

Fiscal Year 2023

Progress Report from the Japan EMF Information Center

Japan EMF Information Center
Japan Electrical Safety & Environment Technology Laboratories (JET)

Table of Contents

Preface	3
Overview of the activities in fiscal year 2023	6
(1) Organization and personnel	7
(2) Administration	7
a. Administration Audit Committee	7
b. Experts Network	8
(3) Operation	9
a. Information Gathering and Research	9
b. Communication strategies	12
c. Operation of entrusted business	18
d. Social Contribution Activities	18
e. Academic Conference Presentations	19

Preface

Looking back on 15 years of activities since the establishment of the Japan EMF Information Center (JEIC)

Fifteen years have passed since the JEIC was established in 2008. During this period, various events have occurred both domestically and internationally. We have faced unprecedented disasters such as the Great East Japan Earthquake and nuclear power plant (Fukushima) accident on March 11, 2011, and subsequent earthquakes of magnitude 7 in the Kumamoto Prefecture, the eastern part of Hokkaido, and the Noto region of Ishikawa Prefecture. Internationally, unexpected events such as the COVID-19 pandemic beginning in 2020, Russia's invasion of Ukraine after February 2022, and Israel's invasion of Gaza have become a reality.



On the other hand, JEIC has been engaged in various risk communication projects on the health effects of exposure to electromagnetic fields (EMFs) since its inception and has steadily accumulated achievements. As we approach the 15-year milestone of our establishment, I would like to introduce the cumulative number of JEIC activities.

Invited lectures:

In FY2023, 21 public meetings were held, bringing the total number of lectures given over the past 15 years to more than 300, nationwide. Questionnaire surveys of participants indicate that attending to the lecture has reduced their concerns about EMFs.

Seminars at scientific meetings:

We organize seminars for researchers and health professionals at academic meetings related to school health and social medicine, presenting WHO information on the health effects of EMFs. 13 seminars were held in FY2023, bringing the total number of seminars to more than 120.

Webinars:

We started webinars in FY2021 as a response to the COVID19 epidemic. We have held 6 in FY2023, for a cumulative total of 25, covering a variety of topics every 2 months.

Inquiries:

There were approximately 1,000 inquiries in FY2023, bringing the cumulative total to more than 12,000. It is likely that there is still a high level of concern about EMFs.

Free lending service of low-frequency magnetic field meter :

In response to the demand for self-measurement of magnetic field strength, we launched a magnetic field meter lending service in 2013. With the introduction of a web-based application system in March 2022, we received approximately 250 applications in FY2023, bringing the total to over 2,300. Data from questionnaires conducted before and after borrowing the meters suggest that self-measurement has helped to reduce anxiety.

EMF Information Database:

The "EMF Information Database", which is easily accessible to the general public, has reached a total of approximately 18,000 articles, official documents, and other publicly available information by the end of March 2024. The database provides scientifically supported information.

EMF-Portal database:

For researchers, in 2014 we participated in EMF-Portal, the world's largest research database on EMF, operated by the Technical University of Aachen, Germany. It contains information on about 7,900 papers relate health effects of EMF exposure translated into Japanese.

Publications:

In order to effectively communicate science-based information to the public, JEIC has published a collection of WHO Fact Sheets in Japanese with permission of WHO (WHO Fact Sheet Japanese Translation Booklet) that summarize messages published by WHO . In response to the growing interest in the link between exposure to magnetic fields from power facilities and childhood leukemia, JEIC developed 2 kind of brochures for school nurses and for pregnant women. These publications are distributed to participants at public meetings. In addition, as an activity aimed at a broader audience, JEIC participates in the activities of the Mothers' and Children's Health and Welfare Association. and helps to produce educational materials for pregnant women on the health effects of EMFs, which are distributed nationwide along with a supplemental reader for the Maternal and Child Health Handbook. 680,000 copies were distributed in FY2023, and approximately 4.2 million copies have been distributed to date.

Magnetic field measurement project:

The Magnetic Field Measurement Project Team has been conducting measurements on various devices and facilities each year since FY2010. The objective is to measure the magnetic field levels of new and increasingly popular sources of EMFs and to provide information about them to the public.

Mentioned above are some of JEIC's activities. We feel the history of JEIC, which has accumulated various activities one by one over the past 15 years. We will continue to provide

information to those who are concerned about EMF in a more understandable way and to practice risk communication. Thank you for your continued support of JEIC's activities.

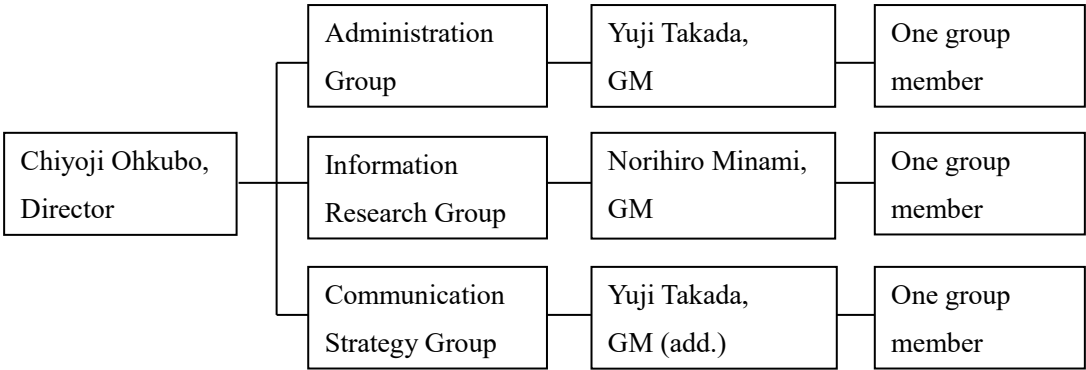
Chiyoji Ohkubo PhD

Director

Japan EMF Information Center

Overview of the activities in fiscal year 2023

(1) Organization and personnel



The number of the personnel at the end of this fiscal year is six in total including Director Ohkubo.

(2) Administration

a. Administration Audit Committee

In order to fully leverage the capabilities of the Japan EMF Information Center (JEIC), it is crucial for the organization to earn the trust of the public, who are the recipients of its information. Therefore, to monitor the center's operations, a 'Administrative Audit Committee' has been established as a supervisory body above JEIC. This committee, comprising eight members who include academics with extensive knowledge, consumer representatives, and media professionals, scrutinizes and approves JEIC's various activities to ensure neutrality and transparency. JEIC conducts its activities only after receiving the committee's approval.

The Administrative Audit Committee meets each spring and fall of the year. The minutes of all committee meetings are in Japanese, but they are available on the JEIC website.

b. Experts Network

As in the previous year, the following expert network members provided objective opinions on the professionalism and clarity of the information research and provision services routinely performed by JEIC.

○ Domestic

Name	Area of expertise
Masateru Ikehata	Molecular Biology, Railroad Technology
Katsuo Isaka	Electrical engineering (low-frequency electromagnetic field measurement technology)
Akira Ushiyama	Environmental physiology and hygiene
Masao Taki	Electrical engineering (dosimetry evaluation techniques for electromagnetic fields)
Shoji Tsuchida	Safety psychology, social psychology
Satoshi Nakasono	Toxicology, Cellular and Molecular Biology
Yukio Mizuno	Electrical engineering (low-frequency electromagnetic field measurement technology)
Hiroaki Miyagi	Public health
Junji Miyakoshi	Electromagnetic life science, radiation biology, molecular cell biology
Naoto Yamaguchi	Epidemiology
Kenichi Yamazaki	Electrical engineering (dosimetry evaluation techniques for low-frequency electromagnetic fields)
Soichi Watanabe	Electrical engineering (high-frequency electromagnetic field exposure assessment techniques)

○ Overseas (Rapid Response Group [RRG])

Name	Area of expertise
Alexander Lerchl	Biology
Bernard Veyret	Biology
Martin Roosli	Epidemiology
Mike Repacholi	Physics/Bioengineering (Coordinator)
Niels Kuster	Physics/Engineering/Dosimetry
Phil Chadwick	Physics/Engineering/Dosimetry
Susanna Lagorio	Epidemiology
Zenon Sienkiewicz	Biology

* Listed names are those in the Experts Network who have agreed to publication of their names.

* RRG is the organization evaluating important scientific study reports that might require scientific review.

(3) Operation

a. Information Gathering and Research

a) Information Gathering

Through the information gathering channels we've established from scientific sources such as our government, the WHO, IARC, ICNIRP, national governmental agencies/committees, and others, we've collected relevant topics on EMF and health issues daily, both in Japan and abroad. In the 2023 fiscal year, 42 of these topics were uploaded to our website as Latest Information.

b) Information Survey

(i) Detailed information research

[Publication of the Japanese Translation of the International Agency for Research on Cancer (IARC) Monograph Preamble on Our Website]

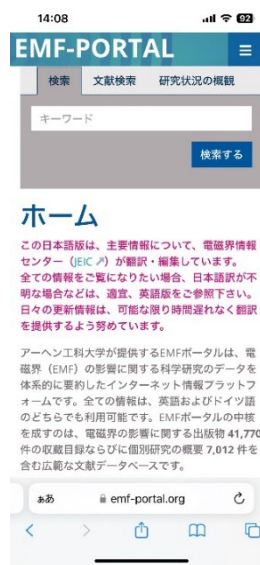
The preamble, which is common to the IARC Monographs and was revised in January 2019, has been translated into Japanese and uploaded to JEIC's website for a Japanese audience with official permission from IARC.

(ii) Participation in EMF-Portal

The Research Center for Bioelectromagnetic Interaction (*femu*) at the Institute of Occupational Medicine in the Faculty of Medicine at RWTH Aachen University in Germany operates the 'EMF-Portal,' the world's largest publicly accessible research database on EMFs. As of March 31, 2024, the EMF-Portal contains approximately 41,700 records, of which about 7,900 include detailed information related to health effects. Since September 2014, we have been participating in the EMF-Portal by providing Japanese summaries of the 7,900 studies related to health effects. Additionally, we currently offer on our website over total 18,000 studies in JEIC database, including those not in the EMF-Portal.



Display image on a PC screen



Display image on a mobile device

(iii) JEIC database

As of March 31, 2024, the total number of registrations on JEIC database increased by 339 from the previous fiscal year to 18,323. The breakdown is as follows:

Document Classification	Number of registrations
Academic Papers	17,633
Publications of International Organizations, Foreign Official Documents, etc.	399
National Archives and Records	79
Regulations, Guidelines, and Technical Guidelines	52
General Books • Reports	146
Others	14
Total	18,323

(iv) Magnetic field measurement project

The “Magnetic Field Measurement Project,” established in fiscal year 2010, aims to measure magnetic field levels from newly emerging electromagnetic radiation sources, as well as those not previously measured by the JEIC. In fiscal year 2023, the project conducted the following measurements and surveys, with the results made available to the public.

Survey of static magnetic fields generated by DC transmission lines

With many new and expanded DC transmission lines planned both in Japan and internationally, public concern is expected to grow regarding the potential health and ecological effects of the magnetic fields (DC magnetic fields) generated by these lines. However, because reports on measuring DC magnetic fields are limited in Japan, we undertook measurements. The maximum recorded static magnetic field (composite value including geomagnetism) was 154.8 μT , well below the general public exposure limit of 400 mT (400,000 μT) established by the International Commission on Non-Ionizing Radiation Protection (ICNIRP). The results were presented at a Japanese academic conference and will soon upload on our website.

Survey of magnetic fields generated by handheld fans

In Japan, Korea, and other countries, an increasing number of people are using handheld fans during the extreme summer heat, and a wide variety of products are available on the market. A South Korean citizens' group reportedly claims that “handheld fans generate magnetic fields that significantly exceed the magnetic field exposure level of daily environment. There is a possibility that the general public will become concerned about the use of handheld fans in Japan, but since we have not found any reports on measured magnetic fields from handheld fans, we measured the magnetic fields. The results showed that the measured magnetic fields varied by handheld fan model, the maximum value was 3.66 μT , which is well below the ICNIRP reference level of 200 μT for exposure to the general public. The results will be presented at domestic and international conferences.

Survey of magnetic fields generated by automobiles

In 2012, we measured the magnetic fields generated by different types of automobiles (electric: EV, hybrid: HEV, gasoline ICE) and published the results on our website, which have since garnered significant public interest. Approximately 10 years have passed since that initial measurement, and with the rising number of EV and HEV vehicles, we anticipate an increase in related inquiries in the future. Moreover, in September 2022, IEC 62764-1, which outlines the procedure for measuring magnetic fields generated by automobiles, was established. We will therefore conduct further measurements in accordance with this IEC technical standard.

Survey of EMF generated by smart meters

In Japan, almost all electricity meters have now been replaced from analog meters to smart meters. However, some citizens have shown significantly concern about

radiofrequency electromagnetic fields emitted by smart meters. We are measuring the radiofrequency electromagnetic fields from the smart meters installed in ordinary households. The results will be presented at academic conferences in the future."

b. Communication strategies

a) Internet Advertisement

We are promoting awareness of JEIC's activities by distributing online advertisements on platforms such as Google for webinar hosted by the JEIC and for information on the magnetic field meter lending service.



Display Image on Internet Advertisement

b) SNS (Facebook, X)

In recent years, with the widespread use of smartphones, the dissemination of information via social networking services (SNS) has become more active. As a result, the JEIC is actively sharing information about webinars it hosts, introducing its activities, and providing comments on news articles.



Display Image on Facebook and X Posting

c) Webinars

Due to the decrease in requested lectures from municipalities and educational institutions caused by the impact of COVID-19, we began hosting webinars in fiscal year 2021 to create opportunities for information dissemination. In fiscal year 2023, we held six sessions on different topics, each attracting about 50 participants. We provided lectures and answered questions, leading to a high level of satisfaction among attendees.

d) Newsletters

The newsletter with friendly contents such as explanations of EMF sources around us, our current activities, etc., was published three times in FY2023, from No. 66 to No. 68.



Newsletter (the cover for No. 68)

The main contents of the newsletters issued in fiscal year 2023 are as follows:

[Technical description]

- IH cooker No.2
- About MRI (Magnetic Resonance Imaging) Examination
- Trends in Risk Assessment of Radiofrequency Electromagnetic Fields by WHO

[JEIC Activities]

- Website Renewal Information
- The exchange of agreements with overseas organizations on international cooperation for electromagnetic field risk communication
- Signing of a memorandum of understanding with a Korean organization regarding cooperation on electromagnetic field risk communication
- BioEM2023 (Oxford), CIGRE2023 COLLOQUIUM (Sendai)

[Column]

- The World of Electricity as Seen on Postage Stamps (2) Gauss
- Birth of the pulse oximeter this and that

e) E-mail Magazine Distribution

We distributed a monthly e-mail magazine to provide of the latest information on EMF and health issues, various seminars and events, and seasonal topics. The March 2024 issue was No. 161. The number of e-mail magazine members is 1,876 at as of March 31, 2024 (an increase of 99 members from the previous year).

f) Communication Activities at the meetings

In order to respond to various needs for EMF risk communication, we have been hosted scientific seminars about EMF and health issue for professionals who attended at the academic meeting. We also distribute lecturers to public meetings requested by local governments, organizations, etc.

(i) Educational activities for the health professional at the luncheon seminars

We held 13 luncheon seminars at academic meetings attended by professionals in school health and social medicine, where we introduced the WHO's perspective on health effects of EMF. A total of 13 luncheon seminars attended by 1,335 participants.

Until last year, due to the impact of COVID19, some of the events were held in a hybrid format, but in FY2023, when the behavioral restrictions were lifted, all of the events were held in a face-to-face format.



Luncheon Seminar at the 69th Annual Meeting of the Japanese Association for School Health

(ii) Invited lectures

In FY2023, we received 21 requests from governments, local authorities and organizations to speak at public meetings attended by a total of 1,475 people.

g) Communication with Pregnant Women

JEIC receives numerous questions from pregnant women and mothers raising children about health concerns related to EMF exposure and its impact on fetuses and children. It is important to communicate with pregnant women to help for understanding the health effects of EMF and to mitigate excessive anxiety. To that end, JEIC collaborated with the Maternal and Child Health Research Foundation, a public interest incorporated foundation, to distribute educational materials about EMF and health issues for pregnant women and support seminar activities for public health nurses, midwives, and others.

(i) Educational materials for pregnant women

Educational materials titled “Learning About EMF for Fetuses and Pregnant Women During Pregnancy” are distributed to all pregnant women by municipal office as an appendix to the “Maternal and Child Health Handbook”. The 6th edition print will be revised in FY2023, and 680,000 copies will be distributed by September 2024.



From left to right:
 Educational Material for Pregnant Women (6th Edition)
 Maternal and Child Health Handbook
 Maternal and Child Health Handbook Supplementary reading

(ii) Organize seminars for maternal and child health care professionals

We dispatched a lecturer to a maternal and child health seminar organized by the Maternal and Child Health Study Group to raise knowledge among public health nurses, midwives, and other maternal and child health care professionals in municipalities that support pregnant women and mothers raising children. The lecture videos recorded on the day of the seminar were also made available later through on-demand streaming.

Seminar Title	Date
Maternal and Child Health Seminar (in Fukuoka)	October 12, 2023 (Video distribution period: January 15 - March 18, 2024)

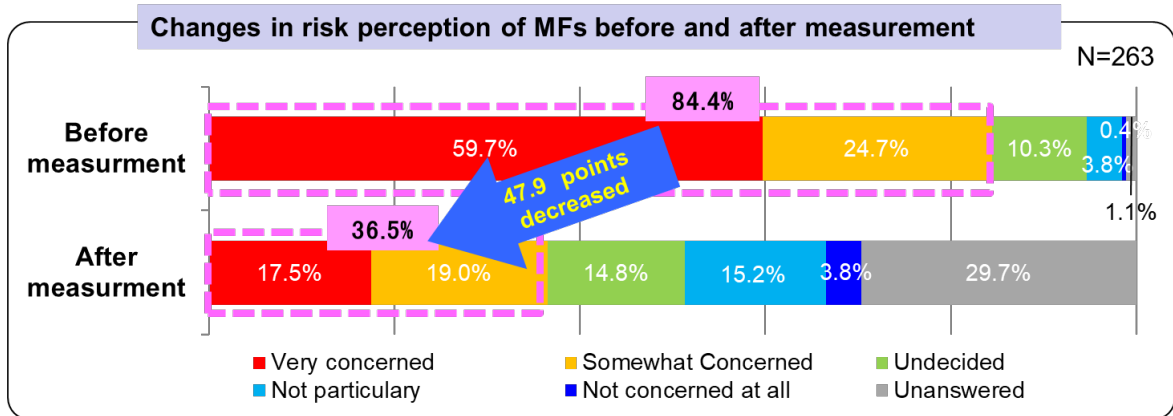
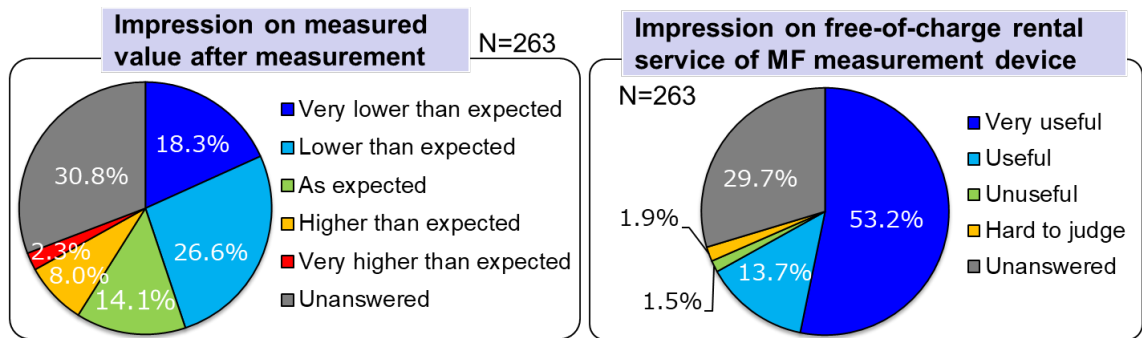
g) Free Lending Service of Low-frequency Magnetic Field Meter

Since 2013, we have been offering a free lending service of low-frequency magnetic field meters to those who are concerned about the health effects of EMF, with the aim of enabling them to measure the EMF around them by themselves and understand its nature of magnetic field intensity.

In FY2023, the number of loans was 263 which is higher than the past few years, due to the effectiveness of Internet advertisements and announcement at public meetings.

The results of the survey conducted among users of the magnetic field meter lending service showed that using the service reduced concerns about EMF. Additionally, users

expressed high satisfaction with measuring magnetic fields by themselves.

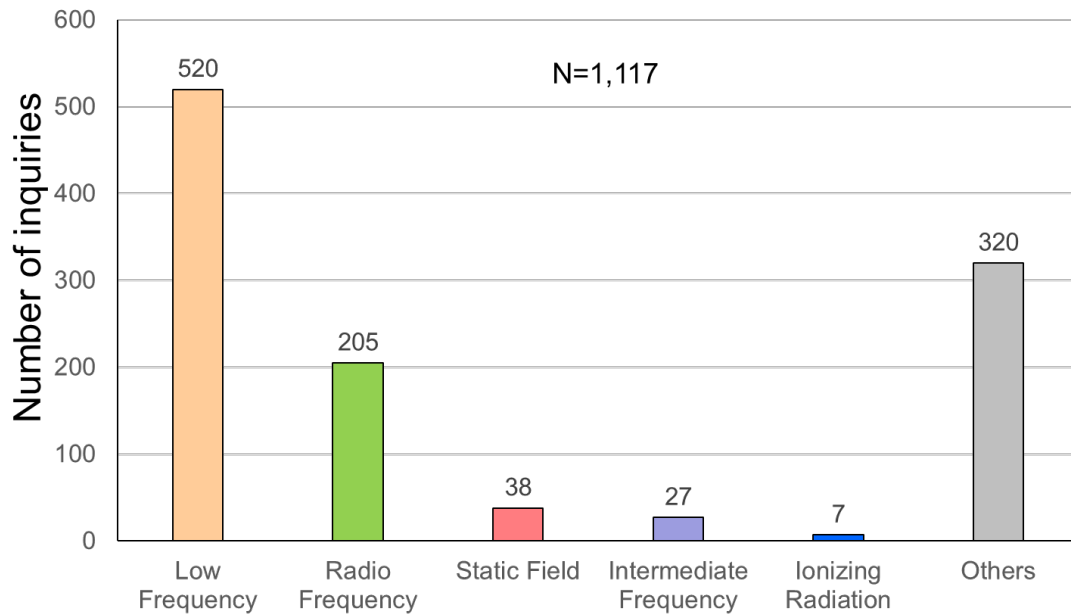


The results of the survey conducted among users of the magnetic field meter lending service (In 2023FY)

h) Operation of Inquiries

As part of our daily operations, we responded to various inquiries regarding electromagnetic waves (via phone, email, website, letter, etc.). The number of inquiries in FY2023 was 1,003.

FY2023(Apr.2023~Mar.2024)



The number of inquiries in FY2023 (by frequency)

c. Operation of entrusted business

We were entrusted with the Ministry of Economy, Trade and Industry (METI) for the "FY2023 Survey and Research Project for the Establishment of Technical Standards for Industrial Safety (Survey and Provision of Information on Electromagnetic Fields in Electric Power Facilities)," and served as the secretariat for the 'Lecture on Health Effects of EMF,' jointly hosted for the first time by the Ministry of Internal Affairs (MIC) and Communications and METI. Director Ohkubo gave a lecture as an expert. The event was held in a hybrid format at six venues nationwide, with a total of 1,341 applicants and 972 participants.



Public Meeting on Health Effects of EMF (in Takamatsu)

d. Social Contribution Activities

We will use its expertise to contribute to international organizations, domestic and

international scientific societies, universities and various committee activities.

e. Academic Conference Presentations

○ Domestic

Date of presentation	Conference name	Presenter	Title
March 2024	National Convention of the Institute of Electrical Engineers of Japan, 2024	Fumiaki KAWABE	On the Measurement of DC Magnetic Field Generated from High Voltage DC Transmission Lines

○ International

Date of presentation	Conference name	Presenter	Title
June 2023	WHO International EMF Project. The 28th International Advisory Committee Meeting (Geneva, Switzerland)	Chiyoji OHKUBO	Example of risk communication activities of Japan EMF information on EMF(JEIC)
June 2023	BioEM 2023 (Oxford,UK)	Daiki SASAKI	Relationship between Power Flow and Magnetic Field Strength of Overhead Transmission Lines
October 2023	CIGRE 2024 Sendai Colloquium (Sendai, Japan)	Chiyoji OHKUBO	Establishment of the Japan EMF Information Center (JEIC) and its Current Activities
		Norihiro MINAMI	Relationship between Power Flow and Magnetic Field Strength of Overhead Transmission Lines
December 2023	SRA 2023 (Washington DC, USA)	Chiyoji OHKUBO	Gender difference of risk perception on environmental risk factors including electromagnetic fields (EMFs)

Edited by Communication Strategy Group, Japan EMF Information Center

Issued by Chiyoji Ohkubo, Director of Japan EMF Information Center

Address: 3rd Floor, 2-9-11 Shiba, Minato-ku, Tokyo, 105-0014, JAPAN

Contact: Phone +81-3-5444-2631, Fax +81-3-5444-2632, E-mail jeic@jeic-emf.jp

URL: <http://www.jeic.emf.jp/>