



COMPLETION REPORT FOR PROJECT:

Summary

Participating UN Organisation:

United Nations Development Programme

Cluster:

E – Infrastructure Rehabilitation

Project No. and Project Title:

E4-09–0038723
Rehabilitation of Hartha Power Station Stage 2.

Project Location/Region/Province:

Basra Governorate, Southern Iraq.

Reporting Period:

Feb 2005 – Dec. 2006 (Check project period!)

Report no:

Final (6)

Counterpart organisations / implementing partners:

Ministry of Electricity (ME)
Mitsubishi Heavy Industries (Japan)

Project cost:

US\$ 17,789,018

Abbreviations and acronyms:

ME - (Ministry of Electricity)
MHI - (Mitsubishi Heavy Industries).
HOC - (Humanitarian Operation Centre in Kuwait)
MNF I - (Multi National Forces Iraq).

Project Duration:

14 MONTHS from February 2005
Extension until 30/04/08 granted on 16/3/08

I. Purpose

Main objectives and outcomes expected as per approved Project/Programme document:

Development objective

To respond to the humanitarian needs of war-affected Iraqi people by ensuring a safe and reliable electric supply which permits the operation of essential humanitarian services and addresses human development priorities.

Immediate Objective 1

The generating capacity, availability and reliability of Hartha Power Plant (Units No.1 and 4) increased.

Intended Outputs

Increased operational reliability of Units 1 and 4 of Hartha Power Station.

Immediate Objective 2

The plant management and staff are able to operate and maintain the units in accordance with international practices.

Intended Outputs

Sufficient spare parts for repairs and regular maintenance available, for a period of 12 months, at the Hartha power plant.

The technical capabilities of Hartha power plant staff enhanced in operation and maintenance practices and procedures

Reference to how the programme/project related to the UN Assistance Strategy to Iraq and how it aimed to support Iraq national development goals and the Millennium Development Goals :

The project is in line with UNDG's Development Strategy, providing a reliable and efficiently run power system. The project complies with two of the Strategy objectives, namely to improve generating capacity and to maximise training of ME staff in the sector.

The results of the project also have direct impact on health, availability of potable water, improvement in living conditions and job creation. Sanitation is yet another indirect area which directly benefits from the availability of electricity. Improvement of the environment is yet another millennium development goals, addressed to some extent by this project

Project Management arrangements

Give a brief description of programme/project implementation and monitoring arrangements utilised including:

- Programme/project implementation and supervision arrangements; indicate in-country and region based capacity of organisation utilised ;

One international project manager and support staff based in Kuwait

Main international and national implementing partners involved, their specific roles and responsibilities in project implementation and their interaction with the agency;

- UNDP plays a major role in assessment, award of contract and delivery of spares to Hartha after they have been delivered in Kuwait.
- MHI for supply of spare parts and provision of training to Iraqi nominees.

- Engineers of Hartha Power Plant share the skills received from training and use them to install spare parts and to improve operation and maintenance of the power plant.
- National Consultant appointed by UNDP responsible for day to day coordination, monitoring the implementation of spare parts and equipment and reporting on progress.
- Multinational Forces (Iraq) operating in the South also play a major role in providing security escorts from Kuwait / Iraq (Abdally) Border to Hartha. Without their support the insurance cost would have seriously inflated.

Indicate extent of cooperation with relevant line ministry

- Close cooperation with MoE and with the power plant's engineer was exercised from the start of the project.

Specific delivery mechanisms utilised

- Direct execution was the implementation modality used,

Details on arrangements for procuring and transporting programme/project inputs, to ensure local appropriateness and acceptability, as well as security and value-for-money under the circumstances – attach as annex 3 final list of contracts awarded;

- Sole source procurement was used due to the highly specialized proprietary nature of the equipment involved

Systems for programme/project monitoring (including financial tracking and accounting audit), quality control (including lesson learning, and corrections), and impact assessment; methods for data collection and monitoring

- Plant staff shared willingly all necessary information. In addition independent consultant was used to cross-check generation data, inventories, etc.

II. Resources

Total approved budget and summary of resources used for the programme/project from the UNDG Iraq Trust Fund and non-Trust Fund resources where applicable:

Budgeted	US\$ 17,789,018
Funded	US\$ 17,789,018
Disbursed up to Mar 2008	US\$ \$17,789,018

Note that project delays compelled UNDP to extend its project staff and thereby to over-run the original personnel budget. See Complete final resources utilisation overview at annex 2.

Also, training is virtually absent from the aggregated expenditure. Indeed, training was provided as part of a supply contract and cannot be dissociated from this contract and has been accounted for in budget line 2. and not budget line 3. the same is true for transport and security (budget line 4 & 8)

Human Resources

Indicate number, type (operations/programme) and level of staff used for the project in two categories national and international. Please be careful to indicate where staff are shared with other projects

One international project manager and national support staff based in Kuwait. National staff also supported other projects

Project Assets

Assets purchased under the project and their disposal

All assets, Equipment, spare parts and material, were handed over to Hartha power plant

III. Results

An assessment of the extent to which the programme/project component / programme/project has achieved the outcomes and outputs expected:

Please begin with one succinct paragraph summarising what has been the impact of the project

The rehabilitation at Hartha Power Station contributes to the stability of power supply in the Southern region and the whole country through the national grid. Stage I of the rehabilitation, which has already been completed with bilateral assistance from the Government of Japan through UNDP

The training component included in the project scope enhanced the technical capability of staff to maintain and operate the power plant according to international standards. Also, trainees were able to train other junior engineers, which further expanded the benefits of the training.

Particularly emphasize impact on basic service delivery, employment creation, capacity development, and policy dialogue. Provide quantitative and qualitative details.

During the period under review, Unit No. 4 has been partially overhauled using the spare parts provided under the contract. Both the units are running quite smoothly contributing the following un-interrupted power: Unit No.1 180 MW Unit No. 4 160 MW. This increased of at least 20% in the availability of electricity has numerous implications on the living standards of the population directly benefiting from the power plant output, about 5 million. The effect in terms of accrued economic and employment generation has not been measured yet but is deemed to be positive

Has the original problem the project sought to address been adequately solved –Who have been the main beneficiaries, and how have they benefited? Which other stakeholders have gained or lost as a result of the programme/project? How was stakeholder participation handled?

See log frame results matrix in annex 1.

The project has achieved its expected outputs within time frame:

- All the deliveries of spare parts have been completed by the scheduled date i.e. March 2006.
- Training and pre-shipment inspection have been successfully completed. The project has delivered on its capacity building output.
- Availability of drawings, operation manuals, and test certificates has increased the capability and performance of operation and maintenance staff.
- Annual maintenance has been completed on both the Units i.e. Unit 1 and Unit No.4 during the period under review. This has resulted in the expected stability of the Units. After rehabilitation works the units have not experienced any tripping on account of equipment failure. We are in contact with the Manager of Hartha and reports are received about stability and output. Expected increase in generating capability of the units to 150 to 160 MW and continuous running has been maintained.
- The station has become self-reliant and day to day works are attended without loss of time.
- As expected, the frequency of breakdowns and unplanned shutdowns has been reduced.

Compare results achieved against project benchmarks and to the extent possible targets/benchmarks identified in UN/WB Joint Needs Assessments and/or UN Assistance Strategy and National Development Goals

Although limited to Hartha power plant, the achievements under this project are in line with the national objectives. Lessons learned will help reproduce power supply gain in other power plants as is necessary for Iraq recovery.

Main activities undertaken and achievements/impact:

All the spare parts included in lot 1 through 4 have been delivered in time, without damages or shortage.

- The total worth of spare parts supplied is US\$ 15,036,037.00
- Total worth of training provided under the contract US\$ 100,900.00
- Total worth of pre-shipment inspection US\$ 54,600.00
- Total value of the contract and payments made US\$ 15,391,373.00

All the activities related with Mitsubishi have been completed to the satisfaction of the Power Plant and UNDP. All payments have been made. Advance payment guarantee has also been released.

Performance guarantee has been released as the one year warranty period has been completed and the management of Hartha has expressed complete satisfaction over quality and quantity of spare parts supplied (No shortage / damages and no deviation from specifications)

Final illustrated project review report of the project has been shared with donors and UNDG-ITF.

Implementation constraints, lessons learned from addressing these and knowledge gained from assessments, evaluations and studies that have taken place during the project:

Please be straightforward in this section. Iraqi officials and donors are keen to be informed of lessons learned (both positive and negative) to guide future design and implementation of similar operations

Include major external factors affecting implementation and outcomes and the steps taken in programme/project implementation to address, and minimise or mitigate the potential risks;

Detail major findings of evaluation reports where relevant and indicate how recommendations were followed in project implementation.

Provide table of monitoring, evaluation, inspection and audit missions undertaken.

The security situation remains a serious hurdle for the transport of material from Kuwait to Hartha. At the beginning of the project, full support of MNF was available to escort the material from Abdally border to Hartha. At later stage this facility was not available. A Private Security Company was engaged at the last stage of the project to escort the material from Abdally to Hartha. The coordination between the transporters and the security company was mostly problematic. The last consignment was, however, delivered rather smoothly, escorted by Private Security, due to proper communication and coordination arranged at the initiative of UNDP.

The material had always been crossing into Iraq through Military gates. Going through Iraqi Customs was rather impossible as the instruction of UN goods being exempted from duties / taxes had not trickled down to the customs office at the border.

The problem of communication through normal channels with the engineers at Hartha Power Plant still persists, though to a lesser extent. E-mail contact is available, but not very efficient. Contact by mobile telephone has become comparatively easier. The problem has been largely overcome by the appointment of a Consultancy company. The response is fast and transfer of information and advice has become comparatively easier,

In view of the communication problems the issue of nominating engineers for training and pre-shipment inspection was initiated early in March. UNDP, keeping in view this problem, appointed a local (Basra-based) consultant who was available either by phone or by e-mail. The communication thus became smoother.

There had been some delay in supply of some of the equipment mainly valves, included in lot 2. This was because of difficulties of communications and specifications were not clear - particularly size and type of some large size valves. Upon the request of UNDP to ship the balance material of lot 2, Mitsubishi deployed a technical delegation to have technical discussions and clarify the issue. After discussing by telephone our consultant in Basra, the specifications became clear. This being a reason, the delivery period of valves in lot 2 was extended and MHI later supplied the valves of desired specifications without any extra cost as they had already supplied a number of valves as per initial specification. This was a great achievement on the part of UNDP as the parts worth US\$800,000/- were received free of cost.

Key partnerships and inter-agency collaboration, impact on results:

MHI and UNDP are the two main partners. The impact of working in close coordination has been positive and results were fully achieved as targeted to the satisfaction of all the parties involved. Supplies were in time, issuance of Substantial Completion certificates, payments were also in time. Training and pre-shipment inspection were completed as scheduled.

MNF-I are yet another partner without whose support, the movement of material from Kuwait to Hartha, would have been much more difficult.

National consultants appointed by UNDP in Basra are acting as the representatives of UNDP in checking the material upon arrival, and monitoring / reporting implementation.

The manager of Hartha Power Plant and the engineers working there have expressed their thanks and appreciation at the role played by UNDP in meeting all targets in time without any accident, damage and shortage.

Highlights and cross cutting issues pertinent to the results on, e.g., gender disaggregation, policy engagement and participation of the public:

Were the needs of particularly vulnerable or marginalised groups addressed?

How did the beneficiaries of the programme/project participate in its development and delivery?

How did men and women benefit from the programme/project? How were gender inequalities handled?

Were environmental concerns addressed including environmental impact/risk assessment where relevant?

Were there any specific issues in relation to the security situation?

How did the project contribute to capacity building in ministries and elsewhere?

So far, in respect of Hartha, there was no cross cutting issue pertinent to the results. The improvement in electrical supply and its stability has a direct impact on industrial and commercial activities which in turn has its impact on employment and poverty reduction.

The key issue to address at the request of the Minister of Planning and Development Cooperation is the impact on employment creation.

IV. Follow up actions and sustainability

Priority actions that should be supported/implemented following completion of project to build on achievements and partnerships rectify shortcomings encountered and use the lessons learned during the project with strong emphasis on achieving sustainability of the outcomes:

Since there are no further deliveries and as MHI have fulfilled all their obligations, payments have been made to MHI, consultancy company and the private security escorts. Therefore no further major expenditure is involved.

Use of the 25% of spare parts left would continue for routine and break down maintenance. To strengthen its inventory control and asset management, Hartha power plant has also received computers are ready for delivery and arrived in Kuwait to be delivered to Hartha.

Indication of major adjustments in the strategies, targets or key outcomes and outputs:

Since the targets have already been met, there is no major or minor adjustment required in the strategies, targets or key outcome and outputs.

Estimated Budget required (Budget required for any necessary follow up action):

There has not been any shortfall in the budget. All the tasks, which included supply of spare parts, training to Iraqi Engineers, pre-shipment Inspection by Iraqi Engineers, engagement of Private Security Escorts, have been completed within target and without any shortages or damages.

Annex 1 Key Performance Indicators – Log Frame Matrix

Objectives	Measurable indicators	Means of verification	Outcomes
<p>Development Objective</p> <p>To respond to the humanitarian needs of war-affected Iraqi people through ensuring reliable and safe electricity supply to permit the operation of essential humanitarian services and addressing human development priorities, and daily needs.</p>	<p>Availability of a reliable and secure electricity supply to all consumer categories especially for essential services and other community services.</p>	<p>Improvement of livelihood, wellbeing and economic development of the people in Iraq</p>	<p>Significant contribution has been made to this objective. The power plant is in stable condition providing 320-340 MW electricity depending upon demand to the national Grid.</p>
<p>Immediate Objectives:</p> <p>1. The generating capacity, availability and reliability of Hartha Power Plant (Units No.1 and 4) increased.</p> <p>2. The plant management and staff are able to operate and maintain the units in accordance with international practices.</p>	<p>1. Energy recording instruments indicate an approximate increase of annual energy output by 20%</p> <p>2. Ability of the plant staff to undertake the maintenance and repair works in accordance to approved work plans.</p>	<p>Verification by UNDP engineers or Consultants (Owners Engineer) in close cooperation with MoE HARTHA plant staff.</p>	<p>Immediate objective has been achieved. The reliability of the available power from Hartha Power Plant has remarkably increased.</p> <p>Before the start of the project, the output was below 220MW (See average weekly load data). The Output capacity gain represents much more than the 20% targeted.</p> <p>The training, software, as built drawings and operation manuals have helped the Engineers to tend to the break downs as and when they occur with out loss of time.</p>
<p>Outputs :</p> <p>1. Increased operational reliability of Units 1 and 4 of Hartha Power Station.</p> <p>2. Sufficient spare parts for repairs and regular maintenance available, for a period of 12 months, at the Hartha power plant.</p> <p>3. Technical capabilities of the HARTHA power plant staff enhanced in operation and maintenance practices and procedures</p>	<p>1. Steady output of generating units 1 & 4 at 180 MW</p> <p>2. Warehouse inventories reflect the spare parts delivered.</p> <p>3. Ability of the plant staff to undertake the maintenance and repair works in accordance to approved work plans that were repaired or replaced.</p>	<p>Verification by UNDP engineers or Consultants (Owners Engineer) in close cooperation with MoE HARTHA plant staff.</p>	<p>1. The output has been realized. The units are running in quite stable condition providing together 320-340 MW electricity depending upon demand to the national Grid. Weekly reports from the power plant indicate that the two units are running without tripping.</p> <p>1. Achieved. The availability of spare parts has enabled to power plant engineers to attend to the break downs in shortest possible time</p> <p>2. The training, software, as built drawings and operation manuals have helped the Engineers to attend to the break downs as and when they occur with out loss of time.</p>

Annex 2 PROJECT COSTS

CATEGORY	UNDG ITF approved budget	Actual COST	Percentage of Approved	Budget Revision approved (give date)	Percentage of revision
1. Personnel • including staff and consultants	\$546,000	\$929,442	170.23%		
2. Contracts • including companies, professional services, grants	\$15,373,250	\$1,755,441	11.42%		
2. + 6. Contracts and Equipment (Note some equipment include installation and O&M components and are therefore difficult to separate from service contracts at the accounting level)	\$15,373,250	\$15,677,493	101.98%		
3. Training	\$160,000	\$777	0.49%		
4. Transport	\$240,000	\$0	0.00%		
5. Supplies and commodities	0	\$5,230	NA		
6. Equipment	0	\$13,922,052	NA		
7. Travel	\$126,000	\$107,771	85.53%		
8. Security	\$332,505	\$104,217	31.34%		
9. Miscellaneous	\$180,000	\$66,623	37.01%		
10. Agency Management Support	\$847,096	\$897,823.16	105.98%		
Total Expenditure	\$17,789,018	\$17,789,018	100.00%		