APAC Green Data Center Market - Industry Outlook & Forecast 2022-2027

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Report description:

The APAC green data center market is expected to grow at a CAGR of 10.99% during 2021-2027.

MARKET OVERVIEW

The region is one of the most dynamic global data center markets, with increased investments from colocation providers and hyperscale operators. The growing number of internet users, increased use of social media, elevated smartphone penetration, increased adoption of cloud services, and the need for enterprises to migrate from server room environments to data centers are the major drivers of the APAC green data center market.

The APAC green data center market investment in power capacity accounts for around 32% of the overall data centers in the APAC region. The region's market for colocation data centers is expected to witness steady growth owing to the updated criteria issued by the governments for data center construction, including developing data centers at a PUE of 1.3 or less and getting the Green Mark Certification by different authorities.

KEY HIGHLIGHTS
Government Push Towards Sustainability

-In July 2022, the Government of Singapore lifted the data center moratorium, announcing its pilot project for facility development, under which operators can register for the pilot process by September 19, 2022. The government has also issued specific criteria to be met to be eligible to develop centers under the pilot project.
-On average, renewable power prices in the APAC are now roughly 16% higher than fossil fuel power costs across the project lifecycle. Renewable energy is between 12% and 29% cheaper than coal, the lowest-cost fossil fuel. India, China, and Australia are the top three leaders.
Government Interest In Curbing Carbon Emissions Driving APAC Green Data Center Market
-China has planned to be carbon neutral by 2060, with the Chinese government releasing a Three-Year Plan for new data centers,

requiring that new facilities be more efficient, have a PUE of 1.3, and be fully used by the 2023 end.
-India targets net zero by 2070 and aims to derive around 50% of its energy through renewable sources by 2030.
-Japan aims to be carbon neutral by 2050. Because of higher energy efficiency, it generates every USD 1,000 of GDP using less energy than other countries like the US and Germany.
-Regional and state governments across various nations are concerned about global warming and GHG emissions.
-Several governments have announced plans to become carbon neutral between 2030 and 2050.
-Renewable energy companies are partnering with governments to build and develop renewable energy projects like wind and solar farms.

SEGMENTAL ANALYSIS - ELEMENTS OF GREEN DATA CENTERS
Innovations In Power Technologies

-In April 2022, Green Li-ion, a renewable energy company based in Singapore, received funding of over USD 11.5 million. The company has developed recycling technology for lithium-ion batteries that is modular.
-Microgrids are also being set up in various countries, enabling renewable energy use. For instance, the Singapore Institute of Technology (SIT) is setting up Singapore's largest private microgrid on its premises, which is expected to be operational in 2024.
-Natural gas generators will likely replace diesel generators in APAC in the coming years. In addition, fuel cells will emerge as prime or backup power. For instance, Equinix and the National University of Singapore are testing the potential for hydrogen fuel cells to be used as a power source in their data centers in Singapore.
Innovations In Cooling Technologies
-Underwater and floating data centers are gaining traction. Beijing Highlander is among the leading companies focused on deploying floating and underwater data centers, boosting the APAC green data center market.
-The use of snow as an alternative to cool data center facilities, especially in colder regions, is also a concept that is being explored. Japan is among the first movers in this regard in the APAC region.
Adoption Of District Heating And Waste Heat Recovery Systems Is Expanding Beyond Nordic
-The waste heat generated from facilities is an excellent opportunity to reduce OPEX by selling waste heat and can be used to heat residential and commercial buildings in colder months.
-Countries in APAC, such as South Korea, Japan, parts of China, and Australia, have tremendous potential to adopt district heating as a practice in the coming years.
Increasing Modular Data Center Design & Deployment
-Modular data center buildouts tackle challenges such as a high PUE, high operational costs of traditional centers, and high environmental impact.
-In January 2022, Huawei installed a modular data center with over 230 modules, in Xi'an, for China Mobile.
Hyperscale Operators Stacking Up On Renewable Energy PPAs
Hyperscale operators in the APAC green data center market have entered into power purchase agreements with renewable energy providers to supply power to their data centers.
-In March 2021, AWS announced its first renewable energy project in Singapore. The company signed a 62-MW energy agreement with Sunseap Group.
-Google has initiated its first clean energy project in APAC in Taiwan, wherein it signed an agreement with a few Taiwan-based energy companies to procure the output of a 10 MW solar array.
Renewable Energy Adoption by Colocation Service Providers
Digital Reality, Equinix, Vantage Data Centers, ST Telemedia Global Data Centers, and Keppel Data Centres, among others, are some significant operators operating facilities using renewable energy, with many of them aiming to be carbon-neutral by 2030.
-Data Vault is installing 230 kW solar generation plants for its Hamilton data center. Also, the company has adopted 114 kW of solar power for its Auckland data center facility.
-Equinix's facilities in China, Hong Kong, Japan, and Singapore are powered by 100% renewable energy from 2020, and its overall facilities in the APAC region are powered by 75% renewable energy.

-NEXTDCs M1 data center in Melbourne has installed a solar array that has generated around 2.2 million kWh of power since its operation, offsetting around 700 tons of greenhouse gases yearly.

PUE of Data Centers is Decreasing?

Operators are increasingly targeting a PUE of less than 1.5 in the APAC green data center market by maintaining a temperature lower than the recommended temperature using innovative design, power, and cooling technologies such as hybrid cooling, advanced UPS systems, smart DCIM solutions and adoption of renewable energy sources.

A Significant Opportunity Has Been Identified For Renewable Energy Producers And Suppliers In APAC

-With increasing requirements for renewable energy supply by hyperscale and colocation operators, there is an increasing need for energy generation via solar, wind, and hydro energy, among other sources, especially in APAC.

-Adani Green Energy (AGEL) plans to build a 25 GW renewable portfolio by 2025, comprising wind, solar, and hybrid power plants.

-GreenYellow has partnered with Schneider Electric to provide turnkey programs for energy efficiency to large companies to enable these companies to meet their energy efficiency targets.

MARKET SEGMENTATIONS

Segmentation By Infrastructure

-Electrical
-Mechanical
-General Construction

Segmentation By Electrical Infrastructure

-UPS Systems
-Generators
-Transfer Switches & Switchgear
-PDUs
-Other Electrical Infrastructures

Segmentation By Mechanical Infrastructure

-Cooling Systems
o Crac & Crah Units
o Chiller Units
o Cooling Towers
o Condensers & Dry Coolers
o Economizers & Evaporative Coolers
o Other Cooling Units
-Racks
-Others Mechanical Infrastructure

Segmentation By Cooling Technique

-Air-based Cooling Technique
-Liquid-based Cooling Technique

Segmentation By General Construction

-Core and Shell Development
-Installation and Commissioning Services
-Engineering and Building Designs
-Physical Security and Fire Detection Suppression

-DCIM/BMS

Segmentation By Geography
-APAC
oChina & Hong Kong
oAustralia & New Zealand
oJapan
oIndia
oSouth Korea
oSoutheast Asia
oSingapore
oMalaysia
oIndonesia
oRest of SEA
oRest of APAC

VENDOR LANDSCAPE

Prominent Data Center Investors
-AirTrunk
-Alibaba
-Amazon Web Services (AWS)
-Apple
-Big Data Exchange (BDx)
-CDC Data Centers
-Chayora
-China Telecom
-Chindata
-Colt Data Centre Services
-CtrlS
-Digital Realty
-EdgeConneX
-Equinix
-GDS Services
-Google
-Global Switch
-Huawei Technologies
-Iron Mountain
-Keppel Data Centres
-Lotte Data Communication
-Microsoft
-NEXTDC
-NTT Global Data Centers
-Nxtra by Airtel
-Princeton Digital Group (PDG)
-Pure Data Centres
-RackBank

-Regal Orion
-Sify Technologies
-Space DC
-SUNeVison Holdings (iAdvantage)
-STACK Infrastructure
-ST Telemedia Global Data Centres
-Tenglong Holdings Group
-Vantage Data Centers
-VNET
-Yondr
-Yotta Infrastructure

Renewable Energy Providers
-Adani Green Energy (AGEL)
-AGL Energy
-AMP Energy
-Avaada Energy
-China Yangtze Power (CYCP)
-GCL-Poly Energy Holdings
-GreenYellow
-JinkoSolar Holding
-Meridian Energy
-New Zealand Solar Power
-ReNew Power Ventures
-Suzlon Energy
-Tata Power Solar Systems
-Trina Solar
-SB Energy
-Solargiga Energy Holdings
-Vena Energy
-Xinjiang Goldwind Science & Technology

KEY QUESTIONS ANSWERED

1. How big is the APAC green data center market?
2. What is the growth rate of the APAC green data center market?
3. What are the latest APAC green data center market trends?
4. Which country holds the largest APAC green data center market share?
5. What factors drive the growth of the APAC green data center market?

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22.17.2 PRODUCT/SERVICE OFFERINGS
22.18 SUZLON ENERGY
22.18.1 BUSINESS OVERVIEW
22.18.2 PRODUCT/SERVICE OFFERINGS
22.19 SOLARGIGA ENERGY HOLDINGS
22.19.1 BUSINESS OVERVIEW
22.19.2 PRODUCT/SERVICE OFFERINGS
22.20 TATA POWER SOLAR SYSTEMS
22.20.1 BUSINESS OVERVIEW
22.20.2 PRODUCT/SERVICE OFFERINGS
22.21 TRINA SOLAR
22.21.1 BUSINESS OVERVIEW
22.21.2 PRODUCT/SERVICE OFFERINGS
22.22 TOTALENERGIES
22.22.1 BUSINESS OVERVIEW
22.22.2 PRODUCT/SERVICE OFFERINGS
22.23 THE AES CORPORATION
22.23.1 BUSINESS OVERVIEW
22.23.2 PRODUCT/SERVICE OFFERINGS
22.24 VENA ENERGY
22.24.1 BUSINESS OVERVIEW
22.24.2 PRODUCTS/SERVICE OFFERINGS
22.25 XINJIANG GOLDWIND SCIENCE & TECHNOLOGY (GOLDWIND)
22.25.1 BUSINESS OVERVIEW
22.25.2 PRODUCT/SERVICE OFFERINGS

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23.1 KEY TAKEAWAYS

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