Gundia Hydro Electric Project: Issues of contradictions and contentions

(Synopsis: The proposal to set up a 400 MW capacity hydro electric project in evergreen forests of Western Ghats in Hassan district of Karnataka has met with a lot of opposition from the locals and environmentalists. The Detailed Project Report of the proposal poorly backs up the project with many contentious issues. The Public Hearing on environmental issues on 26.7.2008 at the project location was a stormy one with many people vehemently opposing the proposal. When a manipulated minutes of the public hearing was sent by the District Commissioner, strong protest letters were sent. This article highlights many contentious issues of the proposal.)

Preface The Western Ghats in Karnataka are the source of about 30 small and major rivers including Cauvery, Tunga, Bhadra, Sharavaty, Netravthy, Hemavathy etc. and are the main sources of water in the plains, in addition to being the life line of people of the state. In this scenario any more destruction, submersion and fragmentation of the Western Ghats will be suicidal, and hence any additional hydro electric project is not in the best interest of the people of not only Karnataka but also of the entire South India. Western Ghats are also an important and sensitive ecological area in the world, and already several hydro electric projects, mining, road and rail have destroyed these unique forest ecosystems reducing the natural forests. It is very pertinent to note that any Environmental Management Plan (EMP) as may be proposed by project developers will not be able to compensate the loss of bio diversity.

The project proposal The proposal is to set up two hydro turbines of 200 MW each and use the stored waters of few rivers and streams including the river Gundia in thick rainfall forests of Western Ghats in Sakaleshapura Taluk, Hassan district in Karnataka. The Detailed Project Report (DPR) prepared by Karnataka Power Corporation Ltd. (KPCL) contentiously says that the project is to be developed as a run-of- river scheme but also to be used for peak load support. A cursory look at the costs mentioned in the DPR indicates that the costs are very high compared to the meager benefits of 400 MW of peak load and annual energy of 1,136 MU at annual Load Factor of only 32.42%. The costs of forest destruction and that of R&R of the Project Affected Families, which have not been included in the cost estimate, themselves may push the overall cost of the project to a high level.

The issues

1. Whereas the generally accepted norms require an effective cost benefit analysis for any project of such societal importance, no such analysis has been shown by KPCL. Without such an analysis the DPR has failed to demonstrate that the proposed project is the best solution available to the society in the present circumstances.
2. A cursory look at the costs mentioned in the DPR indicates that the costs are very high compared to the meager benefits of 400 MW of peak load and annual energy of 1,136 MU at annual Load Factor of 32.42%. The costs of forest destruction and that of R&R of the Project Affected Families, which have not been included in the cost estimate, themselves may push the overall cost of the project to a high level.
3. The societal value of the thick rain forests of highly sensitive Western Ghats alone, which are proposed to be submerged, itself may be many times more than the project cost of Rs. 1,200 Crores.
4. The annual revenue to the forest department from this forest itself may be more than the monitory value of the energy estimated from the project. In addition, the real value of the livelihood it is providing to the locals, the value of herbs, of water source etc. will be very huge.
5. Some of the value additions the thick rain forests of Western Ghats can provide are: Production of oxygen; Control of soil erosion & maintenance of soil fertility; Recycling of water and control of humidity; Sheltering of animals, birds, insects & plants; Control of air pollution.
6. I understand that as per an indirect estimate of value of forests by Mathur and Soni in 1983 it is about 1.27 Crores per hectare per year. With about 490 Hectare of forests to be submerged under this project, the total value loss per year itself would work out to be about Rs. 620 Crore per year.
7. The value of annual energy production by this project @Rs. 1.27 per unit works out to Rs. 144 Crores. Even if we consider the replacement value of hydel energy by gas energy @ Rs. 4.00 per unit, the value of annual energy production by this project works out to be about Rs. 450 Crores. The economic value accruing to the society from these forests, hence, is much more than the projected revenue from the electricity generation.
8. Whereas the revenue from a live forest is much more than quantified above and is perpetual, the energy production from the proposed hydel station is only for a limited period say, 50 years.
9. Because of this simple economic analysis alone the project appears to be unacceptable to our society.
10. Whereas the National Forest Policy stipulates 33% forest cover of the land for a healthy environment, Karnataka's and national forest cover is understood to be below 20%. Hence the proposal

to submerge 490 Hectares of thick rain forests of highly sensitive Western Ghats will be against the letter and spirit of the said National Forest Policy, and hence should not be acceptable to our society.

11. KPCL, as project proponents, has not considered any alternative to this project in order to meet the electricity demand of the state. Even if we agree for a minute that there is electricity shortage in the state, the first thing any company /organization would do under such a situation is to analyse all aspects of the situation. One should ask the question why there has been shortage: whether the existing infrastructure including the generating stations is being put to maximum use; identify all the relevant issues; study various options available etc. If the officials care to analyse the situation objectively the following issues will become crystal clear.

- The Transmission and Distribution losses in Karnataka have been very high of the order of about 28% against the international norms of less than 10%; if these losses are brought down to 10% there will be virtual addition of more than a thousand MW to the available power; this will be more than treble the capacity addition possible through the proposed project;
- As of today the total available power for the state from various sources, including the share from the central sector is about 8,000 MW (as per MoP website). If this capacity is used to the optimal level, as per Central Electricity Authority (CEA) norms, a peak hour demand of more than 6,500 MW can be met. But the peak hour demand met for the year 2005-06 was reported as 5,600 MW only. This shows that the infrastructure including the generating stations is not being put to maximum use.
- Similarly, the annual energy deficit reported for the year 2005-06 was less than 1%. Even if we take the unrestricted demand into consideration, which was not very high during 2005-06, the same for the reason mentioned above was easily avoidable;
- There is huge scope for adopting various efficiency improvement measures like Demand Side Management (DSM) and utilization at users' end. As per the Planning Commission the peak load can be reduced by more than 10% at the national level. The replacement of even 50% of all the incandescent lamps in the state by CFL can result in the reduction of about 1,000 MW of peak hour demand, and about 1,500 MU of energy demand per year. This can be achieved without any expenditure to the state if the cost of replacement is passed on to the consumers in small installments.
- The agricultural loads in the state, which are consuming about 38% of the total electrical energy of the state, are known to be wasting about 50% of this consumption which is techno-economically avoidable. Efficiency improvement in this sector alone can release about 19% of the total energy of the state for productive purposes, which is hidden in the system.
- It is also a well known fact that the potential for the saving in non- agricultural loads in the state is huge. As per the Planning Commission such savings can be more than 20% of the total energy being consumed at the national level. At the state level this comes to about 15 to 20 % of the total energy sold in the state.
- The potential available in the state for harnessing the new and renewable energy sources is immense. As per conservative estimates provided by the Ministry of new and renewable energy sources, more than 12,000 MW of production capacity is feasible from these sources. Solar energy potential alone is immense and is known to be capable of meeting all the energy requirements of the state.
- In summary, an objective analysis of the present scenario of the electricity industry in the state will reveal that the deficit that has been experienced in the state for many decades is just due to the gross inefficiency in the system, and generally not due to the shortage in generating capacity.

12. Without objectively analyzing all these issues and without taking the best course of action most suitable to our state, if the state encourages additional dam based stations it will not only lead to gross wastage of our natural resources, but will also lead to serious environmental degradation and to many serious social problems.
13. The state is already having about 50% of the total power availability through hydro capacity. So even from the system operation point of view this additional hydro power station is not essential.
14. All these issues clearly establish that the ideal solution to the artificial power deficit being faced by the state is not going to be the blind addition of dam based power stations.

Taking all these facts into consideration the energy experts of the state are of the view that such dam based power stations are not in the best interest of the state, and hence should be rejected. The Western Ghats in the state, which are identified as one of 12 mega biodiversity area of the world by UN, have already been subjected to massive abuse in the name of various so called 'developmental projects'. Most of the hydro electric projects of the state (about 3,000 MW out of a total hydel capacity of about 3500 MW) are in Western Ghats. The destruction, submersion and fragmentation of the Western Ghats due to hydel projects alone have been so massive that its sensitive ecology has been irreversibly damaged.

The following are additional concerns expressed by a retired IFS officer on Rapid Environmental Impact Assessment (REIA) / Environmental Management Plan submitted by KPCL.

- The legal status of forest land (774.26 ha) and grass land (107.21ha) as stated in the DPR are not clear. It should be mentioned either as Reserved Forests or as Revenue lands. Land value differs for each category. If it is a RF then compensatory afforestation has to be done in non- forest lands of equal extent identified by government. The cost per ha is about Rs. 50000. This has to be paid by KPCL to Forest department.
- In addition, environment value at the rate of Rs 124 lakhs per ha has to be paid by the beneficiary to government.
- Supreme Court has fixed forest value/growth (Net present value) for tropical Evergreen forests like that of Gundia Reserve Forests at Rs 9.2 lakhs per ha and has to be paid by the beneficiary to government.
- No forest land will be released for rehabilitation purposes (KPCL has earmarked 5 ha for this purpose) as per recent guidelines of GoI.
- There is no identified safe site for land fill, as it is expected to dump about 36 lakh cum of rock muck and there is no comment on their impact. 40 ha of forest area are indicated as required but the government of India has made it clear that no forest land should be used for such activity.
- The project site is covered on all sides by protected areas, like Pushpagiri, Brahmagiri and Kudremukh sanctuaries and therefore movement of wild animals like elephants will be expected. If their corridors are blocked, the man animal conflict, crop damage etc will increase. Therefore it is **not insignificant** as indicated in the REIA.
- Rehabilitation and Resettlement cost has to be included in the project cost for calculating Benefit / Cost ratio. The project affected families may accept money as compensation but may encroach other forested areas and therefore equal extent of land from non forest areas may be considered for resettlement.
- Green felling in forest areas are banned by government and therefore it is not possible to earmark 1 ha of forest every year for fuelwood, as indicated in DPR. The contractor has to provide alternate energy sources like gas, fuelwood depot, bio gas, wind energy etc. It is difficult to assess the real impact of labourers as several other activities like shops, houses etc are bound to increase in the project area.
- The loss of forest cover as stated in DPR, is 1.93% in Sakaleshapur taluk only, and not the total forest cover after release.
- During the floral studies, only economically important timber species are considered and listed. The area is important for non-timber forest products including medicinal plants and detailed floral and faunal studies should be carried out.
- Western Ghats are an important and sensitive ecological area in the world, and already several hydro electric projects, mining, road and rail have destroyed these unique forest ecosystems reducing the natural forests. It is very pertinent to note that any EMP will not be able to compensate the loss of bio diversity.

The opposition for the project from the locals has been massive since two years. The detailed site survey has not been carried out due to the opposition from the locals. Many protest marches and meetings have been held. The local bodies are understood to have passed resolution opposing the project. Project area is located in the sensitive Western Ghats covered with thick forests; involves the loss of both forest land and cultivated land.

DPR says that the forest land does not contain any rare or endangered species of plants. It is unacceptable that such rich evergreen rain forest does not contain any rare or endangered species of plants. The Western Ghats have been damaged heavily in the last few decades and many of the plant species that have been eliminated in other parts of Western Ghats may be available in these forests.

The cost estimates does not include the rehabilitation & compensation for the loss of agricultural lands, and is without provision for compensation for the landless laborers, who depend on these lands and forests. There is no calculation of the perpetual financial /economical loss of revenue from the forests. The cost estimates in DPR does not include objective analysis of the total costs to the society.

Keeping in correct perspective all the above mentioned points, it is safe to aver that the proposed Gondia Hydro Electric project is ill conceived and it is not in the overall interest of the society. The concerned people are, therefore, demanding that the project proposal should be denied all clearances, including the environmental clearance.

People from various walks of life, under the banner of Malnad Janapara Horata Samithi, have opposed the proposed 400 MW (earlier installed capacity was 300 MW, has now been increased to 400 MW, without providing credible reasons for this increase) Gundia Overhead HEP at Sakleshpur taluk of Hassan district in the Western Ghats. The MJHS Convenor said Karnataka Power Corp is to set up a HEP across the tributaries of Netravati River. The project will comprise three major dams, 16 bunds, and a 21-km-long tunnel. Thousands of ha of forest and revenue land will be submerged. This will affect the environment of Dakshina Kannada, Hassan and Kodagu districts, which are benefited by the Netravati and its tributaries. Water supply to the

Netravati from its tributaries may stop, intensifying water scarcity in Dakshina Kannada district. MJHS charged KPCL with not disclosing all the necessary information about the project.

Table 1: Electricity Demand, supply and shortage in Karnataka

(Last 5 years)

	2003-04	2004-05	2005-06	2006-07	2007-08
PEAK POWER					
Demand (MW)	6213	5927	5949	6253	6583
Availability (MW)	5445	5612	5558	5811	5567
Shortage (%)	12.4	5.3	6.6	7.1	15.4
ANNUAL ENERGY					
Demand (MU)	36,153	35,156	34,601	40,797	40,320
Availability (MU)	31,145	33,687	34,349	39,948	39,230
Shortage (%)	13.9	4.2	0.7	2.1	2.7

(Source: CEA Website as on 21.10.08)

TABLE 2: Some salient features of the Gundia HEP components

Sl.no	Particulars	Yatthinahole Barrage	Kereholi Barrage	Hongadahalla Barrage	Bettakubri Dam	Hongadahalla Storage Dam
1	Project Place: Longitude	75° 43' 20"	75° 42' 44"	75° 42' 23"	75° 40'10"	75° 42'44"
	Altitude	12° 51'40"	12° 50'03"	12° 49' 29"	12° 47' 09"	12° 48' 00"
2	catchments Area (Sq.km)	60.50	27.00	8.50	36.60	47.50
3	coverage area (sq.km)	0.10	0.18	0.39	0.99	5.43
4	Average Inflow (Million Cubic Meter)	163	86	28	119.29	150
5	Barrage/dam model	Barrage Made from Soil and Concrete				
6	Length.(mts)	90	65	152.5	514	1090
7	Height (mts)	15	9	31.5	63	90
8	Average river depth (m)	742	757	716.4	681	745
9	Full Reservoir level (m)	750	765	745	740	830
10	Barrage / Dam Complete Height (m)	753	766	747	744.5	833
11	Storage Capacity(Million Cubic Meter)	0.356	0.025	1.91	21.71	132.33
12	Submerged Area (ha)	12.73	0.092	30.93	85.5	556.79

(Source: http://www.mjhs.org.in/controversialprojects.html)

Malenadu Janapara Horata Samiti is leading the agitation against the project for many years now.

A letter was sent on Oct 15, 2008 by me to the Deputy Commissioner, Hassan about the minutes of the environmental public hearing for the project held on August 6, 2008, "The Video cassette DVD copy of the proceedings of the above said meeting clearly establishes that there were very cogent, scientific and rational arguments against the project, whereas the views expressed by those who spoke in favor of the project were all in the nature of personal benefits without any community/societal concerns. But the minutes of the meeting has failed to notice this, but instead projected the proceedings of the above said meeting as though there was a preponderance of support for the project as against opposition. In this respect also the minutes have failed in their objectivity." Though the public hearing was originally scheduled for 26.7.08, it was actually held on 6.8.2008 at the proposed location of the project. This change was done without adequate notice to the concerned.

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The letter went on to state, "Keeping all these points in mind I would like to state that the minutes of the above said public hearing are not the true reflection of the proceedings, failed in its objective and hence should be rejected. Hence I would request you to re-issue the minutes in an objective way to correctly project what has been recorded in Camera."

Similar letters were sent to The Chairman, Karnataka Pollution Control Board, and the Expert Appraisal Committee on River Valley Projects at the Union Ministry of Environment and Forests, requesting the project be denied environment clearance.

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