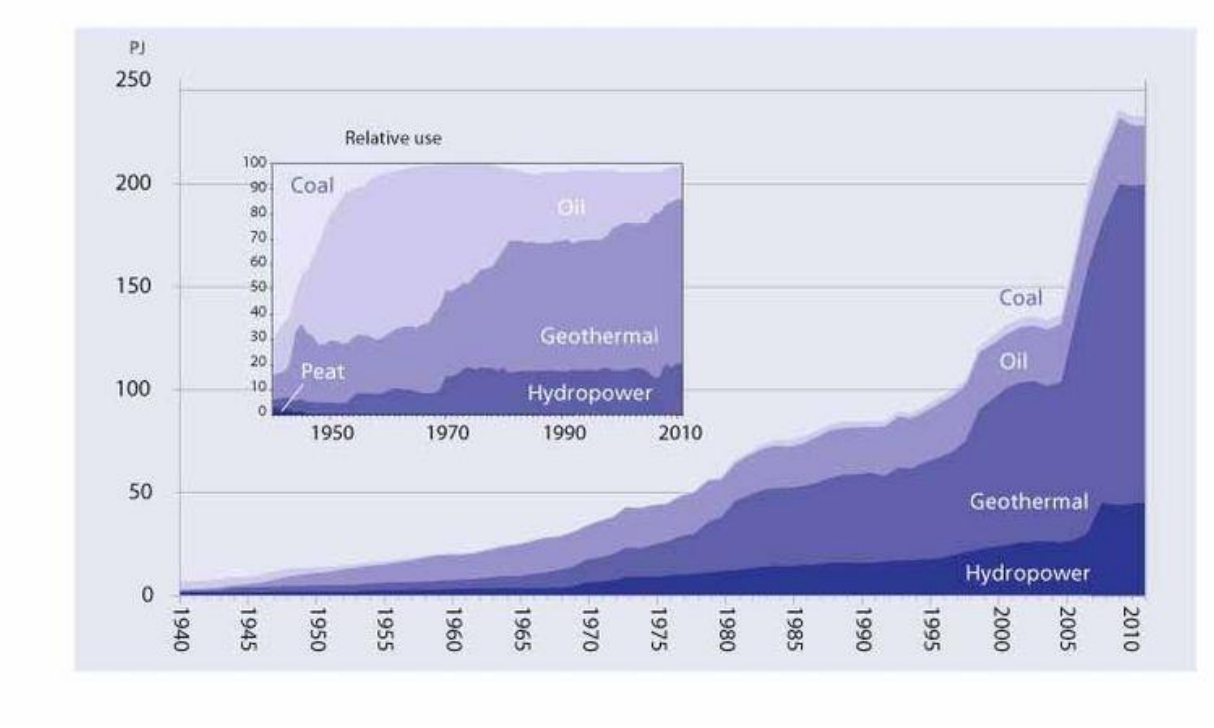
# Primary energy sources in Iceland.

Primary energy use inIceland has increased by large amounts in the last few decades. The main reason for this is the large proportion of large industries in the use of electricity. Around 15% of the primary energy used in Iceland is imported, and 85% is produced domestically. The proportions of energy types in the primary energy have changed a lot over time.

**Main sources of energy in Iceland**

Coal was the largest relative component of primary energy use through the end of the Second World War, after which the use of coal decreased due to increased oil use for herring processing and increased use of geothermal for house-heating. The use of coal has increased again since the late seventies, mostly due to industrial usage in the production of ferrosilicon.




(2015, National Energy Authority)

The figure shows clearly how the proportion of geothermal has multiplied during this period from 1940-2010 and is now Iceland's largest source of energy. In more recent years the use of geothermal for the generation of

electricity has increased significantly. Hydropower has increased rapidly since the late sixties by the establishment of aluminum industry in Iceland. The use of coal decreased to almost nothing for heating around the middle of the last century.

**Task:**

**Use the Excel file "Primary energy use Iceland.xls "to answer these problems.** Start with downdoading it on your computer. Work in Excel and present your results in a Word-file. (The figures are from Orkustofnun (National Energy Authority))

1. What is the meaning of the energy unit PJ? (find informations on the internet)

2. Make a table **(Table 1)** showing the **total energy consumption** in Iceland in the years 1940, 1950, 1960, 1970, 1980, 1990, 2000 and 2010. Calculate the percentice consumption each year if the consumption in 2010 is put as 100%.

a)Use the table to make a graph **(Total energy)** showing total energy as a function of year.

b) The trendline here is obviously not linear. Use Excel to find out which trendline fits best

c) Describe the developement in few words using the figures from Table 1.

3. Make a similar table **(Table 2)** and graph **(Hydro energy)** for hydro energy consumption in Iceland. Describe in few words the developement.

4. Make a similar table **(Table3)** and graph **(Geothermal energy)** for geothermal energy consumption in Iceland. Describe in words the developement.

5. Make a similar table **(Table4)** and graph **(Oil )** for oil consumption in Iceland. Use Excel to find out what kind of trendline fits here. Describe in words the developement.

6. Compare the energy consumption from different sources in the years 1940,1950, 1960, 1970, 1990, 2000 and 2010 by making a table **(Table 5)** showing the percentice consumption of hydro, geothermal, oil and coal of the total energy consumptions each of these years.

a)Which source of energy was most important for Icelanders in each of these years?

b) Which of these energy sources are renewable?

c) What were the percentice of renewable energy consumption in Iceland in 1940, 1980 and 2010?