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THE PROGNOSIS OF THE ROLE OF COAL, CRUDE OIL AND NATURAL GAS IN THE WORLD AND LOCAL ENERGY CONSUMPTION AND PRODUCTION

The paper presents world projections - to 2020 and 2050 - referring to population increase (UN 1998 Revision of the World Population Estimates and Projections), energy demand and utilization of various energy resources (World Resources Institute and UN Development Program). The energy production by 2020 will be 60 % higher compared to the 1998 production level. The energy production increase will be based on a higher utilization of coal, crude oil and natural gas. Moreover, coal will be still utilized for steel, cement and chemicals manufacturing. High cost of energy from nuclear power stations as well as a lack of save technology of permanent storage of nuclear wastes (Report of the USA Department of Energy) result in severe limitation of nuclear power contribution in energy production to 2020.

Combustion of the three fossil fuels in question will bring about almost 2-fold increase of global carbon dioxide emission (10.4 billion metric tons in 2020) compared with the 1990 emission level. Major carbon emission will be produced in nine countries in Asia and Africa which are projected to have the largest national populations and rather low economic development. Coal will be the primary source of their commercial energy. Under such circumstances, global climate changes are inevitable.

An outlook on energy production in Poland and priorities of energy policy in the next 15 years is presented. The major needs are: (i) reducing the energy-consumption degree of the country economy and (ii) reducing the utilization of coal in energy production to approximately 55 % contribution level as well as a significant increase of natural gas utilization. Such policy would be in accord with the global imperative aimed at minimization of carbon and other pollutants emissions as well as with the European standards and with necessity of at least, partial protection of the country energy safety (due to coal resources in Poland).