

## ENERGY AND RENEWABLE ENERGY SOURCES

Stochastic, that is to say, the uncontrollable varying of oil prices on the world market, is the cause of considerable concern not only to energy engineers but also of common people. The reason is as simple as that: the price rise per oil barrel on the world market affects the increasing cost of living for all of us. Recently, we have witnessed the rocketing oil price which had no sooner risen to 160 US \$ per barrel, when in only a several days it fell to 50 US \$.

It is hard to find any regularity in it. Therefore, it is not so easy to plan the economy in the segment directly linked with energy and power sources, so that each piece of information concerning this topic arouses interest. In Croatia, two events linked with energy and renewable energy sources, and thus worthy of our notice, took place this autumn: the traditional meeting of the *Congress of Energy and Environmental protection*, which is biennially held in Opatija and co-organized by the Faculty of Engineering of the University of Rijeka; and the issuing of the Adjustment and Upgrading of the Strategy of Energy Development in the Republic of Croatia (The Draft Green Book).

Congressional speculations about the drafting of the Strategy document raised public debate, precisely at the time of the congress holding in Opatija, as the document draft was expected by the public. Since this document is now open for public debate, we can take some note of it. As evident from the title, the Green Book is not the first document issued at the national level.

About fifteen years ago, the European Institute *Hrvoje Požar* initiated the *Project of the Energy Sector of the Republic of Croatia – PROHES*, which was elaborated into ten subprojects, five subprojects belonging to the segment of conventional energy sources and five to the field of renewable energy sources.

These subprojects were the basis for an elaboration of the Strategy for energy development of the Republic of Croatia. Back then, one objection that was raised to this document was that the state had no economy strategy, and it was, thus, too rash in dealing with energy strategy. Later, in 2001, the energy strategy was accepted; it was the crucial document for an array of activities in the sector of energy engineering, especially in the legislative area, which at the statute law and sub-act level, reached an enviable level.

Speaking about energy and energy development, we can freely say that thanks to this document, we have a relatively well-defined and well-determined legal system. Within pre-admission requirements and negotiations, Croatia will keep on adapting its legal and regulatory frame to the *acquis communautaire* of the EU, thus creating prerequisites for the functioning of the open market, based on clear, stabile and non-discriminating rules as well as on active market regulation.

The document dealt with must be treated as the continuation of something previously initiated, drawn and accepted. But is that so? It is not a simple question; neither it is simple to foresee the market price movements of energy sources.

Unfortunately, as an importer, Croatia depends on the current prices of primary power sources. Energy independence is a precondition for a successful economy. Is the concept with three possible scenarios for the planning of development of the electrical power system by the strategy draft possible? Is it necessary to build an electrical power plant generated by nuclear energy? Are renewable energy sources properly represented in this document? It would be better to pose the question: *Will these renewable sources be adequately stimulated in our near future?*

For the generation of electrical energy, a considerable amount of renewable energy sources is foreseen, in accordance with the Strategy and its fundamental streamline.

To be able to meet the set energy targets, utilities are supposed to receive an overall 1 545 MW of power from renewable sources by the year 2020 (2 770 MW by 2030), whereby large hydroelectric plants are not included.

The goals to be adopted for renewable sources by 2020 are: 1 200 MW of power to be generated by wind turbines, 140 MW electricity by biomass thermal plants, 40 MW of power by waste generated thermal power plants, 20 MW by geothermal power plants, 45 MW by solar utilities and 100 MW by small hydroelectric power plants.

The future will show whether the set goal is too ambitious. Surely, by implementing renewable sources, which are in plentiful supply, Croatia will gradually reduce its dependence on energy and energy sources import.

*“Croatia has to aim at reducing its energy import dependence by implementing flexible energy structure, i.e. such utilities which under uncertain circumstances surely demonstrate their competitiveness and robustness. Certainly, it can be achieved by capitalizing on our own resources and power potentials, effective harnessing of energy, diversity of employed energy forms and technologies, variety of obtained energy directions and sources as well as (and finally) by utilization of renewable power.”<sup>1</sup>*

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<sup>1</sup> Draft Green Book. Adaptation and Upgrading of the Strategy of Energy Development of the Republic of Croatia (October 2008)

Is this aim realistic?

Without any doubt: *“Croatia, in its process of negotiations on the Accession of the Republic of Croatia to the EU has to struggle for that decision which will*

*enable integration into the European system of the internal commitment mechanism of distribution and integration into units of the European Emission Trade Scheme, where targets of energy development will be easily achieved.”*

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