

Green Technologies of Excellence (GteX) Program

Application Guidelines for 2023

Application period
Thursday, May 11, 2023 – Thursday, July 6, 2023 at 12:00

Note: This translation is provided as a reference material. If there is any discrepancy between this translated version and the original Japanese version, the original Japanese version prevails.



Department of Research and Development for Future Creation
May 2023

<Outline of the Call for Proposals>

(1) Schedule

Start of call for proposals	Thursday, May 11, 2023
Briefing session for the open call	For details and application, please refer to the following application page. (The session will be held in Japanese) URL: https://www.jst.go.jp/gtex/koubo/index.html
Application deadline (Deadline for acceptance by e-Rad)	Thursday, July 6, 2023 Noon (Japan Standard Time)
Document Screening Period	Late July to early August
Interview screening period	Mid-August to early September
Notification and announcement of selected proposals	September
Starts of R&D projects	October or later

1. All information and dates after the application deadline are subject to change.
2. Applications through e-Rad will be accepted from Thursday, May 11. The start of acceptance will be announced on the open call website.
3. The specific date and time of the interview will be specified by JST.
4. The schedule for the interview selection process and the date of e-mail notification to those selected for interviews will be announced on the open call website as soon as it is determined.

(2) How to apply

Applications must be submitted via e-Rad (see "Chapter 5: How to apply using the e-Rad"). Please allow sufficient time to complete the application process, as the e-Rad system may become busy near the deadline, and you may not be able to complete the application process depending on the environment in which you prepare your proposal.

Proposals that have not been submitted through e-Rad by the call deadline will not be accepted for any reason.

Please note that proposals uploaded to e-Rad will be rejected if there are any deficiencies that make it difficult to review. "Deficiencies that make it difficult to review" refers to errors in the proposal format, omissions from each of the proposal forms (especially Form 1: Proposal Cover Page), and serious omissions of items in the proposal. When garbled text that makes review difficult is found, JST may contact the applicant to confirm the contents of the garbled text.

JST will not be responsible for any defects in the proposal that occur before the call deadline, regardless of whether the proposal is accepted or rejected. Therefore, please be advised that JST will not make any corrections to proposals or request corrections from proposers after prior confirmation of such corrections by the call deadline.

(3) Target Areas and R&D Themes of the Call

Overall program management

PD (Program Director): UOSAKI Kohei (Professor Emeritus, Hokkaido University / Honorary Fellow, National Institute for Materials Science / Senior Fellow, Center for Research and Development Strategy, Japan Science and Technology Agency)

Storage Battery Area

PO (Program Officer): KUWABATA Susumu (Dean/Professor, Graduate School of Engineering, Osaka University)

Please refer to p. 3 of Chapter 6 (Annex of Application Guidelines) for the themes, number of proposals to be adopted, and R&D budget.

Hydrogen Area

PO (Program Officer): UCHIDA Hiroyuki (Specially Appointed Professor, Clean Energy Research Center, University of Yamanashi)

Please refer to p. 12 of Chapter 6 (Annex of Application Guidelines) for the themes, number of proposals to be adopted, and R&D budget.

Biomanufacturing Area

PO (Program Officer): KONDO Akihiko (Vice President, Kobe University / Professor, Graduate School of Science, Technology and Innovation)

Please refer to p. 20 of Chapter 6 (Annex of Application Guidelines) for the themes, number of proposals to be adopted, and R&D budget.

<To researchers who are considering applying for or participating in the program>

1. Contribution to the achievement of the Sustainable Development Goals (SDGs)

JST contributes to the achievement of the Sustainable Development Goals (SDGs)!

At the United Nations Summit on Sustainable Development held in September 2015, the outcome document "**Transforming Our World: The 2030 Agenda for Sustainable Development**" with the Sustainable Development Goals (SDGs) at its core as new, more inclusive and globally common action goals for people, planet and prosperity was unanimously adopted. The 17 goals of the SDGs not only represent the sustainability challenges faced by the humanity, but also require that these challenges be addressed in an integrated and inclusive manner, and that science, technology, and innovation provide the scientific basis for solving these societal challenges and contributing to better policy decisions. These roles can be said to be consistent with the new responsibility of science, "Science in Society and Science for Society," as set forth in the "Declaration on Science and the Use of Scientific Knowledge" (Budapest Declaration*) adopted at the International Council for Science in 1999. As a core institution promoting Japan's science and technology policy, JST promotes cutting-edge basic research and engages in problem-solving R&D that responds to the demands of society. SDGs are universal goals that can cover JST's entire mission. JST will co-create values with industry, academia, government, and the public through its projects, and work with researchers to achieve a sustainable society.

President, Japan Science and Technology Agency

*The Budapest Declaration clearly states "Science for Knowledge," "Science for Peace," "Science for Development," and "Science in Society and for Society" as the responsibilities, challenges, and obligations of science in the 21st century.



2. Promotion of Diversity

JST promotes diversity!

Diversity is necessary for scientific and technological innovation. It is possible to open a new perspective on science and technology through collaboration and discussion among various stakeholders having different specialties and values, irrespective of gender and nationality. JST is committed to promoting diversity in all aspects of science and technology to address the challenges of the future society and contribute to the enhancement of Japan's competitiveness and enrichment of human well-being. The United Nations Sustainable Development Goals (SDGs) include gender equality and other goals that are closely related to diversity, and JST will contribute to solving not only domestic issues but also issues common in the world.

Currently, women's activities are positioned at the core of the growth strategy as "Japan's greatest potential". In the R&D sector, extensive participation of female researchers is also substantially important, and indispensable to supporting science, technology and innovation. JST hopes that female researchers will actively apply for the program. JST is constantly working for institutional improvement, for example, the improvement of our "Childbirth, Child-raising and Nursing Care Support System" to provide an environment in which a researcher on leave can return to his/her research project based on the voice of the system user.

When soliciting and reviewing new proposals, we will consider diversity as well.

We hope to receive active applications from researchers.

President, Japan Science and Technology Agency

We look forward to receiving your applications!

JST promotes diversity based on the idea that diversity is about understanding people who think differently from you and integrating your ideas with theirs to create new value. This leads not only to solving domestic issues but also to solving issues common to the world, and we will address global social issues such as the SDGs through the promotion of diversity in cooperation with overseas institutions.

Diversity at JST is not only for women, but also for young researchers and non-Japanese researchers. To ensure that each researcher can fully demonstrate her or his abilities, we continue to provide support for childbirth, childcare, and nursing care, and we strive to maintain a balanced staffing structure for committees and other activities. Aiming to create an environment where a wide range of people can work hard together, we especially welcome applications from female researchers, who have been scarce in the past, and work to create new value.

We look forward to receiving active applications, especially from female researchers.

Japan Science and Technology Agency
Diversity Promotion Supervisor
General Manager, Diversity Promotion Office

3. Toward Fair Research Activities

Toward Fair Research Activities

The recent spate of research misconduct and dishonest research activities has created an alarming situation in which the relationship of trust between science and society has been shaken and the sound development of science and technology has been impeded. In order to prevent research misconduct, the scientific community is required to function in an autonomous self-cleansing manner. Each and every researcher needs to discipline himself/herself strictly, work on the creation of new knowledge and inventions useful to society based on a noble sense of ethics, and live up to the expectations of society.

As an organization that allocates research funds, JST takes research misconduct seriously and, in cooperation with related organizations, will make every effort to take measures to prevent misconduct in order to restore the trust of society.

1. JST believes that fairness in research activities is extremely important for our country, which aims to become a science and technology nation.
2. JST supports honest and responsible research activities.
3. JST will deal with research misconduct in a strict manner.
4. JST will work with related organizations to promote research ethics education and reform the research fund allocation system to prevent misconduct.

We must foster a sound scientific culture under the trust of society in order to realize a bright future society filled with dreams and hopes. We ask for the continued understanding and cooperation of the research community and related institutions.

President, Japan Science and Technology Agency

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Chapter 1: Green Technologies of Excellence (GteX) Program

1.1 Overview

As countries around the world accelerate their efforts to achieve carbon neutrality, investments related to Green Transformation (GX) are expanding rapidly, and in order to realize GX, it is essential to achieve carbon neutrality by 2050, as well as to strengthen industrial competitiveness, economic growth, and development. In order to achieve future greenhouse gas (GHG) reduction targets and creation of future industries, it is necessary not only to introduce existing technologies but also to create new technologies. In order to continuously create such technologies, support for R&D and human resource development in academia is required in parallel with application and development of technology in industry, and social implementation through genuine collaboration between companies and academia.

The Green Technologies for Excellence (GteX¹) Program (hereinafter referred to as "the Program") aims to contribute to the realization of GX from the perspective of creating innovative technology seeds and nurturing human resources by supporting R&D and human resource development at universities and national institutes, etc., making the most of the high potential and accumulation of basic research capabilities in academia in Japan. In order to create innovative technologies that will lead to the realization of GX, it is essential not only to conduct basic research on elemental technologies, but also to break the silos in research, and build a system that brings together various laboratories and researchers in fields such as material development, engineering, evaluation and analysis, data management and analysis to conduct integrated R&D as a "team" toward achieving R&D goals. It is essential to establish a system that brings together various laboratories and researchers in material development, engineering, evaluation, analysis, data management and analysis, etc., to conduct integrated R&D as a "team" toward achieving R&D goals.

On these basis, this program promotes R&D in line with the GteX Basic Policy (hereinafter referred to as the "Basic Policy") and the GteX R&D Policy (hereinafter referred to as the "R&D Policy") formulated by the Ministry of Education, Culture, Sports, Science and Technology (hereinafter referred to as the "MEXT"). Based on the Basic Policy and the R&D Policy, we have set "Storage Batteries," "Hydrogen," and "Biomanufacturing" as R&D areas where Japanese academia has a potential to make significant future contributions, and we will support R&D conducted by top-level researchers at universities and national institutes in an integrated all-Japan team. These areas will be reviewed as necessary based on revisions of the basic policy, industrial trends, R&D trends, etc.

Please note that this program is listed on the list of competitive research funding programs posted on the Cabinet Office website (<https://www8.cao.go.jp/cstp/compefund/index.html>).

1.2 Project Implementation Policy and Management Structure

Process of project implementation

① Establishment of the Basic Policy and the R&D Policy

The MEXT will formulate the Basic Policy and R&D Policy based on the deliberations in the

¹ GteX = Green technologies of eXcellence

Subcommittee on Innovative GX Technologies Development² established by the MEXT.

② R&D Plan Development

Based on the Basic Policy and R&D policy, JST formulates an R&D plan for each area (hereinafter referred to as the "Project Plan").

③ Conducting R&D

JST establishes a project management system, including the appointment of a Program Director (hereinafter referred to as "PD"), Program Officer (hereinafter referred to as "PO"), Area Advisor (hereinafter referred to as "AD"), and committees. Under the project management system, the program conducts the call for proposals, screening, and project adoption based on the R&D plan, and manages the progress of R&D.

④ Evaluation of R&D

JST conducts a stage-gate evaluation of the R&D projects during the R&D period to determine whether to continue or discontinue the R&D, to increase or decrease the R&D budget, or to review the R&D structure.

⑤ Review of R&D plans, etc.

JST reports to MEXT if any changes to the R&D plan of the program are necessary based on the progress of the R&D, and seeks advice from the Subcommittee for Innovative GX Technologies Development as necessary.

In addition, this program aims to promote basic and fundamental research that should be conducted by academia such as universities, and to seamlessly link it to technological development, verification, and practical application in industry. To this end, it is important to deepen mutual collaboration between industry and academia by clarifying technological issues in industry and quickly deploying the results of academia's research. This program will promote policy collaboration through joint study meetings and governing boards between the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Ministry of Economy, Trade and Industry (METI), as well as between JST and the New Energy and Industrial Technology Development Organization (NEDO). The project will promote inter-program collaboration between JST and NEDO. The program will also actively collaborate with other programs, including the JST Strategic Creative Research Promotion Program for Advanced Technologies for Carbon Neutral ("ALCA-Next"), which is also managed by the PD.

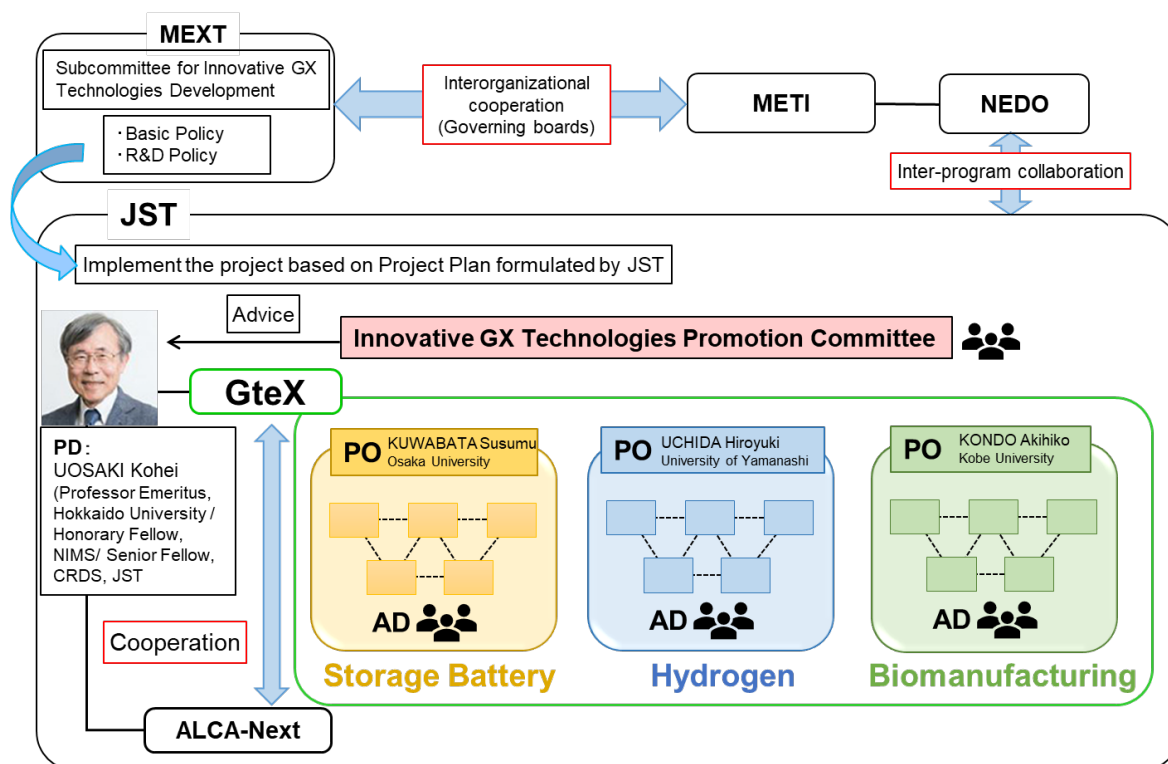
Operation system of the program in JST

The program is directed by a PD appointed by JST, who will oversee the overall operation of the project and provide overall management of the R&D. The PD will also receive advice from the Innovative GX Technologies Promotion Committee to oversee the operation of the project from a bird's-eye viewpoint, and will make decisions on important matters related to the operation of the project, including the formulation and review of the R&D plan, coordination of cross-disciplinary matters including budget, decision on adopted proposals in each area, and decision on whether to continue or discontinue R&D projects based on the results of the stage-gate evaluation. The committee makes decisions on important matters related to project management. The Innovative GX

² Established in the Committee on Science and Technology for Environment and Energy, Subcommittee on Research Planning and Evaluation, Council for Science, Technology and Science

Technologies Promotion Committee is chaired by the PD and consists of external experts. The committee convenes at the request of the chairperson and advises the PD on important matters concerning the operation of the project.

Under the overall supervision of the PD, the PO manages his/her R&D area in charge, including R&D projects. With the cooperation of external experts such as ADs who have specialized knowledge, the PO selects candidate proposals for adoption, manages the progress of R&D through site visits, etc., gives instructions to each team, and conducts stage-gate evaluations. Based on the evaluation results, we may increase or decrease the R&D budget, integrate projects, or terminate (cancel) a project before the end of the project period.



Management Structure

1.3 Characteristics of the Project and Points to Consider in its Promotion

In promoting this program, the following characteristics and points to be noted must be taken into account. In addition, the purpose of this program is based on the Basic Policy and R&D policy formulated by the Ministry of Education, Culture, Sports, Science and Technology, and the R&D plan formulated by JST.

(https://www.mext.go.jp/a_menu/kaihatu/kankyouene/detail/1417737_00001.htm)

- Conduct stage-gate evaluation

To achieve R&D targets, it is important to monitor and evaluate R&D on a regular basis. Flexible efforts are required as necessary, such as reviewing the R&D plan when it is deemed difficult to achieve the goals, or bringing forward R&D expenditures when it is deemed necessary to accelerate R&D for early commercialization. For this reason, this program, in principle, conducts stage-gate evaluations in the third and fifth fiscal years of R&D to determine whether to continue or discontinue R&D projects, increase or decrease R&D budgets, or review the R&D structure. The timing of the evaluation may be changed or added depending on the area and the nature of the R&D subject. For details, please refer to "1.4 R&D Structure" and "3.5 Evaluation."

- Promoting Data Utilization

Automation and autonomy are rapidly advancing in R&D. In particular, as international competition intensifies in the areas targeted by this program, it is extremely important to improve the efficiency of fundamental R&D. For this reason, this program will establish policies regarding research DX to innovate existing research methods and data operations to promote DX of research in each R&D area. Specifically, various experimental and measurement data will be centralized in a specific database, and data will be shared while protecting the advantages of data providers, based on an appropriate data management policy. Participation in this program will require compliance with the policy. For details, please refer to "3.4 Promotion of R&D" and "3.6.2 Responsibility for R&D Results, etc."

- Overseas Cooperation

This program aims for Japan to become the core of a global network in promoting GX, and to this end, it is necessary to promote strategic and proactive collaboration with top-level overseas research institutions. It is also important to promote R&D from an international perspective and to ensure the rapid international deployment of results, so as not to fall behind in verifications, standardization, and market introduction, despite our advanced technology. To this end, this program will not only promote world-leading R&D, but will also strongly promote international collaboration with world-class research institutions and researchers by mutually sending and receiving researchers and conducting joint research with universities and research institutions in partner countries. In addition, to lead the world in the long term, it is essential to develop young researchers, and we will focus on creating an environment for mutual exchange among young researchers and overseas training programs.

- Active participation and development of young researchers

In order to develop human resources who will lead R&D in 2050, the target year for achieving carbon neutrality, there is a strong need to develop researchers, engineers, etc., who are expected to lead Japan's future industry and academia, including Ph.D. holders. It is also necessary to raise the awareness of graduate and undergraduate students who are expected to become researchers and engineers in the future. For this reason, we actively encourage young researchers to assume key positions in the implementation of R&D, to participate in discussions on the direction of R&D, and to encourage the participation of master's and doctoral students in this program. For details, see "3.6 Responsibilities of the Principal Investigator and Principal Co-Investigator, etc.," "4.13 Improvement of Treatment of Doctoral Students ," "4.14 Ensuring Self-sustaining, Stable Research Environment for Young Researchers ," "4.15 Voluntary Research Activities of Young Researchers Employed to Implement the Project, etc. and "4.16 Supporting Various Career Paths for Young Researchers "

- Intellectual property management and open/close strategies to maximize results

Since this program mainly promotes fundamental research at universities, etc., research results will be open to the public in principle. On the other hand, since R&D in each area may have a significant impact on strengthening Japan's industrial and research capabilities, an open and close strategy for research results is important. In cases where the research is expected to develop into joint research with companies, a policy on the scope of sharing research results and data will be formulated according to the R&D stage, and appropriate management will be implemented under the judgment of the PO and other relevant personnel. In the area of intellectual property, if early commercialization is anticipated, we will actively encourage

companies to license intellectual property rights and provide other forms of support. For details, please refer to "3.4 Promotion of R&D" and "3.6.2 Responsibility for R&D Results, etc."

- Promotion of shared use of research facilities, etc.

As stated in "4.12 Promotion of Shared Use of Research Facilities and Equipment," active promotion of shared use is recommended for large-scale facilities and equipment. In this program, in order to maximize its results as a whole, we will further promote the shared use of facilities and equipment. A mutual support network will be formed among the institutions participating in this program, and cross-sectional utilization measures will be discussed among the research areas and R&D teams for such as large equipment or equipment with infrequent use at a single institution or high management and operation costs. For large facilities designated by the PO, the PO may require the sharing of such facilities among the research areas and R&D teams and the establishment of the necessary systems for this purpose. In addition, based on the needs, collaboration with large synchrotron radiation facilities, etc. will also be considered across the research areas. For effective and efficient operation of the facilities, the budget and the institutions to be installed may be reviewed within each R&D area and R&D teams. For details, please refer to "1.5 Common Research Equipment" and "4.12 Promoting the Joint Use of Research Facilities and Equipment "

- Active collaboration among disciplines and R&D teams

We anticipate that there will be aspects where new developments in R&D can be expected through joint implementation, including the promotion of shared facilities and data utilization, across disciplines and R&D teams. Therefore, we will actively promote collaboration among areas and R&D teams. When it is determined that cross-disciplinary efforts are necessary, cross-disciplinary teams may be formed.

1.4 R&D Structure

The R&D structure for this program is as follows. The specific structure and name will differ for each area, so please refer to Chapter 6 of the Annex of Application Guidelines for details.

(1) Team-based research:

A team is a large all-Japan R&D team that integrates elemental technology development and conducts R&D while incorporating knowledge from different fields. The team leader coordinates multiple groups conducting R&D on elemental technologies. The teams work in unison to promote research aimed at achieving the R&D themes, including optimization as a total system. The size and number of groups will be determined in accordance with the actual conditions of each area and theme. In some areas, a "general team leader" may be appointed from among the adopted team leaders to provide overall support to all teams.

The initial research period will not exceed five years. During the research period, a stage-gate evaluation will be conducted to determine whether a research project should be terminated, reviewed, accelerated, or strengthened. The timing of the stage-gate evaluation will be determined according to the nature of the research project, but basically it will be conducted in the third and fifth years after the start of the project. Depending on the results of the stage-gate evaluation, the research period may be up to 10 years. Stage-gate evaluation will be conducted in a timely manner at the discretion of the PD, PO, etc.

After the adoption decision is made, the R&D proposal will be developed further as described in "Chapter 3: Research Promotion after Adoption, etc.," and research will be started after the development is completed. The initial R&D period of 5 years is defined as the period from the completion of the project development to March 31, 2028.

In addition, each research team may install the necessary research equipment (hereinafter referred to as "individual research equipment"). However, from the perspective of efficiency and the assignment of full-time skilled operators for the equipment, particularly large research equipment will be consolidated and operated as common research equipment maintenance as described in "1.5 Common Research Equipment".

(2) Innovative elemental technologies research:

This is a feasibility study of innovative ideas that could be incorporated into team-based research as an elemental technology. This is intended for individual research or research conducted by a very small number of researchers. For example, a proposal for innovative elemental technology research may be considered for active materials, electrolytes, etc. in the "Innovation of Practical Batteries (Advanced Lithium-Ion Batteries)," Theme 1 in the area of Storage Batteries. Please refer to the examples of technologies listed in the contents of R&D for each theme in Chapter 6 of the Annex of Application Guidelines for Applicants.

After the selection is made, the proponent will immediately meet with the PO, AD, and team leader. If determined that the technology can be an elemental technology to be added to the team-based research, it will be incorporated into the team-based research by the start of the R&D. In such cases, the R&D budget for the first year will be based on the amount declared at the time of application, but may be increased or decreased according to the judgment of the PO. R&D budget for the following year and thereafter will be distributed from the R&D funds allocated to the R&D team.

On the other hand, if it is determined that the research is unlikely to be incorporated into a team-based research project, the research will be terminated as of March 31, 2024. In such cases, the R&D budget will be based on the amount declared at the time of proposal, but may be reduced according to the judgment of the PO and other parties.

<Explanation of Terms>

R&D themes: Specific themes of the program's open calls for team-based research to be established in each area. The selection process is conducted for each theme.

R&D team: R&D project adopted under each R&D theme for team-based research; the unit for conducting R&D.

Team Leader: The person in charge of the R&D team for promoting R&D.

Group: In the R&D team in team-based research, the group is responsible for R&D of elemental technologies and elucidation of mechanisms; consists of a group leader and group members.

Principal Investigator : A generic term for a team leader of team-based research or a researcher of innovative elemental technology research

Principal Co-Investigator: The group leader of the team-based research and the group member who will be the contracted representative for the sponsored research.

1.5 Common Research Equipment

Although each research team may install individual research equipment, from the viewpoint of efficiency and the assignment of skilled full-time operators of the equipment, particularly large research equipment, etc., will be consolidated and provided for shared use. (Such equipment to be installed and used in an integrated manner will hereinafter be referred to as "common research equipment.") Common research equipment includes not only equipment newly introduced under the program, but also existing research equipment that can be provided for the program, if any.

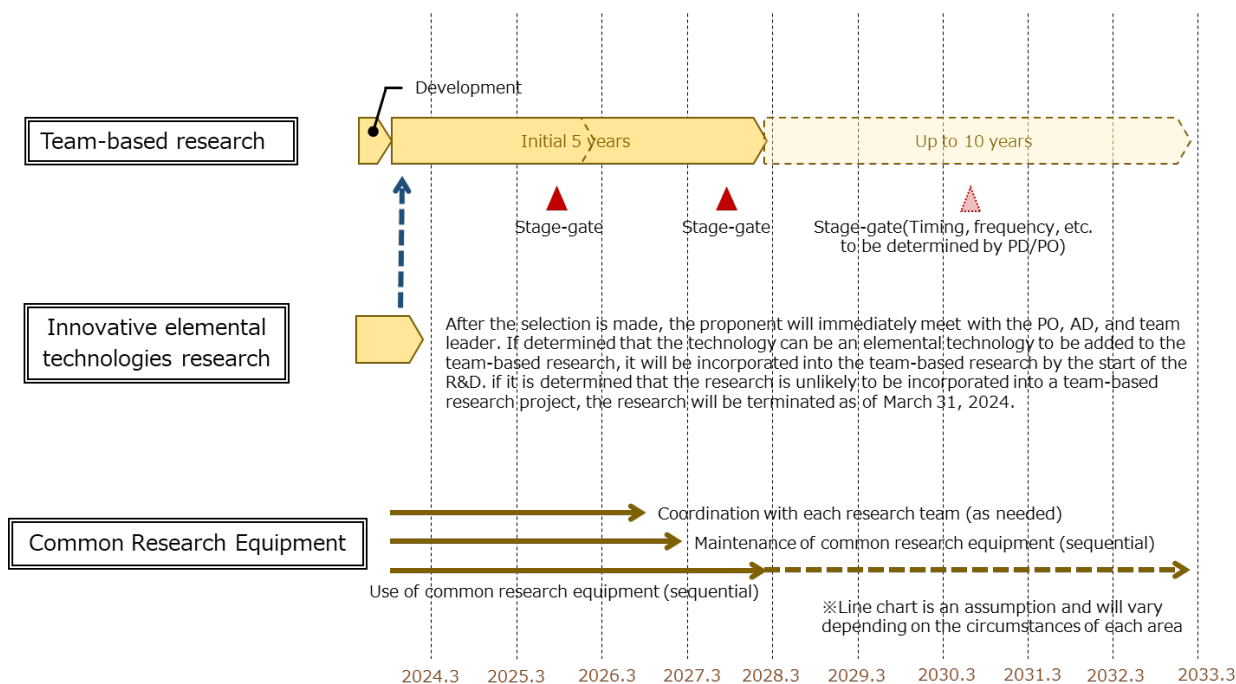
Common research equipment is not intended for equipment that is installed at each research site in a dispersed manner and used for joint research with other research sites (these are classified as "individual research equipment"), but is intended mainly for large research equipment that is consolidated and maintained and managed in an integrated manner under the supervision of a manager, and used for convenience, including sample preparation and equipment operation by a full-time operator. From this perspective, the following expenses are eligible for the maintenance of common research equipment.

- ◇ Equipment costs for common research equipment
- ◇ Maintenance and management costs of common research equipment
- ◇ Expenses necessary for the operation of common research equipment (personnel expenses for full-time operators, utilities when meters are installed independently, materials and consumables necessary for the use of common research equipment such as sequencing reagents, etc.)
- ◇ Facility rental expenses for the maintenance and provision of common research equipment (rental expenses for incubation facilities, etc., at universities, etc., to provide common research equipment to teams whose primary site is at another university, etc.)

Common research equipment does not necessarily have to be installed at the start of the research period. For example, introducing equipment in the following steps may be acceptable:

- ① Coordinate with each adopted R&D team regarding common research equipment to be installed in the first and third fiscal years.
- ② Successively introduce common research equipment identified in the previous step (by the fourth year).
- ③ After necessary preparations, such as training of full-time operators, the common research equipment that has been installed is gradually put into service.

Common research equipment expected in the Storage Batteries / Hydrogen areas will be those listed on p. 11 at minimum. Please plan the installation of individual research devices in consideration of these common research devices.



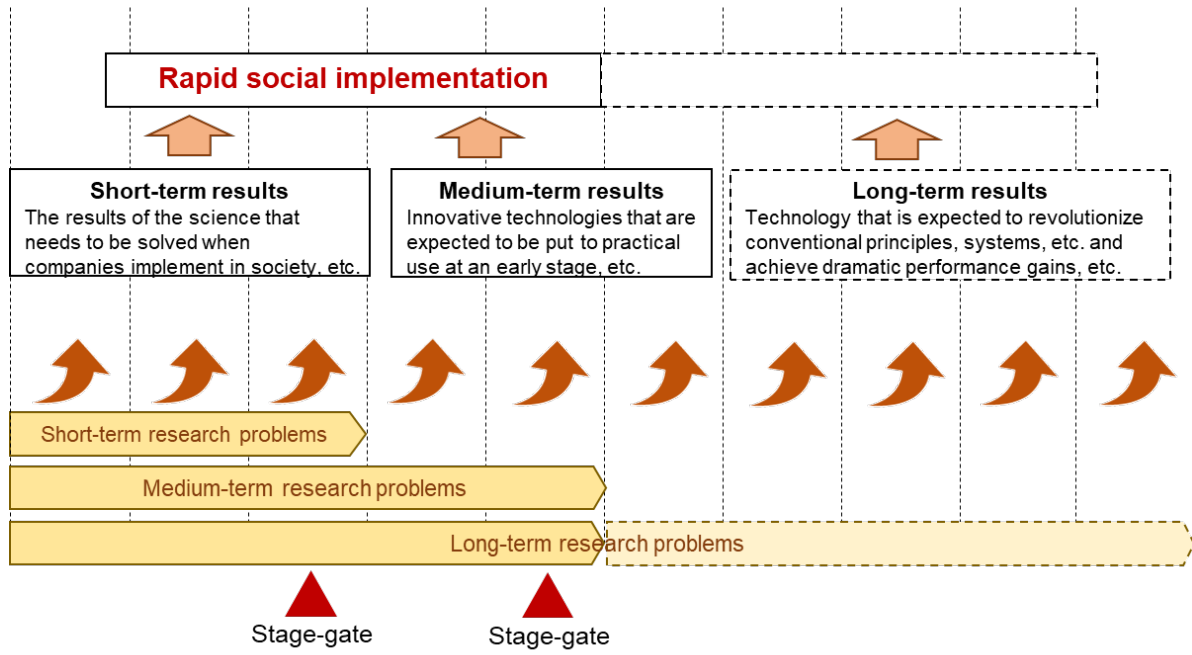
How to proceed with R&D

1.6 Use of Large-scale Experimental Facilities and Equipment

Regarding the use of large experimental facilities and equipment such as large synchrotron radiation facilities (Spring-8, NanoTerasu, J-PARC, etc.), supercomputers, and Inter-University Research Institute Cooperation, JST will consider appropriate measures such as securing machine time for the entire GtEX program based on the needs of the R&D projects and from the perspective of convenience and efficiency of the program as a whole.

1.7 Structure of R&D Proposals

In this program, we aim for early social implementation of innovative technology seeds that contribute to solving bottleneck problems faced by industry. For this purpose, the program aims to create technology seeds even in the mid-stage of research, and requires rapid social implementation activities such as the deployment of these technology seeds to NEDO projects, technology transfer to companies, and the establishment of start-up companies. For this reason, the R&D proposals should consist of short-term research problems that aim to produce research results in the next three years, medium-term research problems that aim to produce research results in the next five years, and long-term research problems that aim to produce research results in the next ten years. Although not all proposals need to set up a short-term problem, please consider proposing short-term problems for the program to constantly generate research result.



Structure of R&D Proposals

Table. List of common research equipment expected to be installed in the Storage Battery and Hydrogen fields

Purpose and Application	Facilities & Equipment
Small and medium-sized battery prototypes	Vacuum dryer, ultrasonic welder, electrolyte pouring booth, vacuum sealer, caulking machine, roll press, automatic coating machine, mixer, dryer, glove box
Battery characterization	Charging and discharging tester
Electrochemical measurement systems	High frequency impedance measurement, DC polarization measurement, single particle electrochemical measurement system
Battery material preparation	Discharge plasma sintering equipment, thin film fabrication equipment
Measurement of powder, porous and thin film properties	Specific surface area analyzer, particle size distribution analyzer, gas transmission analyzer, high-speed spectroscopic ellipsometer
Thermal analysis	High-sensitivity calorimeter, multimode calorimeter, TG-MS (thermogravimetry mass spectrometer)
Morphological observation, 3D structural analysis equipment	Laser microscopy, SEM, TEM/STEM, CP, FIB, FIB-SEM, environmentally controlled SPM, bimodal atomic force microscopy,
Gas composition analysis, separation analysis, mass spectrometry	Battery generated gas analyzer, Oxygen, nitrogen, and hydrogen quantitative analyzer, Ion chromatograph, GC/MS, GC/MSMS, LC/MS, TOF-SIMS, ICP/MS, probe electrospray ionization system mass spectrometer
Surface and bulk chemical state analysis	XPS, HAXPES, scanning AES, XRF, GD-OES, X-ray absorption spectroscopy
Mechanophysical properties measurement	Viscometer, Nanoindenter
Spectroscopic analysis	FT-IR
Crystal and molecular structure analysis	XRD, Laser Raman microscopy

Chapter 2: Call for Proposals and Selection

2.1 R&D Areas and Themes of the Call for Proposals

This program targets (1) team-based research and (2) innovative elemental technology research in the areas of "Storage Batteries," "Hydrogen," and "Biomanufacturing," which are linked to the 14 areas defined in the Green Growth Strategy and in which Japanese academia is expected to make significant contributions in the future. The program invites applications from researchers belonging to universities, companies, public research institutions, etc., for R&D concepts, and selects R&D representatives (team leaders/proposers of innovative elemental technology research) and R&D projects. The details of the call for proposals differ for each area. For details, please refer to "1.4 R&D Structure" and Chapter 6 of the Annex of Application Guidelines.

(<https://www.jst.go.jp/gtex/koubo/index.html>)

Storage Battery Area

PO: KUWABATA Susumu (Dean/Professor, Graduate School of Engineering, Osaka University)

Please refer to p.3 of Chapter 6 (Annex of Application Guidelines), for the R&D themes, the number of proposals to be adopted, and the R&D budget.

Hydrogen Area

PO: UCHIDA Hiroyuki (Specially Appointed Professor, Clean Energy Research Center, University of Yamanashi)

Please refer to p. 12 of Chapter 6 (Annex of Application Guidelines), for the R&D themes, number of proposals to be adopted, and R&D budget.

Biomanufacturing Area

PO: KONDO Akihiko (Vice President, Kobe University / Professor, Graduate School of Science, Technology and Innovation)

Please refer to p. 20 of Chapter 6 (Annex of Application Guidelines), for the R&D themes, number of proposals to be adopted, and R&D budget.

2.2 Application Period and Selection Schedule

Start of call for proposals	Thursday, May 11, 2023
Briefing session for the open call	For details and application, please refer to the following application page. (The session will be held in Japanese) URL: https://www.jst.go.jp/gtex/koubo/index.html
Application deadline (Deadline for acceptance by e-Rad)	Thursday, July 6, 2023 Noon (Japan Standard Time)
Document Screening Period	Late July to early August
Interview screening period	Mid-August to early September
Notification and announcement of selected proposals	September
Starts of R&D projects	October or later

1. All information and dates after the application deadline are subject to change.

2. Applications through e-Rad will be accepted from Thursday, May 11. The start of acceptance will

be announced on the open call website.

3. The specific date and time of the interview will be specified by JST.
4. The schedule for the interview selection process and the date of e-mail notification to those selected for interviews will be announced on the open call website as soon as it is determined.

2.3 Application Requirements

Application requirements are listed in 2.3.1 through 2.3.3 below. Please note that failure to meet the application requirements will be handled as described below.

- If it is found that a proposal does not meet the application requirements by the time of selection, the R&D proposal will, in principle, be rejected or not adopted.
- The application requirements, if adopted, will be maintained during the entire R&D period of the relevant R&D proposal. If the requirements are not met during the R&D period, the entire R&D proposal or part of it will, in principle, be terminated (cancelled) early.

In addition to 2.3.1 through 2.3.3 below, please be sure to understand the information in "2.4.2 Restrictions on duplicate applications " and "Chapter 4: Key Points for Application.

2.3.1 Requirements for applicants

- a. The R&D applicant who will be the Principal Investigator (PI) of the R&D (team leader or proposer of the innovative element technologies research) must belong to a R&D organization in Japan and conduct the R&D at the said organization (regardless of the nationality of the R&D applicant).

The following persons are also eligible for application.

- Foreign researchers affiliated with Japanese R&D institutions.
- Researcher who is not currently affiliated with a specific R&D institution or is affiliated with an overseas R&D institution, and who, if selected as a Principal Investigator, is able to establish a system to conduct R&D by affiliating with a domestic R&D institution in Japan (regardless of nationality).

*Persons belonging to R&D institutions other than universities, such as private companies, are also eligible.

- b. A researcher who is able to assume responsibility for the entire R&D project as the person in charge of the R&D project.

(For details, please refer to "3.6 Responsibilities of the Principal Investigator and Principal Co-Investigator, etc.".)

- c. A researcher who has completed a program on research ethics education designated by JST at his/her home institution by the application deadline.

(For details, please refer to "4.1 Enrolling in and Completing Educational Program on Research Integrity .)

- d. Be able to pledge the following four points:

- The applicant shall understand and comply with the contents of the "Guidelines Concerning Responses to Misconduct in Research Activities (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014)".
- The applicant shall understand and comply with the contents of the "Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)" (revised on February 1, 2021) .
- If the R&D proposal is adopted, the R&D Principal Investigator and the R&D participants shall not engage in any misconduct in research activities (fabrication, falsification, or plagiarism) or misuse of research funds.
- No misconduct in research activities must have occurred in the past research results

described in the R&D proposal.

*Please confirm the above items on the e-Rad application information entry screen.

2.3.2 Requirements regarding R&D project structure

● Team-Based Research

- a. The R&D team shall consist of groups responsible for R&D of elemental technologies and mechanism elucidation under the supervision of a team leader, and shall have an optimal structure to achieve the team's overall goal of maximizing performance as a total system. The size and number of groups should be in accordance with the actual conditions of each research area and the R&D theme.
- b. JST welcomes collaboration with overseas research institutions. However, when a researcher belonging to an overseas research institution participates as the main co-researcher, the overseas research institution will not receive any research funds from JST in principle, and the researcher is required to secure research funds on his/her own. However, only when it is difficult to implement the R&D without disbursement of research funds to the overseas research organization, disbursement of research funds to the overseas research organization may be possible with the PO's approval.

* If you wish to have an R&D team composition that includes overseas research institutions, please list them as members of the group in the R&D proposal (R&D Plan for Team-based Research (Form 3)), and in the "Special Notes," please explain the reason why researchers belonging to overseas research institutions are needed. In addition, the overseas research institution must, in principle, conclude a research contract with the details presented by JST (indirect costs are capped at 30%). JST must be able to own at least 50% of the intellectual property rights generated under the joint research agreement. To indicate whether or not the department head in charge of contracts at the overseas research institution has given prior approval for these matters, please submit a prescribed form separately designated by JST by the time of the interview selection (the secretariat will inquire about this during the selection process).

2.3.3 R&D organization requirements

In conducting R&D, R&D institutions must be fully aware that the source of commissioned R&D funds is public funds, comply with relevant laws and regulations, and strive to conduct R&D efficiently. The implementation of R&D by an R&D organization that fails to fulfill the responsibilities listed in "3.7 Responsibilities of Research Institutes, etc." will not be approved. When applying, please make sure to obtain the prior approval of the R&D institution where the R&D is planned to be conducted.

2.4 Application Method

Application requirements and conditions, such as R&D period and R&D, differ depending on the R&D theme of the open call. When preparing your R&D proposal, please be sure to check Chapter 6 of Annex of Application Guidelines: (<https://www.jst.go.jp/gtex/koubo/index.html>).

In addition, the format of the R&D proposal form is different for research on innovative elemental technologies. Please download and prepare the appropriate R&D proposal form from the Call for Proposals page (<https://www.jst.go.jp/gtex/koubo/index.html>).

2.4.1 R&D proposal form

(1) R&D Proposal for Team-Based Research (Form)

Please be sure to use the designated proposal format. Basically, the proposal should describe the R&D proposal for a five-year period (from April 1, 2028 to March 31, 2028). In addition to this, please describe the R&D contents and goals for the subsequent five-year period (from April 1, 2028 to March 31, 2033), assuming the development and deployment of the R&D. Please

download the form from the following page and prepare your R&D proposal according to the instructions for completion (in blue letters in the proposal form).

URL: <https://www.jst.go.jp/gtex/koubo/index.html>

(2) R&D Proposal for Innovative Elemental Technologies Research (Form)

Please be sure to use the designated proposal format. Basically, you are required to describe your R&D proposal for about six months (until Mar. 31, 2024). In addition to this, please describe the contents and goals of your R&D, assuming the development and deployment of R&D for about four years after being incorporated into the team-based research. Please download the form from the following application page and prepare your R&D proposal according to the instructions for completion (indicated in blue letters in the proposal form).

URL: <https://www.jst.go.jp/gtex/koubo/index.html>

The list of documents to be submitted is as follows

Document Name	Team-based research	Team-based research (with common research equipment maintenance)	Innovative elemental technologies research
R&D Proposal - Cover Page	✓	✓	✓
Overall Concept of R&D Project	✓	✓	✓
R&D Goals and Plan	✓	✓	-
R&D Budget Planning	✓	✓	-
R&D Proponent	✓	✓	✓
Information of other funded projects under other programs	✓	✓	✓
Overall plan of common research equipment installation	-	✓	-
Budget plan for common research equipment	-	✓	-

*Please keep the file size of your proposal within 3 MB.

*Please be sure to confirm "2.5.3 Conflict of interest management

*For details on application method, please refer to "Chapter 5: How to apply using the e-Rad".

*Please be sure to read and understand "Chapter 4: Key Points for Application" and "2.4.2 Restrictions on duplicate applications".

2.4.2 Restrictions on duplicate applications

The following restrictions will be placed on duplicate applications. Certain measures may also be taken for other programs inside and outside of JST that are not mentioned in this section, if they are judged to be unreasonable duplication or excessive concentration. For details, please refer to "4.2 Measures against Unreasonable Duplication and Excessive Concentration."

(1) You may apply for only one R&D program as a Principal Investigator from among all R&D themes of the program and innovative elemental technologies research in team-based research that is the subject of the call for proposals.

(2) It is possible to apply to ALCA-Next as a Principal Investigator for the applicant of team-based

research and innovative elemental technologies research. However, if you are selected as a candidate for both GteX (team-based research or innovative elemental technologies research) and ALCA-Next, we will adjust your application to one of the two.

- (3) The following restrictions apply to participation in R&D as a Principal Co-Investigator in an R&D proposal.
- a. The Principal Investigator and the Principal Co-Investigator cannot exchange their positions and submit multiple applications.
 - b. If a researcher applies as a Principal Investigator or Principal Co-Investigator and also applies as a Principal Co-Investigator in another R&D proposal, and both R&D proposals are selected, the PO may make adjustments, such as reducing the amount of the R&D budget or disqualifying the researcher from participating in some of the R&D proposals in which he/she will be participating.

2.5 Selection Process

2.5.1 Selection process

For each R&D theme, the PO, with the cooperation of the AD and others, will conduct document screening and interview selection. The PO may also obtain the cooperation of external evaluators. Since GteX and ALCA-Next will collaborate to promote the program, POs from related fields in ALCA-Next may participate in the document screening and interview selection as observers. In such cases, ALCA-Next POs participating as observers will be subject to the same confidentiality obligations as GteX POs, ADs, and other evaluators.

In addition, other investigations, etc., may be conducted during the selection process as necessary. If the R&D applicant or Principal Co-Investigator belongs to a commercial organization, etc., the financial statements of the organization to which he/she belongs may be requested.

Based on the above process, JST will select the R&D Principal Investigators and R&D projects.

2.5.2 Special measures for adoption

The following adjustments may be made by the PD and PO during the selection process and at the time of adoption. Please understand that the following adjustments may be made during the selection process and at the time of adoption.

- In the selection process, the selection of R&D proposals may be coordinated between the R&D areas and themes. As a result, the selection process may result in the selection and adoption of proposals under a different R&D area or theme from that to which the R&D applicant has applied. In such cases, the R&D applicant will be notified when it is decided that adjustments will be made.
- Even in the case of rejection, if the PO deems that a part of the R&D proposal is important for the promotion of the R&D area and the theme, the PO may make adjustments by having the research conducted as an elemental technology group, etc. of the selected candidate proposal for team-based research. In such cases, the PO will contact the R&D applicant and make the necessary adjustments.

2.5.3 Conflict of interest management

From the viewpoint of fair and transparent evaluation and allocation of research funds, the following management of conflict of interest is implemented in accordance with JST's regulations.

- (1) Conflict of interest management for those involved in the selection process

From the viewpoint of fair and transparent evaluation, the following interested parties will not be included in the selection process with respect to the R&D Principal Investigators.

- a. A person who has a family relationship with the Principal Investigator of the R&D.
- b. A person who belongs to the same department, major, etc., or the same company at a research institution such as a university, national research institute, etc., as the Principal Investigator.
- c. A person who collaborates closely with the Principal Investigator of the proposed R&D. (For example, a person who is considered to be a member of substantially the same research group as the applicant, which means a person who carries out joint projects, co-authors research papers, is a research member with the same objective, or is a co-researcher in the proposer's R&D project.)
- d. A person who has a close mentor-student relationship or direct employment relationship with the Principal Investigator.
- e. A person who is in academic competition with the R&D subject of the PI or a person who belongs to a company that is in competition in the market.
- f. Other parties deemed to be interested parties by JST.

(2) Conflict of Interest Management for R&D Applicant

If an R&D applicant makes a proposal to an "organization related to the R&D applicant" as a joint research group, and research funds are allocated by JST to the "organization related to the R&D applicant," this may constitute a conflict of interest for the R&D applicant. Therefore, the conflict of interest between the R&D applicant and "an institution related to the R&D applicant" will be appropriately judged in consideration of the necessity, rationality, and appropriateness of the relationship, and conflict of interest management will be implemented to prevent any harmful effects caused by the conflict of interest.

The term "Organization Related to the R&D Applicant" refers to a joint research group in the case of any of the following. The terms "a" and "b" refer not only to the R&D applicant, but also to the spouse and relatives within the first degree of kinship of the R&D applicant (hereinafter collectively referred to as the "R&D applicant, etc.").

- a. An organization established based on the R&D results of the R&D applicant, etc.
(Including the case where the person is not directly involved in management but only holds a title such as technical advisor, etc., or only holds shares.)
- b. An organization where the R&D applicant, etc. is an officer (including CTO, but not including technical advisor).
- c. An institution in which the R&D applicant has an equity stake.
- d. Institutions from which the R&D applicant receives implementation fee income.

Proposals that include "an institution related to the R&D applicant" as a joint research group will be evaluated from the perspective of the necessity, rationality, and appropriateness of the institution concerned.

Therefore, if you wish to include "institutions related to the R&D applicant" as a joint research group, please indicate in the Proposal Form 1 that "institutions related to the R&D applicant" are included in the joint research group.

In addition, separate materials may be required for conducting conflict of interest management by the R&D applicant.

(3) Conflict of Interest Management at JST

The adoption of the companies in which JST has invested (hereinafter referred to as "funded companies") for this project and the allocation of research funds to them may constitute a conflict of interest of JST (conflict of interest as an organization). Therefore, conflict of interest

management will be implemented in order to avoid any doubt from a third party about the conflict of interest between JST and the funded company.

For proposals that include a JST-funded company as a joint research group, we will evaluate the necessity, rationality, and appropriateness of adopting the funded company.

Therefore, if you intend to include JST-funded companies as a joint research group, please indicate in Form 1 of the proposal that the funded companies are included in the joint research group.

Please cooperate with JST's conflict of interest management.

*Please refer to the following web page for information on JST's portfolio companies. Please note that companies that have terminated their investment are not subject to conflict of interest management, and therefore do not need to report conflicts of interest.

<https://www.jst.go.jp/entre/result.html#M01>

*The base date for declaration is the date of the start of the call for proposals of the program. Please report on the companies whose investment from JST has been publicly announced as of the said date. Companies that have already received an investment offer but have not yet made a public announcement are not required to submit a report for confidentiality reasons within JST.

Please refer to the following web page for JST's investment announcement.

<https://www.jst.go.jp/entre/news.html>

2.6 Selection Viewpoints

2.6.1 Evaluation criteria for team-based research

The selection criteria for the team-based research are as follows (Proposals must meet all items from 1. to 4.)

<u>Selection Criteria</u>
<u>1. Overall concept of R&D</u> <ul style="list-style-type: none">– The concept meets the purpose of the program and/or R&D area.– The proposal is expected to create technologies that can make a significant contribution to the reduction of greenhouse gas emissions.
<u>2. The superiority and uniqueness of the proposal</u> <ul style="list-style-type: none">– The proposal has a challenging technical content that is not an extension of conventional technologies, and it is expected to lead to a dramatic development of science and technology.– The proposal has superiority and originality based on domestic and international R&D trends.
<u>3. R&D plan</u> <ul style="list-style-type: none">– The plan in the proposal aims at solving the technical issues indicated in the R&D plan of the program.– The plan is effective in terms of achieving its goals, including the involvement of companies

and other entities that will be responsible for future social implementation.

4. R&D structure

- The R&D structure is organized as an all-Japan cross-functional team that is not confined to a single institution, and it aims to create innovative technologies by organically linking each elemental technology. The R&D structure is capable of addressing new technological challenges, for example, involves researchers from different fields.
- The team leader demonstrates strong leadership and management to achieve the goals.
- The R&D structure is capable of fully utilizing R&D results such as intellectual property rights, research data, etc.

<Supplementation>

- The R&D Principal Investigator (PI) is responsible for promoting R&D under the supervision of the PO. The PI is also expected to manage the entire R&D project in collaboration with the main co-researchers, etc., and by comprehensively handling support, etc., from his/her institution. For this reason, the status of preparation and consideration of R&D support measures and systems at the R&D organization will also be taken into account in the selection process.
- For details on the R&D themes of the call for proposals, please refer to Chapter 6 in The Annex of Application Guidelines. (<https://www.jst.go.jp/gtex/koubo/index.html>)
- The selection process is also based on whether or not the R&D budgets are "unreasonably duplicated" or "excessively concentrated". For details, please refer to "4.2 Measures against Unreasonable Duplication and Excessive Concentration".

2.6.2 Evaluation criteria for innovative elemental technology research

The evaluation criteria for the preliminary evaluation of innovative elemental technology research are as follows (Proposals must meet all items in 1. 2.)

Selection Criteria

1. The superiority and uniqueness of the proposal

- The proposal has a challenging technical content that is not an extension of conventional technologies, and it is expected to lead to a dramatic development of science and technology.
- The proposal has superiority and originality based on domestic and international R&D trends.

2. R&D plan

- The R&D plan is expected to contribute to the achievement of the goals of the area and the R&D theme.

<Supplementation>

- If your proposal is selected, you will be incorporated into one R&D team and conduct R&D as a

member of the team under the leadership of the team leader. Please refer to "3.4 Promotion of R&D" for details.

Chapter 3: Research Promotion after Adoption

3.1 Development of R&D plans

After the adoption, the R&D PI prepares an R&D plan (R&D items, implementation plan, R&D costs R&D system, etc.) for the entire R&D period and for each year. The R&D plan is prepared in consultation with the PO, using the R&D proposal as a starting point, and includes the R&D cost, R&D structure, and R&D goals, which is confirmed and approved by the PO. The main points of the process are as follows:

- Establishment of an appropriate R&D structure as a team-based research, including the confluence of innovative elemental technology research, to achieve the objectives of R&D themes.
- Reasonableness of R&D costs; in particular, the necessity of individual research equipment (possibility of consolidation into common research equipment), etc.
- Establishment of R&D goals and milestones for the team as a whole and for short-, medium-, and long-term issues, including significant quantitative contributions to greenhouse gas reductions and economic spillovers.
- Scenarios from R&D to social implementation
- Directions related to open and close strategies, data utilization, intellectual property management policies, etc.
- Integration and collaboration among R&D issues within or across disciplines.
- Other important matters related to R&D.

Please note that the R&D costs and R&D structure may be revised during the course of the R&D period, depending on the budget situation of the program as a whole and other factors.

3.2 R&D Agreement

After the R&D plan is decided, JST will conclude a research agreement with the R&D organization to which the Principal Investigator and Principal Co-investigator belong. Intellectual property rights such as patents resulting from the R&D shall, in principle, belong to the R&D organization, provided that the R&D organization complies with the provisions of Article 17 (Japanese version of the Bayh-Dole act) of the Industrial Technology Enhancement Act, in accordance with the terms of the research agreement. However, for overseas R&D institutions, JST must own at least 50% of the intellectual property rights obtained through the contract research.

Please note that if the R&D organization is unable to enter into a research agreement with JST, if it is unable to establish the necessary systems for management and auditing of public research funds and for compliance with guidelines on research misconduct, or if its financial situation is extremely unstable, the R&D organization in question may not be able to conduct the R&D. For details, please refer to "3.7 Responsibilities of Research Institutes, etc."

3.3 R&D Costs

Based on the contract research agreement, JST pays the research organization the R&D costs (direct costs) plus indirect costs (up to 30% of direct costs) as contract research expenses.

3.3.1 R&D costs (direct costs)

R&D costs (direct costs) are expenses that are directly necessary for the implementation of the research and can be used for the following purposes:

- a. Cost of goods: Expenses for the purchase of new equipment (*1), fixtures, supplies, etc.
- b. Travel: Travel expenses for research personnel and research participants listed in the R&D

plan.

- c. Personnel expenses and honorarium: Salaries and honorarium for research participants (excluding main joint researcher (*2))
- d. Others: expenses for publication of research results (e.g., article submission fees, etc.), equipment leasing expenses, transferring expenses, etc.) (*3)

- *1. In purchasing new research facilities and equipment, the "research facilities and equipment sharing system for each research organization (hereinafter referred to as the "equipment sharing system")" should be operated as stipulated in the "Introduction of New Research Facilities and Equipment Systems Integrated with the Management of Research Organizations" (Council for Science and Technology, Subcommittee on Advanced Research Infrastructure, November 2015). The "Equipment Sharing System (hereinafter referred to as the "Equipment Sharing System")" is to be used. For details, please refer to "4.12 Promotion of Sharing of Research Facilities and Equipment.
- *2. For effective and efficient operation of the facilities, there may be cases in which the adjustments of the budget and installation place/organization will be made in each area or R&D team.
- *3. In this program, patent-related expenses related to results obtained during the research period may be included in direct expenses only for domestic and foreign applications by universities, etc. Patent-related expenses refer to expenses incurred up to the time the patent is prosecuted, and expenses incurred after the patent prosecution cannot be included in the direct expenses. If the research organization wishes to include patent-related expenses in direct expenses, it must submit an application in the prescribed form in principle before the patent application is filed, and must obtain approval from JST.

Note: Examples of expenses that cannot be treated as research expenses (direct expenses)

- Cost for items which are inconsistent with research objectives.
- Costs considered to be more appropriately handled as overhead costs (indirect costs)
- Costs that is determined by JST to be unauthorized use at the time of settlement) (*)

*JST has established rules and guidelines specific to this program for some items in the research agreement, administrative manuals, and the common ministry/agency expense handling classification table. In addition, the administrative handling may differ between universities, etc. (universities, public research institutions, public-interest corporations, etc. recognized by JST) and companies, etc. (research institutions other than universities, etc., mainly private companies, etc.). For more details, please refer to the latest administrative processing instructions, etc. at the following URL.

<https://www.jst.go.jp/contract/index2.html>

- *4. In principle, universities and other research institutions are eligible to spend the personnel expenses of PIs and expenses related to the performance of non-research work on behalf of the PIs (buyout expenses) only when certain requirements are met. Please refer to the following list of requirements.
 - "Revision of the Direct Expenses to Allow Expenditures for Non-Research Activities (Introduction of the Buyout System) and Expenditures for Personnel Expenses of the Principal Investigator (PI) from Direct Expenses (Liaison)" (September 17, 2020)
<https://www.jst.go.jp/osirase/2020/pdf/20200917.pdf> (Japanese version only)
 - "Response to the Innovative GX Technology Creation Program regarding "Expenditure of Personnel Expenses of Principal Investigators (PIs) from Direct Expenses".
<https://www.jst.go.jp/gtex/form/index.html> (currently under construction and will be posted as soon as possible)
 - "Response to the Innovative GX Technology Creation Program regarding the "Revision to Allow Expenditures on Behalf of Non-research Activities from Direct Expenses (Introduction of a Buyout System)".
<https://www.jst.go.jp/gtex/form/index.html> (currently under construction and will be posted as soon

as possible)

3.3.2 Overhead costs (indirect costs)

Indirect costs are those necessary for the management of the research institution in conducting research, etc. In principle, 30% of the research expenses (direct costs) will be allocated for indirect costs. In accordance with the "Common Guidelines for the Execution of Indirect Costs of Competitive Research Funds" (Meeting of the Liaison Committee of relevant ministries and agencies concerning competitive research funds, April 20, 2001, amended on October 1, 2021), research institutions must prepare policies, etc. concerning the use of indirect costs, execute them systematically and appropriately, and ensure transparency in the use of such funds. The transparency of the use of indirect expenses must be ensured.

3.3.3 Multi-Year contracts and carryover systems

In order to maximize the research results, JST has established multi-year contracts to allow for carryover of research funds and procurement contracts that cross over from one fiscal year to the next, from the perspective of more effective and efficient use of research funds and prevention of misconduct. (In some cases, multi-year contracts and carry-over may not be allowed depending on the administrative management system of the research institution, etc.).

3.4 Promotion of R&D

This program will be implemented in accordance with the Basic Policy established by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). In promoting R&D, the PD and PO will play a central role and conduct appropriate R&D management for the entire program based on the said policy. Each research team is required to conduct research in accordance with these R&D management policies.

3.4.1 R&D management system

The R&D management structure is as follows:

- R&D management of the entire GteX program
PD/PO meeting (tentative name)
 - Members: PD, PO, and external expert advisors for IP, standardization, etc. (participate as needed)
 - Role : Formulates operational policies for the entire program and confirms the status of implementation
- R&D management in each area
Area Management Council (tentative name)
 - Members: PO, AD, and external expert advisors for IP, standardization, etc. (participate as needed)
 - Role : Formulates operational policies and checks implementation status for each area.
- R&D management for each research team
 - Members: Team leaders, etc., PD and PO (participate as needed to check progress, etc.)

In addition to the above, an Intellectual Property Committee will be established to determine policies on the handling of intellectual property in each area, and a function will be set up to ensure smooth deployment of R&D results to NEDO projects, etc. In addition, surveys and studies will be conducted as necessary to properly assess the future GHG reduction effects of R&D results and their impact on the market.

3.4.2 R&D management perspectives

While there are a variety of possible R&D management issues, the following are some of the important issues that can be considered at this time.

- Open and close strategies for future social implementation, and policies for handling intellectual property

Based on the fact that this program aims for its research results to be implemented in society in the future, that it aims to promote domestic industries of domestic companies, etc. as much as possible, and that it promotes basic research projects at universities, etc., the following open and close strategy and policy for handling intellectual property are established.

(a) Open and Close Strategy

It is important to combine the open strategy of releasing technology as a cooperative area for standardization of technology and market expansion, etc., with the close strategy of keeping technology secret as a core technology for companies to bridge research results. For this reason, open and close strategies are formulated for each area with a view to future social implementation, corporate participation, etc.

(b) Intellectual Property Management Policy

To ensure that intellectual property rights issues do not become an obstacle to early social implementation by companies, etc., an intellectual property committee led by a PO, etc., will be organized to establish policies for the use of intellectual property in each area, such as prior confirmation of results and patent applications, monitoring of patent application status, and policies regarding licensing of intellectual property rights, etc. The committee will also establish policies for the use of intellectual property rights in each area.

- Data management

In this program, we will promote the maximization of results throughout the program beyond the framework of the R&D area and team. For this purpose, while ensuring the interests of the data providers and avoiding negative effects, we will accumulate the data obtained through R&D, including evaluation, data management, and analysis as a database, and aim for the shared use of the accumulated data. In addition, while actively utilizing the National Institute for Materials Science (NIMS) data platform, etc., we will aim for efficient R&D through data linkage, accumulation, and utilization, including negative data. Specifically, a policy for data sharing will be established in each area.

- Efforts to measure the effectiveness of GHG reductions and economic ripple effects

This program targets technological issues that are expected to contribute significantly in quantitative form to GHG reduction and economic ripple effects in the future toward the realization of GX, and that are expected to contribute to solving bottlenecks faced by industry and thereby increase investment in R&D and other activities. For this reason, measuring the effects of GHG reduction and economic ripple effects will be important. This is not an easy task, but we will strive to quantify and visualize GHG reductions and economic ripple effects by utilizing the above-mentioned research and studies.

- Social implementation scenarios

As this program is aimed at future social implementation, we expect each team leader to take into account the scenario from R&D to social implementation in order to produce research results more suitable for social implementation. Therefore, we ask each research team to formulate a social implementation scenario and brush up its social implementation scenario, while providing

support by advising PD/PO and experts, and conducting surveys and research as needed.

- Human resource development

One of the objectives of this program is to foster researchers and engineers, including Ph. D. holders, who are expected to lead the future of Japanese industry and academia.. For this purpose, each research team or group will be required to have participation of young researchers, including undergraduates, and to make efforts for their development. In addition, JST will plan and implement support for the exchange opportunities for graduate students participating in the research teams and for the development of global human resources, and will make other efforts to develop human resources as a whole program.

- Overseas cooperation

This program aims to become the core of a global network for GX promotion, and will promote strategic and proactive overseas collaboration by concluding MOUs (Memorandum of Understanding) with top-level overseas research institutions, etc.

3.5 Evaluation

<R&D Project Evaluation>

- a. The PO will monitor the progress and results of R&D, and conduct stage-gate evaluation and ex-post evaluation with the cooperation of ADs and others. For the timing of the stage-gate evaluation, please refer to "1.4 R&D Structure".
- b. In the stage-gate evaluation, the evaluation is based on the progress of R&D, including the creation of R&D results, the possibility of social implementation, future market ripple effects, and the contribution to GHG reduction based on the environmental impact.
- c. Evaluations will be conducted for R&D teams and groups.
- d. The results of the evaluation will be disclosed not only to the R&D team but also to the group as a whole, and will be reflected in subsequent adjustments to the R&D plan and resource allocation (including increases or decreases in R&D budget and revisions to the R&D structure). Depending on the evaluation results, measures such as early termination (cancellation) of the R&D project or adjustments among R&D projects may be taken.
- f. After a certain period of time has elapsed since the completion of the R&D, a follow-up evaluation will be conducted based on the status of development and utilization of the R&D results and the activities of the participating researchers.

In addition to the evaluation of R&D projects, evaluations may be conducted in terms of progress toward the achievement of each R&D area and management status, etc., for the areas and R&D themes. The R&D Principal Investigator will be required to provide various types of information and respond to interviews, etc.

3.6 Responsibilities of the Principal Investigator and Principal Co-Investigator, etc.

3.6.1 Responsibilities in promoting R&D, etc.

- (1) The Principal Investigator and Principal Co-Investigators are fully aware that JST's R&D budgets are funded by the tax as its invaluable source, and are responsible for the fair and efficient execution of R&D costs for their own R&D team or research group as a whole.
- (2) After the proposed R&D project has been adopted, the PI is required to understand the following matters through the explanatory meetings, etc. conducted by JST, and submit a written undertaking of these matters to JST.

- a. Comply with the requirements of the application guidelines and the rules and regulations of your institution.
 - b. With the understanding that the R&D budgets of JST are funded by the public taxpayers' money, we will not engage in fraudulent activities (fabrication, falsification, and plagiarism) in R&D activities, nor will we improperly use R&D costs.
 - c. Ensure that participating researchers are informed about the research ethics educational materials (eAPRIN (formerly known as CITI)) designated by JST to prevent misconduct in R&D activities and the improper use of R&D funds.
- (3) Principal investigators and research participants must complete the research ethics educational materials ((eAPRIN (formerly CITI)) designated by JST in order to prevent misconduct (fabrication, falsification, and plagiarism) in R&D. Failure to complete the course material may result in suspension of the execution of R&D expenses until the completion of the course is confirmed. For details, please refer to "4.1 Enrolling in and Completing Educational Program on Research Integrity ."
- (4) Promotion and management of R&D, etc.
- a. The R&D representative is responsible for the overall R&D, including matters related to the planning and implementation of the R&D. The representative is also responsible for establishing the R&D site and environment necessary for the promotion of R&D, in cooperation with the R&D organization. If the R&D site or environment is deemed to be a serious obstacle to the promotion of R&D, the R&D proposal may be cancelled or other measures taken.
 - b. The PI is responsible for submitting R&D plans, research reports, etc., and for responding to R&D project evaluations. In addition, the PI should respond to reports on the progress of the R&D as required by the JST secretariat or the PO from time to time.
 - c. The project team is requested to provide various information and conduct interviews for the evaluation of the project and the follow-up evaluation after a certain period of time has elapsed after the completion of the R&D.
- (5) The PI of R&D should appropriately manage and administer the execution of R&D tasks and R&D funds (expenditure plan and progress management, administrative procedures, etc.) together with the R&D organization. In addition, the Principal Investigator should also appropriately manage those who participate in the R&D. The principal co-researcher should properly manage the allocated R&D costs (expenditure plan and progress management, administrative procedures, etc.) together with the R&D institution. If students participate in the project, the faculty advisor is also required to assume the responsibility as an R&D participant in the research agreement with JST. For example, if a student commits misconduct, etc., not only the student but also the faculty advisor will be held responsible.
- (6) The Principal Investigator should give consideration to the R&D environment and working environment and conditions for research participants and researchers employed with the R&D funds.
- (7) Principal investigators are encouraged to actively support young postdoctoral researchers employed with the R&D funds to secure diverse career paths in Japan and abroad. The activity plan to support diverse career paths for young postdoctoral researchers employed with the R&D funds may be confirmed at the interview and selection meeting.

For details, please refer to "4.13 Improvement of Treatment of Doctoral Students ," "4.14 Ensuring Self-sustaining, Stable Research Environment for Young Researchers ," "4.15 Voluntary Research Activities of Young Researchers Employed to Implement the Project," and "4.16 Supporting Various Career Paths for Young Researchers ."

- (8) Please follow the research agreement between JST and the R&D organization and JST's various regulations.
- (9) You are required to respond to investigations of accounting by JST, government accounting inspections, etc.
- (10) Please be advised that JST will provide the required information, such as the title of the R&D project, participants in the R&D project and the commissioned R&D costs, to the e-Rad system and the Cabinet Office ("4.29 Handling of Proposals and Other Information on e-Rad"). In addition, we may ask you to provide various types of information to the Principal Investigators.

3.6.2 Responsibility for R&D Results, etc.

- a. Since the R&D projects to be conducted under this program are government-funded, we ask that you acquire appropriate intellectual property rights and actively present the results of your R&D both domestically and internationally in order to ensure the smooth transfer of R&D results to society and industry. In principle, intellectual property rights should be applied for (or filed for) by the affiliated institution based on the sponsored research contract.
- b. When publishing R&D results obtained through the implementation of R&D in the form of papers, etc., please state that they are the results of the Green Technologies of Excellence (GteX) Program.
- c. In accordance with "JST's Basic Policy on the Handling of Research Results for the Promotion of Open Science," researchers are required to submit a "Data Management Plan" to JST together with their R&D plan, which outlines guidelines for the storage and management of research data generated as a result of the research, its publication and non-publication, and the operation of research data that can be made public, for each of the items listed below. In addition, please store, manage, and release (or limited release/non-disclosure) data appropriately based on the above policies. For details of the items to be filled in, please refer to "JST's Basic Policy on Handling Research Results to Promote Open Science Operational Guideline" below.
https://www.jst.go.jp/pr/intro/openscience/guideline_openscience.pdf
<Data Management Plan Entries>
 - Policy for storage and management of research data subject to management
 - Policy on publication and non-publication of research data
 - Methods and systems for providing research data that can be made publicly available
 - Intended use of publicly available research data
 - Initiatives to promote the use of publicly available research data
 - Other Special Notes
- d. As advanced data management, the NII will promote the exchange of information among researchers and the storage, sharing, and publication of research data by clarifying the distinction between the storage, sharing, and publication of research data based on open and close strategies, and by promoting the use of the research data infrastructure system (NII Research Data Cloud) and other systems.
- e. The researchers of the projects should participate in workshops and symposia organized by JST in Japan and abroad, as well as in cross-cutting activities and outreach activities aimed at promoting collaboration and synergy in R&D in the areas and R&D themes, and present R&D

results. In addition, please actively engage in global activities and dissemination in your R&D activities.

3.7 Responsibilities of Research Institutes, etc.

In conducting research, research institutions must be fully aware that the source of the research funds is public funds, comply with relevant laws and regulations, and strive to conduct the research efficiently. Conducting research by research institutions that cannot fulfill the responsibilities listed below will not be approved. Therefore, when applying, please ensure that you obtain prior approval from all research institutions where you plan to conduct research (hereinafter referred to as "participating institutions").

(1) When the research is conducted by a domestic institution

a. The research organization must, in principle, conclude a research agreement with the contents presented by JST. They are also obligated to properly conduct the research in accordance with the research agreement, administrative instructions, and research plan. If the research contract cannot be concluded, or if it is determined that the research will not be conducted properly at the research institution.

Please refer to the following URL for the latest model of the contract research agreement.

<https://www.jst.go.jp/contract/index2.html> (currently under preparation and will be posted as soon as possible)

b. In accordance with the "Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)" (decided by the Minister of Education, Culture, Sports, Science and Technology on February 15, 2007, and revised on February 1, 2021), research institutions must establish a system for the management and audit of public research funds under their responsibility, and strive to properly execute commissioned research funds. In addition, research institutions are obliged to report regularly to MEXT on the status of implementation of the system for management and auditing of public research funds, and to respond to various investigations concerning the system. (See "4.26 (1) Implementation of systems based on the "Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)").

https://www.mext.go.jp/a_menu/kansa/houkoku/1343904_21.htm

c. Research institutions must strive to prevent misconduct by establishing the necessary rules and systems on their own responsibility, based on the "Guidelines Concerning Responses to Misconduct in Research Activities (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014)". In addition, research institutions are obliged to respond to various investigations concerning the establishment of systems, etc., based on the said guidelines. (See "4.27 (1) Implementation of system based on the "Guidelines for Responding to Misconduct in Research Activities ").

https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

d. The research institution is obligated to ensure that research participants are fully aware of the contents of the guidelines described in the items b. and c. above, and that they complete educational materials on research ethics provided by JST.

e. In executing the research expenses, the research organization must appropriately spend and manage the research expenses in accordance with the regulations of the research organization, while giving consideration to flexibility, and must follow the rules specific to this program as stipulated in the administrative processing manual, etc. established by JST. (Research institutions receiving Grants-in-Aid for Scientific Research (KAKEN) may comply with the handling of Grants-in-Aid for Scientific Research at their research institutions with

regard to matters not described in the Administrative Instructions regarding the use of commissioned research expenses).

- f. The research institution is required to make an agreement with the research participant to the effect that intellectual property rights arising from the implementation of the research shall belong to the research institution, or to establish professional regulations to that effect. In particular, when a student who has no employment relationship with the research institution is a research participant, unless it is clear that the student cannot be an inventor, it is necessary to take necessary measures such as concluding a contract with the student in advance so that intellectual property rights pertaining to inventions (including devices) made by the student in the course of conducting this research will belong to the research institution. In addition, with regard to the conditions regarding the consideration for the succession of intellectual property rights, etc., consideration should be given so that the student who will be the inventor will not be disadvantaged.

In addition, when transferring or establishing an exclusive license of the intellectual property right, it is necessary, in principle, to obtain the prior consent of JST, and when filing an application, registration of establishment, implementation, or abandonment, it is obligatory to submit the required reports to JST.

- g. The research institute is obligated to respond to investigations of its accounting by JST and to government inspections of its accounts.
- h. The research organization is required to follow measures such as changing the payment method of the research expenses or reducing the research expenses, if JST designates such measures based on investigations related to the administrative management system, financial status, etc.

In addition, if the evaluation of the program at the end of the mid- to long-term target period of JST calls for the dissolution or downsizing of JST, or if there is a change in the budgetary situation in Japan, JST may cancel the contract during the contract period or reduce the contracted research budget in accordance with the special provisions of the research agreement. Moreover, based on the results of the interim evaluation of the research project, JST may take measures such as increasing or decreasing the research budget, changing the contract period, or suspending the research, etc. Additionally, if JST judges that it is not appropriate to continue the research, JST may take measures such as contract termination even during the contract period. The research organization must comply with these measures.

- i. If the research organization is a national or local government organization, the research organization is responsible for ensuring that the necessary budgetary and other procedures are taken prior to the start of the research contract. (In the unlikely event that the research organization is found to have failed to follow the required procedures after the contract has been concluded, the research organization may take measures such as canceling the contract or refunding the research expenses.)
- j. As part of its efforts to prevent misconduct in R&D activities, JST requires researchers who participate in newly adopted research projects and belong to a research institution to attend and complete educational materials on research ethics (JST will take care of the necessary procedures for attendance, etc.). Research institutions are requested to ensure that all eligible participants take and complete the course.

Accordingly, JST will instruct the research institution to suspend the execution of all or part of the research budget if the researcher concerned does not fulfill the completion obligations stipulated despite JST's reminders. In addition to suspending the execution of the research funds in accordance with the instruction, please do not resume the execution of the research funds until instructed to do so.

- k. Please take necessary measures, such as concluding a joint research agreement with the participating institutions, to the extent that it does not violate the terms of the research agreement with JST, regarding the handling of intellectual property rights, confidentiality, etc., so as not to impede the appropriate implementation of the research or the utilization of research results.
- l. In executing contracted research, based on the fact that government funds are used as the source of funds, please handle the expenses appropriately so that accountability can be fulfilled, while paying sufficient attention to economy, efficiency, effectiveness, legality, and accuracy. Please also make every effort to carry out the research in a systematic manner, and be careful not to procure funds for the purpose of exhausting the budget at the end of the research period or at the end of the fiscal year.

(2) When the research is conducted by an overseas organization

- a. The research organization must, in principle, enter into a research agreement using the "Joint Research Agreement" template provided by JST (the terms of the agreement may be adjusted for items that are deemed reasonable, taking into consideration the characteristics of the research content, etc.). Indirect costs are limited to 30% of direct costs. In addition, the applicant is obligated to properly conduct the research in accordance with the research contract and research plan. If a research contract cannot be concluded, or if it is determined that the research will not be properly conducted at the research institution, the research will not be allowed to be conducted at that research institution.
- b. The research organization is responsible for properly spending and managing research funds in accordance with the research agreement and the guidelines, if any, specified separately by JST, and for preparing and submitting an expense statement (equivalent to a balance sheet for domestic institutions) in English, showing the details of research funds spent. In addition, the research organization is required to respond to various investigations regarding the execution status of the research expenses at the request of JST even during the contract period.
- c. For other details of the terms and conditions, please refer to the latest "Collaborative Research Agreement" template.

* There may be cases in which JST determines that a research agreement should not be concluded from the perspective of security trade control, such as institutions listed on the "Foreign User List"³ published by the Ministry of Economy, Trade and Industry.

3.8 Other Points to Note

3.8.1 Maternity, childcare, and nursing care support systems

As part of its efforts to promote gender equality, JST offers a childbirth/childcare/nursing care support system. The purpose of this program is to enable researchers who are employed as full-time researchers with JST research funds (excluding indirect costs) to continue their research when they experience a life event (childbirth, childcare, nursing care), or if they have to temporarily suspend their research, to enable them to continue their career when they return to their research.

³ In order to improve the effectiveness of catch-all regulations for WMD-related cargo, etc., the Ministry of Economy, Trade and Industry (METI) has published a "Foreign User List" that provides information on organizations located in foreign countries where concerns about the development of WMD, etc. cannot be dispelled.

<https://www.meti.go.jp/policy/anpo/law05.html#user-list>

The "Gender Equality Promotion Grant" (maximum amount: 300,000 yen/month x number of months of support) is provided for research projects, etc.

For more information, please refer to the following web page:

<https://www.jst.go.jp/diversity/about/research/child-care.html>

3.8.2 Use of JREC-IN Portal

As one of the largest research personnel career support portals in Japan, the Japan Research Career Information Network (JREC-IN Portal <https://jrecin.jst.go.jp/>) is a service that allows free posting and browsing of job information for researchers, research supporters, technicians, and other personnel involved in research.

Currently, more than 140,000 users are registered with JREC-IN Portal, and more than 20,000 job openings are posted annually by universities, public research institutes, and private companies. In addition, JREC-IN Portal's web-based application function simplifies the management of application documents and reduces the burden on job seekers. If you are looking for highly knowledgeable research personnel (postdoctoral fellows, researchers, etc.) to promote your research project, please take advantage of the JREC-IN Portal.

In addition, JREC-IN Portal is linked to researchmap, and the functions for creating a resume and list of accomplishments allow you to easily create these application documents using information registered in researchmap.

Chapter 4: Key Points for Application

4.1 Enrolling in and Completing Educational Program on Research Integrity

Applicants are required to have completed a program on research ethics education. Please note that failure to complete the program will be considered an incomplete application.

Please follow either (1) or (2) below for the procedures of taking the program on research integrity and declaring completion of the program.

(1) For applicants who have completed an equivalent program at their institution

If you have completed various research integrity education programs such as e-learning and training sessions conducted by your institution at the time of application, please declare that you have completed them on the e-Rad application information entry screen.

(2) For applicants who have not completed a program at their institution (including applicants at institutions where the program is not provided)

a. If you have completed eAPRIN (former CITI) in the past under JST programs, etc.

If you have completed eAPRIN (former CITI) for JST programs at the time of application, please declare that you have completed it on the e-Rad application information entry screen.

b. In cases other than a. above

If it is difficult for you to attend an educational program on research integrity at your institution, you can take the condensed version of eAPRIN (formerly CITI) (including English version) through JST. Please click on the URL below to take the course and complete it as soon as possible. The course takes approximately one to two hours to complete, and there is no cost to attend.

Course URL: <https://edu2.aprin.or.jp/ard/>

■ Contact for the program regarding research integrity

Research Integrity Division, Department of Legal Affairs and Compliance, Japan Science and Technology Agency

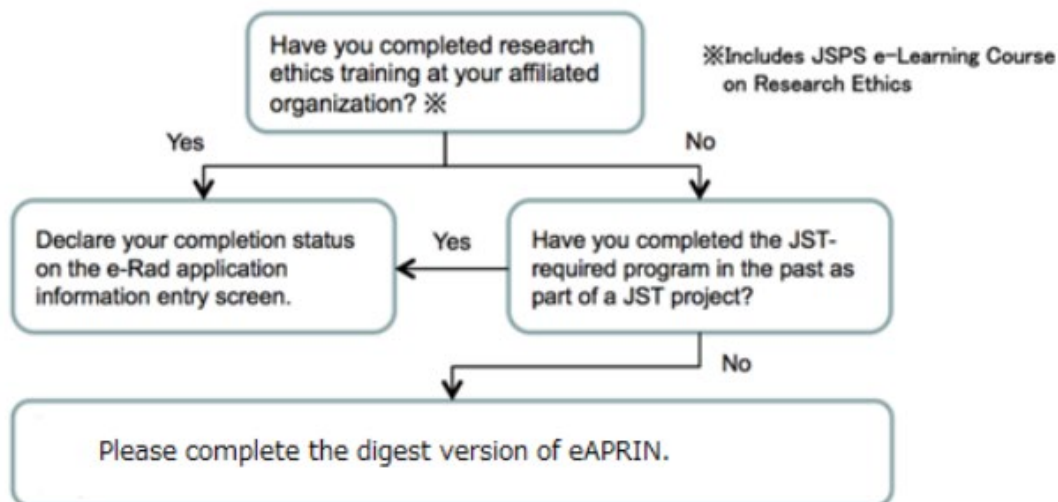
E-mail: rcr-kousyu@jst.go.jp

■ Contact for application

Department of R&D for Future Creation, Japan Science and Technology Agency

E-mail: gtex@jst.go.jp

Please include the name of the open call, the e-Rad project ID, the name of applicant, and project name in email.



Flowchart for Reporting Attendance and Completion of Educational Programs Related to Research Integrity

JST requires researchers participating in this program to take and complete designated units of eAPRIN (former CITI). This requirement will remain unchanged the next fiscal year, all research participants in the adopted projects will be required to take and complete the units of eAPRIN (former CITI) in principle, except in cases where the those who have already completed the units of eAPRIN (formerly CITI) designated by JST at his/her organization or under a JST program.

4.2 Measures Against Unreasonable Duplication and Excessive Concentration

○ Measures against unreasonable duplication

In the case where multiple competitive research funds or other research funds (all current research funds, including grants, subsidies, joint research funds, funded research funds, etc., including those from outside Japan, which are allocated to individual research projects^(*)) are unnecessarily allocated to the same research project (the name or the content of research which receives competitive research funding) by the same researcher, and any of the following applies, the Program will reject, cancel, or reduce the allocation of the research proposal (hereinafter referred to as "rejection of the research proposal"), depending on the degree of such a situation.

- In the case where multiple applications are simultaneously submitted to multiple competitive research funds or other research funds for the same research project (including cases of substantial overlap) and duplicate applications are adopted
- In the case where there is an application for a research program that is substantially the same as a research project that is already adopted and allocated a competitive research grant or other research funding
- In the case where there is an overlap in the use of research expense among multiple research projects
- Other cases equivalent to the above

Although there is no restriction on applying for other competitive research funds or other research funds at the time of application of the Program, if your research proposal is selected for

other competitive research funds or other research funds, the applicant shall report it promptly to the administrative staff of the Program. Failure to do so may result in the rejection of the research proposal.

*Excluding basic or internal funds allocated within the institution, and financial arrangements through commercial activities as defined by the Commercial Code of Japan or direct/indirect financing.

○ Measures against excessive concentration

If the total research funds allocated to the same researcher or research group (hereinafter referred to as "Researcher, etc.") for a given fiscal year exceed the amount that can be used effectively and efficiently and cannot be fully used within the research period, and if any of the following applies, the Program will reject the research proposal according to the degree of such situation.

- Excessive research funds are allocated in light of the capabilities and research methods of the researcher, etc.
- The research expenses are excessive compared to the effort (the ratio (%) of the time required to conduct the research to the researcher's total work hours*) allocated to the research project
- When the cost of research equipment is unnecessarily expensive
- Other cases equivalent to the above

For this reason, if any changes occur in the information provided in the application, such as the selection status of another application for other competitive research funds or other research funds after submitting the application documents for this program, please promptly report to the administrative staff of this program. Failure to do so may result in the rejection of the research proposal.

*The total work time of a researcher does not refer only to the time spent on research activities, but also to the actual total work time, including educational activities and administrative work at his/her institution.

○ Methods for eliminating unreasonable duplication and excessive concentration

In order to exclude unreasonable duplication and excessive concentration of competitive research funds, and to ensure transparency in research activities while ensuring appropriate efforts, the following information must be provided at the time of application.

- (i) Information on the current status of application for and acceptance of other competitive research funds and other research funds, including those from other ministries, and all current affiliations and positions

At the time of application, the Principal Investigator and Principal Co-Investigator shall provide the following information on the current status of application for and acceptance of other competitive research funds and other research funds (name of program, research topic, period of implementation, budget amount, effort, etc.; hereinafter referred to as "information on research funds"), including those from other ministries. Information on all current institutional affiliations and positions (including dual employment, participation in foreign personnel recruitment programs, emeritus professorships without employment contracts, etc.) is also required. This information is to be entered in the application documents and e-Rad (hereinafter referred to as "e-Rad"). If any false information is entered in the application documents or e-Rad, the research proposal may be rejected.

Among information related to research costs, information related to joint researches, for which

confidentiality agreements have been exchanged, will be handled as follows, taking individual circumstances into consideration so that industry-academia collaboration activities, etc., will not be curtailed.

- We will ask you to provide only the information necessary to confirm that the proposed research will not result in an unreasonable duplication or excessive concentration of research funds and that the research will be conducted in a manner that ensures an appropriate level of effort (in principle, only the name of the partner institution for joint research, the amount of research funds to be received, and information related to effort).
- However, if submission is difficult due to unavoidable circumstances, such as when a confidentiality agreement already in place makes submission difficult, the application may be submitted without indicating the name of the partner institution and the amount of research expenses received. In such cases, we may still make an inquiry to the institution to which you belong, according to its necessity.
- In addition to the institution(s) to which the applicant belongs, information may also be shared among funding agencies and related ministries. In such cases, information is shared only among those who are obligated to maintain confidentiality.

When concluding nondisclosure agreements related to your research in the future, we strongly ask you to consider making it a prerequisite that necessary information may be provided when applying for competitive research funding. Please note, however, that it is possible to conclude an agreement that does not presuppose the submission of such confidential information if both parties to the agreement agree on the scope of information to be kept confidential and the justification for such confidentiality (e.g., information that is extremely important for corporate strategy and is considered to be particularly sensitive to confidentiality).

(ii) Provision of other information necessary to ensure transparency in all research activities in which the applicant is involved

In addition to information related to research budgets and the institution and position to which the applicant belongs, the applicant is required to pledge that all information necessary to ensure transparency regarding all research activities in which he/she is involved, is properly reported to his/her institution in accordance with relevant rules and regulations. The research activities include those by support other than funding such as donations and support for facilities and equipment (*). If it is found that you have not reported appropriately in violation of your pledge, your research proposal may be rejected.

With regard to information on the status of purchase of facilities and equipment that are not used for the applied research proposal but are used for research in which the applicant is separately engaged. In addition to the pledge, the affiliated organization will be requested to submit information on the status of understanding and management of such information from the perspective of confirming that the research project can be adequately carried out without unreasonable duplication or excessive concentration.

*Includes cases where the research facilities, facilities, equipment, and other goods and services are provided free of charge

○Sharing of information on applications to exclude unreasonable duplication and overconcentration

To the extent necessary to exclude unreasonable duplication and excessive concentration, information on some of the applications will be shared among the sections in charge of other competitive research funding programs, including those of other ministries, through e-Rad and other means.

4.3 Ensure Research Integrity Against New Risks Associated with Internationalization and Openness of Research Activities

In order to promote the creation of science, technology, and innovation in Japan, we must continue to strongly promote international collaborative research with a variety of partners, with open science as the fundamental principle. At the same time, in recent years, new risks associated with the internationalization and openness of research activities have raised concerns that the fundamental values of the research environment, such as openness and transparency, may be undermined and that researchers may unintentionally fall into conflicts of interest and responsibilities. In this context, it is essential for Japan to establish an internationally credible research environment in order to promote necessary international cooperation and exchanges while protecting the fundamental values of the research environment.

Therefore, it is important for universities and research institutions, etc. to develop relevant regulations and management systems, including those for conflicts of interest and conflicts of responsibility, based on the "Policy for Ensuring Research Integrity against New Risks Associated with Internationalization and Openness of Research Activities (decided by the Council for the Promotion of Integrated Innovation Strategy on April 27, 2021)," and to ensure the self-sustaining soundness and fairness of research (research integrity) at researchers and universities/research institutions, etc. by taking the necessary measures.

From this perspective, we will check to see if it is possible to exclude unreasonable duplication and excessive concentration of competitive research funds, ensure transparency in research activities, and secure the appropriate level of effort. In addition, we may make inquiries to the affiliated institutions as necessary regarding the status of their rules and regulations and the status of information understanding and management.

4.4 Dealing with Misuse and Improper Payments

The following measures will be strictly applied to the improper use of research funds and the improper receipt of research funds (hereinafter referred to as "improper use, etc.").

Actions to be taken when an improper use of research funds is recognized.

(i) Measures such as cancellation of contract

For projects found to have been conducted an improper use, JST will cancel or modify the R&D agreement, and request the institution to return all or part of the research fund. In addition, the R&D agreement may not be concluded for the next and subsequent fiscal years.

(ii) Measures such as restrictions on application and participation (*1)

(1) The researcher who committed the improper use, etc. of the research funds of the program (including those who conspired with the researcher; hereinafter referred to as "the Researcher who committed the misuse, etc.") shall be deemed to have committed the misuse, etc. of the research funds of the Program and researchers who have not conducted but have violated their duty of care (*2), will be restricted from applying for and participating in this program or given a strict warning, depending on the degree of misconduct, as shown in the table below.

In addition, by providing a summary of such improper use, etc. (name of the researcher who committed the improper use, project name, affiliation, research subject, budget amount, research year, details of the improper use, and details of measures taken) to other competitive research funders, including other ministries, the application and eligibility for participation in other competitive research funding systems, including those of other ministries, may be restricted.

*1 "Application and participation" refers to proposing, applying for, or submitting a new proposal, participating in new research as a co-researcher, etc., or participating in an ongoing research project as a Principal Investigator or Principal Co-Investigator, etc.

*2 "Researcher who violated the duty of care" refers to a researcher who has violated the duty to conduct the project with the care of a good manager, although he/she has not been found to have been involved in improper use, etc.

Persons subject to application restrictions related to unauthorized use and unauthorized receipt of funds	Degree of improper use	Application Restriction Period* ³	
Researchers who conducted improper use of the funds and those who conspired with them* ¹	1 Private appropriation for personal gain	10 years	
	2 Other than 1 (1) Those with a significant impact on society and the malignancy of the act is judged to be high.	5 years	
		(ii) Items other than (i) and (iii)	2-4 years
		(iii) Those whose impact on society is deemed to be small and the malignancy of the act is deemed to be low.	1 year
Researchers who have received competitive research funds through deception or other dishonest means, and researchers who have conspired with them		5 years	
Researchers who were not directly involved in the misuse but violated their duty of care* ²		Maximum of 2 years and minimum of 1 year, depending on the degree of breach of duty by the researcher who has a duty of care.	

In the following cases, the application and eligibility will not be restricted and the applicant will be notified of a severe warning.

In the case of *1, if the impact on society and the maliciousness of the act are judged to be low, and if the amount of improper use is small.

In the case of *2, if the impact on society is judged to be small and the maliciousness of the act is judged to be low.

*3. In principle, the period of limitation on participation will be counted from the fiscal year following the fiscal year in which the improper use of research funds is recognized and the research funds are returned. Eligibility will also be restricted for the fiscal year in which the improper use of research funds is found to have occurred.

(iii) Disclosure of fraud cases

In principle, for researchers who have conducted improper use of research funds or violated their duty of care, and whose application and participation in this program have been restricted, a summary of the misconduct case (name of researcher, project name, affiliation, research year, details of misconduct, and details of measures taken) will be made public at JST. The outline of the misconduct case (project name, affiliation, research year, details of misconduct, and details of measures taken) will also be made public by MEXT in principle.

In addition, according to the "Guidelines for Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)," if fraud is found as a result of an investigation, the research institution is required to promptly disclose the results of the investigation.

Please refer to the following web page for an overview of the current MEXT publication on fraud cases.

https://www.mext.go.jp/a_menu/kansa/houkoku/1364929.htm

4.5 Measures for Researchers whose Applications and Eligibility are Restricted under Other Competitive Research Funding Programs

Researchers who have been restricted under other competitive research funding programs*, including those of other ministries, due to misuse of research funds, etc., will be restricted from applying for and participating in this Program for the period during which their eligibility is restricted under the other competitive research funding programs.

The "other competitive research funding programs" include those that will begin accepting applications in FY2023 or later. The programs that ended before FY2022 are also included.

*Please refer to the following web page for the specific programs that are currently covered.

<https://www8.cao.go.jp/cstp/compefund/>

4.6 Measures to be Taken in Case of Violation of Related Laws and Regulations

In the event that research is conducted in violation of relevant laws, regulations, guidelines, etc., the researcher will be subject to disciplinary action and penalties in accordance with related laws and regulations, and the allocation of research funds may be suspended or the decision to allocate research funds may be revoked.

4.7 Carryover

In the event that it is difficult to complete its research expenditure within a fiscal year due to difficulties in determining the research method, conditions related to planning or design, weather conditions, difficulty in obtaining materials, or other unavoidable reasons, the budget may be carried over to the end of the following fiscal year at the maximum if a multi-year contract that continues through the following fiscal year.

4.8 Table of Cross-ministerial Cost Categorization

This program has established a cost structure based on the cross-ministerial cost category table for each ministry and agency, which is commonly used in competitive research funds. The table is currently being prepared and will be posted on the following page as soon as it is available.

<https://www.jst.go.jp/contract/index2.html>

Currently, in response to the "6th Science, Technology and Innovation Basic Plan", the "Integrated Innovation Strategy 2022", and the "Comprehensive Package for Strengthening Research Capability and Supporting Young Researchers", institutional improvements regarding competitive research

funding are underway. Based on this, in this program, the direct cost is expendable to the personnel cost of the project's Principal Investigator, and the cost for non-research work on behalf of the PI. In case you wish to pay for the personnel expenses of PIs and expenses related to non-research work on their behalf (buyout expenses), please confirm the necessary requirements and procedures below.

- "Revision of the Direct Expenses to Allow Expenditures for Non-Research Activities (Introduction of the Buyout System) and Expenditures for Personnel Expenses of the Principal Investigator (PI) from Direct Expenses (Liaison)" (September 17, 2020)
<https://www.ist.go.jp/osirase/2020/pdf/20200917.pdf>

4.9 Diversion of Cost among Items

Regarding the diversion of funds between expense items, the maximum amount of funds that can be diverted without JST approval is limited to 50% of the total direct costs.

4.10 Securing the Research Period until the End of the Fiscal Year

JST is taking the following measures for all competitive research funds to allow researchers to conduct their research until the end of the fiscal year.

- (1) JST will confirm the completion of the project and inspect and accept the research results.
- (2) The deadline for submission of accounting performance reports shall be May 31.
- (3) The deadline for submission of the research results report shall be May 31.

Each research institute is requested to make efforts to establish the necessary systems, taking into consideration that the purpose of these responses is to secure the research period until the end of the fiscal year.

4.11 Retention of Receipts and Reporting of Actual Use of Receipts for Indirect Expenses

Research institutions that receive allocations of indirect costs must properly manage them and properly keep receipts and other documents that prove their proper use for five years from the year following the project completion.

Research organizations that have been allocated indirect costs are required to report to JST via the e-Rad system by June 30 of the following fiscal year (for research organizations that have received multiple competitive research grants, all indirect costs associated with those competitive research grants must be reported together). If you do not know how to use e-Rad for reporting, please refer to the e-Rad operation manual (https://www.e-rad.go.jp/manual/for_organ.html) or "Frequently Asked Questions and Answers" (<https://qa.e-rad.go.jp/>).

4.12 Promoting the Joint Use of Research Facilities and Equipment

"About reforming competitive research funds toward sustainable creation of research achievements (mid-term summary)" (Committee for reforming competitive research funds, June 24, 2015) considers it proper to share relatively large facilities and equipment for universal use while aiming to fully achieve the research objectives.

In addition, the "6th Science, Technology, and Innovation Basic Plan" (approved by the Cabinet on March 26, 2021) and "Integrated Innovation Strategy 2022" (approved by the Cabinet on June 3, 2022) call for the promotion of the maintenance and sharing of research equipment and facilities, the establishment of a system for the systematic installation, renewal, and utilization of research facilities (core facilities), and the formulation and publication of sharing policies.

In March 2022, the Ministry of Education, Culture, Sports, Science and Technology formulated the "Guidelines for promoting the shared use of research facilities and equipment" with the aim of

promoting the strategic operation and sharing of research facilities and equipment at universities.

Based on these, R&D institutions are requested to promote joint use of research facilities and equipment purchased by this program, in particular, large and versatile ones, so as not to preclude the performance of R&D projects. Such purchase shall be made within control conditions of other research costs and in accordance with joint use system in the affiliated institution. The use of facilities and equipment purchased with other research funds and purchase or use with combined multiple research funds shall also be actively promoted. When doing so, it is important to be aware of the potential for sharing facilities/equipment even while projects are being carried out and considering further sharing in order to strengthen research capacity through use of cutting-edge research facilities/equipment. Note that the management of shared facilities and equipment should be balanced with their use to achieve the purposes of the R&D projects.

Besides the above joint use system, R&D institutions are requested to collaborate actively with joint use systems such as the “University Collaborative Research Facility Network Project” managed by the Inter-University Research Institute Corporations’ National Institutes of Natural Sciences with the aim of mutual use of equipment throughout the nation, as well as the “Program for supporting introduction of the new sharing system” and “Core facility construction support program” used by universities to promote the joint use of research facilities and equipment beyond the framework of research organizations and R&D institutions.

- “About reforming competitive research funds toward sustainable creation of research achievements (mid-term summary)” (Committee for reforming competitive research funds, June 24, 2015)
https://www.mext.go.jp/b_menu/shingi/chousa/shinkou/039/gaiyou/1359306.htm
(Japanese version only)
- “6th Science, Technology, and Innovation Basic Plan” (approved by the Cabinet on March 26, 2021)
<https://www8.cao.go.jp/cstp/kihonkeikaku/6honbun.pdf> (Japanese version only)
- “Integrated Innovation Strategy 2022” (approved by the Cabinet on June 3, 2022)
https://www8.cao.go.jp/cstp/tougosenryaku/togo2022_honbun.pdf (Japanese version only)
- “About unifying the rules for various office procedures of competitive funds” (agreed upon by the coordination committees of relevant ministries and agencies on competitive funds, revised on March 5, 2021)
https://www8.cao.go.jp/cstp/compefund/toitsu_rule_r30305.pdf (Japanese version only)
- “Purchase of shared facilities under multiple research funding systems (combined use)” (agreed upon by funding agencies and relevant ministries and agencies, revised on September 10, 2020)
https://www.mext.go.jp/content/20200910-mxt_sinkou02-100001873.pdf
(Japanese version only)
- “Guidelines for promoting the shared use of research facilities and equipment” (formulated in March 2022)
https://www.mext.go.jp/content/20220329-mxt_kibanken01-000021605_2.pdf
(Japanese version only)
Reference: Overview Version on YouTube] https://youtu.be/x29hH7_uNQo
- “University Collaborative Research Facility Network”
<https://chem-eqnet.ims.ac.jp/> (Japanese version only)
- “Program for supporting introduction of the new sharing system”, “Core facility construction support program”
https://www.jst.go.jp/shincho/program/pdf/sinkyoyo_brochure2021.pdf (Japanese version)

only)

4.13 Improvement of Treatment of Doctoral Students

In the "6th Science, Technology and Innovation Basic Plan" (Cabinet decision on March 26, 2021), the number of doctoral students receiving an amount equivalent to living expenses is set to increase threefold (equivalent to about 30% of doctoral students receiving an amount equivalent to living expenses) in order to enhance financial support for graduate students, especially doctoral students, to attract excellent students and working people from Japan and abroad. It also states that "In order to promote the payment of salaries at an appropriate level as research assistants (RA) to doctoral students from competitive and joint research funds, rules for RA expenses related to employment and honorarium for RAs, etc. shall be established in each project and university, and implemented sequentially from FY2021." The Plan requires universities and R&D corporations to expand employment of doctoral students as RAs and improve their compensation.

Furthermore, the "Guidelines for Employment and Training of Postdoctoral Fellows" (Human Resources Committee, Council for Science, Technology and Science on December 3, 2020) states that doctoral students "are not only students but also researchers, and it is an important responsibility of universities to provide an environment for research activities and to ensure their treatment as researchers. It is particularly important to treat them in a manner that appropriately evaluates their contributions, such as by setting compensation commensurate with the nature and content of their work and paying them a salary commensurate with the hours they work under appropriate work management", and "Universities and other institutions need to include the cost of hiring RAs as direct expenses when applying for competitive research funds, and review their internal regulations to ensure that RAs are compensated at an appropriate level."

Based on the above, in this program, please actively employ doctoral students as RAs, etc., who are necessary to conduct research, and set a unit price appropriate to the nature and content of the work, and pay them according to the hours they work under appropriate work management. When applying for this program, please also consider the above-mentioned amount of salary for doctoral students in your budget plan.

(Notes)

- The "6th Science, Technology and Innovation Basic Plan" stipulates that the amount equivalent to living expenses for doctoral students should be at least 1.8 million yen per year, and the amount of research grants for excellent doctoral students should be increased to 2.4 million yen per year, which is equivalent to the amount of special research fellowships (DC), so that they can concentrate on research without financial concerns.
- The "Guidelines for Employment and Training of Postdoctoral Fellows, etc." stipulates that, with regard to the treatment of postdoctoral students hired to carry out research projects, "Taking into consideration the average salary of specially-appointed assistant professors employed with competitive research funds, etc., the payment of an hourly rate of around 2,000 to 2,500 yen* is considered standard."

(* Considering the average salary of specially-appointed assistant professors, etc., who are employed by competitive research funds, the standard hourly wage is considered to be 2,000 yen to 2,500 yen for doctoral students in the latter half of the doctoral course.(Calculated in the "Survey on the Employment Status of Faculty Members at Research Universities (Preliminary Report)" published in August 2020 for the median monthly salary of specially appointed assistant professors in the category (between 400,000 yen and 450,000 yen): the actual working days (19 to 20 days), excluding days is divided by the number of hours worked for (7 hours 45 minutes to 8 hours), then multiplying by 0.8 to account for doctoral student status.)

- The specific amount of salary and employment period are to be determined by the research

institution. The above does not limit the amount of the salary to more or less than the above levels.

- When employing students as RAs, etc., please consider not to work excessive hours and to balance the hours with the doctoral students' own research and study hours.

4.14 Ensuring Self-sustaining, Stable Research Environment for Young Researchers

With regard to terms for postdoctoral researchers, the “Guidelines for Employment and Training of Postdoctoral Fellows” (The Committee on Human Resources, Council for Science and Technology, December 3, 2020) state that “Although many postdoctoral researchers are employed for periods less than three years, employment terms that are too short can damage career development, and terms that enable postdoctoral researchers to settle down for a given period of time and concentrate on their research activities need to be secured”; and that “Taking into consideration the fact that it is desirable for researchers to advance to the next step after gaining experience as a postdoc at one or two institutions over a period of around three to seven years up to their mid-30s, it is desirable to secure terms for each post of around three to five years.

In regard to national university corporations and inter-university research institute corporations, the “Guidelines for reform of personnel and salary management in national university corporations, etc.: Toward building attractive personnel and salary management effective for improving education and research capabilities” (Ministry of Education, Culture, Sports, Science and Technology, February 25, 2019) state that “to meet two requirements, ‘fostering young teachers and securing stable employment,’ there is a need to promote an institutional design that takes into account the development of researchers while maintaining mobility, for example, by securing a certain period of employment, in the order of 5 to 10 years, even in fixed-term posts using highly flexible expenses such as indirect costs or donations.”

Based on these points, when the project in this program hires young researchers such as research assistants or postdoctoral researchers, in addition to attempting to secure the period of employment up to the stage-gate evaluation as the length of term while making confirmation with the personnel and accounting staff in the administrative departments, a certain period of employment should be ensured as much as possible by using external funds including indirect costs, basic research funds and donations, etc., so that the term is not short.

4.15 Voluntary Research Activities of Young Researchers Employed to Implement the Project

In accordance with the "Competitive Research Funding Policy" (Guidelines for Competitive Research Funding by the Relevant Ministries and Agencies, revised on December 18, 2020), young researchers employed under this Program may allocated a portion of their effort to voluntary research activities or activities that contribute to improving research and management skills, while receiving personnel cost from the Program, if the Principal Investigator of the research project judges that such activities will not hinder and contribute to the promotion of the project and approval is obtained from their research institution. For more information, please refer to the following.

- "Voluntary Research Activities, etc. of Young Researchers Employed for Project Implementation (Liaison)" (April 10, 2020)

<https://www.jst.go.jp/osirase/2020/pdf/20200414.pdf>

4.16 Supporting Various Career Paths for Young Researchers

The creation of “an environment where talented young people can expect to be active in various

fields such as academia, industry, and government” has been set as a goal under the “6th Science, Technology, and Innovation Basic Plan” (approved by the Cabinet on March 26, 2021). In addition, the “Guidelines for Employment and Training of Postdoctoral Fellows” (Council for Science and Technology Human Resource Commission on December, 3, 2020; Japanese version only) state that “Doctoral students with high expertise and excellent research skills can be active in various places of society including venture companies and global companies; creating innovation is essential; and efforts to diversify career paths after the end of the postdoctoral period are important.” Based on the understanding of these circumstances, when the R&D project, adopted by this program, employs young researchers such as special-appointment or postdoctoral researchers with allocated public research funds (competitive research funds, other project research funds, or public research funds for universities), special efforts for supporting these researchers to obtain diverse carrier paths are requested. Use of indirect costs for these efforts may be considered.

4.17 Securing URA and Other Management Personnel

In the “6th Science, Technology, and Innovation Basic Plan” (approved by the Cabinet on March 26, 2021), the importance of efforts to ensure professional quality and improve treatment has been pointed out for making URA and other management personnel to be attractive positions. In addition, it indicates in need of establishing career paths for management personnel, URA and engineers, etc., in the “comprehensive package to strengthen research capacity and support young researchers” (Council for Science, Technology, and Innovation on January 23, 2020).

Based on these, when management personnel employed by the research institution, or newly hired URA, etc., is engaged in the management of this research program, it is not limited to this program, and their term of office should be ensured as much as possible by using external funds including indirect costs, basic research funds and donations, etc., so that the term is not short.

At the same time, as support for securing career paths of the management personnel, please take positive efforts for participating in URA training, etc. Please consider utilizing indirect costs for such efforts.

4.18 Security Export Controls (Dealing with Technology Leakage to Foreign Countries)

Research institutions conduct research on many cutting-edge technologies. In particular, due to the increase in the number of foreign students and foreign researchers at universities as a result of internationalization, there is an increasing risk that cutting-edge technologies and research materials and equipment will leak out and be misused in the development and manufacture of weapons of mass destruction and the like. Therefore, when research institutions conduct various research activities, including research under this program, they are required to take systematic measures to ensure that research results, etc. that may be diverted to military use are not passed on to developers of weapons of mass destruction, terrorist groups, or other parties that may engage in activities of concern.

In Japan, for the purpose of maintaining international peace and security, the Foreign Exchange and Foreign Trade Act (Act No. 228 of 1949) (hereinafter referred to as the "Foreign Exchange Law") Export controls (*1) are in place. Therefore, in principle, it is necessary to obtain permission from the Minister of Economy, Trade and Industry if you intend to export (provide) cargo or technology regulated by the Foreign Exchange Law. Please comply with the Foreign Exchange Law as well as all other applicable laws, regulations, guidelines, and notices of the government. If you conduct research in violation of relevant laws, regulations, guidelines, etc., in addition to the legal punishments and penalties, the allocation of research funds may be suspended or the decision to allocate research funds may be revoked.

*1 Currently, Japan's security export control system is based on international agreements, etc. It mainly consists of two parts below;

- (1) a system that requires a permission from the Minister of Economy, Trade and Industry is required in cases of attempting to export (provision) of cargo (technology) with specifications and functions above a certain level among the items listed in the Appended Table 1 of the Export Control Order and Foreign Exchange Order, where (list control)
- (2) a system that requires a permission from the Minister of Economy, Trade and Industry in cases of attempting to export (provision) of cargo (technology) that do not fall under the list control, and there is a risk of military diversion (meeting use requirement and consumer requirement, or inform requirement) (catch-all regulation)

Not only the export of goods, but also the provision of technology is subject to the Foreign Exchange Law. When providing list-controlled technology to a non-resident (including a resident who falls under the specified category (*2) after May 1, 2022) or providing such technology in a foreign country, prior permission is required. The provision of technology includes not only the provision of technical information such as blueprints, specifications, manuals, samples, and prototypes on paper, e-mail, or storage media such as CDs, DVDs, and USB memory sticks, but also the provision of working knowledge through technical guidance and skills training, and technical support at seminars. Activities such as the acceptance of foreign students and joint research may also include a large amount of technology exchange that may be subject to the Foreign Exchange Law. Please note that exporting (providing) technology acquired through this program may also be subject to regulations.

*2 This refers to a type of resident that is strongly influenced by a non-resident, and refers to the specific type defined in 1.(3)㉮ (i) to (iii) of "Regarding transactions or acts providing technology that require permission under Article 25, Paragraph 1 of the "Foreign Exchange and Foreign Trade Act and Article 17, Paragraph 2 of the Foreign Exchange Order".

In addition, when exporting list-regulated goods or providing list-regulated technology to a foreign country as a business under the Foreign Exchange Law, it is necessary to establish a security trade control system (*3). Therefore, prior to the conclusion of the R&D agreement, we may confirm whether or not the export of goods or technology subject to export control under the Foreign Exchange Law is planned under this program, and if there is an intention to export, we may confirm whether or not a control system is in place. If there is an intention to export and there is no management system in place, the applicant will be required to establish a system by the time of export or termination of the project, whichever comes first. The status of said confirmation may be reported to METI upon request. In addition, if any violation of regulations pertaining to the Foreign Exchange Law is found with respect to technology acquired through this program, the agreement may be terminated in whole or in part.

*3 Exporters, etc. are obligated to comply with the "Standards of Compliance for Exporters, etc." stipulated in Article 55-10, Paragraph 1 of the Foreign Exchange and Foreign Trade Control Law. The security trade control system here refers to the internal control system of an organization to prevent unauthorized exports, etc. by appropriately exporting list-controlled goods or providing list-controlled technology to foreign countries, based on the control system in the "Compliance Standards for Exporters, etc.".

Details on security export control are available on the web pages of the Ministry of Economy, Trade

and Industry (METI) and other organizations. For more information, please refer to the following:

- Ministry of Economy, Trade and Industry: Security Trade Control (General)
<https://www.meti.go.jp/policy/anpo/>
- Ministry of Economy, Trade and Industry: Deemed Export Control (related to *2 above)
<https://www.meti.go.jp/policy/anpo/anpo07.html>
- Ministry of Economy, Trade and Industry: Sensitive Technology Management Guidance for Security Export (for universities and research institutes)
https://www.meti.go.jp/policy/anpo/law_document/tutatu/t07sonota/t07sonota_jishukanri03.pdf
- Ministry of Economy, Trade and Industry: Model Security Export Control Regulations Manual for Universities and Research Institutes
<https://www.meti.go.jp/policy/anpo/daigaku/manual.pdf>
- Security Export Information Center
<https://www.cistec.or.jp/export/jisyukanri/modelcp/modelcp.html>
- Ministry of Economy, Trade and Industry: Guidance on Security Export (Introduction)
<https://www.meti.go.jp/policy/anpo/guidance.html>

4.19 Strict Implementation of United Nations Security Council Resolution No. 2321

On November 30, 2016 (local time in New York), the United Nations Security Council (hereinafter referred to as the "Security Council") adopted Security Council Resolution No. 2321, which significantly adds to and strengthens sanctions against North Korea, following the conduct of a nuclear test and a series of ballistic missile launches by North Korea in September 2008. In relation to this, the Ministry of Education, Culture, Sports, Science and Technology (MEXT) has issued the "Strict Implementation of United Nations Security Council Resolution No. 2321 (Request)" dated February 17, 2009 to the relevant organizations.

The "scientific and technological cooperation" referred to in the main clause 11 of the resolution is not limited to technology regulated by the Foreign Exchange and Foreign Trade Control Law, but includes all cooperation except for the purpose of medical exchange. It is important for research institutes to keep in mind the strict implementation of this resolution when conducting various research activities including the contract research under this Program.

For more information on Security Council Resolution No. 2321, please see below.

Ministry of Foreign Affairs of Japan: United Nations Security Council Resolution No. 2321, Japanese translation (Ministry of Foreign Affairs Bulletin No. 463 (issued on December 9, 2008))

<https://www.mofa.go.jp/mofaj/files/000211409.pdf>

4.20 Promotion of Dialogue and Collaboration with Society

In the "Promotion of 'Science and Technology Dialogue with the Public' (Basic Policy)" (decided by the Minister of State for Science and Technology Policy and the expert Diet members on June 19, 2010), it is stated that in order to continuously produce excellent results in science and technology for further development, it is essential to return the results of science and technology to the public and to promote science and technology together with the public. If your proposal is selected for this open call and you receive an annual public research funds of 30 million yen or more per project, we ask that you actively engage in "science and technology dialogue with the public," including public lectures, symposia, continuous distribution of research results on the Internet, and roundtable discussions involving various stakeholders.

Promotion of "Science and Technology Dialogue with the Public" (Basic Policy)
https://www8.cao.go.jp/cstp/stsonota/taiwa/taiwa_honbun.pdf

In addition, the "6th Science, Technology and Innovation Basic Plan" (approved by the Cabinet on March 26, 2021), co-creation of knowledge and wisdom, as well as strengthening of science and technology communication, through the participation of diverse actors, including citizen, is strongly encouraged.

The followings are examples of "opportunities for diverse actors to engage in interactive dialogue and collaboration" provided by JST.

Science Agora

<https://www.jst.go.jp/sis/scienceagora/>

National Museum of Emerging Science and Innovation

<https://www.miraikan.jst.go.jp/en/>

4.21 Open Access and Research Data Management

JST's "Policy on Open Access to Research Publications and Research Data Management" was published in April 2017 and revised in April 2022. This policy defines the basic approach to the open access of research papers and the storage, management, and publication of research data in research activities under JST program.

In principle, researchers participating in this program are required to make their research papers publicly available through institutional repositories and publications that are open access based. In particular, peer-reviewed papers must in principle be published within a period of twelve months. Based on the data policy of the research institution, a data management plan describing the policy and plan for the storage, management, publication, and non-publication of research data generated as a result of research activities shall be prepared and submitted to JST together with the research plan, and research activities carried out after research data has been stored, managed, and disclosed based on this plan. Furthermore, it is requested that research data that is subject to management stipulated under the data management plan or elsewhere is provided in the form of metadata prescribed by the JST. It is also possible to modify this plan while research is being carried out.

Refer to the following for more details.

- JST's basic policy regarding the handling of research results for the open science promotion

<https://www.jst.go.jp/all/about/houshin.html#houshin04> (Japanese version only)

- JST's basic policy operational guidelines regarding the handling of research results for the open science promotion

https://www.jst.go.jp/pr/intro/openscience/guideline_openscience_r4.pdf
(Japanese version only)

JST will analyze statistical data such as the number of data modules, type of data, type of release, and storage location for the purpose of understanding the contents of the description, providing support to researchers, and reflecting (revising) the information in the basic policy. We will assume that the statistical data analyzed may be made public, but we will not release any individual personal data, names, or other information that can be used to identify individuals.

* For life science data, please also refer to "4.22 Releasing Data from the NBDC".

4.22 Releasing Data from the NBDC

The National Bioscience Database Center (NBDC) (<https://biosciencedbc.jp/>) promotes integrated use of life sciences databases created by various research institutions.

In addition, the “Progress of Life Sciences Database Integration Promotion Project and Future Directionality” (January 17, 2013) states that the NBDC (now the Department of NBDC Program) will play a central role in expanding the target projects receiving data and services from the database.

Based on the understanding of these circumstances, researchers are requested to cooperate in publishing the following types of data obtained from this program and databases in the life sciences field.

No.	Data type	Publication destination	Publication URL
1	Overview of public databases that have been built	Integbio Database Catalog	https://integbio.jp/dbcatalog/
2	Data recorded in public databases that have been built	Life Science Database Archive	https://dbarchive.biosciencedbc.jp/
3	Of the data in 2 above, that related to humans	NBDC Human Database	https://humandbs.biosciencedbc.jp/

4.23 Systematic Numbering in Acknowledgments.

When presenting research results obtained through the adopted R&D project, please indicate that the research was funded by this program.

In case of a paper presentation, please include "JST GteX Program Grant Number <10-digit systematic number>" in the Acknowledgment of your paper. The same applies when submitting papers. The 10-digit systematic number for this program is "JPMJGX" followed by a 4-digit project number. The systematic number will be announced at the time of acceptance.

The following is an example of introducing the funding information in an Acknowledgment in a paper.

<English>

This work was supported by GteX Program Japan Grant Number JPMJGXxxxx.

<Japanese>

本研究は、JST 革新的 GX 技術創出事業 (GteX) JPMJGXxxxx の支援を受けたものです。 .

*If there are two or more programs related to the paper, the name and systematic number of all related programs should be written.

4.24 Research Support Service/Partnership Certification System (A-PRAS)

Notice regarding research support services: In the "Science and Technology Innovation Policy Development for Knowledge Intensive Value Creation - Toward a World Leading Nation through the Society 5.0 Realization - Final Summary" (Council for Science and Technology Policy/General policy Special Committee on March 26, 2020), it is as to “research support and return of research results to society that were conducted by the government as public program, the formation of a new public private partnership mechanism is required in keeping with the emerging the startups that have strong feelings and passion as businesses”.

Under such circumstances, MEXT established the "Accreditation System for Partnership for

Research Support Services (A-PRAS)" in 2019 with the aim of improving the research environment for researchers, accelerating the promotion of science and technology and creation of innovation in Japan, as well as providing support for the development of various initiatives related to research support services. Under this system, research support services provided by private business operators that meet certain requirements are accredited as a "Research support service/partnership" by the Minister of Education, Culture, Sports, Science and Technology. Nine services have been certified as of FY2020.

Details of each certified service can be found on the MEXT webpage below. Please utilize this website.

https://www.mext.go.jp/a_menu/kagaku/kihon/1422215_00001.htm (Japanese version only)

"Science and Technology Innovation Policy Development for Knowledge Intensive Value Creation - Toward a World Leading Nation through the Society 5.0 Realization - Final Summary" (Council for Science and Technology Policy/General policy Special Committee on March 26, 2020)

https://www.mext.go.jp/b_menu/shingi/gijiyutu/gijiyutu22/houkoku/1422095_00001.htm

(Japanese version only)

4.25 Competitive Research Funding Reform

The government is currently discussing improvements to the competitive research funding system to enable more effective and efficient use of research funds in response to the "6th Science, Technology and Innovation Basic Plan", the "Integrated Innovation Strategy 2022", and the "Comprehensive Package to Strengthen Research Capability and Support Young Researchers". If, during the period of the call for proposals, a policy or other information regarding the improvement of these systems and their operation that is common to other competitive research funding programs is presented, we will make a new announcement when the policy is applied to this call for proposals and its operation.

4.26 Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)

(1) Implementation of systems based on the "Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)

In applying for this program and conducting research activities, research institutions must comply with the contents of the "Guidelines for the Management and Audit of Public Research Funds at Research Institutes (Implementation Standards)" (revised on February 1, 2021) (*).

Research institutions are requested to establish a system for the management and auditing of research costs under their responsibility based on the above-mentioned guidelines, and to ensure the appropriate execution of research budget. If, as a result of the investigation of the status of the system implementation based on the guidelines, MEXT finds deficiencies in the status of the system implementation of an institution, MEXT may take measures such as reducing indirect costs of all competitive research funds allocated by MEXT and independent administrative institutions under MEXT's jurisdiction.

Please refer to the following web page for the "Guidelines for Management and Audit of Public Research Funds at Research Institutes (Implementation Standards).

https://www.mext.go.jp/a_menu/kansa/houkoku/1343904_21.htm

(2) Submission of the "Self-evaluation Checklist for Implementation of Proper Systems" based on

the "Guidelines for Management and Audit of Public Research Funds at Research Institutions (Implementation Standards)

Upon concluding an agreement for this program, each research institution is required to establish a system for managing and auditing research costs based on the above-mentioned guidelines, and to submit a "Self-evaluation Checklist for Implementation of Proper Systems" (hereinafter referred to as "Checklist"), which is a report on the status of such system. (If the checklist is not submitted, an R&D agreement shall not be concluded.)

For this reason, after April 1, 2023, please check the contents of the following webpage, download the checklist form for fiscal year 2023 from the e-Rad (e-Research and Development Management System), fill in the required items, and submit (upload) the form to the Office of Competitive Research Funding, Research and Development Infrastructure Division, Science and Technology Policy Bureau, MEXT via e-Rad, by the designated date before the conclusion of the R&D agreement.

For the research institution submitted the Self-evaluation Checklist for Implementation of Proper Systems for the fiscal year 2022, the conclusion of R&D agreement will be allowed; however, the institution is required to submit the checklist for fiscal year 2023 by December 1, 2023.

For institutions that do not receive competitive research funds allocated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) or independent administrative agencies under the jurisdiction of MEXT, submission of the checklist is not required.

For details on how to submit the checklist, please refer to the following MEXT webpage.

https://www.mext.go.jp/a_menu/jinzai/fusei/1420301_00001.html

Please note that it usually takes about two weeks to register your research organization with e-Rad.

<https://www.e-rad.go.jp/organ/index.html>

Since the guidelines include the perspective of "promotion of information dissemination and sharing," we ask that you actively disseminate information on your research institution's efforts to prevent misconduct by posting such information on your institution's webpage.

4.27 Guideline for Responding to Misconduct in Research Activities

(1) Implementation of system based on the "Guidelines for Responding to Misconduct in Research Activities"

Research institutions are required to comply with the "Guidelines for Responses to Misconduct in Research Activities" (decided by the Minister of Education, Culture, Sports, Science and Technology on August 26, 2014) (*) when applying for this program and conducting research activities.

If, as a result of an investigation into the status of the organization's system implementation based on the above guidelines, MEXT finds deficiencies in the organization's system implementation, MEXT may take measures such as reducing indirect costs for all competitive research funds allocated by MEXT and independent administrative institutions under MEXT's jurisdiction.

Please refer to the following webpage for the "Guidelines for Responding to Misconduct in Research Activities".

https://www.mext.go.jp/b_menu/houdou/26/08/1351568.htm

(2) Submission of a checklist regarding the status of initiatives based on the "Guidelines for Responding to Misconduct in Research Activities"

Upon signing a contract for this program, each research institution is required to submit the

"Checklist for the Status of Efforts Based on the Guidelines for Responding to Misconduct in Research Activities" (hereinafter referred to as the "Checklist for Research Misconduct"). (Contracts without submission of the Research Misconduct Checklist shall not be approved.)

For this reason, after April 1, 2023, please confirm the contents of the following webpage, download the Research Misconduct Checklist form for fiscal year 2023 from the e-Rad (e-Research and Development Management System), fill in the required items, and submit (upload) the form to the Office of Competitive Research Funding, Research and Development Infrastructure Division, Science and Technology Policy Bureau, MEXT via e-Rad, by the designated date before the conclusion of the R&D agreement.

For the research institution submitted the Research Misconduct Checklist for the fiscal year 2022, the conclusion of R&D agreement will be allowed; however the institution is required to submit the checklist for fiscal year 2023 by September 29, 2023.

For institutions that do not receive competitive research funds allocated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) or independent administrative agencies under the jurisdiction of MEXT, submission of the checklist is not required.

Please refer to the following MEXT webpage for the Research Misconduct Checklist.

https://www.mext.go.jp/a_menu/jinzai/fusei/1420301_00003.html

Please note that it usually takes about two weeks to register your research organization with e-Rad. Please refer to the following web page for details on the procedures for using e-Rad.

<https://www.e-rad.go.jp/organ/index.html>

(3) Measures against misconduct in research activities based on the "Guidelines Responding to Misconduct in Research Activities"

In the event of misconduct in research activities in this program, the following measures will be taken strictly.

(i) Measures to cancel or modify agreement

If specific misconduct (fabrication, falsification, or plagiarism) is found in a research project under this program, the agreement will be cancelled or modified according to the case, and all or part of the commission fee will be required to be returned to JST. In addition, the contract may not be concluded for the following fiscal year and thereafter.

(ii) Measures to restrict eligibility for application and participation

For those who are found to be involved in specific misconduct in research papers or reports under this program, or those who are found to have a certain level of responsibility due to negligence of duty of care as the person responsible for the papers or reports although not found to have been involved, the following measures will be taken to limit their application and eligibility for participation in this program as shown in the table below, depending on the maliciousness of the specific misconduct and the level of responsibility.

In addition, in the event that measures are taken to limit the application and participation, the applicant will not be eligible to participate in the competitive research funding programs allocated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and independent administrative agencies under the jurisdiction of MEXT (hereinafter referred to as "MEXT-related competitive research funding programs, etc."). The information is to be provided to the person in charge of the competitive research funding system allocated by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and independent administrative institutions under the jurisdiction of MEXT (hereinafter referred to as "MEXT-related competitive research funding system, etc."), the person in charge of the competitive research funding system

allocated by other ministries and independent administrative institutions under the jurisdiction of other ministries (hereinafter referred to as "other ministry-related competitive research funding system"). Following the provision of the information, the eligibility for application and participation of other competitive research funding programs may be restricted in the same manner.

Persons Subject to Application Restrictions Related to Specified Misconduct		Degree of Specific Fraud	Application Restriction Period*	
Persons involved in the specified fraudulent acts	1. Those who are particularly malicious, such as those who intended to commit specific misconduct from the beginning of the research		10 years	
	2. The author(s) of the paper(s) pertaining to the research in which the specified misconduct occurred	The author(s) responsible for the paper, etc. in question (the person responsible for supervision, the representative author, or those identified as having equivalent responsibility to these)	Those whose impact on the progress of research in the field in question or social impact is deemed to be significant, or whose conduct is deemed to be highly malignant.	5-7 years
			Those whose impact on the progress of research in the field in question or social impact is deemed to be small, or the malignancy of the act is deemed to be low.	3-5 years
		Authors not listed above		2-3 years
	3. Those involved in the specified fraudulent acts except for 1. and 2.			2-3 years
Authors who are not involved in the specified misconduct but are responsible for papers related to the research in which the specified misconduct took place (the person responsible for supervision, the lead author, or a person certified as having the same responsibility as these persons)		Those whose impact on the progress of research in the field in question or social impact is deemed to be significant, or whose conduct is deemed to be highly malicious.	2-3 years	
		Those whose impact on the progress of research in the field in question or social impact is deemed to be small, or the malignancy of the act is deemed to be low.	1-2 years	

*In principle, the period of limitation of application will start from the fiscal year following the fiscal year in which the specific misconduct is recognized. The eligibility for participation will

also be restricted for the fiscal year in which the specific misconduct is recognized.

(iii) Measures against researchers whose eligibility for applications and participation is restricted under the Competitive Research Funding System and the Basic Research Funds

Researchers whose eligibility for applications and participation in the program have been restricted due to specific misconduct in research activities under the competitive research funding systems related to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), the subsidies for national university corporations, Inter-University Research Institutes, and incorporated administrative agencies under the jurisdiction of MEXT, basic funds such as grants for private schools, or competitive research funding systems related to other ministries.

(iv) Disclosure of Fraud Cases

In the case of misconduct in research activities under this program, JST will, in principle, disclose the outline of the misconduct case (name of researcher, project name, affiliation, research year, details of the misconduct, and details of measures taken). In addition, the details of the case (name of the misconduct case, type of misconduct, research field of misconduct, name of the expense in which the misconduct took place, summary of the misconduct case, measures taken by the research institution, measures taken by the allocating institution, etc.) will also be made public by MEXT in principle.

In addition, the above-mentioned guidelines stipulate that the research organization shall promptly disclose the results of the investigation when a fraud has been identified.

https://www.mext.go.jp/a_menu/jinzai/fusei/1360483.htm

4.28 Obligation to Complete Research Integrity and Compliance Education

Researchers who participate in this program are required to attend research integrity education to prevent misconduct in research activities as required by the "Guidelines on Responses to Misconduct in Research Activities" and compliance education as required by the "Guidelines for the Management and Audit of Public Research Funds at Research Institutions".

After the proposed research project has been adopted, the Principal Investigator is required to submit a document confirming that all researchers participating in the research project have attended research integrity education and compliance training and have understood the contents, as part of the procedures for concluding the R&D agreement.

4.29 Handling of Proposals and Other Information on e-Rad

The information on e-Rad (program name, R&D project name, name of the Principal Investigator and his/her affiliated research organization, budget amount, implementation period, and outline of the proposal) regarding each selected proposal is treated as "information scheduled to be made public" as stipulated in Article 5, Item 1 ㄱ of the "Act on Access to Information Held by Independent Administrative Institutions" (Act No. 140 of 2001). This information will be disclosed on the program's website as appropriate after the adoption of the project.

4.30 Providing Information from e-Rad to the Cabinet Office

The "6th Science, Technology and Innovation Basic Plan" (approved by the Cabinet on March 26, 2021) stipulates that the Science, Technology and Innovation Administration will thoroughly implement EBPM, which is policy making based on objective evidence, and that the information registered in the e-Rad (e-Research and Development Management System) will be used for

appropriate evaluation of government-funded R&D, planning of effective and efficient comprehensive strategies and resource allocation policies, etc.

For this reason, we request that you register the information on research results and accounting results for each fiscal year related to the adopted project and the information on the execution results of indirect costs related to competitive research fund using e-Rad.

Information necessary for macro analysis, including research results and accounting performance information, will be provided to the Cabinet Office.

4.31 Registration of Researcher Information on researchmap

In this program, researchers will be asked to submit their R&D plans and results reports via JST's research project management system (R3; R-Cube*¹), which is linked to JST's researcher information database (researchmap*²). Principal Investigators and Principal Co-investigators selected for the interview selection process are required to register with researchmap. We encourage you to register with researchmap and to enter and update your achievement information.

*1 R3 (R-Cube) is an electronic application system for R&D plans and results reporting, which researchers selected for this program are scheduled to use.

Please refer to the "researchmap Quick Guide (New Registration/Login)" below for information on how to check your registration status on researchmap, how to register as a new user, and how to log in and reissue your password.

https://researchmap.jp/outline/rr_manual/quickguide.pdf

Please refer to the following "Manuals and FAQs" for other operation procedures, such as how to register and edit your own achievements, and how to output the registered achievement data.

<https://guide.researchmap.jp/index.php/Researchmap> 利用者マニュアル

*2 researchmap (<https://researchmap.jp/>) is a Japanese researcher information database with more than 300,000 registered users, enabling management and publication of achievement information. In addition, researchmap is linked to e-Rad and many university faculty databases, so that registered information can be used in other systems for improving efficiency by eliminating the repeated registration of the same achievements in various application forms and databases.

4.32 Patent Application from JST

If the research organization does not grant rights to the invention, JST may grant the rights. Therefore, if the research organization does not intend to grant rights to an invention, the researcher should promptly notify JST of the information regarding the invention in any format. (The above "information on the relevant invention" refers to information required by JST to determine whether or not to file a patent application, such as a copy of the notification of invention used within the research institution.)

JST will examine whether to file an application based on the notice received. If JST determines to make an application for the invention, JST will conclude an agreement on the "Assignment of Right to Obtain Patent" between the research organization and JST.

Chapter 5: How to apply using the e-Rad

5.1 About e-Rad (e-Research and Development Management System)

The Cross-ministerial R&D Management System (e-Rad) is a cross-ministerial system that provides a series of on-line processes (acceptance of applications → selection → adoption → management of adopted subject → reporting of research results) to manage the publicly funded research projects under the jurisdiction of ministries and agencies.

* “e-Rad” is the abbreviation of the Cross-ministerial R&D Management System, which is created by adding the capital letter of “e” of “Electronic” to the capital letters of “Research and Development” for science and technology.

5.2 Application Method Using e-Rad

R&D institutions are requested to make an application using e-Rad.

When applying, refer to the e-Rad portal site (hereinafter referred to as the “portal site”) (<https://www.e-rad.go.jp/en/>).

*With regard to various application processes when using e-Rad, in principle applications using paper documents are not accepted, so be sure to carry out each application process using the e-Rad portal site.

Be especially careful with regard to the following points when submitting an application.

(1) Pre-registration for using e-Rad (<https://www.e-rad.go.jp/organ/index.html>)

R&D institutions and their affiliated researchers must be pre-registered with e-Rad by the time of application.

① Registration application for R&D institution

R&D institution are requested to appoint one administrative representative responsible for e-Rad and have them carry out application procedures for registration from the “Registration Application for R&D institutions” page (<https://www.e-rad.go.jp/organ/entry.html>).

*Since registration takes several days, the research institute should perform the registration procedure more than two weeks before.

*Once the registration is completed, the research institute needs not to register the information again when applying for a program or project under the jurisdiction of other ministries or agencies. *If the research institute has already registered its information in a program or project under the jurisdiction of other ministry or agency, it need not register its information again.

② Registration of information on department, persons in charge of administrative work, positions and researchers

The administrative representative of the R&D institution must log-in to e-Rad using the log-in ID and password obtained through the procedures described in ① above and register information on departments, persons in charge of administrative work (if a person in charge of administrative work has been appointed), positions, and researchers. Log-in IDs and passwords will be issued for persons in charge of administrative work and researchers.

For registration procedures please refer to Sections “10. Procedures for Research Institutions”, “11. Procedures for Research Institution Persons in Charge of Administrative Work”, and “12. Procedures for Researchers” of the R&D Institution Administrative Representative Manual

provided on the e-Rad portal site.

(2) Entry of application information in e-Rad

- Submission of project applications by a researcher

Please refer to the Manual for Researchers on the portal site (https://www.e-rad.go.jp/manual/for_researcher.html). Applications will become invalid if their status does not change to “Application being processed by funding agency” or “Accepted” by the deadline for submissions. Please check application status on the “List of Applications and Approved Projects” page. If the status of an application does not change to either “Application being processed by funding agency” or “Accepted” despite the researcher submitting the application by the deadline for submissions, please contact <<gtex@jst.go.jp>>. Please note that an application’s status must be “Accepted” by funding agency in order for the funding agency to manage the project application, but acceptance is not necessary in terms of researchers’ completion of application procedures. If the status of the project application changes to “Application in progress” and the application type (status) changes to “Application being processed by funding agency, request in progress” by the deadline for acceptance of applications, the application will be completed properly.

<Notes>

- ① When submitting an application, it is necessary to enter the application information on the e-Rad portal site and attach the application form. The maximum size of the application form file that can be uploaded is 3 MB. If you use image data in the file, please pay attention to the file size. In case of exceeding the maximum size, please contact <<gtex@jst.go.jp>> before uploading the file.
- ② An incomplete application form will not be subject to selection. Be sure to read the “Application Guidelines” and “Procedures for Preparing Proposal Forms” and then fill out the form carefully.

5.3 Other

(1) Contact for inquiries on how to operate the e-Rad (e-Research and Development Management System)

Inquiries about the program itself will be handled by the program office as before, and inquiries about how to use e-Rad will be handled by the e-Rad Help Desk. Please check the program webpage and the e-Rad portal site carefully before contacting the e-Rad Help Desk. Please note that we cannot respond to any inquiries regarding the review status or acceptance or rejection of proposals.

Inquiries about the program and the procedures for preparing and submitting application documents	Department of R&D for Future Creation, JST (in charge of call for proposals)	<Please be sure to send your inquiry by e-mail > e-mail : gtex@jst.go.jp Operation hours: 10:00-17:00
Inquiries about how to operate e-Rad	e-Rad Help Desk	0570-057-060 (Navidial) 9:00-18:00 *Except Saturdays, Sundays, national holidays, and year-end and New Year holidays

○Open call page for this program: <https://www.jst.go.jp/gtex/koubo/index.html>

○ Portal site: <https://www.e-rad.go.jp/>

(2) Hours when e-Rad is available

In principle, the service operates 24 hours a day, 365 days a year, but may be suspended due to system maintenance. When service will be suspended, we will notify you in advance on the portal site.