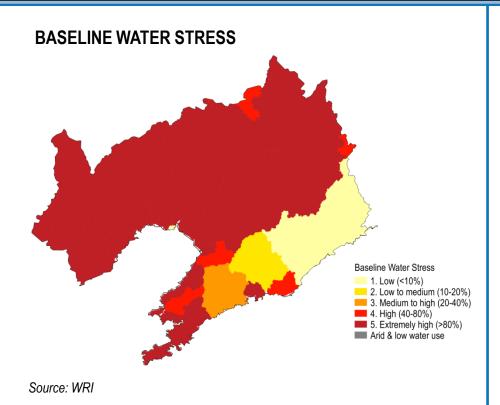
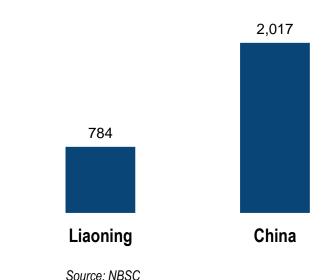
Zoom in Liaoning





RENEWABLE FRESHWATER RESOURCES / PAX

Annual average 2005-2014



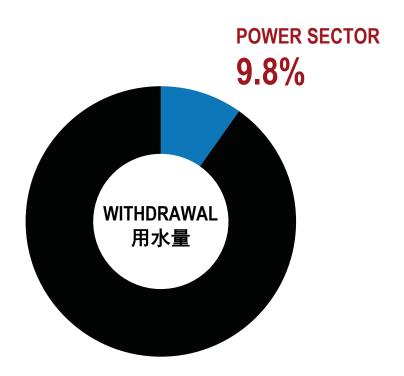
77% CONSIDERED AS EXTREMELY HIGH WATER STRESSED

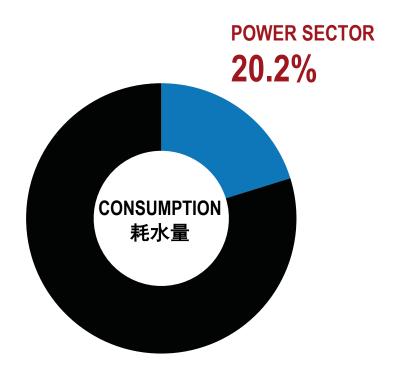
LIAONING WATER RESOURCES / PAX <40% OF NATIONAL AVERAGE

Water for power in Liaoning



POWER SECTOR AS % OF INDUSTRIAL WATER USE - 2011 电力行业占工业用水量 – 2011年





Development of renewable energy





2010

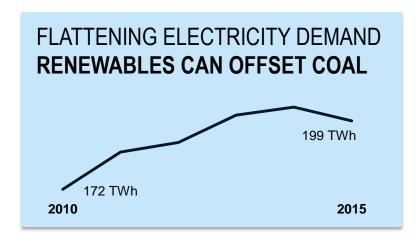
2015

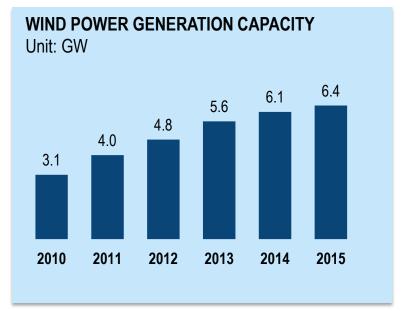
3%

9%

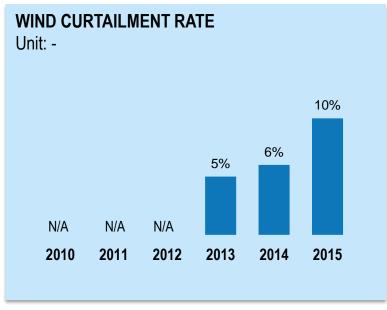
RENEWABLES IN POWER GENERATION MIX

- WIND ON THE RISE
- HYDROPOWER LOW IN 2015









Questions for discussions



Power generation reform can save water

- Reducing curtailment -> reducing water use:
 will the current pilot address curtailment issues?
- Coal overcapacity (Capacity Factor <50%):
 - more operating hours to less polluting/water-intensive
 - shutdown choices should consider water intensity

- Is floating solar an option for Liaoning province?
 - Liaoning #11 in aquatic products
 - 140 coal mines to be shut down by 2020
- Renewables beneficial for employment?
 - Coal: ~84,000 workers laid out until 2020
 - Solar PV (& Wind) have higher direct and indirect employment impacts than large coal-fired units
 - Nuclear has **negative** effects on employment (Tsinghua)



