



# Majid Al Futtaim malls

## Energy Reduction Plan, Middle East

### | The challenge

Majid Al Futtaim is the leading shopping malls, communities, retail and leisure pioneer across the Middle East, Africa and Asia. Today, Majid Al Futtaim owns and operates 27 malls, welcoming over 178 million visitors annually.

Enova first gained credibility in the region by maintaining the growing portfolio of Majid Al Futtaim assets. Over the years, the partnership has grown to integrate energy efficiency solutions to achieve the Group's sustainability objectives. In 2019, Majid Al Futtaim approved the launch of an energy reduction plan at 15 of its malls across 5 countries: the United Arab Emirates, Oman, Bahrain, Lebanon and Egypt.

### | Phase I: Achieving savings without investment

In 2019, Enova focused solely on energy efficiency measures that did not require investment. The teams of Hubgrade, Enova's smart monitoring platform, and site operations worked closely together to identify measures directed at optimizing the operation of existing systems.

#### 1. Air Handling Units and Fresh Air Handling Units

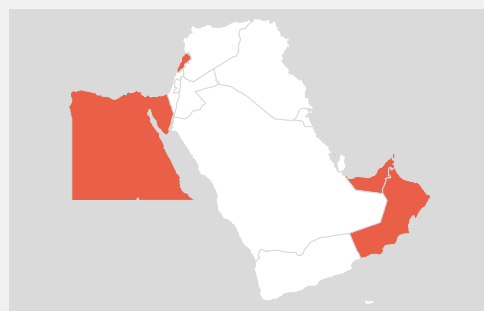
- Optimize the cooling schedule, temperature and CO<sub>2</sub> setpoints based on the mall's operating hours
- Ensure the optimal operation of chilled water valves, air dampers, fans, and heat recovery systems
- Harness free cooling during the winter season

#### 2. Chillers

- Optimize the operations schedule and the chilled water supply temperature based on the mall's operating hours
- Ensure efficient plant operation and minimize losses through close monitoring of KPIs

#### 3. Secondary pumps

- Optimize of the operations schedule based on the mall's operating hours
- Ensure optimal operation of the pumps to match the cooling load



5 countries in the MENA Region



#### Contract

Date: 2019

Type: EPC

Sector: Retail

2

Energy Reduction Plans

15  
malls

5  
countries

#### 4. Cooling towers

- Ensure optimum level of cycles of concentration (COC)
- Apply a dynamic setpoint based on the wet-bulb temperatures
- Optimize the operation of the cooling towers fans during the cool season

##### Benefits

The energy reduction plan yielded significant savings during the first year:

- 8.2% energy cost reduction
- 8.7% electricity cost reduction
- 6.5% water cost reduction
- 12 million AED savings

Additionally, the project improved the malls' carbon footprint, by avoiding 20,974 tons of CO<sub>2</sub> emissions.

#### | Phase II: Investing in high-impact energy efficiency measures

Following the success of the first phase, Majid Al Futtaim approved the launch of a second Energy Reduction Plan involving investment. Enova conducted an ASHRAE Level 2 energy audit, which led to the implementation of 26 Energy Conservation Measures in 2020 alone, including the below:

- Modification of the water supply network
- Installation of a Reverse Osmosis plant to treat the blow-down water from cooling towers
- Installation of a Reverse Osmosis plant for the treatment of the treated sewage effluent water
- Collection and usage of the AC units' condensate drain and rainwater
- Installation of a sewage treatment plant in the mall
- Replacement of conventional lighting by LED lighting and installation of occupancy sensors
- Replacement of existing DX units with inverter split Air Conditioning Units
- Installation of water flow reducers on wash basin taps and faucets
- Installation of waterless urinals
- Installation and optimization of Variable Frequency Drives on secondary chilled water pumps
- Installation of solar films on skylights

The Measurement & Verification is currently ongoing and delivered through Hubgrade, Enova's smart monitoring centre, located at our Head Office in Dubai. Enova will monitor the performance for a period of 5 years.

##### Benefits

In 2020 alone, the second Energy Reduction Plan yielded:

- 12.7% in energy cost reduction, 13.5% on electricity and 13.4% on water, representing 19.2 million AED in savings.
- 34,732 tons of CO<sub>2</sub> emissions were avoided, further contributing to Majid Al Futtaim's Net Positive strategy.

The savings generated are assessed using International Performance Measurement and Verification Protocol (IPMVP) and shared between Majid Al Futtaim and Enova as part of the Energy Performance Contract (EPC).



**74,104,592 kWh**  
electricity savings  
in 2019 and 2020



**471,394 m<sup>3</sup>**  
water savings  
in 2019 and 2020



**49,126 tons of CO<sub>2</sub>**  
emissions avoided  
in 2019 and 2020