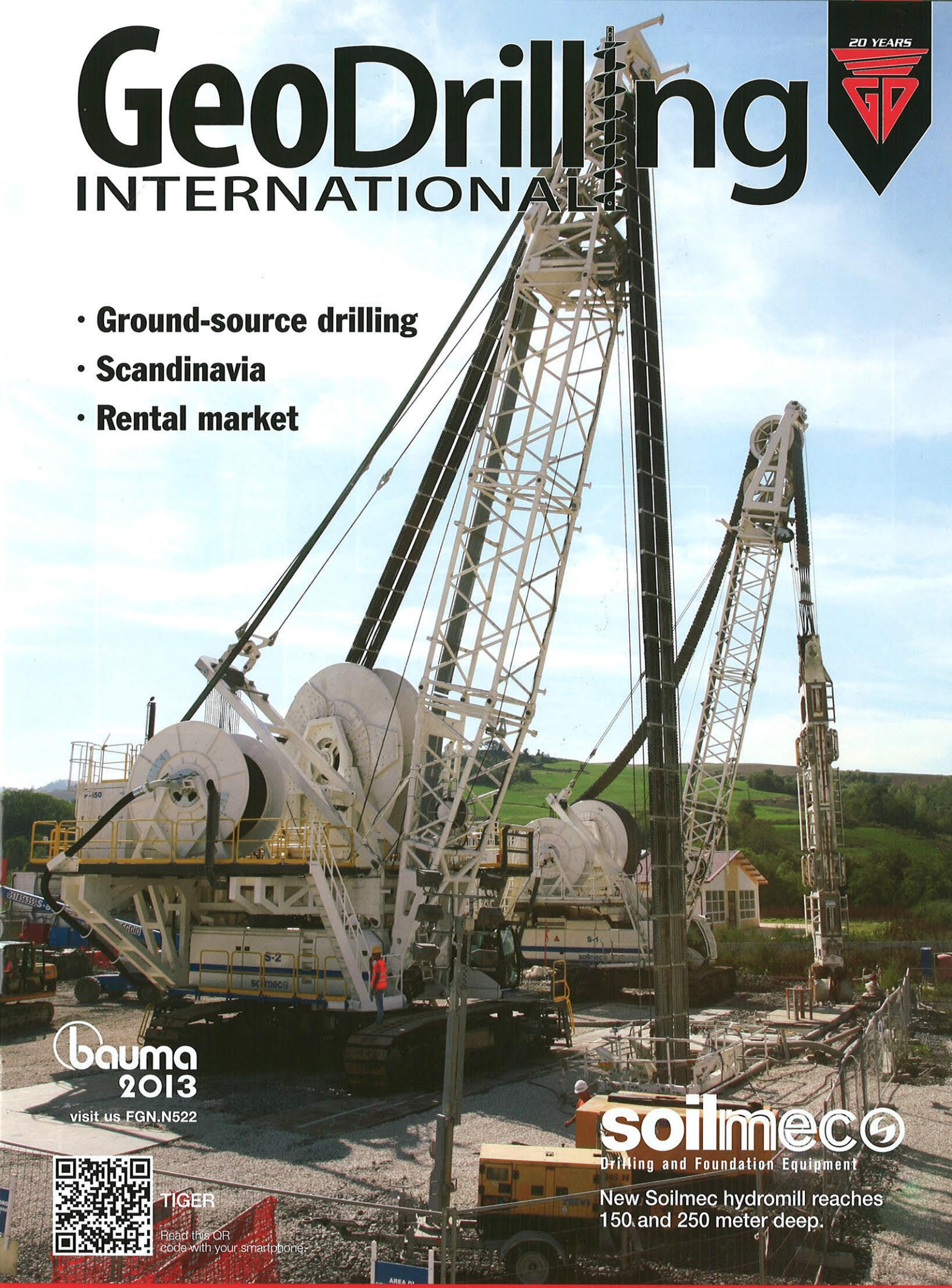
GeoDrilling INTERNATIONAL

20 YEARS

- Ground-source drilling
- Scandinavia
- Rental market



From the cold to the Caribbean

Icelandic geothermal technology is going a long way

Panorama of a borehole

A country known for its thermal springs and the world's largest geyser, Iceland has long been home to geothermal technological innovations and practices.

Iceland is at the core of high-temperature geothermal exploration and development in Europe. Geothermal and hydropower provide all of Iceland's electricity and around 80% of the nation's total energy. The country expects to be energy-independent by 2050.

Iceland's largest geothermal power plant is Hellisheiði, a plant Iceland Drilling Company's chief technical officer Sturla Birkisson knows well. His company is the lead contractor managing high-temperature drilling for Reykjavik Energy at the green-energy plant.

"We have drilled over 50 mostly directional wells from 2,000m to 3,000m deep, some drilled with aerated fluid," Birkisson explains. "It was medium to hard-rock [basalt] drilling. The most powerful well was 25MWe. We also provide integrated services including material procurement, cementing services, casing running services, well-pad construction and management of drilling operations. We have won all our contracts through an international bidding process and all contracts are metre-rate contracts."

Iceland Drilling Company has worked at the country's major geothermal plants

"What else is needed for efficient operations in Scandinavia? Tough workers – Vikings!"

The company runs a fleet of six drill rigs

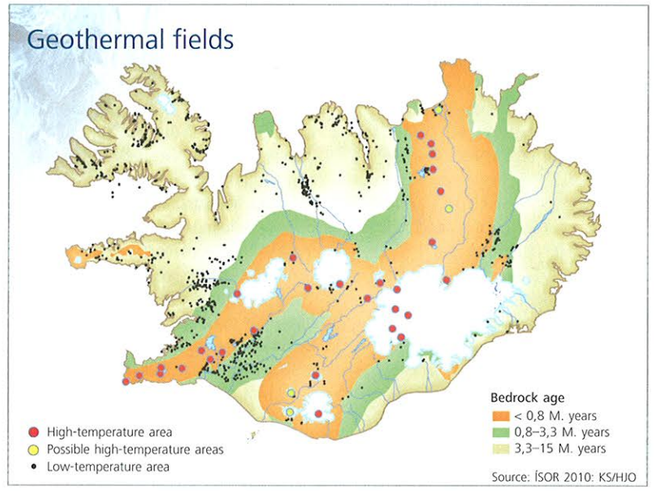
Hellisheiði Geothermal Plant is situated in the Hengill area, an active volcanic ridge in southwest Iceland. Production capacity is 303MW of electricity and 133MW of thermal energy. Geothermal activity in the Hengill area is connected with three volcanic systems. At least three volcanic eruptions have occurred in the region in the last 11,000 years, the most recent being 2,000 years ago.

The company has also worked on Alterra Power's Reykjanes 100MWe geothermal power plant. Construction on expanding the plant began in the second quarter of 2012. Reykjanes 3 will be online in the fourth quarter of this year, and Reykjanes 4 in the second quarter of 2014. Alterra draws power from 12 of 15 boreholes drilled in the area.

The plants are located at the southwest tip of the Reykjanes peninsula, 55km southwest of Reykjavík.

"The unique geothermal market of Iceland has no similarities in Scandinavia. Some low-temperature geothermal energy can be produced elsewhere in Scandinavia but so far this has not attracted big attention," Birkisson says.

Iceland Drilling Company runs a fleet of six drill rigs including Bentec Euro 2008, Drillmec HH300 2007, Drillmec HH220 2006 and Drillmec HH220 2004 types.



In the design and use of drill rigs and equipment in low temperatures (Reykjavik averages a low of approximately 1.9ºC (35.4F) throughout the year) keeping equipment such as the fuel tanks warm enough is essential, Birkisson notes. The challenge is to keep the equipment running 24/7 during blizzards, storms, ice and rain.

When asked what else is needed or recommended for efficient operations in Scandinavia, Birkisson responds: "Tough workers – Vikings!"

The far side of the world

To adapt to tough market conditions, Iceland Drilling Company is exporting its services, naming New Zealand's biggest power producer Mighty River Power, power producer Sogeo in the Atlantic Azores Islands and the government of Dominica in the Caribbean as clients.

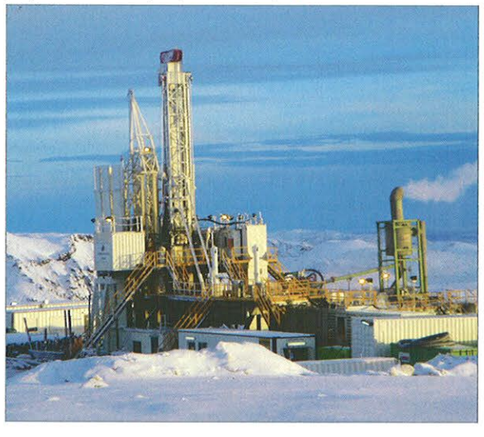
The company has a record of over 7,000 wells around the world, of which 260 high-temperature wells were found in the last 15 years. Iceland Drilling Company's field of operations has covered the Azores, the Caribbean, Denmark, Germany Hungary, Ireland, New Zealand, Switzerland and the UK.

In October 2012 Iceland Drilling Company signed a contract with the government of Montserrat to undertake exploration drilling for geothermal sources. Iceland Drilling Company shipped its equipment north from its project in Dominica and began drilling at Montserrat in January 2013.

The company submitted a bid of just over US$6 million to drill for geothermal energy in and around Cork Hill/Delvins on the Caribbean island. It will take proximately three to four months to complete the two wells, which are each 5,000ft (1,524m) deep.

The geothermal wells will be drilled between Weekes Village and Garibaldi Hill. A 2012 geothermal exploration report conducted by geological and geophysical exploration company EGS of California, US, said there was an 80% likelihood of geothermal energy on Montserrat. The UK's Department for International Development has allocated almost $13.5 million for geothermal exploration in Montserrat.

As part of its global expansion, Iceland Drilling Company has opened new offices in Indonesia and New Zealand with plans to open others in the near future. The company has high expectations with its projects in Asia this year, Birkisson says.



Iceland Drilling Company has taken its expertise to geothermal projects around the world

The famous five

In an effort to meet the needs of the country's growing aluminium industry (which currently accounts for 71% of the island's total energy consumption), more geothermal capacity has been installed.

Figures from Iceland's national energy authority Orkustofnun's 'Energy Statistics in Iceland 2012' report show that installed capacity in geothermal power plants grew 1.5% between 2010 and 2011, with electricity produced by this method jumping 1.1% over the year.

In 2011 geothermal power provided 24.8% of electricity from all installed power-plant capacity. In terms of electricity produced, geothermal energy contributed 27.3% to the nation, behind hydro with 72.7%.

Geothermal plants of Iceland

Plant	Capacity MWe
Hellisheiði	303
Nesjavellir	120
Reykjanes	100
Svartsengi	76.4
Krafla	60