

New dawn for large-scale PV manufacturing in Europe: reality or pipe dream?

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France and Germany contemplate an “Airbus” of solar

6

By Giles Parkinson on 21 January 2014

The French government has announced that it wants to establish a grand alliance with neighbours Germany as it seeks to hasten its move towards renewable energy and reduce its dependency on nuclear



French President Francois Hollande even hinted at the creation of a Franco-German company – similar to Airbus – that could help the two nations as they make major shifts in energy policy.

The broader picture



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Assessing the drivers of regional trends in solar photovoltaic manufacturing†

Cite this: DOI: 10.1039/c3ee40701b

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The photovoltaic (PV) industry has grown rapidly as a source of energy and economic activity. Since 2008, the average manufacturer-sale price of PV modules has declined by over a factor of two, coinciding with a significant increase in the scale of manufacturing in China. Using a bottom-up model for wafer-based silicon PV, we examine both historical and future factory-location decisions from the perspective of a multinational corporation. Our model calculates the cost of PV manufacturing with process step resolution, while considering the impact of corporate financing and operations with a calculation of the minimum selling price that provides an adequate rate of return. We quantify the conditions of China's historical PV price advantage, examine if these conditions can be reproduced elsewhere, and evaluate the role of innovative technology in altering regional competitive advantage. We find that the historical price advantage of a China-based factory relative to a U.S.-based factory is not driven by country-specific advantages, but instead by scale and supply-chain development. Looking forward, we calculate that

Critical success factors

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Assessing the drivers of photovoltaic cost reduction

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Solar-cell manufacturing costs: innovation could level the field
Study shows that factors other than wages dominate trends in photovoltaic costs, raising the prospect of competitive manufacturing anywhere.

Photovoltaics have emerged rapidly as a source of energy and economic activity. Since 2008, the price of PV modules has declined by over a factor of two, coinciding with a massive increase in the scale of manufacturing in China. Using a bottom-up model for wafer-based PV manufacturing, we analyse both historical and future factory-location decisions from the perspective of a typical PV manufacturing corporation. Our model calculates the cost of PV manufacturing with process step resolution, while considering the impact of corporate financing and operations with a calculation of the minimum selling price that provides an adequate rate of return. We quantify the conditions of China's historical PV price advantage, examine if these conditions can be reproduced elsewhere, and evaluate the role of innovative technology in altering regional competitive advantage. We find that the historical price advantage of a China-based factory relative to a U.S.-based factory is not driven by country-specific advantages, but instead by scale and supply-chain development. Looking forward, we calculate that

Selected drivers

- Achieving economic benefits (EU markets and export)
- Accelerating transition to sustainable energy system
- Preventing new form of energy dependency
- Fostering PV innovation ecosystem

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