

# POWERGRID CORPORATION OF INDIA LIMITED



## COMPENSATORY AFFORESTATION SCHEME

DETAIL COMPENSATORY SCHEME OVER AN AREA OF 48.848 HA OF DEGRADED FOREST LAND SELECTEDE IN PALSANI DONGAR RF AGAINST THE DIVERSION OF FOREST LAND IN SUNDARGARH FOREST DIVISION FOR CONSTRUCTION OF 400 KV LILO OF ROURKELA - RAIGARH TRANSMISSION LINE AT JHARSUGUDA POOLING STATION AT KENAPLAI, SUNDARGARH BY **POWERGRID CORPORATION OF INDIA LIMITED.**



**Submitted By-**

*Powergrid Corporation Of India Limited*

*765 KV Pooling Station*

*Vill - Kenapali, Po - Kurga*

*Sundargarh, Odisha - 770 002*

**BARGARH FOREST DIVISION**

SCHEME FOR COMPENSATORY AFFORESTATION OVER 48.848 HA. OF DEGRADED FOREST LAND IN PALSANI RF (PALSANI DONGAR RF) OF PADAMPUR RANGE UNDER BARGARH FOREST DIVISION AGAINST 24.424 HAC. OF FOREST LAND DIVERSION PROJECT- 400 KV LILO OF ROURKELA - RAIGARH D/C TRANSMISSION LINE, CKT - II & IV AT JHARSUGUDA POOLING STATION, AT KENAPLAI, SUNDARGARH UNDER SUNDARGARH FOREST DIVISION.

**1. INTRODUCTION:**

A compensatory afforestation area of 48.848 Ha of degraded forest land has been identified in Palsani RF (Palsani Dongar RF) of Padampur Range under Padampur Tahasil in Bargarh district to compensate against loss of forest land of an area of 24.424 Ha against proposed for diversion of forest land in construction of 400 KV LILO of Rourkela – Raigarh Transmission Line CKT – II & IV at Jharsuguda Pooling Station, At Kenapali, Sundargarh. The Compensatory Plantation Scheme for raising ANR Plantation @ 400 seedlings per ha over 48.848 ha in Palsani RF has been prepared against forest area proposed to be diverted in favour of Power Grid Corporation of India Limited.

**2. IDENTIFICATION OF THE DEGRADED FOREST AREA:**

The degraded forest land for this purpose has been identified in Palsani Dongar RF in Padampur Range of Bargarh Forest Division under Padampur Tahasil in Bargarh District. The selected site lies to the north off village Mahulpali, East of Village Palsen, West of Kabibarpur. The identified area is in a single patches spread over Topo Sheet ref no No. F 44Q16( 64K16). Total degraded forest land identified is **48.848** Ha. The area has been inspected by the Range Officer, Padampur Range and found suitable for taking up Compensatory Afforestation. The location map showing the proposed Compensatory Afforestation site inside Palsani RF over 48.848 Ha has shown in survey of India **TOPO SHEET NO 44Q16(64K16)..**

**(a) Existing Vegetation:**

The Palsani RF under Padampur Range, Padampur Tahasil of Bargarh District is situated approx. 20 Km away from Padampur village. The head quarter of Padampur Range is Padampur. Sal (*Shorea robusta*) crop and its associate species like Bija (*Pterocarpus marsupium*), Asan (*Terminalia tomentosa*), Senha (*Lagerstroemia parviflora*), Dhaura (*Anogeissus latifolia*), Mahul (*Madhuca indica*), Char (*Buchanania lanzan*) & Kendu (*Diospyros melanoxylon*), Harida (*Terminalia chebula*), Bahada (*Terminalia bellerica*), Dhatki (*Woodfordia fruticosa*), Amla (*Emblica officinalis*), Karala etc. in bushy and pole stages are found in the identified degraded forest land. The slope is moderate and is suitable for carrying out plantation activities. The density of the vegetation is **20 to 30%**.

**(b) Soil and topography:**

The topography of the area is mainly undulated terrain and having 20 % slope. The soil is sandy loam and gritty, hard compact and with some moorrum on the slope. Depth of the soil is fairly good. The soil is mainly devoid of humus and shallow in depth.

The topographical configuration of the selected site is suitable for undertaking ANR with gap plantation activities. The soil is mostly sandy loam to lateritic in some areas. For such characteristics, the scheme proposes to dovetail adequate soil and moisture conservation measures into the afforestation programme.

**(c) Temperature:**

The area experiences sub-tropical climate. It is characterized by very hot summer and cool winter. Maximum temperature during summer rises up to 35-48 degree Celsius and in winter it goes down to 10-15 degree Celsius.

**(d) Rain fall:**

The area gets rain from South-East monsoon, which breaks during second fortnight of June and continues until last week of September. The annual rainfall varies from 1259.0 mm to 1441.0 mm. The annual rainfall average is 1350 mm. The bulk of precipitation occurs during July-August. During April-May, occasional rainfall occurs along with thunder storm.

The annual rain fall varies from 1200 mm to 1500 mm mostly received during rainy season from July to September.

**3. OBJECTIVE OF THE SCHEME:**

The main objective of the scheme is to restock the forest vegetation in Palsani RF under Padampur Range, Padampur Tahasil of Bargarh District by taking up silvicultural operation of the existing forest crop and supplementing it with ANR plantation in blanks patches. The scheme also envisages carrying out adequate and appropriate soil conservation measures along with the afforestation work so as to conserve soil and water for recharging the ground water table and to check erosion of the fertile top soil.

Principal Aims of the proposed scheme:-

- (i) To rehabilitate the degraded forest land through gap plantation with suitable indigenous species.
- (ii) To promote the growth of existing crop and root stock through suitable silvicultural practices.
- (iii) To arrest soil erosion and to improve the soil-moisture regime of the area which will ultimately recharge the ground water.
- (iv) To create a compact forest, which will be an asset for the local people from environmental, economic and aesthetic points of view.
- (v) To help reduce environmental pollution.

## ITEMS OF WORK TO BE TAKEN UP:

To achieve the objective narrated in the foregoing para, the following items of work are mainly prescribed to be taken up:

### 1. SURVEY AND DEMARCATION:

The proposed Compensatory Plantation Area has been surveyed and demarcated in the field by the User Agency at their cost, putting RCC pillars of 4' height at visible distance and has been checked by the officials of Forest Department. The entire area will be fenced with Birbed wire fencing by the Forest Department at the cost of the User Agency.

### 2. SOIL AND MOISTURE CONSERVATION.

Since the area is undulating, so soil and moisture conservation measures will be taken up by way of constructing small loose boulder structures and providing vegetative palisades as per site condition.

#### (i) LOOSE BOULDER STRUCUTRE

Taking into the consideration the degradation of the area due to soil erosion it has been proposed to take up Soil Conservation Measures by construction of Loose Boulder Structure over the area of size ( 1mt=10 Nos., 2mt = 10 Nos.& 3mt= 5 Nos.) in Palsen RF.

Name of the Range	Name of the site	Area in Ha.	Nos. of LBS	
			2mt	3mt
Padampur	Budhadangar PRF	118.72	10	15
			@ Rs. 6477/- per LBS = Rs. 64770/-	@ Rs. 13813/- per LBS= Rs. 207195/-

**Total Financial Out lay for this purpose = 271965.00**

The details of estimate of different size of Loose Boulder Structure are given in **the scheme.**

### 3. FENCING

As this area is within the village forest area, there is very possibility of grazing by stray animal. It is therefore proposed for Barbed Wire fencing along the surveyed boundaries to prevent grazing. Barbed wire fencing will be done over 2.315 Km. ( over 48.848 Ha) An amount of Rs.2315000.00 (wage rate of Rs. 200/- per day) will be required for taking up this fencing.

#### 4. PROTECTION MEASURE:

The forest block has become degraded due to biotic interference and to save the area from the same, the following protection measures are to be adopted.

##### (a) Watch and ward.

The Compensatory Area will have to be protected by engaging watchers for 5 years continuously, i.e. till establishment of the planted trees and natural saplings.

##### (b) Involvement of V.S.S.

The members of the VSS, i.e. Palsen VSS will be involved in Protection and regeneration of the area. For the purpose training, awareness and motivation of the members as well as some incentives have been provided in the present scheme.

#### 5. MONITORING AND EVALUATION

This scheme shall be executed and monitored by the Divisional Forest Officer, Bargarh Forest Division. Nursery and plantation journals shall be maintained regularly to facilitate monitoring and evaluation of the project.

#### 6. CLEANING AND TENDERING OPERATION.

Regeneration cleaning of the area will be taken up during the pre-planting year by cutting of unwanted growth, high stumps and singling out of promising shoots of primary species where bushy forest growth is available.

#### 7. PLANTING OF SEEDLINGS.

The proposed Compensatory Afforestation area will be planted by suitable species with a spacing of 2.5m x 2.5m and hence 600 nos of seedling per ha will be planted over 48.848 Ha. So 32240( Including 10%) nos of seedling will be required for planting over the entire area. As the entire area is prone to grazing, suitable indigenous species will be planted as detailed below

1. Teak ( *Tectona grandis*)
2. Bahada (*Terminalia belerica*)
3. Sissoo (*Dalbergia*)
4. Neem (*Azadirachta indica*)
5. Gambhar ( *Gmelina arborea*)
6. Amala (*Emblica officinalis*)
7. Bel (*Aegle marmelos*)
8. Karanja (*Pongamia pinnata*)
9. Bamboo (*Dendrocalamus strictus*)
10. Asan (*Terminalia tomentosa*)

For taking up plantation work, the following items of works are to be taken up.

**(i) Raising of Nursery: -**

The nursery will be raised for 1 year old seedlings during the pre-planting year. Potted seedlings will be planted @ 400 nos. per Ha i.e 32240 nos over the total area. For the purpose 32240 seedling are to be raised including casualty.

**(ii) Survey demarcation, staking and digging of pits :-**

A treatment map will be prepared for the area. Pits of size 30 CM X30 CM X30 CM will be dug with spacing of 2.5 mts X 2.5 mts during January - March, which will help in weathering of pits. Concrete masonry pillars will be constructed along the boundary of the above forest area during demarcation. The area shall be divided in to 4 Ha plots in the field with proper demarcation to facilitate management/inspection and the same shall also be shown on the treatment map.

**PLANTATION YEAR.**

**(i) Application of Farmyard Manure, Chemical Fertilizer and Insecticides :-**

To enhance fertility, farmyard manure will be applied in the pits during June after scooping of the pits. Chemical fertilizer (N.P.K) as basal dose @ 50 gms per plant will be applied at the time of planting. To save the planted seedlings from termite attack, Aldrin dust or some effective insecticides will be applied at the time of planting.

**(ii) Planting: -**

Planting of seedling will be done during the mid July after the onset of monsoon. The soil and water conservation works will be taken up before the rains.

**(iii) Weeding, Soil Working, Manuring, Casualty Replacement. :-**

1<sup>st</sup> weeding and soil working will be taken up during 1<sup>st</sup> week of August or just after establishment of planted seedlings. Soil working at 0.5 m radius around the seedling planted will be taken up. The casualties will be replaced simultaneously.

2<sup>nd</sup> weeding will be done during 2<sup>nd</sup> F.N of September or 1<sup>st</sup> week of October. 2<sup>nd</sup> dose of chemicals fertilizer @ 50 gms per plant will be applied in the crowbar holes during 2<sup>nd</sup> weeding.

**(iv) Grass cutting and fire tracing: -**

To save the area from fire damage, dry grasses shall be cut in lines of 1.5 mtr width around the plantation. The dry grasses shall either be shifted or burnt in-situ with care to avoid fire hazard during summer.

(v) **Watch & ward:**

Watchers shall be engaged for watch & ward of the plantation area against biotic interference, fire hazards etc throughout the year as per the approved cost norm.

**2<sup>ND</sup> YEAR OPERATION.**

During the second year operation the following works will be taken up.

(i) **1<sup>st</sup> weeding, casualty replacement and application of chemical fertilizer.-**

Weeding will be taken up during 1st week of July. Soil working with 0.5 mt radius will be done alongwith the replacement of 10% casualties and application of chemical fertilizer @ 50 gms per plant in crow bar holes. Precaution should be taken for conservation of soil and water at the time of soil working.

(ii) **2<sup>nd</sup> weeding and mulching :**

2<sup>nd</sup> weeding will be done during 1<sup>st</sup> F.N of October. Mulching of the plant sides will be done for conservation of moistures.

(iii) **Grass cutting and fire tracing :**

Cutting of dry grasses and fire tracing will be done during December and January like previous year.

(iii) **Watch & Ward: -**

Watchers to be engaged for the whole year as like previous year.

**3<sup>RD</sup> YEAR OPERATION.**

(i) **Weeding pruning and deep soil working.**

Weeding and deep soil working will be taken up during July and August. Pruning of planted trees and tending of natural species will be done during November.

(ii) **Grass cutting and fire tracing:**

Like previous years grass cutting and fire tracing will be done during December/ January.

(iii) **Watch and Ward:**

Watchers shall be engaged for the whole year as in previous years.

#### **4<sup>TH</sup> YEAR OPERATION.**

**(i)Cleaning and pruning:**

Cleaning of existing crop and Pruning of planted trees will be taken up during December/ January.

**(ii)Fire Tracing:**

Like previous years grass cutting and fire tracing will be done during December/ January.

**(iii)Watch and Ward:**

Watchers will be engaged for the whole year as like previous years.

#### **5<sup>TH</sup> YEAR OPERATION.**

**(i) Cleaning and pruning:**

Cleaning of existing crop and pruning of planted trees will be done during December/ January.

**(ii)Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December /January.

**(iii)Watch and ward:**

Watchers will be engaged for the whole year as like previous years.

#### **6<sup>TH</sup> YEAR OPERATION.**

**(i)Cleaning and pruning:**

Cleaning of existing crop and pruning of planted trees will be done during December/ January.

**(ii)Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December /January.

**(iii)Watch and ward:**

Watchers will be engaged for the whole year as like previous years.

#### **7<sup>TH</sup> YEAR OPERATION.**

**(i)Cleaning and pruning:**

Cleaning of existing crop and pruning of planted trees will be done during December/January.

**(ii)Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December/January.

**(iii)Watch and ward:**

Watchers will be engaged for the whole year as like previous years.

#### **8<sup>TH</sup> YEAR OPERATION.**

**(i)Cleaning and pruning:**

Cleaning of existing crop and pruning of planted trees will be done during December/January.

**(ii)Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December/January.

**(iii)Watch and ward:**

Watchers will be engaged for the whole year as like previous years.

#### **9<sup>TH</sup> YEAR OPERATION.**

**(i)Cleaning and pruning:**

Cleaning of existing crop and pruning of planted trees will be done during December/January.

**(ii)Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December/January.

**(iii)Watch and ward:**

Watchers will be engaged for the whole year as like previous years.

10<sup>TH</sup> YEAR OPERATION.

**(i) Cleaning and pruning:**


Cleaning of existing crop and pruning of planted trees will be done during December/January.

**(ii) Grass cutting and fire tracing:**

As like previous years, grass cutting and fire tracing will be done during December/January.

**(iii) Watch and ward:**

Watchers will be engaged for the whole year as like previous years.


  
Divisional Forest Officer,  
Bargarh Forest Division.  
Bargarh Forest Division  
Bargarh



**DETAILS OF ITEM-WISE FINANCIAL OUTLAY FOR AFFORESTATION.**

Sl No.	Item of work	Total outlay
01	ANR Plantation over 48.848 ha. @ 38806/- per ha =	18,95,595.00
02	Barbed Fencing	23,15,000.00
03	SCM (Loose boulder structure 1mt = 26 nos, 2mt.= 26 nos, 3mt.= 13 nos)	2,71,965.00
04	<i>One Four Wheeler pick-up Vehicle for Range office for monitor over entire Area.</i>	12,00,000.00
06	<i>One Barrack with Deep Borewell</i>	4,00,000.00
07	<i>One nos water harvesting structure (WHS)</i>	8,00,000.00
<b>Sub-Total</b>		<b>68,82,560.00</b>
08	Escalation cost @ 20%	13,76,512.00
<b>GRAND -Total</b>		<b>82,59,072.00</b>

(Rupees Eighty Two Lakhs Fifty Nine Thousand Seventy Two)

  
 Divisional Forest Officer,  
 Bargarh Forest Division.  
 Bargarh Forest Division  
 Bargarh

**ESTIMATE OF COST FOR 1 HECTARE UNDER ANR WITH GAP PLANTATION @ 400 PLANTS PER HECTARE**

Wage rate Rs. 200/- Per Day

Sl. No	Item of work	Preferable Period of Execution	Mandays	Labour cost	Material cost	Total cost
				@Rs.200/- per Day		
1	2	3	4	5	6	7
<b>(a) 0th year (Advance work) preplanting operation.</b>						
1	Survey demarcation & pillar posting	Nov - Dec	2	400	0	400
2	Site preparation	Nov - Dec	2	400	0	400
3	Silvicultural Operation including clearance of weed, climber cutting, high	Jan - Feb	5	1000	0	1000
4	Nursery Cost (6 month old seeding) part @ Rs. 9.45/Seeding (Rs. 6.67 in 0th Year + Rs. 2.78 in 1st Year) for 440 seeding (400 + 40)	Jan - March	11	2200	735	2935
5	Contingency and unforeseen Expenditure	Jan - March	0	0	165	165
	<b>Sub-Total:-</b>		<b>20</b>	<b>4000</b>	<b>900</b>	<b>4900</b>
<b>(b) FIRST YEAR PLANTING YEAR / YEAR OF CREATION</b>						
1	Nursery Cost (Six Month old seeding) Balance @ RS. 2.78 for 440 seeding	April - July	5	1000	223	1223
2	Pitting 30 cm cube size	Feb - March	12	2400	0	2400
3	Carriage planting, including Casualty Replacement	Jul - Aug	10	2000	0	2000
4	Complete weeding, Soil working, Manuring	Aug - Sept	12	2400		2400
5	Cost of vermicompost @200gms/ Plant @ Rs.20/- per KG = Rs.800.00 and Granular Insecticide 5 gms/ Plant @ Rs.80/- per Kg = Rs.80.00	Aug - Sept	0	0	1760	1760
6	Cost Of Chemical Fertilizer (a) Urea 70 gms/ Plant @ Rs.6/- per Kg = Rs.84.00. (b) NPK 50 gms/ Plant @ Rs.24/- per Kg = Rs.240.00 as basal dose		0	0	648	648
7	Silvicultural Operation including clearance of weed, climber cutting, high stump cutting, singling of shoots etc	Sept - Oct	15	3000	0	3000
8	Soil Conservation Measure in form of staggered trenches of size 2m x 0.5m x	Sept - Oct	20	4000	0	4000
9	Fire line tracing & inspection path	Feb - March	3	600	0	600
10	Watch & ward	Aug - March	7	1400	0	1400
11	Contingency and unforeseen		0	0	319	319
	<b>Sub-Total:-</b>		<b>84</b>	<b>16800</b>	<b>2950</b>	<b>19750</b>

**(c) SECOND YEAR MAINTENANCE**

1	Casulty replacement including cost of seedling, carriage and planting	Jul - Aug	2	400	378	778
2	Complete weeding and cultural operation	Sept - Oct	4	800	0	800
3	Soil Working and Manuring	Sept - Oct	4	800	0	800
3	Cost of Fertilizer and insecticide (b) Granulated insecticide 5 gms/plant for 20 plants 100 Gms @ Rs. 80/- per KG = Rs. 8.00 (a) Vermivompost @ 200gms/plant @ Rs.20/- per Kg = 800.00	Sept - Oct	0	0	1616	1616
4	Soil Conservation Measure ( Renovation of staggered trenches etc)	Sept - Oct	8	1600	0	1600
5	Fire line tracing and inspection Path	Feb - March	1	200	0	200
6	Watch & ward ( Whole Year)	April - March	7	1400	0	1400
7	Contigency and unforeseen Expenditure		0	0	362	362
	<b>Sub-Total:-</b>		<b>26</b>	<b>5200</b>	<b>2356</b>	<b>7556</b>

**(d) THIRD YEAR MAINTENANCE**

1	Complete weeding and cultural operation	Aug - Sept	2	400	0	400
2	Soil working	Aug - Sept	2	400	0	400
3	Fire line tracing and inspection Path	Feb - March	1	200	0	200
4	Watch & ward	Apr - March	7	1400	0	1400
	<b>Sub-Total:-</b>		<b>12</b>	<b>2400</b>	<b>0</b>	<b>2400</b>

**(e) FOURTH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(f) FIFTY YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(g) SIXTH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(h) SEVENTH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(i) EIGHTH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(j) NINETH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>

**(k) TENTH YEAR MAINTENANCE**

1	Fire line tracing and inspection Path	Feb - March	1	200	0	200
2	Watch & ward	Apr - March	2	400	0	400
	<b>Sub-Total:-</b>		<b>3</b>	<b>600</b>	<b>0</b>	<b>600</b>


**ABSTRACT**

	YEAR	Person days	Labour (Rs)	Material (Rs)	Totalcost (Rs.)
	0TH YEAR	20	4000	900	4900
1	1ST YEAR	84	16800	2950	19750
2	2ND YEAR	26	5200	2356	7556
3	3RD YEAR	12	2400	0	2400
4	4TH YEAR	3	600	0	600
5	5TH YEAR	3	600	0	600
6	6TH YEAR	3	600	0	600
7	7TH YEAR	3	600	0	600
8	8TH YEAR	3	600	0	600
9	9TH YAER	3	600	0	600
10	10TH YEAR	3	600	0	600
	<b>TOTAL</b>	<b>163</b>	<b>32600</b>	<b>6206</b>	<b>38806</b>

  
Divisional Forest Officer,  
Bargarah Forest Division  
Bargarah

**DETAIL ESTIMATE FOR BARBED WIRE FENCING**

Sl. No	Particular	Amount in Rs.
	As per Labour Rate 150.00 per Day	
1	Cost of one pillar	568.00
2	Transportation Charges to the site	244.00
3	Cost of base fixing	244.00
4	Cost of fixing barbed wire @ Rs. 65/RMT	48.00
5	Total Cost of fixing one pillar ( Add: Sl No 1 to 5)	1104.00
6	Cost of fixing 500 pillar in one KM	552000.00
7	Cost of 15 quintals of barbed wire ( 5 + 2 strand) @ Rs. 13200 per quintal	198000.00
8	Total Cost of fencing per Km	750000.00
9	as per Labour rate Rs. 200.00 per day = Cost as per Rs. 150 per day /150) x 200	1000000.00


  
Divisional Forest Officer,  
Bargah Forest Division  
Bargah

## Detail Estimate of Loose Boulder Structure (S.C.M.)

Span-2 mt. Ht. = 0.6 mt. Slope-U/S:- 1:1.5 D/S slope: 1:2

1. Leveling the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD.			<b>Rs. 200.00</b>
2. Excavation of foundation in hard soil within initial lead of 50 mtr. including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure. Base with apron- $1 \times 3.70 \times 3.00 \times 0.30 =$ Wing wall – $4 \times 0.50 \times 0.50 \times 0.30 =$ <b>@ Rs. 6840.12 per 100 cum.</b>	3.33 <u>0.30</u>	3.63 cum	<b>Rs. 248.00</b>
3. Rough stone dry packing up to GL Base with apron – $1 \times 3.70 \times 3.00 \times 0.30 =$ Wing wall – $4 \times 0.50 \times 0.50 \times 0.30 =$ Above GL Super structure- $1 \times 2.00 \times \frac{2.70 + 0.60}{2} \times 0.60 =$ Wing wall – $4 \times 0.50 \times 0.50 \times 0.50 =$ Side wall- i. $2 \times \frac{0.50 + 1.10}{2} \times 0.9 \times 0.5 =$ ii. $2 \times \frac{0.5 + 1.10}{2} \times 1.2 \times 0.5 =$ iii. $2 \times 0.6 \times 0.6 \times 0.5 =$ iv. $2 \times 1.0 \times 0.5 \times 0.5 =$  <b>@ Rs. 720.15 per cum</b>	3.33 0.30 1.98 0.50 0.72 0.96 0.36 <u>0.50</u>	8.65 cum	<b>Rs. 6229.00</b>
<b>G. Total</b>			<b>Rs. 6477.00</b>

(Rupees Six Thousand Four Hundred Seventy Seven) only

  
 Divisional Forest Officer,  
 Divisional Forest Officer  
 Bargarah Forest Division  
 Bargarah

I. **Detail Estimate of Loose Boulder Structure (S.C.M.)**  
**Span-3 mt. Ht. = 1.0mt. Slope-U/S:- 1:1.5 D/S slope: 1:2.0**

1. Leveling the unshaped surface of the selected site & layout the structure foundation L.S. 1 MD.		<b>Rs.200.00</b>
2. Excavation of foundation in hard soil within initial lead of 50 mtr. Including rough dressing and breaking of clods to maximum size 5 cm. to 7 cm. laying in layer not exceeding 0.3 in depth to strengthening both side U/S approx. bund of loose boulder structure. Base with apron- $1 \times 5.10 \times 4.00 \times 0.30 =$ Wing wall - $4 \times 0.50 \times 0.50 \times 0.30 =$ <b>@ Rs. 6840.12 per 100 cum.</b>	6.12 0.30	6.42 cum <b>Rs. 439.14</b>
3. Rough stone dry packing up to GL Base with apron - $1 \times 5.10 \times 4.00 \times 0.30 =$ Wing wall - $4 \times 0.50 \times 0.50 \times 0.30 =$ Above GL Super structure- $1 \times \frac{4.10 + 0.60}{2} \times 1.00 \times 3.0 =$ Wing wall - $4 \times 0.50 \times 0.50 \times 0.50 =$ Side wall- i. $2 \times \frac{0.50 + 1.50}{2} \times 1.5 \times 0.5 =$ ii. $2 \times \frac{0.5 + 1.50}{2} \times 2.0 \times 0.5 =$ iii. $2 \times 0.6 \times 1.0 \times 0.5 =$ iv. $2 \times 1.0 \times 0.5 \times 0.5 =$ <b>@ Rs. 720.15 per cum</b>	6.12 0.30 7.05 0.50 1.50 2.00 0.60 0.50	18.57 cum <b><u>Rs.13373.19</u></b>
<b>G. Total Rs. 13813.00</b>		

(Rupees Thirteen Thousand Eight Hundred Thirteen) only

  
 Divisional Forest Officer,  
 Bargarah Forest Division  
 Bargarah



पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड

( भारत सरकार का उद्यम )

POWER GRID CORPORATION OF INDIA LIMITED

( A Government of India Enterprise )



765/400 के. वी. सुंदरगढ़ उपकेंद्र, ग्राम- केनापली, पोस्ट- कुरगा, जिला- सुंदरगढ़- ओड़िसा - 770002

765/400 KV Pooling Station Sundargarh, Vill.- Kenapali, P.O- Kurga, Dist.- Sundargarh, Odisha-770002

E-mail : sundargarhss@powergrid.co.in

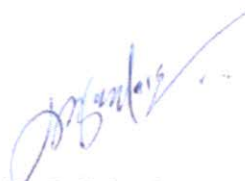
Ref. No.: ERII/SNG/TLC/FOREST/

Date: 09.02.2017

## UNDERTAKING

POWERGRID have applied for diversion of 24.424 Ha of forest land in total for the purpose of construction of 400KV LILO of Rourkela-Raigarh Transmission Line Circuit-II & IV at Jharsuguda Pooling Station (Kenapali, Sundargarh). I/We do hereby undertake that we shall pay the cost of compensatory afforestation as will be fixed by the Government selected in Palseni Dongar RF under Bargarh Forest Division in respect of the proposal for diversion of forest land under Sundargarh Forest Division.

  
Divisional Forest Officer  
Bargarh Forest Division  
Bargarh

  
( R P Sahu )  
CHIEF MANAGER

Eastern Region-II Office: C F-17, ACTION AREA 1C, NEW TOWN, RAJARHAT, Kolkata-700156, Ph. 033-23242840/50

Regd. Office: B-9, Qutab Institutional Area, Katwaria Sarai, New Delhi- 110016, EPABX:011-26560112,26560121