SMART COOLING

CASE STUDY

PepsiCo Plant

Israel

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Intelligent adiabatic **Smart Cooling™** system reduces electricity consumption by **24%** and boosts cooling capacity by **18%** on average at PepsiCo’s Plant in Israel.”

CHECKED AND TESTED FOR PROVEN RESULTS

Efficacy assessment has been conducted and validated. Testing was performed with BTU liquid flow and temperature meter RIF600 and Eniscope energy monitoring equipment.

CUSTOMER

PepsiCo is a leading food and beverages Fortune 500 company, employing a quarter of a million staff and with the vision of leading sustainable production around the world, under the Winning with Purpose program. PepsiCo generated more than USD 67 billion in net revenue in 2019.

CHALLENGE

Israel – During Jericho’s long sweltering summers ambient air temperature can reach upwards of 55°C.

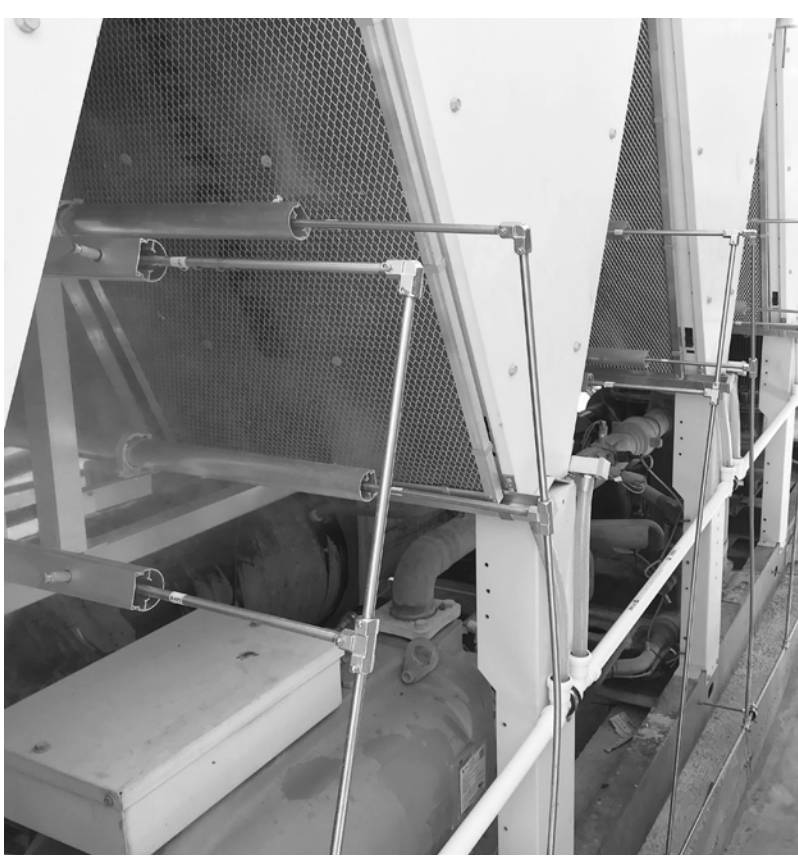
Jericho experiences significant seasonal variation in humidity levels. With considerable temperature variations between day and night and both arid and muggy weather conditions. At PepsiCo, the challenge was to improve chiller performance while ensuring safety and reliability of cooling operations during periods of extreme heat.

SOLUTION

With a total cooling capacity of 563.7 kW, the facility is equipped with a Trane RTAF155 chiller, which provides most of the indoor climatization needs at the PepsiCo plant.

Smart Cooling™ was the natural choice to boost PepsiCo’s cooling equipment efficiency, ensuring more cooling power and lower electric energy consumption.

Smart Cooling™ equips chillers around the world with the latest generation in adiabatic pre-cooling systems. **Smart Cooling’s™ PRO 10** system boosts cooling performance while protecting the condensers from harm.



RESULTS

Test reports at INRIM indicate that after the installation of the intelligent adiabatic **Smart Cooling™** system, the cooling equipment generated noticeably more cooling capacity with an average increase of **37%**. Electricity consumption decreased by **27%** at an average temperature of **35°C**.

The **Smart Cooling™** system allowed the TRANE RTAF 310 chiller to increase its cooling capacity and at the same time reduce electricity consumption, so as to achieve an above-5 COP level. The ROI (return on investment) period for this project is as low as six operating months.

COOLING CAPACITY INCREASED BY ↑37%

ELECTRIC ENERGY CONSUMPTION REDUCED BY ↓27%

ROI 6 MONTHS

Pepsi Co. - 1500 ML Production (8:35 am - 19:45 pm) - 11 hours & 10 minutes

Chiller #1, 13 May 2020 - 13 May 2020 - 1 minute, System, comparing data from 05/30/2020 to 05/30/2020

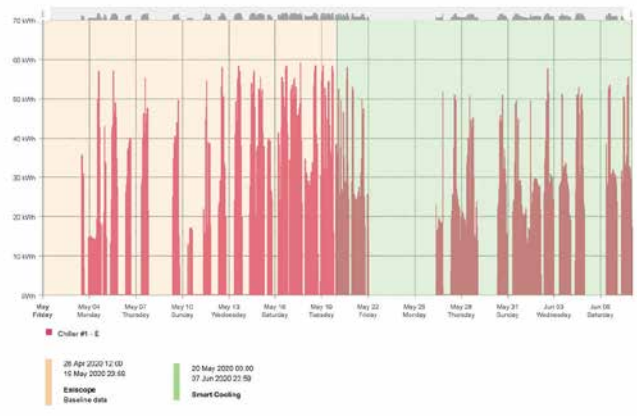
METER	SAVINGS	TOTAL	AVERAGE	MAX	MIN
Chiller #1 - cost BASELINE	₪ 344.03 26.97%	₪ 904.97	₪ 1.35	₪ 2.10	₪ 0.14
Chiller #1 2020-05-30 - 2020-05-31 - cost		₪ 660.94	₪ 0.99	₪ 1.86	₪ 0.14
Chiller #1 - E BASELINE	460 kWh 26.60%	1.73 MWh	2.59 kWh	4.03 kWh	261.72 Wh
Chiller #1 2020-05-30 - 2020-05-31 - E		1.27 MWh	1.89 kWh	3.56 kWh	261.72 Wh
Chiller #1 - I BASELINE	27.98%		242.03 A	370.48 A	25.34 A
Chiller #1 2020-05-30 - 2020-05-31 - I			174.32 A	322.79 A	25.88 A

Note:

Production according to the data provided by Pepsi showed 27% energy saving despite the fact that production during 30 May 2020 (14,648) was much higher that the baseline on 13 May 2020 (10,292).

Pepsi Co.

Chiller #1, 01 May 2020 - 07 Jun 2020 - 15 minutes, System



PepsiCo. - 250 ML Production (11:00 am - 06:00 pm) - 6 hours

Chiller #1, 17 May 2020 - 17 May 2020 - 1 minute, System, comparing data from 05/27/2020 to 05/27/2020, comparing data from 05/31/2020 to 05/31/2020, comparing data from 06/01/2020 to 06/01/2020, comparing data from 06/03/2020 to 06/03/2020

METER	SAVINGS	TOTAL	AVERAGE	MAX	MIN
Chiller #1 - cost BASELINE		₪ 580.83	₪ 1.62	₪ 2.13	₪ 0.90
Chiller #1 2020-05-27 - 2020-05-28 - cost		₪ 362.86	₪ 1.01	₪ 1.83	₪ 0.11
Chiller #1 2020-05-31 - 2020-06-01 - cost	₪166 - ₪256 28.61% - 44.09%	₪ 396.23	₪ 1.10	₪ 1.83	₪ 0.63
Chiller #1 2020-06-01 - 2020-06-02 - cost		₪ 324.75	₪ 0.90	₪ 1.75	₪ 0.60
Chiller #1 2020-06-03 - 2020-06-04 - cost		₪ 414.64	₪ 1.15	₪ 1.86	₪ 0.66
Chiller #1 - E BASELINE		1.11 MWh	3.10 kWh	4.08 kWh	1.73 kWh
Chiller #1 2020-05-27 - 2020-05-28 - E		665.14 kWh	1.94 kWh	3.51 kWh	209.38 Wh
Chiller #1 2020-05-31 - 2020-06-01 - E	315.67 - 487.88 kWh 28.44% - 43.95%	759.05 kWh	2.11 kWh	3.51 kWh	1.20 kWh
Chiller #1 2020-06-01 - 2020-06-02 - E		622.12 kWh	1.73 kWh	3.35 kWh	1.15 kWh
Chiller #1 2020-06-03 - 2020-06-04 - E		794.33 kWh	2.21 kWh	3.56 kWh	1.28 kWh
Chiller #1 - I BASELINE			285.13 A	399.42 A	164.02 A
Chiller #1 2020-05-27 - 2020-05-28 - I			180.76 A	316.55 A	23.04 A
Chiller #1 2020-05-31 - 2020-06-01 - I	27.52% - 44%		196.06 A	317.06 A	117.31 A
Chiller #1 2020-06-01 - 2020-06-02 - I			159.66 A	306.07 A	106.13 A
Chiller #1 2020-06-03 - 2020-06-04 - I			206.39 A	316.63 A	117.76 A

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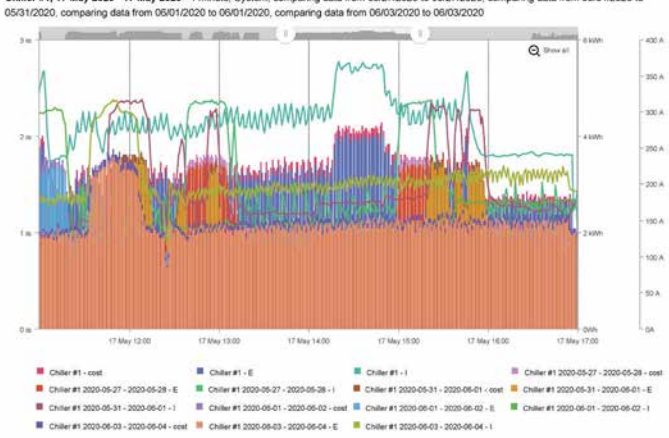

Pepsi Co. - 1500 ML Production (8:35 am - 19:45 pm) - 11 hours & 10 minutes

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