SOLAR HEATING & COOLING PROGRAMME
INTERNATIONAL ENERGY AGENCY

Industry workshop, *Feb 7th 2023*

"Demonstration projects of Solar Energy Buildings around the globe"

Solar energy communities in Aarhus, Denmark

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eUDP

DTU

Resource **E**fficient cities implementing **AD**vanced smart cit**Y** solutions, **READY**

- Demonstrate a **"whole city approach"**
- **Affordable retrofitting** of residential buildings and offices towards the zero-energy consumption
- Development and demonstration of new **low-temperature district heating** solutions
- Smart energy flexible solutions in buildings and introduction of **renewable energy** and **heat recovery** technologies

Project period: December 2014 – November 2020
Project coordinator: Reto M. Hummelshøj, COWI
Support: European Community, FP7-SMARTCITIES-2013, Demonstration of optimized energy systems for high performance energy districts.

Resource **E**fficient cities implementing **AD**vanced smart cit**Y** solutions, **READY**

Location information

Geographic Coordinates: 55.68° N 12.57° E

Climate Zone: Temperate climate

Building typology: Commercial/Residential

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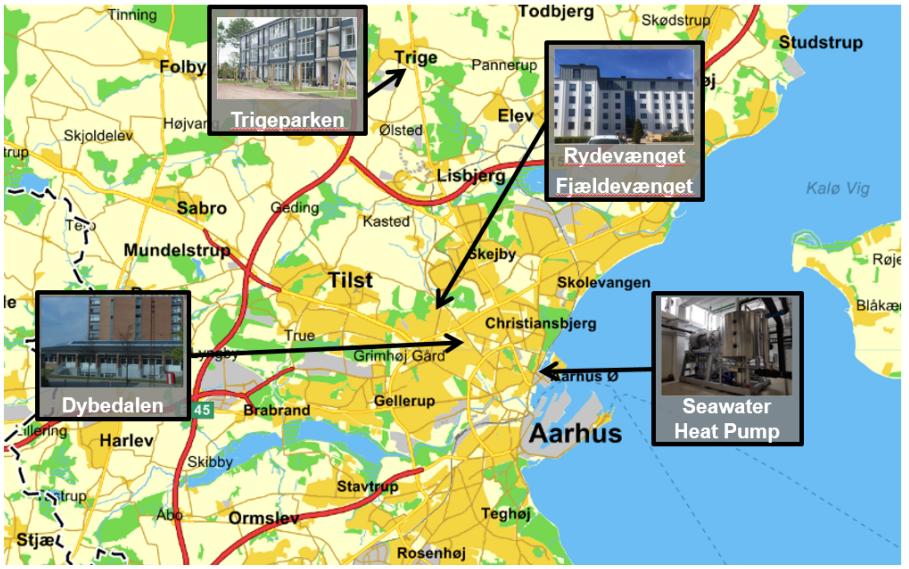
Overview of demonstration sites

BEI+VENT: 187 kWh/m² ⇓ 59 kWh/m²
≈ 69% energy reduction

BEI: Building Envelope Improvement
VENT: Balanced ventilation with efficient heat recovery
PV: Photo Voltaic
PVT: Photo Voltaic Thermal
WW-HR: Waste Water Heat Recovery
BESS: Battery Energy Storage System



BUILDING BLOCKS	Measures	Gross floor area [m²]	PV [kWp]	Heat pump [kW]	Solar thermal PVT [m²]
Fjældevænget	BEI, VENT, PV	14,151	153		
Rydevænget	BEI, VENT, PV, WW-HR	14,151	157	2	
Trigeparken	BEI, VENT, PVT, PV, BESS, WW-HR	19,140	140	44	743
OFFICE BUILDING					
Dybedalen	BEI, VENT, PV	1,446	29		
DISTRICT HEATING					
Seawater heat pump				1,000	
Total		48,888	479	1,046	743

Video

https://www.cowi.com/solutions/energy/ready-gears-Aarhus-for-green-energy-friendly-future

Resource **E**fficient cities implementing **AD**vanced smart cit**Y** solutions, **READY**

Priorities for the **"whole city approach"**

- Reduce the energy demand
- Efficient energy supply and renewable energy sources
- Coherence of all decisions and solutions within all parts of the community concerning energy, environment, economy and life quality of the citizens
- Continuous dissemination and training to support the optimization of the above-mentioned priorities

Continuous monitoring to ensure efficient operation of the Solar Energy Buildings

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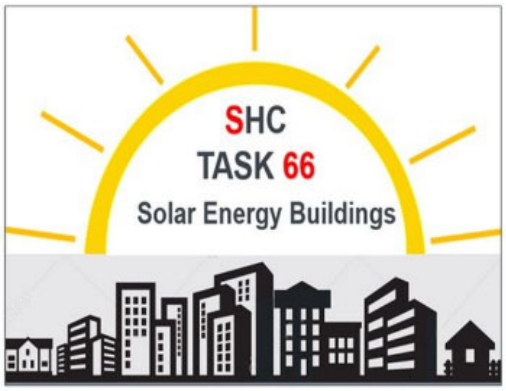
Thanks for listening!
Questions?

www.iea-shc.org



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