

Inovation Pilot 2025 - Roskilde Energy Communities

Hard Nut Presentation

Group 58

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- **Competence Triangle:**

- Technical skills: Software engineering, Supply chain management, Systems engineering.
- Business/organizational skills: Project management, communication.
- Creative/innovative skills: Design thinking, idea generation.

- **Team members:**

- Ferhat (Role: Activist, Background: Production Eng. Eng.)
- Allan (Role: Team player, Background: Production Eng.)
- Mads (Role: Executive, Background: Computer Eng.)
- Asbjørn (Role: Chair man, Background: Chem. Eng.)
- Lucas (Role: Driver, Background: Software Eng.)
- Casper (Role: Innovator, Background: Software Eng.)

- **Fun Fact:**

- Ferhat and Allan grew up together, and Lucas builds Minecraft CPUs!

The Case

- **Who they are:** Roskilde Municipality's *Department for Urban Development & Green Transition*.
- **Challenge:** Support the creation of local *energy communities* in Roskilde.
 - Renewable electricity (solar PV, EV charging).
 - Heating solutions (shared heat pumps, collective systems).
- **Why it matters:**
 - Strengthen local engagement in the green transition.
 - Provide climate benefits and financial value.
 - Supplement large-scale energy networks (wind, waste, CHP, etc.).

The Hard Nut

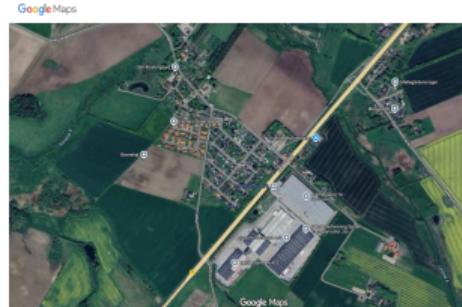
- The biggest challenge is **not technical**, but the **human factor**.
- Citizens, businesses, and the municipality must:
 - Work together effectively.
 - Stay motivated over time.
 - See both climate and financial value.
- To succeed, energy communities need:
 - Clear and simple models.
 - Strong collaboration structures.
 - Inspiring examples that others can replicate.

Initial Concept – Businesses as Energy Anchors

- Use **commercial rooftops** as hosts for solar PV installations.
- Form **local energy communities** where nearby households can buy into surplus electricity.
- Businesses act as **anchor partners**, providing roof space and benefiting from green branding + lower energy costs.
- Municipality supports with **legal templates, facilitation, and visibility**.
- Citizens gain access to **affordable renewable energy** without needing their own roof space.
- Scalable model: start with pilots → create inspiring examples → expand across Roskilde.

Example Candidate – Commercial Roof Potential

- **Location:** DSV Solutions A/S, next to Øm (~445 citizens, 6 km from Roskilde)
- **Roof annual solar influx:** 19508.90 MWh/yr
- **Electricity produced:** 1.92–2.64 GWh/yr (coverage 60–70%, efficiency 20–22%, PR 0.82–0.88)
- **Households supported:** 192–264 (10000 kWh/household/yr)
- **Perspective:** ~445 citizens \Rightarrow ~ 202 households \Rightarrow The roof could cover Øm's demand.



Solar irradiation data from <https://sologvindinfo.dk> (Energistyrelsen).

Our Plans – What's Next

- **Investigate Suitable Rooftops**
 - Map large commercial buildings with unused roof area.
 - Assess technical and structural feasibility for solar PV.
- **Engage Anchor Businesses**
 - Identify local companies willing to host installations.
 - Explore incentives: cost savings, green branding, CSR value.
- **Connect to Households**
 - Research citizen interest in buying into surplus electricity.
 - Understand barriers (financial, legal, motivational).
- **Develop Pilot Model**
 - Design a small-scale rooftop solar community.
 - Test feasibility: economics, regulation, community acceptance.