

Energy Efficiency in Buildings

ENERGY AND CARBON EMISSIONS

General concepts

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Juan A Ferriz-Papi



ENERGY

When is energy consumed?

What types of energy are consumed?

What emissions can be released to the atmosphere?

What negative effects can these emissions have in the environment ?



GREENHOUSE EFFECT

Greenhouse gases:

- Water vapour(H_2O)
- CO_2
- Methane (CH_4)
- Nitrogen oxides (NO_x)
- Ozone (O_3)
- Chlorofluorocarbons (CFC)





But, is global warming truly happening?



https://climate.nasa.gov/climate_resources/139/graphic-global-warming-from-1880-to-2017/



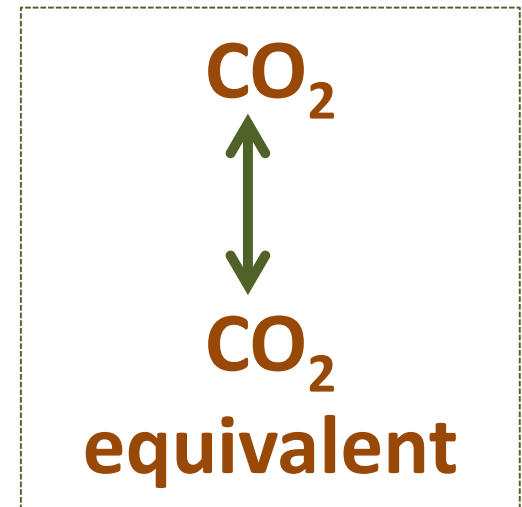
https://www.youtube.com/watch?v=G4H1N_yXBiA



How do we measure emissions?

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KYOTO PROTOCOL (1997)

Commitment for industrialized countries

5% Reduction of their production of greenhouse gases respect to 1990

Period between 2008-2012

Effective date in 2005

Not endorsed by the US

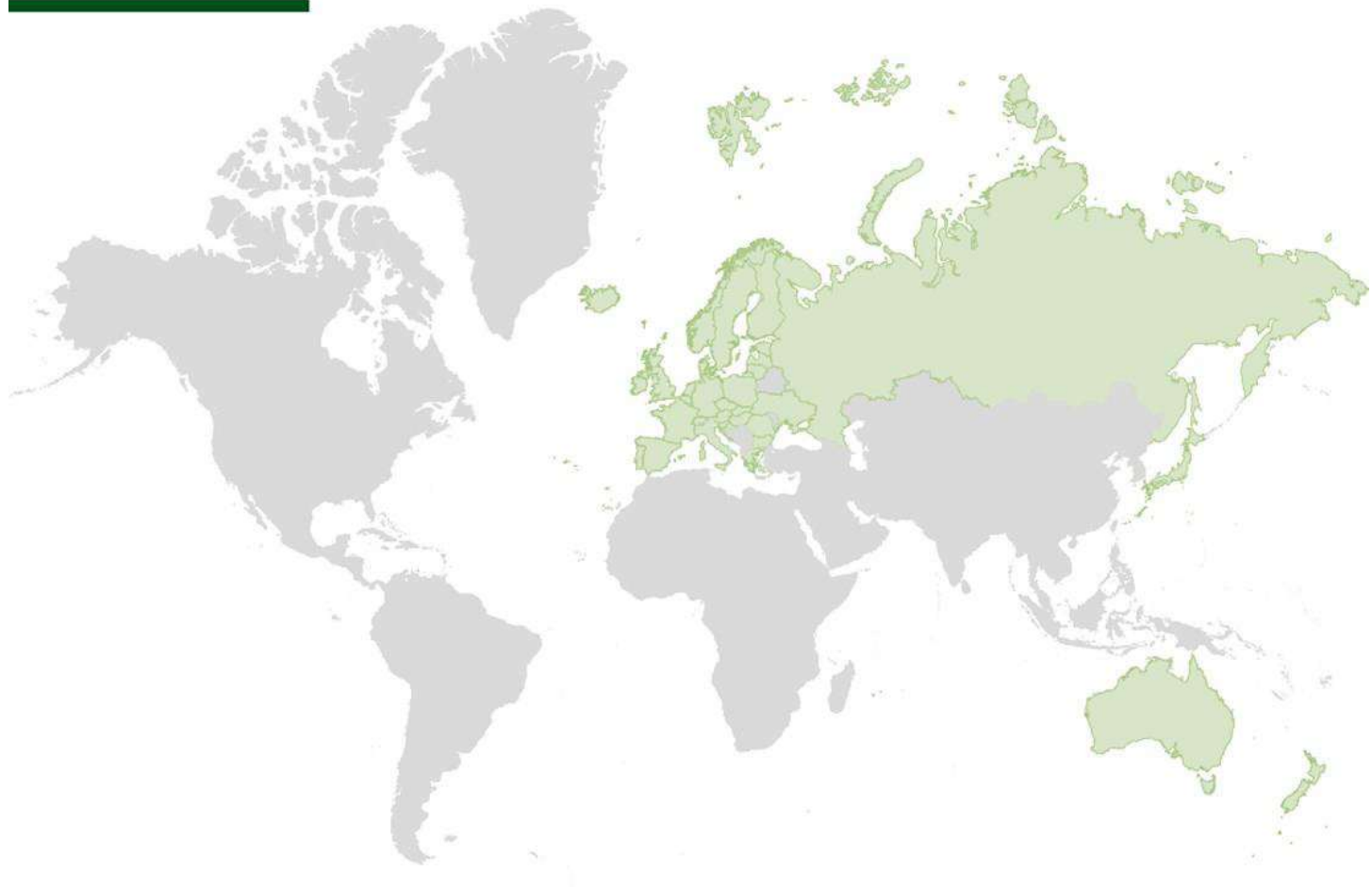
The EU committed to reduce 8%





KYOTO PROTOCOL (1997)

Countries with binding targets during the Kyoto Protocol First Phase





PARIS AGREEMENT (2015)

Target

To keep the increase in global average temperature to well below 2°C (limit increase to 1.5°C)

Countries will determine their own contribution

No mechanism forces specific targets by a specific date

Starting in 2020

European Union

To cut Greenhouse gas emissions to 80% by 2050

- 40% emissions cuts by 2030
- 60% by 2040

UK

Climate Change Act 2008. Reduction target of least 80% by 2050



All sectors are involved in CO₂ emissions reduction

How do you think the construction industry can contribute to this reduction?

