



Making Ice for a Fraction of the Price

Tecogen's clean energy solutions are a proven way for ice rink managers and owners to reduce operating costs and maximize overall efficiency while offering a stable and predictable operating expense base. Providing reliable, efficient, and affordable on-site power generation along with precision heating and cooling services is the backbone of Tecogen's clean energy portfolio. Powered by affordable and reliable natural gas, our unique line of Combined Heat and Power ("CHP" or "cogeneration") equipment has been powering ice rinks for decades. Whether you chose an electrical CHP system with our **InVerde[®]** or **Tecopower[®]** products, which provide electricity and free hot water or a mechanical CHP system with our **TECOCHILL[®]** line of engine driven chillers, which provide chilled glycol or brine and free hot water, you will be sure to leave the competition behind.

Clean Energy—The core of Tecogen's ultra-efficient solution, the **InVerde** cogeneration module, offers ice rinks the opportunity to conserve energy while protecting the environment. Cogeneration systems generate electricity while waste heat from the engine is recovered to provide a building's space heating, dehumidification, domestic hot water (DHW), sub-surface heating, and ice maintenance (Zamboni and ice melting) needs, allowing an installation to achieve 80-90% efficiency levels. This superior efficiency reduces electric demand and cuts the average building's carbon footprint in half. In addition, the **InVerde's** UL certifications mean it can be seamlessly connected to the electric grid and provide backup power in case of blackout, giving facilities managers peace of mind that skaters will never be

"Tecogen introduced the first standardized natural gas engine-driven chillers in 1987 and has been reliably delivering ice for a fraction of the price ever since." - Robert Panora, President



left in the dark. Especially for ice rink applications, the rink's high electric usage can be satisfied by the CHP system while the waste heat generated can be deployed to offset expensive boiler gas usage.

Typical uses for this waste heat are space heating, dehumidification, hot water for locker rooms, sub-surface heating, ice melting, refilling Zamboni hot water tanks, etc.

Complementing a cogeneration system or operating on a stand-alone basis, ice rink customers often select Tecogen's unique natural gas powered **TECOCHILL** chillers.

Efficient Chillers—The premier natural gas engine-driven chiller on the market, a **TECOCHILL** cuts costs by as much as 30-60% when compared to a conventional electric ice plant and helps facilities managers avoid peak-demand electric charges. As



an added bonus, additional savings can be realized by recovering waste heat from engines for heating needs like space heating, dehumidification, DHW, sub-surface heating, and ice maintenance. The true power of the **TECOCHILL** technology is most evident in the summertime when electricity rates are at their highest—often incurring peak usage charges for traditional electric chillers—but when natural gas pricing is “off peak” and especially affordable. **TECOCHILL** customers can rest easy because their chillers will continue running on minimal electric load in case of electric blackout, all while being fed by reliable natural gas. A **TECOCHILL** chiller unit can typically support one sheet of ice with only a few kW of single phase power, vs. hundreds of kW of three-phase power that would be required by traditional electric ice plants.

TECOCHILL's solution for affordable and reliable cooling is especially well suited to ice rinks. The chiller provides cost-effective chilled glycol or brine directly for effectively freezing the ice surface. A **TECOCHILL** can efficiently achieve chilled glycol or brine temperatures down to 5-10°F. Finally, the chillers respond well to rapid load swings, all while requiring very little electric power.

Easy Installation—The **TECOCHILL** unit has a similar foot-print to that of an electric powered ice plant making retrofitting an easy choice. All of Tecogen's CHP equipment can be broken down into easy-to assemble pieces sized to fit through standard doorways and into existing equipment rooms. The compact design also permits the units to be placed close to the thermal loads they are serving, improving cost savings.

Superior Service—Tecogen's commitment to quality craftsmanship and robust engineering design is furthered by a nationwide staff of full service maintenance professionals. Covered by a “bumper-to-bumper” maintenance agreement, Tecogen equipment provides a hassle-free solution for facilities managers. With remote real-time equipment monitoring and state-of the art control software, powered by GE's Equipment Insight solution Tecogen's technicians ensure equipment operates at peak performance.

Utility Incentives Available— Typical equipment payback periods range from 2-5 years and

many Tecogen customers qualify for additional incentives from their local utilities. Investment tax credits, accelerated depreciation benefits, clean energy incentives, and demand response subsidies are among many of the benefits that may be available to facilities installing Tecogen's equipment.

Our company has been successfully serving the ice rink industry for over 25 years—installations include:

- ◇ Andrew Stergiopoulos Ice Rink* ~ Great Neck, NY
- ◇ Broome County Veterans Memorial Arena ~ Binghamton, NY
- ◇ City Ice Pavilion ~ Long Island City, NY
- ◇ Jersey Shore Arena ~ Wall, NJ
- ◇ Meadowlands ~ East Rutherford, NJ
- ◇ Nashoba Valley Olympia ~ Boxborough, MA
- ◇ New England Sports Center ~ Marlborough, MA
- ◇ Onondaga County War Memorial Ice Rink ~ Syracuse, NY
- ◇ Valley Sports Arena ~ Concord, MA
- ◇ Rockett Arena ~ Salem State Univ., Salem, MA

*Home ice of 2002 Ladies Singles Figure Skating Olympic Gold Medalist Sarah Hughes

Fun Fact: *The NJ Devil's won two NHL Stanley Cup titles on **TECOCHILL** ice at the Meadowlands and an AHL championship game was played on our ice at the Broom County Arena.*



For more information about Tecogen's **Ultra-Clean and Efficient Natural Gas Engine-Driven Products**

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