Session Climate Change & Renewable Energy
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Photo: Teija Järvenpää

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Why is the energy efficiency of the maritime cluster important?

- Save energy, save money and cut down CO_2 emissions
- High energy consumption → great saving potential

Photo: Microsoft 365 library

Energy efficiency of the maritime cluster

Project SataMari

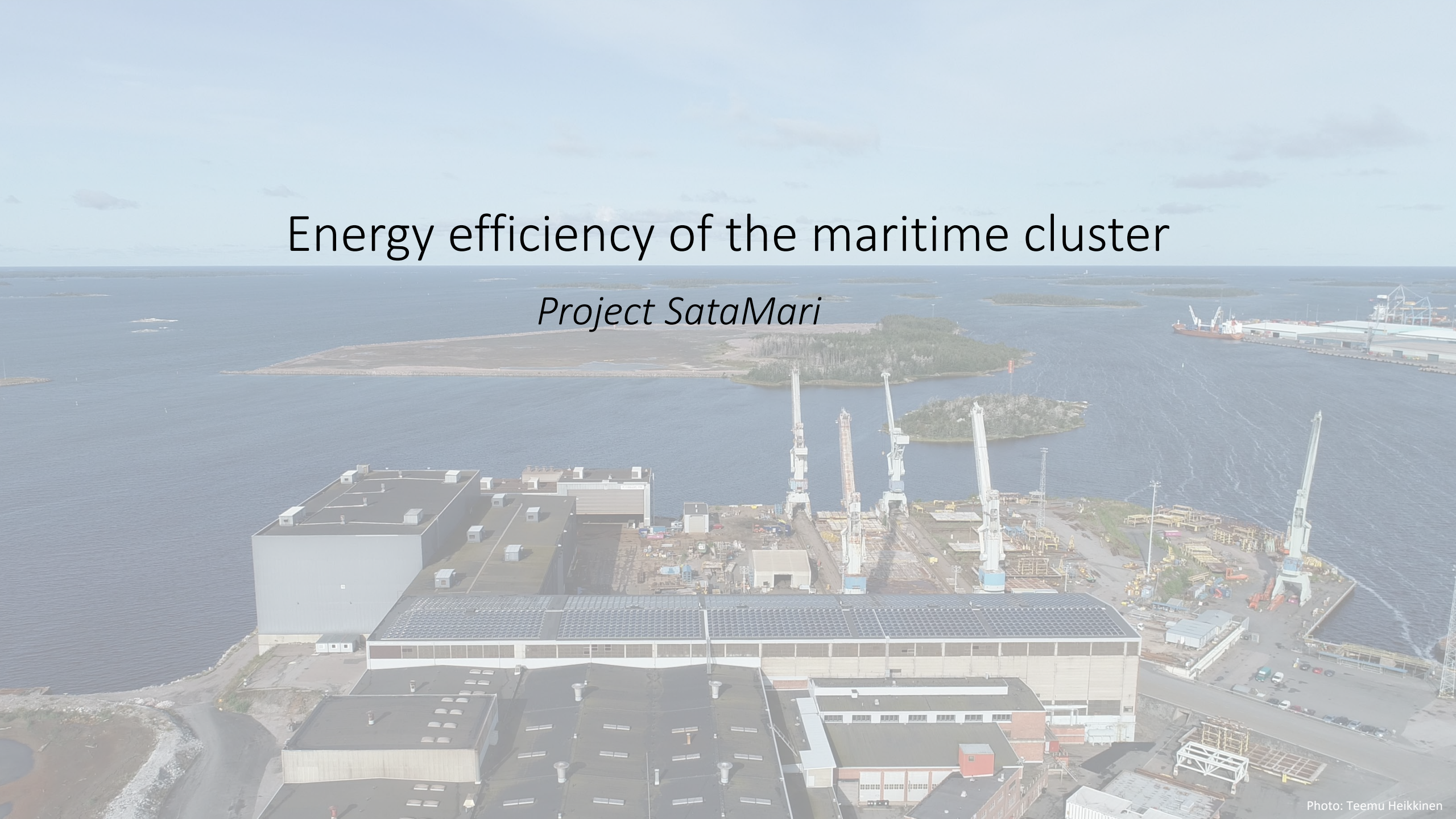

Photo: Teemu Heikkinen

Energy efficiency of the maritime cluster

- SataMari = Energy efficiency of the maritime cluster in Satakunta region, Finland
- Aim is to find practical solutions to increase the energy efficiency and use of renewable energy in the maritime cluster.
  - Finding and piloting solutions, raising awareness, making guidance tool
- Pilot sites: shipyard (SeaSide Industry Park Rauma), port (Euroports Rauma & Port of Rauma)
  - close cooperation with companies


Photo: Teija Järvenpää

Project details:

- Duration 1.1.2018–31.12.2020
- Funded by EU ERDF & SAMK, total budget: 228 267 €
- Project is operated by Satakunta University of Applied Sciences (www.samk.fi/en)
- Website: https://sub.samk.fi/satamari-project/

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Pilot sites at maritime cluster

Photo: SeaSide Industry Park Rauma

Cooperative research

Photo: Teija Järvenpää


Photo: Veera Korhonen / SAMK


Photo: Teija Järvenpää

Photo: Minna Keinänen-Toivola

Cooperative research

- **Satakunta University of Applied Sciences**: interdisciplinarity
  - Combing the expertise from maritime and technology fields
- **Companies**: practical cases
  - Research cases come from the needs and interests of the companies
  - Examples: decreasing the indoor temperature in an industry hall, solar energy to decrease the electricity consumption
- **Students**: theses, credits
  - Win-win situation for all: students like practical work-based cases, companies gain neutral information, project gets extra hands to dig deeper.

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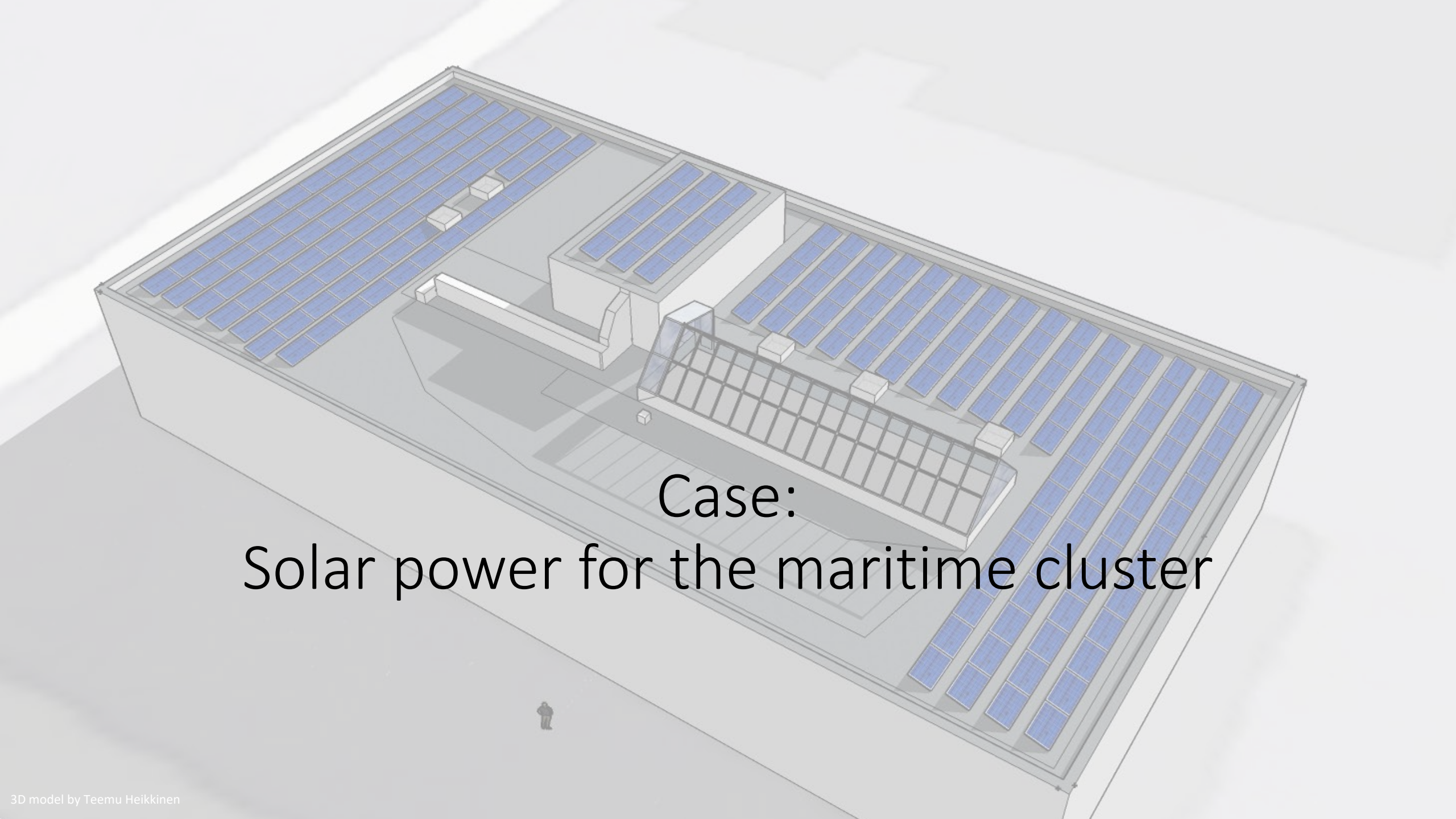
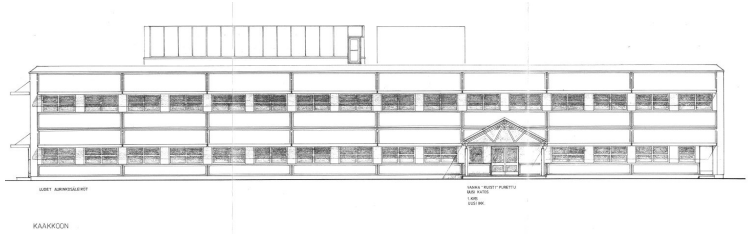


Case:
Solar power for the maritime cluster

3D model by Teemu Heikkinen

Case: solar power for the maritime cluster

- **Why?** Company interested in using solar energy & diminishing energy consumption
- **What?** Design of a solar power plant for the roof of an office building
- **How?** Data collection, site visits, interviews, calculations, dimensiong and modeling
- **Results:** 3D models & feasibility study
  - Option 1: Maximum system size by roof area.
    - The other electricity consumption in the area and economy of scale
  - Option 2: System size by maximum electricity consumption



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Option 1: Maximum system size by the roof area

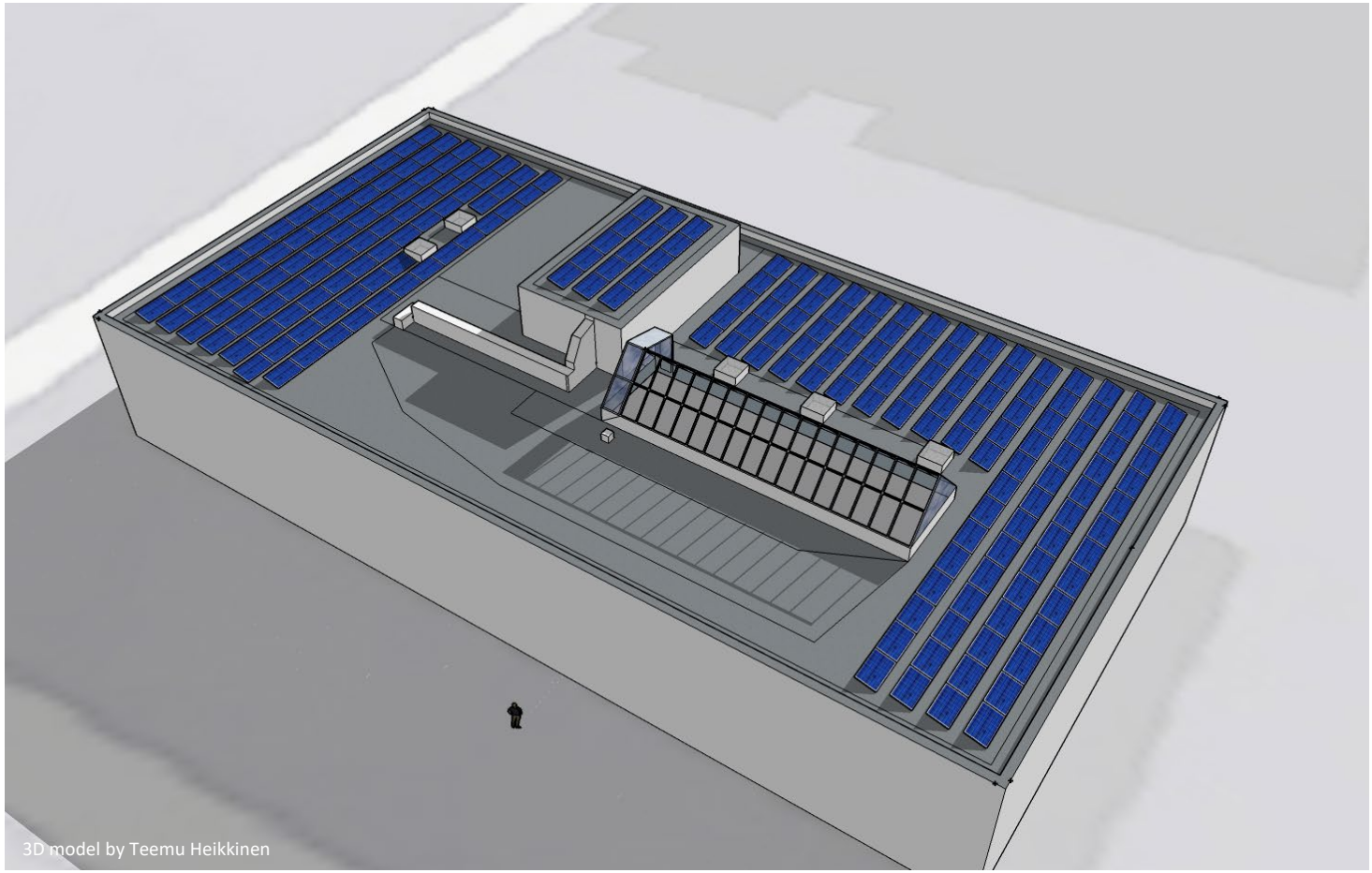

Table 1. Technical info.

Technical detail	Value
Size (peak power)	63 kWp
Size (area)	ca 360 m2
Number of modules	210 (à 300 Wp)
Expected annual electricity generation	ca 51 000 kWh/a *
Payback time	15 years with 20 % subsidy (22 years without subsidy)

** Compare: ca 20 000 kWh/a per a detached house in Finland (electrical heating)*

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Photo: Teemu Heikkinen

Conclusions

- Expertise from different fields combined
- Development of competence
- Data for online guidance tool
- Common goals led to concrete results on solar energy – investment?
- EU carbon neutrality targets – what are the practical actions in industry?

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Thank you!

Questions?

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Satakunta University of Applied Sciences https://www.samk.fi/en/

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