

POLICY OBSTACLES FOR ALTERNATIVE AND RENEWABLE ENERGY IN AN OIL-STATE

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Abstract:

The factors inhibiting a major and global change in the price of oil on the world market are discussed. It is looked at the specific case of Azerbaijan and development of ARE in Azerbaijan. An analysis on structural obstacles to ARE in Azerbaijan is made.

Key words: alternative and renewable energy (ARE), Azerbaijan

INTRODUCTION

Following the volatile changes in the price of oil on the world market in the middle of the first decade on this century, and the concerns about the possible climate-change implications of the continued burning of fossil fuels putting more "greenhouse gases" into the atmosphere, there has been a surge of interest in the introduction and expansion of alternative and renewable energy (ARE) in many countries. Despite the perceived failure of the Copenhagen Conference on Climate Change in 2009, countries are proceeding with national policies. The UK, for instance, intends to produce 40% of its electrical energy this way by the year 2020, and has introduced a carbon-based budgeting system.

The problem is, however, not national but *global*, and those producing most of the carbon dioxide and other greenhouse gases are not necessarily those that will suffer most. The case of small-island, low-lying states such as the Maldives face possible obliteration and produce almost no greenhouse gases. This is a classic case of trying to tackle a global problem in a world made up of some 200 national sovereign states, often thinking first about their own interests or finding what they see as equity in a global solution. The contrasting perspectives of China and the USA are very significant in this regard. There is no executive global management system, and that is unlikely to change in the near future.

Other factors inhibiting a major and global change include:

■ The enormous amount of sunk costs and existing infrastructure built on the exploitation of fossil fuels. This adds an element of inertia to the present situation and distorts the economics of introducing new systems in a world equipped to run on such fossil energy. The introduction of ARE competes with exploration for more oil supplies, for instance in West Africa, the Falkland Islands etc, to keep the old system running at extremely low retail cost to the consumer.

■ The separation of the cost of finding, refining and delivering fossil fuels, and the costs of the damage done by their combustion (externalized costs) so this separates cause and effect.

■ The long-standing prejudice against the development of a nuclear option, with countries such as Bulgaria being forced to close down this option for some time even though it produced the great bulk of its electricity. This fear arises from incidents like Three-Mile Island and Chernobyl, distrust over assurances about safety and the problem of safe storage of nuclear-fission waste, which has a half-life of around 25,000 years. This prejudice is beginning to ease with the perception of the risks associated with the price volatility and possible consequences of a world based on fossil fuels.

■ Some skepticism about the nature of risk in continuing with the present energy-use model. There are well-organized campaigns, particularly on the net, decrying the "evidence" of climate change in general, and human causation in particular. This aspect was sharpened strongly by the revelation of "distortion of the statistics" by the Climate Research Unit at the University of East Anglia, which was providing key "evidence" to the Inter-Governmental Panel on Climate Change (UN) immediately prior to the Copenhagen conference. The public at large ends up confused and cynical about authoritative statements regarding climate change, especially as this same public would have to bear the immediate cost and changes of life-style commensurate with making the change to ARE.

■ Arguments about the costs of licensed technology enabling developing countries to make the change. Nearly all these licenses are held by rich countries.

■ The political process that has a much shorter time-horizon than science because of election timetables. In addition, the voting public tends to focus on immediate crises rather than preventative action. Legislators are reluctant to go against the attitude of their constituents, and that inhibits leadership with a long-term perspective. It is not necessarily the case, in the USA for instance, that the public sees the energy problem as anything more than "the price of oil" that has more to do with market manipulation than the issue of non-renewable fuels. The fix arising from this perspective will be quite different from changing the system.

Apart from these general issues, when we start looking at the specific case of Azerbaijan there is the additional complication that the economy is so

heavily dependent on the export of “traditional” sources of energy such as oil and natural gas. This situation is one that strongly supports the *status quo* unless there is a strong policy line to do otherwise—which there is. In a way, the income from traditional energy is, in part, dedicated to underwriting fundamental changes in the future of energy use in the country. We can consider the oil/gas-based option as the *default* option, and a planned development of ARE as a *strategic* option based on current revenue sources. However, as we shall see, it takes more than clear policy lines to make this happen, though the policy is an essential start. Otherwise it will be hard to avoid a *crisis management* option when the time comes and there is no option *but* to make the change. In this context the situation is confused by conflicting statements on how long Azerbaijan’s fossil-fuel resources will actually last—one suggesting we have already

passed the peak oil situation. Apart from anything else, the policy¹ and its implementation, require a very high degree of integrated activity, whereas governments are generally organized on *sectoral* or functional structures, making horizontal integration extremely difficult and encouraging rivalry. This, in part, helps to explain why the problem has been examined over and over by international consultants in Azerbaijan, often reprocessing the same data and saying the same things, but the implementation of these recommendations remained, for a long time, almost zero. The problem had been addressed many times, and unequivocal policy statements were made,

Elements of the “Dutch Disease.”

The revenue, especially from hydrocarbons, accrues initially to the state sector in terms of royalties, including fees for the passage of energy via pipelines over the national territory. Some jobs are generated, but relatively few directly in the context of the size of the revenue. The government, then, has a major task of “making the revenue work,” in terms of job creation, incentives, infrastructure creation and the like.

This situation has an in-built tendency to favor the big and quick fix—huge highways and public buildings, grandiose improvement of facilities, and the generation of endless bureaucratic “make-work” jobs. This works against more modest, and long-term options.

The capacity to spend is the capacity to inflate, which is something that Azerbaijan has tried to control with the State Oil Fund that sets money aside for the future. Nevertheless, unless this flow of money is regulated, it can lead to inflated currency values, a limitless capacity to import rather than produce, and a rush of money into project with limited real returns.

¹ There are policy statements concerning the ARE in the areas of Energy, Environment, Regional Development, Tariffs, and there are commitments under IRENA, Pipeline Agreements and CDM.

but little actually happened. Despite this, more reports were commissioned from international organizations to study the same thing. This is an important dilemma and needs explanation if we are to understand the needs of a situation that promotes *real* change.

So, the way forward, given the fact that the policy statements are dedicated to the development of ARE in Azerbaijan, the key question is “how do we make this happen?” This is a question of general concern to all countries, but becomes particularly difficult in countries that are, literally, floating on oil and gas. There are frequent references to the “Dutch Disease,” which is illustrated in the text box. Responses to this vary from Norway to Nigeria. But, at this stage, we should recognize that change in the direction of ARE *is* happening in Azerbaijan, note the creation in 2009 of a State Agency on Renewable and Alternative Energy between policy and implementation, that could overcome some of the administrative problems identified in this paper. The country needs to coordinate the different elements required to make ARE policy happen, (such as tariffs, incentives, popular information on the issue, etc), and also include the structure of the existing provision of domestic energy—particularly *Azerenergy* (which has very recently announced its own ARE program)².

The key to ARE is national *vision* that will guide policy and action, and this requires *leadership*. This vision counters the natural tendency in oil-states to do *nothing* but drift along as things are in terms of the abundance of fossil energy. Furthermore, the need for change cannot rely solely on science, which is constrained by what it can *prove*, but, instead, must consider the potential cost of doing nothing, and this requires *strategic thinking and risk analysis*.

Now we will consider some of the structural obstacles to ARE in Azerbaijan, though they are by no means peculiar to that country in many cases:

Sunk Costs in the Existing System: The current energy supply is dominated by *Azerenergy*, which is wholly-owned by the Government. It has built its infrastructure on the basis of subsidized supplies of gas and diesel from another State Enterprise, and so this has introduced a distorting factor in the “cost” of electrical energy to the main producer. ARE companies, and the government strongly favors the private sector in this area of development, have to deal with this challenge, at the same time as carrying enormous start-up costs. *Azerenergy* itself has some hydro capacity at present and has plans to expand into the ARE area (announced 2010)³. In

² For a much more detailed account of the situation in Azerbaijan see Baker, R. and Safarzade, E. (2009). *Azerbaijan Alternative Energy Sector Analysis and Roadmap*. (R-CDTA 7274). Asian Development Bank. The detail is to be found in this report. For this reason, the current paper assumes a more narrative form.

³³ *Azerenergy*, at present produces about 11% of its electrical energy from hydro, and about 1.5% of the country’s energy is ARE-based at the moment. The target is to raise

many ways, *Azerenergy* could look upon ARE from outside sources as competition to its profitability, especially as it has recently borrowed large sums to renew its existing generating capacity throughout the country. Their position has to be understood, and they are in no way against such a change, but they have debts to service and a commitment to the *status quo* in terms of new power stations.

Tariff and Loan Issues raise serious problems. The tariff charged by *Azerenergy* is around 5-8c against 20c in much of Europe, making it very hard to realize a return on the capital and recurrent costs of constructing ARE alternatives. This tariff is set independent of the company. At the same time, companies wishing to enter the ARE sector face serious problems with commercial loans which often have a 28% interest rate and a repayment time of five years. The one private venture developing on the Caspian coast has raised its funding privately in Germany with the assistance of its machinery supplier. If there is not an adequate prospect of profit, then the private sector cannot be expected to participate, and several ventures, including the Koreans, have pulled out. In Europe, for ARE to succeed it has been "kick-started" with government intervention in terms of tariffs, subsidies and the like (Germany, UK etc).

Costs, Returns and Benefits have to be understood. If we look at, for instance, the water-purification plants in the Kura Valley, we find that the benefits in terms of public health (parasite infections for instance) are enormous, as well as the convenience of having strategically placed standpipes around the settlements. The people are delighted and have written to the President to say so. However, these units, which are eventually handed-over to the municipal authorities, require electricity to run them, and the authorities have no way of recovering those costs from the users of the standpipes. Furthermore, there are technical problems and loss of service when the electricity goes off. So the authorities have no means of recovering the costs despite the benefits to the users. The government could use an equity and poverty-alleviation argument to underwrite the cost of transferring these units to solar power for the authorities in rural areas, but a private company cannot, since its bottom-line has to be profit. On the other hand, if the government *is* committed to the private development of ARE, then it can subsidize these initiatives under regional development policies, poverty-reduction policies etc. As mentioned earlier, subsidies are a common element in Europe in order to achieve a policy transformation for broad ecological reasons—and Azerbaijan is a signatory to the principal climate-change CO2 reduction agreements. Furthermore, for local companies to participate in this transformation, they need to achieve economies of scale allowing them to import equipment in sufficient quantities to achieve cost reductions. This is the principal factor holding back local companies at the

this to 8 – 10%. The potential is considerable for wind power along the, generally barren Caspian coast, and for solar in the Kura Valley.

moment. Consumers also require financial inducements such as tax breaks, to make the decision to switch to ARE.

Structural Issues of Administration. The energy sector in Azerbaijan is divided among many different agencies, though there is a Ministry of Energy. *Azerenergy*, Commerce, Environment, State Oil and Gas, the Foreign Ministry (for treaty obligations), and others have a role to play. However, it is very difficult to achieve the horizontal integration needed for a comprehensive policy to be made and to function. The energy “pie” is divided into its sectoral wedges, each focusing on its symptoms of the problem, rather than the problem at large. Recently, in 2009, a State Agency was initiated that will have responsibility for ARE, which is definitely a step forward. However, what mechanisms it has to effect an integration of the different elements of responsibility, and merge them into a cohesive plan of action will have to be seen. It is the same problem that was faced by Ministries of the Environment in many countries, since environment, *per se*, encompasses everything. They often do not have the authority to do anything unless there are stated (and legislated) targets, goals and objectives and they are empowered to see that everyone complies and cooperates. This is a political issue of executive importance, and the mere creation of the institution does not always mean that it can achieve what is needed.

If the government is committed to a target of around 10% ARE contribution, then it will need to empower the body in charge of this, have a program of directing fossil-fuel revenue into kick-starting the initiative and materially supporting the private sector, and working out a system of profitable tariffs. These are the factors that have resulted in so many consulting reports in this field having had, until now, little effect in the area of real change. What we are talking about here is a *methodology* to realize policy. There should be intervention to ensure that loans are made on terms that are realistic for the transformation to happen. There should be incentives for the public and business to start making the change. And, there must be some material consideration for the needs of the poor and disadvantaged both in terms of people and regions. Then the transformation can occur.