

Norwegian Center for Geothermal Energy Research - CGER

Ranveig Bjørk

General manager CGER

15.11.2017



Norwegian Center for Geothermal Energy Research

CGER organization

- CGER is a non-legal partnership consisting of research and industrial Partners from all over Norway.
- Established in 2009
- CGER partners, November 2017:

- Christian Michelsen Research (host)
- Greenstat
- Huisman AS
- IRIS
- Norhard Geo
- NORSAR
- NTNU
- Sintef
- Statoil
- Uni Research
- University of Bergen
- University of Stavanger
- Rock Energy
- Well ID

Main objective of CGER

- Facilitate development of the leading knowledge and technology - as well as increased commercial activity - related to geothermal energy both nationally and internationally
- Promote the use of this energy source as an environmentally friendly energy alternative
- Unite leading research institutions and industrial companies nationally
- Covers both deep and shallow geothermal energy



CGER objectives and plan of action

OBJECTIVES

- National cooperation and coordination of research activities
 - Coordination and promotion of national research and development on geothermal energy
 - Transfer of relevant knowledge and technology from the petroleum sector to the geothermal energy sector
- Improve financial conditions for the national geothermal energy sector
 - Geothermal energy shall be a prioritized area in relevant national strategic documents

Plan of action

- Initiate and support strategically important projects.
- Facilitate utilization of complementary expertise between the partners
- Networking and experience exchange
 - Biennial conference within geothermal energy, latest GeoEnergi2017 in May 2017
 - Seminar, workshops, courses
- Facilitate creation of business clusters
- Contribute with expertise in strategic processes
- Input to Energi21

CGER objectives and plan of action,

OBJECTIVES

- International cooperation
 - CGER Partners visible and attractive partners in international projects
 - Norwegian experts should contribute to international strategic documents
- Profiling, communication and dissemination
 - The opportunities and limitations of geothermal energy shall be made known
 - Disseminate knowledge and data that can counter speculations and contribute to security for society

Plan of action

- Member of European Geothermal Energy Council (EGEC)
- Participation in international forums through Partners
- Media
- Web pages
- Educational programs
- Overview of the national use of geothermal energy

Biennial conference within geothermal energy

- Key arena and only national conference within geothermal energy
- Biennial arrangements since 2011
- Normally gathers about 100 participants from industry and research
- Latest: May 22nd – 23rd at CMR in Bergen
 - Keynote: Guðmundur Ómar Friðleifsson, HS Orka: *“Recent updates from the world's hottest geothermal energy drilling”*
- More info: www.cger.no



Competence within CGER network

KEY COMPETENCE (list not exhaustive)

- Automated drilling
- Distributed fiberoptical sensing and Distributed acoustic sensing
- Energy systems
- Flow in porous media
- Geological characterization, mathematical modeling and computational geoscience
- Geophysics and seismology
- Hard rock drilling
- High temperature electronics
- High temperature geothermal
- Scaling and corrosion
- Shallow geothermal systems
- Well logging

Research activity among CGER Partners, nationally lead research projects*

Project	Project lead	CGER project partners
Mathematical modeling and numerical simulation for enhanced understanding of geothermal reservoir stimulation by shear-dilation treatment	UiB	Statoil, BKK
An integrated geological and mathematical framework for the characterization, modelling and simulation of fractured geothermal reservoirs	UiB	Statoil, Uni
Thermo-mechanical subsurface energy storage (TheMSES)	UiB	
Technology platform for research-based innovations in deep geothermal drilling (INNO-Drill)	Sintef	IRIS, NTNU
Feasibility Study on Deep Geothermal Drilling in Ålgård		IRIS
Optimal ressursutnyttelse av grunnvann til oppvarming og kjøling i Melhus og Elverum (ORMEL)	Melhus kommune	NTNU IGB
INTERACT	Sintef Energi	NTNU
Improved simulation technology for flow and transport in fracture zones	UiB	
Enhancing geothermal reservoirs - hydraulic and thermal stimulation technology	UiB	Statoil, NORSAR
Modeling of high temperature, high pressure geothermal energy production system	NTNU	
Cost-effective and Reliable Engineered Casing Systems for super-HT Geothermal Wells	Statoil ASA	
Integrerte varme- og kjølesystem for sykehusbygg med mål om minimal brutto energibruk	Norconsult	CMR

Research activity among CGER Partners, internationally lead research projects

Project	Project lead	CGER project partners
Drilling in dEep, Super-CRitical AMBient of continental Europe (DESCRAMBLE)	ENEL Green Power	Sintef
Iceland Deep Drilling Project (IDDP2)	HS Orka	Statoil
GEMex	Potsdam	Uni Research
GeoWell	ISOR	IRIS, Statoil
Deep EGS		Statoil
GeoThermal4PL	PGI	CMR, NTNU

Thank you!

Contact info:

CGER

Christian Michelsen Research AS

General manager: Ranveig N. Bjørk

post@cger.no

www.cger.no



Norwegian Center for Geothermal Energy Research