Lessons from Iceland

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Geothermal Energy can Transform a Country's Economy

"In my youth, over 80% of Iceland's energy needs came from fossil fuel in the form of imported coal and oil. We were a poor nation, primarily of farmers and fishermen, and Iceland was classified by the UNDP as a developing country right down to the 1970s. Now, despite the effects of the present financial crisis, we are among the most prosperous nations in the world, largely due to the transformation which made our electricity production and space heating 100% based on clean energy."

- Mr. Ólafur Ragnar Grímsson,
President of Iceland

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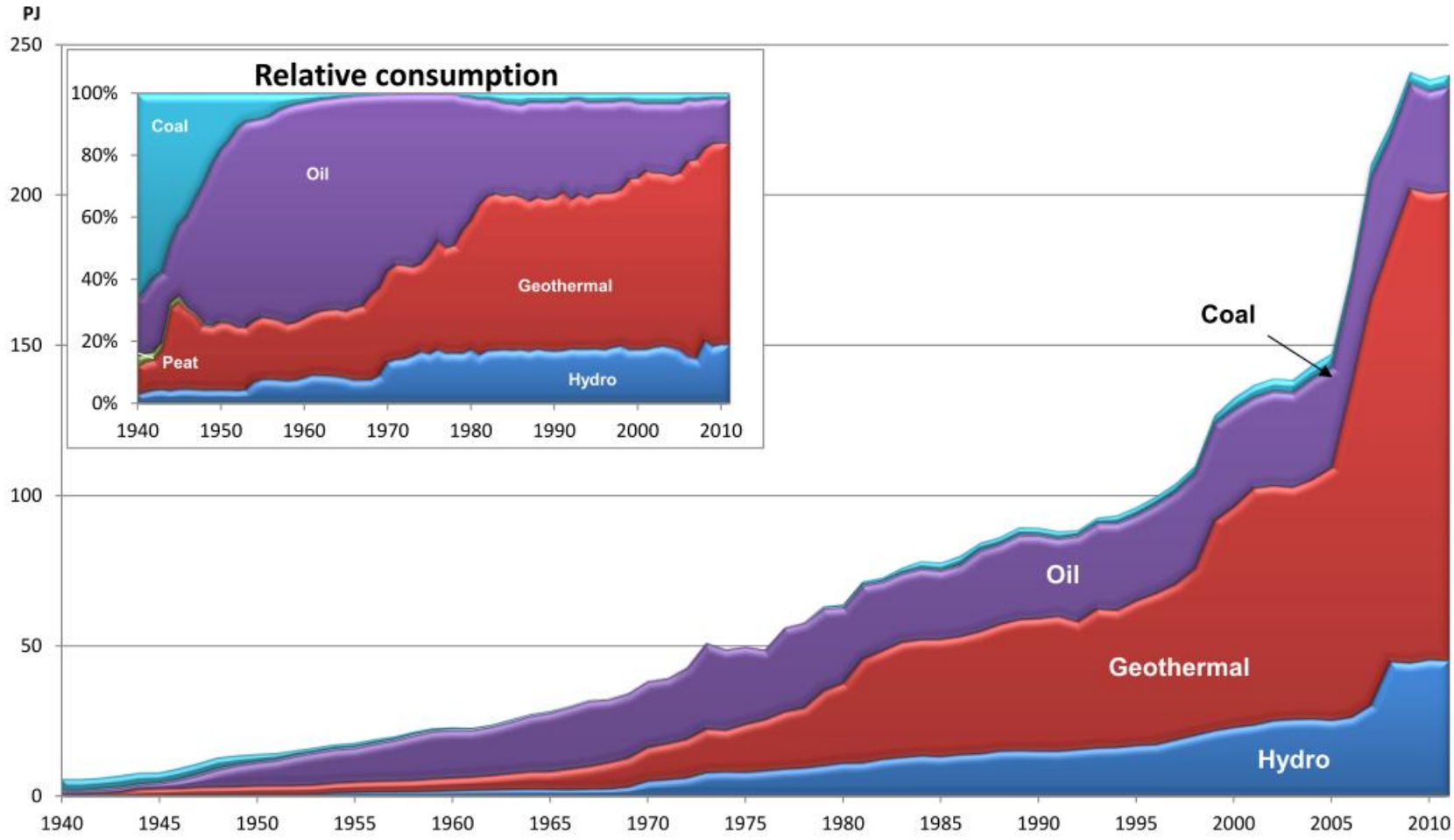
Primary energy consumption in Iceland 1940-2011



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How did Iceland do this?

- In a cold climate heat energy is very important. In the oil crises in the 70´s and 80´s a fundamental decision was made to move from fossil fuel to geothermal for heating.
- A decision made with a full backup from all level of government and the people.
- At the same time Iceland started to attract power intensive industry to start utilizing its huge energy potential both in Hydro as well as Geothermal Power.
- As Icelanders are only 310.000 today and a far away from power markets we decided to attracted the power intensive industry.
- This was possible as both local and national government formed the national power company which involve most of the power plants already in operation.

How did Iceland do this?

- With the national power company asset and government guarantee it was possible to finance the build up of new much bigger power plants.
- A very important ingredient in this was the 25 year power contract with the power intensive industry with a take and pay clause.
- This model is still more or less used today except the government guarantee is getting less important as the power companies grows.

Situation today

- Iceland with its 310.000 people has more then 2500MW of installed power.
- The power intensive industry consumes about 80% of all the electricity produced.
- 40% of all export from Iceland comes from power intensive industry.
- The energy system is very reliable with very little downtime.
- Energy prices are low for all.
- Great expansions opportunities on energy. Considerations to sell energy through undersea cable to Europe.
- Spin offs are getting very important for our economy.
- Iceland has started privatizing its energy industry and that will continue.

What should Kenya do?

Hard for me to give advice as I am not an expert in Kenya´s situation.

- Focus on MW not reports. It is time for action.
- Kenya is on the right way but to accelerate the much needed power plant buildup Private Equity is needed.
- Secure 25 years take and pay contracts for power.
- Focus on securing low interest rates for the country and its industries.
- Give Spin Offs some space.
- Do not focus on one solution, a mixture of Public and Private Power Companies with PPP as well is a good way forward.

- Remember that time is money something that Private Equity values highly so speed on decision making is important.

Uses of geothermal around the world

Flower Growing, Kenya

District Cooling, Abu Dhabi

Drying of Tomatoes, Greece

Aquaculture, California

Resource Park in Svartsengi hosts a Geothermal Power plant…

Note: Photos courtesy of Albert Albertsson and HS Orka

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…tourist attraction…

Note: Photos courtesy of Albert Albertsson and HS Orka

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…health clinic…

Note: Photos courtesy of Albert Albertsson and HS Orka

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…medical research…

71 year old man from the Faeroe Islands. 2 years history of psoriasis.

4 weeks treatment at Blue Lagoon Medical Clinic.

Note: Photos courtesy of Albert Albertsson and HS Orka

…cosmetics production…

Note: Photos courtesy of Albert Albertsson and HS Orka

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…algae, silica, salt production…

Note: Photos courtesy of Albert Albertsson and HS Orka

…carbon recycling methanol plant…

Note: Photos courtesy of Albert Albertsson and HS Orka

…and cutting edge biotech

ORF´s green house growing barley .

By gene manipulation specific human proteins are produced in the barley seeds.

From HS: hot water, ground water, and power

Note: Photos courtesy of Albert Albertsson and HS Orka

Thank You


Takk fyrir
Photo: G. Ívarsson