

資 料

資料1 調査団員・氏名

(1) 協力準備調査（第1次現地調査）

担当	所属	氏名
団長	独立行政法人国際協力機構 経済基盤開発部 都市・地域開発グループ都市・地域開発第二課	荒 仁
調達事情	クラウン・エージェンツ日本事務所	佐納 秀美
業務主任／電気設備	株式会社アンジェロセック	高坂 幸夫
電力事情	株式会社アンジェロセック	熊野 忠則
調達計画／積算	株式会社アンジェロセック	上橋 信行
制度・基準 ／環境社会配慮	株式会社アンジェロセック	郡司 佳純
通訳	株式会社アンジェロセック	大坊 公民

(2) 協力準備調査（第2次現地調査）

担当	所属	氏名
業務主任／電気設備	株式会社アンジェロセック	高坂 幸夫
電力事情	株式会社アンジェロセック	熊野 忠則
調達計画／積算	株式会社アンジェロセック	上橋 信行
制度・基準 ／環境社会配慮	株式会社アンジェロセック	郡司 佳純
通訳	株式会社アンジェロセック	大坊 公民

(3) 概略設計概要説明調査（第3次現地調査）

担当	所属	氏名
業務主任／電気設備	株式会社アンジェロセック	高坂 幸夫
電力事情	株式会社アンジェロセック	熊野 忠則
通訳	株式会社アンジェロセック	大坊 公民

資料2 調査行程

(1) 協力準備調査 (第1次現地調査)

日 月 日	曜日	参加員(JICA)	調査対象機関	コンサルタント株式会社(アンジェロ)						
				調査事項 (名称・内容)	事務主任/普及員 (名前・名義)	電力事情 (電力・燃料)	調査計画/調査 (上掲/進行)	制度・基準/建設社会配慮 (取組/状況)	運賃(費証) (大抵/公民)	
7	21	火	移動(空路) 成田 → ソウル → ランセント							移動(空路) 成田(13:30 02:01) → ソウル(18:00) ソウル(17:30 02:37) → ランセント(21:00)
7	22	水	移動 ランセント→チルメズ(空路) チルメズ→ドクソンベ(陸路) JICA乗車							移動 ランセント(08:25 04:15) → チルメズ(11:25) (空路) チルメズ → ドクソンベ (陸路) JICA乗車
7	23	木	大塚館「(仮)建設所関係者庁(外務 省、保健省、エネルギー産業省) 員会、JICA」会合							大塚館「(仮)建設所関係者庁(外務省、保健省、エネルギー産業省)員会、JICA」会合
7	24	金	サイト視察調査(デリアコフ病院、 産科婦人科研究所、JICA)会合							サイト視察調査(デリアコフ病院、産科婦人科研究所、JICA)会合
7	25	土	保健省との協議 サイト視察調査(23日視察)	移動(空路) 成田 → ソウル → ランセント	保健省との協議 サイト視察調査(23日視察)					保健省との協議 サイト視察調査(23日視察)
7	26	日	サイト視察調査(ダンガラ病院)	移動 ランセント→チルメズ(空路) チルメズ→ラングンベ(陸路)						サイト視察調査(ダンガラ病院)
7	27	月	制度・基準調査(電力)。 JICAとの打ち合せ 保健省との協議	JICAとの打ち合せ	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議	制度・基準調査(電力)。 サイト視察調査(デリアコフ病院)。 保健省との協議
7	28	火	他ドナー調査、調査依頼との協議 M/D協議、JICA)会合	他ドナー調査、調査依頼との協議 M/D協議、JICA)会合	他ドナー調査、調査依頼との協議 M/D協議、JICA)会合	他ドナー調査、調査依頼との協議 M/D協議、JICA)会合	M/D協議	資料整理	M/D協議	M/D協議
7	29	水	M/D署名、大塚館報告、JICA報告	保健省との協議、M/D署名、 大塚館報告、JICA報告						M/D署名、大塚館報告、JICA報告
7	30	木	移動 ドクソンベ → チルメズ(陸路) チルメズ → ランセント(空路)	サイト調査 (デリアコフ病院、産科婦人科研究所)	サイト調査(デリアコフ病院)。 エネルギー産業調査 協議	サイト調査 (デリアコフ病院、産科婦人科研究所)	サイト調査(デリアコフ病院)。 エネルギー産業調査 協議	サイト調査 (デリアコフ病院、産科婦人科研究所)	サイト調査 (デリアコフ病院、産科婦人科研究所)	サイト調査 (デリアコフ病院、産科婦人科研究所)
7	31	金	JICAハウスベキスタン事務所への報告 (移動)空路) ランセント →	サイト調査(産科婦人科研究所)。 現地調査、調査準備調査	電力事情調査、保健省調査	サイト調査(産科婦人科研究所)。 現地調査、調査準備調査	電力事情調査、保健省調査	サイト調査(産科婦人科研究所)。 現地調査、調査準備調査	サイト調査(産科婦人科研究所)。 現地調査、調査準備調査	サイト調査(産科婦人科研究所)。 現地調査、調査準備調査
8	1	土	ソウル → 成田							資料整理 成田打ち合わせ
8	2	日								資料整理 成田打ち合わせ
8	3	月		サイト調査 (デリアコフ病院、産科婦人科研究所)	エネルギー産業調査 協議、 資料収集	サイト調査 (デリアコフ病院、産科婦人科研究所)	エネルギー産業調査 協議、 資料収集	サイト調査 (デリアコフ病院、産科婦人科研究所)	エネルギー産業調査 協議、 資料収集	サイト調査 (デリアコフ病院、産科婦人科研究所)
8	4	火		サイト調査(23日視察)。 現地調査、調査準備調査	サイト調査(23日視察)。 23日ランエト式準備調査	サイト調査(23日視察)。 現地調査、調査準備調査	サイト調査(23日視察)。 現地調査、調査準備調査	サイト調査(23日視察)。 現地調査、調査準備調査	サイト調査(23日視察)。 現地調査、調査準備調査	サイト調査(23日視察)。 現地調査、調査準備調査
8	5	水								産科婦人科研究所調査 協議、 調査準備調査
8	6	木								保健省調査 協議、大塚館報告、JICA報告
8	7	金								移動 ドクソンベ → チルメズ (陸路) チルメズ(15:35 04:15) → ランセント(11:40) (22:30 02:37) (空路)
8	8	土								ソウル(08:50) ソウル(11:20 02:04) → 成田(19:40)

(2) 協力準備調査 (第2次現地調査)

日程			コンサルタント(株式会社アンジェロセック)					
日	月	曜日	1 業務主任/電気設備 (高坂 幸夫)	2 電力事情 (熊野 忠則)	3 調査計画/概算 (上橋 慎行)	4 制度・基準/環境社会配慮 (藤岡 佳規)	5 通訳(露指) (大坊 公民)	
1	8月30日	日	移動 成田(12:50 TK051) ⇒ イスタンブール アタチュルク空港(19:40)、 イスタンブール(20:40 TK1344) ⇒					
2	8月31日	月	⇒ ドゥシャンベ(03:20) 大使館、JICA豊後					
3	9月1日	火	保健省、ディアコフ病院、産科婦人科研究所とのキックオフミーティング・協議					
4	9月2日	水	サイト調査(産科婦人科研究所)					
5	9月3日	木	サイト調査(ディアコフ病院)					
6	9月4日	金	サイト調査(ディアコフ病院) 輸送事情調査					
7	9月5日	土	電気設備の概略検討、 社内打合せ	資料収集、社内打合せ	現地施工会社調査	資料収集、社内打合せ	現地施工会社調査	
8	9月6日	日	電気設備の概略検討、 社内打合せ	資料収集、社内打合せ	施工概略検討、社内打合せ	資料収集、社内打合せ	収集資料の翻訳、社内打合せ	
9	9月7日	月	サイト調査(産科婦人科研究所)	電力事情調査、 制度・基準・計画調査	サイト調査(産科婦人科研究所)			
10	9月8日	火	サイト調査(ディアコフ病院、産科婦人科研究所)					
11	9月9日	水	電気設備の概略検討、 社内打合せ	収集資料の整理、社内打合せ	調査関連整理、 社内打合せ	資料収集、社内打合せ	収集資料の翻訳、社内打合せ	
独立記念日								
12	9月10日	木	電力事情調査 現地コンサルタント調査					
13	9月11日	金	サイト調査(ディアコフ病院、産科婦人科研究所)					
14	9月12日	土	現地施工業者調査 現地コンサルタント調査					
15	9月13日	日	電気設備の概略検討、 社内打合せ	収集資料の整理、社内打合せ	調査関連整理、施工概略検討、 社内打合せ	収集の整理、社内打合せ	収集資料の翻訳、社内打合せ	
16	9月14日	月	サイト調査(ディアコフ病院)					
17	9月15日	火	電気設備の概略検討、 JICA中間報告	電気設備の概略検討 収集資料の整理	サイト調査(産科婦人科研究所)	サイト調査(産科婦人科研究所) JICA中間報告	サイト調査(産科婦人科研究所) 資料の翻訳	
18	9月16日	水	調査事情調査 保健省との協議				移動 ドゥシャンベ⇒テルメズ(陸路)、 テルメズ(15:55 HV1154)⇒タシケント (17:40)、(22:20 OZ574)⇒	調査事情調査 保健省との協議
19	9月17日	木	現地施工業者調査	現地施工業者調査	調査事情調査	⇒ ソウル(08:50) (空路) ソウル(11:30 OZ104) ⇒ 成田(13:40)	調査事情調査	
20	9月18日	金	サイト調査 保健省との協議	サイト調査 保健省との協議	サイト調査 保健省との協議	/	サイト調査 保健省との協議	
21	9月19日	土	収集資料整理 社内打合せ				収集資料の翻訳、社内打合せ	
22	9月20日	日	収集資料整理 社内打合せ				収集資料の翻訳、社内打合せ	
23	9月21日	月	電力事情調査 サイト調査(ディアコフ、産科研究所)				サイト調査(ディアコフ、産科研究所)	
24	9月22日	火	JICA、大使館報告				JICA、大使館報告	
25	9月23日	水	移動 ドゥシャンベ ⇒ テルメズ (陸路) テルメズ(15:55 HV1154) ⇒ タシケント(17:40)、(22:20 OZ574) ⇒				移動 ドゥシャンベ ⇒ テルメズ (陸路)、 テルメズ(15:55 HV1154) ⇒ タシケント (17:40)、(22:20 OZ574) ⇒	移動 ドゥシャンベ ⇒ テルメズ (陸路)、 テルメズ(15:55 HV1154) ⇒ タシケント (17:40)、(22:20 OZ574) ⇒
26	9月24日	木	⇒ ソウル(08:50) (空路) ソウル(11:30 OZ104) ⇒ 成田(13:40)				⇒ ソウル(08:50) (空路) ソウル(11:30 OZ104) ⇒ 成田(13:40)	⇒ ソウル(08:50) (空路) ソウル(11:30 OZ104) ⇒ 成田(13:40)

(3) 概略設計概要説明調査（第3次現地調査）

日程			コンサルタント(株式会社アンジェロセック)		
日 順	月 日	曜 日	1 業務主任/電気設備 (高坂 幸夫)	2 電力事情 (熊野 忠則)	3 通訳(露語) (犬坊 公民)
1	2月26日	金	移動(空路) 成田(13:30 OZ101) ⇒ ソウル(16:10) ソウル(17:20 OZ573) ⇒ タシケント(21:10)		
2	2月27日	土	移動 タシケント(09:25 HY1151) ⇒ テルメズ(11:25) (空路) テルメズ ⇒ ドウシャンベ (陸路)		
3	2月28日	日	国内協議		
4	3月1日	月	JICA表敬、「タ」国保健省への調査報告書説明・協議		
5	3月2日	火	「タ」国保健省への調査報告書説明・協議		
6	3月3日	水	「タ」国保健省への調査報告書説明・協議		
7	3月4日	木	JICA報告		
8	3月5日	金	移動 ドウシャンベ ⇒ テルメズ (陸路) テルメズ(12:25 HY1152) ⇒ タシケント(14:10)、(22:30 OZ574) (空路)		
9	3月6日	土	⇒ ソウル(08:50) ソウル(11:30 OZ104) ⇒ 成田(13:40)		

資料3 関係者（面会者）リスト

タジキスタン共和国政府	
保健省 (Ministry of Health)	
Salimov Nusratullo Fayzulloevich	Minister
Rahmonov Sohbnazar	Deputy Minister
Saifjinov Rahimonovich	Head of Department, Reform of International Relations
Bandaev Lehom	Director of Foreign Relation Division
外務省 (Ministry of Foreign Affairs)	
Yaldoshev Abdullo	First Deputy Minister
Sarvae Bakhti	First Secretary of Asia and Africa Development
エネルギー・産業省 (Ministry of Energy and Industry)	
Khakdodov Makhmadsharif M.	Deputy Minister
Amonov Saifullo Nurulloevich	Head of Department of the International Relations
Abdurakhimov Bahridin	Head of Managing Department on CO2 Industry and Alternative type of energy
Zardova Mahina	Secretary
財務省 (Ministry of Finance)	
Shavkat K. Sokhibov	Deputy Minister
Fakhriddin Amirov	Head of Investments Department
環境保護委員会 (Committee on Environmental Protection)	
Sharipova Oikhon	The vice Chairman
Nazarov Timur	The Head of committee in International Branch
Agency on Hydrometeorology	
Safarov Tavarovich	Director
Baidylloeva jamila	Head of Hydrometeorological Center
Agency of the Republic of Tajikistan for Public Procurement of Goods, Works and Services	
Kakhorov Faiziddin Sattorovich	Deputy Director
Agency for Construction and Architecture	
Sultonov Mirzohisain	First Deputy Director
Nazarov Abdurahim	Head of branch on special state program
Project Implementation Unit for Road Rehabilitation	
Boronov Goibnazar	Deputy Executive Director

Barki Tajik	
GulovRoshral	Sub Chief Engineer
Rakhmov Rustam	Sub Chief Engineer
Niyazov Umarali Safarovich	Electro-Heating Station of Dushanbe, Director
Qalandarov Rahmatullo	Electro-Heating Station of Dushanbe, Chief Engineer
Salolov Doulot	Hydropower Station of Nurek, Deputy Chief Engineer

タジキスタン国病院	
ディアコフ病院 (Diakov Hospital)	
Pirov Abdullo	Director
Manonov Safarbek	Deputy Director
Safaev Olim	Chief Engineer
Aliev Nurullo	Electrical Chief Engineer
産科婦人科研究所 (Reserch Institution of Obsterics gynecology and perinatology)	
Kurbanov Shamsova	Director
Nazriev Jumakhon	Deputy Director (Economic)
Turmakov Khababullo	Electric Engineer
ドゥステイ病院 (Dusty Hospital)	
Shamsova Firuzo	Head Doctor
Yatimov Cafurbek	Head Doctor's assistant
ジョミ病院 (Jomi Hospital)	
Haitov Yuldosh Ibragimovich	Manager
Sattorov Matsharif	Head Doctor's assistant
Narziev Rahim Tursunovich	Manager of Electric
Abdiev Ahmadjon	支部 Hospital No.4 , Head Doctor
ダンガラ病院 (Dangara Hospital)	
Shamsov Khizmatullo	Head Doctor

在タジキスタン日本大使館	
中山喜弘	臨時代理大使
原田和哉	一等書記官
近藤俊介	二等書記官
長尾広視	専門調査員

在タジキスタン JICA 事務所	
海保誠治	所長
織田知則	企画調整員
Safovudin Djaborov	Program Officer

タジキスタン国工科大学 (Tajik Technical University)	
Abdurasulov Anver	Rector
Akhrorova Alpha	Head of the department of Engineering Business and Management

タジキスタン綿花検査機関 (Tajikistan Cotton Inspection Service)	
Rahmonov Abdrigor	Director

建設業者	
Sistemavtomatika.Ltd	
Madvaliev Umarchon	Deputy of general director
Construction Association Sroy Service	
Sulaymonov Habibullo	General Director

現地コンサルタント	
Research, Studies, Design and Surveying Institute	
Nazrishoev Solim	Road Design and researches Department Chief
Limited Liability Company AVTOSTRADA	
Mirzoev Sukhrob Begmatovich	Director
Joint Stock Company Tajmuhandis	
Ahmadov Karim	Deputy Director

Global Link logistics Group	
Behruz Zoynulloev	Manager

他ドナー	
Asian Development Bank	
Joji Tokeshi	Deputy Country Director
UNIFEM	
Mirzoeva Murkhon	Monitoring officer
Narigiza Azizova	Advisor

資料4 討議議事録 (M/D)

(1) 協力準備調査 (第1次現地調査)

**Minutes of Discussions
on the Preparatory Survey
on the Project for Clean Energy Supply to Capital and Regional Hospitals**


The Government of Japan (hereinafter referred to as "GoJ") has established Cool Earth Partnership as a new financial mechanism. Through this, GoJ is cooperating actively with developing countries' efforts to reduce greenhouse gasses emissions, such as efforts to promote clean energy. A new scheme of grant aid, "Program Grant Aid for Environment and Climate Change", was also created by GoJ as a component of this financial mechanism. According to the initiative of Cool Earth Partnership, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), in consultation with GoJ, decided to conduct a Preparatory Survey (hereinafter referred to as "the Survey") on the Project for Clean Energy Supply to Capital and Regional Hospitals in the Republic of Tajikistan (hereinafter referred to as "the Project").

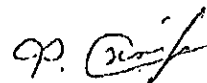
JICA sent the Preparatory Survey Team (hereinafter referred to as "the Team"), headed by Mr. Hitoshi ARA, Assistant Director for Urban and Regional Development 2, Economic Infrastructure Department, JICA, and is scheduled to stay in the country from July 22, 2009 to August 7, 2009.

The Team held discussions with the concerned officials of the Government of the Republic of Tajikistan (hereinafter referred to as "Tajikistan") and conducted a field survey.

In the course of discussions and field survey, both sides confirmed the main items described in the attached documents.

Dushanbe, July 29, 2009


Mr. Hitoshi ARA
Leader
Preparatory Survey Team
Japan International Cooperation Agency
JAPAN


Mr. Salimov Nusratullo Fayzulloevich
Minister
Ministry of Health
Republic of Tajikistan

ATTACHMENT

1. Objective of the Project

The objective of the Project is to promote clean energy utilization and achieve emissions reductions by installing the photovoltaic system.

2. Responsible and Implementing Organization

The responsible and implementing organization is the Ministry of Health (MOH). (The organization chart of the responsible ministry is shown in Annex-1.)

3. Project Component

3-1. After discussions with the Team, the Tajikistan side requested the photovoltaic power generating system including the installation. Major equipment are as follows.

- Photovoltaic (PV) Module (Panel) s
- Junction Boxes
- Power Conditioners
- Transformers
- Data collecting and display devices

3-2. Both sides confirmed candidate sites for installation of the system as follows.

- Diakov Hospital (Pediatrics department, Intensive care unit for Pediatrics department, Intensive care unit)
- Research Institution of Obstetrics Gynecology and Perinatology (Maternity department)
- Dusty Hospital
- Jomi Hospital
- Dangara Hospital

3-3. The Tajikistan side explained that there is no duplication between the contents of the Project and any other plans being implemented by the other donors or the Tajikistan side.

3-4. The Team will assess the appropriateness of the request and will report the findings to JICA Headquarters and the GoJ. The Tajikistan side has understood that the final components and the design of the Project shall be confirmed after further survey.

4. Japan's Program Grant Aid for Environment and Climate Change

The Tajikistan side understood the Japan's Program Grant Aid for Environment and Climate Change scheme explained by the Team (Annex-2, 3 and 4).

5. Schedule of the Survey

- (1) After the completion of the 1st phase of the Preparatory Survey, the Team will report the results to JICA Headquarters and GoJ.
- (2) If the Cabinet will approve the Project based on the 1st phase of the Preparatory Survey, JICA will conduct the 2nd phase of the Preparatory survey for the outline design.

6. Other Relevant Issues

6-1 Current Situation

As the Tajikistan side has been implementing "Program for Promotion of Renewable Energy 2007 -2020", both sides recognized that the Project is accordance with Tajikistan Government policy.

6-2 Priority of the candidate sites

Both sides understood the following natures of the photovoltaic system, which aims to

reduce the emissions and to promote clean energy utilization.

- The photovoltaic system aims to supplement commercial power supply;
- When commercial power supply fails, the photovoltaic system should stop operation for its security
- The battery is necessary to use the photovoltaic system in the non electrified area and to use it as substituting powers at blackout time periods

Based on that, both sides agreed the priority of candidate sites as follows.

- First Priority: Hospitals in Dushanbe (total capacity between 100 -- 200 kW)
- Second Priority: Hospitals in local area

The Tajikistan side requested to install the photovoltaic system to the hospitals in local area where the commercial power supply are unstable. As batteries are also necessary to use photovoltaic system as substitute powers, both sides recognized needs to conduct further survey on the following points to clarify appropriateness of them.

- Current situation of disposal and treatment of batteries
- Sustainability of photovoltaic system with batteries

Both sides agreed to select the site(s) in local area based on the following criteria.

- Power failure frequency and time period
- Number of critical care patient

6-3 Major Undertakings to be taken by Each Government

The Tajikistan side confirmed that major undertakings as shown in Annex-5 should be taken by Tajikistan side at its own budget. In addition, the Tajikistan side should be responsible for the following issues;

- Securing necessary land for
 - PV Modules
 - Underground Cables between PV Modules and Power Conditioners
 - Power Conditioners
- Temporary stockyard(s) during installation of the equipment and materials
- Tables and PCs, if necessary

6-4 Procurement of Equipment and Materials

The Team explained that the policy of GoJ and outline of the program. The Tajikistan side understood the policy of GoJ and requested to procure the products of Japan for the Project.

6-5 Coordination with Related Organizations

MOH shall be the focal point for the Team, and responsible for the coordination with related organizations.

6-6 Consultative Committee

Both sides agreed provisional terms of reference of the Consultative Committee as Attachment 6. Both sides also confirmed the following organizations/agencies should be the member of the Consultative Committee with possible inclusion of others if necessary.

- JICA Tajikistan Office
- Embassy of Japan
- Procurement Agent
- Ministry of Health
- The candidate hospitals*

* The hospitals will be decided through further survey

6-7 Property of Equipment and Materials

MOH shall own the equipment and materials provided under the Project during and after implementation of the Project.

6-8 Environmental and Social Considerations

The Team explained the outline of *JICA Environmental and Social Considerations Guideline* (hereinafter referred to as "the JICA Guideline") to the Tajikistan side. The Tajikistan side took the JICA Guideline into consideration, and shall complete the necessary procedures, if necessary.

6-9 Operation and Maintenance

The Tajikistan side agreed to secure the necessary budget and personnel for the Operation and Maintenance of the system procured and installed under the Project.

6-10 Customs and Tax exemption

The Tajikistan side agreed that the Tajikistan side shall be responsible for the exemption and/or reimbursement of all customs, tax, levies and duties incurred in Tajikistan for implementation of the Project.

6-11 The Tajikistan side shall ensure the security of all concerned Japanese nationals working for the Project, if deemed necessary.

6-12 The Tajikistan side shall provide necessary numbers of counterpart personnel to the Team during the Survey in Tajikistan.

6-13 The Tajikistan side shall submit all the answers to the Questionnaire, which the Team handed to the Tajikistan side on August 6, 2009.

<List of Annex>

Annex-1: Organization Chart of Ministry of Health

Annex-2: Japan's Environment Program Grant Aid Scheme

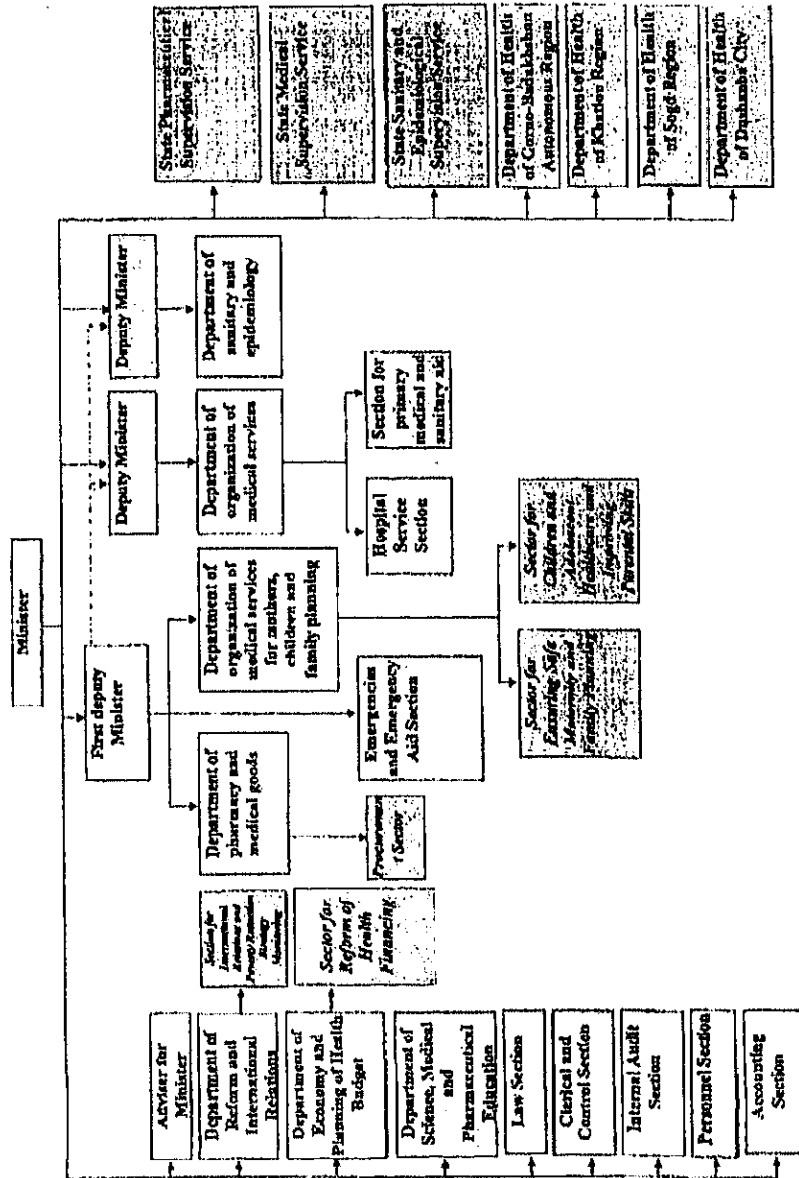
Annex-3: *Flow of Funds for Project Implementation*

Annex-4: Project Implementation System

Annex-5: Major Undertakings to be taken by Each Government

Annex-6: Terms of Reference of the Consultative Committee (Provisional)

Organization Chart of Ministry of Health



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**Program Grant Aid for Environment and Climate Change
of the Government of Japan
(Provisional)**

The Grant Aid provides a recipient country (hereafter referred to as "the Recipient") with non-reimbursable funds to procure the facilities, equipment, and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with relevant laws and regulations of Japan. The Grant Aid is not supplied through the donation of materials as such.

Based on "Cool Earth Partnership" initiative of the Government of Japan, the Program Grant Aid for Environment and Climate Change (hereafter referred to as "GAEC") aims to mitigate effects of global warming by reducing GHGs emission (mitigation; e.g. improvement of energy efficiency) and to take adaptive measures (adaptation; e.g. measures against disasters related to climate change, including disaster prevention such as enhancing disaster risk management).

1. Procedures for GAEC

GAEC is executed through the following procedures.

Preparatory Survey (Phase 1)	Preparatory Survey (Phase 1 for project identification) conducted by Japan International Cooperation Agency (JICA)
Application	Request made by a recipient country
Appraisal & Approval	Appraisal by the Government of Japan and Approval by the Cabinet
Determination of Implementation	The Notes exchanged between the Government of Japan and the Recipient Country
Grant Agreement (hereinafter referred to as the "G/A")	Agreement concluded between JICA and the Recipient
Preparatory Survey (Phase 2)	Preparatory Survey (Phase 2 for detailed design) conducted by JICA
Implementation	Procurement through the Procurement Agency by the Recipient

Firstly, if the candidate project for a GAEC is identified by the Recipient and the Government of Japan, the Government of Japan (the Ministry of Foreign Affairs) examines it whether it is eligible for GAEC. When the request is deemed appropriate, JICA, in consultation with the Government of Japan, conducts the Preparatory Survey (hereafter referred to as "the Survey") on the candidate project as Phase 1 of the Survey with Japanese consulting firms.

Secondly, the Recipient submits the official request to the Government of Japan, while the appropriateness, necessity and the basic components of the project are examined in the course of Phase 1 of the Survey,

Thirdly, the Government of Japan appraises the project to see whether it is suitable for Japan's GAEC, based on the Survey report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes (E/N) signed by the Governments of Japan and the Recipient.

Fifthly, JICA engages Grant Agreement (G/A) with the Recipient and executes the Grant by making payments of the amount agreed in the E/N and strictly monitors that the funds of the Grant are properly and effectively used.

Procurement Management Agent is designated to conduct the procurement services of products and services (including fund management, preparing tenders, contracts) for GAEC on behalf of the Recipient. The Agent is an impartial and specialized organization that will render services according to the Agent Agreement with the Recipient. The Agent is recommended to the Recipient by the Government of Japan and agreed between the two Governments in the Agreed Minutes ("A/M").

2 Preparatory Survey

1) Contents of the Survey

The purpose of the Preparatory Survey (hereafter referred to as "the Survey"), conducted by JICA on a requested project (hereafter referred to as "the Project"), is to provide the basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Survey are as follows:

- Confirmation of background, objectives, and benefits of the Project and institutional capacity of agencies and communities concerned of the Recipient necessary for project implementation.
- Evaluation of relevance of the Project to be implemented under the Grant Aid Scheme for Environment and Climate Change from a technical, social, and economic point of view.
- Confirmation of items agreed upon by both parties concerning the basic concept of the Project.
- Preparation of the detailed design of the Project and reference document for tender.
- Estimation of cost for the Project.

The contents of the original request will be modified, as found necessary, in the design of the Project according to the guidelines of Japan's Grant Aid scheme.

The Government of Japan requests the Government of the Recipient to take whatever measures necessary to ensure its responsibility in implementing the Project. Such measures must be guaranteed even if they may fall outside the jurisdiction of the implementing organization of the Recipient. This has been confirmed by all relevant organizations of the Recipient through the Minutes of Discussions.

2) Selection of consulting firms

For the smooth implementation of the Survey, JICA will conduct the Survey with registered consulting firms. JICA selects the firms based on proposals submitted by firms with interest in implementing the Survey. The firms selected will carry out the Preparatory Survey and prepare a report, based on the terms of reference set by JICA.

3. Implementation of GAEC after the E/N

1) Exchange of Notes (E/N)

The content of GAEC will be determined in accordance with the Notes exchanged by the two Governments concerned, in which items including, objectives of the project, period of execution,

conditions and amount of the Grant Aid are confirmed.

2) Details of Procedures

Details of procedures on procurement and services under GAEC will be agreed between the authorities of the two governments concerned at the time of the signing of the G/A.

Essential points to be agreed are outlined as follows:

- a) JICA will supervise the implementation of the Project.
- b) Products and services will be procured and provided in accordance with JICA's "Procurement Guidelines for the Program Grant Aid for Environment and Climate Change."
- c) The Recipient will conclude a contract with the Agent.
- d) The Agent is the representative acting in the name of the Recipient concerning all transfers of funds to the Agent.

3) Focal points of "Procurement Guidelines for the Program Grant Aid for Environment and Climate Change"

a) The Agent

The Agent is the organization, which provides procurement of products and services on behalf of the Recipient according to the Agent Agreement with the Recipient. The Agent is recommended to the Recipient by the Government of Japan and agreed between the two Governments in the A/M.

b) Agent Agreement

The Recipient will conclude the Agent Agreement, in principle, within two months after the signing of the G/A, in accordance with the A/M. The scope of the Agent's services will be clearly specified in the Agent Agreement.

c) Approval of the Agent Agreement

The Agent Agreement is prepared as two identical documents and the copy of the Agent Agreement will be submitted to JICA by the Recipient through the Agent. JICA confirms whether the Agent Agreement is concluded in conformity with the E/N, A/M, and G/A and the Procurement Guidelines for the Program Grant Aid for Environment and Climate Change then approves the Agent Agreement.

The Agent Agreement concluded between the Recipient and the Agent will become effective after the approval by JICA in a written form.

d) Payment Methods

The Agent Agreement will stipulate that "Regarding all transfers of the fund to the Agent, the Recipient will designate the Agent to act on behalf of the Recipient and issue a Blanket Disbursement Authorization ("the BDA") to conduct the transfer of the fund (hereinafter referred to as "the Advances") to the Procurement Account from the Recipient Account.

The Agent Agreement will clearly state that the payment to the Agent will be made in Japanese yen from the Advances and that the final payment to the Agent will be made when the total remaining amount become less than three percent (3%) of the Grant and its accrued interests excluding the Agent's fees.

e) Products and Services Eligible for Procurement

Products and services to be procured will be selected from those defined in the G/A.

f) Selection of firms

7

In principle, firms of any nationality could be contracted as long as the firms satisfy the conditions specified in the tender documents.

The same applies for any individual consultants who will be involved in the project and provide services necessary for the training and guidance related to the Project. The consultants that will be employed to do detail design and supervise the work for the Project, however will be, in principle Japanese nationals recommended by JICA for the purpose of maintaining technical consistency with the Survey

g) Method of Procurement

When conducting the procurement, sufficient attention will be paid to transparency in selecting the firms and for this purpose, competitive tendering will be employed in principle.

h) Tender Documents

The tender documents should contain all information necessary to enable tenderers to prepare valid offers for the products and services to be procured by GAEC.

The rights and obligations of the Recipient, the Agent and the firms supplying products and services should be stipulated in the tender documents to be prepared by the Agent. Aside from this, the tender documents will be prepared in consultation with the Recipient.

i) Pre-qualification Examination of Tenderers

The Agent may conduct a pre-qualification examination of tenderers in advance of the tender so that the invitation to the tender can be extended only to eligible firms. The pre-qualification examination should be performed only with respect to whether the prospective tenderers have the capability of concluding the contracts.

For this, the following points should be taken into consideration:

- (1) Experience and past performance in contracts of similar kind
- (2) Financial credibility (including assets such as real estate)
- (3) Existence of offices and other items to be specified in the tender documents.
- (4) Their potentialities to use necessary personnel and facilities.

j) Tender Evaluation

The tender evaluation should be implemented on the basis of the conditions specified in the tender documents.

Those tenderers which substantially conform to the technical specifications and other stipulations of the tender documents, will be judged in principle on the basis of the submitted price, and the tenderer who offers the lowest price will be designated as the successful tenderer.

The Agent will submit a detailed evaluation report of tenders to JICA for its information, while the notification of the results to the tenderers will not be premised on the confirmation by JICA.

k) Additional procurement

If there is any remaining balance after the competitive and/or selective tendering and/or direct negotiation for a contract, and if the Recipient would like to procure additional items, the Agent is allowed to conduct this additional procurement, following the points mentioned below:

- (1) Procurement of same products and services

When the products and services to be additionally procured are identical with the initial tender and a competitive tendering is judged not efficient, additional procurement can be conducted by a negotiated contract with the successful tenderer of the initial tender.

(2) Other procurements

When products and services other than those mentioned above in (1) are to be procured, the procurement should be conducted through competitive tendering. In this case, the products and services for additional procurement will be selected from among those in accordance with the G/A.

l) Conclusion of the Contracts

In order to procure products and services in accordance with the guideline, the Agent will conclude contracts with firms selected by tendering or other methods.

m) Terms of Payment

The contract will clearly state the terms of payment. The Agent will make payment from the "advances," against the submission of the necessary documents from the firm on the basis of the conditions specified in the contract. When the services are the object of procurement, the Agent may pay certain portion of the contract amount in advance to the firms on the conditions that such firms submit the advance payment guarantee worth the amount of the advance payment to the Agent.

4) **Undertakings required by the Government of the Recipient Country**

In the implementation of the Grant Aid Project, the Recipient is required to undertake necessary measures as the following:

- a) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the Project.
- b) To provide facilities for distributing electricity, water supply and drainage and other incidental facilities in and around the sites.
- c) To ensure all the expense and prompt execution for unloading, customs clearing at the port of disembarkation and domestic transportation of products purchased under the Grant Aid,
- d) To ensure that customs duty, internal taxes and other fiscal levies that may be imposed in the Recipient with respect to the purchase of the Components and the Agent's services will be exempted by the Government of the Recipient.
- e) To accord all the concerned parties, whose services may be required in connection with supply of the products and services under the contracts, such facilities as may be necessary for their entry into the Recipient and stay therein for the performance of their work.

5) "Proper use of funds"

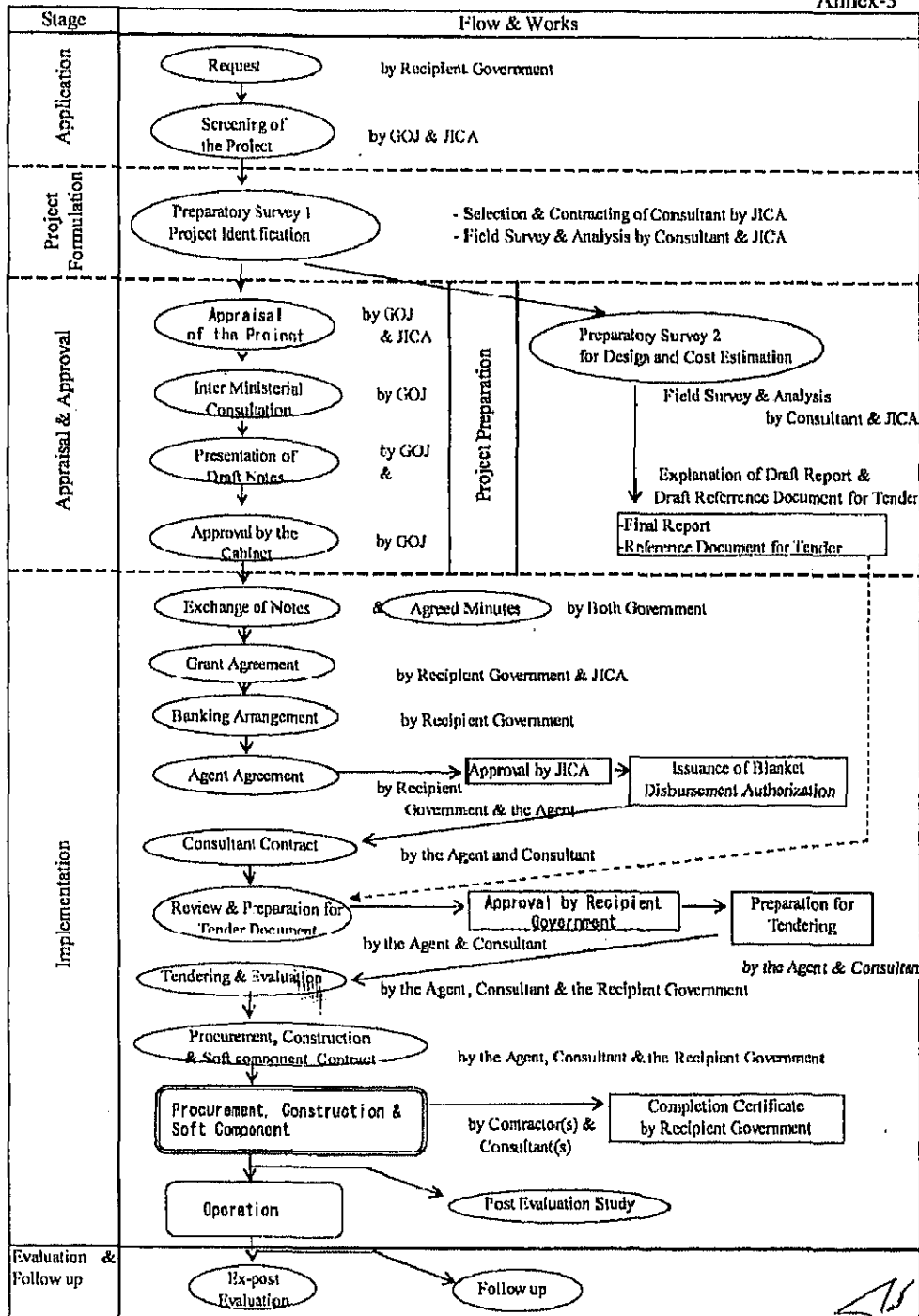
The Recipient is required to operate and maintain the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign personnel necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

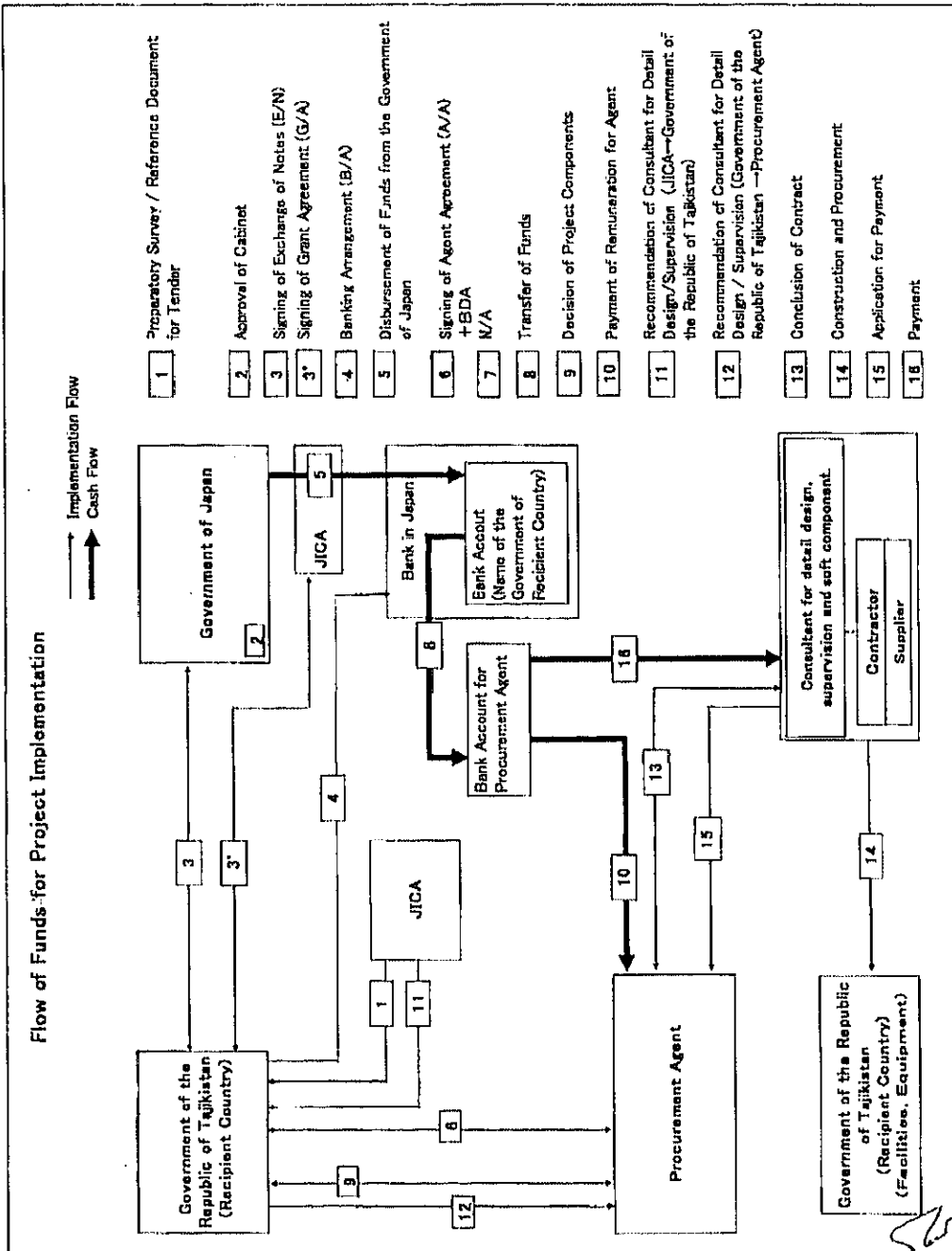
6) "Export and Re-export" of products

The products purchased under the Grant and its accrued interest will not be exported or re-exported from the Recipient.

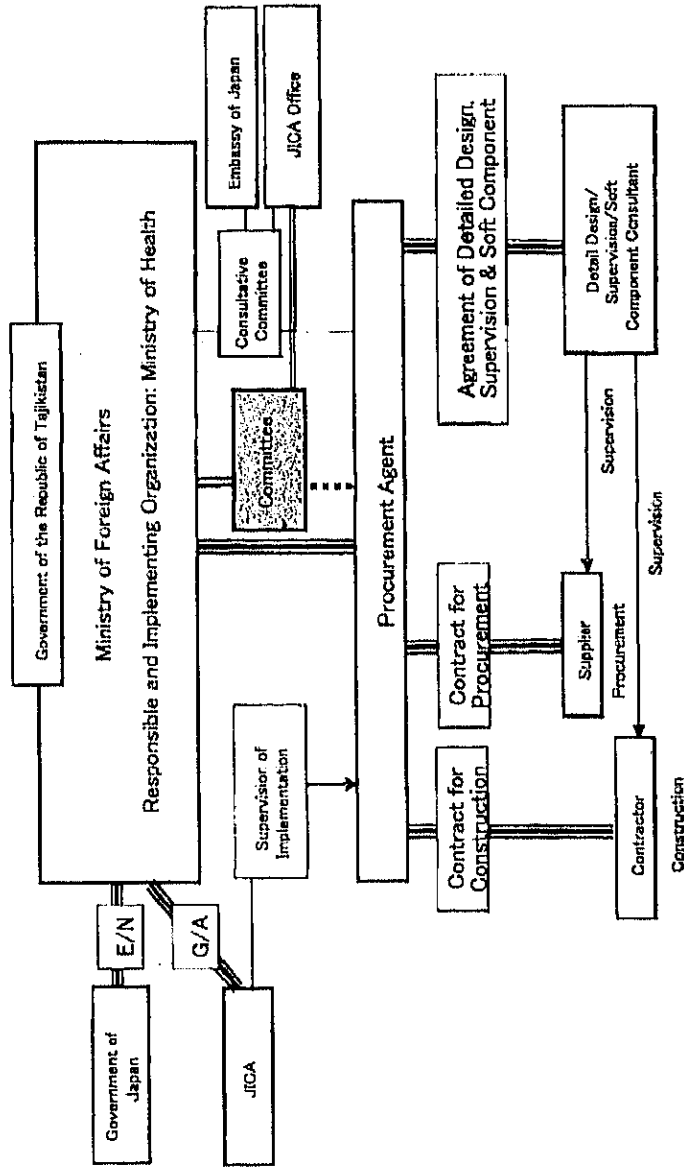
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Project Implementation System



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Major undertakings to be taken by each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		•
2	To clear, level and reclaim the site when needed urgently		•
3	To construct gates and fences in and around the site if necessary		•
4	To construct a parking lot if necessary		•
5	To construct the facility and install the equipment	•	
6	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities if necessary:		•
7	To bear the following commissions applied by the bank in Japan for banking services based upon the Bank Arrangement (B/A):		
	1) Payment of bank commission		•
8	To ensure prompt unloading and customs clearance at the entry to the recipient country		
	1) Marine or air, land transportation of the products from Japan to the recipient	•	
	2) To exempt or bear tax and customs clearance of the products at the port of disembarkation		•
	3) Inland transportation to the project sites	•	•
9	To accord Japanese nationals and / or nationals of third countries, including persons employed by the agent whose services may be required in connection with the Components such facilities as may be necessary for their entry into recipient country and stay therein for the performance of their work.		•
10	To ensure that customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the purchase of the Components and to the employment of the Agent will be exempted by the Government of recipient country		•
11	To maintain and use properly and effectively the facilities that are constructed and the equipment that is provided under the Grant.		•
12	To bear all the expenses, other than those covered by the Grant and its accrued interest, necessary for the purchase of the Components as well as for the agent's fees.		•
13	To ensure environmental and social consideration for the Program.		•

13-15
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Terms of Reference of the Consultative Committee (Provisional)

1. To confirm an implementation schedule of the Program for the speedy and effective utilization of the Grant and its accrued interest.
2. To discuss the modifications of the Program, including modification of the design of the facility.
3. To exchange views on allocations of the Grant and its accrued interest as well as on potential end-users.
4. To identify problems which may delay the utilization of the Grant and its accrued interest, and to explore solutions to such problems.
5. To exchange views on publicity related to the utilization of the Grant and its accrued interest.
6. To discuss any other matters that may arise from or in connection with the G/A.

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(2) 協力準備調査（第2次現地調査）

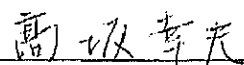
**The Project for Clean Energy Supply to Capital and Regional Hospitals in the
Republic of Tajikistan**
Memorandum of Technical Discussions on 2nd phase of the Preparatory survey

The Preparatory Survey Team (hereinafter referred to as "the Team") held discussions for technical matters with MOH (Ministry of Health) and the concerned officials of the Diakov Hospital (the National Medical Center) and Research Institution of Obstetrics Gynecology and Perinatology.

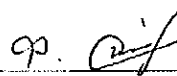
In the discussions, both parties have confirmed the technical items as described in attached documents.

The Team will proceed to further works toward 3rd phase of the Preparatory survey.

At MOH in Dushanbe September 18, 2009



Mr. Yukio KOHSAKA,
Project Manager
Preparatory Survey Team Ingerosec
Corporation



Mr. Salimov Nusratullo Fayzulloevich
Minister
Ministry of Health
Republic of Tajikistan

1. Project Component

1-1. Hospitals for installation of the photovoltaic system as follows.

- Diakov Hospital (wards of #9, #11, #4 and wards of #2, #6, #7 if necessary for effective use of the system)
- Research Institution of Obstetrics Gynecology and Perinatology (ward of Maternity and ward of Gynecology if necessary for effective use of the system)

1-2. Major equipment for the hospitals is as follows.

- Photovoltaic (PV) Module (Panel) s
- Mounting Structure for Photovoltaic Module
- Extension cable for Photovoltaic
- Junction Boxes
- Connection Box
- Power Conditioners
- Display Unit
- Data collecting and display devices
- Transformers
- Cable and others
- Installation Works
- Fence

The standard configuration of the system without "Reverse Current" is shown in annex-1.

1-3. Total capacity of the system

- 110kw for Diakov Hospital
- 30kw for Research Institution of Obstetrics Gynecology and Perinatology

Remarks:

1. The total capacity for each hospital will be adjusted based on further study.
2. The capacity of each ward will temporarily be considered as follows,

For Diakov Hospital:

- #7, #9, #11 wards: 85kw
- #2, #4 wards: 25kw

For Research Institution of Obstetrics Gynecology and Perinatology:

- Maternity ward: 20kw
- Gynecology wards: 10kw

2. Cable laying between Substation (or panel board of each ward) and the system

The cables will lay on depth of 70cm ground as the same as existing cable laying or be wired along walls of wards.

3. Installation areas for the photovoltaic Modules and other equipment was proposed by the Tajikistan side.

The areas proposed in each hospital are shown in Annex-2.

4. Fence

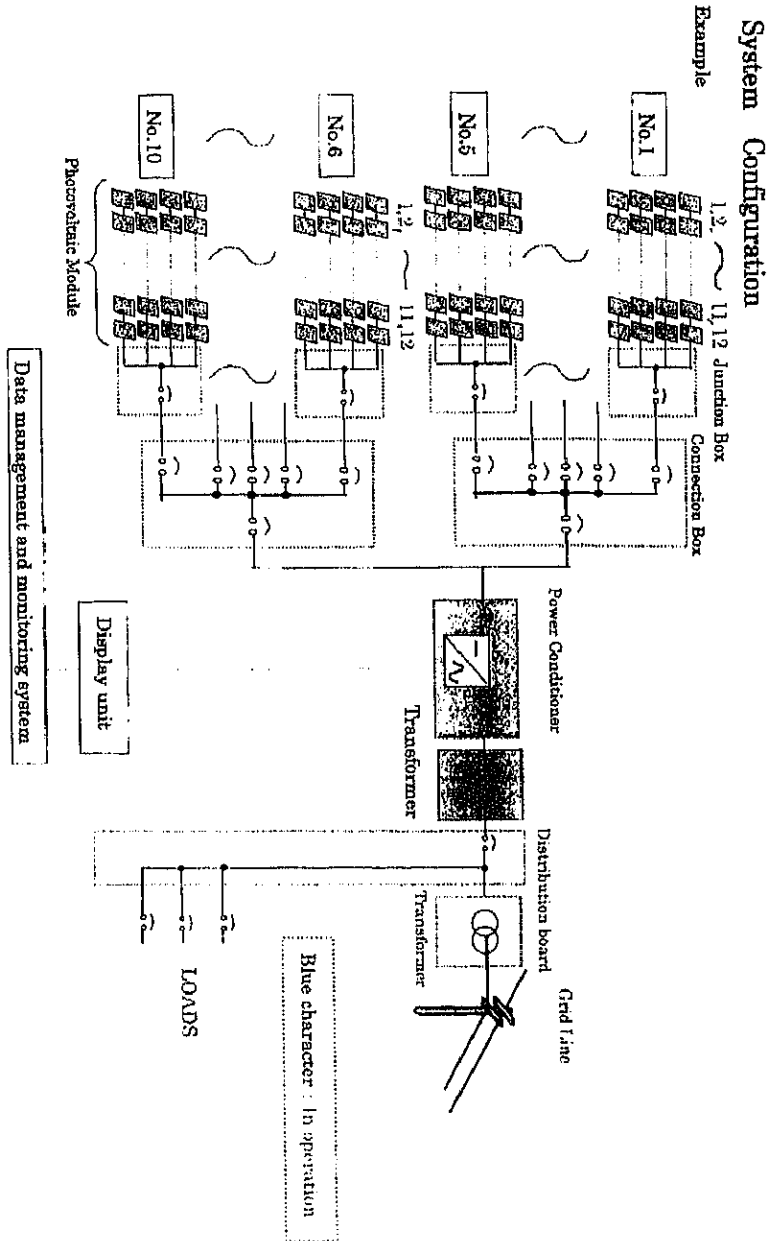
The fence will be installed for protection of the photovoltaic modules around the installation area of the modules.

5. Major Undertakings to be taken by the Tajikistan government

Attachment

The Tajikistan side confirmed that major undertakings as the following issues, should be carried out by the Tajikistan side at their budget.

- To clear the installation area selected of the photovoltaic modules within the areas shown in Annex-2.
- To ensure environmental and social consideration for the Program.
- To ensure the authorization of the Barki Tajik for the Program.

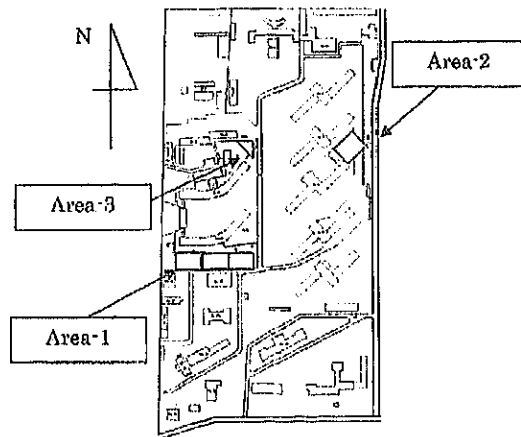


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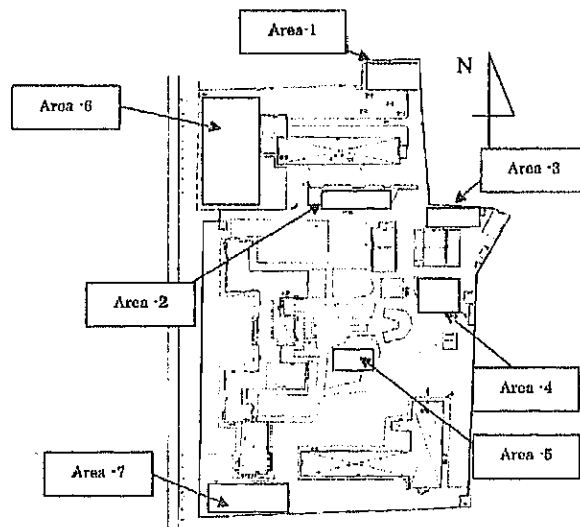
Annex-2

Installation areas proposed by the Tajikistan side for the photovoltaic Modules and other equipment

1. Diakov Hospital



2. Research Institution of Obstetrics Gynecology and Perinatology



(3) 概略設計概要説明調査（第3次現地調査）

**The Project for Clean Energy Supply to Capital and Regional Hospitals
in the Republic of Tajikistan
Memorandum of Technical Discussions on the Preparatory Survey
(Explanation of Draft Final Report)**

In July 2009, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Project for Clean Energy Supply to Capital and Regional Hospitals (hereinafter referred to as "the Project") in the Republic of Tajikistan (hereinafter referred to as "Tajikistan"), and through discussions, field survey and technical examination of the results in Japan, JICA prepared a draft final report of the survey.

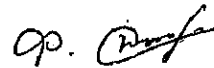
In order to explain and to consult with Tajikistan side on the contents of the draft report, JICA sent to Tajikistan the Preparatory Survey Team (hereinafter referred to as "the Team") from February 27 to March 5, 2010.

As a result of discussions, both sides confirmed the main items described in the attached sheets.

Dushanbe, March 1, 2010

高級 幸夫

Mr. Yukio KOHSAKA
Project Manager
Preparatory Survey Team
Ingclitosec Corporation
JAPAN

op. 

Mr. Salimov Nusratullo Payzulloevich
Minister
Ministry of Health
Republic of Tajikistan

ATTACHMENT

1. Components of the Draft Report

The Tajikistan side agreed and accepted in principle the contents of the draft report of Preparatory Survey by the Team.

The list of equipment is attached to Annex-1.

The final decision will be made by the Government of Japan Based on the examination of the result of the Preparatory Survey.

2. Japan's Grant Aid Scheme

2-1 The Tajikistan side understood the Japan's Grant Aid for Environment and Climate Change scheme explained by the Team (Annex-2, 3, 4 and 5 of the Minutes of Discussions of the Project which is signed on July 29, 2009.)

2-2 The Tajikistan side will take necessary measures, as described in Annex-2, 3, 4 and 5 mentioned in 2-1, between both sides, for smooth implementation of the Project as a condition for the Japan's Grant Aid to be implemented.

2-3 The Team explained to the Tajikistan side that the undertaking of the internal transportation from the port of disembarkation to DJAKOV Hospital and Obstetrics Gynecology and Perinatology in Tajikistan should be covered by Grant Aid.

3. Schedule of the Study

JICA will complete the Final Report, in accordance with the confirmed items and send it to the Tajikistan side by the end of March, 2010.

4. Other Relevant issues

4-1 The Team handed one copy of the draft final detailed specifications of the equipment to the Tajikistan side, and these shall be confidential to third parties in order to secure the fairness of the tender of the Project.

4-2 The equipment procured by the Grant Aid should be used properly and effectively for a reasonable period of time. When it becomes unusable for operations after that, Tajikistan side is required to consult with the Embassy of Japan before it is disposed, transferred, or used for other purposes.

Annex-1 : List of Equipment

Annex-1

List of Equipment

Supply Area	Equipment Name	Quantity	Outline Specification
DIAKOV Hospital	Utility connected photovoltaic system Total Max. power: More than 40kW	3 sets	Module Max power : 210W±5%(Nominal), Grid-connected is no reverse power flow , AC380V, 50Hz, Transformer(CUBICLE): Three-phase & four wire, Display board, Data management and monitoring system, fence, foundation included
Obstetrics Gynecology and Perinatology	Utility connected photovoltaic system Total Max. power: More than 40 kW	1 set	Module Max power : 210W±5%(Nominal), Grid-connected is no reverse power flow , AC380V, 50Hz, Transformer(CUBICLE): Three-phase & four wire, Display board, Data management and monitoring system, fence, foundation included
Total	160kW	4 sets	

資料5 事業事前計画表（概略設計時）

<p>1. 案件名</p>
<p>タジキスタン共和国 太陽光等を活用したクリーンエネルギー導入計画</p>
<p>2. 要請の背景(協力の必要性・位置付け)</p>
<p>「タ」国は、クールアースパートナーシップ国に参加し、国際社会が直面する課題である地球温暖化対策の取り組みとして、「環境アクションプラン」を2006年に策定し、その中で、地球温暖化ガスの排出削減のために化石燃料使用の適正化と、水力発電の増加及び太陽光や風力エネルギーの推進を掲げている。また、再生可能エネルギーの積極的な導入を盛り込んだ政策「非従来型電源の活用 発展に関するプログラム」を実施中であり、その一環として太陽光発電システムの導入を推進している。</p> <p>一方、「タ」国では、冬季（10～3月）における水力発電による電力供給不足、また、電力供給システムの老朽化のために電力供給が不安定となり停電が発生している。これらの電力不足を補うため、近隣国からの買電や火力発電所による電力供給が行われることで、地球温暖化ガスが排出されており、地球温暖化ガスの削減が課題となっている。</p> <p>このような背景の下に、「タ」国政府は我が国に対して、ドゥシャンベ市内2病院（ディアコフ病院、産科婦人科研究所）および地方3病院（ジョミ病院、ドゥスティ病院、ダンガラ病院）の5病院における太陽光等を活用したクリーンエネルギー導入計画の計画達成に必要な太陽光発電システムを設置するための機材の調達のための無償資金協力を要請した。</p> <p>「タ」国では、病院等の公共施設には、優先的に電力供給を行っており、首都ドゥシャンベの病院の電力は安定している。要請地方3病院は、緊急患者の受入を行う各地域の中核病院であるが、冬季における電力供給は不足しており、医療サービスへの影響が課題となっている。</p>
<p>3. プロジェクト全体計画概要</p>
<p>(1) プロジェクト全体計画の目標(裨益対象の範囲及び規模)</p> <p>太陽光発電設置施設の消費電力の省エネを図ることで、各施設の電力料金が節約されるとともに、化石燃料による電力発電量及び地球温暖化ガス排出量が削減される。</p> <p>裨益対象：「タ」国国民 約680万人</p> <p>(2) プロジェクトの全体計画の成果</p> <p>ア <u>太陽光発電システムの導入に必要な機材が整備される。</u></p> <p>イ 太陽光発電が実施される</p> <p>(3) プロジェクト全体計画の主要活動</p> <p>ア <u>太陽光発電システムの導入に必要な機材を調達する。</u></p> <p>イ 太陽光発電を実施する</p> <p>(4) 投入(インプット)</p>

ア 日本側(=本案件):「施工・調達業者認証まで非公表」

イ 相手国側:

(ア) 本計画で調達される機材の据付場所の整地および樹木の移植費用

(5) 実施体制

実施機関:保健省

4. 無償資金協力案件の内容

(1) サイト

「タ」国ドゥシャンベ市

(2) 概要

太陽光発電設備設置に必要な機材の調達

(3) 相手国負担事項

① 本計画で調達される機材の据付場所の整地および樹木の移植

(4) 概算事業費

概算事業費「施工・調達業者認証まで非公表」(「タ」国側負担 93 万円)

(5) 工期

詳細設計・入札期間を含め約 20 ヶ月(予定)

(6) 貧困、ジェンダー、環境および社会面の配慮

特になし

5. 外部要因リスク(プロジェクト全体計画の目標達成に関して)

天候不順により、日照量が大幅に減少しない。

6. 過去の類似案件からの教訓の活用

特になし

7. プロジェクト全体計画の事後評価に係る提案

(1) プロジェクト全体計画の目標達成を示す成果指標

現状	計画値
2009 年	2012 年 (機材稼動開始後 1 年経過後)
「タ」国にて、近隣国からの買電や化石燃料による電力供給が行われていることで、地球温暖化ガスが排出されている	・太陽光発電設置施設の電力料金が節約される ・化石燃料による電力発電量および地球温暖化ガス排出量が減少する

(2) その他の成果指標

特になし。

(3) 評価のタイミング

2012 年(機材稼動開始後 1 年経過後)以降

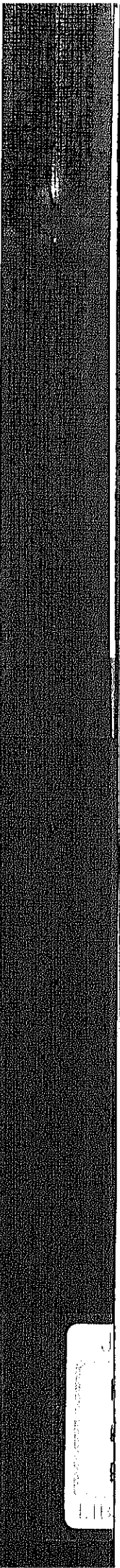
資料6 参考資料

番号	名称	形態 図書・ビデオ 地図・写真等	オリジナル ・コピー	発行機関	発行年
1	保健分野総予算 2002-2009	図書	コピー	保健省	2002
2	保健省本省予算 2008-2011	図書	コピー	保健省	2008
3	保健省におけるドナープロジェクト一覧 2004-2011 (2009年現在)	図書	コピー	保健省	2009
4	ディアコフ病院 敷地内電力網配置図	図書	コピー	ディアコフ病院	2004
5	ディアコフ病院 建物内電力網配置図 (No.9棟、No.11棟)	図書	コピー	ディアコフ病院	2004
6	ディアコフ病院 概略敷地内配置図	図書	コピー	ディアコフ病院	-
7	ディアコフ病院 建物内間取り図集① (No.4棟)	図書	コピー	ディアコフ病院	1989
8	ディアコフ病院 建物内間取り図集② (No.16,17,19,20,20a,21,23,24,25,27,展示館)	図書	コピー	ディアコフ病院	1989
9	ディアコフ病院 既存建屋概要表	図書	コピー	ディアコフ病院	2004
10	ディアコフ病院 No.1棟 施設仕様書	図書	コピー	ディアコフ病院	-
11	ディアコフ病院 No.1棟 図面概要表	図書	コピー	ディアコフ病院	-
12	ディアコフ病院 No.1棟 立面図、平面図	図書	コピー	ディアコフ病院	1959
13	ディアコフ病院 No.1棟 施設検査書兼修繕見積書	図書	コピー	ディアコフ病院	-
14	産科婦人科研究所 敷地内配置図	図書	コピー	産科婦人科研究所	-

番号	名称	形態 図書・ビデオ 地図・写真等	オリジナル ・コピー	発行機関	発行年
15	産科婦人科研究所 建物図面	図書	コピー	産科婦人科研究所	—
16	産科婦人科研究所 建物内間取り図	図書	コピー	産科婦人科研究所	—
17	産科婦人科研究所 予算データ	図書	コピー	産科婦人科研究所	2009
18	産科婦人科研究所 電力消費量/料金データ	図書	コピー	産科婦人科研究所	2009
19	産科婦人科研究所 機材リスト	図書	コピー	産科婦人科研究所	2009
20	産科婦人科研究所 白熱電灯から蛍光灯への交換電灯数表(2009年)	図書	コピー	産科婦人科研究所	2009
21	ダンガラ病院機材リスト	図書	オリジナル	ダンガラ病院	2009
22	ジョミ病院機材リスト	図書	オリジナル	ジョミ病院	2009
23	ドウステイ病院機材リスト	図書	オリジナル	ドウステイ病院	2009
24	Barki Tajik 価格表 No.09-01-2009-料金率表 電力と暖房 -	図書	オリジナル	Barki Tajik	2009
25	Barki Tajik 電力消費量、生産量(発電所別)、供給量(消費者グループ別) データ (2005~2009年)	図書	コピー	Barki Tajik	2009
26	Power Energy of Tajikistan	図書	コピー	Barki Tajik	—
27	Concept of development fuel-energy complex spheres of the Republic of Tajikistan 2003-2015	図書	コピー	産業・エネルギー省	2002

番号	名称	形態 図書・ビデオ 地図・写真等	オリジナル ・コピー	発行機関	発行年
28	The Program on the wide using of the renewable resources of energy, including energy of the small river, sun, wind, biomass, and energy of the underground 2007-2015 表紙	図書	コピー	産業・エネルギー省	2007
29	タジキスタン国環境保護行動計画	図書	コピー	産業・エネルギー省	2006
30	気象観測点図	図書	コピー	Agency on Hydrometeorology	—
31	気象条件一覧表 (ドゥシャンベ、ダンガラ) (2004-2008)	図書	コピー	Agency on Hydrometeorology	2009
32	現地コンサルタント Research stades,design and surveying institute パンフレット	図書	オリジナル	Research stades,design and surveying institute	2008
33	綿花検査機関 太陽光パネル仕様書	図書	コピー	現地建設業者 Sistemavtomatica.Ltd	2009
34	ADB 10Years of Tajikistan-ADB Partnership 1998-2008	図書	オリジナル	ADB	—
35	Tajik Technical University 再生可能エネルギー研究センター パンフレット	図書	オリジナル	Tajik Technical University	—
36	Tajik Technical University 再生可能エネルギー研究センター実測データ「気温、湿度、風力、日射量データ」2008年6月～2009年7月	図書	コピー	Tajik Technical University	2009

番号	名称	形態 図書・ビデオ 地図・写真等	オリジナル ・コピー	発行機関	発行年
37	Construction norms & regulations of Tajikistan (Instruction, No. 1, 6, 7, 8, 9, 46)	図書	コピー	Agency for Construction and Architecture	2007
38	Dushanbe City Map	地図	オリジナル	Land management geodesy and cartography agency	2000
39	Republic of Tajikistan Map	地図	オリジナル	Land management geodesy and cartography agency	2007



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