Energy Consumption in the Industrial sector in the United States of America and China, a comparison of current and future energy intensities

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Overview

Over the long term industrial structures and the way energy is consumed within these structures will change amongst various economies. The following study proposes to analyze how industrial structures and energy consumption within the industrial sector have evolved in the past, how they currently stand and how they will change in the future in both the United States and Mainland China. Energy consumption in the industrial sector in these economies will be forecast up to 2035. Even though both China, a developing economy and the United States, a developed economy have different economic structures, given each economies size and respective positions in the world it is assumed that significant comparisons may be made, especially with regards to current and forecast future energy efficiencies.

Methodology

The main industries in terms of quantities of product produced will be identified and econometric results for energy consumption and energy intensities will be provided.

Preliminary analysis of the drivers of change including policy, technological improvement and changes in the global economy that currently and in the future will have an effect on industrial structures and energy consumption (i.e. fuel mixes used etc.) will be conducted.

For example with regards to fuels used in the industrial sector, in the case of biofuels, even though the US is one of the world's largest producer s, China is already estimated to be a formidable player. According to a 'Global Biofuels Market Analysis' report by RNCOS, significant growth potential is predicted for both China and India. The agricultural waste used as a feedstock for biofuels can also be harnessed to produce plastics and other chemicals such as plant-based glycol which can be used for other industrial applications; one such forthcoming project by Novozymes is set for Jilin Province and will produce biofuels and biochemicals.[1] In addition to this China is also investigating non-food crops that can produce biofuels such as sweet sorghum and jatropha curcas that can be grown in arid conditions. A combination of these factors may see a significant increase in the use of biofuels and agricultural waste by- products in the industrial sector in China.

Expected results

The Chinese Government currently has many energy efficiency policies in place that are likely to have significant impacts on energy efficiency and intensity in the industrial sector. Future policies, aggressively promoting energy efficiency are also planned. This may prove an additional competitive advantage for Chinese industry that the US and other developed economies will need to face.

[1] Liu, Kevin."Green China: Increased Use of Biofuels to Reduce CO2 emissions." *Biztechreport.com*. 22 August 2011. 27 September 2011.