

ABOUT IFFCO

Indian Farmers Fertilizer Cooperative Limited (IFFCO) is a multi-state cooperative society engaged in production and distribution of chemical fertilizers. Registered on 3.11.1967, the Society has a membership of about 39564 cooperative societies and 158 Farmers Service Centres through which its products are distributed in over 29 States / Union Territories in the Country. IFFCO has achieved impregnable status of a Global fertiliser major, having four operating units at Kalol and Kandla in Gujarat which commenced commercial production in 1975 for production of Urea and Complex Phosphatic Fertiliser (NPK/DAP) respectively. Two other units are located at Phulphur and Aonla in Uttar Pradesh which started commercial production in 1981 & 1988 respectively. Fifth Unit located at Paradeep in Jagatsinghpur

With the expansion of its units, IFFCO has emerged as the largest producer of fertiliser in the country, having an annual capacity of producing 42.422 Lakh tonnes of Urea and 43.354 Lakh tonnes of NPK/DAP fertiliser, IFFCO has contributed 20% to the total Nitrogen and 25% to the total P₂O₅ produced in the country during 2007-08.

IFFCO's Kandla Plant

IFFCO's Kandla plant is located on the western bank of Kandla creek adjacent to Kandla Port Trust oil Jetties.

The plant produces NPK/DAP complex phosphatic fertilizers of various grades, namely NPK grades 10:26:26, 12:32:16 & DAP 18:46:00 in terms of N:P₂O₅:K₂O.

The plant, originally consisting of only 2 streams A&B and related facilities was designed & erected by M/s Dorr Oliver Inc. USA at a cost of Rs. 30 crores with an annual licensed capacity of 1,27,000 MT P₂O₅. The plant was commissioned on 28th Nov. 1974 and commercial production declared on 1st Jan, 1975.

With increased demand for complex fertilizers, the capacity was doubled by addition of two more streams C & D designed & erected by HDO at a cost of Rs. 28.60 crores. Licensed capacity was increased from 1,27,000 MT P₂O₅ per annum to 2,60,000 MT P₂O₅ per annum. The expanded unit was commissioned on 4th June 1981 and the commercial production was started from 6th Sept. 1981. Subsequently due to introduction of production of DAP grade, the total capacity increased to 3,09,000 MT per annum of P₂O₅.

IFFCO went in for expansion of their unit at Kandla in 1996-97. Kandla phase-II NPK/DAP project conceptualized the setting up of two additional E & F streams for manufacture of the same grades of NPK/DAP fertilizers with an annual production capacity of 2,10,700 MTPA of P₂O₅ thus increasing the total capacity from 3,09,000 MTPA of P₂O₅ to 5,19,700 MTPA of P₂O₅. The actual cost of the project was Rs. 205.30 crores against a budgeted cost of Rs. 212.20 crores.

The main consultant for the NPK/DAP plant was M/s Hindustan Dorr Oliver, Mumbai with the pipe reactor technology obtained from process licensor M/s Grande paroisse, France. The construction of E&F streams was completed 77 days ahead of schedule. The E & F streams were commissioned on 10th June 1999 & 9th July 1999 respectively and the commercial production started from 5th August '1999.

Subsequently after streamlining of the production, the expanded plant started yielding full production capacity due to which the annual capacity has been upgraded to 910004 MT P₂O₅ output.

Energy Consumption :

IFFCO Kandla unit is highly energy conscious. Due to continuous and consistent efforts with different approach towards the energy conservation programme.

Specific energy consumption in Million Kcal/tonne of P₂O₅

Year	Million Kcal / tonne of P ₂ O ₅
2005-06	0.222167
2006-07	0.223934
2007-08	0.274736

During the year 2005-2006 IFFCO Kandla unit has achieved a lowest ever specific energy consumption of 0.222167 **Million Kcal** /MT of P₂O₅ output. Energy consumption per MT of P₂O₅ nutrient has been going down steadily. This has become possible by adopting cost effective measures that save electricity energy. Idle running of equipment is monitored closely and greatly minimized. Studies are made and implementation of the recommendations have led to cost effective plant lighting. Ensuring motor rating is appropriate, not overrated. The reaction heat of chemical is utilized for drying of fertiliser thereby reducing fuel oil burnt for generation of hot air to dry the fertiliser. Overall reduction in the consumption of steam too has been achieved. Boiler efficiency is monitored closely, oil consumption pattern, steam generation and consumption and flue gas temperature is monitored to arrive at an optimum operating efficiency of the boiler. The old boilers are seldom used while in its place a new boiler has been installed that gives improved heat efficiency having economizer and advanced automation for controlling steam pressure, oil & air consumption ratio, thereby giving better overall operating efficiency. Steam leakage are immediately plugged, condition of steam traps is monitored closely and repairs if any carried out immediately.

Environment and Safety :

- Adopting efficient technologies for process plant and process machinery so as to reduce emissions and minimize wastage.
- Changes have been carried out in the material of construction of scrubber vessels & design spray nozzles for improving the scrubbing efficiency and thereby reduce the emission of pollutants from stack.
- Improving the consumption efficiency of raw materials to conserve resources.
- Instituting competition among sections in Good Housekeeping so that the area remains clean and any waste is properly recovered and reused.
- **Water Conservation :** The Kutch district where Kandla plant is located suffers from perennial water shortage. Hence IFFCO takes all measures to reduce the consumption of water, it also undertakes various projects to ease the problem of scarce water availability. In order to reduce the water consumption and yet to maintain the greenery at the plant site and township, schemes for reuse of treated domestic sewage water have been envisaged and implemented successfully.
- A rain water recharging well has been built at the township with a storage pond for conserving rain water which have been effective in reducing the salinity in the underground water table in the township and its neighboring areas.
- Check dams are constructed to avoid the flow of rain water to the sea in this region of scarce water. The purpose of the check dam is to reduce the salinity of the ground water, improve the ground water table, make water available to the villagers even after the monsoon season is over.
- Green development is also a planned exercise. The forest department is consulted for growing trees, which are compatible with the weather and soil conditions. Funds are earmarked for this purpose.

- A task force for energy audit monitors and reports energy consumption at various consumption points. Energy conservation projects are initiated and implemented as required in a time bound frame.

DETAILS OF CONFIRMATION TO ISO - 14001 :

The Company has obtained ISO - 14001 Certification for its Environmental Management System from M/s Bureau Veritas Quality International w.e.f. November 2000 for the operational scope "Manufacture of DAP and NPK Fertilisers". The company is in the process of applying for re-certification. The salient features of the Environmental Management System adopted at the plant is given below :

We are committed to carry out the business in an environmentally responsible manner and we affirm that we would strive to improve upon our environmental performance guided by the following principles :

- To pursue continual improvement through appropriate environmental management system implementation.
- To comply with all applicable environmental legislation and endeavor to improve upon them in a prudent manner with good business sense.
- To promote sustainable development through better operating practices, optimum utilization of resources and waste minimization.
- To increase environmental management system awareness among all workers for achieving the company's environmental objectives and targets.

Energy Conservation Commitment, Policy and Setup :

Realizing the importance of energy conservation IFFCO management is continuously putting its efforts to optimize the energy utilization. To augment their efforts, the Kandla unit has a task force committee constituting members from all the functional areas viz. Operation, maintenance, materials, finance and like. The main functions of the committee are :

- a. To conduct preliminary audit to identify energy consumption at various sub-process levels and compare them with design norms. On the basis of this, priorities for implementing energy savings measures are set.
- b. To conduct detailed diagnostic audit based on preliminary audit reports. For this, the task force evaluates the detailed techno-commercial options available to implement energy saving measures in the identified areas, and on the basis of this, prepares a detailed plan for implementing energy savings measures.
- c. To set time bound targets for achieving energy savings and to monitor their progress periodically.

Safety Policy and System :

- IFFCO's corporate has framed a 'Safety, Health and Environment Policy' which covers all those who may be affected by its operation. It starts with planning and continues through design, purchase, stores, fabrication, construction, installation, operation and maintenance phases. The key phrase is "In all business decisions due care shall be paid to minimize both consumption of resources and generation of wastes. All practical steps shall be taken to assess risk and safety status periodically for awareness amongst employees and public at large by using expert knowledge of trained and educated personnel". IFFCO Kandla has developed the following systems for its safety, health and environment management based on the policy. A full fledged central safety committee chaired by the Executive Director and comprising of all the sectional and departmental heads review the safety performances, initiate action plans, fixes task.
- Training in environment, safety and fire fighting is imparted by conducting one course every month for a group of 15 to 20 employees. Both outside experts and in-house faculty are invited for the lecture.

- A comprehensive disaster management plan has been prepared. Mock drills are conducted to review and upgrade the plan regularly.
- A structural survey committee does a field survey and assessment of all civil and mechanical structures and recommends repairs/replacement accordingly. The same is reviewed periodically and action is initiated to implement the recommendations at the earliest.