

World on the Edge - Supporting Data for Chapter 9 - Wind

[World Cumulative Installed Wind Power Capacity and Annual Addition, 1980-2009](#)

GRAPH: World Cumulative Installed Wind Power Capacity, 1980-2009

[Cumulative Installed Wind Power Capacity in Top Ten Countries and the World, 1980-2009](#)

GRAPH: Cumulative Installed Wind Power Capacity in Leading Countries, 1980-2009

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GRAPH: Cumulative Installed Wind Power Capacity in the European Union, 1998-2009

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GRAPH: World Cumulative Installed Offshore Wind Power Capacity and Annual Addition, 1991-2009

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A full listing of data for the entire book is on-line at:

http://www.earth-policy.org/books/wote/wote_data

This is part of a supporting dataset for Lester R. Brown, **World On the Edge: How to Prevent Environmental and Economic Collapse** (New York: W.W. Norton & Company, 2010). For more information and a free download of the book, see Earth Policy Institute on-line at www.earth-policy.org.

World Cumulative Installed Wind Power Capacity and Annual Addition, 1980-2009

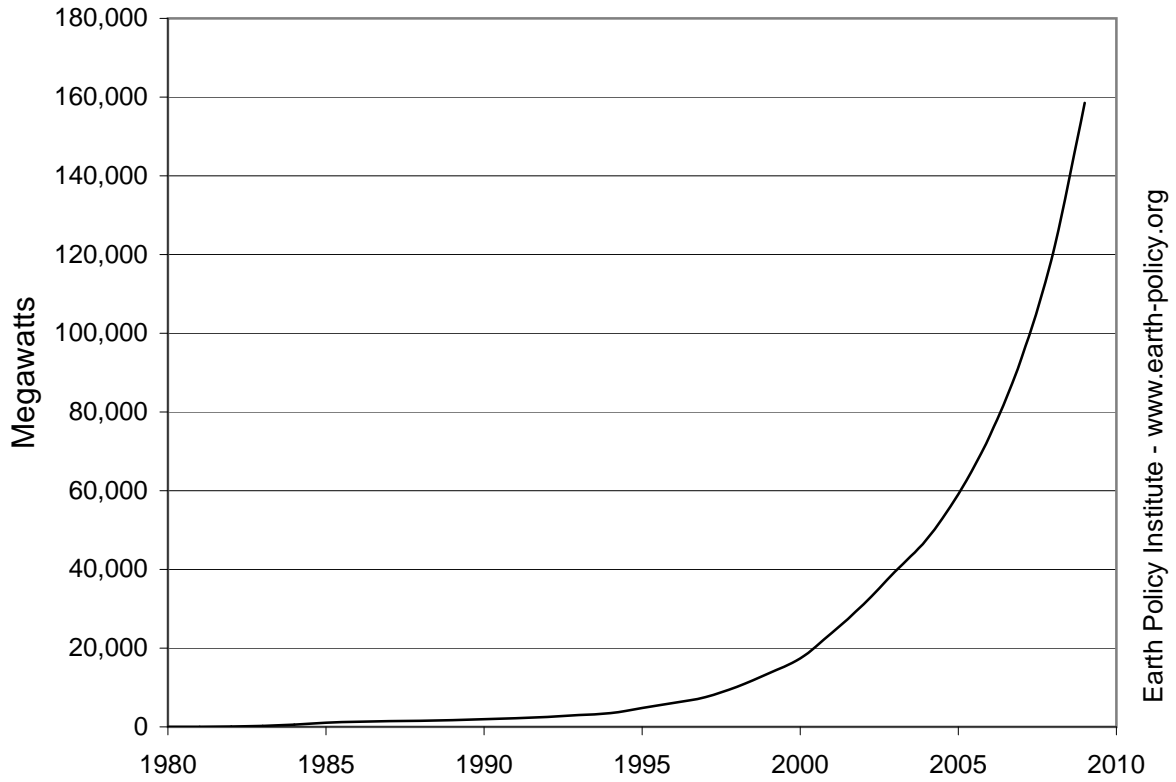
Year	Cumulative Installed Capacity	Net Annual Addition*
Megawatts		
1980	10	
1981	25	15
1982	90	65
1983	210	120
1984	600	390
1985	1,020	420
1986	1,270	250
1987	1,450	180
1988	1,580	130
1989	1,730	150
1990	1,930	200
1991	2,170	240
1992	2,510	340
1993	2,990	480
1994	3,490	500
1995	4,780	1,290
1996	6,100	1,320
1997	7,600	1,500
1998	10,200	2,600
1999	13,600	3,400
2000	17,400	3,800
2001	23,900	6,500
2002	31,100	7,200
2003	39,431	8,331
2004	47,620	8,189
2005	59,091	11,471
2006	74,052	14,961
2007	93,835	19,783
2008	120,297	26,462
2009	158,505	38,208

* Note: Net annual addition equals new installations minus retirements.

Source: Compiled by Earth Policy Institute with 1980-1995 data from Janet L. Sawin, "Wind Power Still Soaring," in Worldwatch Institute, *Vital Signs 2007-2008* (New York: W. W. Norton & Company, 2007); 1996-2009 data from Global Wind Energy Council (GWEC), *Global Wind 2009 Report* (Brussels: 2010), p. 12.

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World Cumulative Installed Wind Power Capacity, 1980-2009



Source: EPI from GWEC, Worldwatch

Cumulative Installed Wind Power Capacity in Top Ten Countries and the World, 1980-2009

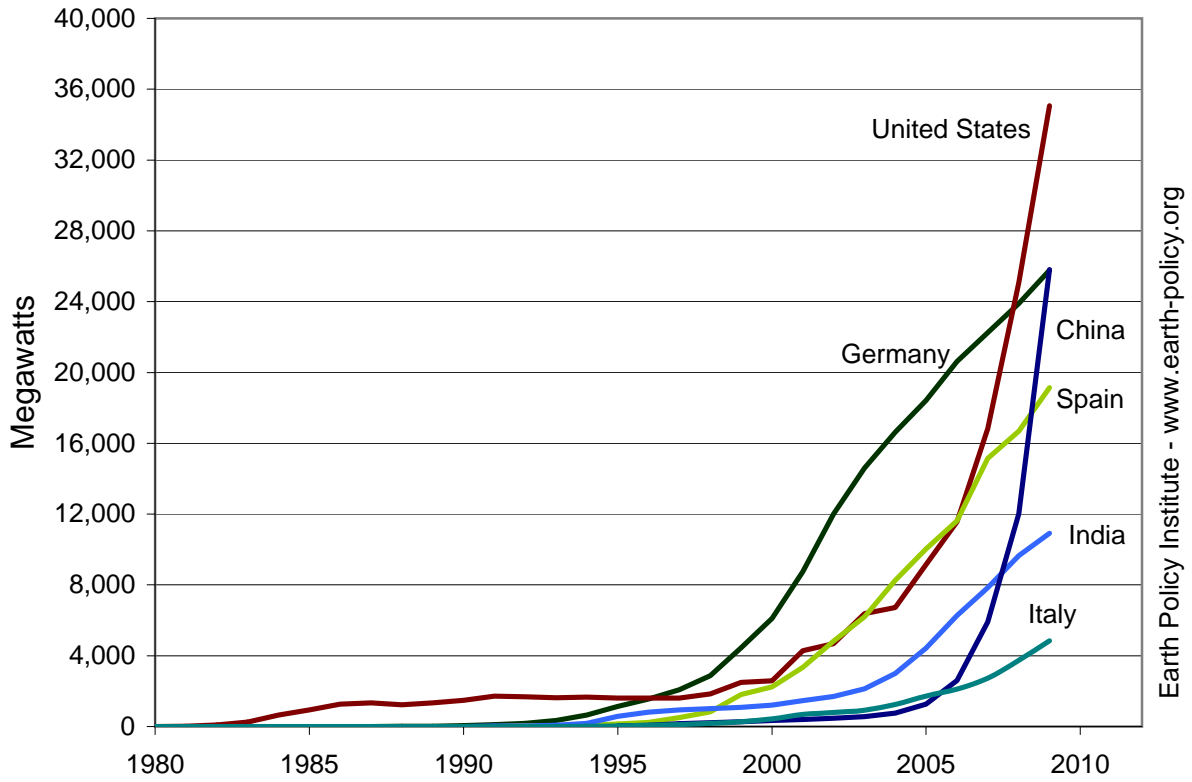
Year	U.S.	China	Germany	Spain	India	Italy	France	U.K.	Portugal	Denmark	World
----- Megawatts -----											
1980	8	n.a.	0	0	0	0	0	0	n.a.	5	10
1981	18	n.a.	0	0	0	0	0	0	n.a.	7	25
1982	84	n.a.	0	0	0	0	0	0	n.a.	12	90
1983	254	n.a.	0	0	0	0	0	0	n.a.	20	210
1984	653	n.a.	0	0	0	0	0	0	n.a.	27	600
1985	945	n.a.	0	0	0	0	0	0	n.a.	50	1,020
1986	1,265	n.a.	0	0	0	0	0	0	n.a.	82	1,270
1987	1,333	n.a.	5	0	0	0	0	0	n.a.	115	1,450
1988	1,231	n.a.	15	0	0	0	0	0	n.a.	197	1,580
1989	1,332	n.a.	27	0	0	0	0	0	n.a.	262	1,730
1990	1,484	n.a.	62	0	0	0	0	0	n.a.	343	1,930
1991	1,709	n.a.	112	5	39	1	0	4	n.a.	413	2,170
1992	1,680	n.a.	180	50	39	3	0	69	n.a.	458	2,510
1993	1,635	n.a.	335	60	79	6	2	n.a.	n.a.	487	2,990
1994	1,663	n.a.	643	70	185	18	n.a.	n.a.	n.a.	539	3,490
1995	1,612	38	1,130	140	576	32	3	200	n.a.	637	4,780
1996	1,614	79	1,548	230	820	70	6	273	n.a.	835	6,100
1997	1,611	170	2,080	512	940	103	10	319	n.a.	1,120	7,600
1998	1,837	224	2,875	834	1,015	180	19	333	60	1,443	10,200
1999	2,490	268	4,442	1,812	1,077	277	25	362	61	1,771	13,600
2000	2,578	346	6,113	2,235	1,220	427	66	406	100	2,417	17,400
2001	4,275	402	8,754	3,337	1,456	690	93	474	131	2,489	23,900
2002	4,685	469	11,994	4,825	1,702	797	148	552	195	2,889	31,100
2003	6,372	567	14,609	6,203	2,125	913	253	648	296	3,115	39,431
2004	6,725	764	16,629	8,263	3,000	1,255	390	888	522	3,123	47,620
2005	9,149	1,260	18,415	10,027	4,430	1,718	757	1,353	1,022	3,127	59,091
2006	11,575	2,599	20,622	11,623	6,270	2,123	1,567	1,962	1,716	3,135	74,052
2007	16,824	5,910	22,247	15,145	7,845	2,726	2,454	2,406	2,150	3,124	93,835
2008	25,068	12,020	23,903	16,689	9,655	3,736	3,404	2,974	2,862	3,163	120,297
2009	35,064	25,805	25,777	19,149	10,926	4,850	4,492	4,051	3,535	3,465	158,505

Note: n.a. = data not available.

Source: Compiled by Earth Policy Institute with world data from Janet L. Sawin, "Wind Power Still Soaring," in Worldwatch Institute, *Vital Signs 2007-2008* (New York: W. W. Norton & Company, 2007); Global Wind Energy Council (GWEC), *Global Wind 2009 Report* (Brussels: 2010). Country data from Worldwatch Institute, *Signposts 2001*, CD-ROM (Washington, DC: 2001); Chinese Renewable Energy Industries Association (CREIA), *China Wind Power Report 2007* (Beijing: China Environmental Science Press, 2007); American Wind Energy Association (AWEA), *Global Wind Energy Market Report*, (Washington, DC: 1999); GWEC, *Global Wind 2009 Report*, op. cit. this note; European Wind Energy Association (EWEA), *Wind Energy - The Facts* (Brussels: 1999 and 2004); François Demarcq, "Perspectives in France for the Coming Ten Years: WIND ENERGY," in *1999 European Wind Energy Conference* (Nice, France: 1999); British Wind Energy Association (BWEA), *Wind Energy in the UK* (London: 2008); Associazione Nazionale Energia del Vento (ANEV), "Installed Power Until 1999," email to Amy Heinzerling, Earth Policy Institute, 22 September 2009; EWEA, "Wind Energy Development in the EU 1998 to 2009," table downloaded from www.ewea.org/index.php?id=180, 12 February 2010.

This is part of a supporting dataset for Lester R. Brown, **World on the Edge: How to Prevent Environmental and Economic Collapse** (New York: W.W. Norton & Company, 2011). For more information and a free download of the book, see Earth Policy Institute on-line at www.earth-policy.org.

Cumulative Installed Wind Power Capacity in Leading Countries, 1980-2009



Source: EPI from Worldwatch, CREIA, AWEA, GWEC, ANEV, EWEA

Cumulative Installed Wind Power Capacity and Annual Addition in the United States, 1980-2009

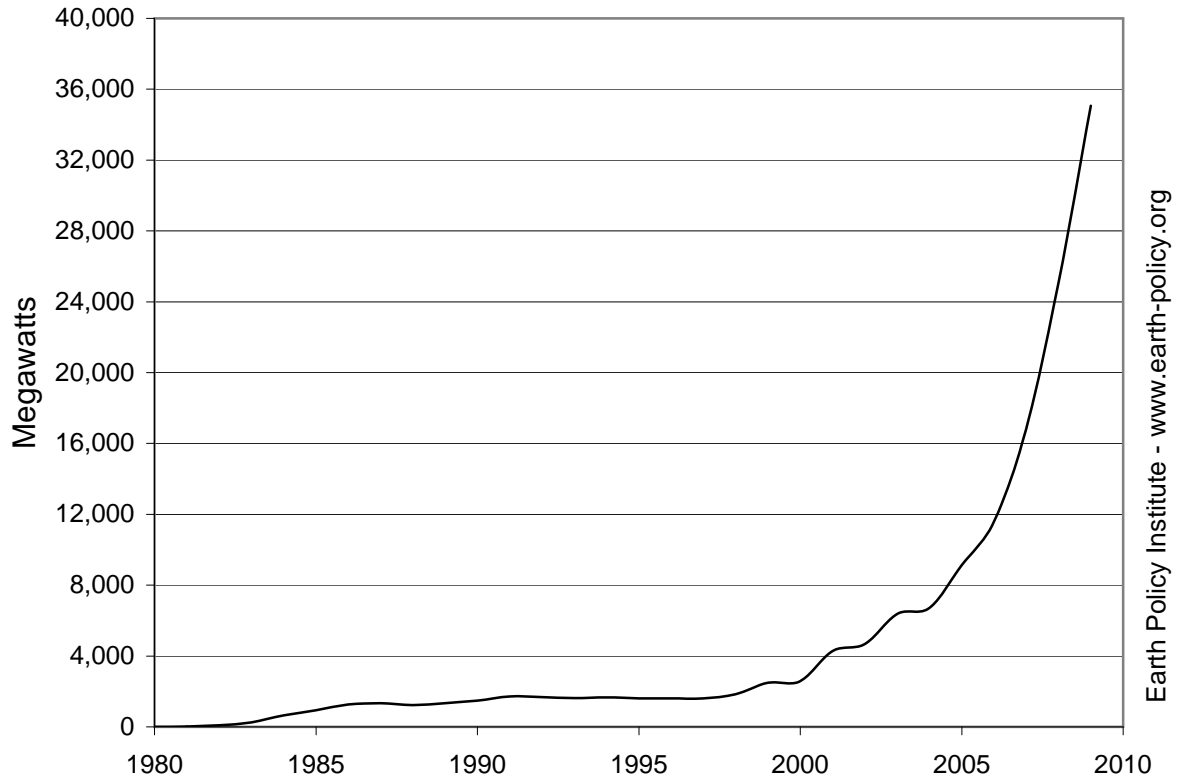
Year	Cumulative Installed Capacity	Net Annual Addition*
	Megawatts	
1980	8	
1981	18	10
1982	84	66
1983	254	170
1984	653	399
1985	945	292
1986	1,265	320
1987	1,333	68
1988	1,231	-102
1989	1,332	101
1990	1,484	152
1991	1,709	225
1992	1,680	-29
1993	1,635	-45
1994	1,663	28
1995	1,612	-51
1996	1,614	2
1997	1,611	-3
1998	1,837	226
1999	2,490	653
2000	2,578	88
2001	4,275	1,697
2002	4,685	410
2003	6,372	1,687
2004	6,725	353
2005	9,149	2,424
2006	11,575	2,426
2007	16,824	5,249
2008	25,068	8,244
2009	35,064	9,996

* Note: Net annual addition equals new installations minus retirements.

Source: Compiled by Earth Policy Institute with 1980-1999 data from Worldwatch Institute, *Signposts 2001*, CD-ROM (Washington, DC: 2001); 2000-2009 data from Global Wind Energy Council (GWEC), *Global Wind 2009 Report* (Brussels: 2010), p. 63.

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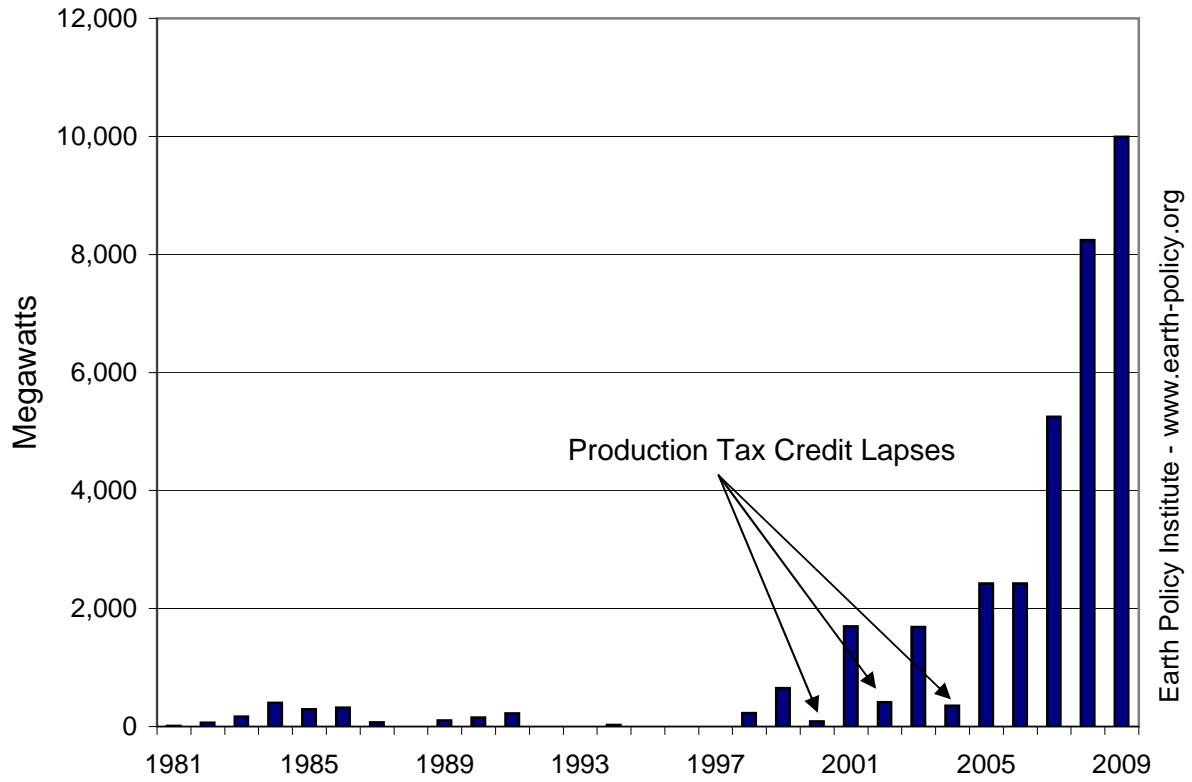
Cumulative Installed Wind Power Capacity in the United States, 1980-2009



Source: EPI from GWEC, Worldwatch

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Net Annual Installed Wind Power Capacity Additions in the United States, 1981-2009



Source: EPI from GWEC, Worldwatch, AWEA

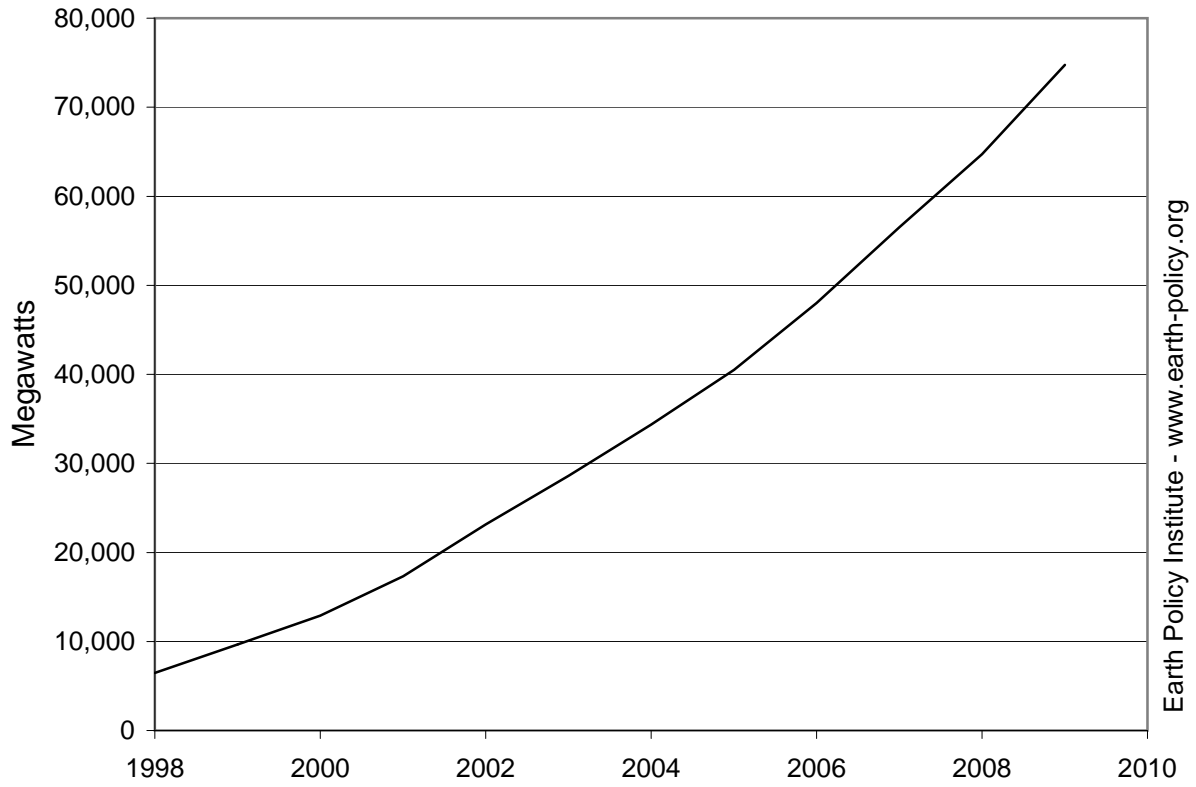
Cumulative Installed Wind Power Capacity in the European Union, 1998-2009

Year	Cumulative Installed Capacity Megawatts
1998	6,453
1999	9,678
2000	12,887
2001	17,315
2002	23,159
2003	28,598
2004	34,371
2005	40,511
2006	48,029
2007	56,531
2008	64,719
2009	74,767

Source: Compiled by Earth Policy Institute with data for 1998-2000 from European Wind Energy Association, "Cumulative Installed Capacity per EU Member State 1998 - 2009 (MW)," table at www.ewea.org/index.php?id=1486, retrieved 17 November 2010; 2001-2009 from Global Wind Energy Council, *Global Wind 2009 Report* (Brussels: 2010), p. 35.

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Cumulative Installed Wind Power Capacity in the European Union, 1998-2009



Source: EWEA; GWEC

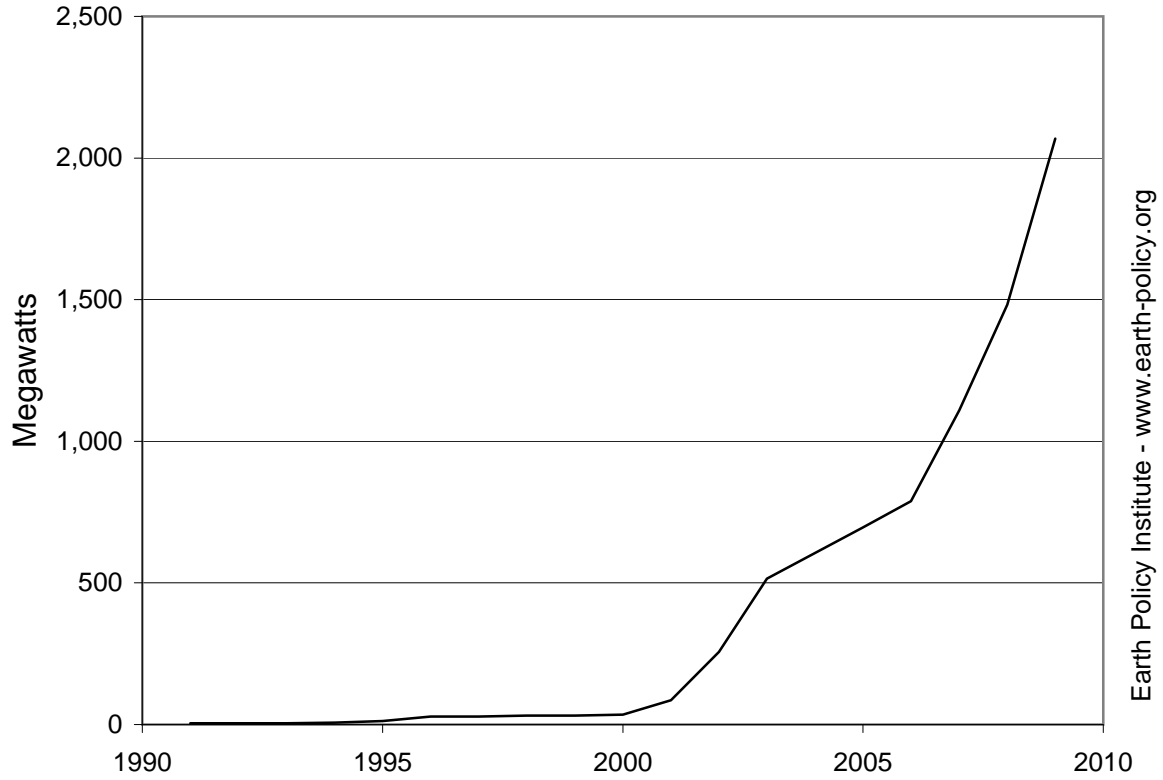
World Cumulative Installed Offshore Wind Power Capacity and Annual Addition, 1991-2009

Year	Cumulative Installed Capacity	Net Annual Addition*
	Megawatts	
1991	5	5
1992	5	0
1993	5	0
1994	7	2
1995	12	5
1996	29	17
1997	29	0
1998	32	3
1999	32	0
2000	36	4
2001	86	51
2002	256	170
2003	515	259
2004	606	91
2005	696	90
2006	788	93
2007	1,109	320
2008	1,482	373
2009	2,068	586

* Net annual addition equals new installations minus retirements.

Source: Compiled by Earth Policy Institute from 4C Offshore, *Offshore Wind Database*, electronic database, at www.4coffshore.com/windfarms/windfarms.aspx, updated 12 March 2010, and European Wind Energy Association, "Operational Offshore Wind Farms in Europe, End 2009," table downloaded from www.ewea.org/index.php?id=1861, 18 March 2010.

World Cumulative Installed Offshore Wind Power Capacity, 1991-2009



Source: EPI from 4C Offshore, EWEA

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Cumulative Installed Offshore Wind Power Capacity by Country, 2009

<u>Country</u>	Cumulative Installed Capacity Megawatts
United Kingdom	883
Denmark	639
Netherlands	247
Sweden	164
Germany	42
Belgium	30
Finland	24
Ireland	25
China	11
Norway	2
Japan	1
<u>Total</u>	<u>2,068</u>

Source: Compiled by Earth Policy Institute with China and Japan from 4C Offshore, *Offshore Wind Database*, electronic database, at www.4coffshore.com/windfarms/windfarms.aspx, updated 12 March 2010; all other country data from European Wind Energy Association, *The European Offshore Wind Industry - Key Trends and Statistics 2009* (Brussels: January 2010), p. 7.

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