

## SCHEME FOR COMPENSATORY AFFORESTATION

Details scheme for Compensatory Afforestation in degraded land (9.7 ha) to be carried out in lieu of 4.85 ha of forest area to be diverted for construction of transmission Line of LOOP-In section of 132 kv MLHEP-KHLIEHRIAT LINE at Mynkre in East Jaintia Hills District by Meghalaya Power Transmission Corporation Limited.

- 1. Name of Project** : Diversion of deemed private forests for construction of transmission of Line of LOOP-In section of 132 kv MLHEP-KHLIEHRIAT LINE at Mynkre.
- 2. User agency** : Meghalaya Power Transmission Corporation Limited.
- 3. Location of CA** : Compartment 11B, Saipung Reserve Forests, East Jaintia Hills District
- 4. Area to be afforested** : 9.7 ha degraded land (4.85 hectare)
- 5. Approved Wage Rate** : Rs 300/Day (fixed by Labour Department )

### 6. Plantation Model and technical details

Area of Compensatory Afforestation : 9.7 ha degraded land (4.85 hectare)

**Species to be planted** : Mixed plantation of species like *Michelia champaca*, *Gmelina arborea*, *Ex-bucklandia populnea*, *Chukrasia tabularis*, *Artocarpus spp.*, *Alnus nepalensis*, *Bombax ceiba*, *Ailanthus exelsa* etc.

- i. **Method of Planting:** Planting of nursery raised seedlings in pre-dug pits of size 0.30 m x 0.30 m x 0.30 m.
- ii. **Spacing:** 2.00 m x 2.00 m.
- iii. **Number of seedlings to be planted per Hectare:** 2,500 seedlings per hectare.
- iv. **Number of seedlings to be raised in nursery per hectare keeping in view in nursery-mortality-cum-culling, transit mortality and plantation site mortality @ 15%, 5% & 20 % respectively :** 2500 + additional 40% = 3,500 seedlings per hectare.
- v. **Number of seedlings to be raised for plantation over 4.85 hectares** = 4.85 x 3,500 = 16975 nos., @ 1000 seedlings per bed = 17 nursery beds.
- vi. **Time Schedule:** Nursery work to be initiated in the month of April following the receipt of fund from the user agency and the advance earth work for raising of plantation are to be initiated from the month of December in the same year in which nursery work has been carried out.



### A. CREATION OF NURSERY

**1. Number of seedling to be raise:** 1000 seedlings per bed.

**2. Basic for cost estimates:** The manday for creation of nursery and plantation in one hectare is taken from the Cost norms raising plantation and nursery etc as approved vide government of Meghalaya, Forests & Environment Department letter no.FOR.85/86/461 Dated Shillong the 5<sup>th</sup> June 2017.

**3. Wage Rate:** Rs 300/Day (fixed by Labour Department vide notification No.LBG 75/2012/361 Dated Shillong, the 7<sup>th</sup> January 2019).

### ESTIMATE FOR CREATION OF ONE BED POLY POT PERMANENT NURSERY

#### 1. First year creation of 1 bed nursery

| Sl. No. | Item of work  | Creation of nursery |                |
|---------|---|---------------------|----------------|
|         |   | Mandays             | Amount         |
| 1       | Preparation of Standard – size beds (13.00 m x 1.30 m x 0.30 m) for replacing the polythene bags  | 1.5                 | Rs 450         |
| 2       | Cost of polythene Bags (22.5cm x 15mm) in one bed 4kgs are required   | 7.2                 | Rs 2160        |
| 3       | Cost of manure mixed earth in polythene bags including pounding after filling   | 9                   | Rs 2700        |
| 4       | Cost of cow dung including transportation   | 0.6                 | Rs 180         |
| 5       | Cost of seeds non pine sp.  | 1.5                 | Rs 450         |
| 6       | Cost of Goat proof fencing net including cost of wooden fencing posts, erecting, fixing, fitting etc. complete and including cost of staples            | 1                   | Rs 300         |
| 7       | Cost of sowing including hoeing, mulching etc.  | 1                   | Rs 300         |
| 8       | Cost of pricking and transplanting of seedlings from germination beds to polybags   | 2                   | Rs 600         |
| 9       | Cos of construction of shades for protection of seedlings from frost during winter and direct sunlight in warm areas.                                   |                     |                |
|         | (a) Cost of materials   | 1                   | Rs 300         |
|         | (b) Labour cost   | 2                   | Rs 600         |
| 10      | Cost of weeding 4 weeding @ 1 dls p.w.  | 2.6                 | Rs 780         |
| 11      | Cost of watering  | 1                   | Rs 300         |
| 12      | Miscellaneous cost e.g fungicides tools & plants, making of inspection path, fertilizers, chemicals, lime pestieides/insecticides, growth hormones, etc | 0.2                 | Rs 60          |
|         | <b>Total in the first year</b>  | <b>30.6</b>         | <b>Rs 9180</b> |



## 2. Maintenance of 1 bed nursery during the Second year

| Sl. No. | Item of work                    | Second year maintenance of 1 bed nursery |               |
|---------|---------------------------------|--|---------------|
|         |                                 | Mandays                                  | Amount        |
| 1       | Weeding- 3 times @ 1 dls p.w    | 1.95                                     | Rs 585        |
| 2       | Watering                        | 0.5                                      | Rs 150        |
|         | <b>Total in the Second year</b> | <b>2.45</b>                              | <b>Rs 735</b> |

**Grand total for creation of 1 bed nursery:**

$$= 1 + 2$$

$$= \text{Rs } 9180 + \text{Rs } 735$$

$$= \text{Rs } 9915/- \text{ per bed /per hectare}$$

**Therefore, the total cost for creation of 17 beds poly pot nursery = Rs 9915 x 17**

$$= \text{Rs } 168555/-$$

### ABSTRACT

| Year                          | Cost per bed in Rs | Estimate cost (Rs) for 17 beds |
|-------------------------------|--------------------|--------------------------------|
| First year                    | 9180               | 156060                         |
| Second year                   | 735                | 12495                          |
| <b>Total cost for nursery</b> | <b>Rs 9915</b>     | <b>Rs 168555</b>               |



## B. Creation of Plantation

**1. Area of Plantation:** 4.85 hectares.

**2. Basic for cost estimates:** The manday for creation of nursery and plantation in one hectare is taken from the Cost norms raising plantation and nursery etc as approved vide government of Meghalaya, Forests & Environment Department letter no.FOR.85/86/461 Dated Shillong the 5<sup>th</sup> June 2017.

**3. Wage Rate:** Rs 300/Day (fixed by Labour Department vide notification No.LBG 75/2012/361 Dated Shillong, the 7<sup>th</sup> January 2019).

### Preliminary Works:

| Sl. No. | Items of works  | Area in hectare | Manday     | Amount (Rs)  |
|---------|---|-----------------|------------|--------------|
| 1       | 2   | 3               | 4          | 5            |
| 1       | Survey and demarcation including fixing of boundary marks at strategic points   | 1               | 2          | 600          |
| 2       | Jungle clearance, burning, land preparation including staking, pit digging, hoeing etc.                               | 1               | 24         | 7200         |
| 3       | Fencing :- With 3 strand barbed wire and wooden fencing posts including cost of staples, fixing, fitting etc complete | 1               | 64         | 19200        |
| 4       | Cost of collection of seeds   | 1               | 5          | 1500         |
| 5       | Construction of camp hut and inspection path  | 1               | 4          | 1200         |
| 6       | Purchase of tools and plants (Lump sum)   | 1               | 2          |              |
| 7       | Supervisory staffs to be engaged on casual basis from amongst the local people  | 1               | 12         | 3600         |
|         | <b>Total cost in the preliminary year</b>   | <b>1</b>        | <b>113</b> | <b>33900</b> |

Therefore, the total cost in the preliminary year for the plantation of 4.85 ha = 4.85 x 33900 = Rs. 164415.00/-



### Creation and First Year maintenance of Plantation

| Sl. No. | Items of works  | Area in hectare | Man days  | Amount (Rs)     |
|---------|---|-----------------|-----------|-----------------|
| 1       | 2   | 3               | 4         | 5               |
| 1       | <b>Creation of plantation:</b><br>Planting of nursery raised seedlings including carriage from nursery canter to plantation sites and proper ramming after planting etc. complete (for plantation raised by nursery seedlings only)   | 1               | 16        | 4800.00         |
| 2       | Three (3) weedings @ 15 mandays per weeding   | 1               | 45        | 13500.00        |
| 3       | Fire protection during dry and windy season:<br>(i) Wages of fire watchers from November of creation year to April of the following year.<br>(ii) Fire line clearance :- Internal and external fire line including controlled burning | 1               | 10<br>10  | 6000.00         |
|         | <b>Total cost for the First Year</b>  |                 | <b>81</b> | <b>24300.00</b> |

Therefore, the total cost in the creation and first year maintenance of the plantation of 4.85 ha = 4.85 x Rs. 24300

= Rs. 117855.00/-



**Second Year of Plantation:**

| Sl. No. | Items of works  | Area in hectare | Man days     | Amount (Rs)            |
|---------|---|-----------------|--------------|------------------------|
| 1       | 2   | 3               | 4            | 5                      |
| 1       | Vacancy filling in mortality areas  | 1               | 4            | Rs 1200.00             |
| 2       | Three (3) weedings @ 15 mandays per weeding)  | 1               | 45           | 13500.00               |
| 3       | Fire protection during dry and windy season:<br><br>(i) Wages of fire watchers from November of creation year to April of the following year.<br><br>(ii) Fire line clearance :- Internal and external fire line including controlled burning | 1               | 10<br><br>10 | 3000.00<br><br>3000.00 |
|         | <b>Total cost for the Second Year</b>   |                 | <b>69</b>    | <b>20700.00</b>        |

Therefore, the total cost in the second year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 20700$   
= Rs. 100395.00/-



**Third Year of Plantation**

| Sl. No.  | Items of works   | Area in hectare | Man days  | Amount (Rs)       |
|----------|--|-----------------|-----------|-------------------|
| <b>1</b> | <b>2</b>   | <b>3</b>        | <b>4</b>  | <b>5</b>          |
| 1        | Vacancy filling in mortality areas   | 1               | 4         | 1200.00           |
| 2        | Two (2) weedings @ 15 mandays per weeding  | 1               | 30        | 9000.00           |
| 3        | Fire protection during dry and windy season :-<br>(i) Fire line clearance controlled burning<br>(ii) wages of fires watchers from November of the creation year to April of the following year | 1               | 10<br>10  | 3000.00<br>300.00 |
| 4        | Miscellaneous cost e.g repair of fencing and maintenance of inspection path etc  | 1               | 4         | 1200.00           |
|          | <b>Total cost for the Third Year</b>   |                 | <b>58</b> | <b>17400.00</b>   |

Therefore, the total cost in the third year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 17400$   
= Rs. 84390.00/-



**Fourth Year of Plantation:**

| Sl. No. | Items of works  | Area in hectare | Man days  | Amount (Rs)      |
|---------|---|-----------------|-----------|------------------|
| 1       | 2   | 3               | 4         | 5                |
| 1       | One weeding in areas where there is heavy growth of weeds/jungles | 1               | 15        | 4500.00          |
| 2       | Fire protection works   | 1               |           |                  |
|         | (i) Wages of fires watchers.                                      |                 | 10        | 3,000.00         |
|         | (ii) Fire line clearance including controlled burning             |                 | 10        | 3,000.00         |
|         | <b>Total cost for the Fourth Year</b>                             |                 | <b>35</b> | <b>10,500.00</b> |

Therefore, the total cost in the fourth year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 10500$   
= Rs. 50925.00/-



**Fifth Year of Plantation:**

| Sl. No. | Items of works   | Area in hectare | Man days  | Amount (Rs)          |
|---------|--|-----------------|-----------|----------------------|
| 1       | 2  | 3               | 4         | 6                    |
| 1       | One weeding  | 1               | 15        | 4500.00              |
| 2       | Fire protection works<br>(i) Wages of fires watchers.<br>(ii) Fire line clearance including controlled burning                   | 1               | 10<br>10  | 3,000.00<br>3,000.00 |
| 3       | Cost of singling out operation to provide proper spacing from one plant to another   | 1               | 6         | 1800.00              |
| 4       | Miscellaneous expenditure e.g salvaging of fencing materials from the plantation centre wherever fencing is no longer necessary. | 1               | 3         | 900.00               |
|         | <b>Total cost for the Third Year</b>   |                 | <b>44</b> | <b>13200.00</b>      |

Therefore, the total cost in the fifth year of the plantation of 4.85 ha = 4.85 x Rs. 13200  
= Rs. 64020.00



**Sixth Year of Plantation:**

| Sl. No. | Items of works   | Area in hectare | Man days  | Amount (Rs)          |
|---------|--|-----------------|-----------|----------------------|
| 1       | 2  | 3               | 4         | 6                    |
| 1       | One weeding  | 1               | 15        | 4500.00              |
| 2       | Fire protection works<br>(i) Wages of fires watchers.<br>(ii) Fire line clearance including controlled burning                   | 1               | 10<br>10  | 3,000.00<br>3,000.00 |
| 3       | Cost of singling out operation to provide proper spacing from one plant to another   | 1               | 6         | 1800.00              |
| 4       | Miscellaneous expenditure e.g salvaging of fencing materials from the plantation centre wherever fencing is no longer necessary. | 1               | 3         | 900.00               |
|         | <b>Total cost for the Third Year</b>   |                 | <b>44</b> | <b>13200.00</b>      |

Therefore, the total cost in the sixth year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 13200$   
= Rs. 64020.00



**Seventh Year of Plantation:**

| Sl. No. | Items of works   | Area in hectare | Man days  | Amount (Rs)     |
|---------|--|-----------------|-----------|-----------------|
| 1       | 2  | 3               | 4         | 6               |
| 1       | One weeding  | 1               | 15        | 4500.00         |
| 2       | Fire protection works  |                 |           |                 |
|         | (i) Wages of fires watchers.   |                 | 10        | 3,000.00        |
|         | (ii) Fire line clearance including controlled burning  | 1               | 10        | 3,000.00        |
| 3       | Cost of singling out operation to provide proper spacing from one plant to another   | 1               | 6         | 1800.00         |
| 4       | Miscellaneous expenditure e.g salvaging of fencing materials from the plantation centre wherever fencing is no longer necessary. | 1               | 3         | 900.00          |
|         | <b>Total cost for the Third Year</b>   |                 | <b>44</b> | <b>13200.00</b> |

Therefore, the total cost in the seventh year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 13200$   
= Rs. 64020.00



**Eighth Year of Plantation:**

| Sl. No. | Items of works   | Area in hectare | Man days  | Amount (Rs)          |
|---------|--|-----------------|-----------|----------------------|
| 1       | 2  | 3               | 4         | 6                    |
| 1       | One weeding  | 1               | 15        | 4500.00              |
| 2       | Fire protection works<br>(i) Wages of fires watchers.<br>(ii) Fire line clearance including controlled burning                   | 1               | 10<br>10  | 3,000.00<br>3,000.00 |
| 3       | Cost of singling out operation to provide proper spacing from one plant to another   | 1               | 6         | 1800.00              |
| 4       | Miscellaneous expenditure e.g salvaging of fencing materials from the plantation centre wherever fencing is no longer necessary. | 1               | 3         | 900.00               |
|         | <b>Total cost for the Third Year</b>   |                 | <b>44</b> | <b>13200.00</b>      |

Therefore, the total cost in the eight year of the plantation of 4.85 ha =  $4.85 \times \text{Rs. } 13200$   
= Rs. 64020.00/-

**C. Soil & Moisture Conservation @ 15 % of the total CA cost in degraded land**

= Rs 282785.00/- (Rupees three lakhs three thousand seven hundred thirty six) only

(1) Headload Transportation cost of construction materials approximately 15 km distant  
@ 30% of SMC Cost = Rs 84836.00/-

(2) Contingencies @ 3 % of SMC Cost = Rs 8484.00/-.

**Total = Rs 282785.00 + Rs 84836.00 + Rs 8484.00**

**= Rs 376105.00/- (Rupees three lakhs seventy six thousand one hundred and five) only.**

**D. Monitoring and evaluation @ 10% of the total CA cost in degraded land**

= Rs **188523.00/-** (Rupees one lakh eighty eight thousand five hundred twenty three) only.

**E. Miscellaneous cost @ 3% of the total CA cost of degraded land**

= Rs 56557.00/- (Rupees fifty six thousand five hundred fifty seven) only.




## ABSTRACT COST INVOLVED

| Particular                                    | Activities   | Estimated Cost (Rupees) |   |
|---|--|-------------------------|---|
|   |  | Amount                  | Total amount  |
| <b>A. Creation of nursery for 17 beds</b>     | First year creation  | Rs 156060.00            | <b>Rs 168555.00</b>   |
|   | Second year maintenance  | Rs 12495.00             |   |
| <b>B. Creation of 4.85 hectare plantation</b> | Preliminary work   | Rs. 164415.00           | <b>Rs 774060.00</b>   |
|   | First Year creation and maintenance  | Rs. 117855.00           |   |
|   | Second Year Maintenance  | Rs. 100395.00           |   |
|   | Third Year Maintenance   | Rs. 84390.00            |   |
|   | Fourth Year Maintenance  | Rs. 50925.00            |   |
|   | Fifth Year Maintenance   | Rs. 64020.00            |   |
|   | Sixth Year Maintenance   | Rs. 64020.00            |   |
|   | Seventh Year Maintenance   | Rs. 64020.00            |   |
|   | Eighth Year Maintenance  | Rs. 64020.00            |   |
|   | <b>Total CA</b>  | <b>Rs. 942615.00</b>    | Rs. 942615.00/- (Rupees nine lakhs forty two thousand six hundred fifteen) only             |
|   | <b>Total CA cost in double degraded land</b>   | <b>Rs. 942615 X 2</b>   | <b>Rs 1885230.00/-</b> (Rupees eighteen lakhs eighty five thousand two hundred thirty) only |
| <b>C. SMC Conservation</b>                    | 15 % of the total CA cost in degraded land   |                         | Rs 282785.00/-  |
|   | (1) Headload Transportation cost of construction materials approximately 15 km distant @ 30% of SMC Cost |                         | Rs 84836.00/-   |
|   | (2) Contingencies @ 3 % of SMC Cost  |                         | Rs 8484.00/-  |
|   | <b>Total under SMC</b>   |                         | <b>Rs 376105.00/-</b> (rupees three lakhs seventy six thousand one hundred                  |



|                                     |   |  |  |
|-------------------------------------|---|--|--|
|                                     |   |  | and five) only.  |
| <b>D. monitoring and evaluation</b> | @ 10% of the total CA cost in degraded land |  | Rs 188523.00/- (Rupees one lakh eighty eight thousand five hundred twenty three) only. |
| <b>E. Miscellaneous cost</b>        | @ 3% of the total CA cost of degraded land  |  | Rs 56557.00/- (rupees fifty six thousand five hundred fifty seven) only                |
| <b>GRAND TOTAL</b>                  |   |  | Rs 2506415.00/- (Rupees twenty five lakhs six thousand four hundred fifteen) only.     |

Prepared by

  
 Assistant Conservator of Forests,  
 Jaintia Hills Territorial Division, Jowai

verified

  
 Divisional Forest Officer (T)  
 Jaintia Hills Division  
 Jowai