**A plant-level analysis of the employment and fiscal impacts of coal phase-out in China**

China is home to over half the world’s coal power generation capacity. In September 2020, President Xi Jinping announced a 2060 carbon neutrality target and a peak in emissions ‘before 2030’. Socioeconomic impact is an important consideration in the design and success of the coal phase-out policies required to meet this goal, particularly the short-term, localised effects on affected populations manifested through job losses, and declining provision of public and private goods funded by taxation.

To assess the potential employment and fiscal effects of a coal phase-out in China over time, a model was constructed to link employment in the coal power sector and coal mining industries to the building and retirement of plants from 2021 to 2060. Different future capacity scenarios for the Chinese power sector are applied to measure impact on employment and fiscal impact of a shift away from coal.

In the base case, employment in coal mines starts at 1.4 million in 2021 and follows a steep downward trajectory, declining almost 50% by 2035. Employment in plants (starting at 500,000) falls by less than 30% in the same period. Fiscal revenues to the central government decline slowly to ¥200 billion in 2030, before beginning to fall steeply around 2035 as coal retirements accelerate and capital-based revenues fall, to 100 billion in 2040 and 20 billion in 2050. The most likely scenario, low-cost renewables, has relatively little impact on total employment, leading to just 100,000 fewer jobs in 2030 relative to the baseline. The approximate magnitude of annual (non-externality) subsidies to the coal industry, while uncertain, are estimated at ¥300-350 billion.

The magnitude of expected coal employment decline by 2050 in coal mines is significant, but largely driven by declining labour intensity rather than climate policy. In anticipation of the inevitable decline in coal sector employment, China should focus on identifying means for further scaling up zero-emissions industries that can make use of existing human capital. The net fiscal effect of coal phase-out may be revenue-neutral or positive, so the role of central government in managing the fiscal implications of coal-phase out is therefore likely to be largely redistributive.