

江天数据：从钢铁基地到绿色智算中心的转型标杆

天津2025年8月29日 /美通社/ -- 8月31日至9月1日，2025年上海合作组织峰会将在天津举行。天津峰会是中方今年最重要的元首外交和主场外交活动之一，也将是上合组织成立以来规模最大的一届峰会。上合峰会期间，江天数据作为天津市绿色低碳转型与数字经济基础设施建设领域的典型代表，受邀参加2025上合组织数字经济论坛，重点展示了天津算力产业园项目，引发广泛关注。



同时，江天数据获中国日报重点关注——不仅通过中国日报网刊发深度报道，讲述江天数据从传统钢铁生产基地到绿色智算中心的蜕变历程，更登上中国日报英文周刊（2025年8月28日全球版），向国际社会展现中国传统制造业在“双碳”与“数字中国”战略下的转型案例。

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CHINA

By YAN DONGJIE in Tianjin
yandongjie@china-daily.com.cn

Despite making the extraordinary decision to pivot from being a heavy industry player to a digital industry heavyweight in 2017, Tianjin GiantDC Technology Co., located in Tianjin's Beichen district, has been able to carry over parallels from these two seemingly diametrically opposed businesses.

"Taking the leap from making steel to storing data was not as crazy as it sounds in the context of China's large-scale push to move away from polluting heavy industries and the promotion of the digital economy, as demonstrated by the national dual carbon goals and Digital China strategy."

"Saving energy was the key to survival for steel companies. Today, the concept of energy management has become a key part of our way of thinking," said Meng Qing, director of energy development at GiantDC. "After transforming into a data center, this awareness has become an even more valuable asset."

In January 2017, coal and steel capacity reduction plans were rolled out across China.

Tianjin stepped up its efforts to implement the reform, cutting steel-making capacity by 1.8 million metric tons that year.

GiantDC, known back then as Tianjin Tianhong Jiantong Heavy Industry Co., also responded, shutting down its furnaces and completely transferring its business to a new industry.

"Data centers are an emerging industry," said Meng. "In the early stages, the focus was more on technological breakthroughs rather than energy conservation and emission reduction."

"But now, placing emphasis on energy efficiency has become one of our core competitive advantages, and it has gradually helped raise awareness of energy conservation across the industry."

For data centers, cooling equipment is one of the largest sources of energy consumption.

GiantDC has adopted advanced indirect evaporative cooling technology.

Now widely used in the data center industry as an energy-efficient cooling method, this technology was still a cutting-edge innovation eight years ago, Meng said, adding that it can significantly reduce energy consumption while ensuring effective temperature control.

"We make use of cool outdoor air, which is first filtered and further cooled, then passed through a heat exchange device to transfer heat with the return air from indoors, thereby cooling the equipment," he said. This process is like adding a "heat exchange core" between walls—lowering the temperature without keeping the indoor air clean and stable.

Green park

Beyond the cooling system, many features across the industrial



Tianjin data center's steel will to save energy

Steelmaker transforms itself from heavy industry workhorse to digital dynamo

park where GiantDC is located reflect a green, low-carbon philosophy.

South-facing walls and all non-equipment roof areas are covered with photovoltaic panels to supply clean electricity. Less than two kilometers away, a fishery-aquaculture hybrid project is underway, where fish, shrimp, and crabs are cultivated in the water with solar panels installed above to provide shade, creating a symbiotic system of ecology and energy.

The park also employs smart design, with cooling water pipes kept as straight as possible to reduce energy loss during circulation, and power supply lines replanned to minimize transmission losses, and a lighting system optimized to avoid wasted electricity.

According to Meng, these energy-saving measures have brought the park's overall power usage effectiveness index down to below 1.25. PUE is a key metric for evaluating a data center's energy efficiency—the lower the number, the higher the efficiency. Most domestic data centers have PUE values of around 1.5.

"Green energy-saving principles run through the entire process," Meng said. "From the very start of planning and construction, this awareness has been deeply embedded at every stage. The results we see today are not the work of a single piece of equipment, but the success of systematic innovation."



Top: A Tianjin GiantDC Technology Co worker inspects equipment. BY WANGHAO / CHINA DAILY
Above: The GiantDC office building in Tianjin. PROVIDED TO CHINA DAILY

Long-term planning

In recent years, green and low-carbon transformation, along with the development of digital infrastructure, have become key drivers of China's industrial upgrading.

The 13th Five-Year Plan (2016-20) for the Development of Strategic Emerging Industries, issued by the State Council in 2016, proposed building green data centers for the first time.

The 14th Five-Year Plan (2021-25) later emphasized accelerating the construction of a green, low-carbon digital infrastructure system and promoting the deep integration of

the digital economy with green development.

Globally, there is a broad consensus on pursuing green, low-carbon and digital growth in parallel. The United Nations Sustainable Development Goals call for promoting sustainable industrialization and upgrading infrastructure, identifying the green transition as a critical path for sustainable growth worldwide.

Tricky transition

"Transitioning from a steelmaker to a data center operator, we found many similarities between the two

industries—both are high-energy-consuming sectors with huge demands for electricity," Meng said. "Our park has a self-built 220-kilovolt substation with dual incoming lines from two 300-kV provincial key stations, making our power reliability and stability the best in the Beijing-Tianjin area."

GiantDC has also laid a dedicated internet line from the park to Beijing's data center clusters, ensuring two-way network latency of less than 2 milliseconds—about one-fifth of the blink of an eye. This meets the highest deployment standards for cloud computing nodes and supports cutting-edge applications such as autonomous driving.

"GiantDC's successful transformation is a typical example of Beichen district's efforts to optimize its industrial structure and promote green, low-carbon development," said Ding Qinglin, head of Beichen district's bureau of industry and information technology. "Going forward, we will develop more targeted policies based on the specific needs of different industries to help enterprises achieve high-quality, green growth."

In recent years, Beichen district has continued to promote enterprise transformation and upgrading, encouraging companies to explore innovative paths in carbon reduction, pollution control and environmental greening.

As of the end of last year, the district had 20 enterprises included in the Green Manufacturing Unit pool, and 31 projects had received special funds for high-quality manufacturing development, with a focus on building competitive industrial clusters in intelligent equipment manufacturing and biomedicine.

"We hope GiantDC's transformation will not only be a typical case of traditional manufacturing upgrading, but also a replicable path," said Ding. "At the intersection of the digital economy and green development, Beichen will continue to create new runways for more enterprises to take off."

AI evolution

In an era of rapid technological progress, artificial intelligence has created new opportunities for energy-saving innovation.

On a display screen in the park, core operational indicators such as PUE, power load and changes in temperature and humidity scroll in real time. Data that was once hidden in the equipment is now captured and visualized by an intelligent monitoring system.

This is the iSentry Intelligent Monitoring and Operations Management Platform, developed in-house by GiantDC. It continuously monitors the operational status of the data center, with a special focus on analyzing and dynamically adjusting the energy consumption of cooling systems to help achieve more efficient energy-saving goals.

"Cooling equipment has an optimal power-saving target under different seasons and loads. We let the AI system find that optimal point," said Meng.

Using this system, the data center can conduct continuous automated energy scheduling, enabling equipment to operate in a more energy-efficient manner.

While improving operational efficiency, GiantDC is also exploring socially valuable ways of reusing energy. Together with Tianjin University, it has launched a waste heat recovery for heating project, aiming to use low-grade waste heat generated by servers to provide winter heating.

"This heat may not be very high in temperature, but it is stable and controllable. If it can be recovered and supplied to nearby communities, it could replace some of the coal or gas heating," said Meng. "This would not only reduce emissions but also ease the energy burden of urban heating."

"We hope this will not just be a single project but a pilot for a new pathway," he said. "Although there are challenges, as long as the policies and conditions are in place, we are ready to move forward—to transform the heat from data center servers into warmth for thousands of households."

Liu Xizhen and Zheng Yihan contributed to this story.

AI system helps doctors diagnose patients in community healthcare centers

By YAN DONGJIE

In the ultrasound room of a community hospital in Tianjin's Binhai New Area, suspicious lesions identified by artificial intelligence are highlighted on a monitor with bright orange boxes.

Connected remotely to the system, a chief physician from a top-tier hospital provides real-time guidance and diagnostic opinions.

This Smart Ultrasound Remote Consultation System was implemented in community hospitals in Tianjin last year.

The system was developed by the Institute for Electronics and Information Technology in Tianjin, Tsinghua University and its incubated company, Taifich.

The system not only improves diagnostic accuracy through remote consultation and eliminates the need for patients to travel back and forth to large hospitals, but also offers real-time AI diagnostic assistance, remote training, ultrasound learning and examination.

"Ultrasound diagnosis has long faced problems of missed diagnoses and misdiagnoses at the grassroots level. On the one hand, image quality is limited by technical conditions. On the other hand, grassroots doctors may not see more than one or two positive cases a year, lacking opportunities to accumulate experience," said Yong Guotang, project director at Taifich.

University's AI technology to transfer the diagnostic experience of senior doctors from top-tier hospitals online to the grassroots level and further address the practical issues faced by grassroots medical care," he added.

Yong cited two examples when discussing feedback on the application of the smart ultrasound remote consultation system.

A chief physician at a community healthcare center in Binhai said that remote consultation saved time and was "extremely convenient" after using the system.

Another example involved a patient at a community clinic who used a green channel to directly access a higher-level hospital, resolving the issue of "difficulty in registering for an appointment."

Taifich has recently launched a fast-track referral service, enabling patients in need at the grassroots level to directly connect with Tianjin Fifth Central Hospital and receive timely treatment.

These five-line changes would not be possible without stable technical support and convenient mechanisms.

"We have established a closed-loop mechanism covering scientific research, verification, product development and industrialization," said Wang Pengfei, vice president of the Institute for Electronics and Information Technology in Tianjin. The institute was jointly established by Tsinghua University, Binhai New Area of Tianjin, and the Shao-Singapore Tianjin Eco-City.



Doctors at Tianjin Fifth Central Hospital use the Smart Ultrasound Remote Consultation System. PROVIDED TO CHINA DAILY

Focused on the commercialization of scientific and technological achievements in the field of electronics and information technology, it has incubated and attracted 312 companies in Tianjin.

In an environment conducive to the commercialization of research outcomes, all levels of government in Tianjin, particularly Binhai New Area and the Eco-City, provided the institute with five

office space and apartments, and supported it in terms of funding, policies and business connections.

In recent years, China has continued to promote the deep integration of industry, academia and research, encouraging universities and research institutions to work with enterprises to advance the engineering and large-scale application of technologies.

Emphasis has been placed on establishing a smooth transition from scientific research to industrialization, promoting the deep integration of the innovation and industrial chains, and accelerating the development of new quality productive forces through the transformation of scientific and technological achievements, Wang said.

"In the past, we tended to convert whatever results we had," he said. "Now, we place greater emphasis on cultivating and converting whatever the market needs, with a focus on major national needs, local development priorities, and emerging fields."

Road revolution

In recent years, in the field of intelligent transportation and autonomous driving, the country has promoted a "vehicle-road-cloud" integration development strategy, marrying up intelligent connected vehicles with transportation infrastructure and cloud platforms.

Against this backdrop, another enterprise incubated by the research institute, Tianjin RHEF Optoelectronics Co., or Jianhuo, has converted its research into applicable products.

Two years ago, it undertook the task of constructing the National No.1 Expressway Vehicle-Road Collaboration Pilot Demonstration Zone, deploying its independently developed fiber optic radar on a 30-kilometer pilot section of road.

This radar works in conjunction with lidar, millimeter-wave radar,

and other equipment to form a roadside perception system covering the entire section of road. On this pilot section of road, fiber optics buried on both sides records the passage of every vehicle in real time.

Every time a wheel touches the road surface, it triggers a slight change in the optical signal, which is analyzed and processed by an optoelectronic integrated microsystem and converted into vehicle location information and operating status, enabling real-time traffic monitoring along the entire section of road.

"Due to monitoring distance limitations, if you want to monitor the entire road section with cameras alone, you need to install one every few hundred meters," said Chen Shun, deputy general manager of Jianhuo.

"But if you combine this technology, you only need to install cameras at the beginning and end of a road section to monitor the entire road section. This not only reduces construction costs, but also improves the coverage and accuracy of monitoring, providing stable data support for smart transportation and autonomous driving," he said.

Wang said that the institute intends to focus on semiconductor, computing power, healthcare engineering convergence, the low-altitude economy and the marine economy.

Liu Xizhen contributed to this story.

作为天津市北辰区产业结构优化的典型样本，江天数据的转型故事，是一场“节能基因”与“数字使命”的深度融合，更是中国企业践行绿色可持续发展理念的生动实践。

从钢铁到智算：节能基因铸就核心竞争力

“节能管理曾是钢铁企业的生存关键，如今，节能管理理念已经成为我们的思维模式。”江天数据能源发展总监孟庆利在接受中国日报采访时的表述，道出了企业转型的核心竞争力。

2017年，响应天津市产业转型号召，江天数据从钢铁行业毅然转身，投身数字经济基础设施建设——“IDC是新兴行业。在新兴行业发展初期，行业会更加关注技术突破而不是节能减排，”孟庆利说，“对能效的重视就成了我们转型的核心竞争力之一，也慢慢带动了整个行业对节能的重视。”



对数据中心来说，设备降温是能源消耗比较大的一环。江天数据采用先进的间接蒸发冷却技术和大温差水冷技术，严选高效UPS、新型环保冷媒、房间级风墙精密空调等智能温控设备。但江天数据的节能探索并不局限于此：

智算中心南向墙面与屋顶全覆盖光伏板，供应清洁电力；园区2公里外推进“渔光互补”工程，实现“水上发电、水下养殖”的生态共生；冷却水管走直线减少输送损耗、优化供电线路降低传输能耗、升级照明系统避免浪费……从规划到建设的每一个细节，都渗透着绿色低碳理念。

低碳实践换来亮眼数据：江天数据园区整体PUE值（评价数据中心能源效率的核心指标）低至1.22以下。孟庆利强调，“如今的成果并不是靠某个单一设备实现的，而是系统性创新的胜利。”

政策与战略共振：锚定数字基建的时代选择

江天数据的转型，始终与国家战略同频共振。2016年国务院《“十三五”国家战略性新兴产业发展规划》首次提出建设绿色数据中心，2021年“十四五”规划进一步明确“构建绿色低碳数字基础设施体系”；全球层面，联合国《可持续发展目标》亦将绿色转型列为全球可持续增长的关键路径。



在“双碳”与“数字中国”的双重战略指引下，江天数据敏锐捕捉行业机遇，结合钢铁与IDC行业“高耗能、重电力”的共性，成功实现产业跨越。

“江天数据的成功转型，是北辰区推进产业结构优化和绿色低碳发展的一个典型案例。”北辰区工信局局长丁庆兰在接受采访时表示，“我们希望江天的转型不仅成为一个传统制造业转型的典型案例，更成为一种路径。在数字经济和绿色发展的交汇点上，北辰将持续为更多企业打造腾飞的新跑道。”

AI 赋能 + 余热回收：开辟绿色发展新图景

科技赋能的当下，江天数据智算园区内一块实时滚动的显示屏格外醒目——PUE值、电力负载、温湿度变化等核心指标，由公司自主研发的云哨iSentry智能监控运维管理平台精准推送。该平台EMS能源管理系统通过AI技术分析制冷设备能耗，动态调整运行参数，为不同季节、不同负载找到“最省电的最优解”，实现全天候自动化节能调度。



不止于自身能效提升，江天数据更探索能源利用的社会价值：与天津高校联合发起“余热回收供暖”项目，计划将数据中心服务器产生的低品位废热转化为冬季供暖资源。“这部分热量稳定可控，若能送入周边社区，可替代部分燃煤或燃气供暖，既减排降碳，又缓解城市供暖压力。”孟庆利表示，尽管项目仍面临挑战，但江天数据愿成为“新路径的试验者”，让服务器的“热量”转变成千家万户的“温暖”。

从钢铁熔炉到数据洪流，从节能管理到绿色智算，江天数据的转型之路，既是企业自身的破局重生，更是中国传统制造业向“数字+绿色”双轮驱动升级的缩影。

此次获中国日报双平台报道，是对江天数据过往实践的认可。未来，江天数据将继续深耕绿色智算领域，在数字经

济与绿色发展的交汇点上，为更多企业提供转型参考，为京津冀数字基础设施绿色化贡献更多力量。

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