

Developing the permanently internationally competitive sector in new industry – lessons from the case of photovoltaic panels production in Germany

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Abstract—This paper is a case study of determinants of the development of photovoltaic (PV) panels production in Germany in the years 2000-2016 in the context of creating a permanent international competitive advantage of the sector. The purpose is to identify the causes of initial success and subsequent failure of German producers and to draw conclusions on how to build a sustainable competitive advantage in manufacturing sector in new industry. The conclusions will be useful in the developing many new renewable technologies that are currently at the experimental stage of development and after appropriate refining the technology and with the appropriate management may be not only a source of clean energy, but also become an export industry of the economy of the country, which will develop them. Conclusions will be applied to both companies and government.

German PV panels production sector recorded a very rapid growth in the first decade of the twenty-first century. However, since 2010 demand for its products has been steadily and rapidly declined. This situation arose from a decrease in the demand on the German market, caused by reduction of subsidies and with the emergence of Chinese manufacturers who began mass production of the PV panels at a much lower cost. As a result, German companies, which largely were responsible for the improvement of the refinement of PV technology in the world, have fallen and / or have been taken over, also by Asian manufacturers. Among the most important reasons for the failure of the German manufacturers there should be indicated that they decided to produce in Germany, what combined with a high share of human labour, despite high production automation, resulted in high cost of their products. In addition, basic technology of PV panels was easy to copy, so the Germans did not have exclusivity on it. In addition, German manufacturers were too much focused on their domestic market and its specificity, losing it along with a reduction in subsidies and not being able to compete effectively abroad. The situation was also worsened by actions of the German government, which directly and indirectly supported the Chinese manufacturers in expanding their production.

The Germans should produce in countries with low-cost labour force and there, through automation, gain a cost advantage over local producers. Products in various types should be produced in places with the greatest demand. Thanks to more advanced technology, the Germans could also gain a technological advantage in Asia. German government whereas should more carefully pay attention on whom to support and if those entities will not be potential competitors of German companies.

Keywords: photovoltaic panels, Germany, international competitiveness of the sector, China