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EDITOR'S PAGE

ENERGY STRATEGY FOR ESTONIA*

The ENERGY BILL has passed the third reading in our State Assembly. According to §12 It.1 of this Bill, it is mandatory for the Government of the Republic to submit a LONG-TERM NATIONAL DEVELOPMENT PLAN OF FUEL AND POWER SUPPLY (let me quote: "... as a substantially important problem") to the State Assembly within three months from the effective date of the Law.

The backbone of such a plan is undoubtedly the energy strategy for Estonia and below the principles of this plan are presented.

Since the development plan will be submitted to the State Assembly for the approval, all presently planned issues of energy strategy must pass through a fine public and political filter beforehand. Already now Estonian energy problems are widely discussed in public, sometimes even neglecting the natural laws in the heat of argument.

I shall try to give an objective synthesis of the work of several organizations where I have been directly or indirectly involved in. Among this organizations are the Ministry of Economic Affairs, the Finnish Ministry of Trade and Industry, the Energy Working Group of FACTE and the Estonian Academy of Sciences, Ministries of Environment both of Finland and Estonia, SE *Eesti Energia* and other energy companies, the Tallinn Technical University, the Estonian Energy Research Institute, IVO, EstIVO. I have also contributed to the research programmes of PHARE, NIB, WB and U.S.A.I.D. etc. To some extent this article reflects also the subjective opinion of the author, but this should be quite relevant.

In mathematics a strategy means an instruction, which determines the behaviour of a player uniquely in any probable situation of the play. On the state level any economic and security strategy cannot be enacted so

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strictly and it is not even reasonable to do so, although it may seem an ideal to some members of the parliament. In fact some "playground" should be left for the tactics, i.e., for the government who must implement this strategy (if it is well reasoned) in unpredictable situations and passing more twisted routes.

On the state level two extreme starting points: **economy**, including reliability and environmental aspects, and national and political **security** influence the energy strategy.

The expenses on national and political security have no objective limits - the fear of citizens and its amplification or, on the contrary, its restraining is interwoven with the interests of businessmen who earn from the security expenses.

The possible principles of energy strategy in the form of theses for making up the development plan are:

1. Motor Fuels (Petrol, Diesel Fuel)

Motor fuels, i.e., petrol and diesel fuel are imported as refined fuels. Considering the security code of IEA, the EU and NATO, strategic security reserves are formed for emergency situations.

Explanation: In 1995 motor fuels made 13 % from the primary energy balance being 225 PJ or 62.5 TWh. No alternative for motor fuel supply is presently available. The domestic shale oil cannot provide sufficiently high quality motor fuel (except for gas turbines). The demand in Estonia of about 1 billion litres per year is several times below the level that could be an economic guarantee for an oil refinery in Estonia.

2. Heavy Fuel Oil (HFO) and Light Fuel Oil (LFO)

The demand of HFO and LFO is mainly covered with import and the domestic shale fuel oils while subsidizing lower sulfur content.

The security reserve is determined according to the IEA standards with the difference of import and export being in balance while equalizing crude oil fuels and shale oil fuels in the balance.

Explanation: In the energy balance of 1995 the share of fuel oil made 6 % or 618,000 t, including shale oil - 189,000 t. The export of shale oil to Denmark was 150,000 t. The net import for the determined security reserve is thus 618,000 - (189,000 + + 150,000) = 279,000 t.

3. Natural Gas

To set a target to link the supply of natural gas with the European gas systems and exploitation of Latvian underground gas storages for creating the security reserve necessary due to the unsafe supply from the east gas sources and also to explore possibilities for building a gas storage in South-Estonia. The government defines the amount of the mandatory security reserve according to the gas consumption pattern with taking into account the customs duties as an exceptional measure for covering the procurement and storage cost of the security reserve foreseen by the government.

Explanation: The share of gas in the energy balance was 11 % in 1995. The European Union where gas supply is available from different source in several regions, sets no requirements for the gas security reserve.

4. Oil Shale

The oil shale resources of underground mines and open pits are used according to the demand of the existing power plants, oil refineries and cement plants.

The environmental and resource charges in oil shale industry can be increased only with a special resolution of the State Assembly.

Land claim for mining new oil shale resources can be approved only in the former (before 1940) concession areas near industries for their technological use.

Explanation: In 1995 the share of oil shale in the primary energy balance made 62 %. The oil shale price has reached such a level where natural gas in large CHP plants, in particular when equipped with gas turbines, may yield less expensive electricity than in oil shale based Narva condensation power plants.

5. Peat and Wood

Production, transport and use of energy wood and peat must be considered as a supporting measure for the security of energy supply. These businesses can be maintained by soft credits, but not with subsidies.

Explanation: In 1995 the share of peat and energy wood in the primary energy balance was 8 % showing thus the payback of this type of primary energy locally.

6. Hydropower and Wind

The utilization of hydropower and wind power should be supported by soft credits and subsidies in places where electricity supply from the grid requires subsidization.

7. Power Plants

Energy supply to Tallinn should be based on natural gas high efficiency CHP blocks. For smaller towns peat and wood can be considered as alternatives.

In oil shale fired power plants the environmental emissions should be decreased and economy improved, first of all with the introduction of the new combustion technology, renovation of measuring devices and automatics, increase of the efficiency of turbines.

7.Transmission Network

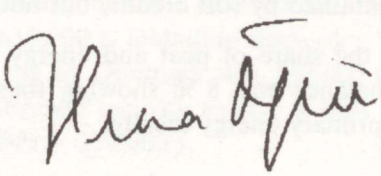
To set a target to link the electricity transmission network to the European electrical system and provide frequency regulation according to the modern requirements.

Top level higher education in energy subjects and scientific potential must be provided with the assistance of energy companies.

It is not proper to burden the national energy strategy as a document with a number of problems and details. In this case it will remind the mammoth directives of the party and government of the occupation period issued on growing maize, on energy saving, on alternative energy sources, etc.

To conclude some words about energy conservation!

Some energy strategists have mentioned repeatedly the high rate of energy wasting in Estonia where the energy cost per a GDP unit is three times higher than in the US. In fact, the reason is the rapidly shrunken GDP and inevitably high energy consumption rate in households due to our climate. Almost half of the used energy is consumed in our residential sector! And this means that energy conservation in the residential sector must be a notable component of the strategy.



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