

Appendix D

Comparative Summary of International Solar Policies

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The solar market is growing very fast internationally. In 2009, cumulative installed solar generation capacity was approximately 23 GW¹, but shot up to about 68 GW² by the end of 2011. Different countries have employed different policies – both targets and mandates, and incentives – to boost solar, and other renewable resources, domestically. Table D1 provides a snapshot summary of the installed capacity, targets, incentives and solar technologies in key countries.

Table D1: Solar Market and Policies in Key Countries

Country	Solar installed capacity (GW) in 2011	Solar target (GW)	Clean energy target by 2020	Key Incentives	Technology	Scale
Australia ³	1.3	NA	20% of total consumption	Generation Based Incentives (GBI), Renewable Energy Certificates (REC)	Solar PV (incl. thin film), solar thermal	Utility scale
China ^{4,5,6}	3	9 by 2015, 50 by 2020	15% of primary energy	Feed in tariffs (FiTs), GBI for rooftop & Building-installed PV, tax incentives for PV	Solar PV, solar thermal	Initially off-grid, shifting to utility scale
Germany ^{7,8}	25	50 to 70 by 2020	35% (50% by 2030, 65% by 2040, 80% by 2050)	FiTs, RECs, tax incentives	Solar PV, Solar thermal only for export	Distributed
India (NSM) ^{9,10,11}	0.5	22 by 2022	15.9%	FiTs, RECs, capital subsidy	Solar PV and solar thermal	90% utility scale
Italy ¹²	12.4	NA	17%	FiTs, RECs, tax incentives	Solar PV	Distributed
Japan ^{13,14}	5	28 by 2020	22%	FiTs, RECs, tax incentives	Solar PV	Distributed
Spain ^{15,16}	5.3	8 to 9 by 2020	20%	RECs, tax incentives	Solar PV, solar thermal	Distributed
US ^{17,18}	4.6	~16 by 2020	17%	Production/ investment tax credit	Solar PV (incl. thin film), solar thermal	Utility scale and distributed

Figure D2 graphically depicts the global distribution of installed solar generation capacity in 2011. Figure D3 puts in perspective the solar energy targets of various countries, as well as their current installed capacities. Notably, India's 2020 targets are large compared to current installed capacities in leading countries, but are smaller than corresponding future targets in leading countries.

Figure D2

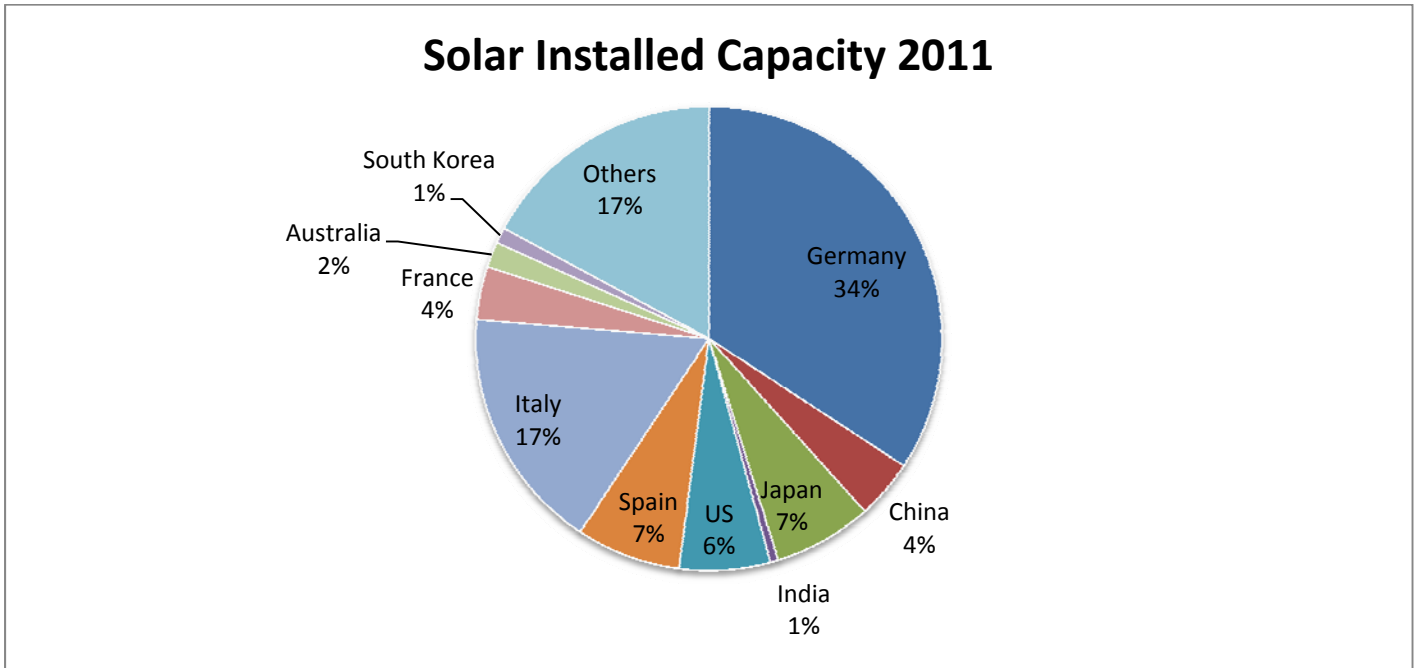
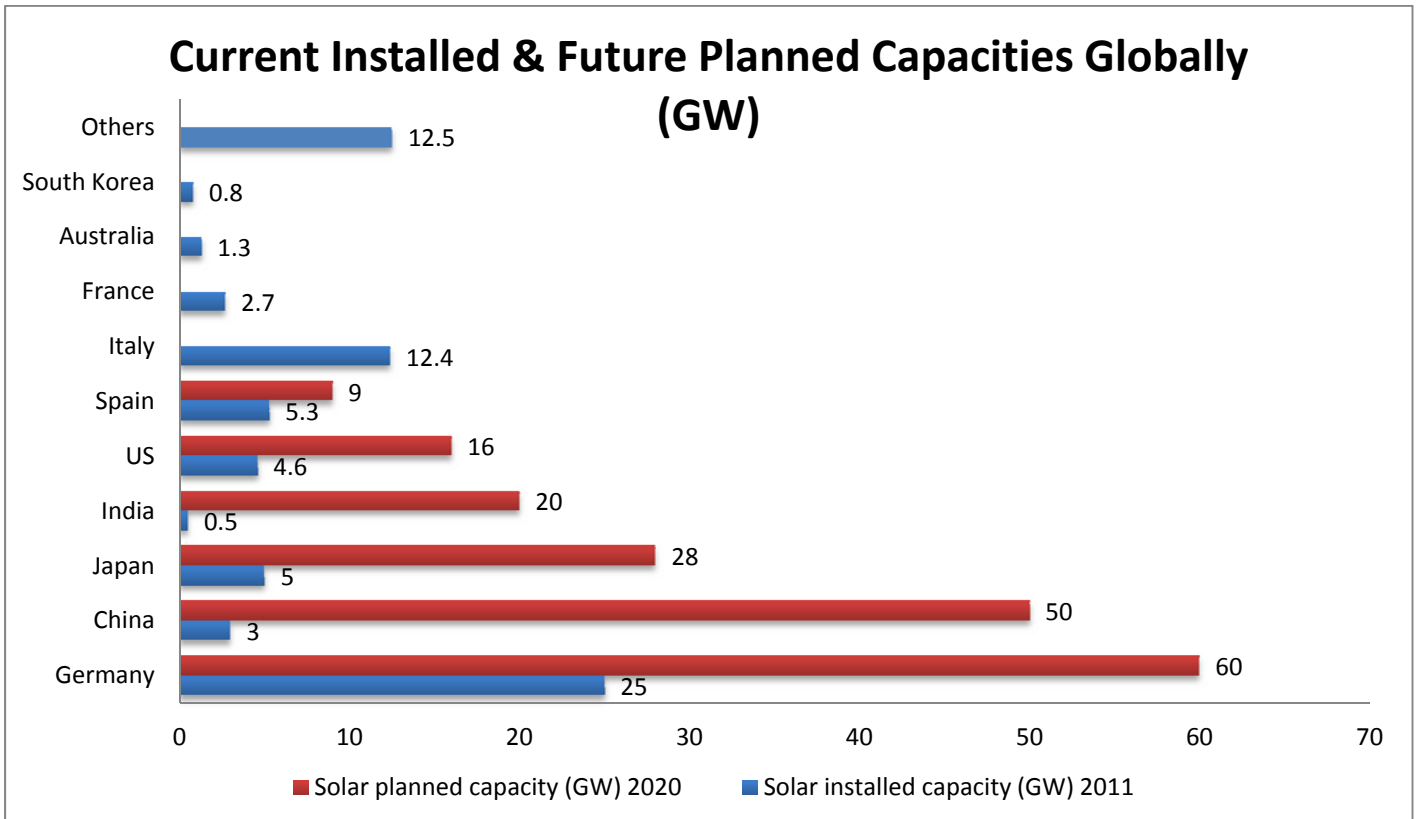


Figure D3



Note: 2020 targets were approximated in instances where 2020 projection data was not directly available.

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- ¹ “Renewables 21: Global Status Report”, *REN21 – Renewable Policy Network for the 21st Century*, August 2011, http://www.ren21.net/Portals/97/documents/GSR/REN21_GSR2011.pdf (accessed April 27, 2012).
- ² Marc Roca, “Solar Capacity Rose 54% to 28 Gigawatts Last Year, BNEF Says”, *Bloomberg*, January 13, 2012, <http://www.bloomberg.com/news/2012-01-13/solar-capacity-rose-54-to-28-gigawatts-last-year-bnef-says.html> (accessed April 27, 2012).
- ³ “Solar Flagships Program Open for Business Solar Flagship Program”, *Australian Government*, December 11, 2009, minister.ret.gov.au/MediaCentre/MediaReleases/Pages/SolarFlagshipsProgramOpenforBusiness.aspx (accessed April 27, 2012).
- ⁴ “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ⁵ Barbara Finamore, “A Clear-Eyed Look at China’s Climate Target”, *NRDC*, April 19, 2010, switchboard.nrdc.org/blogs/bfinamore/a_clear-eyed_look_at_chinas_cli.html (accessed April 27, 2012).
- ⁶ William Pentland, “China Doubles Solar Target, Bubble Likely”, *Forbes*, May 9, 2011, www.forbes.com/sites/williampentland/2011/05/09/china-doubles-solar-target-bubble-likely/ (accessed April 27, 2012).
- ⁷ Paul Gipe, “Germany passes new renewable energy law for 2012, raises targets and payments”, *Grist*, July 24, 2011, www.grist.org/article/2011-07-24-germany-passes-new-renewable-energy-law-for-2012 (accessed April 27, 2012).
- ⁸ “2008 Solar Technologies Market Report” (page 5), *US DoE Energy Efficiency and Renewable Energy*, January 2010, www.nrel.gov/analysis/pdfs/46025.pdf (accessed April 27, 2012).
- ⁹ “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ¹⁰ Eric Yep, “India Raises Renewable Energy Target Fourfold”, *The Wall Street Journal*, December 29, 2010, online.wsj.com/article/SB10001424052970203513204576048870791325278.html (accessed April 27, 2012).
- ¹¹ “Generation of Solar Power”, *MNRE Press Statement*, March 19, 2012, pib.nic.in/newsite/pmreleases.aspx?mincode=28 (503.9 MW as on March 19, 2012; accessed April 2, 2012); Communication from MNRE, March 26, 2012 (clarifying 3 MW increase to 506.9 MW). These figures have since been updated.
- ¹² “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ¹³ “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ¹⁴ “Preparations for the Introduction of the Feed-in Tariff Scheme for Renewable Energy” (page 14), *Ministry of Economy Trade and Industry Japan*, www.meti.go.jp/english/policy/energy_environment/renewable/pdf/fit20100804b.pdf (accessed April 27, 2012).
- ¹⁵ “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ¹⁶ “Renewable Energy Technology Roadmap, 20% by 2020”, *European Renewable Energy Council*, www.erec.org/fileadmin/erec_docs/Documents/Publications/Renewable_Energy_Technology_Roadmap.pdf (accessed April 27, 2012).
- ¹⁷ “Who’s Winning the Clean Energy Race – 2011 Edition”, *The Pew Charitable Trusts*, www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/FINAL_forweb_WholsWinningTheCleanEnergyRace-REPORT-2012.pdf (accessed April 27, 2012).
- ¹⁸ US 2020 target based on estimated aggregation of state targets.