ORKUSTOFNUN
National Energy Authority

Efni/Subject: Talnaefni Orkustofnunar / Orkustofnun Data Repository
Titill/Title: Sparnaður í losun koldíoxíðs með nýtingu endurnýjanlegra orkugjafa í stað olíu / CO2 savings using renewable energy instead of oil
Lykilorð/Keyword: Koldíoxíð, losun, gróðurhúslofttegundir, jarðhiti, varmaorka, raforka. Vatnsorka, endurnýjanleg orka / Carbon Dioxide, savings, geothermal, hydro, power, heat, renewable
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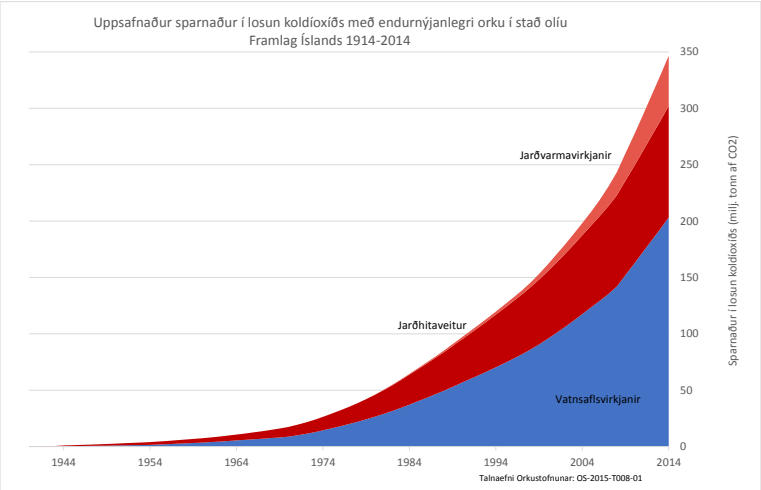
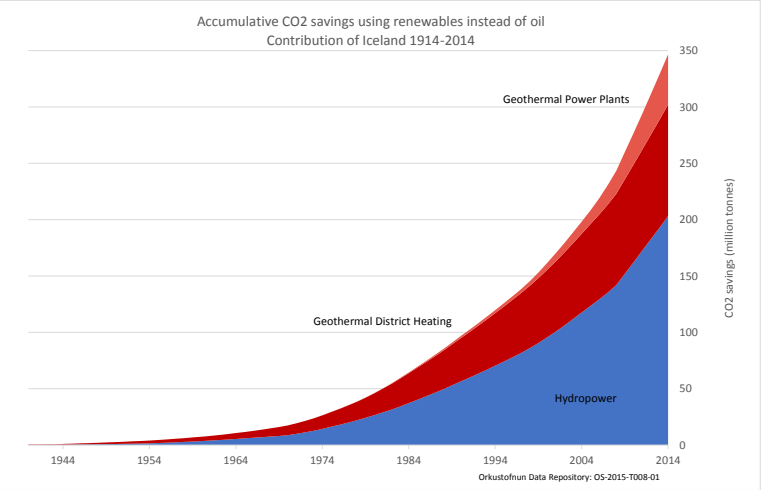
	Orkunotkun / Energy Utilization (MWh)			Árlegur CO2 sparnaður / CO2 yearly savings (tonnes)				Uppsafnaður CO2 sparnaður / CO2 accumulative savings (tonnes)			
Ár / Year	Varmi með jarðhita / Geothermal Heat	Raforka með jarðvarma / Electricity with geothermal	Raforka með vatnsorku / Electricity with hydro	Varmi með jarðhita / Geothermal Heat	Raforka með jarðvarma / Electricity with geothermal	Raforka með vatnsorku / Electricity with hydro	Samtals / Total	Varmi með jarðhita / Geothermal Heat	Raforka með jarðvarma / Electricity with geothermal	Raforka með vatnsorku / Electricity with hydro	Samtals / Total
2014	7.805.556	5.238.000	12.873.000	3.192.472	4.279.446	10.517.241	17.989.159	98.879.696	44.528.951	203.238.554	346.647.201
2013	7.500.000	5.245.000	12.863.000	3.067.500	4.285.165	10.509.071	17.861.736	95.687.223	40.249.505	192.729.483	328.666.211
2012	7.388.889	5.210.000	12.337.000	3.022.056	4.256.570	10.079.329	17.357.955	92.619.723	35.964.340	182.650.154	311.234.217
2011	7.138.889	4.701.000	12.507.000	2.919.806	3.840.717	10.218.219	16.978.742	89.597.668	31.707.770	172.431.935	293.737.373
2010	7.083.333	4.465.000	12.592.000	2.897.083	3.647.905	10.287.664	16.832.652	86.677.862	27.867.053	162.144.271	276.689.186
2009	7.083.333	4.553.000	12.279.000	2.897.083	3.719.801	10.031.943	16.648.827	83.780.779	24.219.148	152.112.328	260.112.255
2008	7.027.778	4.038.000	12.427.000	2.874.361	3.299.046	10.152.859	16.326.266	80.883.696	20.499.347	141.959.469	243.342.512
2007	6.958.333	3.579.000	8.394.000	2.845.958	2.924.043	6.857.898	12.627.899	78.009.335	17.200.301	135.101.571	230.311.207
2006	6.627.778	2.631.000	7.289.000	2.710.761	2.149.527	5.955.113	10.815.401	75.163.376	14.276.258	129.146.458	218.586.092
2005	6.377.778	1.658.000	7.015.000	2.608.511	1.354.586	5.731.255	9.694.352	72.452.615	12.126.731	123.415.203	207.994.549
2004	6.300.000	1.484.000	7.131.000	2.576.700	1.212.428	5.826.027	9.615.155	69.844.104	10.772.145	117.589.176	198.205.425
2003	6.155.556	1.406.000	7.082.000	2.517.622	1.148.702	5.785.994	9.452.318	67.267.404	9.559.717	111.803.182	188.630.303
2002	6.025.000	1.433.000	6.972.000	2.464.225	1.170.761	5.696.124	9.331.110	64.749.782	8.411.015	106.107.058	179.267.855
2001	5.908.333	1.451.000	6.574.000	2.416.508	1.185.467	5.370.958	8.972.933	62.285.557	7.240.254	100.736.100	170.261.911
2000	5.755.556	1.323.000	6.352.000	2.354.022	1.080.891	5.189.584	8.624.497	59.869.048	6.054.787	95.546.516	161.470.351
1999	5.438.889	1.138.000	6.043.000	2.224.506	929.746	4.937.131	8.091.383	57.515.026	4.973.896	90.609.385	153.098.307
1998	5.275.000	655.000	5.617.000	2.157.475	535.135	4.589.089	7.281.699	55.290.521	4.044.150	86.020.296	145.354.967
1997	5.258.333	375.000	5.203.000	2.150.658	306.375	4.250.851	6.707.884	53.133.046	3.509.015	81.769.445	138.411.506
1996	5.158.333	346.000	4.764.000	2.109.758	282.682	3.892.188	6.284.628	50.982.387	3.202.640	77.877.257	132.062.284
1995	5.341.667	290.000	4.678.000	2.184.742	236.930	3.821.926	6.243.598	48.872.629	2.919.958	74.055.331	125.847.918
1994	5.222.222	260.000	4.511.000	2.135.889	212.420	3.685.487	6.033.796	46.687.887	2.683.028	70.369.844	119.740.759
1993	5.141.667	254.000	4.462.000	2.102.942	207.518	3.645.454	5.955.914	44.551.998	2.470.608	66.724.390	113.746.996
1992	5.152.778	230.000	4.306.000	2.107.486	187.910	3.518.002	5.813.398	42.449.057	2.263.090	63.206.388	107.918.535
1991	4.933.333	267.000	4.154.000	2.017.733	218.139	3.393.818	5.629.690	40.341.571	2.075.180	59.812.570	102.229.321
1990	4.961.111	283.000	4.159.000	2.029.094	231.211	3.397.903	5.658.208	38.323.837	1.857.041	56.414.667	96.595.545
1989	5.032.769	258.000	4.213.000	2.058.403	210.786	3.442.021	5.711.210	36.294.743	1.625.830	52.972.646	90.893.219
1988	4.931.325	246.000	4.165.000	2.016.912	200.982	3.402.805	5.620.699	34.236.340	1.415.044	49.569.841	85.221.225
1987	4.568.379	234.000	3.914.000	1.868.467	191.178	3.197.738	5.257.383	32.219.428	1.214.062	46.372.103	79.805.593
1986	4.643.899	212.000	3.842.000	1.899.355	173.204	3.138.914	5.211.473	30.350.961	1.022.884	43.233.189	74.607.034
1985	4.595.431	171.000	3.663.000	1.879.531	139.707	2.992.671	5.011.909	28.451.606	849.680	40.240.518	69.541.804
1984	4.569.507	173.000	3.738.000	1.868.928	141.341	3.053.946	5.064.215	26.572.075	709.973	37.186.572	64.468.620
1983	4.590.923	172.000	3.588.000	1.877.687	140.524	2.931.396	4.949.607	24.703.147	568.632	34.255.176	59.526.955
1982	4.356.473	159.000	3.407.000	1.781.798	129.903	2.783.519	4.695.220	22.825.459	428.108	31.471.657	54.725.224
1981	4.125.406	123.000	3.085.000	1.687.291	100.491	2.520.445	4.308.227	21.043.662	298.205	28.951.212	50.293.079
1980	3.624.947	45.000	3.053.000	1.482.603	36.765	2.494.301	4.013.669	19.356.371	197.714	26.456.911	46.010.996
1979	3.542.664	46.000	2.819.000	1.448.950	37.582	2.303.123	3.789.655	17.873.768	160.949	24.153.788	42.188.505
1978	2.954.286	18.000	2.605.000	1.208.303	14.706	2.128.285	3.351.294	16.424.818	123.367	22.025.503	38.573.688
1977	2.850.588	16.000	2.520.000	1.165.890	13.072	2.058.840	3.237.802	15.216.515	108.661	19.966.663	35.291.839
1976	2.550.763	19.000	2.350.000	1.043.262	15.523	1.919.950	2.978.735	14.050.625	95.589	18.046.713	32.192.927
1975	2.533.856	18.000	2.206.000	1.036.347	14.706	1.802.302	2.853.355	13.007.363	80.066	16.244.411	29.331.840
1974	2.271.227	8.000	2.258.000	928.932	6.536	1.844.786	2.780.254	11.971.016	65.360	14.399.625	26.436.001
1973	2.190.072	24.000	2.181.000	895.739	19.608	1.781.877	2.697.224	11.042.084	58.824	12.617.748	23.718.656
1972	1.931.952	22.000	1.703.000	790.168	17.974	1.391.351	2.199.493	10.146.344	39.216	11.226.397	21.411.957
1971	1.825.999	12.000	1.540.000	746.834	9.804	1.258.180	2.014.818	9.356.176	21.242	9.968.217	19.345.635
1970	1.722.300	12.000	1.413.000	704.421	9.804	1.154.421	1.868.646	8.609.342	11.438	8.813.796	17.434.576
1969	1.538.221	2.000	860.000	629.132	1.634	702.620	1.333.386	7.904.921	1.634	8.111.176	16.017.731
1968	1.472.523	-	687.000	602.262	0	561.279	1.163.541	7.275.789	-	7.549.897	14.825.686
1967	1.396.632		665.000	571.222	0	543.305	1.114.527	6.673.527	-	7.006.592	13.680.119
1966	1.201.806		624.000	491.538	0	509.808	1.001.346	6.102.304	-	6.496.784	12.599.088
1965	1.026.236		641.000	419.730	0	523.697	943.427	5.610.766	-	5.973.087	11.583.853
1964	950.344		653.000	388.691	0	533.501	922.192	5.191.036	-	5.439.586	10.630.622
1963	848.400		629.000	346.996	0	513.893	860.889	4.802.345	-	4.925.693	9.728.038
1962	756.650		593.000	309.470	0	484.481	793.951	4.455.349	-	4.441.212	8.896.561
1961	676.228		576.000	276.577	0	470.592	747.169	4.145.879	-	3.970.620	8.116.499
1960	660.370		523.000	270.091	0	427.291	697.382	3.869.302	-	3.543.329	7.412.631
1959	636.583		470.000	260.363	0	383.990	644.353	3.599.211	-	3.159.339	6.758.550
1958	577.682		431.000	236.272	0	352.127	588.399	3.338.848	-	2.807.212	6.146.060
1957	562.957		415.000	230.249	0	339.055	569.304	3.102.576	-	2.468.157	5.570.733
1956	548.232		406.000	224.227	0	331.702	555.929	2.872.327	-	2.136.455	5.008.782
1955	548.232		379.000	224.227	0	309.643	533.870	2.648.100	-	1.826.812	4.474.912
1954	491.596		327.000	201.063	0	267.159	468.222	2.423.873	-	1.559.653	3.983.526
1953	472.340		198.000	193.187	0	161.766	354.953	2.222.810	-	1.397.887	3.620.697
1952	459.880		176.000	188.091	0	143.792	331.883	2.029.623	-	1.254.095	3.283.718
1951	459.880		170.000	188.091	0	138.890	326.981	1.841.532	-	1.115.205	2.956.737
1950	446.288		167.000	182.532	0	136.439	318.971	1.653.441	-	978.766	2.632.207
1949	402.112		160.000	164.464	0	130.720	295.184	1.470.909	-	848.046	2.318.955
1948	403.245		153.000	164.927	0	125.001	289.928	1.306.445	-	723.045	2.029.490
1947	411.174		136.000	168.170	0	111.112	279.282	1.141.518	-	611.933	1.753.451
1946	364.733		118.000	149.176	0	96.406	245.582	973.348	-	515.527	1.488.875
1945	344.344		99.000	140.837	0	80.883	221.720	824.172	-	434.644	1.258.816
1944	316.026		89.000	129.255	0	72.713	201.968	683.336	-	361.931	1.045.267
1943	124.598		86.000	50.961	0	70.262	121.223	554.081	-	291.669	845.750
1942	92.882		72.000	37.989	0	58.824	96.813	503.120	-	232.845	735.965
1941	77.024		57.000	31.503	0	46.569	78.072	465.132	-	186.276	651.408
1940	67.963		45.000	27.797	0	36.765	64.562	433.629	-	149.511	583.140
1939	65.697		30.000	26.870	0	24.510	51.380	405.832	-	125.001	530.833
1938	63.432		22.000	25.944	0	17.974	43.918	378.962	-	107.027	485.989
1937	61.166		14.000	25.017	0	11.438	36.455	353.018	-	95.589	448.607
1936	58.901		11.000	24.090	0	8.987	33.077	328.001	-	86.602	414.603
1935	56.636		11.000	23.164	0	8.987	32.151	303.911	-	77.615	381.526
1934	54.370		10.000	22.237	0	8.170	30.407	280.747	-	69.445	350.192
1933	52.105		9.000	21.311	0	7.353	28.664	258.509	-	62.092	320.601
1932	49.839		8.000	20.384	0	6.536	26.920	237.199	-	55.556	292.755
1931	47.574		7.000	19.458	0	5.719	25.177	216.814	-	49.837	266.651
1930	45.308		8.000	18.531	0	6.536	25.067	197.357	-	43.301	240.658
1929	43.043		6.000	17.605	0	4.902	22.507	178.826	-	38.399	217.225
1928	40.778		6.000	16.678	0	4.902	21.580	161.221	-	33.497	194.718
1927	38.512		6.000	15.751	0	4.902	20.653	144.543	-	28.595	173.138
1926	36.247		7.000	14.825	0	5.719	20.544	128.791	-	22.876	151.667
1925	33.981		8.000	13.898	0	6.536	20.434	113.967	-	16.340	130.307
1924	30.583		8.000	12.509	0	6.536	19.045	100.068	-	9.804	109.872
1923	28.318		6.000	11.582	0	4.902	16.484	87.560	-	4.902	92.462
1922	26.052		4.000	10.655	0	3.268	13.923	75.978	-	1.634	77.612
1921	24.920		1.000	10.192	0	817	11.009	65.322	-	817	66.139
1920	22.654		1.000	9.266	0	817	10.083	55.130	-	-	55.130
1919	21.521		-	8.802	0	-	8.802	45.865	-	-	45.865
1918	20.389		-	8.339	0	-	8.339	37.062	-	-	37.062
1917	19.256		-	7.876	0	-	7.876	28.723	-	-	28.723
1916	18.123		-	7.412	0	-	7.412	20.848	-	-	20.848
1915	16.991		-	6.949	0	-	6.949	13.435	-	-	13.435
1914	15.858			6.486	0	-	6.486	6.486	-		6.486


Uppsafnaður sparnaður í losun koldíoxíðs með endurnýjanlegri orku í stað olíu
Framlag Íslands 1914-2014
Jarðvarmavirkjanir
Jarðhitaveitur
Vatnsaflsvirkjanir
350
300
250
200
150
100
50
0
1944
1954
1964
1974
1984
1994
2004
2014
Sparnaður í losun koldíoxíðs (milj. tonn af CO2)
Talnaefni Orkustofnunar: OS-2015-T008-01


Accumulative CO2 savings using renewables instead of oil
Contribution of Iceland 1914-2014
Geothermal Power Plants
Geothermal District Heating
Hydropower
350
300
250
200
150
100
50
0
1944
1954
1964
1974
1984
1994
2004
2014
CO2 savings (million tonnes)
Orkustofnun Data Repository: OS-2015-T008-01