

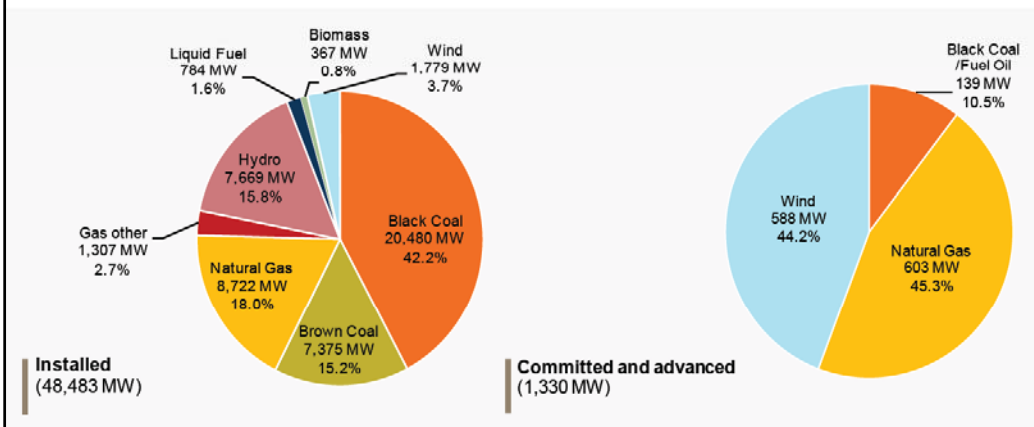
China-Australia Cleantech Cooperation

The Clean Technology Revolution: China and Australia

Drew Clarke
Secretary, Department of Resources, Energy and Tourism

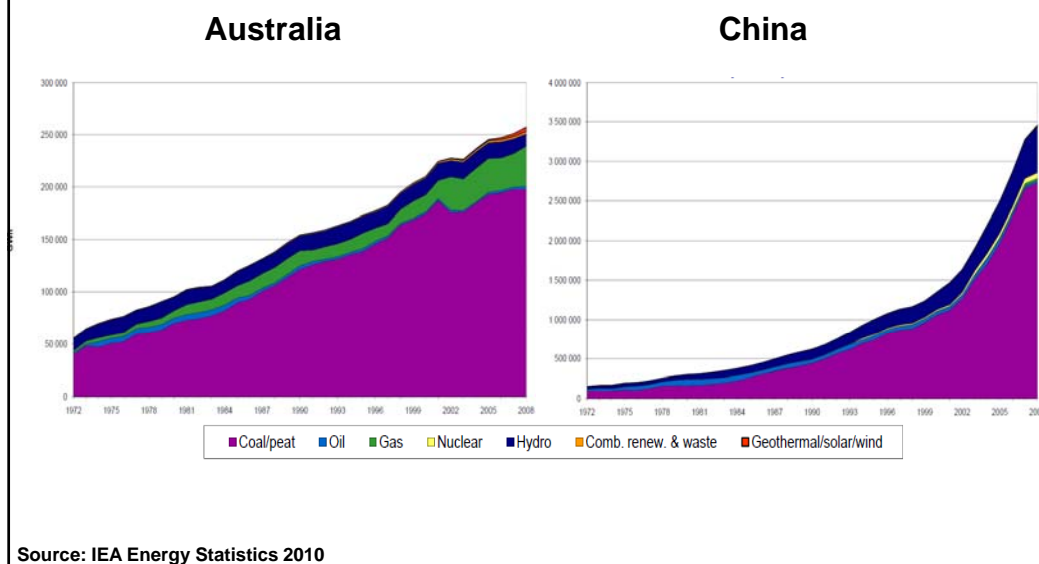


Australia - existing and committed generation



Source: Australian Energy Market Operator 2011

Electricity generation comparison



Australia's clean energy policies

Emissions reduction targets

- By 2020: 5% below 2000 levels
- By 2050: 80% below 2000 levels

Renewable Energy Target - legislated

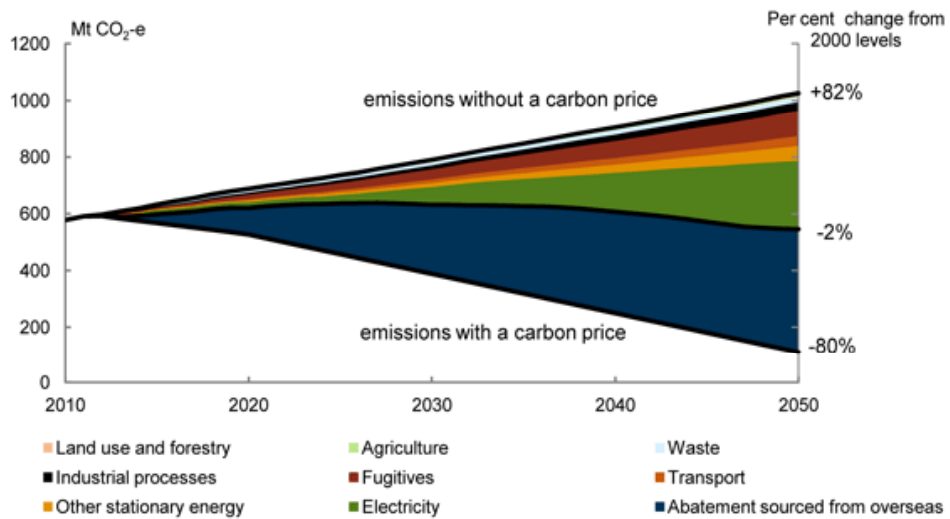
- 20% by 2020

Key policies

- Carbon pricing
- Clean Energy Finance Corporation
- Australian Renewable Energy Agency
- Low emissions fossil fuel

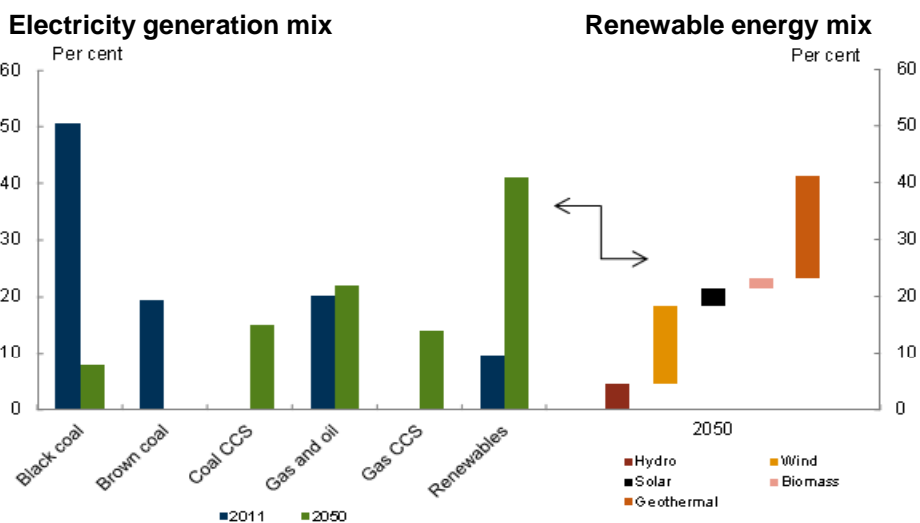
Further information: www.cleanenergyfuture.gov.au

Australia's sources of emissions reductions



Source: Treasury estimates 2011

Australia's electricity generation mix



Source: Average of SKM MMA and ROAM data for Treasury 2011

China's clean energy targets

12th Five Year Plan (2011-15)

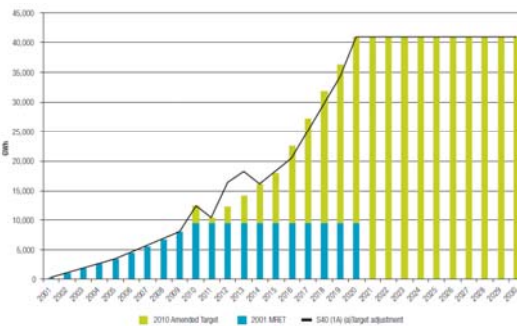
- Energy intensity: 16% reduction
- Non-fossil fuel: reach 11.4% of primary energy consumption

Renewable energy targets

- Aspirational 15% by 2020
- Sub-targets for different technologies

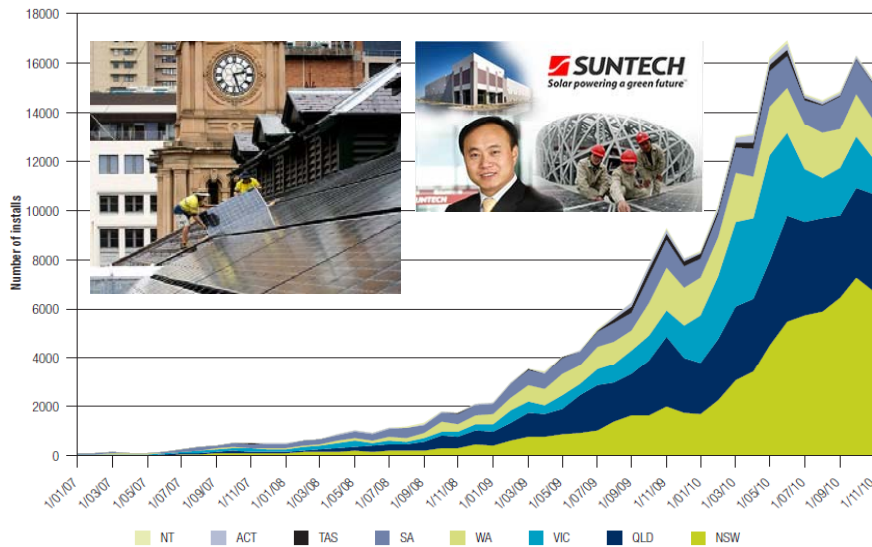
Source: China's 12th Five Year Plan, Productivity Commission 2011

Commercial ties - wind



Source: Office of the Renewable Energy Regulator 2010

PV installations by state 2007-2010



Source: Office of the Renewable Energy Regulator 2010

RD&D collaboration - solar

Australian Solar Institute project funding:

- Suntech & UNSW - \$4.4m - commercial solar cells
- Guodian Jintech, CSG & UNSW - \$1.1m - low cost solar silicon
- Trina Solar & ANU - \$3.3m - industry ready silicon solar cells

RD&D collaboration - low emissions coal

- Australia-China Joint Coordination Group on Clean Coal Technologies (JCG) - \$20m funding - with China's NEA
- Global Carbon Capture and Storage Institute (GCCSI) - membership includes Government of the PRC (NDRC), China Huaneng Group, China Steel Corp
- Australia-China PCC Project - feasibility study for an industrial-scale 600 MW post-combustion capture project

Other collaboration

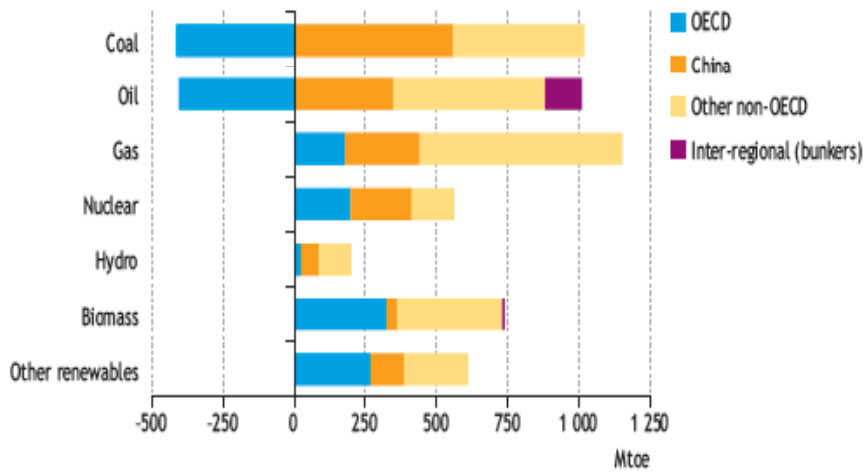
Bilateral Dialogue (DRET – NEA MoU on Energy)

- Covers oil, conventional and unconventional gas, coal, coal bed methane, renewable energy and uranium

APP Medium scale projects

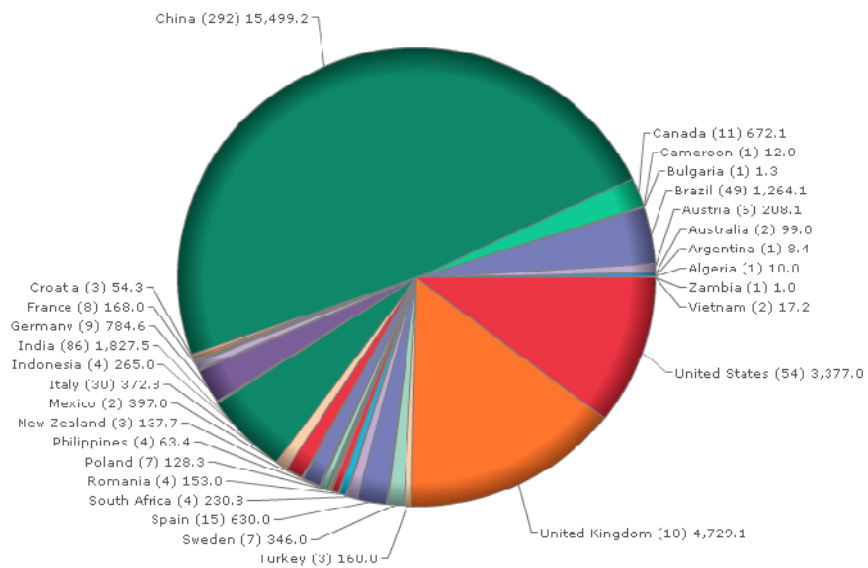
- Gaobeidian PCC pilot project
- CAGS project
- Enhanced Coal Bed Methane project

Change in primary energy demand 2008-2035



Source: IEA World Energy Outlook 2010

Year to date renewable projects



Source: Bloomberg New Energy Finance data

Top 10 PV cell manufacturers

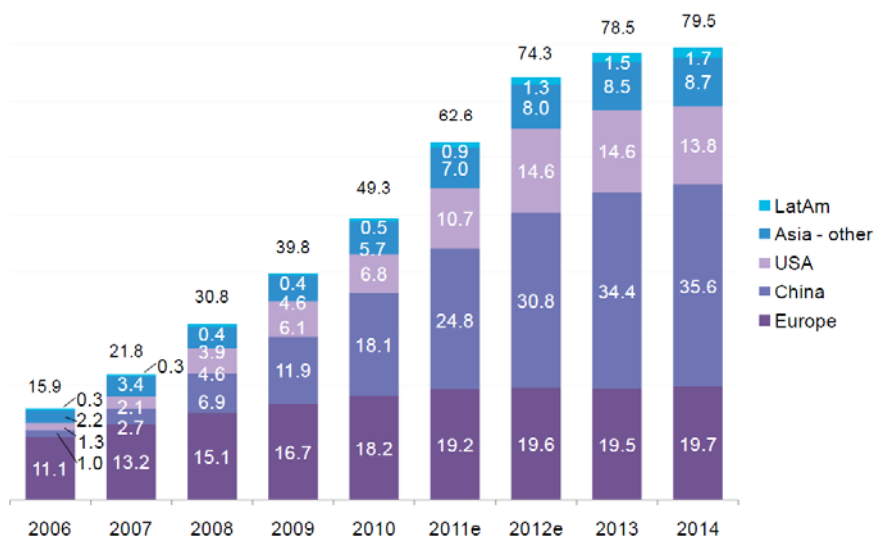
2006 +46% per year **2010**

Company	Country	Capacity (MW)	Company	Country	Capacity (MW)
Sharp	Japan	500	JA Solar	China	1,900
Q-Cells	Germany	420	Suntech	China	1,620
Suntech	China	270	First Solar (TF)	US	1,502
Motech	Taiwan	240	Yingli	China	1,100
Solarworld	Germany	200	Trina Solar	China	1,000
China Sunergy	China	180	Q-Cells	Germany	1,000
Kyocera	Japan	180	Canadian Solar	China	800
Isofoton	Spain	130	Motech	Taiwan	600
Schott	Germany	121	Gintech	Taiwan	600
Sanyo Electric	Japan	115	JinkoSolar	China	600

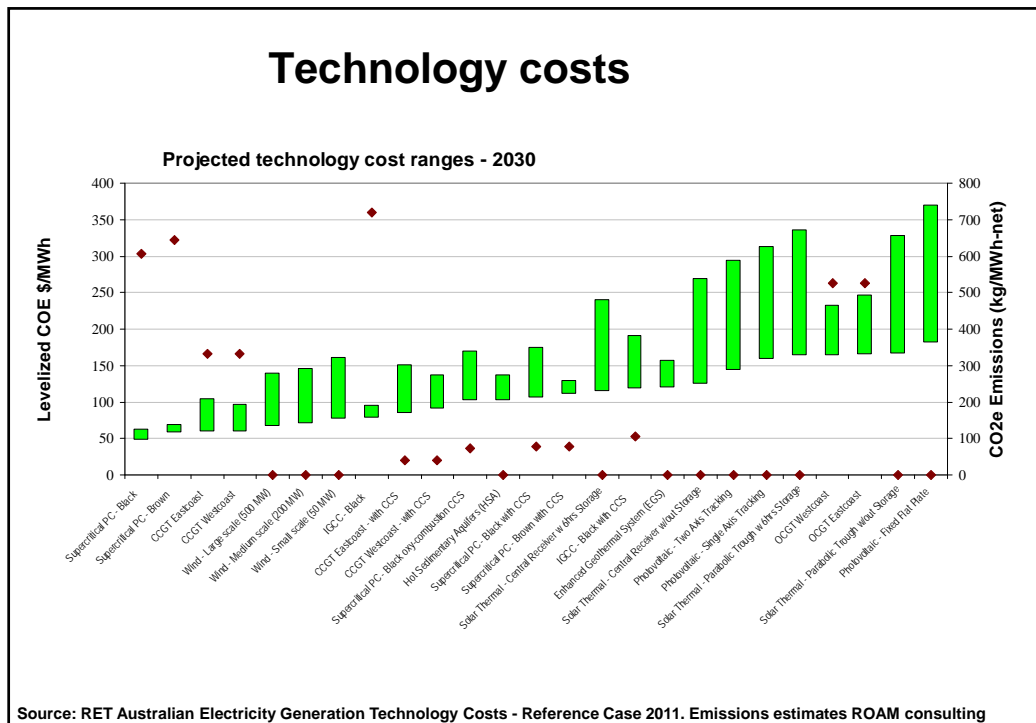
■ Europe
 ■ US
 ■ China
 ■ Other Asia

Source: Bloomberg New Energy Finance

Projected wind turbine manufacturing capacity



Source: Bloomberg New Energy Finance



THANK YOU

Drew Clarke
 Secretary
 Department of Resources, Energy and Tourism

Telephone: (02) 6213 6692
 Email: drew.clarke@ret.gov.au