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# USAID'S GENERATION AND TRANSMISSION IMPROVEMENT PROGRAM (GTIP)

QUARTERLY PERFORMANCE REPORT SEPTEMBER 2011



CONTRACT: EPP-I-00-03-00004-00, TASK ORDER 08

## **September 2011**

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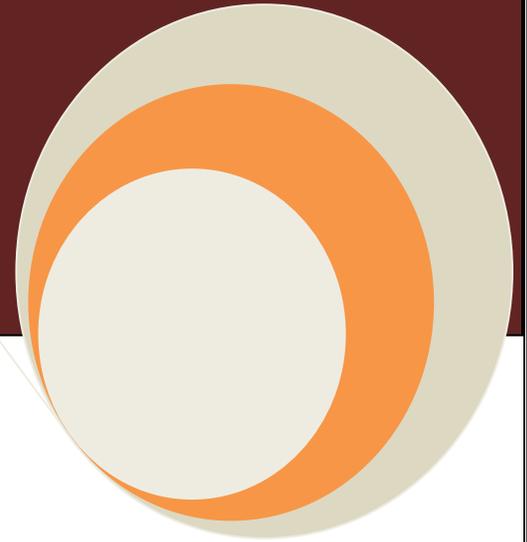
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# ACRONYMS

GTIP	Generation and Transmission Improvement Program
GOP	Government of Pakistan
FARA	Fixed Amount Reimbursable Agreement
GENCO	Generation Companies
GE	General Electric
PSRP	Power Sector Reform Program
CASA	Central Asia South Asia
NPCC	National Power Control Center
PEPCO	The Pakistan Electric Power Company
EECR	Energy Efficiency, Conservation and Renewable Energy
PMO	Project Management Office
EW	Energy Wing
ECC	Economic Coordination Committee
AEAI	Advanced Engineering Associates International
LNG	Liquefied Natural Gas
FODP	Friends of Democratic Pakistan
IMF	International Monetary Fund
NEPRA	National Electric Power Regulatory Authority
IPP	Independent Power Producer
PIIB	Private Power Infrastructure Board
NTDC	National Transmission and Dispatch Company
PSRP	Power Sector Reforms Program
PDIP	Power Distribution and Improvement Program
DISCO	Distribution Company
CPPA	Central Power Purchasing Agency Limited
WAPDA	Water and Power Development Authority
DBDP	Diamer Basha Dam Project
KKH	Karakoram Highway
TUTAP	Turkmenistan, Uzbekistan, Tajikistan, Afghanistan, Pakistan
OGRA	Oil & Gas Regulatory Authority
AEDB	Alternate Energy Development Board

# PROGRAM OVERVIEW

USAID's Generation and Transmission Improvement Program (GTIP) supports the jointly agreed upon interests of USAID and the GOP in power generation, transmission, and related policy reform activities. Current key activities include providing monitoring and implementation support to the following seven signature energy projects, announced by the Secretary of State, Hillary Clinton:

- Four repair and maintenance projects (3 GENCOs and 1 Tarbela. Total Funding \$68 million)
- Two multipurpose dam completion projects (Gomal Zam and Satpara, Total funding \$66 million)

These projects, when completed, will add more than 700 MW to Pakistan's generation capacity.

Project	MW per FARA	Expected Gains	
		Low	High
Muzaffargarh	165	440	475
Jamshoro	95	120	150
Guddu	55	35	55
Tarbela	80	88	128
Gomal Zam	17.4	17.4	17.4
Satpara	17.66	17.66	17.66
<b>Total</b>	<b>430.06</b>	<b>718.06</b>	<b>843.06</b>

GTIP is providing technical support for identifying and selecting new generation and transmission projects. Examples include the CASA 1000, TUTAP (Transmission Interconnection, under which power from the Central Asian Republics (CAR) would be transmitted to Pakistan through Afghanistan). Step I Due Diligence is completed for Diamer Basha, Kurram Tangi, Warsak and Mangla Dam Projects.

GTIP is also supporting generation & transmission related studies and the policy reform activities assigned by USAID. Examples include developing policies/procedures for the National Power Control Center and advisory services at MWP and the Planning Commission (Energy Wing).

**Staffing:** Contractor's level of effort is comprised of 85% Pakistani and 15% international staff.

**Location:** All Provinces and Federally Administered Tribal Areas

**Total USAID Funding:** \$191.06 million (including \$10.9 million for consulting services)

**Confidential information redacted**

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# EXECUTIVE SUMMARY

Project Highlights for the Reporting Period July-September 2011 are:

- Tarbela Dam's unit # 4 (after replacement of its windings under FARA) is now generating 195 MW. Prior to USAID intervention it was generating 87 MW; hence a gain of 108 MW has been achieved by replacement of windings.
- At the end of the quarter, the reservoir level of Gomal Zam was 699 meters above sea level which is one meter below the power intake.
- Acting Director, USAID Office of Energy, Mr. Luis Velazquez and Senior Energy Expert from GTIP project conducted a field visit to Satpara Dam site on Sept.21 - 22, 2011. By end quarter, the progress on construction was 27% completed. In Phase I, Main Dam and Power House # 1 & 2 are 100 % complete; Irrigation System is 91 % complete.
- GTIP team and the USAID team led by the Mission Director, Dr. Andrew Sisson, visited Muzaffargarh Thermal Power station on August 17, 2011. GTIP helped prepare the presentations and facilitated the group's visit. The group also visited the control rooms of Units 1 and 2 and inspected work in progress replacing superheater tubes in Unit 3. FARA work completed on Unit 1. So far, 170 MW, of lost generation capacity, have been recovered. The plant engineers estimate that the total gain will be 475 MW when the work is completed on Units 3-6. Additional gains are also anticipated through improvements in the efficiency of the plants.
- GTIP has prepared a policy paper on the role of Public Private Partnership (PPP) and the final draft is being reviewed internally by the GTIP team. The paper will soon be shared with USAID.
- GTIP held initial meetings with Pakistani institutional investors to determine their interest as potential financing parties for public private partnerships.
- Provided summary on latest position of circular debt/payables position to MWP.

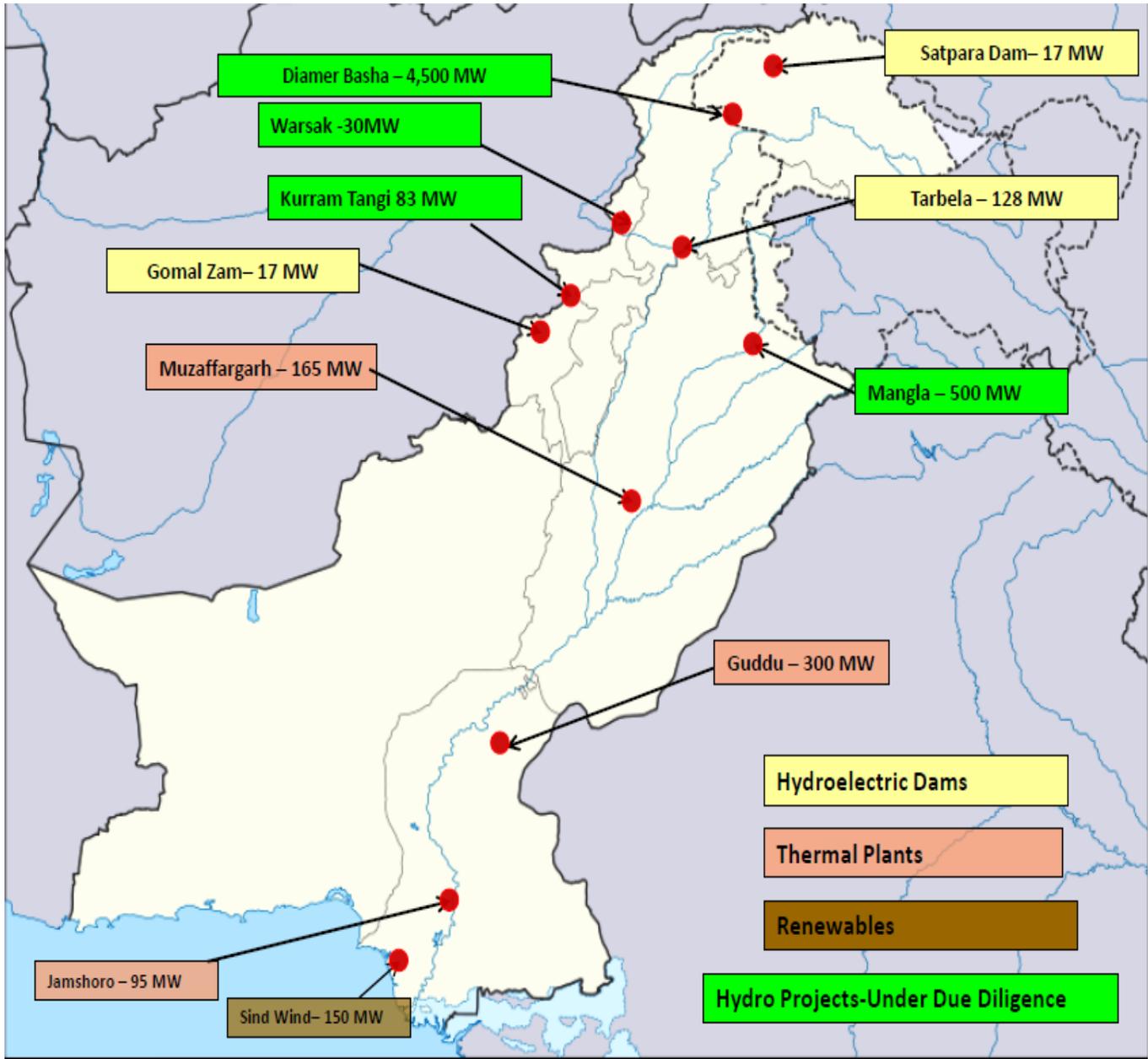
- Regular updating of MWP website to include daily electricity supply and demand data was carried out.
- First draft of the Standard Operating Procedures (SOP) for National Power Control Center (NPCC) is being prepared and is 97% complete.
- Alongside developing the SOPs, GTIP team is also developing a contingency plan for NPCC. The first draft of the plan is 10% completed.
- Provided support to Member Energy, Planning Commission in the development of a presentation on energy efficiency and conservation measures for the Prime Minister of Pakistan.
- GTIP prepared briefs and reports for USAID Energy Office, as a follow-up to the Chairman WAPDA's visit to Washington D.C. to discuss possible USAID support for the Diamer-Basha Dam Project (DBDP).



## Ambassador's Visit to Tarbela



# GTIP REACH IN PAKISTAN



<b>Punjab</b>	Mangla	Muzaffargarh		
<b>Sindh</b>	Guddu	Jomshoro	Sindh Wind	
<b>KPK</b>	Gomal Zam	Khurram Tangi	Warsak	Tarbela
<b>Gilgit Baltistan</b>	Diemer Basha	Satpara		

# Main Components of GTIP

## Component I:

### Project Monitoring and Implementation

#### **Key Personnel:**

- Salahuddin Rifai, Dispatch
- Saleem Paracha, Hydro
- Malik Ghulam Abbas, Thermal
- Michael Gembol, Generation
- Asif Majeed, Engineering

GTIP is monitoring the implementation of six Fixed Amount Reimbursable Agreement (FARA) projects, three existing thermal GENCO power plants (Muzaffargarh, Guddu and Jamshoro), one existing hydropower (Tarbela) and two new multipurpose dams (Gomal Zam and Satpara). GTIP is also coordinating with the implementing partners to achieve timely progress and the processing of invoices for reimbursement to the GOP from USAID.

Specific activities for the reported period were:

#### ➤ **Hydro:**

- **Tarbela FARA:** Tarbela reservoir level reached its maximum level of 1550 ft during the month of September. Unit # 4 (after replacement of its windings under FARA) is now generating 195 MW. Prior to USAID intervention it was generating 87 MW; hence a gain of 108 MW has been achieved by replacement of windings. Unit 1 & 3 windings have arrived at site and replacement/installation work on units will start in the next quarter. Shut down of the units has been approved accordingly. Purchase orders have been placed for all remaining equipment including digital governors and SCADA system, the installation is expected to be completed by May 2012. The project is expected to be completed by May 31, 2012 instead of December 31, 2011 (as per FARA). Total disbursement till September 2011 is \$9,509,917.

- **Gomal Zam Dam:** At the end of quarter, the reservoir level was 699 meters above sea level which is one meter below the power intake level. WAPDA was requested by USAID/GTIP to reduce irrigation releases to enable water reservoir to rise to power intake so that testing and commissioning of the power plant can be started. GTIP's expert visited the site for verification from Jul 25, 2011 to Jul 27, 2011. Progress at GZDP is on schedule as per Activity Agreement despite the fact that contractors were remobilized with a delay of one month. WAPDA is likely to start commissioning tests for power house sometime in the next quarter depending on the availability of water in the Gomal Zam reservoir. The Gomal Zam initiative is expected to be completed by February, 2012 instead of October 2011. The project commissioning has been delayed due to delay in the completion of switch board which was damaged during the 2010 floods. Total disbursement till September 2011 is \$31,178,000.
- **Satpara Activity Agreement:** Acting Director, USAID Office of Energy, Mr. Luis Velazquez and Senior Energy Expert from GTIP project conducted a field visit to Satpara Dam site on Sept.21 - 22, 2011. They verified the completion of works and the current status on the main dam, power houses 1 & 2, irrigation system and power houses 3 & 4. An amount of \$ 1,877,000 was disbursed in WAPDA's bank account during the quarter. Civil Works for power house 3 & 4 are in progress. By the quarter end, the progress on construction was 27% completed. In Phase I, Main Dam and Power House # 1 & 2 are 100 % complete; Irrigation System is 91 % complete. Phase II, which includes construction of Power House 3 & 4, work is underway. The project is on schedule for both phase I & II with actual completion by April, 30, 2013. Total disbursement till end September 2011 is \$11,274,300.

➤ **Thermal:**

- **Muzaffargarh Rehabilitation:** NPGCL, received MK Breakers for Unit Nos. 5 & 6 (FARA line item 37) in September. The claim will be processed by GTIP experts.

Air pre-heater elements for Unit No. 4 (FARA Line Item 11) at Muzaffargarh were received. Northern Power Generation Company Limited (NPGCL) requested its claim to be verified. GTIP experts visited the plant and inspected the material in August; 2011 and found some discrepancies in the material, therefore the claim was not forwarded to USAID.

Super heater tube replacement of Unit 3 was completed on September 15; the unit is expected to be returned to service in October. GTIP will verify the proper performance of the repairs, documentation and invoicing of the work, and actual increases in capacity and efficiency. There are some delays in overall completion of the FARA milestones due to issues of procurement and arranging foreign exchange. Now the project is expected to be completed by July, 30, 2012 instead of November 30, 2011 (as per FARA). Total disbursement till September 30, 2011 is \$4,464,500.

GTIP team and the USAID team led by the Mission Director, Dr. Andrew Sisson, visited Muzaffargarh Thermal Power station on August 17, 2011. GTIP helped prepare the presentations and facilitated the group's visit. The group visited the control rooms of Units 1 and 2 and inspected work in progress replacing superheater tubes in Unit 3. FARA work has been completed on Unit 1. 170 MW, of lost generation capacity, have been recovered. The plant engineers estimate that the total gain will be 475 MW when the work is completed on Units 3-6. Additional gains are also anticipated through improvements in the efficiency of the plants.

- **Jamshoro Rehabilitation:** Item# 5; Replacement equipment, Automatic Burner Control System and Data Acquisition System, for Unit #1 was received at Jamshoro Thermal Power Station (JTPS) in August. GTIP expert visited the site in September to verify the claim of \$270,000 which was later processed and submitted to USAID. There are some delays in the milestones due to issues of procurement and arranging foreign exchange. Now the project is expected to be completed by July, 31, 2012 instead of November 30, 2011 (as per FARA). Total disbursement for Jamshoro FARA till September 2011 is \$670,000.
  - **Guddu Rehabilitation:** The original FARA plan called for overhaul of one of the two 255-MW General Electric Combined Cycle Plants (CCP), which would have increased the capacity of the plant by about 100 MW to the plant capacity, improve its efficiency about 3.4%, and improve the reliability of the system by upgrading the obsolete gas turbine and steam turbine control systems. The GENCO and GE negotiated for over a year, trying to agree on the Scope of Work, price, and contract terms. However the implementation was delayed because of the differences on pricing. Rather than risk losing the FARA funding entirely, the GENCO requested AEAI assistance to evaluate another option of Siemens CCP. However, the GENCO then had positive meetings with GE at the Energy House on 7 & 8<sup>th</sup> September and signed the contract with GE on September 26. This breakthrough with the GE contract is expected to result in completion of milestones as per the original FARA by the end of July, 2012, before the summer peak demand season. The Combined Cycle Plants at Guddu produce some of the cheapest power in Pakistan due to efficiency and the burning of low-quality natural gas from nearby gas fields.
- **Fuel Additives Complaints:** There were complaints about the tendering process for fuel additives which were addressed to WAPDA, PPRA and Transparency International Pakistan. OIG requested USAID to assess the situation. GTIP experts assisted USAID to analyze the complaints and provide support as and when requested.
- **Environmental Monitoring & Mitigation Plans (EMMP):** WAPDA has prepared the checklists for the Implementation of EMMP for Satpara. In Gomal Zam, the work plan has been approved by WAPDA's Environmental Cell. Environment Health & Safety (EHS) officer has also been appointed for GZDP. GTIP is providing technical assistance and will monitor the implementation during site visits. EMPPs for Tarbela, Jamshoro & Muzaffargarh have been prepared and sent to USAID for review. For Guddu the EMMP is pending till the approval of revised FARA.

### Quarterly Reimbursement Summary till Sep 30, 2011

Total Reimbursement Claim  
 Submitted **\$57,096,717**  
 Amount Reimbursed **\$57,096,717**  
 Reimbursement In process **\$0**

Agreement		July-Sep 2010	Oct-Dec 2010	Jan-March 2011			Apr-Jun 2011	July-Sep 2011
Muzaffargarh	Requisition No.	1			2	3		
	Amount USD	167,616			3,734,384	562,500		
Jamshoro	Requisition No.			1				
	Amount USD			670,000				
Guddu	Requisition No.							
	Amount USD							
<b>Total amount requisitioned</b>		<b>167,616</b>		<b>4,966,884</b>				<b>0</b>
<b>5,134,500</b>								
<b>Amount reimbursed</b>				<b>4,572,000</b>			<b>562,500</b>	
<b>5,134,500</b>								
Tarbela	Requisition No.			1	2	3	4	
	Amount USD			3,330,000	3,330,000	2,479,917	370,000	
Satpara	Requisition No.			1			2	3
	Amount USD			7,115,300			2,282,000	1,877,000
Gomal Zam	Requisition No.			1	2		3	4
	Amount USD			19,928,000	5,125,000		1,000,000	5,125,000
<b>Total amount requisitioned</b>				<b>41,308,217</b>			<b>3,652,000</b>	<b>7,002,000</b>
<b>51,962,217</b>								
<b>Amount reimbursed</b>				<b>38,828,300</b>			<b>3,849,917</b>	<b>9,284,000</b>
<b>51,962,217</b>								

## ➤ Sindh Wind Project

### Key Personnel

- Daniel Potash, Senior Financial Analyst & Project Development
- Anser Ali, Project Development Advisor
- Aisha Fariel Salahuddin, Project Development Advisor
- Mohammad Khan Hoti, Project Finance

USAID requested GTIP to assist the Sindh Government in identifying new potential investors for this wind project. GTIP explored the possibilities, however in August USAID informed GTIP to minimize further activity and prepare a report summarizing activities. Some of the activities for July and early August are mentioned below:

- GTIP was contacted by Enrgo for help in getting land allocation for Enrgo from AEDB for its 50 MW wind project.
- GTIP also held a meeting with the International Finance Corporation (IFC) regarding IFC and USAID joining forces to develop Public Private Partnerships (PPP). The following points were covered:
  - Can USAID co-sponsor a project with IFC as there have been partnerships in other countries.
  - IFC's role in PPPs begins at inception stage of the project. The IFC advisory team comes in to structure and a competitive bid is required for the sponsor.
  - IFC's mandate is to support the private sector. As an example, with 49% government involvement, Sind Wind becomes a very hard sell internally. Since IFC has private parties clamoring for IFC funding, they cannot justify supporting such a heavily government-involved project.
  - However, if the project is structured and all parties have been identified and are on board, if at that final stage IFC is approached to support the private party in the deal then there can be discussion if USAID is comfortable with IFC.
- GTIP held initial meetings with Pakistani institutional investors such as Enrgo, IFC, and Arif Habib, to determine interest as potential financing parties for public private partnerships, relative to Sindh Wind Project.
- GTIP determined that Enrgo may be a viable partner in a wind project with the GOP on a public private partnership basis. Enrgo has indicated that it has no financing issues and is in touch with the relevant stake holders.

## **Component 2:**

### **POLICY AND REFORM**

#### **Key Personnel Seconded to MWP and Planning Commission:**

- Mary Webster, Policy Advisor
- Faraz Khan, Finance
- Ijlal Naqvi, Outreach
- Michael Gembol, Generation
- Tari Qazi, Transmission
- Gerrie Vermeulen, Transmission
- Akbar Yousaf, Hydrocarbons
- Imran Haider, IT

#### **I. Support to Governance and Reform Team (GRT), GOP**

GTIP provides support to the Ministry of Water and Power and Planning Commission in the implementation of the GOP's Power Sector Reform Program (PSRP). The activity is jointly performed with Power Distribution Improvement Program (PDIP).

#### **➤ POLICY:**

- Assisted MWP to address issues in tariff setting that relate to the Tariff Differential Subsidy, reduction of further accumulation of circular debt, appropriate tariff recovery for line losses and revenue collection issues.
- Preparing several reports which are expected to be completed by end October, 2011. The reports will cover the following topics:
  - Subsidy and Circular Debt
  - Line losses
    - NEPRA does not want to pass line losses along to consumers by allowing recovery for expenses that are avoidable, however companies need more revenue
  - Collections
    - How to address concerns of NEPRA regarding insufficient collections while still providing adequate revenue to companies.
    - If collections were greater, then there would be less of a subsidy required.

- The GTIP team has strengthened the relationship between GTIP team stationed at the Ministry of Water and Power and the government officials. This has been and will continue to be a task for all GRT representatives.
- MWP requested GTIP to review the issues regarding NEPRA notified tariffs, especially in light of the new legislation relating to NEPRA which is a work in progress.

➤ **Finance:**

- Provided summary on current position of circular debt/payables position for September 2011 to MWP.
- Completed an overview report on the Pak-US Energy Dialogue for the Additional Secretary, MWP.
- Group Support: Providing support to other GTIP members in tasks related to financial analysis
- PEPCO Report: Prepared an introductory report on PEPCO for the Additional Secretary, MWP.
- Consolidated Cash Flow Statement: Preparing a cash flow statement for various MWP entities, to decipher total payables and provide ongoing analysis.
- DISCOs Receivables Model: Gathered financial data including key indicators of DISCOs performance in receivable collections and circular debt related issues. Used information to prepare excel model, to assist MWP in monitoring, tracking progress and evaluating DISCO performance over a period of time.
- DISCOs Progress Report: Analyzed the current DISCOs Receivables Progress Report used to monitor defaulters and receivables progress for each DISCO.

➤ **Outreach:**

- Prepared Ministry of Water and Power newsletter on power sector reforms with contributions from the Ministry of Water and Power and its subsidiary departments during the quarter.
- Updated MWP website to include daily supply and demand data.
- Preparing a short report on Independent Power Producers for Additional Secretary MWP.

➤ **TRANSMISSION:**

- First draft of the Standard Operating Procedures (SOP) for National Power Control Center (NPCC) is being prepared and is 97% complete. The internal review process of the drafted SOPs continued during September among the GTIP experts and is 25% complete. GTIP technical team discussed the NPCC procedures and required changes for SOPs (1-5) have been incorporated. The review for remaining SOPs is progressing. The initial draft of the SOPs is scheduled to be completed by the end of October, 2011.

- GTIP team is also developing a contingency plan for NPCC which will act as the backup procedures in the wake of any disaster or an emergency. The first draft of the plan is 10% completed. There was no documented contingency plan available with NPCC; therefore the document is being prepared from scratch, after extensive secondary research on best practices worldwide, which will be customized for Pakistan. The initial draft of the contingency plan is scheduled to be completed by 10<sup>th</sup> of December.
- Induction Training Manual (Orientation & Operations) for NPCC's new recruits and the existing operators is being developed. There is no training manual for the staff available at NPCC. International best practices applicable to Pakistan are also being incorporated in the manual. The work on the first draft is 15% complete and is expected to be ready by 15<sup>th</sup> of December, 2011.
- Technical assistance to GTIP's team working on NTDC business plan is currently ongoing.
- GTIP technical team is in the process of collecting and analyzing data for the 132 kv grid review. By the end of October, 2011 the transformers portion will be completed whereas the GTIP team is waiting to receive data on 'lines' from NTDC by the end of November, 2011.
- Assisting NTDC's Planning Department on the Reactive Power Compensation (RPC) study. NTDC does not have this study done, expertise is needed to get this study done.
- GTIP team researched and prepared a presentation on options to import power from Uzbekistan, CASA 1000 and TUTAP as requested by the Secretary, MWP who returned from meetings in Tajikistan and Uzbekistan.

## 2. Support to Planning Commission

### ➤ Hydrocarbons:

- Energy Efficiency Projects: Provided support to Energy Wing (EW) in the preparation of a draft PC-II for technical assistance to the Planning Commission for energy efficiency projects to be financed by ADB, under a multi-tranche facility.
- Economic Coordination Committee summaries: Coordinated with Energy Wing (EW) staff and provided inputs on ECC summaries pertaining to petroleum fuels pricing, de-regulation and margin of marketing companies, extension of license for an upstream company, increase in no. of depots, etc.
- LNG Imports: Worked with GTIP staff to develop a Discussion Paper and Presentation for LNG imports for review with USAID.
- Energy Conservation: Provided support to Member Energy, Planning Commission in the development of a presentation on energy efficiency and conservation measures for presentation and discussion in MWP.
- Industrial Zones near dormant gas fields: Attended follow-up meeting of stakeholders at Energy Wing where potential gas fields were short-listed and follow-up actions were agreed. Coordinated with Energy Wing to finalize recommendations and minutes of meetings for circulation.

- Seminar on Energy: Coordinated with Energy Wing staff to outline the agenda and topics to be covered in a seminar proposed to be held on energy sector- issues/remedies. Participation of energy sector professionals is expected.
- General Technical Assistance and support to EW: Provided operational support to EW in miscellaneous planning issues.
- Shale Gas: The Directorate General of Petroleum Concessions (DGPC), responsible for upstream oil and gas sectors in MPNR had formally requested USAID's assistance to appoint a Shale Gas Expert to formulate the Shale Gas policy to effectively exploit these resources and increase domestic gas production. As a follow-up to this request, GTIP drafted a response on behalf of USAID to DGPC and later attended a meeting with the Director General to discuss various issues in upstream oil and gas and possible USAID support. GTIP developed minutes of the meeting and drafted the TORs of the Shale Gas expert who would support DGPC, in developing and implementing a shale gas policy. The TORs were submitted to DGPC.
- GTIP prepared a presentation for LNG imports and other areas of International Financial Institutions (IFIs) assistance to MPNR which was presented to the Additional Secretary, MPNR in the Energy House. As a follow-up to this meeting, another meeting was held with Secretary MPNR. The overall response from MPNR was positive. MPNR requested GTIP to hold follow-up meetings on the topic. Further work will depend on the response from MPNR.
- General Technical Assistance and support to EW: Provided day to day support to EW in planning issues and review of project proposals.
- Fertilizer gas pricing and subsidy issues: Discussed the issues with Sr. Chief (EW) and prepared comments with recommendations for follow-up.

➤ **IT Support:**

- Assisted in preparation of a brief on Tariff Mechanism & the Determinations for 2011-12 on the basis of discussions with NEPRA.
- Gathering and streamlining information on power sector, specifically supply and tariffs, of South Asian Countries.
- Assisted in preparation of a note on Independent Power Producers' issues others than Circular Debt, comprehensive brief on Issues related to LPG, and a presentation on Circular Debt.
- Presentation on Power Sector Crisis for Seminar on Growth Strategy organized by Planning Commission on July 13-14, 2011 at Marriot Hotel Islamabad.
- Collected information on impact of gas diversion from the power sector to fertilizer plants and import of urea.
- Collected information for a brief on relationship between existing gas price and reserves.
- Provided assistance in preparing presentation and a brief on 'Energy Conservation' for the Prime Minister.

- Provided assistance in preparing a presentation on the Power Sector crisis for workshops related to “New Economic Growth” organized in Karachi, Lasbela and Gujrat.
- Updating presentation on Circular Debt for the Prime Minister.

### **3. Coordination, Capacity Building and General Support Services to USAID**

#### **Key Personnel:**

- Munir Ahmad, Policy
- Salahuddin Rifai, Senior Energy Advisor
- Dan Vincent, Capacity Building

Following are the activities performed:

- As a follow up to the Donors Forum-Energy Roundtable and as requested by USAID, GTIP team continued to collect data on energy sector initiatives from several donor agencies to provide a consolidated snapshot on the ongoing projects. Follow up with JICA, World Bank and ADB for collection of data continued during the month. The response is still awaited.
- Prepared the following papers/documents in August for USAID:
  - Sources of Electricity in Pakistan.
  - Decentralization efforts- dissolution of PEPCO( Privatization)
  - Organizational profile and role of Oil & Gas Regulatory Authority OGRA in the power sector.
  - Energy Sector Investment Climate & Private Sector Engagement.
  - Overview of FARA’s with updated status and progress.
  - Role of Alternate Energy Development Board (AEDB).
  - Prepared document that lists GOP’s commitments to IMF, Friends of Democratic Pakistan (FoDP) and under the Power Sector Reforms Program (PSRP) for USAID Energy Office.
  - Tarbela briefing – overview of project scope, benefits, status.
  - PAKINFO – overview of project, status, accomplishments, including the status on PSRP and FoDP report.
- Compiled a list of deliverables as required under the USAID contract with AEAI, and compiling the copies of documents in the electronic library. This activity included collecting documents prepared since 2008 to date, by reviewing all the documents, files, shared folders and organizing the files for easy access. Internal meetings with the project consultants continued during the month for this task, which is 50% complete by month end, and is expected to be fully complete by November 30, 2011.

The documents/deliverables are of the following types:

- Project reports (monthly and quarterly)
  - Financial reports
  - Sector studies
  - Feasibility studies
- During the quarter GTIP team prepared briefs/papers on overview of FARAs and additional information for the papers/reports submitted to USAID for Strategic Dialogue between USG and GOP, such as sources of Electricity, decentralization efforts, dissolution of PEPCO; Privatization, OGRA, Energy Sector Investment Climate & Private Sector Engagement.
  - GTIP team provided updated information on all the FARA projects to USAID including the current status of each project, its cost, disbursements to-date and expected disbursement for the next quarter.
  - Projected disbursements schedules were modified and updated.
  - Event brief for Ambassador's visit to Tarbela Dam was prepared.
  - GTIP team prepared detailed analysis titled, Overview of the Power Sector, in response to the questions raised by USAID Energy office.

#### **4. GENCO MANAGEMENT CONTRACTS**

##### **Key Personnel:**

- Malik Ghulam Abbas, Generation
- Michael Gembol, Generation

GTIP continued to work with PPIB to prepare contract formats and bid documents. PPIB has changed its original plan. PPIB now requires the contractors to convert two plants, at the selected station, to burn imported coal. GTIP has advised that this will require an extremely difficult capital investment that would be better accomplished through a separate Request for Proposal (RFP), instead of being combined into a much smaller O&M contract. GTIP will continue to work in a support and advisory role, but has concerns about the design of O&M contracts. GTIP completed an Attainable Improvements Analysis (AIA) showing how much performance improvement can be expected from the FARA rehabilitation projects, fuel changes, and the management contracts. The AIA shows that the FARA work will regain most of the lost capacity and efficiency, and this undercuts some of the technical improvements expected from Management Contracts.

## 5. NTDC BUSINESS PLAN

### Key Personnel:

- Daniel Potash, Finance & Project Development
- Aisha Fariel Salahuddin, Project Development
- Gerrie Vermeulen, Transmission
- Tariq Qazi, Transmission

The initial draft of the NTDC business plan is expected to be completed by 15<sup>th</sup> December, 2011.

Specific activities are:

- GTIP continued evolving the financial model and structural options to capture the exact dynamics of circular debt, which is the key problem of the power sector in Pakistan.
- Updated circular debt analysis and incorporated most recent figures into the NTDC Business Plan for MWP policy-making.
- Analyzed the role of Central Power Purchasing Agency Limited (CPPA) within NTDC, modeled the operational cost of CPPA independent of NTDC.
- GTIP continued developing the draft business plan and shared this at a high level workshop with NTDC key managers. GTIP and managers exchanged ideas about NTDC's future and NTDC provided initial feedback on key GTIP observations for incorporating into the business plan. The key issues GTIP covered were:
  - Role of regulator should be to resolve disputes amongst licensees, to safeguard interests. Good governance, in and of itself, can solve problems. A spot market in power cannot be implemented anytime soon, new power generators are not coming soon.
  - NEPRA loss figure of 2.5% is an assumption and should not be used to disallow revenue. Until 2009 loss allowed is the actual amount. In 2010 the problem of actual vs. assumed comes in. The issue is being negotiated with NEPRA and a resolution is forthcoming.
  - Reform of power market has issues. CPPA, for example, as a stand-alone body cannot contract for power, because CPPA is not creditworthy and has no assets. CPPA should be kept within NTDC. According to NEPRA legislation the only activities permitted to be licensed are generation, transmission, and distribution. There should be bilateral contracts between the GENCO's and DISCO's and NTDC should not be in the power marketing business.
  - Business planning should include deep involvement of middle management not just top officers. As it regards circular debt, World Bank oversaw a multi-party

agreement some years ago. There is need for another agreement wherein all parties acknowledge all debts and agree to a time bound repayment schedule.

- Deepened the analysis of technical matters with additional engineering personnel of GTIP, to link transmission technical performance and financial impact, now and in the future.
- GTIP technical team visited Lahore on the following dates; 8<sup>th</sup>-11<sup>th</sup>, 13<sup>th</sup>-15<sup>th</sup>, 28<sup>th</sup>-30<sup>th</sup> of September, 2011. Had a series of meetings with NTDC to learn management's thinking on future directions. GTIP team met the following NTDC officials:
  - Waseem Saadat, Manager Corporate Planning, NTDC
  - Muhammad Akhtar Chaudhry, HR & Admin. Director, NTDC
  - Muhammad Daud, GM(P), NTDC
  - Ehsan ul Majeed, GM (CPPA), NTDC
  - Shan H. Zaidi, GM (SD), NTDC
  - Sharafat Ali Sial, GM (GSC), NTDC
  - Tahir Mahmood, GM (Projects), NTDC
  - Shan Zaidi GM (Services Division)
  - Raza Abbas CE (Design ) NTDC
  - Rama Muhammad Amjad, GM (WPPO)
  - Aftab Alam, Manager in office of GM GSO, NTDC
  - Qamar Iqbal Bhatti, GM (GSO)
  - Dilber Ghori, Secretary of the BOD
  - Syed Khalid Ali Shah, Manager Finance CPPA

Some of the highlights of the meeting held in Lahore are:

- ❖ The planning experts highlighted their strategy to overcome bottlenecks and system constraints in response to GTIPs query. They explained that the data of overloaded power transformers and transmission lines collected by GM (Grid System Operation) is shared on regular basis with the GM (Power Planning) which is then used as impetus in preparation of their augmentation, extension, and expansion plans.
- ❖ The salient features of the Least-Cost Generation and Transmission Expansion Plan, recently prepared by Planning Department, with the help of SNC Lavalin were discussed. The detailed plan and electricity demand forecasts, as promised by CE (Planning) are now available on NTDC website.
- ❖ The Load Flow Study analyst and Electricity Demand Forecast expert explained their working, in detail along with their achievements; and the difficulties, they foresee, in near future, consequent to unavailability of qualified engineers and lack of modern training facilities.

- GTIP met with the MWP team to discuss ideas on NTDC and Central Power Purchasing Agency (CPPA) business planning and restructuring. Different alternative plans for CPPA were discussed which now need to be reconciled by the stakeholders.

## **COMPONENT 3:**

### **NEW PROJECTS, PLANNING & DEVELOPMENT**

#### **Key Personnel:**

- Mian Shahid Ahmad – Engineering & Finance
- Ghulam Abbas – Hydro
- Muhammad Khan Hoti- Finance

When projects are identified by the GOP and others to USAID as candidates for USG support, USAID requests GTIP to undertake a two-step Due Diligence exercise to determine whether the proposed project meets the requirements established by USAID. The criteria relate to technical viability, cost and overall effect.

#### **➤ HYDRO:**

- GTIP prepared briefs and reports for USAID Energy Office, as a follow-up to the Chairman WAPDA's visit to Washington D.C. to discuss possible USAID support for the Diamer-Basha Dam Project (DBDP).
- In response to information requirements of USAID, provided advice and assistance to WAPDA to prepare an information package. WAPDA then presented a proposed Activity Schedule and Expenditure Plan (ASEP) to USAID listing activities to be initiated and the expenditure expected to be incurred over next two years in support of the Diamer Basha Dam (DBDB) in case USAID made available up to \$200 million for the project.
- USAID has listed projects in the energy sector for GTIP to investigate and review under its "Due Diligence" exercise. Step 1 Due Diligence reports have been submitted over the last few months for Diamer Basha Dam, Kurram Tangi Dam, Warsak Dam and Mangla Dam. As a follow up, to USAID's requests for clarifications or any other information, from time to time, GTIP continued to provide support for such queries during September as well. Major effort during the period was devoted to review pre-project activities related to the DBDP. For Kurram Tangi, USAID has authorized Step 2 Due Diligence and it is underway. Since irrigation is a major component of the project, the Step 2 Due Diligence will be closely coordinated with USAID's Office of Agriculture. USAID and WAPDA have established a Joint Kurram Tangi Task Force to accelerate process.
- A timeline of activities and two year cost schedule for the DBDP, was provided to USAID as requested.

- GTIP experts continued to collect and update the ongoing analysis of DBDP for USAID. In this regard several meetings and follow-ups with WAPDA officials continued during the month. Also met including GM Hydel Development and Chief Engineer in Lahore. GTIP learned that so far WAPDA has awarded 12 contracts for construction of residential facilities for personnel that will live at the site during the 10 year construction period of the project. Eleven of these contracts total Rs 3.17 billion (about \$36 million) and most contractors are mobilized at site. One contract is in process. GTIP provided a descriptive matrix for each contract with related information to USAID. GTIP also provided cash flow of 11 contracts and Environmental Impact Assessment, Socio Cultural and Heritage activities of project on six monthly basis to USAID to establish the funding requirements on each activity.
- A meeting was held with ADB (Country Director and Assistant Country Director) on Diamer Basha, with GTIP experts and USAID Activity Manager. ADB views itself its role as lead lender and financial advisor.
- GTIP submitted a 'synopsis and commentary on WAPDA's financial plan' for the DBDP to USAID. Accompanied by Chief of Party, GTIP, held detailed deliberations with the finance team in WAPDA. Principal accomplishments included helping steer WAPDA's team to break up DBDP's costs in baskets that would indicate potential sources of financing e.g. Energy Cost Adjustments, multilateral debt, international commercial debt, GOP equity and subordinated debt and local currency capital market instruments such as Sukuk bonds. Helped WAPDA's team to focus on the limited debt capacity available in the local market and explore external sources in an efficacious manner, which could include Public Private Partnerships (PPPs) in certain key aspects, e.g. the powerhouse declared as IPP. Discussed with WAPDA ways and means, to view the Dam as a source of revenue generation and not just a cost centre, as provided in report to USAID Revenues of over US\$ 500 million per annum identified to strengthen DB Dam's sources of repayment in the first instance, and thereafter incremental revenues to finance further hydro-electric power projects in the public sector or by way of PPPs. Convinced WAPDA to go back to the drawing board to chart out its broad sweep financial plan for DB Dam.
- WAPDA has awarded consultancy contracts to international companies to conduct Feasibility Study for rehabilitation of the Mangla and Warsak power stations. On direction from USAID, to investigate progress on the Mangla Power Station rehabilitation project, several inquiries were made and meetings were held with WAPDA officials. Following discussions, WAPDA has invited GTIP experts to attend an upcoming presentation on Mangla Dam to be made by the MWH Consultants on 10<sup>th</sup> October 2011. GTIP team plans to attend and will report results to USAID. Meetings were held with WAPDA to determine progress on Mangla. GTIP team collected monthly progress reports and consultants site visit reports prepared by MWH Consultant and provided support on specific rehabilitation requirements on plant foundation and sub soil conditions to enhance the useful plant life for another 50 years. GTIP team emphasized the need to meet time schedule which is being delayed by two months.

- Soft and Hard copies of Feasibility Report (10 volumes) of DBDP were obtained from WAPDA and delivered to USAID in response to a request for more information regarding the project.

➤ **Transmission:**

- GTIP technical team reviewed the final due diligence of the CASA 1000 study and also reviewed the MoU as requested by MWP. Both GTIP team and NTDC planning department team recommended the ministry to not sign the MoU since there were too many discrepancies. A report highlighting these discrepancies and recommendations was provided to the Secretary.
- GTIP experts came up with the concept of Turkmenistan, Uzbekistan, Tajikistan, Afghanistan, and Pakistan (TUTAP) Transmission Interconnection, under which power from Central Asian Republics (CAR) would be transmitted to Pakistan through Afghanistan. This project is highly important for regional stability and is likely to promote peace in the conflict affected areas of Afghanistan-Pakistan which is one of the broader aims of USAID. The concept envisages power imports to Pakistan, up to 6000 MW, under a set of contracts with the CAR at prices to be negotiated (anticipated to be favorable compared to Pakistan's cost of generation). TUTAP power can make an enormous difference in the cost of power. This amount of power is enough to stop load shedding, stop peak outages, back down the most expensive thermal plants burning imported fuel oil, reduce oil imports and return the MWP to profitability. MWP will then be able to finance new capacity as needed to meet future load growth.
- After initial meetings and data collection GTIP provided a presentation on TUTAP project to MWP. The Minister and Secretary MWP showed great interest in the project- the Secretary formally, on a Most Immediate basis, requested USAID for a detailed briefing in mid-July and preliminary studies of the project. GTIP provided a briefing to Acting Director and COTR, USAID in July and is waiting for authorization to provide the requested briefing.

➤ **Importing Power**

- GTIP Advisory team compiled information for the report regarding TUTAP on behalf of MWP.
- GTIP Team compiled various studies/Analysis reports regarding the import of power from Asian Countries via Afghanistan as instructed by USAID and MWP.

➤ **Public Private Partnership:**

- GTIP has prepared a policy paper on the role of Public Private Partnership (PPP) and the final draft is being reviewed internally by the GTIP team before it is sent to USAID.
- GTIP team held a meeting with the World Bank officials on the 21<sup>st</sup> of September 2011 in Islamabad. Meeting with the World Bank was held to ascertain the World Bank's thinking and to find mutual grounds for possible co-operation. The following WB officials were met:
  - Mr. Rashid Aziz, Senior Energy Specialist
  - Mr. Anjum Ahmad, Senior Energy & PPP Specialist

Highlights of the meeting:

- GTIP learnt that The World Bank were First Movers in promoting PPPs in the country, had vested specialists in PPPs in their Islamabad Office and to-date had spent funds in helping GOP set up the architecture and support network, administrative, legal, corporate, financial, policy and social.
- The WB was keen for USAID to assist in the financial close of the first PPP in run-of-the-river hydro-power generation, Suki Kinari (SK Hydro) on the Kunhar River in Khyber Pakhtunkhwa ( KP ) with a capacity of 840 MW. The assistance could be purely technical in finding a professional world class project developer.
- The WB has officially expressed interest in providing debt financing of up to US\$ 600 million with Lead Arranger role for the IFC.
- The WB was interested to ultimately lead financing for run-of-the-river hydro-project at Dasu with capacity of about 4,000 MW and estimated project cost of approximately US\$10 billion. Consultant for conducting detailed feasibility studies has been selected by the Bank and work should proceed shortly.
- Of particular interest to the Bank was the prospect of PPPs in GENCOs, currently being considered for O&M contracts by GOP.
- The meeting ended on a positive note. GTIP team feels that WB could be a potential partner, depending on direction given by USAID post submission of GTIP's PPP paper.

# MEDIA & COMMUNICATIONS

## Key Personnel

- Ijlal Naqvi

Activities for the reported periods were:

- Accompanied the team that visited Muzaffargarh Thermal Power Station in connection with the visit of USAID Mission Director for Pakistan Andrew Sisson on August 17, 2011. Did media coverage (done jointly with USAID Docs office) that included print (Express Tribune Pakistan Today, Associated Press Pakistan) and television (Aaj, Geo).
- Attended regular monthly Communications Working Group Meetings led by DOCS office. In these meetings all communications specialists discuss their projects achievements for that particular month and the problems faced in the visibility of the work done. The emphasis is laid on making each and every initiative highlighted and visible in the media and to create awareness in the public about the role USAID is playing in the development sector in Pakistan.
- Following success story, Reviving Tarbela, was developed and distributed.

# Reviving Tarbela

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Photo: The Power House at Tarbela Dam

The insulation windings in three generator units of Tarbela's mighty powerhouse had started to fall apart. Their overheating had to be avoided by running the turbines at a reduced load, but this meant more loadshedding – more students unable to study in the evenings, more layoffs at industries, and sweltering sleepless nights everywhere in Pakistan.

Since power generation commenced at Tarbela in 1975, it has been the mainstay of Pakistan's power sector. With US assistance and international funding, Pakistani engineers built the world's largest rock filled dam and made substantial scientific contributions to the techniques of building of big dams. Tarbela set the gold standard for how Pakistani successes could be achieved in partnership with the American people.

Thirty-five years on, Tarbela still stands strong as a mainstay of Pakistan's power supply. Its low-cost production is essential to keeping electricity prices down for Pakistani consumers, just as the water management it enables is essential to irrigation and flood management on the Indus.

Thanks to the timely assistance by USAID in providing new insulation windings, one of the turbines at Tarbela is now producing 108 more MW than when it was audited prior to the repair. Along with the replacements to the windings at two more turbines, Tarbela will now be able to produce 480 GWh more than it would prior to the intervention, which is enough to supply the annual electrical consumption of 130,000 households. Ongoing upgrades will add computerized controls to the powerhouse that will improve the sustainability of the powerhouse by increasing the precision and responsiveness of power dispatch.

American assistance to Pakistan at Tarbela modeled a new mode of aid under which Pakistan's Water and Power Development Authority was reimbursed a fixed amount for an agreed maintenance program. The work done is both timely and transparent, meeting the highest standards of governance in delivering crucial assistance. Tarbela can once again represent the best of what Pakistan and the US can achieve together.

# Administration/Management Support to GTIP

## Key Personnel:

- Dan Vincent, Administration and Management
- Anjum Sarfaraz, Administration and Procurement
- Syed Hussain Al Azeem, Finance
- Muhammad Awais Shabir, IT

Administration is structured to support on-going and planned project activities while ensuring contractual compliance. Administration encompasses the following functions: Accounting/Finance, Human Resources, Procurement, Contracts, Logistics and Communications. In implementing these functions, processes and policies are developed to ensure uniformity of efforts.

**Accounting/Finance:** A draft budget was developed that included estimates from respective task leaders. Miscellaneous payments have been made to the vendors during September. Payroll and financial reconciliations completed. Accounting/finance policy is being revised.

**Human Resources:** One support staff member was added during the quarter. Recruiting process for a communication specialist is completed who will be joining GTIP in October. One new member hired as a consultant (Anser Ali)

**Procurement:** Purchase Orders placed for operations; RFP evaluated and POs issued for technical services which include Infra D (Site selection Sindh Wind) and Auriga (NTDC policy & procedures). RFP issued for Environment Mitigation Monitoring Plans (EMMPs) to support FARAs, technical services of a consultant, legal firms for Sindh Wind, medical insurance, car lease and computers. Purchase Orders placed to support operations, for example, office equipment/supplies and technical services. Request for proposals issued for security services. Procurement policy is being revised.

**Contracts:** All 4 Concurrence requests for travel and all 7 requests for staffing approved by USAID. Consent to place commercial agreement with Auriga was approved.

**Logistics:** More than 50 Trips (arrangements, Per Diem & documentation), evaluated potential guesthouses for staff. Arranged international travel for employees. Obtaining visa extensions for the international staff is in process. Surveys of other firms to compare employee benefits have been completed. Negotiated reduced lodging rates in Lahore. Security protocols and resources are being evaluated. Exterior improvements being developed.

**Communications:** Trouble shooting IT equipment in office and for operations at ministries; all related matters have been solved during this month. Developing a library for the office. Developing report writing aids for technical staff. IT policy is being revised.

**General Support:** Briefings prepared to support USAID for PAKINFO, Energy Summit between USG & GOP and Tarbela. Investigating energy efficiency measures for the office.