

China Oil & Gas

Expert call: IDC liquid cooling sees solid supply and growth potential

Industry Overview

Supply side remains supported despite depressed demand

Today, we hosted a conference call with Mr. Xie, VP of GW Century Communication Tech, to discuss China IDC cooling market outlook. Mr. Xie believes despite the current muted demand given economic headwinds, supply side remains supported by active completion of stacked orders with normally 2 years' construction period. On the demand front, major users differentiate their consumptions in terms of by following: 1) national telecom giants rarely do R&D on IDC cooling and would rather rely on the external supply chain; and 2) leading internet companies such as Tencent and Alibaba have started to develop their own R&D teams though cooperations with external providers. Other big ones (Baidu, ByteDance) and SMEs are mainly dominated by third-party suppliers. On the supply front, major players include 1) server providers (Inspur, Huawei, Sugon, etc.), and 2) third-party cooling facility producers (Envicool, Goaland, etc.). Future growth for IDC cooling will be driven by rising computing demand amid the boost from AI and stricter PUE criteria, albeit lagging effects from current sluggish demand as a downside risk.

Air cooling is current mainstream, liquid cooling is future

Cooling solutions mainly include air cooling and liquid cooling. Liquid cooling is further categorized into indirect liquid cooling, immersion cooling, and spray liquid cooling. In today's landscape, air cooling is still the mainstream with nearly 95% market share, thanks to its technological maturity and low cost. Comparably, indirect liquid cooling/immersion cooling/spray liquid cooling are now about 80/60/50% maturity compared with air cooling (100%). Besides, the price of liquid cooling is 10x that of air cooling. Meanwhile, Xie still sees promising future for liquid cooling, especially under the AI waves. On one hand, China is committed to lower the PUE from its current average level of 1.5 (close to 1.0). To this end, liquid cooling is more advantageous as it could lower PUE 3-10x than that air cooling could do. On other hand, opportunities exist with the development of GPU servers. Mr. Xie believes IDC cooling industry could see a big boost once AI servers tilt towards liquid cooling due to more computing needs.

Third-party suppliers' efforts could position them better

Mr. Xie believes domestic liquid cooling server producers are more advanced and thus it will be easier for them to expand market share in IDC liquid cooling market, given their familiarities with IDC internal structure and privileges to choose the cooling technology/system. The third-party cooling facility suppliers could be better positioned along with the boost from AI, with three key advantages: 1) customized manufacturing capabilities to supply tailor-made products to satisfy various requirements from customers; 2) innovative technology to reduce investment and maintenance cost on cooling system to better improve IRR; and 3) strong connection and deep interaction with server producers/customers to effectively win orders and track industry trends.

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IDC: Internet data center

AI: Artificial intelligence

R&D: Research and development

PUE: Power usage effectiveness

SME: Small and medium enterprise

IRR: Internal rate of return

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