



NEUF 2012 – National Programme for Development of Low-Emission Economy

The Energy Transition Model and the UK Electricity Market Reform (EMR)

Warsaw, 29th June 2012

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The Energy Transition Model (ETM) was developed as a tool to facilitate public debate and help companies plan for the future


ENERGY TRANSITION MODEL
Independent, Comprehensive & Fact-based
Nederlands

Create your *own* Energy Future.


The Energy Transition Model is an independent, comprehensive and fact-based energy model that is used by governments, corporations and NGOs in various countries. It is backed by more than 20 partners. There are three different versions of the Energy Transition Model.



Light



Professional


ENERGY TRANSITION MODEL
Independent, Comprehensive & Fact-based
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Home
Goals
Demand
Costs
Supply
2030

Combustion plants costs

Combustion power plants burn fuels to make electricity. How will costs for electricity production change in the future? [read more](#)

Fuel

Nobody can predict future fuel prices. This makes electricity costs hard to predict. What do you think these fuels will cost in the future?

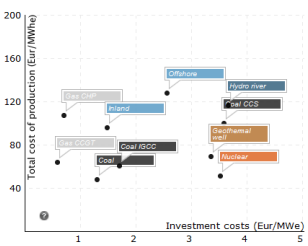
Natural gas	26.3 €/MWh	change 0%
Oil	85.76 \$/barrel	0%
Coal	120.5 \$/tonne	0%
Biomass	133.88 €/tonne	0%

[go to next](#)

Investment

- ▶ Operations and maintenance

Total cost of electricity production



Energy use

0%

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CO₂ emissions

-0.4%

Energy imports

77.3%

Costs (bln)

€40.8

Bio-footprint


0.6xNL

Renewables


5.4%

Goals

0/0



Leading partner of the Energy Transition Model



Partner of the Energy Transition Model

The Energy Transition Model is based on verified energy facts and gives users control to create their own energy scenarios

Assumptions are brought in (scenario input)

▼ Demand growth



The changes in energy use per person you indicate here are due to changes in personal prosperity. This is **excluding** efficiencies and technological changes you can indicate in the subsections below. The demand is also influenced by the population growth and the rate at which existing houses are replaced.

		%/year
Population	<input type="range"/>	0.2 % ?
Electricity per person	<input type="range"/>	0.5 % ?
Heat per person	<input type="range"/>	-1.0 % ?
Cooling per person	<input type="range"/>	1.0 % ?
Hot water per person	<input type="range"/>	0.0 % ?
Replacement of existing houses	<input type="range"/>	0.2 % ?

[go to next](#)

► Insulation

Modeling

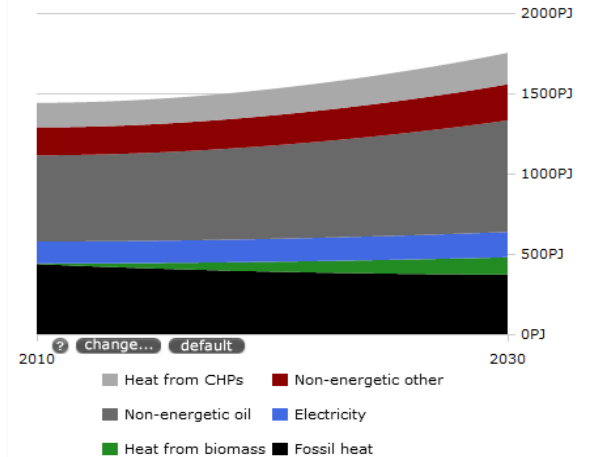
Verified (energy) data

Defined Interrelations

Econometric formulas

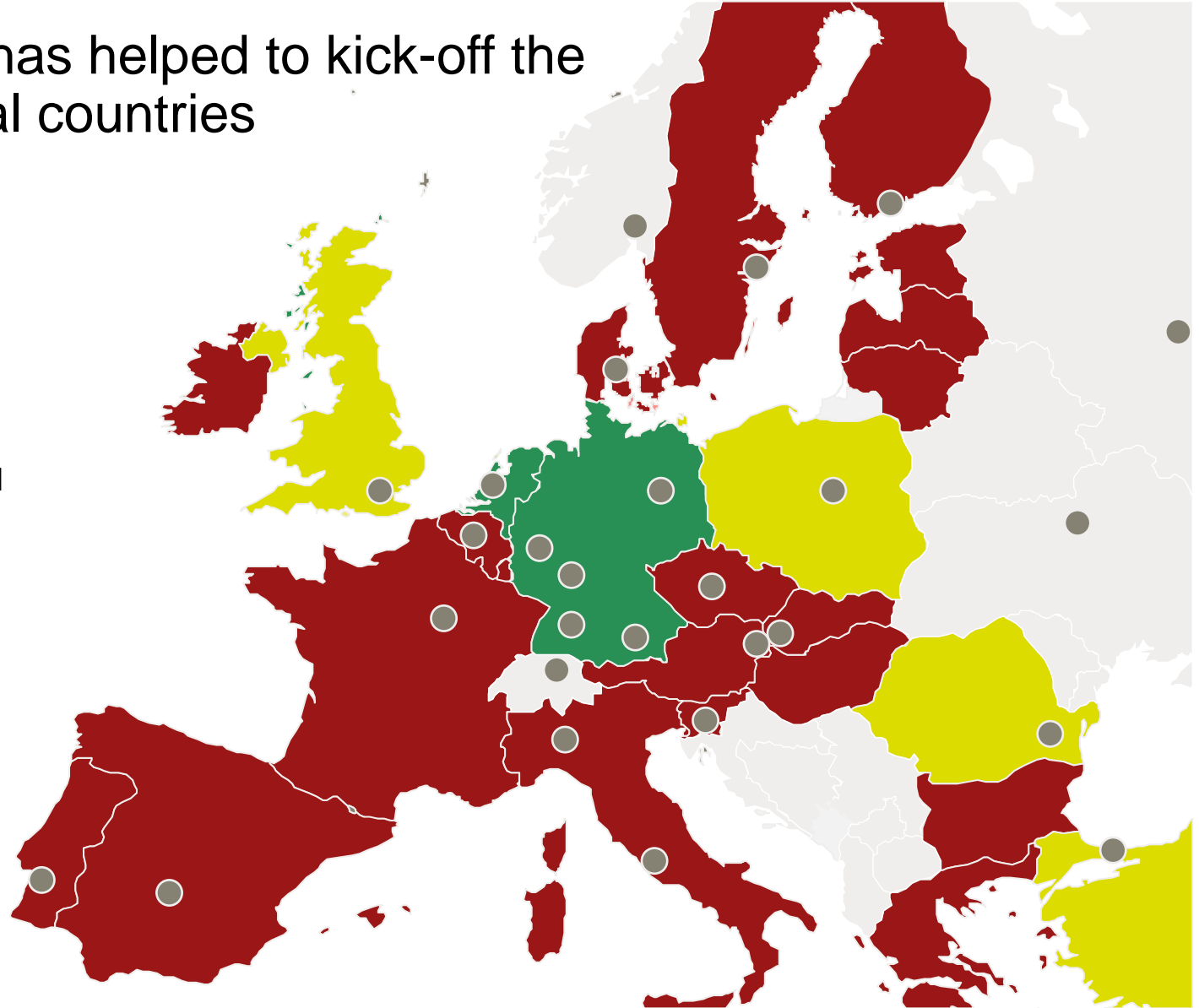
Forecasts are presented (output)

Final energy demand

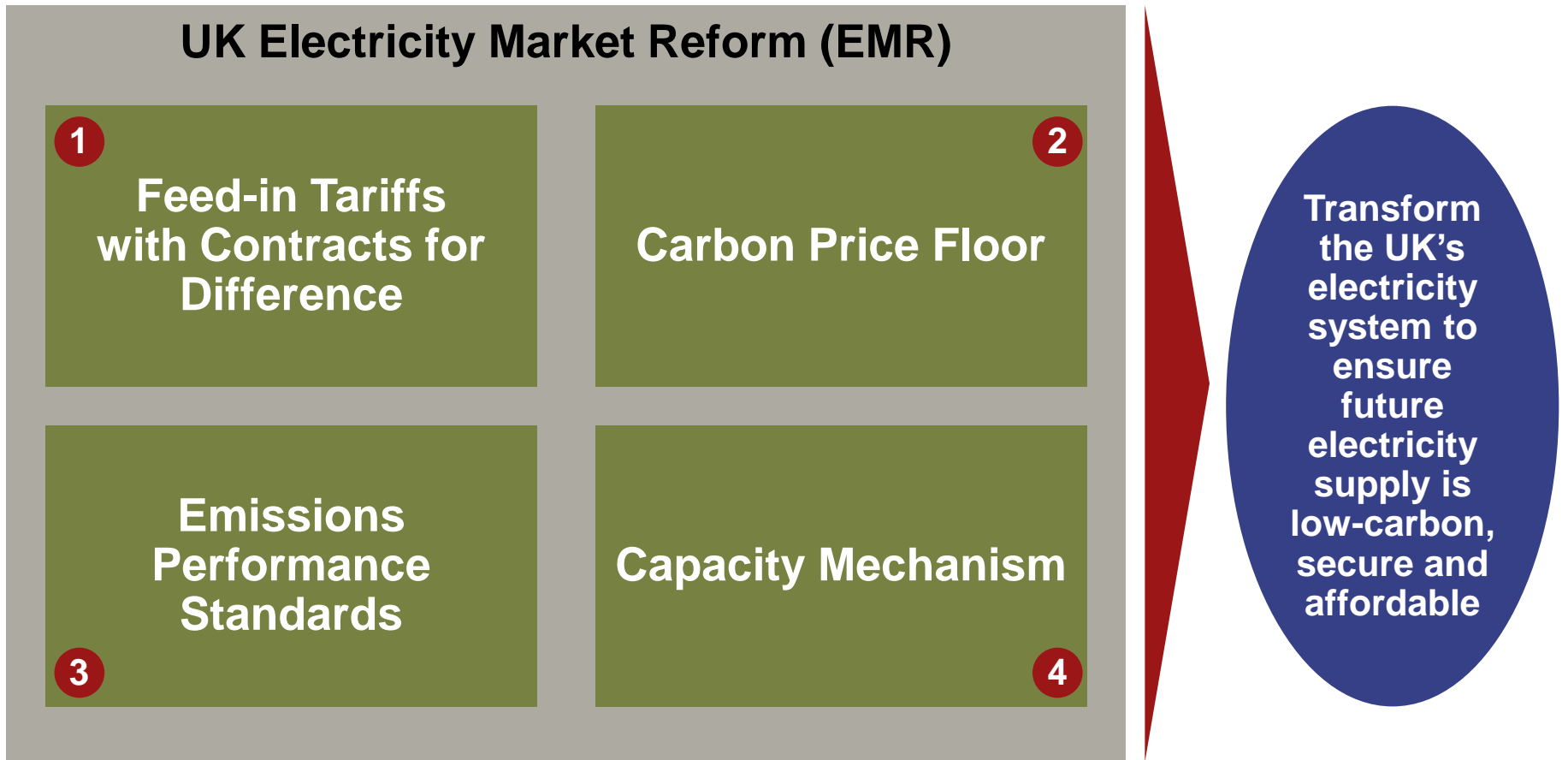


A.T. Kearney has helped to kick-off the ETM in several countries

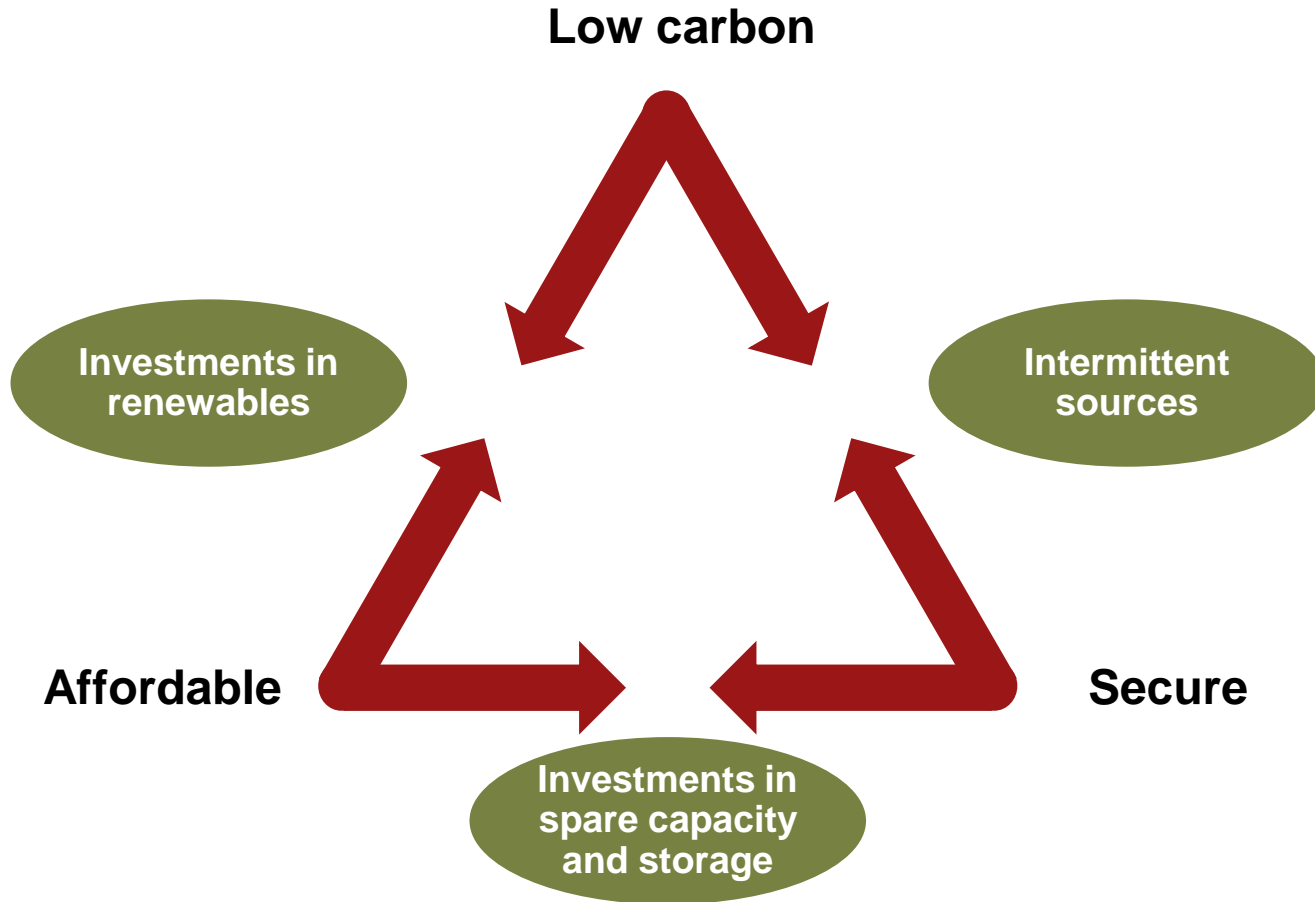
- ETM completed
- ETM in progress
- ETM to be developed



The goal of the UK Electricity Market Reform is to ensure low-carbon, secure and affordable electricity supply through 4 policies



The goals of the Electricity Market Reform (EMR) seem to conflict



We modelled the UK energy system for 2030, based on the EMR policy plus many sources and assumptions

- CO₂ reduction: min. -60%
- Electricity bill: max. +32%
- Security of supply

- Population growth
- Energy consumption by Households, Industry, Agriculture and Transport
- Efficiency improvements

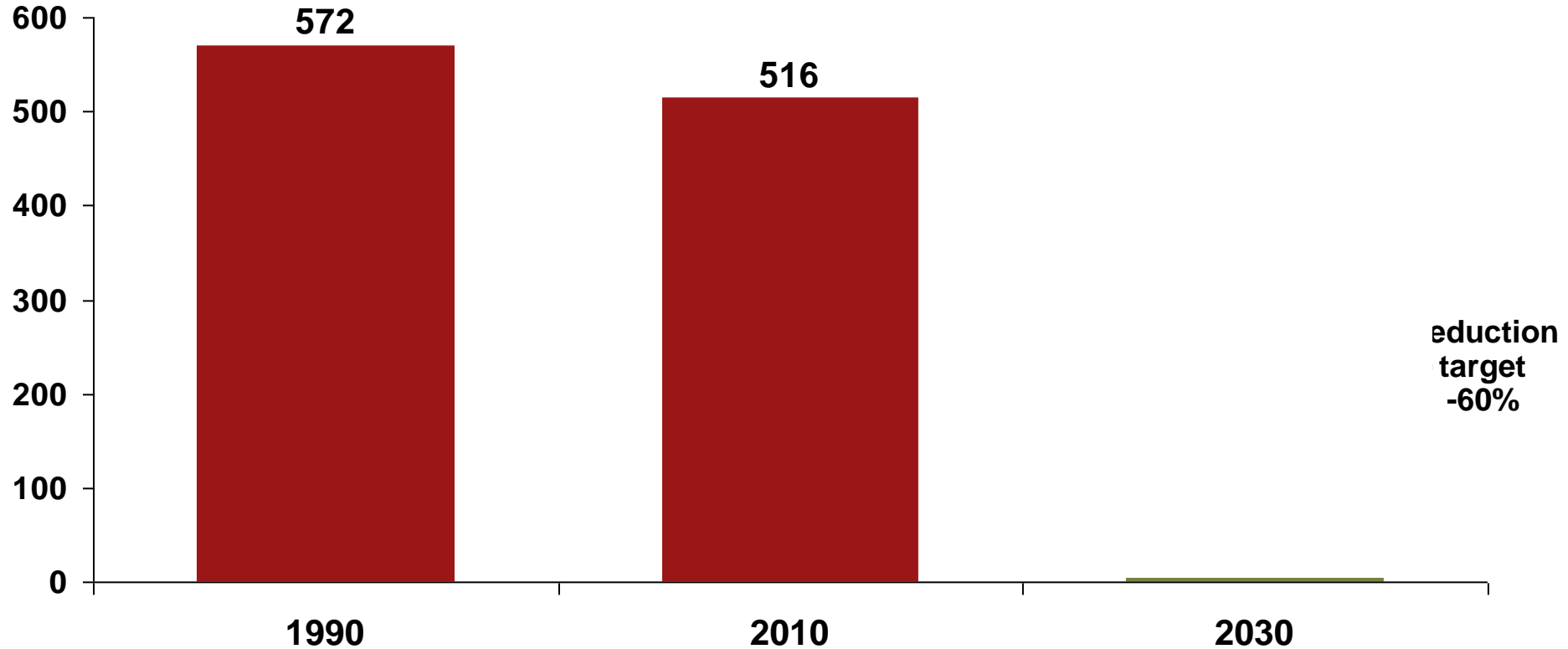


- Fossil & renewable power generation
- Emissions Performance Standard
- Feed-in Tariff
- Capacity Mechanism

- Carbon Price Floor: £70
- Fuel prices
- Technological developments driving down costs

The UK seems unable to meet the 2030 Low Carbon target

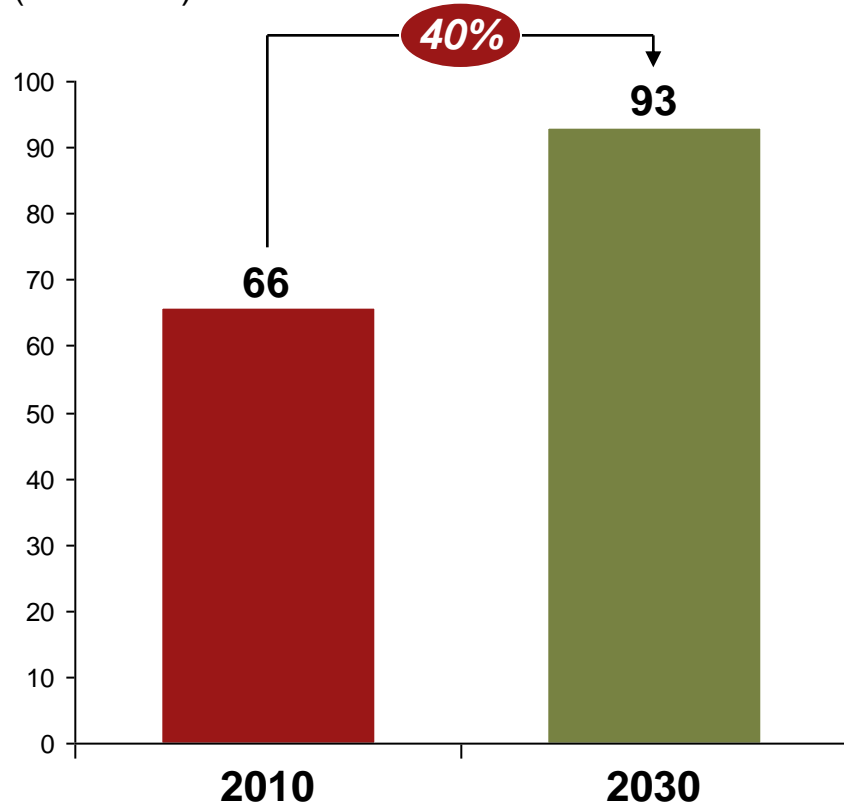
Energetic CO₂ emissions and reduction target
(Mton)



Affordability of UK electricity in 2030 maybe not as desired

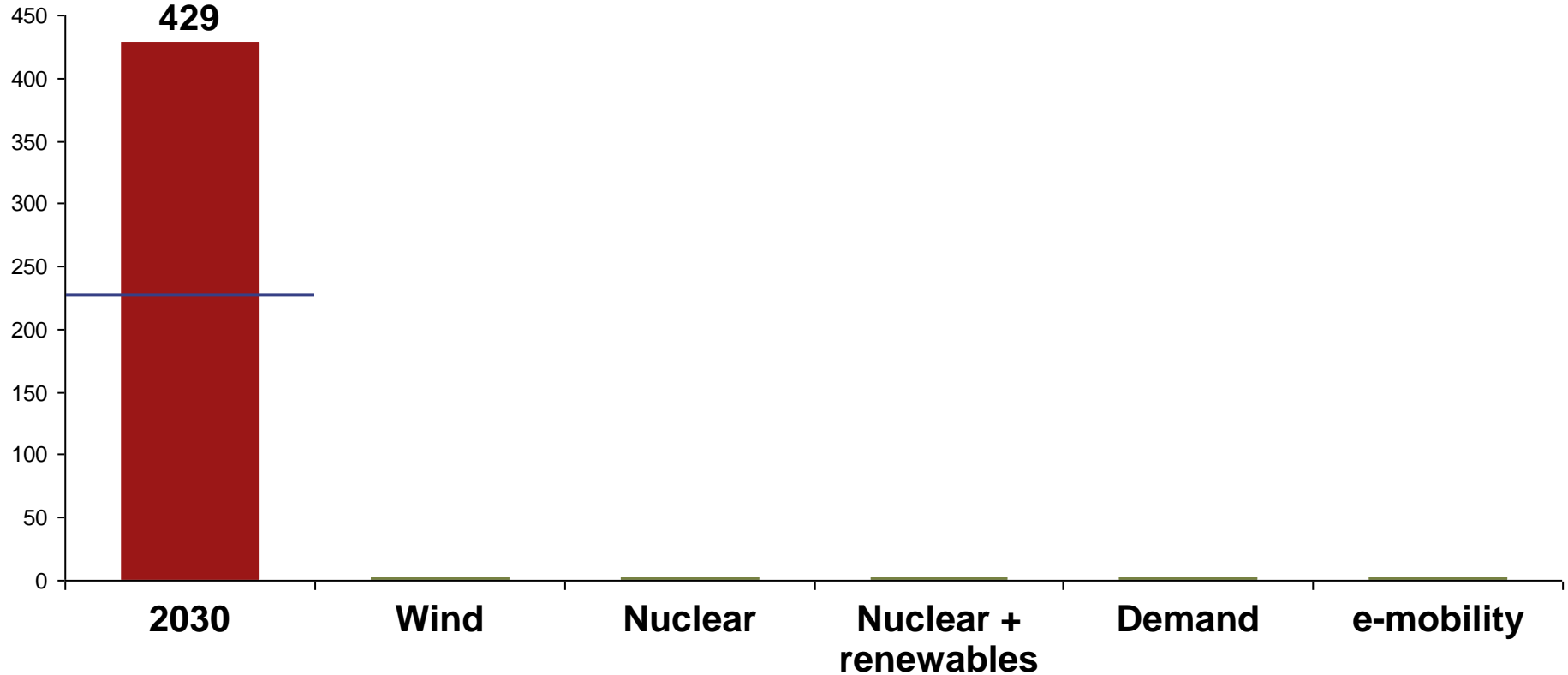
Electricity production costs

(Eur/MWh)



Even with unrealistic, extreme assumptions meeting the EMR low carbon objective seems very difficult

Energetic CO₂ emissions and reduction target (Mton)



A.T. Kearney can help to develop the Polish version of the Energy Transition Model

Combustion plants costs

Combustion power plants burn fuels to make electricity. How will costs for electricity production change in the future? [read more](#)

Fuel

Nobody can predict future fuel prices. This makes electricity costs hard to predict. What do you think these fuels will cost in the future?

Fuel	Current Price	Change
Natural gas	27.17 €/MWh	10%
Oil	105.9 \$/barrel	50%
Coal	113.3 \$/tonne	15%
Biomass	136.29 €/tonne	5%

Total cost of electricity production

Household energy demand

How much energy will households need in the future? The answer depends ... [read more](#)

Demand growth

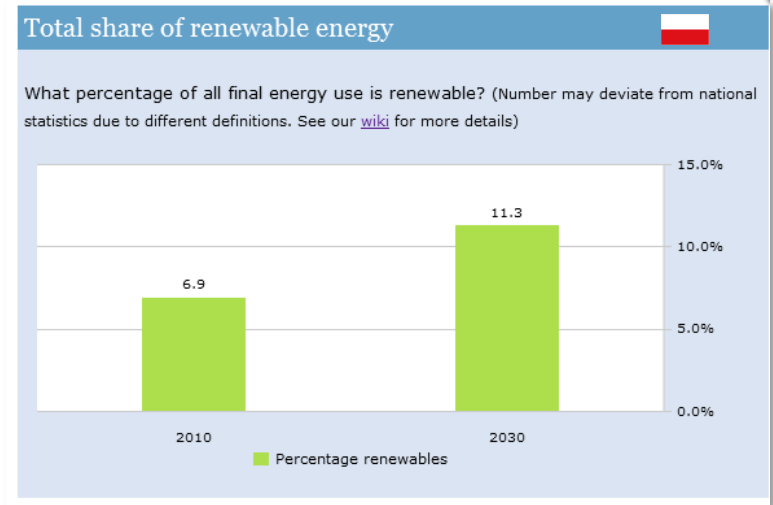
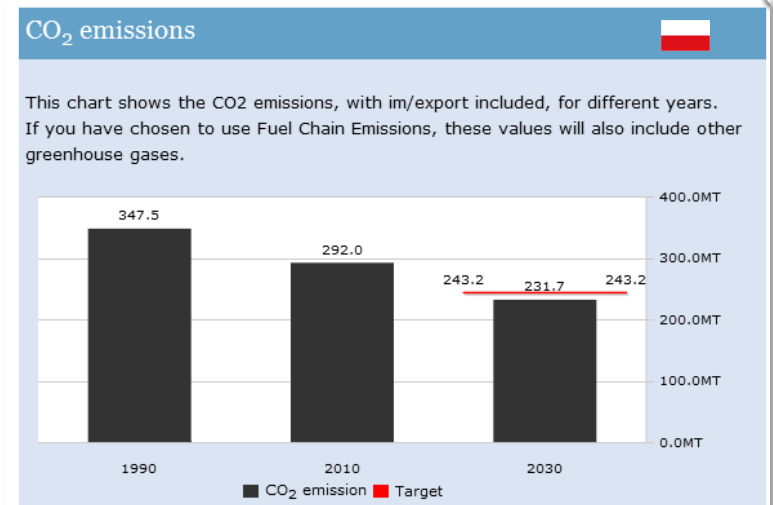
The changes in energy use per person you indicate here are due to changes in personal prosperity. This is **excluding** efficiencies and technological changes you can indicate in the subsections below. The demand is also influenced by the population growth and the rate at which existing houses are replaced.

Population: 0.5% / year
 Replacement of existing houses: 0.3%

Heat and electricity demand

Summary:

- Energy use: -2.2%
- CO2 emissions: -33.3%
- Energy imports: 34.6%
- Costs (bln): €59.8
- Bio-footprint: 0.2xPL
- Renewables: 11.3%
- Goals: 2/2



If you have any questions, please contact us:

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