

Energy supply strategies in XXI century

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The XX century was the century of continued growth of energy production and consumption. On the other hand in the XXI century the mankind will be seeking for the strategies of energy savings and use of renewable sources of energy.

A challenge for a physicist could be to develop a unified theory of energy production, energy transfer and energy consumption but such a theory is in a seeding state.

What questions could be answered now? These are:

i) What are the deposits of hydrocarbonic fuel – coal, oil and gas in the world and how these deposits are distributed among different geographic regions and countries?

ii) What would be the forthcoming dynamics of consumption of fuel?

iii) Which measures could be undertaken in order to reduce energy consumption?

The answer to the first question is extremely uncertain. The reasons are: some data in particular countries are secret, some data on the deposits do not include estimates for the price of the fuel, some data are extremely unreliable. Here are examples.

i) The data on oil deposits in Russia are secret and only the minister Khristenko may expose them in the open press.

ii) Some companies (like British Petroleum) claim that Canada is the second larger owner in the world of oil deposits. However, these deposits are so far in the north that the use of them is very problematic.

iii) Venezuela claims that there are around 230 bil. barrels of oil under Orinoco river but this seems far from being fully true.

What is true that is the absence of any really giant deposit of oil found during last 40 years outside the sea. The other reliable truth is that in 15 years the United States and Mexico will not have any significant resources of oil.

Since the prices on oil will constantly grow (in spite of the statement of Russian minister Kudrin), new energy resources will be attracted to public use. These are renewable energy resources, hydrogen and biological fuel. However simple estimates show that they can cover not more than 1/4 of today's demands.

Hence, the humanity needs to diminish energy consumption in different fields. The use of economic car motors can give 1/3 of economy in transportation and the use of public transport instead of private 1/3 more. House heating is extremely non-efficient in many countries including USA and Russia. In Russia we lose more than 1/3 of heat in the pipes and more than 1/3 of heat because of the absence of strict heat regulations in the building industry.

The more will the scientific community speak about energy problems the easier will be the transfer to a new reality in the forthcoming future.