Since mid-2013, China has piloted carbon emissions trading schemes (ETS) separately in seven developed regions, including four municipalities, two provinces, and one special economic zone. The seven regional ETS pilots are regarded as indispensable experiments for a planned national ETS that is expected to be the world’s largest carbon market. The national ETS will cover, at the first stage, only the electric power industry, an energy-intensive and high CO2-emission industry in China. Furthermore, the electric power industry has been incorporated into all the ETS pilots, though the pilots are operated independently. This study set out to investigate the causal effect of China's ETS pilots on the carbon intensity of the electric power industry (CO2 emissions per unit of electricity generated). To do that, we apply the synthetic control method, a data-driven control-group construction procedure, to panel data on Chinese provincial power sectors from 1995 to 2016. We estimate a synthetic control for the power sector of each pilot region. Our empirical results suggest a significant causal effect of the ETS pilots on the electric power industry’s carbon intensity. It is anticipated that these findings can contribute to the building of an effective national ETS in China, and in turn, to the global effort against climate change.