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Comment on the Draft 2012 Integrated Energy Planning Report

1. Introduction

The Free Market Foundation (also referred to here as 'the Foundation' or 'the FMF') hereby submits its comments on the Draft 2012 Integrated Energy Planning Report, hereinafter referred to as the IEP.

The Free Market Foundation is an independent non-profit public benefit organisation founded in 1975 to promote and foster an open society, the rule of law, personal liberty, and economic and press freedom as fundamental components of its advocacy of human rights and democracy based on classical liberal principles. It is financed by membership subscriptions, donations and sponsorships.

Most of the work of the FMF is devoted to promoting economic freedom as the empirically best policy for bringing about economic growth, wealth creation, employment, poverty reduction and human welfare (including better healthcare, increased life expectancy, literacy and educational quality). As a think tank the FMFs fundamental approach to policy questions is consumer-based.

The foremost question the FMF asks in addressing any policy question, including the contents of the above mentioned IEP is, will the policy that emanates from this document be to the long term benefit of consumers and especially those who are the poorest and most vulnerable? Consumer satisfaction is generally achieved by an absence of barriers to entry into the provision of goods and services, allowing consumers a choice between the offerings of freely competing providers. The Draft Energy Plan will therefore be assessed to ascertain whether it is likely to result in the most beneficial conditions for energy consumers. Is the plan likely, as is its stated objective, result in security of supply of energy? Will it minimise the cost of energy, increase access to energy, and achieve the other objectives listed in the plan?

2. Description of a modern South African electricity supply industry

This document provides excerpts from the writing of the eminent economist Professor Friedrich Hayek to describe the impossibility, by inference, of obtaining positive long-term consequences from maintaining a centrally planned electricity supply system in South Africa (see section 4 – Critique of the arguments for central planning). It also provides excerpts from his writing on the role of freely formed prices in an economy, which if followed in the electricity industry would improve all aspects of the electricity supply system beyond recognition (see section 5 – The role of prices, rather than central planning, in directing economic activity). What is described here is a potential end state in the electricity industry in which electricity prices are the result of consumer demand in a competitive market for electricity. Such a market would have the following characteristics:

Establishing an electricity market

Establishing an electricity market, as was envisaged in the 1998 White Paper, is arguably the most important goal that government should strive for in its efforts to create an environment that will be conducive to the growth of a highly efficient electricity supply system In South Africa, that will ensure an adequate, efficient and reliable supply of electricity to support the rapid growth of the economy. A market should be considered that extends beyond the borders of South Africa to all SADC countries that have stable and reliable electricity grids. Establishing a functional market would require far-reaching reforms that place the accent on consumers being able to choose from a range of suppliers competing for their business, with the ability of consumers to rapidly switch with ease from one supplier to another. Electricity wholesalers are a vital component of a fully functioning electricity market. They smooth prices and source electricity for large users and retailers. The existence of fluctuating prices, including substantial variations for different times of the day, enables electricity users to save money by changing their consumption to times when cheaper electricity is available. This reduces peak loads and consequently the total generation capacity required. Given the structure of the South African electricity system and the absence of an electricity market, price differentials cannot be utilised as effectively to reduce peak loads.

Electricity generation

In order for an electricity market to function properly, there has to be an adequate number of competing generating firms offering electricity into the market. The 1998 White Paper described the intention of government to separate Eskom's power stations into a number of companies to introduce competition into the generation business. It would appear to be sensible to then sell some of these companies to further increase competition in the supply of electricity.

Access to the transmission grid

For real competition to develop it would be necessary to separate the transmission from the generation of electricity. While transmission and generation are carried out by the same entity, there is a conflict of interest which hampers the entry of competing generation firms into the electricity market. The ISMO Bill transfers the operation of the transmission system from Eskom to ISMO but not the ownership, which has the potential to cause friction between ESKOM, as owner, and ISMO, as operator. A complete separation would be preferable for purposes of the establishment of a smoothly functioning market. Until such time as the separation occurs it is vital that independent power producers should be encouraged to wheel electricity across the grid to customers.

Independent and reliable distribution grids

The management of distribution grids should be independent of the retailers of electricity if there is to be competition between retailers, with retailers paying for the use of the grids for the delivery of electricity. In New Zealand there are as many as nine retailers competing for business on a single network. Technology now makes such competition possible to the benefit of consumers. Currently there is a substantial backlog in the maintenance and refurbishment of the distribution grids. This problem could be resolved by contracting out refurbishment and maintenance to private firms, possibly on a basis of refurbish, maintain, and operate.

Reliability of the bulk power system

Consideration is being given to the potential for the establishment, in due course, of an SADC wide interconnected grid. In order to avoid potential political complications in ensuring the integrity of the grid (a matter that is entirely technical) the SADC countries should examine the manner in which the North American Electric Reliability Corporation functions. It offers an example of an organisation that is constituted to ensure the reliability of the grids across a vast area. Its responsibilities as described on its website are: "The North American Electric Reliability Corporation is a not-for-profit entity whose mission is to ensure the reliability of the Bulk-Power System in North America. NERC develops and enforces Reliability Standards; annually assesses seasonal and long-term reliability; monitors the Bulk-Power System through system awareness; and educates, trains and certifies industry personnel. NERC's area of responsibility spans the continental United States, Canada and the northern portion of Baja California, Mexico. NERC is the electric reliability organization for North America, subject to oversight by the Federal Energy Regulatory Commission and governmental authorities in Canada. Entities under NERC's jurisdiction are the users, owners and operators of the Bulk-Power System, which serves more than 334 million people."

The task of NERC is totally technical. Being established as an NGO with a Board elected by its members it avoids the political difficulties that could otherwise occur,

3. The absence of competition in the electricity supply industry is a fatal flaw

The absence of open competition in the generation and supply of electricity in South Africa is a flaw that receives no mention in the Planning Report. While all the developed economies and many of the developing economies of the world have, or are in the process of, introducing competition in all possible aspects of their energy industries, the report that has been issued for comment contains calculations going forward to 2050 that appear to assume, although the matter is not mentioned, the continuance of an Eskom state-owned vertically integrated monopoly in the generation and supply of the bulk of the country's electricity. If this reading of the report is correct, it is predictable that future problems with the electricity supply deficit (or high-priced electricity) will cost the South African economy billions of rand in lost investment and production.

There is no sound economic or any other reason for government to continue on the current path. An electricity environment in which independent power producers (IPPs) compete with Eskom for the business of consumers would be far superior to the current vertical-monopoly electricity structure. The problem for government is how it can introduce private generation capacity into the mix in a manner that will be of greatest benefit to consumers.

The 1998 White Paper that was adopted by government, but not implemented, set out the following goals that needed to be achieved to modernise the electricity sector:

- Giving customers the right to choose their electricity supplier.
- Introducing competition into the industry, especially the generating sector;
- Permitting open, non-discriminatory access to the transmission system.
- Encouraging private sector participation in the industry.

Let us compare those laudable goals with what has transpired during the past 15 years:

- Customers have no choice of electricity supplier and there appears to be no current intention to give consumers a choice as the only way to do so is to open the entire industry to competition under circumstances in which there is equality before the law for all participants.
- There has been no real introduction of competition into the industry as the suppliers of alternative energy are suppliers to Eskom and not competitors.
- Open, non-discriminatory access to the transmission system has not been available – if it had been, South Africa would not currently have an estimated 5,000MW supply deficit.
- Private sector participation in the industry has been actively discouraged and not encouraged as envisaged in 1998.

Private participation

Government can most rapidly create the environment necessary to create a market for electricity if it welcomes the participation of private firms in all aspects of the electricity business. There is no reason for government to incur further liabilities to increase the capacity of the electricity supply system. As far as generation of additional electricity is concerned, private firms should be allowed to finance, build and operate new generation plants, which they will be much more likely to do if they have the confidence that government is intent on encouraging the development of a fully functioning market for electricity in South Africa.

4. Critique of the arguments for central planning

Professor Friedrich Hayek, Nobel Laureate in economics, explained that central planning of economic activity is impossible because no single mind has the necessary knowledge to carry it out. The information needed to conduct such an exercise is too widely dispersed to enable a single person, or a group of people, to allocate resources to their most productive uses. An attempt to do so over a lengthy period of time is destined to cause a disastrous misallocation of resources.

In 1984 the FMF published a book with the title *Transport Policy: A Study of Road Passenger Transportation* written by transport engineer, Terry Markman. The book contains an excellent section on the question of central planning. In 1984 Mr Markman was describing the dangers and predictable negative consequences of applying central planning to road passenger transportation. As the same general arguments apply to the supply of energy, the applicable section of the book is reproduced here as part of this comment on the IEP. The information is based on an article by the Late Professor Hayek entitled “*The New Confusion about ‘Planning’*.” (Hayek 1976) The passages in quotes are from the article. Professor Hayek was also the author of *The Road to Serfdom* (1944) which became a classic analysis of the threat to freedom posed by centralised planning.

Efficiency

The first economists to advocate central planning maintained that, if marketplace competition was replaced by central planning, productivity would increase. However, the great debate of the 1920’s eventually ended in a recognition that “any attempt at centralised collective planning of a large economic system would greatly decrease productivity.”

“The chief reason why we cannot hope, by central direction, to achieve anything like the efficiency in the use of resources which the market makes possible is that the economic order of any large society rests on the utilisation of knowledge of particular circumstances widely dispersed among thousands or millions of individuals.”

Hayek acknowledged that it is difficult for a businessman to obtain all the facts that he needs in order to make the right decisions. However, when faced with a choice between conveying all the information possessed by millions of individuals to a central authority, or communicating to each individual that information which is relevant to his decisions, “we have discovered a solution for the second task only – the market and the competitive determination of prices have produced the procedure by which it is possible to convey to the individual managers of productive units as much information as they need in order to fit their plans into the order of the rest of the system.”

“The market and the price mechanism provide in this sense the sort of discovery procedure which makes possible the utilisation of more facts than any other known system and which provides the incentive for any discovery of new facts which improve adaptation to the ever-changing circumstances of the world in which we live.”

(Note by E Davie: Due to the fact that Eskom is a vertical monopoly operating in the electricity field there is none of the price determination that is found in freely competing industries in which prices, in the final analysis, are determined by consumers. The electricity industry is therefore “stumbling around in the dark”, with none of the price information that is necessary for the industry to function efficiently.)

Complexity

Some argue that, while “the market may have been an adequate mechanism of co-ordination under earlier, simpler conditions, ... in modern times economic systems have become so complex that we can no longer rely on the spontaneous forces of the market for ordering of economic priorities but must resort instead to central planning or direction.” Hayek responds: “Such an argument carries some superficial plausibility but on examination turns out to be particularly silly. In fact of course, the very complexity which the structure of modern economic systems has assumed provides the strongest argument against central planning. It is becoming progressively less and less imaginable that any one mind or planning authority could picture or survey the millions of connections between the ever more numerous interlocking separate activities that have become indispensable for the efficient use of modern technology and even the maintenance of the standard of life Western man has achieved.”

“The market system functions because it is able to take account of millions of separate facts and desires, because it reaches with thousands of sensitive feelers into every nook and cranny of the economic world and feeds back the information required in coded form to a ‘public information board’. What the marketplace and its prices give most particularly is a continuing updating of the ever changing relative scarcities of different commodities and services. In other words the complexity of the structure required to produce the real income we are now able to provide for the masses of the Western world ... could develop only because we did not attempt to plan it and subject it to any central direction, but left it to be guided by a spontaneous ordering mechanism.”

Morality

Central planning is often demanded by those who argue that only the central direction of all economic activity “could distribute income and wealth between individuals and groups to conform to some preconceived moral standard”.

“There are two different fundamental objections to these demands, each of which seems to me to be decisive. The first is that no agreement exists (or appears even conceivable) about the kind of distribution that is desirable or morally demanded; the second is that whatever particular distributive scheme were to be aimed at could in fact be realised only in a strictly totalitarian order in which individuals would not be allowed to use their knowledge for their own purpose but would have to work under orders on jobs assigned to them for purposes determined by government authority.”

Hayek pointed out that this would result in a “disastrous loss of personal freedom”.

Forecasting

This is the argument “that it would be an advantage, enhancing orderliness and predictability, if the gross outline, a sort of skeleton, of the future distribution of resources between industries and firms could be laid down for a fairly long period.”

“Implied in the argument for government planning of industrial and commercial activity is the belief that government ... would be in a better position to predict the future needs of consumer goods, materials, and productive equipment than the individual firms.” But it is extremely unlikely that some central planning authority “would be more likely to foresee correctly the effects of future changes in the scarcity of the different raw materials etc., or the amount of some commodity that ought to be produced some years hence, than the producers or professional dealers of those things.” Furthermore it would be highly undesirable “that various companies in an industry all act on the same guess. It is the very rationale of the method of competition that allows those who have shown greater skill in forecasting to make preparations for the future.”

Indicative planning

The idea of indicative planning is to make a prediction and set a target. “it was conceived that somehow a forecast of the quantities of the different commodities that will be produced would assist in determining the respective quantities which ought to be produced. The plan is conceived as a forecast by government at the achievement of which the industry is to aim.

“There is absolutely no reason at all to assume that announcement of a target will make it likely that the aggregate of output named in it will actually be realised by the efforts of a number of producers acting in competition. Nor is there any reason to think that government, or anybody else, is in a better position than are individual managers acting as they now do to determine beforehand appropriate quantities of different outputs of industries so that supplies and demands will match.

“The production of the tens of thousands of different things which are needed to produce a much smaller but still very large number of final products is determined by the market process and is a matter of infinite complexity. Order is brought about by a spontaneous mechanism which we do not fully understand.

“The idea that such broad-outline information about what has happened in the past should be of significant help in deciding what ought to happen in the future is absurd. Even if we could get and

organise information about the tens of thousands of different commodities actually produced in a specific past period, it would tell us nothing at all about whether that specific combination would be economical under changed conditions.”

The argument for indicative planning rests on “the wholly wrong idea that the efficient use of resources is determined mainly by technological and not by economic considerations.” Thus it does not help to have a team of technical experts such as scientists and engineers as part of the central planning authority.

“Without a knowledge of prices there is, therefore, no possibility of determining from statistics of the past how much of different materials will be wanted in the future. And statistics of the past will help us little to predict what prices will be and therefore what quantities will be needed of different commodities.”

The government should plan only its own activities

Hayek believed that a government should “plan its own activities ahead for long periods, announce and commit itself to the execution of these plans, and thereby make government action more predictable. It would be a great boon for industry if it could know a few years in advance what the government is likely to do.” Hayek was aware of the political difficulties of such a proposal.

5. The role of prices, rather than central planning, in directing economic activity

In the book *Transport Policy; a Study of Road Passenger Transportation* by Terry Markman he also turned to eminent economist Friedrich Hayek for an explanation as to how an economy functions in the absence of central planning. In other words how is it that people who are not poverty-stricken, for instance, have ready access to requirements such as food without the assistance of government planners? In fact, thousands of food and other household products from which people can choose, are invariably available without the intervention of central planners, and it is seldom that they have to turn away disappointed. Every conceivable type of food flows into South Africa’s cities and towns without central organisation. The answer to this question is to be found in the role played by prices, as is described below.

The way in which prices direct individuals and economic activity

“The individual can rarely know the particular circumstances which, for him as well as for his fellows, make it necessary to do one thing rather than another or to do it in a particular way. It is only owing to the prices that he finds on the market that he can learn and is, in fact, constantly and unmistakably told what he ought to do in his own, as well as in the general interest. And the signal which warns him that he must alter his direction or the nature of his efforts is frequently that he simply can no longer sell his products or his labour at the prices which leave to him a surplus over his costs.

“Prices are not the reward for what we have done. Prices are signals which tell us what we *ought* to do in the future. It is only if we interpret prices as an indication of what we *ought* to do and not as a confirmation of what we have done in the past that we can ever understand the function of the market. And particularly we shall never understand how the great division of labour, all over the world, has come about unless we learn that it is the price mechanism which induces people to divide the labour amongst themselves. This division of labour, be it among firms or individuals or countries is not a once and for all affair but a complex, balanced structure which must constantly change if it is to perform its function.

“The division of labour occurs among millions of people who do not know each other or even of the existence of each other. They co-operate unwittingly. Their aim, of course, becomes necessarily

impersonal and in a sense abstract. That is where many people begin to feel uncomfortable. They still imagine that a good economic system should be guided by people *deliberately* aiming at the needs of known people. The modern market rests on the fact that the producer who makes the greatest contribution cannot aim at known benefits of known people but must make his decision entirely on the basis of quantitative calculations using abstract symbols, namely prices.”

The impossibility of improving prices via controls

“We must rely on prices which act as signals telling us about the consequences of facts of which we have no direct knowledge. We cannot improve these prices by any attempt at controlling them. You cannot improve on a signal which conveys information which you yourself do not have. An authority which imagines that if it can improve prices through price control would first have to know all the facts which those prices convey and then perhaps add some extra information. But since no authority can ever possess all this information I’m afraid you may well say, without hesitation, that all attempts to control or correct prices whether by price controls , price fixing or by direct intervention in the market must make the market ineffective and deprive it of its function. Of course, only prices at which everybody is free to buy or sell as much as he wants and his means allow can operate as reliable guides. Only if all owners or users of the commodities or services in question can take part in the dealing will as many requirements and opportunities be taken into account as possible. Thus prices fixed by authority or prices influenced by controls of demand and supply do not guide in the right direction but generally just mislead.

The necessity of prices in economic calculation

The market enables all participants to obtain a given output from a minimum of the resources available to them, or what amounts to the same thing, to obtain from a given amount of resources as large a contribution to the social product as possible. Now, the point which ought to be obvious but is so frequently forgotten, is that this can only be done because the participants are able to calculate in terms of prices which are not arbitrarily fixed but are the results of the interplay of thousands of unknown factors. And these calculations tell them what is the cheapest way of producing what they expect to sell at the known figure. Without prices determined by competition, in which the different information and the different needs of millions are reflected, effective calculation is just impossible.

The difference between productive and non-productive efforts

Each person’s efforts in a free market are directed by the return they receive on the market. To obtain such a return each person must aim at meeting some other person’s demand at least as cheaply as anybody else does. Thus everybody’s efforts must be directed at producing their goods or services at costs as much as possible below current prices. Therefore the difference between costs and returns, which we disdainfully call gain, becomes the true indicator of the social usefulness of our efforts while production at a loss becomes a social offence ... The difference between obeying and not obeying the signals of prices and costs is therefore the difference between productive and non-productive efforts or between efforts which increase and those which decrease the social product. I think we can also legitimately call it the difference between socially beneficial and anti-social activities.

6. Conclusion

The IEP acknowledges that a great deal more information is required in order to make meaningful projections about future energy requirements in South Africa and the manner in which those

requirements can be met. After a thorough evaluation of the IEP this comment argues that it is undesirable for planners to put together an overall centrally devised plan, with the intention of imposing such plans on the country's energy industry and consumers, covering all the aspects of production, transmission, transportation, and distribution of energy in South Africa. No planner or group of planners has the necessary knowledge to carry out such a task and no one can possess that knowledge for the reasons that are described in sections 4 and 5.

Until the price of electricity in South Africa is determined in a market that consists of unconstrained competition in the generation and retailing of electricity, with wholesalers and spot markets playing a role, and transmission and distribution grids that welcome additional business from the various entities wishing to make use of their facilities, no amount of planning will solve the current problems being experienced in the generation and supply of electricity.

It is the structure of the energy supply systems that must change. Government should set general rules applicable to anyone entering the industry and should not attempt to dictate the development of the industry with a comprehensive plan that purports to take into consideration all the factors that may affect the industry in the future. As Professor Hayek warns, no one has the necessary knowledge to devise a system that will function better than the cumulative result obtained in a market with competing suppliers vying with each other to satisfy the needs and wants of consumers.

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