

ALIBABA CLOUD SUSTAINABILITY JOURNEY

A LOOK BACK AND FORWARD

 Alibaba Cloud

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Selina Yuan
Vice President of Alibaba Group,
President of Alibaba Cloud International

01 LETTER FROM THE PRESIDENT OF ALIBABA CLOUD INTERNATIONAL

Every day, we encounter a new challenge to overcome, and technology is helping us do just that. With GenAI accelerating the next wave of digital innovation, it's time to take a step back and examine how we can harness this technological innovation to promote more eco-friendly business practices and improve social well-being.

At Alibaba Cloud, we recognize the importance of driving sustainable innovation through digital technologies. From collaborating with North China Electric Power University toward innovation in sustainable data center technology to building the Hangzhou campus that epitomizes a workspace dedicated to both employee welfare and ecological sustainability, we love contributing to society in sustainable ways by leveraging the power of cutting-edge technologies. We demonstrate our dedication to sustainability through concrete initiatives and programs aimed at actively guiding enterprises toward achieving carbon neutrality.

I am also passionate about our collaboration with the International Olympic Committee (IOC) to support more sustainable games. For instance, Energy Expert enabled the IOC to assess the carbon footprint of temporary constructions for the inaugural Olympic Esports Week (OEW) and leverage sustainability insights via integrated dashboards and reports. Likewise, I am very pleased to see participants adopting eco-friendly initiatives at the Asian Games.

// **We're passionate about providing organizations with timely data, actionable insights, and energy-saving recommendations that make positive and tangible impacts.** //

I strongly believe that talented youth hold a very bright future and nurturing this talent becomes very important in this day and age. With AI and technology innovations, we can improve education and make today's youth more employable. From building a digital talent pool across regions to driving developer engagement through university partnerships and tech events. We continuously work on empowering the youth and nurturing digital talent through our specialized programs and training centers that will eventually help bridge the global digital divide. These programs provide individuals with the necessary tools and knowledge needed to build a more technologically advanced and sustainable future.

As we head deeper into the GenAI era, let us try to shape a future where technology catalyzes sustainable growth and enhances the lives of communities and future generations.



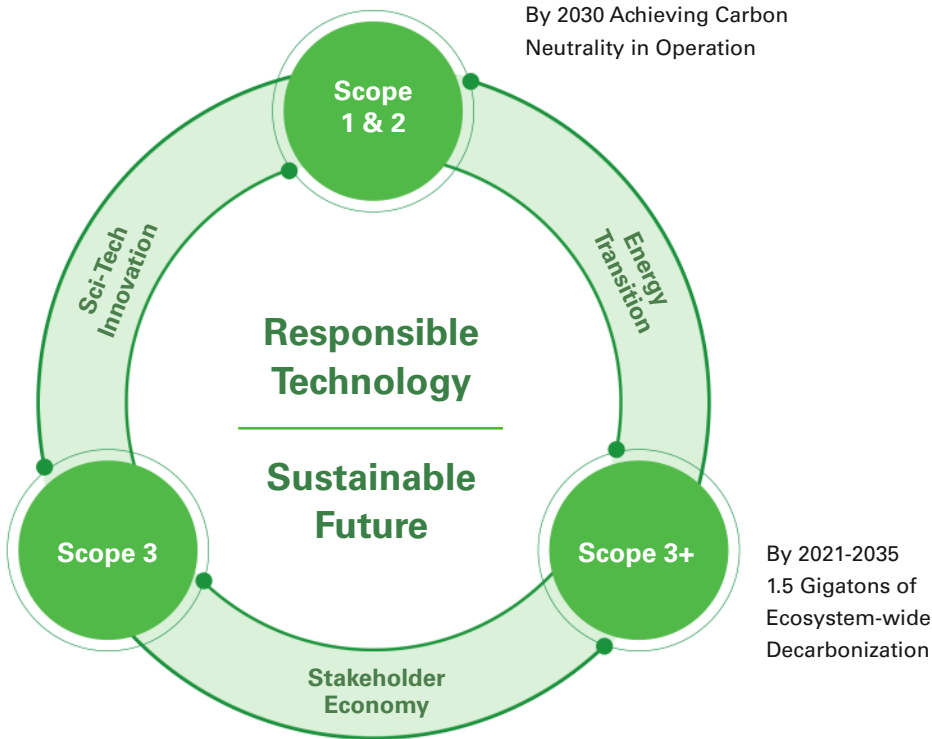
02

BUILDING A SUSTAINABLE FUTURE WITH GREEN INITIATIVES —

Businesses strive to balance profitability with ecological responsibility, and technology is emerging as a vital driver of sustainable innovation. Even at Alibaba Group, we seek to achieve this careful balance by leveraging the “Digital-Circular-Economy” principle to explore avenues of reducing our carbon emissions while maintaining economic growth.

To ensure that we follow through on our goals, Alibaba Group has made three key pledges towards this crucial goal

- **Decarbonize Alibaba Group (Scope 1 and 2)**
By 2030, we will achieve carbon neutrality in our own operations
- **Green Value Chain (Scope 3)**
By 2030, we will collaborate with our upstream and downstream value chain partners to cut emission intensity by 50%
- **Platform Ecosystem Decarbonization (Scope 3+)**
Beyond our operations and direct value chain, Alibaba pledges to leverage our digital platforms to encourage even broader participation by stakeholders that our efforts can reach



2.1

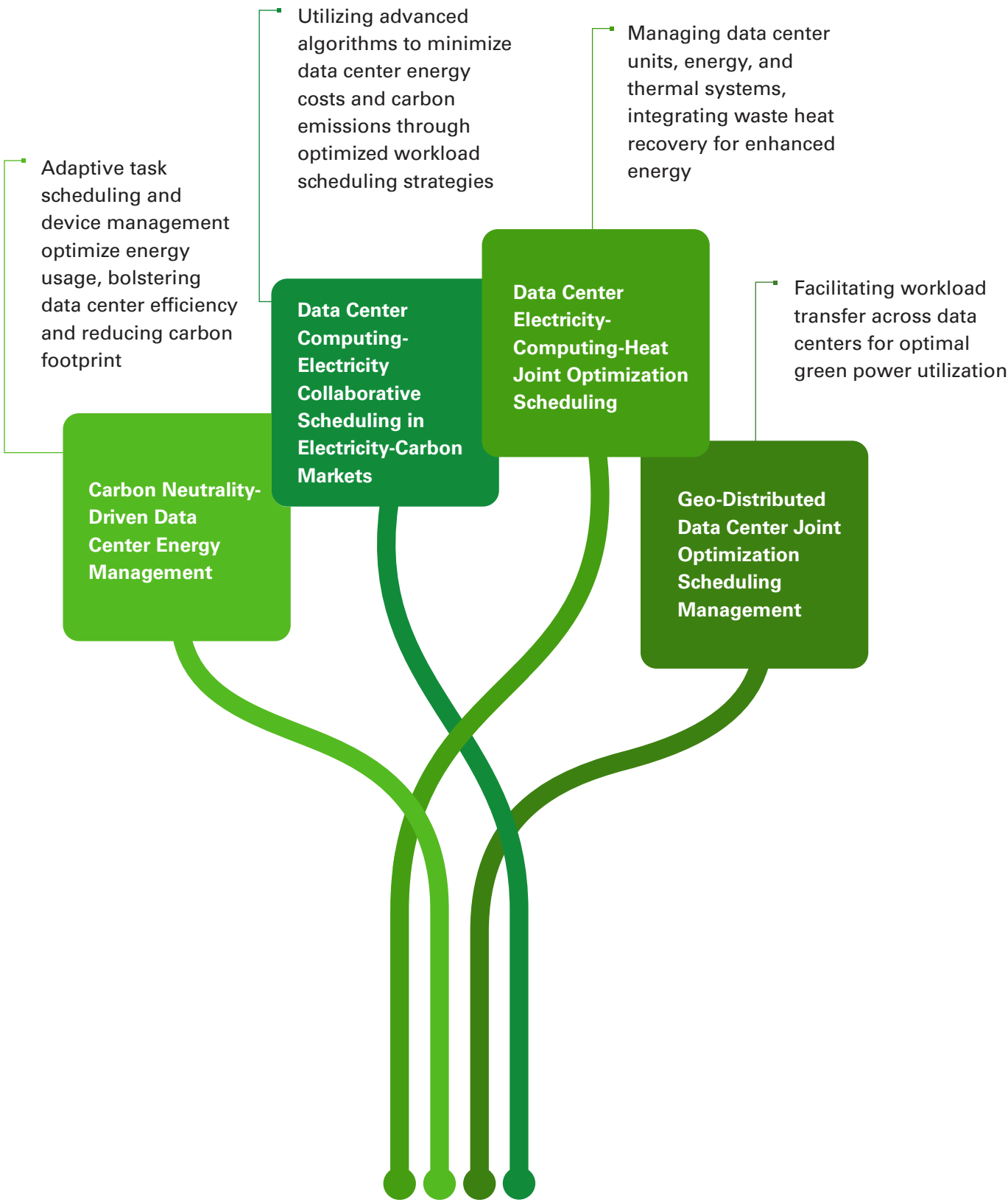
ACCELERATING SUSTAINABLE DATA
CENTER INNOVATION

In response to the global energy crisis and climate change, Alibaba Cloud, in collaboration with North China Electric Power University, has worked toward innovation in sustainable data center technology, as evidenced by the **award-winning project in the UNIDO Global Call 2023 competition.**

The project, titled **“Carbon Neutrality Driven Data Center Job/Resource Scheduling System and Energy Management System,”** represents a significant advancement in the field of clean and sustainable industrial development.



The Key Components of the System



Green Innovation: Revolutionizing Data Center Sustainability

■ UNIDO Global Call 2023 (United Nations)

First Prize in the Energy Efficiency Category

■ Ministry of Industry and Information Technology's 2023 China Computational Power Conference

Best Academic Paper Award

■ The Geneva International Exhibition of Inventions

International Patent Award: Silver Medal

■ Industry-wide Annual Low-Carbon Solution of the Year

Recognized as one of the "Top 10 Companies with Double Carbon Action Capacity"

■ Alibaba Group FY23 ESG Report Annual Innovation Achievement

A key innovation in Alibaba Group's ESG Report for the fiscal year 2023

■ Industry's First "Data Center-Power System" Collaborative Scheduling Field Experiment

Pioneering joint scheduling between a data center and a power system, aimed at boosting renewable energy use

2.2 ALIBABA CLOUD’S SUSTAINABILITY-DRIVEN CAMPUS: PRIORITIZING THE ENVIRONMENT AND EMPLOYEE WELLBEING

Alibaba Cloud’s Hangzhou campus epitomizes a workspace dedicated to both employee welfare and ecological sustainability. It fosters the harmonization of contemporary operational demands with eco-friendly practices, aligning with Alibaba Group’s carbon neutrality goals.



Inner Campus Areas

- Campus headquarters utilize “Energy Expert,” an AI-driven energy management tool, to monitor emissions and suggest efficiency improvements
- Lighting and climate control are adjusted based on occupancy and weather to minimize energy waste

Outdoor Campus Areas

- ~70% of irrigation water comes from reclaimed rainwater, reducing freshwater usage
- 40% of the campus’s electricity is generated from renewable energy sources through solar panels on rooftops



Through these initiatives, Alibaba Cloud’s Hangzhou campus not only fosters a conducive working environment for its employees but also actively contributes to mitigating environmental impact and advancing the global transition towards a sustainable future.



03

PAVING PATHWAYS TO CARBON NEUTRALITY WITH SUSTAINABILITY SOLUTIONS

As the world grapples with the repercussions of climate change, businesses, governments, and communities are increasingly compelled to embrace sustainability solutions that pave the way toward carbon neutrality. The choices we make today will shape how future businesses and individuals address environmentally responsible practices. At Alibaba Cloud, sustainability is one of our long-term goals and through collaborations with leading organizations, we continue pioneering sustainable practices powered by technology.

3.1 | SETTING THE STANDARD FOR SUSTAINABLE GAMES

We have continuously collaborated with the International Olympic Committee (IOC) to support more sustainable sporting events.

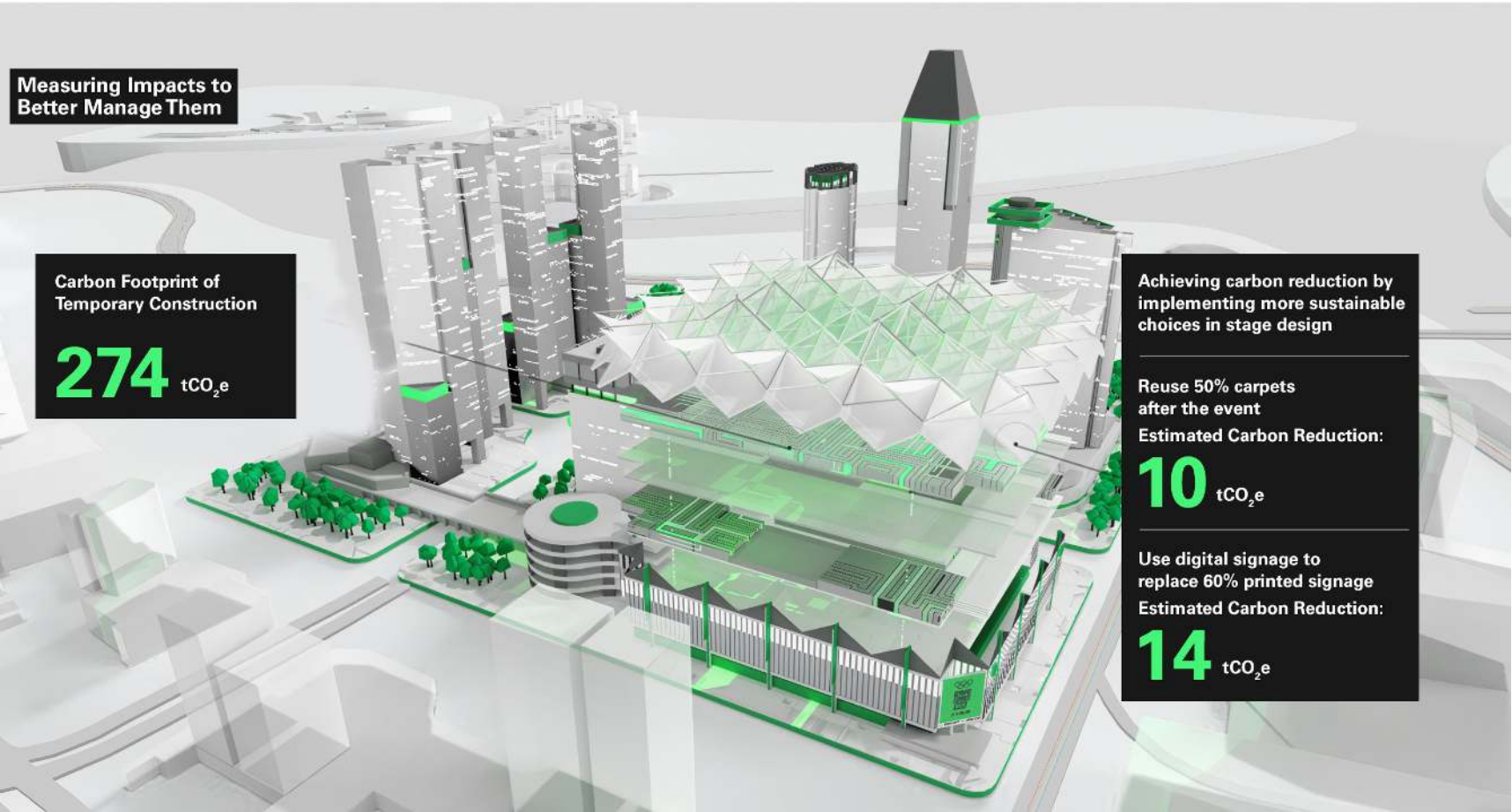
“We’re pleased to work with Alibaba Cloud to apply cutting-edge technologies to measure carbon emissions so we can continue to make a difference.”

Vincent Pereira, Head of Virtual Sport at the International Olympic Committee (IOC)



Quantifying Emissions: Olympics Esports Week

With Energy Expert, we supported the IOC to assess the carbon footprint of temporary constructions for the inaugural Olympic Esports Week (OEW) and generate data-driven insights on the choice of materials and equipment.



Energy expert's dashboard shows the carbon footprint of temporary construction at the Olympic Esports Week

Promoting Sustainable Practices: 2023 Asian Games

As Hangzhou played host to the 2023 Asian Games, the focus was on both sporting excellence & sustainability. Alibaba Cloud spearheaded initiatives to promote eco-friendly behavior during the event.

“We want to leverage the power of technology, in collaboration with our partners, to drive more individuals to participate in our efforts to make the Games greener and more accessible to all.”

Jingren Zhou, Chief Technology Officer
Alibaba Cloud Intelligence



Lifestyle Web Application for the Village

Alibaba Cloud introduced a cutting-edge sustainability web app for the Asian Games Village. It incentivized participants to adopt eco-conscious practices, rewarding them with carbon points for recordings of eco-friendly practices. The points were exchangeable for merchandise at various stores.



3.2 | ADVANCING SUSTAINABILITY FOR OUR CUSTOMERS

At Alibaba Cloud, we're committed to more than just delivering innovative technology, we're dedicated to cultivating a sustainable future for all. With Energy Expert, we empower our customers to make environmentally conscious choices without compromising quality or convenience.

Empowering E-commerce for Positive Change: Synagie

Synagie is among Singapore's top e-commerce companies that leverages cloud-based technologies to provide end-to-end commerce enablement solutions to businesses selling online and offline.



Alibaba Cloud Energy Expert aids Synagie in significantly reducing its carbon footprint to achieve diverse sustainability targets.

- Pinpoint emission sources for the business
- Calculate carbon output for the company's infrastructure
- Devise optimization plans to balance growth and environmental concerns

500+ Synergy-affiliated brands also leveraged Energy Expert to categorize low-carbon products, adopt sustainable practices, and access online carbon footprint modeling and certifications.

100%
of residual Scope 1,2,3 emissions resulting from our FY2022 business operations have been neutralized

>700,000KG
of packaging cardboard CO2 neutralized

>200Mn KM
of deliveries & shipping CO2 neutralized

3.3 CONTRIBUTION TO THE GLOBAL GOAL OF SUSTAINABLE DEVELOPMENT

Alibaba Cloud played a prominent role during the 28th Session of the Conference of Parties (COP28) in Dubai, actively supporting sustainability initiatives and goals. Our efforts included the publishing of research reports and whitepapers, uniting stakeholders in the pursuit of sustainable solutions.



The white paper is among the first detailed research reports for carbon inclusiveness worldwide

Carbon Inclusive Development White Paper

Alibaba Cloud partnered with Energy Chain Smart Electronics to publish a research white paper, the 2023 Carbon Inclusive Development White Paper.

The white paper deep dives into various scenarios and observations around carbon inclusiveness in China, such as:

- Emission reduction projects, user behavior analysis, and practical applications
- Strategies to mobilize people to practice more low-carbon, zero-carbon, and carbon-negative actions

Digital Transformation Theme Day

Alibaba Cloud co-hosted the first-ever “Digital Transformation Theme Day”, helping launch a new sustainability standard for enterprises - “General Rules for Enterprise-wide 3+ Greenhouse Gas Emission Reduction Accounting and Reporting.”

Decarbonization Report

We also launched our industry-wide report on decarbonization titled - “Decarbonization Enabled by Green Cloud Computing - Alibaba Scope 3+ Sector Report.”

3.4

PROMOTING SUSTAINABILITY
THROUGH DIGITAL INNOVATION

Throughout 2023, Alibaba Cloud persistently promoted sustainability and environmental stewardship powered by digital innovations. Events such as the Olympics Esports Week and iLight Singapore highlight the success of our approach to sustainable business practices.

Crafting the Path to a More Sustainable
World with Energy Expert

Sustainability initiatives powered by Energy Expert have driven substantial change within enterprises across diverse global industries. For its role in helping create a greener world, it has received widespread acclaim and accolades from leading authorities on sustainability.



2,000,000 Kwh
of energy savings daily



13
industries leveraging
Energy Expert



100,000 tons
of CO2e reduced



3000+
enterprises have deployed
Energy Expert



30,000+
devices utilizing
Energy Expert



226,000+
factors from global
LCA databases

Sustainability Accolades

Smart City Award - Singapore

For enhancing the ecological footprint of cities (ESGBusiness)

Waste Reduction Award - Singapore

For mitigating environmental impact & fostering responsible resource management (ESGBusiness)

Team of the Year - IT Services

For the Energy Expert team at Alibaba Cloud (SBR Management Excellence Awards)

Innovator of the Year - IT Services

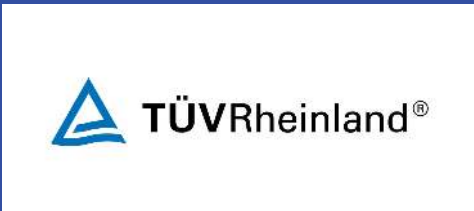
For Dr. Lei Xiao who leads the Energy Expert team (SBR Management Excellence Awards)



Championing Industry-wide Sustainability Standards

Over the years, Alibaba Cloud has actively engaged with industry tests and standards organizations. Our proactive involvement ensures that the sustainability recommendations offered by Energy Expert are not only effective but also authentically contribute to sustainable practices across various industries.

Certified by TÜV, SGS, and DNV



DNV, SGS, and TÜV Rheinland conducted compliance assessments for the carbon emissions data measured by Energy Expert. Following their evaluation, Energy Expert passed and was officially certified for meeting the requirements of the following sustainability standards.

- ISO14064-1: 2018 compliant for carbon emissions accounting
- ISO 14067: 2018 and PAS 2050 compliant for carbon footprint reporting

Setting a New Sustainability Standard for Digital Content and Services

There are several international standards for product carbon footprint accounting but these standards lack specific refinement and standardization tailored to the unique characteristics and requirements of digital content and services. According to estimates -

3.7%
of total CO2e comes from digital content

414 kg
CO2e/year generated by online users

25%
of global CO2e will be generated by digital infrastructure by 2030



To tackle this challenge, Alibaba Cloud spearheaded the establishment of a new international standard for digital content at the International Telecommunication Union (ITU-T SG5) held in Geneva, Switzerland in November 2023.

“Guidelines for the Evaluation of the Carbon Footprint of Software Products”

The 1st official international standard to account for the carbon footprint of software products

04

NURTURING DIGITAL TALENT AND EMPOWERING YOUTH LOCALLY —



4.1

ALIBABA CLOUD TRAINING EMPOWERS
DIGITAL TALENT ACROSS REGIONS

New Training Centers
Setup in 2023

- Two new training centers were set up in Singapore and Hong Kong
- Set up Singapore's first Alibaba Cloud Academy Training Center to develop Singapore's Alibaba Cloud ecosystem for the future
- Inaugural training center in Hong Kong to enhance the region's cloud computing abilities



University Partnerships in 2023 to
Develop Skills Center

- First Alibaba Cloud Academy Skills Center in Thailand in partnership with Chulalongkorn University, offering free training courses and opportunities to learn emerging technologies
- Partnered with the Hong Kong Institute of Information Technology (HKIIT) offering expanded learning resources to foster creativity and facilitate the development of diverse IT projects
- In collaboration with Universiti Malaya, Alibaba Cloud unveiled its first Alibaba Cloud Academy Skills Center in Malaysia to cultivate the next generation of leaders and local digital talent

“The launch of Alibaba Cloud Academy Skills Center is a transformative milestone for Chulalongkorn University, offering cutting-edge digital technologies learnings to equip our students and community with skills for tomorrow’s challenges.”

Associate Professor Dr. Amorn Petsom,
Director, Office of Academic Resources,
Chulalongkorn University



4.2 INNOVATION IN ACTION:
DRIVING DEVELOPER ENGAGEMENT

By establishing a collaborative environment and offering continuous education through the Alibaba Cloud Academy, we encourage developers and tech enthusiasts all over the globe to stay ahead of technological trends.



Alibaba Cloud Hackathon: Nurturing Youth for Tech-Driven Creativity

The Alibaba Cloud Hackathon at the Youth Olympic Games Gangwon 2024 welcomed young tech enthusiasts in Korea towards building real-time, web-based metaverse applications that achieved the dual objectives of solving real-world problems and weaving in the essence of Gangwon 2024 and Alibaba Cloud.

Winners received co-signed certificates from Ilario Corna, the International Olympic Committee’s Chief Information and Technology Officer, and Selina Yuan, Vice President of Alibaba Group and President of Alibaba Cloud International.



BCX-Alibaba Cloud Hackathon

The Alibaba Cloud and BCX partnership has been the foundation for helping enterprises harness advanced cloud computing and AI capabilities to strengthen the region’s digital landscape. In partnership with BCX, Alibaba Cloud launched the first joint AI Hackathon in Africa under the banner of “AI for Social Good.”



Partner Universities and Enterprises

Tshwane University of Technology

The University of Johannesburg

The University of Limpopo

BMW, Standard Bank, and MLab Southern Africa

4.3 RECRUITMENT INITIATIVES AND IMPACT

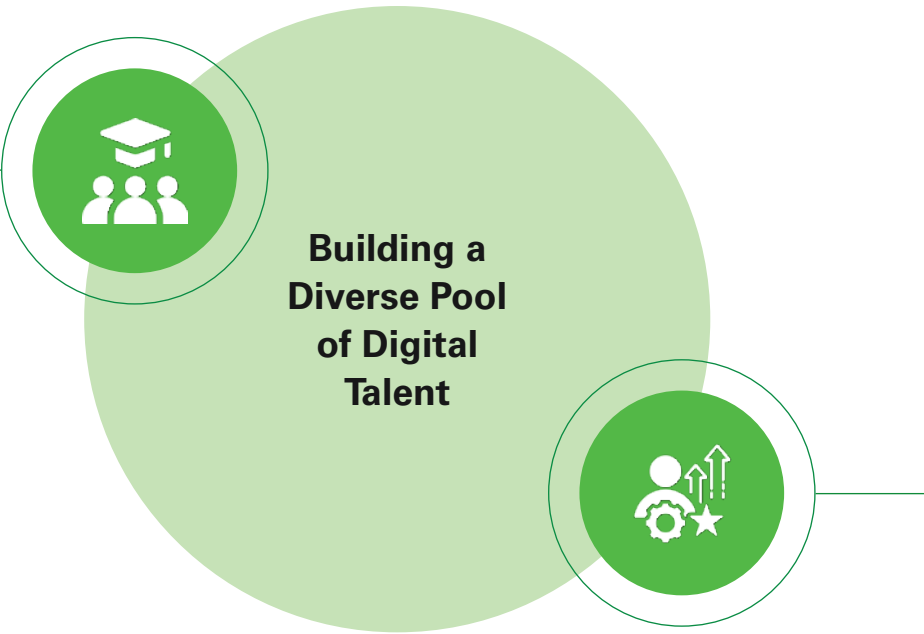
Since 2022, Alibaba Cloud has actively collaborated with leading universities and communities in Southeast Asia, forging partnerships to offer young individuals exposure to Alibaba Cloud’s technologies. These collaborations have not only enabled learning but have also facilitated innovation and exchange, empowering the youth in Asia to take part in shaping the global tech landscape.



Student Ambassador Program



- 1000+ registrations across 40+ universities
- Free certifications and knowledge sharing on cloud computing



Digital Talent Training Program By KOMINFO (The Ministry of Communications and Informatics Indonesia)

- Over 5700 students upskilled in cloud computing, security, and big data
- Collaborated with 20 local organizations like Codepolitan, to offer online workshops for emerging startups, developers, and entrepreneurs



05

BRIDGING THE DIGITAL DIVIDE FOR CHILDREN WITH CLOUD FOR YOUTH PROGRAM



5.1 | CLOUD FOR YOUTH PROGRAM: A VISIONARY INITIATIVE BY ALIBABA CLOUD

The “Cloud for Youth Program” by Alibaba Cloud is our response to the pressing challenges that plague rural education. In the rural parts of China, basic education often struggles and investments in science and technology education remain inadequate. This initiative is trying to catalyze positive change and empower rural children for a brighter future.

160+

Rural schools enabled with cloud computer classrooms in remote parts of China

10,000+

Self-developed cloud computer terminals deployed by Alibaba Cloud

150,000

Students provided with personal cloud computers & digital learning spaces



Launched in 2021, the “Cloud for Youth Program” aims to use digital technology to help urban and rural students/teachers improve their digital skills.

- Donating and building “cloud computer classrooms” for rural schools to navigate the lack of digital equipment, maintenance capabilities, & digital teaching resources
- Enabling rural teachers by improving their digital literacy and skills through digital teacher training programs
- Establishing an effective cloud resource-sharing channel to transform education management digitally and centralize resource management. Additionally, the cloud platform facilitates data-driven support for academic analysis, teaching research, and management



5.2 | GUIDING EDUCATION WITH INNOVATION:
THE IMPACT OF CLOUD FOR YOUTH IN
CHINA AND BEYOND

Under the guidance of the Chinese Ministry of Education, China Education Development Foundation, etc., the “Cloud for Youth Program” has now been launched in remote areas such as Qinghai, Sichuan, Tibet, Yunnan, Guangxi, Guizhou, Hebei, Jilin, and Zhejiang.



18,000

Courses completed by rural teachers

50,000

Digital works submitted by students

300%

Increase in programming projects at school

The program has also garnered recognition through esteemed awards sponsored by the Ministry of Education, the Computer Society of China, and the Province of Zhejiang.

On the international stage, the “Cloud for Youth Program” has forged a partnership with the UNESCO Chair in Artificial Intelligence and Education. The team headed to UNESCO’s Annual Conference in Paris and Huang Guijing, Head of the “Cloud for Youth Program”, delivered a speech sharing their thoughts and practices on using cloud computing and AI to help the development of rural schools.



In November 2023, the Apsara Conference extended invitations to 7 rural students, 5 rural teachers, and 4 dedicated science and technology volunteers from different remote parts of China.



They were received on-site by Dr Jian Wang, the Founder of Alibaba Cloud. They immersed themselves in the developer community and cutting-edge technology, sharing firsthand encounters with AIGC and exchanging insights with scholars.

06

CONCLUDING THOUGHTS

As we reflect on everything we've done for sustainability and social good, it becomes evident that the intersection of technology and sustainability holds immense promise in shaping a brighter future for us all.

In a world where computing demands are escalating, our sustainable data center initiatives are paving the way toward carbon neutrality while providing enterprises with the technologies they need. The sustainability-driven campuses we aim to build are ecologically friendly while also conducive to business productivity. Additionally, Energy Expert, our AI-powered platform, is redefining how businesses plan for sustainability across their processes. Our programs for education and youth empowerment, in collaboration with leading universities around the world, promote technological excellence in young people, helping them find opportunities to improve their lives.

Through innovative solutions and strategic collaborations, we are committed to using our technology to build a smarter, sustainable, and inclusive future. As we navigate the complexities of the modern world, let us remain firm in our commitment to environmental stewardship, social responsibility, and technological innovation. Together, we can build a more sustainable and inclusive future for generations to come.

