

What does a 40-45% cut in Emission Intensity by China Imply?

Recently China announced that it will cut carbon emissions per unit of GDP (carbon intensity) by 40-45 percent by 2020 compared with 2005 levels.

China's GDP is growing by about 10%. If the Chinese economy grows at 8% over the 15 year period it is expected that in 2020 China's GDP will be 3.2 times the GDP in 2005.

A 40 percent reduction in carbon intensity over this period will imply that China's emissions will be 1.9 times the emissions in 2005 ($1.9 = 3.2 \times 0.6$). This estimate by Prayas suggests that China's emissions will grow by 90% of the 2005 value to 13.6 GT CO₂e ($7.2 \text{ GTCO}_2\text{e} * 1.9$). It is important to note that the total global GHG emissions in 2005 were about 38 GTCO₂e.

It is also important to see this from the perspective of per capita emissions. Following the present trends the Chinese population will be 5% higher in 2020 than in 2005. Such a scenario will increase Chinese the per capita GHG emissions by 80%, taking it from 5.5 ton CO₂e/ person/ annum to about 10 ton /person/ annum. China is already above the world average. The world average per capita emissions at present [2005] are 5.5 ton CO₂e/person/annum, which need to reduce rapidly. In comparison, India's per capita CO₂ emissions are about 1.7 ton.

The US is likely to agree to only very weak mitigation measures (the Waxman-Markey bill), far lower than the required reduction of 30 to 40% below 1990 levels. This being the story of top contributors to GHG flows, substantial reductions are going to be difficult.

For Further details Contact
Prayas Energy Group
energy@prayaspune.org
Phone - 020 255420720 / 65205726



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