



**FINAL NARRATIVE REPORT
IRFFI/UNDG IRAQ TRUST FUND (UNDG ITF)**

<p align="center">Participating UN Organization(s)</p> <p>United Nations Development Programme</p>	<p align="center">Sector(s)/Area(s)/Theme(s)</p> <p>Old Cluster: E Infrastructure Rehabilitation</p> <p>New Sector: ERDSOT</p>
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<p align="center">Programme/Project Title</p> <p>E4-07 Rehabilitation of Unit Nos. 2 and 4 at Al Mosul Gas Power Station</p>	<p align="center">Programme/Project Number</p> <p>ATLAS Project Number: UNDG 66980; UNDP Iraq 38901.</p> <p>ATLAS Award Number: UNDG 54980; UNDP Iraq 35995</p>
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<p align="center">Programme/Project Budget</p> <table style="width: 100%;"> <tr> <td style="width: 30%;">UNDG ITF:</td> <td>USD 17,585,450</td> </tr> <tr> <td>Govt. Contribution:</td> <td>USD 0</td> </tr> <tr> <td>Agency Core:</td> <td></td> </tr> <tr> <td>Other:</td> <td></td> </tr> <tr> <td>TOTAL:</td> <td>USD 17,585,450</td> </tr> </table>	UNDG ITF:	USD 17,585,450	Govt. Contribution:	USD 0	Agency Core:		Other:		TOTAL:	USD 17,585,450	<p align="center">Programme/Project Location</p> <p>Region (s): Coverage area national as project is supplying to the National Iraqi Electricity Grid</p> <p>Governorate(s): Ninewa Governorate</p> <p>District(s) Mosul</p>
UNDG ITF:	USD 17,585,450										
Govt. Contribution:	USD 0										
Agency Core:											
Other:											
TOTAL:	USD 17,585,450										

Final Programme/ Project Evaluation	
Evaluation Done	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Evaluation Report Attached	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>

Programme/Project Timeline/Duration
<p>Overall Duration Start 16 August 2004; Operationally closed December 2008</p> <ul style="list-style-type: none"> • Original Duration • Original programme/project duration: 24 months till 16 April 2006. <p>Programme/ Project Extensions</p> <ul style="list-style-type: none"> • Retroactively extended in September 2007 • Timeline extended till December 2008.

FINAL NARRATIVE REPORT

I. PURPOSE

a. Introduction to the Project

Mosul Gas Power Station (GPS) consists of 12 x 20 mega watt (MG) gas turbine units, of which four were manufactured by Hitachi Ltd. This project addressed the technical rehabilitation of two existing Hitachi Units No. 2 and No. 4 with additional work completed as the Unit 4 rotor was sent to Japan Hitachi Plant for refurbishment.

Implementation of this rehabilitation project resulted in reinstatement to capacity of Units No. 2 and No. 4 that provides the generation of 30 MW of electricity. In addition this project has added significant extension of the operational life span of each unit and restored the overall output of the plant. The rehabilitation of the two other Hitachi Units at Mosul Gas Power Station Units No. 1 and No. 3 is being carried out under a separate bilaterally funded project. After completion of the rehabilitation works, the power station is now generating an additional 30 MW of electric power. This project will contribute to the decrease of load shedding and blackouts throughout Iraq and permit more reliable supply of electricity to Iraqi people especially for the residents of the city of Mosul and surrounding areas.

b. Objectives

There were two main objectives:

1. The generating capacity, availability and reliability of Mosul GPS increased (Units Number 2 and 4).
2. The plant management and staff able to operate and maintain the units in accordance with international standards.

Outputs: The planned outputs were to ensure that:

1. Gas Units Number 2 and 4 at Mosul Gas Power Station rehabilitated with increased operational reliability.
2. Selected essential spare parts supplied to Mosul Gas Power Station, which will be available in stock for emergency repairs and routine maintenance - in order to improve the reliability of generation.
3. A substantial number of plant engineers trained, who will be able to operate and maintain the power plant for higher levels of performance and in turn train other junior technical personnel (engineers and technicians).

c. Relevance of the project is in accordance to the following benchmarks and associated outcomes which are stated in the: UN Assistance Strategy for Iraq, Millennium Development Goals, The Iraqi National Development Strategy and the International Compact with Iraq.

➤ UN Assistance Strategy for Iraq:

- UN Cluster 4 Infrastructure and Results Matrix Housing:

The relevant excerpts from the 2006-2007 UN Assistance Strategy for Iraq are as follows:

- UNCT Goal 2:
Assist in the provision of basic services and promotion of community development and participation:
 - Cluster Outcome 2.6:
Rehabilitation and governance of infrastructure at local level.
 - E3: Increased availability of electricity, particularly to rural and low income areas.
- UN Millennium Development Goals (MDG): MDG 7 Target D:
To have achieved significant improvement in the lives of at least 100 million slum dwellers by 2020.
 - The Iraqi National Development Strategy (NDS):
The rehabilitation of Mosul GPS is based on Pillar II 10 that prioritizes increasing the electricity generation and distribution to meet current and projected needs.
 - International Compact with Iraq (ICI):
The rehabilitation of Units to generate electricity at Mosul Gas Power Plant links into several components of the ICI Section 4.

The provision of reliable electricity is the highest mentioned priority by persons in a survey Results of Field Survey for Needs and Opinions of the Poor in Iraq. Conducted by Mr. Khalid Hantoush Sachet (Sept 2008), the survey identified that electricity was the most requested need from 22.3% of 11,198 families represented in ten (10) governorates. Electricity is considered critical and core to the development of the private sector and economic development.

d. Primary Implementing partners, stakeholders, and key beneficiaries

The implementing partners were the Ministry of Electricity of Iraq; the company Hitachi Limited Japan, Mosul Gas Power Station. Key beneficiaries include the entire population of Iraq as the increased production capacity feeds into the national Iraqi electricity grid

II. ASSESSMENT OF PROGRAMME/ PROJECT RESULTS

- a. Project E4-07 is now operationally closed with regular post commissioning monitoring ongoing. Financial closure will follow with the completion of all financial obligations with certification issued.

Key outputs achieved include:

1) Unit Number 4 is 100% complete and fully operational:

- Final completion certificates for Unit Number 4 have been issued;
- According to provisions of the contract, upon completion of the defect liability period and issuance of certificate of final completion, performance guarantees have also been released;
- Hitachi has delivered load coupling to Mosul;
- Rotor of Unit Number 4 transported to Japan and returned back to Mosul after repairs in Hitachi Works.

2) Unit Number 2 is 100% complete and fully operational:

- Final completion certificates for Unit Number 2 have been issued;

- According to provisions of the contract, upon completion of defect liability period and issuance of certificate of final completion, performance guarantees have also been released;
- 3) Spare parts and 105 tons of equipment have arrived at the site for emergency repairs and routine maintenance, in order to sustain the increased power generation. 100% complete.
- MoE requested additional essential spare parts after completion of UNDP procedures for procurement. These additional spare parts were ordered and delivered.
- 4) All drawings, manuals and test certificates issued are 100% complete.
- 5) Nine (9) Mosul site engineers have undergone extensive training at the manufacturer's facility in Japan. One (1) Iraqi Technical Adviser trained in Japan increasing national capacity for rehabilitation and commissioning. 100% complete.
- 6) Fifty (50) un-skilled/ semi-skilled workers were provided with "on the job" training. Three (3) engineers were trained in Amman on commissioning of Units. Forty (40) to fifty (50) persons were provided employment during rehabilitation commissioning works. 100% complete.

The Ministry of Electricity and in particular the MoE Mosul Gas Power Station are the primary beneficiaries in this project. UNDP international engineers and specialists have worked closely with the engineers of Mosul Gas Power Station, representatives of Ministry of Electricity finalizing the scope of work for the various systems, developed specifications and related contracts. Local expertise was utilized to the greatest extent possible with the aim of ensuring technology transfer and to build capacity with Iraqi engineers to carry out similar projects independently in the future.

- b. An overview of how achieved outputs have contributed to the achievement of the outcomes and variance in actual versus planned contributions to the outcomes.

Rehabilitation works on Unit Number 2 have been completed and the Unit was energized during this reporting period and satisfactorily running at 15 MW due to low gas pressure and, additionally, as a precaution due to aging as elaborated below with the capability of generating 19 MW.

Rehabilitation of Unit Number 4 was conducted successfully on schedule and the Unit was energized and satisfactorily running at 15 MW due to low gas pressure and additionally as a precaution due to aging, also with the capability of generating 19 MW.

As a result of detailed discussions with the engineers at Mosul, it was learned that the loading of the two Units has been kept low as a precaution for reasons of aging of the Units and the fact that the surrounding area of the gas turbine power plant had been subjected to heavy bombing, as a result of which heavy vibrations were experienced on the turbine foundations.

The rotor for Unit Number 4 was shipped to Hitachi Japan in order to reap optimal benefits in October 2008 and arrived back at Mosul Gas Power Plant during December 2008.

Most financial obligations have been released, when identified milestones were achieved as per contract. This has paved the way for the operational closure and towards financial closure.

After completion of the defect liability period, the final completion certificate for the project was issued and the financial obligation i.e., the 5% retention was released. Additionally, the release of the performance security has been completed.

c. Contribution of the project/ to the ICI, NDS, MDGs and Iraq UN Assistance Strategy.

The rehabilitation of Mosul Gas Power Station reflects the Iraqi MoE expressed need to assist in ensuring efficient operation, management and maintenance of the Iraqi national electricity production and supply to the grid network. The increase in the availability of reliable electricity is considered core and one of the leading variables to socio-economic recovery, private and international investment, the private sector, and better provision of basic essential humanitarian public services in Iraq.

Related to the International Compact with Iraq (ICI): The rehabilitation of Units to generate electricity at Mosul Gas Power Plant (MGPS) links into several components of the ICI:

Section 4 realising the vision-the socio-economic context in point 2; Revitalize the private sector, in particularly through the creation of an enabling environment; and point 3; improve the quality of life starting with the provision of basic services. This is further elaborated in the section 4.5 Energy (Oil, Gas and Electricity) page 20-21. Under 4.5 the Energy Goal stated is: *“The Government will develop an energy sector that meets Iraq’s needs and maximizes the benefits of hydrocarbons for all Iraqis and reinforces national unity and institutions.”*

Moreover, the Government of Iraq will develop an Energy Master Plan on the basis of an Energy Balance...for the electricity sector; the Government will formulate a plan for least cost development of the power system....

The Mosul Gas Power Plant links directly into these actions which are activities within the larger scope of UNDP infrastructure projects.

Related to the Iraqi National Development Strategy (NDS): the rehabilitation of Mosul GPS is based on:

- Pillar II 10 that prioritizes increasing the electricity generation and distribution to meet current and projected needs. Within the document it is acknowledged that there is a shortage caused by numerous problems such as sabotage, looting, lack of security for workers, lack of training and obsolete technologies. It is also acknowledged that Baghdad accounts for over 40% of the Iraqi power load. One of the planned goals on page 38 refers to two actions specific to this project which are; 1) reconstruct power network, increase power generation and guarantee a continuous supply and 2) update power distribution.

Related to the UN Millennium Development Goals (MDG):

- MDG 7 Target D: to have achieved significant improvement in the lives of at least 100 million slum dwellers, by 2020.

Related to the 2006-2007 UN Assistance Strategy for Iraq are as follows:

- UNCT Goal 2: Assist in the provision of basic services and promotion of community development and participation:
- Cluster Outcome 2.6: Rehabilitation and governance of infrastructure at local level.
- E3: Increased availability of electricity, particularly to rural and low income areas.

Programme outputs:

- Generation capacity enhanced;
- Technical and management capacity enhanced;
- Power plant equipped with sufficient spare parts and operation;
- Maintenance Manuals and drawings for ready reference in efficient operation and maintenance.

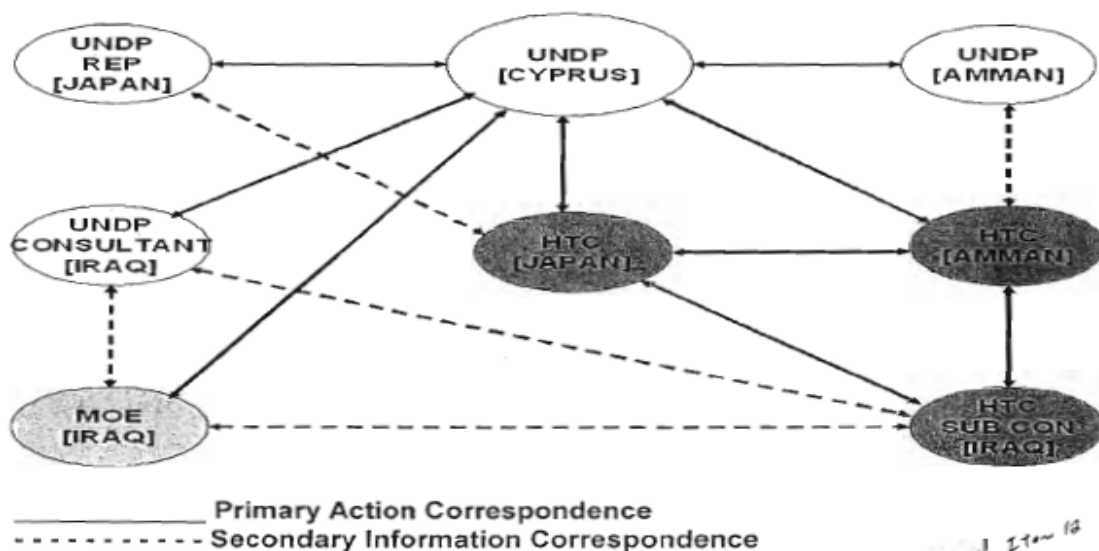
d. Contribution of key partnerships towards achievement of project results.

As a consequence of the restrictions placed on the movement of UN staff in Iraq due to the volatile security situation and the resulting restricted freedom of movement based on security and safety concerns, UNDP Iraq sought ways to overcome the difficulties on the ground to ensure that progress and project implementation reached the set objectives for the required interventions at the power plant. Hence, a strong partnership was developed with Iraqi line ministries and station management. This partnering relationship allowed UNDP to assess the local institutions' capacities for project implementation as well as supporting the counterparts in identifying their major priorities. New implementation modalities were adopted where the MoE engineers played a larger role in overseeing the installation of work which has built capacity for future sustainability.

These de-facto partnerships with beneficiaries and contractors are flexible and efficient operational modalities in Iraq's difficult post conflict environment.

Close collaboration with beneficiaries and contractor allowed for a revised implementation strategy to take account of the concerns of all, adapting optimally to the security situation, the bottlenecks of world markets and the needs of the Iraqi people.

During initial start up meeting a project organization chart was agreed upon between Hitachi, UNDP and MoE with clearly defined responsibilities. This proved to be quite an efficient tool in project management towards achievement of the project goals:



View of the communication structure leading to an effective and efficient partnership on the ground

Key Partnerships have included: Ministry of Electricity and HITACHI LTD. Inter-agency collaboration was limited due to the very specialized nature of the works.

e. Contribution of the project on cross-cutting issues:

Rehabilitation of Mosul Gas Power Station was initially identified as a project to respond to the immediate humanitarian needs of the war-affected Iraqi people by ensuring the supply of reliable and safe electricity to permit operation of essential basic services such as water supply, hospitals, schools, sewage treatment plants and other community services. Thus, the

Iraqi population at large, using essential basic services benefitted as a result of increased availability of electricity serving public basic services provided by the government of Iraq. Since the station is connected to the National Grid, the entire population of Iraq would benefit by the additional Mega Watts added to the network. If the Mosul Gas Power Station had not been connected to the Iraqi National grid and run in isolation, then approximately 80,000 to 100,000 inhabitants residing in northern Iraq would have benefitted.

The project is of a gender neutral nature, having benefitted all Iraqis regardless of income or gender through the improvement of infrastructure serving the entire country. No initial Environmental Impact Assessments were conducted, as the scope of the project was to rehabilitate existing equipments at the original site with no major changes to the existing facilities.

Initially, the poor security situation resulted in all the activities i.e. project negotiation, preparation of tender documents and procurement taking place outside Iraq. At that early stage, the impact of a disintegrating security situation was not on the radar screen. However, realizing the daily deteriorating security situation, close monitoring of the situation and adjustments in implementation modalities were essential to minimize the impact on the programme delivery.

Thus, after placing the contract, at the stage of delivery of material to the work site, difficulties were experienced due to the volatile security situation and the following activities were delayed:

- Pre-contract assessments and negotiations
- Transport of material within Iraq to the work location
- Establishment of storage facilities
- Security of stores
- Obtaining waivers from Customs, a time consuming task, due to the security situation as the irregular attendance of customs staff in the office adversely affected the pace of work.
- Significant security concerns during implementation were experienced.
- Difficulties were experienced during all stages in obtaining technical information from the power plant, due to lack of or non-existent communication facilities.

This project was helpful in providing jobs to skilled and unskilled Iraqis throughout its implementation stage. Depending on the pace and quantity of works at different stages forty (40)-fifty (50) male workers both skilled and semi skilled were employed therefore benefitting some 40-50 Iraqi households, with up to 300 individuals directly affected through the revenue generated.

- f. Assessment of the programme/ project based on performance indicators as per approved project document

Please see part: “IV. INDICATOR BASED PERFORMANCE ASSESSMENT”

III. EVALUATION & LESSONS LEARNED

III. EVALUATION & LESSONS LEARNED

- a. Final project evaluation and key findings

A final outcome evaluation report was commissioned by the UNDP Iraq Office, reviewing a selection of projects from three programme units in the UNDP Iraq Country Office covering the period between the installation of the UNDP Iraq Office in Amman till April 2009. The draft report by the UNDP commissioned Norwegian Consultant Scanteam A/S covering 27 UNDP

Recovery and Crisis Prevention Unit projects was published on 15 April 2009. The report assessed the outcome of this project as “partly successful” but problematical, having been provided with the classification as “acceptable” in the outcome evaluation report. It has been queried by UNDP RCP as to what exact criteria were used to reach these conclusions and ranking as “partly successful”, since the project manager was not consulted by the Scanteam A/S. RCP also felt that consideration had not been given to the complexity of activities undertaken within this large rehabilitation project as well as the externalities experienced due to a difficult context with a fluctuating security situation affecting the outputs of the project components when compared to other relatively simpler projects not requiring the same level of work and procurement inputs in Iraq. The Mosul Gas Power Plant Units 2 and 4 are now rehabilitated as planned with increased operational reliability.

b. Key constraints including delays during project implementation

A number of issues and externalities beyond the control of UNDP led to an overall period of delay of approximately 21 months. Factors included:

- The deterioration of the security situation in Iraq affected overall operations including causing work stoppages on several occasions.
- Time consuming initial negotiations with counterparts during the project qualification stage;
- A change of scope made late in the project cycle, due to the physical condition of the equipment, which was observed after disassembly of the units the requirement of additional spare parts.
- An unexpected need for turbine oil, and difficulties in transporting the available oil from Taji Power Plant. Shipping delays were the main causes affecting the delays in project implementation.
- Additional technical issues also impeding the overall progress of works included the non-availability of past operation and maintenance records of the two units, which made it difficult to carry out assessments from the remote location.
- Changes in physical installations undertaken during the period of sanctions became evident after the disassembly when it was discovered that components were different from those originally shown in the manufacturer’s design. This resulted in the need to consult the manufacturer and find a solution which met the requirements of the manufacturer for the guarantee of works and ensuring the long term sustainability of the rehabilitation works.
- The rotor for Unit 4 was found to be defective and was shipped to Hitachi Japan for repair very late in the project cycle when the security situation improved.
- UNDP prepared an inventory of consumables and spare parts needed for future maintenance to ensure sustainability. Procuring these within the boundaries of the project added to the overall duration.

c. Key lessons learned facilitating future programme design and implementation.

- Adoption of a participatory approach is crucial for programme / project success from conceptualization through to Operations & Maintenance;
- Capacity building for Iraqi counterparts and transfer of know-how are crucial for sustaining all programmes / project-provided assets and for sustaining the sector;
- Clearly defining the operations and responsibilities is essential in all projects for their successful realization;
- Having means to monitor the project activities by way of using the latest technologies is essential;
- Close coordination and mutual consultation with the counterparts at all levels is the route to success;

- Transparency in all matters and sharing information boosts morale, increases confidence among the implementing partners and project team members and is very useful in taking critical decisions; regular communication helps eliminate misunderstanding and distrust;
- Time consuming initial negotiations with counterparts during project quantification stage proved to be useful in finalizing the contract details and plants;
- Initial negotiations play an important role and it should be given time. *“Plan it realistically, and allow some slack.”*;
- Timely actions - decisions play an important role in saving extra costs and limiting delays;
- Mutual respect and consideration towards the opinions of counterparts’ who play an important role in achieving targets;
- Plan the project fully. Identify the goals and keep this as the focus to drive the project forward. The methodology should be well thought out, and scope of definitions should be strictly adhered to;
- Most equipment works "as built," i.e., not as the designer planned;
- Drawings and manuals after completion of project are a must for rehabilitation projects to be success. At times difficulties were faced after disassembly when components were noted as different from originally shown in the manufacturer’s design. It could have been a post completion / subsequent alteration, but it resulted in consumption of valuable time.
- Maintain focus and priority of the project. Without 100% day-to-day time commitments from team members, the project overview would be lost in the shuffle of daily duties and responsibilities;
- Non-availability of past operation and maintenance record of the units made it particularly difficult to carry out assessment from the remote location. It is necessary to develop a system that records each unit’s operations; daily, weekly and monthly for maintenance and future assessment.
- Communication planning and changes as per demand of the situation was a continuous process throughout the project implementation; effective communication arrangements helped in obtaining a day-to-day situation overview and facilitated monitoring;
- Timely passing on all critical information about incidences, project progress and additional works if any that were to be undertaken, to the management makes it easier for the management to take managerial decisions in order to achieve planned targets.

UNDP would like to thank the people and Government of Japan for their support of this project and the warm relationship that has been built. In addition, UNDP would like to thank the Iraq Trust Fund and the UNDG.

IV. INDICATOR BASED PERFORMANCE ASSESSMENT

	Performance Indicators	Indicator Baselines	Planned Indicator Targets	Achieved Indicator Targets	Reasons for Variance (if any)	Source of Verification	Comments (if any)
<p>IP Outcome 1 To respond to the immediate humanitarian needs of the war-affected Iraqi people by ensuring the supply of reliable and safe electricity to permit operation of essential humanitarian services including water supply, hospitals, schools, sewage treatment plants and other community services.</p>							
<p>IP Output 1.1 Units 2 and 4 at Mosul Gas Power Station rehabilitated with increased operational reliability.</p>	<p>Indicator 1.1.1 Implementation of scheduled rehabilitation works of Turbine Units No. 2 and 4.</p>	<p>Unit 2 Out of operation. Unit 4 Poor condition, limited output.</p>	<p>30 MW of electricity becomes available. Reduce further deterioration of units.</p>	<p>Unit 2 and Unit 4 running at 15 MW each An additional 30 MW of reliable electricity becomes available to the National Grid from the two units</p>	<p>Although capable of generating 19 MW, functioning each at 15 MW, due to low gas pressure and as a matter of precaution due to aging and the fact that the surrounding area in the vicinity of the power plant was subjected to heavy vibrations due to bombing,</p>	<p>Careful verification was conducted by UNDP engineers in close co-operation with Mosul GPS engineering staff through daily web camera meetings and tri-party meetings in Amman, attended by representatives from MoE-Mosul, Hitachi and UNDP. The programmes were planned in the framework of a Gantt chart. Every stage was</p>	<p>It has been confirmed by the Manager of Mosul Power Plant that the instruments are correctly indicating what is being generated by Units 2 and 4 (approx.30 - 36 MW) to the national grid system. With daily real time monitoring through web cameras and VSAT, it was possible to continue work with minimum</p>

						<p>defined with time periods for implementation and monitoring in order to track possible risks of delays and avoid or mitigate these to the extent possible in order to meet the time frame allocated. In some cases, activities were initiated earlier than planned in time in order to make up for the lost time on other activities. The monitoring of work progress, risk log, and rescheduling as needed was achieved through tri-party meetings held during and after the completion of rehabilitation works. The last meeting was held on 14th-15th January 2008.</p>	<p>delays. Timely arrangement for waiver of customs letters and monitoring the security situation while the cargo was on its way to the gas power station by road was a significant task, which was achieved through constant liaison with the ground staff. Nomination of engineers from MoE, was the first step of the training process which has a time constraint. This was achieved by constant follow-up by UNDP staff. Later, arranging visas and training programme to suit the</p>
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						<p>The achievement of objectives has been verified. Meeting records in respect to changes in activity scheduling exist. Regular contacts have being maintained by telephone – e-mail to confirm the latest operating status of the units. Technical Tests included: AVR dynamic characteristic and synchronization test; Load operation test; Reliability test; Certificate of Final Completion.</p>	<p>requirement needed in depth study of the situation which was possible with the remarkable help of MoE and Hitachi.</p>
<p>IP Outcome 2 The generating capacity, availability and reliability of Mosul Gas Power Station (Turbine Units No.2 and 4) restored.</p>							
<p>IP Output 2.1 Set of selected, essential spare parts supplied</p>	<p>Indicator 2.1.1 Provision of specified spare parts and</p>	<p>Lack of spare parts and severely deteriorated</p>	<p>Spare parts available.</p>	<p>Delivery of 104 Tons of spare parts and equipment.</p>	<p>Nothing to remark</p>	<p>Careful verification was conducted by UNDP engineers</p>	<p>The delivery of spare parts to the station was confirmed by</p>

<p>to Mosul Gas Power Station for emergency repairs and routine maintenance, in order to sustain the increased generation.</p>	<p>relevant rectification of selected components coming from disassembled units.</p>	<p>condition of plant.</p>	<p>Plant staff trained.</p>	<p>Repair of one damaged rotor at Hitachi Ltd. works in Japan as additional work without cost to the project. 12 site engineers from Taji and Mosul trained as trainers in Japan. One Iraqi technical advisor trained in Japan, increasing national capacity for rehabilitation and commissioning.</p>		<p>in close co-operation with Mosul GPS engineering staff through daily web camera meetings and tri-party meetings in Amman, attended by representatives from MoE- Mosul, Hitachi and UNDP. The programmes were planned in the framework of a Gantt chart. Each stage was defined with time periods for implementation and monitoring in order to track possible risks of delays and avoid or mitigate these to the extent possible in order to meet the time frame allocated. In some cases the activities were initiated earlier</p>	<p>various documentation prepared at site. Proper check up was also conducted by a third party inspection agent in Japan prior to shipment.</p>
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						<p>than planned in time in order to make up for the lost time on other activities.</p> <p>The ongoing monitoring of work progress, risk log, and rescheduling as needed was achieved through three party meetings held during and after the completion of rehabilitation works. The last meeting was held on 14th-15th January 2008. The achievement of objectives has been verified. Meeting records in respect to changes in activity scheduling exist. Regular contacts have being maintained by telephone – e-mail to confirm</p>	
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						the latest operating status of the units.	
IP Outcome 3 Plant personnel trained in accordance with international standards.							
IP Output 3.1 A substantial number of trained plant engineers, who will be able to operate and maintain the power plant for higher levels of performance and also in turn would be able to train other junior technical personnel (engineers and technicians).	Indicator 3.1.1 Implementation of the relevant training process carried out both at site and at the Manufacturer's workshop.	Capacity needed to conduct repair and maintenance .	Ability of the plant staff to undertake the repair and maintenance works in accordance to approved work plans.	An adequate number of trained staff have become available by provision of training in Japan and on the job training. Thus, the plant management and staff are capable of operating and maintaining the units in accordance with international standards maintenance manuals, drawings and CDs provided by Hitachi under this project have	Nothing to remark	Careful verification was conducted by UNDP engineers in close co-operation with Mosul GPS engineering staff through daily web camera meetings and tri-party meetings in Amman, attended by representatives from MoE-Mosul, Hitachi and UNDP. The programmes were planned in the framework of a Gantt chart. Each stage was defined with time periods for implementation and monitoring in order to track possible risks of	Contents of the training programme was finalized with the MoE and adhered to for imparting training to the staff. The duration of training course was settled with the help of previous experience of Hitachi and after discussion with the representatives of MoE and Mosul.

				<p>proved to be extremely useful for the ongoing O & M requirements. Besides attending daily web meetings with Hitachi, UNDP from Amman and the site engineer of Hitachi have enhanced the know-how and the skills of the plant engineers to a substantial degree.</p>		<p>delays and avoid or mitigate these to the extent possible in order to meet the time frame allocated. In some cases the activities were initiated earlier than planned in time in order to make up for the lost time on other activities.</p> <p>The ongoing monitoring of work progress, risk log, and rescheduling as needed was achieved through three party meetings held during and after the completion of rehabilitation works. The last meeting was held on 14th-15th. January 2008. The achievement of objectives has been verified. Meeting records</p>	
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