

Shandong

GDP: **\$899.4bn**

Five-year economic growth rate: **14.3%**

Population: **97.9m**

Total clean energy investment, 2009-2014: **\$15.6bn**

Installed power capacity: **80.9GW**

Renewable share: **9.7%**

Total clean energy generation: **15.8TWh**

Top energy authority:

Provincial Development and Reform Commission

CHINA RANKING		OVERALL SCORE
2014	2015	2015
9	11	1.97

OVERVIEW

Located on China's east coast, Shandong had a nominal GDP of \$957bn in 2014, contributing about 9% to the overall economy. Shandong is one of the major industrial manufacturing hubs in China with a heavy reliance on coal-fired generation. However, in recent years the province has seen rapid growth in renewables thanks to a combination of surging electricity demand and growing government support.

By year-end 2014, Shandong had an installed capacity of 79.8GW, of which 90.2% (72GW) was coal. Wind and large hydro represented just under 8% with solar accounting for the rest at 400MW. In terms of actual generation, nearly all (97%) of Shandong's 373.8TWh came from burning coal. Zero-carbon power penetration has to date been very limited in the local energy mix.

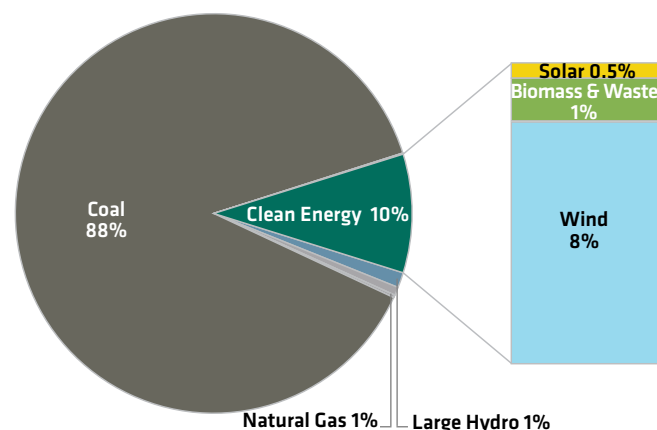
The provincial government has since 2010 offered a CNY0.06/kWh (\$0.01/kWh) subsidy to wind-generated power on top of the national benchmark power price of CNY 0.61/kWh (\$0.10/kWh). This premium has had its intended impact and wind capacity has grown sharply over the past five years.

More than 60% of Shandong's PV capacity is distributed and often small projects serve industrial consumer directly through bilateral power purchase agreements.

In 2011, the Shandong government released guidelines setting explicit goals of 600MW of utility-scale solar and 1.2GW of small-scale projects by 2015. Given that those targets that have yet to be achieved, Shandong is likely to see further growth in 2015.

INSTALLED POWER CAPACITY BY SOURCE, 2014 (%)

80.9GW total installed capacity

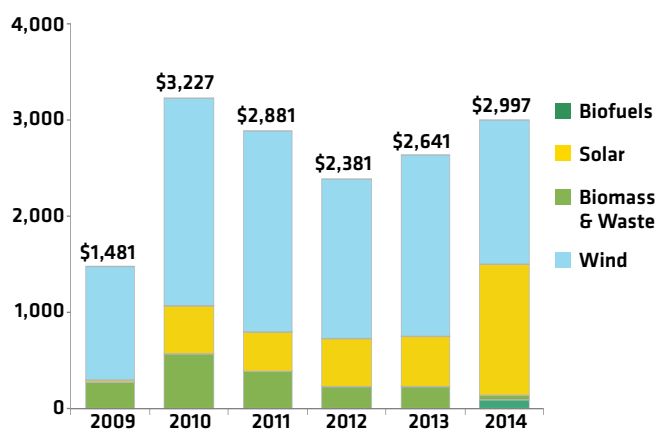


Source: Bloomberg New Energy Finance, National Energy Administration, Ministry of Water Resources, China Wind Energy Association, China Electric Power Yearbook
 Note: Negligible values for small hydro and oil & diesel cannot be graphically represented due to scale, see source data for the complete numbers.

To rein in local power sector CO2 emissions, the Shandong government in 2011 released its 12th Five-Year Plan for Energy Conservation. It set targets to cut CO2 intensity in the power sector to 0.85 tons of coal equivalent per kWh by 2015. That would mark 17% and 35% drops compared to 2010 and 2005 levels, respectively.

ANNUAL INVESTMENT IN CLEAN ENERGY, 2009-2014 (\$m)

\$15607.6m total cumulative investment



Source: Bloomberg New Energy Finance
 Notes: Total investment includes: Asset Finance, Corporate Finance and Venture Capital / Private Equity Commitments.

For further information, access www.global-climatescope.org/shandong