

Systemic and Psychological Barriers to Reducing Energy Consumption

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Synopsis

The barriers to reduction of energy consumption include: a lack of public awareness of the importance of the problem, positive association of the level of consumption with social status, and a lack of sufficient feedback between the amount of energy consumed and the costs of it.

Abstract

The authors distinguish and discuss 3 groups of factors impeding reduction of energy consumption. These are: (1) a lack of appreciation (by the users) of indirect negative consequences of an increase in energy consumption on a global scale; (2) a positive association of the level of consumption in general (and consequently, the amount of energy consumed) with social status; (3) a lack of efficient cognitive and financial feedback concerning the amount of electrical energy consumed, resulting from the specific nature of this product. The authors suggest that the most promising possibilities (not requiring high investments) lie in improving this feedback, that is, by directly informing users about the amount of energy consumed and the costs of it.

The aim of our paper is to discuss three groups of factors impeding reduction of energy consumption on a global scale and to stress the complex nature of their systemic conditions. In our view, all important conditions, if we consider them genetically, have complex nature (social-economic-cultural), and thus are systemic. Considering, however, that all decisions concerning the consumption of energy are made by people (individually or collectively) based on of available information and subjective probability of expected consequences (immediate and delayed) - the problem has also psychological facets. Therefore, it is worth considering the problem simultaneously in two complementary aspects: objective systemic conditions on one hand, and subjective decisions of energy-users and psychological functions of their behaviour, on the other.

One can distinguish three groups of factors, which - in our view - have important influence on the level of energy consumption in a given community: (1) not noticing or not appreciating (by individual users) the importance of problems resulting from the increase in energy consumption on a global scale; (2) positive correlation between the level of consumption in general (and thus, indirectly, the level of energy consumption), and social status or prestige; (3) a lack of sufficiently efficient cognitive and financial feedback between the amount of energy consumed and one's direct costs and (delayed) social and environmental costs.

1. The Lack of Public Awareness of the Importance of The Problem

Generally, it seems that the problem of negative consequences of the increase of energy consumption has not emerged as an object of public awareness yet. It has not become a public issue in the sense that it is not present in the awareness of ordinary people, that is, individual energy-users. There is a huge gap between the awareness of experts and the awareness of ordinary energy-users. In Poland this assertion seems to be appropriate. One can point to several causes of this state of affairs:

- (1) Thinking in global terms, and especially in the terms of a closed system and the limits of energy resources as well as the costs of utilizing alternative energy sources is rare among average energy-users (Boulding 1970).
- (2) Even in the case of people who are acquainted with the problems of degradation of the natural environment, it is far more difficult to see the indirect connection between, e.g., the level of electrical energy consumption and the state of environment, than it is between the amount of rubbish and waste “produced” and environmental degradation.
- (3) Cognitive processes and opinions of individuals are based rather on relative than on absolute frames of reference. Because of this, the signals which attract attention on a social scale must usually be very striking and drastic changes (and therefore perceived by everyone). These changes might include:
 - a) more and more frequent interruptions in the supply of electrical energy, gas, coal, or petrol - it is less important whether they are caused by natural disasters, strikes, economic or political crises;
 - b) radical increases in prices of basic energy sources, that are not proportional to increases of prices of other goods and services;
 - c) actions (or events) which are intentionally planned and have very widespread social effects. By analogy to other actions with a global scope (such as the International Day of Cleaning the World), we can imagine a similar action such as turning off the supply of electrical energy for several (or more) minutes in the whole country, or, even better, in many countries of Europe or the whole World.
 - d) moreover, the changes (that is, increases) in energy prices (even if they are high) are positively correlated with increases in prices of other goods and services, because energy prices constitute an important part of production costs of any goods and services. Thus, the changes, are in public awareness interpreted rather as financial trouble (an increase in the cost of living), than as an “energy problem”, or a global and ecological problem.
- (4) Almost all commercials which persuade us to buy “always better” (but not necessarily needed) things, and thus to increase our consumption, regardless of their exact content and particular form of persuasion, send the same message: consumption is good and desirable. Moreover, this meta-message harmonizes with the traditional view of economists, namely, that an increase in consumption contributes to prosperity, because it increases supply, creates new jobs and constitutes a necessary condition of economic growth, which is often identified with the standard of living. In this situation, it is not difficult to come to the conclusion that an increase in consumption in general (and, as a consequence, consumption of energy as well) is a “public duty” of citizens, and those who consume most deserve to be called “benefactors of humankind”.

In this context a question arises: which governmental and non-governmental institutions, or what kind of lobbies, would be able to counterbalance the indirect message of all commercials, by a systematic and equally convincing broadcasting of messages that would suggest a reduction of consumption, at least in the case of highly energy-intensive goods or services? For instance, is it in the interest of companies producing and supplying energy to work to decrease demand for their products? Can such associations as the Customers Rights Association, even if they are eager to, be as persuasive as the majority of manufacturers advertising their new products, and can they spend comparable amounts of money on anti-commercials or educational programmes? In other words, which institutions are able to promote, with the efficiency of the advertisers, the proposal expressed by Nørgård (1995): “buy less, do less, do it slower and enjoy life more”?

2. Positive Association of the Level of Consumption with Social Status

Social scientists have known for a long time that each public behaviour (in the presence of any audience) plays a communicative role and is a way of social self-presentation (Knapp 1996). Through channels of non-verbal communication, the information is conveyed about one's attachment to a particular social group and about one's position and social status. In a society with an inclination to consumption, one's possessions are symbols of social status. When we buy new, luxurious goods and prefer an expensive lifestyle, we in fact pay for the symbols, we "inhale symbols" (Scherhorn 1993). The symbols used in the process of non-verbal communication can include: place of living, house size, means of transport used, kinds of sports played, clothes, cosmetics, jewellery, household appliances (Saddala and Krull 1995), and the level of consumption in general, and as consequence, the amount of an energy and other resources consumed (Mudyň and Ryzak 1996).

The most essential fact is that in the economy-dominated, contemporary Western culture, the level of consumption has become the most common criterion of "group ranking". Competition concerning the level of consumption has become something like the most universal form of the "rat race", and an equivalent of natural selection - the weakest drop out, the strongest take privileged positions in social hierarchy (Mudyň 1967). Looking at the issue from the perspective of sociobiology, one can find a rational core of this culturally approved procedure. In the "competition through consumption" (as in the case of any other sort of competition within a species) one can find the symptoms of self-regulation of the species as a whole, which, if the environment or other species do not exert any pressure, organizes "competitions" for its own members, which in turn forces mobilization and practising skills of various kinds. This increases the likelihood of this species' survival in the case of an emergency or unexpected deterioration of the conditions of existence in a given ecosystem. Perhaps, when we envy and mimic those, who possess more, we in fact express our appreciation and admiration for their competencies.

Further in this case the relativity of frames of reference that people use is visible. According to Duesenberry's thesis, which was formulated in 1949, satisfaction derived by consumers from the goods used is inversely proportional to the perceived level of consumption of other people they compare themselves with. In contrast to egalitarian ideology stressing one side of the coin, people try not only to be "equal", but rather "more equal". Strictly speaking, those who feel discriminated try to catch up with those they regard as privileged, whereas the latter prefer full freedom and struggle to become *primus inter pares*. Shortly, taking into account the biologically-conditioned mechanism of competition within a species, it seems that it would be much easier to persuade people to compete with one another in reducing consumption than to persuade them to consume "the same amount" and try to replace all forms of competition by common co-operation. From the point of view of ecology and energy saving, it would be certainly good if the reduction of consumption was socially rewarded and, (consequently), appreciated and desired by common citizens. One can imagine, at least in the form of a positive utopia, that both governments and international institutions systematically grant diplomas, medals, and prestigious honours for good results in the minimizing of energy consumption, and a situation where the prerequisite of applying for high public and state positions was previously submitting an "evidence of poverty", or a proof of "low level of consumption".

It is worth mentioning that the products and services offered by the so-called free market are, to a large extent, substitutes for universal human needs, and consequently these needs are still not satisfied. As a result, striving for further consumption of goods available on the market never weakens; consumption does not have any natural upper bound, the surpassing of which would mean that the needs of a given group of people have been satisfied. It is partly due to the fact that "activity" is synonymous with "life", and ordered activity requires subsequent goals and additional unsatisfied needs. One could say that beside rather specific physiological needs, people have also a meta-need, that is the need to have a certain number of unsatisfied needs. Goods and services offered by the market simultaneously satisfy the already existing needs and create subsequent needs of instrumental or symbolic nature. Consumption is like some of the globally advertised soft-drinks, which while promising to quench one's thirst are actually increasing it. As a result, the consumer, no matter how hard he tries, is always thirsty and unsatisfied. (Podder 1996). This is reminiscent of the myth about Erysichton, who was punished for cutting down the trees in the holy grove of Demeter with an insatiable hunger that never could be satisfied (Graves 1955).

3. The Lack Of Sufficient Feedback Between the Amount of Energy Consumed and its Costs

One of the reasons impeding economical usage of electrical energy, is the lack of direct and systematic cognitive and financial feedback during actual consumption. The lack of sufficient feedback, that would immediately inform users about the amount of energy consumed, partly results from the particular characteristics of the product (electricity). It also partly results from the way we “buy” electrical energy, that is from the way we pay bills. It is also important, that electrical energy, being a product with strategic significance, is to a rather small extent subjected to self-regulatory mechanisms of the free market - the prices of electrical energy are fixed centrally. Individual consumers cannot choose a cheaper supplier.

In this context we should note something rather obvious - in contrast to the majority of other products, we do not buy electrical energy in a shop. Thus we cannot select more attractive offers, or negotiate the price. Moreover, although we consume it every day, we do not pay for it every day. As a result, it is relatively rare that we think about its price and the costs of it. It is worth mentioning that in research carried out by the Polish Ecological Club in 1996 in Cracow, Poland, which covered 270 households, it was established that only 31% of families were able correctly to name the price of a kilowatt-hour (personal communication).

We should also note that in contrast to many other products (including unprocessed sources of energy, such as coal), electrical energy does not have weight or capacity, that is, those physical properties that we can control continuously with our senses, i.e. visual and kinesthetic signals. This means that when we try to save electrical energy we are in a different, more difficult cognitive situation than in the case of coal and many other consumer goods. If, for example, we use coal to heat our flat (instead of electrical energy), we can involuntarily and effortlessly observe (immediately) how much is gone, and how much we still have. A user of electrical energy usually does not get (involuntarily and systematically) this sort of information. He also cannot store electrical energy and “save it for a rainy day”. A further difference is that in the case of coal we first pay for it, and then use it. In the case of electrical energy the sequence is reversed - “we use today, we pay tomorrow”, or rather in a month. From a psychological point of view we deal with the situation that makes saving more difficult, because the payments, which (in behaviouristic terminology) constitute a negative reinforcement, are very much delayed in time. Thus, according to the law of effect, its influence on the previous behaviour is minimal. Here we deal with a situation similar to the situation of using credit cards - we buy (and consume) today, we pay in the distant future. It is well known that using credit cards does not ensure financial discipline and leads rather to extravagance than to saving. The conclusion follows that saving habits, appropriate for other products, are not easy to transfer to the consumption of electrical energy.

Payments that are delayed in time also seem to be a negative factor, reducing the amount of cognitive and financial feedback, and undermining the feedback's efficiency. Let us illustrate this assertion by referring to the situation in Poland. The amount of periodic payments for electrical energy consumed in the current year is based, in Poland, on the expected level of consumption, which is fixed on the basis of the amount of energy consumed in the previous year. For instance, if in 1995 a user consumed energy in the amount of 1200 ECU, this means that in the following year, 1996, he should pay a fixed amount every two months, which results from the division of the previous sum into six 2-months installments, that is, 200 ECU every two months. If at the end of the year it turns out that during the whole year he used more than predicted - he must pay the difference. However, if he used less than he had paid for, the electrical company will take this difference into account in the first installment of the next year. It should be added, however, that there has been progress - the bills are still paid on the basis of predicted energy consumption, but are paid monthly.

This method of paying for electrical energy illustrates nicely almost a complete lack of feedback between the level of energy consumption and the amount of costs that are borne. Within one year one can find at most two instances of feedback, that consist in the correction of payments for the next year, and in acknowledging overpayment or underpayment. We claim that this does not help to control cognitively the level of energy consumption, nor does it encourage discipline of its consumption.

4. Conclusions

- 1) One of the important causes of excessive energy consumption is - according to the authors - the fact that people do not perceive indirect connections between the growth of production and energy consumption, on one side, and the degradation of natural environment, on the other. This should be countered by educational programs systematically broadcasted in mass media. These programs should be sponsored by government institutions primarily.
- 2) Undoubtedly, the amount of consumed energy is connected with the consumption-oriented lifestyle that prevails in our culture. What is worse, there is a strong connection between the level of consumption and the social status. Therefore we need alternative systems of values - such that would bind social status with conscious efforts to limit the level of energy consumption. As far as the reduction of energy consumption is concerned, the ideal system of values would require that one seeking to improve one's social status should decrease the consumption of material goods, and in consequence - the level of energy consumption.
- 3) It seems also that through better information and systematic monitoring of the amount of electrical energy consumed, one could achieve a substantial reduction of electrical energy consumption. We think that this can be accomplished through both technological support of immediate information concerning the amount of energy consumed and providing consumers with detailed information (in the form of diagrams, graphs, etc.) on the amount of energy consumed in subsequent months or weeks. If in the case of biofeedback one can achieve, for example, a decrease of blood pressure, then in the case of "economical feedback" one can also decrease the level of electrical energy consumption. In our view this can be realized in many ways and with the help of relatively small financial resources.

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