

WORKS CONTRACT

Works

Works which intend to create an asset or intend to maintain the Asset. Work includes Electric supply lines and any buildings, machinery or apparatus required to supply energy. The terms work which by itself is used in a comprehensive sense, applies not only to works of construction or repair but also to other individuals objects of expenditure connected with the supply, repair and carriage of tools and plant the supply or manufacture of other stores or the operation of a workshop.

Capital Works :- (Capital Expenditure)

Expenditures incurred to create acquire/asset in order to accomplish the objectives of the Organisation and which is for permanent use of the business. It will not be recurring in nature. It is one time expenditure (Ex.) Plant & Machinery, Furniture & Fixture, Office equipment etc.

In TNEB the following Capital Works are undertaken

1. New Works(Ex.: Establishment of SS/Gen. Stations in Thermal/Hydel/Gas/Wind etc. Construction of Building – Office/Residential, Formation of Road etc.)
2. Replacement with necessary improvement (Ex.: Enhancing the Transformer Capacity, Additional Load in the existing service connection)
3. Replacement without Improvements (Ex.: Replacement of Existing Transformer with same rating Transformer)
4. Additions (Ex.: Construction of one Addl. Floor in the existing building)
Alteration/Renovation and Modernisation with Residual Life Assessment / without Residual Life Assessment (Ex.: R & M works in Generating Stations)

The capital expenditures are booked under Group code 14. After the completion of work and getting a work completion certificate from the field, the work order is closed and the total expenditure is transferred to Fixed Asset under Group Code 10.

Revenue Works (Revenue Expenditure)

It is incurred to maintain the existing assets in good condition so as to give continuous performance. It is recurring in nature. It relates to day-to-day expenditure in running the business (Ex.)

1. Payment of salaries
2. Purchase of consumables like coal, oil
3. Repair and Maintenance Expenditure etc.

Repair and Maintenance Expenditures

Any expenditure incurred to bring back the original efficiency of plant, Machinery, Vehicles etc. should be treated as repair expenditure. Maintenance expenditure is incurred to maintain the original efficiency of plant, machinery, vehicles etc.

They fall under the above categories

a). Normal Repairs and Maintenance

Annual Estimates to be prepared both for material and Labour

Estimate Card to be prepared

No Work order to be issued

Direct booking of Expenditures under the relevant revenue Heads of Expenditure

b). Special and foreseen repair and Maintenance

All scheduled repairs and maintenance works which are not of routine nature shall be classified in this category.

Separate estimate to be prepared

Work order to be issued and the expenditures shall be controlled through work order.

Direct booking of Expenditures under the relevant revenue Heads of Expenditure (Head of A/c.74)

Expenditure to be classified as Capital or O & M

If any replacement of parts results in improvement of efficiency or decreasing operation cost such expenditure shall be properly classified as capital.

c). Special and unforeseen repair and Maintenance

All breakdowns, repairs shall come under this category.

Procedures same as (a) and (b)

Estimate sanction

Administrative approval (para 489 of TNEB manual volume-I)

As per the delegation of Powers vide TNEB Manual Vol. II Appendix I

It is an order to execute a certain specified work at a stated cost. It is a formal approval without detailed specification and Drawings. A report accompanying the estimate justifying the proposal must be enclosed along with the proposal. Lumpsum Provision is to be provided under different Heads for execution of the works.

Technical sanction (para 490 of TNEB Manual volume-I)

As per the delegation of Powers vide TNEB Manual Vol. II Appendix I

After obtaining administrative approval a detailed estimate must be prepared for the technical sanction, of authority competent. It is a detailed estimate with proper drawings, technical specification etc. This must be obtained before execution of work. For the Administrative approval sanctioned by Board and Chairman, the concerned CE is the competent authority to accord technical sanction

Sources of Rates/Prices for preparation of estimates:

1. Cost Data published by TNEB to be adopted wherever possible
2. PWD Schedule of Rates for Civil/Mech./Elec. Nature of works
3. Budgetary offers obtained from manufacturers/suppliers. Mostly being adopted on the Gen. Stations side since scope of Work/Break up details of cost etc. not available with TNEB
4. Previous P.O Rate/Work awarded
5. Market Rate wherever required
6. Rates obtained from other power utilities if necessary

Model Estimate

Board's side Estimate:

A. Gross Estimate

For new works Board's estimate as 'A' will be evolved. For replacement /improvement works the estimate should consist of 'A' and 'B'

Material (Quantity and Rate)

Contingency restricted to 1 %

Storage restricted to 1 %

Labour and Transport(as per cost data/15 % of Material and Contingency)

Establishment and Supervision Charges – 15 % of the above

Gross

-----B.

Credit Estimate

For replacement/improvement works

Cost of old material to be replaced (Assumed as 50 % cost of new material)

+ original erection charges (10 % on the total material cost)

+ Dismantling Charges (50% of original erection cost
or 5 % of total material cost)

Total Value of Old Asset

Nett Value (A – B)

Deposit Contribution Works Estimate

To be prepared based on the request of the consumer. Estimate to be prepared and communicated to the applicant with a request to make the estimate cost as deposit duly fixing due date for payment. Commencing the execution of work after receipt of Deposit amount towards the cost of works. Work order to be closed and the consumer is either to make addl. Payment if any or to get refund. Transfer the total actual expenditure as asset through journalisation

When DCW estimate is to be prepared

DCW estimate to be prepared for the following works(Ref: B.P No. 1594 dt 05.11.1975),

1. Replacement of stolen/burnt meters,
2. Deviation of HT/LT Lines, Cables etc. at the request of the consumer,

3. Shifting of Lines / services, Ref. SE/IEMC/EE/AEE/F.Instruction/D269/95 (Tech.Br) dt.09.06.95 P.279 – 283/1995
4. Replacement of Board properties damaged due to dashing of Vehicles or due to persons,.

Model DCW Estimate

Material as per Cost Data etc

Contingency 5 %

Storage 3 %

Labour and Transport (As Per the Amount worked out based on the approved labour rates otherwise 30 % of above)

Establishment and Supervision Charges 22 % of all the above

For more details refer Circular Memo. No. SE/EMC/EE3/AEE1/F.Instruction/D.267/95 (Technical Branch) dated 09-06-1995

Four Part Estimate

Ref. (B.P. No. 449 dt. 01.09.1980) To be prepared when dismantling and replacement of an obsolete and damaged assets arise. When an asset is removed from service either by way of replacement or by permanently discarding it, the value of the old asset is to be removed from the Asset base.

Part I: Gross Value of the New Asset to be created (A/c No. 14 Work in progress head)

Part II: Total Depreciation so far written off on the old asset – 90 % of the value of the asset – (Debit with A/c. No 12.600)

Part III – Written down value of the old asset/ Scrap Value being 10 % of the original value of the asset – Chargeable to Stock A/c.
(Debit to 22:300 is for Devolution)

Part IV – Chargeable to Fixed Assets (Credited to Group Code 10.)

Estimate Card

Every Estimate shall be accompanied with Estimate Card in Quadruplicate in Form No. CWO. 6 for materials included in the estimate. No materials should be drawn

without production of Estimate Card. Estimate Card to be authenticated by the authority who sanctioned the estimate. 1st Copy to Stores, 2nd copy to the Accts. Br.-Central Office, 3rd Copy to the Section Office executing the work, 4th Copy to be recorded with the estimate. While issuing materials, the Stores Custodian shall enter the issue in the estimate card available with him as well as in the estimate card presented by the drawing office. For drawing extra material than those included in the estimate, a supplemental estimate card shall be issued by the estimate sanctioning authority duly authorized by him pending sanction of revised estimate if any. To be sent along with certificate of Work completion to the Central Office for closing the Work order .

Codification of Estimate

(Ref.: Lr.No.38282/CAC/87-2 (AB) dt. 18.12.1987)

Estimate to be sanctioned by the Assistant Engineer shall have 10 Digits (Ex.: 14:626 estimate No. 626/A123/085)

Where 62 – Project code

6 – Asset identification code

A – indicated sanctioning authority

1 – indicated section

2 – sub division

3 – Division

085 – identifies the estimate No. assigned

Similarly the estimate to be sanctioned by AEE will have 9 Digits, EE - 8 Digits and SE / CE / Chairman / Board - 7 Digits.

The work order should be numbered one digit more than the estimate number (Ex.) 626 / A123 / 085 / 1

Revised Estimate (para 491 of TNEB Manual Volume-I)

1. If in working out the detailed estimate, it is found necessary to make any important deviation from the design to which administrative approval has been obtained or if the cost will exceed the estimate administratively approved by more

than 10% revised administrative approval must be obtained before technical sanction is accorded.

2. During the excussion of work when sanctioned estimate is likely to be exceeded by more than 5% for any cause whatever when material developments or deviation have necessitated a revised administrative approval is to be sanctioned (Ref. para 515 of TNEB manual volume-I)

Supplementary Estimate

(Para 514 of TNEB manual volume)

During execution of work when a new of item of work is necessary which is not included in the original estimate then a supplementary estimate is to be got approved.

Work Order

This terms is applied to an order which contain a description and an estimate of cost of a proposed work and also conveys the executive approval to proceed with it.

Types of Work Order

1. Capital Work order (Extension/Improvement/Replacement etc) to be obtained for all capital works

2. Token Work Order- Opened for a face value of Rs.1000/-, to be regularised within a period of one month from the date of issue of work order by preparing a regular estimate.

This is required to draw material on emergency situation to restore power supply to the consumers rectification works during floods etc.

3. Temporary Supply Work Order

This is to be obtained for drawn materials to give service connection for construction activities. Advance current consumption for 90 days along with cost of the estimate is to be collected as deposit before effecting service connection.

4. DCW Work Order

Refer earlier page

5. Stock Work Order

This work is applicable for the manufacturing of RCC/PSC Poles at yards of TNEB and at Mettur Work Shop. The materials such as Cement, Steel, etc. are drawn this work order. The poles / tower parts manufactured / are devoluted into stores through work order. This is to be closed

Work order Ledger

To be maintained in central office for each estimate. Posting to be done with reference to priced requisition for drawal of material, Chit/K2 Agreement for booking labour charges and Temporary Advance Receipts/Imprest Voucher in respect of Local Purchases.

Work order Closing

Certificate of closure of Work order along with estimate card to be sent to the Work order section of Central Office. Postings verified, Devolutions Checked and Closed.

Revalidation: T & P items valid for three years, get extension thereafter

Balance work order: Every W.O to be closed on 31st of March every year for completed portion of works. For Non-Completed works balance w.o to be obtained by a separate requisition.

Extension W.O:

The work order issued is valued upto 31st March of every year. To operate the work order for a limited period (say for 3 months) in the next financial year extension of work order is to be obtained from competent authority.

Initial Accounts Relating To Works (Para 614 of TNEB Manual Volume – I)

In order to facilitate the closing of work orders field officer should maintain an initial account in respect of each work in a simple form. The form should provide for materials and labour.

1. Drawal of material is to be posted with date, number and quantity
2. Devolution of materials with date, number and quantity is to be posted as minus

3. Labour charges, transport charges, bills for petrol, drivers expenses etc. should be posted with reference to chit / K2 agreement, imprest account, temporary advance voucher.

This account is to maintain an account as accurately as possible of the expenditure on work and to record final measurement and check measure the erected quantities and surplus remaining on completion of the work.

Check Measurement

The actual work executed is to be checked by the higher officer as per the delegation of powers.

Completion Report

A report of completion of works is to be prepared and sent to the central office along with the work order for closing the work orders.

Contract: Meaning

Indian Contracts Act codifies the way to enter into a contract, execute a contract, implement the provisions of a contract and effects of breach of a contract. As per Contract Act an Agreement enforceable is a contract. An Agreement: Every promise and every set of promises forming the consideration for each other is an Agreement.

A person makes a proposal(offer). When it is accepted by others it becomes a promise. Promise cannot be one sided. Only a mutual promise forming consideration for each other is agreement. A agrees to pay Rs.100/- to B and B agrees to give a book at Rs.100/-. This is a set of promise which form consideration for each other.

If A agrees to pay Rs.100/- to B but B does not promise anything, it is not set of promise forming consideration for each other. Hence not an agreement. All agreements or contracts if they are made by the free consent of parties competent to contract for a lawful consideration and with a lawful object and are not expressly declared to be void.

Validity of the Contracts

- | | |
|------------------|--------------------------|
| • Offer, | Lawful Object, |
| • Acceptance, | Competent to Contract, |
| • Consideration, | Performance of Contract, |
| • Free Consent, | Enforceable by Law |

Work Contract

Work contract includes any agreement for

- a. Caring out the building construction
- b. Processing
- c. Fabrication
- d. Erection
- e. Installation
- f. Laying
- g. Fitting out
- h. Improvement
- i. Modification
- j. Repair
- k. Construction of any movable or immovable property

In TNEB, Works Contracts are being entered either in the form of Purchase Order / Agreement for the in the following forms

Chit Agreement/K2 Agreement(Capital/Revenue)

EPC Contract(Projects)

Turnkey Contract(Erection of Towers/Feeders)

Service Contract(Hiring/Consultancy)

Rate Contract(Sick Transformer)

For proper execution of Agreement an Officer should aware of the provisions and Terms and Conditions of the following act in order to ensure effective discharge of their duties in safeguarding the Board's interest:

Constitution of India

Act of Indemnity and Guarantee

Indian Contracts Act

Sale of Goods Act

Stamp Act

Arbitration and Conciliation Act

Carriage by Air Act

Negotiable Instrument Act

Right to Information Act
 Central Excise and Customs Act
 Central Sales Tax Act
 Tamilnadu Value Added Tax
 Service Tax – Rules and Regulations
 Road Transport/Shipping Act
 General Insurance
 TNEB Tender Regulation 1991
 Tamilnadu Transparency in Tender Act 1998
 Tamilnadu Transparency in Tender Rules 2000
 TNEB's Gazette for Periodical Amendments and Circulars issued

I Techniques/Methods for Evaluation of Capital Schemes

Now Time Value Method-I

1. Pay back Period

- Pay back period means period required to recover the capital investment made.

Pay Back Priod = Investment/Cash Inflow.

Investment=> amount invested

Cash Inflow => Profit after Tax but before depreciation modernize and establish power plants in 17 Sugar Factories in TN. Pay back period works to 7 to 8 years for capital exp. 1500 Crores.

Illustration

Years	Investment	Cash Inflow	Cumulative Cash inflow
1	2 Lakhs	30,000	30,000
2		38,000	68,000
3		25,000	93,000
4		22,000	1,15,000
5		36,000	1,51,000
6		49,000	2,00,000
7		31,000	2,31,000
8		28,000	2,59,000
9		24,000	2,83,000
10		24,000	3,07,000

2. Average Rate of Return

$$= (\text{Average Profit}/\text{Average Investment}) * 100$$

Average Profit-> Profit after tax and Depreciation

Average Investment-> (Opening investment + Closing Investment) / 2

Rate of Return 12.9% to 14.4%

Note: Payback Method and Average Rate of Return do not take into account the time value of money

II. Time Value Method

1. Net Present Value Method

- Present value of Cash inflow – Present Value of Cash Outflow.
- Discounting Factor is to be calculated by applying the following formula:
- $D/f = 1/(1+r)^n$ (Where r = rate of return per annum and n =No. of Years over which we are discounting)
- Discounting Cash is an evaluation of the further net cash flows generated by a capital project by discounting them to their present day value

◆ Illu: Investment = Rs.10,000/-

◆ Life Period = 3 Years.

◆ Cash inflows 1st Year = Rs.40,000/-,

2nd Year = Rs.5000/- and 3rd year = Rs.4000/- and the cost of capital is 10% per annum.

$$D/f = 1/(1+r)^n$$

$$1^{\text{st}} \text{ year} \rightarrow D/f = 1/(1+10/100)^1 = 0.909$$

$$2^{\text{nd}} \text{ year} \rightarrow D/f = 1/(1+10/100)^2 = 0.826$$

$$3^{\text{rd}} \text{ year} \rightarrow D/f = 1/(1+10/100)^3 = 0.751$$

Year	Cash Flows	D/f	PV of cash Out flow	PV of Cash inflow
1.1.05	10,000	1	10,000	-
31.12.05	4000	0.909		3636
31.12.06	5000	0.826		4130
31.12.07	4000	0.751		3004
		Total	10000	10770
		NPV	770	

Thumbing Rule - +ve means project of Ok
- ve means project to be rejected

2. Internal Rate of Return (Discounting Method)

- The Rate of which the difference between present value of cash inflow and present value of cash outflow is Zero.
 - $\text{Cash inflow} / \text{cash outflow} + 1$
- I.R.R is to obtained by trial and error method
- The rate of interest will not be given
- In order to have an approx. idea about discounting rate it is advisable to find out the factor $f = I / C$.

Thumbing Rule: Projects having IRR more than the rate prescribed by TNEB will be considered for implementation.

Time Value Method

3. Profitability Index Method:

- Profitability Index = $\text{PV of Cash inflows} / \text{PV of cash outflows}$
This is also called as cost benefit Ratio.

For establishment of new generation Stations a DPR is to be prepared duly adopting the CERC guidelines.

Environmental clearances and Forest Clearances etc are to be obtained.