



CASE STUDY

NEWPORT BEACH,
CALIFORNIA

TowerJazz Semiconductor

Goals and Challenges

TowerJazz enlisted Willdan's help to evaluate potential energy upgrades and incentives for the Newport Beach manufacturing facility's cooling plant. Their main goal was to optimize the facility's energy use to maintain a competitive edge in the market, allowing for talent retention and future growth amid increasing energy costs.

To maximize the amount of energy saved per invested dollar, TowerJazz needed to evaluate all potential savings and incentives – a daunting task requiring in-depth knowledge of the site and local utility programs.

Facility staff were aware of equipment inefficiencies, but lacked either the time or expertise to conduct a complex analysis of solutions and financial benefits. Staff also needed added visibility into plant performance and added control over processes.

Solutions and Outcomes

Willdan performed an energy audit, developed energy models, and recommended solutions based on potential savings, return on investment, and operational needs.

Willdan's familiarity with Southern California Edison's (SCE) incentive programs, resources, and procedures allowed TowerJazz to add upgrades previously outside of their budget. Willdan worked closely with contractors to ensure compliance with utility guidelines at every step of the project. Willdan guided contractors to tune each system to be as efficient as possible, maximizing the savings-based incentive of over \$1.8 million. Due to the large utility incentive, TowerJazz implemented a more comprehensive project, managing to save over 12.5M kWh per year. These improvements make it cheaper to produce TowerJazz's products, supporting over 700 local jobs and increasing the facility's long-term profitability.

One of SCE's
largest incentives!



\$1.8M Incentives

Annual Savings:



12.5M kWh



1,357 kW peak demand

About TowerJazz

Located in Newport Beach, California, TowerJazz is a 318,000 sq.ft. manufacturing facility that specializes in producing analog integrated circuits for more than 300 customers worldwide. TowerJazz serves growing markets such as automotive, medical, industrial, consumer, aerospace, and defense, among others.

Featured Services

- Energy Efficiency
- Engineering Analysis
- Financing & Revenue Optimization

Chillers – Willdan evaluated savings and incentive options for chiller replacements. TowerJazz selected high-efficiency centrifugal units that operate efficiently at low chilled water supply temperatures necessary for controlling humidity in manufacturing processes and **saving 9,194,970 kWh annually**.

Cooling Tower System – The old cooling towers supplied condenser water (CW) at higher approach temperatures (15°F higher than outside wet bulb temperatures), causing chillers to work harder. The moderate coastal temperatures of the facility are ideal for new towers that can supply cooler CW (9°F approach temperature). Willdan recommended the installation of variable frequency drives (VFDs) on five 200HP CW pump motors. The cooling tower system retrofit **saves 2,204,765 kWh annually**.

Chilled Water Optimization – Willdan recommended the installation of VFDs and controls on the primary chilled water (CHW) pumps and optimization of the secondary loop pumps to provide only the required flow, allowing pump speeds to ramp down. New controls enabled a CHW reset, saving energy by adjusting supply temperatures and adjusting operation to actual occupancy and equipment loads. A software platform with intelligent, load-based HVAC controls was installed so that staff can monitor the facility's energy use in real time and optimize the secondary CHW pumps, CW pumps, cooling tower fans, and primary CHW pumps based on actual system demands, **saving 1,097,220 kWh per year**.

Clear Communication – Willdan hosted biweekly calls with TowerJazz and contractors to coordinate schedules, address operational concerns (e.g. humidity tolerances for technology production), and share progress updates.

Opening Doors to Further Savings – The success and ease of this project inspired TowerJazz to proactively assess their other facilities for chiller plant optimization and additional energy-saving opportunities.



“Willdan’s clear and constant communication made this process easy. My staff were able to do what they do best while Willdan took care of the research, the incentive paperwork, project details, and positioning our facility to receive significant, real energy savings and an impressive incentive.”

**- Jerry Kelley,
TowerJazz Facilities Director**