The closed unit of Talcher Fertilizer complex of the Fertilizer Corporation of India Limited (FCIL) was based on the gasification of coal. Since 2002 FCIL Talcher is totally closed and there is no activity related to production of urea. Several attempts were made to revive Talcher fertilizer unit but all in vain.

A proposal was put-up before Cabinet Committee of Economic Affairs (CCEA) for setting up a coal based fertilizer and chemical complex within plant premises of closed unit of FCIL Talcher. The CCEA also approved formation of Joint Venture Consortium to set up proposed fertilizer and chemical complex. As per the approval of CCEA, a Joint venture consortium was proposed to be incorporated jointly by M/s Rashtriya Chemicals & Fertilizers Ltd (RCF), M/s Coal India Ltd. (CIL), GAIL (India) Limited & Fertilizer Corporation of India Limited (FCIL) with RCF as nodal agency and coordinator of the Joint venture.

Formation of JVC was already in the process after approval of CCEA and after completing all the formalities, a Joint venture consortium in the name of Talcher Fertilizers Limited (TFL) has taken place in 2015. TFL is a Public Company incorporated on 13 November 2015. It is classified as Non-Govt. Company and is registered at Registrar of Companies, Cuttack.

Rashtriya Chemicals & Fertilizers Ltd. (RCF) & Fertilizer Corporation of India Ltd (FCIL) are Public Sector Units under the Ministry of Chemicals & Fertilizers. Coal India Ltd (CIL) is public sector undertaking under the Ministry of Coal, Govt. of India and GAIL (India) Limited is the public sector undertaking under the Ministry of Petroleum & Natural Gas, Govt. of India.

Considering the increasing demand for fertilizers in the country, TFL intends for setting up coal based fertilizer project for production of 2200 MTPD Ammonia and 3850 MTPD Urea along with necessary offsite and utility facilities, within the premises of FCIL at Talcher Unit, Angul district, in the State of Odisha, India.

As per EIA Notification, published in Gazette of India, Extraordinary Part-II, Section-3, sub-section (ii) of Ministry of Environment & Forest dated 14.09.2006, the proposed project falls in Activity 5(a), Category-A of “List of Projects or Activities Requiring Prior Environmental Clearance” and shall require prior Environmental Clearance from Ministry of Environment and Forests & Climate Change (MoEF&CC) on the recommendations of an Expert Appraisal Committee (EAC).

M/s TFL has appointed Projects & Development India Limited (PDIL), a Government of India Undertaking and a NABET accredited EIA consultant organization for all the jobs related to EIA / RA for proposed Coal based Fertilizer project.

SITE ANALYSIS

The proposed fertilizer and chemical complex will be set up within the existing land of FCIL- Talcher unit. Total Area of Talcher Fertilizer complex is 904.53 Acre. Out of this total area, 444.6 acres of land
is available for fertilizer complex and remaining area is for residential colony. The location of the proposed project falls around Geo-Coordinates 20°54′47.40″N latitude and 85°09′47.22″E longitude at an elevation of 98m above MSL.

Talcher fertilizer complex is located at Vikrampur in Angul district of Odisha on the Cuttack - Sambalpur National Highway NH-42. NH-42 is passing at distance of about 8 km from the site. The nearest railway station is Talcher at about 7 km and nearest airport Bhubaneswar is at 150 km and nearest port is Paradeep, 200 km by rail/road. The project site is well connected with Cuttack and the capital city Bhubaneshwar by rail and road. River Brahmini, a perennial river is at a distance of about 8 km from site to meet the requirement of water for the proposed project. Power may also be drawn from the substation of OSEB.

PROJECT DESCRIPTION

The Gasification unit consists of Gasification Island (Gasifier, Coal Milling & Drying), Gas Cooling, Acid Gas removal unit, Cryogenic Purification unit, Sulphur Recovery, CO-Shift & Air separation. They collectively allow for production of raw gas from coal and separation, purification, treatment & disposal of ash.

Ammonia Plant

Ammonia Plant will be laid out in single stream having a capacity of 2200 MTPD. The process technology for Ammonia plant shall be obtained from a reputed Ammonia Licenser. The main process sections shall be Synthesis gas compression, Ammonia Synthesis, refrigeration and storage.

Urea Plant

Urea Plant will be laid out in one stream having nameplate capacity of 3850 MTPD prilled neem coated urea. High pressure steam imported from captive power Plant will be used to drive the CO₂ compressor with extraction arrangement for meeting the process requirements.

Power Generation

The power requirement for proposed project would be met by installing two nos. of STG sets of 35 MW each. During normal operation of the complex, both the generators will be running simultaneously at appropriate load.

NEED OF THE PROJECT

Urea as a major source of Nitrogen continues to dominate the scene of Nitrogenous Fertilizers in the country.
Production and Consumption Trends

Though the level of fertilizer consumption in the country has all along been very low, the indigenous production of urea in India has always been lagging behind the consumption requirement except for the year 2000-01.

Available Options

The apparent choice to fulfill this demand supply gap may be through increase in indigenous capacity by expansion/grass-root plants, by joint venture and import of urea.

Expansion / Grass root plants

Around 1.27 million tonnes of additional capacity of urea through green field project of Matix Fertilizers & Chemicals at Panagarh (West Bengal) which is under implementation and commercial production of the plants is likely to start in FY 2017-18.

Over the period 2019-2025, seven more projects are expected to start which are presently under active consideration by the management of the companies / the Govt. of India. These projects are Ramagundam Fertilizers & Chemicals at Ramagundam (Telangana), Chambal Fertilizers & Chemicals at Gadepan (Rajasthan), Rashtriya Chemicals & Fertilizers at Thal (Maharashtra) and FCIL at Sindri (Jharkhand) / FCIL (Gorakhpur) / HFCL (Barauni) / BVFCL (Namrup).

ENVIRONMENTAL CONSIDERATION

Though Talcher industrial area falls in the list of 88 industrial clusters identified for preparation of Comprehensive Environmental Pollution Index (CEPI). Necessary Management Plan has been prepared and being implemented with positive impact and it has been found that there is considerable reduction in CEPI index. It is also worth mentioning that the moratorium has been lifted in 2013. The proposed fertilizer plants are a new generation plant with best available technology and which has built-in pollution abatement system. The plants are based on optimum utilization of energy which will reduce pollution load.

EMPLOYMENT GENERATION

It is envisaged that the proposed project would generate sufficient employment opportunity during construction phase as well as operation basis. For carrying out construction related activities, it is envisaged to engage skilled, semi-skilled and unskilled workers from local area to the maximum extent.

Manpower Requirement

Based on the organizational pattern envisaged for, the total number of operating personnel required to operate plant and storage facilities in three shifts a day at full rated capacity and other auxiliary / statutory facilities works out to be 550 persons.
REHABILITATION & RESETTLEMENT PLAN

Old & closed FCIL Talcher fertilizer complex is spread over an area of 904.53 acres of land. The total area of land is under the administrative possession of FCIL Talcher. The proposed fertilizer project shall be implemented within plant premises of existing Talcher Fertilizer Complex. Hence, any planning with respect to rehabilitation & resettlement is not applicable.

PROJECT SCHEDULE & PROJECT FINANCIALS

Project Schedule

The likely date of start of construction shall commence after getting Environmental Clearance (EC) from MoEF&CC. The project is scheduled to be completed within 42 months after financial closure.

Cost Estimates

The Project Capital Cost of the proposed project 2200 MTPD ammonia and 3850 MTPD neem coated urea along with associated offsite & utility facilities, as per the scope is estimated at Rs. 788700 Lakh.

Project Cost

The total cost of the above proposed project has been estimated as Rs. 788700 Lacs and it is expected to be completed within 42 months after environmental clearance.

ANALYSIS OF PROPOSAL

The final analysis of proposed may be briefed as under:

a) The revival of FCIL Talcher will narrow the gap between demand and supply of Urea in central and eastern zone of India, especially in Bhubaneshwar area.

b) Industrial cluster of talcher has been identified as critically polluted zone but implementation of Management Plan prepared by CPCB/OSPCB has resulted positive impact with reduction in CEPI index. As a result the moratorium on Talcher Industrial Area has been lifted in 2013. Lifting of moratorium has enhanced the potential of further industrial development within Talcher Industrial Area.

c) The implementation of recently developed Best Available Technology (BAT) which is a reliable and reproducible in different environment throughout the globe, will save energy consumption for production of ammonia / neem coated urea.

d) The new technology will reduce dependency of import of fertilizer in the country thereby resulting in saving of foreign exchange.

e) The proposed project is a part of “India Low Carbon Strategy” and INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC) under UNEPCCC Protocol.

f) The policy for revival of FCIL Talcher in the name of Talcher Fertilizers Limited (TFL) is the result of restless efforts of GOI to bridge up the gap between demand and supply of fertilizer in the
country. Several policies framed and implemented from time to time under strict close observation of DoF and Niti Ayog and PMO.

g) The proposed project is a part of “India Low Carbon Strategy” and INTENDED NATIONALLY DETERMINED CONTRIBUTION (INDC) under UNEPCCC Protocol.

h) The policy for revival of FCIL Talcher in the name of Talcher Fertilizers Limited (TFL) is the result of restless efforts of GOI to bridge up the gap between demand and supply of fertilizer in the country. Several policies framed and implemented from time to time under strict close observation of DoF and Niti Ayog and PMO.

**Project Proposal**

The project proposal is limited to production of coal based 2200 MTPD of Ammonia and 3850 MTPD of Urea project based on recent best available technology comprising following main products and their value-added derivatives. The important facilities are presented below in Table-E.1:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the Facility</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.</td>
<td>Ammonia Synthesis gas for production of Ammonia from Coal Gasification</td>
<td>243000Nm³/hr</td>
</tr>
<tr>
<td>02.</td>
<td>Carbon Dioxide for production of Urea from Coal Gasification unit</td>
<td>60480 Nm³/hr</td>
</tr>
<tr>
<td>03.</td>
<td>Ammonia</td>
<td>2200 MTPD</td>
</tr>
<tr>
<td>04.</td>
<td>Urea (Neem Coated)</td>
<td>3850 MTPD</td>
</tr>
</tbody>
</table>

The salient feature of the project is to utilize local natural resource (coal) and to reduce the stress on import of energy resources (NG). The project shall also utilize some of the existing facilities, which are in good condition or which can be made useable after refurbishment.

**Justification of Proposed Project**

- India is agro-based country and Urea as fertilizer is the prime need of agriculture.
- To bridge up the gap between demand and supply for Urea in the country.
- Better utilisation of local energy resource (coal) for production of ammonia and urea.
- Reduction in stress of import of energy resource (NG).
- A check on the monopoly of foreign traders.
- Ease in availability of fertilizers amongst farmers.
- FCIL, Talcher which is the site for the proposed project is nearer to the source of Coal.
- MCL, which is subsidiary of CIL, is having a number of coal blocks in Talcher Coal field area.
- Proper utilisation of available land & infrastructure in existing closed Talcher fertilizer complex and raw material.
- Lower capital cost compared to a grass root project resulting in lower cost of production due to easy available of land and water.
Project Benefits
The proposed project shall yield following benefits:

- A step towards food security of the country and timely availability of fertilizer to farmers in the command area.
- Lessen dependency on import of Urea.
- Effective utilization of indigenous engineering capability, manufacturing and infrastructure facilities.
- Production of urea due to ready availability of off-site facilities, infrastructure, economy of scale (due to higher capacity) and reduced energy consumption.
- Saving of precious foreign exchange.
- Use of updated technology by replacing obsolete.

Sources of Raw Materials & Utilities
The project would require approximately 249.6 MTPH ROM coal and 38.5 MTPH Pet Coke which will be transported to the site by CIL.

Power requirement for the proposed facilities will be met by installing 2 nos. of (Steam Turbine Generator) STG Sets of 35 MW each (2x35MW). Water requirement for the proposed facilities is 1437 m$^3$/hr. or 34,488 m$^3$/day. FCIL had a long term agreement with the State Government for the supply of 64,800 m$^3$/day of the water from Brahmini River. All the infrastructure facilities i.e. Intake Well, Pump House and 900 mm dia. 10km long U/G pipeline network are available and

Conclusion
The proposal of revival of ammonia/urea plant at FCIL Talcher may be seen as a corrective step towards reducing the growing gaps between demand and supply for fertilizer urea in eastern zone and to minimize import dependency. Indirectly, by producing the fertilizer within the consumption region, it will lessen the pressure on the long distance transport network as well as the transport cost involved in such long distance movement between production units and the consuming points. The proposed plants at FCIL Talcher shall be implemented based on state of the art technologies.