

## **Possible world production of fuel and metallic minerals by 2025 with new reserves compensation**

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A balanced human development is impossible without equivalent provision with energy (E) and metals. Fuel minerals (F) play a leading part in energy production. Fuel production dynamics is proportional to the growth of population (N). Each ton of produced fuel accounts for a certain amount of mined metals (M). Possible world F production by 2025 is estimated from N dynamics while an equivalent production of main metals is determined from M value. The maximum forecast shows the following rates of production by 2025 as related to 1995 values (1995: 1950 in parentheses): total F 2.0(4.0), oil 1.8(5.3), gas 2.6(8.0), coal 1.5(2.0), bauxite 1.8(15.0), PGE 2.0(13.0), Mo 1.9(6.9), Ni 2.0(5.6), Cr 1.8(5.5), Cu 1.8(3.9), Fe 1.9(3.3), Zn 1.6(2.9), Ag 1.8(2.1), Au 1.7(2.3), Mn 1.1(3.7), Co 1.8(1.7), Pb 1.5(1.3), Sn 1.0(0.8). Thus, the initial reserves (1995) of oil, gas, zinc, silver, gold, lead may be completely exhausted by 2025. In order to retain initial (1995) reserves' provision of production by 2025 the following average annual rate (%) of reserves addition is required (actual 1970-1995 values are shown in parentheses): oil 3.1(6.5), gas 8.6(9.0), coal 0.01(2.3), Fe 0.1(3.3), Mn 0.01(17.1), bauxite 0.1(50.0), Cu 5.4(8.7), Ni 4.2(0.5), Pb 2.3(5.4), Zn 5.7(11.5), Sn 1.0(9.5), Mo 2.3(5.2), Co 0.01(16.8), Ag 7.0(9.6), Au 8.0(4.5), PGE 0.7(27.3). The above data point to the need of timely removal of geology from its current state of "punishment for success", for the good of the balanced development of civilization.