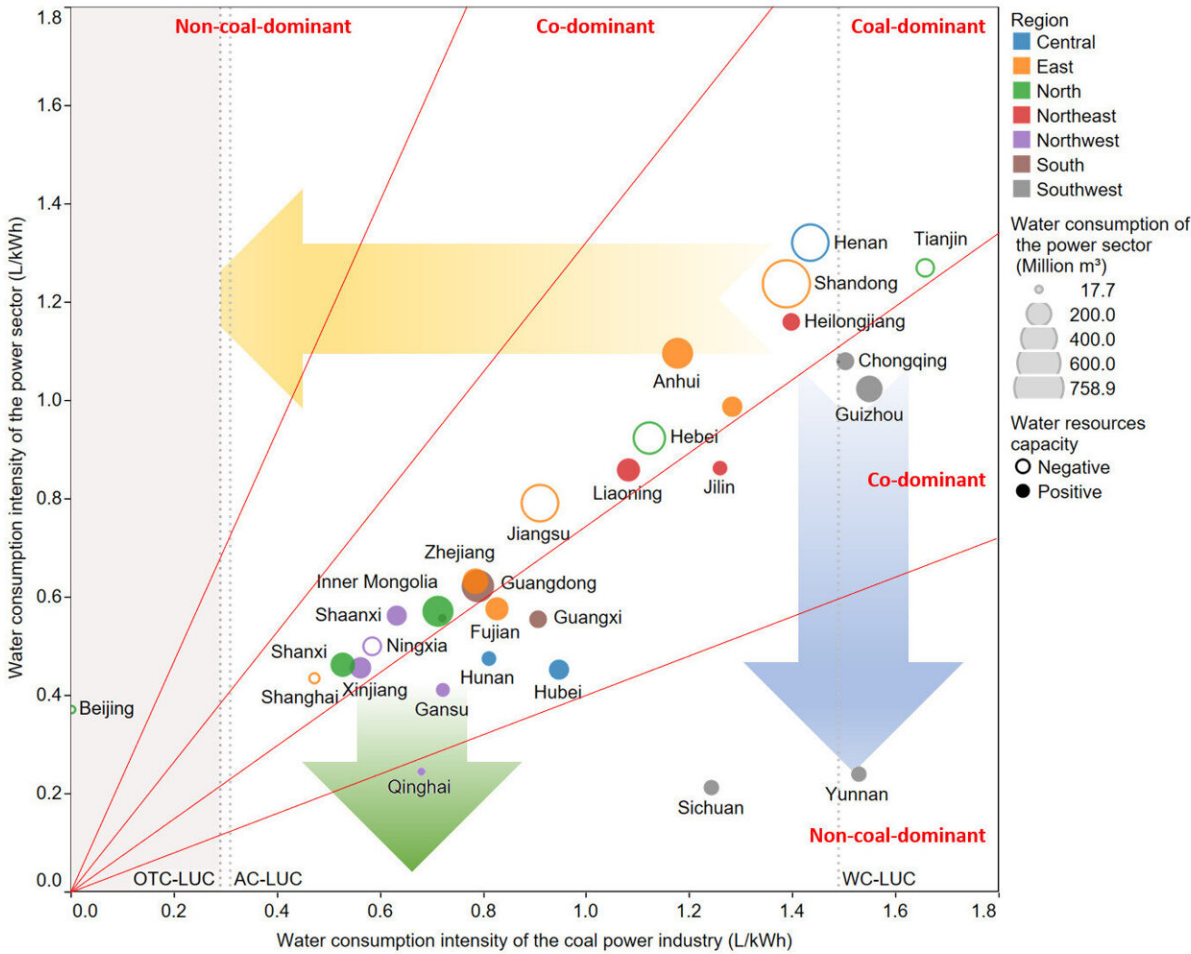


Water consumption and conservation evaluated in the coal power industry in China

August 16 2021, by Li Yuan



Provincial water consumption intensities of the coal power industry and power sector by 2020. Credit: TIAN Yajun

Coal power is still a main source of power generation for China. The coal power industry, the largest industrial water consumer, is facing extreme pressure, since China is a typical water-scarce country, representing 20% of the global population and only 7% of the globe's freshwater. Effective water conservation is urgent for the sustainable development of this industry.

Researchers from the Qingdao Institute of Bioenergy and Bioprocess Technology (QIBEBT) of the Chinese Academy of Sciences (CAS) have evaluated water consumption and conservation of the [coal power](#) industry in 30 provincial-level administrative divisions in China.

The study was published in *Sustainable Energy Technologies and Assessments* on July 19.

Introducing non-coal [power](#) to replace coal power is strongly recommended to lower water consumption, but the water conservation efforts and effects of the coal power industry itself are usually neglected or underestimated.

In this study, the researchers developed a bottom-up, province-level inventory of power-cycle [water consumption](#) in 2016, and compared the water conservation effects of self-improvement measures on the coal power industry with those of replacing coal power by non-coal power in 2016–2020. They found that the water conservation potential was almost equal.

Water conservation efforts were suggested to be the priorities in coal-dominant provinces after 2020, especially for the six provinces with negative water resource capacities, according to the study.

"We suggest to employ a short-term strategy for self-improvement in upgrading water conservation technology and retiring outdated facilities,

and a long-term strategy for power mix towards a renewable future," said Tian Yajun, Director of the Extended Energy Big Data and Strategy Research Center of QIBEBT and senior author of this study.

More information: Junjie Li et al, Water consumption and conservation assessment of the coal power industry in China, *Sustainable Energy Technologies and Assessments* (2021). [DOI: 10.1016/j.seta.2021.101464](https://doi.org/10.1016/j.seta.2021.101464)

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