CASE STUDY

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IFFCO gets rid of utility expenses by 35% with a new Centralised Control & Monitoring System

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CASE STUDY | DOTS Energy Services

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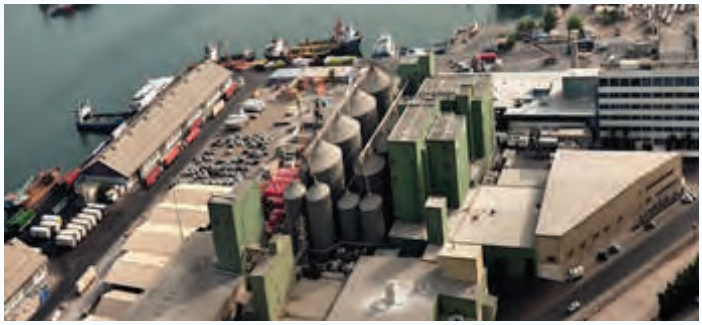

THE CHALLENGE

Industrial energy efficiency program is one of the biggest challenges as downtime incurs immense amounts of monetary loss.
A detailed energy audit revealed significant oppurtunities for energy savings as all the AC units operated as stand alone units without any appropriate setpoint & operating schedule. Introducing a centralised system for control of AC units would not only result in electrical savings (fan power) but also chilled water consumption eventually reducing the load on the variable speed compressors and condensers. Introducing apt setpoints & a time program resulted in optimising the demand without compromising on indoor environmental quality, occupant comfort & materials & processes

THE SOLUTION

Replacement of all stand alone FCU/AHU controllers with communicating type which connects to the centralised system.

- Overhauling of in-efficient compressors & damaged condenser coils replacement
- Installation of VAV system for Air handlers
- Installation of Building Management System
- Installation of programmable thermostats in all the areas with lock feature to prevent override of BMS command
- Increasing temperature setpoints from unusally low to optimum range based on activity/zone/utility
- Shifting operations from manual to auto in all areas with night set back modes for unoccupied areas
- Installation of Digital Energy meters for performance monitoring & targeting
- Training & awareness Program (CSR Initiative)

BACKGROUND

A food processing industry with typical non-stop operations with major loads such as ammonia based industrial refrigeration system with variable speed compressors, for cold storage & space airconditioning with FCUs & AHUs on the load side were not operated in an energy efficient manner.

BUILDING SPECIFICATIONS

Typology	Industry (Food Processing)
Location	Industrial Area#1, Sharjah, UAE
Age	16 Years
Building Configuration(m^2)	G+M+1
Major Equipment/System	Fan Coil Units Air Handling Units Ammonia Compressors (Industrial refrigeration & Air conditioning)

THE RESULTS

An analysis was carried out considering the benefits with associated costs and the best fit solutions were implemented which yielded the below.

Estimated Energy Avoidance: 545 MWh
Estimated Cost Avoidance: 240,000 AED
Estimated Annual Savings: 35%
Estimated Carbon Reduction: 355 Tons

Solution implementation saves the below equivalent GHG emissions from

Greenhouse gas omissions from

CO_2 emissions from

81.8	942,292	43,366	37,858	67.2	2.1
Passenger vehicles driven for one year	Miles driven by an average passenger vehicle	Gallons of gasoline consumed	Gallons of diesel consumed	Homes' electricity use for one year	Railcar's worth of coal bured