

FES 2018

	2050 compliant						Non-2050 compliant					
	Community Renewables			Two Degrees			Steady Progression			Consumer Evolution		
	2017	2030	2050	2017	2030	2050	2017	2030	2050	2017	2030	2050
Gas annual demand (incl exports) TWh	933	616	333	933	643	673	933	827	739	933	852	717
Gas peak demand	5,522 GWh	3,925 GWh	2,047 GWh	5,522 GWh	4,013 GWh	2,992 GWh	5,522 GWh	5,083 GWh	4,817 GWh	5,522 GWh	5,068 GWh	4,147 GWh
Electricity (underlying) annual demand	319 TWh	322 TWh	464 TWh	319 TWh	312 TWh	396 TWh	319 TWh	326 TWh	413 TWh	319 TWh	329 TWh	417 TWh
Electricity (underlying) peak demand	59.4 GW	62.0 GW	82.7 GW	59.4 GW	63.8 GW	78.5 GW	59.4 GW	62.3 GW	86.5 GW	59.4 GW	63.7 GW	86.7 GW
Electricity TX annual demand	265 TWh	199 TWh	181 TWh	265 TWh	219 TWh	253 TWh	265 TWh	252 TWh	319 TWh	265 TWh	235 TWh	265 TWh
% split of annual elec demand supplied from Tx and Dx plant	73%:27%	55%:45%	35%:65%	73%:27%	54%:46%	42%:58%	73%:27%	65%:35%	50%:50%	73%:27%	66%:34%	47%:53%
Electricity TX restricted peak demand	49.4 GW	35.3 GW	17.3 GW	49.4 GW	44.6 GW	38.5 GW	49.4 GW	47.9 GW	56.5 GW	49.4 GW	40.8 GW	38.2 GW
% split of peak demand supplied from Tx and Dx plant	85%:15%	61%:39%	26%:74%	85%:15%	73%:27%	54%:46%	85%:15%	79%:21%	67%:33%	85%:15%	67%:33%	46%:54%
New nuclear	0 GW	1.7 GW	7.8 GW	0 GW	7.8 GW	17.3 GW	0 GW	1.7 GW	14.0 GW	0 GW	0 GW	14.4 GW
Existing nuclear	9.2 GW	1.2 GW	1.2 GW	9.2 GW	1.2 GW	1.2 GW	9.2 GW	1.2 GW	1.2 GW	9.2 GW	1.2 GW	1.2 GW
EVs numbers (Cars)	91k	10.1m	31.7m	91k	9.7m	30.7m	91k	2.6m	33.1m	91k	2.5m	33.4m
EV annual demand (Cars)	0.2 TWh	20.1 TWh	60.6 TWh	0.2 TWh	17.5 TWh	59.5 TWh	0.2 TWh	4.9 TWh	56.5 TWh	0.2 TWh	4.5 TWh	55.8 TWh
EV peak demand (inc. V2G)	0.1 GW	5.0 GW	3.3 GW	0.1 GW	8.1 GW	6.5 GW	0.1 GW	2.8 GW	12.7 GW	0.1 GW	2.6 GW	9.9 GW
Heat pumps number (million)	0.04	3.77	19.13	0.04	2.72	8.96	0.04	0.48	3.41	0.04	1.32	6.15
Total installed generation capacity	103.1 GW	158.2 GW	267.7 GW	103.1 GW	160.9 GW	224.4GW	103.1 GW	134 .0GW	189.2 GW	103.1 GW	131.1 GW	199.6 GW
% of overall generation capacity that is decentralised	27%	45%	65%	27%	31%	44%	27%	28%	37%	27%	40%	56%
Electricity interconnector capacity	3.6 GW	16.5 GW	16.5 GW	3.6 GW	19.8 GW	19.8 GW	3.6 GW	15.1 GW	15.1 GW	3.6 GW	9.8 GW	9.8 GW
Total electricity storage capacity	2.9 GW	9.0 GW	29.0 GW	2.9 GW	8.9 GW	17.3 GW	2.9 GW	5.9 GW	11.8 GW	2.9 GW	6.8 GW	15.9 GW
Offshore wind (capacity)	6.1 GW	23.6 GW	32.5 GW	6.1 GW	30.0 GW	43.4 GW	6.1 GW	24.8 GW	35.0 GW	6.1 GW	16.8 GW	21.0 GW
Onshore wind (capacity)	11.5 GW	23.5 GW	50.8 GW	11.5 GW	19.6 GW	22.4 GW	11.5 GW	15.5 GW	16.4 GW	11.5 GW	20.5 GW	33.5 GW
Gas TX (CCGT + CHPs)	31.0 GW	20.5 GW	10.5 GW	31.0 GW	24.4 GW	2.0 GW	31.0 GW	35.5 GW	29.7 GW	31.0 GW	31.4 GW	24.1 GW
CCGT Tx new build (capacity)	0.0 GW	2.3 GW	8.0 GW	0.0 GW	4.4 GW	1.6 GW	0.0 GW	11.3 GW	15.5 GW	0.0 GW	7.7 GW	14.2 GW
CCUS capacity	0.0 GW	0.0 GW	0.0 GW	0.0 GW	0.9 GW	12.1 GW	0.0 GW	0.0 GW	6.7 GW	0.0 GW	0.0 GW	0.0 GW
Decentralised contribution at	9.1 GW	23.9 GW	61.6 GW	9.1 GW	17.1 GW	36.5 GW	9.1 GW	12.9 GW	28.5 GW	9.1 GW	21.1 GW	46.6 GW

<i>peak (difference between Total demand and Tx demand). Of which:</i>													
<ul style="list-style-type: none"> • Wind • Thermal • Storage • DSR 	1.5 GW 4.3 GW 0.2 GW 1.0 GW	2.8 GW 11 GW 3.1 GW 2.5 GW	9.1 GW 11.9 GW 17.7 GW 3.9 GW	1.5 GW 4.3 GW 0.2 GW 1.0 GW	1.9 GW 6 GW 3.3 GW 2.2 GW	2.4 GW 6.9 GW 6.6 GW 3.6 GW	1.5 GW 4.3 GW 0.2 GW 1.0 GW	1.6 GW 6.1 GW 1.1 GW 1.4 GW	1.8 GW 6.2 GW 5.6 GW 1.7 GW	1.5 GW 4.3 GW 0.2 GW 1.0 GW	2.3 GW 11.8 GW 2.0 GW 1.5 GW	5.1 GW 14.6 GW 9.1 GW 1.9 GW	
<i>Total installed decentralised capacity. Of which:</i>	28.2 GW	71.1 GW	173 GW	28.2 GW	50.5 GW	98.8 GW	28.2 GW	37.3 GW	70.9 GW	28.2 GW	52.5 GW	112.4 GW	
<ul style="list-style-type: none"> • Solar • Wind • Thermal • Storage • VtG 	12.4 GW 6.2 GW 5 GW 0.2 GW 0 GW	32.8 GW 12.4 GW 12.1 GW 4.4 GW 1.1 GW	65.6 GW 39.7 GW 12.8 GW 21.8 GW 20.6 GW	12.4 GW 6.2 GW 5 GW 0.2 GW 0 GW	23.6 GW 8 GW 6.8 GW 4.1 GW 1 GW	42.5 GW 10.8 GW 7.6 GW 8.1 GW 17.9 GW	12.4 GW 6.2 GW 5 GW 0.2 GW 0 GW	16.4 GW 7 GW 6.8 GW 1.5 GW 0.2 GW	27.3 GW 7.9 GW 7 GW 6.8 GW 15.6 GW	12.4 GW 6.2 GW 5 GW 0.2 GW 0 GW	19.6 GW 10.4 GW 12.9 GW 2.9 GW 0.2 GW	35.7 GW 23.4 GW 15.9 GW 11.2 GW 17.7 GW	
<i>Carbon intensity of power generation, annual average (g of CO2 per KWh)*</i>	266 gCO2/KWh	74.8 gCO2/KWh	32.2 gCO2/KWh	266 gCO2/KWh	47.6 gCO2/KWh	19.8 gCO2/KWh	266 gCO2/KWh	116.6 gCO2/KWh	51.8 gCO2/KWh	266 gCO2/KWh	146.5 gCO2/KWh	71.6 gCO2/KWh	

(GB) Electricity Underlying demand – Residential, industrial and commercial demand. No interconnector, station or pumping demand.

(GB) Electricity Tx Annual Demand – Demand on the Tx system. No interconnector, station or pumping demand (National Demand).

(GB) Electricity Tx Restricted Peak Demand - Demand on the Tx system. No interconnector, station or pumping demand. Includes reduction by Triad avoidance (Restricted National Demand)

DSR – Pure demand side response (not including generation) currently around 1GW and expected to grow in the scenarios.

*2017 figure is from National Grid’s control room, based on 2017 actual data, excluding some decentralised generation. Forward projections for 2030 and 2050 are based on BID3 modelling. Further detail can be found in the [FES 2018 Modelling Methods document](#).