Miniutes of the 89th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 23-24th November, 2015 at Teesta Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhavan, Jor Bagh Road, New Delhi – 110003.

The 89th Meeting of the Expert Appraisal Committee (EAC) for River Valley and Hydroelectric Projects was held during 23-24th November, 2015 at Teesta Meeting Hall, 1st Floor, Vayu Wing, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi – 110003. The meeting was chaired by Shri Alok Perti, Chairman. Dr. K.D. Joshi, Sh. P. B. Chaudhury and Dr. A. Lingaraju, Members could not attend the meeting. The list of EAC members and officials/consultants associated with various projects and who attended the meeting is at Appendix.

The following Agenda items were taken-up in that order for discussions:

1st day (23.11.2015)

Agenda Item No.1: Welcome by Chairman and confirmation of Minutes of the 88th EAC held on 23-24th October, 2015. The minutes of 88th EAC was confirmed.

Agenda Item-2.1 Development of Command Area and Canal System in North Bihar proposed to be brought under Irrigation through Sapta Kosi High Dam Multipurpose Project and Sun Kosi Storage-cum-Diversion Barrage by M/s. Sapta Kosi Sun Kosi Investigation, Government of Nepal & Government of India – for reconsideration of TOR.

The project proponent made a detailed presentation on the project. It was noted that the project envisages construction of 51 m high Rock-fill dam across river Kosi in District Dhakuta District of Nepal about 60 km upstream of India-Nepal Boarder. Dam and appurtenances are proposed to be constructed in Nepal territory. However, canal network shall extend in India for providing irrigation facility in 7.72 lakh hectares of area in 13 District of Bihar. Flood control in river Kosi is a additional benefit envisaged from the project. Separate EIA study for Nepal territory is being planned as per the extant rules of Government of Nepal. The scope of the EIA study is limited for canal network in Indian Territory. The total estimated cost of the project is about 1233178 lakhs.

This project was considered by EAC earlier in its meeting held on 24-25th August, 2015. The project proponent submitted a copy of the TOR earlier granted for this project on 21.10.2008 and the validity has been expired. A copy of the agreement between Government of Nepal and Government of India was also provided. However, the committee observed that details of the works on Nepal portion and necessary

MOU between Nepal & India have not been provided. Reference of EAC was also drawn to the letters of exchange made between India and Nepal in respect of establishment of JPO-SKSKI and execution of the project. However, the committee observed there is no specific mention in the letter on the modalities of EIA/EMP study of the project. Therefore, the project proponent was asked to have an agreement between India and Nepal through diplomatic channels on EIA study of the project to be carried-out separately for the project components in Nepal and India as per the extant environmental rules and regulations of the respective country. The committee may be kept updated on the progress made thereof.

After detailed deliberations on the project, following emerged:

(i) The TOR issued for this project on 21.10.2008 in invalid. The standard TOR for River Valley projects, as available on the Ministry web-site should have to be followed for portion of the project lying in Indian Territory.
(ii) Project proponent should also carry-out EIA study as per EIA Notification, 2006 and its amendment in 2009. The study should also include salient features of project components in Nepal in the EIA report.
(iii) Project proponent should also ensure appropriate agreement with Government of Nepal to ensure adequate environmental flows in the river Kosi at the time of its entry into India bringing to the notice of Nepalese Government the norms being followed in India
(iv) Project proponent shall incorporate in MOU the aspect of granting Environmental Clearance (EC) for the project and clearly spell out as to how the EIA/EMP of the project in its entirety to be scrutinized by Nepalese and Indian Government. This will guide the EAC as to how it should proceed at EC stage as there is no guideline in the EIA Notification.
(v) Biodiversity study shall be carried-out by associating a reputed organization as recommended by WII, Dehradun or by ICFRE, Dehradun. The list of Institutes is available on MoEF & CC portal.

With the above observations, the EAC approved the Standard TOR as applicable for River Valley Projects subject to appropriate agreement between Government of Nepal and Government of India to implement the project as brought out in para (iii) and (iv) above

Agenda Item 2.2 Nandawadagi Lift Irrigation Scheme (Part of UKP Stage-I & II) in Karnataka by M/s. Operation & Maintenance Zone, Krishna Bhagya Jala Nigam Ltd – for TOR.

The project proponent did not attend the meeting. Therefore, the project was not considered by the EAC.

Agenda Item 2.2 A Goriganga III-A HEP (120 MW) Project in Pittorgarh of Uttarakhand by M/s. NHPC Ltd – for TOR.

The Project proponent made a detailed presentation on the Project. The project is proposed on river Goriganga {a tributary of river Kali (Sarda)} near Village Madkot in the District Pithoragarh of Uttarakhand. This is a run-of-the-river scheme. The project envisages construction of 27.6 m high barrage across river Goriganga to generate 120 MW (3x40 MW) hydropower. The land requirement for the project is about 147.46 ha, out of which forest land is 134.9 ha and private land is 12.52 ha. Total submergence area is about 35.53 ha. A surface powerhouse is proposed on the right bank of river near village Bangapani with 3 units of 40 MW capacity each. The project is located within 10 kms radius of redefined boundary of Askot Wildlife Sanctuary. The NBWL accorded wildlife clearance vide letter no 6-3/2003 WL-1(pt) dated 6.7.2006. Subsequently, Hon'ble Supreme Court of India permitted NHPC to execute the work vide its order dated 6.2.2008. The total project cost is about Rs 1397.28 Crores and project is likely to be completed in 60 months.

The project proponent informed that there shall be no displacement of human population due to construction of the project. Videography of the project area (barrage and powerhouse site) was also shown to EAC. Geological section along proposed barrage axis was also shown to EAC for appraising the height of barrage from river bed level as well as depth of overburden in the river bed. EAC enquired about the presence of RET species found in the project area. It was informed by project proponent that although no RET species was reported/ observed during PFR studies but detail study related to RET species will be carried out during EIA/EMP studies.

The EAC was informed that Hon'ble Supreme Court in its order dated 13.8.2013 imposed ban on hydropower project and also has inter-alia, directed Ministry of Environment, Forest & Climate and Government of Uttarakhand not to take-up any new project for environmental and forest clearances in Uttarakhand till further orders. However, Hon'ble Supreme Court in its order dated 12.10.2015 imposed ban on hydropower projects has been lifted other than those of 24 hydropower projects mentioned in the report of Wildlife Institute of India, Dehradun. Therefore, the project has been submitted for consideration for Scoping/TOR clearance.

The committee enquired about power potential studies with respect to e-flow. The project proponent clarified that minimum e-flow has been taken as 20% of average lean season discharge (November to May), 30% of average monsoon season discharge (June to September) and 20% for remaining month i.e. October of 90% dependable year. However, during EIA/EMP study, this issue will be assessed scientifically. It was also intimated by the project that there are nine tributaries in between barrage and

powerhouse site. The first large tributary having catchment area of about 200 sq km is about 1.6 km downstream of barrage site. The catchment upto barrage site is approximately 1385 sq km and up-to powerhouse site is 1920 sq km.

After detailed deliberations, the EAC recommended for scoping clearance for the project with the following additional TORs to be followed in the EIA study.

(i) Information on the 10-daily flow basis for the 90% dependable year the flow intercepted at the barrage, the environmental flow and other flow releases at downstream of the barrage and spillway shall be included in the EIA report.

(ii) Hydrological studies/data as approved by CWC shall be utilized in the preparation of EIA/EMP report. Actual hydrological annual yield may also be given in the report.

(iii) Project Proponent will perform skill mapping for the services required for construction, operation & maintenance of the project based on the estimated workforce. In order to employ local population, the eligible persons amongst the local population should be trained to acquire skills required during investigation, construction, operation & maintenance of the project and such an empowerment project for local populations should be part of and included in R&R Plan.

(iv) Suitable Provisions for health care services should be incorporated in R&R Plan.

(v) R&R Plan is to be formulated as per new Act, 2013 which came into force w.e.f. 1.1.2014**.** Plan will also incorporate community development strategies.

(vi) Biodiversity study shall be carried-out by associating a reputed organization as recommended by WII, Dehradun or by ICFRE, Dehradun. The list of Institutes is available on MoEF & CC portal.

(vii) The scoping/TOR clearance is being considered by MoEF & CC subject to the outcome of the court order and the project proponent shall bound by the decision of the MoEF & CC arising out of such outcome of court order.

(viii) Recommendation of additional measures contained in EB report dated 19.10.2015 on 6 HEPs of Uttarakhand may also be examined and necessary safeguard measures included in the EMP.

Agenda Item 2.3 Dinchang HEP (252 MW) in West Kameng District Arunachal Pradesh by M/s. KSK Dinchang Power Company Pvt. Ltd. – extension of the validity of ToR

The project proponent made a detailed presentation of the project. The project (RoR Scheme) is proposed on Digo River in West Kameng District of Arunachal Pradesh. The Scoping/TOR Clearance for this project was granted on 8.11.2011 for 360 MW capacity with 2 years validity up to 7.11.2013. Thereafter, the capacity was revised downwardly from 360 MW to 252 MW. The revised power potential of 252 MW stands accepted by CEA vide letter dated 13.9.2013. Thereafter, extension of validity was granted for 1 year up-to 7.11.2014 with downward revision in capacity from 360 to 252 and 2nd extension of validity of TOR was granted up-to 7.11.2015. Therefore, validity has already completed 4 years period.

The Project proponent requested for last extension for the project mentioning that the Land & Socio-Economic Survey could not be started immediately after finalization of revised limits of level (FRL 1138M & TWL 800M) in July 2015 due to monsoon season .The survey works will be taken-up commencing from November, 2015. Now, the balance Land & Socio-economic survey will be completed by April, 2016 and draft EIA/EMP report will be finalized and thereafter, the reports SPCB for conducting public hearing.

After detailed deliberations and considering the provisions of OM dated October 08, 2014, the committee recommended one year extension for Dinchang HEP (252 MW) Project in West Kameng District of Arunachal Pradesh up-to 7.11.2016. This is the last and final extension for completion of all works and submit final EIA/EMP for appraisal. If the developer fails to complete, a fresh application for scoping clearance has to be submitted to the Ministry.

However, the EAC recommended that the Ministry may examine the fulfilment of condition of relevant OM with regard to cut off date of submission of Application by the project proponent before issue of the extension order.

Agenda item 2.4 Anjaw HEP (270 MW) Project in Anjaw District, Arunachal Pradesh by M/s Lohit Urja Pvt. Ltd – For extension of validity of TOR.

[Project proponent made a detailed presentation on the project. Anjaw HEP is a 270 MW hydropower project proposed on Lohit River in Anjaw District of Arunachal Pradesh. The project was accorded scoping clearance on 8.11.2011 and thereafter granted two time extension of the validity of TOR was granted. The validity of TOR was completed on 8.11.2015. The developer informed that DPR is under preparation and

to be submitted to CEA for review and approval. Due to delay in finalization of project features as a part of DPR Studies, the EIA/EMP studies could not be completed and therefore the Project Proponent requested extension for one more year.

The committee observed that the project has been accorded scoping clearance in November 2011 and in last 4 years, DPR could not be prepared and EIA study could not be completed. EAC took serious note of the fact that this is not only case as there are several other projects especially in Arunachal Pradesh where developers are seeking TOR extensions year after year with no significant progress is being seen on ground. State government, who have allotted these projects need to review the situation urgently and resolve the hindrances where seen. Ministry of Power should also review ensure speedy implementation of the hydro projects in Arunachal Pradesh. MoEF & CC may consider bringing this to the notice of State Government and MOP. In case no action is taken the EAC may have to consider stoppage of extensions of scoping clearance in many such cases.

After detailed deliberations and considering the provisions of OM dated October 08, 2014, the committee recommended one year extension for 270 MW Anjaw HEP Project in Anjaw District, Arunachal Pradesh up-to 7.11.2016. This is the last and final extension for completion of all works and submits final EIA/EMP for appraisal. If the developer fails to complete, a fresh application for scoping clearance has to be submitted to the Ministry.

However, the EAC recommended that the Ministry may examine the fulfilment of condition of relevant OM with regard to cut off date of submission of Application by the project proponent before issue of the extension order.

Agenda item 2.5 Consideration of Report on 4 Projects in Siang Sub-basin in Arunachal Pradesh in terms of decision taken by EAC during its 75th EAC meeting

The consultant made a detailed presentation in this regard. The matter was discussed in detail in 88th EAC meeting held during October 2015. EAC in that meeting concluded that to take a decision on this matter, it was important to go through and the chronology of the events that have taken place while finalizing the Siang River Basin Report. The Consultant was accordingly asked to submit the same for further discussion and reconsideration.

Consultants have now submitted the Chronology of events and the same was presented and discussed in detail. EAC noted that these projects were at various stages of survey and investigation. Preparation of DPR was also underway in r/o some projects during the period when field visits were undertaken for the Siang Basin study

and data was requested from developers. Palsi HEP' s DPR was approved in November 2012 and they have started the road construction after the land acquisition in June 2013. Field visits were completed during 2012 and therefore, site work did not get noticed during the then field visits undertaken by study team of consultants.

While deliberating the matter further, EAC was informed that the revised and updated data were not shared with Consultant at the time of preparation of Basin Study report. However Arunachal Government objected formally to the project data and status of these 4 HEPs only on finalization of the basin study report and requested for review with respect these four projects. Consultant explained that based on the directions of MoEF &CC, they have had detailed discussions with the State Government as well as Developers on the subject during the meeting held at Itanagar in August 2015 as part of the ground verification process. These Developers explained that they did not share the data available with them as their projects were less than 25 MW installed capacity and do not fall under the purview of the EIA notification, 2006. EAC noted the matter on the issue that less than 25 MW projects, which have already made progress, should be given due consideration as they were not needed to go for environment clearance to start the site activities. EAC also observed that recommendation of the basin study to drop these four projects was made public in early 2014, where discussions with State Government took place by EAC in May 2014, where in it was informed that these projects were making progress, and have incurred expenditures.

EAC recalled that during its 75th meeting, it was recommended to review these four projects only, out of 15 recommended for preclusion, as the state government of Arunachal Pradesh raised specific concern on dropping of these projects which were making progress on ground and have made substantial investments in terms of survey and investigation and site work besides 3 HEPs being of less than 25 MW capacity. Therefore, EAC recommended undertaking ground verification exercise in respect of these 4 Projects during 75th meeting itself.

Consultants explained that the progress made by these four projects have been captured during the recent site visit and discussed in detail in review report along with documentary evidence in Annexures. Progress has been discussed in Sections 5.1 through section 5.4 of the Ground Verification report for Palsi, Nyikgong, Sipit Upper and Kaying HEPs respectively. Expenditure made by each developer has also been discussed in the report based on the auditor' s certificates, which are enclosed at Annexures-VIIa, VIIb, VIIc and VIId for Palsi, Nyikgong, Sipit Upper and KayingHEPs respectively.

EAC observed that out of 4 projects under review, 3 are less than 25 MW and are not covered under the EIA notification. Palsi HEP (24 MW), got its DPR approved in 2012, completed land acquisition in 2013 and has started site work thereafter. Nyikgong and Kaying HEP, have completed DPRs and got approved from IIT Roorkee and had started the land acquisition process. They have made local set ups and employed local people during survey and investigation. These three projects have made substantial progress before they were stalled as they do not need environment clearance. EAC further noted that Kaying HEP was recommended to be dropped due to its proximity to Yordi Rabe Supse WLS, however, State Board of Wildlife, during its meeting held on January 28, 2014 where Kaying HEP was proposed for Wildlife Clearance has recommended that the said proposal does not require wildlife clearance and dropped it from agenda for discussion.

Sipit Upper HEP is of 45 MW installed capacity and therefore shall be covered by environment clearance process. No significant progress is made by Sipit Upper as developer has not initiated the environment clearance process as yet. DPR though claimed to be prepared for 45 MW installed capacity in 2012, has not been recommended by IIT Roorkee as state Government has not yet cleared the 45 MW installed capacity. Originally, this project was considered with 7 MW installed capacity for which MoU was signed with the state Government has not yet cleared Sipit River only with another downstream project, Sipit HEP (2 MW) which was constructed more than 10 years ago but could not made operational as its intake weir and fore-bay tank got washed away during trial runs. The matter between state government and contractor is sub judice and state government cannot approve 45 MW installed capacity till the matter is settled. Allowing 45 MW installed capacity will lead to abandoning of the downstream project.

EAC concluded that three less than 25 MW projects viz. Palsi HEP, Nyikgong HEP and Kaying HEP, have made substantial progress and expenditure and therefore Ministry may take a liberal view for their implementation subject to all other clearances, such as WL, FC from designated Authorities. However, as the matter is sub-judice in case of Sipit Upper, the project may be considered by EAC only after Court orders.

Agenda item 2.6 Singatalur Lift Irrigation Scheme in Gadag District of Karnataka by M/s. Karnataka Neeravari Nigam Ltd – For Environmental Clearance (EC)

The project proponent requested due pre-occupation deferment due to Assembly being in session. Therefore, the project was not considered by the EAC and deferred the project to next EAC meeting during December, 2015.

Agenda Item No. 2.7 JIDU HEP in Upper Siang District of Arunachal Pradesh by M/s Meenakshi North East Power Private Limited - Revision of Capacity from 92 MW to 96 MW

The project proponent made a detailed presentation on the project. It was noted that the project is proposed on Yangsang River (a tributary of Siang River) in Upper Siang District of Arunachal Pradesh. The project envisages construction of 22 m high barrage across Yangsang River just downstream of the confluence of Yangsang River with Apong Nala to generate 92 MW of hydropower. This is a run-of-the river scheme. The total land requirement for the project is 80 ha which is forest/ community forest land. A surface powerhouse is proposed on the left bank of the river with 3 units of 30.66 MW each. Total cost of the project is about Rs. 732.80 Crores and likely to be completed in 5 years.

The Scoping/TOR clearance for this project was granted on 13.1.2014 for 92MW capacity. However, CEA approved the power potential for JIDU HEP as 96 MW on vide letter no. 18/88/2015-HPA/401-404 dated 26.2.2015. Thus, the project proponent submitted application for modification of TOR due to capacity revision from 92 MW to 96 MW. It was informed that the basic domain of FRL and TWL remain unchanged. The project parameters/features are more or less same, except slight modifications which might lead to higher environmental impacts. The original and modified proposal details are as presented below in a tabular form:

Items	Original Proposal	Revised Proposal
Installed Capacity	92 MW (3x 30.66 MW)	96MW (3x32 MW)
Physical Location	Left bank scheme	Left bank scheme
Full Reservoir Level (FRL)	El. 640.0 m	El. 632.0 m
Height of Barrage	22 m	20 m
Barrage Axis	Barrage Axis proposed 112 m downstream of confluence of Arpong nala with Yangsnag chuu	Barrage Axis further locally shifted to downstream by about 157 m from the old proposed Barrage Axis
Head Race Tunnel (km)	4.06 km	3.943 km
Power House	Surface	Surface
Tail Race Channel (m)	100 m, open channel, concrete lined	100 m, open channel, concrete lined
Total Land Requirement	80 ha (approx.)	31.97 ha

Items	Original Proposal	Revised Proposal
No. Of families displaced	Nil	Nil
Cost of Project	Rs. 732.8 Crores*	Rs. 925.43 Crores**

*As per PFR August 2013 **As per PFR October 2015

This is a run-of-the-river scheme. Forest diversion proposal has been submitted in July 2014 vide letter no. MNEPPL/AFDFL/JIDU/1107/14-15.Total submergence area is 10.74 ha. Total catchment area is 1210 Sq.km. The project area does not fall within any biosphere reserve or protected areas. The project is proposed to be completed in a time frame of about 5 years.

The details of hydrology of the project were presented. The water availability series for JIDU HE project has been developed based on the 10 daily approved discharge series at Yamne-I HE project site for the period 1978-79 to 2008-09. The minimum and maximum elevations for the JIDU HE project catchment are almost similar to Yamne-I HE Project catchment. Therefore, the 10-daily discharge series of Yamne-I HEP site has been transferred to JIDU HE Project diversion site by multiplying it with the catchment area ratio and yield correction factor. The 10-daily discharge series thus obtained at JIDU HE project diversion site with average annual yield of 3448.42 MCM (2850 mm). The 10-daily discharge series for the period 1978-79 to 2008-09 has been used for JIDU HE Project diversion site. The CWC approved the hydrology vide letter no. 2/ARP/64/CEA/2013-PAC/5269-71 dated 5.9.2013.

As per MoEF&CC norms, a minimum discharge of 30% (42.5 cumecs) during monsoon season, minimum discharge of 20% (5.96 cumecs) during lean season & 25% (19.18 cumecs) during rest of the months will be released from the barrage. The energy potential in 90% dependable year (which is the year 2004-2005) have been calculated by CEA and the capacity has been fixed at 96 MW using continuous 9 years water series from 2000-01 to 2008-09. These environmental flows also conform to the proposed releases for JIDU HEP in Siang sub-basin CIA study. The hydrology and e-flows remained unchanged for 96 MW proposal as the 90% dependable year is same.

It was also mentioned that the Barrage axis has been shifted about 157 m downstream of that envisaged during the presentation of the previous TOR for 92 MW. This was necessitated due to nfavourable hydraulic and diversion arrangement layouts at the proposed upstream axis during the course of planning and site visits as part of scheme optimization. The FRL of the scheme after detailed survey at the revised axis location has been proposed at 632 m with a 20m high diversion structure.

As per present status, other than JIDU HEP, no project is proposed in Yang Sang Chhu river.

After having the detailed deliberation, the committee observed that the barrage axis has been shifted about 157 m downstream, total land requirement is changed, submergence area is increased and capacity has been increased from 92 MW to 96 MW, therefore, the modification in capacity in TOR is not appropriate. The EAC recommended for a fresh TOR for 96 MW JIDU HEP with these modifications/changes for a validity period of 3 years. The committee also agreed that the data already collected (not more than 1 year old) could be utilized in the preparation of EIA/EMP report.

The meeting ended with vote of thanks to Chair.

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List of Participants

2.1 M/s Sapta Kosi Sun Kosi Investigation, Govt. of Nepat & Govt. of India

1. Shri A.S. Goel, Chief Engineer, YBOI, CWC
2. Shri Amit Mumar Jha, Project Manager
3. Shri Anil Kumar Verma, AE

2.2 Nandawadagi Lift Irrigation Scheme

2.2-A Goriganga-III A M/s NHPC Limited

1. Shri I.D. Dayal, ED(D&E), NHPC
2. Shri Rajeev Boboota, CE (Civil)
3. Dr. A.K. Tripathi, Chief (Env)
4. Shri Kumar Manish, DM (Env)
5. Shri Vishal Sharma, DM (Env)
6. Shri Arindom Chakrabarty, Manager
7. Shri Rohit Khanna, DM (Civil)

2.3 M/s KSK Dinchang Power Co. Pvt. Ltd.

1. Shri. S.K. Datta
2. Shri C.S. Kasana, DGM, KSK
3. Shri Tarakesh Swain, DM
4. Shri S.M. Dixit, DCE, WAPCOS Ltd.

2.4 M/s Lihit Urja Private Ltd

1. Shri Jaideep Lakhtakia, Director
2. Shri Arun Bhaskar, Director, RSET
3. Shri Ravinder Bhatia, Director, RSET
4. Jay Chandra Khandelwal, LUPL
5. Shri S.C. Sud, Consultant
6. Shri Rajendra Singh

2.5 Siang Sub-basin in Arunachal Pradesh

1. Shri Topden Puning, Director, Sarda Eco Power Ltd
2. Shri Arun Bhaskar, RSET, Gurgana

2.6 M/s Karnatak Neeravari Nigam Limited

2.7 M/s Meenakshi North East Power Private Ltd.

1. Shri P.V. Prasad, GM (Tech.)
2. Shri G.K. Kaistha, SR
3. Ms. Neeta Arora
4. Shri Sippy N. Kumar, Evn. Engg.
5. Shri Sandipan Das, Sr. Scientist
6. Shri R. Jeyseelan, Sr. Consultant, SMEC
7. Shri Vikas Gupta, Dy. Technical Principal, SMEC
8. Shri Pivush Isasare, Sr. Associate, SMEC

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