

Executive summary

Iceland's environmental quality is generally good

Iceland has a small, open economy built on plentiful and cheap renewable energy, energy-intensive industry, abundant freshwater, unique natural tourist attractions and fisheries. The people of Iceland enjoy a high standard of living thanks to high income, low inequality and good environmental quality. The severe financial and economic crisis that hit the country in 2008 reduced some pressures on the environment, including use of materials, generation of waste and emissions of greenhouse gases (GHGs). However, these are likely to increase as the economy recovers. The carbon intensity of the economy is very low as hydro and geothermal power covers about 85% of Iceland's energy needs, a share with no equal among OECD countries. Less than 1% of the land area is artificially built, and about 20% of the country's area is under some form of nature protection. Groundwater is of excellent quality and does not need treatment before consumption. Emissions of most air pollutants have declined and air quality is generally good in the Reykjavík area, home to one-third of the population.

Some environmental pressures are of concern

Several activities exert pressure on Iceland's biodiversity, including hydropower and geothermal exploitation, overgrazing, urban sprawl and tourism development. About half the country suffers from acute soil erosion and some species of flora and fauna are threatened, including about 40% of the bird species nesting on the island. While the share of population connected to wastewater treatment systems grew to 73%, it remains one of the lowest among OECD countries. Despite increased recycling, more than half the municipal waste generated still goes to landfills. Pollution from small particulates continues to exceed the limit value, mainly because of the use of studded tyres, which pulverise road asphalt. Geothermal power production is a major, growing source of sulphur oxides and hydrogen sulphide (H₂S). Concentrations of H₂S in the Reykjavík area have often exceeded exposure standards, with possible impact on human health and ecosystems.

Iceland has made progress in streamlining the institutional and policy framework for environmental management

As a member of the European Economic Area, Iceland has continued to align its environmental policies and legislation with those of the European Union. The financial and

economic crisis, however, slowed this convergence process. Iceland has strengthened its institutional framework for environmental management and enlarged the environment ministry's portfolio. Reducing the number of municipalities has helped improve efficiency in providing water, waste and transport services. However, with several environment-related agencies and many small municipalities, Iceland needs to further rationalise institutional arrangements and reinforce administrative capacity. This would help improve efficiency and policy coherence, as well as strengthen policy implementation. Despite the progress in streamlining environmental assessment and licensing procedures, they remain complex and slow, involving multiple national and local authorities and overlapping requirements. Iceland has a long tradition of open, free access to environmental information and of public participation in decision making. While collecting and reporting environmental data have improved, there are still important gaps and inconsistencies, and data are scattered among several central and local institutions.

Policy interest in green growth, use of economic instruments and promotion of eco-innovation has risen

In 2011, the Parliament released a report containing 50 proposals to promote Iceland's transition towards a greener economy. In the last ten years, Iceland introduced new environmentally related taxes, including an excise duty on diesel, a carbon tax and a vehicle tax based on carbon dioxide emissions, and joined the European Union Emissions Trading System. While the recession has made revenue from environmentally related taxes highly volatile, there is evidence that it is lower than in most OECD countries. Removing some fuel tax exemptions and increasing the tax rates on diesel and petrol would help reduce GHG emissions and other externalities cost-effectively. Unlike in most countries, the carbon tax is applied to fuels used by fishing vessels. Iceland has implemented an effective system for managing fish stocks, based on scientific estimates of total allowable catches and individual transferable quotas. In addition, in 2012 a special profit-based fee was introduced to capture the fisheries resource rent. Agricultural support is relatively high. A large share of it can have a potential negative environmental impact, such as subsidies that help maintain large numbers of grazing animals, which exacerbate soil erosion.

Despite being small, Iceland is a relatively innovative country. The Iceland 2020 strategy targets eco-innovation as a main growth sector. In line with this goal, in 2012, the share of the public R&D budget allocated to environment-related research was among the highest in the OECD. However, while patenting activity in general has been on par with that in other OECD countries, there have been very few Icelandic patent applications in environmentally relevant sectors.

Iceland adopted an innovative approach to land-use planning for energy projects

The abundance of renewable, cheap energy has attracted energy-intensive industries to Iceland, notably aluminium smelting. To meet industry demand, electricity production has more than doubled since 2000, and is now five times the amount needed by the population alone. Iceland is effectively locked into providing these industries with low-price energy

through long-term contracts. It is not clear if the rate of return earned by public utilities is sufficient to cover all costs, including environmental costs. Many areas with potential for hydropower or geothermal development are sites of exceptional beauty and unique biodiversity, and they are often major tourist attractions. Repeated conflicts over the environmental and social impacts of power capacity expansion prompted the government to develop the Master Plan for Hydro and Geothermal Energy Resources. The plan, adopted in 2013, is based on scientific analysis and wide public participation; it provides a valuable model for building consensus on complex energy-environment issues. The next phase and the four-year review of the master plan should further reinforce the independence and quality of the scientific and economic analysis.

There is scope for energy savings in the residential and transport sectors

Energy use for space heating grew by about 12% over 2000-11, partly due to low-cost, plentiful geothermal heating and relatively poor insulation of buildings. As geothermal heat may be exhausted in the long term, however, promoting energy saving in homes would be a prudent policy. This could be done, for example, by tightening energy efficiency requirements of buildings and removing subsidies to electric and fossil fuel heating. Transport and fishing are the main consumers of fossil fuels. Fossil fuel use in the fishing industry has declined, but it has continued to rise in the transport sector. Inland freight and passenger transport is virtually all on roads. Iceland should strengthen co-ordination among municipalities in the capital area to improve urban planning and public transport development, and reduce urban sprawl and private car use. While the use of electric vehicles in Iceland is still limited, increasing it is technically feasible within the current renewables-based power system.

Iceland's nature is a key tourism asset, but it is coming under increasing pressures

Tourism is one of Iceland's fastest growing sectors, representing about 6% of GDP. The number of annual visitors has increased in recent years to more than twice the country's population. Tourism is largely based on the country's unique combination of natural assets, including areas of pristine wilderness. Increased international arrivals and high seasonality exert growing pressures on fragile ecosystems and local traditions. Iceland developed a complete set of tourism accounts in 2008, which, however, does not include information on the environmental impact of tourism.

Ensuring the environmental sustainability of tourism is a major challenge

Iceland would benefit from developing a comprehensive action plan for sustainable tourism in close co-ordination with land-use and nature conservation policies. Co-operation among ministries with responsibilities related to tourism and environment could also be reinforced, for example by establishing an inter-institutional committee to oversee the development and implementation of tourism policy. The Tourist Site Protection Fund is used to finance tourism-related infrastructure, but financial resources are limited. Iceland

introduced a tax on lodging in 2011, but the tax has proved difficult to manage and raised less revenue than expected. Developing a multi-access “nature pass” could provide access to a set of sites, both popular and less well known, with a view to raising finance and reducing pressures on the most visited sites. In 2011, Iceland launched the VAKINN certification system to rate quality of tourism services, including some environmental aspects. The system is still in its infancy; further promoting it could help improve the environmental performance of tourism operators.



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