Deepak Fertilisers introduces world-class emission-control technologies, and attains significant reduction surpassing regulatory requirements.

It goes without saying that the fertilizer industry has been a critical pillar of support for Indian agriculture, a mainstay of nearly 55% of India's population. Fertilizer manufacturers in India play a vital role in the nation's agriculture landscape, supporting farmers by providing the necessary nutrient solutions for crop growth. Yet, they are constantly faced with the dilemma of striving to strike a balance between producing quality fertilizers and ensuring emissions remain under control. While fertilizer manufacturing involves the consumption of liquid ammonia, simultaneously, there are ammonia emissions from the stacks as a result of manufacturing process.. This dynamic necessitates fertilizer manufacturers to consistently and actively work hard to reduce emissions from their production facilities. For a country which is the second-largest consumer of fertilizers in the world, it is quite a challenge to control these emissions.

Unique & innovative technology emerges from within the fertilizer industry itself

Given the substantial scale of fertilizer consumption and production within the nation, effectively managing and mitigating these emissions requires innovative technology solutions to tackle this pressing challenge. Driven by the imperative of ensuring sustainable agricultural practices while minimizing environmental impact, Deepak Fertilisers And Petrochemicals Corporation Limited (DFPCL) has pioneered a one-of-its-kind technology capable of reducing emissions to a bare minimum.

DFPCL, one of India's leading fertilizer players, has collaborated with Incro SA , an industrial engineering pioneer company from Spain, to develop a unique technology that significantly reduces emissions. Thanks to this state-of-the-art technology, now fertilizer plants can reduce emissions of ammonia from chimneys to < 50 mg/Nm^3, three times less than the Indian regulatory requirements. Designed in 2017, the process design involved in this technology ensures recovery of ammonia back into the process to the tune of 99.5%-99.9%, accompanied by zero liquid discharge or ZLD, marking a remarkable achievement in itself.

DFPCL, a fertilizer manufacturer and a technology frontrunner for decades

It was back in 1992 when DFPCL made a lateral expansion into the fertiliser industry. Today, Mahadhan Agritech Limited (MAL), a wholly-owned subsidiary of DFPCL, is one of India's largest and most renowned manufacturers of bulk and speciality fertilisers. For years, DFPCL's flagship brand '*Mahadhan'* with its wide portfolio of fertilizer products has been at the forefront serving the Indian farming community with its unique and innovative products and solutions. Over the years, *Mahadhan* has grown from a local to a regional to a national brand today. With its motto 'A Bond of Life', the brand has stayed true to its roots and has been instrumental in not only gaining deep market knowledge but also the trust of farmers that it has sought to serve. Moreover, it is also one of India's leading names in crop nutrition management and a market leader in the water soluble and speciality fertilisers markets.

DFPCL's emission-reducing technology at NPK plant epitomises the spirit of innovation

DFPCL's Taloja facility serves as the headquarter for all of the company's divisions, spanning

Industrial Chemicals, Crop Nutrition Business, and Technical Ammonium Nitrate. Within this facility, the company produces a diverse array of products, including but not limited to Isopropyl Alcohol, Nitric Acid, Liquid CO2, Ammonia, NPK fertilizers, ANP fertilizers, and Technical Ammonium Nitrate. As a veritable problem-solver, DFPCL has deployed the latest emission-reducing technology at its NPK plant in Taloja, a facility that has a daily manufacturing capacity of 2 * 1000 MT of fertilisers. This plant is has integrated with state-of-the-art ammonia reduction technology. This technology involves the installation of scrubbers of capacities 3,40,000 m3/hr for each NPK train.

By designing the system to reduce ammonia from stacks, DFPCL's NPK plant conserves ~500 tonnes of ammonia, compared to the National Standards for Ammonia emission from stack. This helps to avoid approximately 700 tons of greenhouse gas emissions every year. Ammonia emission from the stack stands at less than 50 mg/Nm^3 in 2023-24 which is the best in the world as of the date, and much lower than the Indian regulations of 150 mg/Nm^3. Furthermore, M/s. Incro has certified that DFPCL's NPK plant is well-designed to control ammonia emission from the stacks. This makes DFPCL resilient to long-term regulatory changes and reduces air pollution.

This emission-reducing technology, exemplified by DFPCL's Taloja NPK plant, sets a new standard for the reduction of greenhouse gas emissions, pushing the boundaries of what is possible. With every stride towards sustainable business practices, DFPCL continues to act as a catalyst ensuring that the strong connection between agriculture and environmental protection remains strong and unbreakable.

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TO WHOM SO EVER CONCERN:

M/S. Smartchem Technologies Limited has installed 2 * 1000 MTPD Complex Fertilizer (DAP/NP/NPK) Manufacturing Plants. Technology and BASIC engineering were given by us i.e. M/S. INCRO, Spain during the years 2016-17.

M/S. INCRO, is a leading company in the industrial engineering sector that provides services in the areas of Fertilizers exercising its Global field of activities since 1975. We provide various manufacturing technologies that are tested successfully across the world and proved to be less in pollution i.e ZLD (Zero Liquid Discharge) and very low concentration of pollutants air emissions.

Inline with the above, we have provided the Best Fertilizer Manufacturing Process Technology and Basic engineering to M/S. Smartchem Technologies Limited.

According to our technology documents (M/S. Incro's designs) the air that gets emitted from NPK units stack is around 3,40,000 m3 / hr. – which may contain traces of Ammonia as a pollutant. Our process design ensures recovery of Ammonia back to the process about 99.5 to 99.9% and the remaining are losses.

Considering the present and future air emission standards across the world we have designed and provided technology to M/S. Smartchem Technologies. that ensures Ammonia concentration in NPK units stack air emission at 50 mg/Nm^3 **(** which is **BEST IN THE WORLD** as on date **)** .

As a responsible technology provider, we also keep upgrading our technologies and we transfer the latest technologies to all our clients regularly which helps minimize air emissions from manufacturing processes.

INCRO S.A.

Date: 3rd October, 2019
By : Jesús Sánchez
Project Director