

# CASE STUDY

## A Major Dairy in Western India



### Problem

Losses due to improper design of heating and chilling facilities

### Objective

To establish utility loads and provide optimum design to cater to process requirements

### Solution

- Establishing utility generator capacities, selecting relevant utility parameters and applying the reduce-reuse-recycle concept
- Correcting utility pipeline loads suitably for pipe-rack design
- Designing of chilled water distribution network for minimal temperature variation
- Selecting pump, and making appropriate modifications, for chilled water and cooling water networks based on load with specifications to ensure lowest OpEx
- Designing of critical distribution network connecting the biomass fired boiler with the process plant over a distance of 1.2km, including a 25 meter underground section across a national highway

### Benefits

- Safety within the utility network
- Distribution losses minimised
- Increase of on 0.4deg C in chilled water distribution network of 250 meters
- Minimum pressure drop within the distribution networks
- Operation of biomass boiler made possible and plant was able to achieve carbon neutrality
- 16% opex reduction in the steam fuel bill