

# Excellence in Energy Management



## MSD International GmbH (Singapore Branch)



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## Background

Today's MSD is a global healthcare leader working to help the world be well. MSD is a tradename of Merck & Co., Inc., with headquarters in Kenilworth, N.J., U.S.A. Through their prescription medicines, vaccines, biologic therapies, and animal health products, MSD works with customers and operates in more than 140 countries to deliver innovative health solutions. MSD also demonstrates commitment to increasing access to healthcare through far-reaching policies, programs and partnerships.

## Energy Management in the Company

MSD demonstrates respect and care for the environment in everything they do because they know that a healthy planet is essential to human health and the sustainability of their business. MSD understands the business has a responsibility to use resources wisely and drive innovations, and has made it a priority to reduce their demand for energy and establish policies and practices focused on reducing energy usage and greenhouse gas emissions.

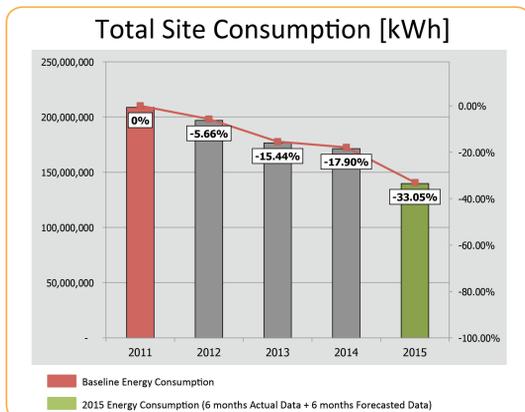
MSD places strong emphasis on leadership accountability and governance to drive energy management. The company seeks to grow an energy-conscious and energy-saving culture across the entire work community. To improve efficiency of their operations and reduce environment impact or risks in the value chain, it is imperative to drive ownership through people-centric awareness and engagement programs.

MSD's energy key objectives:

- To reduce 30% energy consumption by 2015 from the 2011 baseline through usage optimization and waste elimination by using energy efficient & cost effective technologies
- To maintain sustainable environment by waste heat recovery and reducing greenhouse gas emissions
- To motivate and instil an organization culture that embraces continuous improvement

## Achievements

MSD anticipated energy savings of approximately 62.6 GWh over five years from 2011-2015. This result represents significant cost savings in millions of dollars as well as 43,000 metric tons of carbon emission reduction. The reduction derived is equivalent to powering approximately 150,000 HDB 4-room flats for one month or planting 1 million tree seedlings grown for ten years.



Since 2011, the execution of more than 90 energy projects has achieved significant energy savings every year. The site-wide commitment and implementation of energy projects will bring about energy reduction that exceeds the stipulated goal of 30% by end-2015.

Year of Completion	Project Name	Energy Savings (MWh/year)
2015	API Chilled Water Loop Optimization: Cease of one Secondary Pump	1,516
	API Synthesis Shutdown: Air-Handling Unit (AHU), Process Equipment, Utilities & Lighting Shutdown	1,370
2014	Optimization of API Chiller System	13,870
	MPP2 Utilities Optimization Phase-2 (Complete utilities shutdown & optimization)	5,955
2013	Optimization of Clean Steam Generator	2,532
	South Water Chiller Optimization	2,520
2012	Warehouse 2 AHU B500S02N01 Energy Saving	242
	Energy Saving for AHU 6/7/9 for Pharm PF1	166
2011	Biotech Chiller Optimization	623
	Glycol System Optimization	599

The table above demonstrates a summary of the yearly top two highest energy saving projects from 2011 to 2015.

