Global growth in solar

Figure 1: Historical development of Global cumulative PV power installed per Region

Current Global Installed Capacity
PV: 20 GW

Source: International Energy Agency
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Challenges to increased solar uptake

- Relatively high costs
- High installed cost per unit
- Need for more R&D and storage solutions
- Low efficiencies
- Variability of energy supply creates grid integration challenges

Source: European Photovoltaic Industry Association
### Australian Government renewable energy policy framework

- 20 per cent by 2020 Renewable Energy Target
- AU$5 billion Clean Energy Initiative
  - ACRE
  - Solar Flagships
  - ASI
  - Low Emission Coal
  - Renewable Energy Future Fund
- Two stage carbon pricing mechanism
  - Fixed price for 3 to 5 years
  - Emissions trading scheme

### 20% Renewable Energy Target

- 20% of Australia’s electricity supply is to come from renewable sources by 2020.

- This equates to 45,000GWh of new renewable energy generation by 2020.

- Changes from 1 January 2011:
  - Small-scale Renewable Energy Scheme (SRES)
  - Large-scale Renewable Energy Target (LRET)
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Australian Centre for Renewable Energy (ACRE)

- Promote the development, commercialisation and deployment of renewable energy and enabling technologies
- Central point of contact for Australian renewable energy businesses
- Independent advisory board
ACRE Funding by renewable energy technology

<table>
<thead>
<tr>
<th>Technology</th>
<th>% of ACRE Committed Funds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar</td>
<td>47.3%</td>
</tr>
<tr>
<td>Ocean</td>
<td>16.2%</td>
</tr>
<tr>
<td>Geothermal</td>
<td>11.0%</td>
</tr>
<tr>
<td>Bioenergy</td>
<td>3.6%</td>
</tr>
<tr>
<td>Enabling</td>
<td>4.1%</td>
</tr>
<tr>
<td>Wind</td>
<td>3.3%</td>
</tr>
<tr>
<td>Other</td>
<td>3.6%</td>
</tr>
<tr>
<td>Total</td>
<td>87.9%</td>
</tr>
</tbody>
</table>

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Australian Centre For Renewable Energy – Solar projects

- Two solar thermal projects - $92 million grant funding
- Originally submitted under the Renewable Energy Demonstration Program (REDP)
- Announced in the May 2010 Budget

Source: Areva

Renewable Energy Venture Capital Fund (REVC)

- Will provide up to $100 million for investment in renewable and enabling technology companies
- Designed to provide critical early-stage equity investments
- Aims to address a major challenge facing early stage companies – access to capital
- Will be operational in 2011-12
Solar Flagships

Primary objective:

- "large scale, grid connected, solar power … to operate in a competitive electricity market"
Australian Solar Institute (ASI)

$150 million in Government funding

ASI aims to:

- Support solar research and development
- Encourage collaboration between researchers and institutions
- Increase the cost-effectiveness of solar technologies
- Accelerate the capacity of Australian solar industries

ASI is to play a leading role in dissemination of knowledge from the Solar Flagships program

Australian Solar Institute (ASI)

- Three ASI Foundation Projects each of $5 million underway at UNSW, ANU and CSIRO.
- To date, 27 projects have been funded by the ASI.
- The total funding commitment for the 27 projects is $66.1 million, leveraging over $209 million of total project activity.
Australian Solar Institute (ASI)

US-Australia Solar Energy Collaboration (USASEC)

- Support joint projects specifically aimed at reducing the cost of solar energy.

- New research on advanced solar technology projects such as dual junction photovoltaic devices, hot-carrier solar cells and high temperature receivers.

Australian renewable energy international cooperation

- The International Energy Agency (IEA)
- International Renewable Energy Agency (IRENA)
- Asia Pacific Partnership for Clean Development & Climate Change (APP)
- The Renewable Energy and Energy Efficiency Partnership (REEEP)
- United Nations Framework Convention on Climate Change (UNFCCC)
- Major Economies Forum (MEF)
- Clean Energy Ministerial (CEM)
Thank you