Press Release

NEW REPORT! China ICT running dry?

New CWR report explores how AI & climate risks amplify existing water risks faced by thirsty data centres

Hong Kong, 12nd April 2024 – CWR releases a new report, ***"China ICT running dry? The rise of AI & climate risks amplify existing water risks faced by thirsty data centres"***. The report reveals 4.3mn data centre racks in China consume around 1.3bn m^3 of water today; but data centre growth can more than double this to over 3bn m^3 by 2030. This will put pressure on already stressed water resources, especially as the rise of generative AI and chatbots could see water use surge by a shocking 20x.

For perspective, water consumed by China's data centres today is 1.9x the water use for households & services in Tianjin, a city of 13.7mn people. So, 3bn m^3 by 2030 will provide water for 26mn but the explosion of AI could see this jump to over 500mn people unless strict measures are taken to control ICT sector water usage.

Unfortunately, data centres are not just thirsty but also power hungry – their carbon emissions, if left unchecked, will accelerate global warming which will exacerbate water scarcity, creating a vicious cycle. *"Carbon causes climate change but water is how we feel it"* said Debra Tan, Head of CWR and lead author of the report. *"Already, we are feeling the impacts – floods, droughts, rising water scarcity and so on. The fact that we have breached year-to-date warming of 1.5°C in 2024 will only accelerate such risks – the power hungry ICT sector must have cohesive strategies to address these"* she added. Indeed, temperatures soared in February to an alarming 2°C of warming for four consecutive days.

The report, a first in CWR's new 2024 ***"Accelerated Threat Series"***, highlights five key areas of water risks faced by data centres in China and provides a "5 to-do's action list" to rein in ICT water risks. Corporates, institutional investors and lenders are encouraged to use these to assess the exposure of their portfolios to these accelerating and compounding risks. It's important they get on top of these because even without the explosion of AI and chatbots, China already faces severe water challenges.

According to Dr. CT Low, CWR's Geospatial Risk Lead and co-author of the report: *"almost half of China's data centre racks are located in water scarce regions, which are as dry as the Middle East"*. He cautioned that *"rising water demand coupled with rising water scarcity due to climate change will increase the competition for water putting ICT at risk as meeting water demand from households and agriculture will be the priority"*.

On top of this, the exposure to extreme weather events is significant. CWR's analyses show that at least 41% of China's national data centre racks are in regions that are highly prone to drought and at least 28% are in areas that are highly prone to floods; at least a fifth are very prone to both. But it's not just freshwater threats that pose concerns, *"56% of China's data centre racks are located in coastal regions which are vulnerable to storm surge and sea level rise"*, added Dr Low.

Water risks can also disrupt power generation – water is used for cooling in thermal power generation and is essential for hydropower. Floods and droughts have also caused power cuts and rationing. In 2022, power cuts during the Yangtze droughts even affected global supply chains. The report warned that data centres could face double whammy risks (water and power) especially in hydropower reliant provinces such as Sichuan and Chongqing, home to one of the 8 Computing Hubs and 10 Data Centre Clusters.

Clearly, if data centre expansion was powered by coal, this will accelerate climate change and exacerbate water stress. CWR's earlier report on ICT transition flagged that China data centre emissions can balloon 3.5x in a decade to 340MTCO_2 by 2030 – an amount greater than the energy-related CO_2 emissions of the UK.

The Chinese government is already acting. In 2020, a new national initiative "Eastern-Data, Western-Computing" (东数西算) was launched to shift data centres from the populous coastal regions to western regions. Natural cooling, lower electricity tariffs, access to green electricity, and cheaper land costs are some of the key reasons behind this "going-west" strategy. However, Dr Low pointed out: *"Going west doesn't solve all water problems. The "Eastern & Western Hubs" are spread over 14 regions but 9 of these have around 40% or more of their respective areas facing 'High' to 'Extremely High' water stress"*.

Regulatory and river basin risks are also high. As per the report over three-quarters of China's data centre racks are located in three river basins – Yellow, Yangtze & Pearl. *"China is taking active steps to manage rivers holistically from source-to-sea, so expect to see tighter regulations and WUE standards for the ICT sector"* warned Tan. The report noted that Beijing has already proposed water caps for data centres while Shanghai has introduced stricter water efficiency (WUE) guidelines. Plus, various ministries have ruled out some cooling tech as *"unsuitable for use in water-scarce areas"*.

"CWR helps corporates and the financial sector assess fast-evolving climate & water risks, and curate cohesive climate strategies to survive them. For the ICT sector, the time to tackle water risks is now – we must get on top of these before the explosion of AI" urged Tan. China's ICT giants are encouraged by the think tank to take the lead to be *"water neutral"* or *"water positive"* like their Silicon Valley counterparts of Meta and Google. Despite daunting water challenges ahead, Tan remains positive: *"by working together, the public and private sectors can collaborate to reduce water risks and ensure access to water for all"*.

Media

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Report Link:
https://chinawaterrisk.org/notices/new-cwr-report-china-ict-running-dry-rise-of-ai-climate-risks-amplify-existing-water-risks-faced-by-thirsty-data-centres/

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About CWR

China Water Risk (CWR): CWR is a non-profit think tank that aims to create a world where water and climate risks are embedded in business & finance. Since its launch in 2011, it has worked from its Hong Kong base to engage with global business and investment communities in understanding and managing various types of water and climate risks in China and across Asia. CWR's collaborative reports with financial institutions, IGOs, scientists as well as government related bodies have been considered ground-breaking and instrumental in understanding Asia's water challenges. They have helped inform better decision-making today for a water secure tomorrow. Join the conversation at **www.chinawaterrisk.org**

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Protect & prepare for locked-in climate impacts | Ideate flexible innovations | Be ready to survive & thrive

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