



Our Care For The Environment

“ Resource conservation is a key focus for Tata Chemicals. The identified Material issues addressed here are on waste management, energy & water conservation and on managing the climate change concerns.”



Integrating environmental sustainability principles in overall operations and planning is the philosophy followed by us. We try and ensure that all employees and associates understand their responsibilities towards protection of environment and sustainable business with appropriate training and support. Our corporate strategy has considered Climate Change as one of the major environmental challenge and has established a corporate strategy cell on climate change to respond to the challenge and to develop action for a low carbon economy.

We are signatory to “Responsible Care” and have adopted environment sustainability standards of British Safety Council in our journey towards environmental excellence and sustainability. ISO 14001 : 2004 Environment Management System framework supports us towards this. Our Babrala facility has been certified to Responsible Care Management System RC14001 by American Chemical Council. Tata Chemicals has been conferred the use of Responsible Care logo by Indian Chemicals Council based on the assessment of practices adopted .

RESOURCE CONSERVATION

With the growing industrialization across the world, demand of industrial resources is also growing and an increase in extraction of materials and other natural resources leading to a demand supply gap. In all plant operations feed and fuel flexibility has been incorporated over the years for resource utilization and effective management. The focus on raw material intensity reduction,

energy efficiency and recycle and reuse continues. The Halida and Mithapur plant have successfully developed reuse/recycle of solid wastes from its operations. With use of innovative seawater desalination technologies at Mithapur the use of ground water has been completely stopped. The Babrala plant has achieved benchmark levels in specific water consumption in the industry This results in the need to improve efficiencies in operations even more necessary. At Tata Chemicals, resource conservation and efficiency improvements is the philosophy in operations and strategy to optimize the consumption and minimize the losses of raw materials and other resources.

We are one of the major manufacturers of inorganic chemicals like soda ash, food additives like edible salts, soda bi-carb, nitrogenous fertilizers like urea, Phosphatic fertilizers & chemicals like DAP, various grades of NPK, SSP & STPP in India. The main raw materials used are Limestone, Natural gas, Naphtha, Ammonia, Phosphoric acid, Potassium chloride, Soda ash, Rock phosphate and Sulphur for the manufacture of our wide product range. In addition, packaging materials like HDPE bags and various lubricating oils are also being used.

All manufacturing processes operate with the basic philosophy of resource optimization, use of alternative sources and maximization of “recycle and reuse” by using innovative techniques.

All manufacturing processes are part of highly integrated inorganic chemical complexes, which facilitates conservation as a main

environment management tool. In this context, we have initiated various programs that include periodical technical audits (operational efficiency, Energy, Water); initiatives like ‘Manthan’, ‘Udaan’, Benchmarking, Six Sigma, and Suggestion schemes etc, which focus on enhancing technical efficiencies, resource optimization and operational improvements.

This has resulted in the maximizing recycling of materials such as limestone, ESF cake, NFC, etc.

Along with material conservation, energy and water conservation are also of prime importance for future sustainability.

Energy

Energy sources for various manufacturing processes include pet coke, coal, natural gas, naphtha, furnace oil, diesel, coking coal and grid power.

The total energy saving of 748 TJ has been achieved in the last five years by conservation, process modifications; retrofitting of equipments, waste heat recovery (Fig. En-02). Even though the production has been hampered since 2007-08 due to various factors like heavy rainfall in Gujarat and raw material unavailability at Haldia, global economic downturn, the consumption in specific energy has reduced by about 1% in the last five years from 2005-06 to 2009-10. (Fig. En-01)

Manufacturing of Chemicals & Fertilizers are energy intensive processes and primarily depend on the non-renewable energy sources.

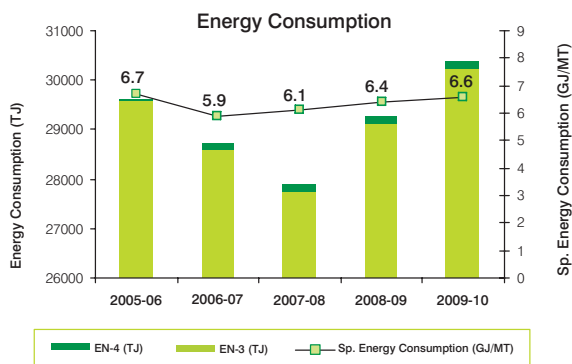


Fig. En-01

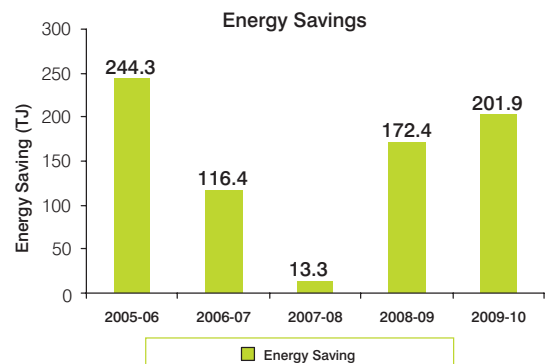


Fig. En-02

But we have initialized use of renewable by utilizing solar energy & wind power at Mithapur, solar heaters for domestic water heating at Babrala & biomass based gassifier at Haldia resulted in sourcing of 11.5 TJ of energy from renewable sources in last 3-years.

Our fertilizer plant at Babrala is one of the most energy efficient urea plants. We have used alternative materials in order to conserve energy inclusive of maximization of use of pet coke in the boilers and anthracite coal in soda ash lime kiln at Mithapur. In the last five years, Haldia site has achieved 45.0% of reductions in the specific energy consumptions by implementing Energy Conservation initiatives like installations of VFDs, energy efficient plant illumination & utilization of waste heat steam in plant processes & in turbo generator for electricity.

Water

Water conservation, reuse & recycling has been the key to Tata Chemicals survival over the years. Manufacturing processes depend on Arabian Sea Water, ground water (wells), surface water (rain fed lakes) and PHE supply water (Fig. En-03). All manufacturing processes are part of highly integrated inorganic chemical complexes, which facilitates conservation as a main environment management tool. (Fig. En-04)

Mithapur has achieved 95% reduction in dependence on ground water in the last 5 years by adopting various in-house water conservation measures as well as management of the rain-fed lake. Though urea-manufacturing process wholly depends on groundwater, specific water consumption

here is a benchmark amongst the Nitrogenous Fertilizers' manufacturers. Periodic water level and quality measurements are the part of Quality Assurance System of Babrala. Babrala and Haldia Fertilizer sections are zero discharge plants and mainly depend on recycled water, while chemical plants are major consumers of raw water. In the area of waste water recycling and reuse, we have pioneered recycling of waters by integrating various manufacturing operations; recycle of condensate as boiler feed water at Mithapur, using treated effluent containing nutrients for horticulture at Babrala and the use of regeneration streams in scrubbers at Haldia. About 48% of water is recycled back into the system.

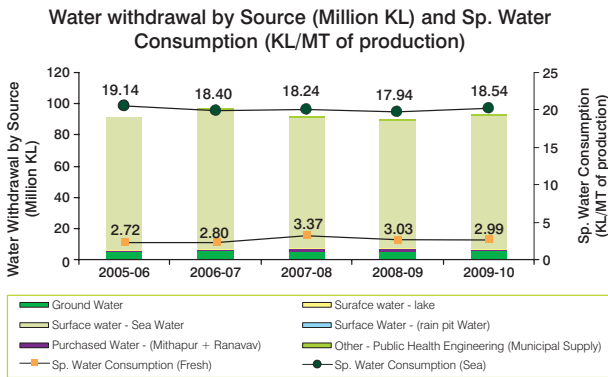


Fig. En-03

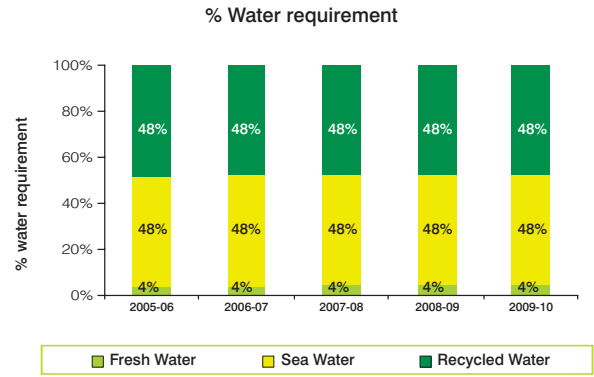


Fig. En-04

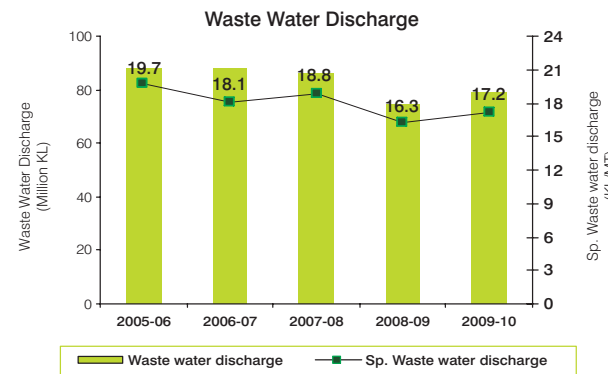


Fig. En-05

Waste management

Waste management has become the part of plant operation and disposal of various types of wastes have been done as per the guidelines documented in ISO system and as per prevailing waste management rules. We manage our hazardous wastes by proper collection, handling, storage and disposal to authorized TSDF (Treatment, Storage & Disposal Facility) or registered recyclers to ensure they are disposed off safely.

The Company has carried out comprehensive environmental impact assessment studies and aspect & impact assessment of all activities. It covers the possible impacts of major activities starting from procurement of raw material, fuel and water to the final dispatch of product till the factory gate.

Adequate financial resources were provided for treatment and disposal of wastes, treatment for emissions, emission certificates and insurance costs etc. A cumulative amount of Rs. 275.1 million and Rs. 418.9 million during the year 2008-09 and 2009-10 respectively, across the three locations was spent towards environmental protection. (EN – 30 of Table ENV 1)

Conservation of Biodiversity

Tata Chemicals owns about 318 sq. km area and out of which 0.39 sq. km area at Mithapur has been categorized under Marine National Park (MNP) and forests. In Mithapur plant, brine is transferred through pipeline, which passes through MNP, and treated effluent is discharged into sea through an open channel. Industry has been conducting EIA studies to assess the impacts of its operation on nearby biodiversity and surrounding environment. The findings of study illustrates that no significant impact has been observed on the native flora and fauna.

While operating in harsh ecological conditions/semi-arid conditions at Mithapur site, highly alkaline soil conditions at

Babrara site, TCL has restored the ecological balance in the surroundings habitats by converting waste lands into greenbelt. Our commitment towards continual improvement is triggering new programs such as bio-diversity reserves, grassland development, Mangrove conservation and regeneration, increasing waste utilization and greening of our products.

