



COOLING RENTAL

NORTH AMERICAN TEMPORARY COOLING MARKET

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RESEARCH SCOPE

NORTH AMERICAN TEMPORARY COOLING MARKET

Equipment for temporary cooling applications enable customers to control the temperature and provide cooling for a variety of applications.

For the purposes of this analysis, rental cooling equipment has been segmented in the following categories:

- Spot Coolers
- Air Conditioners
- Chillers
- Cooling Towers
- Air Handling Units (AHUs)

The report captures the following information about the North American Temporary Cooling Market:

- Market Size, Growth Rate, Revenue Forecasts 2016-2024
- Growth Drivers & Restraints
- Market Trends
- Market Landscape
- Supplier Landscape
- Strategic Recommendations



COOLING EQUIPMENT DEFINITIONS

NORTH AMERICAN TEMPORARY COOLING MARKET



Air Conditioners

Refers to cooling equipment where in the air conditioning process, the heat is removed in two ways; an actual drop in temperature and as water. The air passes over a closed-loop coil filled with refrigerant and the air is cooled and dehumidified. The cold air is delivered to the space being cooled and the water produced by dehumidification is pumped or drained away.



Cooling Towers

A cooling tower is a heat rejection device, which extracts waste heat in the atmosphere through the cooling of a water stream to a lower temperature. The type of heat rejection in a cooling tower is termed "evaporative" in that it allows a small portion of the water being cooled to evaporate into a moving air stream to provide significant cooling to the rest of that water stream. The heat from the water stream transferred to the air stream raises the air's temperature and its relative humidity to 100%, and this air is discharged to the atmosphere. Evaporative heat rejection devices, such as cooling towers, are commonly used to provide significantly lower water temperatures than achievable with "air cooled" or "dry" heat rejection devices, like the radiator in a car, thereby achieving more cost-effective and energy efficient operation of systems in need of cooling.



Chillers

A chiller is an air-cooled or water-cooled heat-transfer device that uses mechanical refrigeration to remove heat from a process load and transfers the heat to the environment. The systems are used to cool fluids or dehumidify air in both commercial and industrial facilities. Chilled water has a variety of applications from space cooling to process uses.



COOLING EQUIPMENT DEFINITIONS

NORTH AMERICAN TEMPORARY COOLING MARKET



Spot Coolers

A self-contained spot cooler cools a spot or an area. The evaporator supply air is usually directed to an area through a directional louver or a nozzle.



Air Handlers (AHU)

In essence, an air-handling unit, or AHU, is a device used to regulate and circulate air as part of a heating, ventilating, and air-conditioning (HVAC) system.

An air handler is usually a large metal box containing a blower, heating or cooling elements, filter racks or chambers, sound attenuators, and dampers.

Air handlers usually connect to a ductwork ventilation system that distributes the conditioned air through the building and returns it to the AHU.



DEFINITIONS: END USERS

NORTH AMERICAN TEMPORARY COOLING MARKET

For the purposes of this study, temporary heat excludes dehumidification equipment. Temporary Cooling refers to the rental of Cooling equipment used for the below categories.

Industrial – Includes manufacturing, cold storage, warehousing, refining, petrochemical and all other industrial processes that might require cooling.

Commercial – Office buildings and Multifamily dwellings. These dwellings generally include apartment complexes or high-rise apartment buildings. A fourplex or greater is considered commercial real-estate.

Healthcare - The healthcare industry includes real-estate utilized for the treatment of patients. Such facilities include hospitals, hospice care, surgical centers, laboratories and others.

Datacenters - A datacenter is a facility used to house computer systems and associated components, such as telecommunications and storage systems. It generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (e.g., air conditioning, fire suppression) and various security devices.

Education - Public and private education institutions including K-12 schools, universities, trade schools and other facilities utilized for education.

Events - Events such as weddings, television broadcasts, movie productions, sporting events, concert touring, festivals and major corporate events.

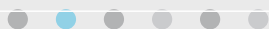
Others – All other temporary heat opportunities not covered in the above categories. The 'Others' category include areas like construction, agriculture, and some commercial applications.



ABBREVIATIONS

NORTH AMERICAN TEMPORARY COOLING MARKET

Acronym	Expansion
ACI	American Concrete Institute
ARRA	American Recovery and Reinvestment Act
ARA	American Rental Association
AHU	Air Handling Unit
CAGR	Compound Annual Growth Rate
CRAC	Computer Room Air Conditioning
CTI	Cooling Technology Institute
DX	Direct Expansion Air Conditioner
EBITDA	Earnings Before Interest, Taxes, Depreciation and Amortization
GSA	Government General Services Administration Contract
HCFC	Hydrochlorofluorocarbons
HVAC	Heating, ventilating and air conditioning
JCI	Johnson Controls, Incorporated
kW	Kilowatt
IoT	Internet of Things
M&A	Merger & Acquisition
Btu/hr	British Thermal Units Per Hour
M	Million
MW	Megawatt
O&G	Oil & Gas
OEM	Original Equipment Manufacturer
OS	Operating System
R&D	Research & Development
US	United States
USD/ \$	United States Dollar



DEFINITIONS: TERMS

NORTH AMERICAN TEMPORARY COOLING MARKET

For the purposes of this study, temporary heat excludes dehumidification equipment. Temporary Cooling refers to the rental of Cooling equipment used for the below categories.

DX Units - A direct expansion air conditioning (DX) system uses a refrigerant vapor expansion/compression (RVEC) cycle to directly cool the supply air to an occupied space. DX systems (both packaged and split) directly cool the air supplied to the building because the evaporator is in direct contact with the supply air. Expansion refers to the treatment of the refrigerant (a valve reduces its pressure and temperature) prior to it entering the evaporator. DX systems can come equipped with all the components in the unit (packaged system) intended for installation on the rooftop, or by the side of a building, or it may have some components installed inside the building and some outside (split system). DX systems require a ventilation fan to distribute the cool air and resupply/re-circulate it.

Process Cooling - Process cooling is when refrigerating systems cool air below the ambient temperatures. Simply put, it uses a compressor that expands refrigerant gas. When the gas is expanded, it absorbs heat cooling the surrounding area. In some applications, process cooling will produce temperatures far below freezing. It is essentially the same as engine-driven chillers that are used for air conditioning purposes. The difference is they will generally cool far less air than a similarly sized engine-driven chiller. More energy is required to achieve the lower temperatures needed for most process cooling situations.

Comfort Cooling - Comfort cooling systems are engineered primarily for the intermittent use required to maintain a comfortable environment for people in facilities with a moderate amount of in-and-out traffic. However, while these systems are capable of effectively maintaining acceptable conditions for human occupants, they are not designed to regulate humidity and temperature within precise margins.

ABOUT VERIFY MARKETS

ABOUT US

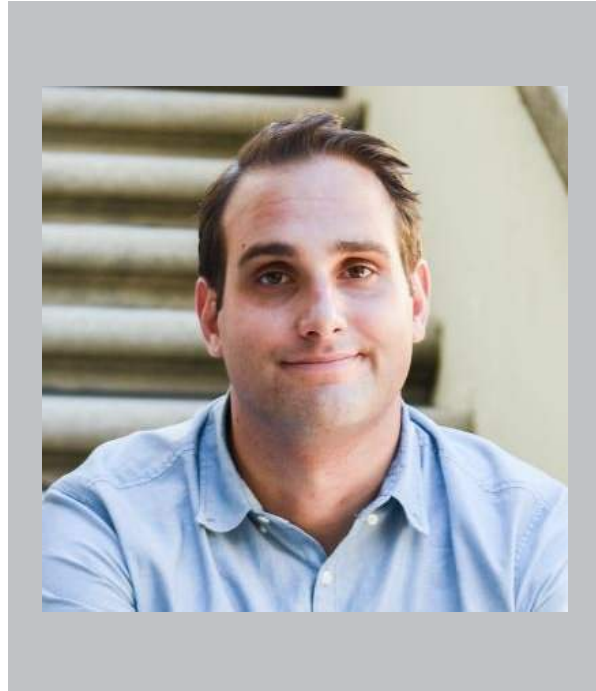
EXPERT ADVICE AND STRATEGY CONSULTING

Verify Markets is a market research and consulting firm specializing in Industrial, Environmental, Energy and Water markets. Our Research & Consulting practice provides global industry analysis, custom engagements, end-user analysis, strategy consulting, strategic market intelligence, and forecasts that are designed to facilitate strategic decision-making. Our team of consultants, industry experts and analysts continually monitor and evaluate information to create insights for your business needs. We are comprised of a group of analysts that have been tracking their respective markets for a number of years.

Our goal is to help you reach yours.



ABOUT THE AUTHOR



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Mr. Miller is acting Managing Partner at Verify Markets and is involved in all aspects of research and sales efforts associated. Prior to his role at Verify Markets, he acted as an analyst and consultant within the Energy and Power Systems industry. He has gained in-depth knowledge and strategic insight in generation, energy storage, transmission and distribution technologies through market sizing, trend study and growth analysis. He has worked on consulting projects in the areas of power generation, transmission and distribution technologies, and associated supply-chain and distribution channels.

He has authored numerous studies focused on Building Technologies, Power Generation and Transmission & Distribution Infrastructure. Specific topics include Lighting Controls, Building Automation Systems, Equipment Rental, SMART Grid Technologies, AMR/AMI, energy storage, switchgear, power and communications infrastructure, etc. Anthony has lead projects with Fortune 500 companies both domestically and abroad and been featured in many publications, including: The Wall Street Journal, Forbes, Washington Post, Next Generation Power, The New York Times, Reuters, GDS Infocentre, Canadian Business Journal, Red Orbit, and EV World, among others.

Mr. Miller graduated from the University of California San Diego.



METHODOLOGY

METHODOLOGY

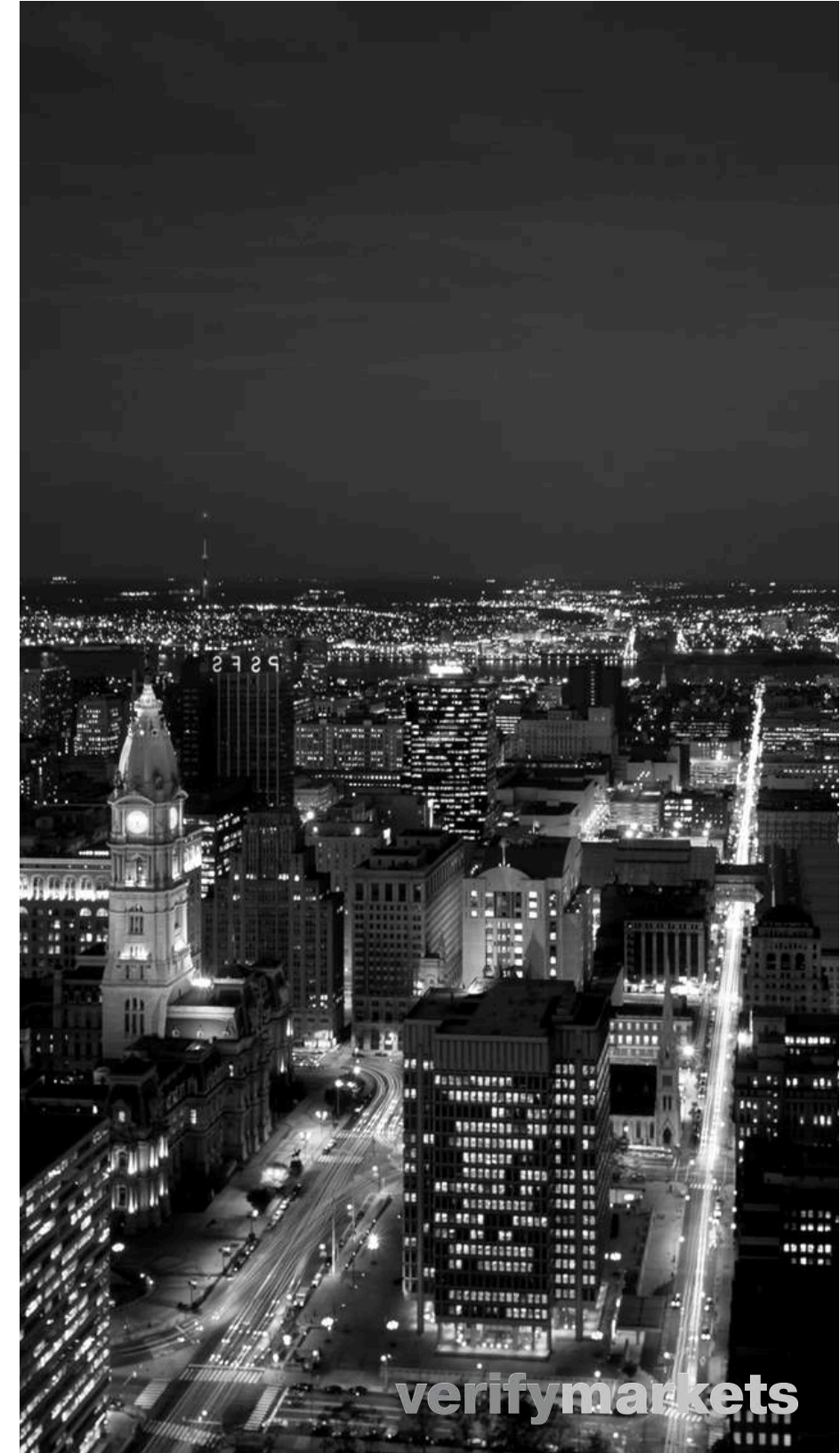
The methodology when formulating market trend projection is outlined below. Historical trends were determined through secondary research and Verify Markets in-house database.

- Secondary research was conducted. A list of key industry participants was put together.
- Telephonic interviews were conducted. Most of the leading participants across all countries were contacted.
- Bottom up methodology was used to calculate the market size.
- Market drivers and restraints were built into the forecasting model to estimate the revenue growth and market size figures.

METHODOLOGY

Profiles of Interviewees: Vice President, Marketing Manager, Business Development Manager, Brand Manager, CEO (for smaller companies).

Most of the primary interview data was captured through telephonic interviews. Pictures, company contacts, preliminary data was captured through secondary research. Images are derived from company websites and other web sources.



DISCLAIMER

Despite Verify Markets' best efforts, certain challenges were encountered and certain assumptions had to be made. The extremely competitive nature of the cooling rental market often results in an increased reluctance on the part of several competitors to discuss their market position, future plans, or market trends. Verify Markets used its skills and experience to extract the relevant data in order to complete the analysis.



VERIFY MARKETS

Verify Markets is not responsible for any incorrect information supplied to us by companies during our primary research process.

Verify Markets report is for customers' internal use and not for general publication. This research cannot be given, disclosed, or sold to non-customers or third parties.

Since most of the data is based on company personnel views, it is subject to fluctuation.



CAPABILITIES

MARKET COVERAGE

Water & Wastewater Treatment

Air Treatment

Environmental Technologies

Energy & Power Equipment

Power Supplies & Batteries

Oil & Gas

Building Technologies & Efficiency

Consumer Products

Healthcare IT

SERVICES

Competitive Intelligence

Market Research

Custom Consulting

Strategic Planning

White Papers

Verified Leader Awards

Claim Validation

Strategy Workshops

Customized Monthly Newsletters



LOCATIONS

GLOBAL PRESENCE





ANY QUESTIONS?
CONTACT US AND SET UP A TIME TO
SPEAK WITH OUR ANALYSTS.

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