

Consistency Dilemma of Korean Energy Policy^{*}

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Abstract

This paper examines the continuity of Korean energy policy for the last 30 years and consistency of energy policy with other energy-related policies. Because energy policy environment is characterized by high level of uncertainty, long-range planning as well as skillful adaptation to changing environments are both needed. But there are costs the two different approaches must pay. Energy sector has its close connections with economic and environmental sectors. Energy policy-maker should find ways to minimize any conflict between related policies. Economic planning must be designed aware of the constraints energy sector faces, and energy sector planning inevitably affects environmental quality. And priority among related policy areas must be adjusted according to changing situations. This paper calls policy-makers' attention to consistent policy process in the midst of favorable international energy market and emergence of green movement.

I. Introduction

There are opposing arguments regarding the utility of policy shift to sudden environmental changes. Energy policy is characterized as being besieged by high level of uncertainty. Supply side of energy, especially oil, has been proved to be volatile, and has experienced two times of supply disruption. Korea, which depends on imported petroleum to supply 100 percent of domestic oil demand, has swiftly changed her energy policy just after the oil shocks.

In addition to the sudden change of energy policy, Korean energy policy experienced inconsistency among the subsectors of energy as well as other related

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sectors of economy and environment. There has been conflict between coal industry and petroleum industry, and now gas industry. Heavy industry has been promoted without serious consideration of proper energy availability. Any warning for environmental hazards has been easily neglected for urgency of energy supply security until very recently. And nuclear power generation is chosen as one of the best alternative of getting stable energy supply. Moreover, the Ministry of Energy and Resources, which was established in 1978, are recommended to be integrated into as a part of newly designed the Ministry of Industry and Trade by the Presidential Commission on Administrative Reform.

In this paper, the writer tries to evaluate the past Korean energy policy on the basis of two policy criteria, i.e., continuity and consistency. When dealing with continuity issue, the policy change during last 30 years will be analyzed. Consistency issue will be defined to internal consistency within energy sector and external consistency in relation to economic and environmental policies and institutional arrangement.

II. Continuity and Consistency as Policy Criteria

1. Continuity and Policy Credibility

In the steered economy, such as Korea, the credibility of policy is important because the general public as well as stakeholders tries to find the real intents of a policy proposed. Continuity of a policy enhances credibility from the public if the real intents of then existing policy are known. Because private investment and consumption are essential factors in the success of energy policy, it is really hard to secure compliance from the public if the private parties do not trust government intent and expect potential benefits.

The credibility issue is more serious when the time scale of energy and economic planning gets longer. The hierarchical relationship between long-, medium-, and short-run planning means continuity of a policy. In the short run, policy change looks like adaptation to the changed energy environment but frequent policy change looks like, in the long run, lack of capability on the part of energy policymakers. If the policy change results in policy costs, it will be borne by the consumers or private businesses in various forms in the long run.

If the government loses credibility through frequent changes in policy directions and principles, then it is hard to implement a new policy effectively. Because a certain private capital investment lasts longer than the policy switch period, the private parties will not find the incentive to participate in energy sector investment. (Barzelay, 1986, pp. 45-58) Sudden policy switches result in serious sunk costs which cannot be recovered without government intervention again, which may raise unexpected policy costs one more time. Frequent policy changes increase risk for businesses. If the economic and political risk in the

energy sector is higher than in any other sectors in general, or in a specific program, the private companies should be guaranteed a higher expected rate of return. The gap between the normal profit and the higher return will be eventually borne by the consumers. Through this forward transfer, the policy costs made by the policymakers who are the public's agents are paid by the numerous consumers who are the principals.

In practice, it is hard to be consistent over very-long-run planning periods. This is because the energy policy environment is subject to change, and because there are uncertainties regarding the future. Flexibility is expected from a good policy. The day-to-day process of implementing a policy involves a series of focused-decisions in response to rather specific, and frequently unconnected, problems. This alteration of program and policy is probably inevitable, and may be desirable, as program managers and street-level bureaucrats seek to creatively and responsively implement programs in unique environment. If policymakers lose sight of the reasons for changes and do not understand the resulting cumulative effects of changes, confusion and conflict within the policy can build.

Flexibility should be a constraint to "policy drift," by which the writer means confusion and conflict over priorities, objectives, standards, and activities during the policy processes. The quality of policy flexibility can be best judged by the rule that the policy direction needs not be changed in the long run and, at the same time, the policy signal should be precise for the private parties, resulting in effective implementation. In a certain energy-related policy, especially the programs which need large scale capital investment and/or long run commitment by the large number of consumers, there is a point beyond which it is almost impossible to change the policy direction without serious financial as well as economic losses from the society's point of view.

The policy flexibility can be enjoyed within a certain level of commitment. Irreversibility of policy direction should constrain policymakers' ambition. This concern is especially important when the policy is strongly affected from the interest groups. Because interest groups of an industry may want more government commitment in the steered economy, a policy which is not guided by consistency criteria can move toward the point beyond which reverse of the policy will result in policy disaster.

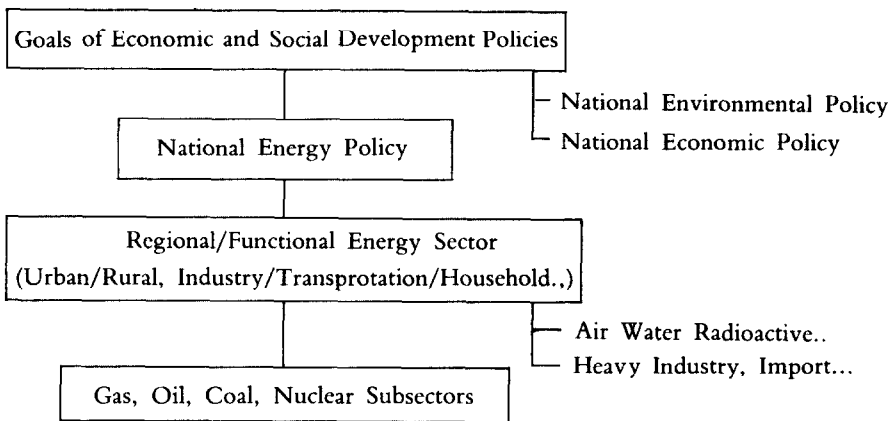
2. Consistency

Energy policy option should be judged on the basis of the long-term options for society. Energy-relevant choices are hierarchically related. A project decision, such as a nuclear power plant's siting or choice of supply technology at a given site, is embedded in a choice of overall societal choice of a desirable future. The project-level decisionmaking process needs somehow to reflect its relation to the choices above it in the hierarchy.

These hierarchically related choices often are not made by single or concentrated decisionmakers, except perhaps at the project level. A framework which depicts the hierarchy of interactions clarifies the link we must design consistently.

In the following diagram, lines between each elements denote the importance of linkage among them.

Diagram 1. A Hierarchy of Energy Policies



Consistency requires energy decisions to be compatible with, or at least not contradictory to, other related decisions for a given point in time. Issues may be considered consistent in three ways: 1) internally consistent with other energy decisions in the same subsector and/or other subsectors of region; 2) externally consistent with national energy decisions as well as with related non-energy decisions, such as environmental or economic policy; and 3) consistent with larger societal goals and objectives as well as social trends. In practice, these three levels of consistency merge and overlap considerably. (Munasinghe & Gunter, 1983, pp. 84-87)

The problem of consistency increases as a society grows more complex and as a society approaches more constraints on their development paths. Growing social complexity means that consistent energy decisions can no longer be independent: Many economic, environmental, and foreign policy issues have energy-related facets. Energy costs are approaching a large portion of GNP and, in fact, an energy shortage drove off both the past recessions. Since the demand for energy is a function of the demand for goods and services which are produced and consumed with it, particular rate of economic growth will of necessary affect the energy sector of the economy. (Lebel, 1982, p. 456)

Meeting and balancing the key societal goals of economic prosperity, environ-

mental protection, and social welfare will become increasingly difficult. And when difficult tradeoffs must be made, society can no longer afford to discuss one goal at a time. Thus, energy decisions have become harder to make in a consistent fashion, as the energy sector has interacted more deeply with a wide range of other societal goals. As a real income rises, people tend to prefer more convenient and cleaner energy sources. This was the tendency in the industrialized society such as Japan and the U.S. This tendency will be a guideline in designing future energy mix in newly industrialized countries. This is also consistent with the increasing environmental concern but in some cases this tendency raises the problem of balance of payment when energy prices go up.

III. Adaptation to Shifting Environment or Policy Drift?

1. Sharp Bends of Energy Policy

Coal briquets have been extensively used in the household sector, since 1950, the Korean Civil War. Like other developing countries, particularly China, the government emphasized the use of commercialized domestic fuel in order to prevent deforestation. With government regulations on woodfuel use and the encouragement of domestic anthracite production, coal production increased rapidly and the coal industry became prosperous. Coal has been extensively used in the household as well as in the transportation and in the industrial sectors. At the time the government has no comprehensive energy policy with a long-run time horizon.

In the late 1960s, the government tried to switch to petroleum products from coal. Promotion of a domestic refining industry and stabilized international oil market motivated oil transition policy. This policy transition deserves some analysis because the logic of the policy for the switch sound reasonable at the time and the analysis will give some heuristic value for the latter energy and environmental policy.

During the First Economic Development period(1962-1966), energy policy was formulated and implemented on an ad hoc basis rather than on comprehensive and long-run basis. The Korea Petroleum Corporation, which was a refining company, was established in 1964. Without any comprehensive energy policy the government regulated energy prices and its use as needed. With the Second Economic Development Planning efforts(1967-1971), the Ministry of Commerce and Industry(MIC) and the Korea Productivity Center(KPC) worked together for a "Long-Term Estimate of Energy Supply/Demand and Comprehensive Energy Policy Development." The Honam and Kyungin Refineries were built and Kukdong Oil began to invest with Royal Dutch Shell in this period.(KOA, 1984, pp. 29-52) Because the goals of the Second Economic Planning effort was "to modernize industrial structure and to attain economic self-reliance," investment was

focused on the petrochemical, steel, machinery, and textile industries. The founding of the petrochemical industry was one of the strategic goals of the investment in the period. The industrial structure turned out to be energy-intensive heavy industry: bunker-C was used for electricity generation and in the cement industry; naphtha for the petrochemical industry; gasoline and diesel for the rapidly increasing transportation sector, and other petroleum products for the household sector.

Domestic anthracite production increased annually by 14 percent during 1962-1966, due to government promotion policies; and consumption reached its peak during 1965. As the conditions for coal production became worse, the production could not satisfy increased demand. There was shortage of domestic anthracite in 1966 and 1967, resulting in a coal briquet crisis. Beginning in October 1966, the coal shortage became serious. This was especially the case because the winter season was when demand reached its peak in the household sector. The government formulated an energy switching and energy modernization plan and allowed free kerosene marketing beginning May, 1966. Anthracite, which accounted for 45.7 percent (5,969 thousand TOE) of the primary energy in 1966 became reduced to 39.7 percent of the primary energy (5,357 thousand TOE) in 1967. The impact of the coal briquet shortage on the household sector was serious. In addition, because about 85 percent of the thermal power generating plants used anthracite as their energy source, and a consequent electricity shortage resulted in limited transmission of electricity to households as well as to industrial factories. Diesel energy began to be used extensively in the transportation modes, including railroad and ships.

In the middle of the briquet crisis, policy-makers with the help of issue networks worked toward an oil-primary policy direction. They emphasized the ease of the acquiring the security of crude oil purchases; the necessity of oil and petroleum products for the development of then burgeoning heavy industry; and the convenience and diversity of oil use. They decided to modernize the industrial as well as the household sectors with oil. Domestic refineries were promoted and optimistic forecasts of increasing demand due to economic growth supported such government protection of the oil refining industry. MIC estimated an annual 17 percent increase of oil consumption and KPC estimated it at 36.4 percent. Although there were several arguments against such a swift policy change from the "coal-primary, oil secondary" to the "oil-primary, coal-secondary" policy, they did not draw much attention from policy-makers. (Dong-A Ilbo, 1968. 4.10, Editorial) In the policy process, when a policy attains some momentum, it is very hard to find any segment of policy-makers who pay attention to the arguments opposing the majority view. "Modernization" was viewed as representing everything that is beautiful and high-technology related; and a fluid energy source was also considered to be "modern energy" which no one could hesitate to adopt.

Consensus for an oil-primary policy emerged and many policy-makers obscured the risks of such a sudden policy change. (Kingdom 1984, pp. 146-149) Beginning in October, 1967, a free oil marketing system was introduced and various policy tools such as low import duties on oil, low tax rates on oil industry, subsidies, and an overall favorable policy environment for the oil industry— were used to promote oil consumption.

The other side of oil-primary policy can be characterized as non-policy or even unfavorable policy toward the coal industry. The domestic coal industry which once had enjoyed government protection faced recession partly due to decreased demand and partly due to no favorable government action. Only in late 1968, did the coal industry draw attention, because the problem with coal production got progressively worse. In 1969, the government enacted "The Temporary Measure Law for Coal Mining Promotion" and supported the coal mining industry with money collected from an additional 10 percent of tax on bunk-C sales. In the "Comprehensive Energy Development Plan" (June, 1970), which was used as a reference for the energy sector plan of the Third Economic Development Planning process, gas was intended to be used as a household energy source in the urban areas.

The following table contrasts the change of pattern of energy usage due to the sudden policy changes between the First and the Second Economic Development Planning period. There had been no more growth for the coal industry, and the coal share of primary energy went down to 28 percent. The oil sector, however, experienced rapid growth and energy dependency increased as more crude oil was imported from the three Middle Eastern countries.

Table 1. Energy Use Pattern

Percent Increase	1962-1966	1967-1971
Coal	+14.1%	+0.4%
Oil	+22.0%	+38.4%
Hydro	+8.6%	+6.0%
	1966	1970
Coal Share of		
Primary Energy	46.2%	28.1%
Energy Dependency	17.1%	50.8%

*SOURCE: The Korea Petroleum Association, *Petroleum Policy and Petroleum Industry*(Seoul), 1984.

After experiencing the first oil embargo, the government, i.g., Long-Term Resources Committee, formulated a "New Long-Term Energy Policy" in October 1973, and six months later it modified the plan to the "Comprehensive

Measures for Long-Term Energy Policy" in May, 1974. Here it emphasized the importance of oil conservation and reduction of oil dependency. Due to the pressure from the balance of payment problem, the government could not help but change the existing "oil-primary, coal-secondary" policy direction. It again emphasized the importance of maximum utilization of domestic coal. Domestic hydro-resources received attention and nuclear power generation option was intensely studied during this period. Foreign hard coal was imported to supply an increased amount of coal briquets. Imported bituminous coal began to be used in the steel industry. Many substantive policies, regarding energy rearrangement of the domestic oil industry, were carried out. Institutionally, the idea of establishing the "Ministry of Energy" was brought up. An "Energy Management Corporation" which focused on energy conservation was established and the "Korea Petroleum Development Corporation" was established for stockpiling activities and crude oil exploration.

In 1976, the government formulated the "Resources and Energy Sector Plan" for the Fourth Economic and Social Development Plan. In plan, the government underestimated domestic refining capacity by much a smaller amount than did the 1974 comprehensive plan. Along with the oil policy the government tried to promote the domestic coal industry through various subsidies and a demand extension policy with a low coal briquet price. The government allowed the Korea Coal Corporation to import foreign coal and to invest in coal development in several countries. Bituminous coal substituted for energy oil in the cement industry and other several industries such as pulp, textile, and food industries. Three coal burning thermal plants were built and several coal import ports were scheduled. Between 1979 and 1984, bituminous coal importation had increased annually by 34.3 percent and had accounted for 15.6 percent of total energy in 1985. In January, 1978, the Ministry of Energy and Resources was established and a research institution, the Korea Institute of Energy and Resources, was integrated with the existing Resources Development Research Institute and the Korea Comprehensive Energy Research Institute in January 1981.

2. The So-Called "Comprehensive" Plan

Until the second oil crisis, the government adapted energy policy according to the changing environment of the energy sector. The government could not systematically examine the problems of energy policy because the pending problem was so urgent and serious. During the two energy crises, the government could not formulate any consistent and relevant long-run energy policy because day-to-day supply procurement was so overwhelmingly important. Also, the government was not clever enough to build up strategic planning under high level of uncertainty. They lacked general strategic planning capacity and needed information was out of their reach. Experiencing another oil crisis and negative economic

growth in 1980, the government switched energy policy from the "passive adaptation" to so-called "positive energy source development." After the second oil crisis, and the world energy market regained its stability, the government could formulate a long-run energy plan. The government formulated another "Comprehensive Energy Plan." The policy can be summarized as one that focuses on: 1) energy conservation and efficient use; 2) development and/or economic energy sources; 3) oil dependency reduction; and 4) satisfying an increased high-grade energy source demand. (Hur, 1983, pp. 55-71) The integrated planning needs was met by a joint energy assessment efforts in September 1981. (MER, 1979) As mentioned before, these technical forecasts might work in defending the plan. One of interesting point in the forecasts is that the model expected 6 million tons of LNG by 2001, three times the 1987 import amount.

In addition to several programs for efficient energy use, the government put emphasis on the energy conservation regulations. In the domestic development area, exploration of energy sources, development of new alternative energy sources, conservation and stockpiling have been pursued simultaneously. In the overseas development area, energy source diversification, overseas investment and development, the geographic importance of source diversification of oil, and improvement of contract methods have been considered. One of the major specific new policy goals was to reduce the share of oil in total energy consumption by increasing coal, nuclear, and gas imports. In relation to LNG (Liquefied Natural Gas), the early assessment expected virtually all gas will go to residential/commercial and industry/agricultural sectors and only a little goes for electricity generation. (Argonne National Lab., 1981, pp. 6-40) From the third and fourth considerations above, large scale gas importation was chosen beginning in 1982, the Jungwoo Energy Company imported LPG (Liquefied Petroleum Gas) and KGC (Korea Gas Corporation), which was established in August 1983, prepared for LNG importation. In 1984 the payments for energy imports cost 6.64 billion dollars, representing 21.7 percent of total importation costs. Energy sector bare 16.7 percent of total foreign debts in 1984 and the sector has become more dependent on foreign money and foreign technology since then.

According to the government plan, LNG will account for 3.4 percent and LPG will account for 4.6 percent of total energy in 1991. (Energy & Resources Sector Plan: Tentative) The government plans to have another LNG project (3 million ton/year) in 1996. Then, 5 million tons annually of LNG will be consumed. Basically an urban area whose population is more than 300 thousand will be supplied with LNG made city-gas, and the other areas will be supplied with the bottled propane gas.

About 70 percent whole households will tap gaseous energies in the early 2000's. This is really an accelerated gas plan. Energy policy-makers emphasized the importance of a domestic coal industry and set a goal to utilize the domestic

coal to the maximum extent. In the short-run, this seems to be reasonable, in the sense that extensive domestic resource utilization will protect the vulnerable energy and economic sector from the outside hazards. However, in the long-run, this policy will result in earlier exhaustion of domestic energy resources. Early exhaustion of domestic coal will make managing the energy sector as well as the whole economy much more difficult. Because there are no other domestic energy sources, and because other renewable energy sources cannot be developed and applied extensively, the early exhaustion of domestic coal would eliminate all domestic energy intensive-industry structure will take time. Thus, the energy-economy connection will be still strong in the near future. The economic system will, to a large extent, depend on the fluctuations of international energy market. In addition to such economic instability, the government or private energy businesses will have a weak position in negotiating the importation of energy sources. Urgent needs for foreign energy sources will make policy-makers politically susceptible to foreign pressures because the country cannot find alternative, reliable supply sources. Also, the negative impacts of such a weak position will require economic costs: the importing party will often pay higher prices.

Therefore, the government can switch the existing domestic coal promotion policy and try to find an "optimal" speed of production which is presumably lower than the present maximum utilization. This can be done through several policy tools: technology development using domestic coal with imported coal, and pollution abatement; and efficiency improvement of coal briquet use; and extensive adoption of pollution abatement technology. Another effective tool is rationalization of coal and coal briquet prices. Because the last party in the policy, i.e., the consumer, plays the ultimate role in reducing domestic coal consumption. Price is one of the most effective policy tools in conserving domestic coal without discouraging the domestic coal industry.

IV. Energy Connections and Institutional Change

1. Short-Term Bias

Because energy sector is crowded with risks and uncertainties, any policymakers who are not well-trained to cope with those uncertainties tend to lose long-term views and stick to the present problems. Although there were somewhat serious efforts to formulate a strategic energy plan after the second oil crisis, the plan was not tested in harsh energy environment: as the international energy market became stabilized and crude oil price remained at the lower level for a while, any shortcomings of existing policy are not prominent. In reality, it is very hard to see any significant implementation efforts to realize the intents of the comprehensive plan because of relaxed attitudes due to favorable international energy market.

The history of the Korean energy policy can be briefly captured as follows: from "no policy" to "coal use" to "oil-primary, coal-secondary" to "coal-primary, oil-secondary" to "diversification with a gas emphasis". During the last 30 years, the energy policy, has not been based on a long-run policy principle. In addition to the urgency of securing energy supplies from outside, institutional problems also hindered any long-run policy development. When the existing policy turned out to be a failure, the changed international environment was blamed for it, and no policy-makers claimed the responsibility for the policy failure at that time. The lack of accountability in policy-making circles is not favorable for a creative energy policy development to cope with the uncertainties involved in the energy sector.

As a result, when the international energy market situation changed, or its change was uncertain and abrupt, energy policy-makers tended to lose a long-run view and tried to skillfully adapt to the changes for the duration of their tenures in a specific position. Before the establishment of MER, several energy-related bureau chiefs were formally responsible for their unique areas of energy sources when the energy policy was in the hands of MCI. Even though several committees were formed to examine comprehensive energy policies, they did not face serious responsibility issues. Bureau chiefs have been changing their job positions, and the term of one position is rather shorter than the period of an energy market change. So, when a policy-maker got a new position with changed energy market, he could advocate a drastically different policy direction. The changing policy environments supplied policy-makers an excellent opportunity to promote their short-run policy ideas which looked more modern. A new policy with a new dream for the nation with a new face has been the salient feature of energy policy for the last thirty years. Huge projects with highly central and foreign technology often dominate in such situations. There have been no built-in mechanism for curbing policy fluctuations.

In this context, the recommendation recently made by the Presidential Commission on Administrative Reform to integrate MER into a part of the newly designed MIT (Ministry of Industry and Trade) seems to be the case in point. It is not an issue here to argue that the new form of organizational arrangement is good or bad. The argument here is this: the integration of MER will compose an important element of discontinuity in the history of Korean energy policy. The recommendation is based on the following reasoning: 1) at the present time, MER realized the missions or goals of securing foreign oils; 2) the programs and activities carried out by MER and MIT can be better integrated when MER is merged into MIT; and 3) the business of MER is rather too small to be an independent ministerial level department. (PCAR 1989, pp. 210-211) The writer wants to pay attention to the first argument. With a favorable policy environment of low energy price, it seems to be correct to judge that the mission of stably

securing foreign energy sources has been attained. But this is true only with short-term horizon and only in countries of abundant energy sources. Korea is a country with needs exactly the opposite view. Even though we accept that there is some truth in what they recommend in the context of governmental organizational reform, there must be some measures to be taken in order to make policy-makers to keep long-term view.

2. Economic and Environmental Considerations

Energy connection usually deals with the relationship between energy and the economy. (Sonenblum, 1978) Constraints faced by the energy sector in Korea put serious burden in the economic development process. Especially, the first and second oil shocks have been real "shock of earthquake" to entire Korean economy.

According to a simulation study to estimate economic impacts which the first oil shock has exerted upon the Korea economy, absence of the drastic oil price rise in 1974 would have stimulated GDP(Gross Domestic Product) growth rate by 1.2 percent and reduced inflation rate by 7 percent. Also, devaluation of Won would have been slowed down by 95 Won per dollar. (Rhee and Cho 1981, pp. 4-31) Economic impacts have not been less serious in the case of the second oil shock.

However, there has not been serious efforts to restructuring high energy-consuming industrial structure into less energy-consuming one. In the case of Japan or the United States, they brought up energy intensive heavy industry when the energy price was out of the question. In the case of Korea, the government tried to foster heavy industry in the late 1970s when international energy market was not so stable. There have been some efforts to conserve energy: the government helped energy saving activities, such as, solar heat, research and development for energy efficiency, stockpiling, and so on. But, it is very hard to prove that the economic policy-makers seriously took energy constraints into consideration. Technology intensive industrial structures got attention but not based on energy constraint.

The use of energy poses an inevitable energy-environment conflict, whatever the supply option. Environmental problems can be remedied to a certain extent with technological control - at a price. Environmental concern has been steadily increased after the 1977 Environmental Conservation Law and establishment of independent governmental organization, the Environment Administration in 1980. Also, environmental right was stipulated expressively in the constitution. But efficiency-oriented economic policy-maker tended to see environmental protection as an extra cost. And several laws ended up a mere scrap of paper and strict implementation was never thought seriously.

However, environmental problems got more attention from the public as their living standard got improved. Air pollution in metropolitan areas and water

contamination in all around the country became one of major concern recently. Beginning early 1980s, LNG was used in urban areas to combat deteriorating air pollution. Purifying devices should be equipped in automobiles and emission from factories became tightly monitored. Coal briquet factories plan to move out of densely populated areas and fuel sources for thermal power generation plant will be switched to low sulfur oils or LNG.

Green movement seems to become active in the near future and there are several antinuclear movement organizations and number of publications increases. According to government plan, accelerated nuclear power plants are scheduled to be constructed in the near future and this policy is an area of serious dilemma. To enlarge electricity supply with low costs, nuclear power generation is one of the most attractive policy options in Korea but emerging environmental concern and green movement will put pressure on the government plan.

V. Two Sides of Energy Policy Switch

There are two opposing evaluations regarding such frequent policy switches. A World Bank study (The World Bank, 1979, pp. 61-99) defended such swift policy adaptation to the changed environments: the matching of policies to conditions. They argued that the rapid recognition of environmental change by the public policy-maker and the following strategic switch in energy policy to accommodate the change in the short period of time enabled the Korea economy to grow. They even applauded the government's capacity for changing policy suddenly in the most opposite direction, and secured the affirmation of businesses and consumers, responding to changing comparative advantage and external opportunities and constraints. Such a sudden switch seemed to possible in a small economy with politicized operation of an economic development plan. In line with these arguments, "state-led economic development strategy" can be augmented as a development strategy. There is, however, a difference between adapting merely to changing environments without preparing any policy direction in advance, and revising existing policy direction tactically. Development of a policy strategy prior to implementation is an essential requirement for a successful policy outcome. The World Bank study did not forget reminding the importance of stability with flexibility and pragmatism which is necessary for confidence and rational planning by enterprises and individuals.

Other groups of policy evaluators criticized the policy-making capacity for being short on creative policy ideas. They believed this had to be improved soon. A good policy making process should take into consideration the uncertainties involving future policy environments. Frequent policy changes will raises serious economic and social problems. The premature capital retirement and abandonment of initial investments will result in economic costs; and ambivalent government policy signaling in a steered economy will often cause social conflicts.

Others also pointed out that once the policy lost credibility, the real problem would occur in the future policy implementation phase, and would last for a long time. It would be hard to get cooperation from private parties when there are not enough incentives, government guarantees, or strong controls. The level of policy compliance will be very low and policy output will be far below the anticipated level.

Who bears the costs of such a policy fluctuation? In conventional governmental economic statistics, such a policy costs could not be captured easily. A huge amount of sunken cost accumulates as the policy changes more often than the life-time value of the investment. The costs are eventually borne by consumers who do not have political clout. This is especially true in the circumstances where the government regulates both the industry and consumer prices. The private businesses which participated in energy programs usually had political connections which, at least, guaranteed normal profits. Even if companies went bankrupt when the government policy switched due to changed environments, the owners or senior executives could still enjoy better position compared to their previous status.

Such a short-run view of energy policy has raised serious questions of policy credibility. When the government's policy signal does not attain credibility, the government will face difficulty in securing compliance from the private parties thereafter. As mentioned above, because energy policy changes so often, any parties involved in the existing energy policy will hesitate to invest to a large scale. They tend to defer their decision until they are satisfied that the quality of the information they have is sufficient to interpret the government's signals.

VI. Concluding Remarks

It seems very hard to resolve any conflict among policy areas and, also, not easy to continue a policy even at policy philosophy level for a long period of time. The consistency problem seem to be acuter at program and/or project levels. But the examination of the 30 year Korean energy policy shows that inconsistency between related policy areas and discontinuity of energy policy direction is one of the most striking characteristics.

Although diversification was suggested as a measure to reduce any social costs endogenous to such inconsistency, it is not quite clear to what extent the energy policy diversification will contribute the goals of energy policy in an unfavorable international energy market. Also, it is urgently needed to take serious policy attention to the continuity problem when the energy prices have been kept at lower level and people tend to forget the crisis they felt during felt energy market disruptions. A conservative and risk averse attitude or mental map is a kind of necessity in policy area of high uncertainty, such as energy policy.

References

- Argonne National Laboratory, *ROK/US Cooperative Energy Assessment*, Vol. 1, Main Report, 1981.
- Barzelay, Michael, *The Politicized Market Economy: Alcohol in Brazil's Energy Strategy*(Berkeley: University of California Press), 1986.
- Dong-A Ilbo, April 10, 1968, Editorial.
- Energy and Resources Sector Plan(Tentative), the Sixth Five Year Economic and Social Development Plan, Korean Government, 1986.
- Hur, Namhoon, "Government Energy Policy," in *Energy Policy and Korean Economy*(Seoul: Bakyoung Sa), 1983.
- Kingdom, J.W., *Agendas, Alternatives, and Public Policy*(Boston: Little, Brown Co.), 1984.
- Korea Petroleum Association, *Pertroleum Policy and Petroleum Industry*(Seoul: KOA), 1984.
- Level, Phillip G., *Energy Economics and Technology*(Baltimore: The Johns Hopkins University Press), 1982.
- Ministry of Energy and Resources(MER) and the Office of Country Assessments, Assistant Secretary for International Affairs in U.S. Department of Energy jointly carried out an energy assessment program in late 1979. Technical management was performed by Argonne National Laboratory and Several Korean Research Institutions, such as KAIST and KIER. the primary emphasis has been placed on the integrated treatment of a wide range of supply and demand sectors. These forecasts seem to have been exploited in the comprehensive energy plan.
- Munasinghe, Mohan and Gunter Schramm, *Energy Economics, Demand Management, and Conservation Policy*(New York: Van Nostrand Reinhold Company), 1983.
- Presidential Commission on Administrative Reform, *Recommendations for Administrative Reform*(Seoul: PCAR), 1989.
- Rhee, S.Y. and D.K. Cho, "Economic-Impact Simulations of the 1974 Oil Shock and an Alternative Oil-Pricing Policy on the Korean Economy," *Journal of Energy Research*, Vol. 4, No. 4, 1981.
- Sonenblum, Sidney, *The Energy Connections: Between Energy and the Economy*(Cambridge, MA: Ballinger Publishing Company), 1978.
- The World Bank, *Growth and Equity in Semi-Industrialized Countries*, Staff Paper, No. 35, 1979.