The Oil Drum
DISCUSSIONS ABOUT ENERGY AND OUR FUTURE

Indigenous Energy - Pakistan, India and Bangladesh

Posted by Heading Out on September 24, 2010 - 10:25am
Topic: Supply/Production
Tags: bangladesh, coal, india, pakistan [list all tags]

Yesterday and this morning I spent my time helping clear up the damage from a storm that hit our town over the summer. We were away, and several trees were left with limbs torn, damaged and in some cases dangling. So, I used the chance to get some of the other trees pruned of dead wood, and to generally clean up around the yard. Now I am left with a reasonable amount of kindling and firewood, to help heat the house over the winter. We have a tile stove, and so the effort is a little more to cut the wood to the shorter lengths, but the work is justified

The trees remain, and will continue to grow. But other parts of the world are not as fortunate. Judith Curry has written of the facility with which commentators have cited the recent flooding in Pakistan as being due to global warming, when there is a significant case that it could, more correctly, be blamed on inept water and agricultural practice, with a little regional politics thrown in. Unfortunately the problems that she describes illustrate the problems of a country where the pressures of a growing population have sought short-term answers to long-term problems. For example:

> Illegal logging supported by the Taliban in the northwest province of Khyber-Pakhtunkhwa has felled as much as 70% of the forest in some districts. The lack of trees, combined with overgrazing by livestock, reduces the soil's ability to hold water and leads to soil erosion. Flash flooding in the northern, mountainous areas then sends silt downstream, reducing the amount of water the river channel can hold. . . . . There are a substantial number of barrages (dams) on the Indus River that support irrigation and hydropower. The flood occurred when the rising river bed (owing to the huge silt deposition in the upstream areas) was trapped by the Taunsa barrage, obstructing the water flow. These heavy silt loads were then transported through western tributaries of the Indus River. Construction of protective levees and dykes has also contributed to raising the riverbed and the sedimentation of upstream areas; moreover, the rising riverbed levels have rendered protective levees ineffective.

In 1951 Pakistan held a population of 34 million people. This had increased to 144 million in 2001, and is currently estimated at over 170 million. It is thus now the sixth most populous of nations. The average consumption of 500KWh is a fifth of the global average of 2,500 KWh. Of that thermally generated energy currently produces around 63% of the power, while hydro has produced around 32% (6,500 MW). However, as noted above, the lakes behind the high dams are sedimenting rapidly, as deforestation increases the bearing load of the streams. It is estimated that 20% of the live storage capacity is already gone. Yet, because of its geography, there is a potential for more than doubling the amount of power available to Pakistan from hydro-electricity

generation. It has the advantage of being indigenous, in a country that already faces considerable expense in importing energy. There is one project, the Neelum-Jelham scheme, in Kashmir, currently in progress, though it is controversial.

> Neelam Jhelum Hydroelectric Project is located near Muzaffarabad, capital of Pakistani Administered Kashmir. It aims to dig a tunnel and divert water of Neelam River from Nauseri, about 41 KM East of Muzzafrabad. A Powerhouse will be constructed at Chatter Kalas, 22 Km South of Muzaffarabad; and after passing through the turbines the water will be released in Jhelum River, about 4 Km South of Chatter Kalas. Once completed, the Neelam Jhelum Hydroelectric Project will produce 969 MW of electricity annually at the cost of US $2.16 billion.

To meet the needs of the population Pakistan has steadily increased oil imports (to about 400,000 bd). It does have natural gas resources, and has seen these rise to almost 4 billion cu ft/day, in the same period. However it has, increasingly, also had to import coal to meet its growing needs. And yet the country has a large coal resource.

> Pakistan coal reserves are estimated at 175 billion tons which according to the Vice-Chancellor (VC) of Punjab University, Professor Dr Mujahid Kamran equal 618 billion barrels of crude oil. According to the most reliable analytical reports Saudi Arabian crude oil reserves are estimated at around 260 billion barrels. At 60 Dollars per barrel this equates to 3708 Billion Dollars or approx. 4 Trillion Dollars (at current prices). At future prices these reserves will be worth 8 or 24 Trillion Dollars. This is enough money to build the most modern infrastructure, the best roads, the best hospitals, the best education, the best universities, the best hi-speed rail system and the best public transportation system on the planet.

On the other side of India, there is a planned collaboration between India and Bangladesh to jointly build a 1320 MW coal-fired power plant in Khulna, the land being proposed as Bangladesh's equity investment.

> It is planned that the Khulna plant would use high-quality coal imported through the sea from countries like Indonesia or Australia. The government is not considering import of Indian coal as it is generally low in quality and comparatively more environmentally harmful.

Bangladesh opened its first coal mine in April 2003 and has yet to develop it extensively, though there have already been strong protests over the planned opening of the Phulbari surface mine.

I bring these matters up, because I anticipate that, with the tightening of oil supplies, and the resulting increases in the price of imported energy, that countries will have to rely more on the resources that they find within their own borders. Pakistan, India and Bangladesh will likely be among those nations that will, likely because they have no other viable economic choice, move to an increased reliance on coal-fired power. The reserves are there nationally, even if, for now, the

world price for coal is low enough, because of the large size of other national deposits, that they may not be mined. But, in time, they will be. Because, as with places like Haiti, and Lebanon, once the trees are gone they will likely not come back for a very long time.

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