



Green Accounting 2021

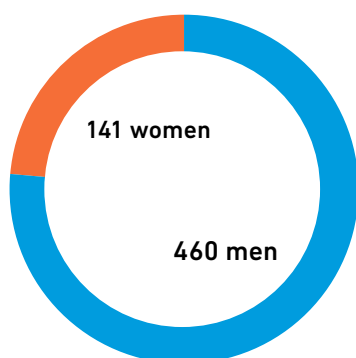


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Employees, raw materials and resource consumption

Quantity	2019	2020	2021	Unit
Employees	570	581	601	
Electricity	4,654,000	4,626,000	4,669,000	Mwh
Oil	479,456	466,822	440,690	litres
Gas	62	33	32	tonnes
Fresh water	185,277	180,611	177,116	m3
Sea water	7,884,000	7,884,000	7,884,000	m3
Total raw materials used	2.37	2.37	2.39	t/t Al
Imported raw material	2.37	2.37	2.39	t/t Al
Hazardous substances (solid)	611,646	605,101	614,410	tonnes
Hazardous substances (liquid)	503,839	493,990	466,947	litres
Misc. packaging	< 400	< 400	< 400	tonnes



We have set ourselves the goal to increase the ratio of women within the company. In 2017 women were 13.3% of Norðurál's workforce while in 2021 the ratio was 23.5%. This development will continue.

Emissions and waste

Quantity	2019	2020	2021	Unit
Atmospheric emissions				
Fluoride (gaseous and particles)	0.38	0.38	0.38	kg/t Al
Sulphur dioxide SO ₂	10.83	8.64	10.62	kg/t Al
Dust	0.74	0.70	0.71	kg/t Al
Carbon Dioxide CO ₂	1.49	1.50	1.53	t/t Al
Fluorocarbons, PFC CO ₂ equivalents	0,14	0,14	0,15	t CO ₂ eq. /t Al
Polyaromatic hydrocarbons PAH ₁₆	0.000024	0.000058	0.000056	kg/t Al
Release into surface water/groundwater/sea				
Sludge	0.04	0.07	0.05	kg/t Al
Oil/fat in cooling agents from potroom and rectifiers	< 0.5	< 0.5	< 0.5	ppm
Release into municipal sewage system				
From septic tanks	0.02	0.03	0.02	kg/t Al
Waste disposal				
Compactable waste	0.50	0.50	0.40	kg/t Al
Seashore repository	32	36	33	kg/t Al
Recyclable waste				
Anode waste and coal dust	108	109	108	kg/t Al
Aluminum slag	8.1	8.8	9.2	kg/t Al
Wood	1.1	1.0	1.1	kg/t Al
Scrap metal	2.3	2.1	2.6	kg/t Al
Cardboard	0.12	0.12	0.12	kg/t Al
Plastic	0.03	0.04	0.03	kg/t Al
Waste material for disposal				
Total waste	0.01	0.02	0.01	kg/t Al

Waste

Quantity	2019	2020	2021	Unit
Material from the sewer				
Sludge	13.3	21.2	16.4	tonnes
Other waste (from septic tanks)	7.5	8.4	6.6	tonnes
Recyclable waste				
Anode butts	32,670	32,769	32,755	tonnes
Carbon dust	1,300	1,266	1,302	tonnes
Bath material	2,648	2,888	1,823	tonnes
Aluminum dross	2,568	2,762	2,890	tonnes
Busbarstones	1,928	1,986	1,714	tonnes
Anode stub metal	98	-	-	tonnes
Scrap iron	721	645	830	tonnes
Timber	333	307	362	tonnes
Cardboard	38	38	37	tonnes
Plastic	11	13	10	tonnes
Waste oil	16	29	4	tonnes
Rubber tires	4.9	1.7	9.8	tonnes
Batteries and electronics	4.2	5.1	3.9	tonnes
Textile	1.1	4.1	2.9	tonnes
Light bulbs	0.19	0.20	0.17	tonnes
Oil contaminated waste	7	9	8	tonnes
Asphalt	217	-	-	tonnes
Toxic waste				
Electronics – toxic waste	0.04	0.00	0.4	tonnes
Toxic waste	4	4	2	tonnes
Paint	0.5	0.8	0.4	tonnes
Substances in flood pits				
Spent potlining	7,449	8,289	7,008	tonnes
Carbon from rodding shop	1,156	1,275	1,409	tonnes
Carbon from pot rooms	1,110	1,224	1,242	tonnes
Dust from sweeper	-	-	-	tonnes
Residual refractory material	412	498	413	tonnes
Spent refractory material	58	121	127	tonnes
Earth materials	43	-	75	tonnes
Solid waste				
Waste for compacting	158	157	125	tonnes
Organic waste	7	8	10	tonnes

Emissions into the air

Quantity	2019	2020	2021	Unit
Substances				
CO ₂	469,201	467,721	481,595	tonnes
CF ₄ /C ₂ F ₆	45,530	43,137	46,860	t CO ₂ eq.
SO ₂	3,421	2,700	3,348	tonnes
Polyaromatic hydrocarbons	7.5	18.1	17.6	Kg
Fluorides in total	121	120	121	tonnes
Dust (PM10)	235	218	222	tonnes

Use of hazardous chemicals (Xn, T, Tx, C, Xi, E, Fx, F, O, N)

Quantity	2019	2020	2021	Unit
DAG 2671 (O, T, N)	-	-	-	litres
DAG 554/20 (C, N, Xn)	16,875	19,540	18,937	litres
Plicast strong mix	128	152	-	tonnes
Ramming paste (T)	708	758	660	tonnes
Flange paste (T)	1,616	1,452	1,219	tonnes
Propane (Fx, F, E)	62	33	32	tonnes
Diesel oil (Xn, O)	479,456	466,822	440,690	litres
Hydraulic oil	7,508	7,628	7,320	litres
Sodium hydroxide (Xi)	196	249	227	tonnes
Aluminum fluoride (Xn)	5,104	4,551	4,233	tonnes
Aluminum oxide (Xn)	603,805	597,881	608,015	tonnes
Ferromanganese (Xn)	11	10	10	tonnes
Ferrophosphorus (Xn)	16	15	13	tonnes

Production and raw material consumption

Quantity	2019	2020	2021	Unit
Aluminum production				
Primary aluminum production	315,867	312,629	315,182	tonnes
Aluminum oxide	603,805	597,881	608,015	tonnes
Aluminum fluoride	5,104	4,551	4,233	tonnes
Prebaked anodes (net weight)	132,142	130,604	133,658	tonnes
Propane	62	33	32	tonnes
Diesel oil	479,456	466,822	440,690	litres
Sodium hydroxide	196	249	227	tonnes
Flange paste	1,616	1,452	1,219	tonnes
Cast iron	979	871	836	tonnes
Anode rods	747	513	596	tonnes
Electricity	4,654,000	4,626,000	4,669,000	MWh
Industrial water	111,166	108,367	106,269	m ³
Drinking water	74,111	72,244	70,847	m ³
Sea water	7,884,000	7,884,000	7,884,000	m ³
Silicon	3771	3239	4199	tonnes
Magnesium	151	126	153	tonnes
Titanium	56	46	65	tonnes
Strontium	19	16	18	tonnes
Hydraulic oil	7,508	7,628	7,320	litres
Oil for cooling	5,024	2,804	3,057	litres
Oil removing chemicals	1,720	1,970	2,035	litres
Lubricating oil	6,231	6,997	2,820	litres
Ferrosilicon	23	23	20	tonnes
Ferromanganese	11	10	10	tonnes
Ferrophosphorus	16	15	13	tonnes
Carbon	52	66	53	tonnes
Steel pellets	81	78	86	tonnes
Wood sticks	13,600	17,200	12,250	pcs.
Batteries	60	72	67	pcs.

Statements

Auditor's Statement

I have reviewed and audited the information presented in Norðurál's green accounting for 2021. The books have been reviewed with regard to whether the information stipulated in articles 6, 7 and 8 of Regulation No. 851/2002 and whether the numerical information presented complies with data from the financial records and the company's monitoring of key figures in environmental matters.

After having conducted a review of the data, my opinion is that the green accounting meets the conditions of Regulation No. 851/2002 and gives a thorough account of the company's environmental impact in the year of 2021.

Elin Vignisdóttir

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Geographer

Board's Statement

All information in the company's green accounting for the year 2021 is provided according to the best knowledge. Emission control equipment is state of the art and is efficiently maintained. The findings of internal measurements are used for making improvements aiming to minimize environmental impact.

Proper handling of the environment is a cornerstone in the company's responsible operation and a constant monitoring of environmental factors aims to ensure that the set goals are achieved. The company's environmental activities were generally successful during the year, with active monitoring carried out in accordance with the monitoring schedule and the requirements of the license.

Gunnar Guðlaugsson

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Managing Director

Sigrún Helgadóttir

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Plant Manager

Norðurál keeps green accounting in accordance with regulation no. 851/2002 and delivers its audited green accounts to the Environment Agency of Iceland before May 1 every year. Emissions accounting is kept in accordance with regulation no. 990/2008.

Please send any questions and comments to umhverfi@nordural.is and we shall reply to the best of our ability.



