Forskningssenter for miljøvennlig energi

Zero Emission Buildings

Laboratorieinfrastruktur

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ZEB The Research Centre on Zero Emission Buildings

Zero Emission Buildings (ZEB)

The main objective of ZEB is to develop competitive products and solutions for existing and new buildings that will lead to market penetration of buildings with zero greenhouse gas emissions related to their production, operation, and demolition.

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The ZEB research activities

ZEB will focus its work in five areas that interact and influence each other:

- WP-1: Advanced materials technologies
- WP-2: Climate-adapted low-energy envelope technologies
- WP-3: Energy supply systems and services
- WP-4: Use, operation, and implementation
- WP-5: Concepts and strategies (incl. pilot buildings)

ZEB – Research Infrastructure

- The ZEB Research Centre is dependent on having laboratory facilities to carry out its R&D activities.
- The Work Packages do analysis and testing of the materials, components, structures and solutions they develop in the laboratories, in-situ at a field station, and in pilot buildings.
- The functionality, usability and robustness of the developed concepts will be investigated and tested in test cells and in pilot buildings.
- Between the phases of material and component R&D and of experimental buildings, outdoor test facilities will be used to test systems and building concepts under realistic climatic conditions.

ZEB – Research Infrastructure

- NTNU and SINTEF already have extensive research, development and testing facilities for materials, components, and larger building structures.
- In order to achieve the vision and goals of ZEB, five laboratories will be expanded and/or developed:
  - Advanced Material Technologies Laboratory
  - Climate and Building Technologies Laboratory
  - Energy and Environmental Laboratory
  - Full Scale test Cell Field Station Laboratory
  - Full Scale Test Cell Field Station Laboratory
  - Pilot Building Measurement In Situ Laboratory

Equipment and laboratory investments and activities

- The budgeting and the priorities for laboratory equipment are in place. Together with the extra funding of 5 + 6 mill NOK from the Research Council, 42 mill NOK is allocated to laboratory equipment and pilot project measurement equipment.
- NTNU and SINTEF have also been granted a pre-project on “Sustainable Building Laboratories – Large-scale Infrastructure for the Research Centre on Zero Emission Buildings”.

Sustainable Building Laboratories – Large-scale Infrastructure for the Research Centre on Zero Emission Buildings

Mandat for forprosjektet

- Utarbeide en visjon for storskala zeb-lab.
- Etablere et kunnskapsgrunnlag for hvorvidt storskala laboratorieinfrastruktur for nullutslippsbygg bør tas videre ved en senere utlysning hos Forskningsrådet – dvs. avklare industrielt og forskningsmessig potensial.
- Utvikle et grovt skisseprosjekt for fysisk installasjon av storskala laboratorieinfrastruktur for nullutslippsbygg.
- Utarbeide en søknad for forskningslaboratorier som er basert på forskningsbehov med industriell forankring.
- Være klar med eventuell søknad til Forskningsrådet til september 2011.

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Visjon

Laboratorieinfrastruktur for nullutslippsbygg – en arena der løsninger utforskes, utvikles, prøves og demonstreres.

Infrastrukturen skal (utover FME-zeb levetid)

- danne grunnlag for kunnskapsutvikling på internasjonalt nivå
- danne grunnlag for internasjonal konkurransedyktig industriell utvikling
- danne skole for nye og rehabiliterte nullutslippsbygninger
- være forskningsarena for utvikling av nullutslippsbygninger

Brukergrupper:

- næringspartnere, forskere, studenter, doktorkandidater

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