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Growth of industrial CO₂ emissions in Shanghai city: Evidence from a dynamic vector autoregression analysis

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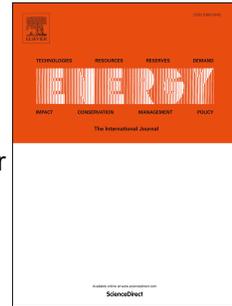
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1 **Growth of industrial CO₂ emissions in Shanghai city:**
2 **Evidence from a dynamic vector autoregression analysis**

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14 **Abstract:** Carbon dioxide (CO₂) is one of the main sources of global warming, rising
15 sea levels, and frequent outbreaks of extreme weather. China is now one of the largest
16 energy consumer and CO₂ emitters in the world. As one of China's economic centers,
17 Shanghai city has a perfect industrial system with large industrial scale. The industrial
18 sector is an energy- and emission-intensive industry, which contributes the
19 significant part of CO₂ emissions in Shanghai city. Therefore, an in-depth
20 investigation of the main driving forces of CO₂ emissions in the industrial sector is
21 essential to reduce CO₂ emissions in the city. This study uses Vector Autoregressive
22 model to analyze the main factors causing the increase in CO₂ emissions in the
23 industrial sector. The results show that economic growth leads to an increase in CO₂
24 emissions in the short run, but is conducive to reducing CO₂ emissions in the long run,
25 due to the differences in fixed-asset investment and export trade. Energy consumption
26 structure leads to a growing CO₂ emissions in the short term, and is beneficial to
27 mitigate CO₂ emissions in the long term, owing to the gradual optimization of energy
28 consumption structure. However, urbanization helps to reduce CO₂ emissions in the
29 short term, but leads to an increase in CO₂ emissions in the long term, because of

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