資　　料

1. 調査団員・氏名
2. 調査行程
3. 関係者（面会者）リスト
4. 討議議事録 (M/D)
5. ソフトコンポーネント計画書
6. 収集資料
7. その他資料・情報

1. 調査団員･氏名

調査団員氏名、所属

第 1 次現地調査

No.	氏名	担　当	所属
官調査団員リスト			
1	蔵方　宏	団長	JICA 産業開発部　参事役
2	戸村　浩之	計画管理	JICA 産業開発部　副調査役
3	竹内　和樹	調達監理計画	JICS 業務第二部　副室長
調査団員リスト			
4	松田　康治	業務主任／太陽光発電システム全般	㈱ニュージェック
5	中澤　孝志	系統連系太陽光発電システム	㈱ニュージェック
6	今井　亨	機材・設備計画	㈱ニュージェック
7	和田　哲郎	建築設計	㈱ニュージェック
8	木村　友一	業務調整 1	㈱ニュージェック

第 2 次現地調査（詳細調査）

No.	氏名	担　当	所属
調査団員リスト			
1	松田　康治	業務主任／太陽光発電システム全般	㈱ニュージェック
2	中澤　孝志	系統連系太陽光発電システム	㈱ニュージェック
3	今井　亨	機材・設備計画	㈱ニュージェック
4	丸岡　巧	調達計画/積算 1	㈱ニュージェック
5	三雲　是宏	制度・基準/環境社会配慮	㈱ニュージェック
6	石橋　丈治	系統運用	㈱ニュージェック
7	和田　哲郎	建築設計	㈱ニュージェック
8	高澤　徳洋	業務調整 2	㈱ニュージェック

第 3 次現地調査（協力準備調査概要書（案）の現地説明・協議）

No.	氏名	担　当	所属
官調査団員リスト			
1	明石　和彦	団長	JICA 産業開発部　参事役
2	村松　美江	協力計画	JICA 産業開発部インハウスコンサルタント
調査団員リスト			
3	松田　康治	業務主任／太陽光発電システム全般	㈱ニュージェック
4	中澤　孝志	系統連系太陽光発電システム	㈱ニュージェック
5	丸岡　巧	調達計画/積算 1	㈱ニュージェック
6	高澤　徳洋	業務調整 2	㈱ニュージェック

2. 調査行程

第１次現地調査

No.	月日	曜日	官団員			コンサルタント				
			団長	計画管理	調達監理(JICS)	業務主任／太陽光発電システム全般	系統連携太陽光発電システム	機材・設備計画	建築設計	業務調整
			蔵方　宏	戸村　浩之	竹内　和樹	松田　康治	中澤　孝志	今井　亨	和田　哲郎	木村　友一
1	12月6日	日				着カンボジア				着カンボジア
2	12月7日	月				JICAカンボジア事務所訪問、EDC訪問資料提供要請、 PPWSA訪問及び資料提供依頼、プンプレック浄水場調査				同左
3	12月8日	火				MIME表敬訪問及び資料提供依頼及び資料受領	EDCとの配電資料・技術事項協議			業務主任と同じ
4	12月9日	水	カンボジア着			クメールソーラ訪問、 PPWSA資料入手、浄水場調査 MIME資料受領	クメールソーラ訪問、 PPWSA資料入手、浄水場調査		カンボジア着、 浄水場調査、 クボタ浄水場構造確認	クメールソーラ訪問、 PPWSA資料入手、浄水場調査 コミンクメール訪問、 クボタ訪問
5	12月10日	木	JICA及び大使館表敬訪問、プンプレック浄水場視察 （カンボジア祝日）			官団員と同じ	浄水場調査			
6	12月11日	金	カンボジア電力庁（EAC)表敬訪問 鉱業エネルギー省（MIME)とのMD打合せ（エネルギー局及び水道局） プノンペン水道公社（PPWSA)表敬訪問及びMD打合せ			官団員と同じ	MIMEとのMD打合せ 収集資料整理			
7	12月12日	土	MD案修正・加筆			団内打合せ・追加要求資料検討				
8	12月13日	日	同上			同上				
9	12月14日	月	PPWSAとのMD協議、MIMEとのMD協議			官団員と同じ	EDC訪問燃料関係資料入手	PPWSA訪問浄水場関係図面資料収集		中澤と同じ
10	12月15日	火	JICAとMIME及びPPWSA間でMD署名 カンボジア開発評議会（CDC)へ表敬訪問及び案件説明			官団員と同じ	コミンクメール訪問施工能力確認			
11	12月16日	水	環境省（MOE)へ表敬訪問及び案件説明 日本大使館へ帰国前報告 JICAカンボジア事務所へ帰国前報告 発カンボジア			官団員と同じ	大使館及びJICAカンボジア事務所帰国前報告	カンボジアからラオスへ移動		
12	12月17日	木	着成田			PPWSAへ離国挨拶 カンボジアからラオスへ移動	カンボジアからラオスへ移動			

第２次現地調査

日程	日	曜日	太陽光を活用したクリーンエネルギー導入計画準備調査（カンボジア国、ラオス国） 第二次現地調査実績日程（カンボジア国）							
			業務主任/太陽光発電システム全般	系統連系太陽光発電システム	機材・設備計画	調達計画/積算1	制度・基準/環境社会配慮	系統運用	建築設計	業務調整2
			松田　康治 /NEWJEC	中澤孝史 /NEWJEC	今井　亨 /NEWJEC	丸岡　巧 /NEWJEC	三雲　是宏 /NEWJEC	石橋　丈治 /NEWJEC	和田　哲郎 /NEWJEC	高澤　徳洋 /NEWJEC
1	3月1日	月	ビエンチャンからプノンペンへ移動(VN 841, 10:20 - 11:50)							BKK からプノンペン入り (PG 933 13:40 - 14:50)
2	3月2日	火	・PPWSA表敬訪問(9:30 – 11:10) （第二次現地調査の目的と日程説明） ・EoJ 表敬訪問 (15:00 – 15:30) ・JICA事務所表敬訪問 (16:00 – 16:50)			・PPWSA表敬訪問(9:30 – 11:10) ・現地コンサルタント打合せ (11:20 – 12:00) ・JICA事務所表敬訪問 (16:00 – 16:50)	・PPWSA表敬訪問(9:30 – 11:10) ・JICA事務所表敬訪問 (16:00 – 16:50)		・PPWSA表敬訪問(9:30 – 11:10) ・EoJ 表敬訪問 (15:00 – 15:30) ・JICA事務所表敬訪問 (16:00 – 16:50)	・PPWSA表敬訪問(9:30 – 11:10) ・JICA事務所表敬訪問 (16:00 – 16:50)
3	3月3日	水	・PPWSAと浄水場屋上設置施工方法（防水層を含む）について説明・協議 (9:00 – 12:00) ・MIME宛の依頼状作成	・PPWTの電圧調査(9:00 – 12:00) ・PPWTの日影度測定 ・系統接続協議用資料作成	・PPWTの電圧調査(9:00 – 12:00) ・PPWTの日影度測定 ・系統接続協議用資料作成	・PPWSAと浄水場屋上設置施工方法（防水層を含む）について説明・協議 (9:00 – 12:00)	・PPWTの電圧調査(9:00 – 12:00) ・PPWTの日影度測定	・PPWTの電圧調査(9:00 – 12:00) ・PPWTの日影度測定 ・系統接続協議用資料作成	・PPWSAと浄水場屋上設置施工方法（防水層を含む）について説明・協議 (9:00 – 12:00)	・PPWTの電圧調査(9:00 – 12:00) ・PPWTの日影度測定 ・MIMEへ依頼状提出
4	3月4日	木	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・PPWSA総裁への表敬訪問 (10:00 – 10:30) ・MIME表敬訪問 (15:00 – 15:50)	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・PPWSA総裁への表敬訪問 (10:00 – 10:30) ・MIME表敬訪問 (15:00 – 15:50)	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・MIME表敬訪問 (15:00 – 15:50) ・系統接続協議用資料作成	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・PPWSA総裁への表敬訪問 (10:00 – 10:30) ・MIME表敬訪問 (15:00 – 15:50)	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・MIME表敬訪問 (15:00 – 15:50)	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・MIME表敬訪問 (15:00 – 15:50) ・系統接続協議用資料作成	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・MIME表敬訪問 (15:00 – 15:50)	・EDC表敬訪問及び明日の系統接続協議依頼 (8:30 – 9:10) ・PPWSA総裁への表敬訪問 (10:00 – 10:30) ・MIME表敬訪問 (15:00 – 15:50)
5	3月5日	金	・PVシステムの維持管理体制確認（PPWSA） ・PPWSAと必要な環境評価について協議 ・PPWSA財務資料入手 ・現地業者見積依頼用資料作成補助	・EDCと系統連系条件について協議 (9:00 – 12:00) ・議事録作成	・EDCと系統連系条件について協議 (9:00 – 12:00) ・現地業者見積依頼用資料作成	・現地業者見積依頼用資料作成	・PVシステムの維持管理体制確認（PPWSA） ・PPWSAと必要な環境評価について協議 ・PPWSA財務資料入手	・EDCと系統連系条件について協議 (9:00 – 12:00) ・議事録作成	・現地業者見積依頼用資料作成	・EDCと系統連系条件について協議 (9:00 – 12:00) ・プノンペン市内日降雨資料収集（2007、08、09）
6	3月6日	土	・PPWSA財務資料整理 ・市内建設現場状況見学	・PPWT電気仕様書作成 ・市内建設現場状況見学	・PPWT電気配線図検討・作成 ・市内建設現場状況見学	・現地業者見積依頼用資料作成 ・市内建設現場状況見学	・PPWT環境スクリーニング検討 ・市内建設現場状況見学	・PPWT電気配線図検討・作成 ・市内建設現場状況見学	・現地業者見積依頼用資料作成 ・市内建設現場状況見学	・精算業務 ・市内建設現場状況見学
7	3月7日	日	・PPWSA財務資料整理	・PPWT電気仕様書作成	・PPWT電気配線図検討・作成	・現地業者見積依頼用資料作成 ・現地コンサルタント入手資料整理	・PPWT環境スクリーニング検討 ・「カ国」諸税・労働条件調査	・PPWT電気配線図検討・作成	・現地業者見積依頼用資料作成 ・浄水場屋上施工方法検討	・精算業務
8	3月8日	月	カンボジア祝日 （各人上記作業を継続）							
9	3月9日	火	・PPWSAとのPVシステム構成・仕様及び配線計画説明・協議(9:00–12:00) ・スクリーニング結果レビュー	・PPWSAとのPVシステム構成・仕様及び配線計画説明・協議(9:00–12:00) ・PPWSAへの補足説明資料作成	・PPWSAとのPVシステム構成・仕様及び配線計画説明・協議(9:00–12:00) ・配線施工計画準備	・プノンペン～シハヌークビル（4号線）輸送路調査(8:00 – 19:30)	・PPWT環境スクリーニング実施 ・「カ」国環境法制度聞き取り調査	・PPWSAとのPVシステム構成・仕様及び配線計画説明・協議(9:00–12:00) ・議事録作成	・プノンペン～シハヌークビル（4号線）輸送路調査(8:00 – 19:30)	・「カ」国環境法制度聞き取り調査

日程	日	曜日	太陽光を活用したクリーンエネルギー導入計画準備調査（カンボジア国、ラオス国） 第二次現地調査実績日程（カンボジア国）							
			業務主任/太陽光発電システム全般	系統連系太陽光発電システム	機材・設備計画	調達計画/積算1	制度・基準/環境社会配慮	系統運用	建築設計	業務調整2
			松田　康治 /NEWJEC	中澤孝史 /NEWJEC	今井　亨 /NEWJEC	丸岡　巧 /NEWJEC	三雲　是宏 /NEWJEC	石橋　丈治 /NEWJEC	和田　哲郎 /NEWJEC	高澤　徳洋 /NEWJEC
10	3月10日	水	・環境スクリーニング結果説明・協議（PPWSA） ・PPWSA保守管理体制確認（PPWSA） ・「カ」国通貨事情聞き取り調査(PPWSA) ・配水地浄水場屋上防水構造確認立会い(PPWSA) ・MIME表敬訪問（エネルギー部門）(16:00−16:30)	・配水地浄水場屋上防水構造確認立会い ・カンボジア系統接続基準レビュー ・MIME表敬訪問（エネルギー部門）(16:00−16:30)	・配水地浄水場屋上防水構造確認立会い ・配線施工計画準備	・配水地浄水場屋上防水構造確認立会い ・輸送路調査結果報告書作成 ・MIME表敬訪問（エネルギー部門）(16:00−16:30)	・環境スクリーニング結果説明・協議 ・輸入関税、諸税等の免税手続き確認・協議	・配水地浄水場屋上防水構造確認立会い ・予備品工具検討	・配水地浄水場屋上防水構造確認立会い ・屋上施工方法検討	・環境スクリーニング結果説明・協議 ・輸入関税、諸税等の免税手続き確認・協議 ・MIME表敬訪問（エネルギー部門）(16:00−16:30)
11	3月11日	木	・PPWSAとソフトコンポーネント、予備品・工具説明・協議 (9:00 − 12:00) ・CDC表敬訪問及びプロジェクト概要説明 (16:00 − 16:40)	・PPWSAとソフトコンポーネント、予備品・工具説明・協議 (9:00 − 12:00) ・CDC表敬訪問及びプロジェクト概要説明 (16:00 − 16:40)	・PPWSAとソフトコンポーネント、予備品・工具説明・協議 (9:00 − 12:00) ・配線施工計画検討	・現地業者訪問	・収集資料整理 ・発カンボジアBKK経由 (TG 585, 21:00 - 22:15, TG 672 23:50 -)	・PPWSAとソフトコンポーネント、予備品・工具説明・協議 (9:00 − 12:00) ・配線施工計画検討	・現地業者訪問	・PPWSAとソフトコンポーネント、予備品・工具説明・協議 (9:00 − 12:00) ・CDC表敬訪問及びプロジェクト概要説明 (16:00 − 16:40)
12	3月12日	金	・3月15日用プレゼン資料準備	・3月15日用プレゼン資料準備	・PPWTP電圧再調査 ・3月15日用プレゼン資料準備	・現地業者訪問	・関空着 (TG 672 - 07:00)	・PPWTP電圧再調査 ・3月15日用プレゼン資料準備	・現地業者訪問	・3月15日用プレゼン資料準備補助
13	3月13日	土	・3月15日用プレゼン資料準備 ・市内建設現場状況見学	・3月15日用プレゼン資料準備 ・市内建設現場状況見学		・現地入手資料整理 ・市内建設現場状況見学		・3月15日用プレゼン資料準備	・工事工程検討・作成 ・市内建設現場状況見学	・3月29日合同会議招待者リストチェック及び追加
14	3月14日	日	・3月15日用プレゼン資料準備	・3月15日用プレゼン資料準備 ・電気機器個別仕様検討		・現地入手資料整理 ・精算業務事務引継ぎ		・3月15日用プレゼン資料準備 ・電気機器個別仕様検討	・工事工程検討・作成	・精算業務事務引継ぎ
15	3月15日	月	・PPWSA第1回プレゼン(9:00 − 12:00) ・電気機器個別仕様案チェック	・PPWSA第1回プレゼン (9:00 - 12:00) ・電気機器個別仕様書作成	・PPWSA第1回プレゼン (9:00 - 12:00) ・配線施工計画準備	・PPWSA第1回プレゼン(9:00 − 12:00) ・工事工程検討・作成		・PPWSA第1回プレゼン(9:00 − 12:00) ・配線施工計画準備	・PPWSA第1回プレゼン(9:00 − 12:00) ・工事工程検討・作成	・カンボジアから BKKへ戻る (TG581 10:00 - 11:05)
16	3月16日	火	・クボタ現地事務所訪問 (14:00 − 15:00) ・第二、第三配水池屋上ブロックコンクリートレイアウト図作成	・電気機器個別仕様書作成	・クボタ現地事務所訪問 (14:00 − 15:00) ・配線施工計画案（ラオス）修正	・クボタ現地事務所訪問 (14:00 − 15:00) ・収集資料整理		・電気機器個別仕様書作成（補助）	・クボタ現地事務所訪問 (14:00 − 15:00) ・防水構造施工方法検討	
17	3月17日	水	・3月22日プレゼン資料作成 ・JICAカンボジア事務所中間報告(16:00 − 16:30)	・電気機器個別仕様書作成 ・JICAカンボジア事務所中間報告(16:00 − 16:30)	・配線施工計画案（ラオス）修正 ・電線工場訪問(14:00 − 16:00)	・収集資料整理 ・電線工場訪問(14:00 − 16:00)		・電気機器個別仕様書作成（補助） ・電線工場訪問(14:00 − 16:00)	・防水構造施工方法検討 ・JICAカンボジア事務所中間報告(16:00 − 16:30)	
18	3月18日	木	・MIMEと3月29日の合同会議協議 (9:00 − 9:30) ・MIME宛依頼状作成	・電気機器全体仕様書作成	・配線施工計画案（ラオス）修正	・収集資料整理 ・現地業者打合せ		・EDCへの系統接続条件再確認 ・カンボジア発 (TG 585 21:10 − 22:15, TG 672 23:50 −)	・防水構造施工方法検討 ・カンボジア発 (TG 585 21:10 − 22:15, TG 672 23:50 −)	
19	3月19日	金	・3月22日プレゼン資料作成	・電気機器全体仕様書作成	・配線施工計画案（カンボジア）検討	・生コン業者訪問 ・建設資材会社訪問 ・収集資料整理		・関空着（TG 672, −07:00）	・関空着（TG 672, −07:00）	

日程	日	曜日	太陽光を活用したクリーンエネルギー導入計画準備調査（カンボジア国、ラオス国） 第二次現地調査実績日程（カンボジア国）							
			業務主任/太陽光発電システム全般	系統連系太陽光発電システム	機材・設備計画	調達計画/積算1	制度・基準/環境社会配慮	系統運用	建築設計	業務調整2
			松田　康治 /NEWJEC	中澤孝史 /NEWJEC	今井　亨 /NEWJEC	丸岡　巧 /NEWJEC	三雲　是宏 /NEWJEC	石橋　丈治 /NEWJEC	和田　哲郎 /NEWJEC	高澤　徳洋 /NEWJEC
20	3月20日	土	・3月22日プレゼン資料作成 ・市内建設資材マーケット調査	・電気機器全体仕様書作成 ・3月22日プレゼン準備	・配線施工計画案（カンボジア）作成 ・市内建設資材マーケット調査	・収集資料整理 ・市内建設資材マーケット調査				
21	3月21日	日	・現地写真整理 ・準備調査報告書作成準備	・電気機器全体仕様書作成 ・3月22日プレゼン準備	・配線施工計画案（カンボジア）作成 ・3月22日プレゼン準備	・収集資料整理				
22	3月22日	月	・PPWSA第2回プレゼン及び電気機器仕様協議（14:00 – 16:00） ・質問回答事項整理	・PPWSA第2回プレゼン及び電気機器仕様協議（14:00 – 16:00） ・質問回答事項整理	・PPWSA第2回プレゼン及び電気機器仕様協議（14:00 – 16:00）	・収集資料整理 ・PPWSA第2回プレゼン及び電気機器仕様協議（14:00 – 16:00）				
23	3月23日	火	・合同会議準備状況確認（MIME） ・現地写真整理	・電気機器全体仕様書作成	・配線施工計画案（カンボジア）作成	・収集資料整理				
24	3月24日	水	・3月29日合同会議招待状配布 ・現地写真整理	・電気機器全体仕様書作成	・配線施工計画案（カンボジア）作成	・建設資材単価調査 ・収集資料整理				
25	3月25日	木	・現地写真整理 ・現地収集資料整理	・電気機器全体仕様書作成	・カンボジア電気配線数量チェック	・業者訪問 ・収集資料整理				
26	3月26日	金	・3月29日プレゼン資料準備	・電気機器全体仕様書作成	・ラオスPMO電気配線数量再確認	・業者訪問 ・収集資料整理				
27	3月27日	土	・3月29日プレゼン資料準備 ・市内状況調査（社会・物価・流通品等）	・3月29日プレゼン準備 ・市内状況調査（社会・物価・流通品等）	・ラオスPMO電気配線数量再確認 ・市内状況調査（社会・物価・流通品等）	・収集資料整理 ・市内状況調査（社会・物価・流通品等）				
28	3月28日	日	・3月29日プレゼン資料準備 ・帰国前報告書作成	・3月29日プレゼン準備	・ラオスPMO電気配線数量再確認	・収集資料整理				
29	3月29日	月	・関係機関との合同会議（14:00 – 16:30） ・議事録作成 ・質問回答事項整理	・関係機関との合同会議（14:00 – 16:30）	・関係機関との合同会議（14:00 – 16:30） ・質問回答事項整理	・関係機関との合同会議（14:00 – 16:30） ・質問回答事項整理				
30	3月30日	火	・荷物整理 ・若杉書記官現地案内及び帰国前報告(14:00 – 15:00) ・カンボジア発（TG585 20:25 – 21:30, TG622 22:40 –）							
31	3月31日	水	・関空着（TG622 -06:10）							

第３次現地調査

日程	日	曜日	太陽光を活用したクリーンエネルギー導入計画準備調査（カンボジア国、ラオス国） 第三次現地調査実績日程（カンボジア国）					
			官団員		業務主任/太陽光発電システム全般	系統連系太陽光発電システム	調達計画/積算1	業務調整1
			団長　明石　和彦 /JICA	村松　美江 / JICA	松田　康治 /NEWJEC	中澤孝史 /NEWJEC	丸岡　巧 /NEWJEC	高澤　徳洋 /NEWJEC
1	10月17日	日		成田発プノンペン入り	関空発プノンペン入り (VN941 - VN1819; 18:50)	関空発プノンペン入り (VN941 - VN1819; 18:50)	関空発プノンペン入り (VN941 - VN1819; 18:50)	バンコック発プノンペン入り (TG584; 19:25)
2	10月18日	月		(1) MIME 表敬訪問（08:30 – 09:30） (2) PPWSA 表敬訪問、薬注棟屋上現地確認（10:00 – 12:00） (3) 大使館表敬訪問(14:30 – 15:30) (4) JICA事務所表敬訪問（16:00 – 17:00）		(1) MIME表敬訪問（08:30 – 09:30） (2) PPWSA 表敬訪問、薬注棟屋上現地確認（11:00 –12:00 ） (3) 大使館表敬訪問(14:30 – 15:30) (4) JICA事務所表敬訪問（16:00 – 17:00）	
3	10月19日	火		PPWSA にて「協力準備調査概要書（案）」、「入札図書（案）」説明及び質疑応答（9:30 – 15:30） （参加機関：MIME, PPWSA, EDC JICA, JICS, NEWJEC)、出席者数19名（出席者リスト有り）				
4	10月20日	水	成田発プノンペン入り	(1) PPWSAにてM/D 協議（9:30 – 12:10）(MIME & PPWSA) (2) EDC 訪問（15:00 – 17:00）(配電部門及び計画部門へのMD内容説明)		(1) PVモジュール追加可能性調査（沈砂池屋上ギャラリー調査；W4.6 m x L 47.2 m）(9:00 – 11:00) (2) EDC配電部門訪問（系統保護機能の再説明）（15:00 – 16:00）		
5	10月21日	木	PPWSAにてM/D 最終協議 （9:30 –） (MIME, PPWSA)		官団員に同行 沈砂池屋上ギャラリー調査	(1) 設置容量増の可能性検討 （容量・機材構成） (2) 現地業者施工実態調査		
6	10月22日	金	(1) M/D署名 at MIME （9:00 – 9:20） (2) JICAカンボジア事務所報告（11:00 – 12:00） (3) 大使館報告（14:00 – 15:00） (4) プノンペン発		官団員に同行 プノンペン発 (19:30 VN1818 - VN940)	官団員に同行 プノンペン発 (19:30 VN1818 - VN940)	官団員に同行 プノンペン発 (19:30 VN1818 - VN940)	官団員に同行 プノンペン発(20:25 TG585 BKK着 21:30)
7	10月23日	土	成田着	成田着	関空着 (07:20)	関空着 (07:20)	関空着 (07:20)	

3. 関係者（面会者）リスト

関係者（面会者）リスト

鉱工業エネルギー省	Ministry of Industry, Mines and Energy (MIME)	
Mr. Phork Sovanrith, MSc	Secretary of State	次官
Mr. Toch Sovanna	Director, Department of Energy Technique	局長
Mr. Heng Kunleang	Director, Energy Development Department, General Department of Energy	
Mr. Victor Jona	Deputy Director General, General Department of Energy	副局長
Mr. Tan Sokchea	Director of Portable Water Supply Department	局長
プノンペン水道公社	Phnom Penh Water Supply Authority (PPWSA)	
Mr. Ek Sonn Chan	Delegate of the Royal Government of Cambodia in charge of General Director of PPWSA	総裁
Mr. Sem Bun Heng	Vice General Director	副総裁
Mr. Long Naro	Deputy General Director	副総裁
Mr. Samreth Sovithia	Director of Planning and Technical Department	局長
Mr. Chou Phalla, M.Eng.	Manager of Procurement Management Office, Planning and Technical Department	課長
Mr. Khut Vuthiarith	Director of Production and Distribution Department	局長
Mr. Ma Noravin	Deputy Director of Production and Distribution Department	副局長
Mr. Sek Saman	Assistant of Production Department	技師長
カンボジア電力公社	Electricité du Cambodge (EDC)	
Mr. Chea - Sinhel	Director Distribution	局長
Mr. Iv Visal	Deputy Director, Distribution Department	副局長
山川　弘勝	JICA Senior Volunteer (Electrical Engineer)	専門家
Mr. Or Vaddhana	Deputy Chief of Dispatching Control Center	係長
Mr. Chulasa Praing	Director of Planning Department	局長
電力規制庁	Electricity Authority of Cambodia (EAC)	
Dr. Ty Norin	Chairman-Secretary of State	議長
Mr. Hul Kunnak Vuth	Executive Director	理事

カンボジア開発評議会	Council for the Development of Cambodia (CDC)	
Ms. Heng Sokun	Director General & Director, Bilateral Aid Coordination Dept. Japan-Asia Pacific & Oceania	局長
福永　美佐	Aid Coordination / Effectiveness　(JICA)	専門家
環境省		
Mr. Tin Ponlock, Ph.D	National Project Coordinator, Climate Change Office, MOE	室長
在カンボジア大使館	Embassy of Japan	
黒木　雅文　大使		
松尾　秀明　一等書記官		
森　　伸雄　二等書記官		
若杉　友紀　三等書記官		
JICA カンボジア事務所	Japan International Cooperation Agency, Cambodia Office	
鈴木　康次郎　所長		
小林　雪治　　次長		
村上　雄祐　　次長		
野中　博之　　企画調査員		

4. 討議議事録 (M/D)

Minutes of Discussions
on the Preparatory Survey
on the Project for Clean Energy Promotion Using Solar Photovoltaic System

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 Promotion Using Solar Photovoltaic System(hereinafter referred to as "the Project").

JICA sent to the Kingdom of Cambodia (hereinafter referred to as "Cambodia") the Preparatory Survey Team (hereinafter referred to as "the Team"), headed by Mr. Hiroshi KURAKATA, Senior Advisor to Director General, Industrial Development Department, JICA, and is scheduled to stay in Cambodia from December 9th to 16th, 2009.

The Team held discussions with Phnom Penh Water Supply Authority (hereinafter referred to as "PPWSA"), Ministry of Industry, Mines and Energy (hereinafter referred to as "MIME") and the other concerned officials of the Government of Cambodia and conducted a field survey.

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

Phnom Penh
December 15, 2009

Mr. Hiroshi Kurakata
Leader
Preparatory Survey Team
Japan International Cooperation Agency

Mr. Sem Bun Heng
Deputy General Director
Phnom Penh Water Supply Authority
The Kingdom of Cambodia

Mr. Victor Jona
Deputy Director General
General Department of Energy
Ministry of Industry, Mines and Energy
The Kingdom of Cambodia

ATTACHMENT

1. Current Situation

The Government of Cambodia recognizes the renewable energy could play a more important role in terms of enabling to meet their energy requirement. The Renewable Energy Action Plan (REAP) established in 2002, and it aims to promote renewable energy including photovoltaic (PV) system.

In this situation, the PV power generation system connected with the national power grid is one of the pilot systems to enhance the possibility of applying renewable energy.

2. Objective of the Project

The objective of the Project is to supply the electricity for Phum Prek Water Treatment Plant and also to promote clean energy utilization and achieve emissions reductions by installing the photovoltaic system to be connected to the national grid. The Project is also expected to contribute to sustainable water supply for the households at their affordable water price in Phnom Penh City via saving of the water distribution cost for PPWSA.

3. Responsible Organization and Implementing Organization

The responsible organization is MIME. (The organization chart of MIME is shown in Annex-1.)

The implementing organization is PPWSA. (The organization chart of the implementing organization is shown in Annex-2.).

4. Items Requested by Cambodian Side

4-1. The Cambodian side requested to install the PV system on the sedimentation basin instead of reservoir No.2 and/or No.3. Corresponding to this request, the Team explained that it would be difficult to accept this due to the policy of the Grant Aid for Environment and Climate Change by GOJ. After discussions with the Team, the following equipment was finally requested by the Cambodian side.

Table 1 Project requested by the Cambodian side

	Description
Location	Phum Prek Water Treatment Plant, PPWSA
Outline	The power produced by PV system is used for the Phum Prek Water Treatment Plant.
Requested equipment	(1) Solar module (Panel): total capacity might be 200kW (The Cambodian side remarked to the Team that it should be better installing more than 200kW of the solar module for the Project.) *The final capacity of the PV system to be installed under the project will be decided by the GoJ. (2) Junction box (3) Power conditioner (4) Distribution board

	(5) Cables for electric distribution (6) Data collecting and display device (7) Mounting frame for solar module

4-2. The project site is the as shown in Annex-3.

4-3. The Cambodian side explained that there is no duplication between requested contents of the Project and any other plans implemented by the other donors or the Cambodian side.

4-4. The Cambodian side has understood that the detailed component and the design of the Project will be confirmed at the timing of 2nd phase of the Preparatory Survey.

4-5. The Team will report the findings and items requested by the Cambodian side to JICA Headquarters and the GoJ.

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

The Cambodian side understood the Japan's Program Grant Aid for Environment and Climate Change scheme explained by the Team, as described in Annex-4, 5, 6, 7 and 8.

6. Schedule of the Study

6-1. The Team will proceed to further survey in Cambodia until December 17th 2009 as the 1st phase of the Preparatory Survey.

6-2. After completion of the 1st phase of the Preparatory Survey, the Team will report the results to the Cambodian side, JICA Headquarters and GoJ.

6-3. Based on the results of the 1st phase of the Preparatory Survey, JICA will conduct the 2nd phase of Preparatory Survey for the discussion of detailed component and design as well as collection of further data necessary for design and cost estimate by the end of March, 2010.

6-4. JICA will prepare the draft report and reference document in English and dispatch a mission to Cambodia in order to explain its contents at the end of July, 2010.

6-5. When the contents of the report are accepted in principle by the Government of Cambodia, JICA will complete the final report and reference document, and submit them to the Government of Cambodia and to the Procurement Agent by the end of August, 2010.

7. Other Relevant Issues

7-1 Permission of Land Acquisition / Usage

Since Phum Prek Water Treatment Plant is located in the PPWSA's property, the land acquisition is not necessary for implementation of the Project.

(a) Securing necessary land or facilities
- for PV Modules
- for underground cables between PV Modules and Power conditioners
- for Power conditioners

(b) Temporary Stockyard during installation of the equipment and materials

7-2 Procurement of Equipment

The Team explained that, in accordance with the policy of Government of Japan, products of Japan shall be procured for major equipment in the Project. The Cambodian side also requested products of Japan for major equipment.

7-3 Coordination with Relevant Organizations

The responsible organization for the Project, MIME, shall be the focal point for the Team, and responsible for the coordination with relevant organizations. The Cambodian side agreed to establish a consultative committee in order to coordinate with the Japanese side. The consultative committee consists of relevant institutions from the Cambodian side and the Embassy of Japan and JICA Cambodia office from the Japanese side. Terms of Reference of the Consultative Committee is referred to Annex-9.

7-4 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 Cambodian side. The Cambodian side took the JICA Guideline into consideration, and shall complete the necessary procedures, if necessary.

7-5 Operation and Maintenance

The implementing organization, PPWSA, agreed to secure and allocate the necessary budget and personnel for the operation and maintenance of grid-connected PV system procured and installed under the Project.

7-6 Customs and Tax exemption

The Cambodian side agreed that the Cambodian side shall be responsible for the exemption and/or reimbursement (payment/assumption) of all customs, tax, levies and duties incurred in Cambodia for implementation of the Project.

7-7 The Cambodian side shall ensure the security of all concerned Japanese nationals working for the Project, if deemed necessary.

7-8 The Cambodian side shall provide necessary numbers of counterpart personnel to the Team during the period of the Project in Cambodia

<List of Annex>

Annex-1 Organization Chart of Responsible Organization

Annex-2 Organization Chart of Implementing Organization

Annex-3 Candidate site of the Project

Annex-4 Program Grant Aid for Environment and Climate Change

Annex-5 General Flow of Program Grant Aid for Environment and Climate Change

Annex-6 Project Implementing System

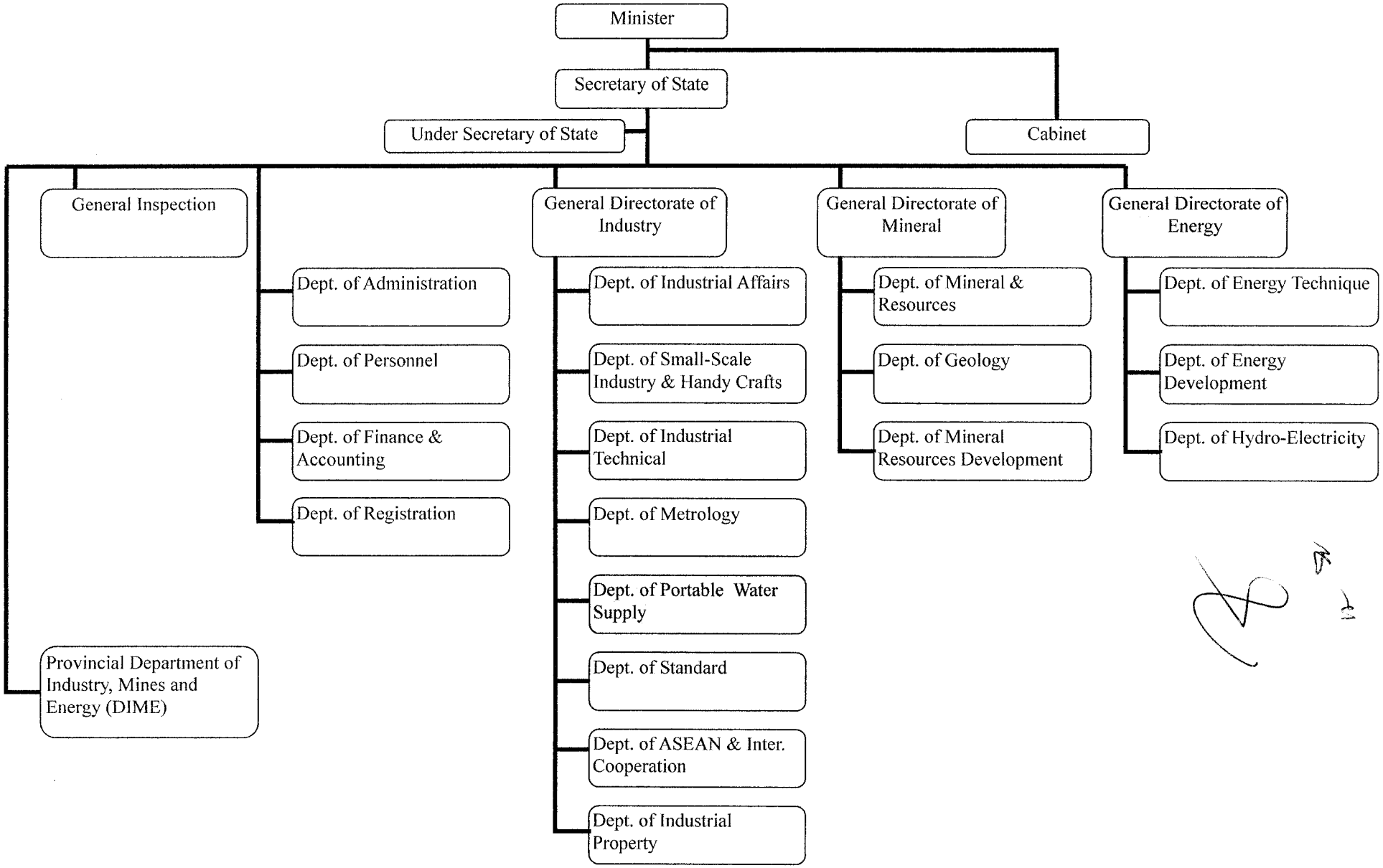
Annex-7 Flow of Funds for Project Implementation

Annex-8 Major Undertakings to be taken by Each Government

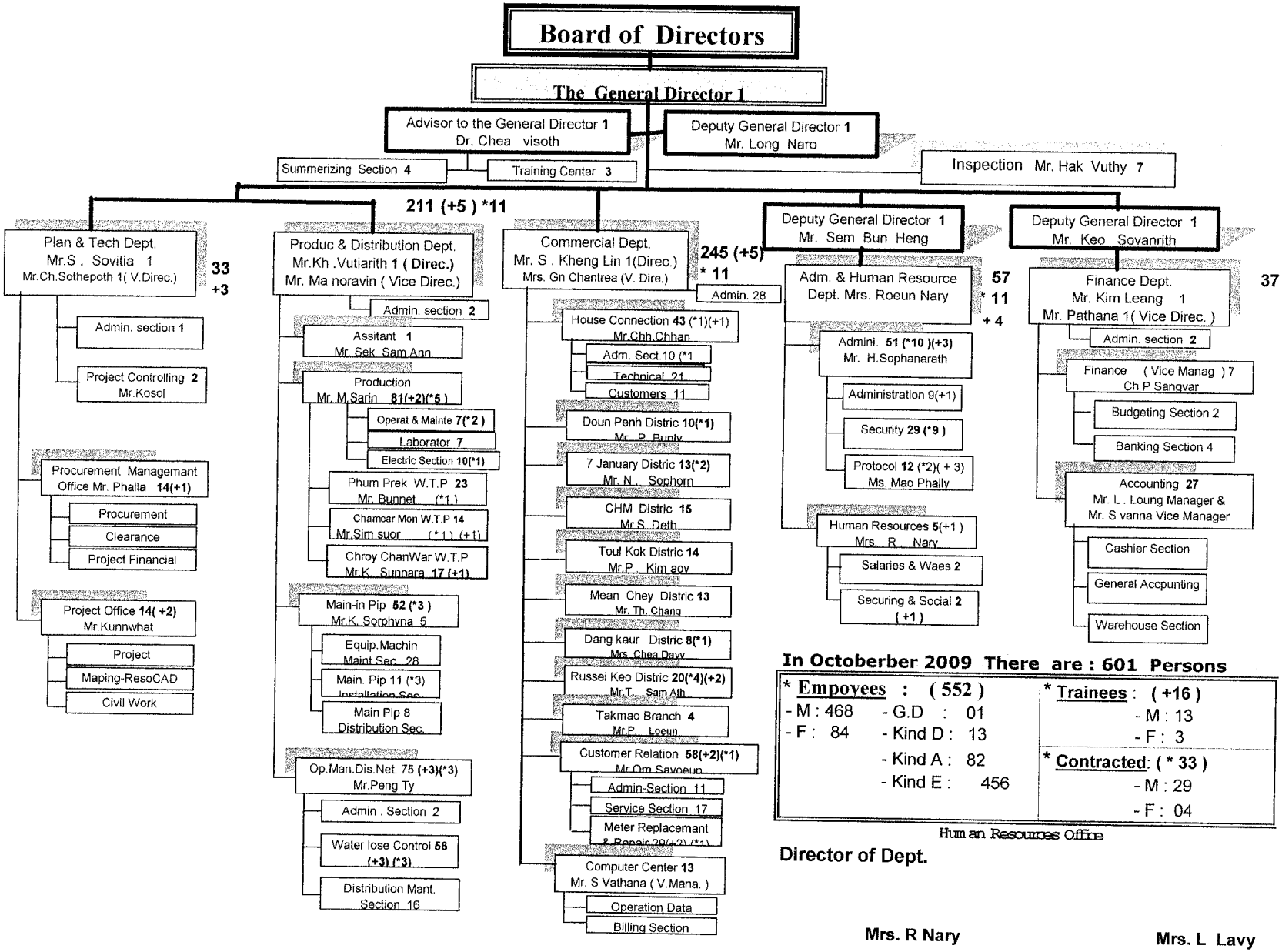
Annex-9 Terms of References of the Consultative Committee

Organization Chart of Responsible Organization (MIME)

Annex – 1



Organization Chart of Implementing Organization (PPWSA)



In Octoberber 2009 There are : 601 Persons

* **Empoyees** : (552) - M : 468 - G.D : 01 - F : 84 - Kind D : 13 - Kind A : 82 - Kind E : 456	* **Trainees** : (+16) - M : 13 - F : 3 * **Contracted**: (* 33) - M : 29 - F : 04

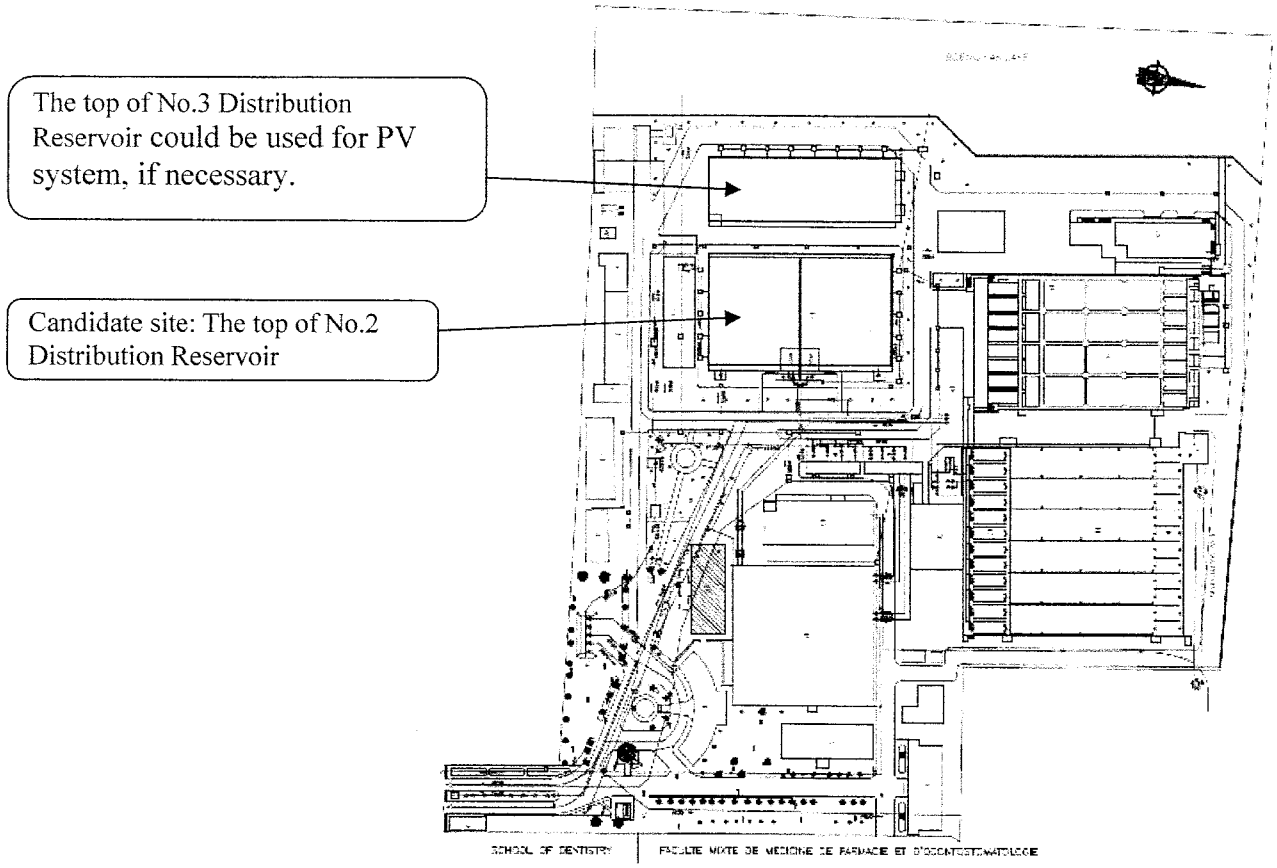
Human Resources Office

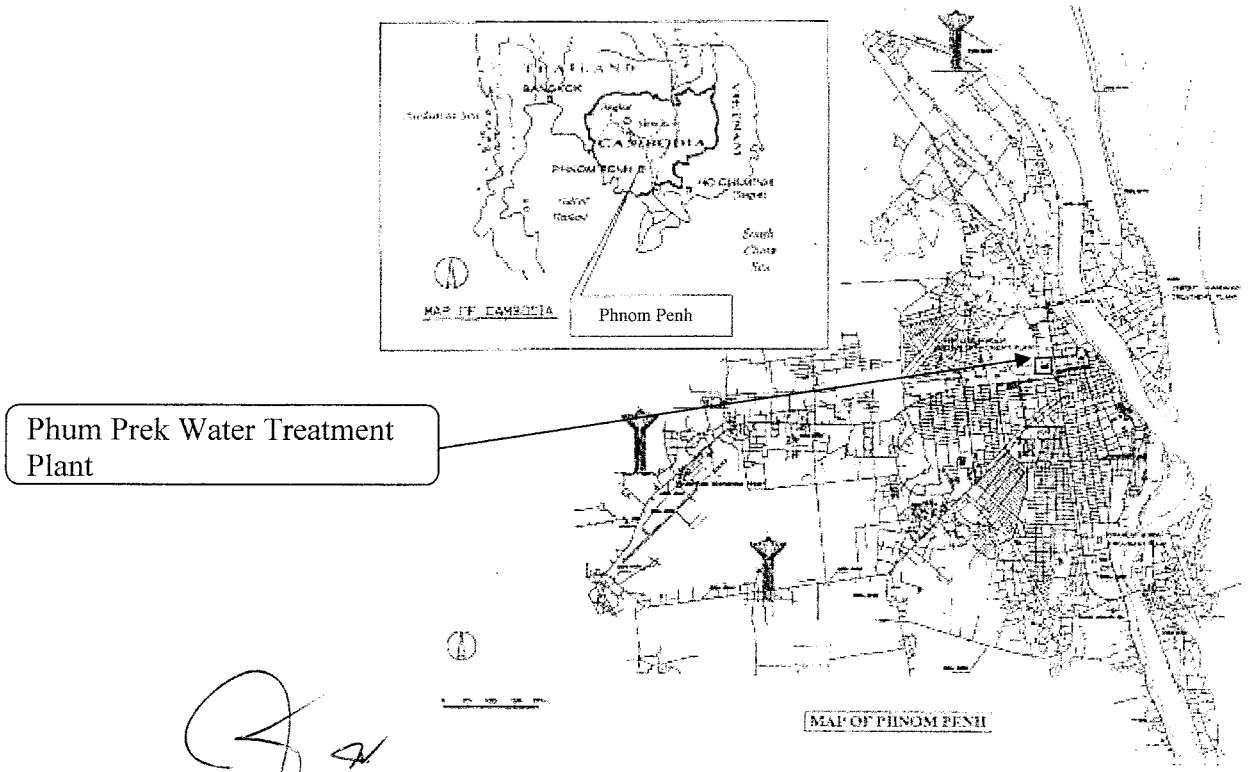
Director of Dept.

Mrs. R Nary **Mrs. L Lavy**

Candidate Site for PV System supported by the Project

Location: Phum Prek Water Treatment Plant, PPWSA, Phnom Penh





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).GAEC may contain multiple components that can be combined to effectively meet these needs.

1. Procedures for GAEC

GAEC is executed through the following procedures.

Preparatory Survey 1	Preparatory Survey 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 2	Preparatory Survey for 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 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) Firm and Consultant

The firm and consultant who would contract with the Agent shall be Japanese Nationals.

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 Study.

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.

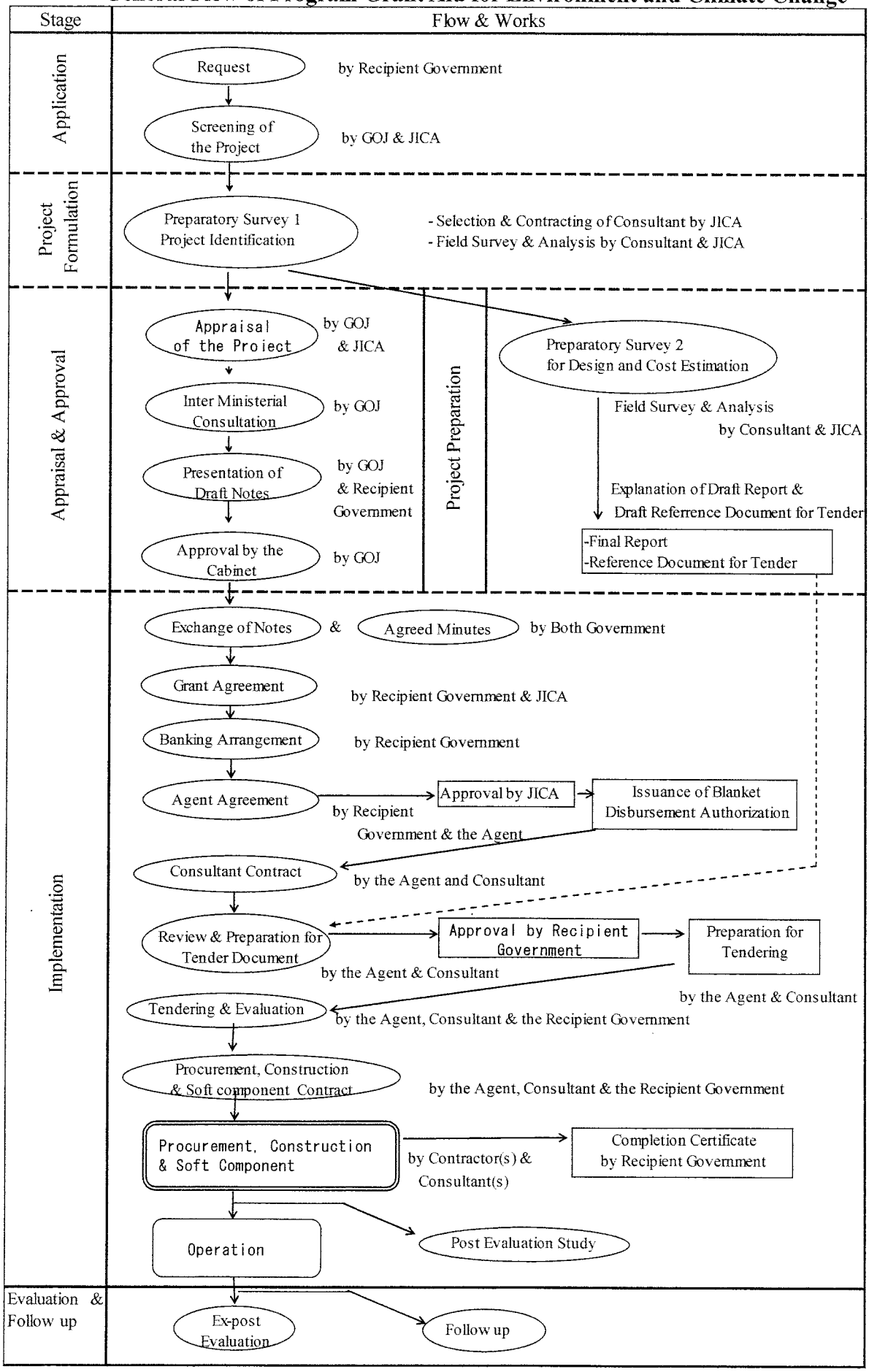
5) "Proper use of funds"

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.

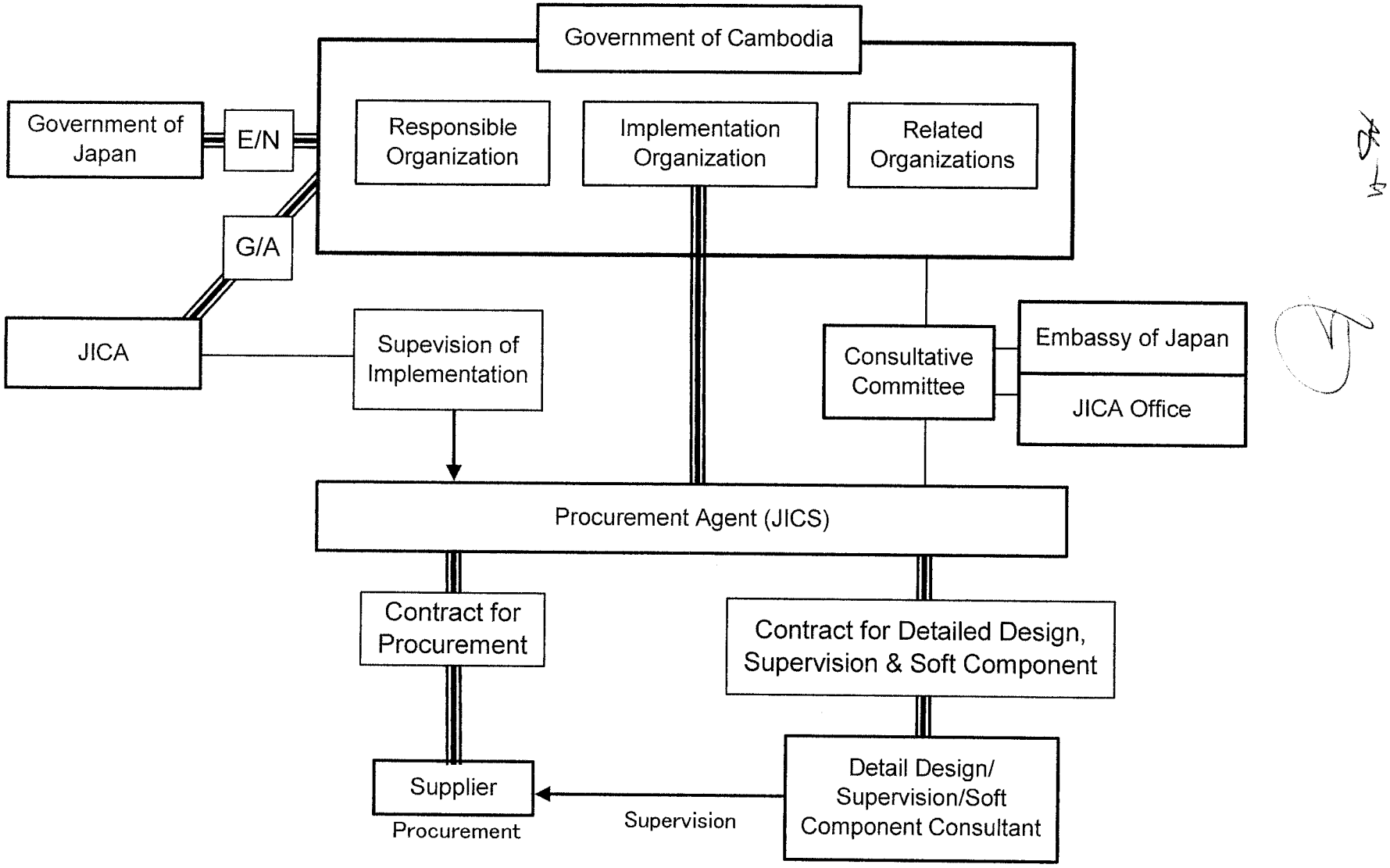
6) "Export and Re-export" of products

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

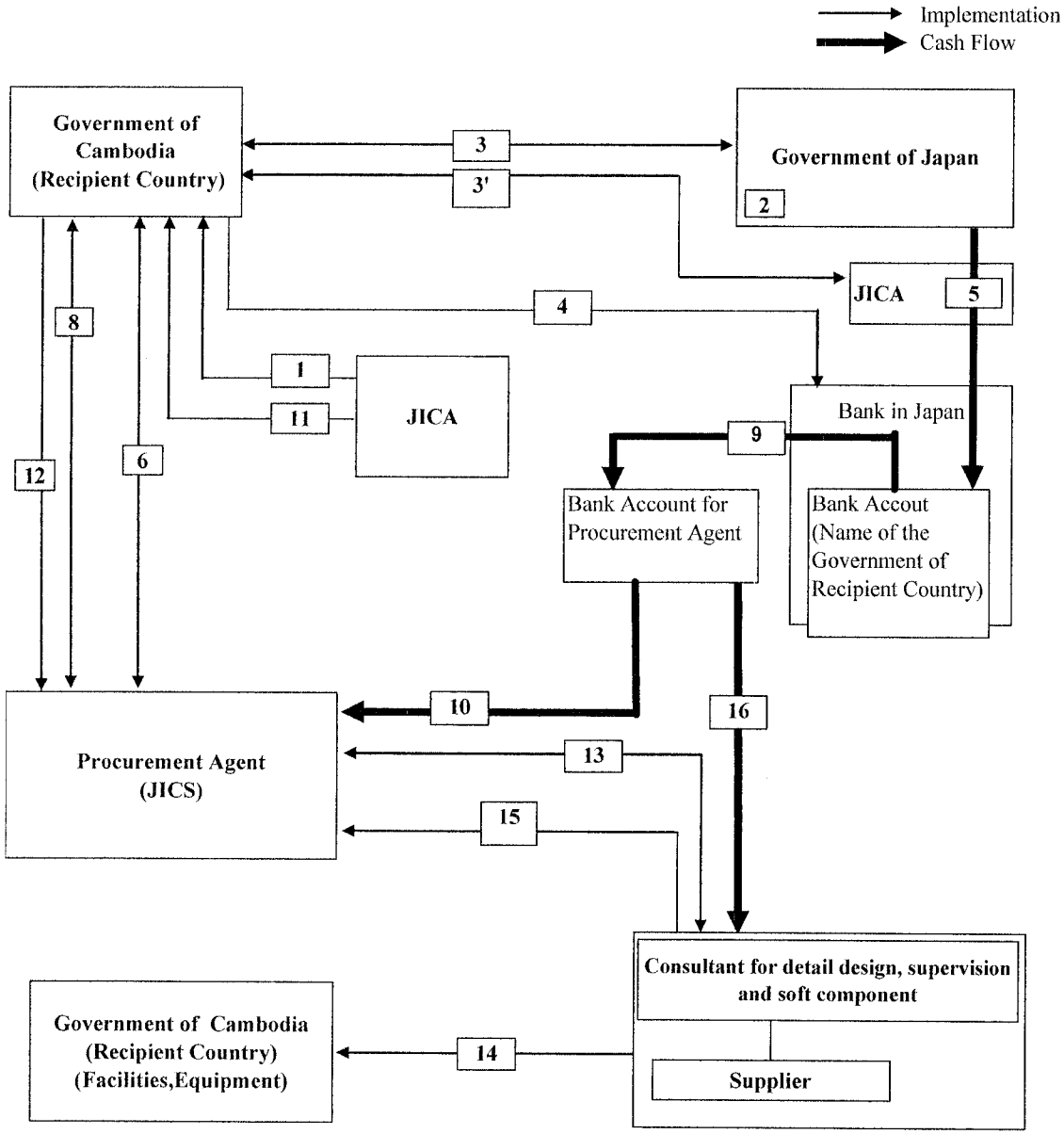
General Flow of Program Grant Aid for Environment and Climate Change



Project Implementation System



Flow of Funds for Project Implementation



1 Preparatory Survey / Reference Document for Tender

2 Approval of Cabinet

3 Signing of Exchange of Notes (E/N)

3' Signing of Grant Agreement (G/A)

4 Banking Arrangement (B/A)

5 Disbursement of Funds from the Government of Japan

6 Signing of Agent Agreement (A/A) + BDA

7 N/A

8 Decision of Project Components

9 Transfer of Funds

10 Payment of Remuneration for Agent

11 Recommendation of Consultant for Detail Design/Supervision (JICA -> Government of Cambodia)

12 Recommendation of Consultant for Detail Design / Supervision (Government of Cambodia -> Procurement Agent)

13 Conclusion of Contract

14 Construction and Procurement

15 Application for Payment

16 Payment

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		●
4	To construct a parking lot if necessary		●
5	To construct roads		
	1) Within the site	●	
	2) Outside the site and Access road		●
6	To construct the facility and install the equipment	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities if necessary:		
	1)Electricity		
	a. The power distribution line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer for the site	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for conveying storm water, sewage, etc. from the site)		●
	b. The drainage system within the site (for sewage, ordinary waste, storm water, etc.)	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	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		●
9	To ensure all the expense and prompt execution of unloading and customs clearance at the port of disembarkation in the recipient country		
	1) Marine or air transportation of the products from Japan or third countries to the recipient	●	
	2) To ensure all the expense and prompt execution of unloading, tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
10	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.		●
11	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		●
12	To maintain and use properly and effectively the facilities that are constructed and the equipment that is provided under the Grant.		●
13	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.		●
14	To ensure environmental and social consideration for the Programme.		●

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.

Minutes of Discussions
on
the Preparatory Survey (Outline Design)
on
The Project for Introduction of Clean Energy by Solar Electricity Generation System
in
the Kingdom of Cambodia

(Explanation on Draft Final Report)

In December 2009, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched to the Kingdom of Cambodia (hereinafter referred to as "Cambodia") a Preparatory Survey Team on the Project for the Introduction of Clean Energy by Solar Electricity Generation System (hereinafter referred to as "the Project"), to hold discussions with relevant officials of the Government of Cambodia to conduct field surveys and to make technical evaluations. After discussing results of the Preparatory Survey in Japan, JICA prepared a Draft Outline Design Study Report.

In order to explain and to consult with the concerned officials of Cambodia on the components of the Draft Final Report, JICA dispatched to Cambodia a Preparatory Survey Team for Draft Final Report Explanation (hereinafter referred to as "the Team"), which is headed by Mr. Kazuhiko AKASHI, Senior Advisor to the Director General, Industrial Development Department, JICA, from October 17th to 23rd, 2010.

As a result of the discussions held between the Team and concerned officials of Cambodia, the main items described on the attached sheets are confirmed.

Phnom Penh, October 22nd, 2010

Mr. Kazuhiko AKASHI
Leader
Preparatory Survey Team
Japan International Cooperation Agency

Mr. Sem Bun Heng
Deputy General Director
Phnom Penh Water Supply Authority
The Kingdom of Cambodia

Excellency Phork Sovanrith
Secretary of State
Ministry of Industry, Mines and Energy
The Kingdom of Cambodia

ATTACHMENT

1. Components of the Draft Final Report

The Phnom Penh Water Supply Authority (hereinafter referred to "PPWSA") and Ministry of Industry, Mines and Energy (hereinafter referred to "MIME") accepted in principle the components of the Draft Final Report explained by the Team.

2. Program Grant Aid for Environment and Climate Change of the Government of Japan

The Cambodian side understood the contents of the Minutes of Discussions signed by the Team and concerned officials of Cambodia on 15th December, 2009, as attached as Annex-1 (hereinafter referred to as "the previous M/D"), and agreed to take the necessary measures confirmed on the previous M/D for smooth implementation of the Program following procedures of the Program Grant Aid for Environment and Climate Change of the Government of Japan as shown in **Annex-1**.

3. Confirmation of progress made from the previous M/D

3.1. Project Site and Capacity of PV System

The Team and the Cambodian side confirmed that project site is Phum Prek Water Treatment Plant as shown in **Annex-2**.

The Team explained that the capacity of PV system, which initially requested as 200kWp capacity in the previous M/D and discussed to increase to 320kWp in the 2nd Preparatory Survey conducted in March 2010, was increased to 488 kWp in the Draft Final Report based on the result of outline design and the updated cost estimation; therefore, the additional roofs were chosen for the installation of PV pannels..

The Cambodian side agreed to change the PV capacity.

3.2. Implementing Organization

The Team and the Cambodian side confirmed that PPWSA is the implementing organization for the Project. MIME is the responsible organization to provides policy and technical advices. Electricite du Cambodge (hereinafter referred to as "EDC") provides technical support for the grid connection as mentioned in the Draft Final Report.

4. Equipments to Be Procured

The Team explained that the list of equipment to be procured is as shown in **Annex-3** based on the result of the 2nd Preparatory Survey conducted in March 2010. After discussions, the Team and the Cambodian side agreed to procure the major equipment such as PV module, Power Conditioner and Transformer from Japan.

5. Procurement Process for the Project

The Team and the Cambodian side reconfirmed that procurement process would be supervised by the Procurement Agent (hereinafter referred to as "the Agent") through necessary consultations with the Consultative Committee (hereinafter referred to as "the Committee"). The Team and the Cambodian side also reconfirmed roles of the Agent as follows;

(1) The Agent will render the services stipulated in the provisions of the G/A as well as the E/N for the Project;

(2) The Agent will undertake the procurement procedures necessary for the Program according to the provisions of the G/A, E/N and any other relevant guidelines

(3) JICA will provide a Final Report of Outline Design Study to the Agent; and

(4) The Agent will commence the procurement according to the contents of the Final Report of the Outline Design.

The Team explained that if tender price exceeds the amount agreed on G/A and E/N, quantity or/and items of the equipment would be reduced until the cost for the Project comes down to the amount agreed on G/A and E/N.

The Cambodian side agreed that if there is a remaining amount of the cost for the Project after a tender, additional items of equipment would be procured based on the list which was set in the Final Report. Both sides confirmed that the roof of gallery beside the sedimentation basins as shown in Annex- 2 would be the priority site in case of additional PV panel installation.

The Cambodian side also understood that decision on the addition or reduction of the equipment would be made through necessary consultations with the Committee.

6. Project Cost

The Cambodian side agreed that the cost for the Project should not exceed the upper limit of amount agreed on in E/N, which is 720 million yen. The Team and the Cambodian side also agreed that the cost for the Project contains procurement cost of equipment, the cost for transportation up to the site for the Project, installation cost, the Consultant fee, the Agent fee, and the cost for soft component for the technical support of operation and maintenance of equipment.

7. Confidentiality of the Project

(1) Detailed Specifications of the Facilities

The Team and the Cambodian side agreed that all the information related to the Project including detailed drawings and specifications of the facilities and equipment and other technical information shall not be released to any outside parties (i.e. outside of JICA, concerned officials of Cambodia, and the Agent) before the conclusion of all the contract(s) for the Project.

(2) Confidentiality of the Cost Estimation

The Team explained the cost estimation of the Project as described in **Annex-4**. The Team and the Cambodian side agreed that the cost for the Project estimates should never be duplicated or released to any outside parties (i.e. outside of JICA, concerned officials of Cambodia, and the Agent) before the sign of the contract with the winner contractor of the Project. The Cambodian side understood that the cost for the Project Estimation attached as Annex-3 is not final and is subject to change as a result of examination through revision of the Outline Design Study.

8. The Consultative Committee

The Cambodian side agreed that PPWSA will chair the Committee in order to facilitate consultation and procurement process. The Terms of Reference of the Committee are outlined in Annex-9 of the previous M/D.

The members of the Committee are as follows:

(1) Representative(s) of PPWSA(Chair)

(2) Representative(s) of MIME

(3) Representative(s) of JICA Cambodia Office

A representative of EDC may asked to attend the meeting depending on the agenda.

The first meeting of the Committee shall be held after the signing of the consultant contract between the Agent and the consultant. Further meetings shall be held upon request of either the Cambodian side or the Japanese side. The Agent may advise JICA and the Cambodian side on the necessity to call for a meeting of the Committee.

9. Other Relevant Issues

9.1. Undertakings Required by the Cambodian Side

The Team requested the Cambodian side to abide by the following undertakings by the Cambodian side in addition to major undertakings described in the previous M/D and in **Annex-5** of this M/D. The Cambodian side agreed to take necessary measures.

(1) Land/Space Usage for PV System

The owner of the land/space for the following equipment and materials for PV system is PPWSA. The Cambodian side has reconfirmed that there is no objection for the implementation of the Project.

1) for PV system

2) for temporary stockyard

(2) Preparation for the Site

Both sides agreed that PPWSA should complete the following works for the preparation of the site at least three months before the commencement of civil work.

-To secure and keep open the space for PV system installation

-To clear the space for PV system installation

-To clean up the inside of the electric rooms

The Japanese side explained that in principle the Japanese Grant Aid does not cover the site clearance and preparation. In this Project, however, the recovery of the waterproof on the roofs is included in the items covered by the Japanese Grant Aid for they may be affected by the installation of PV system.

The Team found that lightning protection towers and foundations are on the roof of the chemical treatment building. The clearance of the towers and foundations is carried out by PPWSA, coordinating with the installation schedule to minimize the period without the protection.

(3) Environmental and Social Considerations

The Cambodian side reconfirmed that IEIA or EIA is not required for the Project in accordance of Sub-Decree No.72 ANRK.BK. dated August 11, 1999.

(4) Application of the Related Laws and Regulations

The Cambodian side reconfirmed that installation of PV array on the roof of the existing water treatment facilities is not subject to the below mentioned approvals and any juridical restrictions in Cambodia.

1) Construction approvals
2) Permissions on installation of electric generator
3) Any other relevant approvals from public authorities

(5) Customs and Tax Exemption

The Cambodian side agreed that PPWSA shall take responsibility for the exemption of all customs, tax, levies and duties incurred in Cambodia for the implementation of the Project.

(6) Assignment of Counterpart Personnel

1) Overall project management

PPWSA will assign the following personnel for overall project management and coordination for the implementation within one month after the signing of this M/D.

- A Project Director
- A Project Manager
- Necessary technical staff

2) Soft Component

The Cambodian side agreed to assign necessary personnel in accordance with the soft component plan proposed by the Team as described in Table2-4.9 in the Draft Report.

PPWSA will assign the focal Counterpart Personnel for the soft component.

Other personnel will be assigned from PPWSA, MIME and EDC organizations as required at the time of implementation of the soft component.

9.2. Ownership and Operation and Maintenance (O&M) Responsibilities of Equipments

The Cambodian side has reconfirmed that the PPWSA is the final owner of Equipment and responsible for O&M, which includes securing necessary personnel and budget for O&M of Grid-connected PV system as well as the replacement of major equipment such as a power conditioner procured and installed under the Program.

The Team explained that the Japanese side understood that the ownership of the equipment procured under the Grant Aid remains under the PPWSA as a public entity and PPWSA shall secure the continuity of operation and maintenance even if the legal character, ownership or control of PPWSA changes. The Team also asked MIME and PPWSA to inform and consult with the Japanese side on any above mentioned changes planned in the future.

The Cambodian side understood the concerns of the Japanese side and agreed to share the information.

9.3 Project Schedule

Both sides confirmed the tentative implementation schedule of the Project as shown in **Annex-6.**

<List of Annex>

Annex-1 Program Grant Aid for Environment and Climate Change of the Government of Japan

Annex-2 Location Map of the Project Site

Annex-3 List of Equipments

Annex-4 Project Cost Estimation (Confidential)

Annex-5 Major Undertakings to be taken by the Cambodian side

Annex-6 Implementation Schedule for the Project

Minutes of Discussions
on the Preparatory Survey
on the Project for Clean Energy Promotion Using Solar Photovoltaic System

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 Promotion Using Solar Photovoltaic System(hereinafter referred to as "the Project").

JICA sent to the Kingdom of Cambodia (hereinafter referred to as "Cambodia") the Preparatory Survey Team (hereinafter referred to as "the Team"), headed by Mr. Hiroshi KURAKATA, Senior Advisor to Director General, Industrial Development Department, JICA, and is scheduled to stay in Cambodia from December 9th to 16th, 2009.

The Team held discussions with Phnom Penh Water Supply Authority (hereinafter referred to as "PPWSA"), Ministry of Industry, Mines and Energy (hereinafter referred to as "MIME") and the other concerned officials of the Government of Cambodia and conducted a field survey.

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

Phnom Penh
December 15, 2009

Mr. Hiroshi Kurakata
Leader
Preparatory Survey Team
Japan International Cooperation Agency

Mr. Sem Bun Heng
Deputy General Director
Phnom Penh Water Supply Authority
The Kingdom of Cambodia

Mr. Victor Jona
Deputy Director General
General Department of Energy
Ministry of Industry, Mines and Energy
The Kingdom of Cambodia

ATTACHMENT

1. Current Situation

The Government of Cambodia recognizes the renewable energy could play a more important role in terms of enabling to meet their energy requirement. The Renewable Energy Action Plan (REAP) established in 2002, and it aims to promote renewable energy including photovoltaic (PV) system.

In this situation, the PV power generation system connected with the national power grid is one of the pilot systems to enhance the possibility of applying renewable energy.

2. Objective of the Project

The objective of the Project is to supply the electricity for Phum Prek Water Treatment Plant and also to promote clean energy utilization and achieve emissions reductions by installing the photovoltaic system to be connected to the national grid. The Project is also expected to contribute to sustainable water supply for the households at their affordable water price in Phnom Penh City via saving of the water distribution cost for PPWSA.

3. Responsible Organization and Implementing Organization

The responsible organization is MIME. (The organization chart of MIME is shown in Annex-1.)

The implementing organization is PPWSA. (The organization chart of the implementing organization is shown in Annex-2.).

4. Items Requested by Cambodian Side

4-1. The Cambodian side requested to install the PV system on the sedimentation basin instead of reservoir No.2 and/or No.3. Corresponding to this request, the Team explained that it would be difficult to accept this due to the policy of the Grant Aid for Environment and Climate Change by GOJ. After discussions with the Team, the following equipment was finally requested by the Cambodian side.

Table 1 Project requested by the Cambodian side

	Description
Location	Phum Prek Water Treatment Plant, PPWSA
Outline	The power produced by PV system is used for the Phum Prek Water Treatment Plant.
Requested equipment	(1) Solar module (Panel): total capacity might be 200kW (The Cambodian side remarked to the Team that it should be better installing more than 200kW of the solar module for the Project.) *The final capacity of the PV system to be installed under the project will be decided by the GoJ. (2) Junction box (3) Power conditioner (4) Distribution board

	(5) Cables for electric distribution (6) Data collecting and display device (7) Mounting frame for solar module

4-2. The project site is the as shown in Annex-3.

4-3. The Cambodian side explained that there is no duplication between requested contents of the Project and any other plans implemented by the other donors or the Cambodian side.

4-4. The Cambodian side has understood that the detailed component and the design of the Project will be confirmed at the timing of 2nd phase of the Preparatory Survey.

4-5. The Team will report the findings and items requested by the Cambodian side to JICA Headquarters and the GoJ.

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

The Cambodian side understood the Japan's Program Grant Aid for Environment and Climate Change scheme explained by the Team, as described in Annex-4, 5, 6, 7 and 8.

6. Schedule of the Study

6-1. The Team will proceed to further survey in Cambodia until December 17th 2009 as the 1st phase of the Preparatory Survey.

6-2. After completion of the 1st phase of the Preparatory Survey, the Team will report the results to the Cambodian side, JICA Headquarters and GoJ.

6-3. Based on the results of the 1st phase of the Preparatory Survey, JICA will conduct the 2nd phase of Preparatory Survey for the discussion of detailed component and design as well as collection of further data necessary for design and cost estimate by the end of March, 2010.

6-4. JICA will prepare the draft report and reference document in English and dispatch a mission to Cambodia in order to explain its contents at the end of July, 2010.

6-5. When the contents of the report are accepted in principle by the Government of Cambodia, JICA will complete the final report and reference document, and submit them to the Government of Cambodia and to the Procurement Agent by the end of August, 2010.

7. Other Relevant Issues

7-1 Permission of Land Acquisition / Usage

Since Phum Prek Water Treatment Plant is located in the PPWSA's property, the land acquisition is not necessary for implementation of the Project.

(a) Securing necessary land or facilities
- for PV Modules
- for underground cables between PV Modules and Power conditioners
- for Power conditioners

(b) Temporary Stockyard during installation of the equipment and materials

7-2 Procurement of Equipment

The Team explained that, in accordance with the policy of Government of Japan, products of Japan shall be procured for major equipment in the Project. The Cambodian side also requested products of Japan for major equipment.

7-3 Coordination with Relevant Organizations

The responsible organization for the Project, MIME, shall be the focal point for the Team, and responsible for the coordination with relevant organizations. The Cambodian side agreed to establish a consultative committee in order to coordinate with the Japanese side. The consultative committee consists of relevant institutions from the Cambodian side and the Embassy of Japan and JICA Cambodia office from the Japanese side. Terms of Reference of the Consultative Committee is referred to Annex-9.

7-4 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 Cambodian side. The Cambodian side took the JICA Guideline into consideration, and shall complete the necessary procedures, if necessary.

7-5 Operation and Maintenance

The implementing organization, PPWSA, agreed to secure and allocate the necessary budget and personnel for the operation and maintenance of grid-connected PV system procured and installed under the Project.

7-6 Customs and Tax exemption

The Cambodian side agreed that the Cambodian side shall be responsible for the exemption and/or reimbursement (payment/assumption) of all customs, tax, levies and duties incurred in Cambodia for implementation of the Project.

7-7 The Cambodian side shall ensure the security of all concerned Japanese nationals working for the Project, if deemed necessary.

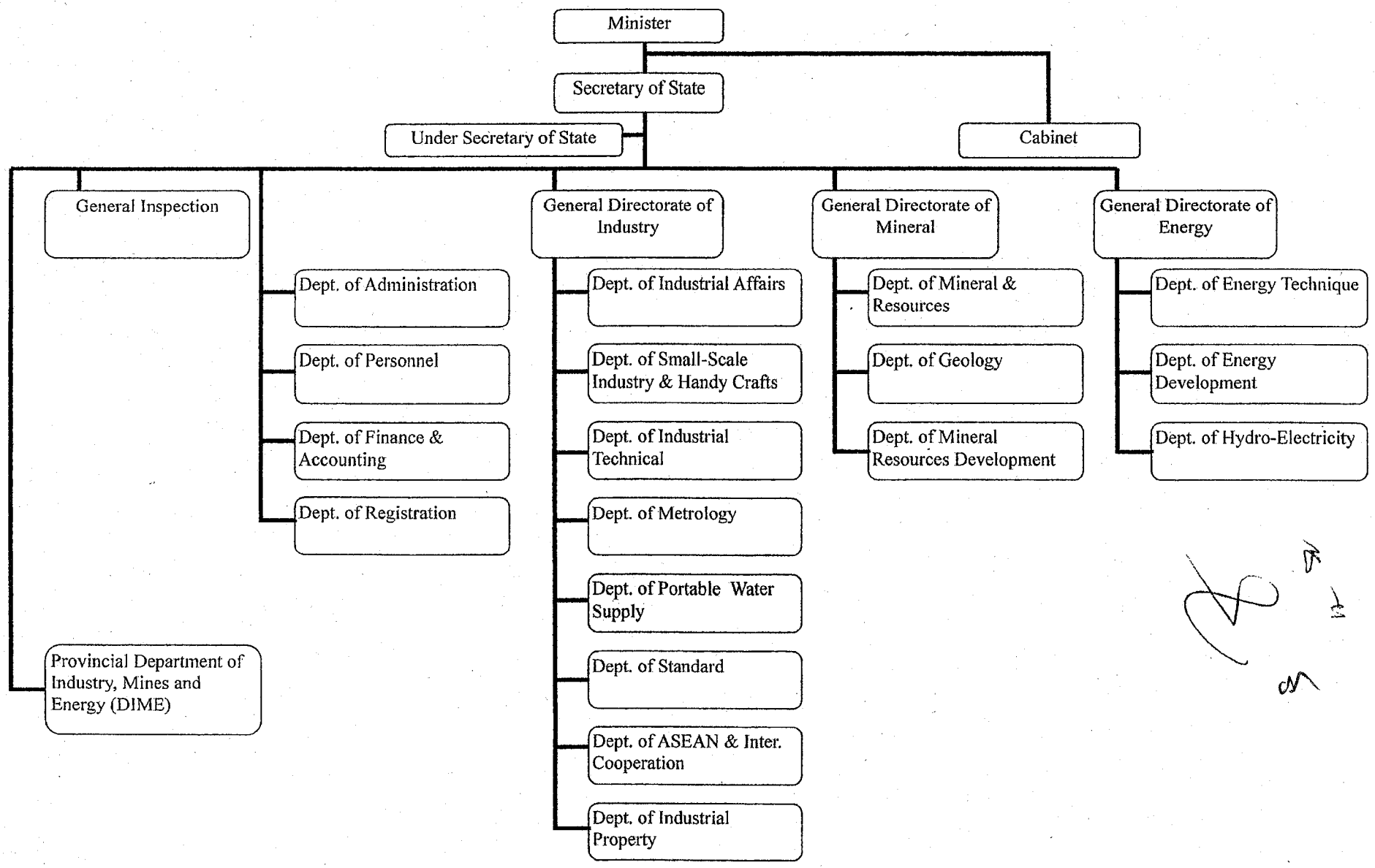
7-8 The Cambodian side shall provide necessary numbers of counterpart personnel to the Team during the period of the Project in Cambodia

<List of Annex>

Annex-1 Organization Chart of Responsible Organization
Annex-2 Organization Chart of Implementing Organization
Annex-3 Candidate site of the Project
Annex-4 Program Grant Aid for Environment and Climate Change
Annex-5 General Flow of Program Grant Aid for Environment and Climate Change
Annex-6 Project Implementing System
Annex-7 Flow of Funds for Project Implementation
Annex-8 Major Undertakings to be taken by Each Government
Annex-9 Terms of References of the Consultative Committee

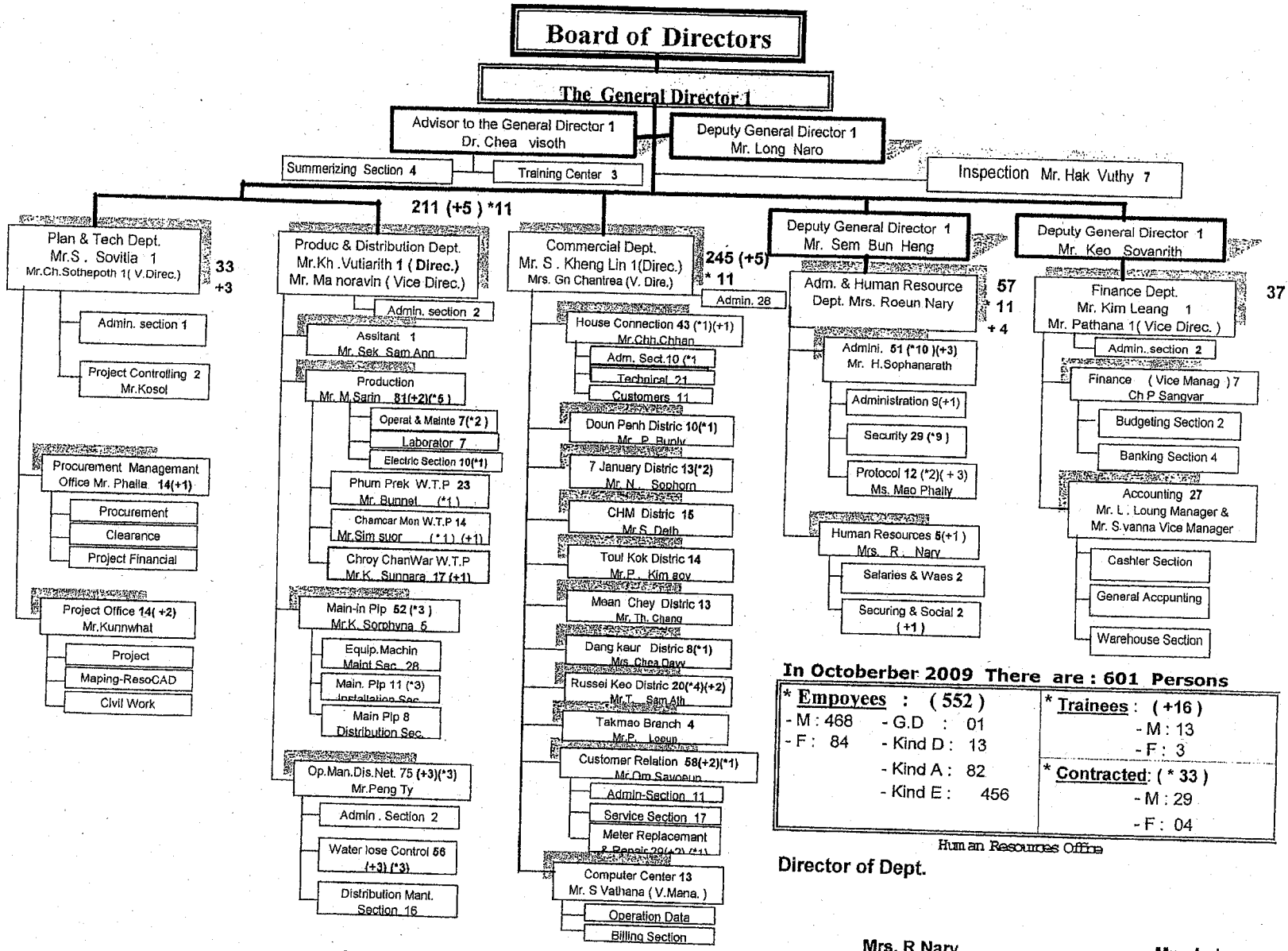
Organization Chart of Responsible Organization (MIME)

Annex – 1



Organization Chart of Implementing Organization (PPWSA)

Annex 2

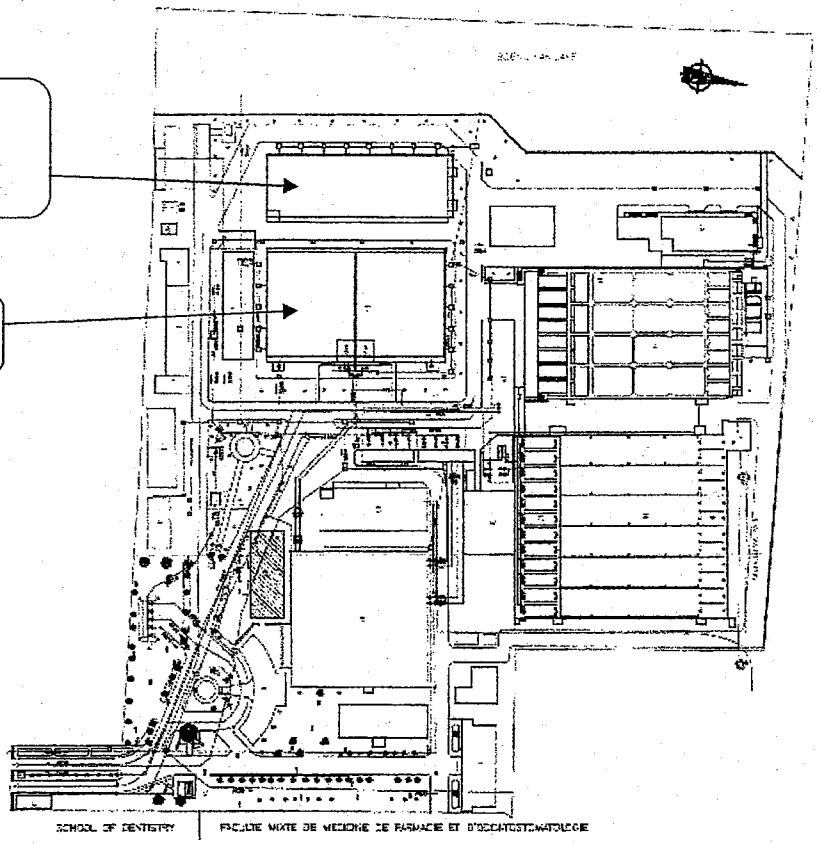


Candidate Site for PV System supported by the Project

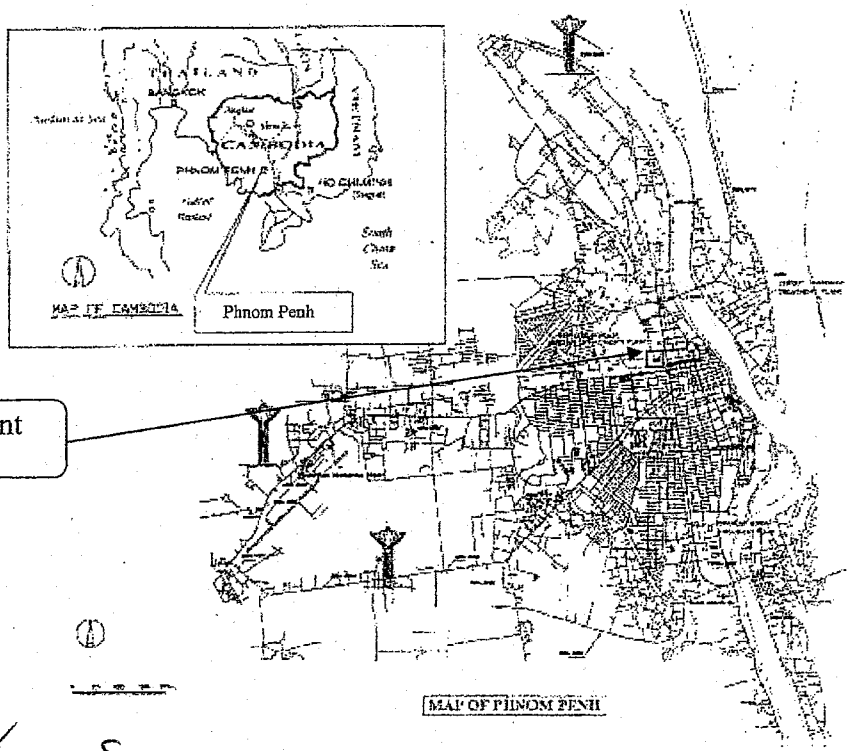
Location: Phum Prek Water Treatment Plant, PPWSA, Phnom Penh

The top of No.3 Distribution Reservoir could be used for PV system, if necessary.

Candidate site: The top of No.2 Distribution Reservoir



Phum Prek Water Treatment Plant



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).GAEC may contain multiple components that can be combined to effectively meet these needs.

1. Procedures for GAEC

GAEC is executed through the following procedures.

Preparatory Survey 1	Preparatory Survey 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 2	Preparatory Survey for 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 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) Firm and Consultant

The firm and consultant who would contract with the Agent shall be Japanese Nationals.

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 Study.

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.

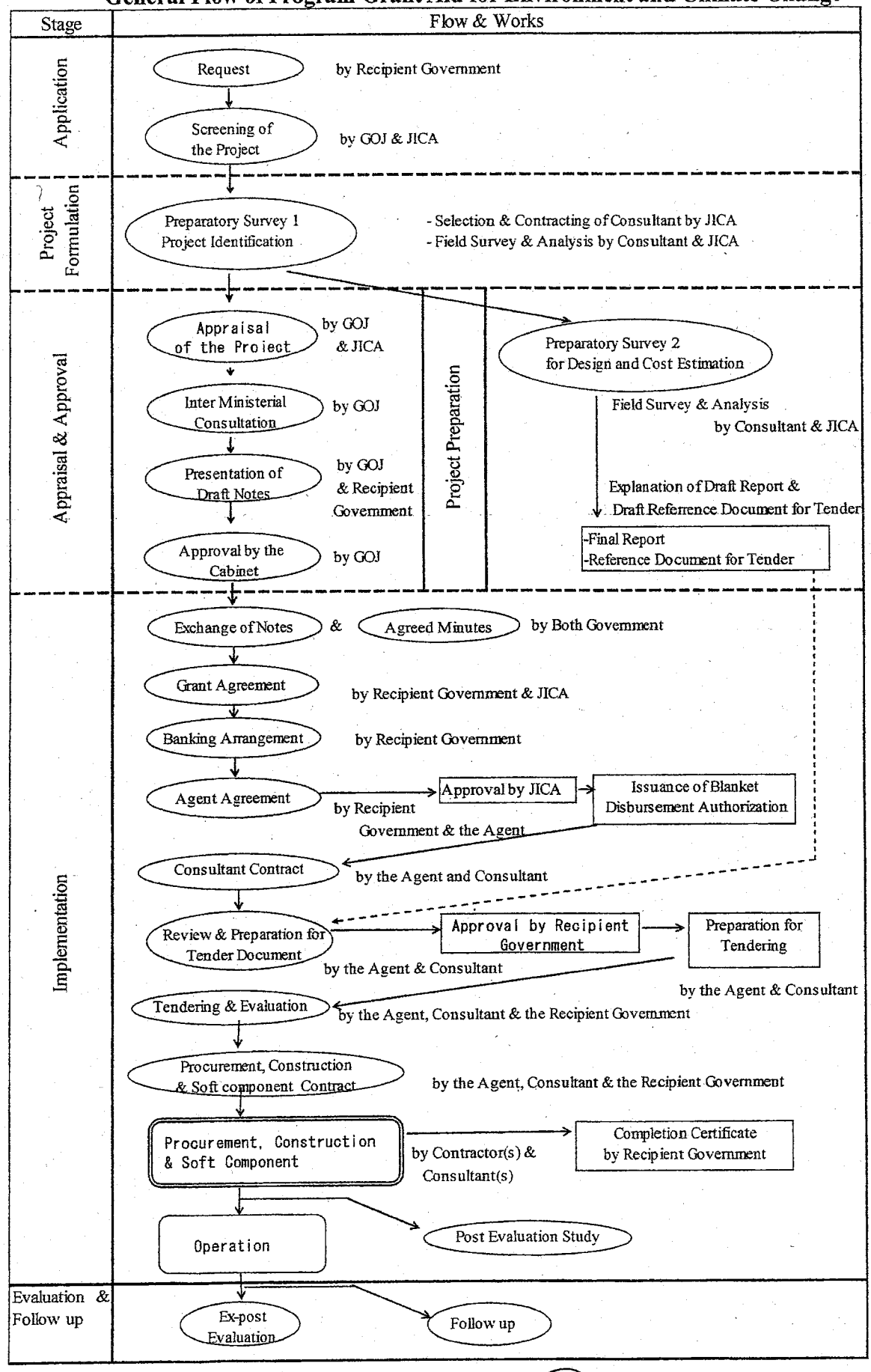
5) "Proper use of funds"

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.

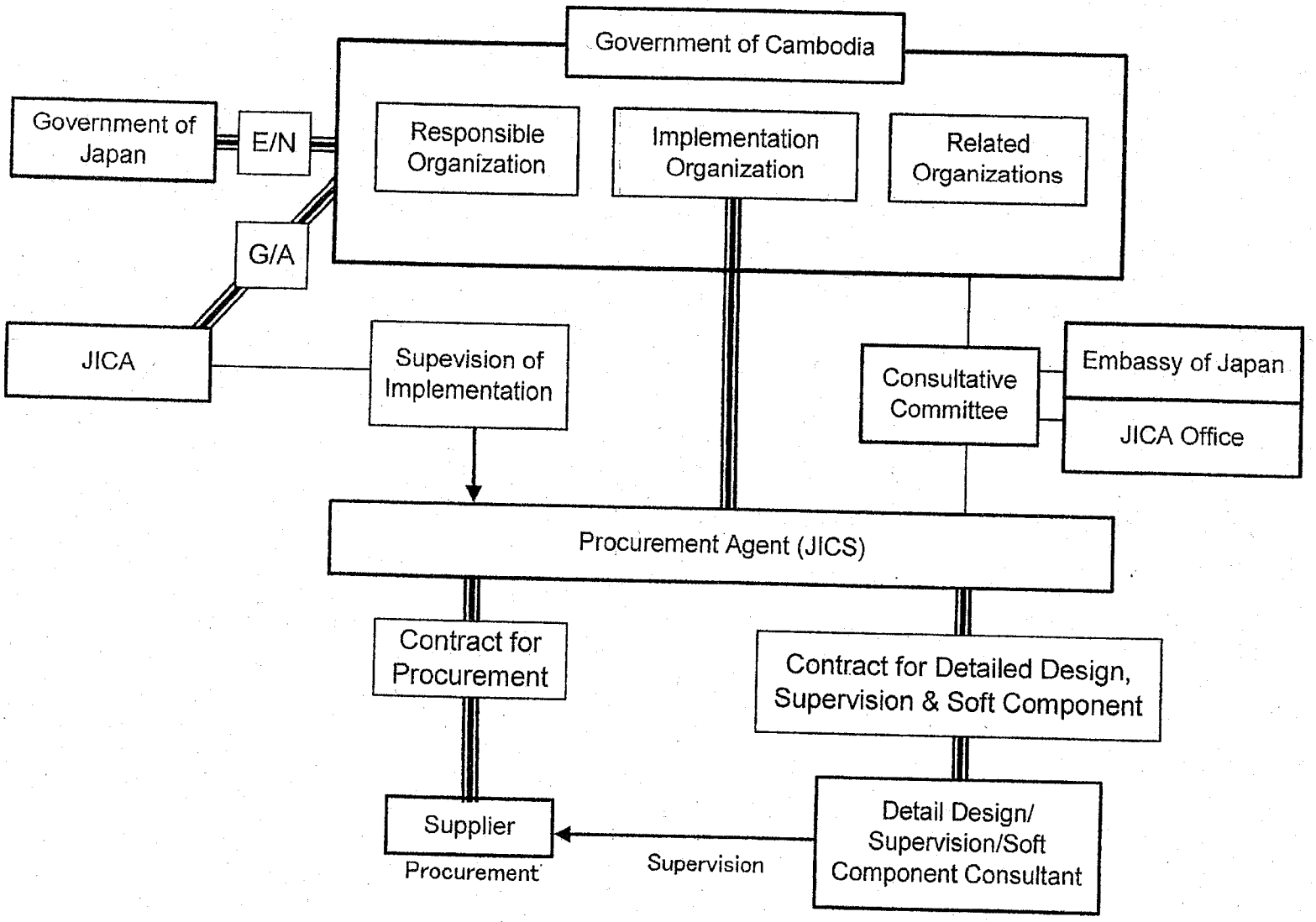
6) "Export and Re-export" of products

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

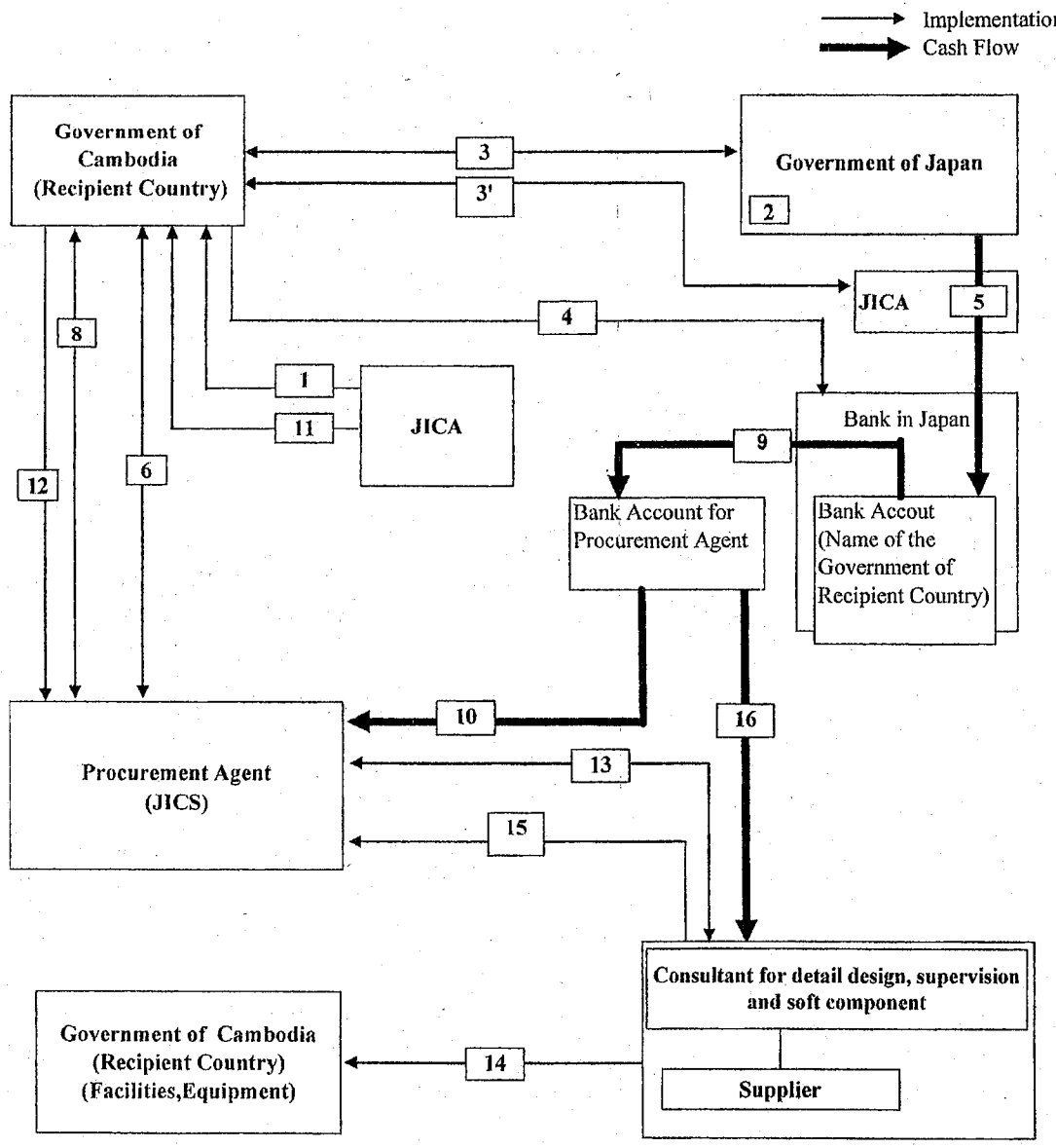
General Flow of Program Grant Aid for Environment and Climate Change



Project Implementation System



Flow of Funds for Project Implementation



1 Preparatory Survey / Reference Document for Tender

2 Approval of Cabinet

3 Signing of Exchange of Notes (E/N)

3' Signing of Grant Agreement (G/A)

4 Banking Arrangement (B/A)

5 Disbursement of Funds from the Government of Japan

6 Signing of Agent Agreement (A/A) + BDA

7 N/A

8 Decision of Project Components

9 Transfer of Funds

10 Payment of Remuneration for Agent

11 Recommendation of Consultant for Detail Design/Supervision (JICA -> Government of Cambodia)

12 Recommendation of Consultant for Detail Design / Supervision (Government of Cambodia -> Procurement Agent)

13 Conclusion of Contract

14 Construction and Procurement

15 Application for Payment

16 Payment

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		●
4	To construct a parking lot if necessary		●
5	To construct roads		
	1) Within the site	●	
	2) Outside the site and Access road		●
6	To construct the facility and install the equipment	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities if necessary:		
	1)Electricity		
	a. The power distribution line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer for the site	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for conveying storm water, sewage, etc. from the site)		●
	b. The drainage system within the site (for sewage, ordinary waste, storm water, etc.)	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	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		●
9	To ensure all the expense and prompt execution of unloading and customs clearance at the port of disembarkation in the recipient country		
	1) Marine or air transportation of the products from Japan or third countries to the recipient	●	
	2) To ensure all the expense and prompt execution of unloading, tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
10	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.		●
11	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		●
12	To maintain and use properly and effectively the facilities that are constructed and the equipment that is provided under the Grant.		●
13	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.		●
14	To ensure environmental and social consideration for the Programme.		●

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.

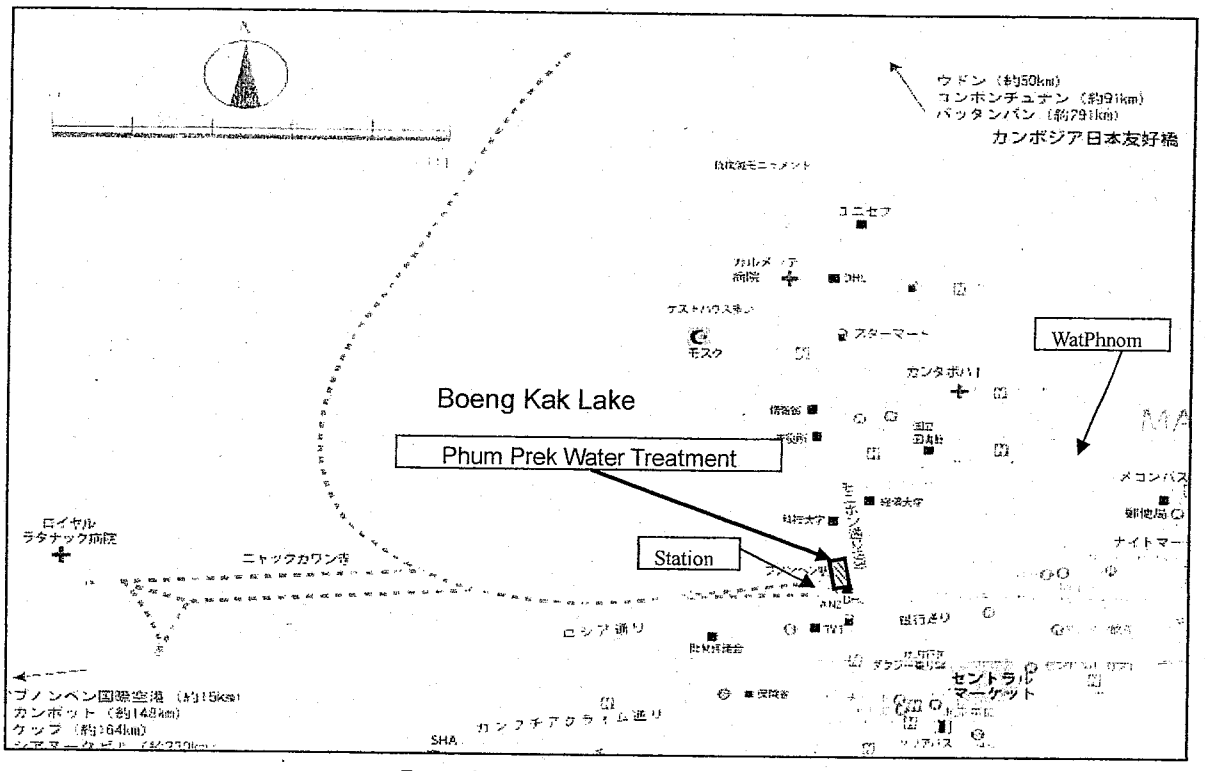
2. To discuss the modifications of the Program, including modification of the design of the facility.

3. To exchange views on allocations of the Grant and its accrued interest as well as on potential end-users.

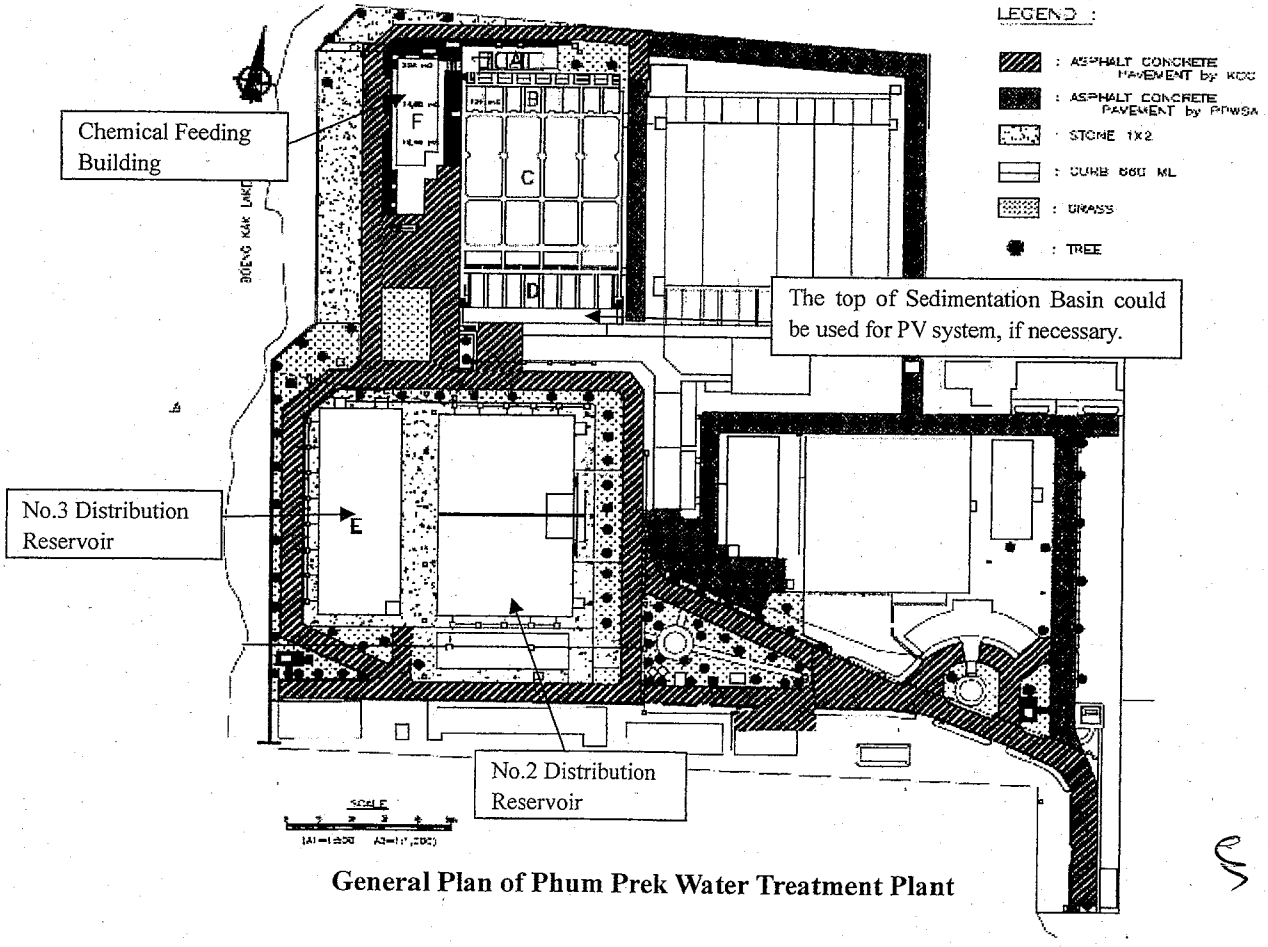
4. To identify problems which may delay the utilization of the Grant and its accrued interest, and to explore solutions to such problems.

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.



Location Map of the Project Site



General Plan of Phum Prek Water Treatment Plant

List of Main Equipment

No.	Name of Device	Main Specification and/or Components	Qty	Purpose
1	Photovoltaic Module	(1) Applicable Standard: IEC or equivalent standard (2) General specification: 1) Type: Crystal type 2) Rated installed capacity: 488 kWp (264.6kW array + 173.8kW array +50.4kW array)	2328 pc	Fundamental device in the PV system to convert solar energy to electric energy of DC
2	Adjunct Cable for PV Module	(1)Applicable Standard: JCS 4418B (2)Type: (a) HEM - CE Cable with (+) connector at one edge (b) HEM - CE Cable with (-) connector at one edge (c)HEM - CE Cable with (+) (-) connector at both edges (3)Size: 3.5sq - 1C	194 pc	Cables connecting each module in series and necessary cable for the system
3	Junction Box	(1) Construction: Outdoor hanging type (2) Material: SPHC Steel plate (3) Input voltage cell: DC 500 V/circuit (4) Number of input circuits: 3 ~ 5 circuits (5) Input current of PV cell: 8.9 A/circuit (6) Number of output circuits: 1 circuit (breaker workable in tropical region) (7) Devices to be stored: Circuit breaker for wiring (DC500V 50A), islanding connector, blocking device, lightning protection device by induction type, and heat-sensitive terminal caps	50 pc	Boxes to integrate the wiring cables connecting each module in series, and necessary device for the system
4	Collection Box	(1) Construction: Outdoor hanging type (2) Material: SPHC Steel plate (3) Input voltage cell: DC500V (4) Input current of PV cell: 50A/circuit (5) Number of input circuits: 5 circuits with breaker for tropical region use (6) Number of output circuits: 1 circuit with breaker for tropical region use (7) Breaker (Switch): Circuit beaker for input wiring (DC500V 50A) Circuit breaker for output wiring (DC500V 225A) (8) Others: Heat-sensitive terminal caps	11 pc	The wiring cables from each junction box will connect to the collection boxes in parallel and DC electricity will be transmitted to power conditioner from the collecting boxes. The collecting boxes are necessary for a large scale PV system.
5	Power Conditioner	(1)General specification for installed capacity: 488 kW 1)Construction: Indoor free-standing type 2)Main circuit model: Self-excitation voltage type 3)Switching method: HF PWM 4)Cooling method: Forced cooling system (2)Electrical specification 1)Rated capacity: 100 kW×3 pc (No.2 Reservoir), 100kWx2 pc (No.3 Reservoir and Chemical Feeding Bld.) 2)Rated input voltage: DC300V and less 3)Maximum allowable input voltage: DC0~500V and less 4)Voltage range for input operation: DC240V~470V and less 5)Follow-up control range for maximum output: DC240V～420V and less 6)Output electrical mode: 3-phase and 3-wire system 7)Rated output voltage: AC202V 8)AC output current distortion rate: Total 5 % and less, each harmonic 3% and less 9)Power control system: Maximum output follow-up control 10)Efficiency: 90 % and more 11)Function: Automatic start, shut down, soft start, automatic voltage regulator (3)Grid Protection Device: OVR(225/230/235/240V）,(410/420/430V）, interval (0.5/1.0/2.0S) UVR(160/165/170/175/180V）(350/360/370V）, interval (0.5/1.0/2.0S) OVF(50.5/51/51.5/52Hz）, interval (0.5/1.0/2.0S) UVF(48.5/49/49.5Hz）, interval (0.5/1.0/2.0S) Blocking time after restoration: (5/150/200/300S) (4)Islanding Operation Detector Active method range of fluctuation: Wattless power shall be 5 % of rated output, Detective factor: cycle fluctuation of frequency, Detective level: 0.25 Hz, Parallel off time:0.5~1S Passive method: ±3/5/8/10°, Detective time: 0.5S and less (5)External Communication; Transmitted information: malfunction & measuring information by RS485 (6)Internal Lightning Protection Device; DC SPD Class II and above, AC SPD gap type class II and above	1 Ls	Power conditioner has the following functions; (a) Converting DC to AC generated by PV module, (b) Keeping power quality at appropriate level by monitoring and watching AC power Therefore, a power conditioner is the essential device for PV system.
6	Transformer	(1) Rated output: 600kVA (2) Primary voltage (output): AC380-230V, 3-phases and 4-wires (3) Secondary voltage (input): AC200V, 3-phases and 3-wires (4) Frequency: 50Hz (5) Insulating class: H-type and dry class (6) Other specification: Rating plate, primary terminal - 5 taps and more	1 Ls	One of the main components of the power conditioner and converting AC voltage into required voltage level.
7	External Lightning Protection	(1) Applicable Standard: JIS A 4201-2003 (2) Protection level: Class II (3) Receiving part: lightning rod, horizontal conductor, and mesh conductor by rotating sphere method (4) Grounding: Keeping the same electrical potential with that of supporting structure of PV panel	1 LS	Protecting outdoor facilities from lightning strike, necessary device for PV system to be installed in countries, where there are many lightning in rainy season.
8	Cubicle	(1) Material: SPHC Steel plate (2) Devices to be stored: 100kW x 5 power conditioner, 600 kVA equivalent transformer, data transmittal device, I/O switch, and circuit breaker (3) Internal Lightning Protection : AC SPD Class II and above at output side (4) Ventilation: Forced cooling system (22kW air conditioner)	1 LS	Box containing electrical devices, such as power conditioner and transformer, and protecting those devices from direct light and rain. The box is necessary when those electrical devices are installed outside.
9	Data Monitoring System	(1) Data monitoring device Measuring method: Measuring interval: 6 second Collecting data: DC - voltage /current, AC - voltage /current / power / frequency Monitoring device: Personal computer (WindowsXP or equivalent), serial signal converter (from RS485 to RS232C), uninterruptible power supply system (UPS), rack for personal computer (2) Required Function: Displaying instantaneous value, graph, operation performance of power conditioner, malfunction information and storing setting values for grid protection device in power conditioner (3)Remote Monitoring System Data control at site: Delivering data from the site to the server and storing transmitted data into the server Access to data: Displaying on Web site through internet Data download: Displaying and printing graphs Access control: User ID and password	1 Ls	Monitoring device for operation performance of the PV system. The data monitoring system is necessary in terms of operation and maintenance of the system.

List of Main Equipment

No.	Name of Device	Main Specification and/or Components	Qty	Purpose
10	Display Device	(1)Construction: Indoor hanging type, LED plane luminescence panel (brightness 85% and more, average illuminance of panel 200 lux/ 600 cd and more) (2)Display items: Instantaneous value of power output and cumulative generation energy (3)Display panel: 5~15 cm/ number (4) Size: 1000 mm x 1600 mm ±15%	1 Ls	Necessary device for enlightment of the PV system.
11	Distribution Board for Grid Connection	(1)Construction: Indoor free-standing type (2)Material: SPHC Steel plate (3)Size: 1950W x 800H x 350D (4)Devices to be store: Voltmeter, ammeter, watt-hour meter, and SPD (5)Breaker (Switch): MCCB4P1000AF/1000AT with alarm function	1 Ls	Distribution board (Power panel) to be used for pre-connection work to minimize the blackout required for grid connection work.
12	Fixing Clasp for PV Module	(1) Type: Fixing clasp for PV module (2) Material: SS400 hot dip galvanized finishing (HDZ45 equivalent) (3) Angle of inclination: 10° (4) Installed capacity: 264.6kW +173.8kW+50.4kW, to be considered of roof structure (5) Grounding: grounding rod or plane grounding pole, reduction conductor 22 mm^2 and above (6) Design wind velocity: 40m/sec.	776 pc	Clasp for fixing PV module onto supporting structure.
13	Supporting Structure for PV Module	(1)Material: JIS G3101, SS400 (2)Coating: Hot dip galvanized HDZ45 equivalent	1 Ls	Supporting and fixing PV modules

Note: The above quantity in the table might be changed depending on the conclusion of the Contract between the Contractor and the Procurement Agent.

Project Cost Estimation (Confidential)

This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant Aid.

1. Cost to be borne by the Japanese side:

2. Cost to be borne by the Cambodia side: Riel 0

Item	Amount
1. Clearing and leveling of the Site	Riel 0
2. Total (1.)	Riel 0

However, issuing commission of the permission for the persons related to the Programme to enter the project sites and providing office space to the Consultant will be borne by the Cambodia side.

3. Cost to be borne by the Cambodia side for Operation and Maintenance (every year)

	PPWSA
Personnel expenses	-
Expendable and replacement parts cost in the short run	Approx. Riel 7,000,000
Expendable and replacement parts cost in the long run	Approx. Riel 90,000,000
Total (in the short run)	Approx. Riel 7,000,000
Total (in the long run)	Approx. Riel 90,000,000

The equipment to be procured in the Programme can be operated and maintained by the existing maintenance staff of the facility including the cleaning PV panel. Therefore, there would be no additional personnel expenses. At intervals the equipment will require replacement of worn out parts and consumables. In the short run, most of parts and consumables to be needed will be covered by those provided in the Programme, only minor, locally available items have to be purchased by Cambodia side. After the provisions of the Programme have run out, necessary items that have to be purchased by Cambodia side will increase.

4. Conditions for estimation

(1) Time of estimation: March 2010

(2) Foreign exchange rate: US$ 1.00 = JP¥ 91.36, Riel 1.00 = JP¥ 0.02154

(3) Others: The above estimation was carried out in accordance with relevant rules and the guideline of Japan's Grant Aid.

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 site		●
4	To construct a parking lot if necessary		●
5	To construct roads		
	1) Within site	O	
	2) Outside the site and Access road		●
6	To construct the facility and install equipment	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities if necessary:		
	1) Electricity		
	a. The power distribution line to the site		●
	b. The drop wiring and internal wiring within the site	O	
	c. The main circuit breaker and transformer for the site	O	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	O	
	3) Drainage		
	a. The city drainage main (for conveying storm water, sewage, etc. from the site)		●
	b. The drainage system within the site (for sewage, ordinary waste, storm water, etc.)	O	
8	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		●
9	To ensure all the expense and prompt execution of customs clearance at the port of disembarkation in the recipient country		
	1) Marin or air transportation of the products from Japan or third countries to the recipient	●	
	2) To ensure all the expense and prompt execution of tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
10	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		●
11	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		●
12	To maintain and use properly and effectively the facilities that are constructed and the equipment that is provided under the Grant		●
13	To bear all 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		●
14	To ensure environmental and social consideration for the Programme		●

Note: ● means coming undertakings and O means already done or out of subject

Annex-6

Implementation Schedule for the Project