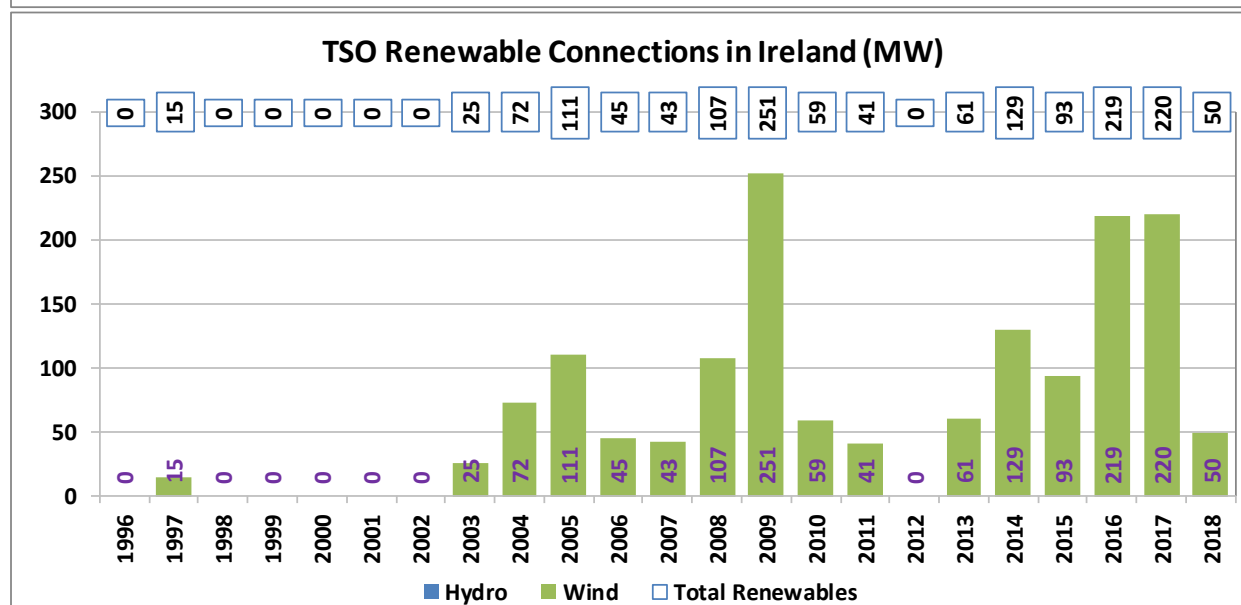
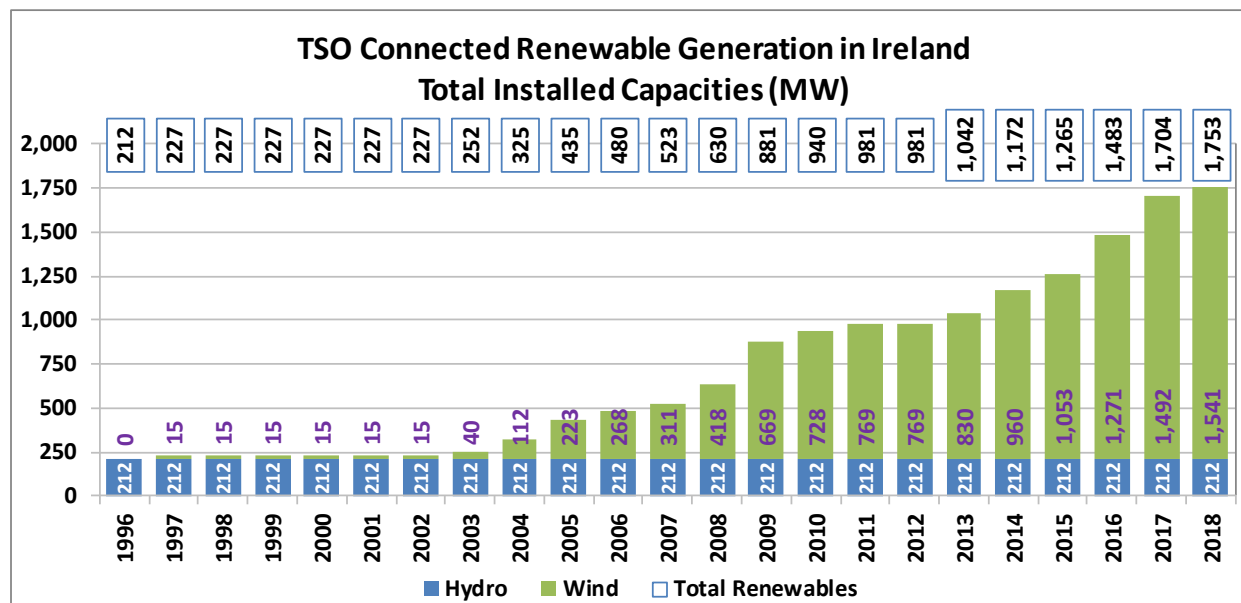


TSO Connected Renewables - Annual Installed Capacities

Correct as of 01/Aug/2018

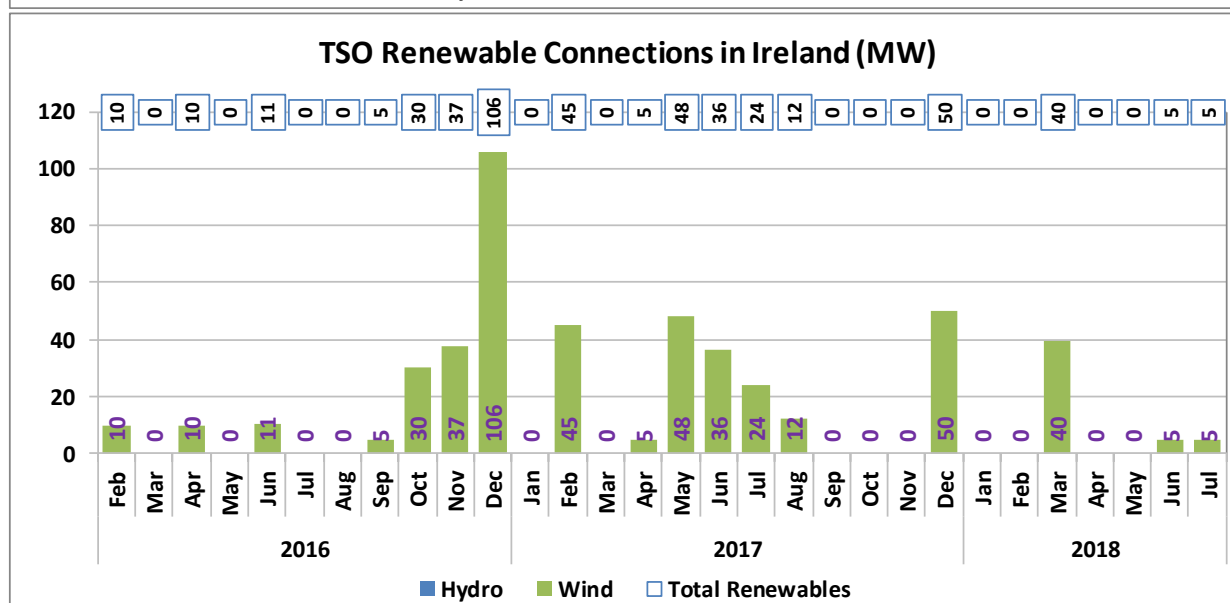
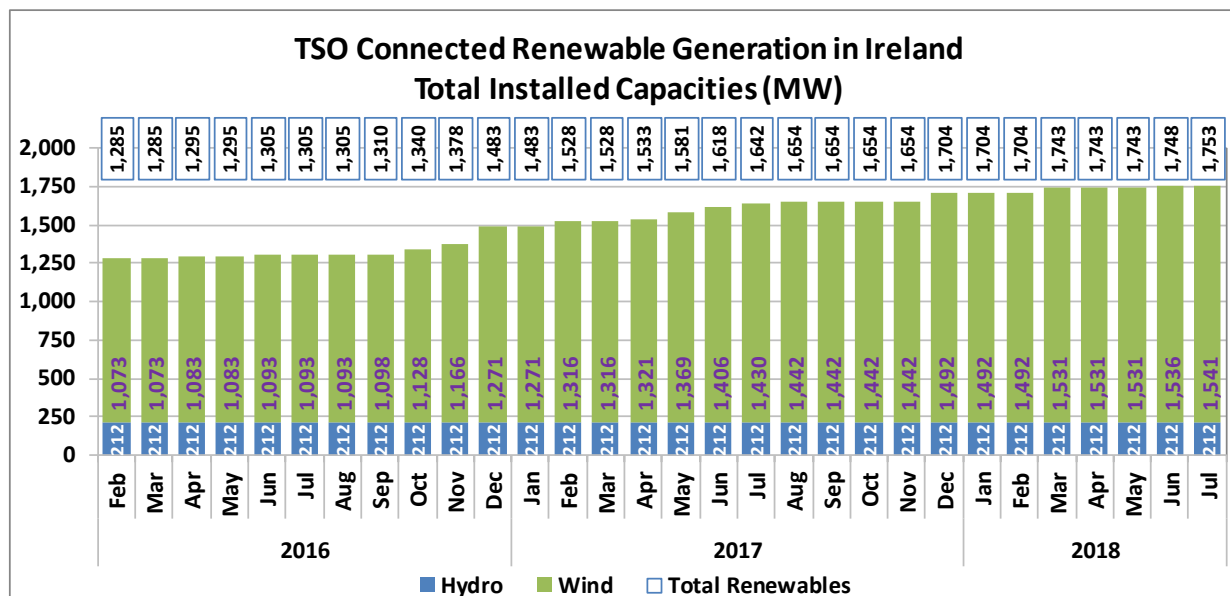
Year	MW Installed Capacity at Year End			MW Connected		
	Hydro	Wind	Total RES	Hydro	Wind	Total RES
1990	212.18	-	212.18	-	-	-
1991	212.18	-	212.18	-	-	-
1992	212.18	-	212.18	-	-	-
1993	212.18	-	212.18	-	-	-
1994	212.18	-	212.18	-	-	-
1995	212.18	-	212.18	-	-	-
1996	212.18	-	212.18	-	-	-
1997	212.18	15	227.18	-	15	15
1998	212.18	15	227.18	-	-	-
1999	212.18	15	227.18	-	-	-
2000	212.18	15	227.18	-	-	-
2001	212.18	15	227.18	-	-	-
2002	212.18	15	227.18	-	-	-
2003	212.18	40	252.18	-	25	25
2004	212.18	112.4	324.58	-	72.4	72.4
2005	212.18	222.9	435.08	-	110.5	110.5
2006	212.18	267.9	480.08	-	45	45
2007	212.18	310.85	523.03	-	42.95	42.95
2008	212.18	417.75	629.93	-	106.9	106.9
2009	212.18	668.75	880.93	-	251	251
2010	212.18	727.8	939.98	-	59.05	59.05
2011	212.18	769.2	981.38	-	41.4	41.4
2012	212.18	769.2	981.38	-	-	-
2013	212.18	830.2	1042.38	-	61	61
2014	212.18	959.55	1171.73	-	129.35	129.35
2015	212.18	1052.55	1264.73	-	93	93
2016	212.18	1271.25	1483.43	-	218.7	218.7
2017	212.18	1491.5	1703.68	-	220.25	220.25
2018 YTD	212.18	1541.1	1753.28	-	49.6	49.6



TSO Connected Renewables - Monthly Installed Capacities

Correct as of 01/Aug/2018

Year	Month	MW Installed Capacity at Month End			MW Connected		
		Hydro	Wind	Total RES	Hydro	Wind	Total RES
2016	Feb	212.18	1072.55	1284.73	-	10	10
	Mar	212.18	1072.55	1284.73	-	-	-
	Apr	212.18	1082.55	1294.73	-	10	10
	May	212.18	1082.55	1294.73	-	-	-
	Jun	212.18	1093.25	1305.43	-	10.7	10.7
	Jul	212.18	1093.25	1305.43	-	-	-
	Aug	212.18	1093.25	1305.43	-	-	-
	Sep	212.18	1098.25	1310.43	-	5	5
	Oct	212.18	1128.25	1340.43	-	30	30
	Nov	212.18	1165.65	1377.83	-	37.4	37.4
	Dec	212.18	1271.25	1483.43	-	105.6	105.6
2017	Jan	212.18	1271.25	1483.43	-	-	-
	Feb	212.18	1316.25	1528.43	-	45	45
	Mar	212.18	1316.25	1528.43	-	-	-
	Apr	212.18	1321.25	1533.43	-	5	5
	May	212.18	1369.25	1581.43	-	48	48
	Jun	212.18	1405.5	1617.68	-	36.25	36.25
	Jul	212.18	1429.5	1641.68	-	24	24
	Aug	212.18	1441.5	1653.68	-	12	12
	Sep	212.18	1441.5	1653.68	-	-	-
	Oct	212.18	1441.5	1653.68	-	-	-
	Nov	212.18	1441.5	1653.68	-	-	-
	Dec	212.18	1491.5	1703.68	-	50	50
2018	Jan	212.18	1491.5	1703.68	-	-	-
	Feb	212.18	1491.5	1703.68	-	-	-
	Mar	212.18	1531.1	1743.28	-	39.6	39.6
	Apr	212.18	1531.1	1743.28	-	-	-
	May	212.18	1531.1	1743.28	-	-	-
	Jun	212.18	1536.1	1748.28	-	5	5
	Jul	212.18	1541.1	1753.28	-	5	5



TSO Connected Renewable Generation List

Correct as of 01/Aug/2018

No	Type	Category	Gate	Ref. Code	Generator	Phase	Connection Full / Partial	Maximum Export Capacity (MW)	Installed Capacity (MW)	Full / Latest Connection Date	Notes	County	No of Turbines	Controllable
1	Wind	Onshore	PG	P25	Golagh	1	Full	15	15	Jul-1997		Donegal	25	N
2	Wind	Onshore	PG	P38A	Kingsmountain	1	Full	23.75	25	May-2003		Sligo	10	N
3	Wind	Onshore	PG	P38BDF	Meentycat	1	Full	70.96	72.4	Oct-2004		Donegal	38	Y
4	Wind	Onshore	PG	TG13	Ballywater	1	Full	31.5	31.5	May-2005		Wexford	16	Y
5	Wind	Onshore	PG	TG07	Booltiagh	1	Full	19.45	19.5	Aug-2005		Clare	13	Y
6	Wind	Onshore	PG	P33	Derrybrien	1	Full	59.5	59.5	Oct-2005	Gort	Galway	70	Y
7	Wind	Onshore	PG	TG11	Coomagearlahy	1	Full	42.5	45	Mar-2006		Kerry	15	Y
8	Wind	Onshore	1	TG47	Midas	1	Full	29.8	32.45	Jul-2007	Glanlee 1	Kerry	23	Y
9	Wind	Onshore	2	TG35	Ballywater	2	Full	10.5	10.5	Aug-2007		Wexford	5	Y
10	Wind	Onshore	PG	TG06	Mountain Lodge	1	Full	24.8	25.5	Apr-2008		Cavan	17	Y
11	Wind	Onshore	1	TG12	Pallas	1	Full	37.8	40	Jun-2008	Clahane 1	Kerry	20	Y
12	Wind	Onshore	1	TG18	Coomacheo	1	Full	41.225	41.4	Jun-2008		Cork	18	Y
13	Wind	Onshore	2	TG50	Coomagearlahy	2	Full	8.5	8.5	Mar-2009		Kerry	10	Y
14	Wind	Onshore	2	TG52	Mountain Lodge	3	Full	5.82	6	Mar-2009		Cavan	4	Y
15	Wind	Onshore	2	TG54	Coomagearlahy	3	Full	30	32.5	Jun-2009		Kerry	13	Y
16	Wind	Onshore	2	DG187	Coomacheo	2	Full	18	18.4	Jul-2009		Cork	8	Y
17	Wind	Onshore	2	TG55	Lisheen	1	Full	36	36	Jul-2009		Tipperary	18	Y
18	Wind	Onshore	1	TG65	Meentycat	2	Full	14	16.1	Oct-2009		Donegal	7	Y
19	Wind	Onshore	PG	P38-1	Bindoo	1a	Full	48	48	Oct-2009	Ratrussan	Cavan	32	Y
20	Wind	Onshore	2	TG29	Boggeragh	1	Full	57	57	Dec-2009		Cork	19	Y
21	Wind	Onshore	2	DG141	Dromada	1	Full	28.5	28.5	Dec-2009		Limerick	19	Y
22	Wind	Onshore	2	TG23a	Garvagh	1a	Full	26	26	Jun-2010	Glebe	Leitrim	13	Y
23	Wind	Onshore	2	TG23c	Garvagh	1c	Full	22	22	Jun-2010	Tullynahaw	Roscommon	11	Y
24	Wind	Onshore	2	TG40	Kingsmountain	2	Full	11.05	11.05	Jun-2010		Sligo	13	Y
25	Wind	Onshore	2	DG88	Castledockrell	1	Full	20	20.7	Jan-2011		Wexford	9	Y
26	Wind	Onshore	2	DG172	Castledockrell	2	Full	2	2.3	Jan-2011		Wexford	1	Y
27	Wind	Onshore	2	DG189	Castledockrell	3	Full	3.3	2.3	Jan-2011		Wexford	1	Y
28	Wind	Onshore	2	DG201	Castledockrell	4	Full	16.1	16.1	Jan-2011		Wexford	7	Y

TSO Connected Renewable Generation List (contd.)

Correct as of 01/Aug/2018

No	Type	Category	Gate	Ref. Code	Generator	Phase	Connection Full / Partial	Maximum Export Capacity (MW)	Installed Capacity (MW)	Full / Latest Connection Date	Notes	County	No of Turbines	Controllable
29	Wind	Onshore	2	TG55a	Lisheen	2	Full	23	24	May-2013		Tipperary	12	Y
30	Wind	Onshore	2	TG38	Booltiagh	2	Full	12	12	Sep-2013	Booltiagh 2 & 3 (TG38 & TG39)	Clare	6	Y
31	Wind	Onshore	1	TG22a	Athea	1a	Full	34.35	34.35	Feb-2014		Limerick	16	Y
32	Wind	Onshore	3	TG66	Mountlucas	1	Full	79.2	84	Nov-2014		Offaly	28	Y
33	Wind	Onshore	3	TG69	Kill Hill	1	Full	36	36	Dec-2014		Tipperary	16	Y
34	Wind	Onshore	3	DG135	Woodhouse	1	Full	20	20	Jun-2015		Waterford	8	Y
35	Wind	Onshore	2	DG50	Cloghboola	1	Full	46	48	Oct-2015	Knocknagashel	Kerry	16	Y
36	Wind	Onshore	3	TG102	Boggeragh	2	Full	65.7	65.7	Jun-2016	Knockduff + Killavoy 1 (DG200)	Cork	26	Y
37	Wind	Onshore	3	DG308	Mulreavy	2	Full	5.4	5	Oct-2016	Meenadreen South 2	Donegal	2	Y
38	Wind	Onshore	3	TG94	Sliabh Bawn	1	Full	58	64	Dec-2016		Roscommon	20	Y
39	Wind	Onshore	2	TG51	Mulreavy	1	Full	89.85	90	Feb-2017	Mulreavy 1 (82MW)(TG51) + Croaghnameal 1 (4.25MW)(DG198) + Meenadreen South 1 (3.6MW)(DG65)	Donegal	36	Y
40	Wind	Onshore	3	DG92	Uggool	1	Full	64	64	Feb-2017		Galway	22	Y
41	Wind	Onshore	1	TG15	Moneypoint	1	Full	17.25	17.25	Jun-2017		Clare	5	Y
42	Wind	Onshore	3	TG58	Seecon	1	Full	105	108	Aug-2017		Galway	36	Y
43	Wind	Onshore	2	DG49	Cordal	1	Full	35.85	35.2	Mar-2018		Kerry	11	Y
44	Wind	Onshore	3	DG272	Cordal	2	Full	54	54.4	Mar-2018	Merged with Cordal 3	Kerry	17	Y
45	Wind	Onshore	3	TG83	Clahane	2	Partial	13.8	5	Jun-2018		Kerry	6	Y
46	Wind	Onshore	N/A	TG256	Kelwin	1	Partial	37.05	5	Jul-2018	Hybrid: 37.05 MW Wind + 2 MW Diesel + 7.8 MW Battery	Kerry	13	Y

The DSO-connected renewable generators lists can be found on the DSO website:

<https://esbnetworks.ie/new-connections/generator-connections/generator-connection-statistics>

TSO Connected Renewable Generation List (contd.)

Correct as of 01/Aug/2018

No	Type	Category	Gate	Ref. Code	Generator	Phase	Connection Full / Partial	Maximum Export Capacity (MW)	Installed Capacity (MW)	Full / Latest Connection Date	Notes	County
1	Hydro		PG		Ardnacrusha	1	Full	22	22	1929		Clare
2	Hydro		PG		Ardnacrusha	2	Full	22	22	1929		Clare
3	Hydro		PG		Ardnacrusha	3	Full	21	21	1929		Clare
4	Hydro		PG		Ardnacrusha	4	Full	21	21	1934		Clare
5	Hydro		PG		Erne	1	Full	10	10	1950	Cliff	Donegal
6	Hydro		PG		Erne	2	Full	10	10	1955	Cliff	Donegal
7	Hydro		PG		Erne	3	Full	22.5	22.5	1951	Cathleen's Fall	Donegal
8	Hydro		PG		Erne	4	Full	22.5	22.5	1952	Cathleen's Fall	Donegal
9	Hydro		PG		Lee	1	Full	15	15	1952	Inniscarra	Cork
10	Hydro		PG		Lee	2	Full	4	4	1952	Inniscarra	Cork
11	Hydro		PG		Lee	3	Full	8	8	1952	Carrigadrohid	Cork
12	Hydro		PG		Liffey	1	Full	15	15	1944	Pollaphuca	Wicklow
13	Hydro		PG		Liffey	2	Full	15	15	1944	Pollaphuca	Wicklow
14	Hydro		PG		Liffey	3	Full	0.18	0.18	1944	Pollaphuca	Wicklow
15	Hydro		PG		Liffey	4	Full	4	4	1944	Pollaphuca	Wicklow

The DSO-connected renewable generators lists can be found on the DSO website:

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Frequently Asked Questions

- **Q: What is the difference between transmission (TSO) connected and distribution (DSO) connected wind?**

A: The power grid consists of two parts, a transmission system (high to medium voltage power lines) and a distribution system (medium to low voltage power lines into homes and businesses).

The transmission system is operated by EirGrid also known as the Transmission System Operator (TSO).

The distribution system is operated by ESB Networks also known as the Distribution System Operator (DSO).

Windfarms connected to the transmission system are known as TSO-connected windfarms.

Likewise, windfarms connected to the distribution system are known as DSO-connected windfarms.

Currently the TSO and DSO publish two separate lists of TSO-connected and DSO-connected windfarms as well as other types of generation.

The DSO-connected generators lists can be found on the DSO website:

<https://esbnetworks.ie/new-connections/generator-connections/generator-connection-statistics>

- **Q: What is the difference between the Maximum Export Capacity (MEC) and the installed capacity of a windfarm?**

A: Prior to building a windfarm, a connection agreement must be signed with the grid operator (TSO or DSO). This connection agreement specifies the maximum allowable power that can be exported by the windfarm to the grid, known as the Maximum Export Capacity (MEC). The grid operator then upgrades that part of the network to cater for this new capacity. The installed capacity of the windfarm increases as the turbines are gradually built. The TSO connected renewable generation list shows both the full agreed MEC and the latest installed capacity of the windfarm. The list also states whether the windfarm is fully or partially connected. The installed capacity of a windfarm may at times be slightly higher than its MEC, but the power output is limited so that it would not exceed this agreed MEC.

- **Q: Why is the number of turbines not available for certain windfarms?**

A: This is generally the case for partially connected windfarms.

This information may not be available until these windfarms are fully connected.

- **Q: Why do the connected MW and dates for windfarms in the TSO connected renewable generation list not match the MW growth in the annual/monthly charts and tables?**

A: Once a large windfarm is first energised, it can take a number of months for the installed capacity to grow as the turbines are gradually built and commissioned. The renewable generation list only shows the final connection date for a windfarm if it is fully connected; and only shows the latest “capacity increase” date for a windfarm if it is partially connected. This list therefore does not reflect the timeline of the gradual increase in installed capacities. The annual/monthly charts and tables however reflect this gradual growth accurately.

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