



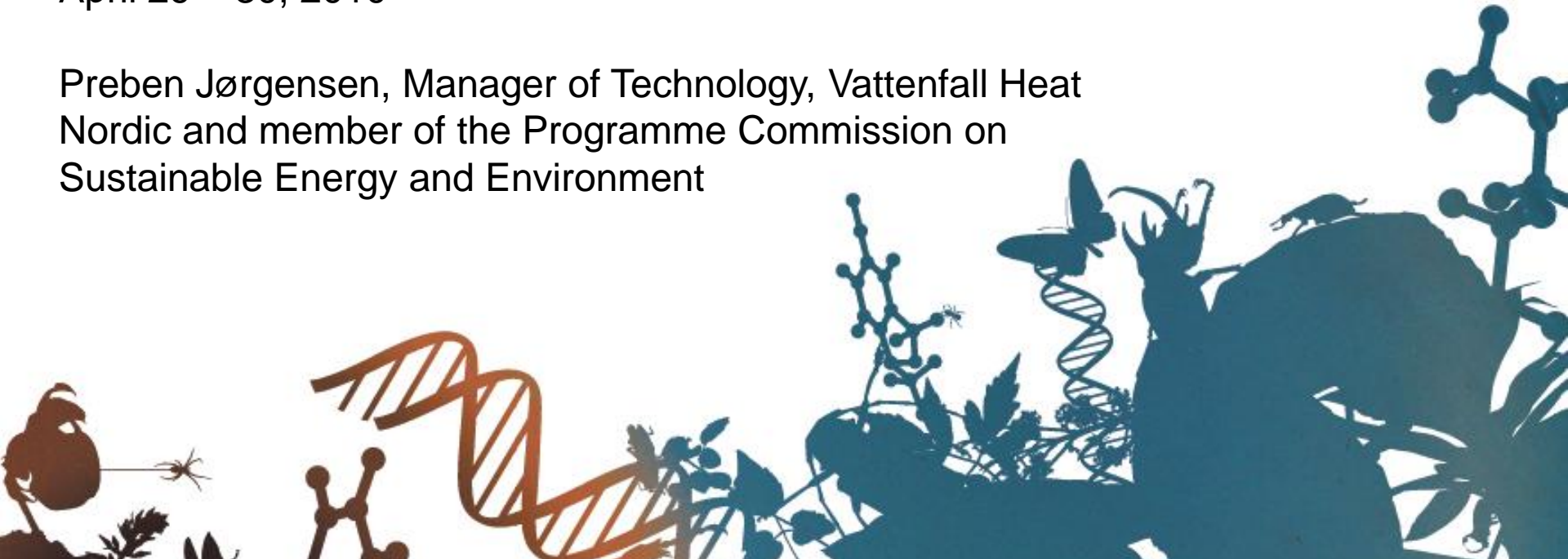
Forsknings- og  
Innovationsstyrelsen

Ministeriet for Videnskab  
Teknologi og Udvikling

# Funding Opportunities for Research Collaboration

Energy Storage Workshop (Santa Clara, CA)  
April 29 – 30, 2010

Preben Jørgensen, Manager of Technology, Vattenfall Heat  
Nordic and member of the Programme Commission on  
Sustainable Energy and Environment

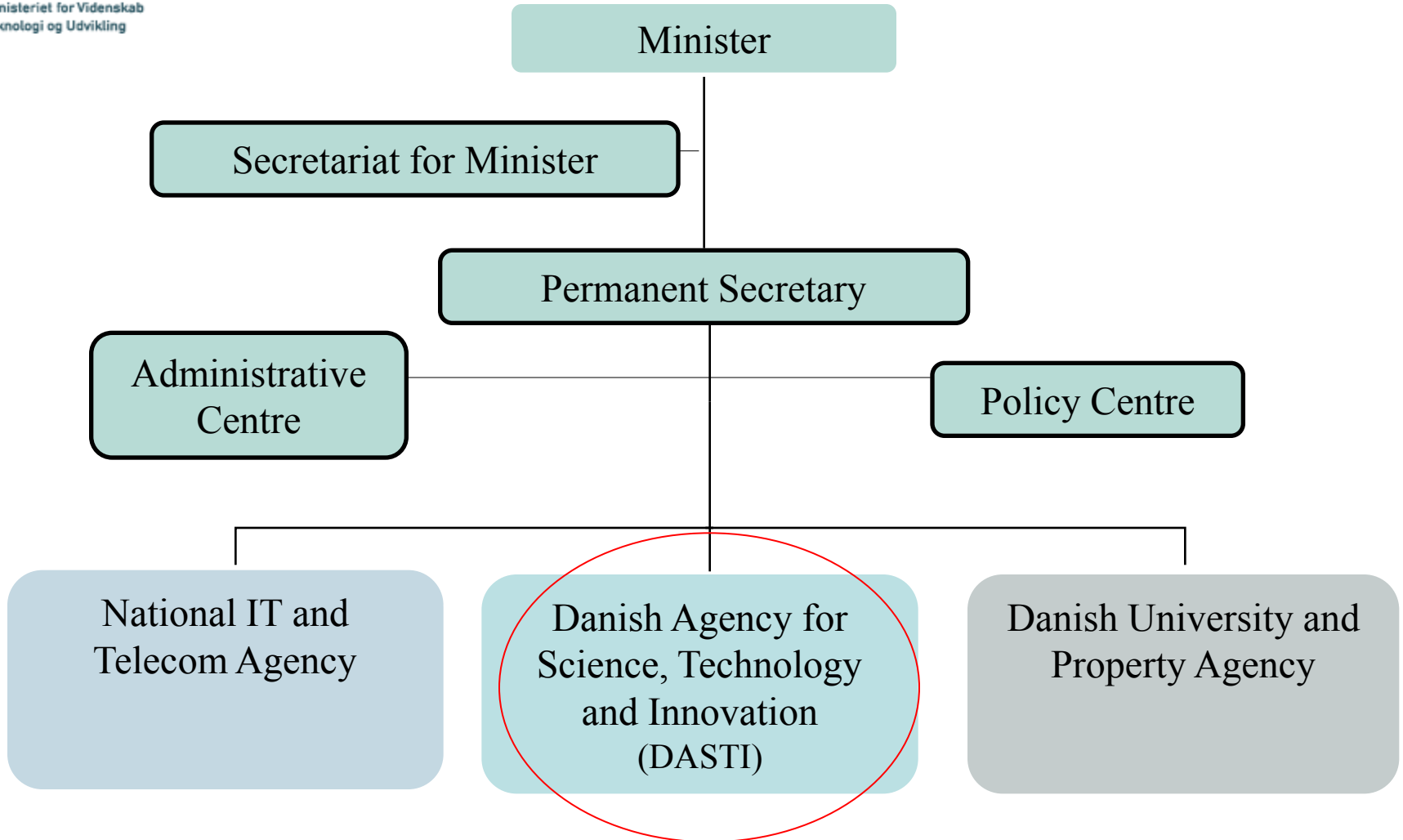




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# Ministry of Science, Technology and Innovation



Innovations Centers: Munich, Shanghai, Silicon Valley, CA, US + Beijing University

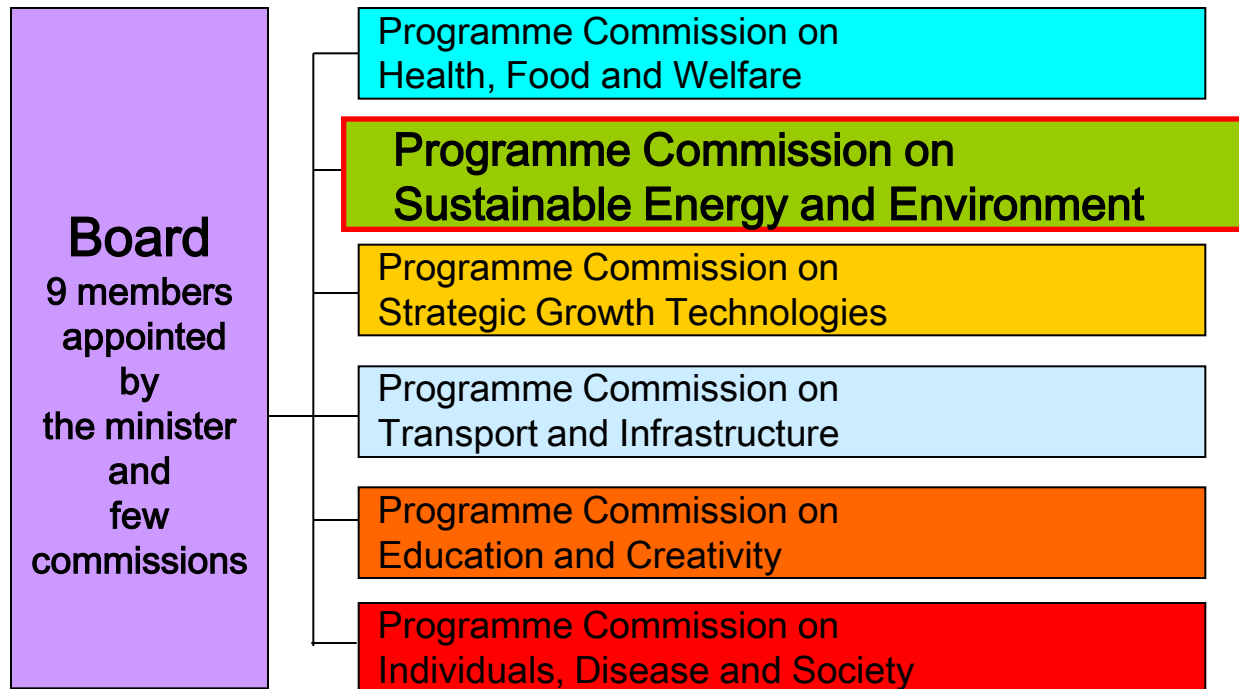


# The Danish Advisory and Funding System for Research and Innovation





# The Danish Council for Strategic Research 2010

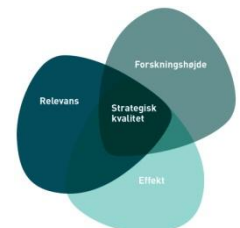
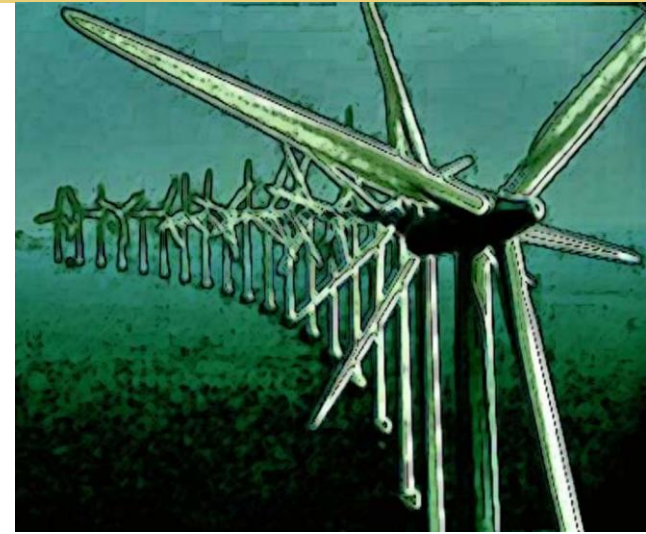


**(Established 2004)**



# Focus in 2010

1. More research education
2. Increased internationalization
3. Larger projects and grants
4. Increased public-private research collaboration





# Funding Instruments

Strategic  
research  
centres

Approx 30 mill. DKK  
(Approx. 5 mill. USD)

Duration 5-7 years

Strategic  
research  
alliances

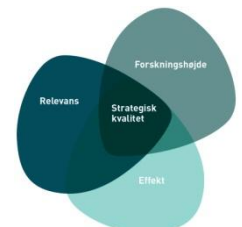
15 - 20 mill. DKK  
(3 – 4 mill. USD)

Duration approx. 5 years

Strategic  
research  
projects

Min. 10 mill DKK  
(Min. 2 mill. USD)

Duration 3-5 years





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# The Value Stream of Energy Research in Denmark 2010 1 billion DKK (180 mill. USD)

Basic research      Applied research      Development Demonstration      Commercialization



danskenergi | eliforsk

**ENERGINET** / DK

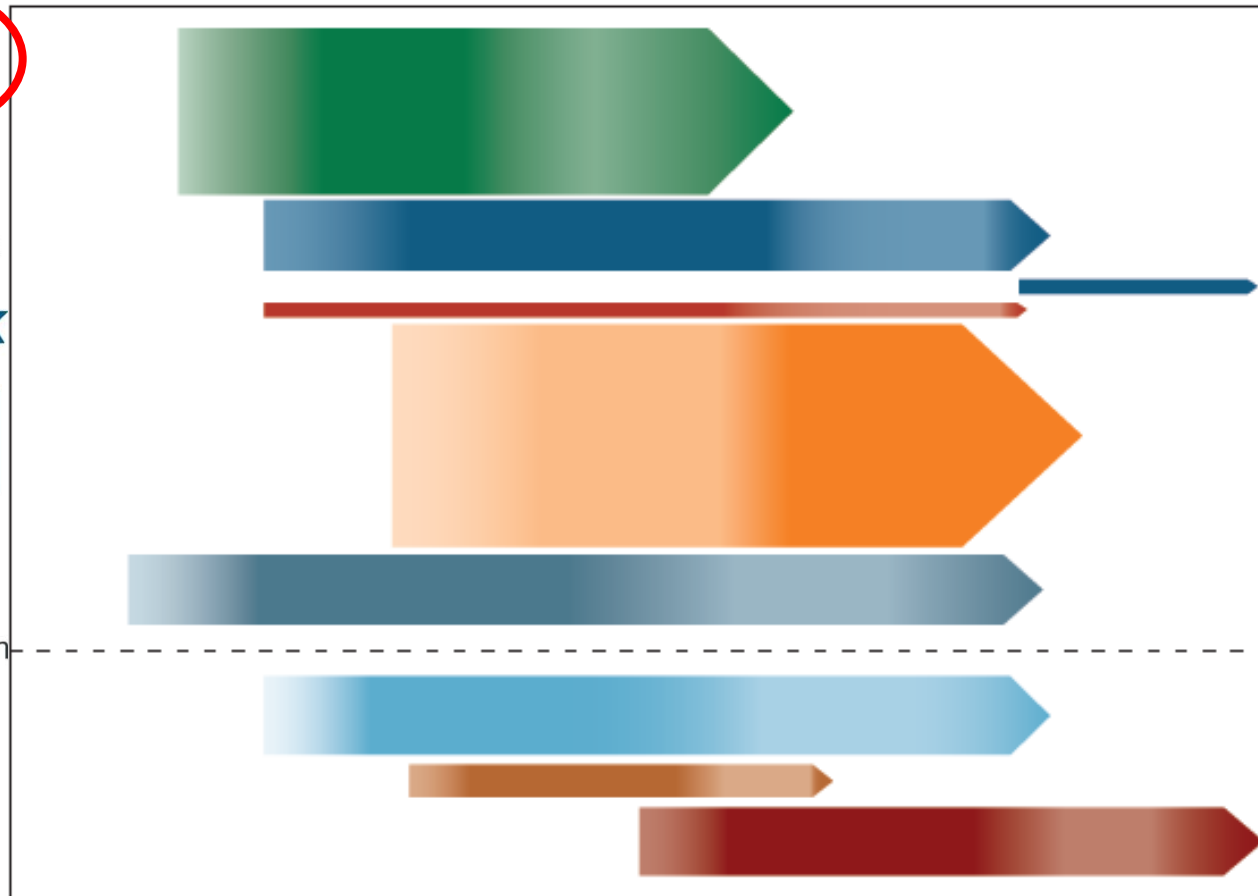


Højteknologifonden

EU: FP7-Energy

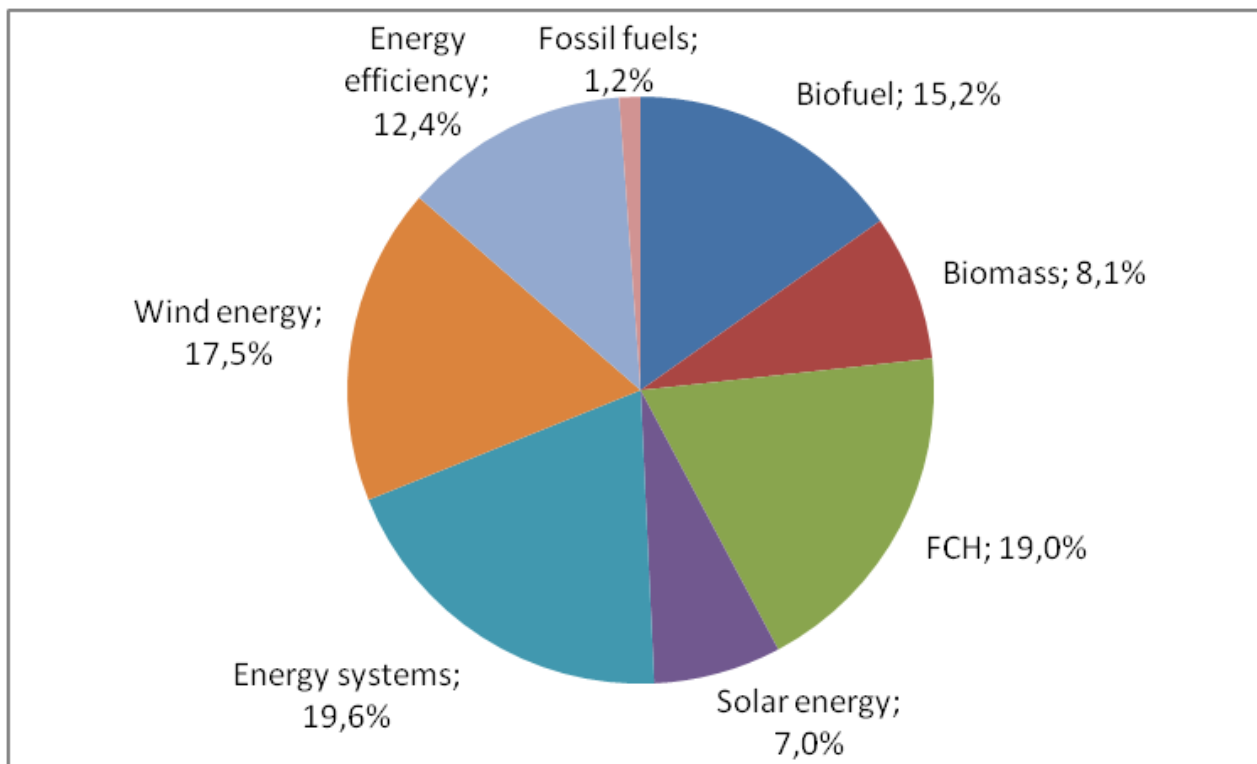
Green Lab

Grøn Fond





# The Energy Strategic Research Portfolio







# International Energy Research Collaboration

- Up to 20 % of Danish Strategic Research Means can be used in international collaboration
- Common Chinese-Danish energy funding in 2009 – 2011
- Innovative Energy Technologies (N-INNER) as a cross Nordic national calls and funding in 2007, 2009 and 2010
- EU Programmes
- IEA collaboration
- Bilateral agreements with USA, Canada and Japan and more



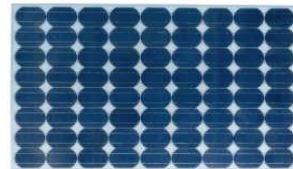
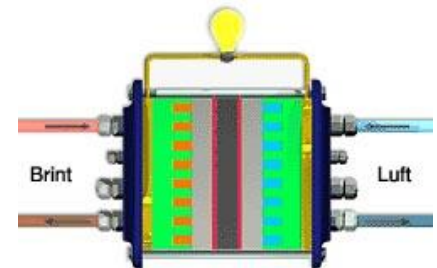
# Sustainable Energy

## More than 70 grants in total

- **Priorities**
- Research education
- Cooperation research institutions and private companies
- International cooperation

- **Supported energy technologies**

- Wind power
- Energy efficiency
- Biofuels
- Biomass and environment
- SmartGrid and flexible power production
- Renewable energy market
- Fuel cells and hydrogen
- Photovoltaic (PV)



Many innovative projects as:

- Magnetic cooling
- PV – polymer production



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## Links and Publications

### Links

Energinet.dk – Danish Transmission System Operator:  
<http://www.energinet.dk/en/menu/Frontpage.htm>

Technical University of Denmark: [www.dtu.dk](http://www.dtu.dk)

Risø DTU: National Laboratory for Sustainable Energy  
<http://www.risoe.dtu.dk/>

Aalborg University: <http://en.aau.dk/>

Danish Energy Association  
<http://www.danishenergyassociation.com/>

University of Copenhagen: <http://www.ku.dk/english/>

University of Southern Denmark: [www.sdu.dk](http://www.sdu.dk)

Aarhus University: [www.au.dk](http://www.au.dk)

### Publications

Publications in general:  
<http://en.fi.dk/publications>

Energy09: Annual report on Danish  
energy research Programmes  
<http://en.fi.dk/publications/2009/energy09/>  
(Energy10: To be published in June).

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Technology and Innovation  
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DK-1260 Copenhagen K  
Tel: +45 3544 6200  
E-mail: [fi@fi.dk](mailto:fi@fi.dk)  
<http://en.fi.dk/>





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# Thank you for your attention!

Contact information:

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Or visit [www.fi.dk/dsf](http://www.fi.dk/dsf)





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# Backup



# Vision



The Danish Council for Strategic  
Research strengthens research...

.with high international impact...

.addressing significant challenges to  
society...

...which potentially contribute to  
development of welfare.



# Characteristic strategic features

- Research themes are **determined politically** (government and parliament, annual finance act)
- **Problem oriented** rather than subject oriented research
- **Cross-disciplinary** research
- **Useful research** - *e.g.* as basis for further research or for innovation (in the private and/or public sector)
- **Not only 'applied research'** – also **basic research**, but with value for the Danish society. Research that drives the continuing growth, development of welfare or solve important societal problems *e.g.* energy, environment, climate and health.
- Research **performed in interaction** with potential users





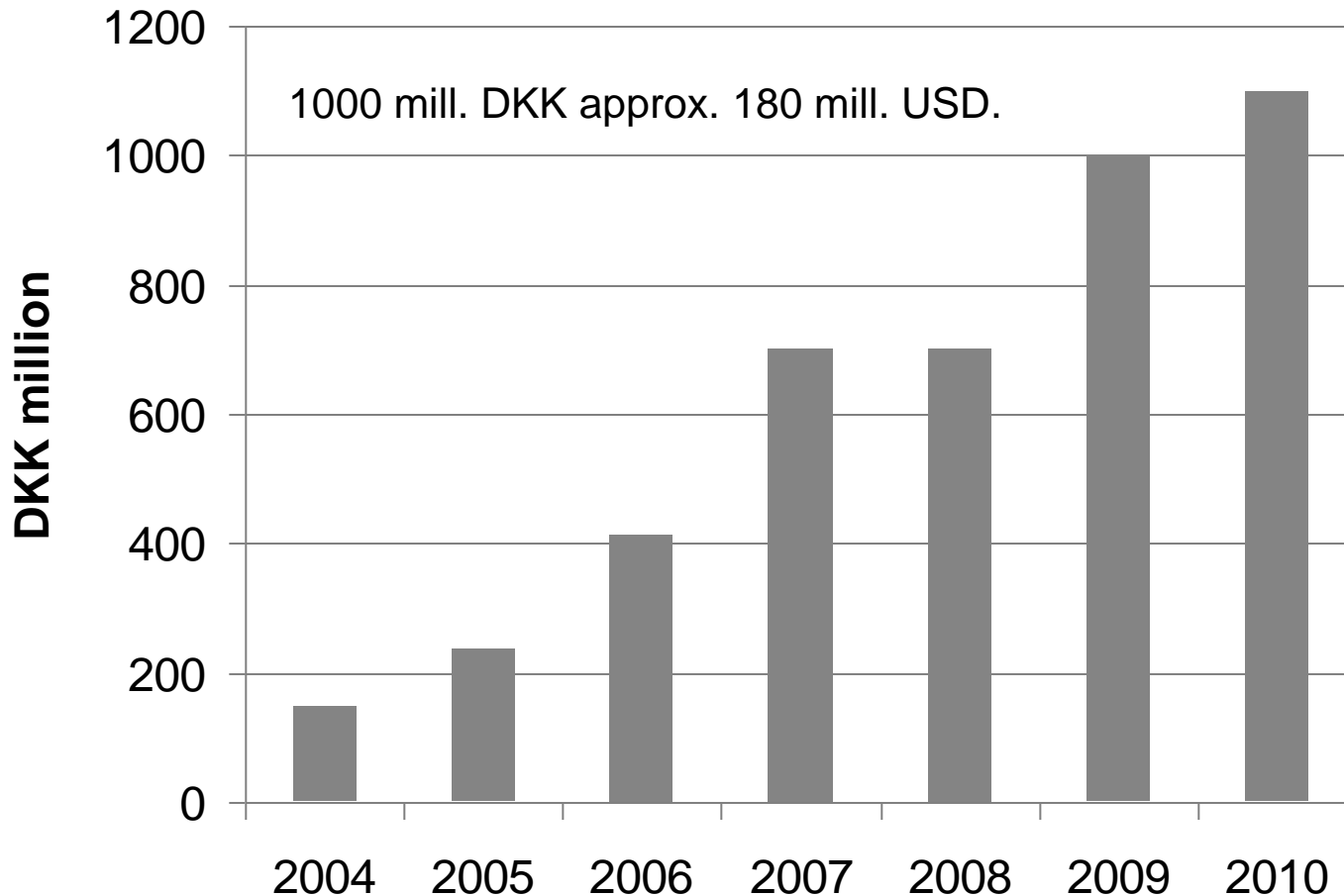
# Three assessment criteria - of equal importance







# Increased Danish Strategic Research Funding





# 1.1 billion DKK for strategic research in 2010

|   |               |
|---|---------------|
| Programme Commission on<br>Education and Creativity           | 27 mill. DKK  |
| Programme Commission on<br>Strategic Growth Technologies      | 176 mill. DKK |
| Programme Commission on<br>Individuals, Disease and Society   | 209 mill. DKK |
| Programme Commission on<br>Transport and Infrastructure       | 60 mill. DKK  |
| Programme Commission on<br>Health, Food and Welfare           | 279 mill. DKK |
| Programme Commission on<br>Sustainable Energy and Environment | 338 mill. DKK |

61 mill. USD

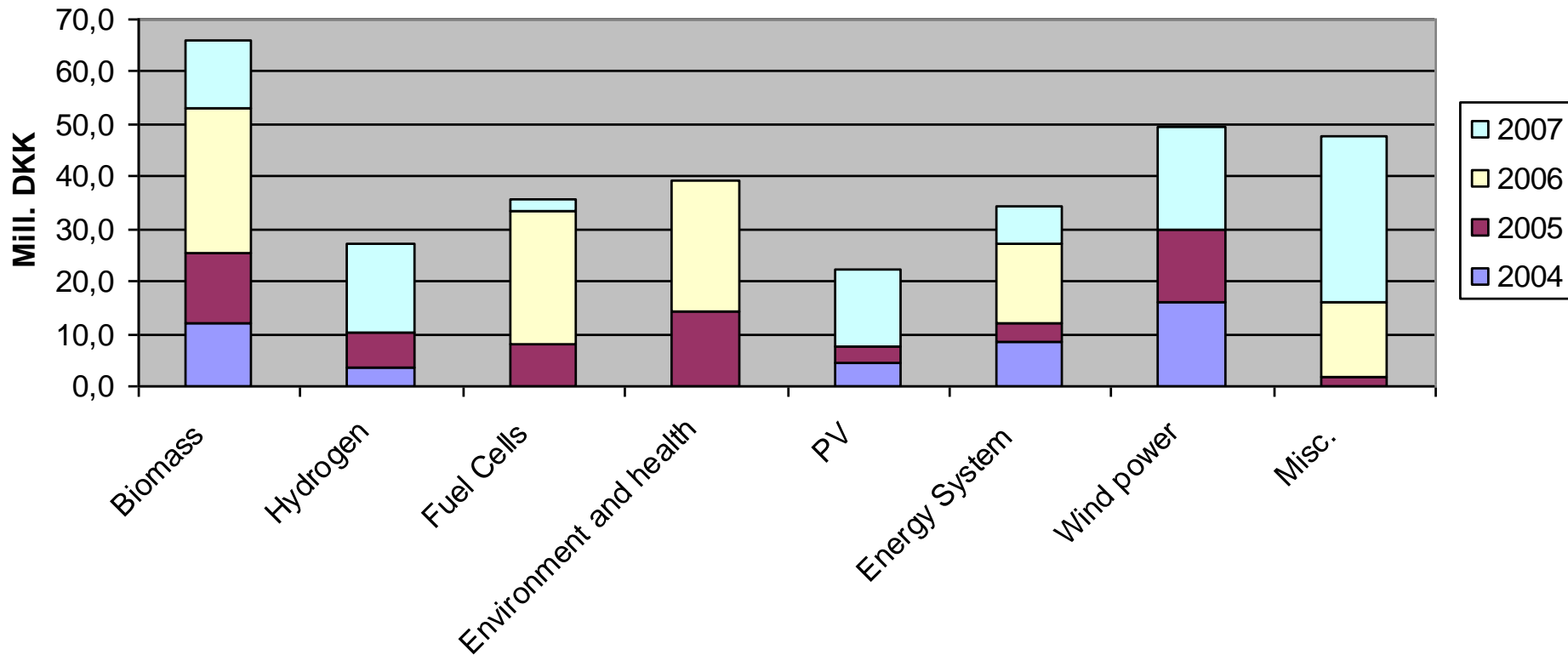




# Sustainable Energy

## More than 50 grants in total

Energy and Env. grants in total

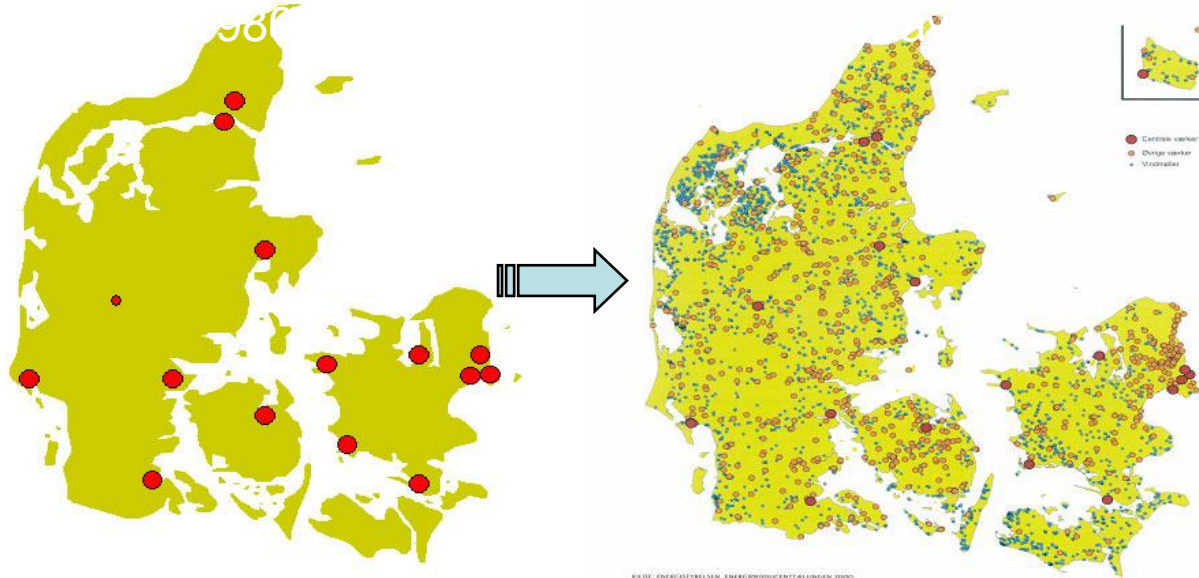




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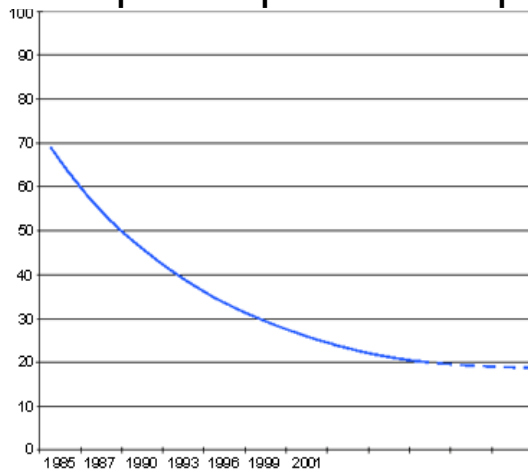
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# Electricity Production Structural Development over 20 years

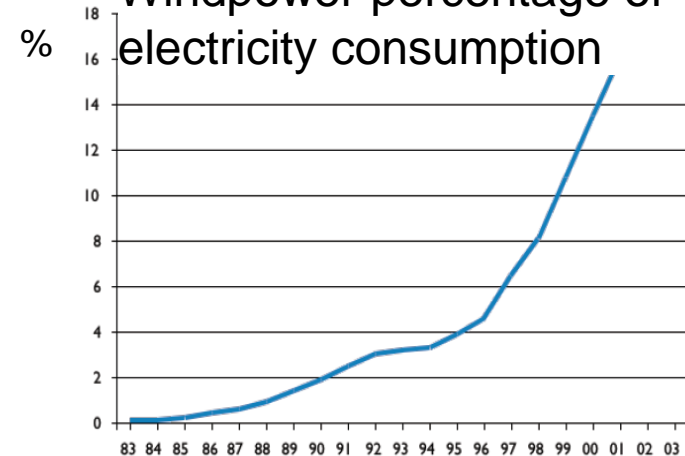


KILDE: ENERGIEN, ENERGIPRODUKTIONEN 2000,  
VINDMØLLEKORDINATER, KORT & MÅTRESTYRELSEN 2001

## Windpower production price



## Windpower percentage of electricity consumption





7.700 MW Primary Power Stations  
1.500 MW Small-scale CHP  
3.000 MW Wind Power  
7.000 MW in peak load

