

CLEAN ENERGY MANUFACTURING

China Dominates Global Manufacturing

In 2010, China surpassed the United States as the world's top producer of goods. How have they accomplished this? Among other strategies, its government leaders have hitched their economy to the developing \$2.3 trillion clean energy market. Here are the facts you need to tell this story:

#1 China currently ranks first in manufacturing. For the first time in more than a century, the United States does not lead the world in manufacturing. China manufactured 20% of all the goods in the world in 2010.¹

By **2016** China's GDP will be the largest in the world and the U.S. will fall to second place.² The United States became the world's largest economy in the 1870s.³

China is now a Market-Maker in Renewables

China saw in clean energy technology an opportunity not only to create a stable source of power for its own economy, but a chance to create goods the world will buy and use. Now, it is the clear global leader and is reaping the rewards for its national commitment.

100,000 new clean energy industry jobs are created annually in China.⁴

50% of all solar panels and wind turbines were manufactured in China in 2010.⁵ **4 of the top 10** wind power manufacturers in 2010 were Chinese. Only **1 of the top 10** was American.⁶

Chinese companies control **66%** of the \$39 billion global solar photovoltaic cell production market, including the top global provider.⁷ U.S. share of the global solar market in 2010 was **10%**, down from 42% in 2005.⁸

China is Investing in Electric Vehicles

Oil resources are running out, and more nations are competing to use what is left. China believes that decreasing its reliance on gasoline is in the best interest of its economy, noting how oil price shocks have wrought havoc on the American economy 14 times in the past three decades.

500,000 electric vehicles will be built in China by the end of 2012.⁹ The U.S. is not likely to manufacture its 500,000th electric vehicle until **2016**.¹⁰

The Chinese government has pledged **\$15 billion** to the development of alternative-fuel and fuel-efficient vehicles over the next 10 years.¹¹

China is Cornering the Rare Earth Metals and Raw Materials Markets

*To ensure that its manufacturing is well supplied, China determined that it must corner the market on the raw materials needed to make advanced energy technologies. Rare earth metals are critical for the components of many clean energy components, including batteries and the magnets used in wind turbines.*¹²

95% of the world's rare earth metals are produced in China or by Chinese companies overseas.

125,000 tons of rare earth metals were used globally in 2010.¹³

China's annual demand for rare earth metals is **50-60%** as a portion of total global demand. The country has accounted for more than half of worldwide demand since 2005.¹⁴

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- 3 Angus Maddison, "Historical Statistics for the World Economy," The Groningen Growth and Development Center, Economics Department of the University of Groningen, September 13, 2008. Accessed June 10, 2011. Available at: http://www.ggdcc.net/maddison/Historical_Statistics/horizontal-file_09-2008.xls.
- 4 Keith Bradsher, "China Leading Global Race to Make Clean Energy," *The New York Times*, January 30, 2011. Accessed June 8, 2011. Available at: <http://www.nytimes.com/2010/01/31/business/energy-environment/31renew.html>.
- 5 "Who's Winning the Clean Energy Race?" Report, The Pew Charitable Trusts, 2011, p. 13. Accessed June 8, 2011. Available at: <http://www.pewenvironment.org/uploadedFiles/PEG/Publications/Report/G-20Report-LOWRes-FINAL.pdf?loc=interstitialskip>.
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- 12 "China's cars to turn green," *Shanghai Daily*, August 5, 2010, translated by China.org.cn. Accessed June 8, 2011. Available at: http://www.china.org.cn/business/2010-08/05/content_20645667.htm.
- 13 Katherine Bourzac, "Undermining China's Monopoly on Rare Earth Elements," *Technology Review*, December 22, 2010. Accessed June 8, 2011. Available at: <http://www.technologyreview.com/energy/26980/>.
- 14 Ibid.
- 15 Chen Zhanheng, "Outline on the Development and Policies of China Rare Earth Industry," The Chinese Society of Rare Earths, 2010. Accessed June 20, 2011. Available at: <http://www.cs-re.org.cn/en/modules.php?name=News&file=article&sid=35>. Also presented at 6th International Conference on Rare Earth Development and Application, Beijing, August 2-6, 2010; See also United States, Department of Energy, Office of Policy and International Affairs, "Critical Materials Strategy," December 2010, p. 38. Accessed June 20, 2011. Available at: <http://www.energy.gov/news/documents/criticalmaterialsstrategy.pdf>.