

Turning SME ideas into New Smart Energy Solutions

- Session Innovating SMEs -

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Content

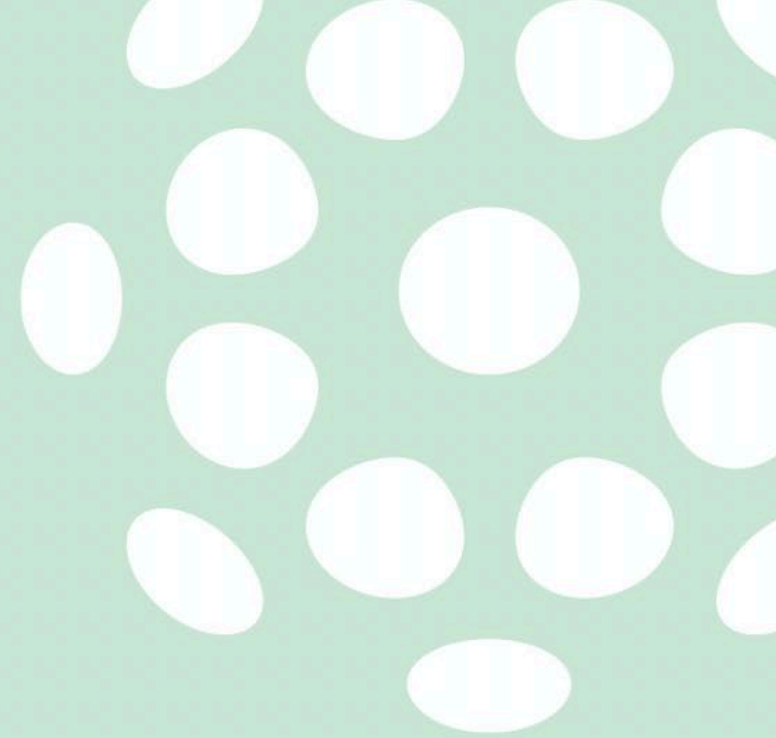
- Introduction to Energy Cluster Denmark - ECD -
 - Innovation Projects
 - Triple Helix
 - Focus Areas/Sectors
- The strenght of the Energy Sector seen in the perspective of data.
 - SMEs in the Danish Energy Sector
- ECDs portfolio of Innovation Projects
 - Currently 66
- Ideas to solutions

Energy Cluster Denmark

We are a national platform for innovation in the energy sector.

Energy Cluster Denmark is Denmark's cluster organization for the entire energy sector. Our focus is to ensure that Danish companies develop the new technological energy solutions that the world demands.

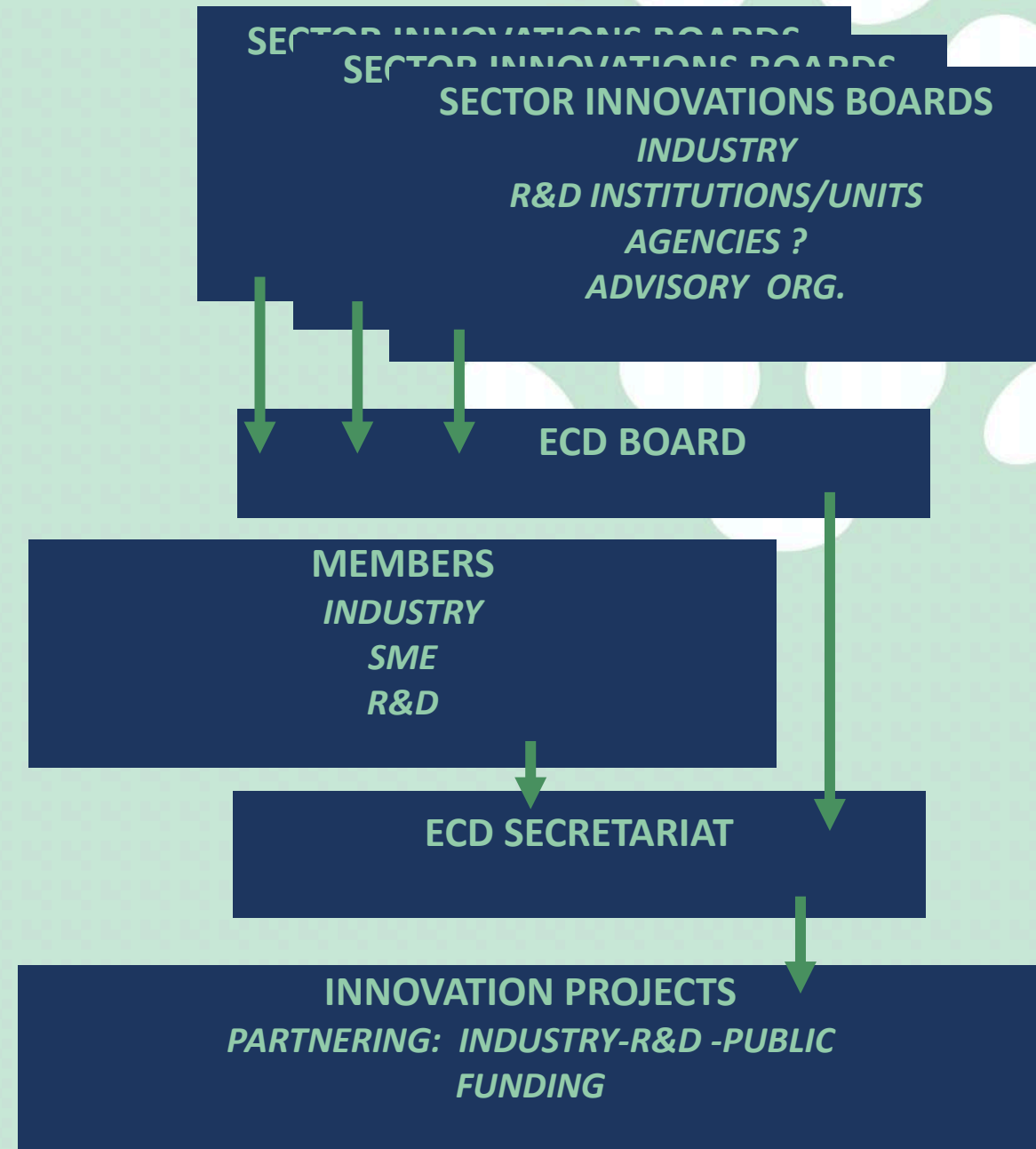
Our ambition is to create a Danish Silicon Valley for energy and continue to develop our energy system that is already world-class. We help facilitate and raise funds for concrete innovation activities and innovation projects that always involve partnerships between small and medium-sized companies, global market-leading companies and leading research and knowledge institutions.



We are the platform for innovation in the energy sector

We are shaped by the industry
and driven by the need
for one strong focal point for innovation.
It is absolutely crucial to ensure
a globally competitive Danish energy sector.

We are already working with 400 members
and a project portfolio of DKK 800 million,
and



Our Energy Focus

**ENERGY-
PRODUCTION**

**ENERGY-
INFRASTRUCTURE**

**ENERGY-
STORAGE**

**ENERGY-
EFFICIENCY**

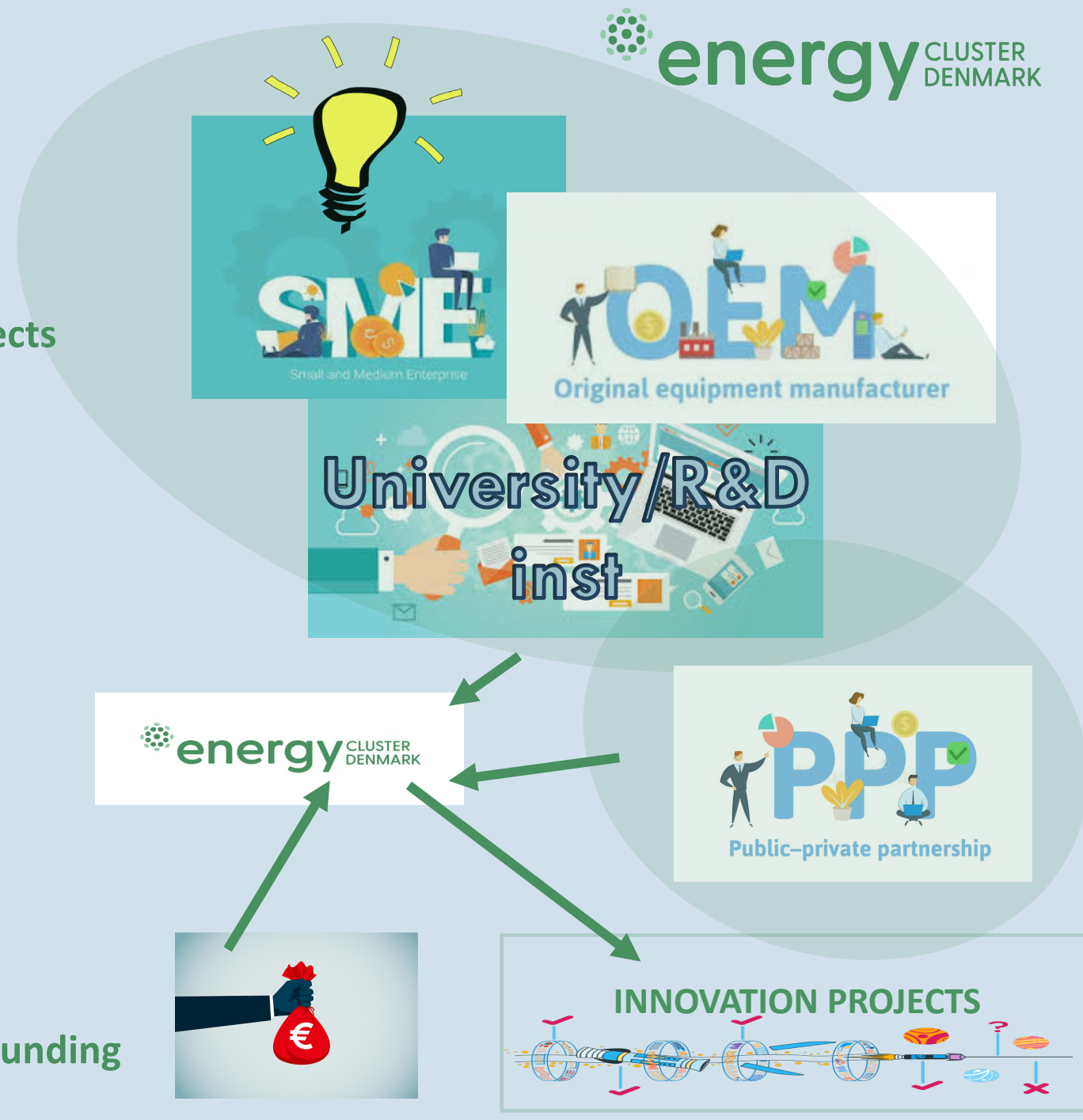
SECTOR LINK, SYSTEM INTEGRATION , DIGITALIZATION

What we do

- Initiating (Smart)Energy Innovation projects
- Facilitate Innovation
- Business Development and Growth(Erhvervsfremme)

How do we do it?

- Triple helix
- Focus on SME
- Collaboration between SMEs and large Companies and e.g. PPP
- National og Internal R&D
- Funding: National and EU/ International Funding



National Presence

- Aalborg
 - Aarhus
 - Esbjerg
 - Fredericia
 - København
 - Sønderborg
-
- 37 Regional based energy professional staff



The Danish Energy Sector

Analysis from 2019 shows that the Danish Energy sector plays an important role in the Danish ecosystem.

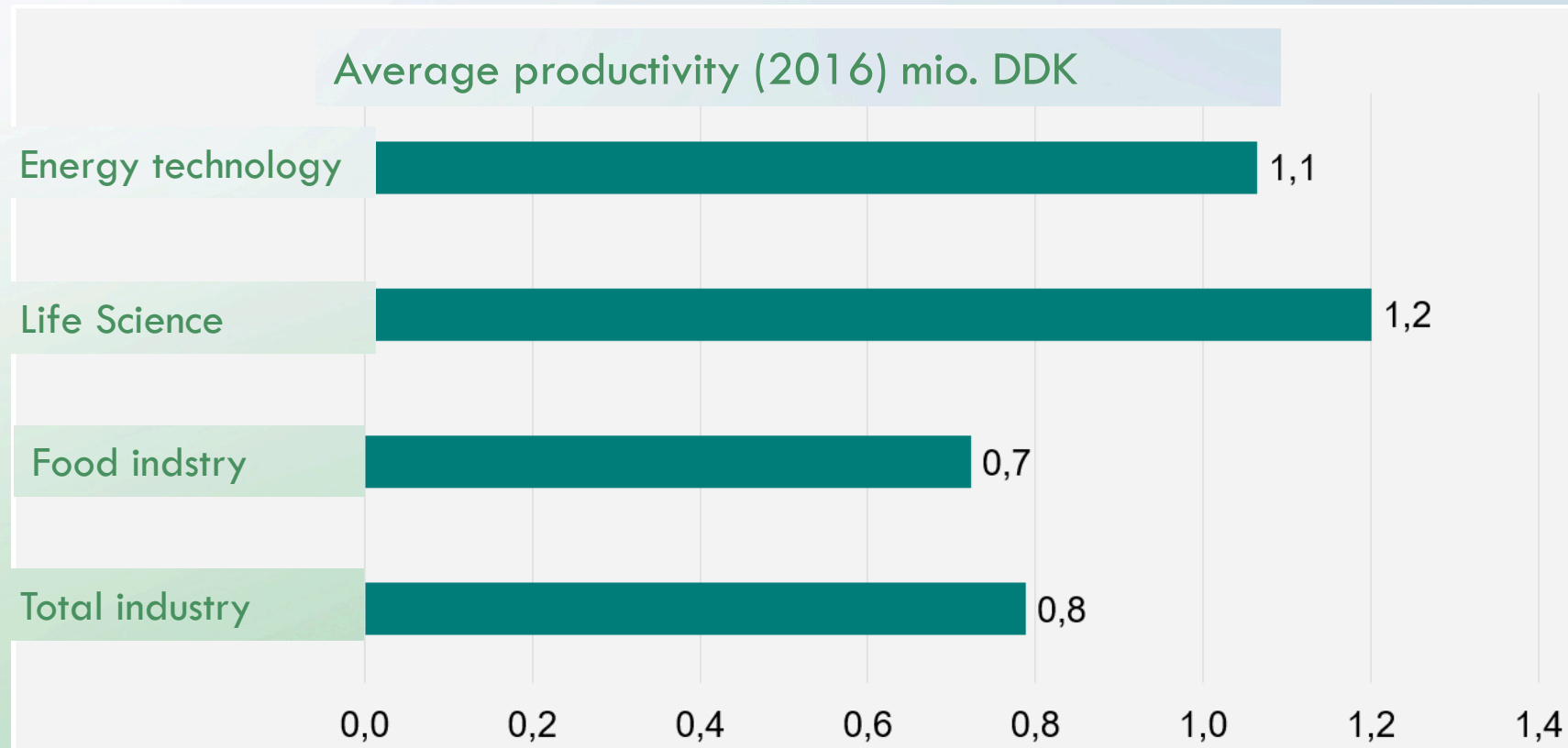
Denmark, with its strong position within the energy technology sector and the ability to work across innovation-driven partnerships, has already made a significant contribution to the green transition of the future and will do so in the future.

Approximately 3,200 companies in Denmark (2017) work with energy technology, according to the analysis.

However, more important is it to highlight that these innovative companies only corresponds to aprox. 1 % of all danish companies. Neverthess, the analysis shows that this 1 % of danish companies stand for 17,5 % of all danish export. (2017)

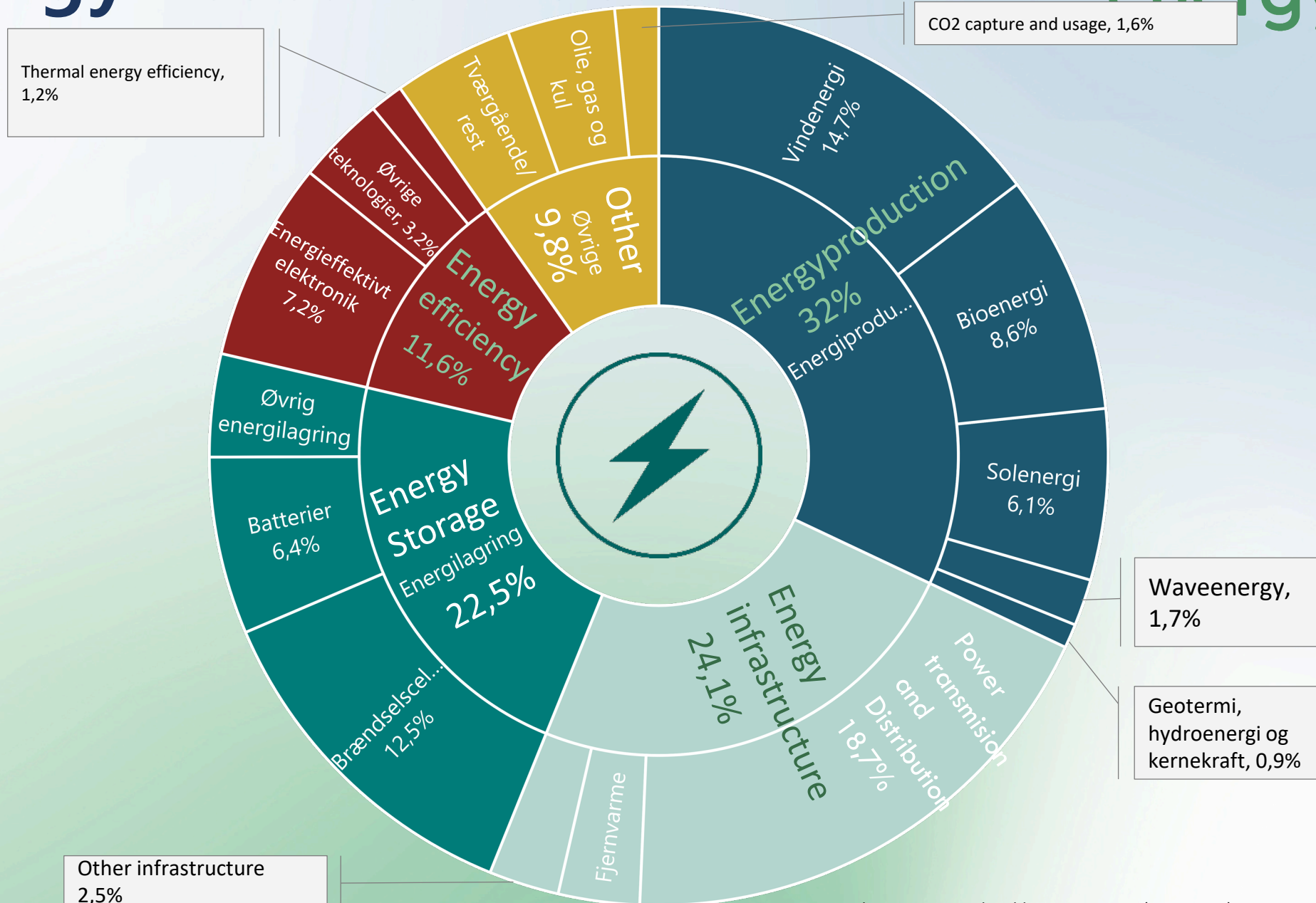
Energysector areas (2017)	Companies/ Business	No of Full-time employees	Value of Export (mia. DKK.)
Energy production	378	24.673	44,1
Energy infrastructure	777	25.767	10,6
Energy storage	98	1.172	0,6
Energyefficient technologies	1.095	53.941	56,8
Consultancy	892	25.472	5,1
Total	3.240 (4000+?) (2019)	131.025 (?) 2019	117,2 122,6 (2019)

The energy cluster versus other clusters?



Source Statistics Denmark (REGN1)

Energy research focus



Energy Cluster Denmark Innovation Projects

- ❖ ECD facilitate and administer currently 66 Danish innovation projects
- ❖ Triple helix and SME driven innovation – Combining entrepreneurial spirit and solution oriented often with OEMs and Solution Owners/Customers involved.

❖ All focus areas are included -

Energy Production: Drone based offshore Wind sparepart delivery for improved maintenance
Salt based cooling of Nuclear system

Energy infrastructure: FlexiCharge = Storage/quickcharge solution for electric cars charging

Energy Efficiency: Total Smart House efficiency; Energy efficient Mobile Antenna net

Energy storage: PtX solutions for marine sector- Green Vessel; Backup Fuelcell/battery solutions;
Thermal storage

SmartEnergy/system integration: At District heating, Optimal biomass/heatpump(power) production

Conclusion

- ❖ The Danish Energy Sector has a **strong position in Danish Innovation**
- ❖ Focus are on **all energy sectors**
- ❖ **Tradition for SMV, OEM and Universities cooperate on** Innovationprojects focusing on new solutions. Many include public authorities with a triple helix focus
- ❖ Focus on **Smart Energy Solutions with Sector and System Integration**

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