

OUTLOOK INTO THE FUTURE – IS 100% RENEWABLES REACHABLE DUE TO EXISTING DOMESTIC POTENTIAL OR SUPPORTING POLICIES? LESSONS FROM ICELAND

SEPTEMBER 2014



Consequences from climate change are nowadays more vivid than ever, thus governments and policy makers over the world make efforts to mitigate them and/or prevent further deterioration. One of the most effective ways to combat climate change is to reform the energy sector by reducing CO₂ emissions through increased energy efficiency and share of renewables in the final energy consumption. Renewable energy is known not only for its positive environmental impacts, but it can also contribute to energy security and economic development. The EU is one of the most devoted regions when it comes to renewables and energy efficiency. Its 2020¹ and 2050 goals² are very ambitions; the latter refers to a Communi-

cation in which lies the commitment to reducing greenhouse gas emissions to 80-95% below 1990 levels by 2050. Iceland, not an EU member state, but a member of the European Economic Area³, generates 100% of its electricity from renewables. In fact in 2013 71% of electricity came from hydro and 29% from geothermal.⁴ Despite the fact that Iceland has specific geographic landscape which is very favorable for utilizing renewables– it is an island with extensive volcanic and geothermal activity; a review of its renewable energy policies is of importance since supporting focused policies also play a key role in making most out of this renewable potential. For example, the Western Balkan countries are assessed to have un-

1 Europe 2020 is the EU's growth strategy till 2020 whereas one of its aims is the 20/20/20 climate and energy policy targets which include: a 20% reduction in EU greenhouse gas emission from 1990 levels, a 20% renewable energy share in EU energy consumption and a 20% improvement in the EU's energy efficiency.

2 This refers to the Energy Roadmap 2050.

3 The Agreement on the European Economic Area provides for the inclusion of EU legislation covering the four freedoms — the free movement of goods, services, persons and capital. [Annex IV of the Agreement contains specific provisions and arrangements concerning energy, in which Iceland's target for share of energy from renewables in gross final energy consumption till 2020 is 64%](#)

4 Orkustofnun, (2013), Energy statistics in Iceland 2013

tapped renewable energy potential, especially solar and hydro, and although their environment is not entirely comparable with that of the island country, they could achieve their envisaged shares of renewable energy in the final energy consumption and even higher with suitable supporting policies. Thus, considering the favorable renewable energy potential in Iceland, the main question is to see whether Iceland has supporting policies for development of renewables which have contributed to the 100% share. From Iceland's experience important lessons may be derived for the Western Balkan countries by illustrating the role of targeted supporting policies in the development of renewables.

To begin with, increasing the share of renewables is not an easy task and most frequent barriers to achieving it are either of administrative character, lack of suitable policies or similar. In this line, the Renewable energy progress report published in 2013 which assesses the progress of EU member states in the promotion and the use of renewable energy towards the 2020 renewable energy targets⁵, lists some of the reasons for concerns: administrative burdens and delays still cause problems and raise project risk for renewable energy projects; slow infrastructure development; delays in connection; and grid operational rules that disadvantage renewable energy producers and similar.⁶ Another set of arguments about the importance of renewable energy focused policies brings the International Energy Agency (IEA). Its Medium-term renewable energy market re-

⁵ The report also describes the member states' compliance with the measures outlined in the Directive 2009/28/EC on the promotion of the use of energy from renewable sources. The Directive sets mandatory national renewable energy targets for achieving a 20% share of renewable energy and a 10% share of energy from renewable sources in transport in Community energy consumption by 2020.

⁶ European Commission, (2013), *Renewable energy progress report*

port from 2013 assessing among other things market trends for the renewable electricity and making projections through 2018, says that policy uncertainty, such as abrupt, retroactive policy changes and stop & go policies, is the number one risk. Thus, the main messages to policy makers include that many renewables no longer require high economic incentives; but they need longterm policies that continue to provide a predictable and reliable market and regulatory framework compatible with societal goals.⁷

Concerning Iceland, according to Askja Energy, the independent Icelandic energy portal, the country's geothermal and hydroelectric production is very reliable due to the country's glacial reservoirs, geophysical conditions, but also due to a strong and modernized transmission system. Because of its geothermal potential, new geothermal power stations are being built; and in addition to electricity production, the geothermal water and steam is used directly for central heating and in several industries. More innovative use of geothermal energy is for the melting of ice and snow under the streets. The wind energy due to the weather conditions in Iceland is also considered attractive for investment, thus the Icelandic National Power Company is working to set up the first large wind turbines in the country. Furthermore, Iceland offers some of the most competitive electricity prices in the world due to its stable energy supply. Iceland also recognizes the positive influence on its economy caused by the EU 2020 goals – they will contribute to the increase in the demand for renewables, making the Icelandic renewable energy more competitive. Also, new investments are not left without support - the government authorities could grant

⁷ IEA, (2013), *Medium-term renewable energy market report 2013*

incentives in form of direct cash grants, training aid and lease of land.⁸

Regarding strategies, in 2007 the country has adopted its Climate Change Strategy which has the long-term vision of reducing net emissions of greenhouse gases by 50-75% until 2050, using 1990 emissions as a baseline. Some of the key objectives of this Strategy include reducing the use of fossil fuels in favor of renewables and exportation of Icelandic expertise in fields related to renewables.⁹ Another document states that the Icelandic government has set up the Energy Fund to increase the utilization of geothermal resources. The Fund has granted over the past few decades many loans to companies for geothermal exploration. In case the drilling failed to give the expected results, loans were converted to grants.¹⁰ IEA also stresses that the effective policy in making renewable energy a long-term priority in Iceland has contributed to Iceland having a big share of renewables. In 2012 two major legislative amendments in the energy area were made: grants to new geothermal heat utilities was increased from being the equivalent of the accumulation of space heating subsidization with oil or electricity of 8 to 12 years; and promotion of renewables was further stipulated in accordance with the Directive 2009/28/EC on the promotion of the use of energy from renewable sources. Moreover, the IEA's report explained about a particular project on geothermal

systems whereas the research is being conducted by representatives from universities, research institutes and companies, that young scientists are being trained, new simulation models are being developed and similar. Iceland has also university programs in the field of renewable energy, whereas Iceland's government also supports with funding the United Nations University-Geothermal Training Program, a postgraduate training program aiming at assisting developing countries in capacity building within geothermal exploration and development.¹¹

Undoubtedly Iceland's richness with renewable resources gives the country a head start on the path of fulfilling the green policies. However, the respective authorities drafted plans, projects and strategies and most importantly implemented specific measures and activities to increase the share of renewable energy. In the case of the Western Balkan countries, although a 100% renewable energy future is not very likely and is not a state goal either; on one hand the arguments state that the lack of supporting policies are the renewables' biggest enemy, and on the other hand as seen by the case of Iceland, focused policies do matter. Thus, investing in education, funds and concrete implementing measures is a way to increase the share of renewable energy. Iceland has shown that 100% is possible, and the Western Balkan countries could use many policy examples of Iceland and strive to achieve as high as possible renewable energy share in their energy mix.

8 Internet page of Askja Energy

9 Ministry for the Environment, (2007), Iceland's Climate Change Strategy

10 Orkustofnun, (2010), Geothermal development and research in Iceland

11 IEA Geothermal, Iceland Country Report 2012