Introduction to Center Denmark

100% CLIMATE NEUTRALITY

Pathways towards a smart society

Sønderborg, 2019.10.02

CITIES

centerdenmark

intelligent energy

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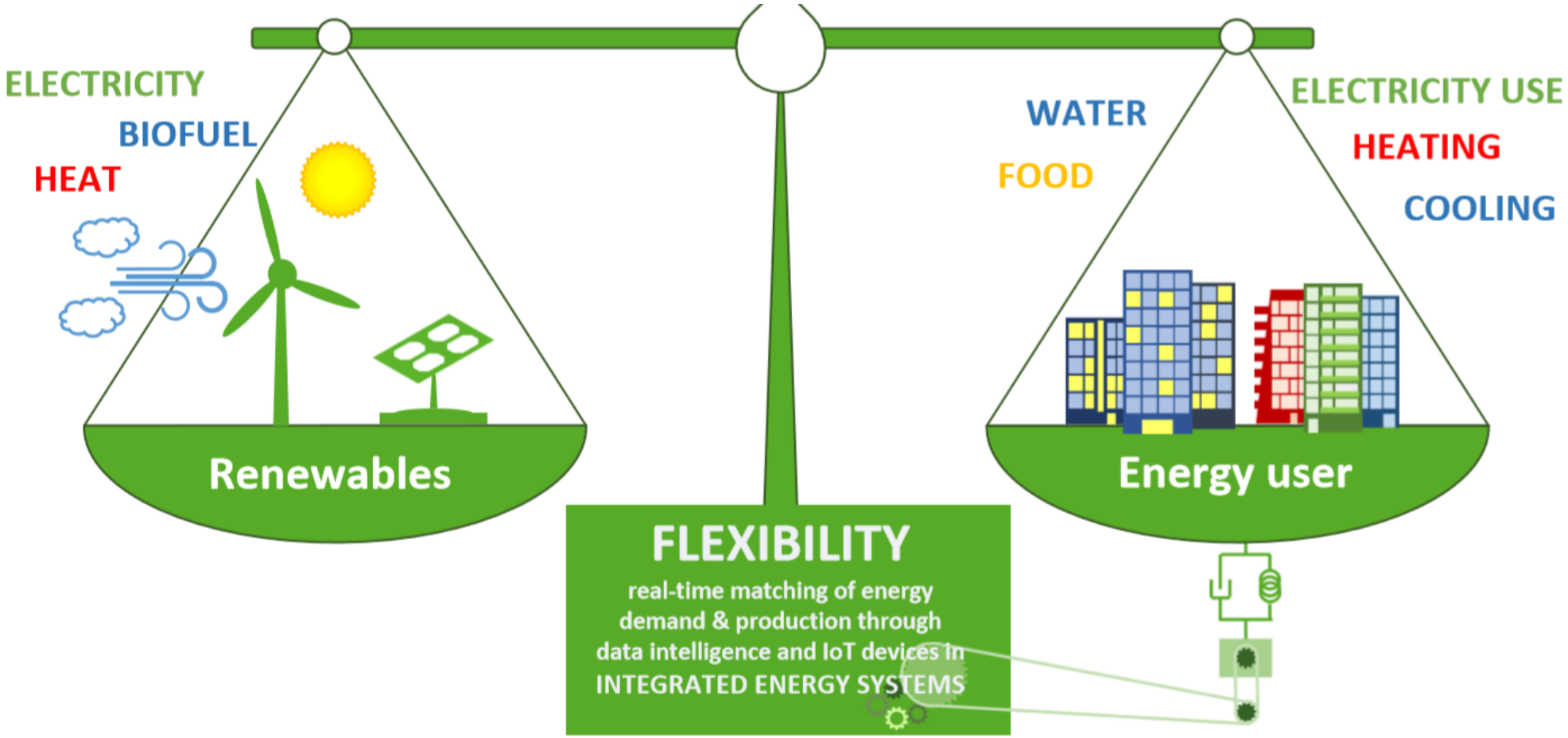

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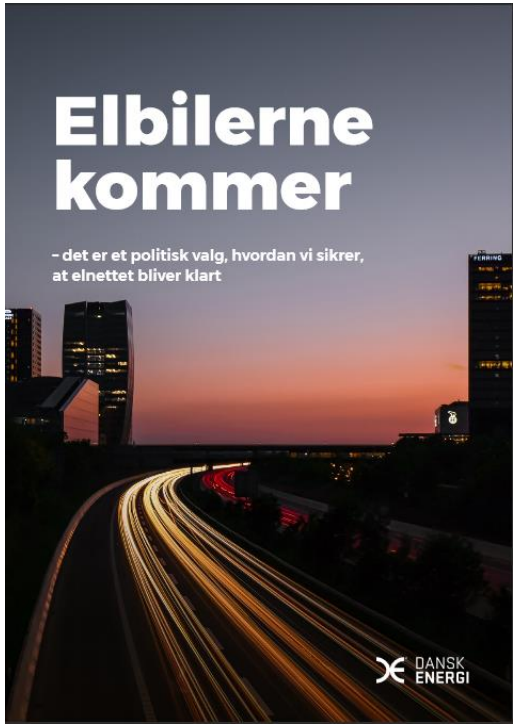

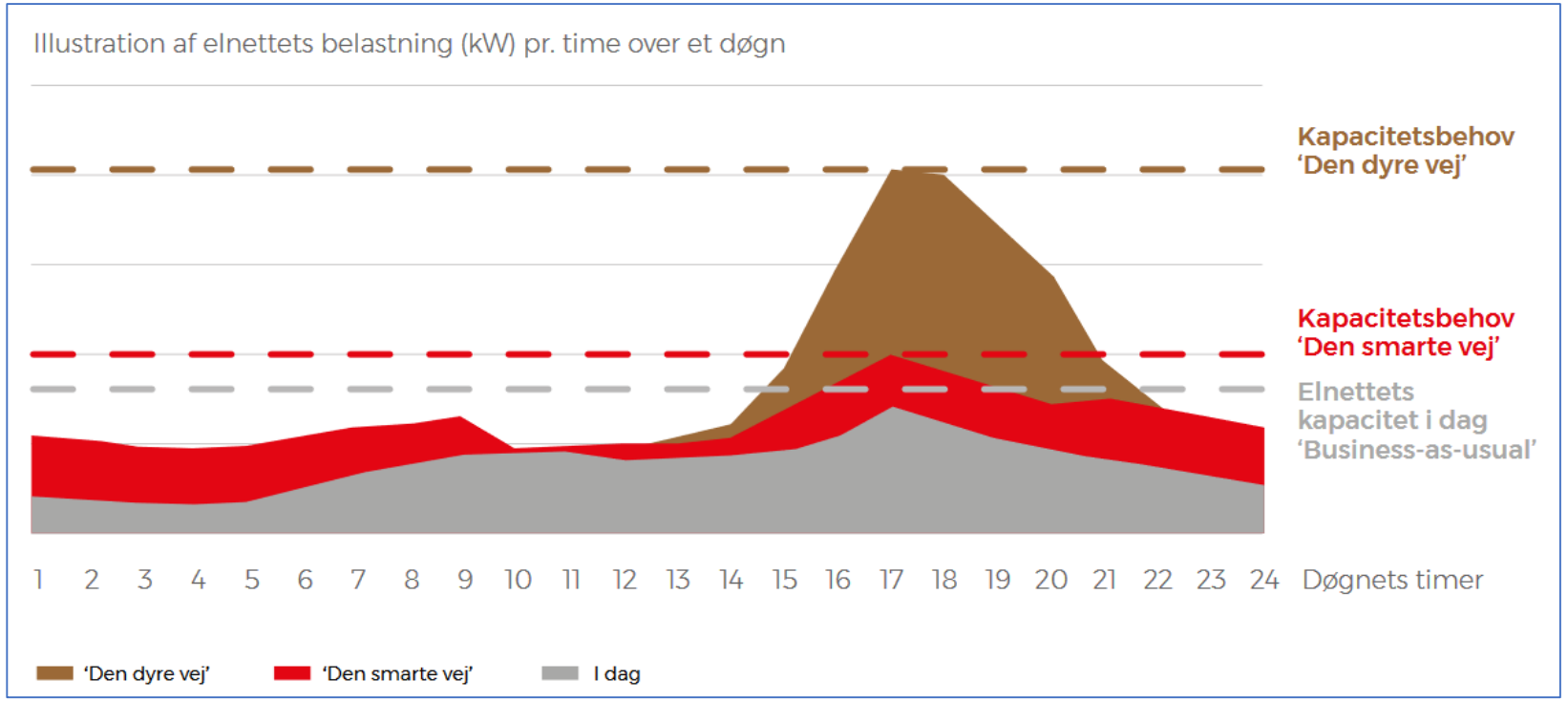

From the report 'Elbilerne Kommer', Dansk Energi 2019

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- Selskaberne skal frem mod 2030 arbejde systematisk og målrettet på at forbedre effektiviteten
- Fjernvarmeproduktionen skal omstilles, så den er CO_2-neutral i 2030
- Fjernvarmen skal understøtte den grønne omstilling af andre energisystemer frem mod 2030.

Extract regarding instruments to reach the target:

”Et af hovedelementerne i at nå målet om CO2-neutral fjernvarme i 2030 er, at fjernvarme fremover i langt højere grad skal **elektrificeres**, så en stor andel af produktionen sker på elkedler og store eldrevne varmepumper, som blandt andet anvender overskudsvarme og geotermisk energi som varmekilder.”

From the report ‘CO2- Neutral Fjernvarme i 2030’, Dansk Fjernvarme 2019

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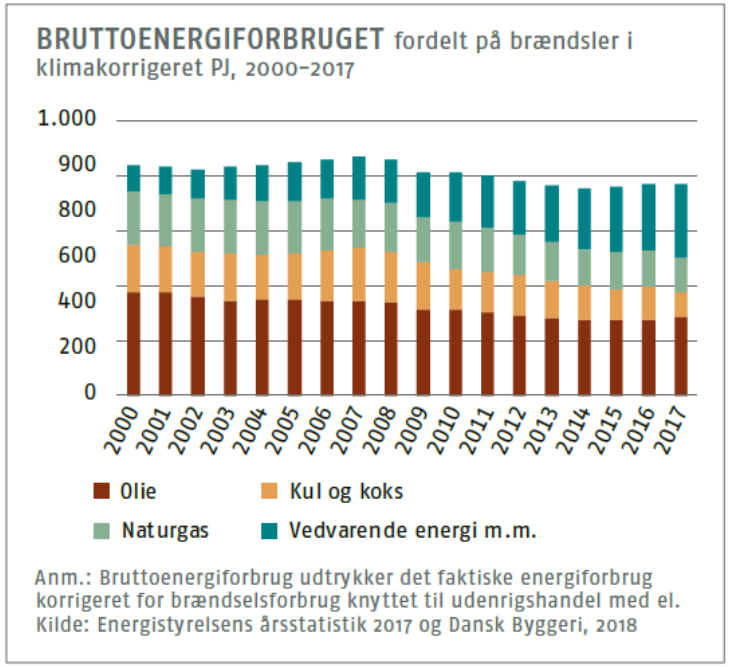

One of many recommnedations in the report:

”See buildings as an integrated part of the energy system”

From the report ‘Cbyggeriets Energianalyse 2019’, Dansk Byggeri 2019

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10 recomendations for the green transition, January 2019

Members of the growth team

- Lars-Peter Søbye (formand), CEO, COWI
- Christian Venderby, GSVP, Vestas
- Claus Madsen, CEO, ABB Danmark
- Hanne Christensen, Managing Director, Water, Rambøll
- Helene Egebøl, Adm. direktør, Schneider Electric
- Johanne Staugaard Johansen, Founder & CEO, Maple
- Mads Nipper, CEO, Grundfos
- Malou Aamund, Direktør, Google Danmark
- Martin Manniche, Founder, Chairman & CEO, Greenwave Systems
- Märtha Rehnberg, Medstifter & partner, DareDisrupt
- Steen Donner, CEO, DTU Science Park
- Thomas Dalsgaard, Executive Vice President, CEO, Bioenergy & Thermal Power, Ørsted

Link to the rapport:
https://em.dk/media/12935/danmark-som-frontlober-i-den-gro-nne-omstilling_web_accessible.pdf

> ”Det er vækstteamets ambition, at der i to store danske byer kan etableres storskala referenceprojekter inden for 2-3 år, hvor fx en hel by eller bydel fungerer som testområde og udstillingsvindue for implementeringen af innovativ energi- og miljøteknologi.”

Center Denmark

Målsætninger

En mere digitaliseret grøn sektor

Styrket eksport af grøn teknologi

Øget grøn værdiskabelse

Temaer for anbefalinger

- Forbedret adgang til data
- Bedre rammer for test og demonstration i stor skala
- Flere startups og mere innovation
- Globale markeder og øget eksport
- Opfølgning

Center Denmark

What is Center Denmark?

Center Denmark is a **National center** for R&D, test & demonstration and education with focus on **data intelligence and integrated energy systems:** Identifying and utilize flexibilities on demand side across energy systems

Center Denmark is established an independent non-profit organization

Founding partners:

EWII ENERGINET ENERGY COOL more cooling-less energy DTU AARHUS UNIVERSITY AALBORG UNIVERSITY DENMARK SDU University of Southern Denmark

Vision

Center Denmark will **accelerate the green transition towards 100 % renewable energy** in DK through digitalization and sector coupling and thereby unlocking flexibilities and utilize digital opportunities at all levels across energy systems

Mission

Center Denmark will develop the best-in-class nationwide data platform for energy related data, that combined with forefront artificial intelligence identifies flexibilities on the demand side across the energy systems. Development of decision tools with real time capabilities will enable our partners to develop new innovative business models and commercial services targeting smart grid features for industrial sector and private households.

Center Denmark will make the data platform a foundation for an international framework for research, representative and scalable tests and demonstrations as well as education.

Center Denmark

Offerings

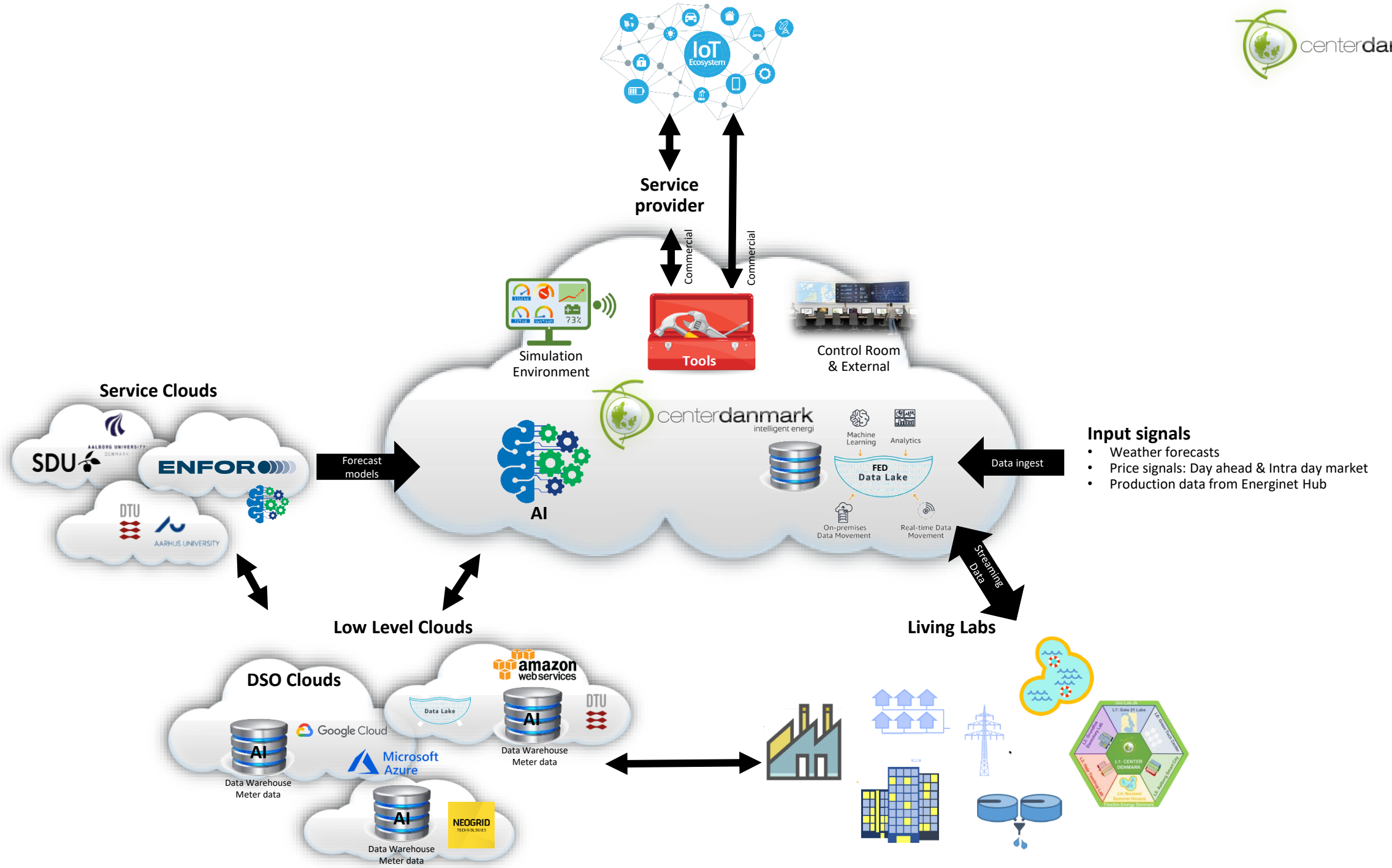
- Real-time **DECISION TOOLS** for controlling energy consuming units intelligently for limited environmental impact, economic incentives and grid capacity constraints.

- Center Denmark creates an **INCUBATOR** environment where we share knowledge, foster new ideas and develop new business models utilizing new technologies and dynamic taxes. The incubator environment is for start-ups and established companies, industry associations, public organizations, universities and funding and network partners etc.

- **SIMULATION ENVIRONMENT** for new business models and technologies in a digital representation of the energy ecosystem utilizing dynamic tariffs and taxes.

- **TEST AND DEMONSTRATION** in a representative real-life test environment with focus on demonstrating effect of energy system technologies as well as impact on environment, people and nature. Center Denmark will digitally connect Living Labs for scaling and establish new scalable micro-grid test and demonstration facilities.

Center Denmark IT Value stream



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Energy cockpit: Visualization, Simulation and control

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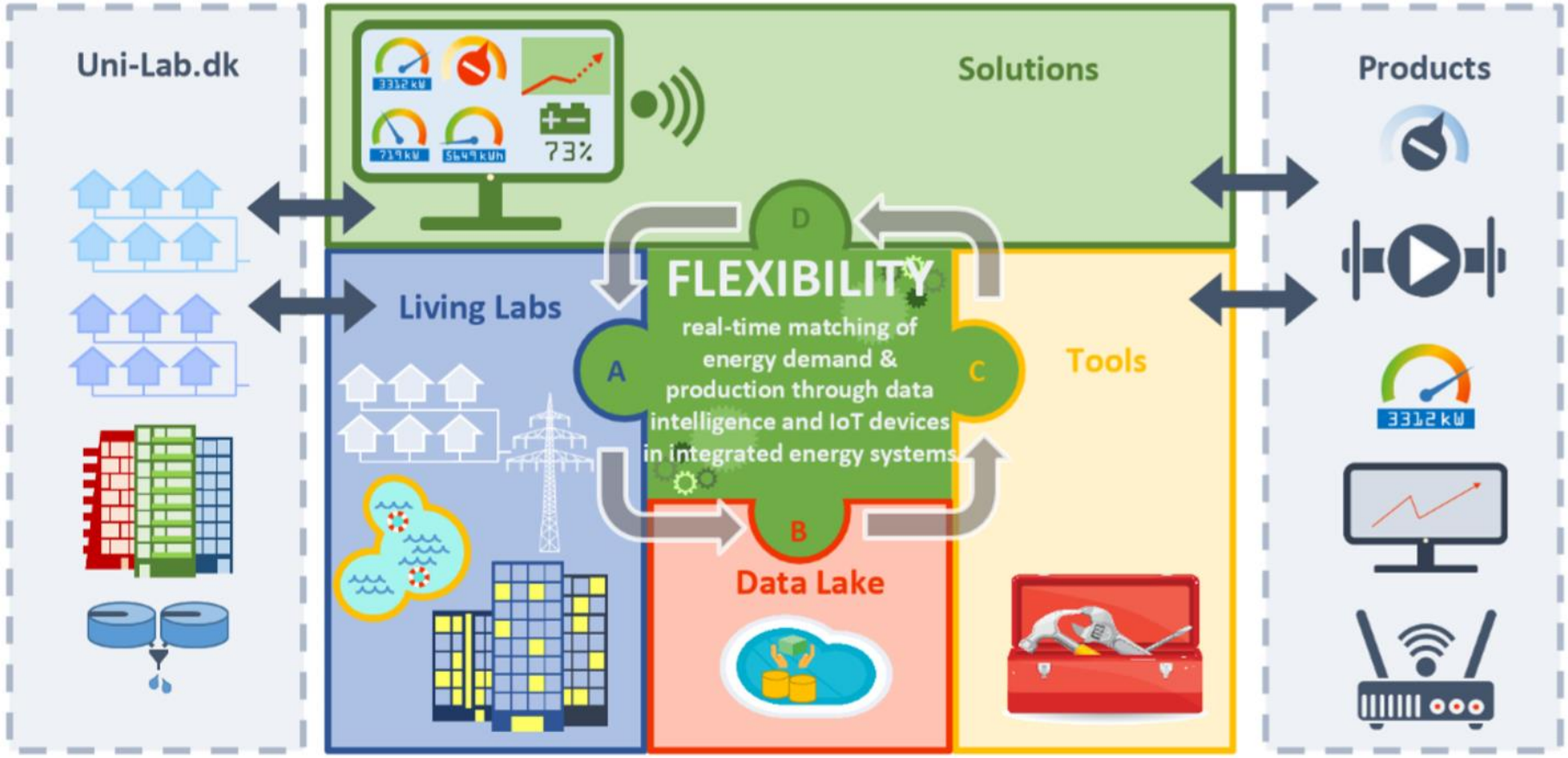
FED FLEXIBLE ENERGY DENMARK

Innovation Fund Denmark



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FED FLEXIBLE ENERGY DENMARK

Energy supply and infrastructure

TREFOR
EWII
KONSTANT
Aalborg Forsyning
NEAS ENERGY
HTK Forsyning A/S

Data Lake and AI

centerdenmark
intelligent energy

Universities

DTU
AALBORG UNIVERSITY DENMARK
daisy
Center for Data-intensive Systems
AARHUS UNIVERSITY
SDU
University of Southern Denmark

Applications

NOVASOL
ABB
Danfoss
Tomorrow

Software and smart grid

xtel WIRELESS
EMD International A/S
www.emd.dk
EURISCO RESEARCH & DEVELOPMENT
NEOGRID TECHNOLOGIES
ENFOR
FlexShape

Innovation Fund Denmark

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HEAT 4.0 (HEATman) Digital platform til optimering og styring af fjernvarmenettet

Med HEAT 4.0 vil vi udvikle et værktøj til optimering af fjernvarmenettet. Som det er nu, er der en række forbedringspotentialer som projektet adresserer: nedbringelse af ledningstab i fjernvarmenettet, sænkning af fremløbstemperaturen, lægekagesøgning i nettet og forbedret samspil mellem de IT- systemer der anvendes hos fjernvarmeselskaberne. Alt sammen noget der fører til et lavere varmeforbrug og mindre spild og dermed en effektivisering.

Værktøjet hedder HEATman og er i realiteten et stykke cloudbaseret software, som ved at sammenkøre data for varmeforbrug, vejr og den aktuelle driftssituation i fjernvarmenettet løbende kan beregne den optimale driftssituation og afsløre spild i nettet.

En forudsætning for et digitalt værktøj er **adgangen til data**. Opbygningen af en datalake, som er en bærende ide med **Center Danmark** projektet, vil være et oplagt afsæt for HEATman projektet, som netop kan gøre brug af de data der opsamles i en datalake.

Center Denmark

Partnership with Center Denmark

- **Support the nationwide initiative to foster data-intelligent sector coupling**
- Access to a nationwide data platform with energy data
- Simulation environment for framework conditions and business models
- Strong network within sector coupling and digitalization
- Focused research and demonstration program
- Access Incubator environment for business development and laboratories
- Access promotion show room

Sign-up here:
https://www.centerdenmark.com/bliv-partner/

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intelligent energy

Data Platform Manager

Do you want to take the green transition in Denmark to the next level with integrated energy systems? As our new Data Platform Manager, you will take part in creating a national data platform, using machine learning to identify potential flexibilities across energy systems, and providing the foundation for optimised utilisation of renewable energy through new innovative business models. You will be employed in our newly established research centre in the Danish Triangle Region where you will play an important role in developing the company professionally and culturally.

https://candidate.hr-manager.net/ApplicationInit.aspx?cid=307&ProjectId=183981&DepartmentId=21768&MediaId=3029

Center Denmark

Thank you for your attention!

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