



C4ET
factsheet

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An overview of the links between climate change and energy

The anthropogenic origin of climate change is no longer in doubt; it is linked with the greenhouse gases emissions associated with our energy systems and consumption and production patterns. Modern societies heavily relied and still rely on the use of fossil fuels (coal, oil and gas). The main sectors in terms of energy consumption, namely the Industry, the Transport and Buildings, figure among the main emitters of GHG along with the electricity and heat production as well as UTCATF (Agriculture, Forestry and other land use) which impacts carbon sinks and is also linked to energy issues.

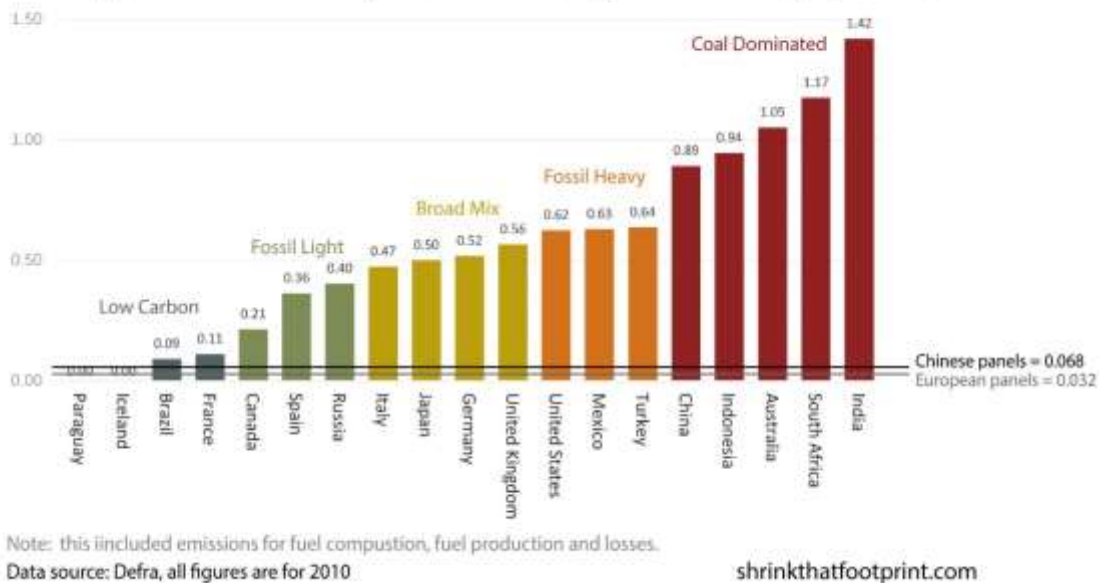
Globally, energy is present in all aspects of our life and activities, whether it is for our homes, commerce, transportation, the agriculture, in cities, in buildings, for providing basic needs such as heating and cooking, etc. Our energy demand is likely to grow significantly in the next decades, spurred on by sustained demographic and economic growth in developing/emerging countries.



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Average carbon intensity of consumed grid electricity: g Co₂e/kWh



Source: <http://www.theenergycollective.com/lindsay-wilson/396136/it-s-not-where-your-solar-panels-came-matters-it-s-where-they-are-going-counts>

This growth is not without consequences, with the majority of energy demand (over 85%) still provided by fossil fuels. Not only are these non-renewables, i.e. their consumption is leading to a rapid depletion of available resources, but they are also polluting and the sources of significant greenhouse gases emissions. Massive use of fossil fuel resources also has implications in terms of inequalities, energy security and access in many countries as well as economic instability due to fluctuating energy prices.

From a climate change perspective, the International Panel on Climate Change estimated that, to contain global warming to 2°C as set in the Paris agreement, a maximum of 1000GtCO₂ can still be emitted... To be clear, this means that two third of current fossil fuels reserves should remain untouched underground. A significant shift of our societies, unseen in Human history, is therefore needed, with a transition based on three pillars: energy sobriety, where our demand for energy services is limited to what is necessary, energy efficiency, where we use less energy to provide for the same service, and renewable energy to cover for the energy demand that is incompressible. All actors, including citizens, are in this context parts of the solution.

A citizen can for example:

- Change its consumption patterns in order to save on direct and indirect (the energy used to produce the goods and service we buy) energy consumption
- Influence its relatives & friends so they can do the same
- Influence firms to change their production patterns
- Influence politicians to change public policies, taxation and regulation.