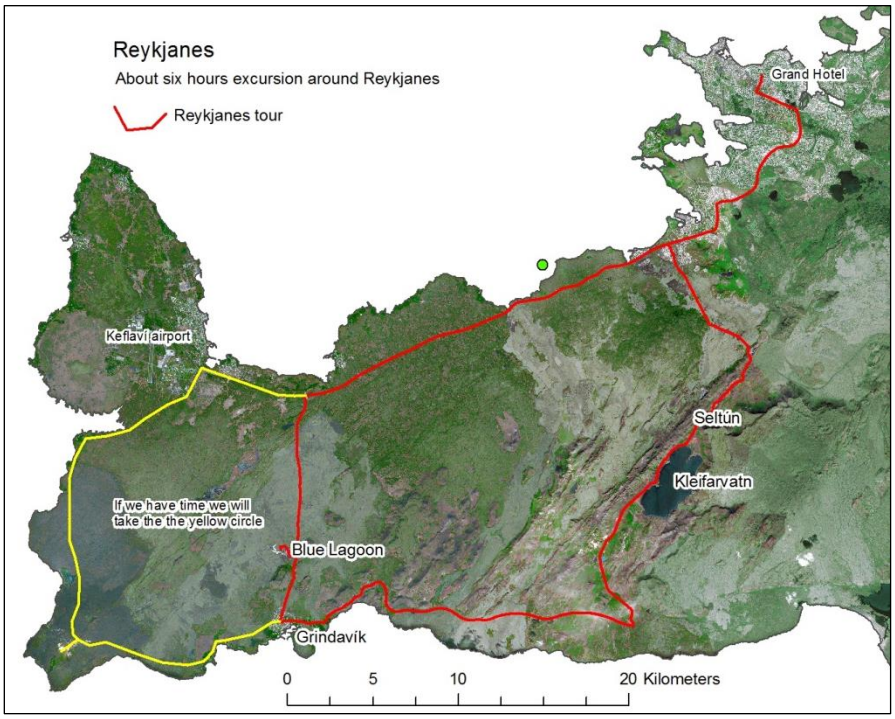
The excursion

On the Thursday the 11th, there will be a half day excursion to the Reykjans Peninsula (see map).

The Reykjanes Peninsula offers variety of landscapes, with geothermal activity, lava fields and sparsely vegetated areas. We will stop few places and look around.

The tour takes us to the geothermal spa Blue Lagoon, where you have opportunity to bath in mineral rich water (see http://www.bluelagoon.is/). The admission to the Blue Lagoon is not included in the conference fee. The admission is about US $ 50.



Seltún geothermal area

The road to Krýsuvík passes by a solfatara field at Seltún. Sulphur has been mined at Krýsuvík from time to time. The latest attempt was made in the late 19th century by a British company, which set up its working base here but had to give up soon.

The main sulphur area is a fumarole field in the col to the southwest. At Seltún, there are mud pools and steaming ground where some sulphur and also white and yellowish brown sulphates are deposited. The sulphates dissolve in water and become mottled and disappear in rainy wheather. The largest mud pools are east of the road, one of them almost extinct and filled with mud washed in by the stream from the solfatara creek west of the road.

In the mid-20th century there were plans to develop the geothermal field for utilisation, including power production, and Seltún then became one of the main drilling targets. There are old drill pads to be seen near the path along the creek. The borehole in one of them started erupting intermittently in the winter of 2010, but a few days pass between the eruptions. The outlet has been diverted sideways across the creek.

Another old borehole blew up in 1999 forming a crater with a diameter of about 30 m, now filled by mud except where a flow of steam keeps boiling pits open. The explosion debris covers the slope as a carpet of yellowish mud up to about 100 m to the northeast of the crater.

The water of the pools is surface water heated by steam from a boiling geothermal reservoir underneath. Accompanying gases such as hydrogen sulphide and carbon dioxide acidify the water and alter the rock to clay. Only the uppermost 300 m of the reservoir at Seltún is boiling, i.e., follows the boiling curve in accordance with increasing pressure. Below this depth, a temperature inversion occurs, indicating that the boiling section is fed laterally from an upflow some distance away.

Kristján Sæmundsson, 2010

www.isor.is

Svartshengi geothermal powerplant

The location of the plant draws its name from a former resting place of horseback riders, which is all of the area east of the Grindavík road across the plant. The plant itself is on lava which erupted back in 1226 and it is called Illahraun. South of the powerplant is Þorbjarnarfell and east of it is Svartengisfell and Selháls between it and north of it is Baðsvellir, which is south from the plant.

A drilling search for steam in Svartengis area began in in the middle of November 1971, when a 700 meter hole was scheduled to be drilled. At a depth of 250 meters the heat was around 200 °C; in the first phase three holes were drilled and the deepest one was about 400 meters. These holes were used for hot water production in the thermal energy exchange plant which was built in 1976. Immediately after the utilization of these steamholes, the separated sea created a lagoon which today is now more famously called, Blue Lagoon. The first houses , in Grindavík, received water on the 6th of November 1976 and year later, on the 30th of December in 1977, the first houses in Njarðvík as well.

Today, the total production capability of the energy plant in Svartsengi is 75 MW in electrical energy and about 150 MW in thermal energy.

Hot water used at Reykjanes peninsula is orginal fresh water. Fresh water is pumped to the plant were the oxygen and natural CO2 is taken out and the water is heated up to 101 – 105 °C in heat exchangers with high pressure steam. Then the water is pumped to the municipalities at Reykjanes peninsula. So there is no need for kettles when customers need hot water, only to flash the hot water at the sink, put the cup under and they have hot water.

The Svartengi plant has been build in phases. The first plant (Power plant 1) was built in the year 1977 – 1979 and the last one (Power plant 6) was built from the year 2006 – 2008.

Today, the total production capability of the energy plant in Svartsengi is 75 MW in electrical energy and about 150 MW in thermal energy.

www.hsorka.is

The Blue Lagoon

The **Blue Lagoon** (Icelandic: *Bláa lónið*) geothermal spa is one of the most visited attractions in Iceland. The spa is located in a lava field in Grindavík on the Reykjanes Peninsula, southwestern Iceland. Bláa lónið is situated approximately 13 km (8 miles) from theKeflavík International Airport and 39 km (24 miles) from the capital city of Reykjavík. That is roughly a 20 minute drive from the airport and a 40 minute drive from Reykjavík. The Blue Lagoon spa and geothermal complex is clearly visible from any of the usual satellite imagery sources at coordinates (63.880, -22.449).

In 1976 a pool formed at the site from the waste water of the geothermal power plant that had just been built there. In 1981 people started bathing in it after the discovery of its healing powers for psoriasis. In 1992 the Blue Lagoon company was established and the bathing facility was opened for the public.

The warm waters are rich in minerals like silica and sulphur and bathing in the Blue Lagoon is reputed to help some people suffering from skin diseases such as psoriasis.[1] The water temperature in the bathing and swimming area of the lagoon averages 37–39 °C (98–102 °F). The Blue Lagoon also operates a research and development facility to help find cures for other skin ailments using the mineral-rich water.

The lagoon is a man-made lagoon which is fed by the water output of the nearby geothermal power plant Svartsengi and is renewed every two days. Superheated water is vented from the ground near a lava flow and used to runturbines that generate electricity. After going through the turbines, the steam and hot water passes through a heat exchanger to provide heat for a municipal water heating system. Then the water is fed into the lagoon for recreational and medicinal users to bathe in.

Iceland has a strict code of hygiene and guests are required to shower before and after bathing.

The Blue Lagoon was used as the pit stop for the first leg of *The Amazing Race 6*. The Blue Lagoon was used for the thermal spa scenes in the filming of *Hostel: Part II*. It was also shown in the Incubus documentary *Look Alive*, when the band visited Iceland, as well as in the Britain's Next Top Model.

The Blue Lagoon is situated close to the world's first renewable methanol plant, which uses Carbon Recycling International's carbon dioxide to methanol fuel process.

http://en.wikipedia.org/wiki/Blue_Lagoon_(geothermal_spa)