

# CASE STUDY: ENERGY REDUCTION IN API DEVELOPMENT & MANUFACTURING



## Client:

Piramal Pharma Solutions  
(Internal: Process Improvement)

## Project Name:

Energy Reduction in API  
Development & Manufacturing

## Time Period – Start to Delivery:

2022-2024

## Piramal Pharma Solutions Site:

Morpeth, England

## Project Overview:

The Piramal Pharma Solutions (PPS) site located at Morpeth, England, is a significant manufacturer of various active pharmaceutical ingredients (APIs) needed for the synthesis of important drugs. Due to escalating energy costs and increasing environmental concerns, employees at the Morpeth site worked together to analyze current processes and develop new ways to move forward that are considerate of energy consumption and potential impacts to global health. To focus these efforts, this massive project was further divided into 4 phases: reduction, replacement, generation, and procurement of energy. Ideas were reviewed based on benefits vs. effort, which allowed the Morpeth site to prioritize low effort/high yield systems.

## The Solution:

Employees at the PPS Morpeth site worked together to develop creative solutions to reduce energy consumption:

- A global task force was implemented across all 14 sites of PPS with the goals of reducing energy and sharing best practices
- Green Teams were formed within different manufacturing processes at Morpeth. These groups generated over 130 initiatives that were shared with other PPS sites across the globe
- Installation of new equipment, such as a solar panel farm, is in progress to provide alternative energy sources for some processes. When completely online, the solar panel farm will generate 4.7 million KWh of energy, which amounts to 22% of the site's total power requirements
- More than half (65%) of suggested initiatives did not require additional funding and were successfully deployed at multiple sites. Initiatives that required capital investment were ranked accordingly and built into a future plan to address these concerns and continue implementing new initiatives at PPS sites
- Power reduction initiatives were applied for simple fixes, such as turning off lights and HVAC systems on the weekends or during other times when the facility is not in use, switching to LED lighting, and turning off equipment when not in use

## The Benefits/Key Outcome(s):

- Alternative energy options were explored
- Energy consumption was significantly decreased
- Reduction of more than 400,000 KWh in energy consumed based on ultrasonic compressed air leakage surveys
- Cost savings of more than £125,000
- A concerted effort to switch off equipment not in use generated a huge reduction of almost 350,000 KWh in energy consumed
- Conversion to LED lighting yielded a reduction of over 160,000 KWh
- Recirculation of HVAC equipment showed a reduction of 700,000 KW
- Changes to support a better environmental future

These programs provided a clean solution for Morpeth, which benefits residents of this area along with PPS employees and clients. These initiatives also presented PPS with various opportunities to reduce, replace, generate, and produce energy in greener ways while reducing costs, especially if these changes are implemented across multiple sites.

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## Patient Centricity

PPS maintains 15 sites around the globe responsible for the manufacturing of active pharmaceutical ingredients (APIs) that assist in drug discovery along with the development and commercialization of medications. These processes require a significant amount of energy input and produce a variety of waste products. This can also have significant impacts on the environment. PPS recognizes that sustainable systemic changes are necessary to support global environmental wellness. For solutions to be effective, these changes also need to be sustainable. PPS sites continue to work diligently to find sustainable alternatives that reduce the site's carbon footprint and decrease energy consumption. With help and support from our employees, PPS strives to update current methods and implement new processes that are environmentally friendly. We believe that greener and cleaner operations are essential for our future and have benefits that extend well beyond our organization.



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