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A Non-Implicit Luxury. What 'Energy Security' Really Means¹

Summary: The developed world lives in comfort, having sufficient electricity, heat and fuel. However, the other four fifths of humanity live either without electricity altogether (almost half of the developing world), or with an irregular electrical power supply. The EU and in fact the entire West have to realize that current comfortable quality of life is unsupportable unless new technologies replace fossil fuels in the nearest decades. Without new sources of electricity (non-coal based) and new types of propulsion (non-oil based) the Western countries will be faced with a simple dilemma: either they will increase the efficiency of their economies (in order to import ever more expensive fossil fuels), or they will have to let go of their requirements necessary for an adequate lifestyle.

The basic situation is simple, easily describable – but not spoken of very much. The developed world, where we also belong, lives in comfort: we have sufficient electricity, heat and fuel. The other four fifths of humanity live on another planet. Either without electricity altogether (almost half of the developing world), or with an irregular electrical power supply. Either completely without transportation vehicles or with decaying busses which we wouldn't set foot in.

¹ The text represents the personal opinions of author, not those of the Ministry of Foreign Affairs of the Czech Republic.

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The Poor Want to Become Rich

Of course people from the poorer parts of the world want to have a better life – and they usually see the television, refrigerator, computer, their own car, a house with air conditioning and other technological achievements (which we today perceive as our natural right) as an inseparable part of progress. Theories about ‘third-world’ inhabitants taking a lesson from our ‘dead end of civilization’ and deliberately opting for a different ‘energetically less-demanding’ development route are just wishful thinking. So far, all the incoming data from the countries catching up to our level of development show that the present *Homo sapiens* measure progress in units of things, rather than in thoughts. Cellular phones may possibly be the best indicator of these aspirations. In the year 2006, 95% of Japanese households and 93% of Chinese households had a cellular phone;² even though the difference in the purchasing power of these countries still remains enormous. Ownership of cellular phones is steeply increasing even in the poorest parts of the world. In Africa it should double in the years 2007 – 2011 to 31%.³

It can therefore be to no surprise that energy production and consumption in developing countries is increasing dramatically – no international energy conference is complete without someone mentioning the fact that in 2006 China opened a new 1000 MW power plant every five days. A simple statement that between 2002 and 2005 China added to its power network an output equal to the one of Japan, is understandable even to non-specialists.⁴ In its newest report the *International Energy Agency* (IAE) attributes almost half of the world increase in energy consumption to just two countries, China and India.⁵

But the hunger for sources of energy is not restrained to Asia. Africa, mainly its Sub-Saharan part still bears the greatest ratio of ‘energy poverty’. Almost 70% of the inhabitants of the African Union do not have electricity; the ratio of households without electricity rises to over 80% when South Africa and the northern belt of Arab countries are deduced.⁶ To illustrate the difference between our part of the world and Africa – one example: the Czech Republic with a population of 10 million has produced 77,8 TWh of

² Taken from the *Ipsos Insight*, The Face of the Web, 2006.

³ African Mobile Market Forecast (2007 – 2011), RNCOS, 2007

⁴ *World Energy Outlook*. (International Energy Agency, 2007).

⁵ Ibid.

⁶ Personal interview with the representatives of the *African Union*, Summit EU-Middle East-Africa. Sharm El-Sheikh, Egypt, November 2007.

electricity in the year 2006;⁷ Nigeria with around 150 million inhabitants produced approximately 15 TWh of electricity in the same year.⁸ In other words – every Czech person is supplied with 75 times as much electricity as a Nigerian citizen.

The term ‘energy security’ is unequivocally perceived from China to Nigeria: how to provide the basic conditions for the development of economy and to bring at least minimal comfort to citizens. The building of new power plants is therefore a priority of the governments in developing countries; it has to be if they are to meet the expectations of their citizens at least partially. Our appeals to the poor countries to prefer ecological and renewable sources of energy are being ignored, and rightly so; these are rich men’s choices, not theirs. That is why 90% of the new power plants in India and China are coal power plants, often based on old technologies. Fossil fuels – mainly coal and oil – were the backbone of the economic miracle in the West; the countries of the South are heading in the same direction.

The Rich Want a Common Good

The developed world has other concerns. Reliable energy and fuel supplies are considered to be automatic; ‘energy security’ is perceived as a set of provisions to ensure the uninterrupted supply of energy for further growth. While the attention of developing countries is fully focused on building new capacities and acquiring necessary resources at the same time, the West hasn’t clearly decided what it precisely wants. That is why it is startled by the penetration of China into Africa or Brazil or the negotiations on a gas cartel between Russia, Iran and Algeria; its attention is elsewhere. In the past few years its focus was on the environment, especially on the subject of ‘climate change’. Even though in the European Union itself – despite many proclamations – energy consumption is growing, we don’t talk about the need to build new power plants to ensure our welfare; we talk about the melting of icebergs in Greenland.

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⁷ Data of the Ministry of Industry and Trade of the Czech Republic, 2007

⁸ IAEA, 2007; data is incoherent; the page states a number of different figures for the years 2004 and 2005. The cited number of 15 TWh is a median figure. Details at: <http://www.iaea.org/inisnkm/nkm/aws/eedrb/data/NG-elp.html>

To ponder about risks that future might bring is the luxury of the rich; the poor have to worry about heating for tonight. Sadly, the discrepancy between the political ambitions declared by the West and the real needs of the developing countries is growing into absurd proportions.

Let's take the energy policy of the EU as an example. It proclaims three priorities:

1. the reduction of CO₂ emissions;
2. the support of renewable sources;
3. saving primary energy sources especially by the means of higher efficiency.

These three priorities have the political support of most of the member countries – and it will remain so in the near future. So far their impact on the life of the normal population is bearable (like in the case of the increasing price of grain and other groceries, due to their use as bio-components in fuels). The real moment of truth will present itself once we calculate the cost of all the proposed steps. For example, it is estimated that the yet unknown technologies of the so called emission-free burning of coal⁹ will have a 20 – 30% lower energy efficiency¹⁰ to standard processes and they will cost 50% more than present technologies. In other words if today India was building a 1000MW power plant for 1 billion dollars, we want her to build a 700MW power plant for 1,5 billion dollars instead. I wouldn't want to be a diplomat presenting such a proposal to the government in New Delhi or Beijing.

Steps towards the reduction of CO₂ are only meaningful if they are undertaken on a global scale. The world coal consumption is to increase by 74% to the year 2030¹¹ and should represent 28%¹² of the primary consumption. We are therefore not talking about one power plant but thousands of similar projects.

Our Real Needs

If the governments of the West truly perceive climate change as the greatest present threat to our planet, they will have to put their wallets where their mouths are. And I am not sure how EU citizens would accept, for example, a

⁹ The completely emission-free burning of coal is still out of reach of current science. The newest technologies put the level of remaining ash at 0.25% of the initial mass – depending on the type of coal.

¹⁰ These concern energetically demanding processes: the gasification of coal, high-temperature burning of coal etc.

¹¹ From 114,4 in the year 2004 to 199 trillion Btu. *World Energy Outlook*. op. cit.

¹² Ibid.

proposal to assist the developing countries with billions of Euros for cleaner technologies.

It would be a moment of truth: our current pleasant quality of life is unsustainable unless we discover new technologies to replace fossil fuels in the nearest decades. Their supplies are final and their price is growing with their dramatically increasing consumption. Without new sources of electricity (non-coal based) and new types of propulsion (non-oil based) we will be faced with a simple dilemma: either we will significantly increase the efficiency of our economies (in order to import ever more expensive fossil fuels), or we will have to let go of our requirements necessary for an adequate lifestyle.

Just for illustration: the proportional consumption of oil in barrels for 1000 inhabitants is: 69 in the USA; 32 in Germany; 20 in the Czech Republic; 13,6 in the Slovak Republic, but only 4,9 in China; 2,7 in India; 2,1 in Nigeria and 0,12 in Congo.¹³

We're having a good time. The sooner we realize this, the better.

¹³ *CIA World Factbook*. CIA, 2007.