

The concept of energy security in the light of global security

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According to a number of authors, the definition of energy security is related to the category of “macro-level security.” This means that definitions – even if they occasionally include the attribute “global” – can be connected to the security of energy supply and satisfying the energy needs of a given state or country. Nonetheless, energy security is a global problem, and it is being recognised by politicians as well, as guaranteeing energy security requires global cooperation and assistance. As a consequence, it appears to be a must that energy security be given a broader definition than the one in use at the moment; that is, in a way that it would suit global relations. According to the working hypothesis of the author, the solution to the problem may be found by expanding the concept of society's needs. In the light of this approach, security may correlate with a certain degree of balance between proportionalities, which are needs realised by consumption, and disproportionalities, i.e., unrealised needs. If the notion of society's needs can be expanded in global relations, security, together with its energy dimension, will be interpretable in a novel way. The author is convinced that the clarification of basic concepts outlined above is indispensable for the solution of the problems related to energy security that mankind is about to face.

1. Introduction

It has become generally accepted that energy security is a global problem. No state, not even one that is among the strongest ones, is capable of guaranteeing the satisfaction of their own energy needs. The European Union as an international institution cannot guarantee the smooth operation and security of its energy supply via the cooperation of its member states either. Also, there are serious difficulties concerning the ability to cooperate at a wide, international level. The recently evolved financial-economic crisis has revealed a number of problems concerning cooperation. This lecture intends to contribute to strengthening the theoretical principles of problem solving, principally by approaching some new dimensions of the concept of energy security.

2. Energy security – economic security

Those who define the concept of energy security in a narrow sense tend to concentrate on the “security of supply”. Thus, they focus mainly on the security issues concerning the access to the energy sources, transport routes, power plants, etc. This aspect is reflected in NATO’s approach as well (Shea, 2006), which, being a military-political organisation designed to defend security, finds its own mission in guaranteeing the security of supply routes, such as oil and gas pipelines, maritime transport.

The concept needs to be defined in a broader sense in order to prepare appropriate decisions and to theoretically and methodologically substantiate the problem solving methods concerning energy security. Still, these days there is a massive barrier against the possibility of a global interpretation of the concept of energy security. The essence of this barrier lies in the fact that security is a systemic concept, and it may only be used in relation to existing factors created as a system. Still, it is not timely for global society and global economy to be defined as a uniform system; it may be presumed that this is not possible at the present level of recognition. One may find attempts with the promise of possible, forthcoming results in the field of research focussing on defining the concept of a global information society (Nagy, 2000, 2007, 2009).

As a result of what has been mentioned above, the concept of energy security will first be analysed in the light of macro-level security, which is more profoundly substantiated than global security; then I will return to venturing a global interpretation. The core element of macro-level security is economic security. Military security and political security also emerged as independent categories for the first time, followed the appearance of the concept of information security. This is followed by the “separation” of energy security. As a result of the development, a tetrahedron structure has developed, in the centre of which economic security can be found, and political security, military security, information security and energy security can be found at the apices of the formation respectively. Revealing the relations between them and the connections mediated by these relations seems to be accelerating, due to the development of science. Henceforth, I would like to concentrate on the connection between economic security and energy security, and I will attempt to provide the basis of a global interpretation based on the analysis of this connection.

Economic security can be described as the totality of the prerequisites to sustain the “normality” of a given national economy. “Normal existence and functioning” in an economic sense is taken to have the same meaning as “normality” introduced by János Kornai in his *The Economics of Shortage*¹. Economic security is a set of conditions, a

¹ “Its content may be apprehended without a precise definition. There is a given system, whose external circumstances as well as internal behavioural regularity are more or less constant. “Normality” may be referred to as the persistent steady state, or the “unalterable”, regular values of the key economic variables of this system. Minor, internal or external disorders divert the values of shifts from what is normal, but this “normality” expresses the dominating tendency along deviations... We must get accustomed to not relating any uttered or unuttered evaluation or association to the expression of “normality”... The statement that an actual system is in the state of normality is neither appraisal, nor relegation; it is neither condemnation, nor acquittal. We are saying neither more, nor less than the following: the system operates on the basis of its

complex totality of the internal and external relations of economy, and either the availability thereof enables the key economic status variables to persistently remain within the range of tolerability that is typical of normality, or the system is able to reset them by means of its automatic mechanisms.

Here I need to highlight the importance of the dynamic interpretation of “normality.” From an internal aspect, this is also emphasised by the following quote: “the norms that play an important role in the regulation as well as the ranges of tolerability are historically determined societal formations, which undergo alternations in parallel with the more fundamental changes of the system” (Kornai, 1982, 70).

The dynamic interpretation with respect to global security may be based on the following: “... from the aspect of any country, the possibilities of developing and exceeding the given socio-economic status also needs to be incorporated in the concept of security, and clearly this is the basic reason of regional conflicts, and this is summarised in a global conflict” (Agh, 1986, 16).

The notion of security includes not only the conditions of conserving normality, but also the possibility of a “normality shift” and its implementation in due time. As will be seen, in the field of security, and more specifically, in that of economic security, the core problem is centred on how to resolve the contradiction between conserving normality and changing it.

I will relate the concept of normality to the structure of the needs² that are realised by consumption. Economic normality may be characterised as a “certain degree” of concord between the conditions on production and consumption realised by production and the needs realised by consumption. This concord may be the balance that “materialises as the satisfaction of actual needs”, as the apparent form of proportionality; still, it may be the system of particular disproportionalities as well. The system of given proportions appropriate for balance and actual disproportions corresponding to imbalance is the quantitative manifestation of balance and imbalance. It must be mentioned that the balance that is realised qualitatively characterises the overall balanced status of a nation’s economy. Nonetheless, proportionalities and disproportionalities can always be regarded as particular, quantitatively definite coherencies of reproduction.

When normality is said to be characterised as a “certain degree” of concord between the conditions on production realised by production and the needs realised by consumption³, this “certain” degree may be connected to the particular coherencies of the quantitative definiteness of reproduction. The formation of the “degree” may

own, internal nature. During the scientific analysis of a system, it is indispensable to understand what the normal values (or normal temporal changes) of key variables are.” (Kornai, 1982, 64).

² Needs are objective phenomena of human society as determined historically, which simultaneously emerge as the impulses and (direct or terminal) goals of production” (Szabó, 1985, 22). “... as there is no demand on its own, since it is always concretely materialised, it is not possible that all of the types of needs would perfectly be satisfied (saturation)” (Szabó, 1985, 23). Effective needs can really be satisfied, because production factors, structures are adapted to needs? No! This is also due to the adaptation that needs undergo in favour of production conditions and inputs” (Szabó, 1985, 139).

³ We should take into consideration that „az anyagi szükségleteket mennyiségileg csakugyan aligha vagyunk képesek kellő pontossággal ábrázolni, kivált, ha saját szférájukon belül próbáljuk őket megragadni”. (Szabó, 1985. 23)

originate in the temporal changes of interactions of particular, quantitatively determined coherencies. The exact proportions may differ from proportionality criteria after these interactions and changes, just as much as temporary disproportions oppose proportionality balance requirements. This is so, because proportionality is a law of tendency, as it shows a tendency for taking the will of production to structurally satisfy needs into consideration only at the expense of stability and proportions, on a par with economic cycles.

3. Normality shifts and economic security

The economic literature constrains the conditions of normality shifts to the designation of new quality. In my opinion, this new quality may be connected to the unique structure of invisible and virtual needs realised by consumption.

A favourable structure (or “constellation”) of invisible and virtual needs realised makes normality shifts possible, facilitating the switch to a growth path with higher levels of efficiency. The purposeful development of such a structure is debilitated by, on the one hand, the recognisability of needs, and on the other hand, the danger of the formation of chiefly or even completely unforeseeable disproportionality structures. Danger means here that the unfavourable formation of disproportionality structures leads to a stage where normality shifts can also occur, but the direction thereof is unfavourable: economic growth falls back to a path with lower levels of efficiency. As a consequence, this efficiency deterioration leads to the overall decrease of the levels of realised needs and to a situation in which the likelihood of further negative normality shifts can be much higher. In the end, the whole economy might collapse, which involves catastrophic effects pertaining to the whole society.

The most endangered stage of economic development is when a normality shift occurs. A normality shift can be “induced” by the structure of invisible and virtual needs realised by consumption. A particular constellation of invisible and virtual needs realised by consumption enables a novel resource to be used, such that the structural transformation taking place as part of the dialectic interaction with the resource is its prerequisite as well as a result. These structural transformations lead to the emergence of new quality, which is materialised in a normality shift. Switching abruptly to a novel growth path can occur only if new economic relations have developed a constant, full-grown form.

4. The broader sense of energy security

If we extend our macro level approach to a global level, we can safely say that the concept of global security can be defined as a dynamic equilibrium of the proportionate and disproportionate (in other words, satisfied and unsatisfied) needs of humanity. It would be tempting to say that global security is the sum of the conditions required for the maintenance of the normal conditions of the global economy, but global economy cannot yet be defined as a system, for no such system has been developed so far.

If we consider the concept of energy security from the aspect of global security, we will become aware of certain aspects that are not apparent at the macro level. These aspects are mainly related to the possibility of the future satisfaction of human needs.

The most basic example for the above is the depletion of certain energy sources, such as oil, coal, etc. Another, more complex problem is presented by the environmental effects of the satisfaction of our demands for energy. At a macro (nation state) level it is possible to buy and sell carbon dioxide quotas, but that in itself will not increase the amount of resources available at a global level. Problems related to the law of conservation of energy really become apparent only at a global level. One such problem is the constantly increasing heat load and corresponding carbon dioxide emission generated by power stations. Consequently, it is no longer enough to concentrate solely on the satisfaction of needs at a macro level; we should adopt a global approach. At the same time, however, our approach to problems related to energy security has not even reached the macro level, which is why the issue of energy security is basically regarded as the secure functioning of the supply systems by politicians and scholars of the subject alike.

Based on the above, the following points may characterise global energy security (that is, guaranteeing the “energy conditions” of the sustainable development among the relations of a global information society):

- A) The basic principle of the efforts to satisfy energy needs, as well as that of problem solving methods is the overall completion of the implications originating from the conservation of energy. One of the important results thereof is the requirement to continuously analyse the assurance of sustainability: energy needs must not be satisfied, if this risks forthcoming satiability or places it beyond possibility.
- B) The conditions of satisfying energy needs must be liberated from the domination of nation states as well as that of the market. Energy supply and distribution must be placed in the authority of a network of international institutions. This is the only way to ensure that the principle in A) above becomes fruitful. The institutional network⁴ will come into existence as the result of dense struggles among the relations of a global information society.
- C) In favour of what was mentioned in A), within the confines of the conditions outlined in B), energy needs must be handled in a unified system together with the needs related to consciously handling the “energy emission” originating in the “energy transformation” while satisfying needs.
- D) While satisfying energy needs and providing the conditions of satiation, it must be taken into account that to some extent needs are able to adapt to the conditions available for satiation, and that different types of needs may be able to transform into each other. With respect to the latter, by satiating energy needs in a virtual (future) range, certain insatiable effective needs automatically cease to exist.

I suppose that any research related to information security may be provided a qualitatively novel basis as well. However, these questions go far beyond the scope of this lecture. I am finishing my presentation hoping that my proposals may substantiate a new direction of talks and scientific discussions.

⁴ The first element of such a complex institutional network may be the global network of energy security centres (virtual knowledge centres on energy security); cf. Nagy, 2008.

Conclusion

At the micro level (energy suppliers, industrial and residential consumers), the concept of energy security is usually interpreted as the security of the supply systems. At the macro level, energy security is related to the existence of conditions necessary for the satisfaction of objective social needs (for example, access to energy sources, such as natural gas, oil, etc.). However, if we consider the concept of energy security from the aspect of global security, it will become apparent that we should also take into consideration the effects resulting from need satisfaction, which are primarily environmental in nature. If we choose to disregard these effects, the possible consequences can even be more dire than those of a nuclear catastrophe. Therefore, we need to adopt a global approach in order to guarantee energy security. Such approach will require a new culture of cooperation and the development of problem solving capacities based on qualitatively new foundations. The necessary conditions to meet such challenges will be provided by the development of a global network of energy security centres.

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