

CO2 Commercial Refrigeration System In Jordan

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Who We Are?



- Abdin Industrial is a leading innovated manufacturer of commercial display refrigerators, freezers and refrigeration system using natural refrigerant.

Introduction



- Al Salam Supermarket project was the first transcritical CO₂ commercial refrigeration unit implemented in so-called HAT (high ambient temp.) country.
- It was installed in the capital city of Jordan, Amman in January 2018
- The project was funded by CCAC (Climate and Clean Air Coalition), implemented by UNIDO, supplied and installed by Abdin Industrial.

System Operation & Maintenance



- The Co2 system have proven to be a reliable, energy efficient and requires minimal frequent maintenance.

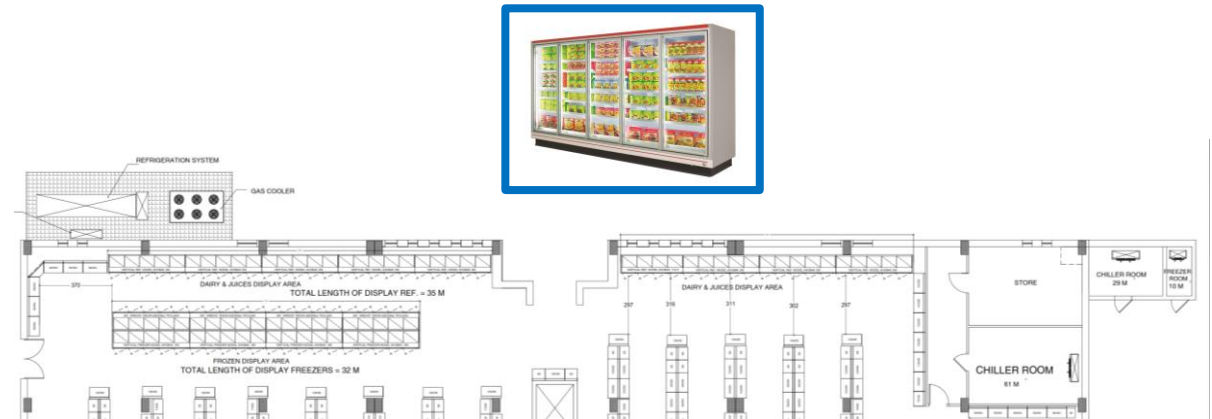
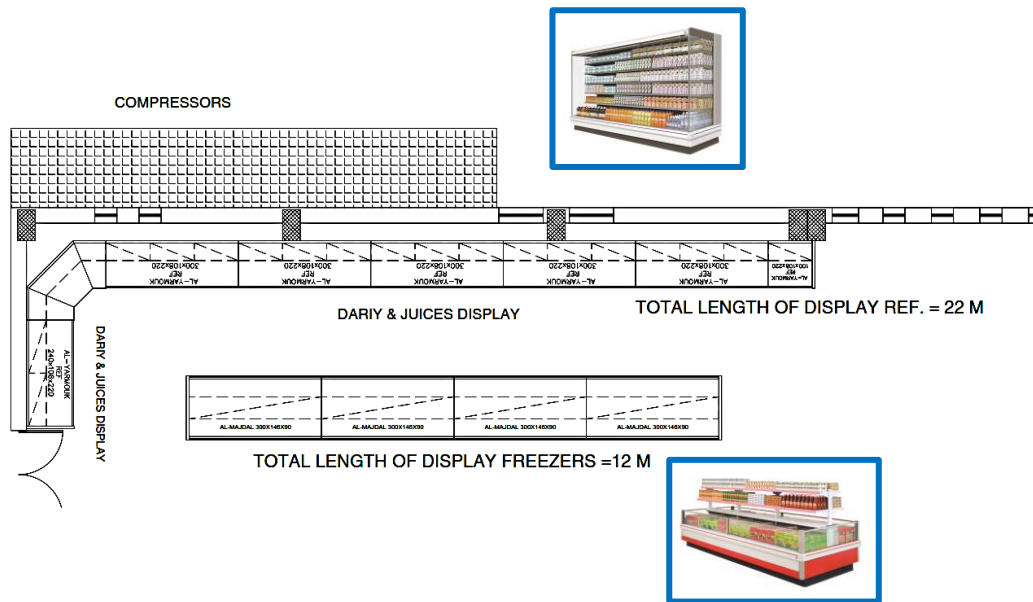
Reliable

- No system failure
- Maintain smooth line temperature resulting in zero food wastage and extending the fresh food shelf life.

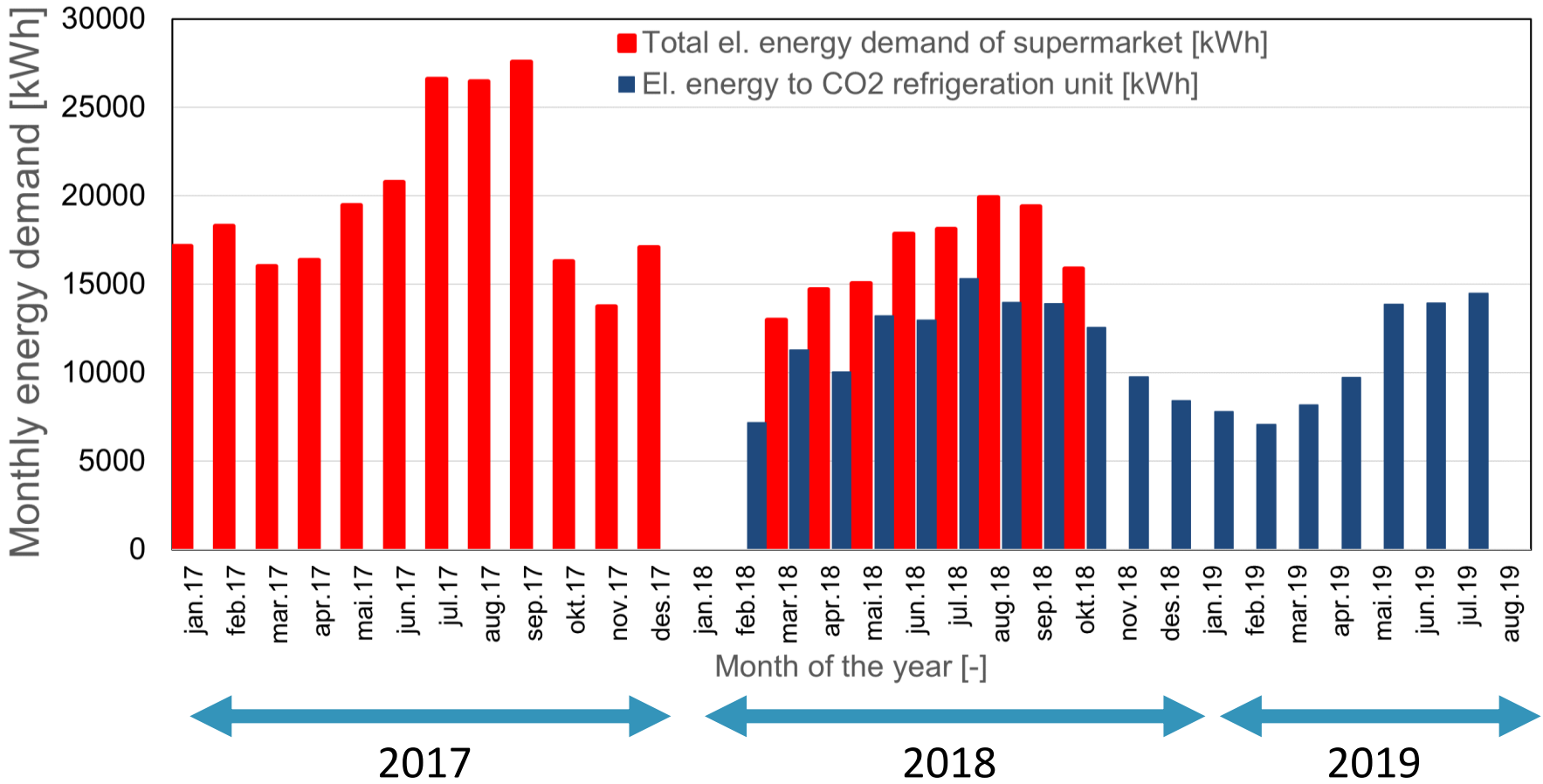
Energy-Efficient

- The system is consuming around 30% less energy than the previous HCFC system taking into consideration that the number of cabinets for chilled items were doubled in capacity and the frozen cabinet are 5 times bigger, two cold rooms and one freezer room added.

SUPERMARKET LAYOUT BEFORE & AFTER



Energy Demand



System Operation & Maintenance



- **Maintenance**
- With our experience in the CO2 systems the system requires no maintenance since the first day of operation the system never failed. We carry out a regular dust cleaning for the gas cooler and compressor oil changing every two years.
- Other than that no maintenance was done.
- The system is not complicated and easy to operate with minimal training.

Summary



- The first transcritical CO2 booster system with ejector supported parallel compression installed in a high ambient temperature country is in operation since January 2018.
- The feedback from the end-user:
 - Up to now operation without extraordinary maintenance visits, i.e. no failure in the system nor the cabinets.
 - Zero food wastage due to stable temperature levels in the display cabinets.
 - Reduction of energy demand related to the refrigeration unit by more than 30% compared to similar new HFC installations in the region.
 - Increase in sales and profit.



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