

F. No.J-11011/28/2017-IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
IA Division

Indira Paryavaran Bhawan
Jor Bagh Road, N Delhi - 3
Dated 7th June, 2019

To,

M/s Solar Industries India Limited
Village Chakdoh, Tehsil Katol,
District **Nagpur** (Maharashtra)

Sub: Modernization and Expansion of explosives and defence products manufacturing plant by M/s Solar Industries India Limited at Village Chakdoh, Tehsil Katol, District Nagpur (Maharashtra) - Environmental Clearance - reg.

Ref: Online proposal No.IA/MH/IND2/61877/2017 dated 22nd October, 2018.

Sir,

This has reference to your online proposal no. IA/MH/IND2/61877/2017 dated 22nd October, 2018 for environmental clearance to the above project.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for grant of environmental clearance to the project for modernization and expansion of explosives and defence products manufacturing plant by M/s Solar Industries India Limited in an area of 1108474.47 sqm located at Village Chakdoh, Tehsil Katol, District Nagpur (Maharashtra).

3. The details of existing and proposed products are as under:

S. No.	Product	Existing Capacity (MTPA)	Proposed Capacity (MTPA)	Total Capacity (MTPA)
1.	Surry /Emulsion Explosives (Nitrate Mixture)	100000	56250	156250
2.	Bulk Emulsion (SME) (Nitrate Mixture)	NIL	125000	125000
3.	Sorbitan Monooleate (SMO) C&F	9162	NIL	9162
4.	Polyisobutylene succinic anhydride, (PIBSA) C & F	6000	NIL	6000
5.	Lead Azide (Captive)	9	Nil	9
6.	Lead Styphanate (Captive)	3	Nil	3
7.	ASA (Mixing and Drying) Captive	12	Nil	12
8.	Penta Erythritol Tetra Nitrate (PETN) C & F	2062.5	937.5	3000



9.	Cyclotetramethylene tetranitamine, (HMX) & HMX Compounded Products , C & F	62.5	237.5	300
10.	RDX & RDX Compounded Products	125	2875	3000
11.	Trinitrotoluene (TNT)	625	2375	3000
12.	Pentolite Cast Booster	1875	1125	3000
13.	Detonating Fuse	75 Million Meters	75 Million Meters	150 Million Meters

4. Existing land area is 1108474.47 sqm. No additional land shall be required for the proposed expansion. Industry has already developed greenbelt in an area of 33% i.e. 365795.35 sqm out of total project area. The estimated project cost is Rs.184.01 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 7.0114915 Crores and the recurring cost (O&M) will be about Rs. 3.6168353 crores per annum. Total employment will be 1710 persons as direct & 100 persons indirect after expansion.

5. There are no National Parks, Wildlife Sanctuaries, Biosphere Reserves, Tiger/Elephant Reserves, Wildlife Corridors, Rivers etc within 10 km. Jam River flows at a distance of 18 km in West-North West.

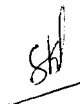
6. Total fresh water requirement is estimated to be 471 cum/day. The required permission for withdrawal of 430 cum/day has been obtained from the Central Ground Water Authority vide their letter dated 15th May, 2018. To meet the incremental water demand, proposal has been submitted to the concerned regulatory authority.

Total effluent generated from different industrial operations is estimated to be 259 cum/day, which will be treated in the ETP, and 227 cum/day of treated water will be reused in the process/gardening. There will be no discharge of treated/untreated waste water from the unit, and thus ensuring Zero Liquid Discharge.

Existing unit has 11 TPH (2 TPH, 3 TPH & 6 TPH) coal / agro waste briquette fired boiler and Thermopac boiler of 600000 k Cal/hr capacity. Additionally, 12 TPH coal fired boiler will be installed. Multi cyclone separator/ bag filter with a stack of height of 30 m (existing boilers) and 33.5 m (proposed boilers) will be installed to control the particulate emissions within the statutory limit of 115 mg/Nm³.

7. The project/activities are covered under category A of item 5(f) 'Synthetic organic chemicals industry' and category B of item 6(b) 'Isolated storage & handling of hazardous chemicals' of the schedule to the EIA Notification, 2006, and requires appraisal/approval at central level in the Ministry.

8. The ToR for the project was granted on 7th July, 2017. Public hearing was conducted by the Maharashtra State Pollution Control Board on 28th December 2017.



9. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its meetings held on 19-20 December, 2018 and 26-28 February, 2019, wherein the project proponent and their accredited consultant presented the EIA/EMP report. The Committee found the EIA/EMP report complying with the ToR and recommended the project for grant of environmental clearance.

10. Based on the proposal submitted by the project proponent and recommendations of the EAC, Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to the project for **modernization and expansion of explosives and defence products manufacturing plant** by M/s Solar Industries India Limited located at Village Chakdoh, Tehsil Katol, District Nagpur (Maharashtra), under the provisions of the EIA Notification, 2006, and the amendments therein, subject to compliance of the terms and conditions as under:-

(a) Necessary permission as mandated under the Water (Prevention and Control of Pollution) Act, 1974 and the Air (Prevention and Control of Pollution) Act, 1981, as applicable from time to time, shall be obtained from the State Pollution Control Board.

(b) Necessary permission from the Ministry of Defence and/or other statutory authorities shall be obtained for manufacturing products of their use.

(c) Storage of different raw materials and/or the finished products shall be as decided by the PESO and the permission granted in this regard.

(d) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.

(e) Necessary authorization required under the Hazardous and Other Wastes (Management and Trans-Boundary Movement) Rules, 2016 and the Solid Waste Management Rules, 2016 shall be obtained. The provisions contained therein for handling, generation, collection, storage, packaging, transportation, use, treatment, processing, recycling, recovery, pre-processing, utilization, offering for sale, transfer or disposal of hazardous waste, shall be strictly adhered to.

(f) No raw material/solvent prohibited by the concerned regulatory authorities from time to time, shall be used for production of pesticides.

(g) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.

(h) Coal with Sulphur content less than 0.5% shall be used as fuel in the boiler, along with bio-fuel/briquettes/bagasse/agro waste.

(i) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.

(j) Solvent management shall be carried out as follows:

(i) Reactor shall be connected to chilled brine condenser system.

(ii) Reactor and solvent handling pump shall have mechanical seals to prevent leakages.

(iii) The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.



- (iv) Solvents shall be stored in a separate space specified with all safety measures.
 - (v) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - (vi) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
 - (vii) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- (k) Total fresh water requirement shall not exceed 471 cum/day, out of which 430 cum/day shall be met from ground water, and the remaining from surface water resource. Prior permission in this regard shall be obtained from the concerned regulatory authority/CGWA.
- (l) Process effluent/any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
- (m) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer through pumps.
- (n) Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.
- (o) The project proponent shall strictly comply with the Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989, as amended from time to time. Accordingly, the units shall prepare and update safety report, on-site emergency plan, supply of information relating to the industrial activity under his control to the District Emergency Authority for preparation of offsite Emergency plan, etc. Schedule-5 of the said Rules prescribes the list of Authorities and its corresponding duties. The transportation of all hazardous chemicals shall be as per the Motor Vehicle Act, 1989.
- (p) Fly ash should be stored separately as per CPCB guidelines so that it may not adversely affect the air quality. Direct exposure of workers to fly ash and dust shall be avoided.
- (q) The company shall undertake waste minimization measures as below:-
 - (i) Metering and control of quantities of active ingredients to minimize waste.
 - (ii) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
 - (iii) Use of automated filling to minimize spillage.
 - (iv) Use of Close Feed system into batch reactors.
 - (v) Venting equipment through vapour recovery system.
 - (vi) Use of high pressure hoses for equipment clearing to reduce wastewater generation.
- (r) The green belt of at least 5-10 m width shall be developed in nearly 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.
- (s) All the commitments made to the public during public hearing/consultation shall be satisfactorily implemented.
- (t) As committed by the project proponent monitoring stations shall be installed in nearby villages to monitor the vibrations due to blasting.

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- (u) As committed by the project proponent ground vibrations shall be reduced to NIL.
- (v) At least 1.5% of the total project cost shall be allocated for Corporate Environment Responsibility (CER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.
- (w) For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
- (x) The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Fire-fighting system shall be as per the norms.
- (y) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- (z) Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises.
- (aa) Process safety and risk assessment studies shall be further carried out using advanced models, and the mitigating measures shall be undertaken accordingly.
- (bb) The unit shall comply with the provisions of the Public Liability Insurance Act, 1991 and get the insurance policy under the said Act to ensure immediate relief to the persons affected by accident occurring while handling any hazardous substance.

10.1 The grant of environmental clearance is further subject to compliance of other generic conditions as under:-

- (i) The project authorities must strictly adhere to the stipulations made by the state Pollution Control Board (SPCB), State Government and/ or any other statutory authority.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry. In case of deviations or alterations in the project proposal from those submitted to this Ministry, a fresh reference shall be made to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
- (iii) The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.
- (iv) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.
- (v) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards



prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

(vi) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.

(vii) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.

(viii) The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing shall be implemented.

(ix) The company shall undertake all measures for improving socio-economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villagers, administration and other stake holders. Also eco-developmental measures shall be undertaken for overall improvement of the environment.

(x) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.

(xi) The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.

(xii) A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zila Parisad/ Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.

(xiii) The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

(xiv) The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional offices of MoEF&CC by e-mail.

(xv) The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at <http://moef.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the



vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.

11. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

12. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991, read with subsequent amendments therein.

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7/6/2019

(S. K. Srivastava)
Scientist E

Copy to:-

1. The Principal Secretary, Environment Department, Government of Maharashtra, 15th Floor, New Administrative Building, Mantralaya, **Mumbai** (Maharashtra) – 32
2. The Additional Principal Chief Conservator of Forests, Regional Office (WCZ), Ministry of Environment, Forest and Climate Change, **Nagpur** (Maharashtra)
3. The Member Secretary, Central Pollution Control Board Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, **Delhi** - 32
4. The Member Secretary, Maharashtra Pollution Control Board, Kalpataru Point, 3rd and 4th floor, Opp. Cine Planet, Sion Circle, **Mumbai** - 22
5. Monitoring Cell, Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, **New Delhi** - 3
6. Guard File/Monitoring File/Record File

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7/6/2019

(S. K. Srivastava)
Scientist E