New mid to long-term objective period (7 years) 4/1/2018 - 3/31/2025

National R&D Agency, Institute of Physical and Chemical Research (RIKEN) Outline of Next Mid to Long-term Objectives and Evaluation Criteria, etc. (Draft)

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Present issues

- RIKEN is supposed to be **the core institute leading the innovation system** in Japan as a designated national R&D agency. To achieve this, it needs to **accelerate the implementation of "Initiative for Scientific Excellence"** to promote **restructuring of its corporate management system that must serve as a model for other R&D agencies** under the president's leadership.
- **Strategic research and development must be further promoted based on national strategies including the Science and Technology Basic Plan to realize Society 5.0**. When evaluating a research and development project, it is also important to include not only outcomes obtained from the project but also suitability of the management to proceed the project.

Points of draft for the next mid to long-term objectives and evaluation criteria, etc.

1. Setting priority on reforms of research institute management system for creating innovation

To encourage institute-side efforts for creating innovation, **regulate reforms of the research institute management system and make clear the direction of the road ahead as a designated national R&D agency** by reinforcing a system and function to support the management of institute under the the president's leadership, increasing social return through stronger ties with related organizations, exploiting and creating new science to support sustainable innovation, improving research environments that include personnel system reforms allowing researchers to focus on their research based on mid to long-term perspectives.

2. Review of strategic research and development and the evaluation base for research and development infrastructure

Make it clear to include **the progress of research and development toward its defined goal** and **progress management in evaluation** in addition to create the world's highest level research outcomes.

3. Specify the strategic research and development fields of the institute based on national strategies including the Science and Technology Basic Plan

Define the role of a national R&D agency supposed to implement national strategies including the Science and Technology Basic Plan by setting goals according to the national and social needs for each field of research such as AI that supports IoT and big data analysis required for realizing Society 5.0, optical and quantum technologies required for energy saving societies and quantum computers, and life science contributing to longer and healthier life.

4. Establishment, operation and upgrading of the world's most advanced research and development infrastructure

Develop the most advanced research and development infrastructure of RIKEN steadily, including the supercomputer, bio-resource infrastructure and large-scale synchrotron radiation facility, **operate them for sharing and set objectives by research area to promote upgrading and leveraging technology study** based on national strategies including the Science and Technology Basic Plan.

Outline of the Next Mid to Long-term Objectives and Evaluation Criteria, etc. (Draft)

Mid to long-term objectives (draft)	Evaluation criteria
1. Position and role of the agency in the policy system	
2. Mid to long-term objective period (7 years from 2018 to 2025)	
3. Matters relating to maximizing research and development outcomes and improving the quality of other operations	
3.1 Establishment and operation of the research institute management system to maximize R&D outcome and create innovation (1) Reinforcing the system and function to support management under the president's leadership (2) Improving the research environment and developing outstanding researchers to produce the world's best research outcomes (3) Promoting social return of research outcomes through close collaboration with related organizations (4) Exploiting and creating new sciences to support sustainable innovation in Japan	○ Establishment and operation of the management system serving as a model for other agencies to maximize outcome and create innovation under the president's leadership.
3.2 Strategic R&D based on national strategies ○Strategic R&D according to national and social needs (1) Advanced intelligence projects (AI technologies for realizing a "super-smart society") (2) Theoretical and mathematical sciences (solutions for natural science and national/social needs from mathematical science perspectives) (3) Medical science (individualized and preventive medicine in immunotherapeutic approach for cancer patients, etc.) (4) Bio-functional science (a system of maintaining bio-function and overcome age-related dysfunction) (5) Brain and neuroscience (understanding of the structure and function of human brain including higher cognitive function) (6) Sustainable resource science (innovative technology for efficiently producing food with less environment load) (7) Emergent matter science (environment and energy saving technologies such as ultra-low power consumption type devices) (8) Advanced photonics (innovative measuring and control technologies using high-precision lasers) (9) Accelerator science (basic study of atomic nuclei including research on the process of nucleosynthesis using accelerators)	○ Strategic promotion of R&D to meet national and social needs described in the Science and Technology Basic Plan, etc. ○ Production of the world's highest level R&D outcomes; social return of these outcomes. ○ Suitability for R&D management to maximize R&D outcome.
3.3 Establishment, operation and upgrading of the world's most advanced research infrastructure ○Steady establishment, operation and upgrading of R&D infrastructure (1) Computational science (broader sharing of "K" and smooth transition to the post-K computer) (2) Synchrotron radiation science (better sharing of the specific synchrotron radiation facilities (SPring-8, SACLA) and performance upgrading) (3) Bio-resource (preparation and utilization of the world's highest level bio-resources and development of preservation techniques)	○ Efforts for research on the operation, sharing, upgrading and utilization of the R&D infrastructure. ○ Outstanding R&D outcomes leading to upgrading and utilization as a research institute; and social return of these outcomes. ○ Achievements contributing to the progress of science and technology as well as economy and society through sharing R&D infrastructure with outside institutes. ○ Suitability for R&D management for maximizing R&D outcomes.
4. Matters concerning efficient operation and management (streamlining and improving efficiency of operational expenses, appropriateness of personnel expenses, etc.)	
5. Matters concerning improvement in financial conditions	
6. Other important matters concerning administrative operations (enhancement and strengthening of internal control, legal compliance, tighter information security, etc.)	

Policy System Chart on RIKEN

RIKEN will improve the scientific and technological standards and maximize research outcomes by dealing with national and social issues described in the Science and Technology Basic Plan, etc., capitalizing its strength as a general research institute handling the highest level of natural science as a whole in Japan, and playing the role of a designated national R&D agency as the core institute to lead the innovation system by creating new innovation and returning results to the society.

[National policies]

Efforts to be made based on the Science and Technology Basic Plan include:
- Creation of new value for future industrial development and social transformation (super-smart society, etc.)
- Provision of solutions for economical and social issues (healthy and longevity society, solutions for global issues, etc.)
- Improvement of fundamental strength in STI (diverse human resources, challenging environments that stimulate one's potential, etc.)
- Establishment of a virtuous circle for innovation (stronger ties between industry and academia, venture creation, etc.)

[Work specified in individual laws]

- Science and technology related tests and research
- Dissemination and utilization of research outcomes
- Sharing of laboratory facilities and equipment
- Fostering and upgrading of researchers and engineers, etc.

[Mission as a designated national R&D agency]

- Production, dissemination and utilization of the best outcomes
- Fulfillment of roles as a core institution to lead the innovation
- Response to requests from the competent minister pursuant to Article 7 of the Act on Special Measures, etc.

[Efforts of the agency in this mid to long-term objective period]

1. Establish and operate a research institute management system to maximize R&D outcomes and create innovation
- **Reinforcing the system and function to support management under the president's leadership**
- **Promoting social return of research outcomes through close collaboration with related organizations**
- **Exploiting and creating new science to support sustainable innovation in Japan**
- **Improving the research environment and developing outstanding researchers to produce the world's best research outcomes**

2. Strategic R&D based on national strategies, etc.

3. Establishment, operation and upgrading of the world's most advanced research infrastructure