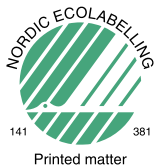




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Solid Waste Management  
in Iceland's Capital Area



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# SORPA: What We Do

Solid waste management and solid waste disposal are prominent modern urban services throughout the industrialized world. There are over 300,000 people living in Iceland, about 190,000 of whom live in Reykjavík, Iceland's capital, and its adjoining municipalities.

Since 1991, the City of Reykjavík and six other municipalities have coordinated their solid waste disposal through an independent non-profit firm named SORPA, which these seven municipalities jointly own and run. Seven representatives from the municipalities and SORPA's general manager form its Board of Directors.



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# A Brief History of SORPA

## The Stepping Stones

In 16 years, recycling increased from 8% to 41.5% and recycling categories jumped from 1 to 15!



- April 1991** The baling and sorting plant and a new landfill are opened.
- December 1993** SORPA and four separate charities cooperate to found a market for used household goods.
- May 1994** SORPA uses garden waste to produce MOLTA, an organic fertilizer.
- July 1995** The recycling of newspapers and magazines begins.
- March 1996** SORPA starts inviting groups of schoolchildren for educational purposes.
- December 1996** SORPA collects the methane gas produced in the landfill site for energy, thus reducing greenhouse gas emissions.
- January 1997** The recycling of beverage cartons begins.
- October 1998** Recycling centres start receiving deposit beverage containers.
- August 1999** A daughter company of SORPA, Metan Ltd is established in order to supervise the marketing and distribution of the methane products at the landfill site.
- Also in 1999, the market for household goods opens up under the name Góði Hirðirinn and a grant from the operating profit is awarded for the first time.
- May 2000** Recycling centres set up containers for clothing to be donated to the Red Cross.  
Vehicles fuelled by methane are purchased by SORPA.
- June 2000** Esso opens a methane fuelling station at Bíldshöfði.
- January 2003** A methane power plant is opened, generating electricity for the first time in Iceland by using methane gas from a landfill site in cooperation with Reykjavík Energy (Orkuveita Reykjavíkur).
- October 2006** Second-generation methane cars are added to SORPA's fleet.
- February 2007** The Metan Ltd Conference marks the 10-year anniversary of the methane project.



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# A Necessary Step

SORPA was created as a response to a need prompted by an increased awareness of environmental issues. At the same time, its founding was influenced by a policy issued by the Icelandic government in the early 1990s introducing a step-by-step plan to reduce solid waste.

The most densely populated areas in and around the capital had extensive waste disposal problems that had to be dealt with. Unsorted waste and open waste sites covered by a thin layer of earth were the only solutions until the founding of SORPA.

Aesthetic problems were obvious, pollution was evident and recycling absent.

SORPA was determined to solve the problems at hand.



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# A Charter for the Future

The charter of the firm stipulates a 11-point programme stating SORPA's general goals. The programme forms the foundation of company policy and actions. The 11 points are:



- 1 Select, procure and operate an environmentally sound landfill site.
- 2 Build and operate common waste collection sites.
- 3 Transport waste from these sites.
- 4 Produce and sell fuel and/or energy obtained from solid waste when economically feasible.
- 5 Produce and sell raw material for new products from solid waste when economically feasible.
- 6 Collaborate with other recycling companies when economically feasible.
- 7 Follow innovations in the fields of solid waste disposal and recycling.
- 8 Handle hazardous waste disposal.
- 9 Develop new techniques to retrieve valuable products from solid waste.
- 10 Publicize the role and attributes of SORPA and raise environmental consciousness.
- 11 Establish and operate a regional waste plan in accordance with the current legal environment.

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# Take It Out

SORPA's baling and sorting plant handles solid waste from homes, firms and institutions in the capital area by compressing it in balers and decreasing the volume by up to 70%. The bales are then transported some 20 km to the land-fill site at Álfsnes, northeast of Reykjavík.

All manner of paper waste is compressed into bales and exported to Sweden, where the material is recycled. Wood is shredded and sent to the ferro-silicon plant at Grundartangi where it makes an excellent source of carbon. This successful method of carbon production for a ferro-silicon smelter was unique in the world when it began.

Scrap-metal is brought to scrap-metal firms, which in turn export the material to markets abroad.

# Sort It Out

The municipalities run a well-organized waste-collecting service for households. The waste is brought to SORPA's baling and sorting plant from each municipality while commerce and industry manage their own waste services.

The public is not compelled by law to sort or classify solid waste, except for hazardous waste. In fact, each municipality sets its own rules regarding the collection and disposal of solid waste. In the capital area, the municipal authorities encourage the public to deliver sorted solid waste to special SORPA recycling and drop-off centres located throughout the service area. The recycling centres are open to individuals as well as to small firms and establishments.







## Recycle















SORPA operates seven recycling centres, where people voluntarily bring their own solid waste. SORPA's staff instruct on and assist them with placing the sorted materials into the appropriate containers.

SORPA operates, as a part of the recycling centres, reception areas for deposit beverage containers (bottles and aluminium cans) to be recycled by another firm.

# Your Neighbourhood

SORPA has placed large containers within walking distance of most homes in the capital area, where people can dispose of newspaper and regular cardboard and paper packaging.

SORPA receives and recycles:

-  Beverage cartons and regular cardboard containers
-  Corrugated cardboard
-  Newspapers, magazines and office paper
-  Plastic containers
-  Metals
-  Wood and wooden pallets
-  Garden waste
-  Rocks, glass and porcelain
-  Household goods
-  Clothing
-  Shoes
-  Wax
-  Hazardous waste
-  Electronic waste



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# The Good Afterlife

Góði Hirðirinn is an open market for household goods, run by SORPA in cooperation with charity organizations. A lot of good material that people want to throw away is rescued. The market makes sure that useable furniture, cooking utensils and electrical appliances are appropriately salvaged for resale. The products stored and sold by Góði Hirðirinn are very moderately priced, and the moderate profits made from the sales remain with charity organizations.

There are containers for household goods earmarked for Góði Hirðirinn at all SORPA recycling centres.



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# The Good Seed

People can bring waste from gardening activities to the recycling centres. Since 1994, an organic substance called MOLTA has been produced from such waste. MOLTA is a high-quality organic fertilizer, produced according to fixed quality standards.

## Optimal Use

The solid waste that cannot be recycled is landfilled. Compressed waste from homes, firms and institutions is transported by customized vehicles from the baling station to the landfill site, where forklifts pile up the stacks. The stacks are then buried under layers of earth, reducing the amount of earth used and putting available land space to optimal use.

Processed areas are subsequently sown with grass seed and planted with trees. The new surface will be the recreational outdoors of the future!



## New Energy

Landfill organic waste produces a substantial volume of methane, a potent greenhouse gas. Beginning in 1996, SORPA channelled the gas to a simple burning device. Burning the methane rendered it less toxic. Thus, any greenhouse effect caused by SORPA's waste was considerably reduced.

However, in the early summer of 2000, SORPA opened a new gas refining and production plant at Álfarnes to clean the methane. As a result, the upgraded methane is used as fuel for bi-fuel vehicles. Any gas not used for upgrading is funnelled to a generator for electrical production. The methane power plant manages to supply approximately 1,000 homes in the Reykjavík area with sufficient electricity to meet their daily needs.

SORPA formed a sister company, Metan Ltd, for the purpose of promoting and marketing the new energy.



# Dangers

SORPA operates a sister company, Efnamóttakan Ltd, to promote and facilitate the law requiring the disposal of hazardous waste. Efnamóttakan Ltd sorts and handles hazardous waste from all over the country. Companies and contractors bring hazardous waste directly to Efnamóttakan Ltd, whereas the public brings it to recycling centres, from which it is transported to Efnamóttakan Ltd.

The staff at Efnamóttakan Ltd sort the waste and prepare it for transport within Iceland and/or shipment abroad, where Efnamóttakan Ltd collaborates with foreign firms in the disposal and recycling of hazardous waste. Two good examples are Kommunekemi in Denmark and Boliden Bergsö in Sweden.

Only waste fuel oil and other carbon oil waste products are not exported. They are utilized instead as energy-boosters in high-temperature furnaces at Iceland's cement factory.

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## Live and Learn

Disposal of solid waste is an important service. The staff at SORPA takes pride in serving their community in a modern and efficient way.

Informational and educational activities are thus an integral part of SORPA's services. SORPA publishes brochures, other informative reading materials and a colouring book. Primary schools are invited to send groups of pupils on field trips to SORPA's headquarters to learn about the environment and recycling. Each year, numerous other groups from secondary schools, business firms, various institutions and organizations pay SORPA a visit to learn more about solid waste management.

SORPA also publishes leaflets and brochures to inform and educate the public about the sorting and recycling of solid waste. All of the published material, as well as extensive information on waste issues, can be found at the regularly updated and popular homepage: [www.sorpa.is](http://www.sorpa.is).



