

Out of total 48 projects allotted during 1993 to 2006, only 10 per cent projects were complete and operational after lapse of 15 years. Consequently, the envisaged power generation worth 2005.05 MW could not be achieved. As of March 2009, only two projects were to get commissioned in the year 2009 while nine other projects were under various phases of construction. The remaining 12 were found to have not progressed beyond the DPR/clearance stage despite freezing of IAs.

There was also no evidence of any punitive action being undertaken against any of the developers for defaulting on IA conditions. The liquidated damages, as a consequence of undue delays in commissioning of projects, were not recovered in a single case.

Further, the failure of the nodal agency to enforce the conditions of regular and timely submission of quarterly progress reports by the project developers resulted in non-assessment of the progress of projects by the Government to avoid delays in their implementation.

Negligence towards environmental and safety concerns was yet another consequence of weak monitoring by the nodal agency in ensuring adherence to prudent utility practices.

The execution phase was also found characterized by generation losses of 10.57 million units of power worth Rs. 2.64 crore, mainly attributable to grid failure, transmission obstruction due to low voltage and hindrances by local people indicating inadequate maintenance of grid infrastructure.

#### 4.1 Present Status of Projects

Forty-eight (48) projects were allotted during 1993 to 2006 for development through IPPs. Out of these, only five projects have been completed and are operational. The remaining 43 projects are at various phases; 23 projects are in the DPR submission/approval stage, eight projects are in clearance stage and 12 projects are under construction as of March 2009.

Table : 4

YEAR OF ALLOCATION	NO. OF PROJECTS	ESTIMATED POTENTIAL (MW)	OPERATIONAL PROJECTS	PRESENT STATUS		
				DPR STAGE	CLEARANCE STAGE	UNDER CONSTRUCTION STAGE
<b>Pre-bifurcation</b>						
Between 1993 to 1998	34	1,038.50	5	11	7	11
<b>Post-bifurcation</b>						
2003	2	84.00	-	1	-	1
2004	4	950.00	-	4	-	-
2006	8	350.60	-	7	1	-
<b>Total</b>	<b>48</b>	<b>2,423.10</b>	<b>5</b>	<b>23</b>	<b>8</b>	<b>12</b>

Source: Information provided by UJVNL.

Of the 34 projects, allotted during the composite state of U.P., revised IA/Project Development Agreements (PDAs) were signed by the GoU with the project developers to make them accountable for timely completion. However, only five projects were found to be operational till March 2009. Out of the remaining 29 hydro projects, the date of commercial operation was kept as October 2008 for 23 projects; however none of these projects could achieve the target date of commissioning. Only two projects were likely to get commissioned in the year 2009 while nine other projects were under various phases of construction. The remaining 12 were found to have not

progressed beyond the DPR/clearance stage despite freezing of IAs.

Only 10 *per cent* projects having a total capacity of 418.05 MW are complete and operational (year 2008-09) as against the envisaged targeted potential of 2423.10 MW. Delays of over four years were noticed in commencing work in 31 *per cent* of the projects; prime reasons for the delays being problems associated with land-acquisition, forest clearances and enhancement in project capacities.

#### 4.1.1 Status of sampled projects

The details of 13 projects selected for detailed audit scrutiny are presented in the table 5.

Table: 5

SL. NO.	STAGE	NAME OF PROJECT SELECTED FOR AUDIT	CAPACITY (IN MW)	YEAR OF ALLOTMENT	DATE OF IA	APPROVAL OF DPR	
1.	Operational stage	Rajwakti	4.40	1993	Aug 1999	1999	
2.		Debal	5.00	1993	April 2004	1996	
3.		Hanuman Ganga	4.95	1993	April 2004	1997	
4.		Loharkhet	4.80	1993	April 2004	2005	
5.	Clearance/ Construction stage	Agunda Thati	3.00	1993	April 2004	2006	
6.		Birahiganga	7.20	1993	April 2004	2004	
7.		Kakora Gad	12.50	1993	--	Submitted in Dec 06	
8.		Melkhet	56.00	1993	April 2004	Submitted in Feb 08	
9.		Bhyunder Ganga	24.30	1993	April 2004	2006	
10.		Srinagar (GVK)	330.00	1993	Feb 2006	2000	
11.		Initial Stage	Birahi Ganga-II	24.00	2006	--	Submitted in Nov 08
12.			Bhilangana- III	24.00	2003	Jan 2007	2006
13.			Alaknanda (GMR)	300.00	2004	--	2008

Source: Information provided by UJVNL.



## 4.2 Failure to enforce Implementation Agreement

The Implementation Agreement, made between the GoU and the IPP, specifies the terms and conditions for undertaking the implementation of the project. The IA is made after the IPP has carried out necessary investigations and confirmatory surveys, prepared and submitted the DPR and is convinced of obtaining statutory clearances and other approvals.

The IA stipulates a time period for achieving financial closure<sup>15</sup> and for commencing commercial operations and specifies a Commercial Operation Date<sup>16</sup> (COD) for the project. The IA also lays down the consequences of not complying with the stipulations regarding achievement of financial closure and commercial operation which in the case of the former is termination of the IA itself and in the case of the latter is a liability to pay liquidated damages to the Government. Besides, the IPP is also responsible for submitting quarterly progress reports in respect of obtaining clearances and approvals; achieving financial closure and progress of works relating to the project.

### 4.2.1 Non-levy of liquidated damages

Out of the 13 projects included in the audit sample, IA had been signed with the developers in the case of 10 hydro projects. These IAs specified the Commercial Operation Date (COD) of each of these projects. Scrutiny of relevant records revealed that four out of the 10 projects were able to start power generation within the stipulated time. In the case of three

projects, the COD is still due. In the balance three projects, representing 30 *per cent* of the population, commercial operations have not been achieved by the stipulated COD.

As per the IA, liquidated damages, amounting to Rs. 2.54 crore as on August 2009 were to be charged from the project developers, as tabulated in table 6.

However, audit noticed that, there was no evidence of any punitive action being undertaken by the Government against any of the developers for defaulting on IA conditions. The liquidated damages, as a consequence of undue delays in commissioning of projects, were not recovered in a single case despite the fact that even the IAs gave no scope of discretion on relaxation or exemption from paying of liquidated damages. This underlined the Government reluctance in dealing with consistently defaulting developers.

### 4.2.2 Inadequate monitoring of progress of projects

Policy document mandated UJVNL to carry out various checks including data collection and monitoring during the execution of the projects. Due to the shortage of staff the nodal agency was unable to fulfill its mandate.

Audit noticed that, no measures were taken by UJVNL to enforce the clause in the IA mandating submission of periodical progress reports by project developers. In the absence of these reports, the Government was not in a position to assess the actual status of projects and monitor project implementation.

Thus, the failure of the nodal agency to enforce the conditions of regular and timely submission of quarterly progress reports by the project developers resulted in non-assessment of the progress of projects by the Government to avoid delays in their implementation.

<sup>15</sup> The date, on which the IPP has immediate access to the funding by the lenders, given by way of loans, debentures, bonds, security agreements and other debt instruments.

<sup>16</sup> The date on which the project is capable of delivering power on a regular basis after having successfully completed the commissioning tests.

Table: 6

NAME OF THE PROJECT	DATE OF IA	FINANCIAL CLOSURE	SCHEDULED COD	ACTUAL COD	OVERRUN PERIOD	LD AS PER IA (PER DAY)	TOTAL LD (IN LAKH)	SUPPLEMENTARY IA
Agunda Thati	28.4.04	Feb 2006	27.10.08	Yet to achieve	308 days	5,000	15.40	--
Birahi Ganga	28.4.04	Feb 2006	27.10.08	Yet to achieve	216 days	5,000	10.80	June 2009
Bhilangana-III	25.1.07	March 2007	24.7.11	--	--	80,000	--	--
Melkhet	28.4.04	Not achieved	27.10.08	Yet to achieve	308 days	74,000	227.92	--
Bhyunder Ganga	28.4.04	Applied for extension	31.03.11 as per supp. IA	--	--	74,000	--	Nov 2006
Srinagar <sup>17</sup> (GVK)	08.2.06	Not achieved	--	--	--	No mention	--	--
Total :							254.12	

Source : Information obtained from UJVNL.

The specific case of the Agunda Thati project is discussed below to highlight the adverse repercussions of the inadequate monitoring of project implementation by the GoU and UJVNL.

### Agunda Thati Hydropower Project

The initial allotment of Agunda Thati project was made to M/S Gunsola Hydro Power Generation Private Limited in 1993. The DPR for the project was approved by the Uttar Pradesh Government for an installed capacity of 3 MW. After the bifurcation of the State and creation of Uttarakhand, an IA was entered into with the same project developer by the GoU in April 2004. A fresh DPR was also submitted by the project developer for approval in April 2005. During the technical vetting of the DPR by UJVNL, it was noticed that significant changes have been made in the project design without seeking prior permission. It was also found that civil construction work had also been commenced on a changed project site. The unauthorized changes made by the project developer included:

- ◆ Change in geographical coordinates of the project site from 78-39' longitude to 78-38' longitude
- ◆ Change in project site from 'Thati' to 'Buda Kedar'
- ◆ Change in water source from the river 'Dharamganga' to river 'Balganga'
- ◆ Increase in water discharge from 3.45 cumecs to 10 cumecs
- ◆ Reduction in head from 172 m to 50.43 m

Audit analysis revealed that, the changes appear to have been planned with the motive of gaining from the combined water discharge of two rivers (river Dhramganga being a tributary of river Balganga). Besides, the above mentioned changes also involved an infringement of UJVNL's project Balganga-I located on river Balganga. The revised DPR submitted by the developer was however, approved (April 2006) on the basis of the justification given by the developer that the changes were necessitated

<sup>17</sup> The related documents were not provided to audit, except the copy of RIA.

on account of a cloud burst that took place in 2001. However, the justification lacks weight as the occurrence of the cloud burst and the consequent need for the changes were not brought to the notice of the GoU at the time of entering into the IA in April 2004.

The following shortcomings in the execution of the above project highlight the absence of monitoring project implementation by the responsible authorities:

- ◆ Both the nodal agency and the Government being unaware of the status of projects being implemented.
- ◆ The project developer without any intimation to and approval from the nodal agency and the Government not only unilaterally changed the project site and design but also commenced civil construction at the changed site.
- ◆ It was only to attain financial closure and mobilize loans from HUDCO that the project developer approached the Government for seeking approval for its revised DPR.
- ◆ The Government instead of taking stern action against project developer decided to approve the revised DPR on a ground that was found to be unjustified.

#### 4.3 Unreasonable terms in the Restated Implementation Agreement (RIA)

The Srinagar hydropower project on river Alaknanda with a capacity of 330 MW was conceptualized in the 1990s under the composite State of Uttar Pradesh. The project which was initially started as an Irrigation department project was first allotted to a JV of a Kolkata based company and a foreign company. The project, thereafter, moved to a Tata company which acquired controlling stake in the JV and finally to GVK. On account of the changes in the status of the developer and the creation of the new State of Uttarakhand, a

Restated Implementation Agreement (RIA) was entered into (February 2006) between the GoU, the Government of Uttar Pradesh and GVK's Srinagar Hydro Power Company for execution of the said project.

Audit scrutiny of the terms and conditions stipulated in the RIA revealed that the project developer had been given terms that were more favourable than the terms of the standard IA being entered into by the GoU with other project developers allotted projects of over 100 MW capacity. Few issues of the unreasonable terms are as follows:

- ◆ There is no provision for liquidated damages on account of delays; as per clause 6.1 of the RIA, the project developer is required to commence commercial operations within 13 years from the effective date i.e. Feb 2006. This period can be extended in case of delay.
- ◆ As per clause 8.1 of the RIA, if required, the GoU shall provide for the purpose of facilitating financial closure of the project, suitable undertaking for forest land and mortgage facility in respect of non-forest land in favour of the lenders providing financial assistance to the project.
- ◆ Clause 18.2 of the RIA stipulates that the project shall operate as a "must run plant" utilizing its full potential. If the company is required to release water from the project dam by the GoU which would have otherwise been utilized for power generation and any other direction from the GoU affecting generation, the GoU will have to pay to the company for the resultant revenue loss.
- ◆ The ownership of the project entity has been allowed to change even though the policy is to prohibit any changes till the project comes into commercial operation.

The rationale for grant of special terms to the project developer in this case could not be ascertained during Audit as **files relating to the**

project were not provided despite several written requests. The time taken for project implementation to commence in this case was also found to be unusually long but due to absence of access to project records reasons for the same could not be analysed in audit.

*Delays of such magnitude not only lead to escalation of project costs which will push up tariffs but also delay benefits from the project from being realized. The special terms offered in this case opens the risk of similarly placed developers seeking similar concessions at some stage of their project implementation.*

On being pointed out, the State Government emphasized the need to include provision relating to 'Must-run-project' in all the IAs in future to attract more private investment in the sector.

#### 4.4 Non-adherence to Prudent Utility Practices<sup>18</sup>

As per the conditions of the IA, the project developer was required to design, construct and complete the project in accordance with applicable laws, sound engineering and prudent utility practices. UJVNL was entrusted with the job of monitoring and supervision of the project works. Out of five operational projects, four were physically inspected by the audit team. Deficiencies noticed are discussed below:

- i. During the physical inspection of the Rajwakti power project (June 2009), it was found that the power channel<sup>19</sup>, in a length of 150 meters was left uncovered. This was a violation of standard provisions of the DPR. Besides, it was also a safety hazard for the local population.

<sup>18</sup> The internationally accepted practices, methods, techniques and standards for installation, operation and maintenance of the project taking into account physical conditions, safety and efficiency.

<sup>19</sup> Power channel is meant to supply water from de-silting tank till the turbines.



Rajwakti : Uncovered power channel

- ii. A minimum water flow from the weir/barrage needs to be ensured for downstream requirements. Due to the trench type weir designs of Loharkhet and Hanuman Ganga hydropower projects, the free river flow got absolutely thwarted; the water passage in the diversion reach was possible only in situations of overflow during heavy rains. Thus the scope for downstream flow during the lean season when the demand for water is at its peak was entirely eliminated. The environmental aspects of non-maintenance of a minimum downstream flow have been elaborated in Chapter 5 on 'Environment Impact'.



Loharkhet : Trench type weir

- iii. The IA envisaged that the project developer shall ensure proper safety measures during implementation of the project. The preventive plan for safety included:

- ◆ Safety check of all installed devices;
- ◆ Ensuring of canal/river safety ;
- ◆ Fencing of moving parts;
- ◆ Constitution of safety committees

Audit scrutiny revealed that safety measures were inadequate in Debal and Rajwakti hydro power projects. The absence of fire fighting equipment and fencing/covering of moving parts like turbines, coupled with insufficient technicians and skilled staff were issues of grave concern and need to be urgently addressed. Inadequate attention to safety measures posed a security hazard for the personnel working in the project.

Negligence towards environmental and safety concerns by the IPPs, as illustrated above, was yet another consequence of weak monitoring by the nodal agency in ensuring adherence to prudent utility practices.

#### 4.5 Loss of Energy

Scrutiny of the test checked projects in operation, revealed that generation losses of 10.57 million units of power worth Rs. 2.64 crore had taken place during 2005-2009. The losses were mainly attributed to grid failure, transmission obstruction due to low voltage and hindrances by local people, indicating inadequate maintenance of grid infrastructure. The details are shown in table 7.

Table: 7

NAME OF PROJECT	SHUT-DOWN HOURS *	PERIOD	UNIT LOSS	RATE PER UNIT (RS.)	AMOUNT OF LOSS (RS. IN LAKH )
Hanuman Ganga	3,297.98	2005-09	90,02,562	2.50	225.06
Loharkhet	682.68	2008-09	15,71,304	2.50	39.28
Total :	3,980.66		1,05,73,866		264.34

Source: Information obtained from project authorities.

\* Excludes annual accepted limit of 400 hours.

#### Recommendations

- ◆ A proper monitoring mechanism needs to be put in place to ensure that lapses on the part of IPPs during civil construction and operations are avoided.
- ◆ Executive should prescribe procedure to fix accountability in cases of violation of conditions stipulated in the Implementation Agreements.
- ◆ Reasons behind delays in implementation of hydro projects should be thoroughly examined so as to put in place a more responsive monitoring mechanism for avoiding delays in upcoming projects.

