

Report No. 58

**Energy Sector of Bangladesh:  
What are the Knowledge Gaps?**

**Centre for Policy Dialogue**

House 40 C, Road 11, Dhanmondi R/A, GPO Box 2129, Dhaka 1209, Bangladesh

Tel: 8124770; Fax: 8130951; E-mail: [cpd@bdonline.com](mailto:cpd@bdonline.com)

Website: [www.cpd-bangladesh.org](http://www.cpd-bangladesh.org)

July, 2003

*The Centre for Policy Dialogue (CPD), established in 1993, is an innovative initiative to promote an ongoing process of dialogue between the principal partners in the decision-making and implementing process. The dialogues are designed to address important policy issues and to seek constructive solutions to these problems. The Centre has already organised a series of such major dialogues at local, regional and national levels. These dialogues have brought together ministers, opposition frontbenchers, MPs, business leaders, NGOs, donors, professionals and other functional groups in civil society within a non-confrontational environment to promote focused discussions. The expectation of the CPD is to create a national policy consciousness where members of civil society will be made aware of critical policy issues affecting their lives and will come together in support of particular policy agendas which they feel are conducive to the well being of the country. The CPD has also organised a number of South Asian bilateral and regional dialogues as well as some international dialogues.*

*In support of the dialogue process the Centre is engaged in research programmes which are both serviced by and are intended to serve as inputs for particular dialogues organised by the Centre throughout the year. Some of the major research programmes of CPD include **The Independent Review of Bangladesh's Development (IRBD), Governance and Development, Population and Sustainable Development, Trade Policy Analysis and Multilateral Trading System, Corporate Responsibility, Governance, Regional Cooperation for Infrastructure Development and Leadership Programme for the Youth.** The CPD also carries out periodic public perception surveys on policy issues and developmental concerns.*

*As part of CPD's publication activities, a CPD Dialogue Report series is brought out in order to widely disseminate the summary of the discussions organised by the Centre. The present report contains the highlights of a dialogue organised by CPD held at **CIRDAP Auditorium, Dhaka on January 24, 2002** on the theme of **Energy Sector of Bangladesh: What are the Knowledge Gaps?***

**Report prepared by:** Ms Zakia Haque, Programme Associate, CPD

Mr Shahrier Khan, Chief Reporter, The Daily Star

**Assistant Editor:** Anisatul Fatema Yousuf, Head (Dialogue & Communication), CPD

**Series Editor:** Professor Rehman Sobhan, Chairman, CPD

*Dialogue Report on*  
**Energy Sector of Bangladesh: What are the Knowledge Gaps?**

**The Dialogue**

The Centre for Policy Dialogue (CPD) organised a dialogue on the topical subject *Energy Sector of Bangladesh: What are the Knowledge Gaps?* at the CIRDAP auditorium, Dhaka on January 24, 2002.

The State Minister for Energy and Mineral Resources Division, Ministry of Power, Energy and Mineral Resources, Mr AKM Mosharraf Hossain was the chief guest at the dialogue and former State Minister, Ministry of Foreign Affairs Mr Abul Hasan Chowdhury was present as the Special Guest. CPD Chairman Professor Rehman Sobhan chaired the dialogue. The dialogue was participated by a cross section of people who included politicians, representatives from various energy sector organisations and International Oil Companies (IOCs), academicians, researchers, NGOs and members of diplomatic community. Members of the two national level gas reserve and gas utilisation committees were also present at the dialogue.

Dr Debapriya Bhattacharya, Executive Director, CPD welcomed the participants. In his welcome speech he mentioned that CPD held its first dialogue on energy issues on May 23, 1999, and since then continued the process of discussing various energy sector issues. One of the early dialogues held in September 1999, highlighted optimising the use of Bangladesh gas resources where the issues of Production Sharing Contract (PSC) was discussed and the contracts were analysed and at the end, some concerns were expressed. More research and talks followed that dialogue to generate greater consensus on the issue from the national point of view. Prior to the 2001 elections, the CPD prepared a set of policy briefs for all the political parties to adopt. One of these briefs put forward the recommendations on the energy sector. To thrust the policy briefs, the CPD also carried out country-wide consultation meetings and held its dialogue on energy in Sylhet because of the location of the gas resources in that area. Till date CPD held at least eight dialogues on this issue in Dhaka and outside. During the last couple of months, CPD researchers have observed that there had been a very intensive debate on this issue particularly on gas utilisation and gas reserve. The CPD tried to stay away from this debate and tried to look at the facts dispassionately Dr Bhattacharya added.

The CPD believes that this dialogue would generate more insight, more knowledge and more information than generate intensive or passionate polarisation in that way.

### **The Keynote Presentation**

Professor A.K.M. A. Quader of the Chemical Engineering Department and Professor Edmond Gomes, Petroleum and Mineral Resources Engineering Department both from the Bangladesh University and Technology (BUET) presented the keynote paper of the dialogue titled “An Exploratory Review of Bangladesh Gas Sector: Latest Evidence and Areas of Further Research”.<sup>1</sup>

The paper highlighted the following issues: a) gas exploration in Bangladesh, b) production of natural gas, c) uses of natural gas, d) consumption of natural gas in different sectors and their growth, e) projection of gas demands in Bangladesh, f) gas utilization in the future, g) alternatives from revenue from gas utilisation, h) identification of areas for research and studies in gas sector.

The paper described natural gas as an important indigenous hydrocarbon resource in Bangladesh. The first discovery of natural gas was made in 1955 at Haripur. Since then, twenty two gas fields and one oil field have been discovered. In this process, from the early days the International Oil Companies (IOCs) have been involved in the exploration and development of oil and gas in this region under a wide range of contracting arrangement. After the emergence of Bangladesh, following IOCs have worked in the country: ARCO, INA, Nippon Oil, Ashland, Canadian Superior Oil, Union Oil, Shell, Scimitar, Occidental, Cairn, Rexwood, UMIC and Unocal. Shell and Unocal are producing gas from two fields under separate Product Sharing Contracts (PSCs) and Gas Purchase and Sale Agreements (GPSAs).

On gas reserve, different studies were made to determine the estimate. These studies include: Intercom-Kanata Management Ltd. (IKM) study, studies by Petrobangla, BUET, Shell Oil, Unocal, United States Geological Survey (USGS)-Petrobangla Joint Study and Hydrocarbon Unit (Hydrocarbon Unit) and Norwegian Petroleum Directorate (NPD) Study.

There are five basic categories of natural gas consumers: a. power, b. fertiliser (urea, ammonia and ammonium sulphate), c. industrial, d. commercial and e. domestic users.

---

<sup>1</sup> The background paper has been brought out as CPD occasional paper series no. 17

The keynote speakers pointed out that the country's existing gas reserve figures could be increased if the existing gas fields were developed further. They said that pipeline export of gas was a profitable option especially when the prospect of bigger gas reserve in the country remained unutilised.

They noted that as the gas sector required huge Foreign Direct Investment (FDI), International Oil Companies (IOC) should be encouraged to work in Bangladesh and discouraged to leave this sector.

There are different documents giving out gas demand projections such as Asian Development Bank Study, a Task Force Report, the National Energy Policy Report and Petrobangla's own study. These studies project that every year there would be 7 to 10 per cent growth in gas demand for fertiliser, 10 to 13 per cent growth of natural gas fuelled power generation, industrial growth in excess of 7 per cent requiring 7 per cent rise in gas demand and growth of gas demand to exceed the growth in GDP.

Various articles and reports on the demand and growth of gas published in the dailies, weeklies and monthly newspapers, show gas demand growth at 10 per cent. The latest projection supported by Petrobangla predicts that the gas reserves of 10.46 TCF (excluding Bibiyana and Moulvibazar) would be exhausted by 2015 if the demand grows as it had been projected. This projection assumes that power generation will reach 5,264 MW in 2005 and 11,035 MW in 2015.

The projection made in this report shows that during the period 2002-2005, the gas consumption in the fertiliser sector will remain static to about 90 BCF per year. Again, by 2005, if things proceed as planned, the gas based power generation capacity would increase by 1400 MW and the domestic sector consumption of gas would continue to rise. The consumption of gas in industry will continue to rise in the franchise areas of Titas Gas Transmission and Distribution Company Ltd (TGTDC).

The keynote paper suggested some alternatives or gas based products which could generate and increase revenue. These are: a. Aluminium, b. Power Generation, c. Fertiliser, d. Methanol, e. Petrochemicals, f. Liquefied Natural Gas (LNG), g. Gas to Liquids (GTL), h. Compressed Natural Gas (CNG) and i. Pipeline Export of Natural Gas.

Focusing on gas export, the keynote speakers said that to export 500 MMSCFD gas by pipeline over a distance of 1000 Km, it required a 24-30 inch diameter pipeline

system with a pressure of at least 1000 PSIG. This needs an investment close to US\$ 1 billion including gas compression stations and related facilities. Under the present circumstances, gas export can be considered as a short-term option and should be a part of the overall gas sector development plan.

The keynote paper underscored the need to undertake research on the energy consumption planning by different sectors, projection of demands by various studies and documents, estimation of gas reserves and potential by various studies, and operation of the IOCs during the past five years. The promising areas for research and studies include:

- a. Study of gas consumption growth on sectoral basis to project future demands
- b. Reserves estimate based on actual well testing and appraisal of wells
- c. Impact on this sector if IOCs abandon their activities in Bangladesh
- d. Implication of export of gas and Bangladesh's preparedness to undertake it and
- e. Other related issues arising out of PSCs.

## **Discussion**

### ***Knowledge gaps***

R. Reddingius of Shell Bangladesh Limited drew attention to the knowledge gaps that existed about gas reserve estimation. He said that nobody would ever be sure of exactly how much gas reserve one country had and the challenge remained for all to take decisions on gas issues by accepting the truth that reserve estimation would never be perfect. He added that the estimates given out in the key note paper was acceptable in this light. He noted that the estimate for Bangladesh was likely to increase like other countries of the world.

Sirajul Majid Mamun, former Senior Executive of Petrobangla Corporation emphasised on reducing the knowledge gap by getting the reserve estimate done properly. He proposed that the country could assign some reputed companies of the world through competitive bids to make a scientific assessment of the reserve.

### ***Resource assessment confusion***

Badrul Imam of the Geology Department, University of Dhaka said that despite many studies on gas reserve and resources, there had been a lack of convergence. Such a thing happened because the estimates given by the USGS-Petrobangla study and the NPD-Hydrocarbon Unit differed by about 10 TCF. Firstly, such difference is too sharp and secondly, both of these assessments have lots of ambiguity, and both took

into consideration a lot of controversial issues or figures. Clarifying, he added that the USGS report had divided Bangladesh in different divisions and put values of possible undiscovered resources in each of these divisions. A petroleum geologist might not agree with these values because of the parameters set to define these divisions. On the other hand, the Norwegian report seemed more ambiguous and it led to raising questions about the parameters set to assess gas resources. These figures needed to be reevaluated.

Again, according to newspapers, USGS estimated the gas reserve at 32 TCF, while the Petrobangla assessed it at 11 TCF. After coming across all these figures, people became confused.

Professor Quader said that they have presented all the available data in the keynote paper and it was up to all to accept it. Without exploration nobody could fully confirm any projection or estimate.

A representative of Unocal pointed out that a reserve and the quality of a reserve varied so much that a range of uncertainty always remained.

The Honourable State Minister, Mr AKM Mosharraf Hossain observed that experts never agreed with each other on technical issues such as reserve estimation. Unless drilling was done none could say the actual figures. But as Bangladesh lacked adequate funds, it was unable to start so many drilling schemes right away, he noted.

Dr Md. Hossain Monsur, Professor, Dept of Geology, University of Dhaka and former Chairman of Petrobangla, said that the gas debate began after the present government came to power with an intention to export gas through pipeline. He added that the existing agreements and policy gave no provision to export gas through pipeline. The government was trying to increase the reserve by saying that the country had an estimated 11.2 TCF gas reserve. He argued that this reserve figure contained both proven plus probable gas reserve. If only proven reserve was considered, the figure would come down to 7 TCF from 11.2 TCF.

#### ***Problems in the methodology to measure reserve***

Rafidul Islam Khan, a former Division Chief of Planning Commission, said that the keynote paper presentation used various methods and various time frames and that created much confusion. Methods and other parameters needed to be brought down under a common base for fair comparison with each other. He recommended bringing

down all parameters under one base line to clearly show the reserve, recoverable reserve and expected reserve.

Badrul Imam noted that one could not take the hypothetical and speculative data very seriously. The Norwegian report suggested that the resource base was 41 TCF, which was 10 TCF higher than the USGS assessment. The Norwegian report also put 24 TCF out of the 41 TCF into unmapped areas while it placed 16 TCF reserve on mapped areas. So, a person who knew how resource assessment was done could see that these were cumulative multiplication of a number of probabilities. When we said that we had a resource base of 41 TCF, it meant that we were talking about probability and not reserve. Probability mentioned here was the multiplication of five major probabilities including whether there was a source reservation, migration of hydrocarbon and other factors, which were geologically linked with one another. The Norwegians gave the 41 TCF figure using all kinds of probabilities and putting 24 TCF in unmapped areas. Without a map we could not measure the value of prospects. So, this kind of reserve estimation should not be discussed.

Sirajul Islam of the Chemical Engineering Department, BUET, pointed out that we have to use the advanced technology in the methodology to get close to an agreeable gas reserve estimate.

### ***Role of Petrobangla***

A debate over the status of Petrobangla as an organisation started when Dr Md. Hossain Monsur, its former chairman and Professor, University of Dhaka, said that he was quite surprised that though Petrobangla was the government's legal authority on gas issues, the government did not believe in Petrobangla's estimates. Petrobangla represented the government and it had the expertise and experience to trust upon. One could not emphasise on the estimates given by private companies or NGOs when Petrobangla was there. Petrobangla was created in 1972, underwent reforms and came under the act of the parliament in 1985.

Hossain Monsur added that the basic fundamentals in understanding the Norwegian study should be whether it used the right techniques to determine the gas reserve. He observed that no geologist agreed with each other and the only way to make them agree was to undertake drilling.

State Minister for Energy AKM Mosharraf Hossain clarified that the Hydrocarbon Unit was the Government's expert agency whereas Petrobangla was a corporation and an autonomous body dealing with petroleum selling, marketing and drilling. The

report prepared by the Norwegian Government experts and the Hydrocarbon Unit should be considered under that light. He further added that the task of a government department was to complete the undertakings of the government and Petrobangla's task as an autonomous body was not deciding the petroleum reserves but to drill and market gas.

Dr Md. Hossain Monsur further interrupted and opined that Petrobangla was a corporation and not an autonomous body. It was a government organisation and the Hydrocarbon Cell was an organ to perform government duties. He noted that it was not clear whether the state minister was dishonouring the Petrobangla.

Professor Rehman Sobhan, moderator of the dialogue, pointed out that while the Hydrocarbon Unit was a Bangladesh government entity the Norwegian Petroleum Department was not. He asked if there was any reason to question the objectivity of professional competence of these two agencies. Had the NGP got any commercial intention or was it totally incompetent to make an estimation? He questioned all present that what was the actual mode of question was it the institution or the objectivity of the organisation that needed to be questioned?

#### ***Role of Norwegian Petroleum Department and Hydrocarbon Unit***

Dr Mashiur Rahman, the former Secretary, inquired what was the purpose of the NPD study— was it to improve the PSCs or to estimate the reserve?

AKM Mosharraf Hossain said that the Norwegian Study was initiated about a year back along with the Hydrocarbon Unit to update the gas reserve estimation.

Professor Monsur added that the Norwegians had some projects with the Hydrocarbon Unit and they came here to improve the terms and conditions of PSCs and the Petrobangla had no comments on it.

Prof. Moshiur Rahman, as a researcher for the Norwegian government, provided assistance to Bangladesh for expanding its capacity to go into this area. He believed that knowledge had to be generated. He didn't believe that there was any reason to suspect anyone for knowledge dissemination. If there was a flaw in the report it could be resolved through discussion.

Shamsuddin Ahmed of ADB said that the Hydrocarbon Unit was created in 1994 with the assistance of ADB. The reserve study in question actually started in 1999.

### ***Gas export option***

Engineer Shahidullah, Managing director of a consultancy firm, expressed his opinion that there was no rush for a decision on export, and if the issue was to be considered, it should be given a lot of time before final decision is taken. He also noted that one should not rush with the estimation. If the government had an estimate, it should not take the decision on export only on the basis of its committee report. A decision on export can not be taken only on the basis of the reserve size. One should also see that if any organisation other than Petrobangla was interested to export gas, it was properly evaluated.

Rashed Khan Menon, a leader of the Workers' Party, expressed his anxiety and asked why the government was in such a hurry to export gas. He added that it formed a Committee with members who clearly promoted gas export but Bangladesh's own energy security needed to be ensured first.

Replying to Menon, State Minister AKM Mosharraf Hossain said that the government had not decided to export gas at this moment. But, he said, quoting Finance Minister M Saifur Rahman that there was no justification to keep the gas under the ground. In this light the government was considering what was the best use of this resource. The country's real challenge was to find out how to get investment in this sector in the future to meet the growing energy demand of the country. We knew that gas is an exhaustible resource. But we needed to export gas to earn foreign exchange. In the long run it would be good for bringing more investment in the sector.

Mosharraf Hossain added that there was still some confusion about the figures but we needed to work with some figures. A committee of experts had been constituted to remove all confusions and Government was not making any comments at this stage.

A participant drew attention to the difference between the reserve and resource figures. The USGS said the country had 32 TCF while Petrobangla said it was 11 TCF. If the 32 TCF estimate indicated the mean average of finding new gas prospect, then we should not consider export. Our reserve was only of 11 TCF and all our planning should be done accordingly.

Mahbubur Rahman Sadi pointed out that one way to approach the export issue was to calculate how much of gas was needed for 50 years of domestic consumption and see if the country had surplus reserve after meeting that demand. How much we shall get from the export was very important to know and would be useful to develop our infrastructure. He opposed the idea that the country would not develop, would not

make progress without gas. Many developed countries like Japan and Switzerland or developing countries like Sri Lanka do not have much of gas or other energy resources. We have many resources. If after independence we could utilise our resources properly, we might have made a lot of progress. He wanted to know whether we would be benefited at all from export of gas.

### ***Gas demand projection***

Asaduzzaman of BIDS said that there were various forms of energy-- oil, gas, coal, biomass and kerosene. These were used for various forms of energy services-- lighting, cooking, transportation, industries and power production. Some of these had substitute sources and some did not. He noted that it was not clear to him how the gas demand projection was made without making an integrated projection first for all these kinds of demand. To calculate the supply side, one must know about the demand side-- which also depended on how much investment had taken place. The system loss of the energy sector also needed to be taken into account. Power consumption by industrial sector bear high system loss and wastage. If that was taken into account, one could try to make more efficient and increased use of energy in this sector.

Badrul Imam said that the Government demand projection show that in a period spanning fifty years, Bangladesh would need 41 TCF gas in 30 years and 61 TCF gas in 50 years and if we accepted this, we could not consider that export was an option.

Muinul Islam of the Economics Department of the Chittagong University said that with growth in the countries GDP, the demand for energy had also increased quite significantly. In the previous year we saw that the demand for natural gas went up by 13.4 per cent. However, he pointed that, all the studies had put the projection of the growth of demand for energy at around 7-8 per cent. Electricity remained the most crucial infrastructure development and the gas reserve will be enough for only 15 years and not 20 years as claimed by some. At present Bangladesh's GDP growth rate is around 6 percent. Mr Islam thought that the demand projection seemed to be underestimated. If we consider 12-13 per cent growth of demand for gas per annum our reserves will last for only 15 years.

Hossain observed that Bangladesh did not have alternative energy resources other than gas. Demand projections in question tended to use only consumption rates; for example industrial growth was taken to be only 7 per cent. In order to get out of the vicious circle of poverty, Bangladesh required a growth rate in power sector beyond 15 per cent.

Rafidul Islam Khan observed that the demand projections given by Asaduzzaman and Al Hossainy and by Professor Quader, had not taken note of GDP growth or substitution of one fuel by another. Fertiliser growth had been projected at 10 to 15 per cent although it can be said that this would never grow at this level. Now, combined with KAFCO, various fertiliser factories of our country were producing 2.5 million metric tons of fertiliser against a total demand of 4 million tons. While fertiliser based industries showed high growth, the case of other industry consumers could be different and this needed to be correlated with the desired GDP growth. While the projections put industry growth rate at 7 percent, at least 10-15 per cent industrialisation growth was necessary for the survival of the country in the next 10 to 15 years.

Besides, one had to consider new usage of gas. For instance, if the government went ahead with its plan of replacing 25 per cent petroleum fired transport vehicles by CNG fired ones, this would create a considerable demand for gas.

Dr Mosiur Rahman, the Former Secretary, said that the assumption and growth projection was shown at 10 per cent annual growth of demand in the keynote paper presentation and the source was newspapers -- which seemed very casual for such a study. Combining the urge for accelerated growth to 7 or 8 per cent and a 2.5 per cent higher demand, if we attain a growth of 7 or 8 per cent the energy growth rate should be between 16 and 20 per cent. So, this 10 per cent calculation was a serious underestimation. It just ignored any ambition that the country might have voiced.

Profesor Mohiuddin pointed that in 1972 consumption was 24 billion CFT per year. In 1991, it was 50 billion CFT per year. In 20 years the consumption had doubled and consumption in 2001 shot up to 350 billion CFT. So, in only 10 years, consumption rose by seven times and this was the indication that the growth, once started, increased rapidly.

Professor Quader, drawing attention to the fertiliser sector, said that how this sector had been behaving in the last 10 years needed to be analysed. Three gas companies had served this sector-- Titas, Bakhrabad and Jalalabad. Over the last 7 or 8 years, there had not been any growth in this sector. If we do not add fertiliser factories there will be no further growth here. In addition, gas consumption in power sector under Bakhrabad and the Jalalabad systems did not show any substantial increase. The consumption had only increased under the Titas system. He pointed out that what we had achieved in the last 30 years could be an indicator to make realistic planning for the next 10 or 15 years. By 2005 we are going to add only one fertiliser factory if we

have that investment. On the power side if the existing power projects in pipeline came into operation, by 2005 we would require only 200 MMCFD gas in addition to the current demand during the peak hours. So, there was no scope for a dramatic growth in gas demand overnight. We need investment to create consumers and the demand. Focusing on the historical growth rate of Bangladesh, Professor Quader commented that we could not sustain more than 3 to 4 percent growth.

A participant noted that it was not always correct to depend on the historical figures. We were not very happy about the fact that we had not been able to provide electricity to more than only 20 percent of our people. We were not happy that the economy remained stagnant throughout the 1980s up to the early 1990s. But after that the growth rate had picked up. Now we had achieved 6 per cent. We might not sustain this in future-- but we want to sustain. So, those were things we had to consider and not the historical events only. So, planning is very important. And the projection of power made by Prof. Quader was grossly underestimated. In a planning, priority should go to our infrastructure development projects, like emphasis on power generation. And it would automatically count the potential use.

Professor Mohiuddin mentioned that trend analysis could not be taken into the projection. In that position if the trend went up and if one projected according to the trend line, it would take over 900 years to alleviate our poverty. A few years back there was a BUET study saying that if 50 percent of the vehicles in Dhaka and Chittagong were converted to CNG—a daily consumption of 50 MMCFD gas would be necessary. If we considered that the more industries were willing to back up more power plants, power growth would also be high. We should go for a growth rate that improves life and that should be our approach.

Clarifying on the keynote paper, Professor Quader said that there was a general misunderstanding that in his paper he made the demand projections. But he only presented the demand projections made by five year plans, Asian Development Bank Study, National Energy Policy, Task Force on Energy and Petrobangla. He gathered all those demand projections against the actual consumption of gas of the last 30 years. So, the assumptions of 7-10 per cent and 10-13 per cent were taken over by the real gas demand. Their projections were much above what we had been consuming for the last 30 years. So, he disagreed with the propositions that the GDP rate would be taken over by high energy consumption rates. The gas consumption in the last 4 years by the industry and fertiliser factories and the power units only grew in the Titas area, not in other areas.

Moyeen informed that the cost of gas given in the keynote paper as 10 cents per unit was a moderate vision. Syed Moinul Hasan agreed that all the numbers in the tables were based on current prices and prices of gas and power would go up soon under pressure from the World Bank.

### ***Reserve Estimation***

Engineer Shahidullah, while addressing on the optimum use of gas observed that in our self-interest we should be optimistic regarding future economic growth. We should think that in future we would need more gas. But while estimating reserve we should also be conservative to ensure the minimum level of reserve and decide within how many years should we be prepared to seek more energy sources. Since in future we would need more gas, we should not underestimate demand and overestimate the reserve.

Asaduzzaman noted that energy consumption was lower than demand projection possibly because of the infrastructural adequacy. The consumption patterns of rural and urban areas should be examined differently. In that case, the effective demand would increase in the rural areas, added Professor Rehman Sobhan.

Prof Sobhan further said that if demand was underestimated, there would be a high level of unmet demand. With the limited reserve, the country was going to face serious energy deficit in the very near future, may be 10 years from now. In the next part of this dialogue, Prof Sobhan suggested that the participants should try to find out how the country should meet up the energy deficit. Already the country imported petroleum to address its energy deficiency. If our pessimism on reserve was to be matched by our optimism about demand, then it was a dark picture of the energy scenario of Bangladesh. Unless some major effort was made to find some alternative sources including existing possible sources of energy, we would face a serious problem.

There were different assumptions for assessing estimations. One might appear to be an actual estimate, the other would appear to be a reflection of what we hope demand would actually be. We grew at a desired rate and we addressed the poverty needs of the people and hopefully we also might have a Government in place that could respond to the needs of its citizen. On the basis of this assumption, we might have another set of expectation. Now, in this circumstances, let us see what we could do with the available energy resources in terms of the available options. These options would range from domestic usage to possibilities of export in various forms.

Rashed Khan Menon said that gas should be utilised for the welfare of the people. The actual use of electricity and what was presented in the keynote paper was different. Through export we might get 20,000 crore taka in 20 years or 1,000 crore taka in one year. On the other hand we could earn 1,200 crore taka each year by just stopping the system loss.

### ***Demand Estimation in Fertiliser Sector and Foreign Investment***

Former State Minister for Foreign Affairs, Abul Hasan Chowdhury said that he was getting the impression that the dialogue was proceeding on the basis whether gas should be exported or not.

He noted that Bangladesh was unable to project either the demand side or the exact rate of growth because the country had not allowed the private sector to play its due role in the area. If the government opened up the area to private sector, it would have had come up with creative suggestions to utilise gas for both domestic purpose and export in a value added form. If gas was exported, the buying country's private sector would be benefited. The same benefit could go to the private sector in Bangladesh if they were given the chance.

There was ambiguity about the country's gas resource base and there was no reason to politicise the issue. However when the former Prime Minister, Sheikh Hasina had announced that the country would consider export after keeping a 50-year reserve for domestic purpose, the present government—which was in Opposition then—began a war against the idea of export. Then after coming to power, the transformation of BNP on the issue was quick. The decision on gas utilisation should not be based on narrow political interest. Rather, various studies should influence such decisions. The facts that Bangladesh was one of the most densely populated country dispersed in a land mass of 56,000 square miles and that our forest resources were rapidly depleting and that gas was a non-renewable resource should be considered while making this decision. Because this energy resource belonged to the people. Decisions must be taken after taking the views of the entire population, and to do that we have to reach a political convergence in the light of economic understanding. We must try to secure at least this one resource of our country considering the fact that our readymade garments sector would face severe problems after 2005. It is a life and death decision. Let it not be confined only to the government or the private sector. Let us secure maximum benefit for maximum number of years for the people of this country.

AKM Mosharraf Hossain disagreed with the proposition that the demand scenario would change once gas export began. The availability of gas market was very

important in the demand scenario. He noted that the country did not have funds to build even one fertiliser factory in the last ten years. Even the private sector did not come up although it was open for the private sector. He noted that the country needed at least two more fertiliser factories. Again, it would take 7 to 8 years to build one fertiliser factory. So, the demand scenario was linked with the investment scenario.

Professor Rehman Sobhan observed that if the country wanted to attract foreign investors in the energy sector, they would invest here for one reason or another as long as they were able to sell the gas.

### ***Signing of PSCs***

Rashed Khan Menon felt that the keynote paper tried to justify export. He felt more confused when the minister excluded Petrobangla and BAPEX as prospective energy explorers. When the previous Government was negotiating the PSCs, BAPEX was excluded. He noted that politics was very much involved in deciding the utilisation of gas. World politics revolved around energy. In Bangladesh, Opposition leaders took a position totally opposite to what they took after they came to power. When we invited the IOCs, why they were invited should be probed into. What were the terms in the PSCs were also very important to know.

Rashed Khan Menon disagreed with the report being prepared by an expert level committee. He said such an issue should be dealt by a parliamentary committee. Referring to his recent Sylhet visit, he said that the common people were opposing gas export. The people there were inquiring whether they would get money if gas was exported from the Bibiyana gas field.

Abul Hasan Chowdhury pointed out that the previous Awami League government also did not want to export gas and its present position on export is still negative. The Awami League stood by its position on ensuring 50 years reserve before exporting the gas. Signing of a PSC was very important and it was subjected to serious economic scrutiny and technical understanding. The AL Government signed several PSCs because the previous government had signed a few and initiated the process of more PSCs. As an elected government, AL was under no obligation to be dictated by individual organisations. But it was under severe pressure and was constantly told by very distinguished and respectful experts that Bangladesh was missing the boat and the investment would go elsewhere. This was the time when investment in Bangladesh grew from 25 million dollars to a billion dollars because of the energy sector.

On PSCs, AKM Mosharraf Hossain said that four PSCs were signed during the previous BNP regime and two were being negotiated. The next government signed more PSCs with the intention to allow export. The last five years' documents clearly talk about cross border trade and export of gas to India. One needed to look at the terms and conditions in the signed documents like the PSC terms and conditions. The BNP government replaced one contract signed during the Ershad regime. Then BNP signed four contracts and Awami League signed six more contracts. The new Government was landed in a situation with so many PSCs where it had to take a decision on how to get maximum benefit from the gas sector.

### ***Obligations to IOCs and gas export***

State Minister for Energy, AKM Mosharraf Hossain said that the Government had a 250 million-dollar project in the western region but it did not have enough funds to pursue it. The government could give gas connection to everybody's house but where would it get the finance to do so was the main question. We were buying gas from IOCs at 2.8 dollars- 3 dollars per unit and selling the same to local market at 1.4 dollars. If we could sell it at 2.8 then the energy price would have to be doubled. The government was losing 500 crore taka in this sector per year. Liabilities with the IOCs stood at more than 200 million dollars as we could not pay the gas bills in due time due to shortage of adequate foreign currency. It was very easy to have a projection showing how we could go for 5 per cent or 10 per cent growth. As per the contracts, the IOCs had to drill and invest a lot of money and there were questions of cost sharing and cost recovery. If they could not market gas and we failed to ensure the cost recovery, we would face litigation. At this moment there is one company from which we were supposed to buy a certain amount of gas but we were unable to do so and it had filed a 100 million-dollar case. There were other similar contracts also. There were three contracts where gas purchase by us was obligatory. So, nobody was going for drilling unless we ensured the market. We must use this gas and if we did not use it, it would remain unused under the soil. To use it, we needed money to invest. The return on investment needed to be examined. The private sector didn't come up because we were buying the gas at 2.8- 3 dollars and selling at 1.4 dollars.

Enayetullah Khan pointed out that unless IOCs were granted a market they would not invest the kind of money they had invested in the past and thereby taking the investment curves higher. This market could be in the form of LNG or pipeline export of gas or domestic purchase. As the risk investment in energy sector was very high, the IOCs should be paid as per contract or they would cap investment. Could Bangladesh afford that when it needed capital input, particularly the FDI? Could it

allow itself to suffer from investment fatigue when it needed very urgently to accelerate growth rate?

Identifying justification of pipeline gas export, Khan questioned what kind of value added products could Bangladesh export. Whether fertiliser was value reduced or value added would be a debate while power was certainly a value added product. But the very high investment for power plant should also be considered. It would take time for this option to mature. Whereas for the sake of just paying the IOCs that was due, just for the sake of risk investment and also for accelerating growth and technology transfer, pipeline export could be the quickest solution. The gas pipeline proposal seemed to be the most economic option. And all experts agree on its viability. Economic considerations and imperatives of FDI are the most important issues that we should consider. We needed more investment because Bangladesh would require more drilling for oil and gas discovery as it was one of the most under-explored countries in the world.

Professor Muinul Islam of Chittagong University said that the fourteen questions asked by Professor Quader were the real issues of political economy. The existing PSCs have sealed the fate of Bangladesh as it was buying gas at 2.80 dollars to 3 dollars per unit and selling the same at 1.4 dollars to KAFCO. Thus we were subsidising the fertiliser production at KAFCO. We were also subsidising the production of power because we were selling the gas to power stations at 1.6 to 1.1 dollars. Here came the real crunch-- the only beneficiary out of this proposed export phenomenon would be the IOCs because of the way the PSCs were made. We already had experience with the Sangu gas. The original cost estimate for Sangu field development was something below 100 million dollars but now they had inflated the figure to over 360 million dollars. They were claiming this amount from Bangladesh and they were adding their cost everyday. They were donating money to some organisations in the name of charity and there was no mechanism to monitor the cost. Some day we might be forced to pay for that charity even. The production sharing costs were made in such a way that the foreign exchange reserve or the economy would face all the hardship. The question that stirred so much emotion was why did we sign all these PSCs and divide all these blocks among the international oil companies. This was pure politics, and rotten politics. We didn't estimate our cost, we did not estimate properly the revenues we are supposed to pay to IOCs and how to get it. If we wanted to do something of it, economics would dictate that power generation should get priority and the experts agreed. A study of IUBAT done by two Canadian experts with Dr Mujibur Rahman Khan, a former Petrobangla Chairman, suggested that power generation was the most economic proposition for gas usage in Bangladesh

at the present moment. The question of PSC came now. When Unocal signed the agreement, there was a provision for export of LNG. So, we should not argue saying that we were forced to take a decision out of their wish, because if they did not follow the PSC rules they would be violating the agreement.

Financially speaking, the liabilities of Bangladesh as per the PSCs would seal its fate. Then our first demand should be to try to cancel the rest of the PSCs as soon as possible as the present proposition would be very harmful for our economy. The government could not raise the price of electricity and gas everyday just to pay the IOCs. India or anti-Indianism was not the issue here. We wanted economic co-operation with India. We wanted a regional economic forum where we could co-operate with India and have economic consideration. We wanted to develop our Chittagong port and want to use it in regional economic entry port. We wanted to go for transshipment and there was no problem with that.

As a student of economics, Moinul Islam did not find any good for exporting gas at this moment. Looking at the figures put by the Unocal one could see that we would get 20 thousand crore taka in 20 years. But the present value of this amount needed to be considered. The only problem was that the PSCs were made in such a way that there was pressure on the reserve position and our exports had really slowed down, the economy had stagnated somewhere. These were hard issues but yet, these should not be used in giving away to India a non-renewable energy like gas. And that was why this proposition could not be supported.

Awami League leader Abul Hasan Chowdhury clarified that the past AL Government had clearly said that it would not export gas. The IOCs who came to sign contracts knew precisely what was being said. He noted that value-added export was an issue on which there was no opposition. Given the global and domestic environment; the private sector should be encouraged to invest in the energy sector. Bangladesh might consider the option of export after it ensured 50 years of gas reserve.

### ***Committees made by the new Government***

State Minister for Energy AKM Mosharraf Hossain informed the dialogue that the government formed two committees—one to deal with gas reserve based on available figures and the other to give economic analysis of the reserve figures and suggest ways to utilise it to ensure maximum benefit of the country. As there was controversy about the option of export the government high command decided that this committee report would definitely be discussed in the parliament. Let us decide on the economic consideration than on the sentimental point of view. However, none of the two

committees have been given the task to justify export. The economic committee had been given the mandate to suggest the most acceptable ways of gas utilisation. Resource availability was the prime question there.

### ***The Role of Civil Society***

Mashiur Rahman the Former Secretary, drawing attention to the issue of the role of the civil society, said that the civil society took a much stronger interest than those who actually were involved in the gas issue. The Minister indicated that the government had not yet decided about export but it was exploring various aspects and in the exploration it was taking into account the decisions taken by their predecessors. Earlier in the beginning of the discussion there was a comment that people did not trust the government because whenever they change there was a change of opinion and there was a change of policies. But there were instances where a succeeding government was honouring the previous government's position.

There was a serious question about resource availability and more explorations were necessary. On the other hand we should recognise that the technological investment for gas would have to come from outside. And in that case, substantial portion of the repayment burden had to be generated within the sector. If we wanted to pay for the investment in gas sector from export receipts, then export was to increase enormously and that was not possible. So, for the sake of more investment in gas sector, we needed to assume responsibilities. If the reserve or expected reserve were so low that it would not last for more than 15 or 20 years, what would Bangladesh do after that was very important. That should possibly define the problem in terms of a larger production and consumption nexus of which Bangladesh would be a part. If we run out of gas and if we run out of petrol after 20 years, for example, we needed arrangements so that we could have access to these resources.

In discussing gas, the civil society was tempted to take a distinct view. The gas was available here-- we would extract only that much which we could consume and not sell. If the investment was coming from outside then the output also had external dimension that should be taken into account. There was a comment that we needed to sell gas because we needed foreign exchange. This comment was not based on thorough observation. Gas was an exhaustible resource. If we make use of it to an extent that we depleted it too quickly, then we were in a situation of the Dutch disease and that should be avoided. So, this kind of resource should not be used to meet a current problem of foreign exchange shortage. It should be put in a longer-term perspective. The argument that because the PSCs were signed, certain contracts were accepted good or bad had to be honoured, Rahman did not think that these were very

convincing arguments. The sovereign country had the authority of revising any contract if it was convinced that it was against the interest of the country.

Enayetullah Khan said that Professor Quader and Masihur Rahman had pointed out that the government's credibility had suffered enormously in the past few years. The Magurchara incident was ill handled and till today none knew the exact nature of damage there. There was a lack of accountability and transparency in this sector. He opined that if Bangladesh exported gas to India through pipeline, it would have to invest very little but have most return on that investment.

Professor Quader, in his concluding remarks, said that the views of politicians differed most. Pointing at the speech of Rashed Khan Menon, Quader said that Shahbazpur gas field meant nothing for the people of Barisal. Because nothing had been done to develop or utilise the field since its discovery in 1995. When we talked about value addition or other things, we totally forgot the size of investment we needed and from where the money would come. We wanted to shut down the fertiliser factory in Fenchuganj in 1991 but it was still operating because a committee submitted a report saying that it could be operated safely. After that two regimes had passed but no new fertiliser factory had been built.

The other trouble was that the people had wrong impressions about those who promoted IOCs in this country. The promoters who were termed as 'one percent' or 'half percent' men were looked at with suspicion. However, such suspicion might be unfounded.

He concluded by saying that we needed to develop this sector continuously. We must remember that the IOCs discovered the total gas reserve of 14.1 TCF and Petrobangla itself discovered only 1.4 TCF. So, the role of IOCs in reserve finding should not be ignored.

## **Conclusion**

Concluding the dialogue, Prof. Rehman Sobhan observed that the oil companies were arbitrarily demanding access to business using their agreements with the country. These companies were in a position in the globalised world in which we live to exercise collateral pressure on issues such as market access to protect their own interest. They did not have that much stake or interest in Bangladesh but whatever stake they had these companies were obviously going to exercise all pressure they

could put to safeguard their interest. You would have to resist a larger set of forces than merely a problem arising in a court of law. Obviously this sort of dispute would also impede foreign investment.

Professor Sobhan added that to explore, discover and develop the gas resources for the growing energy demand in the country, we would have to find a lot of external resources. The principle donors had decided for their own reason that they were not going to spend one more cent for this purpose. Accordingly, Bangladesh would not have any finances from donors or lenders to develop our fertiliser sector and/or power generation. Historically all investment came from soft loan and now the only way to get investment was either by supplier's credit or from private investment like that in the power sector. So in this situation, we had a lot of questions which needed to be answered. Until we had answers, whatever might be our views and positions, that would not be a very productive political and economic position.

**List of Participants**  
(in alphabetical order)

<i>Ms Selima Ahmad</i>	Director, NITOL Group & Co. Ltd.
<i>Mr Mohiuddin Ahmed</i>	Former Principal, Foreign Service Academy
<i>Professor Muzaffer Ahmed</i>	IBA, University of Dhaka
<i>Mr Shamsuddin Ahmed</i>	Head (Energy), Asian Development Bank
<i>Dr Syed Mainul Ahsan</i>	Professor, Concordia University, USA
<i>Mr Badrul Alam</i>	Director, Wata Chemical Ltd
<i>Dr Anisuzzaman</i>	Professor, Department of Bangla, DU
<i>Dr Mohammad Asaduzzaman</i>	Acting Director General, BIDS
<i>Mr Ashrafuzzaman</i>	Research Officer, BILIA
<i>Dr Munim K Barai</i>	Political and Economic Adviser Canadian High Commission
<i>Mr Amanul Alam Chowdhury</i>	Advocate, Dhaka Bar
<i>Dr Jahangir Alam Chowdhury</i>	Assistant Professor, Finance and Banking, DU
<i>Mr Ismail Chowdhury</i>	Chief Coordination Officer, Unocal Bangladesh
<i>Mr Anwarul Kabir Chowdhury</i>	Director, Rural Electrification Board
<i>Mr Claude Eggleton</i>	PA Consulting, USAID
<i>Ms Lailun Nahar Ekram</i>	President, Asian Development Technology Centre
<i>Mr M Maqbool Elahi</i>	Managing Director, BAPEX
<i>Mr Faisal</i>	Research Intern, CPD
<i>Ms Lailatul Ferdousi</i>	Law Researcher, BLAST
<i>Dr Edmond Gomes</i>	Head, PMRE Department, BUET
<i>Mr Greg Gritters</i>	Vice President, Unocal Bangladesh Ltd.
<i>Ms Zakia Haque</i>	Programme Associate, CPD
<i>Mr Yussuf Abdullah Harun</i>	President, FBCCI
<i>Dr A K Enamul Haque</i>	Department of Economics, North South University
<i>Ms Lena Hasle</i>	First Secretary, Norwegian Embassy
<i>Advocate Molla Moqbul Hossain</i>	Secretary, UNAB
<i>Mr S M Al-Husainy</i>	Former Secretary, GOB & Chairman, Swanirvar Bangladesh
<i>Mr Badrul Imam</i>	Professor, Dhaka University
<i>Mr Aftabul Islam</i>	President, American Chamber of Commerce, Bangladesh
<i>Dr Mirza Azizul Islam</i>	Former Director, UN-ESCAP
<i>Dr Muinul Islam</i>	Professor, Department of Economics, CU
<i>Dr M Serajul Islam</i>	Associate Professor, Department of Chemical Engineering, BUET
<i>Mr A B Tajul Islam</i>	Former MP
<i>Ms Khushi Kabir</i>	Coordinator, Nijera Kori
<i>Mr M F Kaiz</i>	DCCI, MCA

<i>Mr Syed Sajedul Karim</i>	Chairman, Petrobangla
<i>Mr Enayetullah Khan</i>	Editor-in-Chief, Weekly Holiday & MD, UNB
<i>Mr Rafidul Islam Khan</i>	Former Division Chief, Planning Commission
<i>Dr Fahmida Khatun</i>	Research Fellow, BIDS
<i>Engr Mr Serajul Majid Mamoon</i>	Director, Concord Group
<i>Mr Andrew McAllister</i>	Second Secretary, British High Commission
<i>Mr Rashed Khan Menon</i>	Secretary General, Workers' Party
<i>Engineer Golam Mohiuddin</i>	Industrial and Production Engineering, BUET
<i>Dr Md Hussain Monsur</i>	Former Chairman, Petrobangla
<i>Mr A M A Muhith</i>	Former Finance Minister & President, POROSH
<i>Dr Ainun Nishat</i>	Country Representative, IUCN
<i>Mr V W Pete Orr</i>	Manager, Unocal Bangladesh Ltd.
<i>Mr Ruhin Hossain Prince</i>	General Secretary, Bangladesh Communist Party
<i>Dr AKM Atiqur Rahman</i>	Associate Professor, North South University
<i>Mr Mahbub-Ur Rahman</i>	President, ICC-B
<i>Dr A K M Masihur Rahman</i>	Former Secretary, ERD
<i>Dr Mostafizur Rahman</i>	Research Director, CPD
<i>Dr Ruba Rahman</i>	Manager, Shell Bangladesh
<i>Ambassador Waliur Rahman</i>	Director, BILIA
<i>Mr Reinier Reddingius</i>	MD, Exploration & Development, Shell Co. Ltd
<i>Mr S M Shaheedullah</i>	MD, Shaheedullah and New Associates Ltd.
<i>Mr Abdullah Al Shahin</i>	Information Officer, M/O Power, Energy and Mineral Resources
<i>Ms Kaniz Siddique</i>	Associate Professor, North South University
<i>Dr A H M Shamsuddin</i>	Chief Geologist, Unocal Bangladesh Ltd.
<i>Mr A K M Shamsuddoha</i>	Managing Director, Dohatech New Media
<i>Mr A K M Shamsuddin</i>	MD, Rhône-Poulenc Rorer Bangladesh Ltd.
<i>Mr Md Shamsuddoha</i>	Freelance Journalist
<i>Mr Md Shariff</i>	Institute of Diploma Engineers Bangladesh
<i>Mr M Yousuf A Talukder</i>	General Manager, BAPEX
<i>Professor Woobaidullah</i>	Chairman, Department of Geology, DU
<i>Ms Syeda Afroza Zerin</i>	Researcher, BLAST

**List of Journalists**  
(in alphabetical order)

<i>Mr Mahmud Hafiz</i>	Senior Staff Reporter, The Daily Janakantha
<i>Mr Alam Raihan</i>	Staff Correspondent, The Daily Banglabazar Patrika
<i>Mr Mahub Matin</i>	Staff Correspondent, Channel I
<i>Mr Shahed Siddique</i>	The Daily Bhorer Kagoj
<i>Mr Sagar Sarwar</i>	The Daily Jugantar
<i>Mr Sirajul Islam Quadir</i>	Senior Economic Correspondent, Daily Manabjamin
<i>Mr Khaled Muhiuddin</i>	Staff Reporter, The Daily Prothom Alo
<i>Mr Raziur Rahman</i>	Staff Reporter, The Daily Star
<i>Mr Kazi Shamsul Amin</i>	Senior Staff Correspondent, The Weekly Holiday
<i>Mr Dablu Chowdhury</i>	Universal Television
<i>Mr Ziaur Rahman</i>	Senior Staff Correspondent, The Financial Express
<i>Mr A T M Ishaque</i>	Economic Reporter, The Daily Ajker Kagoj
<i>Mr Delwar Hassan</i>	The Daily Dinkal
<i>Mr Md Soaib</i>	Channel I
<i>Mr Rafiqul Bashar</i>	The Daily Sangbad
<i>Mr Sujan Mahmud</i>	Reporter, The Daily Ajker Kagoj
<i>Ms Parveen Ahmed</i>	AP
<i>Mr Hamid Sarkar</i>	Economic Reporter, The Daily Arthaniti
<i>Mr Najmul Hasan</i>	The Daily Ittefaq
<i>Mr A R Khan</i>	The Daily Independent