Tomorrow's Energy Scenarios 2017 Consultation

Planning our Energy Future

Appendix Document

February 2017

EIRGRID

Further information on our scenarios

Tomorrow's Energy Scenarios 2017 Consultation document outlines four draft scenarios. The consultation document can be found here.

During the consultation we are seeking your feedback on our draft scenarios. We will analyse all feedback received and your views will allow us to shape the final scenarios which will be published in summer 2017.

We will be accepting input and feedback on our draft scenarios until **March 31st 2017**.

To enhance discussion we are providing further information on the demand and generation portfolios in our draft scenarios in this appendix. In particular we are providing information on 2030 as this represents the next major milestone, post- 2020, on Ireland's continued path to decarbonising the energy system.

If you require any further information on Tomorrow's Energy Scenarios, or would like to provide us with feedback, please visit http://www.eirgridgroup.com/customer-and-industry/energy-future.

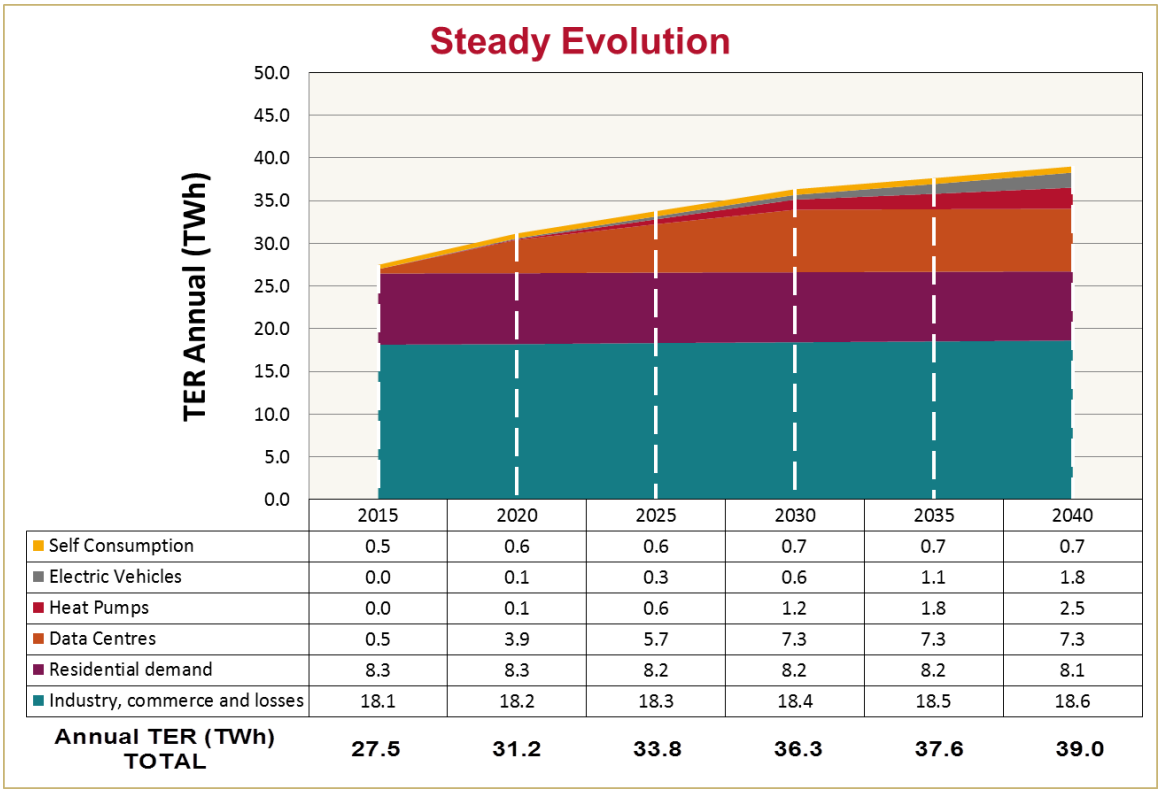
Alternatively, please email us your views on Tomorrow's Energy Scenarios to scenarios@eirgrid.com and one of our team will be in touch.

Fuel Type	Steady Evolution	Low Carbon Living	Slow Change	Consumer Action
Coal	0	0	860	0
Gas	4,660	4,210	3,760	4,660
Peat	0	0	0	0
Distillate Oil	220	100	320	100
Heavy Fuel Oil	0	0	0	0
Waste (assume 50% renewable)	100	100	80	100
Fossil Fuel Generation Total	4,930	4,360	4,980	4,810
Wind (Onshore)	5,140	6,000	4,640	5,380
Wind (Offshore)	280	2,000	30	600
Wind Generation Total	5,420	8,000	4,670	5,980
Hydro	240	240	240	240
Biomass/Landfill Gas (including Biomass CHP)	390	750	270	430
Solar PV	500	1,400	200	1,160
Ocean (Wave/Tidal)	50	100	20	70
Renewable Generation Total	6,890	10,780	5,680	8,170
Pumped Storage	290	650	290	290
Small Scale Battery Storage	50	200	0	700
Large Scale Battery Storage	50	150	0	100
Demand Side Management	500	750	400	1,000
DC Interconnection	1,200	1,200	1,200	1,200
Conventional Combined Heat & Power	160	180	150	190
Total Capacity	**14,070**	**18,270**	**12,700**	**16,460**

Table 1: Summary of the generation portfolios in the 2030 draft scenarios. All figures are given in MW.

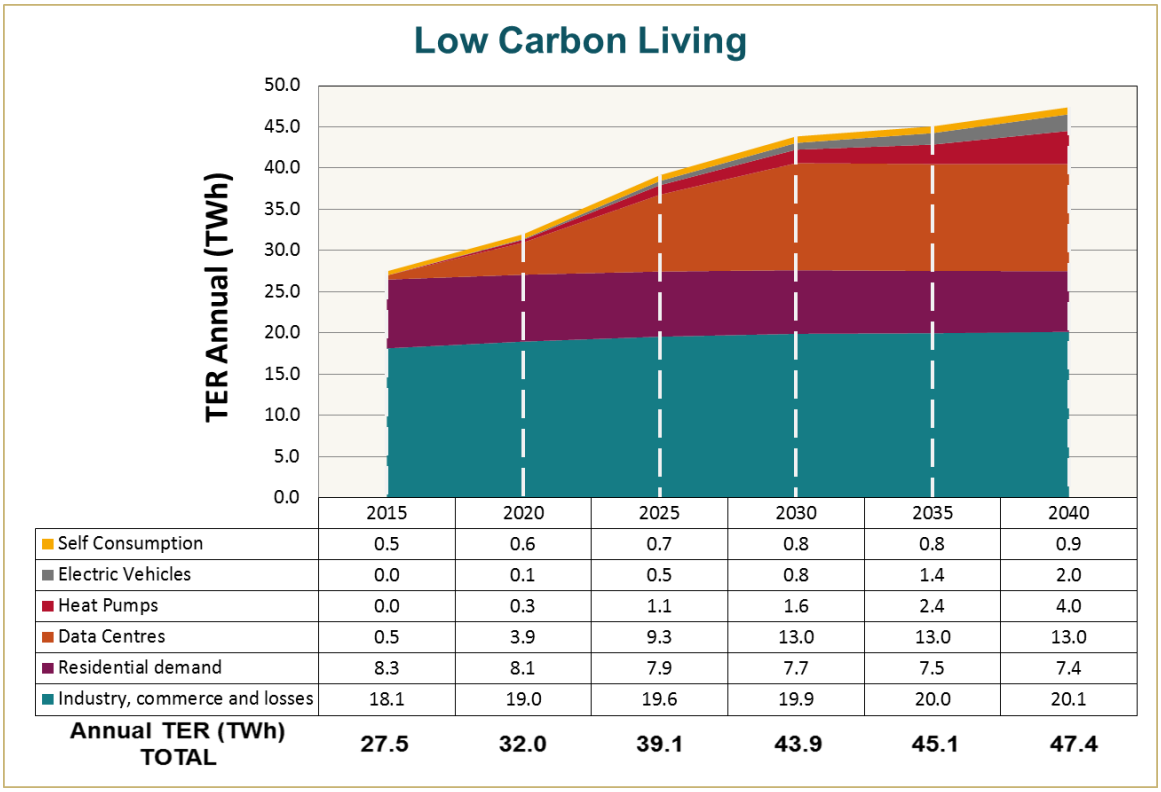
Demand Component Information	Steady Evolution	Low Carbon Living	Slow Change	Consumer Action
Total Data Centre Capacity (MVA)	1,100	1,950	850	1,675
Total number of Electric Vehicles	168,000	246,000	67,000	280,000
Total % of Vehicles which are Electric	8%	11%	3%	13%
Total number of Heat Pumps	199,000	279,000	100,000	339,000
Total % of Households with Heat Pumps	10%	14%	5%	17%
Total Demand (TWh)	**36.3**	**43.9**	**35.2**	**42.5**

Table 2: Summary of demand components in the 2030 draft scenarios.



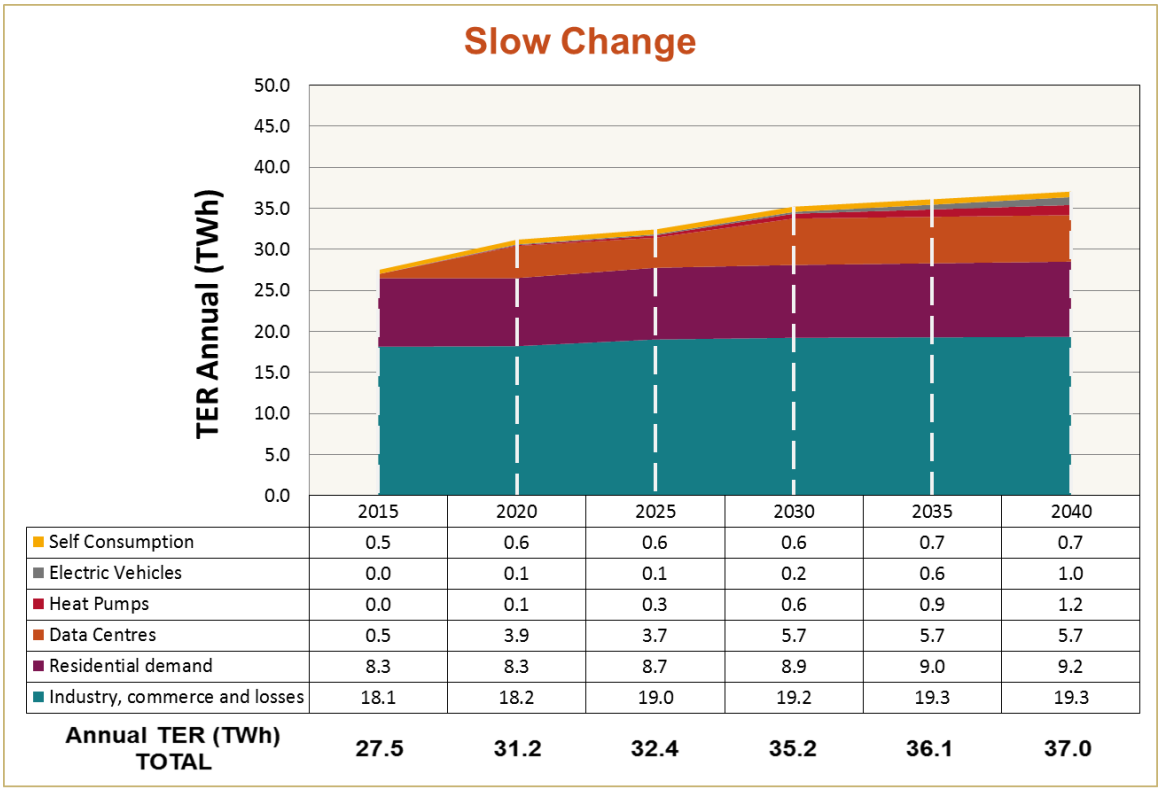
	2015	2020	2025	2030	2035	2040
Self Consumption	0.5	0.6	0.6	0.7	0.7	0.7
Electric Vehicles	0.0	0.1	0.3	0.6	1.1	1.8
Heat Pumps	0.0	0.1	0.6	1.2	1.8	2.5
Data Centres	0.5	3.9	5.7	7.3	7.3	7.3
Residential demand	8.3	8.3	8.2	8.2	8.2	8.1
Industry, commerce and losses	18.1	18.2	18.3	18.4	18.5	18.6
Annual TER (TWh) TOTAL	**27.5**	**31.2**	**33.8**	**36.3**	**37.6**	**39.0**

Figure 1: Total Electricity Requirement breakdown for the Steady Evolution scenario.



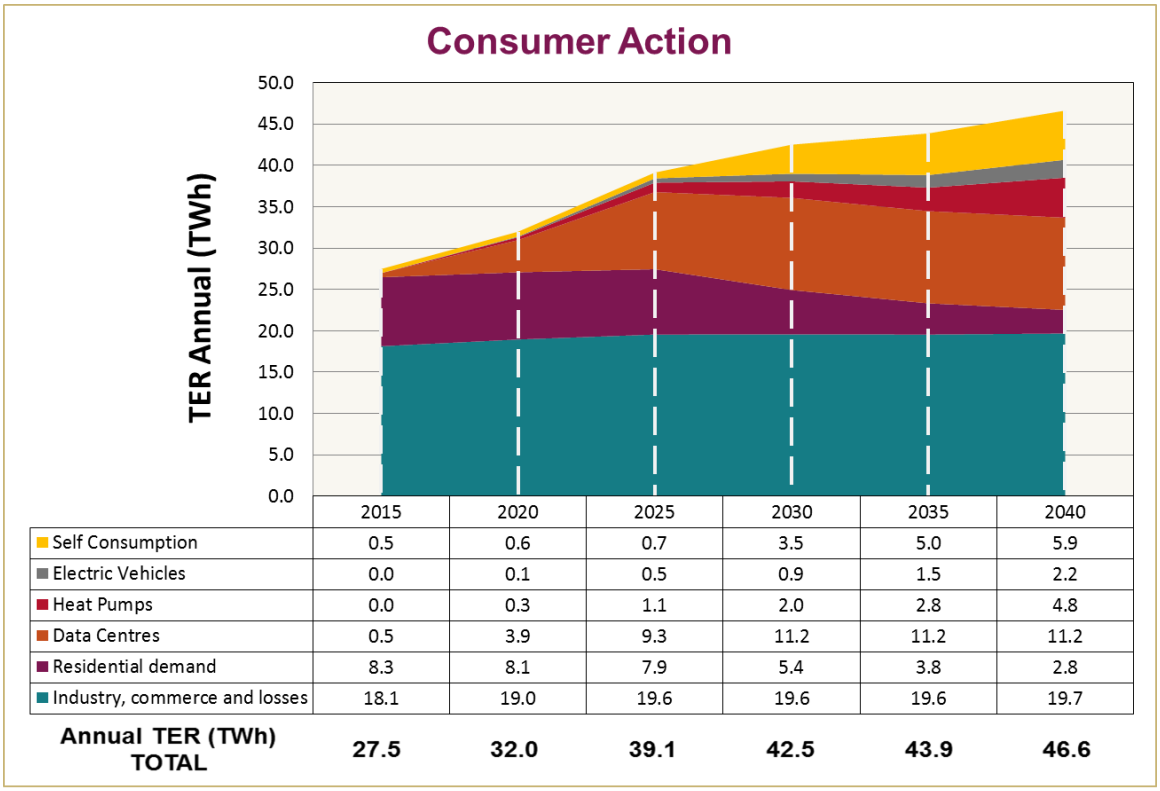
	2015	2020	2025	2030	2035	2040
Self Consumption	0.5	0.6	0.7	0.8	0.8	0.9
Electric Vehicles	0.0	0.1	0.5	0.8	1.4	2.0
Heat Pumps	0.0	0.3	1.1	1.6	2.4	4.0
Data Centres	0.5	3.9	9.3	13.0	13.0	13.0
Residential demand	8.3	8.1	7.9	7.7	7.5	7.4
Industry, commerce and losses	18.1	19.0	19.6	19.9	20.0	20.1
Annual TER (TWh) TOTAL	**27.5**	**32.0**	**39.1**	**43.9**	**45.1**	**47.4**

Figure 2: Total Electricity Requirement breakdown for the Low Carbon Living scenario.



	2015	2020	2025	2030	2035	2040
Self Consumption	0.5	0.6	0.6	0.6	0.7	0.7
Electric Vehicles	0.0	0.1	0.1	0.2	0.6	1.0
Heat Pumps	0.0	0.1	0.3	0.6	0.9	1.2
Data Centres	0.5	3.9	3.7	5.7	5.7	5.7
Residential demand	8.3	8.3	8.7	8.9	9.0	9.2
Industry, commerce and losses	18.1	18.2	19.0	19.2	19.3	19.3
Annual TER (TWh) TOTAL	**27.5**	**31.2**	**32.4**	**35.2**	**36.1**	**37.0**

Figure 3: Total Electricity Requirement breakdown for the Slow Change scenario.



	2015	2020	2025	2030	2035	2040
Self Consumption	0.5	0.6	0.7	3.5	5.0	5.9
Electric Vehicles	0.0	0.1	0.5	0.9	1.5	2.2
Heat Pumps	0.0	0.3	1.1	2.0	2.8	4.8
Data Centres	0.5	3.9	9.3	11.2	11.2	11.2
Residential demand	8.3	8.1	7.9	5.4	3.8	2.8
Industry, commerce and losses	18.1	19.0	19.6	19.6	19.6	19.7
Annual TER (TWh) TOTAL	**27.5**	**32.0**	**39.1**	**42.5**	**43.9**	**46.6**

Figure 4: Total Electricity Requirement breakdown for the Consumer Action scenario.