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Source: LinkedIn post - John Kemp is a Reuters market analyst. The views expressed are his own

China's Transition is Hampered by Flat-Lining Energy Intensity

China's economy has become much less energy intensive over the last 40 years as its industries have modernized and the economy has shifted towards more service sector output. But energy intensity has flatlined for the last five years making it much harder to displace coal by renewables and meet the government's objective of capping total emissions. China converted one ton of standard coal or its equivalent in other forms of energy (including wind and solar generation) into gross domestic product worth 21,000 yuan in 2023. Conversion of energy into economic output was essentially no more efficient than in 2018, after adjusting for inflation, according to estimates prepared by the National Bureau of Statistics.

Energy consumption has roughly tracked economic growth, rather than declining in relation to output as in other major economies. No other country has been more active than China in deploying huge amounts of wind and solar generation in the last few years. But economic output and energy consumption are growing so fast a smaller share has translated into more absolute use. Before 2018, China achieved large and consistent annual reductions in energy intensity as heavy industries modernized and the economy's composition shifted from energy-intensive manufacturing to less energy-intensive services. Some of the improvement in energy efficiency before 2018 was more apparent than real, reflecting a change in the composition of output rather than better equipment and practices.

Since 2018, however, there has been no further movement away from manufacturing and towards the services sector. Some stagnation likely reflects the impact of the coronavirus epidemic and the movement controls imposed in response. Lockdowns and other social distancing measures hit personal services such as food, travel and entertainment particularly hard. At the same time, the bursting of China's real estate bubble has hit a broad range of services linked to moving home and refurbishing. In response, the government has focused on stimulating manufacturing to offset weakness in other parts of the economy and reduce dependence on imports from the United States and its allies. The result is that the composition of the economy has become more not less energy intensive, offsetting any underlying efficiency improvements. ■