

Annexure-19**Compensatory Afforestation Scheme for Non Forest area**

Hazira Capacity Expansion Project (HCEP)-Change in Compensatory Afforestation Land Ha.12.00.Proposal No.FP/GJ/IND/29375/2017

Detailed scheme of Compensatory Afforestation for Non Forest area 24.86 ha. To be carried out in lieu of 12 ha. Of Reserve Forest land to be diverted in Surat District.

1. Details of Non Forest land.

District	Taluka	Range	Village	Survey No.	Area(Ha)
Bhavnagar	Mahuva	Mahuva	Kotiya	11 P1	10.5851
Bhavnagar	Mahuva	Mahuva	Kotiya	10	7.9218
Bhavnagar	Mahuva	Mahuva	Kotiya	25	6.3536
Total....					24.8605
Round About Plantation Area					24.86

2. Description of Area.

Soil type	Black clay
Topography	More or less flat, Hilly
Slope	Gentle
Whether the area is bearing any root stock of Vegetation	Area covered with <i>ziziphus zuzuba</i> trees and grass like <i>sporobolus</i> and other saline land grass species.

3. Name of Plantation Programme:- Compensatory Afforestation Scheme for Non Forest Area.**4. Schedule of Plantation Programme:-**

(i)	The Compensatory Afforestation on Non forest area would be started by Deputy Conservator of Forest Bhavnagar Division as early as possible after the proposal is formally approved.
(ii)	Compensatory Afforestation will be done in 24.86 ha. Area. The total afforestation cost will be about Rs.1,68,15,726/- . Shell Energy India Private Limited, Surat has given an undertaking to pay the cost of Compensatory Afforestation as per the prevailing wages (including the price escalation and supervision charges).

5. Technical Details:-

Technical details of Compensatory Afforestation are as Follows:

Sr. No.	Details	Specifications		
a	General Details	The C.A. will be taken under Compensatory Afforestation for double land on Non Forest Areas. The prevailing wage rate is 340 per day.		
b	Spacement	3 X 3 mtr., 1111 plants per ha.		
c	Species to be planted (No. of plants per ha.)	Species	Plants	Plants Height
		Saral	300	60 cm
		Gugal	300	60 cm
		Khakhro	300	60 cm
		Desi Baval	211	60 cm
		Total	1111	
d	Nursery Technique	Nine months old polypot raised plants will be planted at the onset of monsoon.		
e	Site Preparation	The malformed rootstock present in the area will be cutback & the site will be cleaned in the month of Nov-Dec. Alignment & pit digging 45 x 45 x 45 cms. will be carried out in the month of Dec-Jan.		
f	Plantation Method	Polypot raised plants will be planted during monsoon.		
g	Soil & Moisture Conservation Works	(i) Pucca structure like Check dam, check wall, retaining wall (ii) Contour trenches 2.00 x 0.45 x 0.30, 300 Nos/ha. will be dug along the contour line. the dug out soil will be heaped on the down ward side. Gully plugging & Nala Banding using the loose stone available in the area will be carried out as per requirement. Seeds of Acacia and thorny Etc. will be planted during monsoon in the upper side of nala as per suitability.		
h	Protection Trench	Barbed wire fencing, Seed sowing And planting of cuttings of thorny Spp. along the fence.		
i	Silvicultural Operations	1 st year three weeding soil working, Support watering will be provided if needed. 2 nd year two weeding soil working. 3 rd year one weeding soil working.		
j	Maintenance	It is proposed to maintain the Plantation up to ten years.		
k	Subsequent Silvicultural Operation	Cleaning, thinning etc. (as per species specific requirement) will be carried out at the age as per prescribed in the working plan.		

L	Proposed monitoring mechanism	<p>(i) A plantation register is to be maintained.</p> <p>(ii) Monitoring is to be done as per the following norms. Forester – 100% RFO – 100% ACF – 20% DCF – 10%</p> <p>(iii) The results of survival etc. are maintained in the plantation register on a periodical basis, which is updated at the end of September and March each year.</p> <p>(iv) The collar girth is also to be reordered at the end of each year.</p> <p>(v) At the end of maintenance period, the area is aimed at full stocking and pole crop girth for all the species, except bamboo.</p> <p>(vi) Bamboo would be of the harvestable size by the end of 4th year.</p> <p>(vii) Third party monitoring mechanism is also in the State and if the plantations in the sample selected, it will also be monitored by the third party selected for this purpose.</p>
m	Regeneration cleaning	Promotion of root suckers.
n	Silviculture & other activities	Only afforestation aimed plantation will be taken up, as the area falls under degraded forest land.


Deputy Conservator of Forests
Bhavnagar Forest Division
Bhavnagar

The Compensatory Afforestation scheme at the cost of Rs.1,68,15,726/- is technically and administrative approved by the undersigned.

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Daily wages Rs. 340

Spacemnts = 3 m x 3 m				
1111 seedling / Ha				
1st year replacement 10 % = 111 seedling /ha				
2nd year replacement 20 % = 111+111 seedling /ha				
3rd year replacement 10 % = 111 seedling /ha				
Total Seedlings = 1333 seedling /ha				
Polypot size : 15 cm x 25 cm x 200				
Item of work	Qty.	Labour	Material	Total
1	2	3	4	5
0 year				
Nursery				
(a) Cost of container,soil, ,manure, seeds, water, fertilizer, insecticides, implements, rent of lands. Shade, etc. (including 10 % for casualty replacement)	1222	0	2069	2069
(b) labour : Preparation of beds, filling and arranging of bags,showing of seeds, watering shifting, weeding etc.	1222	4656	0	4656
(c) Seedling cost for casualty replacement in one year old (20%)	222	2484	621	3105
(d) Seedling cost for casualty replacement in two year old (10%)	111	0	517	517
Total		7140	3207	10347
2. Area Development (Land Preparation)				
(a) Survey, cutback and promotion of root suckers		245	20	265
(b) Aligment and digging of pits 0.45 X 0.45 X 0.45	1111@ 6.00	10642	0	10642
Total		10887	20	10907
(a) Natural fertilizer (Neem cake/ Castor cake)	1111 @ 5.00	0	10855	10855
Total		0	10855	10855
3. SMC Works				
(a) Check wall/ retaining wall /checkdem (all pucca only)	L.S.	13092	25989	39080
(b) Contour trench 2 M x 45 Cm x 30 Cm as per Rs.17.00/rmt (300 trench)	600 rmt.	9966	0	9966
Total		23057	25989	49046
4. Protection				
(a) stone wall	240 rmt	86920	130380	217300
(b) Seed sowing and planting of cuttings of Ipomea/ Glaricidia along the fence		1215	522	1737
Total		6717	50028	219037
Sub Total of 0 year		48831	90562	139393


1st Year				
(a) Maintenance of nursery (April to June)	1222	3762	375	4137
(b) Transport of seedling for plantation	1111	2064	426	2490
(c) Planting with khamna of Min 1 m dia	1111	6343	0	6343
(d) Transport of seedling for casualty replacement	111	220	50	270
(e) 3 weeding cum soil working	1111	24727	0	24727
(f) Support watering 5 times @ 3.25		15806	22681	38487
(g) Protection / tending operation		5116	0	5116
(h) Tending to natural vegetation		1279	0	1279
(i) Contingency		0	1279	1279
Total for 1st year		59319	24811	84130
2nd Year				
(a) 2 weeding & soil working		13733	0	13733
(b) 20 % Casually replcement, transport and planting	111+111	231	1149	1380
(c) Natural fertilizer (neem cake / caster cake) etc.	Rs.5/ plant	0	12829	12829
(d) Support watering 3 times @ 3.25		10271	14742	25013
(e) Protection / tending operation		5542	0	5542
Total for 2nd year		29778	28721	58498
3rd Year				
(a) 2 weeding & soil working		14790	0	14790
(b) 10 % Casually replcement, transport and planting	111	124	620	744
(c) Natural fertilizer, neem cake etc.	Rs.5/ plant	0	13815	13815
(d) Support watering 1 times @ 3.25		3688	5292	8980
(e) Protection & maintenance of fencing / tending operation	L.S.	7461	0	7461
Total for 3rd year		26063	19727	45790
4thYear				
(a) 1 weeding & soil working	250 rmt	7923	0	7923
(b) Protection & Maintenance of fencing/ Tending operation	L.S.	7994	0	7994
Total for 4th year		15916	0	15916
5thYear				
Protection & maintenance of fencing/ tending operation	L.S.	8527	0	8527
Total for 5th year		8527	0	8527
6thYear				
Protection & maintenance of fencing/ tending operation	L.S.	9060	0	9060
Total for 6th year		9060	0	9060

7thYear				
Protection & maintenance of fencing/ tending operation	L.S.	9592	0	9592
Total for 7th year		9592	0	9592
8thYear				
Protection & maintenance of fencing/ tending operation	L.S.	10125	0	10125
Total for 8th year		10125	0	10125
9thYear				
Protection & maintenance of fencing/ tending operation	L.S.	10658	0	10658
Total for 9th year		10658	0	10658
10thYear				
Protection & maintenance of fencing/ tending operation	L.S.	11191	0	11191
Total for 10th year		11191	0	11191
SUB TOTAL :		239061	163820	563681
The Cost of Supervision/subsequential silvicultureal Operations	20%	47812	32764	112736
		286873	196584	676417

Note :-

- (1) Seed sowing along fencing towards the inner side, and also in the plot.
- (2) Planting of cutting of ipomea//Glarcidia along the fencing towards outer side.

1 Ha cost, Rs. 676417 X 24.86 Ha. = Total Cost Rs. :1,68,15,726/-


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Dy. Conservator of Forests
Surat.