

The US energy crisis, the solution and Bangladesh

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IN September 2000, the news hit the media that the United States was having an energy crisis. On September 22, President Clinton ordered releasing 30 million barrels of crude oil over 30 days from the national Strategic Petroleum Reserve saying, "Families shouldn't have to drain their wallets to drive cars or heat their homes." Nevertheless, the crisis has worsened across the country. Oil and natural gas prices have increased more than five times in some parts. The hardest hit state is California. In certain sections, hundreds of thousands of people have been without electricity and heat, blackouts and brownouts are rampant, businesses have suffered heavy losses even collapsed, buildings have been closed, and traffic has been disrupted due to power failures even causing some accidents. Natural gas prices have shot up nearly 15 times compared to last winter's prices. Two largest utilities, Pacific Gas and Electric (PG&E) and Southern California Edison, incurring \$13 billion in debt since June 2000, have been pushed to near bankruptcy. It's as if suddenly a plug has been pulled from an artificial life-support system. "We see the cancer spreading, if you will," commented Graham Brownstein of The Utility Reform Network, a San Francisco-based group. Blame continues to be heaped on OPEC, pollution control, industry price gouging and, most of all, deregulation (rather, misregulation). But these, which have been triggers for a deep-rooted crisis, must not be confused as causes. For a real solution we must go beyond short-term explanation and stopgap measures, look at the root of the crisis, and get on the path of the abundant energy resources which remain practically untapped. The crisis is a painful warning for California, for the US and for the world which we can't ignore.

Running on empty

Estimates suggest that all the known reserves of oil, natural gas and uranium will be depleted by 2050 and coal by 2250. These took millions of years to accumulate. We are using up fossil fuels at a rate that is 100,000 times faster than they are being replenished, thereby making them nonrenewable. In one year US automobiles burn more petroleum than Alaskan oil field accumulated in 100,000 years. The most direct consequence of using these fuels is that they are being used up. Rising fuel prices and their worldwide effects, from crippling economies down to the individual consumer's pocket, are symptoms of this crisis.

Energy demand is rising rapidly. The US Department of Energy, in its International Energy Outlook (1998), predicts that the global energy demand will climb by 66 per cent between 1990 and 2020. The hi-tech revolution around the world is consuming power like there's no tomorrow. In the US computers and other electronic gadgets account for nearly 10 per cent of total power consumption. Electricity has been called the "oxygen of Silicon Valley." The Valley is now facing a growing shortage of oxygen.

The crisis can worsen long before the world runs out of oil. In "The End of Cheap Oil" (March 1998, Scientific American) Colin J Campbell and Jean H Laherrere 40-year oil industry veterans conclude, "within the next decade, the supply of conventional oil will be unable to keep up with the demand... From an economic perspective, when the world runs completely out of oil is thus not directly relevant; what matters is when production begins to taper off. Beyond that point, prices will rise unless demand declines commensurately. Using several different techniques to estimate the current reserves of conventional oil and the amount still left to be discovered," Campbell and Laherrere conclude that "the decline will begin before 2010."

More reserves out there?

Additional reserves may be discovered that could keep us going for a few more years, but only as a stop-gap measure. It's like keeping the wolf away from the door for a little while longer. Growing demand for a limited resource could make exploration and extraction highly profitable, and boost investments in proving the existing technologies and innovating new ones. We could also substitute other nonrenewables for oil, such as natural gas, temporarily prolonging the oil supply. In the long run, however, it only leads to choosing one disaster over another. Even in the short-term, such measures shoot up the prices of substitutes. In some parts of the country, natural gas prices have climbed faster than oil prices.

While the major oil companies, with their own dwindling reserves, aggressively pursue fuel sources and push for building more power plants, practically nothing is being said about the root cause of the crisis and its long term consequences or solutions. Oil, natural gas and nuclear industries promoting themselves against each other are launching commercials, as if any of them is a solution. Public confusion, ignorance and denial of the problem go on being reinforced. There's still the belief that the genie who was released out of the powerful fossil and nuclear energy sources will go on serving us forever.

Tapping into the national

The economic, technological and environmental advantages of several renewable energy technologies have been well proven in Bangladesh, not only in researches and estimates, but also through actual implementations and evaluations. Yet, all that remains valuable lessons and promising signs, at best. A more massive expansion of such efforts is urgently needed to solve the country's worsening energy crisis.

Strategic Reserve provides temporary relief, but not a solution. The Department of energy estimates that the US consumes 19 million barrels of oil a day, 10 million of which is imported. At this rate, the Reserve's total stockpile of 571 million gallons is enough only for 30 days. The Reserve was established following the 1973-74 Arab oil embargo, the oil shock that caused cars and trucks to line behind gas pumps like the Depression era bread lines. It came in handy in 1991, during the Gulf War never really ended and we continue to be at war over oil in the Persian Gulf. Nothing better explains our Middle East quagmire than our dependency on, and ever growing hunger for, oil.

So, the arguments claiming additional reserves out there quickly dry up when we ask questions like, just how much more, for how long, and at what price? Add to these: additional utilization of nonrenewable how many more environmental, economic and political consequences are we going to face? The consequences which we are facing now the legacies we leave behind for future generations such as global warming, acid rain, nuclear contamination and energy wars, each with a costly price tag, already seem to be out of control, unless some fundamental, revolutionary changes are made.

The solar revolution

What we need is a truly long-term vision and approach. Solar energy with its vast renewable energy sources of light, heat, wind, water movement and photosynthesis has the potential to revolutionize the global economy. In two weeks the Sun gives us more energy than what is stored in all the fossil fuel reserves on the planet. Fueled by renewable sources, the choices of many ingenious and practical solar technologies, such as photovoltaics, wind turbine, hydroelectric and solar

thermal systems, biogas and solar cookers are within our reach right now. Appropriately chosen and combined, these offer sustainable solutions for rural as well as urban settings around the world from a Bangladeshi village home to a skyscraper in New York's Times Square. A wide range of applications of renewable energy technologies has proven their economic and environmental advantages. Many more highly promising possibilities, such as fuel cells, are on the horizon.

The transition will not be easy, especially because of the extent to which we have become entrenched in the nonrenewable path and the powerful vested interests, which guard and reinforce the entrenchment. Under these conditions, the grip of denial on our psyche tightens even more. Investment in renewable energy technologies at various public and private levels is growing in the US and around the world, but it doesn't come close to allowing us to avoid catastrophe. It will require an emergency action plan aimed at all levels calling for understanding the problem, solar education for action, conservation, increased investments in renewable energy technologies, financing, collaboration, and transformation of political and social will. Maximizing renewable options while conserving and utilizing the nonrenewable with the utmost efficiency and as transitional fuels is the key to the transition. The diverse nature of the energy technologies offers enormous possibilities for such actions.

The Bangladesh energy scenario

The energy crisis is worsening in Bangladesh. The fuel import bill is over 70 per cent of the country's total export earnings. The only sizable fossil fuel reserve is natural gas, 10.42 trillion cubic feet (TCF), which is likely to be exhausted by 2010. A speculated additional reserve may stretch gas supply for a few more years. A Bangladesh-US joint study in 2001 puts the reserve estimated to be between 8.7 TCF with a 95 per cent possibility and 67 TCF with a 5 per cent possibility over the next 30 years. Put differently, there's a 50-50 chance of striking 33.5 TCF gas reserve in next 30 years. Whatever amount of gas is found, the economic feasibility remains a serious question. Cost of exploration and extraction increases as reserves get more difficult to reach. Explorations by multinationals have already caused critical environmental and economic damage. The lures of dollars and pressures under weapons both of hardware and "development" mean a little of the gas may be available for the country's own consumption. The pressure to export gas has been building. Only a small per cent of the population have access to natural gas for cooking; even for that the supply has become increasingly unreliable. The use of natural gas will also contribute to global warming. Bangladesh is among the regions which are most vulnerable to this unnatural disaster. Should Bangladesh pave the path of its own disaster?

Hydroelectric contributes only 2 per cent of the total energy supply. Hydroelectricity or hydel power has a renewable source. However, mainly due to inappropriate topology and plant size, the hydroelectric project at Kaptai has proven itself to be more of an ecologically damaging and unreliable power source. Diesel generators are widely used.

But they have a short and costly life cycle, requiring frequent maintenance and costly parts. They depend on ever-costlier nonrenewable fuels, which also cause pollution for air, water and noise. The construction of a nuclear power plant is under consideration, but nothing could be more short-sighted and ultimately more economically, environmentally and politically disastrous than this. Germany's official decision in 2000 to phase out nuclear power by 2020 is both a warning and an example for the world.

In short, while the demand for energy is multiplying in Bangladesh, a growing scarcity of firewood and cooking gas, rising costs, inadequate and unreliable electric supply, environmental destruction and pollution have reached a crisis which is impossible to solve by relying on nonrenewable or manipulating the power supply.

Renewable energy prospects

Bangladesh is richly endowed with renewable energy sources. Sunlight is abundant year-round in this semi-tropical region. Even during the monsoon season with long daylight hours, solar radiation is as good as the annual average. In addition to ample light and heat, the hundred-plus miles long coastal area and hilly sections provide ample wind for wind turbines; waterways of varied forms and speed provide ample wave and gravity driven water flow for ecologically balanced hydroelectric generators; and the lush vegetation provides ample photosynthesis and biomass for fuel for a variety of purposes. Bangladesh is truly an exceptional, naturally endowed and integrated, "energy mine." Contrary to the publicized notion that it will take a miracle to solve Bangladesh's energy crisis, it is indeed a "development" blunder of a miraculous proportion that such a crisis could be contrived in Bangladesh.

Since the 1980s, mostly through international collaboration, various kinds of renewable energy technology projects have been implemented at the NGO, private, commercial, academic and governmental levels. Bangladesh Proitbondhi Foundation, Nijera Kori, UBINIG, Centre for Mass Education in Science, the Fuel Research Institute of BCSIR, the Energy Park at Dhaka University, the Atomic Energy Centre, the Rotary Club of Dhaka, the Red Crescent, Rahimafrooz Solar, Bangladesh Solar, Bangladesh Centre for Advanced Studies, Swanirvar, Rural Electrification Board (REB), LGED, BRAC, Grameen Shakti, Solar Energy System, Ananda, First Bangladesh Technologies, Micro Electronics and Prakaushali Sangsad are among the pioneers undertaking such projects. Through innovation and turnkey transfer, some components are manufactured locally, which are among the best and cheapest in the world. Forums, workshops, seminars and conferences are taking place at various levels. There are others who are playing an increasingly active role.

The economic, technological and environmental advantages of several renewable energy technologies, such as photovoltaics, wind turbines, micro-hydro, biogas and solar cookers have been well proven in Bangladesh, not only in researches and estimates, but also through actual implementations and evaluations. Yet, all that remains valuable lessons and promising signs, at best. A more massive expansion of such efforts fueled by political and social will is urgently needed to solve the country's worsening energy crisis and launch its economy towards an eminently viable sustainable and prosperous future.

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Excerpts from the main report of Hamoodur Rahman Commission of Inquiry as declassified by Government of Pakistan

Earlier, between August 26 and September 10 of last year, we published excerpts from the leaked supplementary report of Hamoodur Rahman Commission of Inquiry constituted by Bhutto government in Pakistan to probe the 1971 debacle by Pakistan Armed Forces in erstwhile East Pakistan. These we carried in sixteen instalments.

The leaked supplementary report triggered a demand in Pakistan for an early release of the Commission's 'main report' withheld for the last twenty-six years since its submission before the then Pakistani government. As a sequel to the pressure politicians, civil society leaders, human rights activists and ex-Generals in Pakistan put on the incumbent government that its Chief Executive Pervez Musharraf decided to 'declassify' the report on December 30, 2000. It is the excerpts from that report which we serialise with effect from today, downloading the same from *The Dawn* website.

However, we owe our readers a responsibility to tell them that the report is fundamentally a Pakistani view, analysis and interpretation of the events in 1971.

POLITICAL BACKGROUND: I

THE new Constitution came into force on the 8th of June, 1962, but as soon as it was put into operation a countrywide campaign was set afoot under the leadership of the former Prime Minister, Mr H.S. Suhrawardy. It was bitterly attacked as a retrograde step designed for perpetuating the Field Marshal's (Ayub Khan's) power. All its basic principles were challenged. There was a general clamour for the restoration of the political parties, the re-introduction of a direct system of elections of the legislatures and the re-establishment of the fundamental rights of the citizens.

The opposition was at first ruthlessly suppressed and Mr Suhrawardy was taken into custody. There was great resentment against this move, particularly in the student community in East Pakistan, which launched an agitation against the educational reforms and the new University Ordinances promulgated in June 1961. The students came into clash with the agencies of law and order and firing had to be resorted to. This only gave further momentum to the movement and it spilled over to West Pakistan. A general strike was called by students in East Pakistan for the 17th of September, 1962, against the Education Commission's reforms and in particular against the three-year pass degree course. This call was taken up in West Pakistan also and the tempo of the student unrest assumed such serious proportions that the government had ultimately to yield and virtually withdraw the three-year course, although officially it was only held in abeyance.

With the promulgation of the Constitution it was furthermore soon realised that the constitutional machinery, no matter what its form or shape, could not work without political parties. On the 14th of July, 1962, therefore, a Political Parties Act was passed allowing Political Parties to function but with many

restrictions. Notwithstanding these restrictions, the political parties began to reappear, particularly, since the Field Marshal himself had decided to establish a political party of his own, called the Convention Muslim League.

The political agitation against the constitution continued to gather further momentum with the emergence of the political parties and the Government was compelled in 1963 to re-introduce fundamental rights, give power to the High Courts for the issuance of writs and to empower them to exercise the right of judicial review of executive acts. The political opposition was, however, mainly spearheaded by the students, as the former political leaders, who were still under disqualification under the Elective Bodies (Disqualification) Order, were not in a position to openly lead the movement.

Under the Constitution the Field Marshal had been nominated as the first President up to March 1965, and the Old Legislatures had been continued in office until the next elections. The opposition, therefore, awaited with great interest the first election of the Basic Democrats under the Constitution, for, they were to form the electoral college for the election of the President and the Assemblies. As many as 90 per cent of the registered voters voted in East Pakistan and 75 per cent in West Pakistan. The real excitement, however, started with the election for the President. All the opposition parties now emerged and joined together to set up Mohtarma Fatima Jinnah, the sister of the founder of Pakistan, as a rival candidate to Field Marshal Ayub Khan. She had the support of the intelligentsia and students as well. Feelings ran high during the election campaign and frequent clashes occurred between the police and the students at Dhacca, Karachi, Lahore and Peshawar from the date of the first Confrontation Meeting, namely, the 10th of December, 1964. Serious

disturbances took place on the 11th of December, 1964, at Peshawar University Campus between the police and the students. The situation became tense throughout the country and the government appointed a Commission to enquire into the students' problems.

The Awami League, led by Sh Mujibur Rahman, took a very prominent part in the opposition against Field Marshal Ayub Khan, but when the results were announced the people were surprised to find that the Field Marshal had been declared elected by a majority of 21,260 votes, although the popular estimate was that Mohtarma Fatima Jinnah had received the solid support of all urban areas. People suspected foul-play and charged that elections had been rigged. As a result they took no further interest in the elections of the National and Provincial Assemblies in which the convention Muslim League managed to secure a thumping majority. Field Marshal Ayub Khan was sworn in for a second term of office as President on the 23rd of March, 1965, and was set for another period of rule with a more than comfortable majority in the Legislature.

It is significant to note that it was during these elections that Sh Mujibur Rahman in June 1964 released his Awami League election manifesto calling for "two economies" and a Constitution based on his interpretation of the Lahore Resolution of 1940, which he claimed envisaged two sovereign independent States. It is further alleged that the defeat suffered by the combined opposition in the Presidential elections, led by Sheikh and some others in East Pakistan, forced them to think also of more extreme measures for realising the demand of autonomy for East Pakistan.

With his overwhelming majority the Field Marshal was looking forward to another period of

ress and stability but his plans received a serious setback by the treacherous attack made by India on the Pakistan Post of Kanjar Kot in the Rann of Kutch on the 13th of April, 1965. Although India had thrown in more than 20,000 troops into the disputed territory as also landed para-troopers around Biar Bet, our troops stoutly held their ground until ceasefire was effected on the 30th of June, 1965 with the UN help and the dispute was submitted to arbitration before an International Tribunal. The peace was, however, short-lived, for, on the 24th of August, 1965, the Indians shelled Awan village in Gujrat district and on the 30th of August attacked the village of Pir Sahaba in Azad Kashmir. In retaliation, the Azad Kashmir forces, supported by the Pakistan Army, crossed the Ceasefire Line, captured Chamb and Jurrian and threatened Akhnoor well inside Occupied Kashmir. They were only six miles away from Akhnoor when in the early hours of the 6th of September India launched another treacherous attack along the international borders of West Pakistan. India and Pakistan were locked in a deadly and bitter war all along the West Pakistan border for 17 days, until ceasefire was brought about by the intervention of the great powers on the 23rd of September, 1965.

During this war East Pakistan found itself completely isolated from the West and at the mercy of India with only one division of troops and two air squadrons to defend her. The theory of the defence of the East lying in the West was thoroughly exploded and had not China declared India an "outright aggressor" and called upon her to dismantle her military installations on the Sikkim border, it is believed, that India would have attacked East Pakistan too.

TOMORROW: POLITICAL BACKGROUND: II

Garfield



James Bond

