

# The Problems and the Prospects of Global Renewable Energy Market Growth

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*The article presents the main tendencies of the cleantech sector and its market segments development for the last years on the globe. The purpose of the paper is to indicate the main impediments to the market of renewable energy growth. The statistic data about the venture capital financing of the world market of renewables are given in this paper.*

Keywords – cleantech sector, alternative energy, the segments of renewable energy market, venture capital, start-ups.

## I. Introduction

Cleantech sector is composed of a numeral segments with the market of renewable energy. Nowadays the world market of renewable energy sources is well represented by manufacturers of power equipment, energy distributors, brokers and consumers of energy derived from alternative sources: wind, water, solar, biomass, geothermal and other renewables.

## II. General intent

Study on alternative energy prospects want to start with the analysis of statistical data on cleantech sector, which consists of agriculture and bioproducts, energy efficiency, smart grid and energy storage, solar energy, transportation, water and waste management, wind and geothermal, and other renewables.

According to [1] among the top-100 cleantech companies of the world, that have had the mutual support from experts CleantechGroup during the last few years, got listed firms from 13 countries: 64 of them represent USA, 8 - United Kingdom, 6 – Israel, 5 – Canada, 4 – Germany, 3 – China and others Among the 100 most promising private cleantech innovative firms 69% are located in USA, 21% - in Europe.

The top sector for Global Cleantech 100 companies is Energy Efficiency. Solar emerged as second sector, held this place despite losing representation in 2012 with a significant 40% fall since 2009. Biofuels & Biochemicals and Water & Wastewater are held the equal third position on the list. This analysis have an great impact to make a conclusion that the clean tech community considered not only the renewable energy as the most promising sector but resource-efficiency also. This fact is an important evidence of a new wave of world clean technology development.

By 2012 the world market for cleantech included 68 new public companies, however, about 63 companies left him because of the difficulty of its development. By geographical spread U.S. and China are leaders by the number of new firms emerging in the industry, making

the Asia- Pacific region a leader in terms of dissemination of alternative energy market [2].

Renewable energy market shows growth in the number of companies, market capitalization and revenues in 2012 compared with 2011. Number of manufacturers of water power fell by 2% but market capitalization and revenues increased. In the segment of solar power on an example the U.S. market in 2012 many companies went bankrupt, also seen a decline in average operating income by 17 % in the segment. In addition, the price of solar technology fell by 48% in 2012 compared to 2011. Scope of geothermal energy shows significant growth in 2012 due to higher number of firms in this field. Although the USA and China are gradually observed their growth with the number of manufacturers of equipment for renewable energy in the world, in addition we see the intention of expanding business in other parts of the world. Germany, Japan, South Korea are the most active in investing in the field of alternative energy.

Study of analytical materials on the market of renewable energy sources have made it possible to distinguish the main problems of its growth in the world:

1. A significant excess of the aggregate supply of process equipment for the production of renewable energy over the existing aggregate demand. Although the world has seen an oversupply of solar panels and batteries, the USA demand for such equipment is growing with 435 MW in 2009 to 3 GW in 2012 According to analysts, Japan and especially China overtake the USA in terms of demand for new equipment, significantly outperform demand from Europe and will soon become the world leaders in terms of consumption of renewable energy [1-2].

2. Equipment and energy manufacturers are not operating at full capacity, which prevents full use economies of scale to reduce the cost of energy production and improve the quality of transportation. It promotes of increasing unprofitable firms. However, experts predict that during the period from 2015 to 2020 most solar panels manufacturers' will be profitable.

3. New scope, new market that is in a state of becoming, not only need the support of their governments, but also supranational bodies. For example, in 2012 about intention to finance \$ 500 million Geothermal Energy Market Development announced the World Bank. Getting tax credits to projects from the field of alternative energy by the end of 2013 did not help to significantly increase the spread of energies [3].

4. Limited opportunities for the production of renewable energy equipment deterred investors from active support.

In recent years there has been a decline in global investment in alternative energy: with more than 45 billion dollars. United States in 2010 (historic maximum) to less than \$ 8 billion in 2012 on a material decline in investment in renewable energy has affected a significant reduction in government borrowing in 2012 the world's major contribution to investment in solar energy was in the period 2006-2011, particularly in the USA and in 2012 we have seen a significant drop in activity of

investors who decided to bypass their attention on alternative energy and most segments of clean technologies. Most renewable energy projects need further support governments and project duration in average 7 years deters investors to finance this area.

Decreased activity and venture capital investors in the alternative energy. Overview of the U.S. market shows that among the 50 most promising venture start-ups in 2012, which show high growth rates and market capitalization are selected by analysts The Wall Street Journal, neither was any enterprise from the field of clean technologies and in particular new segments of energy industry [4]. Among the leaders are start-ups from the field of Information Technology, business and financial services, consumer services and healthcare. These areas are attractive to U.S. venture capitalists.

The market of alternative energy and energy efficiency is going through not easy times. According to The World's Renewable Energy Network for News & Information this area did not meet investors' expectations about the pace of growth in the world. This is largely due to the residual impact of the financial crisis, tax aspects in different countries and so on [5].

Despite cleantech received \$364 million in 43 venture deals in the second quarter of 2013, the whole venture market in investing amounts in \$6675 million during that period. Thus, the cleantech had received only 5,45% of U.S. venture investments. The top leaders industries of venture capital recipients in the second quarter of 2013 were: software (31,86%), biotechnology with (19,01%) and IT services (9,79%). Among the top 10 U.S. deals in venture capital investments, that was made with \$104,360 millions in 2012, is biotechnological company with focusing on producing renewable specialty chemicals [6].

Compared to the previous years in 2012 on the U.S. cleantech market we can see the decreasing tendencies in funding trends, many changes in deal volume and deal size: early-stage investment during the 2013 decreased by 69 percent compared to the second quarter of 2012, investment for late-stage decreased by 59 percent over the same period.

Cleantech subsectors have received increasing funding in 2013 compared to the prior-year period: Energy Efficiency plus 161 percent to \$56 million, Water & Waste Management plus 27 percent to \$53 million. Another cleantech segments received less funding in 2013: Smart Grid and Energy Storage minus 86 %, Solar Energy minus 81 %, Wind & Geothermal minus 43 % [7].

Despite such unkindly atmosphere on the renewable energy market, such factors as the need for compliance with environmental regulations and energy security, population growth in the world and lack of energy, constant increasing of demand (consumption) on the energy in the world make it possible to predict the future and the significant growth of the clean technology. Important aspects of the renewable energy market exit from the crisis area are innovation, improving of service quality, reducing the cost of power equipment and support by governments through tax credits and subsidies to business.

Although cleantech venture funding is decreasing, projects are still being developed. So we can hope, that the industry is growing overall, suggesting that other sources of funding, such as government corporations and commercial lenders are becoming increasingly active.

## Conclusion

The market of alternative energy and energy efficiency is going through is not easy times. According to The World's # 1 Renewable Energy Network for News & Information this area did not meet investors' expectations about the pace of growth in the world. This is largely due to the residual impact of the financial crisis, tax aspects in different countries and so on.

However, factors such as the need for compliance with environmental regulations and energy security, population growth in the world and lack of energy, constant demand (consumption) is the energy in the world make it impossible to predict the future and the significant growth of the clean technology. Important aspects of the exit area of the crisis are innovation, improve service quality and reduce the cost of power equipment, and support governments through tax credits and subsidies to business.

## References

- [1] The 2012 Global Cleantech 100: facts, figures, and analysis. [Online]. Available: [http://www.cleantech.com/wp-content/uploads/2012/09/Cleantech\\_Group\\_GlobalCleantech100\\_2012report.pdf](http://www.cleantech.com/wp-content/uploads/2012/09/Cleantech_Group_GlobalCleantech100_2012report.pdf) [Accessed Sept. 28, 2013].
- [2] David Groarke, Zach Pollock, Ben Kellison. Global Smart Grid Technologies and Growth Markets 2013-2020. [Online]. Available: <http://www.greentechmedia.com/research/report/global-smart-grid-technologies-and-growth-markets-2013-2020> [Accessed Sept. 15, 2013].
- [3] Meg Cichon Where is money for Geothermal Development Renewable Energy World Magazine. – Volume 16. – Issue 4. – July/August 2013.
- [4] Looking for the 'Next Big Thing'? Ranking the Top 50 Start-Ups The Wall Street Journal. [Online]. Available: <http://online.wsj.com/article/SB10000872396390444813104578018940187057924.html> [Accessed Sept. 19, 2013].
- [5] The World's #1 Renewable Energy Network for News & Information - Project update. [Online]. Available: <http://www.renewableenergyworld.com/rea/news> [Accessed Sept. 18, 2013].
- [6] The MoneyTree Report. PwC Research&Analytics [Online]. Available: [www.pwcmoneytree.com](http://www.pwcmoneytree.com) [Accessed Sept. 18, 2013].
- [7] Power & Renewables Deals: outlook and 2012 review [Online]. Available: [http://www.pwc.com/en\\_GX/gx/utilities/publications/assets/pwc-power-and-renewable-deals-2013-outlook-and-2012-review.pdf](http://www.pwc.com/en_GX/gx/utilities/publications/assets/pwc-power-and-renewable-deals-2013-outlook-and-2012-review.pdf) [Accessed Sept. 18, 2013].