

CHAPTER

VI

Contract Management



SUMMARY

Works under the Kaleshwaram Project were awarded at different points of time between 2008-2020 to a varied set of agencies. While 17 contracts were awarded on EPC basis, 39 contracts were on unit price (lumpsum or LS) basis. It was seen that in 21 of the 56 works contracts entrusted under the project, the scope of work involved supply and installation of lifts. The Department provided a total amount of ₹17,653.71 crore towards the cost of pumps, motors and auxiliary equipment in the estimates of these works, without assessing the market rates. Audit verified the actual cost at which the contractors procured the equipment (from M/s Bharat Heavy Electricals Ltd.) in four works and found that amounts (₹7,212.34 crore) provided for this equipment in the estimates was higher by ₹5,525.75 crore than their actual cost (₹1,686.59 crore). Even when 30 per cent of the estimated cost is allowed for the items/operations outside the scope of BHEL supply and another 20 per cent is allowed towards overheads and contractors' profit, the possibility of undue benefit of at least ₹2,684.73 crore to the contractors of these works cannot be ruled out.

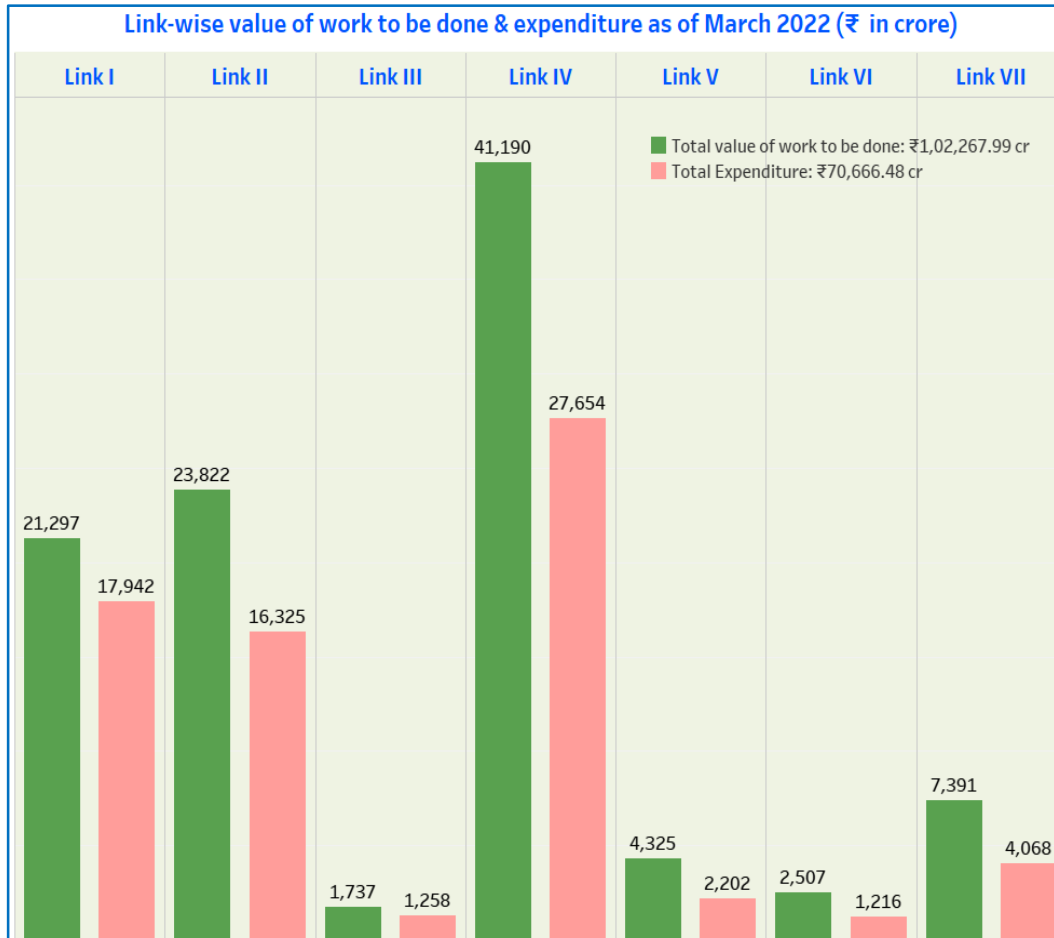
In respect of the other common equipment, an aggregate amount of ₹1,282.94 crore provided for could not be verified during audit as the Department did not produce the invoices. Post tender inclusion of price adjustment clauses were also done by the Department on the request of the successful bidders, resulting in avoidable payment of ₹1,342.48 crore. Similarly, adoption of incorrect rates/costs resulted in inflation of the estimates. Audit also found instances where the Department had allowed additional payment to contractors, but not adjusted payment from contractors when there were reductions in work quantities.

6.1 Details of link-wise expenditure

The Kaleshwaram Project was divided into seven Links and the works under each link were further sub divided into various packages. In all, a total of 56 package works with an aggregate agreement value of ₹82,252.75 crore¹⁴³ were awarded to various contractors. Out of the 56 works awarded under the project, 17 works (₹30,489.13 crore) were entrusted through Engineering, Procurement and Construction (EPC) Turnkey contracting system and 39 works (₹51,763.62 crore) were awarded under the conventional unit price contract system (locally called as lumpsum or LS contracts).

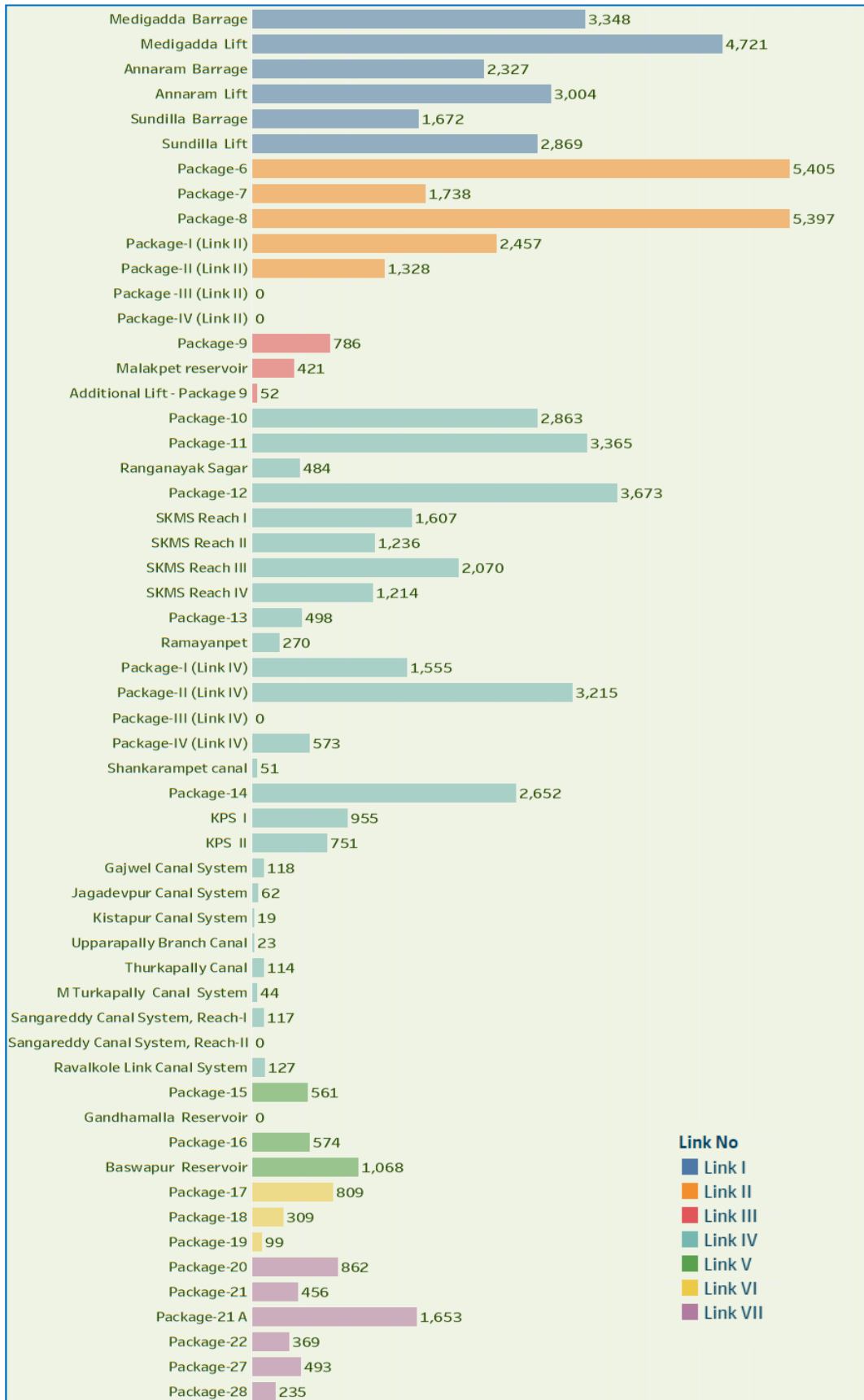
¹⁴³ These include 19 works pertaining to the erstwhile PCSS project brought under Kaleshwaram project after re-engineering with revised scope of work, 28 new works were taken up consequent to re-engineering and 9 more additional works awarded subsequently

Chart 6.1 – Link wise final value of agreements and expenditure as of March 2022



Source: Records of the I&CAD Department

Chart 6.2 – Package wise expenditure as of March 2022 (₹ in crore)



Source: Records of the I&CAD Department

The estimates for the works in both the modes of contract are prepared based on Andhra Pradesh/Telangana State Standard Specifications and rates provided in the ‘Schedule of Rates’ (SoR). In case of non-availability of rates in the SoR for a component/item of work, quotations from reputed firms shall be collected for preparation of estimate. Adoption of observed data of similar works in the State or neighbouring State is the other practice in vogue.

Under the EPC contracts followed in the State, the contractors were required to conduct detailed survey and investigations, submit proposed alignments, designs and drawings to the Department for approval. After receiving these approvals, the contracting agencies were required to identify the lands required for execution of works and submit the land plan schedules to the Department.

On the other hand, in LS contracts, the responsibility for designs and identification and acquisition of lands rests solely with the Department. As per the existing instructions¹⁴⁴ of Government, administrative approval/technical sanction for irrigation works would be issued only after designs are finalized, detailed investigation is completed, and necessary lands are acquired for taking up works without interruption for the first two years.

In addition to the above differences in both the contracts, some basic differences are also detailed below:

Table 6.1 – Differences between EPC and LS contracts

S. No	EPC system of contract	LS system of contract
1	The contractor is to design a project or work, procure all the necessary materials and construct it, either through own labour or by subcontracting part of the work and deliver it to the employer. The contractor carries the entire risk of the project for schedule, as well as budget, in return for a fixed price.	The contractor has to execute the work as per approved designs and drawings and payment would be made on actual quantities executed.
2	The work specified in the contract is divided into several components to facilitate payments and the cost of each component has to be specified as a percentage of the total bid price.	Payments are made to contractors with reference to the quantities of work actually executed by them duly considering the tender percentage quoted by them
3	Agreements do not contain ‘bill of quantities’ indicating the quantities and rates of each item of work.	Agreements do contain ‘bill of quantities’ indicating the quantities and rates of each item of work

Source: Records of the I&CAD Department

In case of the 17 tenders invited through the EPC system during the period 2008-09, the tenders were invited by the Superintending Engineers of the concerned Circles and the 1st level scrutiny of the bids (technical and financial) was undertaken at the Circle level. Thereafter, the tender evaluation reports were submitted to the concerned Chief

¹⁴⁴ GO Ms. No.94 of I&CAD (PW-COD) Department, dated 01.07.2003

Engineer(s)/Engineer(s)-in-Chief. Subsequently, it was submitted to the State Level Standing Committee¹⁴⁵ and then to the High-Powered Committee¹⁴⁶, which was responsible for finalization and acceptance of tenders. The finalized/accepted tenders were recommended to the Government by the High Powered Committee and final award of work was issued by the Superintending Engineer.

In case of the 39 tenders invited under the LS system during the period from 2016-20, the Superintending Engineer (SE) of a Circle Office invited tenders for respective works and evaluated both the technical and the financial bids. Thereafter, the tender evaluation reports were submitted to the Chief Engineers/Engineer(s)-in-Chief for 2nd level check. The tender evaluations were finally submitted to the Commissioner of Tenders¹⁴⁷ (CoT¹⁴⁸) for scrutiny and finalization. The decision of the CoT on tender is final and after finalization of the tenders, the SE of the concerned circle gives the final award of work.

Before calling for tenders for any work, the Department prepares cost estimates to arrive at the estimated contract value (ECV) which is put to tender. While bidding, the bidders have to quote the overall tender percentage (*i.e.*, tender discount or tender premium) on the ECV. The estimates are prepared by computing the quantities of each item of work to be executed and the rate of each item. The rates of individual items of work are calculated by considering the costs involved (*i.e.*, the cost of materials, operations, labour, *etc.*) in execution of that item of work. For working out the rates of each item of work, the rates of materials, operations, labour, *etc.*, available in the relevant SoRs prepared every year are adopted. In respect of the items for which rates are not available in the SoR, the rates are ascertained from open market and adopted in the estimates.

The erstwhile combined State of Andhra Pradesh had been stipulating a maximum ceiling up to which the bidders can quote their tender premium. The ceiling on tender premium was 10 *per cent* during July 2003 to November 2004 and five *per cent* thereafter. After re-organisation of the combined State of Andhra Pradesh, the newly formed Telangana State has continued the five *per cent* ceiling on tender premium. It is obvious that the objective behind stipulation of ceiling on tender premium was to ensure that the works taken up by Government Departments are not entrusted at unreasonably high prices and that value for money was achieved in procurement of works. In order to achieve this objective and to assess the reasonableness of the bids received in the tender process for works, it was essential that the works estimates are prepared realistically.

Audit observed that, after re-engineering of the project, none of the works were awarded under the EPC system.

¹⁴⁵ SLSC consists of Engineer-in-Chief as chairman, Commissioner of Tenders, CE, CDO, CE concerned and Deputy financial advisor as Members

¹⁴⁶ HPC consists of Chief Secretary as Chairman, Irrigation Secretary and Finance Secretary as members.

¹⁴⁷ vide GO Ms. No. 94 of I&CAD (PW-COD) Department dated 01 July 2003

¹⁴⁸ Commissioner of Tenders is Chief Engineer (Administration wing)

6.2 Preparation of estimates

Audit observed the following deficiencies in preparation of estimates in Kaleshwaram Project:

6.2.1 Costing of Electro/Hydro mechanical equipment

The Kaleshwaram Project, has 27 lifts¹⁴⁹ (included in 21 agreements) with each lift having multiple pumps/motors. These lift works involve execution of civil works like construction of pumphouse, *etc.*, and supply, installation and commissioning of Electro-Mechanical and Hydro-Mechanical (EM&HM) equipment. The EM&HM equipment includes - (i) pumps, motors and auxiliary equipment like control panels, unit auxiliary boards, DC distribution boards, *etc.*, and (ii) common equipment like cranes, generator sets, batteries, *etc.*

In the estimates of these 21 works involving lifts (10 LS contracts and 11 EPC contracts), the Department had provided a total amount of ₹18,936.65 crore¹⁵⁰ towards the cost of EM&HM equipment (with an aggregate capacity of 8,338.04 MW).

6.2.1.1 Estimation of cost of pumps, motors and auxiliary equipment

Audit observed that the SoRs prepared in the State did not contain the rates for pumps, motors and auxiliary equipment. The Department obtained estimates for pumps and motors from M/s Bharat Heavy Electricals Limited (BHEL) in September 2005. The estimates obtained from BHEL, however, did not provide any break-up of the costs. The Department, using the estimates provided by BHEL, provided lumpsum amounts¹⁵¹ towards the cost of pumps and motors in the estimates of the 11 EPC works (out of 21 works) awarded in 2008-09.

However, in case of the 10 LS works taken up after 2016-17, the Department stated that the estimates were prepared based on the rates adopted in Kalwakurthy Lift Irrigation Scheme which was commissioned in the year 2008 and updating the rate up to 2016. The mechanism adopted by the Department in preparation of estimates in respect of pumps, motors and auxiliary equipment lacked consistency and transparency.

In the agreements concluded with contractors for these 21 works, an aggregate amount of ₹14,562.32 crore was provided towards supply and commissioning of pumps, motors and auxiliary equipment. The amount provided in these agreements works out to ₹135.56 lakh/MW to ₹350.60 lakh/MW. As of March 2022, supply of equipment

¹⁴⁹ In addition, there are four small lifts (in Package-9) involving submersible pumps (total capacity: 4.66 MW). These have not been taken into account for Audit analysis. Further, in seven out of the 21 lifts, the Department later decided to increase the capacity of pumps/motors (total increase: 116.4 MW) but is yet to work out the revised cost of pumps/motors.

¹⁵⁰ ₹17,653.71 crore for pumps, motors and auxiliary equipment and ₹1,282.94 crore for other common equipment

¹⁵¹ Breakup of the lumpsum amount is not available.

was completed in nine works¹⁵², partially completed in eight works¹⁵³ and supplies were yet to be made in the remaining four works¹⁵⁴. A total amount of ₹8,896.29 crore was paid to contractors for this equipment supplied so far (March 2022) in these works.

In an effort to ascertain the actual market value of this equipment, Audit sought the copies of purchase invoices collected, if any, by the Department before making payments to contractors. However, the Department did not furnish the invoices stating that there was no stipulation in the agreements requiring the contractors to submit invoices in support of the equipment procured.

Audit observed that in four EPC works (Package Nos. 6, 8, 10 and 11), the Department had included a total amount of ₹7,212.34 crore in the estimates for supply and installation of pumps and motors of an aggregate capacity of 2,805.76 MW. It was observed that contractors of these four works engaged M/s BHEL (which was also a partner in the Joint Ventures), for supply, installation, testing and commissioning of pumps, motors and auxiliary equipment. M/s BHEL had supplied and commissioned the equipment in these works during 2017 to 2020. Audit ascertained from M/s BHEL the amount charged by it from the JV partners for this component. Audit observed that there were variations between the amounts provided for this equipment in the estimates and the actual cost at which M/s BHEL had executed the work on behalf of the JV, as shown below:

Table 6.2 – Variation between the amounts provided in the estimates for pumps, motors and auxiliary equipment and actual cost of supply by M/s BHEL¹⁵⁵

S. No.	Pkg. No.	Total capacity of pumps and motors supplied @ (in MW)	Amount * provided in the estimates (₹ in crore)	Average cost provided per MW (₹ in lakh)	Cost at which M/s BHEL supplied the equipment to contractors (₹ in crore)	Actual cost per MW (₹ in lakh)	Excess amount provided in the estimate (₹ in crore)	Excess percentage
1	6	871	2,238.17	256.97	530.92	60.96	1,707.25	321.56 %
2	8	973	2,508.96	257.86	529.15	54.38	1,979.81	374.15 %
3	10	424	1,086.45	256.24	305.72	72.10	780.73	255.37 %
4	11	537.76	1,378.76	256.39	320.80	59.65	1,057.96	329.79 %
	Total	2,805.76	7,212.34	257.05	1,686.59	60.11	5,525.75	327.63 %

Source: Records of the I&CAD Department and information provided by M/s BHEL

@ Package-6: 124.4 MW X 7 Nos.; Package-8: 139 MW X 7 Nos.; Package-10: 106 MW X 4 Nos.; and Package-11: 134.44 MW X 4 Nos.

* including the cost of pump discharge valves

As seen from the above table, the actual cost at which M/s BHEL had supplied the pumps and motors ranged from ₹54.38 lakh/MW to ₹72.10 lakh/MW and the average

¹⁵² Medigadda lift, Annaram lift, Sundilla lift and Package Nos. 6,8,10,11,12 and 14

¹⁵³ Package-9, Package Nos.1 & 2 of additional 1.1 TMC works in Link-II, Package Nos. 1 & 2 of additional 1 TMC works in Link-IV, Package Nos. 20, 21-A & 28

¹⁵⁴ Package Nos. 21, 22, 27 and Package-4 of additional 1 TMC work in Link-IV

¹⁵⁵ BHEL was a part of the successful consortium(s) which were awarded the four packages.

cost works out to ₹60.11 lakh/MW. The amounts provided in the estimates (₹7,212.34 crore) of these works was more than four times the actual cost (₹1,686.59 crore).

As per the procedure followed for preparation of estimates in the irrigation works in the State, the Department provides Overheads & Contractor's profit at the rate of 13.615 *per cent* over the cost of works. Even when 20 *per cent* of the supply cost is allowed towards Overheads and Profit, there was a possibility of undue benefit of ₹5,188.43 crore to the contractors of these four works.

Audit could not compare the actual cost of pumps and motors in the remaining 17 packages, as supply of the EM&HM equipment was not yet done in four works and even in the remaining 13 works where the supplies were made, the Department did not furnish the relevant invoices stating that there was no stipulation in the agreements requiring the contractors to submit invoices in support of the equipment procured.

The Government, in the Exit Conference, stated that works were awarded through a transparent process by inviting global tenders in 2008-09. It was also replied (May 2023) that these pumping stations were tailor made and the components of these pumping stations were not standardized items and there was no SoR for these items. It was further stated that the cost of pumps and motors and their associated and auxiliary equipment was obtained from M/s BHEL (as ₹2.40 crore per MW), which was the pump and motor manufacturing unit of Government of India. The Government further replied that there would be about 31 major items/equipment of specific type and rating out of which, the scope of supply of M/s BHEL was limited to only three items (pumps, motors and associated equipment). It was further replied that the EPC contractor had to pay for the EM&HM items, transport the materials in segments to worksite from various units of BHEL like Bhopal, Rudrapur, Bangalore, *etc.*, with transit insurance, fabrication of some components, assemble the segments at site, erection, testing at all stages and commissioning the same including dry run and wet run. Hence, the price of BHEL said to be furnished by them to Audit was only for part of equipment cost. As the civil, EM&HM works needed to be carried out simultaneously, erection of EM&HM equipment was done at multiple stages spanning over years, keeping expert engineers, manpower, equipment co-ordination and that arranging training on this equipment was also necessary. Considering all the complex steps and operations involved in the erection and testing of EM&HM equipment, the BHEL would have quoted the rate of ₹2.40 crore per MW based on which the estimates were prepared. Government also replied that the Department had collected the rate per MW followed in 11 other projects across Madhya Pradesh, Gujarat, Rajasthan, and Karnataka States and the rate per MW in those projects was ranging from ₹2.33 to ₹3.84 crore per MW. Hence, the rate per MW adopted in Kaleshwaram Project was justifiable.

The fact however remains that the cost paid to the contractors for the EM&HM equipment was higher than the prevailing market rates. This is evident from the fact that when Audit verified the item wise costs provided for the EM&HM equipment in other lift works taken up subsequently (during 2016-17 to 2019-20) under

Kaleshwaram Project, it was observed that the cost provided for pumps, motors and associated equipment in these estimates consisted of 72 per cent¹⁵⁶ of the total cost of EM&HM equipment and only 28 per cent of the cost represented the remaining auxiliary equipment, spares and other operations like transportation, insurance, jointing/assembling at site and installation, testing and commissioning which were stated to be outside the scope of supply of M/s BHEL. It was also observed that the cost provided for other common equipment (like mobile cranes, generator sets, etc.) in these works ranged from ₹51.13 crore to ₹85 crore¹⁵⁷ per pump house.

Thus, even when 30 per cent cost is allowed for the items/operations outside the scope of BHEL supply (such as other auxiliary equipment, spares, and other operations/costs) and a further amount of ₹85 crore per lift is allowed for common equipment, the possibility of contractors of these four EPC packages getting unduly benefited by at least ₹2,684.73 crore cannot be ruled out.

Table 6.3 -Calculation worked out by Audit

(₹ in crore)

Description	Amount	Amount
Total amount provided in the estimates for EM&HM equipment (A)		7212.34
Deduct 30% towards items/operations stated to be outside the scope of work of BHEL (B) = (A) * 30%		2163.70
Deduct cost of common equipment (@ ₹ 85 crore per lift * 4) (C)		340.00
Net cost provided in the estimates for the items within the scope of supply of BHEL (D) = (A) - (B) - (C)		4708.64
Actual cost of the items supplied by BHEL (E)	1686.59	
Add contractors' profit and other overheads @ 20% on the above (F) = (E) * 20%	337.32	
Cost to contractors for the items supplied by BHEL (G) = (E) + (F)	2023.91	2023.91
Total (D) - (G)		2684.73

Source: Information collected from the records of the I&CAD Department and information provided by M/s BHEL

The Government further replied (November 2023) that Audit had arrived at the undue benefit to contractors towards EM&HM equipment as ₹2,684.73 crore with certain assumptions of cost share percentage on the components such as items supplied outside the scope of BHEL, cost of the items supplied by BHEL, common equipment and contractors' benefits on BHEL items which is not justifiable. Government contended that Audit considered contractors' profit only on BHEL items, but it has to be considered on all the items such as the items supplied outside the scope of BHEL including erection, testing and commissioning of EM&HM works. It was also replied that Audit did not consider the labour components and other material components such

¹⁵⁶ 71.87 per cent in Package-II of additional TMC work in Link-II; 72.13 per cent in Package-1 of additional TMC work in Link-IV; and 76.52 per cent in Medigadda Lift

¹⁵⁷ ₹51.13 crore in Medigadda Lift; ₹57.57 crore in Package-1 of additional TMC work in Link-IV; and ₹85.36 crore in Package-II of additional TMC work in Link-II.

as welding rods, oils, lubricants *etc.*, while working out the above undue benefit to contractors.

The reply is not correct as Audit considered contractors' profit only on BHEL items as these were supplied items (based on invoices) and were exclusive of the contractors' profit. The rates of other items like testing, erection, and commissioning, *etc.* are at estimated rates and inclusive of contractors' profit. Hence, Audit did not consider contractors profit on these items. Further, in respect of labour and material components such as welding rods, oils, lubricants, *etc.*, while working out the undue benefit to contractors, Audit has considered 30 *per cent* cost towards these miscellaneous operations/costs including the cost of jointing/assembling at site and installation, testing and commissioning, *etc.*

Recommendation - 8

The Department should evolve a sound and transparent mechanism, including conducting market survey periodically for estimation of costs of various EM&HM equipment. The possibility of including the rates in the SoRs should also be explored.

Recommendation - 9

The Department should ensure that a detailed cost breakup of EM&HM components is given in the estimates of lift works to ensure transparency in release of payments.

Recommendation - 10

The Department should include a clause in the works contract conditions stipulating production of invoices as a pre-condition for releasing payments in respect of EM&HM components.

6.2.1.2 Frontloading in Payment Schedules

As per the terms and conditions of the EPC contracts concluded for the PCSS project works (2008-09), the EPC agencies have to execute the total work as per the basic project parameters broadly defined in the respective agreements within the firm fixed contract price. These agreements do not contain 'bill of quantities' indicating the quantities and rates of each item of work. However, for the purpose of regulating the interim payments to contractors, the total contract price is divided into several components duly indicating their percentage costs in the total contract value and indicated in the 'payment schedule' in the agreement. After concluding the agreements, contractors submit detailed estimates for the work in which the cost provided in the payment schedule for each component will be further divided into sub-component wise costs. The detailed sub-component wise payment schedules are vetted and approved by the Department. Payments to contractors are regulated as per the costs so assigned to each sub-component in the detailed payment schedules.

As already stated earlier (in Paragraph 6.2.1.1), the cost of pumps, motors and auxiliary equipment was already inflated in the departmental estimates in four works. Audit could not compare the actual cost of pumps and motors in the remaining 17 packages, as supply of the EM&HM equipment was not yet done in four works and even in the remaining 13 works where the supplies were made, the Department did not furnish the relevant invoices stating that there was no stipulation in the agreements requiring the contractors to submit invoices in support of the equipment procured. Audit observed that the inflated costs provided in the estimates for pumps and motors were likely passed on to the contractors by frontloading the cost of different items of common equipment in the detailed payment schedules, as shown below:

*Table 6.4 – Examples of frontloading of payments made for common equipment in EPC contracts
(This frontloaded amount is included in the estimated cost of pumps and motors of EM&HM)*

(₹ in crore)

S. No.	Pkg. No.	As per abstract estimates			Actual supply/payment		
		Capacity and Quantity	Unit Rate (₹ in crore)	Estimated cost (₹ in crore)	Capacity and Quantity	Payment (₹ in crore)	Excess payment (already included in estimates of other equipment (₹ in crore))
<i>Payments made for Diesel generator set</i>							
1	6	250 KVA X 3	0.25	0.75	500 KVA X 1 320 KVA X 1	39.82	39.07
2	8	250 KVA X 3	0.25	0.75	500 KVA X 1 320 KVA X 1	44.39	43.64
3	9	250 KVA X 1	0.25	0.25	250 KVA X 1	1.80	1.55
4	10	250 KVA X 3	0.25	0.75	500 KVA X 1 320 KVA X 1	27.82	27.07
5	11	250 KVA X 2	0.25	0.50	330 KVA X 1	31.10	30.60
6	12	250 KVA X 2	0.25	0.50	320 KVA X 1	14.65	14.15
<i>Payments made for Electric overhead travelling (EOT) crane</i>							
7	6	NA X 1	10.00	10.00	NA X 2	96.49	86.49
8	8	150 MT X 2	12.00	24.00	NA X 2	110.51	86.51
9	9	250 MT X 1	2.00	2.00	NA X 1	15.67	13.67
10	10	150 MT X 2	8.00	16.00	125 MT X 3	41.29	25.29
11	11	150 MT X 2	8.00	16.00	150 MT X 1	72.51	56.51
<i>Payments made for mobile crane</i>							
12	6	30 MT X 1	0.75	0.75	30 MT X 1	9.89	9.14
13	8	30 MT X 1	0.75	0.75	30 MT X 1	10.21	9.46
14	10	30 MT X 1	1.00	1.00	30 MT X 1	8.63	7.63
15	12	30 MT X 2	1.00	2.00	30 MT X 2	5.69	3.69

NA: Information not available/not furnished

Source: Records of the I&CAD Department

The departmental estimates of the EPC Package Nos. 6, 8, 10, 11 and 12 (awarded in 2008-09) did not contain separate provisions in respect of certain items of common

equipment. The cost of these items was included in the composite cost provided for pumps, motors and auxiliary equipment. In such cases, Audit compared the payments made for these items with the amounts provided for similar items in the estimates of Medigadda, Annaram and Sundilla lifts (prepared with 2015-16 rates). It was found that high amounts were paid for the following items.

Table 6.5 – More examples of higher payments for common equipment in EPC contracts

(₹ in crore)

S. No.	Items	Cost as per estimate of Sundilla lift	Package-6		Package-8		Package-10		Package-11		Package-12	
			Amt. paid	Excess	Amt. paid	Excess	Amt. paid	Excess	Amt. paid	Excess	Amt. paid	Excess
1	Station Auxiliary Boards	1.12	35.89	34.77	35.68	34.56	32.77	31.65	37.5	36.38	29.32	28.2
2	Pump House Earthing	1.86	28.37	26.51	25.53	23.67	26.86	25	34.83	32.97	22.79	20.93
3	Unit Auxiliary transformers	8.38	40.57	32.19	52.07	43.69	33.57	25.19	43.54	35.16	28.49	20.11
4	Emergency Board	0.93	53.4	52.47	51.79	50.86	26.86	25.93	34.83	33.9	15.47	14.54
5	Switch gear panel	4.65	222.9	218.25	341.93	337.28	116.54	111.89	151.15	146.5	85.63	80.98
6	Battery sets	2.33	32.45	30.12	108.53	106.2	61.58	59.25	79.87	77.54	30.12	27.79
	Total	19.27	413.58	394.31	615.53	596.26	298.18	278.91	381.72	362.45	211.82	192.55

Source: Records of the I&CAD Department

As can be seen from the above tables, there is a significant risk that inflated costs provided in the estimates for pumps and motors were passed on to the contractors by frontloading the amounts paid for different items of EM&HM equipment.

In contrast to the EPC contract system, in the traditional unit price (locally called Lumpsum or LS) contract system, the items of work to be executed, their quantities and the estimated unit rates payable for each item are mentioned in the Bill of Quantities (BOQ) in the agreements. Payments to contractors are regulated as per the quantities actually executed/supplied and the rates mentioned in the BOQ after applying the quoted tender percentage.

Audit, however, observed that in the three LS contracts relating to Medigadda, Annaram and Sundilla lifts, though the Department prepared the estimates with itemised rates for EM&HM equipment, it provided lumpsum amounts in the BOQ in the agreements without the item-wise rates. For regulation of payments, it later prepared a separate payment schedule for the EM&HM equipment duly giving the detailed break up of amounts payable for each item of equipment.

In these contracts, the payments for the pump and motors were made below the estimate rates prepared by the Department but higher payments were frontloaded for various items of common/auxiliary equipment, as compared to the amounts provided

for these items in the departmental estimates¹⁵⁸. Some such cases of higher payments are shown in the table below.

Table 6.6 – Examples of higher payments frontloaded for common/auxiliary equipment in LS contracts of Medigadda, Annaram and Sundilla lifts

(₹ in crore)

S. No.	Item description	Medigadda Lift			Annaram Lift			Sundilla Lift		
		Est. cost*	Amount paid	Excess	Est. cost*	Amount paid	Excess	Est. cost*	Amount paid	Excess
1	Station Auxiliary boards	0.74	2.24	1.50	1.12	3.36	2.24	1.12	3.40	2.28
2	SFC starting equipment (3 No.)	13.03	54.05	41.02	13.03	47.74	34.71	13.03	48.24	35.21
3	Air Conditioning & Ventilation	2.79	8.07	5.28	2.79	8.10	5.31	2.79	8.14	5.35
4	EOT Crane 100/25 (3 No.)	9.31	16.79	7.48	9.31	16.77	7.46	9.31	32.75	23.44
5	Pump House Earthing	1.86	25.68	23.82	1.86	25.65	23.79	1.86	25.92	24.06
6	415V 500 KVA DG Sets (3 No.)	1.24	5.49	4.25	1.24	5.49	4.25	1.86	8.31	6.45
7	Fire Protection System	1.40	8.96	7.56	2.33	14.91	12.58	2.33	15.07	12.74
8	2000 KVA Unit Auxiliary Transformers-Dry Type (3 No.)	7.45	19.73	12.28	9.93	16.43	6.50	7.45	13.63	6.18
9	500 KVA Unit Auxiliary Transformer-oil filled	0.62	2.93	2.31	1.24	6.26	5.02	0.93	4.74	3.81
10	50 Ton Mobile Crane	5.59	8.56	2.97	5.59	8.61	3.02	5.59	8.69	3.11
11	Bus ducts & related equipment	21.10	44.37	23.27	14.89	32.53	17.64	17.38	41.31	23.93
12	AC Distribution Board	11.17	27.25	16.08	8.07	19.66	11.59	9.31	22.92	13.61
13	11 KV - XLPE Cables	12.41	40.61	28.20	12.41	29.46	17.05	12.41	31.35	18.94
14	LT Power Cable	7.45	24.54	17.09	5.59	17.02	11.43	5.59	17.36	11.77
15	Control cable and cable tray	5.59	19.01	13.42	5.59	15.20	9.61	5.59	14.10	8.51
16	Instrumentation cables	3.72	10.74	7.02	3.72	10.64	6.92	3.72	12.41	8.69
17	SFC Starting Isolators	17.87	29.13	11.26	13.90	18.25	4.35	15.89	21.08	5.19

* Estimates calculated by converting the estimated item rates for 2 TMC to 3 TMC by Audit

Source: Records of the I&CAD Department

¹⁵⁸ The scope of work under the initial contracts of Medigadda, Annaram and Sundilla lifts stipulated installation of EM&HM equipment for lifting of 2 TMC of water per day. The scope of work was later increased to 3 TMC per day. For comparison of payments, Audit worked out the estimated cost of equipment by increasing the costs provided in the original estimates on pro-rata basis.

The higher payments made for the above items in the contracts of Medigadda, Annaram and Sundilla lifts present a significant risk that the cost of pumps and motors were inflated in the estimates of these works also and the inflated amounts were likely passed on to the contractors through frontloading payments of common equipment.

The Government replied (May 2023) about the discrepancy between estimate cost and payments made to the contractor towards auxiliary equipment that estimates were made to arrive at the total cost of EM&HM equipment based on the tentatively worked out ratings of equipment. However, in detailed engineering, some equipment like SFC system and station auxiliary boards, 11 KV panels got changed in view of starting method adopted by pump and motor supplier. Accordingly, revised ratings of the modified equipment were arrived at and payment schedules were prepared by considering the updated ratings. The 100 *per cent* value of payment schedule approved by the committee had not exceeded the total amount provided for Electro-Mechanical equipment. Frontloading of each individual item did not have any relevance in EPC system.

Though the payment was restricted within the agreed EM&HM items value, the fact remains that the payment made towards common equipment was higher when compared to any existing standard.

6.2.1.3 Estimation of cost of common equipment

In addition to pumps, motors and auxiliary equipment, the EM&HM equipment used in the pumphouses/lifts also includes common equipment like EOT crane, mobile crane, generator set, batteries, switch gear board, transformers, earthing material, *etc.*

In the estimates relating to 21 works involving installation of lifts, the Department included an aggregate amount of ₹1,282.94 crore towards common equipment. The rate analysis or the basis on which these costs were arrived at were not forthcoming from the estimates/departmental records. Since the Department did not produce the invoices, Audit could not check the accuracy of the costs provided in the estimates for these items.

The Government replied (October 2023) that the rates of common items were obtained from the already completed pumping stations/generating stations and the prices were updated/upgraded as per the required rating with the experience of engineers.

The reply of the Government is not justifiable since the prices for common equipment like DG set, mobile crane, EOT crane, gantry crane, *etc.*, could have been assessed by obtaining quotations from the manufacturers by mentioning their specifications.

6.2.1.4 Post tender incorporation of price adjustment clause

Under the earlier PCSS project, the Department invited (March/July 2008) tenders for Packages-6, 8, 10, 11 and 12 and after tender evaluation, entrusted (November/December 2008) the works to the lowest bidders. The tender/agreement conditions of these works provided for price adjustment (PA) for cement, steel and fuel if the variation (increase or decrease) is more than five *per cent*. The tender/agreement conditions stated that no escalation on labour and other materials would be paid and that the Bidder has to quote the bid taking into account any variation in rates and wages

during the period of execution *i.e.*, from the date of quoting the rates to the end of completion of work in all respects. The tender/agreement conditions did not stipulate PA for EM&HM equipment and payment of compensation of foreign exchange value. Audit observed that after opening of price bids of the above works, based on the request of the successful bidders and recommendation (October 2008) of the Advisors Committee¹⁵⁹, the Government issued (7th November 2008) instructions to include, among other things, a clause allowing PA on EM&HM equipment and compensation for variation in foreign exchange rates in all the agreements to be signed henceforth by the Department.

Audit observed that while recommending inclusion of PA clause, the Advisors Committee¹⁶⁰ also pointed out that during the pre-bid meetings, some of the bidders had raised the issue of PA on EM&HM equipment and fluctuation in foreign exchange and that the Department had clarified that no payment towards these items would be made. The Committee also stated that inclusion of such clauses in the agreement at this stage involves financial commitment and if such clause has to be incorporated in the agreements, it requires specific approval of Government.

Since the tender conditions had not provided for PA on EM&HM equipment and the specific request of bidders had been rejected in the pre-bid meetings, the bidders would have factored in the financial implication on account of possible price escalation in the bid prices already quoted by them. Therefore, allowing PA in these cases would not only be a vitiation of the tender process but also unduly benefited the successful bidders. The Government ignored this fact and ordered inclusion of these clauses in all the future agreements (instead of future tenders). Accordingly, the Department included these clauses in the above contracts by concluding (June – December 2014) supplemental agreements with contractors.

Table 6.7 – Post tender inclusion of price variation clause in agreements

S. No.	Pkg. No.	Tender notice date	Pre-bid meeting date	Price bid opening date	Date of agreement	Date of supplemental agreement	Price escalation paid on EM&HM equipment (₹ in crore)
1	6	22.03.2008	23.04.2008	06.06.2008	12.11.2008	19.06.2014	294.92
2	8	22.03.2008	05.05.2008	25.06.2008	17.11.2008	19.06.2014	399.74
3	10	14.07.2008	NA	14.08.2008	02.12.2008	01.12.2014	147.56
4	11	22.03.2008	23.04.2008	06.06.2008	24.11.2008	01.12.2014	319.38
5	12	14.07.2008	NA	14.08.2008	24.11.2008	20.10.2014	180.88
						Total	1,342.48

Source: Records of the I&CAD Department

¹⁵⁹ Constituted by Government vide G.O.Ms.No.144 of I&CAD (PW: Reforms) Department dated 13 June 2007 to examine EPC agreements

¹⁶⁰ Comprising three Advisors (Advisor on Andhra Pradesh, Advisor on Telangana Project, Advisor on Rayalaseema Project, Engineer-in-Chief (AW), Chief Engineer, PCLIS and Director, Hydrel APGENCO (special invitee)

Post tender inclusion of price adjustment clause in the above agreements resulted in avoidable payment of ₹1,342.48 crore towards payment of price escalation on inflated EM&HM equipment and undue benefit to contractors.

The Government replied (November 2023) that the bidders had represented for inclusion of foreign exchange variation clause and price variation clause as the equipment has to be imported and the payments are to be made in the Euros/Dollars which are varying with foreign exchange rate day to day and that the prices of raw materials like steel, copper and aluminium are fluctuating a lot and the agreement period is 48 months. It further replied that based on the representations of agencies and the Advisors Committee's recommendations, the Government had given instructions in November 2008 with the concurrence of Finance Department, for incorporation of price adjustment clause in the agreements which are going to be signed henceforth by the Department and as such, provision of this clause is justifiable and there was no undue benefit to contractors.

The reply is not acceptable since the bidders would have factored in the financial implications of these issues while quoting their bids and therefore, inclusion of price variation clause after finalization of tenders has resulted in avoidable payment of ₹1,342.48 crore towards price escalation and undue benefit to the contractors.

6.2.2 Inflation of estimates for other works

6.2.2.1 Inflation of estimate due to adoption of incorrect rate

The work of Package 21A included providing Pressured Pipe Irrigation System (PPIS) which involves laying of pipelines using pipes of different sizes.

- Mild Steel (MS) Pipes (1000mm to 3000mm dia) for the main pipeline
- Ductile Iron (DI) Pipes (350mm to 900mm dia) for the distributary network
- High Density Polyethylene (HDPE) Pipes (40 mm to 355 mm dia) to the fields

Accordingly, in the estimates prepared for the work, the Department provided the cost of excavation of trenches for laying pipelines and refilling of trenches after laying of pipes.

Audit observed that for excavation of trenches for all the three types of pipes, the Department adopted a unit rate of ₹98.30 per cubic metre (Cu.M.) which included the cost of depositing the excavated earth with a lead of one Km.

Figure 6.1 - Laying of HDPE pipeline in Metpally segment at Jakranpally village



Source: I&CAD Department

Since the trenches excavated (in the agricultural lands of the farmers) for laying the 40 mm to 355 mm diameter HDPE pipes are very small in size (trench width: 0.44 M to 0.75 M and depth: 1.04 M to 1.355 M), there was no need to deposit the soil at a distant place. Hence, allowing a lead of one Km for excavated soil was unwarranted and resulted in inflating the estimate by ₹21 crore.

The Government replied (November 2023) that the rate for excavation of earth for laying of HDPE pipes would be revised without 1.00 Km lead and the excess amount paid would be deducted from the future bills.

6.2.2.2 Inflated estimate due to inclusion of cost of sand

In January 2015, the State Government notified¹⁶¹ the ‘Telangana State Sand Mining Rules’ which permitted use of river sand free of cost for local use in Government works on payment of seigniorage charges.

Audit observed that in the estimate of Package-21A, the Department proposed utilization of river sand to be brought from the foreshore of Sri Ram Sagar Project reservoir. However, despite availability of river sand free of cost, the Department included initial sand cost of ₹647.60 per Cu.M. (basic cost of sand: ₹570 plus contractor’s profit: ₹77.60) in the estimate (prepared in December 2017). This resulted in inflating the estimate by ₹23.15 crore.

The Government accepted that usage of river sand was permitted free of cost on payment of seigniorage charges and that the initial cost of sand would be recovered from the forthcoming bills of the contractor.

6.3 Tendering process

6.3.1 Entrustment of consultancy services to an ineligible firm

The Department invited (February 2019) Expression of Interest (EOI) for consultancy services for preparation of DPR/master plan for beautification and development of certain facilities in Link-I and Link-II of Kaleshwaram Project. Only one bid was received which was accepted by the Department and the work was awarded (March 2019) to the sole bidder for ₹6.35 crore.

Audit observed that the tender conditions, *inter alia*, stipulated that the prospective bidder should have accomplished experience in consultancy services for development of similar work and documentary proof issued by Government/Quasi-Government/PSUs/MNCs should be submitted. The conditions also stipulated that the prospective bidder should provide experience certificates of at least three consultancy services in landscape and tourism development works each costing ₹25 lakh or one such project costing ₹75 lakh in any one financial year.

Audit observed that the successful bidder did not submit any proof of having completed a project costing ₹75 lakh in one year. The contractor had submitted only

¹⁶¹ Vide GOMs No.3, dated 08.01.2015 issued by the Industries & Commerce (Mines-I) Department

a work order (for ₹1.05 crore) issued (September 2018) by a private company for tourism and resort development work in Odisha State. However, the Department accepted the bid and entrusted the work to the agency though it did not meet the stipulated qualification criteria.

The Government replied (May/October 2023) that M/s SAR International Limited had completed consultancy work for development of tourism and resorts projects in Odisha State and in addition, the Director of M/s SAR International Limited had completed consultancy projects like (i) landscape consultancy work in HMDA, Buddha Purnima Project, Hyderabad, (ii) Architectural consultancy services for Buddhist monument at Japaipet under AP Tourism Development Corporation, *etc.*, and the Director's experience was also taken into account in arriving at eligibility criteria.

The reply is not tenable since as per the NIT, the Firm/agency participating in bidding should possess the necessary experience. Consideration of experience of its Director is not supported by any Government orders. Moreover, the work experience as shown in support of bid was not of M/s SAR International Limited but that of M/s Landscape Plus, whose Director later joined the M/s SAR International Limited. Further, while finalizing the bid, the Committee constituted to finalize the tender itself mentioned that the firm is comparatively a new entity.

6.4 Regulation of payments to contractors

6.4.1 Regulation of payments in EPC contracts

Under the Engineering, Procurement and Construction (EPC) turnkey contracts concluded for the project works, the EPC contractor was to conduct detailed survey and investigation, prepare and submit designs and drawings to the Department in line with the basic project parameters broadly defined in the agreement and execute the entire work including all ancillary and incidental items of work and deliver the project in complete shape. The agreement conditions stipulated that the contractor was bound to execute all supplemental works that are found essential, incidental and inevitable during execution of main work at no extra cost to the employer and the cost due to such supplemental items of work shall be borne by the contractor.

Thus, in the EPC contract system followed in the State, the contract price would not be adjusted for any increase or decrease in the cost of work on account of changes work quantities/designs, necessity of any additional items of work, *etc.*, as long as there is no change in the outcomes to be achieved as defined in the basic project parameters in the agreements.

Audit, however, observed instances where the Department on one hand allowed additional payments to the EPC contractors for works within the scope of agreements but on the other hand did not adjust the payments where there were reductions in the work quantities, as discussed in the following paragraphs:

6.4.1.1 Undue benefit to contractor due to non-deduction of cost of work not executed

Under the erstwhile PCSS project, the work of Package-18 was entrusted (February 2009) to a contractor for ₹700.75 crore, under EPC turnkey contract system. The scope of work in this package consisted of construction of water conveyor system (lined gravity canal and tunnel) and creation of distributary network for a CA of 15,000 acres. During re-engineering of the project, the Department made (June 2017) some changes in the scope of work. Accordingly, the Department prepared a revised estimate and concluded (November 2017) a supplemental agreement with the contractor for an additional amount of ₹57.32 crore.

Audit observed that though there are both increases and reductions in the scope of work under some components, the Department provided additional amounts for the increases in work in the supplemental agreement but did not deduct the amounts for reductions in the quantities/scope of certain items of work as shown below.

Table 6.8 - Non-deduction of amounts for reduction in scope of work in Package-18

S. No.	Original scope of work	Changes made in the scope of work	Amount adjusted in the supplemental agreement
1	Excavation of gravity canal for a length of 39.60 Km with carrying capacity of 87.21 cumecs	Carrying capacity of canal increased to 164 cumecs for a length of 2.505 Km	Additional amount of ₹19.05 crore was provided.
2		Carrying capacity of canal reduced from 87.21 cumecs to 81.10 cumecs in 34.10 Km and to 78.10 cumecs in 0.05 Km	No deduction was made for the reduction in the discharge capacity in these reaches and reduction in canal length (₹19.23 crore).
3		The total length of canal reduced from 39.60 Km to 36.655 Km (i.e., by 2.945 Km)	
4	Excavation of lined tunnel (7.00 m dia) for a length of 6.28 Km	Length of tunnel reduced from 6.28 Km to 3.598 Km	No deduction was made for the reduction in tunnel length (₹63.85 crore).
5	One Adit ¹⁶² tunnel was proposed	Adit tunnel deleted	No deduction was made for Adit tunnel not excavated (₹11.24 crore).
6	No diversion structures were proposed	5 structures were proposed for Haldivagu crossing	Additional amount of ₹20.96 crore was provided.

Source: Records of the I&CAD Department

Due to non-deduction of the cost of reduction in works has resulted in inflating the value of agreement by ₹94.32 crore and undue benefit to contractor to that extent.

¹⁶² Adit is a horizontal or near horizontal passageway to a larger underground tunnel for the purpose of ventilation, water removal and/or for use as auxiliary entrance to the main tunnel

The Government replied (November 2023) that during re-engineering, the discharge capacity was increased from 87.21 cumecs to 164 cumecs from the starting point to Haldi vagu crossing and additional amount towards execution of gravity canal up to Haldi vagu and for the diversion structures at Haldi vagu was provided in the revised IBM. The balance scope of work *i.e.*, from the reach beyond the Haldi Vagu crossing to end point was not changed. IBM Committee in its meeting held in July 2017 approved the IBM value of the gravity canal for a length of Km 34.10 from Km 26.625 to Km 60.725 by adopting the section as approved by the CE, CDO for 87.21 cumecs to carry the modified discharge against 81.10 cumecs. Hence, the same amount as provided in the original IBM was incorporated in the revised IBM and the same was approved (July 2017) by Government. It was also submitted that length of the gravity canal and tunnel was finalised after investigation and therefore, no deduction in the cost of gravity canal and tunnel was incorporated in the revised IBM. As regards the adit tunnel, Department stated that it is used to facilitate access to the main tunnel works. It is neither the component of the work nor the basic parameter. Due to non-taking up the adit tunnel, the cost of land acquisition towards adit tunnel was saved to the Government and also benefited the farmers.

The reply is not tenable as the Department chose to add additional amount when there are increases in the scope of the work but it ignored to reduce the cost in case of reductions. In the revised estimate, it was clearly mentioned about the revised hydraulic particulars (HPs) of this Package as approved by the CE, CDO in June 2017. The IBM Committee should have insisted for reduction in cost of gravity canal and tunnel on account of reduction in the overall length and revised cross section of the canal/tunnel according to the revised HPs approved by CE, CDO.

Further, the Government's contention that the agreement value would be adjusted only when there is a change in the basic project parameters is also not acceptable since the basic parameters in the agreement of Package-18 mentions the discharge capacity of the canal as 87.21 cumecs. As per the revised HPs, the discharge of canal was reduced from 87.21 cumecs to 81.10 cumecs in 34.10 Km and to 78.10 cumecs in 0.05 Km. While the Department allowed the additional cost where there was increase in the discharge capacity, it did not deduct the cost in case of the reduction. As regards the adit tunnel, Department admitted that adit tunnel was not taken up in this Package. However, it did not answer as to why the provision of adit was included in the revised estimate when it was not needed for execution.

6.4.1.2 Issues related to payment of dewatering charges

(A) Payment of dewatering charges contrary to agreement conditions

The terms and conditions of the EPC agreements stipulated that the contractor was expected to quote the bid price in lumpsum after careful analysis of the performance of work to be completed considering all specifications and conditions of contract. Further, the contractor shall also be deemed to have inspected and examined the site and to have satisfied himself, before submitting his bid, as to the form and nature

thereof including the sub-surface conditions and other local conditions, the hydrological, geological and climatic conditions, the extent and nature of work and materials necessary for the completion of the works, *etc.* The agreement conditions clearly stipulated that no payment shall be made towards dewatering¹⁶³. In case dewatering was found to be essential but the contractor suspends dewatering operations, the Engineer-in-Charge shall have the liberty to take over dewatering operations and recover the amount spent thereon from the contractor.

In deviation to above agreement clauses, the Government approved (March 2019) additional payment of ₹50.17 crore to the contractor of Package-7 towards dewatering charges on the ground that the alignment of the tunnel is passing under SRSP canal, distributaries and its CA due to which weak and shear zones were encountered resulting in formation of open and internal cavities. However, additional payment for dewatering charges contrary to agreement conditions resulted in undue benefit of ₹50.17 crore to the contractor.

The Government replied (May/November 2023) that the alignment of Package-7 twin tunnels is passing under the SRSP canal and its distributaries at several places. In addition, there is a stream which is crossing the tunnels at Km 4.950. During execution, internal and open cavities were formed due to weak and shear zones encountered. Due to these factors, heavy seepages occurred in the entire stretch of tunnels necessitating huge dewatering in addition to the nominal provision made in the estimate. This feature is seen only in Package-7 unlike Package-6 & 8 which met with normal and routine working conditions. It was further replied that during a review meeting, the agency had represented to the Chief Minister that the provision for dewatering in the estimate was nominal and requested to compensate for the additional cost of dewatering being incurred by them during execution and that the Government had agreed to consider the same. Considering the peculiar site conditions, the State Level Standing Committee agreed and recommended to the Government for consideration and approval for the additional cost of dewatering for an amount of ₹50.17 crore treating this as a special case. Accordingly, the Government accorded approval for the additional cost towards dewatering for an amount of ₹50.17 crore, duly relaxing the agreement conditions.

The fact remains that this is an EPC contract under which the contractor is bound to execute all supplemental works that are found essential, incidental and inevitable during execution of main work at no extra cost to the employer. Further, the agreement conditions clearly stipulated that no payment shall be made towards dewatering. The additional payment for dewatering charges was contrary to the agreement conditions and resulted in undue benefit to the contractor.

¹⁶³ dewatering means removing groundwater seeping into the work site which would hinder the execution of work.

(B) Undue benefit to contractor due to payment of dewatering charges

In respect of the work 'Construction of Medigadda Barrage' (entrusted in Lumpsum contract mode), in response to a query by a prospective bidder during pre-bid meeting (May 2016), the Department clarified that dewatering charges would be paid subject to a ceiling of five *per cent* on the relevant work components for which dewatering is required. Accordingly, a clause to this effect was included in the agreement. Audit, however, observed that without providing any justification, the Department sanctioned 7.16 *per cent* of value of work as dewatering charges instead of restricting it to five *per cent*, as clarified during pre-bid meeting. The excess over five *per cent* worked out to ₹29.01 crore, which is contrary to the agreement conditions and an undue benefit to the contractor.

The Government replied (May 2023) that continuous dewatering at Medigadda Barrage, was essential as the river flow increased after confluence with perennial river Pranahitha at Kaleshwaram. The provision for dewatering was made in the Revised Estimate-I for 2,84,54,010 KwHr subject to a ceiling of 5 *per cent* of the relevant components. Further, due to heavy monsoons the total dewatering quantities increased to 4,79,40,324 KwHr which was 8.42 *per cent* of relevant components. Accordingly, restricting clauses were relaxed/ exempted.

The reply of the Government is not tenable as the demand of the bidders to allow dewatering charges based on actual quantities was rejected in the pre-bid meeting. Accordingly, the prospective bidders would have quoted their bid prices, foreseeing the expected dewatering quantities. Therefore, post bid relaxation to the agreement conditions is tantamount to passing of undue benefit to the contractor.

6.4.1.3 Undue benefit to contractor due to allowing additional payments contrary to agreement conditions

The work under Package-9 was entrusted (November 2008) to a contractor under EPC turnkey contract system for ₹714.71 crore. The scope of work, *inter alia*, included excavation of a tunnel for a length of 7.885 Km with 5 metres diameter. After re-engineering, the Department later increased (March 2017) the tunnel diameter to 5.8 metres and accordingly revised the agreement value.

As the progress of work was slow, the Department later deleted (July 2017 to July 2020) parts of work from the scope of this contract and entrusted them to five different agencies, as per the same terms and conditions as that of the original contract. Part of the tunnel work was entrusted (July 2017) to one of the contractors at an agreed value of ₹239.82 crore.

Audit observed that the terms and conditions of this EPC turnkey contract stipulated that the contractor was bound to execute the entire work on a firm lump sum price on a single source responsibility basis. The agreement conditions further stipulated that the contractor was bound to execute any items of work contingent to main work at no extra cost and the cost of such items shall be deemed to have been included in the contract price. The agreement clauses also stipulated that no separate payment would

be made for dewatering and the quoted bid price is inclusive of such charges. However, the Department included (May 2020) an amount of ₹3.45 crore towards additional adit tunnel, ₹5.24 crore for spacing the vehicle pockets¹⁶⁴ and ₹2.79 crore towards dewatering charges in the revised estimate, even though these items fall under the original scope of work as per the EPC agreement conditions. Inclusion of these amounts was contrary to these agreement conditions and resulted in inflating the revised estimate/agreement and undue benefit of ₹11.48 crore to the contractor¹⁶⁵.

The Government replied (May 2023) that additional adit at Km 4.350 was proposed to speed up the work. Further, the size of vehicle pocket was increased for smooth parking of heavy machinery. The tunnel was passing through the weak and shear zone due to which open and internal cavities were formed leading to huge dewatering quantities. Hence, the provision for adit, vehicle pockets and dewatering was made in the revised estimate.

The reply is not acceptable as the additional expenditure on excavation of adit, vehicle pockets and dewatering were to be borne by the contractor as per the EPC Contract conditions. Hence, allowing additional cost contrary to the agreement conditions was not justifiable.

6.4.1.4 Non-reduction of cost of works not required to be executed

Package-16 (under link-V) of earlier PCSS project was entrusted (February 2009) to a contractor for ₹1,082.97 crore on EPC Turnkey basis. The scope of work mentioned in this agreement, *inter alia*, included excavation of Reach-II (for a length of 89 Km) of canal from Tipparam tank up to Panthangi (V) of Chityala (M) of Nalgonda District with a carrying capacity of 33.20 cumecs, construction of Baswapur reservoir with a capacity of 0.8 TMC and creation of distributaries for a CA of 1.66 lakh acres.

During re-engineering of PCSS project, the capacity of Baswapur reservoir was increased. The work of formation of the Baswapur reservoir was deleted from the scope of this work and entrusted to another contractor.

Further, the scope of the work under Package-16 agreement was changed during re-engineering. Due to increase in capacity of Baswapur reservoir, the discharge capacity of the canal which was to feed water to the reservoir (from chainage Km 36.202 to Km 41.800) was increased from 33.20 cumecs to 70 cumecs. Accordingly, the Department concluded (November 2018) a revised agreement with the contractor for ₹1,059.75 crore for the work retained under Package-16.

(i) Audit observed that the scope of work under the original agreement included excavation of main canal for a length of 89 Km. However, as per the approved designs, the length of canal was reduced during execution to only 57.80 Km and the work was being executed accordingly. Despite knowing this fact, while working out the revised value of work, the Department did not deduct the cost of the 31.2 Km canal portion

¹⁶⁴ vehicle pocket in a tunnel is intended for parking of vehicles to allow passing of vehicles coming from the opposite direction

¹⁶⁵ In the supplemental agreement concluded in June 2020

which was not required to be executed. This resulted in likely undue benefit up to the extent of ₹93.40 crore¹⁶⁶ to the contractor.

The Government replied (May 2023) that the length of the main canal incorporated in technically sanctioned estimate was as per the preliminary survey and was considered for estimation purpose to arrive at the IBM value. It was also stated that the work was entrusted on EPC mode and that the contractor was to undertake detailed surveys of the alignments incorporated in the estimate so as to meet the criteria of providing irrigation facility to the 1,65,500 acres of CA.

The reply of the Government is not tenable because at the time of re-engineering, additional amount was provided for additional work incorporated in the agreement. On the contrary, when some portions of work were deleted from the scope of work, no corresponding deduction was made from the agreement value.

The Government further replied (November 2023) that as per the IBM estimate, the main canal was proposed from Km 36.202 to Km 94.000 for a length of 57.8 Km. Further, at Km 94.000, LMC and RMC with approved length of 13.7 Km and 16.15 Km, respectively, were proposed. Hence, the total length of main canal including LMC and RMC was 87.649 Km and saving in the length of the main canal is only 1.352 Km and not 31.20 Km as pointed out by Audit.

This reply is also not acceptable since in the revised estimate, additional amounts were provided for additional works resulting from re-engineering, while no reduction was made for the reduction in the length of canal. Further, as per the original estimate, the designed discharge of the main canal beyond Km 94.500 was not less than 10.876 cumecs and its cost was worked out accordingly. This cost is carried forward in the revised estimate also. On the other hand, the design discharge of the LMC and RMC, which are stated to be under execution in lieu of the deleted main canal, are only 2.496 cumecs and 0.37 cumecs, respectively, and hence not comparable with the deleted portion of main canal¹⁶⁷.

(ii) Further, the increase in the size of Baswapur reservoir also led to reduction in the length of the main canal on the downstream side of the reservoir by 167 metres. However, the Department did not deduct the cost of this portion resulting in a further undue benefit of ₹1.72 crore to the contractor.

The Government replied (November 2023) that in view of the approved MDDL of Baswapur, the discharge from Km 44.117 to Km 44.650 was enhanced from 22.746 cumecs to 25.403 cumecs and two additional structures were necessary to negotiate the canal bed level and the cost of the same was adjusted against the reduced length of the canal.

¹⁶⁶ The cost for constructing the additional LMC and RMC and other structures as given in the reply of the Department could not be calculated by Audit due to lack of sufficient information.

¹⁶⁷ The cost for constructing the additional LMC and RMC and other structures as given in the reply of the Department could not be calculated by Audit due to lack of sufficient information.

The reply is not acceptable in view of Clause 39.3.2 of the agreement, which entails that any contingent work on the main work should be done by the contractor at no extra cost. The two additional structures stated to be executed are the items contingent on the main work and hence the contractor was bound to execute with no extra cost to the Department. On the other hand, the portion of canal not required to be executed due to change in scope of work while re-engineering should have been deducted from the revised estimate and supplemental agreement.

(iii) Audit also observed that due to increase in the size of Baswapur Reservoir, a stretch of 2.317 Km of main canal already excavated under Package-16 on the upstream side came under submergence. By that time, the contractor had not executed cement concrete (CC) lining in this canal reach. However, while computing the revised agreement value for the balance work under Package-16, the Department did not deduct the cost of lining work in the submerged canal reach from the agreement. This resulted in undue benefit of ₹2.77 crore to contractor for the CC lining work which was not required to be executed.

The Government accepted the audit observation and replied (November 2023) that the cost of lining from Km 41.800 to Km 43.950 worked out to ₹2.46 crore only and that the amount would be recovered from the next bill.

However, the Government did not furnish any calculation in support of the amount of ₹2.46 crores and details of recovery are awaited (November 2023).

6.4.1.5 Execution of shorter length of gravity canal resulted in undue benefit to the contractor

As per the tender notice/agreement, the scope of work under Package-9 included excavation of a 29.50 Km long gravity canal with CC lining. After part of the canal excavation was done by the original contractor, due to slow progress of work, the Department later deleted the remaining portion of the canal from the scope of contract and entrusted it to another contractor at the same rates and terms of the original contract.

In the original estimate, an amount of ₹35.92 crore was provided for the excavation and CC lining of gravity canal. Audit observed that as per approved alignment/designs and actual execution, the length of canal was reduced from 29.50 Km to 24.921 Km (*i.e.*, by 4.579 Km). However, the Department allowed full payment to contractors without restricting the payment to the actual execution. This resulted in undue benefit of ₹5.69 crore¹⁶⁸ to the contractors.

The Government replied (November 2023) that as per the project basic parameters, the canal work has been carried out to create contemplated CA of 60,000 acres of new CA and 20,000 acres of stabilisation CA. Though, the length of the canal was reduced, the discharge in the canal increased from 10 cumecs to 12.987 cumecs *i.e.*, about 30 *per cent* in capacity. The canals for increased discharge were executed within the amount provided in the sanctioned estimate.

¹⁶⁸ The total amount provided in the estimate for 30.225 Km was ₹35.92 crore. The pro-rata cost of 4.579 Km = (₹35.92 crore X 4.579 Km/30.225 Km) + ₹0.25 crore (Tender Percentage @ + 4.643%)

Reply of the Department is not acceptable as the Department did not provide any evidence in support of its argument that reduction in canal length was compensated by increased water discharge, thereby ensuring that the proposed ayacut (60,000 acres and stabilisation CA of 20,000 acres) was served even with reduced specifications. In the absence of any documents to prove that there was change in other specifications such as width and depth to compensate for the length reduction, Audit is unable to derive assurance that allowing of full payment to the contractor was justifiable.

6.4.1.6 Unwarranted provision towards Service Tax in the agreement

Under the PCSS project, the work of Package-20 was awarded (November 2008) to a contractor for ₹892.67 crore for completion by November 2012. Due to slow progress of execution of work by the contractor, the Department deleted part of the work from the contract and entrusted (June 2020) it to three different contractors by concluding separate agreements with them.

Audit observed that in one of the contracts concluded for the balance works, the Department included an amount of ₹9.54 crore towards Service Tax, even though irrigation works executed for the Government were fully exempt from levy of Service Tax. Though no amount had so far (January 2022) been paid to contractor towards Service Tax, inclusion of ₹9.54 crore for the same in the agreement was unwarranted and would result in undue benefit to contractor.

The Government replied (May/November 2023) that the Service Tax of ₹9.54 crore which is available in the estimate was exhibited in the payment schedule but the same has not been paid to the contractor. It was further stated that the revised estimate is under preparation and the Service Tax provision would be deleted from the revised estimate.

6.4.2 Undue benefit/excess payment to contractors due to inflation of values of revised estimates/supplemental agreements

After initial entrustment of works to contractors, there will be occasions where changes in scope of work are necessitated or additional works are to be taken up. As per Note-6 under Para 154 of the AP Public Works Department (APPWD) Code, such 'supplemental' or 'additional' items of work can be entrusted to the original contractor. Before entrustment of additional items of work, the Department prepares revised estimates and after approval of the same, concludes supplemental agreements with the original contractors. Since entrustment of additional works to the original contractors is similar to entrustment on nomination basis, it is important that the revised estimates and the cost of additional items are prepared accurately. Audit observed cases where the Department had provided higher rates/costs for additional items in the revised estimates leading to inflation of the value of supplemental agreements and consequent excess payments/undue benefits to contractors, as discussed below.

6.4.2.1 Undue benefits to contractor due to incorrect preparation of revised estimate

Package-21 was awarded to a contractor under the earlier PCSS project for ₹1,143.79 crore. The scope of work in this package, *inter alia*, included excavation of a gravity canal to convey 8 TMC of water from Masani tank up to Padakanti tank. The canal was proposed to run parallel to the existing Nizamsagar Project (NP) canal. Later, in order to avoid extra land acquisition for the parallel canal, the Department decided (June 2012) to utilize the existing NP canal as combined canal for NP and Package-21 by increasing its carrying capacity in the entire stretch of 14.40 Km.

After re-engineering of PCSS project, some of the other components of work (like creation of distributary network, *etc.*) under Package-21 were deleted (October 2017) and taken up separately. Accordingly, the Department prepared (February 2020) a revised estimate for ₹807.92 crore covering the work of increasing the discharge capacity of NP canal. Audit observed that the revised estimate prepared by the Department was inflated resulting in undue benefit to contractor as discussed below:

(i) In the revised estimate, the Department provided ₹45.66 crore for cement concrete (CC) lining of NP canal. Audit observed that as per the canal drawings already approved (March 2016) by the Department, cement concrete (CC) lining to canal was to be provided with 100 mm thickness from Km 0.00 to Km 1.32 and with 75 mm thickness for balance stretch from Km 1.32 to Km 14.40 and the contractor was executing the work accordingly. However, in the revised estimate, the Department provided the cost of CC lining with 100 mm thickness even for the 13.08 Km long reach where 75 mm thick lining was being executed and was making payments to contractor accordingly. Thus, the incorrect excess provision of lining thickness resulted in inflating the cost of work by ₹13.25 crore and undue benefit to contractor to that extent.

The Government accepted the audit observation and assured to recover the excess payment from the next bill.

(ii) Audit further observed that in the revised estimate, the Department provided ₹6.37 crore for CNS treatment¹⁶⁹ in the canal reach from Km 3.00 to Km 14.40. However, it was observed that as per the soil test reports (2013) in this canal, CNS treatment was not required for canal in certain reaches¹⁷⁰ (for canal bed and slopes for a total length of 5.475 Km and for canal sloped for a length of 2.175 Km). The Department also confirmed that CNS treatment was not required in these reaches. Despite this, the Department provided the cost of CNS treatment for the entire reach from Km 3.00 to Km 14.40 and accordingly, was making payments to contractor. This resulted in undue benefit of ₹3.19 crore to the contractor.

¹⁶⁹ A layer with Cohesive Non-Swelling (CNS) soils is laid beneath CC lining to ensure that the lining is not disturbed due to swelling of soils in the canal bed and slopes

¹⁷⁰ Side slopes and canal bed in reaches Km 3.5 to Km 4.2, Km 8.25 to Km 8.45, Km 9.25 to Km 9.475, Km 9.75 to Km 11.95 and Km 12.25 to Km 14.40; and side slopes in reaches from Km 2.275 to Km 3.475, Km 4.225 to Km 4.700 and Km 5.000 to Km 5.950

The Government, in its reply (November 2023) concurred that CNS soil treatment was not required in 2.725 Km in the executed portion from Km 0.000 to Km 9.75 and that CNS treatment would be required from Km 9.75 to Km 14.400. It was further replied that a revised estimate as per actuals was under submission.

However, the Government did not furnish the details of canal reaches where the CNS treatment was claimed to be not required in the executed canal portion. As per the soil test reports available with the Department, CNS treatment was not required for a total length of 3.300 Km (in canal bed and slopes for a total length of 1.125 Km and in canal slopes for a length of 1.175 Km) out of the 9.75 Km length stated to be executed so far. The Government did not furnish the reasons for this variation. Further, in the balance canal reach yet to be executed also, CNS treatment was not required in 4.35 Km (in canal bed and slopes).

The fact, however, is that the soil test reports available with the Department showed that the soils in canal reaches for a total length of 7.65 Km conformed to the properties¹⁷¹ of CNS soils as prescribed in IS Code: 9451 (1994) and therefore, no CNS treatment was required in these reaches. Thus, the excess payment made should be recovered.

(iii) As per the Goods and Services Tax (GST) Act – 2017, the GST leviable on works contracts was stipulated as 12 *per cent*. The orders issued (July 2018)¹⁷² by Government of Telangana also stipulated that GST at the rate of 12 *per cent* should be added to the value of works executed after 22 August 2017. Audit, however, observed that while preparing the revised estimate for Package-21, the Department added GST at 18 *per cent* on the cost of surge protection system instead of 12 *per cent*. This resulted in inflating the revised cost of work by ₹0.65 crore and undue benefit to contractor.

The Government (Finance Department) replied (October 2023) that the excess provision of GST would be corrected in the revised estimate.

6.4.2.2 Excess payment due to adoption of incorrect rate of Overheads and Contractor's profit

The Department prepared the estimates for the works of Medigadda, Annaram and Sundilla barrages with SoR 2015-16 and awarded the works after tender process. The original scope of these agreements *inter alia* contemplated 'sheet pile' foundations. After award of works, based on the site conditions, the specification of foundations was changed as 'Secant pile¹⁷³' foundations. Accordingly, supplemental agreements were concluded with the contractors by including this as a supplemental item.

¹⁷¹ *i.e.*, liquid limit ranging from 30 to 50 *per cent* and plasticity index ranging from 15 to 30

¹⁷² G.O.Ms.No.67 of Irrigation and CAD (Reforms) Department, dated 14 July 2018

¹⁷³ Secant Pile wall consists of overlapping piles (primary and secondary piles) to for structural or cut-off walls to achieve water tightness

As per the preamble of SoR for the year 2015-16, 'Over Head Charges and Contractor's Profit' was to be allowed at the rate of 13.615 *per cent* while computing the rates for work items. Audit, however, observed that while computing the rate for the supplemental item (Secant pile), the Department added overhead charges and contractor's profit at the rate of 20 *per cent* and 10 *per cent*, respectively. Providing overhead charges and contractor's profit at the rate of 30 *per cent* instead of 13.615 *per cent* as stipulated in the SoR has resulted in excess payment of ₹35.07 crore¹⁷⁴ to the contractors of these three works.

The Government replied (November 2023) that the Data for Secant Piles is not available in the SoR 2015-16 of Government of Telangana. Hence, the Data and Rate of Secant piles was adopted from the "MoRTH¹⁷⁵" specification of Government of India, which is being adopted in Roads & Buildings Department of Government of Telangana. The overhead charges and contractor's profit at the rate of 20 *per cent* and 10 *per cent*, respectively are provided for Secant piles as per the "MoRTH" Data and is not comparable with the provision of the SoR 2015-16 as the item of this work is very specialized and deduced from the "MoRTH" Data.

The contention of the Government is not correct as the rates arrived at by the Department are deduced from the combination of both the MoRTH specifications and also the State Standard Data applicable for irrigation works. From the approved estimate prepared for Secant Pile, it is clearly seen that the rates of items such as cement concrete, reinforcement, *etc.* used in the work were adopted from work estimate, which was prepared as per Standard Specifications/SoRs of the State for irrigation works. Hence, adoption of overhead and contractor's profit as per the MoRTH was not justified.

6.4.2.3 Undue benefit to contractor due to inflating the amount payable for survey and investigations

The work under Package-9 was entrusted (November 2008) to a contractor under EPC contract system. The scope of work under this EPC contract includes conducting of detailed survey and investigations and preparation/submission of designs and drawings by the EPC contractor. In the estimates prepared for the work, the Department had included an amount of ₹3.04 crore towards the cost of survey and investigations, worked out at the rate of 0.50 *per cent* of the estimated cost of works (₹608.26 crore).

Due to re-engineering of the project, the scope of work under this package increased and the Department prepared (November 2021) a revised estimate (RE) for the revised scope of work. As per the RE, the cost of work was computed as ₹868.41 crore. Audit, however, observed that in the RE, the Department provided the cost of survey and investigations at the rate of 2.82 *per cent* instead of adopting 0.5 *per cent* as per the

¹⁷⁴ Medigadda: ₹13.40 crore; Annaram: ₹11.14 crore and Sundilla: ₹10.53 crore

¹⁷⁵ Ministry of Road Transport and Highways

original estimate. This resulted in inflation of value of revised estimate/ supplemental agreement by ₹20.17 crore and undue benefit to contractor to that extent.

Similarly, in the revised estimate of Package-20 also, the Department provided the cost of survey and investigations at the rate of 3.95 *per cent* contrary to the 0.5 *per cent* provided in the original estimate. This led to inflation of value of revised estimate by ₹27.29 crore.

Table 6.9 – Inflated provision for survey and investigations

S. No.	Package No.	Percentage of S&I in the original estimates	Cost of revised scope of work as per RE (₹ in crore)	Amount to be provided for S&I (₹ in crore)	Percentage adopted in the REs	Actual amount provided in the RE (₹ in crore)	Excess amount provided (₹ in crore)
1	9	0.50	868.41	4.34	2.82	24.51	20.17
2	20	0.50	790.15	3.95	3.95	31.24	27.29

Source: Records of the I&CAD Department

The Government replied (May/November 2023) that the provision towards Survey & Investigations was proposed at the rate of 0.5 *per cent* only in the original and revised estimates of these works. However, in view of the intricate nature of work, the amount payable for Survey & Investigations was later increased to 3.5 *per cent* in the payment schedule duly reducing the amounts allotted for other components of work, but within the total agreement values.

However, the copies of the latest detailed estimates/working sheets have not been furnished in support of the reply. As such, Audit could not verify the correctness of the facts stated in the reply.

6.4.2.4 Unwarranted additional payment for approach road

The Department entrusted (August 2016) the work of construction of Medigadda barrage to a contractor for ₹1,849.31 crore with a stipulation to complete the work within 24 months. Due to subsequent changes in scope of work, the value of work under the agreement was increased to ₹4,321.44 crore.

The contract conditions stipulated that – *“In addition to existing public roads constructed by Government, if any, in the work area, all the additional approach roads inside work area required by the contractor shall be constructed and maintained by him at his own cost”*. The agreement clauses further stipulated that *“The contractor’s heavy construction traffic shall not traverse any public roads unless the contractor has made arrangement with the authority concerned. In case contractor’s heavy construction traffic or equipment is not allowed to traverse any public roads and the contractor is required to make some alternative arrangements, no claim on this account shall be entertained”*.

Audit, however, observed that during execution of work, the Department entrusted another work of construction of a new 60 feet wide bituminous road for a length of

13.90 Km from Kudurupally village to the Medigadda barrage to the same contractor as an additional item at an estimated cost of ₹46.28 crore. The cost of this road work was further increased to ₹66.29 crore, due to laying of bituminous layer on the above road and taking up another road work from Medigadda barrage to Ambatpally village. An amount of ₹44.42 crore had been paid to the contractor so far (January 2022) for the road work.

The Department justified taking up this road work on the ground that the existing single lane R&B road from Mahadevpur village to the barrage site was passing through five villages and movement of contractor's heavy vehicles would pose problems to the residents. Further, the road had many electrical line crossings all along its length and shifting of all those electrical lines was a difficult task.

It is evident from this that the road work was taken up to facilitate smooth movement of men, machinery and materials of the contractor. Therefore, the cost of this road work should have been borne by the contractor, as per the agreement conditions. Instead, the Department shouldered this cost by entrusting the work as additional item resulting in undue benefit to the contractor to the tune of ₹66.29 crore, contrary to agreement conditions.

The Government replied (May 2023) that the constructed approach road is an alternate road from Kudurupally village to Medigadda Barrage outside the work area of Medigadda Barrage. The existing R&B road leading to the barrage site was a single lane narrow road and passing through forest and villages. It was difficult to shift the electrical lines all along the road and the heavy vehicle movement to the barrage site would have posed problems for the public. As such, it necessitated an approach road from Kudurupally (V) to Medigadda (V). Further, by providing the additional resources/facilities, the barrage work was completed in stipulated time.

The reply of the Government confirms that due to taking up of barrage work there was heavy vehicle movement which posed problems to the public. In this scenario, as per the agreement conditions, the cost of the newly laid road should have been borne by the contractor as it facilitated the smooth movement of men, machinery and materials.

6.4.2.5 Undue benefit to contractor due to increase in the agreement value

The scope of work under the EPC agreement of Package-9, *inter alia*, included excavation of a tunnel and construction of a pumphouse. While preparing the estimate, the Department contemplated construction of an open pumphouse and an amount of ₹101.20 crore was provided for pumphouse, surge pool and draft tube. The original contractor executed part of this work and was paid ₹26.34 crore. The Department later decided to execute the pumphouse underground instead of open pumphouse. Further, due to slow progress of work by the original contractor, the Department deleted the part of work from the scope of original contract and entrusted (July 2017) to another contractor for ₹214.02 crore with the same rates and conditions of the original agreement. In this agreement, an amount of ₹76.50 crore was provided for construction

of a pumphouse, surge pool and draft tube. After concluding the agreement, based on the request (November 2017) of the second contractor, the Department increased (May 2020) the cost of these works by adding the amount of ₹26.34 crore already paid to the first contractor. Such an increase in the amount payable for a particular work after concluding the agreement was highly irregular. Moreover, this increase was based on the request of the contractor only and was not supported by any evidence that there was any increase in the quantities. Thus, increase in the agreed value resulted in undue benefit of at least ₹26.34 crore to the contractor.

In response to the above, the Government stated that as per the recommendations of the High-Power Committee and suggestions of the Advisor for lift irrigation schemes, the surge pool and pumphouse are proposed in the underground. The Committee also directed to prepare the extra financial implications due to change in the basic project parameters. Accordingly, the expenditure was incurred.

Even though the High-Power Committee directed to prepare the extra financial implications, the same was not prepared by the Department. However, the Department allowed ₹26.34 crore based on the request of the second contractor without any assessment. Hence, allowing the same had resulted undue benefit to the contractor.

6.4.2.6 Irregular payment towards additional lead (conveyance) charges

The General Conditions of tender notice/contract for the work of construction of Medigadda barrage stipulated that the contractor should inspect the site and proposed quarries of choice for materials including quarrying, conveyance and all other incidental charges and quote his bid price. The Technical Specifications also specified that the contractor should examine availability of coarse aggregate from the existing stone crushers and opening of new quarries, *etc.*, if required, and quote accordingly. The agreement conditions clearly stipulated that no claims on extra leads for aggregates would be entertained.

Audit observed that in the revised estimate, the Department provided extra lead charges for additional 28 Km for conveyance of metal in respect of some items of work. Payment for additional lead was contrary to the agreement conditions and resulted in excess payment of ₹26.46 crore to the contractor.

The Government replied (May 2023) that the only road through which the entire machinery and material has to be transported to the work site was very busy. There were hundreds of sand trucks from the sand quarry that were plying on the same road. About 450 trucks per day were deployed for transportation of material from source to batching plant on both Right bank side (TS) and Left bank side (Maharashtra) of the barrage. The above circumstances enforced the transport of construction materials for project works from Kaleshwaram-Sironcha side to Pochampally (v) Maharashtra side in order to complete the work in time.

The reply of the Government is not tenable as the contractor was required to execute the work within the quoted price. Thus, the payment towards additional lead was against the agreement conditions.

6.4.2.7 Avoidable extra expenditure due to non-utilization of excavated rock

The work of Construction of Malkapet Reservoir (under Link-III) was entrusted (September 2017) to a contractor under LS system. The scope of work under this contract included several items including earthwork excavation in hard rock (requiring blasting) for formation of reservoir and laying of rock toe¹⁷⁶ to the reservoir bund.

The bill of quantities in the agreement contained two rates for the work of laying of rock toe. The rate of laying rock toe by re-using the excavated hard rock was ₹425.10 per Cu.M. and the rate for laying with stone brought from quarry was ₹736 per Cu.M. The contractor has so far (February 2022) laid rock toe of a total quantity of 1,34,888 Cu.M. Out of this, the Department made payments for 63,706 Cu.M. at the rate of ₹425.10 per Cu.M. (re-used rock) and for 71,182 Cu.M. at the rate of ₹736 per Cu.M.

Audit observed that in this work, the contractor has so far excavated a total quantity of 2.72 lakh Cu.M. of hard rock. Thus, sufficient hard rock was available for re-use in laying of rock toe. However, only 63,706 Cu.M. of rock was shown as re-used in the work. Payment of higher rate (applicable for rock brought from quarry) for rock toe despite availability of excavated hard rock resulted in avoidable extra expenditure of up to ₹2.18 crore¹⁷⁷ and undue benefit to contractor. Further, there is also the possibility of an additional commitment of ₹1.22 crore on the rock toe quantity of 40,050 Cu.M. still to be executed by the contractor.

The Government replied (November 2023) rock samples from total available quantity of 1,58,604 Cu.M. of surface boulders were tested (August 2020) as per IS Codes and the useful quantity of 39,651 Cu.M. was utilised for revetment. It was further replied that 1,18,848 Cu.M. of rock spoil was obtained during excavation of cut-off trench through open blasting. As the quality of rock spoil can be visually assessed, sample testing was not required. The Government stated that rock spoil stacked and measured was 63,706 Cu.M. which was used in the rock toe. The total useful quantity of 1,03,357 Cu.M. was utilised for revetment and rock toe and there is no balance work left over.

In the instant case, Audit is unable to corroborate the correctness of the quantity of useful rock stated to be available in this work since the Department got test reports for a rock spoil of only 1.53 lakh Cu.M. as against the total excavated hard rock of 2.72 lakh Cu.M. In case the total excavated quantity was tested, there was a possibility of getting additional useful rock.

¹⁷⁶ Rock toe is a structure of rocks placed along the water's edge on the lower part of earth dam (on the downstream side) to provide drainage and/or to protect the earth dam from tail water erosion

¹⁷⁷ (₹736 - ₹425.10) X 71,182 Cu.M. = ₹2.21 crore. After applying tender discount of 1.30 per cent, the amount works out to ₹2.18 crore

6.4.3 Recoveries from contractors

6.4.3.1 Extra expenditure due to non-recovery of cost of filling of over-breakages in tunnel from contractors

The work under Package-9 was entrusted (November 2008) to a contractor for ₹714.71 crore under EPC contract system. The work under this package included excavation of a 12.035 Km long concrete lined tunnel with 5.8 metres diameter. As the progress of work was slow, the Department later deleted part of the tunnel work from the scope of this contract and entrusted (October 2017) to another contractor. Accordingly, the tunnel excavation work was executed by these two contractors. The Department later entrusted (July 2020) the work of providing cement concrete lining inside the tunnel to a third contractor for an agreed value of ₹78.85 crore.

The agreement concluded with the third contractor included an amount of ₹8.87 crore towards filling of over-breakages¹⁷⁸ in the tunnel. Audit observed that the specifications for tunnels incorporated in the agreements concluded with the first and second contractors stipulated that any over-breakages/enlargements in excavation shall be back filled with concrete (similar to lining) at the cost of the contractor. In the instant case, the over-breakages occurred when the tunnel excavation was done by the first and the second contractors. Since these contractors left the work without backfilling with concrete, the Department should have recovered the cost of refilling the over breakages with concrete from them as per the contractual provision. However, the Department did not take any action to recover the same from the earlier contractors, resulting in additional financial burden of ₹8.29 crore on public exchequer.

The Government replied (November 2023) that at the time of preparation of IBM, the Department proposed with an over breakage of 150 mm on either side including tunnel lining 300 mm thickness on either side. As per Geologist's report, over breaks were noticed at many reaches due to intersection of sub-horizontal joints with vertical joints and due to shearing affect along the jointed rock mass. During the excavation, over breaks were encountered beyond the provision made in the estimate. To fill up this with CC lining, extra amount was allowed. It was further replied that the type of strata cannot be anticipated at the time of preparation of IBM estimate as investigation has to be carried out by the agency.

The reply is not acceptable since this is an EPC contract under which the contractor was responsible for any variation in the work quantities. Further, allowing extra amount for filling of over breakages over and above the permissible limit is contrary to agreement conditions and hence not justifiable.

¹⁷⁸ Over-breakages denotes the excess area excavated beyond the profile upto which excavation is actually required to be done

6.4.3.2 Excess payment to contractors due to non-deduction of embedded taxes

The Department prepared the estimate for Package-18 with Schedule of Rates (SoR) for the year 2008-09 and awarded (February 2009) the work to a contractors after tender process. In the estimate, the rates of materials to be used in the work were inclusive of the applicable Central/State taxes.

After introduction (July 2017) of Goods and Services Tax (GST), the works contracts were being subjected to GST at the rate of 12 *per cent*/18 *per cent*. Thus, to avoid GST on the taxes already included in the cost of works, the Government of Telangana issued (July 2018) orders¹⁷⁹ that in respect of the works done after 01 July 2017, the taxes already embedded in the rates/materials under the existing contracts should be deducted and to the net value of work so arrived at, GST at the rates applicable from time to time should be added while making payments to contractors.

In Package-18, while computing the amount of embedded taxes to be deducted from the cost of work, the Department worked out the amount of embedded taxes in the work item 'earthwork excavation in hard rock' as ₹3.79 per Cu.M. However, while making payments to contractor, the Department did not deduct this tax, resulting in excess payment of ₹1.65 crore to the contractor.

The Government replied (November 2023) that the excess paid amount of ₹1.65 crore had been recovered from the Running Account bill-27. However, no records have been furnished to Audit in support of proof of recovery.

6.4.4 Price adjustment payments

6.4.4.1 Excess payment of price escalation due to adoption of incorrect value of work

The terms and conditions of the contracts of Medigadda, Annaram and Sundilla barrage works provided for price adjustment in case of variation in the prices of steel, cement, POL (Petrol, Oils and Lubricants), labour and other materials. Accordingly, the Department paid a total amount of ₹529.39 crore to contractors towards price adjustment in these contracts.

The clauses relating to price adjustment in these contracts stipulated that for the purpose of calculating the price adjustment amount, the seigniorage charges, VAT and other overhead charges shall be deducted from the total value of work done. From the net value of work, the cost of the relevant component (*viz.*, steel, cement, *etc.*) would be worked out and the price variation would be worked out on this cost. Audit observed that while computing the amount of price adjustment payable to contractors, the Department deducted seigniorage charges and overhead charges from the total value of work but did not deduct the amount of taxes embedded therein. This led to inflating the cost of each component (for which price variation is being paid) in the

¹⁷⁹ GO Ms.No.67 of I&CAD (Reforms) Department, dated 04 July 2018

work done. As a result, an amount of ₹16.91 crore was excess paid to contractors in these three works towards the price adjustment.

The Government replied (November 2023) that the excess payment in respect of Annaram barrage was adjusted and that excess amount in respect of Medigadda and Sundilla barrages would be adjusted from the next bill.

The details/evidence of recovery were not furnished to Audit (November 2023).

6.4.5 Excess payments recovered at the instance of Audit

In respect of three works Audit had pointed out cases of excess payments amounting to ₹65.45 crore, as shown in the Table below:

Table 6.10 – Issues pertaining to excess payments pointed out by Audit

Sl. No.	Name of the work	Issue pointed out by Audit	Amount pointed out (₹ in crore)
1	Package-12	Incorrect inclusion of steel	62.82
2	Kondapochamma Sagar Reservoir (Reach-1)	Recovery of cost of stone and lead charges	1.76
3	Package-15	Excess payment of price adjustment on POL	0.87
	Total		65.45

Source: Replies furnished by the Government to the audit observations

The detailed description of the above cases is given in **Appendix 6.1**.

The Government, while accepting the facts (November 2023), replied that the entire amount had been recovered from the contractors at the instance of Audit.

Though the Government furnished the recovery particulars in respect of the above cases, it did not state the action taken/proposed to fix responsibility on the officials responsible for preparation of incorrect estimates/excess payments.

Recommendation - 11

The Department should review the cases of inflated estimates and undue benefits to contractors pointed out by Audit, fix responsibility on the officials involved and take immediate steps to recover/prevent the excess payments to contractors.

6.4.6 Advance payment on electro/hydro-mechanical equipment and pipes

The scope of work under Package-21A (in Link-VII) included construction of two lifts and installation of Pressured Pipe Irrigation Systems (PPIS) to irrigate two lakh acres of CA. The terms and conditions of the agreement specified that the payments in respect of electro/hydro-mechanical equipment and pipes would be released stage-wise viz., 70 per cent on receipt of goods at site, 20 per cent on erection of equipment, 5 per cent on successful testing and commissioning of equipment and the remaining 5 per cent at the time of final bill.

Audit observed that the Department released (October 2021) the third stage payment of 5 per cent (for testing and commissioning) in respect of electro/hydro-mechanical equipment and pipes used in the PPIS amounting to ₹28.94 crore to the contractor on the ground that hydro testing was completed. On a further scrutiny of records, Audit noticed that the works relating to the pumphouses/lifts through which water was to be received for PPIS were not yet completed (pumphouse for Metpally segment was in progress and that of Gadkol Segment was in its initial stage). Thus, the PPIS equipment could not have been commissioned without completion of pump houses. Therefore, release of third stage payment (5 per cent) for the equipment/pipes of PPIS without successful commissioning was injudicious and contrary to agreement conditions and resulted in advance payment to that extent.

The Government accepted that the 5 per cent payment should be made only after testing and commissioning as pointed out by Audit and that the excess payment would be recovered/adjusted in the next bill.

Details of recovery/adjustment had not been intimated (November 2023).

6.4.7 Advance payment for operation and maintenance (O&M) charges

The scope of works under Packages – 6, 8, 10, 11 and 12 included execution of civil works and supply, installation and commissioning of electro and hydro mechanical (EM&HM) equipment. In the agreements, the scope of work under ‘Maintenance during Defect Liability Period (DLP)’ stipulated that the contractor shall maintain the civil works for five years (three years after DLP) and EM&HM works for 15 years (13 years after DLP) within the agreed cost and that a separate agreement would be concluded for O&M. The cost estimates prepared by the Department and the schedule of payments included in the agreements also provided the cost of O&M for 3 years for civil works and for 13 years for EM&HM works. Thus, the O&M charges during the initial two years of DLP is included in the cost of initial works and are not payable separately.

Audit, however, observed that in Packages - 10, 11 & 12, the Department concluded separate O&M agreements with the contractors for a period of 5 years/15 years from the completion of works instead of 3 years/13 years after completion of DLP. Due to

this, the O&M cost payable in 13 years after DLP is now spread over 15 years (including the DLP). The Department provided O&M charges of ₹70.75 crore for the first two years in the payment schedules of these three packages. Out of this, an amount of ₹47.26 crore has been paid as of January 2022. The DLP was not yet completed. Release of O&M charges during DLP would ultimately result in advance payment of ₹70.75 crore to contractors.

The Government replied (November 2023) that as per agreement clauses, the contractor has to take over the pumphouses and the pipeline from the commercial operation date and the O&M shall be for 5 years for civil works and 15 years for the civil, Electro Mechanical and Hydro-Mechanical works connected with the lift system. The bidder shall quote for this item separately in the financial bid and a separate agreement would be concluded for O&M. As the O&M of headworks is deemed to have started, based on the recommendation of the SLSC, the O&M agreements were concluded for the three package works on 01 July 2020 as per the prices quoted by the contractors for O&M component. It was further replied that no extra payments over the quoted price will be made during the O&M period. The Government further stated that during the DLP, the contractors are responsible for the quality of works executed *i.e.*, to rectify the defects arising out of the scheme without extra cost and that during DLP, the contractor has to deploy men and machinery for the operation of pumps for which the payment has to be made by the Department from the O&M amount and accordingly, payments were made. Hence, the payment made during the DLP is not a front-end payment. Further, the payment has been made duly distributing the cost quoted by the contractors towards O&M for 15 years as against 13 years which is a saving to the Department. The Government further replied that the payments towards O&M were not paid from October 2021 for Package-10 and from January 2022 for Package-11 and Package-12 by the Department.

The reply is not tenable as the O&M charges during the two years of DLP are included in the cost of initial works and are not payable separately, as per the agreements. Though the Department stated that it is not paying the amount for O&M now, an amount of ₹47.26 crore had been already paid as of January 2022.

6.4.8 Non-recovery of Mobilization Advances and interest thereon

In the Report of the Comptroller and Auditor General of India on Jalayagnam (Report No. 2 of 2012), Audit had pointed out that large amounts of Mobilization Advances (MA) given to contractors were pending recovery in various projects including the PCSS Project. Audit now observed that:

- After re-engineering of PCSS project, the Department deleted (October 2017) Packages-23, 24, 25 and 26 from the scope of Pranahitha and Kaleshwaram Projects. Audit observed that even after more than four years, the Department was yet to close the contracts and settle the accounts of the contracting agencies (March 2022). Audit observed that in Packages-23, 24 and 25, as against the total MA of ₹64.05 crore given to the contracting agencies, the Department

could recover advances of only ₹44.57 crore leaving a balance of ₹19.48 crore unrecovered (February 2022). Out of the total interest amount of ₹26.91 crore, accrued up to May 2018, the Department could recover only ₹13.19 crore, up to last bills paid. It was further observed that though the Department held Bank Guarantees (BGs) worth ₹43.40 crore collected from the contractors towards MA (₹19.97 crore)/ Deposits (₹23.43 crore), it did not encash these BGs to adjust the dues receivable from contractors. The reasons for non-encashment of BGs were not on record.

- After re-engineering, the Government decided (July 2017) to close the contract of Package-14 and entrust the work with some revisions to other contractors by calling for tenders. Audit observed that as of March 2021, a total amount of ₹61.69 crore (*i.e.*, MA: ₹29.49 crore and interest: ₹32.20 crore) was pending recovery from the original contractor. Audit further observed that as against the outstanding amount of ₹61.69 crore due from the contractor, the Department held BGs amounting to only ₹31.04 crore, which were not encashed so far (January 2022) for the reasons not on record.

The Government replied (May/October 2023) that the settlement of accounts with the contractors was under process and that the pending MA and interest thereon would be recovered/ adjusted from the contractors' deposits/BGs available with the Department and the balance amounts payable to contractors at the time of final settlement of accounts. In respect of Package-14, the Government further replied (October 2023) that the Honourable High Court, Hyderabad had issued (2015) stay orders for recovery of interest on MA for the extended period of contract. It was also replied that final settlement of accounts to the agency were under process and soon after disposal of the Court case, the recoveries of MA and interest would be made.

However, Government reply is silent on non-settlement of accounts with contractors and non-encashment of BGs for more than four years since the decision (July/October 2017) to close these contracts.

Recommendation - 12

The Department should immediately take steps to recover the dues of mobilization advances from the contractors of closed contracts and fix responsibility on the officials involved. Strict instructions should also be issued to the departmental officers to ensure prompt encashment of bank guarantees without delay in cases of pre-closure of contracts in future.