

Survey of Public Understanding on Energy Resources including Nuclear Energy (I)

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Abstract

Women in Nuclear-Korea (WINK) surveyed the public understanding on various energy resources in early September 2006 to offer the result for establishment of the nuclear communication policy. The reason why this survey includes other energy resources is because the previous works are only limited on nuclear energy, and also aimed to know the public's opinion on the present communication skill of nuclear energy for the public understanding. The present study is purposed of having data how public understands nuclear energy compared to other energies, such as fossil fuels, hydro power, and other sustainable energies. The data obtained from this survey have shown different results according to the responded group; age, gender, residential area, etc. Responded numbers are more than 2,000 of general public and university students. The survey result shows that nuclear understanding is more negative in women than in men, and is more negative in young than older age.

Key words: WINK, Survey, Public Understanding, Nuclear Energy, Renewable Energy, Chi-square method

I. Introduction

A survey using a systematic questionnaire developed is performed on public understanding of energy resources. More than two thousand of general public and university students responded using a phone or face to face. Previous study is compared with the result of the present study, and is used for its verification. Review on survey of public understanding of energy resource reported by KNEF[1,2] and on Chung et al[3] are performed.

The questionnaire for the present survey is subdivided into 5 groups. Each result from each group is reported in the order of 'Understanding on energy consumption', 'Comparative preference on method of electric power generation', 'Understanding on needs and problems of nuclear power generation', 'Understanding on characteristics of various energy resources', 'Status of energy information with public and information demands'.

The cross analysis among the responded groups, of which are university major, academic careers and residential area is also introduced. The several items such as the general understanding of electric consumption, the expecting type of power, the appropriate portion of nuclear power, the obstacles and the advantage of nuclear power, the natural resources for electric energy, the generation cost, the environmental advantage, the informative level of public on energy, the contact opportunity with energy

information, a desirable method of communication are analyzed for the cross data.

The application of the present study is also suggested on the basis of 3 groups, such as the education for energy information, the development of energy information for the public communication, and the educational and communicational objects.

II. Results

The majority of Korean, more than 90%, is aware of that the energy demands will be increased for 20 years ahead. This result is also distinctive according to the gender and the family income. Female and low electricity consumer is more aware of increasing of energy demand than that of male and high electricity consumer respectively. The majority also thinks that Korea has possibility of energy crisis for 20 years ahead.

The comparative preference on electric power shows that more than 60% of public prefers renewable energy. Women prefer renewable energy much more than men do. And also women and younger age show more negatively than men and elderly in nuclear power generation.

For the question on the needs and problems of nuclear power, more than 70% of publics understand that nuclear power will be increased more than those in the present. It means that the public in mind accept the needs of nuclear power. In this aspect, men and the middle-aged are more positive than women and the

youth. More than 60% of public are anxious about nuclear safety but they are confident as following order; its high technology, the economical effect, the stability of resource supply, and the contribution as a preventive measures for green house effect. The present survey result tells that the nuclear energy's role as a preventive measure for green house effect is not well known to the public than expected.

On the characteristics of energy resources, more than half of the public understand that energy resources are lack in Korea. On the other hand, the public understand not well enough of the fact that the generation cost of nuclear power is lower than most other energy resources. This indicates that offering this information to the public is needed for the future public communication.

Question about the environmental effect of the energy resources is resulted in that the public's understanding is biased against carbon dioxide discharge only. This indicates that public communication for nuclear energy will be more effective if this information is well offered to the public.

Question about the public's status on energy information and their informative demands is resulted in that more than half feels having not enough information on energy or not enough contact opportunity with the information. This fact tells that Korean have responded for this survey with a prejudice or preconception without having right knowledge on the energy.

Nuclear energy information was given with other energies for the questionnaire. The general public is better aware of them than university students. However the public is not aware of some questions, such as 'Nuclear power plant is not exploded' and 'Renewable energy can also pollute environments'.

For the question of 'the most desirable public communication method', the majority responded that the mass media (TV/radio/newspaper) will be the most effective method. They answered on the question of 'the education and internet' as a secondly effective method.

All the answers have been verified with the chi-square method in their statistic significance. The cross tab analysis from the answers is also performed to find out the mutual relationship among the group of university major, academic career and residential area. This cross analysis will tell us the public's awareness on the nuclear energy in terms of variable angles.

III. Application and Discussion

To apply the survey results effectively to the nuclear communication policy, the discussion has done on the basis of three distinctive categories, such as 'Contents for energy education', which is focused on education information, 'Developable energy information and distribution for the public communication' and 'Effective information according to the differentiated responding group'.

Firstly, for the category of 'Contents for energy education', two points such as nuclear power as clean

energy and its safety are suggested to develop. For instance, nuclear energy has an outstanding advantage compared to the other energy resources. It is because the public has a prejudice in the information of the renewable energy. Public believes in its richness, economical and environmental, which are not always correct information. Therefore it is necessary to offer the correct information to the public. On the other hand, it is also worth to insist on the importance of the nuclear safety which has very low accidental possibility and its low social cost generated from radiation hazard compared to that of the other energy resources [4].

Secondly, for the category of 'Developable energy information and distribution for the public communication', it is suggestible that the economical advantage of nuclear resulted from the generation cost and its environmental advantage from no carbon dioxide discharge, which nuclear energy can contribute as a prevention measures for climate change, are usable as information for the public understanding and education on nuclear energy.

Thirdly, for the category of 'Effective information according to the differentiated responding group', it is suggested that the appropriate education including training giving energy information under consideration of the group distinction, such as gender, academic career, region. Communication also has to be carried with mass-media.

The result of present survey is expected in its use as fundamental data for the establishment energy policy as well as nuclear policy. It will be useful to refer the results for establishment the nuclear communication policy especially when the public distinction is considerable.

Further information from the survey results will be discussed more in the future paper.

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