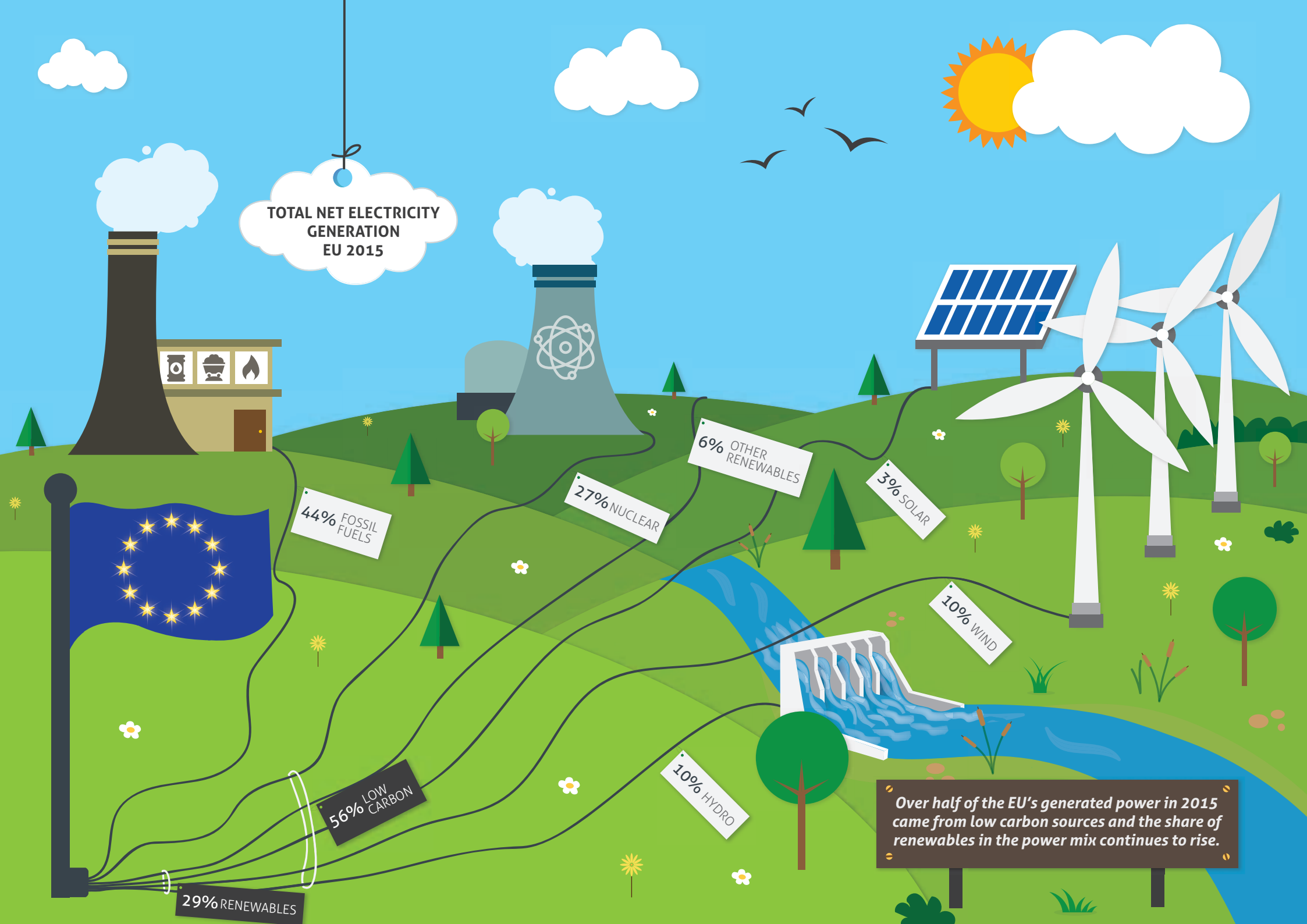
The European Power Sector in Transition

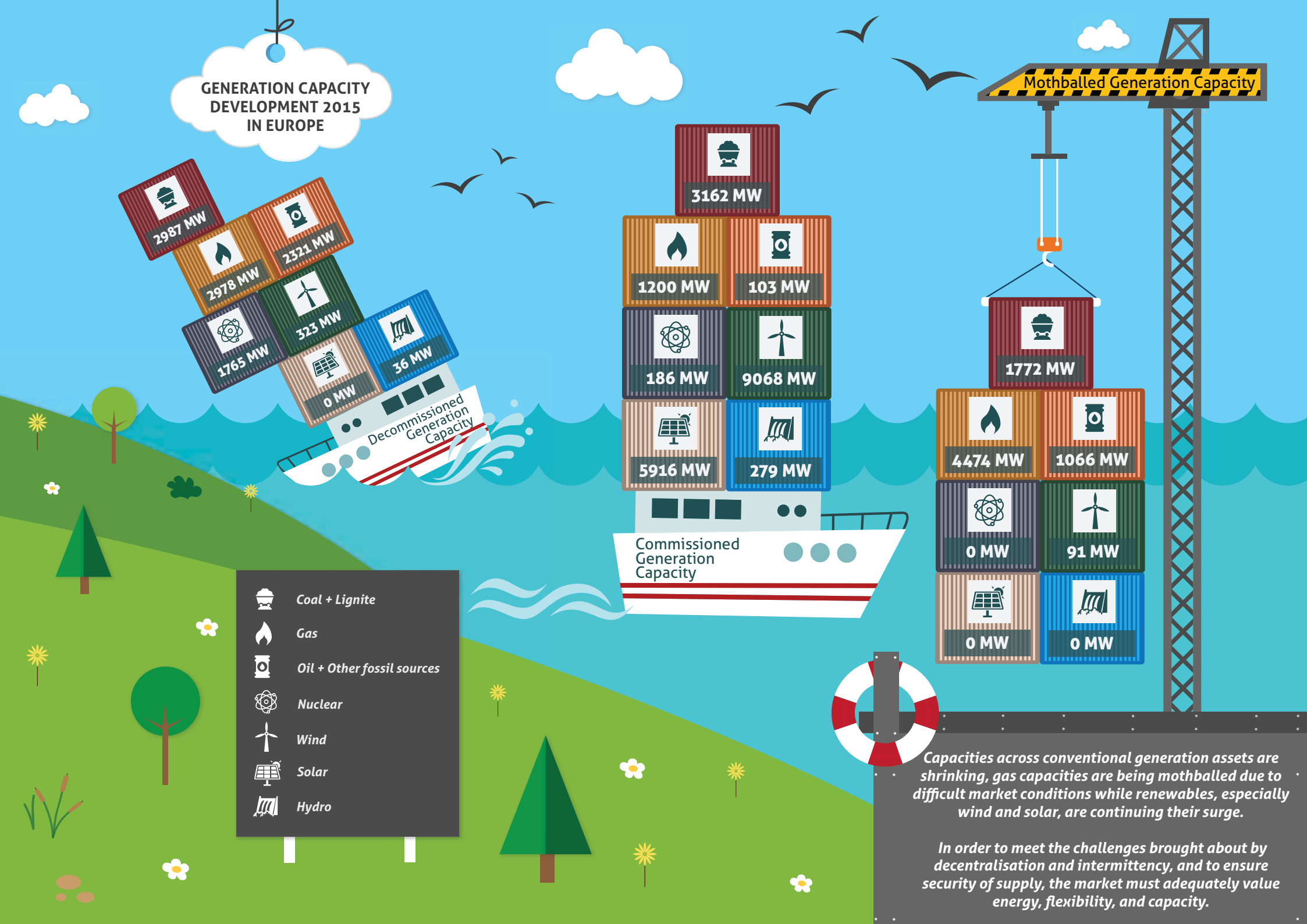
Facts & Figures

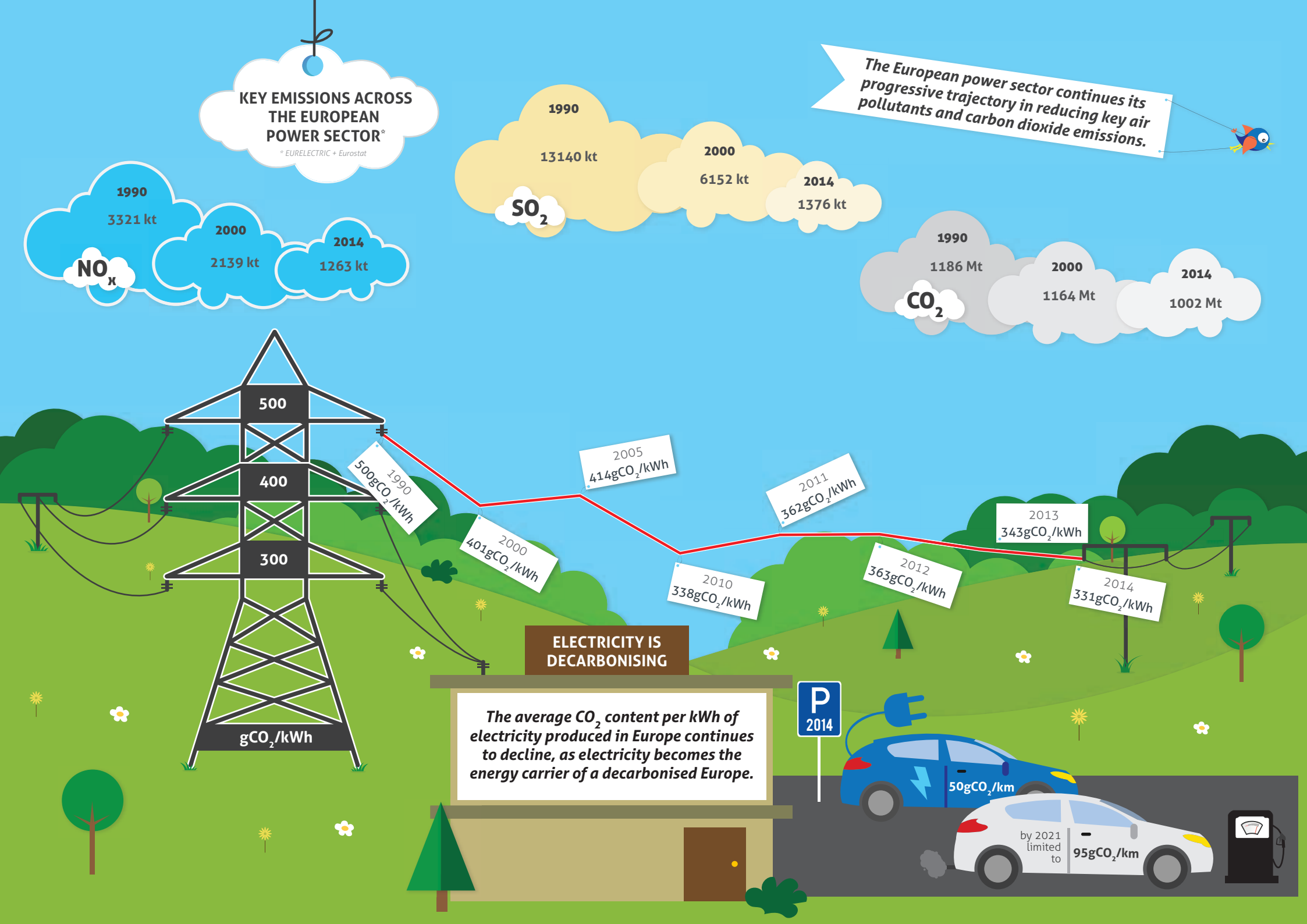
eurelectric

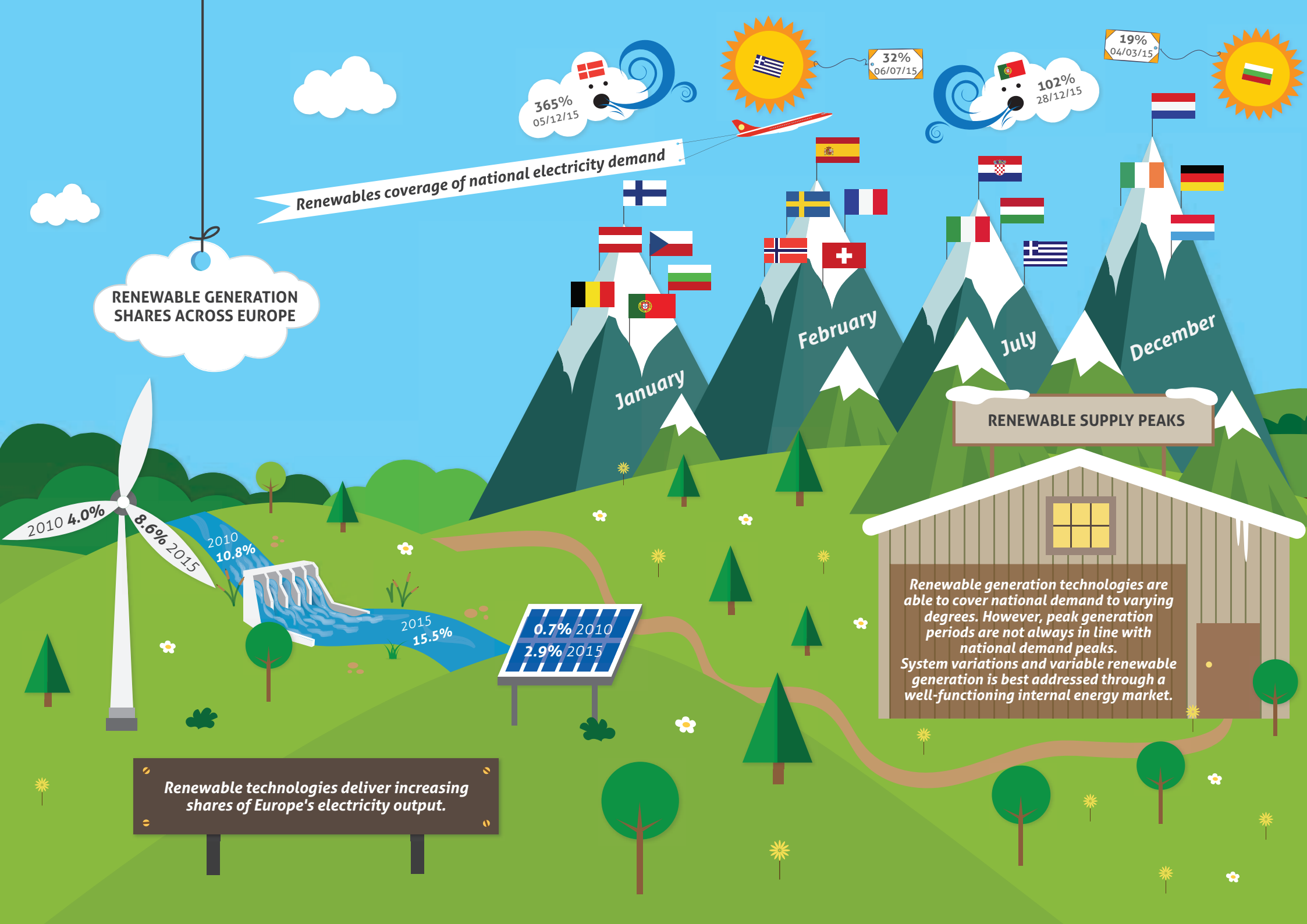
ELECTRICITY FOR EUROPE

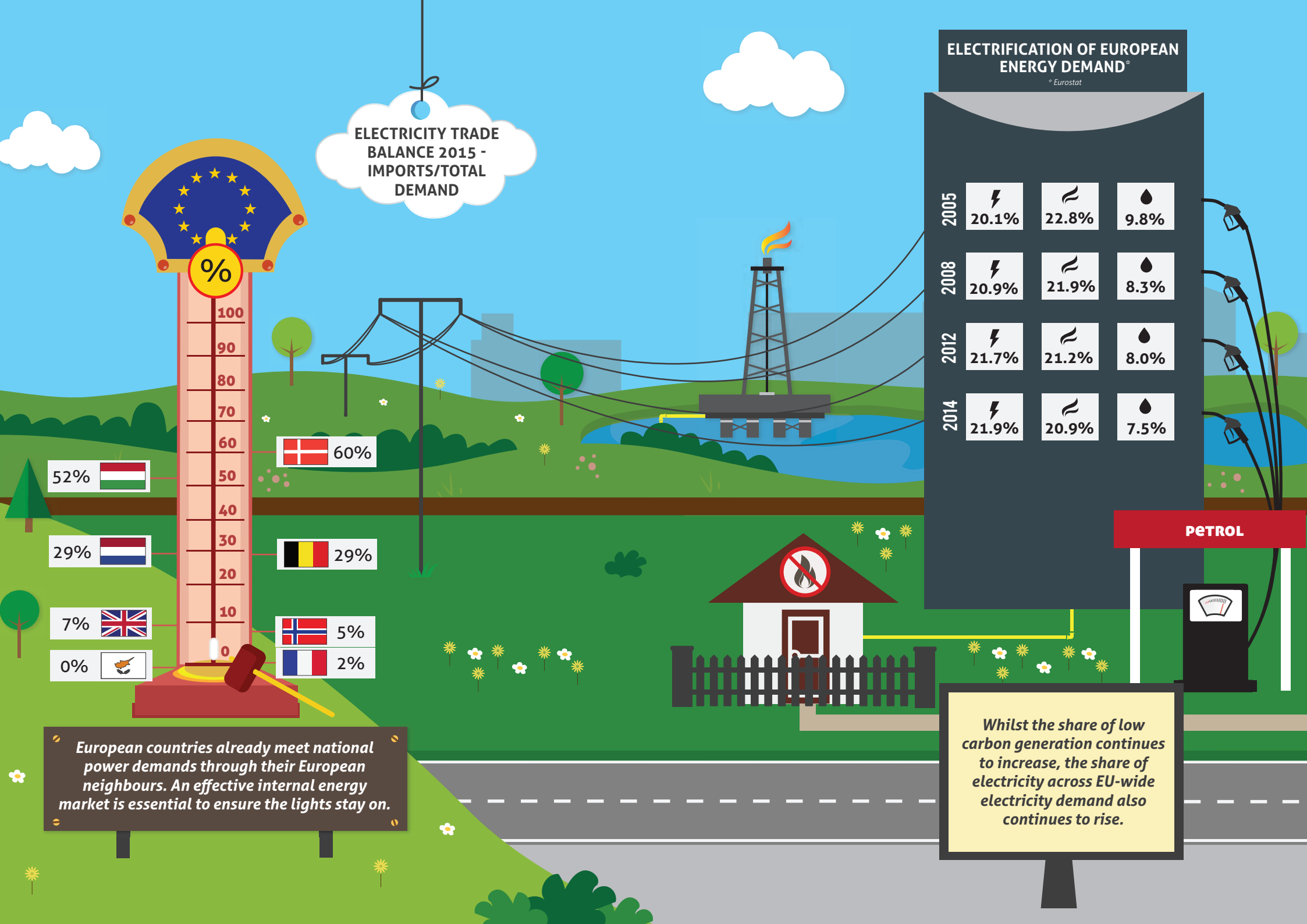
December 2016


TOTAL NET ELECTRICITY GENERATION EU 2015
44% FOSSIL FUELS
27% NUCLEAR
6% OTHER RENEWABLES
3% SOLAR
10% WIND
10% HYDRO
56% LOW CARBON
29% RENEWABLES
Over half of the EU's generated power in 2015 came from low carbon sources and the share of renewables in the power mix continues to rise.

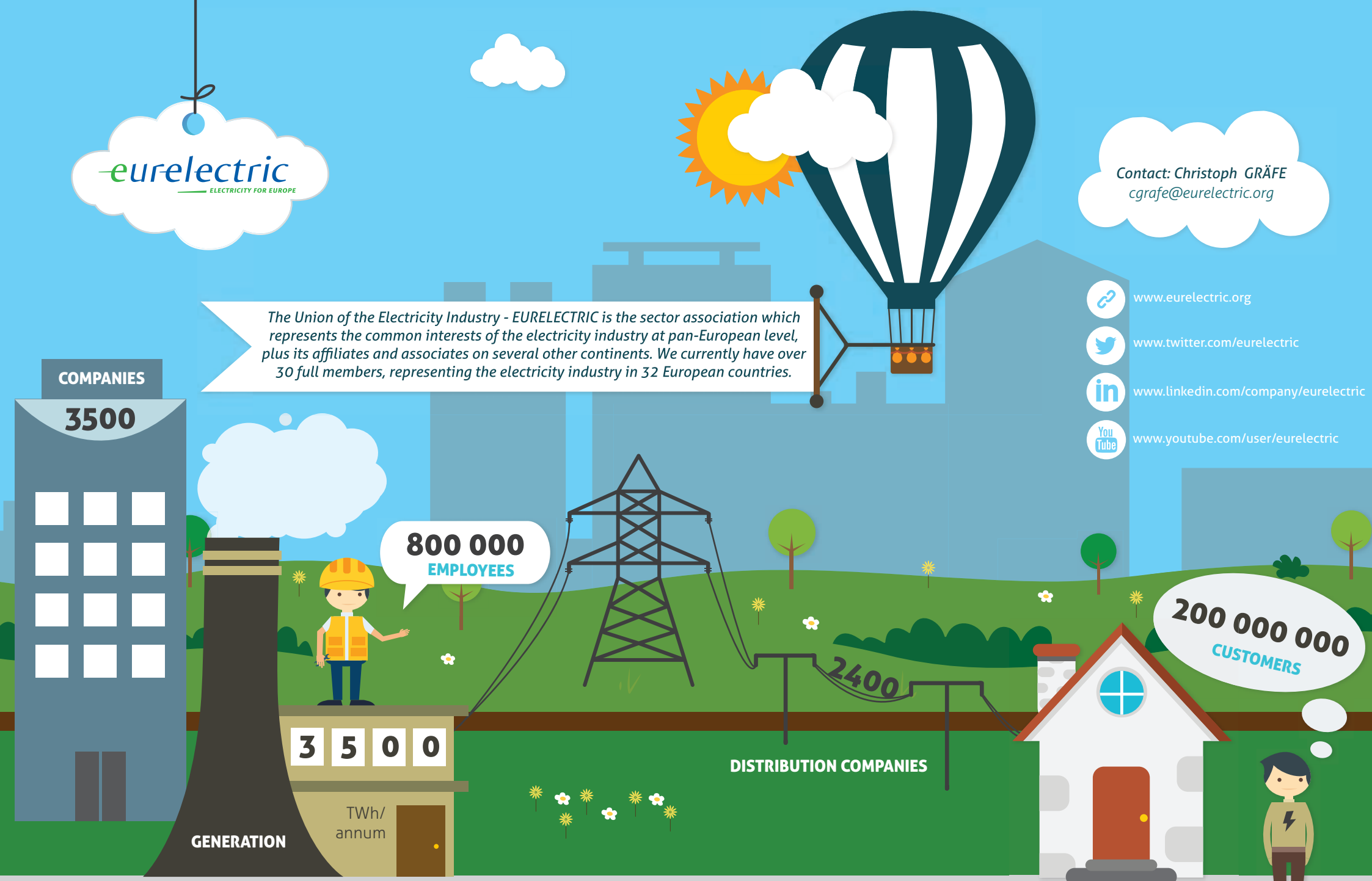

GENERATION CAPACITY DEVELOPMENT 2015 IN EUROPE
2987 MW
2978 MW
2321 MW
1765 MW
323 MW
0 MW
36 MW
Decommissioned Generation Capacity
3162 MW
1200 MW
103 MW
186 MW
9068 MW
5916 MW
279 MW
Commissioned Generation Capacity
Mothballed Generation Capacity
1772 MW
4474 MW
1066 MW
0 MW
91 MW
0 MW
0 MW
Coal + Lignite
Gas
Oil + Other fossil sources
Nuclear
Wind
Solar
Hydro
Capacities across conventional generation assets are shrinking, gas capacities are being mothballed due to difficult market conditions while renewables, especially wind and solar, are continuing their surge.
In order to meet the challenges brought about by decentralisation and intermittency, and to ensure security of supply, the market must adequately value energy, flexibility, and capacity.


KEY EMISSIONS ACROSS THE EUROPEAN POWER SECTOR*
* EURELECTRIC + Eurostat
The European power sector continues its progressive trajectory in reducing key air pollutants and carbon dioxide emissions.
NOx
1990
3321 kt
2000
2139 kt
2014
1263 kt
SO2
1990
13140 kt
2000
6152 kt
2014
1376 kt
CO2
1990
1186 Mt
2000
1164 Mt
2014
1002 Mt
500
400
300
gCO2/kWh
1990
500gCO2/kWh
2000
401gCO2/kWh
2005
414gCO2/kWh
2010
338gCO2/kWh
2011
362gCO2/kWh
2012
363gCO2/kWh
2013
343gCO2/kWh
2014
331gCO2/kWh
ELECTRICITY IS DECARBONISING
The average CO2 content per kWh of electricity produced in Europe continues to decline, as electricity becomes the energy carrier of a decarbonised Europe.
P
2014
50gCO2/km
by 2021 limited to
95gCO2/km


RENEWABLE GENERATION SHARES ACROSS EUROPE
Renewables coverage of national electricity demand
365% 05/12/15
32% 06/07/15
102% 28/12/15
19% 04/03/15
January
February
July
December
RENEWABLE SUPPLY PEAKS
2010 4.0%
8.6% 2015
2010 10.8%
2015 15.5%
0.7% 2010
2.9% 2015
Renewable technologies deliver increasing shares of Europe's electricity output.
Renewable generation technologies are able to cover national demand to varying degrees. However, peak generation periods are not always in line with national demand peaks.
System variations and variable renewable generation is best addressed through a well-functioning internal energy market.


ELECTRICITY TRADE BALANCE 2015 - IMPORTS/TOTAL DEMAND
%
100
90
80
70
60
50
40
30
20
10
0
52%
60%
29%
29%
7%
5%
0%
2%
European countries already meet national power demands through their European neighbours. An effective internal energy market is essential to ensure the lights stay on.
ELECTRIFICATION OF EUROPEAN ENERGY DEMAND*
* Eurostat
2005
20.1%
22.8%
9.8%
2008
20.9%
21.9%
8.3%
2012
21.7%
21.2%
8.0%
2014
21.9%
20.9%
7.5%
PETROL
Whilst the share of low carbon generation continues to increase, the share of electricity across EU-wide electricity demand also continues to rise.


Whilst wholesale costs have decreased and network costs have remained relatively stable, the proportion of policy costs and taxes in the consumer electricity bill have increased by 47% between 2008 and 2014.
CONSUMER PRICES IN EUROPE*
*ACER
2014 Bill-dings
2012
2008
45%
26%
29%
40%
26%
34%
37%
26%
37%
THE TRUE REASON FOR RISING CONSUMER BILLS
Electricity
Distribution & Transmission
Policy Costs & Taxes
MR.REGULATOR
Governments in 14 EU Member States interfere in the retail market by regulating energy prices.



Data in this publication is based on the latest available industry figures (2015) gathered from EURELECTRIC statistical experts and complemented by public information.
The data contained in this report covers EURELECTRIC member countries (referred to as Europe in this publication), namely Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the UK.
We would like to express our sincere gratitude to all contributing experts, in particular to country data experts.
Unless indicated otherwise, the data presented has been collected via the EURELECTRIC annual power statistics survey.