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The Japanese Government Revitalization Unit (GRU) Reviewed the Science and Technology Budget Requests

This report summarizes the outcome of the reviews conducted by the Government Revitalization Unit (GRU), with the focus on science and technology-related projects/programs.

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In October 2009, Prime Minister Hatoyama established the Government Revitalization Unit (GRU) 'to reform the overall national administration, including the budget and system of national administration, from the people's standpoint, and also to review the division of roles among the national government, local public authorities, and private companies.' The 11-member GRU is chaired by the Prime Minister, with Mr. Yoshito Sengoku (Minister for Administrative Reform) serving as his deputy. The other members include representatives from business and labor, academia, and the Cabinet.

The GRU's first task was to review selected projects/programs in the budget request for the next fiscal year (JFY2010: April 2010 – March 2011) with the goal of securing sufficient funds in the

next fiscal year's budget, to enable implementation of policies the Democratic Party of Japan pledged in its campaign platform last August. To accomplish this task, the GRU tagged 447 out of 3,000 projects/programs for review. The review took place on November 11-27, 2009, at the gymnasium of the National Printing Office in Tokyo, a currency printing facility of the Ministry of Finance (MOF). The GRU created three working groups (WG) to carry out the ambitious review. Each WG was assigned responsibilities for evaluating projects/programs in the following ministries: (WG-1) Internal Affairs and Communications/Finance/Land, Infrastructure, and Transport/ Environment; (WG-2) Foreign Affairs; Health, Labor, and Welfare/Economy, Trade, and Industry; and (WG-3) Education, Culture, Sports, Science, and Technology/Agriculture, Forestry, and Fisheries/Defense.

The review process consisted of a 5-7 minute summary of the project/program under review by government officials from the relevant ministry or agency, followed by an additional 3-5 minute explanation by MOF officials, and a brief description of the rationale for selecting the project/program for review by a WG member. After these initial briefings, the WG members posed questions to the government officials, exchanged comments among themselves, and gave each project/program one of five recommendations: (1) support at the requested budget level, (2) reduction of budget. (3) postponement pending further review; (4) transfer to an appropriate local government entity rather than the central government; and (5) cancellation. The WGs met in parallel sessions and spent about 40 minutes to review each project/program.

The entire proceeding was open to the public and anyone from the general public could attend the review on a first-come-first-served basis. The number of observers increased day by day and many people were turned away in the latter half of the review period. The review was also broadcast over the Internet. In addition, all the review results along with summaries of the reviewers' comments were posted at the Cabinet Office's homepage by the end of the day of review.

The table below summarizes the GRU's review of science and technology-related projects/programs. The S&T budgets have been protected as 'sacred' in the recent past based on the recognition that science and technology investments are essential to make Japan an 'S&T-oriented nation.' As a consequence, the S&T budgets have stayed almost flat, even when the budgets in other areas were substantially decreased. The review this time, however, did not recognize any 'sacred' areas.

Government Revitalization Unit's (GRU) Recommendations on the S&T-related JFY2010 Budget Request

Responsible Ministry / Implementing Organization, Programs		
Program/Project Reviewed		GRU Recommendation
GRU Comments		
MEXT (Ministry of Education, Culture, Sports, Science and Technology) / RIKEN		
Next-generation supercomputer		On hold pending further review
<ul style="list-style-type: none"> The project should be frozen and the JFY2010 budget should be cut as much as possible. Two of the three companies participating in the project have withdrawn from the project in May 2009, which has changed the scope of the project and necessitates a complete re-evaluation. Not sufficient rationale was given to invest a huge amount of government funds to the project: Building 'the fastest computer in the world' is not a good reason under the current economic condition. 		
Spring-8 facilities		Reduce budget between 33 and 50%
<ul style="list-style-type: none"> More effort should be made to make more efficient use of the facilities. The merit of investing ¥8.6 billion (~\$86 million) per year in this project is not explained. 		
Plant Science Center		Reduce budget by 33%
<ul style="list-style-type: none"> While the Center promises contributions to the increased food production, research focuses on basic research and does not take food industry's needs into consideration. 		
Bio Resource Center		Reduce budget by 33%
<ul style="list-style-type: none"> While it is understandable that the government needs to maintain these resources, it is not necessary to distribute them to the users below cost. 		
MEXT / JAMSTEC (Japan Agency for Marine-Earth Science and Technology)		
Deep-sea drilling project		Reduce budget between 10 and 20%
<ul style="list-style-type: none"> It is not critical to continue drilling at the requested pace. Funding from outside sources should be increased with a concomitant reduction in government's investment. 		
Institute for Research on Earth Evolution		On hold
<ul style="list-style-type: none"> The project does not need be started until the 7,000 meter-drilling has been successfully accomplished. JAMSTEC receives this basic research fund without competition, which is very unfair as other basic research programs are supported through competitive funding programs. 		

MEXT: Competitive funds – Frontier Research		
The Coordination Fund for Promoting Science and Technology (Transformative Technology Promotion, Creating Innovation in Frontier Interdisciplinary Areas)	Reduce budget and streamline basic research management across implementing organizations	
JSPS (Japan Society for the Promotion of Science): Selected Programs within the Grants-in-Aid for Scientific Research (Scientific Research on Priority Areas, Innovation, and other areas promoted specifically in the JFY2010 budget request)		
JST (Japan Science and Technology Agency): Basic Research (ERATO, PRESTO, CREST), Strategic Innovation Creation Program, Cutting-edge Low Carbon Technology Development, Strategic Reinforcement of Basic Science program		
<ul style="list-style-type: none"> The systems should be consolidated and simplified. Randomly established programs across ministries/agencies are a source of waste. Three reviewers voted to postpone funding: 5 voted for a budget cut: 5 voted for a budget at the requested level awaiting review of the overall basic research funding system. 		
MEXT: Competitive funds - Fostering Young Researchers		
The Coordination Fund for Promoting Science and Technology (System Reform to Foster Young Researchers)	Reduce budget	
Young Scientists and JSPS Fellows Programs within Grants-in-Aid for Scientific Research		
JSPS (Japan Society for the Promotion of Science): Special Research Fellowship for Young Scientists		
<ul style="list-style-type: none"> These programs are duplicative. They need to be consolidated and streamlined, which should result in budget savings. Government should establish a policy for ensuring employment of young researchers. 		
MEXT: Competitive funds – Invitation of Foreign Researchers		
WPI: World Premier International Program	Reduce budget and re-evaluate the program	
<ul style="list-style-type: none"> A new round of solicitation for proposals should not take place in JFY2010. The program should be reviewed before establishing more WPI centers. The progress of the center activities should be made clear. The concept is good, but the excessive program scope / budget are not adequately justified. 		
JSPS: International Cooperation Program		
<ul style="list-style-type: none"> The program should be reevaluated and the program goal be re-defined GRU recognizes the importance of the program, but the budget should be cut in JFY2010. 		

MEXT: Competitive funds - Life Science		
Target Protein Program	<ul style="list-style-type: none"> The program goal is not clear. It is not explained why it requires 5 years. The program should be evaluated and the budget should be cut. 	Reduce budget between 20 and 50%
Molecular Imaging Program (2nd phase)	<ul style="list-style-type: none"> The program goal and plans should be made clearer. The program duplicates other existing programs. Accordingly, the budget should be cut. 	Reduce budget between 20 and 33%
Infectious Diseases: International Network (2nd Phase)	<ul style="list-style-type: none"> This should be supported by MHLW (Ministry of Health, Labor and Welfare) and not MEXT. The placement of the project should be determined first. If the project is determined to be appropriate for MEXT, it should be promoted in cooperation with MHLW with decreased budget. 	Cancel or reduce budget between 20 and 50%
MEXT: Competitive funds - Women Researchers		
Women Researcher Support program (part of the Coordination Fund for Promoting S&T)	<ul style="list-style-type: none"> It is important to increase the number of women researchers, and therefore it is necessary to support them. The program should not include budget to support research per se. 	Reduce budget by 33%
MEXT: Competitive funds - Internationalization of Universities		
Internationalization of Research Environment	<ul style="list-style-type: none"> All the reviewers agreed to the importance of internationalization of universities. This program is not an effective way to accomplish that goal. Universities themselves should promote it. 	Cancel
MEXT: Competitive funds - Other Areas		
R&D on Nuclear Power System	<ul style="list-style-type: none"> Fostering expert personnel is very important. The system should be re-designed based on a long-term strategy and with the management efficiency in mind. Subdivision of the competitive funds causes duplication and waste; 	Reduce budget by 20%

JST: Technology/Equipment Development for Advanced Measurement and Analysis		Reduce budget between 10 and 20%
<ul style="list-style-type: none"> The significance of the program is understandable. The initial goal of the program seems to have been accomplished. More effort is needed in achieving cost effectiveness. The MEXT's competitive funding system should be streamlined to develop a more strategic and flexible system. 		
MEXT: Regional S&T Promotion - Industry-University-Government Cooperation		
Intelligent Cluster Creation program		Cancel
Urban-area Industry-University-Government Cooperation Program		
Regional Innovation Cluster Creation program by Industry-University-Government Cooperation		
Industry-University-Government Cooperation Strategic Development Program		
JST: Comprehensive Support for Creating Region-based Innovation		
<ul style="list-style-type: none"> These are not the programs to be promoted by the central government. Each local government has unique situations; these programs would be more effectively supported by local governments. 		
MEXT: JST (Japan Science and Technology Agency)'s Education Programs		
Assistants to Support Science Classes at Elementary and Secondary Schools		Cancel
<ul style="list-style-type: none"> It is good to increase the number of children who are interested in science; however, this is a model program to be terminated in 2011 without a long-term plan. This program in its current form should be abolished and be redesigned in the context of Educational Reform. 		
MIRAikan (National Museum of Emerging Science and Innovation)		Reduce budget
<ul style="list-style-type: none"> The Museum is operated under the Japan Foundation of Public Communication on Science and Technology that is under the Japan Science and Technology Agency (JST). This organization structure makes the whole operation opaque and non cost-effective. 		

MEXT: JAXA (Japan Aerospace Exploration Agency)		
HTV: H-II Transfer Vehicle (An unmanned cargo transfer spacecraft to deliver supplies to the IIS (International Space Station))		Reduce budget by 10%
<ul style="list-style-type: none"> It is necessary to have this program as it is based on the international agreement; however, the cost should be decreased as much as possible. 		
Satellites Launch after 2012		
<ul style="list-style-type: none"> This is mentioned in the Space Basic Law, but should be reviewed in light of the current economic condition. The program should be reviewed to identify and prioritize specific focus areas, based on which the budget should be selectively reduced. 		
MEXT: JAEA (Japan Atomic Energy Agency)		
R&D on Fast Breeder Reactor (Monju)		Review overall program management; restart Monju but put all others on hold
R&D on Japan Materials Testing Reactor (JMTR)		
<ul style="list-style-type: none"> The division of roles between MEXT and METI (Ministry of Economy, Trade, and Industry) is not clear in managing these programs. It should be clearly defined. Pending review of the role of MEXT and METI, GRU recommends re-starting Monju and freezing all the others. 		
High-level Radioactive Waste Processing (Deep Earth)		On hold pending overall program review with METI
<ul style="list-style-type: none"> METI is responsible for processing nuclear waste while MEXT is responsible for only one (although significant) part of the project: therefore it is not possible to judge the value of the overall project by looking at this project alone It is necessary to review the entire program including METI. The project can be postponed while the total program is being reviewed. 		
ITER (International Thermonuclear Experimental Reactor)		Budget as requested
<ul style="list-style-type: none"> It is recommended to fund as requested; however, the progress should be constantly monitored. 		
MIC (Ministry of Internal Affairs and Communications)		
Investment in the NICT (National Institute of Communications Technology)		Reduce budget between 10 and 30%
<ul style="list-style-type: none"> NICT's R&D programs should be merged with those managed by MIC (Ministry of Internal Affairs and Communications). Duplication of efforts with similar research institutions supported by other ministries/agencies should be avoided. 		

MOE (Ministry of Environment)		
Biodiversity preservation	<ul style="list-style-type: none"> The importance of the program, especially in relation to COP10, is understandable The purpose, impacts, or the funding mechanism are not very transparent. More effort should be made to explain the program to the tax payers. 	Budget as requested
Global-scale biodiversity monitoring	<ul style="list-style-type: none"> There were comments to cut the budget, which MOE should study carefully. 	Budget as requested
Natural environment preservation: Baseline survey	<ul style="list-style-type: none"> The urgency for the survey was not fully explained. 	Reduce budget by 33%
Biodiversity: National-wide activities	<ul style="list-style-type: none"> While such activities are important, the value of investing ¥100 million (~\$1 million) is questioned. The nation-wide activities are worthwhile, but it is possible that only limited people, not nation-wide, always participate in these nation-wide activities. 	Reduce budget by 50%

NOTE: Abbreviations used in the table:

ERATO	Exploratory Research for Advanced Technology
CREST	Core Research for Evolutional Science and Technology
PRESTO	Precursory Research for Embryonic Science and Technology

The unexpected review results elicited many negative responses from the Japanese research communities and S&T-related Ministries. For example, a group of Japanese Nobel laureates met with the Prime Minister and protested the GRU's review method and results. All the researchers involved in the next-generation supercomputer project signed a petition asking the government to overturn the GRU's recommendation. Directors of major government-supported research institutions posted statements on the WEB protesting the review results and asking for comments from the world's scientific communities. Ministries such as MEXT and METI solicited comments from the general public on their WEB.

In parallel to the GRU's review, the S&T budget requests were reviewed by the Council for Science and Technology Policy (CSTP) from a scientific perspective as in the previous years. NSF Tokyo Office will soon report the results of the CSTP review. Both the GRU and CSTP review results are currently under discussion at the Cabinet level. The JFY2010 budget proposal is scheduled to be finalized by the Ministry of Finance at the end of December 2009, which will then be discussed at a Diet session in early 2010. The Japanese Diet is scheduled to pass the JFY2010 budget before the end of March 2010.