

The Geothermal Cluster

The role of financial institutions - a new approach in Iceland

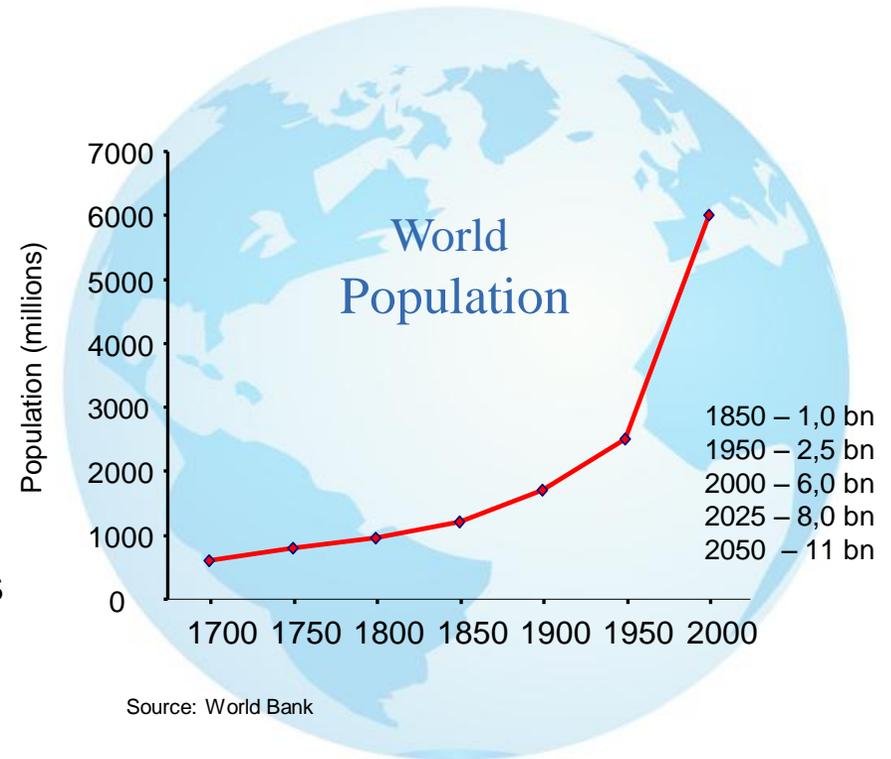


Stefán Pétursson,
Chief Financial Officer of Arion Bank

Geothermal is an important resource

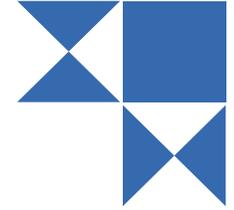


- World population will grow substantially over next decades
 - Mainly in the underdeveloped part of the world
- Demand for energy will increase
 - Fossil fuels used to meet demand
 - Decisions now affect the future
- Focus on CO₂ emissions calls for utilization of renewables on a global basis
 - Heating
 - Electricity generation



Geothermal energy can play an important role

Steady growth in power production in Iceland



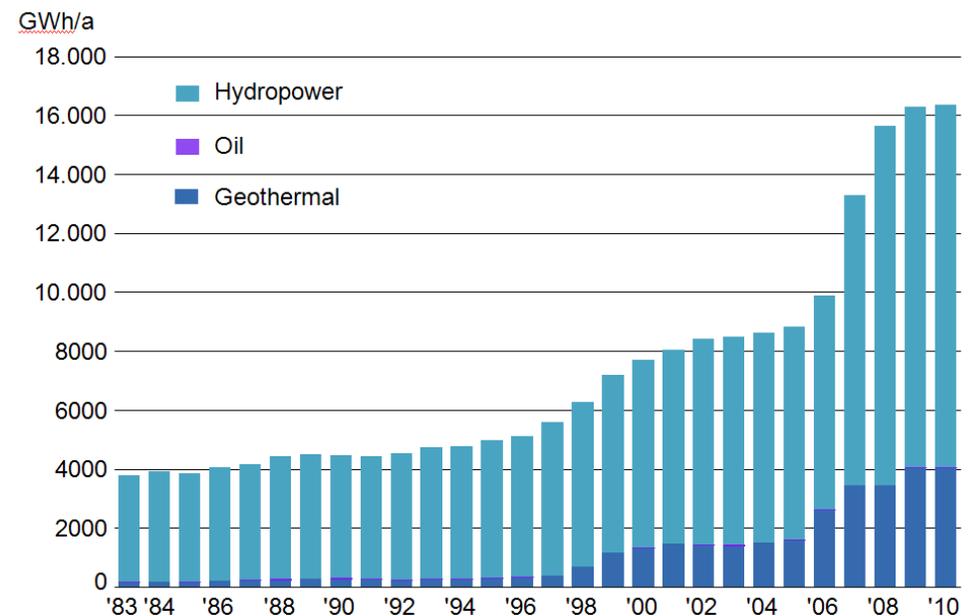
- Availability of natural resources
 - Hydro and Geothermal
- Technical know-how
- Stable regulatory environment
- Attractive long-term funding
 - Based on guarantees from the Government or large municipalities

Geothermal cluster requires activity and growth in the domestic market

but

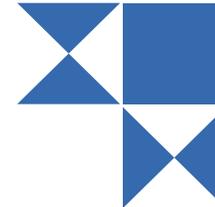
funding further growth is difficult in a changed economic environment

Electricity Production by Sources 1983-2010



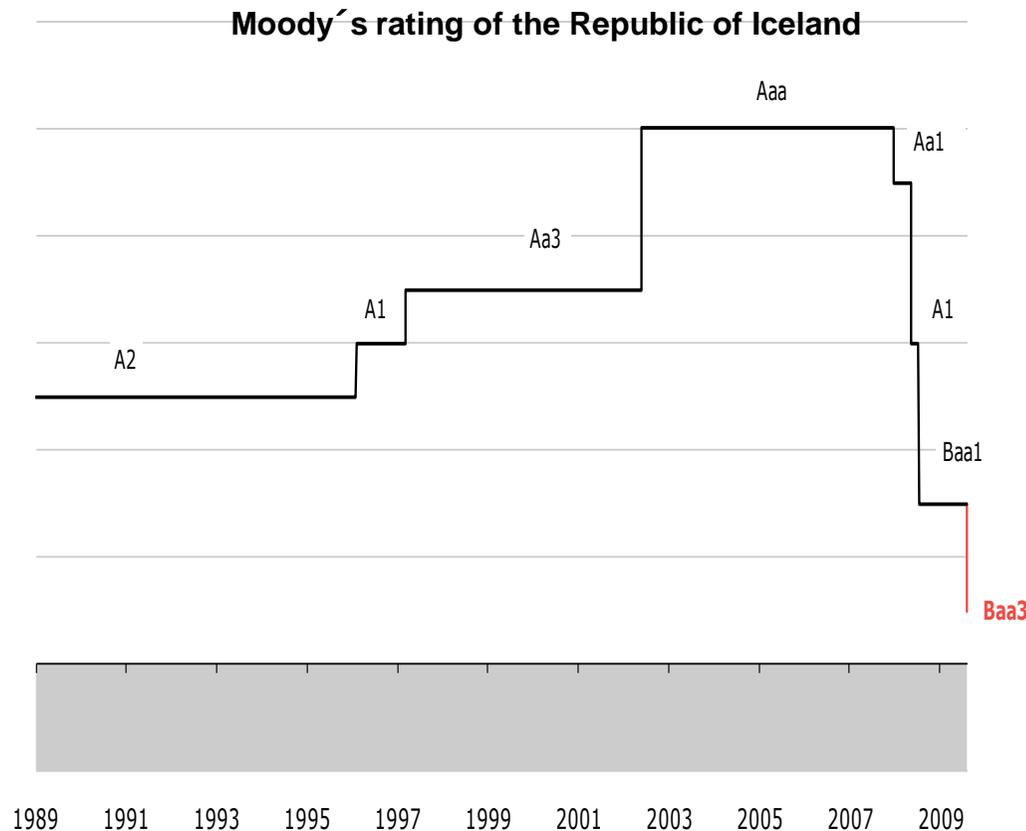
Source: Landsvirkjun

Credit rating changes limit scope for further growth in the sector

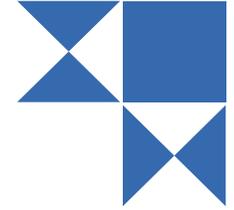


- Credit margins have increased substantially
- Icelandic entities have limited access to funding
- The power companies are financially too weak for large investments
- The State Treasury has limited flexibility to provide guarantees

A new approach is needed if we want to continue large scale investments in hydro or geothermal

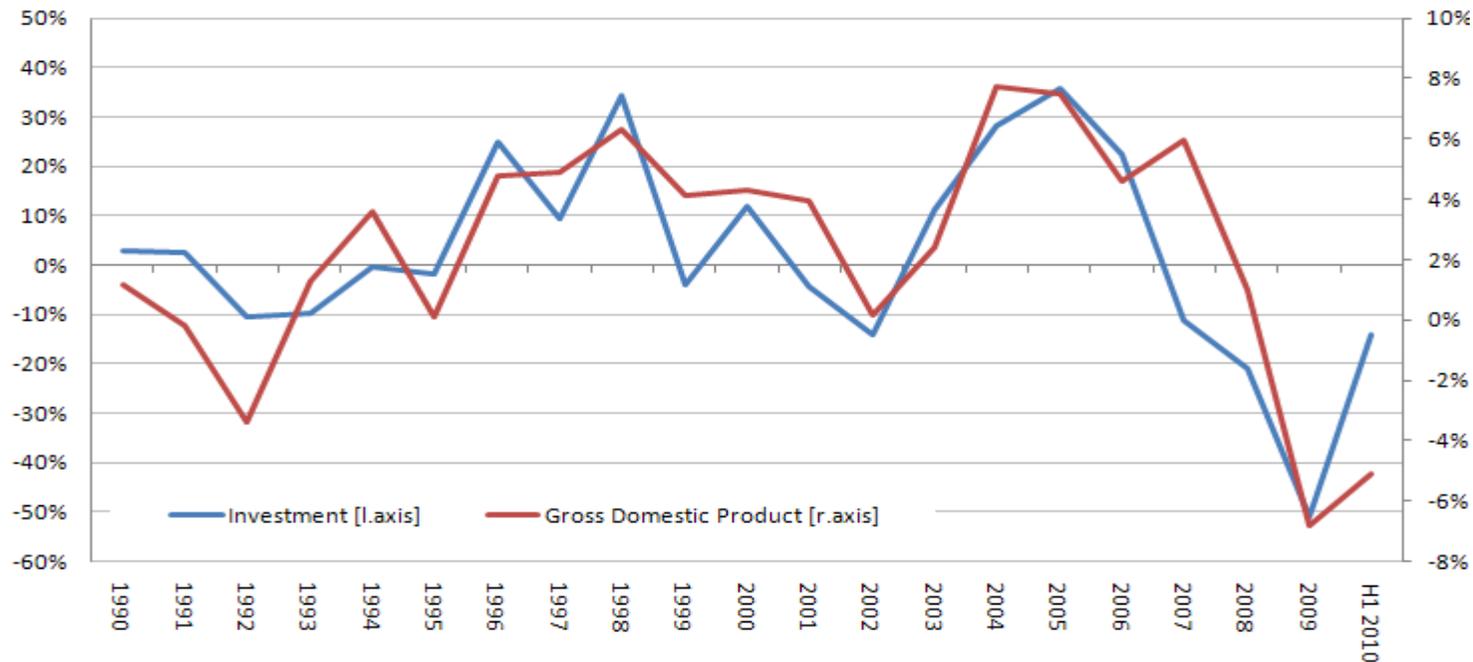


The economic situation calls for investment in Iceland



Investment and Economic growth

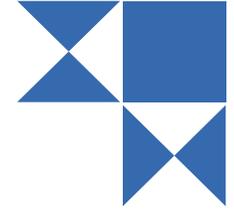
- Real changes from previous year



Sources: Statistics Iceland

Power investments have traditionally fuelled economic growth in Iceland

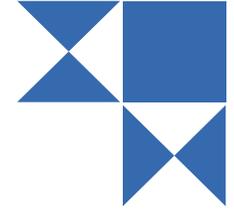
Project Financing (PF) and Build, Operate, Transfer or BOT may offer solution



- PF is a structure where the project investment costs are covered by debt which is guaranteed by future cash flows
- Applied in various project types
 - Energy & Infrastructure
 - Metals & mining
 - Shipping
- Used where natural resources are available but access to capital is limited
 - Turkey
 - The Philippines
- In BOT a company is permitted to build and operate assets that utilise a resource for a defined term and must then transfer the assets to the government at the end of the term



Main characteristics of Project Financing



- A well defined sizeable project placed in a special company (SPV)
- The risk of the SPV's owners is limited to their equity contribution
- Lenders focus on future cash flows for repayment of project debt

Focus on risk reduction for debt and equity investors

Advantages

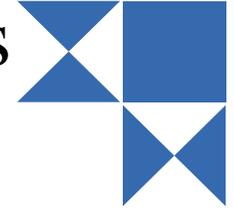
- Risk reduction for the owners
- Long term debt
- Debt servicing is designed to meet project cash flows

Disadvantages

- Limited flexibility
- Cash flow is used in a pre-specified way
- Limited financial flexibility

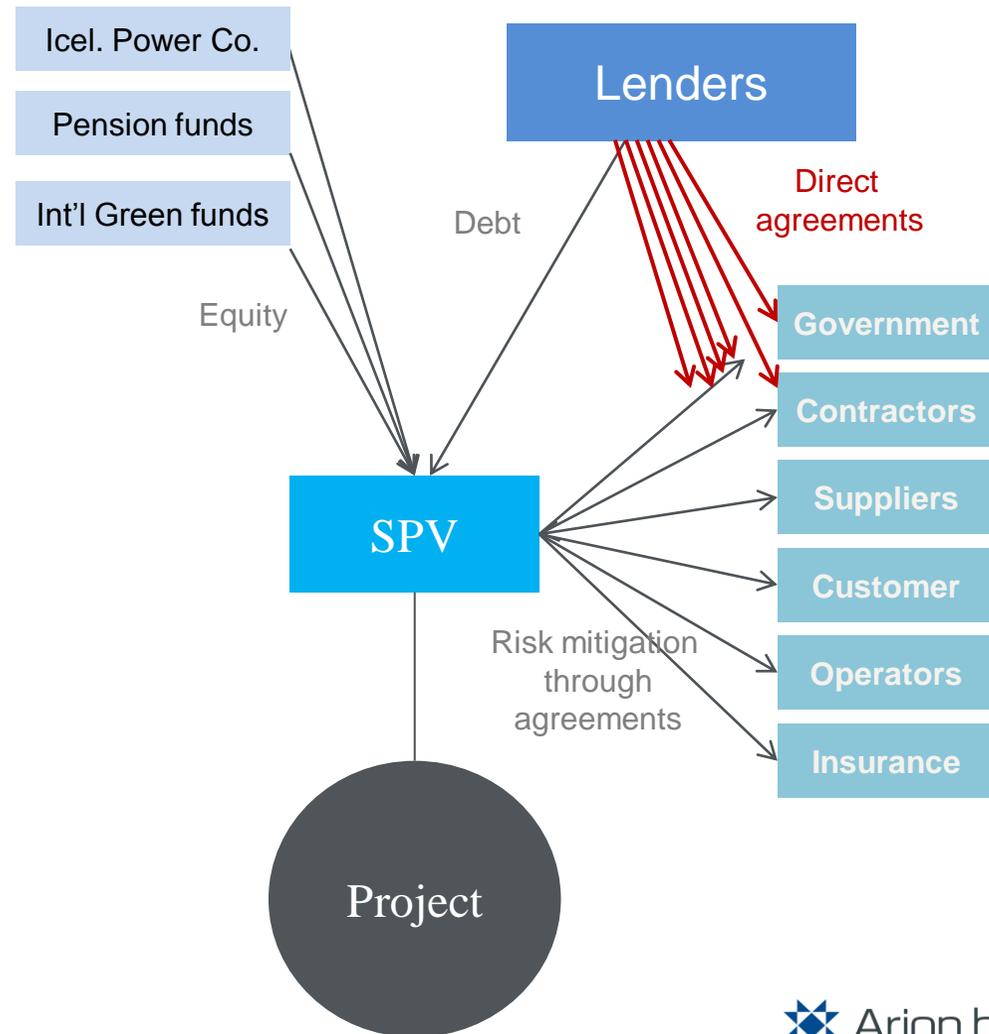
More complicated and often more expensive than on balance sheet financing

Project financing and role of financial institutions

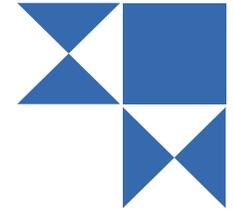


Project financing is a complex financing option mainly due to number and complexity of necessary agreements

- Arion Bank provides a variety of project financing related services
 - Advisory
 - Structuring services
 - Debt syndication
 - Trade Finance
 - Payment services

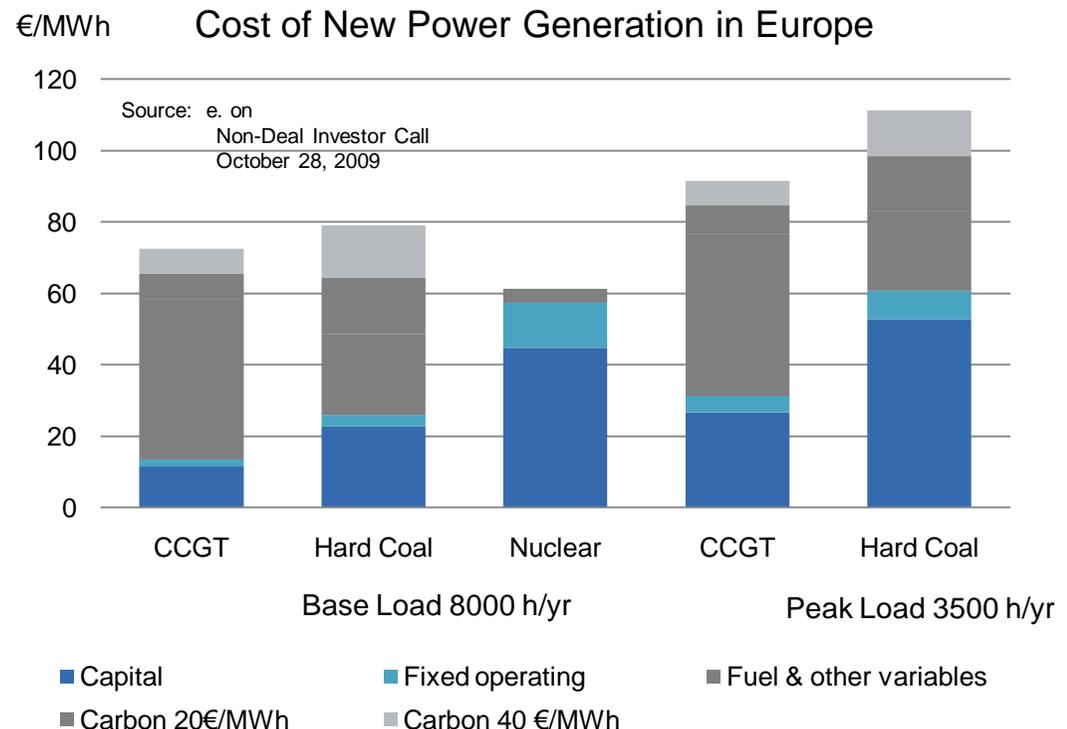


Improved competitive position of Iceland creates scope for project financing and BOT



- European electricity markets have been liberalised
 - Power prices higher than few years ago
- Need for power investments in Europe
 - Both new and rebuild
- Cost of new generation in Europe substantially higher than in Iceland

A solid power contract with a good customer should allow enough financial flexibility to use project financing in Iceland

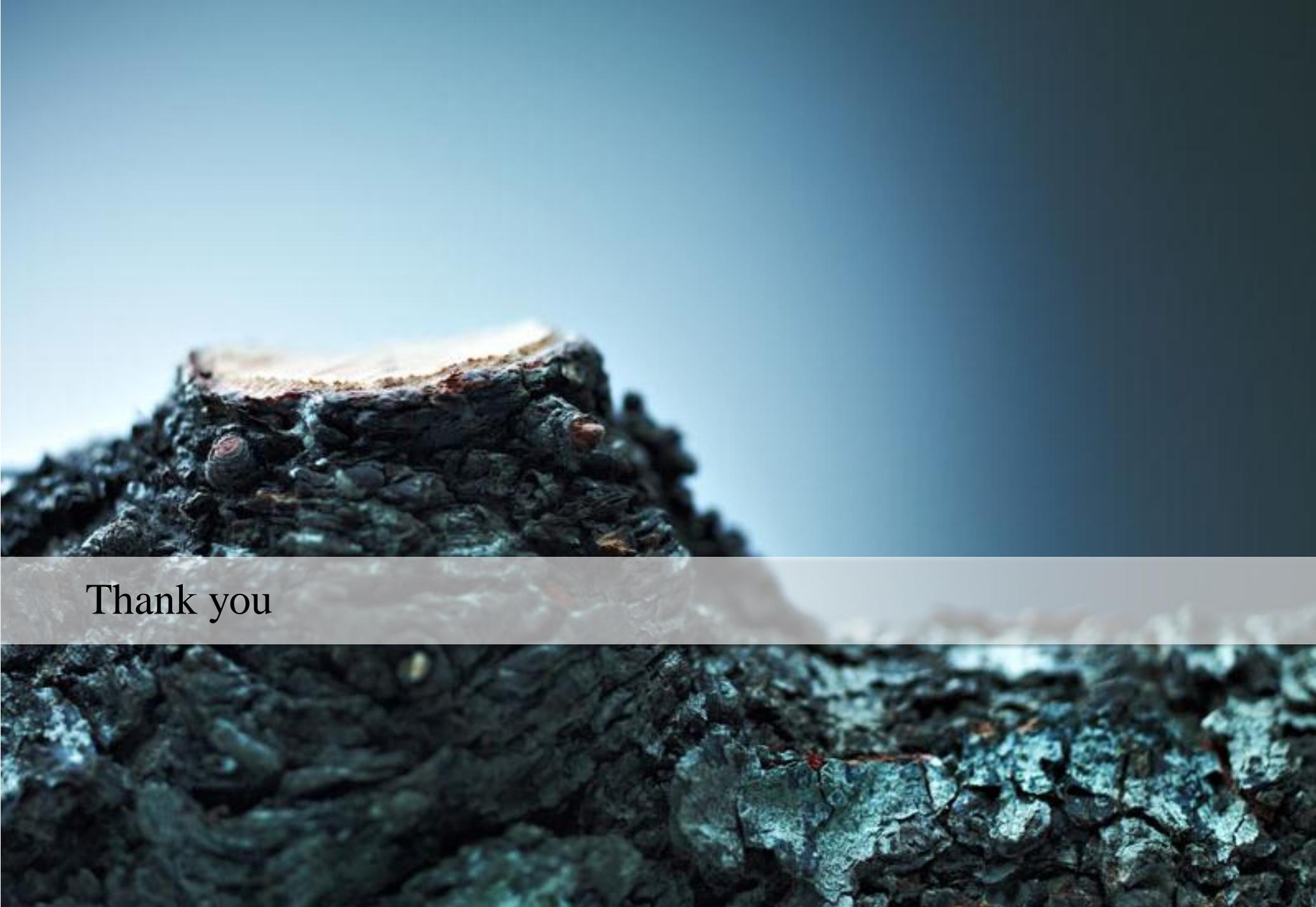


Bright future for the geothermal cluster in Iceland



- Iceland should invite quality international investors to co-invest in new power projects on a BOT basis with Icelandic power companies and pension funds
- Green investment funds are actively looking for renewable projects
- The financial institutions can assist in finding the best investors

Current economic challenges should not have to negatively impact geothermal development and the geothermal cluster in Iceland



Thank you