SINTEF Energy Research

SINTEF Energy Research offers cutting-edge, research-based knowledge that provides our clients with added-value solutions and services. SINTEF Energy Research is a part of the SINTEF group, one of Europe's largest independent research organisations.

Strategic focus areas are:

- Energy efficiency
- Carbon capture and storage (CCS)
- Hydropower
- Offshore wind
- Bioenergy
- Smart grids
- Transmission
- Hydrogen
- Offshore energy systems
- Environment friendly transport

Sustainability is at the heart of our research activities. The UN's Sustainable Development Goals represent a global joint strategy to eradicate poverty, combat inequality and stop climate change. The UN defined 17 sustainable development goals, and SINTEF Energy Research contributes towards several of these, the most prominent being:

Key figures: SINTEF Energy Research has a staff of 269. Income in 2019 was approx 512 MNOK.

APRIL 2021

SINTEF ENERGI AS - SINTEF ENERGY RESEARCH
www.sintef.no/energy • Read about our research on the #SINTEF blog - blog.sintef.com

National centres for Environment-friendly Energy Research

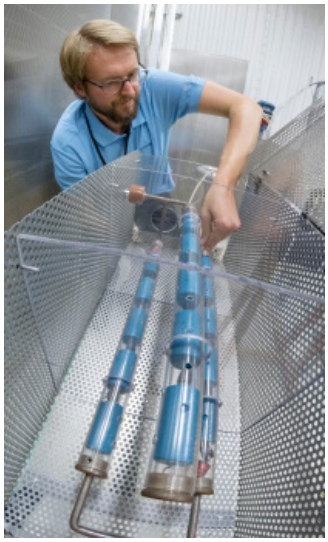
With support from the FME and Petrosenter funding programmes, these large research centres have had an international impact. SINTEF Energy Research participates in the following centres::

CENTRE FOR ENVIRONMENT-FRIENDLY ENERGY RESEARCH
The Research Council of Norway

- FME **NorthWind** - Norwegian Research Centre on Wind Energy
- FME **NTRANS** - Norwegian Centre for Energy Transition Strategies
- FME **Bio4Fuels** - Norwegian Centre for Sustainable Bio-based Fuel and Energy
- FME **CINELDI** - Centre for Intelligent Electricity Distribution
- FME **HighEFF** - Centre for an Energy Efficient and Competitive Industry for the Future
- FME **HydroCen** - Norwegian Research Centre for Hydropower Technology
- FME **NCCS** - Norwegian CCS Research Centre
- FME **ZEN** - The Research Centre on Zero Emission Neighbourhoods in Smart Cities

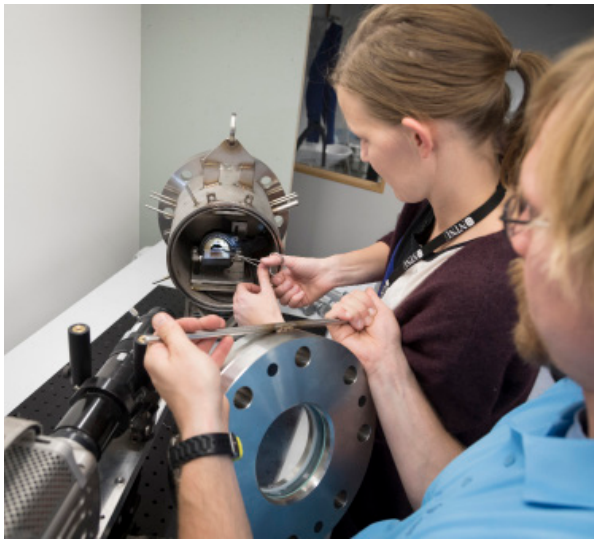
Petrocentre

- **LowEmission** - Develops technology and solutions to help the offshore industry meet its emissions reduction goals.



Rigging of experiments in the electrotechnical laboratories.

Photo: SINTEF, Geir Mogen and Thor Nielsen



Nanostructured surface is mounted inside reactor for studies of CO_2 condensation at high pressure and low temperature

Laboratory services

In cooperation with the Norwegian University of Science and Technology (NTNU), we have 12,000 m² of modern laboratories available for research, development and education. These laboratories are available for national and international researchers and industry.

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

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

The Electrotechnical laboratories 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 high pressure testing of materials and components for offshore and subsea power systems.

The national SmartGrid laboratory is used to study technology and solutions for the sustainable electric power system of the future that will have more variable and distributed power production, flexible consumption and digital solutions.

Gasification reactor in the combustion laboratory at SINTEF Energy Lab.

Smart Grid laboratory.

National Laboratories for an Energy Efficient Industry supports better utilisation of available industrial surplus heat and improved efficiency in various industrial processes.

HighEFFLab

ElPowerLab is an international resource for research on the power components and materials of the future.

ElpowerLab

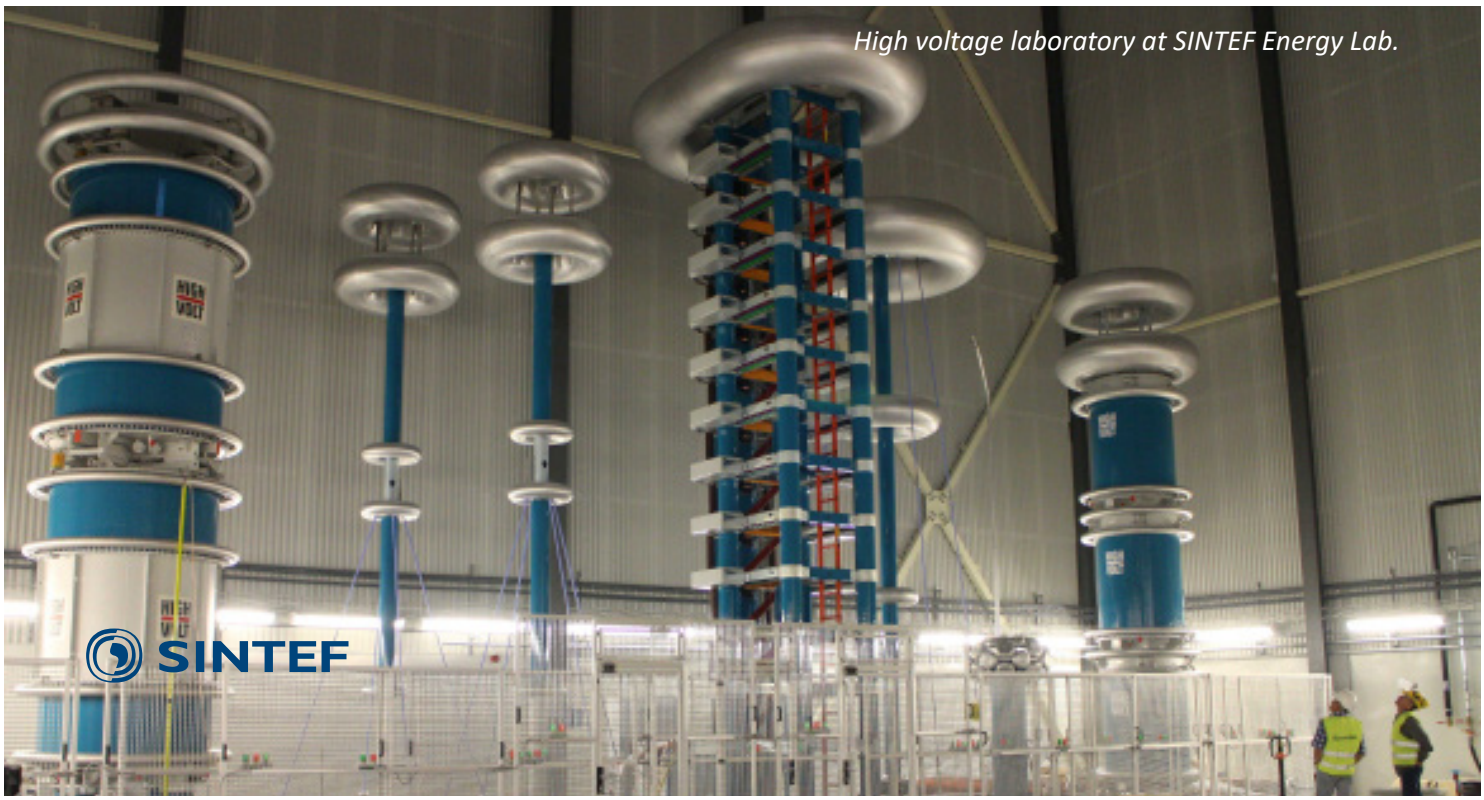
SINTEF Energy Research is a memeber of SATS (**Scandinavian Association for Testing of Electric Power Equipment)** and the Short-Circuit Testing Liaison (STL) and cooperates with other laboratories in Scandinavia.

SATS Certification
Scandinavian Association for Testing of Electric Power Equipment

ECCSEL
SINTEF and NTNU have been appointed by ESFRI (European Strategy Forum on Research Infrastructures) to coordinate the construction of a Pan-European infrastructure within CO_2 capture and storage (CCS). ECCSEL includes advanced scientific laboratory equipment available to guest researcher from the European Union/ European economic area.

ECCSEL

www.sintef.no/energylabs



High voltage laboratory at SINTEF Energy Lab.