BUSINESS VALUE DRIVER

NATURAL CAPITAL

Being a leading energy company, we realise the responsibility that an organisation like ours has towards environment. To create a sustainable value, we focus on efficient utilisation of natural resources.

At JSW Energy, we achieve environmental excellence by ensuring that our plants operate at maximum efficiency levels. We also strive to optimally utilise the limited resources available in nature. It is our strong belief that development and sustainability should co-exist. To ensure that we are following this belief, we regularly take into account the ecological impact of our business activities. Furthermore, we have shaped our efforts accordingly to maintain the sensitive natural balance of our country's geology and reduce the chemical emissions into the atmosphere.

Our Environmental Performance

The scope of our Integrated Management Policy is to conserve and protect the environment and our entire value chain. All our plants are cautious, and they maintain the generation of emissions and waste within the permissible levels.

We have taken on the responsibility to address and combat long-term global challenges such as demographic change, climate change, and diminishing resources, in a socially, ecologically, and economically responsible manner. Coal is a primary raw material to our thermal plants. Hence, we put a lot of effort in the selection process of coal so that we are able to minimise its environmental effects.

How we manage our environmental impact

During FY2020, we have undertaken several efforts at our plant sites to ensure we minimise the environmental effects of our production activities.

JSW Energy Limited, Vijayanagar

- Replacement of the ESP field spike-type electrodes with spiral-type electrodes, which has increased the availability of ESP fields
- Reduction in fossil fuel consumption by decreasing the auxiliary power consumption by 62,749 KWh through various in-house and process improvements

JSW Energy Limited, Ratnagiri

- Replacement of basket for APH-A (Air Preheater) of Unit-1, which resulted in saving nearly 150 kW in ID Fan power consumption as well as improvement in boiler efficiency by 0.35%
- Installation of trim sets in four BFP recirculation control valves, which has resulted in saving 853 kW
- Replacement of Cooling Tower fans with high efficiency fans, which has resulted in saving 4kCal/kWh in the heat rate through vacuum improvement

JSW Energy (Barmer) Limited,

- Reduction in fossil fuel consumption due to 0.69% decrease in the heat rate through various in-house process improvements
- Environment emissions are maintained within the norms and limestone is being treated to maintain SOX emissions to minimum
- Helium leak detection test is executed to assess air ingress and improve condenser vacuum
- Rainwater harvesting has been implemented as Barmer is a desert location

Pre-Treatment Plant - Output Water Quality

1.5 NTU

Turbidity Achieved

During FY2020, we have implemented various initiatives to improve the water quality. We have also installed a system with auto logic to ensure proper drainage of sludge, which is a form of waste. Our several efforts have resulted in an improved water quality and we have achieved 1.5 NTU i.e. Nephelometric Turbidity Units out of a 5 NTU design

JSW Hydro Energy Limited

- Regular plantation drives have been initiated and 4,269 plantations were completed in FY2020
- Prohibition on single use of plastic in the premises
- Implementation of solid waste management

Emissions and Waste Management

Thermal Power Plants:

JSW Energy Thermal Power Plants are in compliance with prescribed permissible limits as per Central Pollution Control Board (CPCB), State Pollution Control Board (SPCB) for air emissions, effluent quality and discharge, solid and hazardous waste generation and disposal.

Hydro Power Plants:

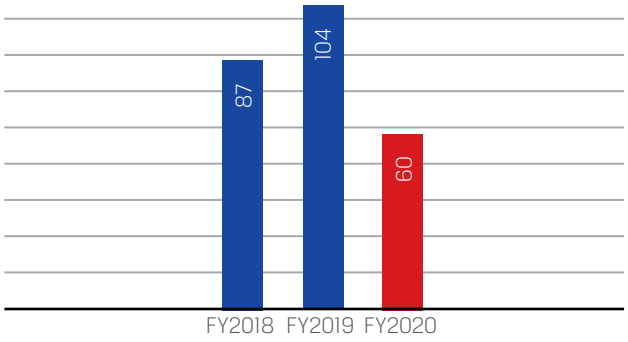
The river quality is analysed by the State Pollution Control Board as a part of monitoring the environmental impact of the operations. No adverse effect of the plant or its operations on the water quality has been reported.

Zero Effluent Discharge

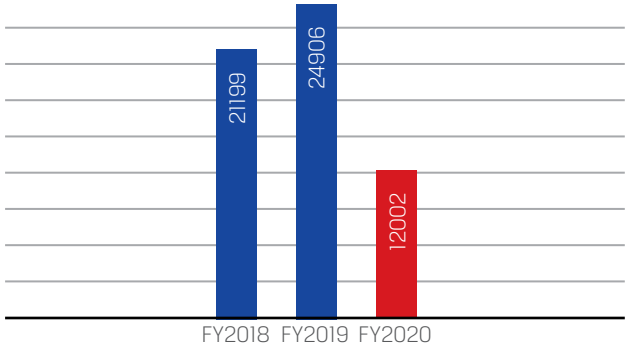
At Vijayanagar plant, the CW blowdown water (9,98,199 m3) is recycled in Reverse Osmosis (RO) Plant. The entire wastewater is treated in the effluent treatment plant based on Reverse Osmosis (RO) technology, and the recycled product, that is, water, is used in cooling towers as make-up water, while the RO reject stream is used for plantation. Thus, this helps us in achieving zero discharge of effluent water. Similarly, at our Barmer plant, the wastewater is treated in the Reverse Osmosis (RO) based effluent treatment plant and recycled water is combined with raw water as part of the feed to the demineralised water plant or as part of the make-up water to the cooling towers. The RO rejected water is used for plantations and ash/lignite spray, amongst others. Thus, zero effluent discharge is achieved here as well. We follow a similar practice in our Ratnagiri plant.

Key Performance Highlights

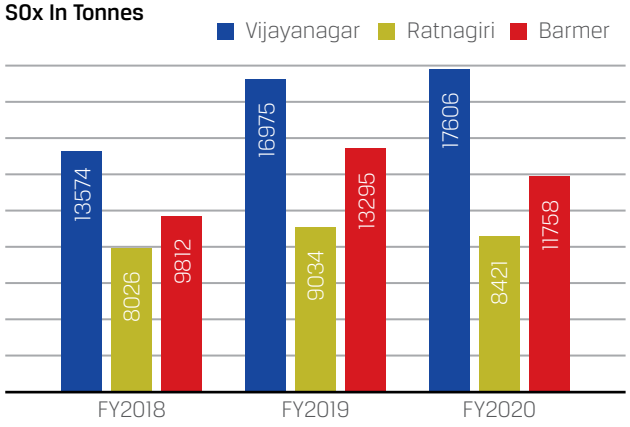
Energy Savings (MUs)



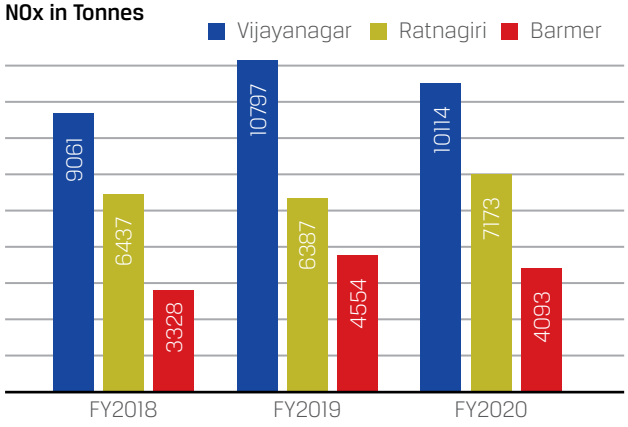
Tree Plantation



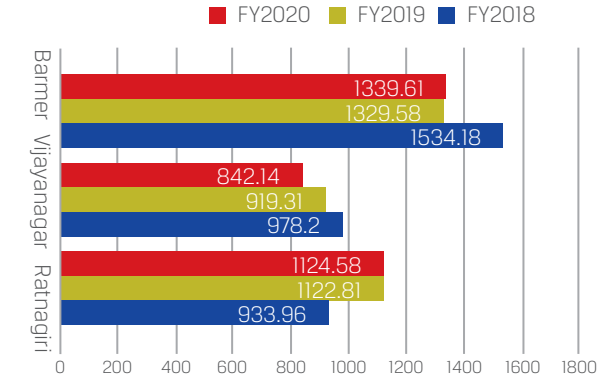
SOx In Tonnes



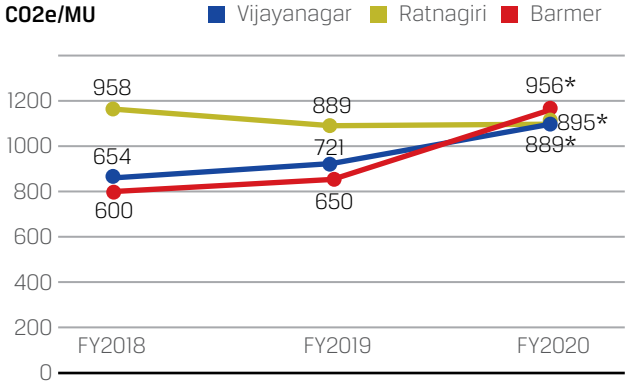
NOx in Tonnes



SPM in tonnes



GHG Emission in MT CO2e/MU



*FY2019-20 onwards IPCC method using emission factor has been adopted for calculation of GHG emissions at all plants instead of fixed carbon method. Hence, there is a steep variation at Barmer and Vijayanagar plant from the previous years.