



Renewable energy sources statistics in the EU, Iceland and Norway

Data 1989-2000

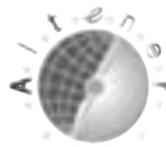
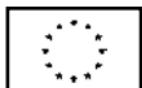
Part 3

8



THEME 8

Environment
and energy



*Europe Direct is a service to help you find answers to your questions about
the European Union*

New freephone number:

00 800 6 7 8 9 10 11

A great deal of additional information on the European Union is available
on the Internet.

It can be accessed through the Europa server (<http://europa.eu.int>).

Luxembourg: Office for Official Publications of the European Communities, 2002

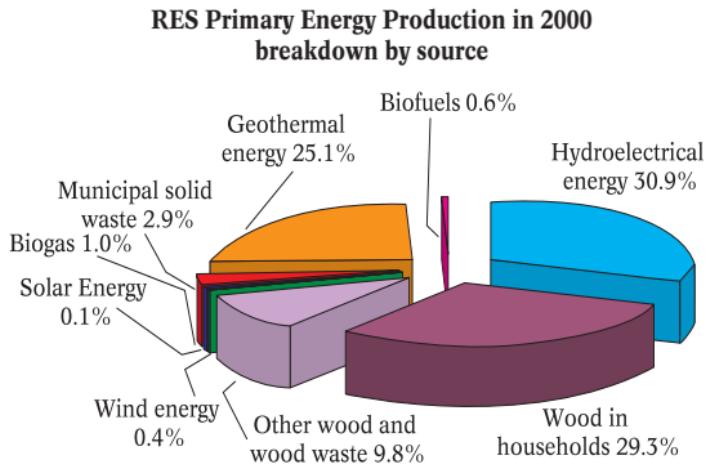
ISBN 92-894-4251-4

© European Communities, 2002

Contents

Introduction	5
RES Primary Energy Production	9
Inland Consumption	15
Electricity Generation	16
The Impact of Each Resource	18
Country Data.....	29
Belgium	30
Denmark	33
Germany	36
Greece	39
Spain	42
France	45
Ireland.....	48

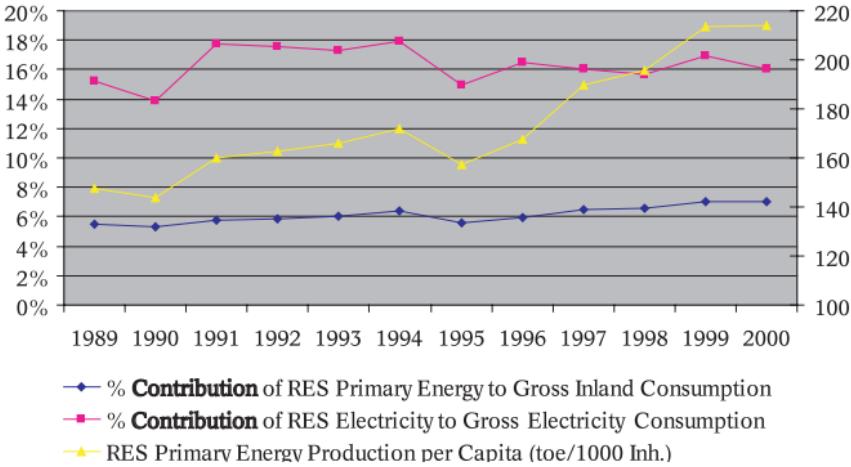
Italy	51
Luxembourg.....	54
The Netherlands	57
Austria.....	60
Portugal.....	63
Finland.....	66
Sweden.....	69
The United Kingdom.....	72
Iceland	75
Norway	78



RES Primary Energy Production (ktoe)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average Annual Change
Hydroelectrical energy	2 928	2 719	3 632	3 628	3 562	3 840	3 249	3 615	3 577	3 544	3 901	3 816	3%
Wood in households	2 150	2 150	2 150	2 150	2 150	2 252	2 226	2 226	3 344	3 334	3 614	3 614	10%
Other wood and wood waste	965	970	970	998	1 007	1 020	1 002	1 021	1 038	1 073	1 210	1 206	4%
Wind energy	0	0	0	0	0	1	1	3	10	20	35	48	127%
Solar Energy	5	5	5	5	7	8	8	8	8	11	11	11	7%
Biogas	56	63	63	59	59	10	19	59	95	142	167	122	45%
Municipal solid waste	191	191	197	197	215	265	124	134	172	273	374	356	23%
Geothermal energy	2 067	2 073	2 050	2 226	2 465	2 312	2 323	2 524	2 611	2 801	2 915	3 103	6%
Biofuels	0	0	0	0	0	120	63	43	66	78	78	78	5%
Total	8 362	8 170	9 066	9 263	9 464	9 828	9 014	9 632	10 921	11 275	12 304	12 354	7%

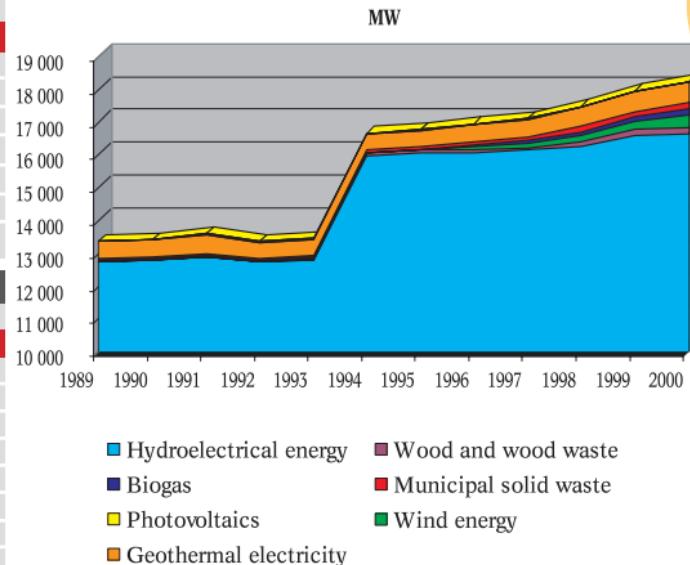
7% of the Gross Inland Consumption in 2000 was covered by RES, while the percentage of RES electricity in the Gross Electricity Consumption was 16.1% in the same year. Wood and wood wastes cover the largest percentage of the total RES primary energy production (39% in 2000), while hydroelectric energy is the second largest source (30.9% of RES primary energy production in 2000) and geothermal energy is the third (25.1% of RES primary energy production in 2000). Hydroelectric energy covered about 13.8% and geothermal electricity covered 1.5% of the Gross Electricity Consumption.



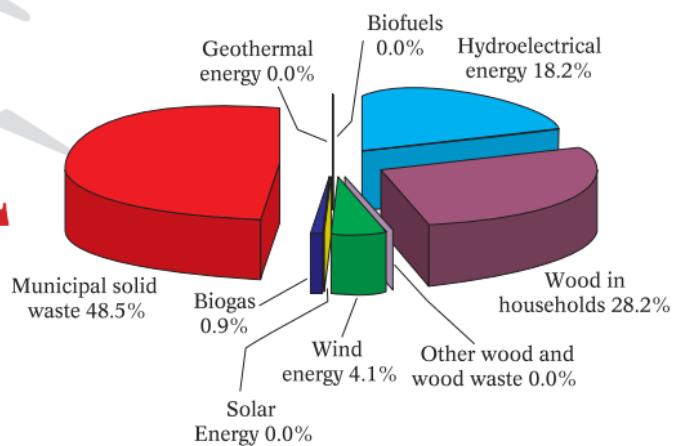
1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
5.5%	5.3%	5.8%	5.8%	6.1%	6.4%	5.5%	5.9%	6.5%	6.5%	7.0%	7.0%
% Contribution of RES Electricity to Gross Electricity Consumption											
15.3%	13.9%	17.8%	17.6%	17.3%	18.0%	14.9%	16.5%	16.0%	15.6%	16.9%	16.1%
RES Primary Energy Production per Capita (toe/1000 Inh.)											
148	144	160	163	166	172	157	168	190	196	213	214

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	15.3%	13.9%	17.8%	17.6%	17.3%	18.0%	14.9%	16.5%	16.0%	15.6%	16.9%	16.1%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	13.9%	12.6%	16.4%	16.1%	15.8%	16.6%	13.6%	14.9%	14.4%	13.7%	14.8%	13.8%
Wood and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.2%	0.2%
Municipal solid waste	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%
Geothermal electricity	1.3%	1.3%	1.2%	1.3%	1.4%	1.3%	1.2%	1.3%	1.3%	1.4%	1.4%	1.5%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	52	48	64	64	62	67	57	63	62	62	68	66
Wood in households	38	38	38	38	38	39	39	39	58	58	63	63
Other wood and wood waste	17	17	17	18	18	18	17	18	18	19	21	21
Wind energy	0	0	0	0	0	0	0.0	0.0	0.2	0.3	0.6	0.8
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	1	1	1	1	1	0	0	1	2	2	3	2
Municipal solid waste	3	3	3	3	4	5	2	2	3	5	6	6
Geothermal energy	36	37	36	39	43	40	41	44	45	49	51	54
Biofuels	0	0	0	0	0	2	1	1	1	1	1	1
All RES	148	144	160	163	166	172	157	168	190	196	213	214

Installed Capacity of RET's



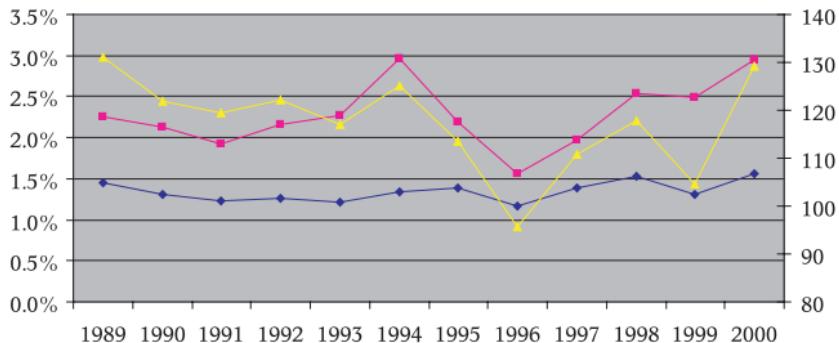
RES Primary Energy Production in 2000 breakdown by source



RES Primary Energy Production (ktoe)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average Annual Change
Hydroelectrical energy	6	6	5	6	6	10	7	5	7	10	8	10	7%
Wood in households	15	15	15	15	15	15	15	15	15	15	15	16	1%
Other wood and wood waste	0	0	0	0	0	0	0	0	0	0	0	0	na
Wind energy	0	0	0	0	0	0	0	0	0	1	2	2	na
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biogas	0	1	1	1	1	1	1	2	1	2	0	1	na
Municipal solid waste	28	25	26	26	25	24	23	18	23	23	20	28	4%
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	49	47	46	48	47	51	47	40	47	50	45	57	4%

Municipal solid waste covers the largest percentage of the total RES primary energy production (48.5% in 2000), while wood and wood waste is the second largest source (28.2% of RES primary energy production in 2000) and hydroelectric energy is the third (18.2% of RES primary energy production in 2000). Hydroelectric energy covered about 1.7% and wind electricity covered 0.4% of the Gross Electricity Consumption. The contribution of RES in the Gross Inland Consumption was 1.6% in 2000, while the contribution of RES electricity in the Gross Electricity Consumption was 2.9% in the same year.



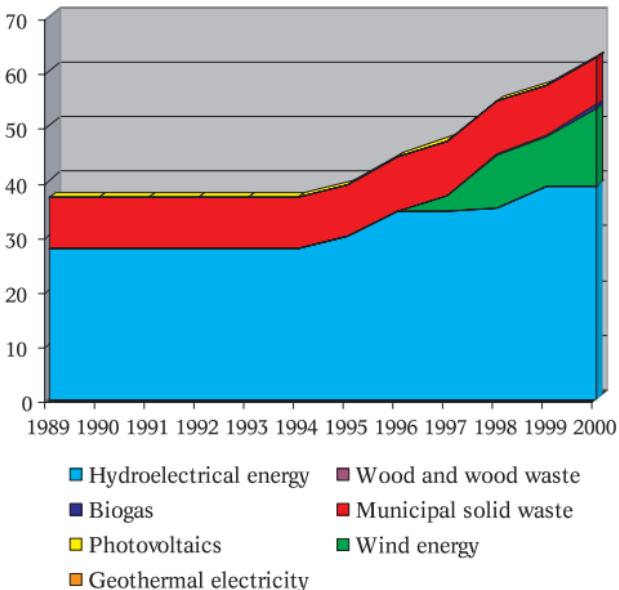
- % Contribution of RES Primary Energy to Gross Inland Consumption
- % Contribution of RES Electricity to Gross Electricity Consumption
- ▲— RES Primary Energy Production per Capita (toe/1000 Inh)

1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
1.5%	1.3%	1.2%	1.3%	1.2%	1.3%	1.4%	1.2%	1.4%	1.5%	1.3%	1.6%
% Contribution of RES Electricity to Gross Electricity Consumption											
2.3%	2.1%	1.9%	2.2%	2.3%	3.0%	2.2%	1.6%	2.0%	2.5%	2.5%	2.9%
RES Primary Energy Production per Capita (toe/1000 Inh)											
131	122	119	122	117	125	113	96	111	118	105	129

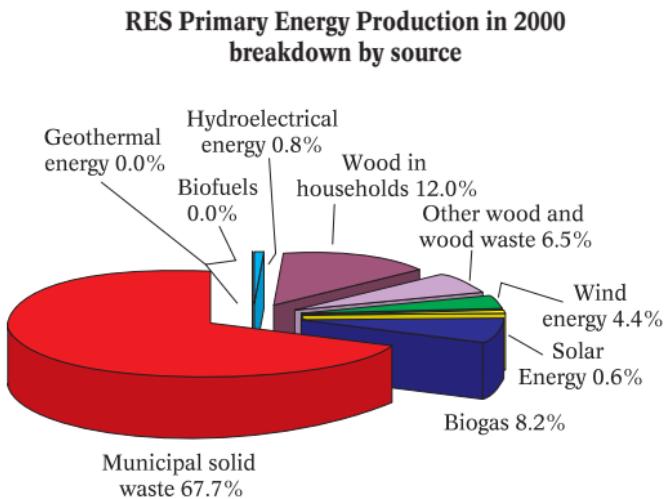


	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	2.3%	2.1%	1.9%	2.2%	2.3%	3.0%	2.2%	1.6%	2.0%	2.5%	2.5%	2.9%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	1.3%	1.3%	1.0%	1.3%	1.3%	2.1%	1.3%	1.0%	1.2%	1.7%	1.4%	1.7%
Wood and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.3%	0.4%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Municipal solid waste	0.9%	0.9%	0.9%	0.8%	1.0%	0.9%	0.8%	0.6%	0.7%	0.7%	0.8%	0.8%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	16	15	12	15	14	25	18	12	16	23	19	24
Wood in households	41	40	40	39	39	38	38	37	37	36	35	36
Other wood and wood waste	0	0	0	0	0	0	0	0	0	0	0	0
Wind energy	0	0	0	0	0	0	0	0	0	2	3	5
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	1	2	1	2	2	2	2	4	3	4	0	1
Municipal solid waste	74	65	66	66	62	60	56	43	55	53	46	63
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	131	122	119	122	17	125	113	96	111	118	105	129

Installed Capacity of RET's

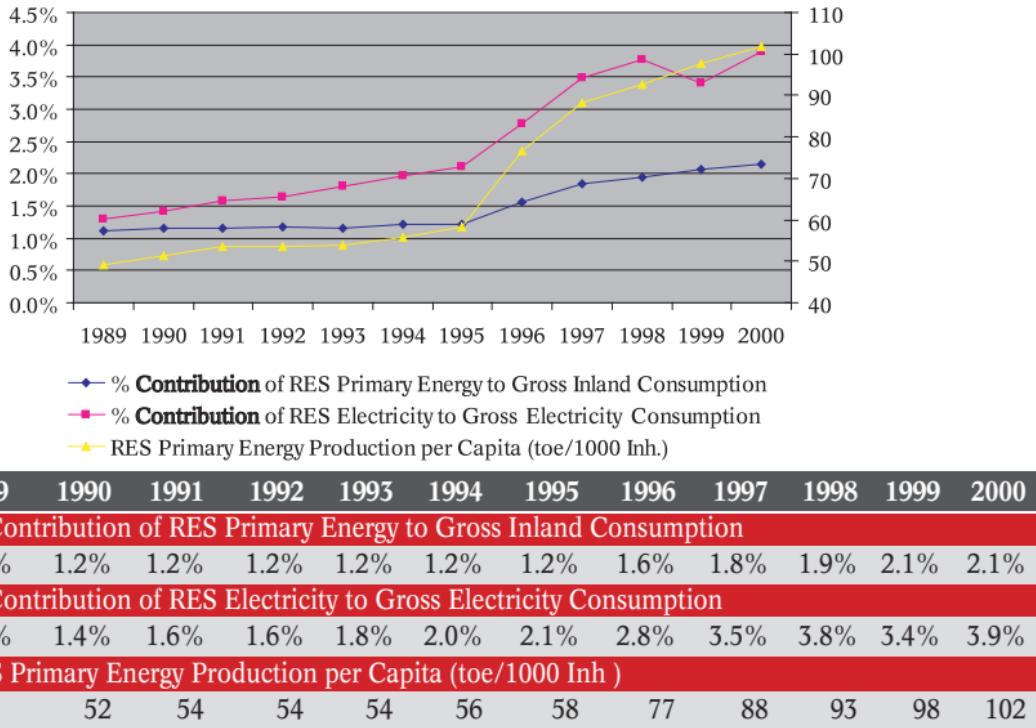


- Hydroelectrical energy
- Wood and wood waste
- Biogas
- Municipal solid waste
- Photovoltaics
- Wind energy
- Geothermal electricity



	RES Primary Energy Production (ktoe)												Average Annual Change
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Hydroelectrical energy	3	7	9	10	8	9	8	7	8	9	8	12	10%
Wood in households	221	221	218	218	214	211	211	208	208	208	208	194	-2%
Other wood and wood waste	35	42	42	38	37	33	33	36	46	59	59	106	26%
Wind energy	3	5	8	13	15	20	27	38	41	55	55	71	21%
Solar Energy	1	2	2	3	3	3	4	4	5	7	7	9	19%
Biogas	64	64	75	93	100	107	119	125	128	123	119	132	2%
Municipal solid waste	403	429	454	441	447	473	497	774	943	994	1 090	1 098	17%
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	730	770	807	815	825	857	899	1 191	1 380	1 454	1 546	1 622	13%

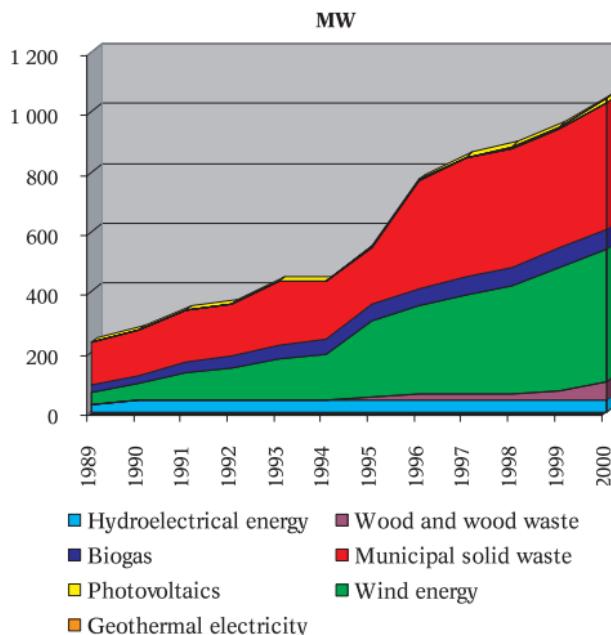
Municipal solid waste covers the largest percentage of the total RES primary energy production (67.7% in 2000), while wood and wood waste is the second largest source (18.5% of RES primary energy production in 2000) and biogas is the third (8.2% of RES primary energy production in 2000). Electricity of MSW origin covered about 2.4% and wind electricity covered 0.8% of the Gross Electricity Consumption. The percentage of RES in the Gross Inland Consumption was 2.1% in 2000, while the percentage of RES electricity in the Gross Electricity Consumption was 3.9% in the same year.

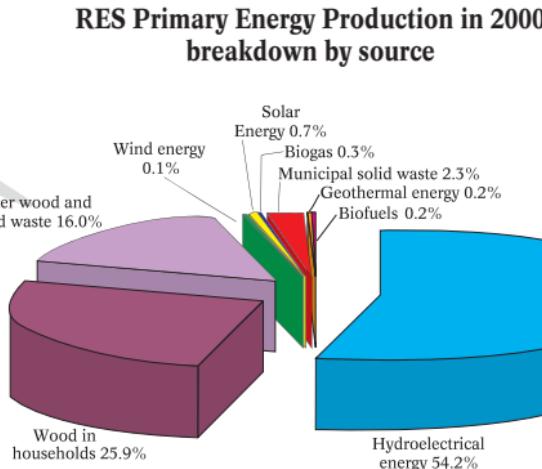




	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	1.3%	1.4%	1.6%	1.6%	1.8%	2.0%	2.1%	2.8%	3.5%	3.8%	3.4%	3.9%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Wood and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.3%
Wind energy	0.1%	0.1%	0.1%	0.2%	0.2%	0.3%	0.3%	0.5%	0.5%	0.6%	0.6%	0.8%
Biogas	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.3%	0.3%
Municipal solid waste	1.1%	1.1%	1.2%	1.2%	1.3%	1.3%	1.4%	2.0%	2.6%	2.8%	2.4%	2.4%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	0	0	1	1	1	1	0	0	1	1	0	1
Wood in households	15	15	14	14	14	14	14	13	13	13	13	12
Other wood and wood waste	2	3	3	3	2	2	2	2	3	4	4	7
Wind energy	0	0	0	1	1	1	2	2	3	4	4	4
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	1
Biogas	4	4	5	6	7	7	8	8	8	8	8	8
Municipal solid waste	27	29	30	29	29	31	32	50	60	63	69	69
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	49	52	54	54	54	56	58	77	88	93	98	102

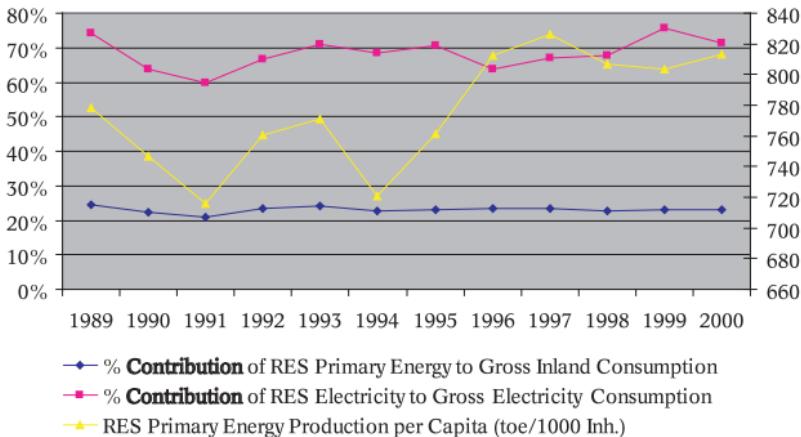
Installed Capacity of RET's





	RES Primary Energy Production (ktoe)												Average Annual Change
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Hydroelectrical energy	3 019	2 708	2 702	2 995	3 156	3 070	3 187	2 941	3 093	3 192	3 589	3 579	2%
Wood in households	2 224	2 332	2 119	2 224	2 021	1 776	1 891	1 958	1 848	1 826	1 864	1 709	-2%
Other wood and wood waste	670	641	648	650	823	779	871	1 440	1 496	1 264	830	1 059	4%
Wind energy	0	0	0	0	0	0	0	0	2	4	4	6	na
Solar Energy	11	13	17	21	25	29	36	42	48	55	47	47	6%
Biogas	9	7	24	27	27	28	30	34	39	40	17	19	-9%
Municipal solid waste	29	67	77	89	95	97	95	20	125	121	127	149	10%
Geothermal energy	2	2	2	4	4	4	4	5	5	7	12	14	27%
Biofuels	1	1	11	7	8	6	11	1	12	13	16	16	9%
Total	5 964	5 771	5 600	6 017	6 158	5 789	6 124	552	6 667	6 520	6 506	6 598	2%

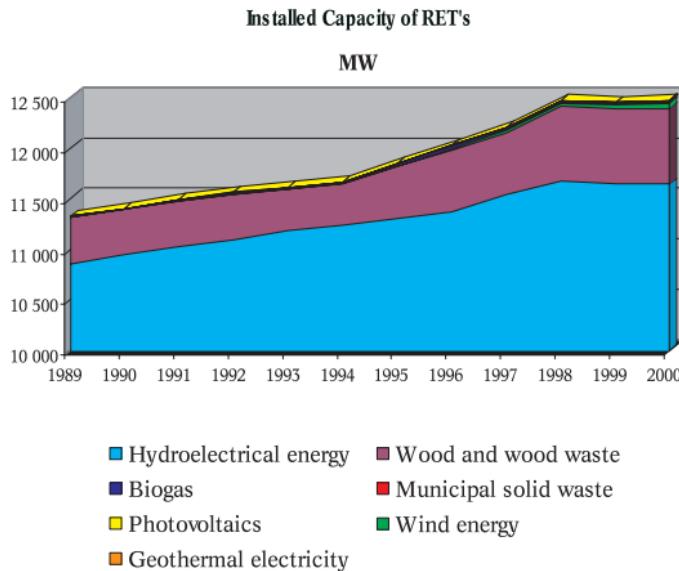
Hydroelectric energy is the main renewable source used in Austria and it covers a large percentage of the Gross Electricity Consumption (68.7% in 2000). Wood and wood wastes cover 42% of RES primary production, and are mainly used for heat production. The largest increase in renewable energy production during the year 1995 to 2000 is in geothermal energy (27%), which holds only 0.2% of RES primary production and in municipal solid waste (10%). The contribution of RES in the Gross Inland Consumption was 23% in 2000, while the contribution of RES electricity in the Gross Electricity Consumption was 71.5% in the same year.



1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
24.4%	22.5%	20.7%	23.4%	24.0%	22.6%	23.2%	23.4%	23.4%	22.6%	22.9%	23.2%
% Contribution of RES Electricity to Gross Electricity Consumption											
74.2%	63.9%	59.9%	66.7%	71.0%	68.3%	70.6%	63.9%	67.2%	67.8%	75.7%	71.5%
RES Primary Energy Production per Capita (toe/1000 Inh.)											
779	747	716	760	771	721	761	813	826	807	804	813

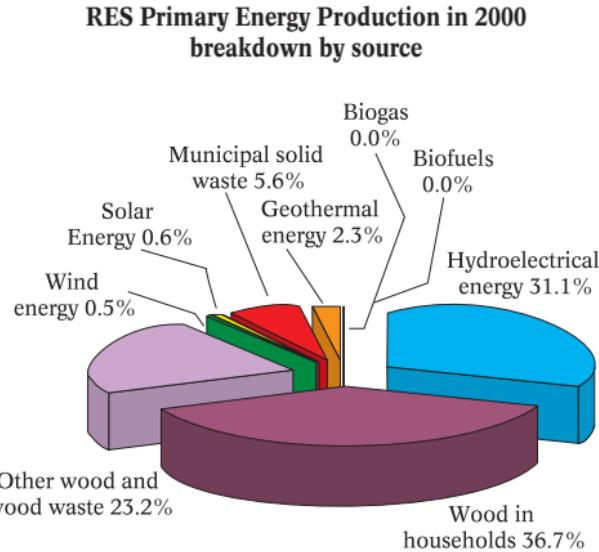


	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	74.2%	63.9%	59.9%	66.7%	71.0%	68.3%	70.6%	63.9%	67.2%	67.8%	75.7%	71.5%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	72.0%	61.8%	57.9%	64.7%	69.0%	66.3%	68.4%	61.3%	64.1%	64.8%	72.7%	68.7%
Wood and wood waste	2.2%	2.0%	1.9%	1.9%	1.8%	1.9%	2.0%	2.4%	2.8%	2.7%	2.7%	2.4%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Biogas	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Municipal solid waste	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	394	350	346	378	395	382	396	365	383	395	443	441
Wood in households	290	302	271	281	253	221	235	243	229	226	230	211
Other wood and wood waste	87	83	83	82	103	97	108	179	185	156	103	130
Wind energy	0	0	0	0	0	0	0	0	0	0	1	1
Solar Energy	1	2	2	3	3	4	4	5	6	7	6	6
Biogas	1	1	3	3	3	3	4	4	5	5	2	2
Municipal solid waste	4	9	10	11	12	12	12	15	15	15	16	18
Geothermal energy	0	0	0	0	0	0	1	1	1	1	2	2
Biofuels	0	0	1	1	1	1	1	1	1	2	2	2
All RES	779	747	716	760	771	721	761	813	826	807	804	813





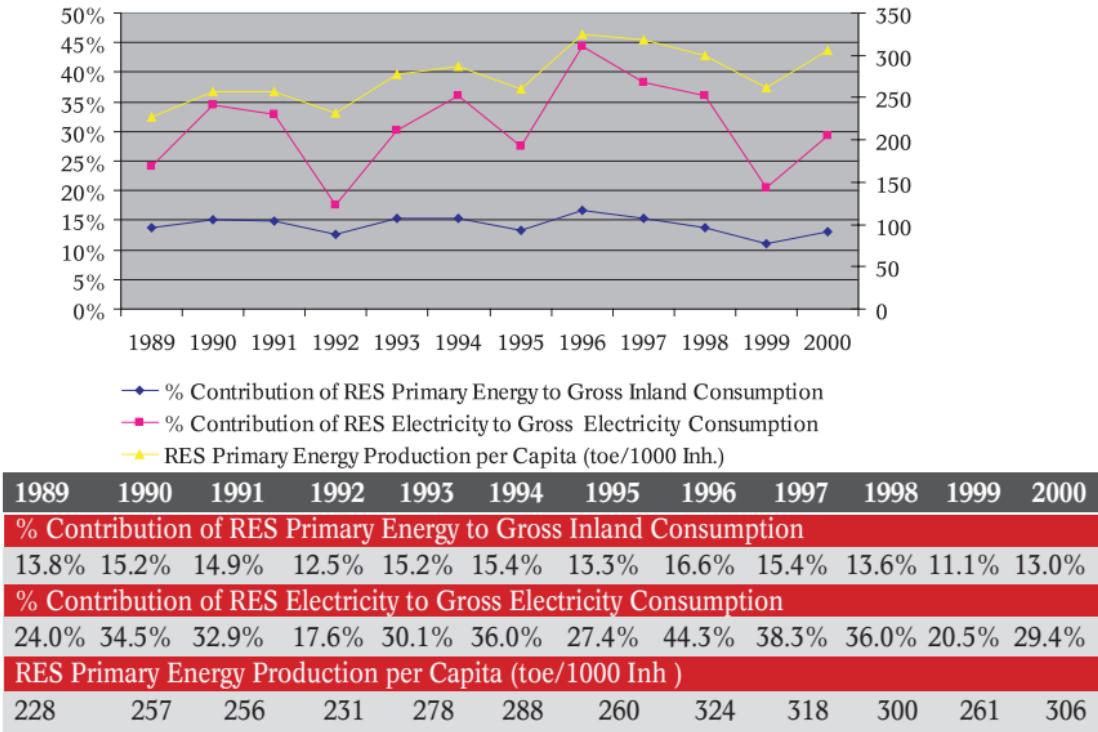
portugal



RES Primary Energy Production (ktoe)

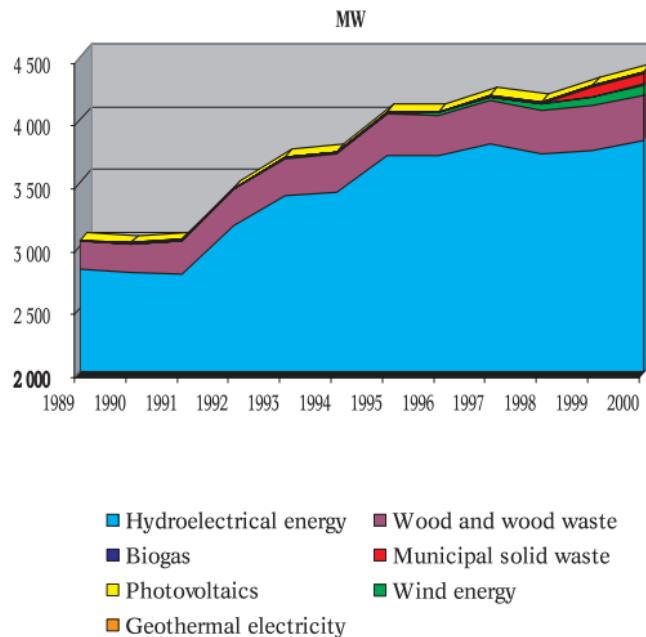
	Average Annual Change												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	95-00
Hydroelectrical energy	500	787	778	399	734	916	717	1 269	1 127	1 116	625	974	6%
Wood in households	1 150	1 150	1 150	1 150	1 150	1 150	1 150	1 150	1 150	1 150	1 150	1 150	0%
Other wood and wood waste	602	590	595	736	864	762	683	779	869	692	725	728	1%
Wind energy	0	0	0	0	1	1	1	2	3	8	11	14	62%
Solar Energy	9	11	13	13	14	14	15	16	16	17	18	18	4%
Biogas	2	2	2	2	2	3	3	3	3	2	1	1	-18%
Municipal solid waste	0	0	0	0	0	0	0	0	0	0	57	174	na
Geothermal energy	0	3	4	4	4	30	37	42	45	51	70	72	14%
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	2 264	2 543	2 542	2 305	2 770	2 876	2 607	3 261	3 213	3 035	2 656	3 133	4%

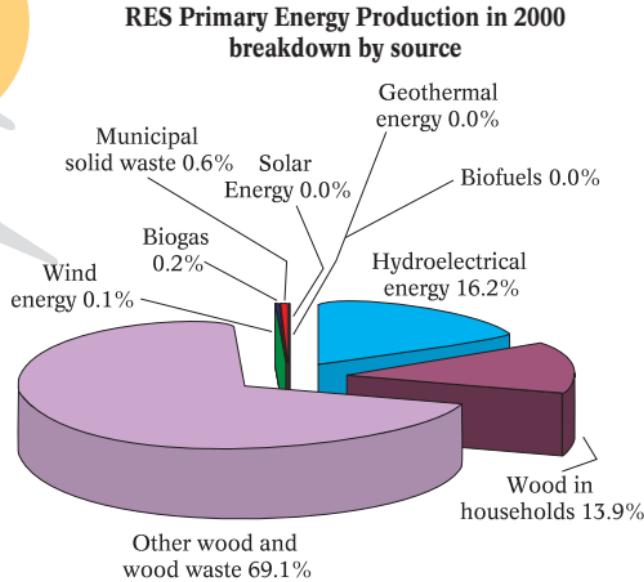
Renewable Energy Sources accounted for 13% of the Gross Inland Consumption in 2000, while the percentage of RES electricity in the Gross Electricity Consumption was 29.4% in the same year. Wood and wood waste cover the largest percentage of the total RES primary energy production (60% in 2000), while hydroelectric energy is the second largest source (31.1% of RES primary energy production in 2000) and MSW is the third (5.6% of RES primary energy production in 2000). Hydroelectricity covered about 25.3% and wood and wood waste produced electricity covered 2.3% of the Gross Electricity Consumption.



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	24.0%	34.5%	32.9%	17.6%	30.1%	36.0%	27.4%	44.3%	38.3%	36.0%	20.5%	29.4%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	21.6%	32.1%	30.2%	14.8%	27.2%	33.0%	24.4%	41.4%	35.3%	33.0%	17.1%	25.3%
Wood and wood waste	2.5%	2.4%	2.7%	2.8%	2.9%	2.9%	2.9%	2.7%	2.8%	2.6%	2.5%	2.3%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%	0.2%	0.3%	0.4%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Municipal solid waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	1.2%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	50	80	78	40	74	92	72	126	112	110	61	95
Wood in households	116	116	116	115	115	115	115	114	114	114	113	112
Other wood and wood waste	61	60	60	74	87	76	68	77	86	68	71	71
Wind energy	0	0	0	0	0	0	0	0	0	1	1	1
Solar Energy	1	1	1	1	1	1	2	2	2	2	2	2
Biogas	0	0	0	0	0	0	0	0	0	0	0	0
Municipal solid waste	0	0	0	0	0	0	0	0	0	0	6	17
Geothermal energy	0	0	0	0	0	3	4	4	4	5	7	7
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	228	257	256	231	278	288	260	324	318	300	261	306

Installed Capacity of RET's

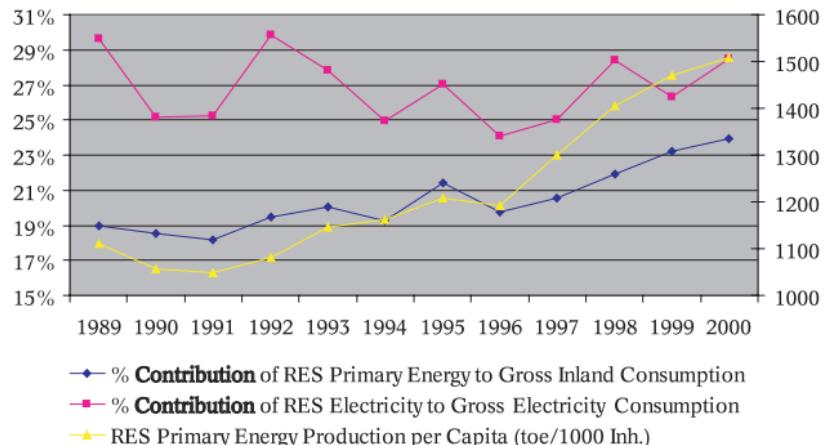




RES Primary Energy Production (ktoe)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average Annual Change
Hydroelectrical energy	1 120	934	1 135	1 301	1 158	1 013	1 110	1 020	1 053	1 294	1 099	1 262	3%
Wood in households	1 065	1 068	1 070	1 072	1 075	1 075	1 068	1 120	1 125	1 139	1 112	1 082	0%
Other wood and wood waste	3 298	3 240	3 030	3 051	3 545	3 796	3 965	3 946	4 466	4 790	5 348	5 392	6%
Wind energy	0	0	0	0	0	1	1	1	1	2	4	7	49%
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	14%
Biogas	10	10	10	10	11	11	13	16	24	18	18	18	7%
Municipal solid waste	18	19	18	18	17	16	12	8	10	4	15	45	30%
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	5 512	5 270	5 263	5 453	5 806	5 911	6 169	6 110	6 680	7 247	7 596	7 806	5%

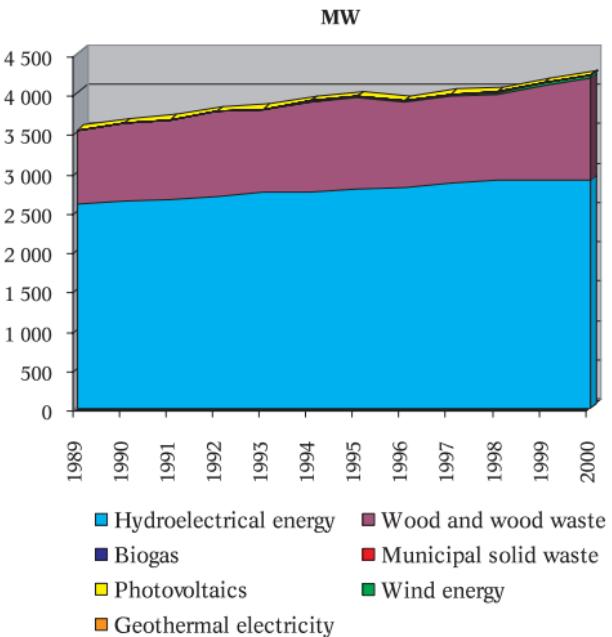
Hydroelectric energy covered about 17.9% and wood and wood waste covered 10.4% of the Gross Electricity Consumption of Finland in 2000. Wood and wood wastes cover the largest percentage of the total RES primary energy production (82.9% in 2000), while hydroelectric energy is the second largest source (16.2% of RES primary energy production in 2000). The percentage of RES in the Gross Inland Consumption was 23.9% in 2000, while the percentage of RES electricity in the Gross Electricity Consumption was 28.5% in the same year.



1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
% Contribution of RES Primary Energy to Gross Inland Consumption												
19.0%	18.5%	18.2%	19.5%	20.0%	19.3%	21.4%	19.8%	20.5%	21.9%	23.2%	23.9%	
% Contribution of RES Electricity to Gross Electricity Consumption												
29.6%	25.2%	25.2%	29.8%	27.8%	24.9%	27.0%	24.1%	25.0%	28.4%	26.3%	28.5%	
RES Primary Energy Production per Capita (toe/1000 Inh.)												
1 110	1 057	1 050	1 082	1 146	1 162	1 208	1 192	1 208	1 300	1 406	1 471	1 508

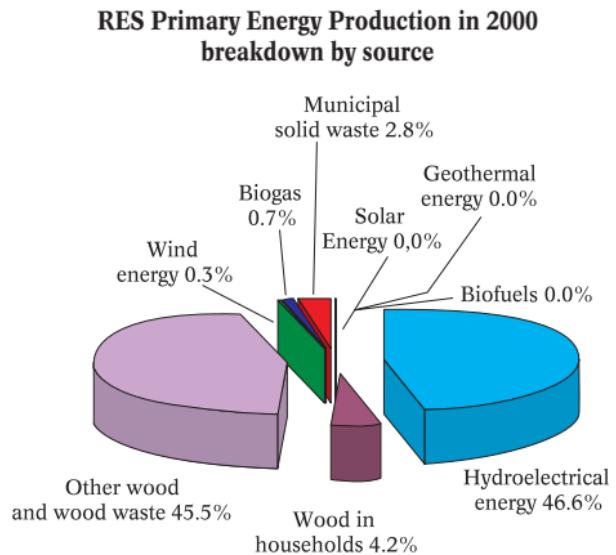
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	29.6%	25.2%	25.2%	29.8%	27.8%	24.9%	27.0%	24.1%	25.0%	28.4%	26.3%	28.5%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	21.7%	17.6%	18.9%	22.9%	19.6%	16.3%	18.2%	16.2%	15.9%	18.9%	15.8%	17.9%
Wood and wood waste	7.9%	7.6%	6.3%	6.9%	8.2%	8.6%	8.8%	7.8%	9.0%	9.4%	10.4%	10.4%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Municipal solid waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	226	187	226	258	229	199	217	199	205	251	213	244
Wood in households	215	214	213	213	212	211	209	219	219	221	215	209
Other wood and wood waste	664	650	604	605	700	746	776	770	869	929	1 035	1 042
Wind energy	0	0	0	0	0	0	0	0	0	1	1	1
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	2	2	2	2	2	2	3	3	5	3	4	3
Municipal solid waste	4	4	4	4	3	3	2	2	2	1	3	9
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	1 110	1 057	1 050	1 082	1 146	1 162	1 208	1 192	1 300	1 406	1 471	1 508

Installed Capacity of RET's



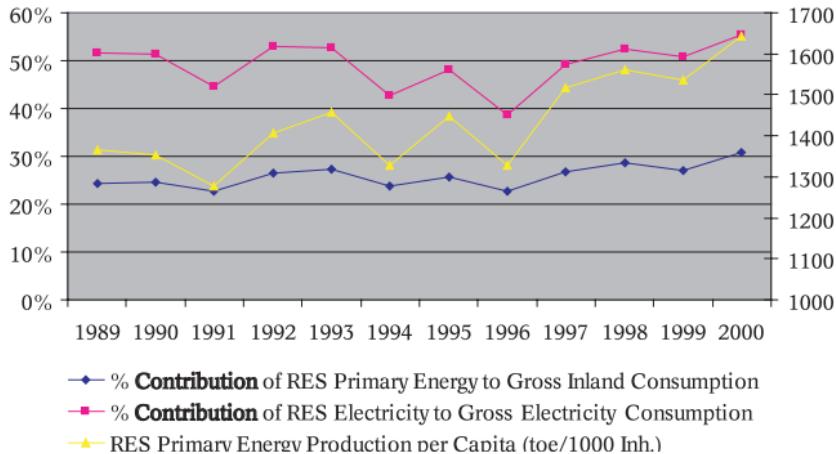


Sweden



	RES Primary Energy Production (ktoe)												Average Annual Change
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Hydroelectrical energy	6 169	6 234	5 437	6 394	6 419	5 082	5 856	4 449	5 934	6 391	6 166	6 795	3%
Wood in households	926	937	939	943	945	911	926	948	962	975	827	612	-8%
Other wood and wood waste	4 154	4 040	4 288	4 478	4 891	5 200	5 494	5 834	5 946	5 896	6 041	6 632	4%
Wind energy	0	1	1	3	4	6	9	12	18	27	32	38	33%
Solar Energy	3	3	4	4	4	4	5	4	4	5	5	5	2%
Biogas	0	0	0	0	81	92	99	115	124	103	102	107	2%
Municipal solid waste	340	355	352	364	373	362	390	372	426	417	422	403	1%
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	11 592	11 569	11 021	12 185	12 717	11 656	12 779	11 734	15 414	13 813	13 594	14 592	3%

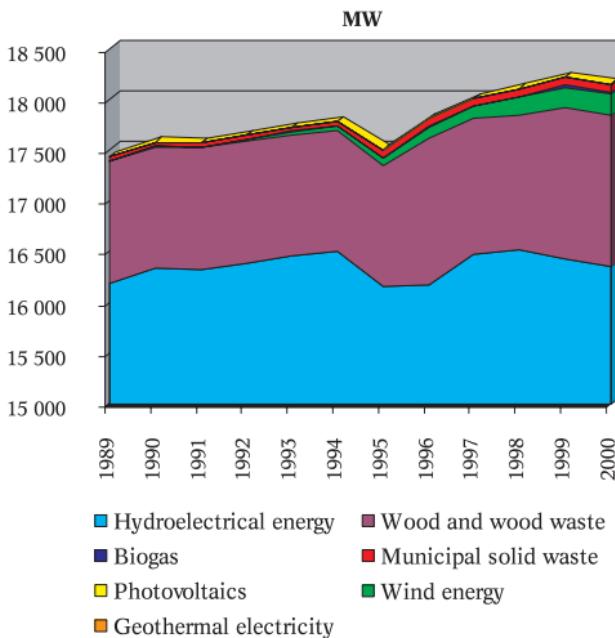
Hydro-electricity covered about 52.4% and wood and wood waste produced electricity covered 2.4% of the Gross Electricity Consumption in 2000. The percentage of RES in the Gross Inland Consumption was 30.7% in 2000, while the contribution of RES electricity in the Gross Electricity Consumption was 55.3% in the same year. Wood and wood waste cover the largest percentage of the total RES primary energy production (49.6% in 2000), while hydroelectric energy is the second largest source (46.6% of RES primary energy production in 2000) and MSW is the third (2.8% of RES primary energy production in 2000).

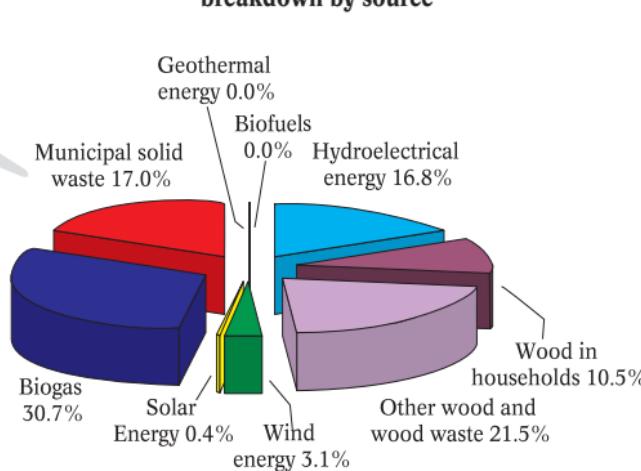


1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
24.4%	24.6%	22.7%	26.4%	27.3%	23.8%	25.6%	22.7%	26.6%	28.6%	27.0%	30.7%
% Contribution of RES Electricity to Gross Electricity Consumption											
51.7%	51.4%	44.6%	52.9%	52.8%	42.6%	48.1%	38.6%	49.1%	52.4%	50.9%	55.3%
RES Primary Energy Production per Capita (toe/1000 Inh.)											
1 365	1 352	1 279	1 406	1 459	1 327	1 448	1 327	1 516	1 561	1 535	1 645

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	51.7%	51.4%	44.6%	52.9%	52.8%	42.6%	48.1%	38.6%	49.1%	52.4%	50.9%	55.3%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	50.2%	49.9%	43.1%	51.4%	51.2%	41.1%	46.4%	35.2%	47.0%	50.3%	48.5%	52.4%
Wood and wood waste	1.4%	1.4%	1.4%	1.4%	1.5%	1.5%	1.6%	3.0%	1.8%	1.7%	2.0%	2.4%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.3%	0.3%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Municipal solid waste	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	726	728	631	738	736	579	663	503	671	722	696	766
Wood in households	109	109	109	109	108	104	105	107	109	110	93	69
Other wood and wood waste	489	472	498	517	561	592	622	660	672	666	682	748
Wind energy	0	0	0	0	1	1	1	1	2	3	4	4
Solar Energy	0	0	0	0	0	1	1	0	0	1	1	1
Biogas	0	0	0	0	9	10	11	13	14	12	12	12
Municipal solid waste	40	41	41	42	43	41	44	42	48	47	48	45
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	1 365	1 352	1 279	1 406	1 459	1 327	1 448	1 327	1 516	1 561	1 535	1 645

Installed Capacity of RET's





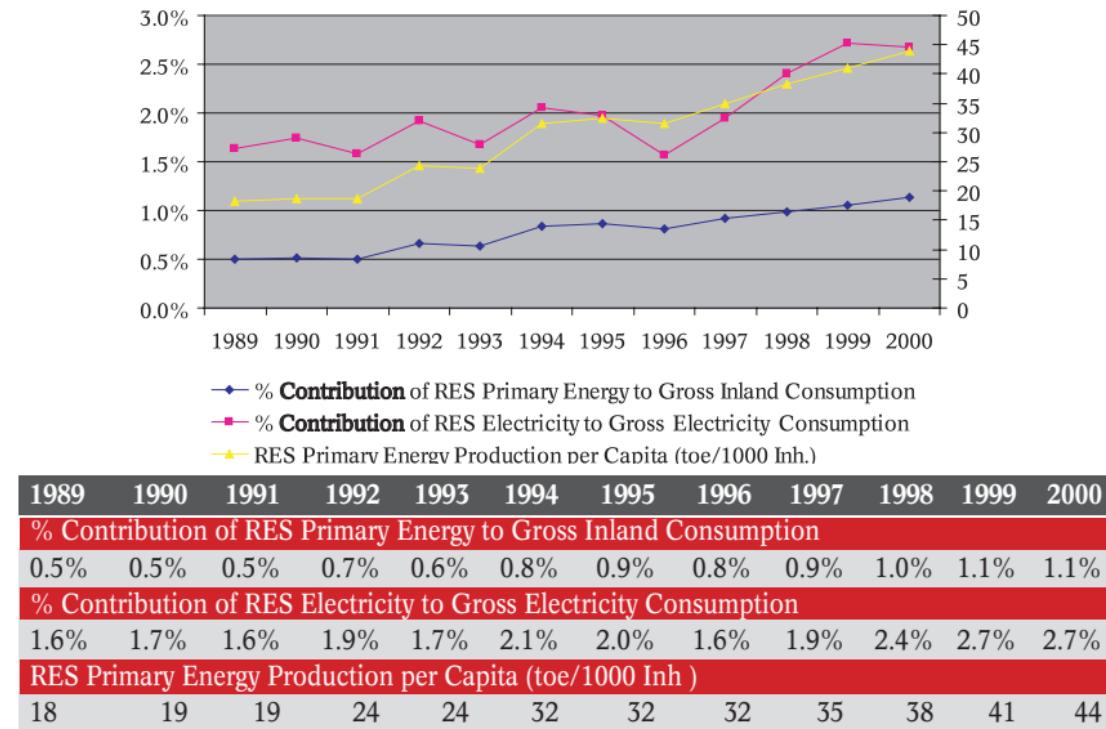
**RES Primary Energy Production in 2000
breakdown by source**

RES Primary Energy Production (ktoe)

Average Annual Change

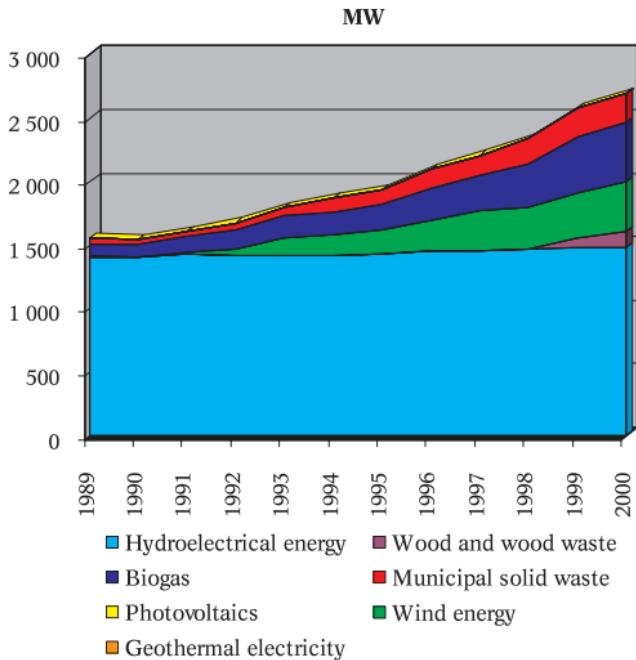
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	95-00
Hydroelectrical energy	398	436	394	474	368	438	416	289	355	450	461	440	1%
Wood in households	204	204	204	204	204	204	204	204	204	204	276	276	6%
Other wood and wood waste	57	57	57	233	237	455	498	505	506	506	529	563	2%
Wind energy	1	1	1	3	19	30	34	42	57	75	77	81	19%
Solar Energy	5	5	5	6	6	6	6	6	7	7	11	11	13%
Biogas	195	218	256	307	320	359	380	442	501	585	685	804	16%
Municipal solid waste	193	160	165	185	234	352	358	369	427	435	406	445	4%
Geothermal energy	0	0	1	1	1	1	1	1	1	1	1	1	0%
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	1 053	1 082	1 082	1 413	1 388	1 845	1 895	1 858	2 057	2 264	2 442	2 621	7%

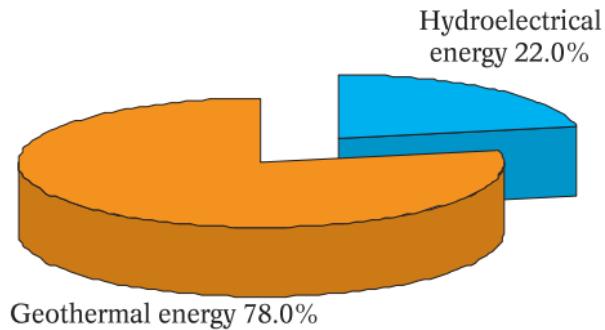
Wood and wood waste cover the largest percentage of the total RES primary energy production (32% in 2000), while biogas is the second largest source (30.7% of RES primary energy production in 2000) and MSW is the third (17% of RES primary energy production in 2000). Hydroelectricity covered about 1.3% and biogas produced electricity covered 0.7% of the Gross Electricity Consumption. The contribution of RES in the Gross Inland Consumption was 1.1% in 2000, while the percentage of RES electricity in the Gross Electricity Consumption was 2.7% in the same year.



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	1.6%	1.7%	1.6%	1.9%	1.7%	2.1%	2.0%	1.6%	1.9%	2.4%	2.7%	2.7%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	1.4%	1.5%	1.3%	1.6%	1.3%	1.5%	1.4%	0.9%	1.1%	1.4%	1.4%	1.3%
Wood and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%	0.2%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%
Biogas	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.3%	0.3%	0.4%	0.4%	0.6%	0.7%
Municipal solid waste	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.3%	0.4%	0.3%	0.3%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	7	8	7	8	6	8	7	5	6	8	8	7
Wood in households	4	4	4	4	4	3	3	3	3	3	5	5
Other wood and wood waste	1	1	1	4	4	8	8	9	9	9	9	9
Wind energy	0	0	0	0	0	1	1	1	1	1	1	1
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	3	4	4	5	5	6	6	8	8	10	12	13
Municipal solid waste	3	3	3	3	4	6	6	7	7	7	7	7
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	18	19	19	24	24	32	32	32	35	38	41	44

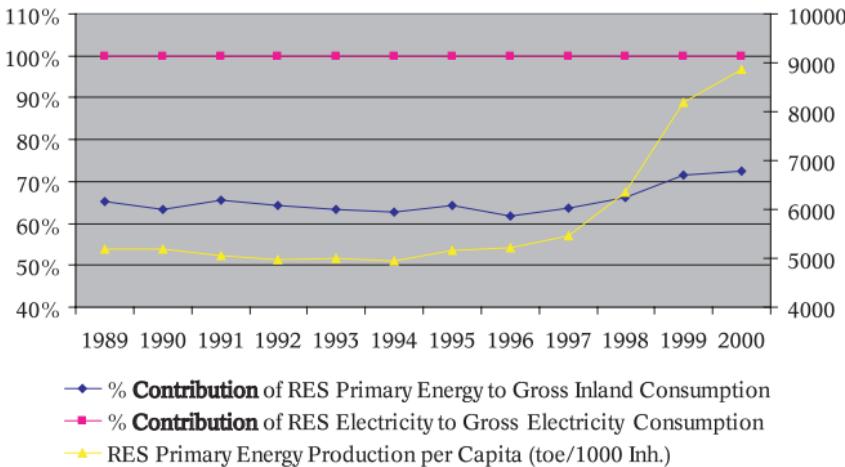
Installed Capacity of RET's





	RES Primary Energy Production (ktoe)												Average Annual Change
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	
Hydroelectrical energy	366	362	362	371	384	388	403	410	448	483	520	547	6%
Wood in households	0	0	0	0	0	0	0	0	0	0	0	0	na
Other wood and wood waste	0	0	0	0	0	0	0	0	0	0	0	0	na
Wind energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biogas	0	0	0	0	0	0	0	0	0	0	0	0	na
Municipal solid waste	0	0	0	1	1	1	1	1	1	1	1	1	0%
Geothermal energy	948	964	940	928	935	928	976	992	1 032	1 256	1 753	1 942	15%
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	1 314	1 325	1 302	1 299	1 321	1 317	1 379	1 404	1 481	1 741	2 274	2 490	13%

All the electricity consumed in Iceland is produced from renewable energy sources. In 2000, 82.7% of the electricity was produced from hydro and 17.3% from geothermal energy. Also 72.6% of the Gross Inland Consumption of Iceland (in 2000) is covered by renewable energy sources (hydro and geothermal). Geothermal energy is used for heating purposes as well.

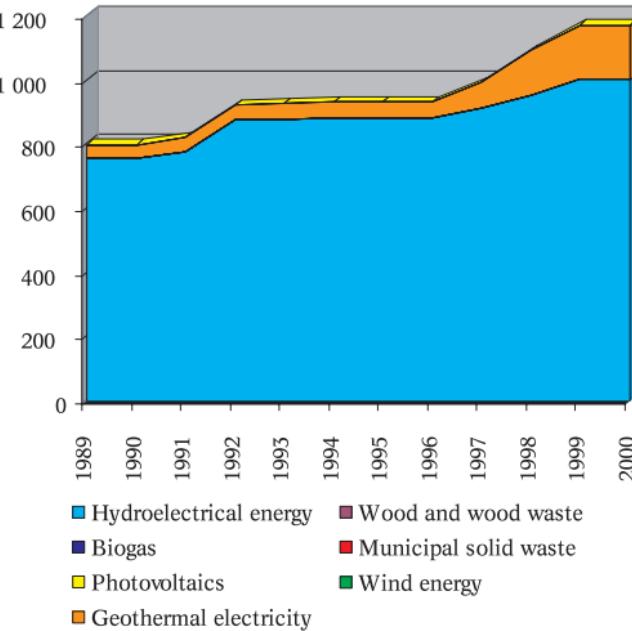


1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
65.1%	63.2%	65.5%	64.4%	63.4%	62.8%	64.4%	61.8%	63.6%	66.3%	71.7%	72.6%
% Contribution of RES Electricity to Gross Electricity Consumption											
99.9%	99.9%	99.8%	99.9%	99.9%	99.9%	99.8%	99.9%	99.9%	99.9%	99.9%	99.9%
RES Primary Energy Production per Capita (toe/1000 Inh)											
5 196	5 200	5 049	4 977	5 008	4 951	5 157	5 220	5 462	6 352	8 199	8 855

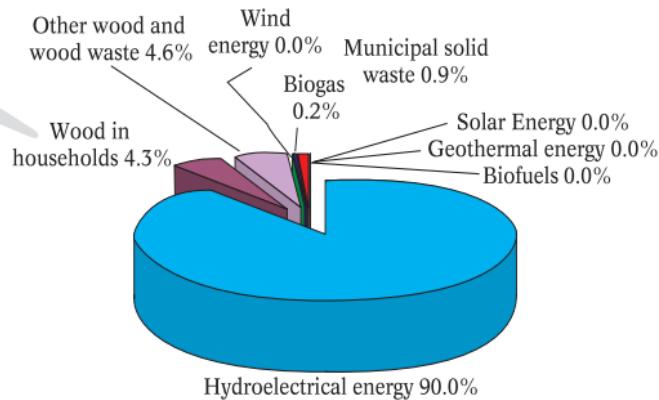
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	99.9%	99.9%	99.8%	99.9%	99.9%	99.9%	99.8%	99.9%	99.9%	99.9%	99.9%	99.9%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	93.9%	93.2%	93.5%	94.8%	94.5%	94.5%	94.0%	93.1%	93.2%	89.5%	84.1%	82.7%
Wood and wood waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Municipal solid waste	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Geothermal electricity	6.0%	6.7%	6.3%	5.1%	5.4%	5.4%	5.8%	6.8%	6.7%	10.4%	15.8%	17.2%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	1 449	1 419	1 402	1 420	1 456	1 460	1 505	1 526	1 652	1 764	1 875	1 944
Wood in households	0	0	0	0	0	0	0	0	0	0	0	0
Other wood and wood waste	0	0	0	0	0	0	0	0	0	0	0	0
Wind energy	0	0	0	0	0	0	0	0	0	0	0	0
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	0	0	0	0	0	0	0	0	0	0	0	0
Municipal solid waste	0	0	0	4	4	4	4	4	4	4	4	4
Geothermal energy	3 748	3 781	3 647	3 553	3 547	3 487	3 648	3 690	3 807	4 584	6 320	6 908
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	5 196	5 200	5 049	4 977	5 008	4 951	5 157	5 220	5 462	6 352	8 199	8 855

Installed Capacity of RET's

MW



RES Primary Energy Production in 2000 breakdown by source

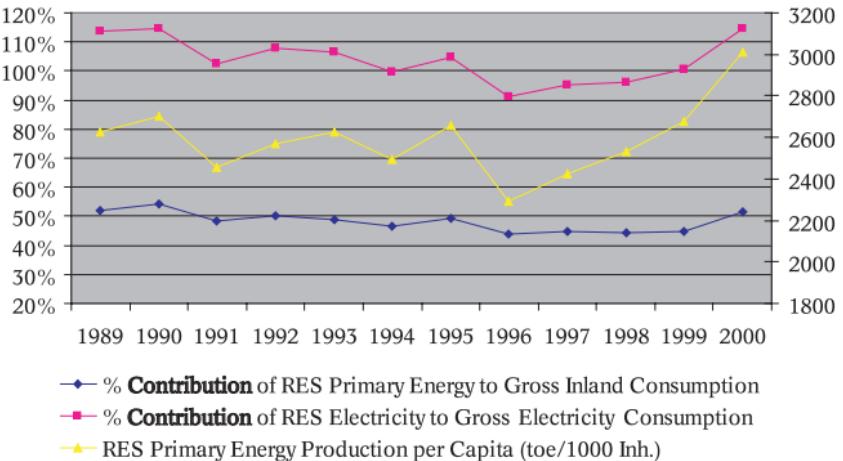


RES Primary Energy Production (ktoe)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Average Annual Change
Hydroelectrical energy	10 206	10 437	9 508	10 066	10 285	9 676	10 434	8 907	9 439	9 946	10 438	12 186	3%
Wood in households	445	516	461	464	522	576	554	586	604	604	575	577	1%
Other wood and wood waste	368	407	400	387	403	432	456	434	488	534	768	618	6%
Wind energy	0	0	0	0	1	1	1	1	1	1	1	3	26%
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biogas	0	1	6	8	12	13	16	16	25	25	25	26	11%
Municipal solid waste	87	95	99	99	107	109	115	112	114	116	138	124	2%
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0	na
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0	na
Total	11 106	11 456	10 474	11 023	11 329	10 807	11 574	10 055	10 670	11 225	11 945	13 533	3%

More than half of the Gross Inland Consumption of Norway (51.4% in 2000) is covered by renewable energy sources, while hydro-electricity was 1.14 times larger than the Gross Consumption of Electricity.

Hydroelectric energy is the main renewable source (90% of RES primary energy) and the remaining is covered by wood, biogas and municipal solid wastes.



1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
% Contribution of RES Primary Energy to Gross Inland Consumption											
52.2%	54.2%	48.5%	50.1%	49.0%	46.7%	49.3%	44.0%	44.6%	44.3%	44.9%	51.4%
% Contribution of RES Electricity to Gross Electricity Consumption											
113.7%	114.7%	102.3%	107.8%	106.6%	99.7%	104.5%	91.3%	95.2%	96.1%	100.5%	114.4%
RES Primary Energy Production per Capita (toe/1000 Inh.)											
2 628	2 701	2 458	2 572	2 627	2 492	2 655	2 295	2 422	2 533	2 677	3 013

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Share of RES Electricity to Gross Electricity Consumption												
	113.7%	114.7%	102.3%	107.8%	106.6%	99.7%	104.5%	91.3%	95.2%	96.1%	100.5%	114.4%
Electricity Generation per RES Technology as a percentage of the Gross Electricity Consumption												
Hydroelectrical energy	113.7%	114.5%	102.1%	107.5%	106.4%	99.4%	104.2%	91.0%	95.0%	95.8%	100.4%	114.3%
Wood and wood waste	0.0%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%
Wind energy	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Biogas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Municipal solid waste	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Geothermal electricity	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Photovoltaics	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
RES Primary Energy Production per Capita (toe/1000 Inh)												
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Hydroelectrical energy	2 415	2 461	2 231	2 348	2 385	2 231	2 393	2 033	2 143	2 244	2 339	2 713
Wood in households	105	122	108	108	121	133	127	134	137	136	129	128
Other wood and wood waste	87	96	94	90	93	100	105	99	111	120	172	138
Wind energy	0	0	0	0	0	0	0	0	0	0	0	1
Solar Energy	0	0	0	0	0	0	0	0	0	0	0	0
Biogas	0	0	1	2	3	3	4	4	6	6	6	6
Municipal solid waste	21	22	23	23	25	25	26	25	26	26	31	28
Geothermal energy	0	0	0	0	0	0	0	0	0	0	0	0
Biofuels	0	0	0	0	0	0	0	0	0	0	0	0
All RES	2 628	2 701	2 458	2 572	2 627	2 492	2 655	2 295	2 422	2 533	2 677	3 013

