

3. Task 3 Review and Investigation for International Cooperation

3.1 R&D Goals

This research is a part of the scope of WE-NET, World Energy Network, which initiated in 1993. The purpose is to clarify scheme of international cooperation required to develop WE-NET Plan into genuine international cooperation project and also to clarify method of information exchange in terms of internationally applicable technologies related to hydrogen.

WE-NET project meant a research and development project subject for broad aspects in utilization of hydrogen, which can be achieved through international cooperation. Thus it is vital that the whole concept of the project should be well understood by overseas governmental organizations and other organizations that are involved in the development of hydrogen energy in order to seek their positive cooperation.

In the first phase of the research and development, information was exchanged with related organizations in order to make them understood the true concept of WE-NET, and also survey was conducted to find details of various plans and their status of the projects related to development of hydrogen that exist in overseas research organizations.

In the second phase, it has been tried to incorporate valuable facts and information found in the first phase into WE-NET and dispatch updated information of WE-NET to overseas organizations, which may influence their current projects and eventually may lead to realization of WE-NET vision.

3.2 Results FY2001

3.2.1 Promotion of International Cooperation in R&D Activities

WE-NET is a project based on international cooperation. Thus it is vital that the whole concept of the project and actual activities should be well understood by overseas governmental organizations and other related organizations. Recently there are positive movements for realization of various hydrogen projects locally or in overseas, particularly in the areas of fuel cell driven vehicles, hydrogen supply stations, etc. It must be wise to incorporate such movements or good results into WE-NET to accelerate its activities. In this viewpoint, technological cooperation through international information exchange is becoming more and more important than ever. Terrorist's attack in New York in September, 2001 certainly adversely affected WE-NET activities due to cancellation of international conferences and seminars or difficulty for participation, etc. However, effective communication through Internet or E-mail somehow compensated the problems. Major activities conducted in this year are as follows.

(1) Distribution of WE-NET Results in 2000

English version of WE-NET results of the year 2000 summarized by NEDO based on reports on individual tasks was distributed to about 180 overseas organizations that were listed as those for routine information exchange. In the past there were complaints from overseas in that the timing of such distribution had been too late, but this time the distribution was expedited within the year 2001. This sort of continued effort, we believe, certainly makes the world realize WE-NET as an important national project and establishes a scheme in which R&D projects in WE-NET technologically cooperate to the world wide hydrogen projects.

(2) Presentation in International Conferences

WE-NET was reported in the following international scenes.

Hydrogen Research Committee in the International Gas Union.

Chicago/Midwest Renewable Energy Workshop

The 11th. General Assembly of Canadian Hydrogen Association

Hypothesis IV

Japan/Korea Symposium

International Hydrogen Conference

C & E 2002. International Symposium by Tokyo Institute of Technology

(3) Cooperation with International Energy Agency (IEA)

IEA conducts R&D on the basic hydrogen technologies based on agreement among various governments in terms of development of hydrogen energy in the future. WE-NET went into positive support of IEA activities in the under listed. On the other hand studies were made on how to introduce basic R&D of IEA to WE-NET in the future.

IEA Hydrogen Executive Committee

Corresponding Committee for Hydrogen Executive Committee

Expert Service to Each Annex

3.2.2 International Information Exchange in Hydrogen Technologies

In order to develop WE-NET to international project, cooperative scheme to promote hydrogen utilization must be established through close communication with overseas organizations and agencies as well. The principle of information exchange should be on the basis of Give & Take. Thus positive information dispatch was tried at most possible. In line with it, specifically following activities were implemented in this year.

(1) Survey on Overseas Activities Related to WE-NET

Those involved in each task in WE-NET made surveys in overseas along with each objective and collected technological information on hydrogen that is common to WE-NET.

(2) Update of WE-NET Home Page

In order to make WE-NET attractive, its home page was updated by adding latest information, revising obsolete information and reconstructing the whole layout. WE-NET activities in the year 2000 were presented in the updated home page.

(3) Videotape on the Safety of Hydrogen

It is essential to remove worries about hydrogen utilization from people's mind in order

to promote hydrogen as safe and clean energy source in the future. Thus the nature of hydrogen must be well understood and its handling must be properly oriented. In this regard, WE-NET decided to cooperate in developing Part II of the videotape on the safety of hydrogen. In this year the scenario and visual materials were worked out. The completion of the videotape is scheduled in 2002.

3.2.3 Basic Research for Standardization of Hydrogen Energy Technology

So far, both international and domestic survey of the related standards and regulations has been conducted in this research in the broad fields, which could affect hydrogen energy technologies in the such aspects as hydrogen production, storage, transportation, handling, safety, and materials. The research also extended to abstract needs for standardization and possible problem areas that were expected necessary for evaluation in the future. Particular emphasis was placed on the basic research and evaluation of regulations related to the construction of hydrogen supply station.

For the research in this year, it was discussed to conduct review of the related regulations to hydrogen station and to survey the related regulations in overseas. It was also discussed the necessity to review the Basic Research for Standardization of Hydrogen Energy Technology.

3.2.4 ISO/TC197(Hydrogen Technology)

ISO/TC197 was established in 1989 aiming at 「Standardization of Systems and Devices for Production, Storage, Transportation, and Measurement of Hydrogen as Energy Resource」. The Head Quarter of the secretariats was located in Canada in 1994 and Dr. T. K. Bose (Quebec University) has been the chairman since then.

The 10th. General Conference and WG1, WG5, WG6, and WG7 meetings were held in October, 2001, however, Japanese delegations dared not participate in those meetings being affected by the Terrorist's Attack in the previous month. Thus, they only participated in the joint meeting of TC197/WG2 and TC220/WG1 held in June 2001 and TC197/WG8 held in Canada in March 2002, but collaboration to the organization has been continuously underway by submitting reports to various ISO/TC197 secretariats.

In October, 2001 ISO/TC197 registered WG8 「Hydrogen generators using water electrolysis process」. Thus, 8 WG's are currently in action. Proposed specifications by each WG and their status are shown in the Table 3.2.4-1.

necessary to exchange the information and to cooperate for the development of technology with these countries. Currently technological development for fuel cell vehicle and its infrastructure in the utilization of hydrogen has already come to a stage of verification and each technology has been progressing on the global basis. Thus in order to effectively propel these plans, it must be essential not only to facilitate mere exchange in the technological information but also to generate positive new ideas from Japan on the both fields of hydrogen technology and its international standardization.