# Page 3. Environment & Energy

## Objective

Track emissions, energy composition, air quality, land and forest resources, water sustainability, and environmental economics to illustrate China’s energy transition and environmental improvement from 2000 to 2020.

## Introduction

China’s rapid growth reshaped its environmental and energy profile. This section examines greenhouse gas emissions, energy mix, air‑quality improvement, forest recovery, water pressures, and policy‑driven sustainability efforts across two decades.

## Charts & Narrative

1. Greenhouse Gas Emissions

* Panel A: Total GHG emissions (Gt CO₂e) with key policies (Kyoto, post‑2010 pivot).
* Panel B: CO₂ per capita vs GDP per capita — income–emission relationship over time.

1. Emissions Composition

* Stacked area: CO₂, CH₄, N₂O — CO₂ as dominant driver with secondary gases contributing modestly.

1. Energy Structure

* Electricity mix overtime — Coal, Gas, Nuclear, Hydro, Renewables.
* 2020 snapshot pie separating Hydro vs other renewables — diversification and clean‑energy rise.

1. Renewable Energy Scaling

* Renewable power share line with policy markers (Blue Sky Plan 2013, Paris 2015) — steep growth in 2010s.

1. Air Quality

* PM2.5 trend vs WHO/China guidelines; policy cycle around 2013–2018.
* Box‑point comparison pre‑ vs post‑2015 — cleaner air distribution shift.

1. Forest & Land Resources

* Forest cover (% land) rising — reforestation efforts.
* 2020 land‑use pie: Agricultural, Arable, Forest, Other.

1. Water Resources

* Water stress index trend with reference bands.
* 2020 water use pie: Agriculture, Industry, Domestic.

1. Environmental Economics

* Stacked costs (% GNI): CO₂, PM, energy depletion — long‑term decline.
* Adjusted net savings improving — strengthening green capital.

1. Environmental Performance Index

* Composite: normalized CO₂ pc (inverted), PM2.5 (inverted), renewable share — steady improvement.

## Conclusion

Between 2000 and 2020, China reduced coal dependence, expanded renewables, and improved air quality following aggressive policy actions after 2013. Forest cover increased, environmental costs fell, and energy efficiency advanced — though water stress remains a major constraint.

## Design & Interaction Notes

1. Decade filters for comparison (2000s vs 2010s).
2. Subdued green‑blue‑gray palette for environmental tone.
3. Policy event markers and threshold lines to clarify context.
4. Consistent margins and clean visual hierarchy.