



# A Milestone: Denmark as a Green Technology Laboratory

**A new wind turbine test center at the Lindø Plant and three other energy technological Green Labs are to strengthen Denmark's international reputation as a green technology laboratory.**

The Board for the Green Labs DK scheme has allocated DKK 129 million to four centres, where enterprises can test and demonstrate new climate and energy solutions with a global market potential.

The largest allocation of DKK 87 million is given to Lindoe Nacelle Testing, which is a test center for large nacelles (wind turbine houses) at the Lindø Plant. The center will be testing large offshore wind turbines for functionality and power on a new test bench. A cluster of world leaders with knowledge about offshore wind turbines are behind the center. These include wind turbine manufacturers, investors and universities.

The three other centers are:

- Powerlab: Smart grid technologies on Bornholm.
- GLEEB: Energy-efficient building components in Tåstrup and
- The Green Gas Test Center: New green renewable energy gases in Hørsholm

The new Green Labs aims at maintaining and developing high standards in Denmark by making brand new test facilities available to Danish and foreign enterprises. This is to speed up developments and contribute to keeping production of knowledge intensive energy technology in Denmark.

Torkil Bentzen, Chairman of the board of Green Labs DK states:

*“ When selling new energy technology, whether it is offshore wind turbines,*

*smart grid components or window systems, it is vital that the product has been tested by an independent test center. This increases credibility, it is an essential sales parameter and it makes possible to correct mistakes and improve prototypes. These new possibilities will benefit Danish enterprises and probably also attract foreign manufacturers.”*

Lykke Friis, Minister for Climate and Energy states:

*“ We need projects that can work as new green beacons for the Danish technology industry. This is where the Green Labs DK programme plays an important role in developing advanced test facilities. With a strong field of applicants in central Danish stronghold positions, I can confirm that they passed the test, and that the Danish energy cluster fully meets the government’s ambition to be amongst the international elite. Things look good for Denmark’s green future” .*

All funding commitments are given on terms that must be negotiated with the recipients. The total funding of the center must fall into place, including any third-party funding, and in the case of the Lindø Plant, there must be EU approval on account of the size of the amount.

Further information:

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Green Lab

Applicant and Parties

Funding Commitment

Lindoe Nacelle Testing

LORC and Risø DTU

DKK 87 mill.

**Green Lab for Energy Efficient Buildings, GLEEB**

Danish Technological Institute, Technical University of Denmark (DTU Byg)

DKK 25 mill.

Powerlab Dk

Technical University of Denmark (DTU Elektro), Risø DTU, National Laboratory for Sustainable Energy, University College of Engineering and Østkraft A/S

DKK 15 mill.

Green Gas Test Center

Danish Gas Technology Centre

DKK 2 mill.

## **Description of the new Green Labs**

### **Lindoe Nacelle Testing**

Funding has been allocated for establishing a test bench for nacelles (turbine houses) at the former Lindø Plant near Odense. A cluster of world leaders with extensive knowledge about wind turbines are behind the center; these include wind turbine manufacturers, buyers and universities. The test bench will be testing the functionality and power of large offshore wind turbines of up to 10 MW. Turbine houses in the test bench may be exposed to a number of well defined loads far more quickly and cheaply than in an actual offshore wind farm. This makes it easier and faster to optimise the turbine design and avoid over dimensioning or under dimensioning. The test bench is estimated to cost up to DKK 275 million.

### **Powerlab DK**

Funding has been provided for establishing an experimental platform for smart grid components and systems. Smart grid components can be used to integrate a varying level of power from e.g. wind turbines in the electricity system. Energy Strategy prepares the ground for much more of the electricity supply to derive from wind turbines, and this requires development of new technologies which can ensure balance between electricity production and consumption, as well as good interaction with other types of energy, e.g.

biomass. The facilities range from laboratory level at the Technical University of Denmark to large-scale facilities at Risø and on to full scale facilities at the Østkraft electricity grid on Bornholm.

### **Green Lab for Energy Efficient Buildings (GLEEB)**

Buildings generate 40% of total energy consumption and encompass large savings possibilities. Funding has been allocated for establishing a Danish test and documentation platform for energy efficient building and installation components. This is an expansion of existing facilities and competencies at the Danish Technological Institute, including e.g. EnergyFlexHouse. The test facility will include both permanent and mobile laboratories for testing e.g. combined units within solar heating, photovoltaics, heat pumps and ventilation under standardised conditions. Moreover, a test platform will be built for handling alternative building and insulation materials.

### **Green Gas Test Center**

Funding has been allocated for establishing the “Green Gas Test Center”, which is to test new green gases, e.g. biogas, before these are transmitted through the natural gas grid. The center is to ensure that renewable gas energy is of sufficient quality to avoid damaging the integrity of the grid. The center is targeted at manufacturers of renewable energy gases and energy companies. There will be focus on biogas up to . In the long term, focus will also be on other renewable energy gases, such as hydrogen and biomass gasification.

### [Energy Technology](#)

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