académie Nantes

RÉGION ACADÉMIQUE
PAYS DE LA LOIRE

MINISTÈRE
DE L'ÉDUCATION NATIONALE,
DE L'ENSEIGNEMENT SUPÉRIEUR
ET DE LA RECHERCHE

BACCALAUREAT GENERAL ET TECHNOLOGIQUE

EPREUVE SPECIFIQUE MENTION
« SECTION EUROPEENNE OU DE LANGUE ORIENTALE »
Académie de Nantes, binôme : Anglais/SVT

Thème 2 - Enjeux planétaires contemporains

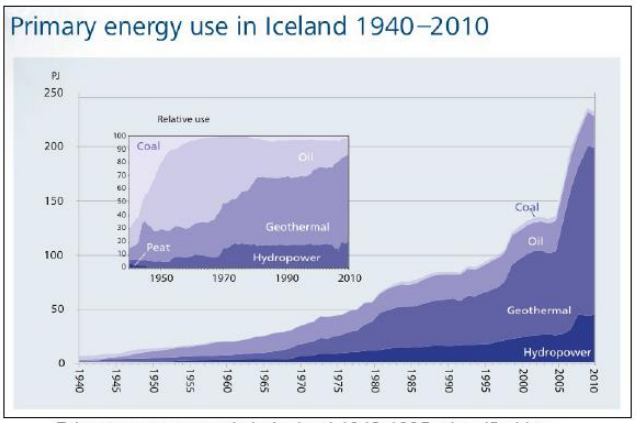
2-A - Géothermie et propriétés thermiques de la Terre

As regards geothermal energy, why is Iceland a very special place?

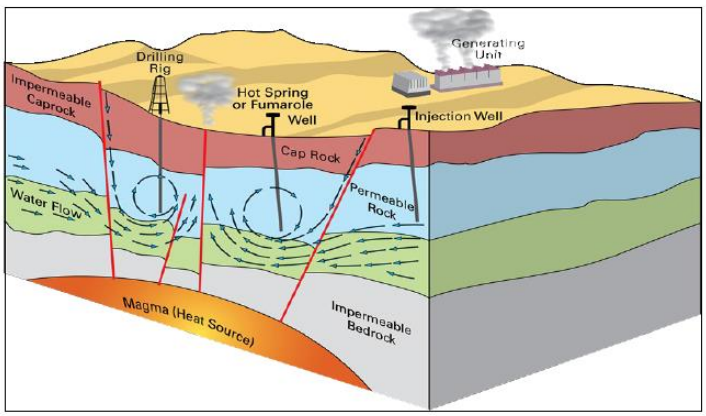
During the course of the 20th century, Iceland went from what was one of Europe's poorest countries, dependent upon peat and imported coal for its energy, to a country with a high standard of living where practically all stationary energy is derived from renewable resources. In 2011, roughly 84% of primary energy use in Iceland came from indigenous renewable resources. 66% thereof was from geothermal.

Geothermal energy is a carbon free, renewable, sustainable form of energy that provides a continuous, uninterrupted supply of heat that can be used to heat homes and office buildings and to generate electricity. Geothermal energy plants are normally located in regions where there is volcanic activity, such as in Iceland and New Zealand. Resources of geothermal energy range from the shallow ground to hot water and hot rock found a few miles beneath the Earth's surface, and down even deeper to the extremely high temperatures of molten rock called magma.

From National energy authority of Iceland.

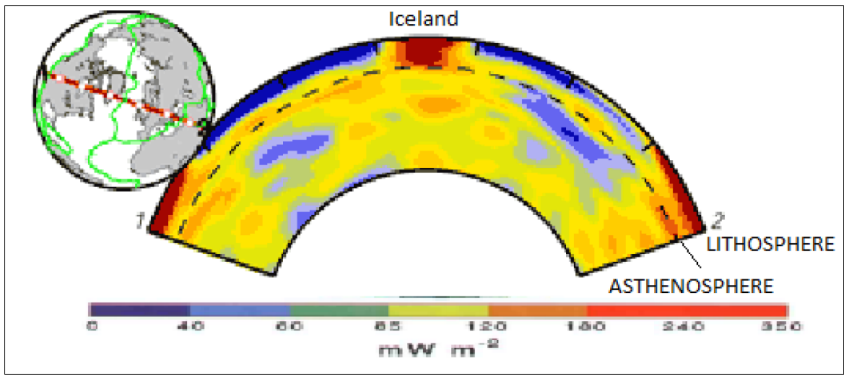


Primary energy supply in Iceland 1940-1995, classified by energy sources
Extracted from : http://geoheat.oit.edu



Simplified diagram of geotherman power plant
Extracted from : British Geological Survey

Arthur Holmes was the first influential advocate of convection within the Earth, a process that later became generally accepted as the physical basis for Wegener's theory of continental drift (Holmes 1931).



Tomography section through Iceland
Extracted form: http://www.mantleplumes.org