

# SINTEF ENERGY RESEARCH

*SINTEF Energy Research is an applied research institute dedicated to creating innovative energy solutions. We offer cutting-edge research-based knowledge that provides our clients with added-value solutions and services.*

## STRATEGIC FOCUS:

- Energy efficiency
- CCS
- Hydropower
- Offshore windfarms
- Bioenergy
- System integration of renewable energy
- Smart grids
- Transmission
- Gas technology, LNG and hydrogen
- Subsea power supply and processing

## KEY FIGURES

- SINTEF Energy Research has a staff of 244.
- The turnover in 2016 was approx 440 MNOK.

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[blog.sintefenergy.com](http://blog.sintefenergy.com)

## CENTRES FOR ENVIRONMENT-FRIENDLY ENERGY RESEARCH

In 2016 the Research Council of Norway awarded NOK 1.3 billion in funding for eight new Centres for Environment-friendly Energy Research (FME).

SINTEF Energy lead these centres:

- CINELDI - Centre for intelligent electricity distribution
- HighEFF - Centre for an Energy Efficient and Competitive Industry for the Future
- NCCS - Norwegian CCS Research Centre – Industry driven innovation for fast track CCS deployment

SINTEF Energy participate in these centres:

- Bio4Fuels - Norwegian Centre for Sustainable Bio-based Fuel and Energy
- HydroCen - Norwegian Research Centre for Hydropower Technology
- ZEN - The Research Centre on Zero Emission Neighbourhoods in Smart Cities



***SINTEF Energy Research** is a part of the SINTEF group, which is the largest independent research organisation in Scandinavia. We create value through knowledge generation, research and innovation, and develop technological solutions that are brought into practical use.*

## LABORATORY SERVICES

In cooperation with Norwegian University of Science and Technology (NTNU), we have 7000 m<sup>2</sup> of modern laboratories available for research, development and education.

**SINTEF Energy Lab** is our largest laboratory and houses seven separate laboratories, each dedicated to a particular field of operation. The largest and most prominent structure is the new high voltage laboratory which is designed to handle system voltages up to 420 kV. The laboratory provides state-of-the-art infrastructure for advanced R&D in SINTEF Energy Research's strategic areas of involvement, with a focus on industry-specific applied research.

**The Thermal engineering laboratory** (VATL) is the largest laboratory for research work within the technologies of refrigeration, low temperature, combustion, thermal engineering, energy and environment.

**The Electrotechnical laboratories** (ETL) comprise high voltage, high current and climate labs as well as a number of smaller labs for material testing and analyses. They also include special labs for hyperbaric testing of materials and components for sub-sea power and signal applications for the off-shore industries.

In the **Smart Grid Laboratory**, we use realistic models to study the behavior of smart grids, the integration of the power grid and internet. This applies to power systems with grid, communications, smart meters, loads, smart house, electric vehicle charging, distributed generation etc.

[www.sintef.no/energylabs](http://www.sintef.no/energylabs)

SINTEF Energy Research cooperates with other laboratories on a global basis, within the Scandinavian Association for Testing of Electric Power Equipment (SATS) and the Short-Circuit Testing Liaison (STL).



SINTEF and NTNU have been appointed by ESFRI (European Strategy Forum on Research Infrastructures) to coordinate the construction of a Pan-European infrastructure within Carbon Dioxide Capture and Storage (CCS).



*Gasification reactor in the combustion laboratory at SINTEF Energy Lab.*



*SmartGrid laboratory.*



*Torrefaction Reactor - a thermal pre-treatment process that enhances the properties of biomass.*



*Novel technologies for effective CCS management. 2nd generation CLC process with integrated CO<sub>2</sub> capture.*

*Photo: SINTEF, Per Einar Olsen, Geir Mogen, Thor Nielsen og Gry Karin Stimo*