HOUSING ASSOCIATIONS AS ENERGY COMMUNITIES: FLEXSHAPE IN DENMARK

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www.flexshape.dk
WHO AND WHERE?

- In Denmark
  - Very **high electricity taxes** (wholesale \(<0.04\text{€/kwh}\), consumer\(>0.3\text{€/kwh}\))
  - Very **attractive business case** for **self-consumption**
  - Many non-profit **housing communities** renting flats to **tenants**
  - A (part of a) housing community can become a **self-led** energy community

- Where: Aarhus, Denmark

- Who:
  - DanSolar: PV turnkey solutions **and** electricity supplier
  - VisBlue: Down-scaled vanadium-flow batteries
  - FlexShape: ICT platform for energy communities – big and small
**Purpose and activities**

- **Purpose**
  - Turn a housing community into a self-sufficient renewable energy community

- **Activities:**
  - Housing community **signs contract** with DanSolar as electricity supplier
    - Single meter "at the entrance", all flats are "behind the meter"
  - Dansolar **finances and installs PV+battery**, FlexShape **installs ICT system**
  - Housing community tenants use electricity - **with help and guidance**
  - FlexShape ICT platform **optimizes self-consumption**, battery (de)charging, electricity **procurement from grid**, providing **grid services from battery**
  - After 10 or 15 years, **PV+battery ownership transfers** to housing community
**How Does It Work?**

- FlexShape Solar Predictors *predicts PV production*
- FlexShape Energy Planner *app predicts and optimizes loads to increase self-consumption*
- FlexShape Battery MPC Controller *plans battery (de-)charging to maximize self-consumption and*
- FlexShape Aggregator-as-a-Service
  - *Procures grid electricity when cheap*
  - *Provides grid services with battery*
Benefits, Business Model, Transfer

- Business model: 2 options
  - Tenants pay **same** price as before, ownership transfers after **10 years**
  - Tenants pay **20% less** than before, ownership transfers after **15 years**
  - DanSolar **finances installation, paid by no tax** on self-consumption
  - After ownership transfer, **>80% discount** on self-consumption

- Benefits
  - **No installation expenses** for housing community or tenants
  - Electricity **same price or cheaper** for tenants
  - **Higher savings and income** due to FlexShape ICT platform

- Transfer to other places
  - Technically straightforward, but business case depends on taxes (VAT++)
STATUS AND CONTACTS

- Status
  - First installation expected fall 2020
  - Stay tuned for experiences
- DanSolar [www.dansolar.dk](http://www.dansolar.dk)
- VisBlue [www.visblue.dk](http://www.visblue.dk)
- FlexShape [www.flexshape.dk](http://www.flexshape.dk) [torben@flexshape.dk](mailto:torben@flexshape.dk)

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