

添付資料-9

支援要請案件概要

BAPEX よりの支援要請案件

Requirement of Hardware & Software to Develop 2nd 3D Crew of BAPEX:

Sl No.	Hardware and Software	Description(Brief)	Procurement Type	Cost in BDT (Lac)	Cost in USD (million)
1	Topo Survey	RTK GPS (20 Set), Hand GPS (50 Nos), Total Station (10), TGO (2 Nos), TBC (2 Nos), GP Seismic (2 Nos), ArcGis (2 Nos), Graphnet(2 Nos),.	Foreign	1500	2
2	Design and QC	Geoland , SPSNET, Easy QC ArcGis, etc. (01 Set)	Foreign	750	1
3	Recording	Recording Instrument(01 Set), Cables and Geophone, FDU (6000 Nos), walky-talky(200 NOs) etc.	Foreign	4500	6
4	Seismic Drilling	Seismic Drilling Machine(80 Nos), Hose pipe(5 km), Electric Generator (20 Nos) etc.	Foreign	750	1
5	Processing	Geocluster processing system(01 Set)	Foreign	1500	2
6	Interpretation	Geoframe , Tigress , Opend Tect interpretation system etc (01 Set).	Foreign	1500	2
			Total	10500	14

* 1 Dollar = 75 BDT

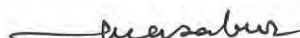
Mortuza Ahmad Faruque
30/11/11

Mortuza Ahmad Faruque
Managing Director
Bangladesh Petroleum Exploration & Production Co. Ltd.
Dhaka

Date : 30.11.2011

Proposed Training Program By BAPEX Under JICA Project

SI No.	Training Course	Duration (Week)	Number of Participant
1	Reservoir Engineering and Simulation	2	4
2	Well Logging Techniques and Basic Operation	2	4
3	Reservoir Characterization	1	2
4	Petroleum Exploration and Development	2	2
5	Production Logging Techniques and Interpretation	1	4
6	Geological & Geophysical Modeling	2	4
7	IT Management (2D & 3D Processing and Interpretation System)	2	2
8	IT Management (2D & 3D Acquisition Equipment and System administration)	2	2
9	Design and QC 2D & 3D	4	4
10	Advance processing (2D Seismic Data)	4	2
11	Advance processing (3D Seismic Data)	4	2
12	Advance Interpretation (2D Seismic Data)	4	2
13	Advance Interpretation (3D Seismic Data)	4	2
14	2D Acquisition equipment operation and maintenance	4	2
15	3D Acquisition equipment operation and maintenance	4	3
16	Remote Sensing & Geoinformatics, Basic Geodesy, Geodesy equipment operation	4	4
17	2D & 3D Seismic Project Management	2	4
18	Advance Course on Drilling Technology	2	6
19	Cementing Technology	1	4
20	Advance Drilling and Completion Fluid Technology	2	3
21	Well Design and Engineering	2	4
22	Drilling Fluid Technology	2	4
23	Gas Process Plant Design	1	4
24	VFD and PLC Programming	2	4
	Total	60	78


30.11.2011

Md. Abdus Sabur
Company Secretary
BAPEX, Dhaka.


30.11.2011

Mortuza Ahmad Faruque
Managing Director
Bangladesh Petroleum Exploration & Production Co. Ltd.
Dhaka

GTCL よりの支援要請案件

ANNEXURE-III

1. 3.4.2 Proposal for the ODA Loans of Chapter 3 Results of the Survey, page-86:

The following two projects may also be considered as the prospective project for Japanese ODA loan:

- (3) Gas transmission pipeline, (a) Langalband-Mawa, 30" dia. x 40 km
 - (b) Mawa-Janjira including Padma Bridge Portion, 30" dia. x 20 km

Executing Agency: GTCL

National gas grid is planned to be expanded upto South/South-Western region of the country by constructing (a) a 30" dia. x 40 km gas transmission pipeline from Langalband (Narayanganj) to Mawa and (b) a 30" dia. x 20 km gas transmission pipeline from Mawa to Janjira along the Padma Bridge. Extension of gas network in that region will contribute significantly in establishment of gas based power plants, industrial and commercial units thus improving the overall socio-economic condition of the region.

- (4) Gas transmission pipeline, Sunetra Gas Field-Kishoreganj, 20 inch, 80 km

Executing Agency: GTCL

The proposed Sunetra Gas Field-Kishoreganj 20" dia x 80 km gas transmission pipeline will ensure evacuation of gas produced from Sunetra gas field and transmit the same to the national gas grid. Nearly 100 mmcf/d gas will thus be added at Kishoreganj point of national gas grid by the end of 2014 which will support meeting additional gas demand in West and South-West region of the country.

TGTDCL よりの支援要請案件



তিতাস গ্যাস ট্রান্সমিসন এণ্ড ডিস্ট্রিবিউশন কোং লিঃ

(পেট্রোবাংলার একটি কোম্পানী)

সূত্র নং: এসইআইপি/১৪.২ /২০১১/২

তারিখ: ০৩-০১-২০১২ খ্রি.

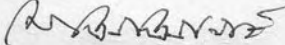
পরিচালক (পরিকল্পনা)
পেট্রোবাংলা
৩, কাওরান বাজার বা/এ
ঢাকা-১২১৫।

বিষয়: MAIN POINTS OF DRAFT FINAL REPORT এর উপর মতামত
প্রেরণ প্রসঙ্গে।

মহোদয়,

উপর্যুক্ত বিষয়ে পেট্রোবাংলা হতে প্রাপ্ত পত্র, সূত্র নং: ৩২.০৩.১৯/৫৩৫ তারিখ: ২৬-১২-২০১১
খ্রি. এবং বর্ণিত পত্রের সঙ্গে সংযুক্ত ও জাইকা হতে প্রাপ্ত “MAIN POINTS OF
DRAFT FINAL REPORT” শীর্ষক প্রতিবেদনের উপর কোম্পানীর মতামত পরবর্তী
কার্যার্থে এতদসঙ্গে সংযুক্ত করা হল।

ধন্যবাদান্তে,
আপনার বিশ্বস্ত


(মো. আব্দুল আজিজ খান)
ব্যবস্থাপনা পরিচালক

বিতরণ:

- ১। ব্যবস্থাপক (সমন্বয়), চেয়ারম্যান শাখা, পেট্রোবাংলা, ঢাকা।
- ২। Mr. Kazutora KONO, Consulting Engineers, Oriental Consultants Co. Ltd.

প্রধান কার্যালয় : “তিতাস গ্যাস ভবন” ১০৫, কাজী নজরুল ইসলাম এভিনিউ, কাওরান বাজার বাণিজ্যিক এলাকা, ঢাকা-১২১৫, বাংলাদেশ।
ফ্যাক্স:- ৮৮০-২-৮১১৩০৩১ টেলিফোন : পিএবিএক্স- ৮১১২১৩৫-৪২
ই-মেইল : titasgas@bdonline.com, mdtgas@dbn-bd.net, ওয়েব সাইট : www.titasgas.org.bd

Ref.: 3.4.2 Proposals for the Japanese ODA Loans

Titas Gas Transmission and Distribution Co. Ltd (TGTDCCL) is requesting the following proposals to be considered for the assistance of Japanese ODA.

Proposal	Entry	Justification
<p>1: Operational Strengthening and Measurement Efficiency Improvement</p> <ul style="list-style-type: none"> • Development of Remote Gas Metering System for 1000 load intensive customers and distribution input metering and counter metering station, comprising design, procurement and installation of required meters and ancilliary facilities. • Design, Procurement, Installation and Commissioning of 300,000 nos. of Pre-paid Gas Meters for the Domestic/ Commercial customers. • Extensive CP and leakage survey of gas distribution network and domestic customers house lines, including procurement and installation of materials/equipment as necessary. • Strengthening emergency response preparedness including development of elaborate emergency response plan, procurement of modern, effective tools, equipment and vehicles. 	<p>TGTDCCL</p>	<p>Advanced and hi-tech metering system like smart gas metering system for load intensive customers within TFA can be a solution to the problem of system loss by inaccurate metering. For improvement of customer end measurement it is envisaged to build up a remote metering network involving 1000 load intensive industrial consumers, input metering and counter metering. Under this program digital meters with EVCs and modems will be installed at the premises of these customers and their gas consumption will be monitored and recorded round the clock by means of the server of a central control centre(s) via existing GSM network or thru fibre optic cable network or thru wireless network.</p> <p>Unmetered domestic customers resort to phenomenal wastage and misuse of gas. They pay gas bill amounting to 450 taka per month for a double burner for whatever quantity of gas they can use. If prepaid meters are installed the customers will have to pay for the volume of gas they consume. This will make them sincere and responsible about wastage and misuse of gas. This arrangement will help in eliminating system loss incurred due to use of unlimited gas in unauthorized gas appliances. And the company will be able to realize actual revenue in advance. This will reduce monitoring cost and manpower requirement. This will also help to improve customer service as well.</p> <p>On the other hand the TGTDCCL Distribution network in the Dhaka Metropolitan City & adjoining areas is two-to-four decade old. These network was built during seventies with the existing available materials. This network provides extensive coverage with the help of pipe lines ranging from 6" DN to 16" DN X 150/350 PSIG Distribution mains to 6" DN to 12" DN X 50 PSIG Feeder mains and ¾" DN to 4" DN Distribution & Service Lines to domestic, commercial & Industrial Customers in different areas. The area of Dhaka city has been extended tremendously and will take the shape and status of a mega city within a decade. Many of the areas</p>

		<p>are densely populated. Urban areas are rapidly shifting to the outskirts of the City. Many of the roads & by-roads are narrow (1 to 2 meters). Drainage and sewerage pipe lines of DWASA, underground cables of BTTB, DESA and DESCO has been laid along and across the gas pipelines. The construction process of pipelines and underground cables by the aforementioned utility organizations causes significant damage to the CP system of this company. Although the gas pipelines are laid as per applicable technical standards and there is an arrangement of protective Wrapping & Coating under Cathodic Protection System, external impact or normal Wear and Tear of the system poses a threat to the integrity & safe operation of the extremely intricate gas distribution network. Leakages in the distribution mains are not wide spread, but not uncommon either. Domestic customers of this company use unmetered gas. In their house lines after the riser of gas connection unto the domestic burners leakages of gas is quite common. The survey for the detection of these domestic house line leakages is yet to be made with a view to arrest wastage of gas vis-à-vis revenue loss. So it is necessary to conduct an extensive survey within the Distribution Network and house lines of the domestic customers with the help of modern equipment. It is also necessary to take appropriate steps to analyze, balance and strengthen the existing CP System. The job consists of a study part which is followed by procurement and installation of necessary materials and equipment.</p>
<p>2: Rehabilitation of the existing critical pipeline sections</p> <ul style="list-style-type: none"> • Construction of 4"~16" DN × 50-150 psig× 150 km pipelines for rehabilitation of Distribution Main Lines/ Distribution Network and installation of Metering and Regulating facilities in prospective load growth centers in and around greater Dhaka. • Rehabilitation of existing pipeline River crossing section by Horizontal Directional Drilling Method (HDD) as necessary. 	<p>TGTDCL</p>	<p>Greater Dhaka is expanding rapidly. Newly developed areas are of great prospect for consuming natural gas. Rajuk and private large housing projects, large industrial parks are rapidly developing giving new dimension to the greater Dhaka area which may double or even triple the present demand in near future. To ensure safe and reliable supply to the Mega city, a new layer of backbone network needs to be established.</p> <p>Most of the river crossing sections of the existing Transmission and Distribution Pipelines has been constructed by Open Cut Method during Late Seventies and Nineties. Some of them are presently at very vulnerable conditions, which are urgently required to be replaced for safety reasons. Hence, a Component for rehabilitation of the existing pipeline river crossing section by HDD method is proposed.</p>

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<p>3: Study of existing Distribution network system of TGTDCCL and its components.</p> <ul style="list-style-type: none"> To assess the condition of the existing Gas Distribution Pipeline Network system using latest network analysis software. Procurement and supply of latest Design/ Software Analysis Software and Hardware. On-job Training of the TGTDCCL Engineers. 	TGTDCCL	<p>TGTDCCL distribution network consists of more than 12,000 Km of pipelines of different sizes ranging from 1" to 16" in dia, which were built during the late seventies. The network is a result of bits and pieces planning as different pipelines are added on from time to time to meet some imminent requirements. As a result the network is unwieldy and imbalanced in places resulting in pockets and areas with low gas pressure problem. An extensive network analysis is required to identify the weaknesses of the system and to plan extensions to cater for mid and long term gas requirements. The study will carry out a detailed network analysis of TGTDCCL distribution system employing latest network analysis software. TGTDCCL engineers will be trained on-the-job. Also the design / Network Analysis Software and Hardware to be procured under the project will be handed over the Company for future analysis purpose.</p>
<p>4: Intelligent Pigging for safe & efficient operation of TGTDCCL owned major transmission Pipelines.</p> <ul style="list-style-type: none"> To assess the condition of the following existing transmission network: <p>A.1 Titas M & R Station (Ghatura)~Narsingdi VS 12 - 14"x1000 Psig x 49.39 Km</p> <p>A.2 Narsingdi VS 12~Demra CGS - 14"x1000 Psig x 32.41 Km</p> <p>A.3 Ashuganj VS 3- ZFCL Complex - 10"x1000 Psig x 3.43 Km</p> <p>A.4 Titas M & R Station (Ghatura)~Narsingdi VS 12 Parallel Pipeline - 16"x1000 Psig x 46.31 Km</p> <p>A.5 Narsingdi VS 12~Ghorashal 2x14"x1000 Psig x 12.00 Km</p> <p>A.6 Narsingdi VS 12~Ghorashal Third Parallel Pipeline 16"x1000 Psig x 12.00 Km</p> <p>A.7 Ghorashal to Joydevpur CGS- 14"x1000 Psig x 24.50 Km</p> <p>A.8 Elenga to Tarakandi - 12"x1000 Psig x 43.00</p> <p>A.9 Monohardi to Narsingdi - 20"x1000 Psig x 25.00 Km</p>	TGTDCCL	<p>TGTDCCL has a transmission system of 613 km comprising 12" DN, 14"DN, 16" DN, & 20" DN Pipe lines. These pipelines have major river & railway track crossings. One major transmission pipeline (14' x 1000 Psig) also crosses the mighty Meghna River along the Railway Bridge. The pipe lines were laid at different times between 1968 and 1999, which are currently under full capacity utilization, supplying gas to a number of Power & Fertilizer Plants as well as major load centers including Metropolitan City. These transmission pipelines are required to undergo Intelligent Pigging in order to assess their operational integrity & safety and to take steps for replacement of pipeline sections as necessary.</p>

<p>A.10 Narsingdi Valve Station-12 ~ Siddirganj P.S RMS- 20"x1000 Psig x 41.00 Km</p> <p>A.11 Dhanua ~ Mymensingh 12"x1000 Psig x 56.00 Km</p> <ul style="list-style-type: none"> To ascertain whether the existing transmission pipeline will be replaced by higher-diameter pipelines keeping in view the safety factors and growing gas demand. 		
<p>5: Capacity Building and Human Resource Development</p> <ul style="list-style-type: none"> Development of operation and maintenance manuals for supervisory and operator level manpower. Providing foreign training of Company's technical manpower in the fields of Pipeline transmission and distribution design, design/operation/ maintenance of metering and regulating system, cathodic protection, and telemetry and remote metering and management level training/seminar/ symposium for the senior officials. Providing on-the-job Training for Company's manpower in the fields of design, development, operation, maintenance, environmental safety, hazard and risk management, corrosion control, project finance and management by expatriate specialists. 	<p>TGTDCL</p>	<p>Efficient and skilled human resource is an inevitable part for the smooth and reliable operation of gas transmission and distribution system and the efficient performance of the Company as well. And thus it necessitates extensive training to inculcate skills and expertise in the personnel employed in different sectors of the Company. Once a good number of skilled and efficient human resources are attained it is certain that the operational performance of the Company will be promoted to a desired level. So it is imperative that a comprehensive training be incorporated under the project.</p>

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তিতাস গ্যাস ট্রেডার্স ইউনিয়ন এণ্ড ডিজিটাইজেশন কোং লিঃ

(পেট্রোবাংলার একটি কোম্পানী)

তারিখঃ ১৮-০১-২০১২ খ্রি.

সূত্র নংঃ এসইআইপি/১৪.২ /১৮৬৬/২

পরিচালক (পরিচালনা)
পেট্রোবাংলা
৩, কাওরান বাজার বা/এ
ঢাকা-১২১৫।

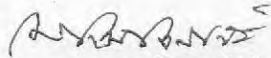
বিষয়ঃ MAIN POINTS OF DRAFT FINAL REPORT এর উপর মতামত প্রেরণ প্রসঙ্গে।

মহোদয়,

উপর্যুক্ত বিষয়ে পেট্রোবাংলা হতে প্রাপ্ত পত্র, সূত্র নংঃ ৩২.০৩.১৯/৫৩৫ তারিখঃ ২৬-১২-২০১১ খ্রি. এর সঙ্গে সংযুক্ত ও জাইকা হতে প্রাপ্ত “MAIN POINTS OF DRAFT FINAL REPORT” শীর্ষক প্রতিবেদনের উপর অত্র কোম্পানীর মতামত ইতঃপূর্বে পত্র, সূত্র নংঃ এসইআইপি/১৪.২/১৫১১/১ তারিখঃ ০৩-০১-২০১২ খ্রি. এর মাধ্যমে পেট্রোবাংলায় প্রেরণ করা হয়, যা ই-মেইলের মাধ্যমে জাইকা কর্তৃপক্ষের নিকট প্রেরিত হয়। তৎপ্রেক্ষিতে জাইকার সংশ্লিষ্ট প্রতিনিধির নিকট হতে প্রাপ্ত ইলেকট্রনিক মেইলের চাহিদা অনুযায়ী অন্যান্য তথ্যাদি অন্তর্ভুক্ত করতঃ সম্মিলিত প্রতিবেদন প্রস্তুত করা হয়েছে। বর্ণিত প্রতিবেদনের একটি কপি পরবর্তী কার্যার্থে এতদসঙ্গে সংযুক্ত করা হল।

ধন্যবাদান্তে,

আপনার বিশ্বস্ত,


(মো. আব্দুল আজিজ খান)
ব্যবস্থাপনা পরিচালক

বিতরণঃ

- ১। ব্যবস্থাপক (সমন্বয়), চেয়ারম্যান শাখা, পেট্রোবাংলা, ঢাকা।
- ২। Mr. Kazutora KONO, Consulting Engineers, Oriental Consultants Co. Ltd.

প্রধান কার্যালয় : “তিতাস গ্যাস ভবন” ১০৫, কাজী নজরুল ইসলাম এভিনিউ, কাওরান বাজার বাণিজ্যিক এলাকা, ঢাকা-১২১৫, বাংলাদেশ।

ফ্যাক্সঃ- ৮৮০-২-৮১১৩০৩১ টেলিফোন : পিএবিএক্স- ৮১১২১৩৫-৪২

ই-মেইল : titasgas@bdonline.com, mdtgas@dbn-bd.net, ওয়েব সাইট : www.titasgas.org.bd

TITAS GAS TRANSMISSION AND DISTRIBUTION CO. LTD

(A Company of Petrobangla)
105, Kazi Nazrul Islam Avenue
Kawran Bazar C/A, Dhaka-1215

Projects Proposal for Japanese Government ODA Loans

Sl No.	Name of the Component	Estimated Cost (In Lakh Taka)			Implementation Period	Remarks
		F/C	L/C	T/C		
	1: Operational Strengthening and Measurement Efficiency Improvement					
	Sub-components:					
	a) Development of Remote Gas Metering System for 1000 load intensive customers and distribution input metering and counter metering station, comprising design, procurement and installation of required meters and ancillary facilities.	Tk. 685.00	Tk. 3385.00	Tk. 4070.00	4.0 years	Turn-key Contracts
	b) Design, Procurement, Installation and Commissioning of 300,000 nos. of Pre-paid Gas Meters for the Domestic/Commercial customers.	Tk. 23800.00	Tk. 9220.00	Tk. 33020.00		Turn-key Contracts
	c) Extensive CP and leakage survey of gas distribution network and domestic customers house lines, including procurement and installation of materials/equipment as necessary.	Tk. 1900.00	Tk. 3480.00	Tk. 5380.00		Survey, Engineering, Procurement & Installation
	Sub-Total (Component 1):	Tk. 26385.00	Tk. 16085.00	Tk. 42470.00		
	2: Rehabilitation of the existing critical pipeline sections					
	Sub-components:					
	a) Construction of 4"~16" DN × (50-150) psig ×150 km pipelines for rehabilitation of Distribution Main Lines/ Distribution Network and installation of Metering and Regulating facilities in prospective load growth centers in and around greater Dhaka.	Tk. 13000.00	Tk. 17145.00	Tk. 30145.00	3.0 years	Survey, Engineering, Procurement & Construction
	b) Rehabilitation of existing pipeline River crossing section by Horizontal Directional Drilling Method (HIDD) as necessary.	Tk. 3645.00	Tk. 1200.00	Tk. 4845.00		-do-
	Sub-Total (Component 2):	Tk. 16645.00	Tk. 18345.00	Tk. 34990.00		
	3: Study of existing Distribution network system of TGTDCCL and its components.					
	Sub-components:					
	a) To assess the condition of the existing Gas Distribution Pipeline Network system using latest network analysis software.	Tk. 1398.00	Tk. 475.00	Tk. 1873.00	2.5 years	Survey & Study
	b) Procurement and supply of latest Design/ Software Analysis Software and Hardware.					Procurement & Training
	c) On-job Training of the TGTDCCL Engineers.					
	Sub-Total (Component 3):	Tk. 1398.00	Tk. 475.00	Tk. 1873.00		

Projects Proposal for Japanese Government ODA Loans

SI No.	Name of the Component	Estimated Cost (In Lakh Taka)			Implementation Period	Remarks
		F/C	L/C	T/C		
	4: Intelligent Pigging for safe & efficient operation of TGTDC owned major transmission Pipelines.					
	Sub-components:					
	a) To assess the condition of the following existing transmission network: A.1 Titas M & R Station (Ghatura)-Narsingdi VS 12 -14"x1000 Psig x 49.39 Km A.2 Narsingdi VS 12-Demra CGS -14"x1000 Psig x 32.41 Km A.3 Ashuganj VS 3-ZFCL Complex - 10"x1000 Psig x 3.43 Km A.4 Titas M & R Station (Ghatura)-Narsingdi VS 12 Parallel Pipeline - 16"x1000 Psig x 46.31 Km A.5 Narsingdi VS 12-Ghorashal 2x14"x1000 Psig x 12.00 Km A.6 Narsingdi VS 12-Ghorashal Third Parallel Pipeline 16"x1000 Psig x 12.00 Km A.7 Ghorashal to Joydevpur CGS- 14"x1000 Psig x 24.50 Km A.8 Elenga to Tarakandi - 12"x1000 Psig x 43.00 Km A.9 Monohardi to Narsingdi - 20"x1000 Psig x 25.00 Km A.10 Narsingdi VS-12 ~ Siddirganj P.S RMS- 20"x1000 Psig x 41.00 Km A.11 Dhanua ~ Mymensingh 12"x1000 Psig x 56.00 Km	Tk. 2520.00	Tk. 220.00	Tk. 2740.00	2.5 years	Study & Operation
	b) To ascertain whether the existing transmission pipeline will be replaced by higher-diameter pipelines keeping in view the safety factors and growing gas demand.					
	5: Capacity Building and Human Resource Development	Sub-Total (Component 4):	Tk. 2520.00	Tk. 220.00	Tk. 2740.00	
	Sub-components:					
	a) Development of operation and maintenance manuals for supervisory and operator level manpower.	Tk. 25.00	Tk. 5.00	Tk. 30.00	02 years	Study
	b) Providing foreign training of Company's technical manpower in the fields of Pipeline transmission and distribution design, design/operation/ maintenance of metering and regulating system, cathodic protection, and telemetry and remote metering and management level training/seminar/ symposium for the senior officials.	Tk. 130.00	Tk. 90.00	Tk. 220.00		Foreign Training
	c) Providing on-the-job Training for Company's manpower in the fields of design, development, operation, maintenance, environmental safety, hazard and risk management, corrosion control, project finance and management by expatriate specialists.	Tk. 345.00	Tk. 10.00	Tk. 355.00		Local On-job Training
	Sub-Total (Component 5):	Tk. 500.00	Tk. 105.00	Tk. 605.00		
	Grand-Total (Component 1+2+3+4+5):	Tk. 47448.00	Tk. 35230.00	Tk. 82678.00		

BERC からの支援要請案件

Application Form for Technical Cooperation (Expert)

By the Government of Japan

1. Outline of the Assignment	
(1) Assignment Title	Preparation of Safety Code, Review and upgrading of Grid Code and Distribution Code for Electricity Transmission and Distribution Operation and Maintenance.
(2) Type of Assignment (New/ Extension/ Successor)	New - Consultancy
(3) Period of Assignment and Desirable Time of Dispatch	6 Months January 2011.
(4) Number of Expert(s) Required	03 (three)
(5) Category of Service	<input checked="" type="checkbox"/> Policy Consultation/ <input type="checkbox"/> Administrative System Development/ <input type="checkbox"/> Research and Study/ <input type="checkbox"/> Appropriate Technology Development/ <input type="checkbox"/> Technology Diffusion/ <input type="checkbox"/> Seminar/ <input type="checkbox"/> Others ()
(6) Name of Related Project/ Scheme	Formulation of Regulatory Codes
(7) Name of Requesting Ministry/ Organization and Specific Department/ Division/ Unit of which the Expert is attached	Bangladesh Energy Regulatory Commission, Energy and Mineral Resources Division, Ministry of Power Energy and Mineral Resources.
(8) Location of Service and Distance from the Capital	Dhaka, Capital itself.
2. Counterpart Personnel	
(1) Number, Names and Posts of Counter-part Personnel	4 Nos. Mr. Mohammad Bazlur Rahman, Director; Mr. Md. Haronur Rashid, Deputy Director; Mr. Md. Morshed Iqbal, Deputy Director; Mr. Md. Asaduzzaman, Assistant Director
(2) Name and Post of Supervising Authority to which the Expert is answerable	Mr. Md. Emdadul Hoque Member
3. Background Information on Request of Expert(s)	BERC is an independent and impartial Commission for the energy sector created by an Act of Parliament titled " <i>Bangladesh Energy Regulatory Commission Act, 2003</i> ". It functions in an independent environment primarily to serve the public interest by ensuring that energy prices reflect true cost

	<p>of production and service. BERC has to play vital role in regulating the energy sector to safeguard stakeholders' interests including investors and help ensure affordable energy supply for the economic development of Bangladesh. Vested functions are carried out in accordance with the provisions laid down in the Act. The objectives as stated in the preamble of the Act are:</p> <p><i>"Whereas it is expedient to make provisions for the establishment of an independent and impartial regulatory commission to create an atmosphere conducive to private investment in the generation of electricity, and transmission, transportation and marketing of gas resources and petroleum products, to ensure transparency in the management, operation and tariff determination in these sectors; to protect consumers' interest and to promote the creation of a competitive market".</i></p> <p>BERC aims at bringing transparency in the management, operation and tariff determination in this sector, to protect consumer's interest and to promote the creation of a competitive, level-playing field for the operators.</p> <p>To regulate the electricity transmission and distribution utilities and to achieve discipline in and among these entities, operational and safety codes are necessary. Grid Code and Distribution Code are being prepared which needs review by experts. Presently, there is no Safety Code for Operation and Maintenance electrical transmission and distribution system. This has to be prepared, approved and adopted by BERC.</p>
<p>4. Objective of the Assignment</p>	<p>The objectives the assignment are:</p> <ul style="list-style-type: none"> o To adopt Safety Code for Operation and Maintenance of Transmission and Distribution Network

	<ul style="list-style-type: none"> ○ To adopt Grid Code and Distribution Code for regulation of electric utilities and establish uniformity in standard, O&M, planning, customers' service and relation, reporting and performance monitoring.
<p>5. Expected Output of the Assignment</p>	<ul style="list-style-type: none"> ○ Safety Code for Operation and Maintenance of electrical transmission and distribution system. ○ Grid Code reviewed and updated. ○ Distribution Code reviewed and updated.
<p>6. Duties and Job Description of the Expert</p>	<p>The Experts will be responsible for:</p> <p>Expert - 1:</p> <ul style="list-style-type: none"> ○ To examine the existing safety provisions in the Electricity Rules ○ To review the prevailing safety practices of the utilities ○ To finalize the aspects of the Transmission and Distribution operation and maintenance safety Code ○ Prepare a Safety Code accordingly and finalize the code by interactions with the stakeholders. <p>Expert - 2/3:</p> <ul style="list-style-type: none"> ○ To examine the existing operational and maintenance provisions in the Electricity Rules and Manuals of the utilities. ○ To review the Grid Codes and Distribution Codes of different countries and prepare a comparative statement including the codes being prepared by BERC and prepare review and recommendation matrix. ○ To examine and review the customers' relation practices of the utilities and prepare recommendations for inclusion in the Distribution Code. ○ To finalize the aspects of the Transmission and Distribution Codes. ○ Assist in preparing the final drafts of Grid Code and Distribution Code for adoption by BERC.

7. Inputs by the Recipient Side on the Assignment	
(1) Expenses for Activities of the Expert	BERC will support the following local expenses on reimbursement basis: House Rents and utility costs Stationeries
(2) Provision of the Office and Motor Vehicle for the Expert	BERC will provide office space for the Experts. Transportation will be arranged on rental basis out of the project or purchase of transport, whichever is economical.
8. Qualifications and Experience required	
(1) Age Limit	Minimum 45 years
(2) Educational Background (Doctor/ Master/ Bachelor)	2 - Post Graduate in Electrical Engineering 1 - Post Graduate in Mechanical/ Safety Engineering
(3) Practical Experience on Rental Field	At least 15 years
(4) Language (Name/ Level)	English
(5) Other Qualification and Experience	Experience on grid planning/ protection. Should have exposure to energy regulatory practices in home and abroad.
9. Correspondence Name and address of the official to whom correspondence regarding this application should be forwarded	Mr. Mohammad Bazlur Rahman Director (Power) and Project Director Bangladesh Energy Regulatory Commission TCB Building 3rd Floor 1 Karwan Bazar, Dhaka-1215.

Application Form for Technical Cooperation (Training)

By the Government of Japan

1. Outline of the Assignment	
(1) Assignment Title	Training on Safety Code, Grid Code and Distribution Code for Electricity Transmission and Distribution Operation and Maintenance.
(2) Type of Assignment (New/ Extension/ Successor)	New - Training
(3) Period of Assignment and Desirable Time of Dispatch	6 Months January 2011.
(4) Number of Personnel to be trained	30 (Thirty) including personnel from utilities
(5) Category of Service	<input type="checkbox"/> Policy Consultation/ <input type="checkbox"/> Administrative System Development/ <input type="checkbox"/> Research and Study/ <input type="checkbox"/> Appropriate Technology Development/ <input type="checkbox"/> Technology Diffusion/ <input type="checkbox"/> Seminar/ <input checked="" type="checkbox"/> Others (Training)
(6) Name of Related Project/ Scheme	Formulation of Regulatory Codes
(7) Name of Requesting Ministry/ Organization and Specific Department/ Division/ Unit of which the Expert is attached	Bangladesh Energy Regulatory Commission, Energy and Mineral Resources Division, Ministry of Power Energy and Mineral Resources.
(8) Location of Training	Japan and Dhaka
2. Counterpart Personnel	
(1) Number, Names and Posts of Counter-part Personnel	4 Nos. Mr. Mohammad Bazlur Rahman, Director; Mr. Md. Haronur Rashid, Deputy Director; Mr. Md. Morshed Iqbal, Deputy Director; Mr. Md. Asaduzzaman, Assistant Director
(2) Name and Post of Supervising Authority to which the Expert is answerable	Mr. Md. Emdadul Hoque Member
3. Background Information on Request of Expert(s)	BERC is an independent and impartial Commission for the energy sector created by an Act of Parliament titled " <i>Bangladesh Energy Regulatory Commission Act, 2003</i> ". It functions in an independent environment primarily to serve the public interest by ensuring that

	<p>energy prices reflect true cost of production and service. BERC has to play vital role in regulating the energy sector to safeguard stakeholders' interests including investors and help ensure affordable energy supply for the economic development of Bangladesh. Vested functions are carried out in accordance with the provisions laid down in the Act. The objectives as stated in the preamble of the Act are:</p> <p><i>"Whereas it is expedient to make provisions for the establishment of an independent and impartial regulatory commission to create an atmosphere conducive to private investment in the generation of electricity, and transmission, transportation and marketing of gas resources and petroleum products, to ensure transparency in the management, operation and tariff determination in these sectors; to protect consumers' interest and to promote the creation of a competitive market".</i></p> <p>BERC aims at bringing transparency in the management, operation and tariff determination in this sector, to protect consumer's interest and to promote the creation of a competitive, level-playing field for the operators.</p> <p>To regulate the electricity transmission and distribution utilities and to achieve discipline in and among these entities, operational and safety codes are necessary.</p> <p>Grid Code and Distribution Code are being prepared which needs review by experts. Presently, there is no Safety Code for Operation and Maintenance electrical transmission and distribution system. This has to be prepared, approved and adopted by BERC.</p> <p>Formulation of Codes and implementation needs personnel from BERC as well as from the regulated utilities be trained in relevant field.</p>
<p>4. Objective of the Assignment</p>	<p>The objectives the assignment are:</p> <ul style="list-style-type: none"> ○ To acquaint personnel from Regulators and regulated Utilities with Safety Code for Operation and Maintenance of

	<p>Transmission and Distribution Network prevailing in different countries.</p> <ul style="list-style-type: none"> ○ To make familiar related personnel with Grid Code and Distribution Code for regulation of electric utilities which aims to establish uniformity in standard, O&M, planning, customers' service and relation, reporting and performance monitoring.
5. Expected Output of the Assignment	<ul style="list-style-type: none"> ○ Trained personnel on Safety Code, Grid Code and Distribution for Operation and Maintenance of electrical transmission and distribution system. ○ Transfer of Technology ○ Improved operation of Transmission and Distribution networks.
6. Duties of the Training Organization	<p>The Organizer will be responsible for:</p> <ul style="list-style-type: none"> ○ Setting training curriculum ○ Prepare Training Schedule in home and abroad <p>Foreign Training -</p> <ul style="list-style-type: none"> ○ Arrange venue, accommodation, trainers/ resource persons and conducting training. ○ Travelling arrangement, air tickets and facilitating visa for the participants. ○ Disburse per diem to the participants. <p>Local Training -</p> <ul style="list-style-type: none"> ○ Arrange accommodation of trainers/ resource persons and conducting training. ○ Travelling arrangement, air tickets and facilitating visa for the expatriate trainers. ○ Disburse per diem to the expatriate trainers.
7. Inputs by the Recipient Side on the Assignment	
(1) Expenses for Activities of the Trainer	<p>BERC will support the following local expenses on reimbursement basis: Venue reservation and associated expenses Stationeries</p>

	Per diem to participants for local trainings.
(2) Provision of the Office and Motor Vehicle for the Trainer	BERC will provide transportation of the expatriate trainers to and from the hotel.
8. Qualifications and Experience required	
(1) Age Limit	Minimum 45 years
(2) Educational Background (Doctor/ Master/ Bachelor)	2 - Post Graduate in Electrical Engineering 1 - Post Graduate in Mechanical/ Safety Engineering
(3) Practical Experience on Rental Field	At least 15 years
(4) Language (Name/ Level)	English
(5) Other Qualification and Experience	Experience on safety code, grid planning/ protection. Should have exposure to energy regulatory practices in home and abroad.
9. Correspondence Name and address of the official to whom correspondence regarding this application should be forwarded	Mr. Mohammad Bazlur Rahman Director (Power) and Project Director Bangladesh Energy Regulatory Commission TCB Building 3rd Floor 1 Karwan Bazar, Dhaka-1215.

**PRELIMINARY DEVELOPMENT PROJECT PROFORMA/PROPOSAL
(PDPP)
FOR AIDED PROJECTS**

**TECHNICAL ASSISTANCE FOR STRENGTHENING BANGLADESH ENERGY
REGULATORY COMMISSION AND OTHER AGENCIES FOR INSPECTION,
TESTING & ENSURING COMPLIANCE OF THE QUALITY AS PER
INTERNATIONAL STANDARD OF THE PETROLEUM OIL AND
LUBRICATING PRODUCTS IN BANGLADESH.**

**Sponsoring Ministry/Division
Ministry of Power, Energy and Mineral Resources, EMR Division
Government of the People's Republic of Bangladesh
Bangladesh Secretariat, Dhaka 1000.**

**Executing Agency
Bangladesh Energy Regulatory Commission (BERC)
TCB Bhaban (3rd floor)
1 Karwan Bazar, Dhaka-1215.**

PRELIMINARY DEVELOPMENT PROJECT PROFORMA/PROPOSAL (PDPP) AIDED PROJECTS.

1. **Project Title** : Technical Assistance for Strengthening Bangladesh Energy Regulatory Commission and other agencies for inspection, testing & ensuring compliance of the quality as per international standard of the Petroleum Oil and Lubricating products in Bangladesh.

2. **i) Sponsoring Ministry/Division** : Ministry of Power, Energy and Mineral Resources/Energy and Mineral Resources Division
ii) Executing Agency : Bangladesh Energy Regulatory Commission (BERC)

3. **Expected date of commencement and completion.** : 01 January 2011 and 31 December 2011.

4. **Relevance of Proposal with concerned sectoral allocation.** : The consumption of Petroleum and Lubricating Oil (POL) products has attained quite high level and it is increasing due to scarce availability of natural gas in Bangladesh. No substantial development has so far been undertaken to ascertain the quality of these products. Apart from Eastern Refinery Limited (ERL) there is no standard and satisfactory laboratory in country to test and ensure the product qualities commensurate to the present world standards. Even in Eastern Refinery there is no adequate facility for testing and certify the quality of the lubricating products. This state cannot be allowed to continue. It would pose serious threat in maintaining environmental and public safety & security of the ever-growing Petroleum sector. It would in turn throw the sector in dire straits.

5. **Main objectives and brief description of the project with justification.** : Use of POL products is an ever-growing in the energy sector. It requires well-trained professionals, properly equipped laboratory and workshop with equipment and testing facilities to regulate and ensure the activities in petroleum sector most efficiently, safely & in technically sound manner. But till date no intergraded efforts have been undertaken to carry out such activities to apply highly professional test required to ensure the quality & standard of POL products in the country in truly regulatory perspective. As a result, improper and substandard qualities of products have become a growing concern in maintaining safety & quality. The main objective of this project is to bring the sector under close regulation

through rigorous testing & certification mechanism. Setting of well-equipped & technology-based modern laboratory and testing facilities with fully developed processing & data preservation is a must for putting the mechanism in place. To attain the aforesaid objectives, BERC must have well-trained professionals with sufficient laboratory and testing facilities capable of doing the entire test independently prior to issuance of Test Certificate.

In the absence of such facilities, BERC will not be able to perform one of the major functions of framing codes & standards and enforce those with a view to ensuring quality of service. In this order, the proposed workshop & infrastructural setup will play a pivotal role for public safety. To establish efficient POL products quality testing facilities capable of meeting the requirements of the quality of POL products in the sector, technical cooperation and financial assistance in the form of grant from suitable donor, country or institution will be necessary in the following areas/manner:

- (A) **Human Resource Development (HRD):** Consultancy assistance is required for the preparation of comprehensive & need-based HRD programmed for POL products testing, certification and documentation of test data. This will cover hands-on training for technicians and engineers for testing and preservation of data, documentations for analysis and references. In achieving the said objective, a need-analysis would be required for which visit to all relevant organizations like BERC, Bangladesh Standard and Testing Institute (BSTI), ERL and petroleum oil marketing companies ensure to identify weakness so as to prepare a true professional-based training program. Based on findings the consultant(s) will prepare/design tailor-made training curriculum suitable for entry level, mid-level & higher-level personnel.
- (B) **Capacity Development:** It is required to assess the existing testing facilities and capabilities of BSTI, ERL, LP Gas Limited the blending plants now operating in Bangladesh and the marketing companies namely Podma Oil Company, Jamuna Oil Company Limited, Meghna Petroleum Limited and private entrepreneurs engaged in petroleum operations. Based on the findings, list of equipments, materials etc. will be prepared for establishing well equipped and adequate laboratory & testing workshop for conducting

necessary tests for ensuring product qualities and control mechanism. This will also cover preparation of specifications of equipments, preparation of bidding document for turnkey installation including supply of necessary software and hardware for monitoring and issuance of test certificates, bid evaluation, preparation of the training program to be provided by the vendors etc.

6. Relevance of the Project with short/medium/long term policies/plans/programs etc.

: The acceptability & importance of POL products as transport, agriculture and industry is well established. Requirement of POL in the power sector will increase in many folds due to scarce availability of natural gas. Besides, as the country will move forward and the consumption of fuels will increase; the consumption of proper lubricating oil will also increase and if the quality of the lubricating oil is not ensured, enormous amount of damage will be done in machineries in the form of wears & tears. The consumption of unnecessary POL products will be high due to unburnt fuel, release of Particulate matters and friction loss; as a result, environment will be polluted. In this backdrop, the standard & quality of items related to these products should be brought under close monitoring without any delay. This will directly & significantly impact short, medium & long-term development program in the energy sector. If quality control & certification system is not established the whole country will run in risk. Life & property will be in danger. The institutional structure of the sector should be put on a strong foundation by ensuring successful implementation of the proposed project. This will guarantee accountability which is a dire need in the sector.

7. Relevance with other development programs of the concerned sector.

: The consumption and distribution system of POL products is entwined with multifarious development program including in electricity generation system, of the country. The horizons of the sector will widen if reliability of the system can be ensured through proper testing of quality. Any expansion will have a direct relevance with other development programs of the concerned sector and monitoring compliance of standard.

8. Expected socio economic benefits/outputs of the proposed project.

: Operational cost is reduced sharply with the use of proper quality of POL products. It helps control the expense in transport, agriculture and industrial sector in term of reduced quantity of fuel and enhancement the life of machineries. In order to sustain in the steep competition of world market without compromising the quality of products, cost of production & transport must be substantially low. Moreover, employment opportunity has also

been created in the sector. Both the investment and resultant employment in the sector will go up with the passage of time. This sector is contributing in making the transport sector economically vibrant & cost effective. In the social development sector it is creating substantial opportunity for employment generation and in environment sector reducing health of cost by ensuring pollution-free environment.

9. **i) Estimated amount and cost of the proposed project.** : Total Cost USD 1,500,000/- equivalent to Taka 105,000,000/-
ii) Nature of foreign assistance (loan/grant/others) : Summary of the Cost Break down
(Fig in lakh Taka)
I(a). USD 200,000/- = Tk. 14,000,000/-
(b). USD 5,000/- = Tk. 350,000/-
II. USD 1,120,000/- = Tk. 78,400,000/-
III. USD 175,000/- = Tk. 12,250,000/-
Please see the Annexure-A.
10. **Likely source of foreign assistance** : World Bank, Asian Development Bank, Islamic Development Bank or any other donor agency.
11. **Is there any proposal to undertake feasibility study for the project? If yes, what could be the estimated cost, nature and likely institutional arrangements for such study?** : No.
12. **Any other relevant information.** : Use of proper quality of fuel and lubricating oil will have a positive impact in consumption of fossil fuel and environment. For running the whole sector properly the most important now is quality control and assurance. Only a reliable & acceptable system can play a positive role in development of this sector.

**Signature of Head of
Executing Agency**

**Signature of Secretary of
the Sponsoring Ministry**

Annex-A

Bangladesh Energy Regulatory Commission (BERC).

1. Appointment of Consultant.

(a) Local Consults & Staff	USD 200,000 =	Tk.	14,000,000/-
(b) Miscellaneous.	USD 5,000 =	Tk.	350,000/-
		USD 205,000 =	Tk. 14,350,000/-

II. Procurement of Equipment, Accessories to set up a testing Laboratory/workshop for performing Testing of CNG Cylinders & Conversions component.

(a). Equipment & Accessories	USD 1,000,000/- =	Tk.	70,000,000/-
(b). Buildings	USD 50,000/- =	Tk.	3,500,000/-
(c). Vehicle (1 Pickup double deck)	USD 58,000/- =	Tk.	4,060,000/-
(d). Miscellaneous (Driver + Fuel)	USD 12,000/- =	Tk.	840,000/-
		USD 1,120,000/- =	Tk. 78,400,000/-

III. Procurement of Training.

(a). Training	USD 100,000/- =	Tk.	7,000,000/-
(b). Tour	USD 40,000/- =	Tk.	2,800,000/-
(c). Books, Journal	USD 20,000/- =	Tk.	1,400,000/-
(d) Miscellaneous (Training Aids)	USD 15,000/- =	Tk.	1,050,000/-
		USD 175,000/- =	Tk. 12,250,000/-

Grand Total USD 1,500,000/- equivalent to Taka 105,000,000/-

PRELIMINARY DEVELOPMENT PROJECT PROFORMA/ PROPOSAL (PDPP)
FOR AIDED PROJECTS

TECHNICAL ASSISTANCE FOR SETTING UP
SYNCHRONIZED ENERGY FLOW CENTRAL COMMAND SYSTEM

Sponsoring Ministry/ Division

Ministry of Power, Energy and Mineral Resources, EMR Division
Government of the People's Republic of Bangladesh
Bangladesh Secretariat, Dhaka-1000

Executing Agency

Bangladesh Energy Regulatory Commission (BERC)
TCB Bhaban, 3rd Floor
1 Kawran Bazar, Dhaka-1215.

Preliminary Development Project Proforma/ Proposal (PDPP) Aided Project

1. Project Title : Setting up Synchronized Energy Flow Central Command System
2. Sponsoring Authority : Energy and Mineral Resources (EMR) Division.
Ministry of Power, Energy and Mineral Resources

Executing Agency : Bangladesh Energy Regulatory Commission (BERC)
3. Expected date of Commencement and Completion : Date of Commencement : July 01, 2011
Date of Completion : June 30, 2014
4. Whether included in the Rolling Program : No
5. Main Objectives and Brief Description of the Project : a) Background:

BERC is an independent and impartial Commission for the energy sector created by an Act of Parliament titled "*Bangladesh Energy Regulatory Commission Act, 2003*". It functions in an independent environment primarily to serve the public interest by ensuring that energy prices reflect true cost of production and service. BERC has to play vital role in regulating the energy sector to safeguard stakeholders' interests including investors and help ensure affordable energy supply for the economic development of Bangladesh. Vested functions are carried out in accordance with the provisions laid down in the Act. The objectives as stated in the preamble of the Act are:

"Whereas it is expedient to make provisions for the establishment of an independent and impartial regulatory commission to create an atmosphere conducive to private investment in the generation of

electricity, and transmission, transportation and marketing of gas resources and petroleum products, to ensure transparency in the management, operation and tariff determination in these sectors; to protect consumers' interest and to promote the creation of a competitive market".

BERC aims at bringing transparency in the management, operation and tariff determination in this sector, to protect consumer's interest and to promote the creation of a competitive, level-playing field for the operators.

Energy Audit is a very important need to verify energy use efficiency as well as energy conservation at different installations. This is a tool for monitoring financial and economical activities of the utilities dealing with energy.

Apart from cost rationalization and tariff fixation BERC has mandate to look into sound management principles and best practices in the energy sector including transparency and accountability of the utility entities. BERC has the responsibility to look into reasonable interests of the utility entities and investors' concerns while addressing consumers' rights. For this purpose, a road map has been chalked out to reach and achieve the objectives through setting of standards and close monitoring.

b) Main Objectives:

The project has several objectives:

- (i) to monitor the use of energy to attain best efficiency;
- (ii) constant monitoring of energy flow, both gas and electricity;
- (iii) synchronize energy flow and load dispatch to optimize production/ generation, transmission and distribution of energy;
- (iv) situation analysis to arrive at best possible decision;

- (v) establishment of a Mimic System and train personnel for operation of the unit;
- (vi) all of these will provide a best tool for BERC for establishing regulatory control over the entities in terms of Technical-efficiency, Quality and customers' services.

c) Brief Description of the Project:

BERC regulates energy sector of the country and both Power sector and Gas sector are prominent and inter-related. Presently, lack of coordination and data manipulation prevail in both sector. The outcome is inefficient energy system, in turn, suffering of the end consumers.

In recent days, to mitigate the suffering of the people arising from load shedding, gas supply has been diverted to power generation by curtailing the quota for fertilizer rather keeping several fertilizer plants shut. Still the power generation has not increased proportionately. This is due to selection of running inappropriate generator, which indicates that the operation people do not bother about the pressure and quantum of gas flow and the ultimate result is inefficient energy usage. If the gas flow could be monitored, situation would have been reversed. Presently, Load Dispatch Centre (LDC) organizes power generation and wheeling which is partially automated. Most of the generators and power-grid sections are not visible to the operators. They still depend on typical telecommunication system for controlling the national power grid and mishaps are common. However, an NLDC is under commissioning but this doesn't include the most of the new rental generating plants under construction. So, real time data on energy injected to the grid, energy flow through the transmission network and energy utilized at distribution level are not available.

Similarly, there is no integrated system to monitor gas reservoir capacity, production at various wells, energy flow through the transmission system, pressure & quantum of energy flow at transmission and distribution level.

Although both power and gas has SCADA individually, presently, there is no arrangement of visualizing the combined happenings of gas and power sector. Due to this, synchronizing between gas and power production is missing. Therefore, a Synchronized Energy Flow Mimic Panel and Load Dispatch Central Command System is required to effectively regulate the energy sector of the country.

The system aims to acquire data constantly for every control points of gas and power. Whenever, there is any major variation, for example, shortage or increase of gas production, the situation will be analyzed with alternatives and power generation will be rescheduled accordingly following best possible alternative. To achieve this, the system will have a Mimic Panel which will display the energy flow data at every control point. It will also have simulating software to perform command analysis leading possible decision and/or such alternatives. This central system shall have event logs, too; which will provide profile and event data for scrutiny and preventive analysis.

As the project will contain State of Art technologies personnel earmarked for operation of the System will require adequate training home and abroad.

6. Relevance of Objectives of the Project with the National Development Perspectives, Goals and Objectives in Five Year Plan
- : It has been recognized in the National Energy Policy that energy sector agencies have not been operated and managed efficiently. Due to lack of energy auditing; age old, inefficient plants and systems are consuming huge amount of scarce energy resources to produce only a minimum output. It is causing immense economic and financial loss to the energy starved country like Bangladesh. The proposed project will help BERC to set up an effective control and monitoring tool for regulating the energy sector. Synchronization of gas production versus gas consumption by the generators will be possible in most efficient way. Errors and irrational decisions out of the partial automated cum manual operation of both gas and power system

can be avoided. Moreover, blaming each other by the utilities to shift responsibilities and failures will be eliminated, thereby establishing accountability.

7. Relevance with the other Development Programme of the concerned Sector : Oil, Gas, Petroleum, Mineral and Electricity Sector is the life line for development of the country. It is the main ingredient to enhance the quality of life standard and lower the poverty level. The energy sector itself is very dynamic having multiplier effect. To attain energy efficiency and in turn energy security, BERC has to be proactive by establishing appropriate energy auditing tools. To save huge avoidable wastage of energy, energy auditing is a must and a demand of the era.
8. Expected Socio-Economic Benefits of the Project : With a Synchronized Energy Flow Central Command System, both gas and electricity sector will have strong coordination, best utilization of available resources, increased power generation and a healthy and well-accepted regulatory regime. This will in turn provide reliable supply for a longer period. Reliability in energy supply will attract further investment in the country. Ultimate benefit will be propagated to the end-users i.e., general mass raising their satisfaction-level.
9. Relevance with Concerned Sectoral Allocation : Allocation for Oil, Gas & Mineral Resources exploration and Power Sector in current Five-year plan may be considered adequate for implementation of the project.
10. Likely Source of Foreign Assistance : Kuwait Arab Economic Development Fund (KAEDF), USAID, The World Bank.
11. Estimated Amount and Nature of Foreign Assistance : Total Cost is 3.500 Million USD which is equivalent to Taka 245.000 Million.
12. Is there any Proposal to Undertake Feasibility Study for the Project? : No.

If yes, what could be the Estimated Cost, Nature and Likely Institutional Arrangements for such Study?

Not applicable

13. Any other Relevant Information

: Regulatory regime in the energy sector is new in the country and most of the general people are not familiar with this Commission. When BERC is effective and can act for betterment for the people, its existence will be sensed automatically. Development of the energy sector including attracting investment, will only be possible when an independent, transparent, rational Regulator of quasi-judicial nature establishes just and fair regulatory environment and level playing competitive market ensuring customers' interest. This can be achieved by establishing the proposed project, which is considered a best tool for monitoring and forming a coordinated energy sector.

Signature of Head of
Executing Agency

Signature of Secretary of
the Sponsoring Ministry

Application Form for Technical Cooperation (Equipment)

By the Government of Japan

1.	Subject of Technical Transfer (by the Expert/s) for which Equipment should be Provided	Setting up Synchronized Energy Flow Central Command System
2.	Outline of Activities by the Related Expert(s)	<p>Technology Transfer in respect of Synchronized Energy Flow Mimic Panel and Load Dispatch Central Command System required to effectively regulate the energy sector of the country.</p> <p>The system aims to acquire data constantly for every control points of gas and power. Whenever, there is any major variation, for example, shortage or increase of gas production, the situation will be analyzed with alternatives and power generation will be rescheduled accordingly following best possible alternative. To achieve this, the system will have a Mimic Panel which will display the energy flow data at every control point. It will also have simulating software to perform command analysis leading possible decision and/or such alternatives. This central system shall have event logs, too; which will provide profile and event data for scrutiny and preventive analysis.</p>
3.	Estimated Cost of Equipment	USD 3.5 Million
4.	Place of Procurement	<input checked="" type="checkbox"/> Recipient Country/ <input type="checkbox"/> Japan/ <input type="checkbox"/> Third Country
5.	Preferable Time of Delivery	By June 2012
6.	Necessity of Dispatch of Expert/s for Installation and Adjustment of the Equipment	Yes. The project shall be of turn-key nature and experts will be required to train operational and supervisory personnel.
7.	Name of Recipient Organization	Bangladesh Energy Regulatory Commission
8.	Place of Installation and the Distance from the Capital	Dhaka, Capital itself
9.	Background Information on the Request of the Equipment and its Role in Technical Transfer	<p>a) Background:</p> <p>BERC is an independent and impartial Commission for the energy sector</p>

created by an Act of Parliament titled "*Bangladesh Energy Regulatory Commission Act, 2003*". It functions in an independent environment primarily to serve the public interest by ensuring that energy prices reflect true cost of production and service. BERC has to play vital role in regulating the energy sector to safeguard stakeholders' interests including investors and help ensure affordable energy supply for the economic development of Bangladesh. Vested functions are carried out in accordance with the provisions laid down in the Act. The objectives as stated in the preamble of the Act are:

"Whereas it is expedient to make provisions for the establishment of an independent and impartial regulatory commission to create an atmosphere conducive to private investment in the generation of electricity, and transmission, transportation and marketing of gas resources and petroleum products, to ensure transparency in the management, operation and tariff determination in these sectors; to protect consumers' interest and to promote the creation of a competitive market".

BERC aims at bringing transparency in the management, operation and tariff determination in this sector, to protect consumer's interest and to promote the creation of a competitive, level-playing field for the operators.

Energy Audit is a very important need to verify energy use efficiency as well as energy conservation at different installations. This is a tool for monitoring financial and economical activities of the utilities dealing with

energy.

Apart from cost rationalization and tariff fixation BERC has mandate to look into sound management principles and best practices in the energy sector including transparency and accountability of the utility entities. BERC has the responsibility to look into reasonable interests of the utility entities and investors' concerns while addressing consumers' rights. For this purpose, a road map has been chalked out to reach and achieve the objectives through setting of standards and close monitoring.

b) Main Objectives:

The project has several objectives:

- (i) to monitor the use of energy to attain best efficiency;
- (ii) constant monitoring of energy flow, both gas and electricity;
- (iii) synchronize energy flow and load dispatch to optimize production/generation, transmission and distribution of energy;
- (iv) situation analysis to arrive at best possible decision;
- (v) establishment of a Mimic System and train personnel for operation of the unit;
- (vi) all of these will provide a best tool for BERC for establishing regulatory control over the entities in terms of Technical-efficiency, Quality and customers' services.

c) Brief Description of the Project:

BERC regulates energy sector of the country and both Power sector and Gas sector are prominent and inter-related. Presently, lack of coordination and data

manipulation prevail in both sector. The outcome is inefficient energy system, in turn, suffering of the end consumers.

In recent days, to mitigate the suffering of the people arising from load shedding, gas supply has been diverted to power generation by curtailing the quota for fertilizer rather keeping several fertilizer plants shut. Still the power generation has not increased proportionately. This is due to selection of running inappropriate generator, which indicates that the operation people do not bother about the pressure and quantum of gas flow and the ultimate result is inefficient energy usage. If the gas flow could be monitored, situation would have been reversed. Presently, Load Dispatch Centre (LDC) organizes power generation and wheeling which is partially automated. Most of the generators and power-grid sections are not visible to the operators. They still depend on typical telecommunication system for controlling the national power grid and mishaps are common. However, an NLDC is under commissioning but this doesn't include the most of the new rental generating plants under construction. So, real time data on energy injected to the grid, energy flow through the transmission network and energy utilized at distribution level are not available.

Similarly, there is no integrated system to monitor gas reservoir capacity, production at various wells, energy flow through the transmission system, pressure & quantum of energy flow at transmission and distribution level.

Although both power and gas has SCADA individually, presently, there is no arrangement of visualizing the combined happenings of gas and power sector. Due to this, synchronizing between gas and power production is

	<p>missing. Therefore, a Synchronized Energy Flow Mimic Panel and Load Dispatch Central Command System is required to effectively regulate the energy sector of the country.</p> <p>The system aims to acquire data constantly for every control points of gas and power. Whenever, there is any major variation, for example, shortage or increase of gas production, the situation will be analyzed with alternatives and power generation will be rescheduled accordingly following best possible alternative. To achieve this, the system will have a Mimic Panel which will display the energy flow data at every control point. It will also have simulating software to perform command analysis leading possible decision and/or such alternatives. This central system shall have event logs, too; which will provide profile and event data for scrutiny and preventive analysis.</p> <p>As the project will contain State of Art technologies personnel earmarked for operation of the System will require adequate training home and abroad.</p>
10. Main Users of the Equipment	Bangladesh Energy Regulatory Commission and apex organizations of power and gas sectors
11. Expected Benefit and Effect of the Equipment Provided	With a Synchronized Energy Flow Central Command System, both gas and electricity sector will have strong coordination, best utilization of available resources, increased power generation and a healthy and well-accepted regulatory regime. This will in turn provide reliable supply for a longer period. Reliability in energy supply will attract further investment in the country. Ultimate benefit will be propagated to the end-users i.e., general mass raising their satisfaction-level.

12. List of the Equipment Requested		Quantity	Cost
Name of Equipment	Specification		
(1) Command System	<p>Synchronized Energy Flow Command System having facilities for data acquisition from all control points, data analysis, decision alternatives, feedback commands including:</p> <ul style="list-style-type: none"> • Study of present SCADA system • Design, supply and installation of energy flow command center • Mimic Panel • Data Acquisition Linkage with Power NLDC • Data Acquisition Linkage with Gas SCADA • Installations of new transducers and data acquisition system at missing places. • Development, supply and commissioning of customized software for data acquisition, analysis, reporting, command transmission and remote operations. • Imparting on-job training on operation of the center 	01	USD 3.5 Million
(Detailed list and specifications of equipment shall be attached hereafter, if necessary)			
13. Assignment of Staff, Budgetary Allocation and Necessary Arrangements for Maintenance of the Equipment by the Recipient Country	Separate set of personnel will be deployed for operation of the center. Initially there will be maintenance contract with the equipment provider and gradually taken over by local personnel.		
5. Expected Output of the Assignment			
(1) Budgetary allocation for operation and maintenance of the equipment	Will be borne by Govt. of Bangladesh		
(2) Condition of Space (Capacity, electricity, water supply, etc.) for Operation and Maintenance of the equipment	Space to be acquired. Utility connections will be arranged by BEREC.		

<p>(3) Assignment of Staff for Maintenance of the equipment</p>	<p>Separate set-up for maintenance of the equipment. Personnel will be deployed and required positions will be filled up by recruitment from open market.</p>
<p>14. Correspondence: Name, Postal and telegraphic address of official to whom correspondence regarding this application should be forwarded.</p>	<p>Mr. Mohammad Bazlur Rahman Director (Power) and Project Director Bangladesh Energy Regulatory Commission TCB Building 3rd Floor 1 Karwan Bazar, Dhaka-1215.</p>

添付資料-10

ジャマルプル地域における地震探査

および試掘計画の支援業務案

Proposed 2D/3D Seismic survey and exploratory drilling programme in the Madarganj area of Jamalpur district to confirm the presence of hydrocarbon

Hydrocarbon potential in Madarganj-Sariakandi area

The Bogra shelf area did not generate much interest in the past and as a result limited exploration activities failed to offer any commercial discovery (Figure 1). Now it is quite evident from recent studies that a broad, low relief anticlinal fold having a NW-SE trending axis stretching from Sariakandi (Bogra) to Bhuapur (Tangail) was recognized, and the wells drilled so far in the shelf area were located over the flanks or downdip of this structure. This structure probably forms the crestal part of the largest play of the Bengal basin. From analogy of lithological, depositional and tectonic history to the surrounding gas producing areas, it may be logical to assume that a play of such magnitude must have produced conducive environment for hydrocarbon accumulation. Therefore the possibility of hydrocarbon accumulation over the crestal area along with other types of potential traps like low relief folds, unconformities, updip pinchouts, and fault related traps still remains to be explored.

In the Madarganj-Sariakandi areas, potential source rocks include the shales and carbonaceous shales of from Miocene to Paleocene and coal of Permo-Carboniferous age. So it has three petroleum systems. They are the Oligocene-Miocene-Pliocene, Paleocene-Eocene and the Gondwana petroleum systems. Basin modeling reveals that thermal maturation is sufficient to generate both oil and natural gas and natural gas liquids throughout much of the area.

An interpretation of seismic data revealed fault controlled broad and low relief structures in the Madarganj and Sariakandi areas located over the crestal part of this structure (Figure 2, Figure 3). Presence of seismic amplitude anomalies (Figure 2: Bright Spot) in the Oligocene-Miocene level of the section having direct detection features like polarity reversal and minor diffractions at the edges are indicative of the presence of hydrocarbon in those structures. Presence of time-sag beneath these amplitude anomalies and flat spots further indicate considerable thickness of the feature (Figure 2: Flat Spot). The known Kamta gas field and the Hazipur-1 well having gas and oil shows being located downdip along the axis of this fold and that the Bogra-X1 and Kuchma-1 wells with gas and oil shows being located on the western flank of this structure provide strong evidences on the generation and accumulation of hydrocarbon along the crestal part of this broad anticlinal structure. Plunge of this broad anticlinal fold seems to favour a northwestward (updip) migration of hydrocarbon and their accumulation beyond Hazipur-1 well within this play. Therefore significant accumulation of hydrocarbon at the updip edge of this huge anticlinal structure is not unlikely.

Having Bangabandhu Bridge, power generation and fertilizer production facilities in close proximity, any hydrocarbon discovery in this area would certainly boost industrialization of Bogra, Sirajganj, Tangail and Jamalpur areas and in the northwestern part of Bangladesh at large. Few more seismic lines and a test drill hole at Madarganj are necessary and therefore recommended in the area to confirm the presence of hydrocarbon and their commercial viability.

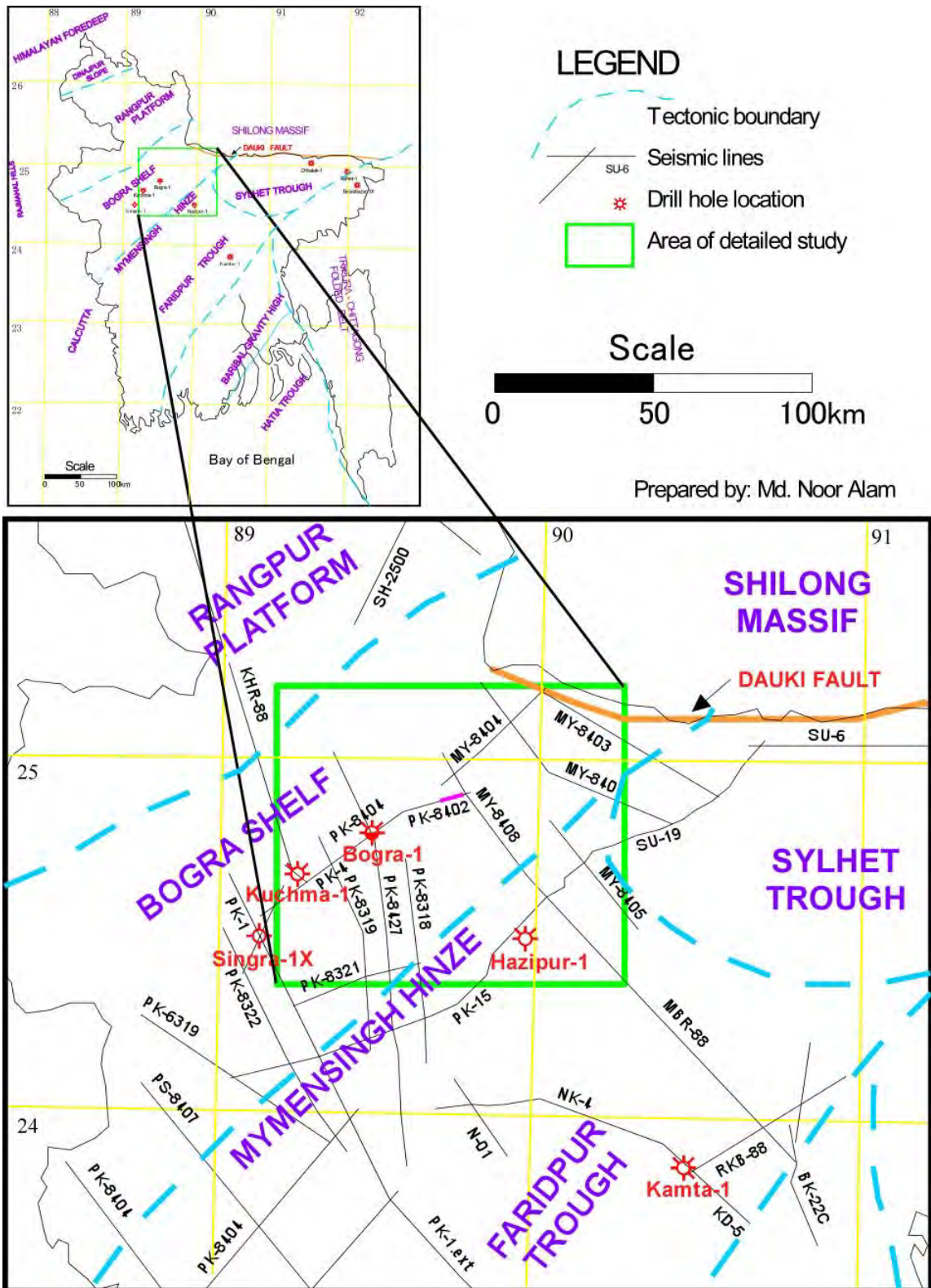


Figure 1: Map of Bangladesh showing tectonic divisions, location of seismic lines, drill holes and the area of detailed study

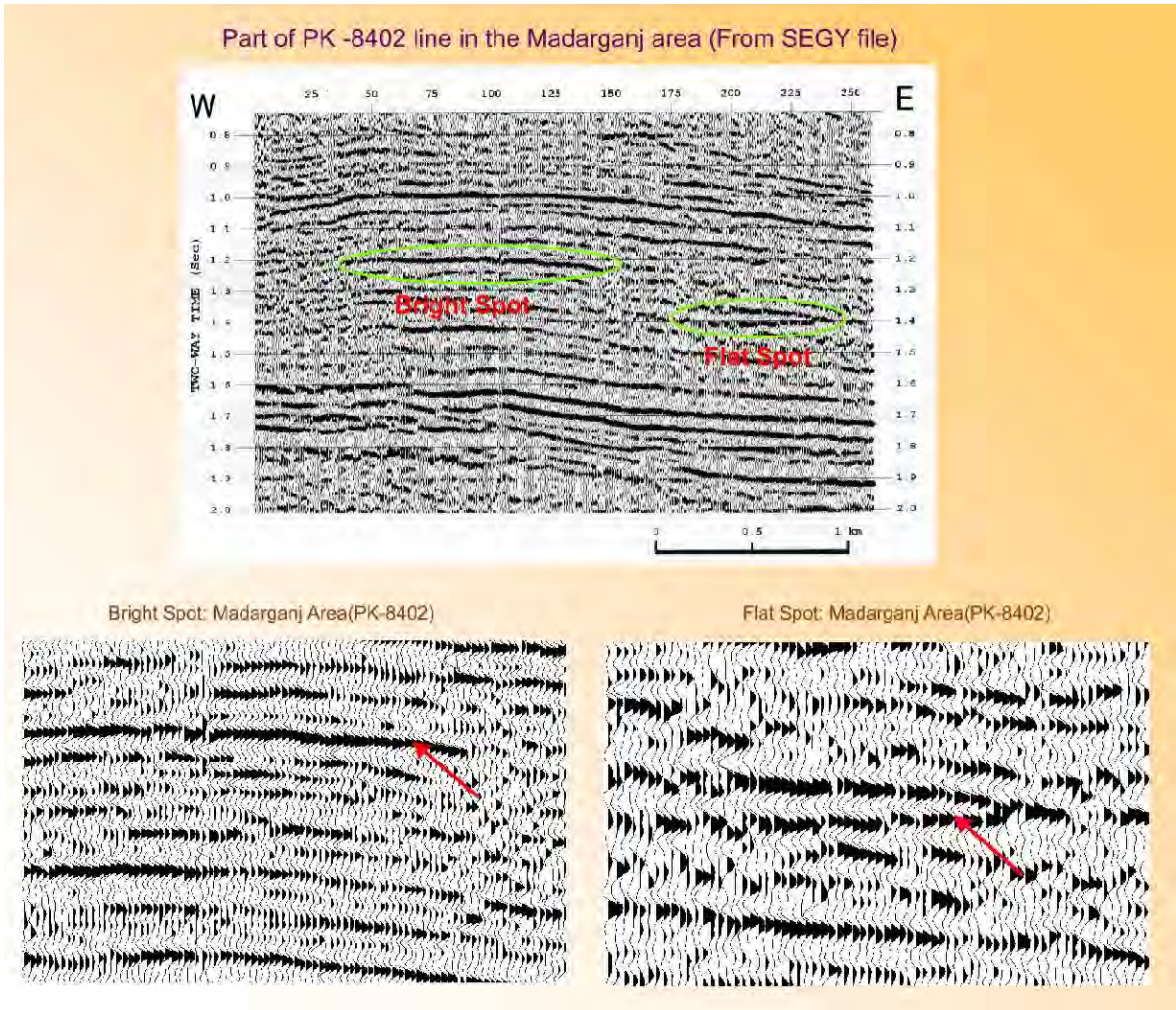


Figure 2: Seismic section (PK-8402) and direct hydrocarbon indication in the Madarganj area

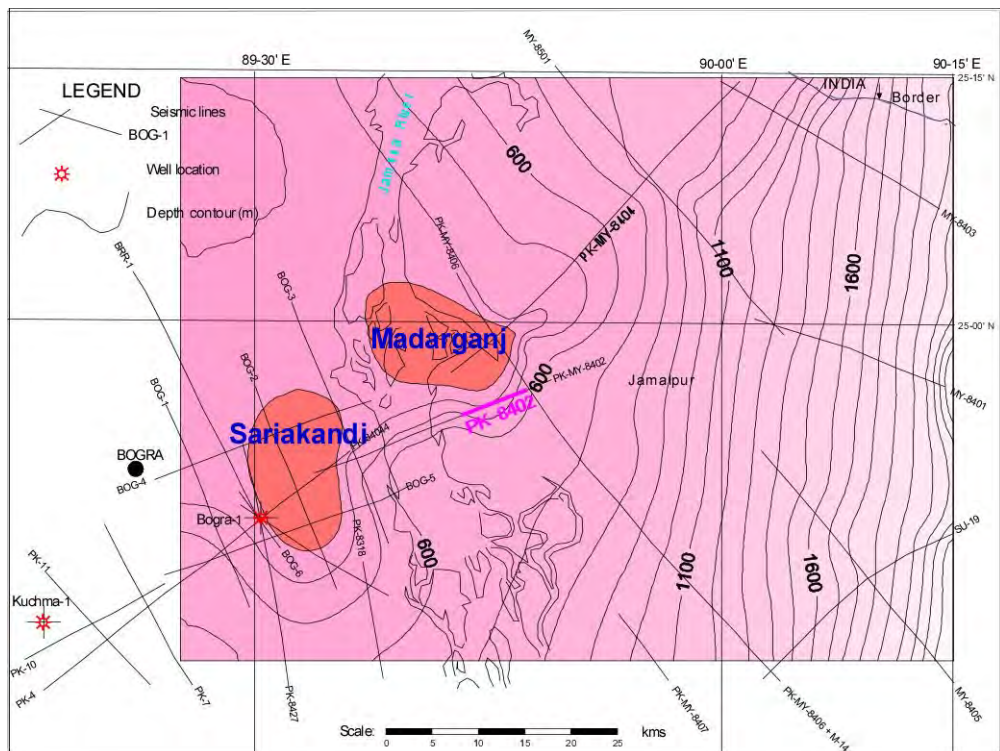


Figure 3: Depth Contour map of Miocene Surma Group in the Madarganj area

Conclusions:

- Broad and low relief structures in the Madarganj and Sariakandi areas located over the crestal part of this structure.
- Presence of seismic amplitude anomalies (Bright Spot) in the Oligocene-Miocene level of the section having direct detection features like Flat spot, polarity reversal and minor diffractions at the edges are indicative of the presence of hydrocarbon in those structures.
- The known Kamta gas field and the Hazipur-1 well is located downdip along the axis of this fold and that the Bogra-X1 and Kuchma-1 wells (With Gas shows in the Eocene Sylhet limestone and Oil shows in Tura Formation) is located on the western flank of this structure.
- The wells drilled so far in the Bogra Shelf area were located over the flanks or downdip of this structure and therefore they were dry.

Recommendations (Figure 4)

- Few more seismic lines over these two structures followed by two test drill holes, one at Madarganj and the other at Sariakandi are necessary to confirm the presence of hydrocarbon and to study their commercial viability.
- Bogra Shelf bears potential for hydrocarbon. It is therefore necessary to carry out high resolution seismic survey over the entire Bogra Shelf area to locate low relief structural and stratigraphic traps etc.

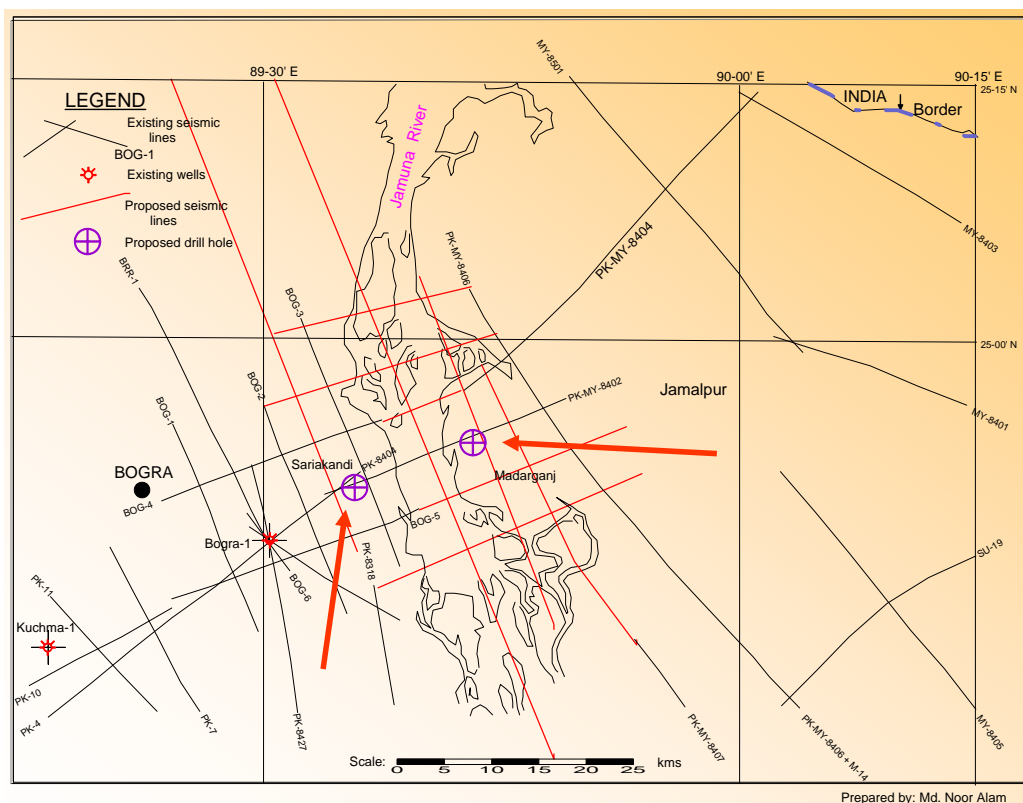


Figure 4: Proposed 2D seismic lines and drill hole locations for detailed study
(Note: Proposed lines are crossing the Jamuna River)

Volume of Survey and Budget (Approximate):

1. Seismic Survey

Seismic	Seismic line required	Unit cost	Approx. cost using Bapex's own crew
2D seismic survey	250 km	3,000 US\$/km	0.75 million US\$
3D seismic survey	300 sq.km	15,000 US\$/sq.km	4.5 million US\$

Time required for seismic survey: One season

2. Drill hole

Drilling	No.of wells	Unit cost/well	Approx. cost using Bapex's own Rig
drill hole (Approx.3200m)	2 well	650 million Taka 8 million US\$	1,300 million Taka 16 million US\$

References:

1. Alam, M. N., 2004: Seismic Evidences on the occurrence of hydrocarbon in the Madarganj and Sariakandi areas of Jamalpur and Bogra Districts Respectively. 5th Conference & Exposition on Petroleum geophysics, Hyderabad-2004, India, pp-380-387.
2. Alam, M.N., Nakayama, K., Matsuoka, T., Yohroh, T, 2006: Petroleum Systems of the bengal Basin in Bangladesh. 6th International Conference & Exposition on Petroleum Geophysics, "Kolkata-2006", pp-889-896.
3. Alam, M.N., 2007: Stratigraphic and Structural Features of the Surma Basin and the Upliftment of the Madhupur Tract of Northeastern Bengal Basin. Journal Geological Society of India, Vol, 69, June 2007, pp-1319-1327.

添付資料-11

入手資料リスト

入手資料リスト

資料 入手元	資料名
ADB	天然ガスアクセス改善プロジェクト報告書の補足添付資料
	実施機関組織図
	過去および今後の財務状況
	財務管理レビュー
	経済分析
	初期環境評価概要
	調達能力評価
	プロジェクト準備スケジュール
	プロジェクト実施準備
	配ガス部門における民間企業参加モデル
BAPEX	年報2006-07
	年報2007-08
	年報2008-09
	年報2009-10
	支援要請案件概要
BERC	支援要請案件概要
	質問票への回答書
BGSL	年報2008
	年報2009
	年報2010
BOI	BOI冊子(Investing in Bangladesh)
BPC	石油関連製品需要予測表(2014迄)
BPDB	電力セクターにおける天然ガス使用量実績(2004-2011)
	電力セクターにおける天然ガス使用量予測表(2018年迄)
	発電所プロジェクトリスト(2016迄)
	発電用エネルギー構成比率(1990-2010)
	電気料金表

入手資料リスト

資料 入手元	資料名
EMRD	Gustavson Associatesによる最新埋蔵量評価書の抜粋
	一次エネルギーおよび商業エネルギー構成比率(2008-2009)
GTCL	年報2005-06
	年報2006-07
	年報2007-08
	年報2008-09
	年報2009-10
	パイプラインプロジェクトリスト
	モノホルディー-ジャムナ橋間パイプラインおよびアシュガンジ・エレンガコンプレッサーステーションプロジェクト提案書
ジャムナ橋-ベラマラ間パイプラインプロジェクト提案書	
GTZ	GTZ冊子
HCU	HCU概要書
	2011年12月時点でのガス埋蔵量および生産量
JGTDSL	年報2005-06
	年報2006-07
	年報2007-08
	年報2008-09
	年報2009-10
KAFCO	電力・エネルギーセクターロードマップ: アップデート
	肥料工場ガス需要予測(2012-2030)
NWPGL	ガス生産予測(2020年迄)
	年間ガス消費実績(1990-2010)
	月次ガス消費実績('07年7月~'10年12月)
	ベラマラ発電所へのガス供給に係る問題点

入手資料リスト

資料 入手元	資料名
Petrobangla	年報2009
	年報2010
	ガスセクター改革ロードマップ 2009-2012
	ガス排出プラン 2010-2015
	国際石油企業からの平均ガス買取価格
	質問票への回答書
	ドラフトファイナルレポート骨子案に対するコメント
PGCL	年報2007
	年報2008
	年報2009
	年報2010
Power Division	500MW太陽光発電開発プログラム(プレゼン資料)
	エネルギー効率改善および需要家サイドマネジメントへのロードマップ
RPGCL	年報2009-10
Santos	年報2010
SGFL	年報2005-06
	年報2006-07
	年報2007-08
	年報2008-09
	年報2009-10
TGTDCCL	年報2009-10
	年報2010-11
	支援要請案件概要
-	エナジー&パワー (「バ」国エネルギー業界誌)バックナンバー
Global Data	バングラデシュガス市場概況、2010