

Foundation of Japan Power Academy Industry-Academia Partnership for Promoting Electrical Engineering

1. Purpose of Founding Japan Power Academy

Electrical engineering* played a key role in the expansion of Japan's power supply infrastructure during the high economic growth period, and has enhanced convenience and comfort in our life. Today, a high-quality electricity supply and a variety of electric appliances are taken for granted, yet electrical engineering continues to play a vital role. We are now facing various energy-related issues such as global warming and soaring prices of fossil fuels. Electrical engineering is a fundamental discipline that is indispensable for solving such difficult problems.

With this background, Japan Power Academy (hereafter referred to as JPA) was set up in April 2008 to further promote electrical engineering and recover people's attention to it.

Pursuing the vision of industry-academia partnerships, JPA supports both research and education in electrical engineering across Japan, organizes public relations activities to foster public awareness of the attraction and importance of this discipline, and contributes to the evolution of electrical engineering(Fig. 1).

* Scope of electrical engineering:

Japan Power Academy's types of support are centered on power systems, high voltage, insulation and electric machinery, but includes related fields of growing interest such as energy, environment, IT application, renewable energy and distributed generation, thus addressing a wide range of technologies and researches.

Scheme of Japan Power Academy

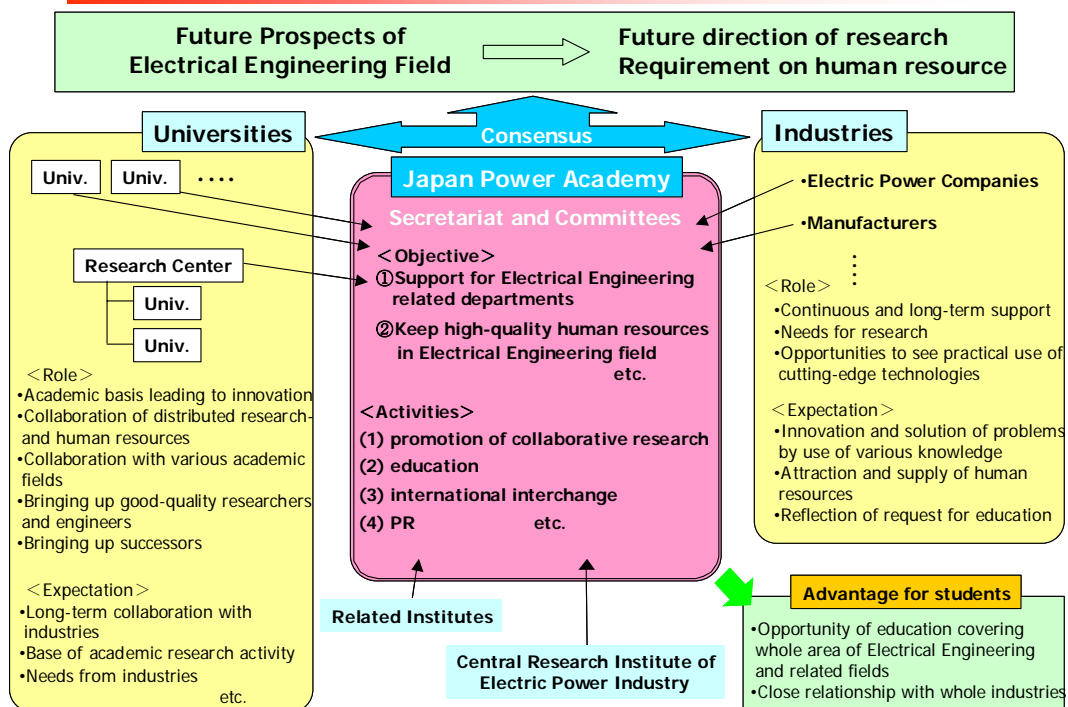


Fig.1 Scheme of Japan Power Academy

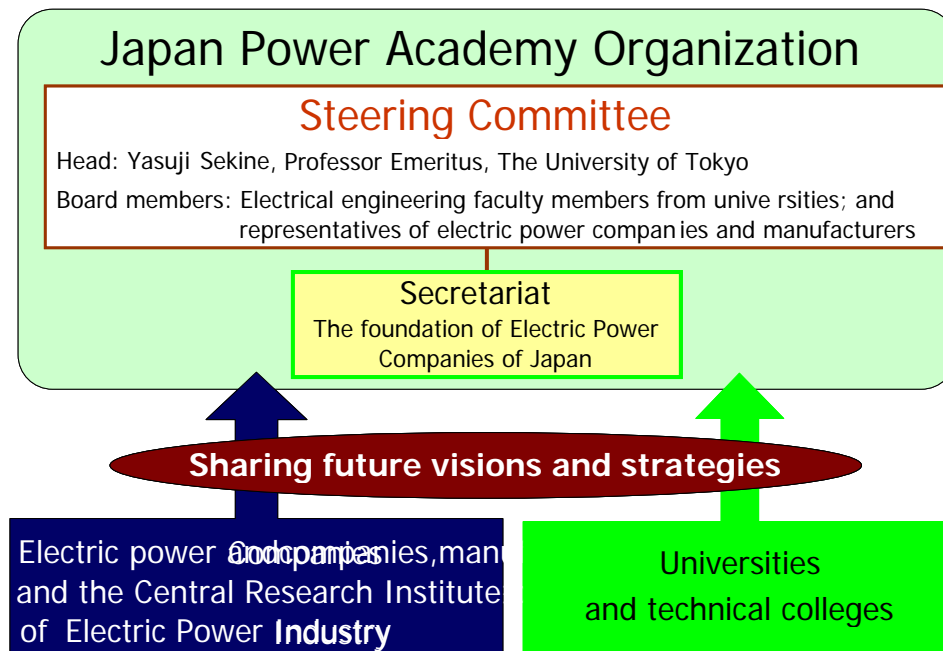


Fig.2 Japan Power Academy organization

2. Organization of Japan Power Academy

In order to administer JPA, Steering Committee was set up that involves electrical engineering faculty members from universities and representatives of electric power companies and manufacturers (Fig.2). First head of this committee is Dr. Yasuji Sekine, professor emeritus of The University of Tokyo. The secretariat of JPA is located within The Federation of Electric Power Companies of Japan.

3. Activities of Japan Power Academy (Fig.3)

(1) Development of future visions and strategies

JPA helps electrical engineering faculty members and industrial experts jointly formulate future visions and strategies, such as future prospects of electrical engineering, an orientation of R&D and human resource development, facilitating the sharing of awareness between industry and academia.

JPA also supports various forms of industry-academia exchanges at both national and regional level, and helps to create the human networks that are the basis of various activities.

One of the activities is to draw up JPA Research Map (described in next section) by identifying the orientation of electrical engineering research through discussions between industry and academia. By providing opportunities for researchers in respective fields to exchange opinions, JPA supports the sharing of needs in industry and seeds in academia, vitalizing mutual communication that may lead to the emergence of new research themes.

(2) Drawing Japan Power Academy (JPA) Research Map

JPA Research Map is a systematic arrangement of the themes of research projects, conducted at universities and technical colleges that address challenges and needs regarding electrical engineering in the industry.

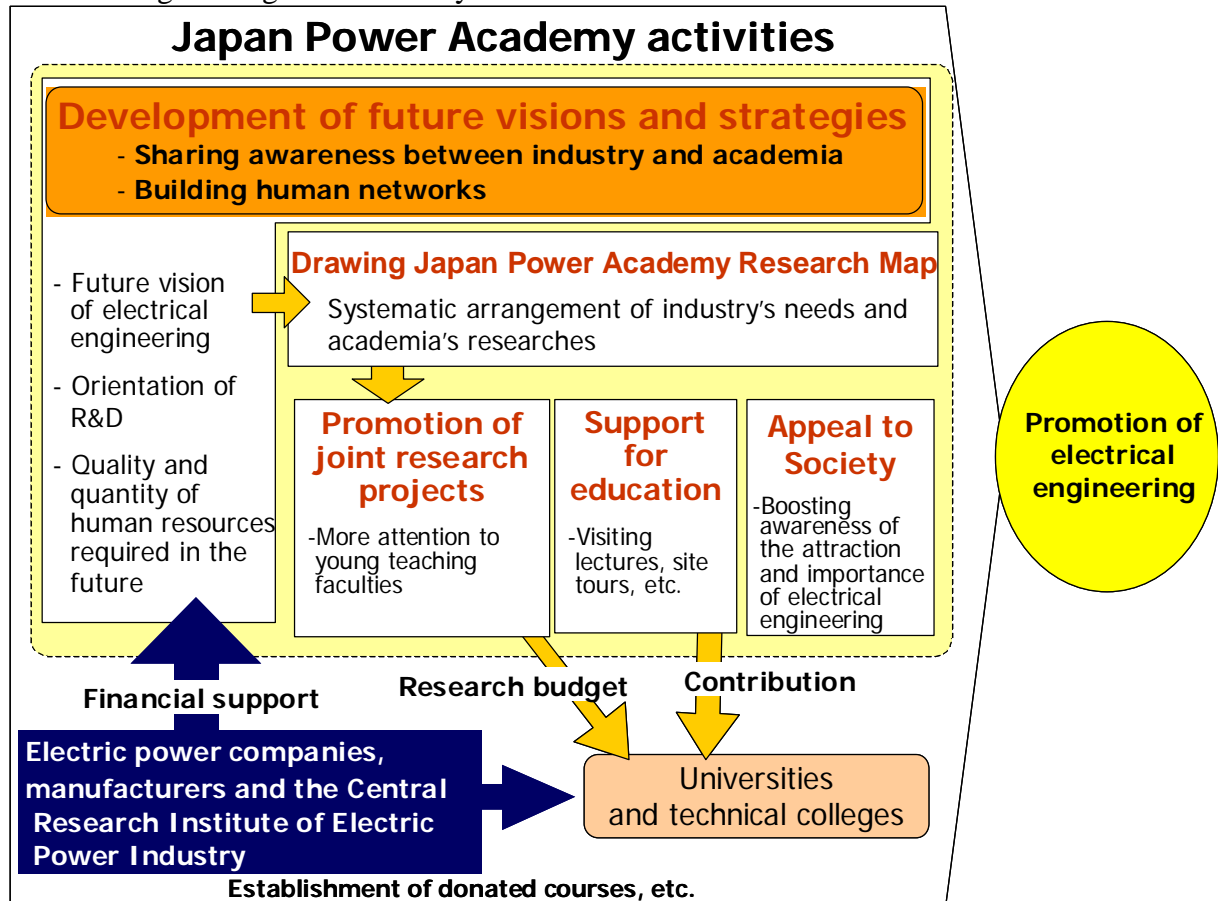


Fig.3 Japan Power Academy activities

This map is drawn up based on exchanges of opinions and ideas between faculty members and industrial experts in electrical engineering. Using the map, JPA generates awareness among government agencies, university administration boards and society in general about the necessity of these researches in electrical engineering through industry-academia partnerships. JPA also coordinates the launching of new research projects and promotes joint research projects based on industry-academia or inter-university partnerships. JPA expects that such an activity stimulates young researchers and students.

JPA Research Map will be updated periodically.

(3) Promotion of industry-academia joint research projects

Using JPA Research Map, JPA supports the evolution of industry-academia joint research projects that involve universities and technical colleges. JPA identifies mid- to long-term challenges from various perspectives including the future of power supply systems, measures against environmental issues, and the refurbishment of aging infrastructures, and promotes industry-academia joint research projects on attractive themes.

For each of the research themes identified on JPA Research Map, Japan Power Academy shows the importance of the subject in an industrial context, and coordinates the building of industry-academia and inter-university partnerships to encourage funding of projects by external entities and to initiate joint research projects with individual corporations.

In its efforts to organize joint research projects, JPA focuses on research activities that offer mid- to long-term potential, as well as research activities that support young faculty members who will be responsible for the next generation of electrical engineering.

(4) Support for education

JPA provides various support to assist the planning of lectures and education programs in electrical engineering that are attractive to students. JPA creates opportunities for industry to provide aid for education in various ways such as dispatching experienced experts as lecturers and organizing site tours. Such programs demonstrate how electrical engineering is applied in industry.

To develop global-minded human resources, JPA provides students with financial support, for example, for presentations at international academic conferences. Cosponsoring with the Institute of Electrical Engineers of Japan, JPA contributes a contest for papers on electric energy written by technical college and high-school students (since FY2007).

JPA will progressively expand its education support programs in response to the needs expressed by universities and technical colleges.

(5) Appeal to society

We will inform the public of our activities through a website, and emphasize the attraction and social contribution of electrical engineering to society in an easy to understand manner.

JPA organizes seminars and events to stimulate interest in electrical engineering.

3. Prospects of Japan Power Academy and expectation to CIGRE-EPEE

As a current status of electric power industry in Japan, a construction of electric power infrastructure has been greatly decreased associated with a saturation of electricity demand, and thus, leading to loss of on-job-training opportunity that has been important for educating engineers. In addition, forthcoming replacement of aged facilities requires engineering of amalgamating new technology and the present system. On the other hand, we have a new trend in the power system ; namely, uncontrollable power flow is supposed to increase due to the liberalization of the retail market and an increase of renewable energies such as photovoltaic and wind power generations. We need appropriate countermeasures in order to stabilize the power system. Considering these circumstances, engineers with basis of electrical engineering will be getting more and more important than ever. We expect that the activities of JPA play a role of showing true fascination of electrical engineering to students and bring them into this field.

Upon investigating the foundation of JPA, we learned a lot of interesting information from the activities of CIGRE-EPEE that is a valuable field of worldwide and comprehensive discussion concerning the issue of electric power engineering education. We believe that it is worthwhile to maintain this activity and to discuss issues such as;

- Future direction and research themes in electric power engineering
- How to formulate an attractive course curriculum including advanced issues as well as a basis of electric power engineering
- How to evaluate related activities

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GROUP REF. :
Pref. Subject :
QUESTION N° :

We expect that CIGRE-EPEE will continue vital activities and dispatch information widely involving students, giving them a clear image of future progress and important role of electric power engineering.