

Chapter 61

Trends and Conclusions for Business Development in the Renewable Energy Industry

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ABSTRACT

The renewable energy industry represents a very dynamic sector, connected with other economic sectors. The trends in this field are numerous and various. The setting of EU targets for greenhouse gas emission reduction is a policy at European level. The huge amount of data calls for the use of complex data processing equipment and systems, so now we can talk about the smart grid, decentralization, the Energy Management System and the Energy storage system. Business development requires very large investments and various financing methods, but especially well-detailed and reasoned business models that can be adapted to local conditions. There are changes at the level of HR through the creation of new specific jobs, as well as continuous training for specialists. The main objective of this chapter is to present the major trends related to the renewable energy sector and their impact on the economic development and on the environment. This chapter presents 18 main trends identified by the authors and analyzed in the renewable energy field. Each of these trends follows in a brief overview the actual situation and the future perspective.

TREND 1: TARGETS FOR THE RENEWABLE ENERGY SOURCES IN UE THAT CONTRIBUTE TO THE REDUCTION OF THE GREENHOUSE GAS (GHG) EMISSIONS

The climate change and the increase of greenhouse gases emissions will determine the EU governments also in the next decades to identify and apply new solutions to reduce the global impact on the environment. As a result, based on the estimation of the studies coordinated by the European Commission,

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the share of renewable energy sources in electricity generation in EU will increase up to 56% in 2050. However, after 2020, the development of PV systems and wind onshore will be realized without support schemes. Wind facilities will have the major role by 2050 with 25% of the total net energy generation, but will have to pass two main targets: 14.4% in 2020 and 18% in 2030 (EC, 2016, 65). An interesting scenario considers that until 2050 the wind onshore capacity generation increases more than the wind offshore capacity. This will be a result of the fact that will be exploited new sites and also that the actual wind turbines will be replaced with new ones with higher installed capacity and higher load hours. The targets for PV production in net generation are: 4.8% for 2020, up to 7% in 2020 and 11% in 2050. Also the shares of biomass in fuel input in thermal power plants will increase and it is estimated to be 17.3% in 2020, 22% in 2030 and 31.5% in 2050 (EC, 2016, 65). The deployment of renewable energy will increase also due to integrated technological solutions such as connecting the electricity sector with transport, heating or cooling.

TREND 2: NEW EU TARGETS FOR GREENHOUSE GAS EMISSIONS

Another challenge is introduced in EU by the new *targets for 2030* regarding energy policy for GHG emissions. The main pillars of the EU Energy Policy for 2030 are: a 40% cut in greenhouse gas emissions compared to 1990 levels, at least a 27% share of renewable energy consumption and at least 27% energy savings compared with the business-as-usual scenario. The tendency in the energy filed is to expand and improve the services that will be offer to the customer because only selling energy will be not so far profitable for companies when the governmental subsidies models will be eliminate or reduced. The new targets for reduction of GHG emission combined with an increase energy efficiency will be one main key for reduction of the air polution and keeping the climate change under the control, limiting the rise in global mean temperature below the 2°C scenario by 2100.

TREND 3: NEW REVENUES MODELS AND SUPPORT MECHANISMS FOR REDUCING THE GREEN GAS EMISSIONS

Business models based on new and innovative revenue models describe intelligent methods to use new government incentives which contribute to higher revenues. Currently, the main support scheme revenue models are based on selling electricity to the grid, either at a fixed price (guaranteed feed-in tariff, green certificate) or a market price. These are characterized by: use of a feed-in remuneration scheme or developing green certificates. In Germany, the feed in scheme was used as a stable basis for a business model for PV, for wind or biomass facility. The costs for this instrument were covered by the government budget (form taxes) or by a network operator on energy bill (from energy consumers like in Germany). If the producers want to use a part of the production for own consumption they need smart meters. The smart meter controls the electricity supplied to the grid and the electricity taken from the grid (see smart grid). In practice, there are two situations regarding the financial structure of a feed-in based business model: to produce more energy than needed for own consumption, and the need to buy additional energy from the market.

PV technologies and their alternative solutions such as PV/T, Building Integrated Photovoltaic (BIPV), and concentrated solar photovoltaic (CPV) applications of solar PV registered the faster development

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