

**2015 BP MADRID FORUM ON ENERGY &
SUSTAINABILITY**

Making energy efficiency happen

The pending challenges

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& October 1 (open session)

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BP CHAIR ON ENERGY AND SUSTAINABILITY

Comillas University

SESSION 1: Energy efficiency targets in Europe: The EE Directive and beyond

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BY USING ENERGY MORE EFFICIENTLY, EUROPEANS CAN LOWER THEIR ENERGY BILLS, REDUCE THEIR RELIANCE ON EXTERNAL SUPPLIERS OF OIL AND GAS AND HELP PROTECT THE ENVIRONMENT.

ENERGY EFFICIENCY HAS TO BE INCREASED AT ALL STAGES OF THE ENERGY CHAIN FROM GENERATION TO FINAL CONSUMPTION. AT THE SAME TIME, THE BENEFITS OF ENERGY EFFICIENCY MUST OUTWEIGH THE COSTS.

ENERGY EFFICIENCY TARGETS FOR 2020 AND 2030

The EU has set itself a 20% energy savings target by 2020 when compared to the projected use of energy in 2020 – roughly equivalent to turning off 400 power stations.

At an EU summit in October 2014, EU countries agreed on a new energy efficiency target of 27% or greater by 2030. The European Commission had proposed 30% in its Energy Efficiency Communication.

POLICIES TO IMPROVE ENERGY EFFICIENCY

The EU has adopted a number of measures to improve energy efficiency in Europe. They include:

- 1.- An annual reduction of 1.5% in national energy sales
- 2.- EU countries making energy efficient renovations to at least 3% of buildings owned and occupied by central governments per year
- 3.- Mandatory energy efficiency certificates accompanying the sale and rental of buildings
- 4.- Minimum energy efficiency standards and labelling for a variety of products such as boilers, household appliances, lighting and televisions (EcoDesign)
- 5.- The preparation of National Energy Efficiency Action Plans every three years by EU countries
- 6.- The planned rollout of close to 200 million smart meters for electricity and 45 million for gas by 2020
- 7.- Large companies conducting energy audits at least every four years
- 8.- Protecting the rights of consumers to receive easy and free access to data on real-time and historical energy consumption.

FINANCING ENERGY EFFICIENCY

The EU has support schemes and initiatives to accelerate energy efficiency investments.

ENERGY EFFICIENCY PROGRESS (1)

According to the Energy Efficiency Communication of July 2014, the EU is expected to achieve energy savings of 18%-19% by 2020 – missing the 20% target by 1%-2%.

However, if EU countries implement all of the existing legislation on energy efficiency, the 20% target can be reached without additional measures.

ENERGY EFFICIENCY PROGRESS (2)

The EU's drive towards a more energy efficient future has already produced substantial benefits for Europeans. For instance:

- 1.- New buildings consume half the energy they did in the 1980s
energy intensity in EU industry decreased by almost 19% between 2001 and 2011
- 2.- More efficient appliances are expected to save consumers €100 billion annually – about €465 per household – on their energy bills by 2020
- 3.- EU countries have committed themselves to rolling out close to 200 million smart meters for electricity and 45 million for gas by 2020, leading to greater savings for consumers
- 4.- The share of refrigerators meeting the highest energy efficiency labelling classes (A and above) increased from less than 5% in 1995 to more than 90% in 2010

ENERGY EFFICIENCY PROGRESS (3)

Further benefits are expected in the future. They include:

- 1.- For every 1% improvement in energy efficiency, EU gas imports fall by 2.6%
- 2.- Lower energy costs for people who live and work in energy efficient buildings, as well as additional benefits such as improved air quality and protection from external noise provided by energy efficient windows
- 3.- Business opportunities for European companies such as construction firms and manufacturers of energy-using equipment
- 4.- New jobs in construction, manufacturing, research, and other industries investing in energy efficiency



BP Statistical Review 2015

The EU energy market in 2014

The EU had the largest primary energy decline out of any region in the world, declining to its lowest volumetric level in three decades.

Fast facts

1. EU primary energy production declined to 750mtoe, the lowest level since at least 1981.
2. EU primary energy net imports declined to its lowest level since 2002.
3. EU carbon emissions from energy declined by 5.4%, the largest regional decline.

- EU energy consumption declined by 3.9%, accounting for 12.5% of the world's total. Consumption was 12.1% below the 2006 peak.
- Declining consumption of natural gas (-11.6%), coal (-6.5%), oil (-1.5%), and nuclear (-0.1%) outweighed increases in renewables in power (+8.2%) and hydro (+0.9%).
- Oil consumption declined to its lowest level since 1969, while natural gas consumption declined to its lowest level since 1995 and coal to its lowest level since 2009.
- Oil (37% of total EU consumption) remains the dominant fuel followed by gas (22%), coal (17%), nuclear (12%), renewables in power (7%), and hydro (5%).
- Energy intensity (the amount of energy required per unit of GDP) fell by 5.2%, to its lowest level since at least 1970. The decline was greater than the ten-year average of -2.2%.
- EU production declines of natural gas (-9.8%), coal (-3.9%), oil (-2.1%), and nuclear (-0.1%) outweighed growth of renewables in power (+8.2%), hydro (+0.9%), and biofuels (+3.6%).
- Nuclear remains the dominant energy source (26% of EU energy production). Renewables in power continued to gain share and accounted for 16% of EU energy production (the same as natural gas). Non-fossil fuels accounted for 55% of domestic production, the highest share on record.
- The EU primary energy deficit declined by 5.9% as natural gas imports fell by 8%.
- Net imports of natural gas both via LNG and pipeline declined by roughly 8%; the decline in pipeline was driven by an 11.6% fall in imports from Russia.
- EU CO₂ emissions from energy use declined by 5.4% in 2014. The EU's emission level is now at its lowest level since 1968. The EU accounted for 10.4% of global emissions in 2014.

-3.9%

Decline in EU energy
consumption

12.5%

EU share of global energy
consumption

+8.2%

Growth in EU renewables in
power production

-1.4%

Decline in EU primary energy
production