



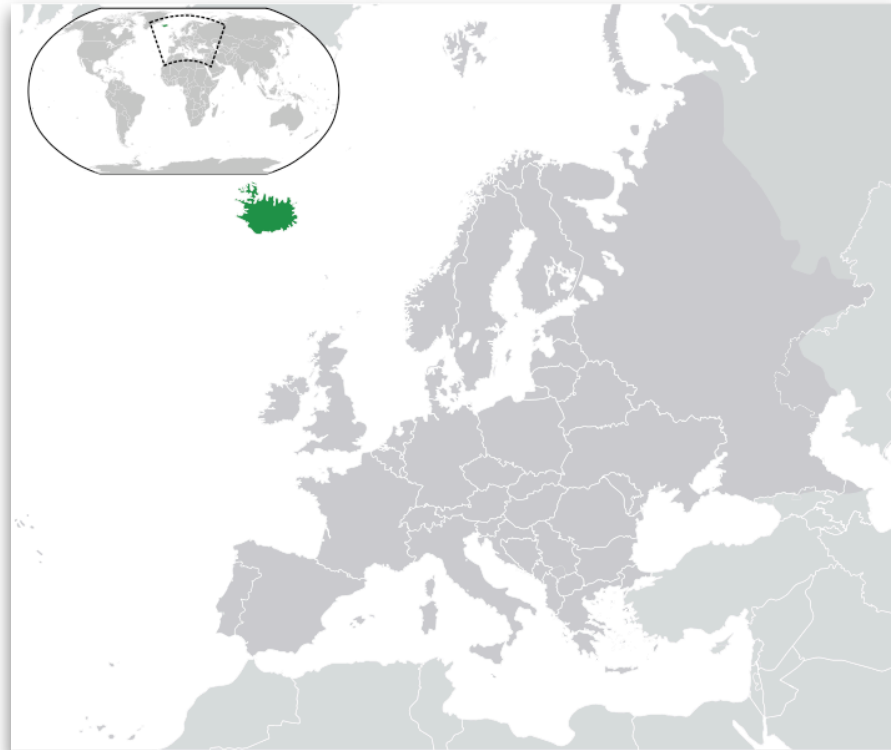
## Introduction

Institution of  
**MECHANICAL  
ENGINEERS**

**Iceland** (Icelandic: **Ísland**) is a European island country located in the North Atlantic Ocean on the Mid-Atlantic Ridge. It has a population of about 320,000 and a total area of 103,000 km<sup>2</sup> (39,769 sq mi). The capital and largest city is Reykjavík, with the surrounding area being home to some two-thirds of the national population. Iceland is volcanically and geologically active. The interior mainly consists of a plateau characterised by sand fields, mountains and glaciers, while many glacial rivers flow to the sea through the lowlands. Iceland is warmed by the Gulf Stream and has a temperate climate despite a high latitude just outside the Arctic Circle.

### Industry in Iceland

The mainstays of the Icelandic economy are renewable natural resources: rich fishing grounds, hydro and geothermal power, and pastureland. The importance of human capital is witnessed by the number of computer software and biotechnology companies.



Icelandic Engineering  
Company Profiles

Institution of  
**MECHANICAL  
ENGINEERS**

Mannvit

Alcoa

Verkís

Össur

HRV

Efla

Geysir Green Energy

Landsvirkjun

Rio Tinto Alcan

Marel



## **Company Profile**

Mannvit Engineering is a leader in Geothermal Energy and Hydroelectric Power, with over 40 years of experience. The company offers turn-key services and solutions for geothermal energy and hydroelectric power development to projects all over the world.

Founded in 1963, the company's origins can be traced back to Iceland's transition into a modern, industrial nation. Around this same time, while most other countries were utilizing inexpensive fossil fuels for energy, Iceland, due to its geography, turned to its geothermal and hydroelectric resources for growth and development. Due to this early adoption, today Iceland is a leader in renewable energy utilization with over 99% of its electricity and heating needs coming from hydroelectric power and geothermal energy.

Mannvit Engineering, the largest firm in Iceland, participated in most of the geothermal and hydroelectric power plants built since the early 1960's and in that time has amassed vast experience and expertise. The company offers a broad range of consulting, design, technologies and EPCM services for geothermal and hydroelectric energy projects as well as the construction and maintenance of overhead transmission lines, substations and transformer stations.

Geothermal energy and hydroelectric power is only one facet of Mannvit Engineering. The company also offers comprehensive engineering, consulting, management and operational services in power intensive industries, buildings, infrastructure, utilities and more.

**Website :** <http://www.mannvit.com/>

**HR Contacts:** Drífa Sigurðardóttir, Auðunn Eiríksson



## **Company Departments**

Geothermal Energy

Hydroelectric Power

Renewable Energy and Climate

Project Management

Power Transmission and Distribution

Industry

Buildings and Construction

Infrastructure and Transport

Environmental Services

Testing and Research Lab

Information Technology





## **Company profile**

Alcoa is the world leader in the production and management of primary aluminum, fabricated aluminum and alumina combined, through its active and growing participation in all major aspects of the industry.

Alcoa serves the aerospace, automotive, packaging, building and construction, commercial transportation and industrial markets, bringing design, engineering, production and other capabilities of Alcoa's businesses to customers. In addition to aluminum products and components including flat-rolled products, hard alloy extrusions, and forgings, Alcoa also markets Alcoa® wheels, fastening systems, precision and investment castings, and building systems.

The Company has 63,000 employees in 31 countries and has been named one of the top most sustainable corporations in the world at the World Economic Forum in Davos, Switzerland, and has been a member of the Dow Jones sustainability Index for 7 consecutive years.

Alcoa makes a very sustainable product: more than 70% of the aluminum ever produced is still in use, equaling 586 million metric tons of a total 806 million metric tons manufactured since 1886.

In June 2007, Alcoa officially opened Fjarðaál ("aluminum of the fjords"), an aluminum smelter at Reyðarfjörður in Eastern Iceland. This project is Alcoa's first new primary aluminum facility in 20 years.

**Website:**     <http://www.alcoa.com/iceland/en/home.asp>

**HR Contacts:** Email - [starf@alcoa.com](mailto:starf@alcoa.com)



## Company Profile

Verkís is an employee-owned engineering firm who provides a wide range of services in most fields of engineering and related disciplines. At Verkís, about 350 employees work with a wide variety of projects, both in Iceland and abroad.

Verkís was established in November 2008 by the merger of five well established engineering firms, VST, Rafteikning, Fjarhitun, Fjölhönnun and RT-Rafagnatækni. Decades of experience benefit our clients and we strive to provide high quality, innovative, technically advanced and comprehensive services. As one of the largest engineering firms in Iceland, Verkís always seeks to provide the best and most economical solutions, thus building a long term relationship with our clients. Continuous improvement and innovation are central to how we do business.

As a fully employee-owned company, we value each member of our staff and maintain a climate of openness, while encouraging professional and personal development.

Verkís is divided into eight divisions, where six of them are business segment divisions. In addition to the business segment divisions, there is an office support division and a branch office division. Each business segment division is split into discipline sections.

## HR Contacts



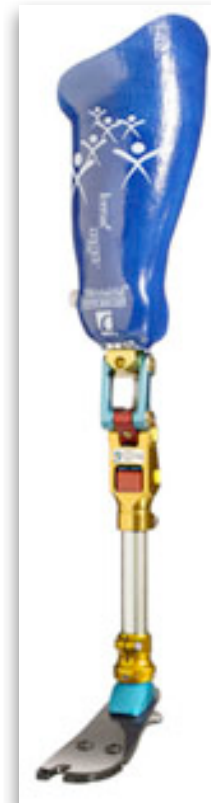


- Company profile
- Össur is in the business of improving people's mobility. A leading global company in non-invasive orthopaedics, we deliver advanced and innovative technologies within the fields of prosthetics, braces, supports and compression therapy.
- Determined to restore maximum biological function to those in need, Össur has more than thirty years' experience in the design and production of high-tech orthopaedic devices. Our newest platform is [Bionic Technology](#) by Össur - a precise fusion of artificial intelligence and human physiology that is transforming the technological landscape.
- Our work, however, is as much about people as it is about products. Their comfort, confidence and rehabilitation are central to our endeavors. We never forget that every time we develop a product or service, we are helping someone else to build a better life. What better business to be in.
- Founded in 1971, Össur has amassed wide-ranging expertise in the development, manufacture and sale of non-invasive orthopaedics. Today the company is a leading global player in the industry.
- An assertive acquisition strategy complements ambitious organic growth as Össur continues to conceive and harness the very best in design and technological advances in its award-winning pursuit of "life without limitations".
- Recognized by the World Economic Forum as a "Technology Pioneer", the company invests significantly in research and product development. Its innovative R&D unit ensures a consistently strong position in the market, while Össur's customer experience is backed up with a range of first-class technical services.
- Össur employs a staff of around 1,600 in 14 strategic locations. It has extensive operations in the Americas, Europe and Asia, with numerous distributors in other markets. The Company's headquarters are in Iceland.
- HR Contacts





## Product Examples





HRV Engineering is Iceland's premiere construction project management and consulting engineering firm, offering full service, multi-discipline, integrated engineering services and solutions to our clients - on time, within budget, safely and professionally. We have successfully delivered projects of all sizes in some of the most challenging conditions and environments on earth. Our core areas of expertise include:

- Construction Project Management
- Construction Management
- Engineering, Procurement, Construction Management (EPCM)
- Civil, Mechanical and Electrical Engineering Design
- Environmental Engineering
- Geotechnical Engineering & Engineering Geology
- Environmental Consulting & Monitoring
- Materials Research & Testing

HRV Engineering was created by the formal alliance of three of Iceland's largest and most experienced consulting engineering and construction project management firms: Honnun, Rafhonnun and VST. Together, we have played a leading role in almost every major construction project in Iceland, including:

- Aluminum smelter plants
- Geothermal and hydroelectric power plants
- High-voltage power transmission lines and towers
- Utilities & waterworks
- Harbors
- Building construction
- Roads, bridges & tunnels

With a combined workforce of over 320 employees, HRV Engineering has laid the foundations of its success on a multi-disciplinary team of highly trained professionals, among them civil, structural, electrical, industrial, mechanical and environmental engineers, experienced project managers and construction managers, biologists, chemists, geologists, geographers, draftsmen and technicians. Drawing on this wealth of professional skills and extensive technical expertise, HRV Engineering offers its clients the complete portfolio of services, advice and solutions necessary to take any project from concept to reality.



EFLA is a general engineering and consulting firm with a staff of professionals well trained to provide quality service in a wide variety of fields. The Company's 230 employees, 50 of whom work in foreign subsidiaries, offer wide-ranging and reliable expertise that enables the Company to carry out a number of unlike projects simultaneously, both in Iceland and in many other countries. The Company places strong emphasis on innovation and research. EFLA regards its employees as its most valuable resource.

EFLA was formally established on October 10, 2008, with the merger of four engineering and consulting firms – AFL Engineering Office (founded in 1987), Línuhönnun (founded in 1979), RTS Electrical Engineering Office (founded in 1988) and the Sudurlands Engineering Office (founded in 1973) – making the new company one of the largest consulting firms in Iceland.

EFLA now has 6 marketing divisions: Energy and Utilities, Industry, Buildings, Transportation, Environmental Concerns and Project Management, comprised of 27 service divisions with designated core activities, together with the Staff, Business Development, and Research and Innovation Divisions.

EFLA has subsidiaries and associated companies in Norway, Russia, France, Poland, Slovenia, Turkey and Dubai that work on consulting and development projects.



Geysir Green Energy (Geysir) is a geothermal energy company committed to the responsible harnessing of geothermal energy for power production and direct use applications. Geysir participates in the development, construction and operation of geothermal plants worldwide.

The management team is experienced in all aspects of the geothermal industry, from exploration, drilling and development to power plant operations. The collective experience of Geysir and its operating subsidiaries provides a solid knowledge base across the geothermal value chain to strengthen the range of projects under development. Geysir's Icelandic home market provides a stable operating base for its subsidiaries through existing contracts and power plant operations.

#### Operations & Development

The operations and development of geothermal resources are focused on Iceland, Germany, USA, China and the Philippines.

#### GEOHERMAL OPERATIONS FOR 33 YEARS

- Iceland is the center of Geysir Green Energy's operations and experience where HS Orka, a leading Icelandic geothermal utility is located, with 175 MW of installed electrical capacity and 150 MWth for space heating. The counter on the right side of this page illustrates the company's geothermal energy production. Iceland is also the core market of Iceland Drilling, where the company's specialized geothermal rigs drilled over 80.000 meters in 2008 alone.-

#### RESOURCE DEVELOPMENT ON THREE CONTINENTS

- Geysir is engaged in development activities in several regions. The development efforts are located in geographic areas with proven geothermal resources in Iceland, Germany, the United States, China and the Philippines.



The founding of Landsvirkjun in 1965 may be traced to the Icelandic government's growing interest in increasing the utilisation of energy resources by attracting foreign investors for power-intensive industry in Iceland.

Early in the 1960s, the Swiss aluminium producer Alusuisse expressed an interest in building an aluminium plant in Iceland. At this point, Landsvirkjun was established for the purpose of constructing and operating power plants which could both sell electricity to heavy industries and provide the general market with electricity at reasonable prices. Up to this time, the electrification of Iceland had been managed by the national government and municipalities around the country; however, these electric works were incapable of financing new energy projects.

Landsvirkjun produces electricity in 16 power stations in Iceland. Thirteen are hydropower stations, two are geothermal and one is run on fossil fuels.

In order to maintain a balance in water budgets and operate hydropower stations with stable capacities, the company operates an extensive system of reservoirs, which provide water to the stations and store the water that accumulates during the summer.

Landsvirkjun's Purchasing Department is responsible for ensuring that Landsvirkjun's purchases and invitations to tender are in accordance with the company's purchasing policies. All invitations to tender and bids for projects are published on this website.



### **We Generate Progress**

Construction of the 690 MW Kárahnjúkar hydroelectric project in Eastern Iceland started in 2003 and the six turbines came into full production in the late 2007. The project is owned by Landsvirkjun and is the largest project that has been developed in the country with a total cost of approximately 1.3 billion EUR.



### **We Generate Green Energy**

Landsvirkjun is a leader in the production of electricity from emission free renewables in Iceland and a successful competitor internationally in attracting power-intensive industries to Iceland. Landsvirkjun has over 30 years of experience of design, construction and operation of power system built on hydropower and geothermal energy.



# RioTintoAlcan



- In 1902, Alcan was synonymous with aluminum production. Today, it offers much more. Alcan has evolved into one of the globe's leading suppliers of bauxite, alumina and aluminum, and a top-ranked provider of engineered and packaging materials, delivering increased productivity, competitiveness and profitability to customers around the world.

Alcan's strength lies in the powerful synergy of its skilled people, its market-driven solutions, its advanced technology and its proven commitment to sustainable value creation. Focused on its governing objective of Maximizing Value, today's Alcan is a strategic operating company that is more attuned and responsive to market opportunities.

Rolled out in 2004, the Alcan Integrated Management System (AIMS) enables the Company to share best practices and tools for improvement, while ensuring all businesses make portfolio choices that create sustainable competitive advantages. Each of Alcan's four business groups — Bauxite and Alumina, Primary Metal, Engineered Products and Packaging — holds strong market positions in the Americas, Europe and Asia.

Selected as a "Super-Sector Leader" on the Dow Jones Sustainability World Index in 2005, Alcan seeks to balance its economic, environmental and social responsibilities everywhere it operates. Another important focus is on developing strong leaders and empowering employees, the driving force behind Alcan's innovative solutions and services, and its ability to anticipate and meet customers' changing requirements.

Today, Alcan has some 68,000 employees, including its joint ventures, in 61 countries and regions. With its head office in Montreal, Canada, Alcan is a public company traded on the Toronto, New York, London, Paris and Swiss stock exchanges with 2006 revenues of \$23.6 billion.





- "We are innovative in everything we do and we provide outstanding new solutions and services to the food processing industry in order to create greater value for all our stakeholders."
- Marel Food Systems is a leading global provider of advanced equipment and systems for the food processing industry. Our internationally renowned brands include AEW Delford, Carnitech, Marel and Scanvaegt, and in May 2008, we joined forces with Stork Food Systems. United, we are at the forefront of innovation in the food processing industry, helping our customers around the world to increase their productivity.
- Marel Food Systems is a multinational company, with more than 3,700 employees worldwide. We are made up of eight business units, located in the Netherlands, Denmark, the United States, Iceland, Slovakia and Singapore. In addition, our extensive global sales and service network spans more than 40 countries. The largest number of our employees is based in the Netherlands (37%), followed by Denmark (23%), the United States (20%) and Iceland (9%), with the remainder (21%) spread out across the globe – from Brazil and several other locations in South America all the way across to Australia and New Zealand in the Pacific.
- We are a single source provider for food processors the world over. We are the global leader in integrated systems for the fish and poultry industry segments, and a major provider in the meat industry. From harvesting raw materials to packaging the final product – from standardized stand-alone units to all-inclusive integrated turnkey systems – our products are designed to meet our customers' every need.

Marel Food Systems thrives on imagination and ingenuity. With our annual investment of 5-6% of income in research and development – far above the industry average – we are constantly pushing the envelope of what is possible. Our cutting edge equipment and software components help food processors of all sizes, in all markets, to operate at peak productivity, whether it be in the processing of fish, meat, poultry, cheese or prepared foods. Our products positively and directly enhance the overall quality and value of food.

University of Iceland

University of Reykjavík

Keilir Atlantic Centre of Excellence



HÁSKÓLI ÍSLANDS

The University of Iceland School of Engineering and Natural Sciences is a leader within teaching and research in the fields of engineering, computer science and natural sciences in Iceland. The school provides various services for students, the professional sector and the general community

Website - [www.hi.is/en](http://www.hi.is/en)

The University of Iceland was established in 1911. The university is structured into 5 academic schools, and 25 faculties. The university offers a diverse range of academic programmes on all levels. The University of Iceland is the only university in Iceland offering undergraduate and graduate studies in all the main disciplines. In addition, the University of Iceland is an internationally renowned research university and our academics have received a great deal of international recognition for their scientific work.

The University of Iceland offers a diverse selection of courses taught in English. Individual academic programmes are offered entirely in English, both at the undergraduate and graduate levels, and all schools offer courses taught in English.

### **An international university**

The University of Iceland works in an international environment, and cooperates with a multitude of international universities and research institutions on research, student exchange, staff exchange, and more. Hundreds of international students study at the university each year, and their numbers are constantly growing. The university is ambitious about attracting international students and scholars, and the number of courses taught in English is always increasing.





**Reykjavik University** is a vibrant international university located at the heart of Reykjavik, the capital of Iceland. Reykjavik University (RU) is Iceland's largest private university.

Our focus is on research, excellence in teaching, entrepreneurship, technology development and co-operation with the active business community.

We educate students to become leaders in business, technology and society at large, starting new companies and creating jobs.

Academic programs at Reykjavik University are based on internationally recognized models, and are continually under review and improvement

## School of Science and Engineering

### **Ambitious Studies in Engineering**

The aim of the School of Science and Engineering is to provide outstanding university education in the fields of engineering with a special emphasis on research, development and innovation. In addition to acquiring a broad theoretical basis, students participate extensively in hands-on, practical projects in close co-operation with local and international businesses and research institutions. The School of Science and Engineering also offer a range of continuing education programs for professionals.

### **Engineering**

RU offer Diploma, BSc and MSc degree programs in biomedical engineering, electrical engineering, civil engineering, financial engineering, industrial engineering, mechanical engineering, software engineering and engineering management. The programs' mission is to provide students with a strong theoretical foundation and specialised skills that will prepare them for successful careers or further study. Many students have practical work experience in their chosen field of study and there is considerable emphasis on ambitious and relevant projects. All the programs may lead to relevant professional engineering certifications.



## Keilir - Atlantic Center of Excellence

The institute was founded in the spring of 2007 and the name Keilir, Atlantic Center of Excellence symbolizes Iceland's position in the globalized world; with the goals of the institute being to build up knowledge, teaching and research at a university level within the international academic community.

Keilir, Atlantic Center of Excellence operates an educational community on the site of the former US Military Air-Base in Keflavik now called Ásbrú Enterprise Park and is a leader in rewriting the possibilities for Icelandic education through innovative approaches in bringing together businesses and academia, knowledge and finance on international base.

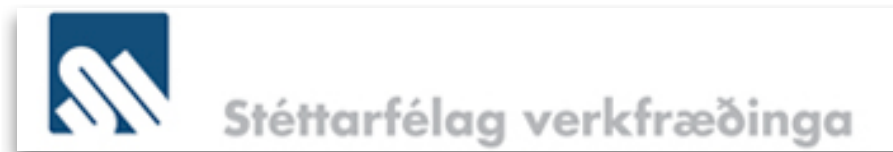
## Courses in English

Keilir offers a range of short courses and longer programs in English.

**Renewable Energy in Iceland**  
**Geothermal Power Plant Technician**

## Keilir Institute of Technology

Welcome to the Keilir Institute of Technology, or KIT. KIT is an independent educational organization, positioned at the center of a unique technology park located at Ásbrú Enterprise Park - the site of the former US Naval Air Station in Keflavik Iceland. The park brings together an international university level program, leading businesses and start-ups in close vicinity to Keflavik International Airport.



Icelandic equivalent of IMechE

Must have MSc. in Engineering to join as “Engineer is a legally protected title in Iceland

More details to follow

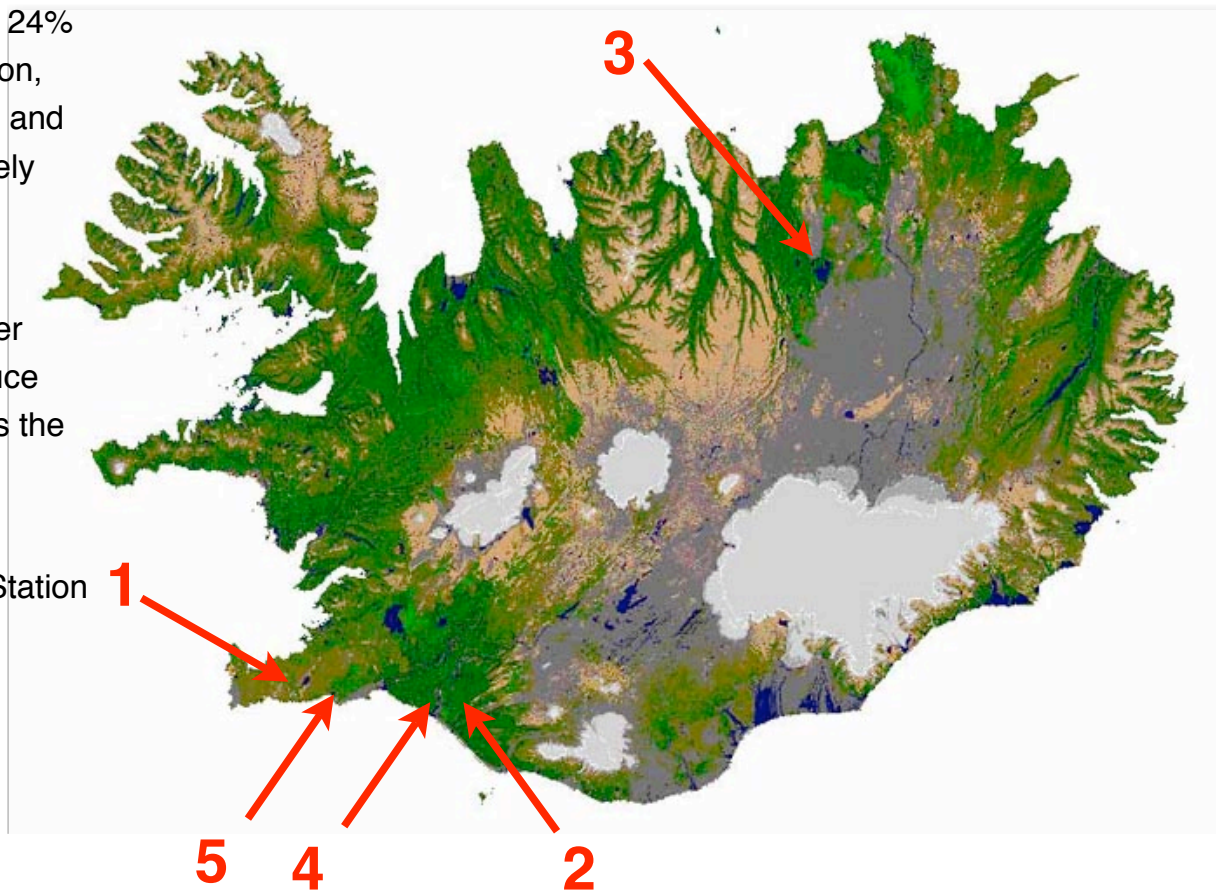
## Places of Interest to Engineers - Geothermal Plants

Due to the special geological location of Iceland, the high concentration of volcanoes in the area are often an advantage in the generation of geothermal energy, the heating and production of electricity

Five major geothermal power plants exist in Iceland, which produce approximately 24% (2008) of the nation's energy. In addition, geothermal heating meets the heating and hot water requirements of approximately 87% of all buildings in Iceland

The following are the five largest power stations in Iceland. The first two produce both electricity and hot water, whereas the other three produce only electricity:

1. Svartsengi Power Station
2. Nesjavellir Geothermal Power Station
3. Krafla Power Station
4. Hellisheiði Power Station
5. Reykjanes Power Station





## Places of Interest to Engineers - Hydroelectric Power

Over 80% of electricity in Iceland is generated in hydroelectric power stations. While geothermal energy is used for heating (and increasingly for electricity generation), the hydroelectric power stations, historically all run by Landsvirkjun, are central to the existence of Iceland as an industrialized country

The largest power station by far is Kárahnjúkavirkjun (690 MW), which is being built in the area north of Vatnajökull to generate electricity for a new factory for the production of aluminum.

Other stations include:

- **Blöndustöð** generates 150 MW
- **Búrfellsstöð** generates 270 MW
- **Hrauneyjafosstöð** generates 210 MW
- **Laxárstöðvar** generates 28 MW
- **Sigöldustöð** generates 150 MW
- **Sogsstöðvar** generates 89 MW
- **Sultartangastöð** generates 120 MW
- **Vatnsfellsstöð** generates 90 MW



**Kárahnjúkavirkjun**