

Geothermal4PL

Wsparcie zrównoważonego rozwoju i wykorzystania płytkiej energii geotermalnej na terenie obszarów objętych programem Mieszkanie Plus w Polsce

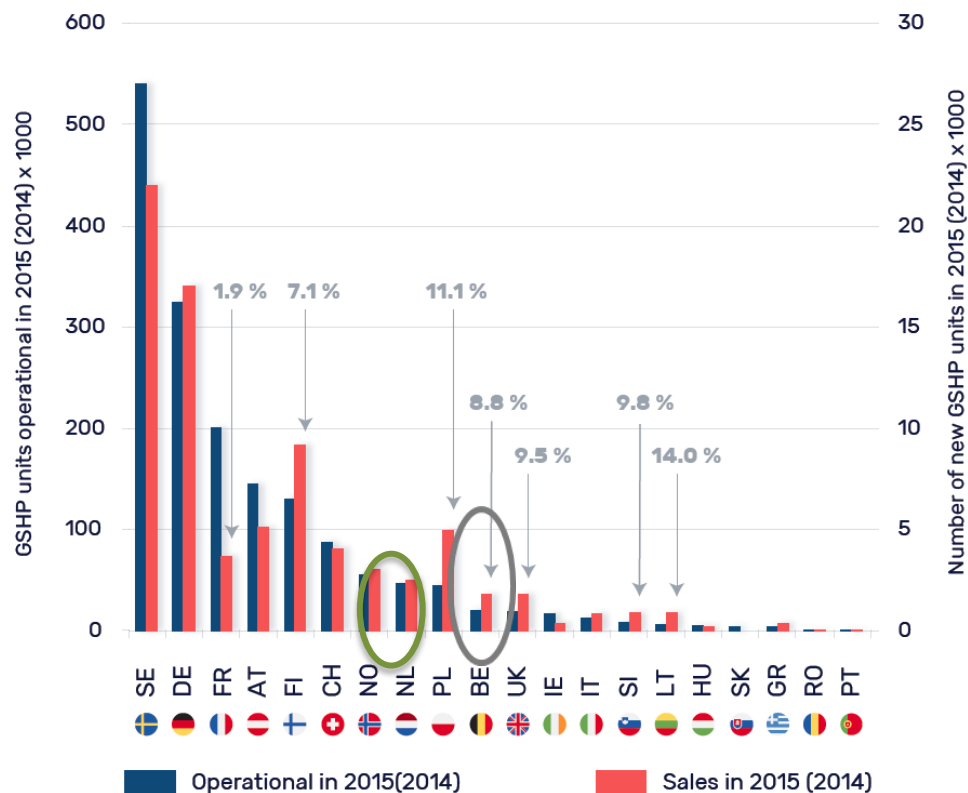
Państwowy Instytut Geologiczny – Państwowy Instytut Badawczy
Christian Michelsen Research AS
5-6.10.2017, Chęciny

IEA Key World selected indicators for 2014

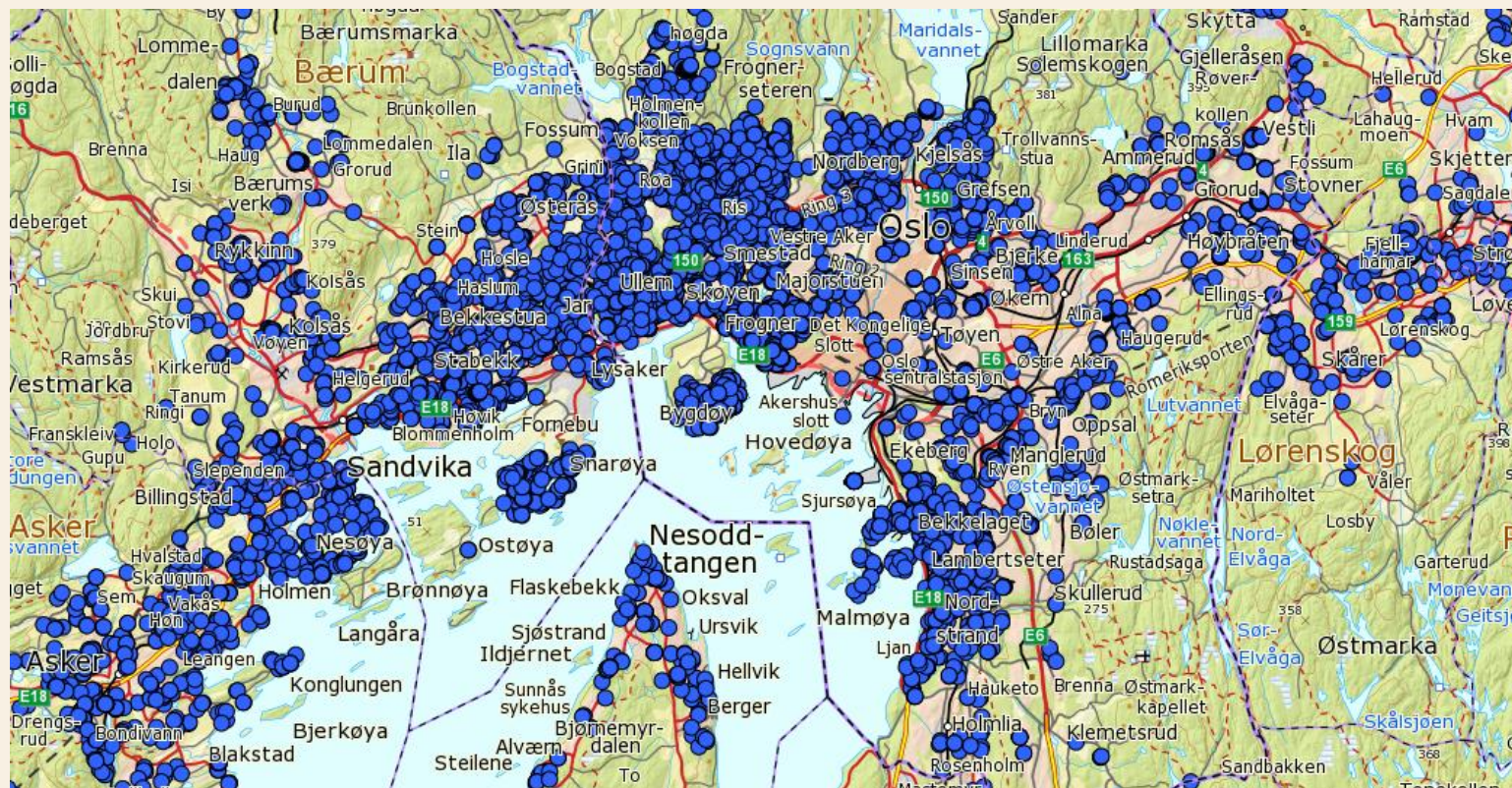
	Population	Total Primary Energy Supply	Elect cons	Electricity Cons pr. population	CO2 emission	CO2/pop
	million	Mtoe	TWh	Kwh/capita	Mt of CO2	Kg CO2 /capita
Norway	5.14	28.75	118.16	23001	35.31	6.87
Poland	38.48	94.02	150.98	4663	279.04	7.25

EGEC Geothermal Market Report 2016

FIG. 20 - GSHP / NUMBER OF INSTALLED GSHP UNITS AND ANNUAL NEW INSTALLATIONS IN 2015; NUMBERS SHOW THE RATIO OF NEW UNITS IN RELATION TO EXISTING GSHP STOCK



BHEs registered in Oslo region





Nordic standard borehole design

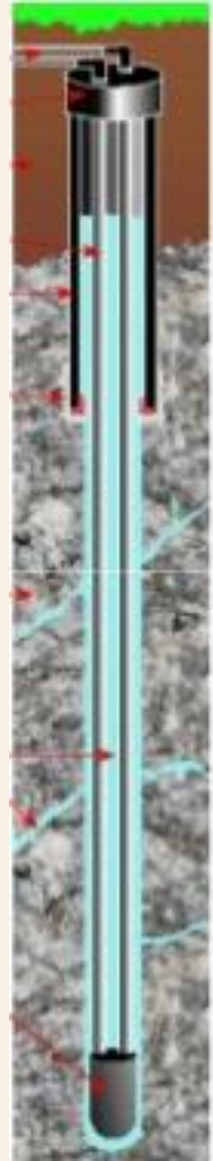
Borehole depth 100-300 m

Borehole diameter 115mm

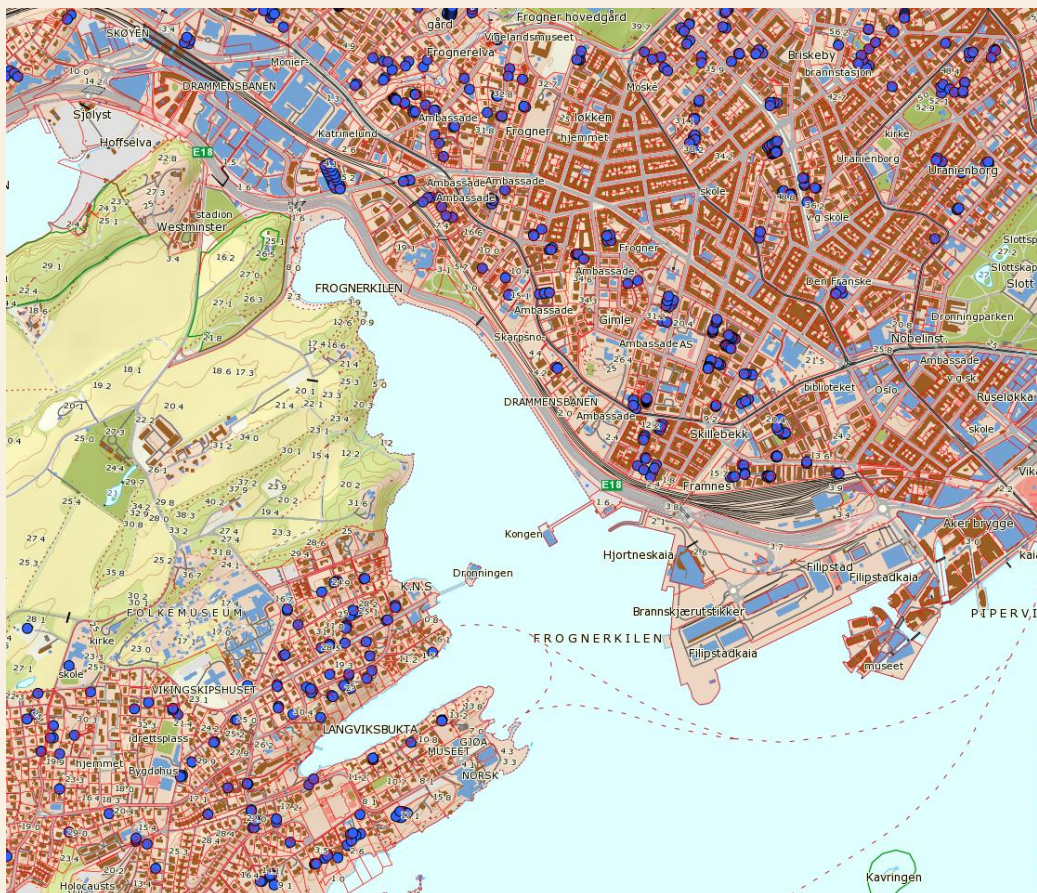
Casing: at least 1 m in
crystalline rock

No grouting

Singel U-pipe a t= 40 mm



BHEs registered in Oslo city center



Geothermal heat pump installations, Arcus,

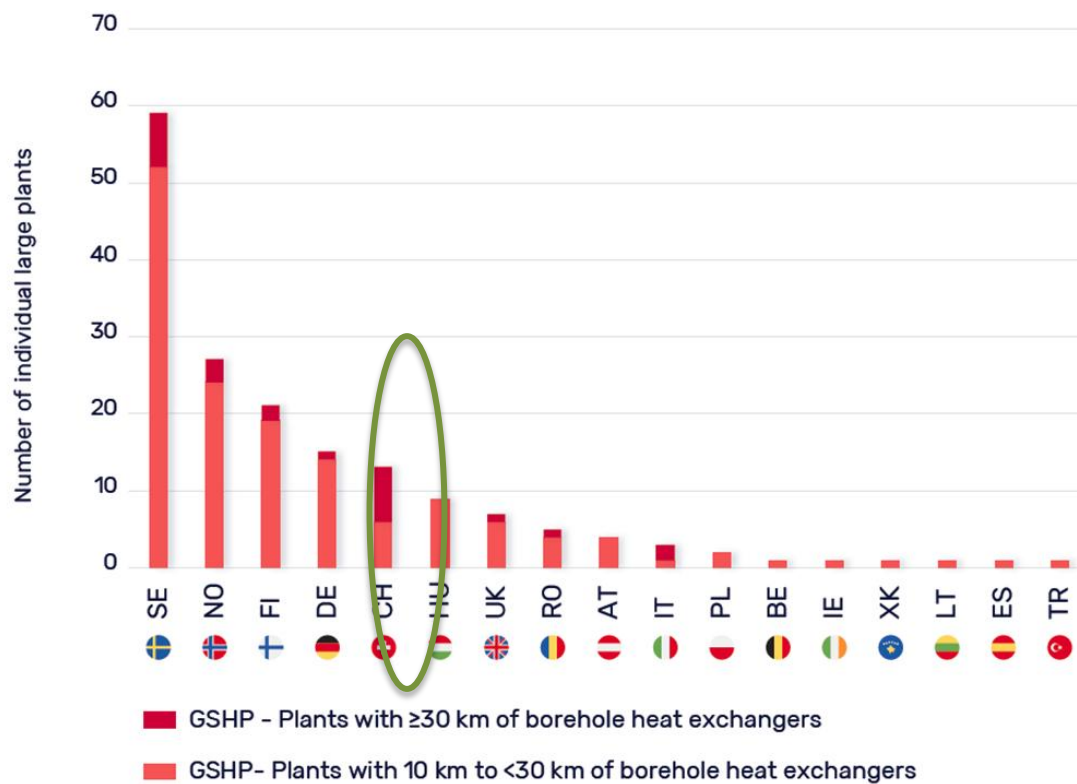
Oslo 90 BHE a 300m



30/06/2011

Ref: Båsum Boring

FIG. 27 - GSHP / DIAGRAM OF ANNUAL GSHP SALES FOR 2010-2016 AND THE SHARE OF GEOTHERMAL IN TOTAL SALES IN FRANCE, GERMANY AND SWITZERLAND





Recommendations 1

- You have to define the best practice geothermal heat pump solutions for Poland
 - depending of energy use, geology, climate and regulations
- Important that PGI and energy authorities is active involved in adapting, developing and market the energy technology
- Marketing and dissemination is important!
 - The technology is invisible
- Geothermal heat pump technologies are commercial proven, but further documentation and verification of system efficiency is needed.
 - Demonstration projects with long term monitoring

Recommendation 2

- The potential for Geothermal Heat Pump in Poland is huge
- Bad installations can lead to bad reputation
- Show the success histories and learn of the mistakes
- Organize annual seminars!