The Path of Chinese Regional Emission Reduction Target in 2030 â€" A Research Based on network-DEA and input-output technique

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At present, China enhance its actions on climate change, which included the intention to low the carbon dioxide emissions per unit of GDP by 60â€"65% from the 2005 level. However, the diversities and differences are not only exist in the regional energy conservation foundation and economic development, but also exist in the sectoral energy efficiency and energy saving potential. Even to complete the same carbon reduction rate, the corresponding technical efficiency are also dramatically different. In addition, the differentiation of CO2 emission reduction target allocation in different regions and sectors, which will directly have influence on the regional industrial structure adjustment and the strategy of different energy production and consumption. In order to complete the CO2 emissions targets in 2030, China should consider maximizing the overall allocation efficiency of all regions and sectors. Therefore, this paper innovational uses the Network ZSG-DEA method in combination with Chinese inter-regional input-output table in 2007 to build the scientific distribution mechanism of binding CO2 emission reduction target and to embody the difference in economic development, industrial structure and emission reduction potential among whole regions and sectors. Results show that: each region and sector will have different emission reduction path in the allocation of 2030 national carbon emissions reduction targets. Furthermore, several energy-intensive industriesâ€™ reduction target will exceed national average standard, such as Mining Industry, Non-Mental Mineral Product Industry etc., which means those need to make more efforts to shift towards a low carbon development.