



ONGC TRIPURA POWER COMPANY LIMITED

**TECHNICAL SPECIFICATION
FOR
HORTICULTURE MAINTENANCE
AND
LANDSCAPING SERVICES**

2 X 363.3 MW

GAS BASED COMBINED CYCLE POWER PLANT,

PALATANA, UDAIPUR, TRIPURA

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**TECHNICAL SPECIFICATIONS FOR HORTICULTURE MAINTENANCE
AND LANDSCAPING AT 2 X 363.3 MW GAS BASED COMBINED CYCLE
POWER PLANT AT PALATANA, TRIPURA**

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TECHNICAL SPECIFICATION OF HORTICULTURE MAINTENANCE AND LANDSCAPING SERVICES

- 1.0 It is clearly understood by the parties that in respect of Services to be provided by Contractor under the Contract, responsibility of Owner shall be limited to provide earth and Contractor shall be responsible for providing all other Services required for horticulture maintenance and landscaping.

In this Technical Specification, capitalized terms used but not defined shall have the meaning assigned to them under the contract dated [●] (the "**Contract**").

2.0 GENERAL OBLIGATION OF THE CONTRACTOR

- 2.1 The Contractor shall obtain, at its expense, all Permits required to be obtained by the Contractor, to allow it to carry on its business and provide the Services under the Contract.
- 2.2 Pursuant to the Contract, the Owner is contracting for the Services of the Contractor, as an independent contractor in accordance with the Contract to (a) maintain horticulture and landscapes in the Plant (b) develop new landscape and (c) Revive existing lawn and grassy field and, (d) Jungle cutting around Plant boundary wall and inside Plant.

3.0 SCOPE OF SERVICES

- 3.1 In furtherance of and without limiting the obligations and responsibilities of the Contractor specified in the Contract, the Contractor shall, at all times commencing from the Effective Date and continuing through the Term and in accordance with the provisions of the Contract, perform the services specified hereunder (the "**Services**"). For the convenience only, Services have been categorized. However, any Services envisaged under the Contract to be provided by Contractor, irrespective of their categorization, shall be provided as and when required.

3.2 HORTICULTURE & LANDSCAPES MAINTENANCE

- 3.2.1 The Contractor shall provide Routine maintenance activities of lawn having different types of grass including without limitation:
- 3.2.1.1 Watering;
 - 3.2.1.2 Deweeding;
 - 3.2.1.3 Cultivation and cutting of hedges etc;
 - 3.2.1.4 Pruning and clipping of hedges etc.
 - 3.2.1.5 Mowing;
 - 3.2.1.6 Top dressing with good earth, manure etc;
 - 3.2.1.7 Sweeping;
 - 3.2.1.8 Applying manure and fertilizers;
 - 3.2.1.9 spraying pesticides and insecticides;

- 3.2.1.10 Protection from pests and diseases;
- 3.2.1.11 Repair of patches by preparation of soil by digging, leveling and planting new grass of same variety;
- 3.2.1.12 Disposal of refuse / waste;
- 3.2.1.13 Stacking, preparation and planting of seasonal flowers, making basins of tree pits and hoeing.
- 3.2.1.14 Maintenance of existing flower beds including alteration wherever required by planting summer and winter seasonal flowers and perennial flowers.
- 3.2.1.15 Plant trees, shrubs etc as and when required.
- 3.2.1.16 Prepare and maintain indoor and outdoor plants in pots at designated locations.
- 3.2.1.17 Routine maintenance activities of landscapes in respect of existing garden features which includes, without limitation, lawn, beds, topiary, perennial beds, rockeries, erecters, climbers, shrubs, trees, self grown trees and complete removal of rank vegetation and bushes etc. It shall include all minor repairs of the garden features damaged due to digging in the area, natural calamity or any other reason.
- 3.2.1.18 Adequate watering of all garden features, trees, hedges, shrubs etc using sprinklers or hose pipes. Contractor shall make his own arrangement of water pumps, hose pipes etc wherever and whenever required. Contractor shall ensure that unnecessary wastage of water does not occur at any time and shall protect the irrigation fittings / hydrants and irrigation system etc installed at Plant. Any damage to existing irrigation system due to negligence by Contractor shall be made good by the Contractor at his own cost.
- 3.2.1.19 Manure and fertilizers as and when required in sufficient quantum shall be applied under the directions of Project Manager. Cost of manure and fertilizers is included in Contract Price.
- 3.2.1.20 Periodic check for pests and diseases. In the event of infestation, prompt spraying of appropriate insecticides, fungicides and pesticides shall be performed so as to completely eradicate the infestation. Cost of insecticides, fungicides and pesticides is included in Contract Price.
- 3.2.1.21 Lawn mowing, hedge cutting and hedge shaping as per the direction of Project Manager but in no case less than once in every 15 days i.e. two times in a month. Lawn mowing, hedge cutting and hedge shaping shall be done in such a manner to give lawn and hedge neat, clean, tidy and even look.
- 3.2.1.22 Clipping and trimming of hedges and edges, trimming of shrub plant, trees, creepers etc at regularly at intervals as directed by Project Manager.
- 3.2.1.23 Cultivate seasonal flower of at least six (6) variety in each season and make flower beds at the Plant.
- 3.2.1.24 Prepare an inventory of trees and plants at the start of work, number the trees and display identification placards for each tree.
- 3.2.1.25 Provide all tools, tackles, instruments, materials etc required for horticulture and landscaping maintenance work.

3.2.1.26 Provide protective equipments like safety shoes, gloves, helmet, gumboots etc as applicable as per the nature of the work to all the Contractor Staff.

3.3 **LANDSCAPING**

3.3.1 The Contractor shall provide following Landscape maintenance activities including without limitation:

3.3.1.1 Apply at least 225 mm garden soil for lawn area and farm yard manure as per the recommendation of Project Manager;

3.3.1.2 Level the ground;

3.3.1.3 Mix earth, sand and manure in proportion as specified;

3.3.1.4 Provide and spread good earth and manure in required thickness;

3.3.1.5 Treat the soil with chemicals including pesticides, fungicides etc and control soil pests;

3.3.1.6 Provide and plant Korean / Buffalow / Doob / Selection-1 grass;

3.3.1.7 Maintain the grass so as to form a thick lawn free from weeds and fit for movement;

3.3.1.8 Prepare bed for planting hedge and shrubs by excavating to specified depth and trenching the excavated base to a further depth of 30 cm, refilling it with good earth mixed with manure in the ratio specified, flooding with water, leveling, fine dressing, disposing surplus material, spreading & leveling surplus earth within a lead of 50 mtr and lift up to 1.5 mtr;

3.3.1.9 Prepare land for planting trees by digging pits in ordinary soil and refilling the same with good earth mixed with manure in the ratio as specified, flooding with water, dressing including removal of rubbish and surplus earth, if any, with all leads and lifts. Trees shall be planted in a pit size of 60 cm x 60 cm and shall be stacked properly;

3.3.1.10 Provide and plant best quality container grown healthy trees and plants of specified height, shrubs, creepers, hedge plants etc as approved by Project Manager.

3.4 **DEVELOPMENT AND REVIVAL OF LAWN / GRASSY FIELD**

3.4.1 Revival of Existing lawns and others horticultural fields/areas inside OTPC plant including watering, de-weeding, edge cutting, mowing and top dressing with good earth, manure, bio compost, vermi-compost, spraying of insecticide & pesticide, repair of patch by preparation of soil by digging, leveling and planting of new grass of the same variety and cleaning of area daily including removal and disposal of all types of cuttings with all labour, tools and tackles, complete as per direction of Project Manager.

3.4.2 The contractor shall submit detailed planning schedule before starting of the contract as per the marked area mentioned in the plot plan. The schedule must contain detailed area wise plan with all area covering in 3 years term. The contractor shall also provide details as per the following scope of work:

3.4.2.1 Excavation and removal of earth from the areas to be revived along with disposal of same earth in avg. 1-1.5 km distance at the designated area inside the plant premises.

3.4.2.2 Removal of unwanted plant roots.

3.4.2.3 Anti-termite treatment to be done.

- 3.4.2.4 Supply & filling of good earth.
- 3.4.2.5 Grading of the soil up to the required level.
- 3.4.2.6 Areas to be covered with plants, grass etc. as directed by engineer in charge
- 3.4.2.7 Regular interval of speeding of fertilizer, watering, de-weeding etc.
- 3.5 **JUNGLE CUTTING**
- 3.5.1 **The Contractor shall provide Jungle cutting & bush cutting services including without limitation:**
 - 3.5.1.1 Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured and removal of rubbish outside the periphery of the area cleared.
 - 3.5.1.2 Provide all tools, tackles, instruments, materials etc required for Jungle cutting & bush cutting work.
 - 3.5.1.3 Cleanings of rubbish from the location & dump them inside the periphery of the plant area. The dumping area shall be as per direction of Engineer in charge of OTPC.
 - 3.5.1.4 Provide protective equipment's like safety shoes, gloves, helmet, gumboots etc as applicable as per the nature of the work to all the Contractor Staff.
- 3.5.2 **The Contractor shall provide Jungle cutting & bush cutting services inside Plant including without limitation in following areas:**
 - 3.5.2.1 Jungle cutting/bush cutting shall be done upto 30mtr to 50mtr around the whole boundary wall of plant & petrol road. The area shall be varies according to the various site.
 - 3.5.2.2 Fire station to ONGC terminal both road side green belt & adjacent area.
 - 3.5.2.3 The whole non plant area including the premises & adjacent area of admin building, BHEL guest house, training center, trainee hostel, security hostel.
 - 3.5.2.4 The security control room adjacent area.
 - 3.5.2.5 BHEL store-1, 2, 3, 4 adjacent areas.
 - 3.5.2.6 Helipad & its adjacent area.
- 3.5.3 The Contractor shall provide Jungle cutting & bush cutting services inside Plant three times in a year as per the 'Jungle cutting plan' attached as Annexure -1 to this Technical Specification. Approximate area of one-time jungle cutting is 300500 square meters. The Contractor has to complete one time jungle cutting within three months.
- 3.5.4 The contractor should deploy sufficient nos. temporary labours/manpower (not less than 15 nos daily mobilization considering the total work volume to be executed) to achieve the timeline of three months for one time jungle cutting.
- 3.5.5 The labours shall be engaged through local man power agency/contractor. No fixed/permanent labours will be posted at site for jungle cutting/bush cutting job.

- 3.5.6 The Contractor shall deploy all Machineries, tools & tackles, instruments, materials required for jungle cutting/bush cutting work. Minimum number of tools & tackles to be deployed is indicated below which is additional to the list of maintenance tools & tackles given in clause 4.0 below :
- 3.5.6.1 Material handling tolly- 2 nos.
 - 3.5.6.2 Spade & Shovel- 15 nos.
 - 3.5.6.3 Fork- 05 nos.
 - 3.5.6.4 Rake- 05 nos.
 - 3.5.6.5 Pruning shears- 05 nos.
 - 3.5.6.6 Sickle- 20 nos.
 - 3.5.6.7 Chopper & cutlass- 20 nos.
 - 3.5.6.8 Crowbar- 02 nos.
 - 3.5.6.9 Petrol operated Bush cutter machine- 03 nos.
 - 3.5.6.10 Anti-weeding spray machine- 05 nos.
 - 3.5.6.11 Excavator-01(on requirement basis).
 - 3.5.6.12 Tripper/Dumper-01(on requirement basis).
 - 3.5.6.13 Hand Tractor- 03 (on requirement basis).

3.6 **GENERAL SPECIFICATION**

3.6.1 **Plant**

3.6.1.1 All plant materials shall be healthy, sound, vigorous, free from plant diseases, insects, pests or their eggs and shall have healthy and well-developed root system. All dead or decayed plants shall be replaced with new plants whenever necessary for which price is included in Contract Price. All plant shall be hardy under climate conditions similar to those in the locality of the Site. No plant material shall be accepted if branches are damaged or broken. Plants shall be of specified height. All materials shall be protected from the Sun and weather elements until planted. All plants shall conform to the requirement specified by the Project Manager except that plants larger than specified may be used if approved by Project Manager provided Contract Price shall remain unchanged on this account.

3.6.2 **Topsoil / Good Earth**

3.6.2.1 Top soil or good earth shall be friable loam typical. It shall be free from subsoil stones, earth clods, stubbles, weeds or other extraneous matter or debris. It shall contain no toxic material. No topsoil shall be delivered in a muddy condition. The pH value of soil shall be ensured between 6.5 and 7.5 by periodic and random testing of soil in any reputed laboratory.

3.6.3 **Manure**

3.6.3.1 Well decomposed farm yard manure/organic shall be used. It shall be free from sticks, paddy strain, stones, earth, weed, seed, extraneous matter, harmful bacteria, insects, chemicals etc.

3.6.4 **Root System**

3.6.4.1 Root system shall be conducive for successful transplantation. Wherever necessary, root-ball shall be preserved by support with hessian cloth or other suitable material. On soils where retention of a good root-ball is not possible, the roots shall be protected in other ways. The roots system shall be free from nematodes and other pests.

3.6.5 Fertilizer

3.6.5.1 Fertilizing shall be carried out by application oin rotation of the following fertilizers every day from the beginning of monsoon till the end of winter:

3.6.5.1.1 Organic well-rotted dry farmyard manure : 0.05 Cu Mtr per tree

3.6.5.1.2 Nitrogen : 15 lbs / 1000 sq feet

3.6.5.1.3 Phosphorous : 30 lbs / 1000 sq feet

3.6.5.1.4 Potash : 15 lbs / 1000 sq feet

3.6.6 Replacement of damaged grass

3.6.6.1 Contractor shall be responsible for damage, failure or dying of grass due to heat, pest, disease etc and shall make good them by planting new grass of same variety.

3.6.7 Lawn Grass

3.6.7.1 Planting / dibbling of lawn grass: After preparation of land, watering shall be done regularly to allow the weeds to grow. After 15 days grass shall be separated and planting shall be done at a spacing of 7-10 cm. After planting of grass, watering and weeding shall be done regularly.

3.6.7.2 Turfing of lawn grass: After preparation of land, leveling, watering and consolidation shall be done. After this thin layer of sand shall be spread followed by laying of grass at uniform level.

3.6.8 Planting of Shrubs / Trees

3.6.8.1 Planting shall be done at the specified spacing as directed by Project Manager. For planting, plants shall be taken out from containers while protecting root-ball. Plants with damaged root-ball shall be rejected.

3.6.8.2 The plants shall be planted plumb and shall be centered in the planting pit or trench. Backfilling shall be done immediately after planting. Any excess soil which is not used for backfilling the planting pits shall be evenly distributed in the landscape area. Immediately after planting, all plants shall be thoroughly irrigated until the backfill soil around and below the roots or root-ball of each plant is saturated. Stacking shall be done immediately after planting.

3.6.9 Maintenance of lawns / doob grass / Korean / Selection-1 grass

3.6.9.1 The lawn shall be regularly mowed with lawn mower without appearing dry patches. The side grass shall be trimmed with grass cutter.

3.6.9.2 Pruning of shrubberies shall be done with proper hedge trimmer or garden shear only.

3.6.9.3 The height of grass shall not be allowed to increase beyond 60 mm. The minimum height of grass shall be maintained as 25 mm. The height shall be measured from top of the soil surface. The grass shall be kept free from all kinds of weeds, pests and diseases.

3.6.9.4 The grass lawns shall be kept constantly rolled to give cushioning effect to the grass. Manuring of grass lawns shall be done regularly to keep the grass green

3.6.10 **Trees**

3.6.10.1 Stacking shall be done immediately after planting. Tree basis shall be formed around the tree. The area around the tree plant up to a minimum two feet from the trunk of the tree plants shall be kept free from grass and all kinds of weeds. Trimming and pruning of the trees and hoeing of the area around the trees shall be done regularly. The trees shall be watered regularly. Hoeing shall also be done after every watering. For proper upkeep of the trees unwanted branches of the trees / tree plants shall be cut and removed at regular intervals as required and as directed by Project Manager. The tree plants/trees shall be kept free of any disease, insects or pests by regularly spraying insecticides/pesticides as required and as directed by Project Manager. To keep the tree plants / trees healthy manure shall be applied based on the required and as directed by Project Manager. The appropriate manure, fertilizers, insecticides, pesticides etc. along with spraying machine and manpower required shall be provided by the contractor

4.0 **MAINTENANCE TOOLS & TACKLES**

4.1 Contractor shall arrange and provide all the tools, tackles and instruments required in adequate number for providing Services under the Contract. Price for deploying these items is included in the Contract Price. Indicative list of tools, tackles and instruments is given in Clause 4.2. This list is not exhaustive and Contractor shall deploy all tools, tackles and instruments required for providing Services under the Contract. If Owner believes that any additional tools and tackles or instruments are required to be mobilized by Contractor, same shall be mobilized by the Contractor without any delay and without any additional cost to Owner.

4.2 Indicative list of tools, tackles and instruments to be mobilized by Contractor is following:

4.2.1 Petrol operated lawn mowers – four (4) numbers

4.2.2 Petrol operated lawn mowers – five (5) numbers

4.2.3 Material handling trolley – six (06) numbers

4.2.4 Nirani – 20 nos.

4.2.5 Spade & shovel – 12 nos.

4.2.6 Hedge cutting machine – two (02) numbers

4.2.7 Hand operated side cutter scissors – ten (10) numbrs

4.2.8 Khurpi – twenty (20) numbers

4.2.9 Weeding khurpi – twenty (20) numbers

4.2.10 Spray machine of 10 / 15 Ltr capacity – two (2) numbers

4.2.11 Gardener watering cane – ten (10) numbers

4.2.12 Hedge cutter- 04 nos.

- 4.2.13 Trowel- 10 nos.
- 4.2.14 Fork- 05 nos.
- 4.2.15 Rake- 05 nos.
- 4.2.16 Pruning shears- 05 nos.
- 4.2.17 Sickle- 20 nos.
- 4.2.18 Chopper & cutlass- 20 nos.
- 4.2.19 Small hand tractor-01(on requirement basis)
- 4.2.20 Crowbar- 02 nos.
- 4.2.21 Rose cutter – 5 numbers
- 4.2.22 Watering pipe & pump as per requirement.

5.0 **SUPERVISION OF WORK AND REPORTING**

- 5.1 The Contractor's project-in-charge/supervisor will report to the representative of OTPC on daily basis and appraise of the manpower engagement status, work to be executed and quality of service being rendered.
- 5.2 Regular supervision to be carried out by the contractor's supervisor and monitored by Owner on daily basis. Contractor's representative have to be available during general shift hours and accessible on round the clock basis to receive information/instruction from the Owner. The contractor shall generate schedule and records of each activity / attendance log on daily basis for periodic supervision by OTPC.
- 5.3 The contractor shall submit daily progress report with actual work done progress with pictures at the end of the day by e-mail/hard copy.
- 5.4 The contractor should submit monthly progress report with actual pictures of the site latest by 7th days of succeeding month.

6.0 **DUTIES AND RESPONSIBILITY OF THE CONTRACTOR**

- 6.1 The Contractor shall not perform any work without Supervision & plant's work permit. The Contractor must provide competent person to supervise the jobs & hold work permit accordingly.
- 6.2 The Contractor shall engage Project Managers/Supervisors for overall supervision of the services as per the Contract.
- 6.3 The Project Manager and supervisor deployed by the Contractor should available for contact through his mobile as and when required.
- 6.4 The contractor shall maintain neatly, completely and legibly registers, records, reports and returns for inspection by various statutory authorities at short notice.
- 6.5 All necessary personal safety gear/equipment like safety shoes, gloves, helmet, gumboots, raincoat, umbrella etc, as considered adequate by the Owner, shall be made available by Contractor for use of their staff deployed in the Plant. The Contractor shall take adequate

steps to ensure proper use of equipment by their staff as applicable as per the nature of the work.

6.6 The contractor shall obtain Police Verification report on character and antecedents of its personnel and other details relating to age , educational qualification, name and permanent address to be provided under this contract along with their passport size photographs before engaging them for duty in Owner’s Premises.

6.7 The Contractor to ensure payment of Bonus to the workers once in a year before Durga Puja.

7.0 EXCLUSION FROM SCOPE OF SERVICES OF CONTRACTOR

7.1 Material storage area;

7.2 Water;

7.3 Electricity.

8.0 PENALTY PROVISIONS:

- a) Non - Compliance of work: In the event of failure of compliance of awarded work in stipulated time penalty will be imposed as per double of actual expenditure incurred in attending to the same by other Agency.
- b) Absenteeism: In case of absence of any staff, penalty will be imposed at double the rate of wages or salary for the day he remains absent.
- c) Penalty will be also be levied for the following, which is not exhaustive.

S.No	Description	Penalty
1	Damage to OTPC assets or equipment's etc., caused by the contractors staff	Cost of assets will be levied as penalty
2	Refusing or non-performance of the assigned work within the time limit set by OTPC Representative	Rs.150/- per occasion.
3	Misbehavior like quarreling, abusing etc., between the staff employed by the agency, causing disturbance in the premises:	Rs. 500/- per occasion with removal of staff.
4	Your staff not reporting in Uniform and I-card	Rs.100/- person per
5	Absence of any provisions for creating new Flower, Foliage, etc. as per the technical specifications shall attract	Rs. 1000/- per month
6	Machine not available for working consequently for 2 days.	Rs. 1000/- per week after first 2 days.
7	Failure to keep the Pots polished throughout the year	Rs. 100/- per day
8	Failure to use Pesticides, insecticide, Fertilizers etc. as per technical specifications.	Rs. 100/- per day per plant shall be levied till the period the same are replaced, at no extra cost.
9	Failure to arrange as per clause 6.0 of Technical specifications.	Rs. 500/- per day
10	Any staff deputed by the contractor found smoking and/or chewing tobacco in the OTPC Campus	Rs. 500/- per occasion with removal of staff.

11	In case the Agency does not fulfill the contractual obligation to use proper fertilizers, manure Pesticides, insecticide etc. at proper time and proper way, the same shall be done by the OTPC at the cost and risk of the Agency. The money will be recovered from the contractor through the RA monthly bills. This is to ensure that OTPC Campus is maintained properly.	Rs. 1000/- + recovery of cost incurred by OTPC
12	Failure to carry out any of the weekly services on time	Rs.500/- per occasion

- d) Penal deduction will also be made for any other poor services on the basis of assessment by OTPC representative and the defaulting staff posted by you should be replaced immediately. Repeated defaults in services shall result in higher penal deductions. Decision of OTPC with respect to extent of penalties being levied shall be final and binding on the contractor.

ANNEXURE-1
JUNGLE CUTTING PLAN

ANNEXURE-2

LAWN REVIVAL PLAN