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Effective Management Distribution of Energy Sources and Energy Independence

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Abstract

As a result of ongoing armed conflicts around the world, including the one between Russia and Ukraine, disruptions have occurred in the supply of fossil resources and energy carriers on the basis of which classic models of electricity supply are built. These resources are primarily gas, crude oil and hard coal. Even economies transforming towards the largest possible share of renewable energy sources in the structure of currently used resources must still take into account the need to use fossil energy carriers. Nuclear power plants, which are relatively cheapest to operate, are also based on fossil energy carriers such as uranium or plutonium, the guarantee of uninterrupted supply of which is now probably no longer possible in the long term. Generally, the production of electricity and heat takes place through central devices such as power plants, combined heat and power plants, heating plants using fossil energy carriers, hydroelectric power plants, as well as wind and photovoltaic farms, and distributed energy cooperatives. Waste incineration plants, waste processing installations, and sewage treatment plants producing electricity and heat directly or from the produced biogas are also sources of local energy production. It is therefore necessary to consider the energy efficiency of individual solutions in the light of the mentioned and potential disruptions in the supply of energy carriers, efforts to reduce CO₂ emissions and, in general, the costs of energy used by enterprises. These costs have a significant impact on building competitive advantage by business entities. The aim of the article is to consider the expected changes in building energy mixes in world economies when the main conflict, the war between Russia and Ukraine, ends. Should distributed energy sources be expanded? Will they still be profitable assuming the forecast of cheaper prices of fossil energy resources? Will we go back to the old models? Or maybe we should strive to build full energy independence, assuming that there will be new technological and organizational possibilities that we have not yet discovered or used yet?

Keywords: management, energy independence, distributed energy, renewable energy sources, energy mix, waste management