

Princeton Digital Group

SUSTAINABILITY IN THE ERA OF AI

Princeton Digital Group Sustainability Report 2023-2024





Contents

01	About this report	4
02	Message from the CEO	6
03	About Princeton Digital Group	8
04	2023 at a glance	10
05	Progress on sustainability	14
06	ESG framework	16
07	Meeting environment goals	34
08	Meeting social goals	60
09	Meeting governance goals	80
10	Appendix	88

01 – About this report

This report details Princeton Digital Group’s (PDG’s) efforts to drive sustainability across our businesses and markets in FY2023, as we pressed ahead in our goal to be the most progressive data center operator in the region in terms of sustainability. Our long-term target is to reach Net Zero for Scope 1 and Scope 2 emissions by 2030.

This is PDG’s third Sustainability Report. It contains full-year data for 1 January 2023 – 31 December 2023 (FY2023) and the reporting period aligns with the company’s financial year. This report is prepared in accordance with the Global Reporting Initiative (GRI) Universal Standards 2021, the most established international sustainability reporting standard.

In 2023, we updated our materiality assessment to additionally identify the issues that most affect our business and stakeholders from an environmental, social and governance (ESG) perspective.

Our ESG framework is aligned to the United Nations Sustainable Development Goals (UN SDGs) focused on growth while balancing social, economic, and environmental sustainability. In this report, we outline how our initiatives align with the SDGs, furthering the agenda for people, planet, prosperity, and partnership.

Our 2023 carbon emissions data has been calculated based on the Greenhouse Gas (GHG) Protocol – the world’s most widely used greenhouse gas accounting standard. This year we are also reporting our Scope 3 footprint for the first time. The Scope 1, 2, and 3 (category 6, business travel only) carbon emission data has been verified through external assurance.

All information and data in this Report are disclosed voluntarily and in good faith. We will continue to publish our sustainability report annually, which will be accessible via our website.

We welcome feedback from our stakeholders as we continuously improve our performance and reporting in our sustainability journey. Please contact us/ drop us your inquiry at <https://princetonog.com/contact>. For more information, you may visit us through our webpage: <https://princetonog.com>.

Reporting scope

This report covers the group's ESG performance of owned and leased properties/ data centers across Singapore, China, India, Indonesia, Malaysia and Japan. The report does not include three (3) data centers that are held in a JV with 21Vianet.

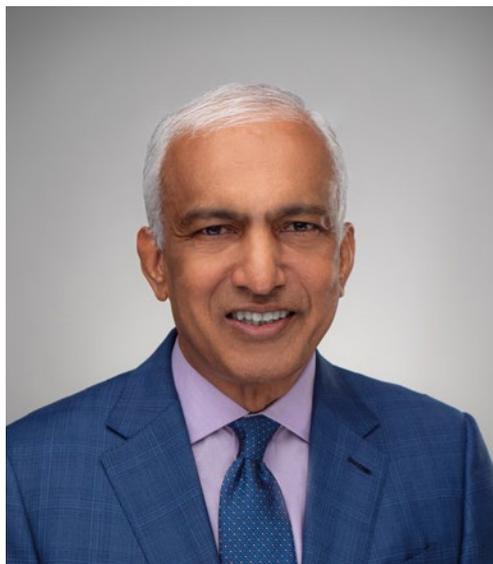
The scope for Scope 1, Scope 2 and Scope 3 emissions reporting are the 9 operating data centers as of December 2023. The report includes an elaboration of how PDG is progressively expanding the scope of its reporting to include material topics, data points and targets for the company, and regional case studies.

Facility	Country	Location	Status	Capacity (MW)
JH1	Malaysia	Johor	Under Construction	150
SH1	China	Shanghai Fengxian	Operational	42.3
NJ1	China	Nanjing	Operational	43
LF1	China	Langfang Zhongshi	Under Construction	66
SG1	Singapore	Singapore	Operational	14
ID1 – includes 5 operational data centers	Indonesia	Jakarta Cibitung Jakarta Bintaro Bandung Pekanbaru Surabaya	Operational	11
JC2	Indonesia	Jakarta Cibitung	Under Construction	22
MU1	India	Mumbai	Operational	125
TY1	Japan	Tokyo Saitama	Under Construction	96

External assurance

Deloitte & Touche LLP has been engaged to independently assure Scope 1, Scope 2 and Scope 3 GHG emissions (category 6: business travel only). The independent limited assurance report is included in this report.

02 – Message from the CEO



2023 was the year when AI went truly mainstream. The combination of innovation in chip hardware, improvements in large language models and, equally importantly, investments in digital infrastructure, meant that AI became usable and useful in ways that impact the daily lives and livelihood of people. AI, like cloud and mobile technology, will likely

create entire ecosystems that generate and benefit from flywheel effects. I believe that we are at the very start of this transformation. And data centers are at the core of it all.

For the large technology platforms serving enterprises, AI is also an enhanced feature-set in their cloud offerings. The growth of AI is driving growth in cloud services for them. This means that the ever more challenging task of building global cloud infrastructure is getting even more difficult – both in terms of scale and scope. In addition to the challenges of building out massive amounts of data center capacity, the escalating energy demands of these data centers pose a formidable challenge to

sustainability efforts, which will necessitate a concerted effort to prioritize energy efficiency, leverage renewable sources, and implement innovative cooling solutions.

For PDG, this represents a great opportunity to enhance our partnership with our customers as we enable them to continue to build out their global cloud and AI footprint. PDG's portfolio of AI-ready, sustainable data centers across Asia are well positioned to support this growth responsibly.

2023 has been a defining year for PDG. We announced our pioneering SG+® strategy for the Singapore region, expanding into Johor and Batam with large scale campuses. The first phase of our 150MW JH1 campus in Johor will be ready for service in mid-2024. We launched our 22MW JC2 campus in Jakarta, progressed construction on our 96MW TY1 project in Tokyo and began construction on the second phase of our 125MW MU1 campus in Mumbai.

Decarbonizing data – Progress towards Net Zero

We pressed ahead in our efforts to meet our target of reaching Net-zero for Scope 1 and Scope 2 emissions by 2030. We offset ~15% of our footprint through the procurement of renewable energy.

Renewable energy procurement is a vital lever for decarbonization. We are working closely with key providers in APAC, a diverse region which varies considerably in terms of

maturity of the renewable energy market, to increase the ratio of renewable energy in our operations. In 2023, we successfully completed two key initiatives:

- In India, we signed a solar power contract with a subsidiary of Tata Power Renewable Energy Limited (TPREL), one of India’s largest renewable energy companies.
- In Indonesia, we entered into a renewable energy contract with PT Cikarang Listrindo Tbk (CL) to procure power generated from biomass sources for our JC campus in Greater Jakarta.

We also procured renewable energy in the form of renewable energy certificates (RECs) in China, India, and Indonesia.

As AI demand soars and the power demands of AI chips increase, data center cooling technology has become even more critical. We have been focused on ensuring that efficient cooling solutions like liquid cooling can be deployed at scale and in an operationally resilient manner.

Health and Safety

We prioritize the health and safety of PDG employees, contractors, visitors, and clients. The PDG Minimum Requirements framework ensures that the highest safety standards are applied consistently to all regions across the entire lifecycle of every project. All our greenfield operational data centers are certified with ISO 45001.

As global recognition of our leadership in health and safety, we were awarded ROSPA Gold awards at two of our data centers – MU1 in India and JC2 in Indonesia.

In 2023, we integrated environmental considerations into our debt financing decisions by building a green finance framework aligned to Green Bond Principles (GBP) and Green Loan Principles (GLP). By May 2024, PDG raised USD375 million in green loans. We also incorporated sustainability deeper into our investment, engineering, and procurement processes.

As a rapidly expanding company, people are our most valuable asset. We are dedicated to cultivating a work culture that champions diversity, fosters inclusion, and ensures equal opportunity for all.

We continue to support global initiatives such as the iMasons Climate Accord and Open Compute Project (OCP) as well as industry associations promoting sustainability.

In this report, we are reporting our progress against our goals for all our material topics. We are reporting our Scope 3 footprint for the first time and will also release our inaugural TCFD report on climate related risks and opportunities.

As one of the largest Pan Asia operators and as a partner of choice for hyperscalers, we are uniquely positioned to serve the evolving AI and cloud demand while solving for sustainability. We are grateful to our investors, customers, partners and employees who are deeply invested to this commitment.

Together, we are forging ahead to harness the power of AI and data in a resilient and responsible way, ensuring that this breakthrough in technology will continue to deliver enduring benefits for generations to come.

Rangu Salgame

Chairman and CEO, Princeton Digital Group

03 – About Princeton Digital Group

PDG develops and operates data center infrastructure in the dynamic digital economies of Asia including Singapore, China, India, Indonesia, Malaysia, and Japan.

Our current portfolio includes 21 data centers located in 15 cities across 6 countries, and we are backed by investments from some of the world’s most reputed investors.



PDG is uniquely positioned in APAC market with its experienced leadership team, differentiated strategy and strong customer relationships.

How we got here

2017-2018

- **PDG formed with partnership** of Rangu Salgame, Varoon Raghavan and Warburg Pincus
- **PDG entered China** through JV with 21Vianet and expanded in China with acquisitions of Shanghai Fengxian, Nanjing and Nantong projects
- **Established headquarters** of pan-Asian platform in Singapore

2019-2020

- **Established operating presence in Singapore** through acquisition of DCSG assets and team as well as expansion capacity
- **Entered Indonesia** with a carve-out and acquisition of 5 data centers from XL Axiata
- Assembled **world-class team with a proven track record** of execution in every market
- Raised **US\$360 million equity investment** led by Ontario Teachers' Pension Plan Board

2021-2022

- **Entered India and Japan** by securing Mumbai and Tokyo land parcels
- Continued **expansion in China** with Langfang project in 2021 and started construction within 2 months
- Announced **investment for new data center in Greater Jakarta**, Indonesia and commenced construction in 2022
- Raised **US\$500+ million** with Mubadala as the lead investor
- Delivered **flagship data center campus in Mumbai**, India in Dec 2022
- Commenced **construction of 96MW hyperscale project** in Tokyo
- Delivered **hyperscale project in Nanjing**, China.

2023

- **Announced SG+ strategy**, expanding into Batam and Johor with initial investment of **US\$1 billion** in Batam
- Announced **entry into Malaysia with a 150MW hyperscale campus** in Sedenak Tech Park (STeP), Johor. Commenced construction of AI ready JH1 campus.
- Launched **JC2, 22MW greenfield hyperscale data center in Cibitung**, Jakarta

2024

- Secured **US\$375 million in green loans** for JH1 and SG1 projects
- Delivered **Phase 1 (60 MW) of JH1**, Johor 150MW campus in Q2'24
- Planned delivery of **Phase 1 (48MW) of TY1**, Tokyo 96MW campus in Q4'24
- Planned delivery of **Phase 2 (24MW) of MU1**, Mumbai 125MW campus in H2'24

04 – 2023 at a glance

From announcing the pioneering SG+ strategy- expanding from Singapore to Johor and Batam, to delivering hyperscale projects in Indonesia and China and strong construction progress in AI ready campuses in Japan, India and Malaysia, 2023 was a transformative year for PDG. As the leading Pan Asia operator, we were steadfast in our commitment to excellence, seamlessly delivering on our promises to customers, investors, and all stakeholders alike.

We were recognized at major industry events such as PTC, iMasons, Capacity, among others, not only for groundbreaking business growth but also for our actions on sustainability, setting a new standard for corporate responsibility and environmental stewardship.

Corporate milestones

Announcement of pioneering SG+® Strategy – In February 2023, PDG announced its comprehensive strategy for the Singapore region to enable customers to seamlessly expand their infrastructure from Singapore to highly scalable data center campuses in Batam, and Johor. PDG announced an investment of US\$1 billion in developing a 96MW data center project in Batam. In May 2023, PDG acquired 31 acres of land in Sedenak Tech Park (STeP), Johor, Malaysia, to build a 150 MW hyperscale campus. JH1 is PDG's flagship carrier-neutral site in Johor Malaysia to be built on 60,000m² of land area. In Oct 2023, PDG commenced construction of Phase I of the AI ready campus. With a capacity of 60MW, this phase was delivered in Q2 2024.



Key milestones achieved for 96MW TY1 project, PDG’s hyperscale campus in Saitama, 30km north of central Tokyo.

The greenfield data center campus houses two buildings built over an area of 33,047m².

The core and shell construction of the first building is complete and the hyperscale data center will be ready for service in H2 2024.



Completed 43MW NJ1 project in Nanjing Jiangning High-tech Zone.

The project includes four buildings built over an area of 35,955m² with access to convenient transportation and excellent connectivity options. The project is equipped with a double 110KV external power supply. In 2023, PDG completed the construction of 3 buildings and delivered 1800 racks.



Commenced construction of Phase 2 of MU1 data center in Mumbai. The total planned capacity for the project is 125 MW. The base building of phase 2 is nearly complete and internal fit outs have started. This phase will be ready for service in H2 2024.

Launched JC2, a 22MW hyperscale data center in Jakarta, Indonesia in Q3 2023.

Located in Cibitung, 35km from central Jakarta, JC2 is designed for reliability and scalability, with energy-efficient modular uninterrupted power systems and highly efficient chiller plants. It has achieved the rare feat of BCA Green Mark Platinum certification which requires high energy performance, resource stewardship, and advanced green efforts. The data center campus is also the first in Indonesia to offer biomass-powered capacity to customers.



Core and shell completion for 66MW LF1 hyperscale campus, which is strategically located in the Langfang High-Tech Industrial Development Zone.

The hyperscale campus covers an overall site area of 51,564m² and consists of three data center buildings. The core and shell of the buildings have been



successfully finished in 2023. Ready for fitting out, LF1 is carrier-neutral with a design Power Usage Effectiveness (PUE) ≤ 1.3. Power has been turned on in early-2024.

2023 at a glance

Certifications



SG1, Singapore

SG1 achieved **ISO 14001**, an internationally recognized standard for environmental management systems (EMS). This certification validates the SG1 team's efforts and proactive measures to minimise their environmental footprint, comply with relevant legal requirements, and achieve environmental objectives.



NJ1, Nanjing and SH1, Shanghai

NJ1 and SH1 obtained **ISO 9001** for Quality of Service, **ISO 27001** for Information Security Management Systems (ISMS), **ISO 20000** for a robust Service Management System (SMS), **ISO 22301** for Business Continuity Management Systems (BCMS), and **ISO 45001** for Occupational Health and Safety Management Systems.



MU1, Mumbai

MU1 received Uptime Tier III (construction) certification, **ISO 45001**, and **ISO 9001** certifications. These certifications demonstrate the highest standards in construction, health and safety, and quality of services delivered to customers. Efforts continue in 2024, as MU1 achieved ISO22301, ISO27001 and ISO20000.



JC2, Jakarta

JC2 is **ANSI/TIA certified** for conformity to the globally recognized ANSI/TIA-942 standard, ensuring adherence to telecom infrastructure requirements. It also received **BCA Green Mark Platinum certification**, for its advanced green efforts and climate-responsive design.

Awards and recognition



PDG’s MU1 and JC2 datacenters both received the prestigious **The Royal Society for the Prevention of Accidents (RoSPA) Health and Safety Gold Award 2024**.



PDG’s JC2 site in Cibitung, Jakarta received an **ESG Business award** for renewable energy adoption. MU1 in Mumbai, India received an award for sustainable infrastructure.



PDG COO Varoon Raghavan and two other PDG senior employees were featured in the **IM100 2023 Awards’ Top 100** Individuals list.



PDG’s NJ1 data center received the **"2023 Outstanding Innovation Award for Digital Financial Infrastructure Products"**.



The Tech Capital Global Awards recognized PDG CEO Rangu Salgame as regional digital infrastructure leader for 2023.



PDG CEO Rangu Salgame was featured in **Capacity Media Power 100** list 2023.



PDG featured as the finalist for **outstanding data center company and outstanding CEO** categories.



The **2023 Asia Pacific Cloud & Datacenter Awards** recognized CTO Asher Ling as the Technology Leader for APAC, PDG engineering head Jeyabalan Kuthalingam as the Technology Leader for South Asia and PDG’s MU1 team as the Data Center Project Team for South Asia.



PDG was recognized for best efforts in energy by **DigiCon DX solution Excellence Awards 2023**.



SBR Management Excellence Awards recognized PDG CTO Asher Ling as the Executive of the Year.



In October 2023, PDG was awarded **Malaysia Digital (MD) Status**, the country’s highest recognition of excellence for digital companies that supports companies in rapid growth and expansion.

05 – Progress on sustainability



Meeting our Net Zero target

- **Offset ~15% of our total GHG emissions** by procuring renewable energy
- Initiated accounting for Scope 3 GHG emissions

First TCFD assessment

- Conducted our **first comprehensive climate risk assessment**, addressing both transitional and physical risks across all assets.

Procurement of renewable energy

- **Partnered with Tata Power Renewable Energy Limited (TPREL) for a solar contract**, sourcing renewable power from captive solar generation in Maharashtra, India
- **Procured biomass powered energy** for our JC campus in Jakarta, Indonesia from Cikarang Listrindo (CL)
- **Installed 2,000 rooftop solar panels** at our SH1 data center, generating 1,030MWh and reducing GHG emissions by 587 tCO₂e annually
- **Planning rooftop solar project** for JH1, Johor data center

Operational efficiency

- **Improved overall PUE** of our data center portfolio
- Operated hyperscale projects NJ1 and SH1 at industry leading **PUE<1.3**
- Enabled technologies such as **liquid immersion cooling** in our data centers to improve energy efficiency

Memberships and associations

- **Open Compute Project (OCP):** PDG operates Asia's first OCP center in Singapore. PDG's SG1 and MU1 data centers are OCP Ready certified
- **Imasons Climate Accord:** PDG joined in 2023 to promote carbon reduction in digital infrastructure
- **Asia Pacific Data Center Association (APDCA), and Asia Cloud Computing Association (ACCA):** As a member, PDG promotes sustainable cloud and data center practices in Asia-Pacific

Green financing

- Established PDG's Green finance framework and **secured US\$375 million in green loans** for JH1 and SG1 data centers

Certifications and awards

- Earned several **ESG-related certifications**, including for health and safety.
- Recognized with **sustainability-linked awards**, such as ROSPA, ESG Business Awards, and iMasons.

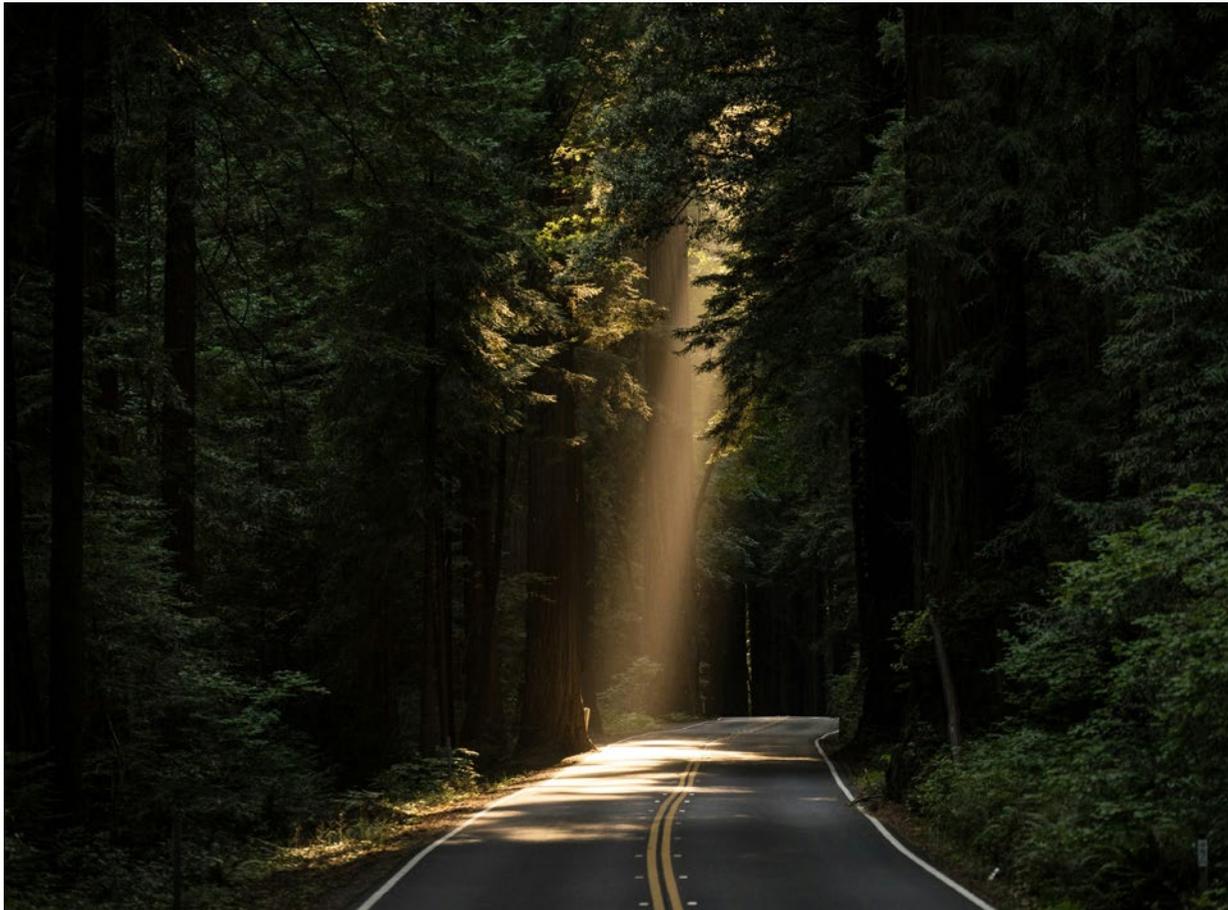




06

ESG Framework

PDG environment strategy



Across our operations, we prioritize lowering emissions and conserving natural resources.

The goal - to operate highly energy, carbon and water efficient data centers to minimize climate impact of digital infrastructure.

To do so, we have committed to a decarbonization journey and rigorously track our carbon footprint at our data centers. Given the energy-intensive nature of data centers, reducing Scope 2 emissions is a critical focus of our sustainability efforts.

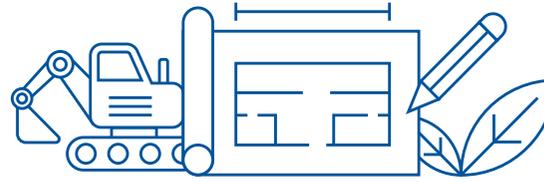
Four main vectors for building low-carbon, energy efficient portfolio



Renewables

Increase renewable/low-carbon energy procurement

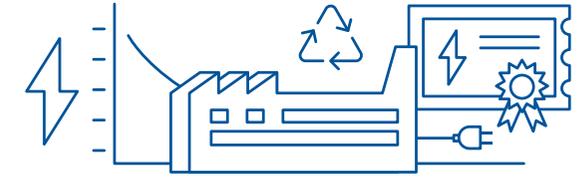
- Green-first: Renewable power availability as key criterion in site selection
- Replace conventional power with renewables at existing sites
- Source RECs and carbon offsets



Green Design & Construction

Incorporate sustainability in all stages of data center life cycle, starting with design and construction

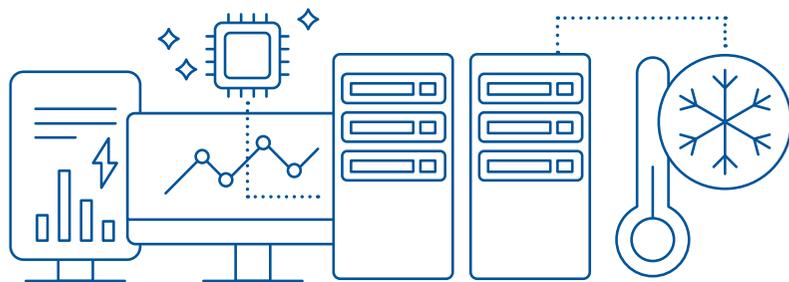
- Greenfield projects to have design PUE between 1.2 -1.4
- Build facilities with global standards of energy-efficient building codes such as LEED, BCA GreenMark etc.



Energy & Resource Efficiency

Build and operate at low PUE and WUE and adopt processes for energy and resource efficiency

- Continuously upgrade operations to optimize PUE & Water Usage Effectiveness (WUE)



Technology and Innovation

Adopt cutting-edge technologies across data center life cycle

- Evaluate new technologies for zero/low-carbon power
- Work with leading vendors to design, implement and operate new technologies in cooling, UPS, control systems for AI-ready data centers
- Identify and implement new AI and automation tools to boost operational performance

PDG social and governance approach

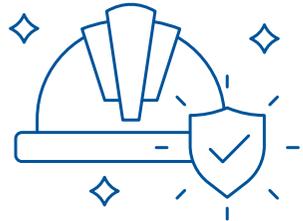
Talent is vital to PDG’s success, and our employees are our most important stakeholders. We prioritize industry-leading health and safety standards and focus on creating positive community impact.

Backed by some of the world’s most reputed investors, we uphold the highest standards of integrity and ethical practices, ensuring transparent reporting on our ESG progress.



How we conduct business

Focus areas for building a responsible and socially conscious business:



Health and safety

Promote and ensure industry leading health and safety practices for all stakeholders

Ensure health and safety of PDG's employees, contractors, visitors and clients by assuring an environment free of hazards and providing appropriate instruction at work with least exposure to risk



Empowering talent

Provide a platform to build a compelling career that helps employees achieve their aspirations

Attract and retain top talent

Promote diverse workforce that boosts inclusivity and a sense of belonging

Create a caring workplace focused on employee wellness and work needs

Build a culture of learning where all are encouraged to enhance knowledge and upskill

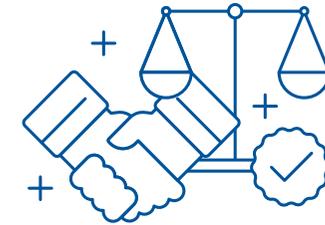


Grow with suppliers

Work with our suppliers to build a sustainable value chain

Work with suppliers to achieve PDG's sustainability goals together

Work with strategic vendors to design, implement and operate new technologies in cooling, UPS, control systems for AI ready data centers



Business ethics and integrity

Code of Conduct: We practice with highest standards of integrity and business ethics

Maintain the highest corporate governance standards

Continue alignment of business practices with international and regional regulatory guidelines and standards, where applicable

Sustainability governance

An effective ESG governance structure enhances transparency and accountability by establishing clear policies, regular reporting, and independent oversight.

Roles and responsibilities

Board:

Oversees the company's sustainability direction and performance during quarterly Board meetings

ESG committee:

Reviews PDG's ESG strategy, ensuring close collaboration between business and ESG. ESG agenda is discussed with the committee on a quarterly and an ad-hoc basis when important issues arise. The CEO, a member of the ESG Committee, oversees and approves PDG's annual sustainability report.

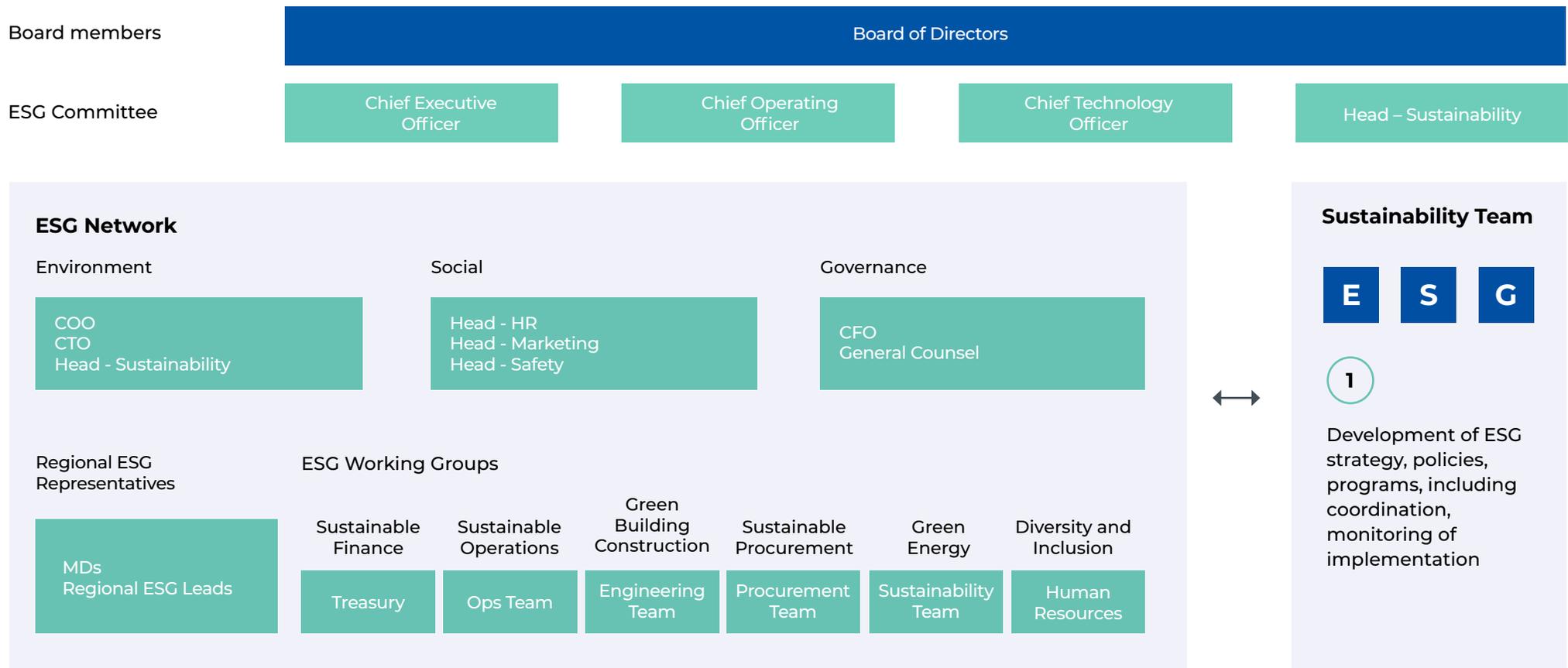
Sustainability team:

Develops PDG's ESG strategy, policies and programs in collaboration with relevant functions. Manages ESG reporting and maintains central database of ESG metrics. Oversees overall execution of sustainability initiatives.

ESG Network:

Includes representatives across functions and regional business groups responsible for operational implementation of ESG initiatives and driving sustainability programs in-country.

Sustainability governance structure at PDG



2 Business adaptation & operational implementation

▲ A more decentralized structure affords greater flexibility in engaging with operational and regional interests

Materiality matrix

In 2023, we updated our materiality topics to align with current business and industry sustainability issues, identifying areas of high relevance to PDG’s business and stakeholders.

From 2022 to 2023, PDG made some key changes to its material topics. Topics such as Renewable energy and Energy efficiency were merged into Energy transition and optimization, and Employee well-being, engagement and development combined with Talent attraction and retention to form Talent development, employee engagement and well-being.

Additionally, new topics such as Meeting customer ESG goals were added, and existing topics were rephrased, including GHG emissions to Carbon management and Water management to Water stewardship.

We identified fourteen material ESG topics, categorized into Essential, Fundamental, and Keep in view, based on an internal stakeholder survey which was subsequently reviewed, revised, and validated by the leadership team.

We plan to review these material topics regularly, particularly when there are significant changes in the business or operational environment of the company.

PDG’s materiality assessment process involves identifying ESG issues through research and stakeholder feedback, prioritizing them based on internal evaluations, validating them with senior management, and conducting annual reviews to ensure their continued relevance to PDG.

Materiality Matrix

Legend ● E ● S ● G



Materiality assessment: Environment

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
Carbon Management	E	 	<ul style="list-style-type: none"> • Scope 1 emissions – fuel & gas • Scope 2 emissions – electricity consumption • Scope 3 emissions – emissions from purchased goods and services, capital goods, employee commuting, and business travel • Amount of carbon emissions offset due to initiatives such as investment in renewable energy 	<ul style="list-style-type: none"> • Follow roadmap to 100% Net Zero for Scope 1 and Scope 2 emissions by 2030 • Replace conventional power with renewables at existing sites • Green- first: Set renewable power availability as a key criterion in site selection for upcoming sites • Source for RECs and carbon offsets • Continuously upgrade operations to improve PUE • Evaluate and enable new technology and innovation for improving energy efficiency 	Sustainability
Energy transition and efficiency	E	 	<ul style="list-style-type: none"> • Percentage of renewable energy usage • Renewable energy such as solar and wind power under contract • Energy intensity/PUE • Percentage improvement in PUE 		Engineering, Operations, Sustainability

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
Water stewardship	E	 	<ul style="list-style-type: none"> All water and waste related data are internally collected and monitored, such as WUE 	<ul style="list-style-type: none"> Continuously upgrade operations to reduce water consumption through recycling and other initiatives 	Engineering, Operations
Waste management	E	 		<ul style="list-style-type: none"> Implement 3R initiative (recycle, reuse and reduce) for waste management 	Operations
Green building design and construction	E	 	<ul style="list-style-type: none"> Green certifications achieved in data centers Design PUE of greenfield data centers Flexible cooling design for high density deployments Number of projects executed/ under development designed to harvest renewable energy on-site including rooftop solar. 	<ul style="list-style-type: none"> Building facilities towards global standards of energy efficient building codes such as LEED, BCA Green Mark and other global and regional standards Pursue leading sustainability certifications for operational and greenfield data centers All greenfield DCs to have design PUE of 1.2-1.4 Work with leading vendors to design, implement and operate new technologies in cooling, UPS, control systems for AI ready data centers 	Engineering, Procurement

Materiality assessment: Social

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
<p>Health and Safety</p>	<p>S</p>	 	<ul style="list-style-type: none"> • Number of safe man hours • Percentage achievement of ISO 45001 certification across portfolio • All health and safety related data are internally collected and monitored 	<ul style="list-style-type: none"> • To be the leader within our industry by protecting the health and safety of PDG's employees, visitors and clients • Ensure an environment free of hazards and providing appropriate instruction at work with least exposure to any risk 	<p>Health and safety</p>
<p>Diversity and inclusion</p>	<p>S</p>	 	<ul style="list-style-type: none"> • Percentage of employees by gender • Availability of policies to promote diversity and inclusion (i.e. maternity/paternity leaves, flexible working hours) • Industry initiatives on diversity supported 	<ul style="list-style-type: none"> • Continue practising non-discrimination and equal opportunity • Continue improvement and reporting of diversity metrics 	<p>Human Resources</p>

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
<p>Talent development, employee engagement and well being</p>	<p>S</p>	 	<ul style="list-style-type: none"> • Percentage of employees receiving regular performance and career development reviews • Employee engagement participation rate, engagement score and eNPS • Number of total employees • All talent attraction and retention related data are internally collected and monitored 	<ul style="list-style-type: none"> • Provide a platform for building a compelling career that helps employees to attain their aspirations • Conduct annual employee engagement survey and take feedback survey and other platforms • Be the workplace of choice for top talent in the industry in all the regions we operate in 	<p>Human Resources</p>
<p>Community impact</p>	<p>S</p>		<ul style="list-style-type: none"> • Number of initiatives to engage local communities 	<ul style="list-style-type: none"> • Engage regularly with local communities to drive long-term value together primarily in talent upskilling and environmental initiatives 	<p>Regional teams</p>

Materiality assessment: Governance

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
Business resilience and climate risk management	G	 	<ul style="list-style-type: none"> Percentage of critical business operations assessed for resilience Percentage or number of data center sites assessed for climate-related physical and transition risks 	<ul style="list-style-type: none"> Ensure continuous, reliable operations while minimizing environmental impact and adapting to climate-related challenges. 	Sustainability
Sustainable supply chain	G	  	<ul style="list-style-type: none"> Number of suppliers screened using ESG criteria Percentage of suppliers complying to the organization's supply chain code of conduct 	<ul style="list-style-type: none"> Work collaboratively with suppliers to achieve PDG's sustainability goals together 	Procurement
Privacy and data security	G	 	<ul style="list-style-type: none"> Number of substantiated complaints concerning breaches of customer privacy and losses of customer data Achievement of ISO 27001 certification 	<ul style="list-style-type: none"> Maintain controls in data security to protect customer data 	IT, Legal

Material topic	E/S/G	SDGs supported:	PDG Metrics:	Goals:	Teams responsible
<p>Governance, transparency, business ethics and integrity</p>	<p>G</p>	 	<ul style="list-style-type: none"> • Communication and training about anti-corruption policies and procedures to employees • Internal and external stakeholder reporting 	<ul style="list-style-type: none"> • Uphold the highest level of integrity in conducting our business • Ensure and safeguard a consistent moral attitude within the company • Align business practices with international and regional regulatory guidelines and standards, where applicable 	<p>Legal</p>
<p>Meeting customer ESG goals</p>	<p>G</p>	  	<ul style="list-style-type: none"> • Percentage of customers offered renewable energy options • Active engagement with customers on ESG initiatives 	<ul style="list-style-type: none"> • Facilitate access to renewable energy sources for customers by offering options to power their data center operations with renewable energy • Transparent engagement on ESG metrics pertaining to customer data center usage 	<p>Sales, Sustainability</p>

Stakeholder engagement

Engagement with our stakeholders is essential for us to fulfil our responsibilities as a blue-chip global company. We strive to build a cooperative relationship and enhance mutual understanding in sustainability topics with our stakeholders through various activities such as multi-stakeholder forums, surveys, and on-site visits.

Stakeholders	Topics discussed	Mode of engagement
Shareholders/investors	<ul style="list-style-type: none"> • Financial performance • Business performance and outlook • Growth strategy • ESG strategy 	<ul style="list-style-type: none"> • Board meetings • Site visits • Regular management meetings • Strategy meetings
Employees	<ul style="list-style-type: none"> • Learning and development • Health and wellness • Employee engagement • Diversity and inclusion 	<ul style="list-style-type: none"> • Employee engagement survey • Performance and career development reviews • Internal communications • Wellness and recreational activities • Team-building activities • Regular town hall meetings
Customers	<ul style="list-style-type: none"> • Health and safety • Sustainability • Expansion plans • Construction and operational best practices 	<ul style="list-style-type: none"> • Regular customer meetings • Customer satisfaction surveys • Website • Social media • Industry events • Marketplaces (online platforms for data centers)

Stakeholders	Topics discussed	Mode of engagement
Suppliers/vendors	<ul style="list-style-type: none"> • Expansion plans • Health and safety guidelines • Innovation in the supply chain • PDG sustainability initiatives related to suppliers and vendors 	<ul style="list-style-type: none"> • Supplier/vendor screening process (Supplier Code of Conduct, Supplier Onboarding Form, and Vendor Screening Form including ESG criteria) • Audits • Site visits • Regular meetings
Industry bodies	<ul style="list-style-type: none"> • Market overview and trends • Sustainability • Operational efficiency 	<ul style="list-style-type: none"> • Industry events • Analyst meetings • IMasons (Infrastructure Masons) • OCP (Open Compute Project) • ACCA (Asia Cloud Computing Association) • APDCA (Asia Pacific Data Centre Association)



07

Meeting environment goals

Carbon management and Net Zero progress

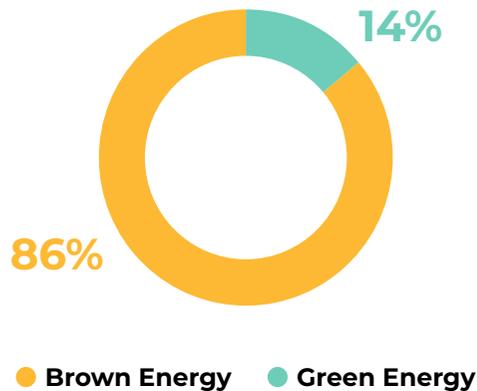
PDG Environmental Sustainability Goal

To achieve Net Zero for our Scope 1 and Scope 2 emissions by 2030

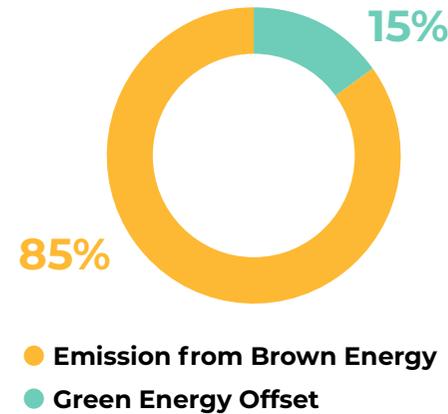
PUE Targets

Design PUE of all greenfield data centers to be between 1.2 – 1.4

Green Energy Consumption (MWh)



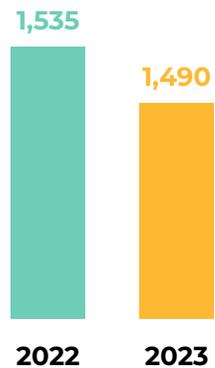
Emissions Offset from Green Energy Consumption (tCO₂e)



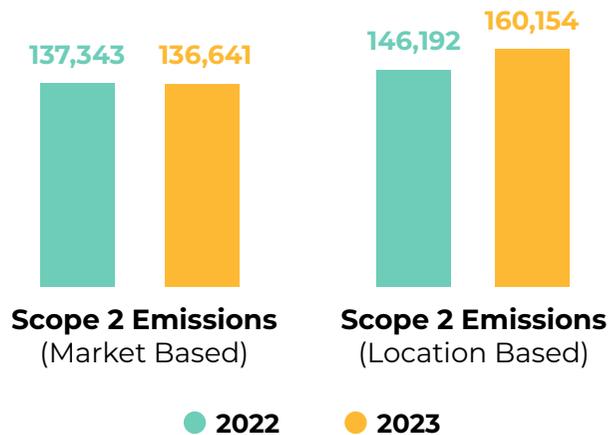
GHG Emissions YoY change

While overall location based GHG emissions increased, PDG successfully offset this rise by procuring renewable energy.

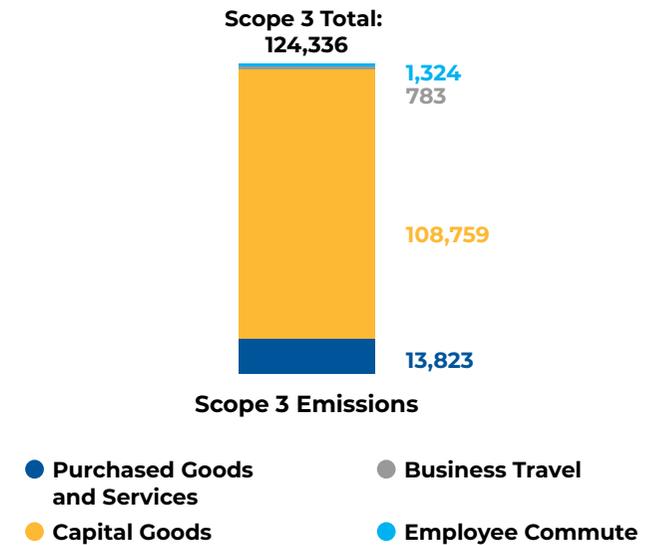
Scope 1 Emissions (tCO₂e)



Scope 2 Emissions (tCO₂e)



Scope 3 Emissions (tCO₂e)



- **Scope 1 emissions** – fuel & gas such as diesel and refrigerant; Scope 1 emissions (Diesel and refrigerant) calculated basis Conversion Factors 2023 provided by DEFRA, Department for Environment, Food & Rural Affairs of the UK.
- **Scope 2 emissions** – electricity consumption; Scope 2 Emissions calculated basis emission factors provided by International Energy Agency (IEA) for India, Indonesia and Singapore and Ministry of Ecology and Environment of the People's Republic of China for China.
- **Scope 3 emissions** – included for 2023 calculation are purchased goods and services, capital goods, business travel (airtravel only) and Employee commute. Scope 3 Emissions are calculated using DEFRA conversion factor 2023 and US EPA Supply Chain Factors Dataset V1.2

Carbon management: Decarbonization plan



Towards Net Zero for our Scope 1 and Scope 2 emissions by 2030

In 2022, we undertook a baseline assessment of our Scope 1 and 2 carbon emissions profile to align PDG’s business expansion plans with our Net Zero target. In 2023, we built on that foundational work and moved closer to our goal by executing on our year-on-year decarbonization roadmap leading to 2030.

This comprehensive assessment facilitates the detailed planning of our renewable energy procurement strategies by country. Although our energy consumption increased in 2023 due to growth in new data center capacities and increased loads at existing facilities, we kept our net emissions below 2022 levels.

Our goal is to achieve Net Zero for Scope 1 and Scope 2 emissions by 2030 and to support our customers in meeting their Net Zero targets for their accounted carbon.

In 2023, we also initiated carbon accounting for Scope 3 emissions, specifically focusing on categories 1, 2, 6, and 7. These categories encompass purchased goods and services, capital goods, business travel, and employee commuting, respectively.

We also explored opportunities to allocate greenhouse gas emissions from electricity consumption responsibly with our customers. PDG's approach enables customers to take ownership of the carbon associated with the energy consumption for their IT equipment under their Scope 2, while PDG reports these emissions under Scope 3. If customers do not account for these emissions, PDG will include them as our own Scope 2 emissions.

PDG ensures that all carbon generated in our facilities is accounted for by either customers or PDG. In 2023, all emissions associated with electricity consumption at our data centers are accounted for as PDG's Scope 2 emissions.

Additionally, PDG is committed to procuring green power to offset emissions continuously. In 2023, we were able to offset approximately 15% of our GHG emissions through these efforts.

Our goal is to achieve Net Zero for Scope 1 and Scope 2 emissions by 2030 and to support our customers in meeting their Net Zero targets for their accounted carbon. We are committed to continuous monitoring and reporting on our progress towards our decarbonization goals on an annual basis.

Renewable energy

Energy transition is critical for mitigating climate change and achieving a sustainable future. Data centers, which contribute to about 2% of the world's power consumption, are crucial to this mission. [IEA \(page 31\)](#)

As AI rapidly advances, energy demand at data centers could potentially double from 2022 levels by 2026, according to the [International Energy Agency \(IEA\)](#). This is why PDG prioritizes anchoring large scale AI data centers at locations with access to renewable energy.

The economic case for mature clean energy technologies is strong. More than 500 gigawatts (GW) of renewables generation capacity were set to be added in 2023 – a new record. More than USD 1 billion a day is being spent on solar deployment. This momentum is why the IEA recently concluded, in its updated Net Zero Roadmap, that a pathway to limiting global warming to 1.5 °C is very difficult – but remains open. [IEA](#)

In 2023, the Asia-Pacific (APAC) region witnessed remarkable strides towards a cleaner, more sustainable energy future, with renewable energy gaining traction as a key player in reducing carbon emissions. Coal was responsible for 57% of the electricity production in 2023, while low-carbon energy sources including nuclear, hydro, solar, and wind made up 32% of the energy mix. According to the [IEA \(page 31\)](#), renewable energy capacity in the region is projected to grow by nearly 430 GW between 2023 and 2028, marking a 73% increase from 2022. Despite challenges, such as the region's higher-than-average electricity generation CO₂ intensity and its substantial reliance on coal, this pivot to renewable energy shows that there's a growing recognition of the urgent need for change. [IEA \(page 88\)](#)

As a leading data center operator, PDG has an important role in supporting this transition and enabling digital decarbonization. In all our markets, we are working with leading renewable energy companies to increase our renewable energy ratio. The goal: Data centers that are powered by zero carbon power on a direct, real-time 24/7 basis.

24/7 renewable energy is a forward-thinking approach to energy consumption, which aims to ensure that all the electricity used is matched with carbon-free energy sources every hour of every day. While extremely challenging, this can be possible through a combination of technologies and power offtake structures:

- Supply of stable/ firm renewable/carbon free energy in grids connected to areas of data and compute consumption.
- Availability of open access structure that enables off-taking of renewable power by a company directly from generators through corporate PPAs.

At the same time, virtual PPA contracts and availability of carbon offset instruments such as RECs, carbon offsets will remain important for energy transition.

We are actively contributing to industry forums and thought leadership in promoting access to green/ low carbon electricity.

In 2023, we took several steps to increase our renewable energy ratio, including:

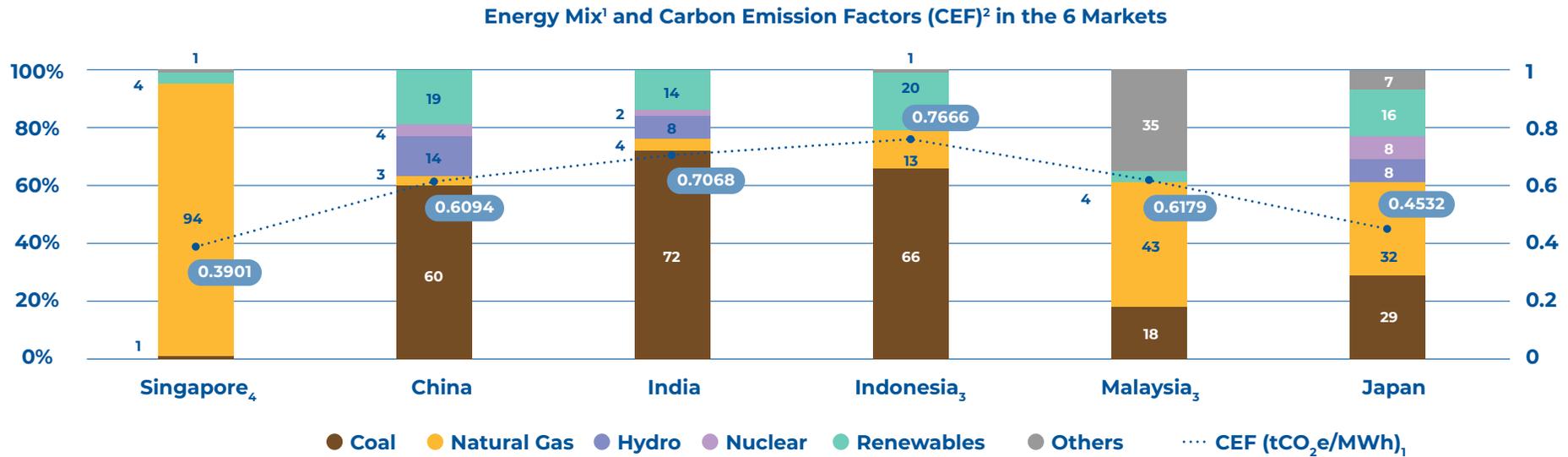
- Entered a solar power contract with Tata Power Renewables for our MU1 data center in Mumbai, India
- Using biomass energy at our JC campus in Jakarta, Indonesia
- Installing rooftop solar panels at our SH1 data center in Shanghai, China
- Purchasing certified Renewable Energy Certificates (RECs) in China, Indonesia, and India.

These initiatives have enabled us to offset approximately 15% of our total greenhouse gas (GHG) emissions in 2023.

The opportunity to decarbonize in our countries of operation varies considerably. However, all countries are showing progress in access to renewable energy and on net zero commitments.

Renewable energy

APAC Renewable market overview



¹ Energy Mix data for China, India, Indonesia and Japan are extracted from [IEA Monthly Electricity Statistics](#); Singapore energy mix data sourced from [EMA](#); Malaysia energy mix data sourced from [NETR Exhibit 4.3](#).

² Carbon Emission Factors (CEF): Measures the carbon dioxide emissions per unit of electricity generated. The values listed are sourced from the International Energy Agency (IEA) Emission Factor 2023 and Ministry of Ecology and Environment of China MEEC.

³ Indonesia & Malaysia Renewables includes hydropower along with solar, wind and other renewables.

⁴ Singapore Renewables constitutes Solar & Municipal (biomass) energy waste.

	Singapore	China	India	Indonesia	Malaysia	Japan
National Energy Mix Targets	<p>Renewables to form 6% of energy mix by 2025 IEA (page 108)</p> <p>Import of up to 4GW low-carbon electricity by 2035 RE2</p>	<p>Non-fossil fuels reaching ~25% of primary energy consumption by 2030</p> <p>Increase the installed Wind & Solar capacity to 1,200GW CI</p>	<p>Targets to meet 50 percent of its energy requirements from renewable energy by 2030 II</p>	<p>Indonesia plans renewable energy target to 23% by 2025, up from 14% in 2021. RI</p>	<p>Renewable energy to form 70% of the total generation capacity by 2050 M1 (page 23-24)</p>	<p>Japan’s 6th Energy Plan targets 36-38% renewable by 2030. IEA</p>
National Net Zero Targets	<p>Net Zero by 2050 SE1</p> <p>Reduce emissions to 60 MtCO₂e by 2030 SE2</p>	<p>Carbon Neutrality before 2060 C2</p> <p>Reduce emissions per unit of GDP by over 65% in 2030 from 2005 levels C2</p>	<p>Net-Zero Emissions by 2070 II</p> <p>Reduce emissions of India’s Gross Domestic Product (GDP) by 45% by 2030 IE2</p>	<p>Net-Zero Emissions by 2060 IE1</p> <p>Reduce emission by 31.9% with its efforts and 43.2% with international assistance by 2030 IE2</p>	<p>Reduce emission intensity of GDP by up to 45% by 2030 compared to the 2005 baseline M1 (page 11)</p>	<p>Net-Zero emissions by 2050 JI (page 2)</p> <p>Reduce emissions by 46% from the 2013 levels by 2030</p>

Renewable energy



Renewable/low-carbon energy technologies

As the demand from AI grows, there is a need to speed up access to renewable energy as well as innovation in clean energy technologies. A combination of existing mature technologies and evolving new technologies is necessary for a transition to 100% carbon-free digital infrastructure.

The following table provides a comparative overview of various renewable and non-renewable energy technologies. It serves as a guide to understand the operational characteristics and market readiness of each technology.

Renewable Energy Technology	Reliability	Carbon emissions	Challenges	Commercial viability
Solar	Variable/ Intermittent generation Capacity Factor: 15-30% Reliability can be increased with storage solutions	Zero operational	<ul style="list-style-type: none"> General Challenge: Space/Land intensive, intermittency Region Specific: Seasonal variations such as monsoons, urban density 	Viable and rapidly growing
Wind	Variable/ Intermittent generation Capacity Factor: 20-40%	Zero operational	<ul style="list-style-type: none"> Noise, avian impact, location specific Typhoon risk 	Viable and growing
Hydro	Reliable consistent generation Capacity Factor: >50%	Low	<ul style="list-style-type: none"> Negative environmental/ social impacts Seasonal water availability, seismic risk 	Well-established, slower growth
Geothermal	Reliable consistent generation Capacity Factor: >70%	Low	<ul style="list-style-type: none"> Location bound Seismic risk 	Viable in certain locations; low operational cost
Biomass	Reliable consistent generation Capacity Factor: 50-55%	Neutral over lifecycle	<ul style="list-style-type: none"> Competes with food production, deforestation Agricultural waste availability (IN, MY, SG), urban space 	Viable with sustainable sources
Nuclear	Reliable consistent generation Capacity Factor: ~90%	Zero operational	<ul style="list-style-type: none"> Regulatory complexity, nuclear waste management Public perception, seismic risk 	Higher cost due to high initial investment
SMR	Reliable consistent generation Capacity Factor: >90%	Zero operational	<ul style="list-style-type: none"> Regulatory complexity and safety concerns 	Emerging technology
Hydrogen	Reliable consistent generation (Issues with production, storage and transportation)	Zero for green hydrogen	<ul style="list-style-type: none"> Infrastructure for production and distribution 	Emerging technology, high production cost
Fuel Cells	Reliable consistent generation Capacity Factor: 95%	Low (depends on fuel source)	<ul style="list-style-type: none"> High cost of infrastructure and technology Fuel supply 	Higher cost compared to established technologies

Renewable energy (procurement)

Procuring renewable energy effectively in the markets we operate is the most critical lever of PDG's overall environmental efforts. In this regard, we made steady progress in 2023.

By procuring renewable energy we met our 2023 annual decarbonization target set in 2022, reinforcing our commitment towards Net Zero for Scope 1 and Scope 2 emissions by 2030.

An integral part of our renewable energy procurement strategy is to procure renewable energy through a certified RECs purchase program. In 2023, we procured renewable energy generated from solar sources in the form of IRECs and GECs in India and China. We procured geothermal power in the form of RECs from PLN in Indonesia.

Case study: In Mumbai, a 25-year solar power contract

PDG entered into a 25-year renewable energy contract with Tata Power Renewable Energy Limited (TPREL) in 2023 to offset the carbon footprint of our 125 MW MU1 data center. Launched in 2022, the data center in Navi-Mumbai is our flagship campus in India.

Under the solar power contract, PDG's MU1 will:

- Consume power generated by a solar project located in Nanded district, Maharashtra.
- Help establish a roadmap for MU1 to be powered with up to 50% renewable energy.



The success of MU1's renewable energy procurement serves as a testament for integrating sustainability into the core of our business model. It is a compelling case of how environmental responsibility can align with financial viability, delivering value to our stakeholders while fostering a greener environment.

Case study: Harnessing biomass power in Indonesia

PDG set a precedent for sustainable operations with our JC Campus data centers in Citibung, Indonesia by harnessing biomass power in partnership with PT Cikarang Listrindo Tbk (CL). CL's Babelan plant, about 30km from the campus, is equipped with a biomass handling system and operates on biomass sourced from the highest-quality biomass sources.

This supply of biomass energy is evidenced by International Renewable Energy Certificates (I-RECs) registered on Evident, a global registry for IRECs. Quarterly checks reinforce the environmental credentials of the power consumed.

Key to this effort is an innovative approach to meeting sustainability goals:

- PDG's JC campus is the first in the industry to be powered with biomass energy in Indonesia.
- It is the first of its scale to gain the BCA Green Mark Platinum certification.

This contract enables PDG to deliver on our promise of providing sustainable solutions to our customers at our JC campus.

Case study: Solar panels deployed in rooftop space at SH1, Shanghai

PDG has installed solar panels on the rooftop of our SH1 data center in Shanghai, China.

Altogether, the 2,000 solar panels generate power while utilizing unused rooftop space:

- The solar panels will generate a total of 1,030MWh annually
- Over a lifespan of at least 25 years, the system is projected to generate approximately 25,690MWh of power.
- This means savings equivalent to about 8,221 tons of standard coal.
- Carbon emissions are cut by 587 tCO₂e per year.



Energy efficiency



The most sustainable power is the power that isn't consumed. Just as important as drawing on renewable energy to power our data centers is making the most out of the limited energy resources available to us.

Efficient operations have a meaningful impact on energy and water consumption in data centers, leading to a lower carbon footprint and reduced costs.

With the high computational power demand of AI workloads, energy efficiency has become even more critical. Implementing advanced cooling technologies and techniques, energy efficient hardware and AI monitoring tools for dynamic energy management help in substantial savings.

Climate can significantly impact the energy required for cooling, which affects the Power Usage Effectiveness (PUE). Data centers located in cooler climates can take advantage of free cooling techniques. These techniques allow data centers to use outside air to cool IT equipment instead of relying on energy-intensive mechanical cooling systems. As a result, data centers located in cooler climates can achieve lower PUE values than those located in warmer climates.

Data centers located in warmer climates, such as in Southeast Asia, require more energy-intensive cooling systems due to the high ambient temperatures resulting in higher PUE values. Other factors, such as the IT workload, server utilization, and facility design, can also impact the energy efficiency of a data center.

In deploying hyperscale data centers across Asia, PDG leverages scale, technology, and optimal energy management to ensure low PUEs. We are also testing technologies such as liquid immersion and direct to chip cooling in our data centers to improve energy efficiency.

Asset portfolio PUE

Operating PUE is sensitive information in our industry and hence usually not shared publicly. However, we are sharing the values or indicative ranges for our data centers.

PUE stands for Power Usage Effectiveness

and is a metric used to measure the energy efficiency of a data center. PUE is calculated by dividing the total amount of power used by the data center by the amount of power used by the IT equipment in the data center.

Facility	Country	Location	Capacity	PUE
JH1	Malaysia	Johor	150	<1.4*
SH1	China	Shanghai Fengxian	42.3	<1.3
NJ1	China	Nanjing	43	<1.3
LF1	China	Langfang Zhongshi	66	<1.3*
SG1	Singapore	Singapore	14	1.54
ID1 (includes 5 operational data centers)	Indonesia	Jakarta Cibitung Jakarta Bintaro Bandung Pekanbaru Surabaya	11	1.76
JC2	Indonesia	Jakarta Cibitung	22	<1.4*
MU1	India	Mumbai	125	<1.4*
TY1	Japan	Tokyo Saitama	96	<1.3*

*Design PUE

Energy efficiency

Case study: In Shanghai, PUE improves to <1.21 in 2023

With optimized energy and water consumption through improved cooling system efficiency and other initiatives, PDG's 42MW SH1 Shanghai data center achieved a PUE of <1.21 in phase 1 in 2023.

Free cooling: Leveraged free cooling whenever possible, including in data halls, reducing reliance on mechanical cooling systems. Relying on ambient temperatures for cooling, we reduced energy usage and costs while maintaining an optimal operating environment.

HVDC system optimization: Adopted pioneering strategy of adjusting rectifier modules based on real-time IT load and calculated thresholds, resulting in reduced power consumption of the HVDC system from 9% to 4.4% of the total power.

Cooling Load Factor (CLF) & Power Load Factor (PLF) monitoring: This allows for comparisons of operating environments under consistent conditions. The ongoing analysis helps identify opportunities for improvement and detect abnormalities in energy usage.

Prompt blinding of racks: Implemented procedures to promptly blind racks during power on/off cycles minimizing energy wastage associated with idle IT equipment.

Operations engagement and training: Fostered a culture of ownership and responsibility in the operations teams for energy efficiency on a 24/7 basis. Regular training on energy efficiency helped equip staff with knowledge and skills necessary to identify opportunities for improvement and implement best practices.

Optimizing chiller performance: We aligned chiller operation with actual demand, continuously monitored water quality and optimized flow rates, optimizing energy efficiency without compromising cooling effectiveness.

Managing energy consumption in shared infrastructure:

With rigorous monitoring and managing consumption across lighting, shared infrastructure, and backup equipment, we identified usage patterns and opportunities for savings.

By adjusting UPS settings based on real-time demand and load conditions, energy is used efficiently without compromising critical backup power capabilities. Adjusting the upper and lower limits of temperature control for generator sets (gensets) and reducing the working time of heating modules helped optimize energy consumption during maintenance operations.

We leveraged dynamic lighting with human sensing technology in data halls, passages, and emergency equipment areas so lighting is only activated when needed. Default lighting mode was set to "off" for warehouses to reduce unnecessary energy consumption during periods of low or no occupancy.

Cooling technology

To keep IT equipment running optimally and reliably, efficient cooling is essential in a data center. It consumes as much as 40% of energy used, especially in warm, tropical data centers in Asia-Pacific. As AI technologies drive more intensive computational tasks, the demand for efficient cooling solutions becomes even more critical. Liquid cooling is gaining traction in AI data centers due to the rising Thermal Design Power (TDP) of CPUs and GPUs and the associated power consumption and heat generation.

Liquid cooling is a method of cooling electronic components by using a liquid coolant instead of traditional air-cooling methods. There are several key advantages of liquid cooling:

Efficient heat dissipation: Better thermal conductivity than air allows for better heat absorption and transfer.

Enhanced cooling performance: More precise temperature control, ensuring that components remain within optimal operating ranges.

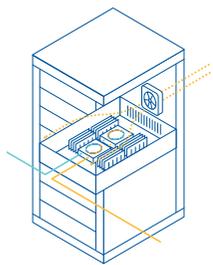
Increased performance: Supports more intensive AI workloads and overclocking of CPUs and GPUs by effectively managing heat generated.

Reduced noise: With fewer fans or fans running at a slower speed than traditional air cooling, liquid cooling contributes to a quieter computing environment.

Energy efficiency

Types of liquid cooling

The utilization of liquid cooling is increasingly being considered at AI data centers because of its improved heat dissipation. The most advanced liquid cooling solutions can support up to 250kW per rack. Two main types of liquid cooling are available today – liquid-to-chip and immersion cooling:



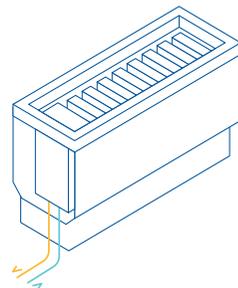
Liquid-to-chip

Liquid cooling with conventional air-cooling techniques

Coolant is circulated directly to heat-generating

components like CPUs and GPUs, while air remains utilized for facility-wide cooling

Maximum cooling: ~80kW per rack

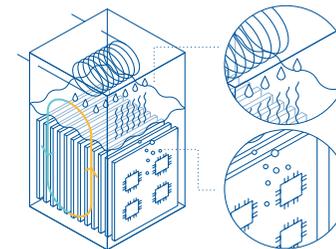


Immersion – Single Phase

Servers or entire racks are submerged in a dielectric liquid. Liquid absorbs heat from the components, which is then circulated to a heat exchanger for dissipation.

Maximum cooling:

~100kW per rack



Immersion – Two-Phase

Similar to single phase, except the coolant undergoes phase change from liquid to gas to efficiently absorb and dissipate heat

Maximum cooling:

~250kW per rack

PDG's AI-ready data centers are designed to incorporate flexible cooling solutions. We are developing a state-of-the-art R&D center to advance cutting-edge data center technologies, including liquid cooling systems.

At PDG's flagship data center MU1 in Mumbai, India, we have showcased a two-phase, full-immersion liquid cooling solution. At our facilities in Shanghai, China and Johor, Malaysia, we have flexibility to enable liquid cooling solutions.

Case study: In Mumbai, a demo of two-phase liquid immersion prototype

Our MUI flagship data center in Mumbai, India implemented a **functional prototype of cutting-edge two-phase immersion cooling**. The model accommodates a 48U rack with a rack density of up to 25kW per rack.

Through testing with resistive load, we have effectively demonstrated the technology to select customers. The solution uses a dielectric coolant, into which the hardware is fully immersed. PDG also supports traditional, hybrid, or complete liquid cooling solutions on-site.



PDG has successfully completed a feasibility study for liquid-to-chip cooling solutions for customers at SH1 and JH1.

This included hybrid cooling solutions, with 60% of the cooling achieved through direct-to-chip technology with remaining 40% through traditional air-cooling methods.

Both designs were for standard 48U racks, with the cooling solutions integrated as rack units.

Additionally, one of them utilized a rear-door liquid-to-air heat rejection unit, while the other employed a cooling distribution unit (CDU). Both solutions are capable of supporting rack densities of up to 80KW per rack.

Water stewardship



Water is key to data centers, which can consume large amounts of the valuable resource, primarily for cooling purposes.

Many parts of Asia-Pacific suffer from water stress, which means selecting the right type of cooling for our data centers is paramount to efficient water management.

Traditional cooling systems use water to absorb and dissipate the heat generated by servers. These systems typically involve cooling towers, chillers, pumps, pipes, heat exchangers, condensers, and computer room air handler (CRAH) units. Water is also utilized for humidification systems and facility maintenance.

In our data centers in Mumbai and Tokyo, we use closed-loop air cooled chiller systems, which have a WUE of 0. We are implementing adiabatic air-cooled system for phase 2 of our MUI Mumbai data center, which will help in bringing down PUE while keeping WUE very low.

We are also enabling liquid cooling solutions, such as immersion and direct-to-chip, at our AI-ready data centers, which can lead to meaningful energy and water savings.

PDG tracks WUE (Water Usage Effectiveness), total water usage and other relevant metrics at all our data centers.

Other PDG water efficiency efforts

Water recycling and reuse: This is supported wherever possible to minimize freshwater consumption and reduce the strain on local water resources. In Singapore, 98% of our water usage in SG1 is from PUB (Singapore’s national water agency) NEWater which is high grade reclaimed water.

Rainwater harvesting: This has been implemented at our MU1 and TY1 data centers. In TY1, a large-scale rainwater storage facility on-site will utilize rainwater for garden and toilet use. The water storage facility reduces the risk of flooding in the surrounding area by adjusting drainage in case of sudden downpours. At our MU1 data center, rainwater is harvested on-site, where up to 100KL of water is stored. A sewage treatment plant of 30KL is available on-site as well. The treated water will be reused for toilets and watering gardens.

Leak detection and prevention: Robust leak detection systems, such as sensors and monitoring software, allow us to quickly identify and address potential leaks before they escalate into larger issues. In Singapore, PDG’s SG1 facility has improved water efficiency by deploying a smart tool to monitor leaks, water flow, overuse, and contamination, along with automated device management. These steps help to monitor water quality in the cooling tower, which lead to the best cycle of concentration (COC) and higher water efficiency.

Water-efficient infrastructure: Incorporating this into the planning and construction of our sites also significantly reduces water consumption. Selecting water-efficient fixtures and equipment, optimizing piping layouts to minimize water wastage, and integrating smart controls and automation systems results in better water management.

Case study: Improving WUE at SH1, Shanghai

In 2023, the WUE at our SH1 data center improved by 4.7% year-on-year. Key to this was the continuous monitoring of water consumption, including vaporized amount from the cooling tower, and usage in a constant-humidity control system. Water wastage was minimized by draining only low-quality unusable water, as determined using monitoring and analysis tools.

At the same time, regular maintenance of water supply and discharge and monitoring water quality to ensure the correct pH and clarity helped in improving water efficiency. We also improved the dosing system and optimized cooling towers’ sand filter parameters. Regular training and awareness on water conservation ensures that all members of the operations team prioritize water conservation.



Waste management



As a leading digital infrastructure provider, PDG is committed to minimizing e-waste.

With PDG’s business model, the production of e-waste is minimal. At all our sites, hazardous waste, including batteries, are handled by licensed vendors for recycling and disposal.

In Singapore, PDG has taken a corporate pledge to minimize e-waste, as part of the eRevival Square effort with SGTech and Sustainable Living Lab in 2021.

Continuing that initiative in 2023, PDG now has policies in place on how to deal with e-waste. We have started working with vendors licensed by the National Environment Agency (NEA) to dispose of batteries as per Singapore's environmental public health regulations.

At our MU1 data center in India, we follow a rigorous process for segregating waste. One important effort here is an organic waste converter that is installed on the premises.

The amount of waste generated is disclosed to the respective local authority on a periodic basis and disposal is through government nominated agencies with valid certifications. All procedures at our sites are implemented in line with the Environmental Management System (ISO14001).

“ In Singapore, PDG has taken a corporate pledge to minimize e-waste. ”

Green building design and construction

The design and construction phase of a data center is foundational for carbon, energy and water efficiency, and thereby environmental impact.

During this phase, selecting sustainable building materials, optimizing the layout for cooling efficiency, and integrating renewable energy sources can significantly reduce the carbon footprint.

Advanced planning for incorporating flexible and scalable high-density designs, ensures that the data center can adapt to new cooling technologies.

We incorporate sustainability into planning, design and construction through four steps:

1. Green-first site selection:

At the planning stage, we prioritize sites that have access to renewable energy supply and have the least impact on ecology and biodiversity. We seek to develop opportunities for on-site renewable generation as well, for example, through rooftop solar panels.

2. Low PUE design:

All our greenfield hyperscale data centers are built with a design PUE of 1.2 – 1.4. Data centers generate heat which requires cooling systems that account for a significant portion of energy consumption. Our sustainable design strategies include the use of high-efficiency cooling technologies such as liquid immersion cooling which lead to lower PUEs.

3. Water conservation:

Air-cooled, adiabatic, water-cooled, liquid immersion, direct to chip or other cooling systems are selected, designed, and operated in a way that helps reduce stress on the water supply in the regions we operate in. We use rainwater harvesting, low-flow fixtures and other techniques for water conservation.

4. Sustainable building material:

At our greenfield projects, we try to use sustainable building materials, recycled content, or locally sourced materials, to reduce the environmental impact of construction.

Recognition for PDG green building efforts

Green Building certifications provide guidelines for the use of water, energy and materials, while reducing the building's impact on the environment through better design, construction and operations.

In 2023, some of the notable certifications achieved by PDG include:

- **BCA (Building and Construction Authority) Green Mark Platinum:** PDG's JC2 data center in Greater Jakarta achieved the highly respected BCA GreenMark Platinum certification. The certification process involves a detailed assessment of various criteria, including energy usage, water efficiency, environmental protection, and indoor environmental quality. The highest accolade within this scheme is the Platinum rating, which signifies top-tier performance in sustainability and energy efficiency. JC2 is the first data center of its scale to achieve this certification in Indonesia.

- **IGBC (Indian Green Building Council) Platinum:** PDG's MUI facility is the first data center in Mumbai to successfully achieve the highest level of certification offered by IGBC. The certification follows a rigorous procedure with points for site selection and planning, energy efficiency, water conservation, building materials and resources, indoor environment quality and innovation.

Apart from the above, we also earned other certifications such as ISO14001.

Case study: Tokyo data center is built to be green

In March 2024, the core and shell construction of PDG's 96 MW TY1, one of Japan's largest data center campuses, was completed. For the demolition works, 100% renewable energy was used. All Scope 1 and Scope 2 emissions attributable to construction works were mitigated through verified carbon credits and RECs.



A large-scale rainwater storage facility is being installed on site, which will enable rainwater to be used for gardening and toilets. This water storage facility reduces the risk of flooding in the surrounding area by adjusting drainage during sudden downpours.

The project utilizes a closed loop air-cooled system which results in a WUE of nearly 0 and a highly efficient PUE design of <1.3.

We are targeting to achieve LEED v4 BD+C CS certification. For this, the exterior walls and rooftop are highly insulated and LED lighting has been installed.

The facility exterior has been designed to match with the surrounding neighborhood, while soundproof walls are used in the facility to minimize noise. We have also attempted to “green” around the sidewalks and other areas on the site, with flower beds. Only native and adapted Japanese species of plants are used which do not require frequent watering.



08

Meeting social goals

Health and safety



A fundamental component of PDG's ESG mission is our commitment to safeguard the health and safety of our employees, contractors, partners, and customers.

In environments like data centers, where construction and operations often entail use of heavy equipment round the clock, inherent risks such as working at heights, hot work, and critical lifting are prevalent. Therefore, taking proactive measures to effectively manage and mitigate these risks is of utmost importance.

PDG's vision is to be the leader within our industry by protecting the health and safety of our employees, visitors, and clients by ensuring an environment free of hazards and providing appropriate instruction at work with least exposure to any risk.

Our multi-country presence enables us to facilitate the exchange and integration of best practices throughout the organization, thereby nurturing the development of our distinctive standards.

Our HSE policy and procedures are aligned with ISO 45001 and meet OSHA requirements. All our greenfield operating data centers are ISO 45001 certified. In 2023, we achieved ~6.5 million safe manhours across our portfolio datacenters.

Employees / Contractors

- Proactively engage in safety audit/check and feedback for incident prevention
- Provide safety induction training on PDG’s HSE Vision and Policy, safety practices, PPE and others
- Provide safe and healthy working environment by conducting safe work procedure/ job safety analysis and risk assessment
- Ensure and govern insurance/ workman compensation coverage for all workers
- Kickstarted site-based Safety Training Centres to upskill workforce and best practices

Customers

- Provide safe data center environment to customers
- Communicate PDG’s HSE Vision and Policy
- Proactively engage with customers for feedback on safety

Governance

- Adhere to corporate directive for compliance
- Fulfil and meet all relevant legislative requirements
- Transparently report any major incident/accident
- Collaborate for regulatory inspections

PDG has also implemented the following procedures at all sites:



- Regular audit/ inspection on site for adhering to control plan



- Rigorous incident reporting framework with regular report to the Head of Safety



- PDG Safety Day conducted in all countries to promote culture of safety

Health and safety

Health and safety framework

PDG has set out minimum standards that outline the required environment, health, and safety standards across the lifecycle of a project.

They are designed to tightly control risks, prevent accidents, and manage safety incidents effectively. These standards implement a structured risk management process through the four basic phases of developing a project.



Each phase has its unique set of risks and requires specific strategies to mitigate these risks. It includes a detailed approach to assessing and minimizing risks across these phases:

Phase 1:



Due Diligence/Governance/Investment:

Identifies EH&S risks that can impact project delivery and asset operations through third-party due diligence, broad risk assessment, peer reviews, and more.

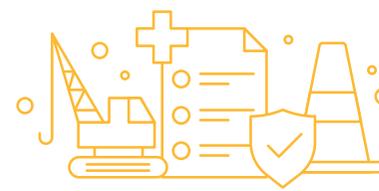
Phase 2:



Design & Procurement:

Outlines the mandatory design controls aimed at eliminating environmental damage and health and safety risks through effective planning, design, and procurement, before any physical work commences on site.

Phase 3:



Delivery (Construction):

Includes protocols for managing work activities within the delivery phase and sets out the mandatory controls and performance standards aimed at eliminating risks across all major construction events that are anticipated that could result in incidents with EH&S risk potential. This phase has the highest risk and hence each risk is managed in meticulous detail.

Phase 4:



Completion (ready for service):

Addresses the protocols for managing the transfer of control of the running of the data center, post-completion to ready for service (RFS). Includes managing tenant installations while the project is also a construction site.

Case study:

PDG's MU1 and JC2 projects get global recognition for leadership in Health and Safety

About the Projects

- **MU1 is a 125MW campus.** Construction activities for the first building started in Q4 2021 and it was ready for service Q4 2022, in a record time of 14 months. The second building's construction started in Q4 2023.
- JC2 consists of one building (G+5 storeys) with 22MW of IT capacity. Construction started in Q1 2022, and it was ready for service in Q3 2023 within just 18 months.

Deploying Experts

- **Engaged independent third-party safety consultant** to comply with local regulations and provide awareness training. Implemented safety governance, conducted self-perception surveys, HSE maturity assessments, and site inspections/audits to prepare reports on each partner's HSE performance.
- **PDG HSE officers from the project management company were deployed** to manage day-to-day safety activities on-site

Reward and Recognition Program

- **Periodic R&R program for contractors** based on contractor safety evaluations, including motivational programs for contractor workers and supervisors to recognize safe practices.
- Competitions, such as quizzes and others, are held to motivate workers to prioritize safety.

Safety Achievements

- Received the **2024 RoSPA Health and Safety Gold Award** for both projects and obtained **ISO 45001** certification for MU1 with certification process for JC2 underway.
- Over **5 million safe man-hours for JC2** and **2 million safe man-hours for MU1** achieved.



Proactive approach to HSE

- **Established detailed HSE vendor selection process and contractor audit program**, involving contractors in safety standards improvement and certification.
- **Implemented project-specific HSE systems**, including HSE plans, risk assessments, lifting plans, Standard Operating Procedures (SOPs), checklists, and Permit to Work (PTW) processes, along with daily inspections and pre-use checks for equipment.
- **Conducted risk assessments and job safety analyses for all tasks**, and implemented a three-level risk assessment process as part of the Hazard and Risk Assessment (HRA) management program.
- **Established checkpoints for verifying personnel identity and safety gear**, and implemented health and well-being monitoring initiatives, including periodic medical check-ups, general cleaning, and physical exercise sessions.

Leadership involvement

- **Monthly site walkthroughs and weekly project reviews** on the Health, Safety and Environment (HSE) dashboard with senior management.
- **Monthly safety committee meetings** with all relevant stakeholders, including vendor partners, internal teams, and the country head

HSE training, campaigns and awareness programs

- **100% completion of DCD's Critical Safety Basics Certification** ensured for engineering and project teams
- **Advanced firefighting and rescue training** conducted by external agency for Company Emergency Response Team (CERT) team members & other key personnel.
- **All workers underwent mandatory safety induction training** prior to site deployment, ensuring comprehensive understanding of safety protocols and procedures.
- **Project managers conducted fortnightly impromptu toolbox talks** focusing on HSE topics, complemented by regular on-the-job training sessions on work at height, electrical work, and other critical tasks, along with specific classroom training on permit-to-work systems, scaffold erection, and safety harness usage.
- **Celebrated project safety milestones** and National Safety Week and conducted overall health checks for workers.
- **Periodically carried out evacuation and emergency drills**, and implemented HSE posters and signages at strategic locations for safety awareness.

Health and safety

Case study: Partnership with Haqdarshak for worker welfare at Mumbai MU1

In 2023, PDG India undertook an initiative to support construction workers at MU1, Mumbai site, facilitating their access to welfare schemes provided by the Indian government.

Workers often lacked awareness of the eligibility criteria and the application process for these schemes. Additionally, they faced challenges in submitting online applications.

To address this, PDG engaged with Haqdarshak, a platform that provides access to **over 7,000 state and central welfare schemes in 11 languages**. We set up a dedicated kiosk at our MU1 campus where all workers could approach the kiosk and receive guidance to apply for relevant welfare schemes of their choice.

Operational for 4 months, this kiosk helped educate workers about various government schemes and granted them access. Through the kiosk, PDG successfully submitted 381 applications on behalf of construction workers, enabling them to benefit from government welfare programs.

Of the applications submitted, **329** received government sanction, resulting in a cumulative lifetime benefit of approximately **US\$380,000** for the workers.



Sustainable financing



Digital infrastructure projects are highly capital intensive and require close partnership between operators and the investor and lender community.

PDG believes it can achieve both business and financial goals while ensuring that the environment and local communities grow together in a sustainable manner.

We took meaningful steps to enhance our sustainable financing efforts significantly:

- We established a Green Finance Framework aligning with Green Bond Principles (GBP) and Green Loan Principles (GLP).
- Our eligible green project categories include Green Building, Renewable Energy, and Energy Efficiency. The relevant qualifying criteria include green/sustainability-linked certifications, PUE, procurement of renewable energy and energy efficiency initiatives.
- Our Green Finance Framework has undergone review, as part of a Second Party Opinion (SPO) conducted by a globally recognized independent SPO services provider, ISS Corporate Solutions.

Sustainable financing promotes environmental, social, and economic benefits by channeling investments towards projects that prioritize long-term viability and positive societal impact. It enables the development of infrastructure that minimizes resource consumption, reduces emissions, and fosters resilience to climate change.

Additionally, sustainable financing encourages innovation and fosters partnerships that drive progress in sustainability efforts.

PDG culture and values



Building a strong corporate culture and defining company values is foundational for a young company.

PDG's positive and values-driven culture helps attract and retain top talent, fosters teamwork and collaboration, and drives overall success and growth.

Our core values include:**Pursuit of excellence:**

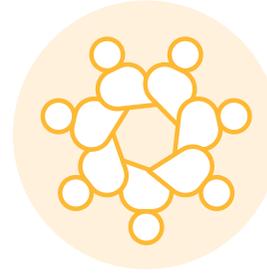
Relentless in our pursuit of excellence in all areas of work.

**Customer centricity:**

Strive to understand customer needs and focus on delivering best solutions at every stage.

**Integrity:**

Uphold the highest level of integrity in the conduct of our business.

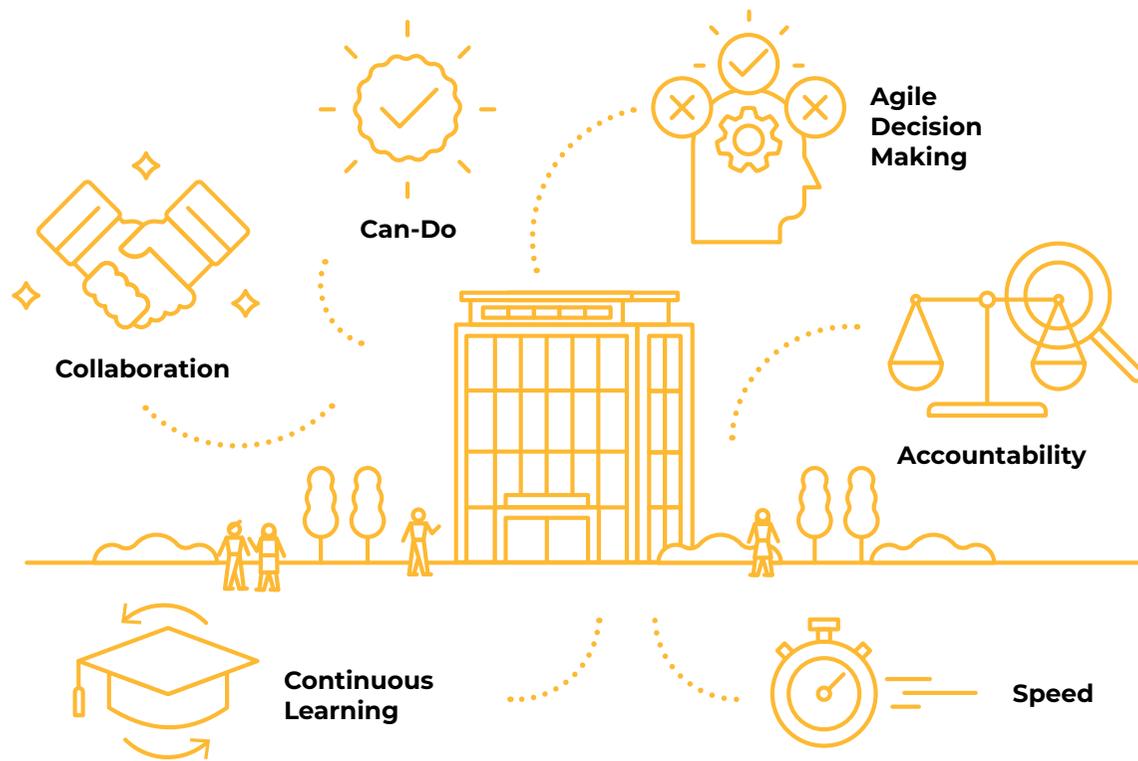
**Diversity and Inclusion:**

Respect everyone irrespective of age, gender, ethnicity, religion, disability, sexual orientation, education and national origin. Every opinion matters – individuals with different backgrounds are culturally and socially accepted and welcomed.

**ESG is at the core of our business:**

We take responsibility to our employees, environment and stakeholders seriously because they are central to our business and key to the sustainability of our endeavors as we continue to grow on a hypergrowth trajectory.

PDG culture and values



Working at PDG

At PDG, we seek to create an environment that is safe, enriching and rewarding for all.

PDG aims to be a platform to build an exciting career, with rapid growth in all regions and provides opportunities to advance into new roles vertically and horizontally.



“ We seek to create an environment that is safe, enriching and rewarding for all. ”

Employee well-being and development



As a fast-growing company, talent plays a key role in PDG’s success. We attract and nurture top talent which enables PDG to innovate and adapt to scale in a rapidly evolving and complex industry.

The PDG team comprises of experts in the global telecoms, Internet infrastructure, data center, renewable energy and real estate sectors who are adept at moving past the boundaries of industries, geographies and cultures.

PDG provides a platform to help employees to attain their aspirations, through:

- Experience in a rapidly growing and stable industry
- Learning from fast-paced, diverse APAC regions
- Growth opportunities across countries and functions

Health and well-being

PDG is committed to provide a work environment where employees can work productively and achieve their highest potential. This is achieved through various initiatives:

- Local wellness committee in each country implements customised wellness activities
- Social activities such as team bonding activities to build common purpose, unity
- Yearly PDG Family Day, where employees and families get a chance to learn about PDG’s role in enabling the Internet

Employee Engagement

PDG values feedback from employees because their ideas and concerns are important to the company's success.

- **Employee engagement Survey:**
Conducted annually, this helps the company understand employee needs and takes feedback to improve the work environment.
- **Internal communications:**
Regular interactions between PDG management and employees help facilitate the exchange of ideas, suggestions, and concerns through various platforms, including town halls and CEO dialogue sessions.
- **Recognition:**
A culture of recognition ensures employees are regularly acknowledged and credited for their contribution.

Diversity and Inclusion

PDG practices non-discrimination and equal opportunity, irrespective of age, gender, ethnicity, religion, disability, sexual orientation, education, and national origin. Every opinion matters - individuals having different backgrounds are culturally and socially accepted and welcomed. The company enhanced its already competitive maternity and paternity related policies and benefits in 2023.

Diversity, equity, and inclusion in digital infrastructure is crucial in creating a more representative digital ecosystem, ultimately leading to greater innovation and better digital solutions. The company also supports and sponsors several initiatives to promote diversity such as Women's Tech Forum at PTC'2024 and iMasons Women events.

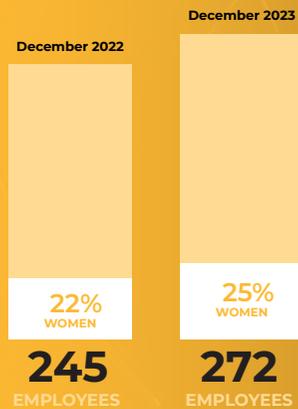


Employee well-being and development

As of 31 December 2022, we had 245 employees of which 22% were women.

As of 31 December 2023, PDG's workforce consists of 272 employees of which 25% are women.

It is our endeavour to increase this percentage as the company grows.



2023 Employee Engagement Survey results:

Overall engagement score:

4.41/5

Participation rate:

92%

eNPS score:

55

Learning & Development

PDG fosters a learning culture so that employees are empowered to take charge of their personal and professional growth. We prioritize continuous skill enhancement and support this through comprehensive training programs and development initiatives designed to suit team competencies.

Our clear guidelines ensure effective identification, monitoring, and review of training needs. PDG provides support for specialized technical training programs and certifications. Beyond technical skills, our expert teams also facilitate business and leadership knowledge-sharing sessions.

PDG's multi-market presence offers the opportunity for teams to learn from other markets. Employees benefit from the opportunity to work across various markets, gaining invaluable experience and significantly enhancing their knowledge by participating in projects in different regions.

Graduate Engineer Trainees (GET) Program

Run in partnership with leading engineering institutes since 2021, the GET program is 18 months long and designed to provide comprehensive training and experience to new engineers. This includes:

- **Technical training:** Trainees receive hands-on training in critical data center operations, including server maintenance, network configuration, and troubleshooting. They also learn about advanced technologies in liquid cooling, energy management, and security protocols.
- **Project management:** Participants gain experience in project planning, execution, and management to understand how large-scale data center projects are developed.
- **Safety and compliance:** Training includes adherence to industry-standard safety protocols and regulatory compliance for operational integrity and safety in data centers.

The GET program also offers rotational assignments through different departments, giving trainees a holistic view of data center operations, from the technical side to business management. Trainees work under the guidance of experienced engineers and managers, allowing them to learn from professionals and contribute to live projects.

In 2023, we onboarded 4 new recruits from Veermata Jijabai Technological Institute (VJTI) and Indian Institute of Technology (IIT) Bombay. We also expanded the scheme to include master's students from IIT Bombay as senior management trainees. In early 2024, we grew the program to Malaysia and are working closely with University of Technology Malaysia and Universiti Malaya.

Internship Program: PDG operates student internship programs across Singapore, China, Indonesia, and India, offering participants practical experience in their chosen fields. These internships provide a pathway for eligible candidates to join PDG, fostering skill development and strengthening connections with educational institutions and local communities. In 2023, we hired and trained 12 interns.

Community engagement

At PDG, we wholeheartedly embrace community engagement as an integral part of our growth strategy.

We prioritize building robust relationships with our stakeholders and creating a positive impact on local communities.

Our engagement extends across all our markets, where we strive to be responsible corporate citizens, deeply committed to sustainable value creation within the communities we serve.

Food from the Heart



Food insecurity remains an issue in Singapore, where it is often invisible but deeply felt by those impacted by it. PDG partnered with Food from the Heart, a non-profit organization dedicated to alleviating hunger and providing food assistance to those in need. Our employees rallied together and donated a wide range of essential food items to support those in need.

Later in the year, our team of volunteers also headed to the Food from the Heart warehouse to pack food supplies for struggling families and seniors. We put together 121 care packages that were delivered by the Food from the Heart team.



JC2 tree plantation with Lindungi Hutan

As part of the launch of our 22MW hyperscale campus in Greater Jakarta, PDG Indonesia planted 1,000 trees in Pantai Kartika Jaya, Kabupaten Kendal and Pulau Tiban with the help of Lindungi Hutan (ProtectForest). Lindungi Hutan campaigns for the preservation of nature, plants trees, monitors forests, educates people, and empowers farmers.



Community engagement in Malaysia

PDG collaborated with relevant partners on community engagement efforts as part of Malaysia's National Energy Transition Roadmap (NETR) initiatives, focusing on enabling Human Capital and Just Transition.

In early 2024, PDG supported the local community initiative Kulai Cycling Carnival 2024. We also sponsored distribution of food packets to children from primary school SK Felda Bukit Batu & SK Ayer Manis.





09

Meeting governance goals

Meeting customer ESG goals



As the massive growth of cloud and AI continues, it is imperative that all players in the value chain take responsibility and contribute to decarbonization efforts.

Our selection of “Meeting customer ESG goals” as a new ESG material topic reflects our commitment to our customers – some of the world’s largest technology companies – on sustainability leadership within the data center industry.

This underscores the recognition that ESG performance is increasingly a criterion for customers when selecting data center services. As hyperscalers and large enterprises execute on their sustainability targets, they seek partners that can not only accommodate but actively contribute to these objectives.

This alignment is crucial, as it directly impacts customer satisfaction and loyalty, positioning PDG as a trusted partner of choice in a competitive landscape.

At all our data centers, we offer renewable energy solutions to our customers. We have also incorporated flexible design options at our flagship hyperscale campuses, allowing customers to select from a variety of hybrid cooling technologies.

We ensure that our ESG metrics and performance, including health and safety, and governance policies, meet and exceed those required by our customers.

In terms of operations, the electricity consumed in data centers is primarily controlled by customers driven by the utilization levels as well as operating parameters set for equipment. On this basis, GHG emissions from operations can be classified as Scope 2 for customers and Scope 3 for operators. Where our customers account for these emissions as their Scope 2, we will account them as our Scope 3 emissions.

The emphasis on meeting customer ESG goals fosters innovation and operational excellence within PDG. It encourages the adoption of advanced technologies and processes that improve energy efficiency, reduce waste, and minimize the environmental impact of data center operations. It also drives leadership in health and safety and economic efficiency, ultimately reducing costs and improving the bottom line.

“ The emphasis on meeting customer ESG goals fosters innovation and operational excellence within PDG. ”

Governance, transparency, business ethics and integrity

At PDG, we are fully committed to maintaining the highest standards of governance. We prioritize compliance with local laws and regulations across the jurisdictions in which we operate and ensure that our data centers maintain strict adherence to environmental, health, safety, and labor laws.

Ethics and compliance

We have strict standards on ethics and compliance and have implemented various internal rules and guidelines for ethical behavior, such as anti-bribery and corruption policy, anti-money laundering (AML), countering financing terrorism and sanctions policy, conflict of interest policy and guidelines for travel, gifts, and hospitality.

We provide periodic training to all employees on ethics and compliance, to educate them on the principles and procedures of our policies and to reinforce the importance of ethics in the workplace.

In addition, we have strict rules around whistle-blower procedure to give comfort to employees and other personnel (such as our business partners and suppliers) who come forward to report any suspected misconduct.

Furthermore, we have developed a comprehensive Supplier Code of Conduct, which is readily accessible on our website. By mandating that our suppliers commit to adhering to this policy before engaging in any business with us, we cultivate an atmosphere of integrity and accountability that aligns with our core ethical principles.

We have also implemented a modern slavery policy to safeguard fair labor practices within our group, including by our suppliers.

Data protection and cybersecurity

Data protection and cybersecurity are key areas of focus for PDG. Our Privacy Policy sets out clear guidelines on how we collect, use, store, and share personal data, with detailed provisions on reporting and escalation protocol in the unlikely event of a data breach.

We do not control, manage, or access data stored on customer servers in any of our data centers – nonetheless, we remain dedicated to upholding and safeguarding the privacy rights of all individuals we engage with.

We also conduct data privacy training for employees to keep them apprised of the laws and regulations governing data protection. With the increasing frequency and sophistication of cyber threats, our IT team remains vigilant in monitoring and analyzing the threat landscape, taking pre-emptive measures to prevent and respond to potential security incidents to ensure the effectiveness of our cybersecurity framework. In FY2023, there were **no incidents** of data breach or loss of customer data reported across our group.

Business resilience and risk management

PDG has taken a significant step forward by conducting our first comprehensive climate risk assessment, addressing both transitional and physical risks across all assets.

This proactive step was aimed at identifying the potential impacts of climate change on our operations, ensuring that both the challenges and opportunities associated with transitioning to a low-carbon economy are thoroughly understood and integrated into our strategic planning.

The assessment evaluated how changing climate policies, technological shifts, market trends, and physical climate events could affect each one of our facilities located in different regions. This detailed analysis is pivotal for PDG as we move forward with implementing robust adaptation and mitigation strategies to safeguard against future climate-related uncertainties.

Following the climate risk assessment, PDG has also completed our first report in accordance with the Task Force on Climate-related Financial Disclosures (TCFD) guidelines.

This inaugural TCFD report signifies a critical step forward in enhancing our transparency regarding climate-related risks and opportunities. The report provides stakeholders with a clear view of how PDG is positioned to handle the potential financial impacts of climate change, integrating climate considerations into corporate governance, risk management, and strategic planning.

This commitment to TCFD reporting underscores PDG's dedication to industry leading practices in sustainability and financial disclosure. It forms a strong foundation for continued resilience and value creation for the future.

Sustainable supply chain

Strengthening our supply chain and procurement processes is integral to PDG's commitment to conduct business in a legal, ethical, sustainable, and socially responsible manner.



We incorporate factors such as environmental impact, energy efficiency, social responsibility and sustainable practices when making purchasing decisions such as equipment and vendor selection, while adhering to global standards.

The PDG Responsible Supply Chain Standard incorporates standards on human rights, labor rights and environmental, and anti-corruption principles, as set out in the UN Global Compact.

The UN Global Compact itself is derived from the Universal Declaration on Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work, the Rio Declaration on Environment and Development, and the United Nations Convention against Corruption and the UN Guiding Principles on Business and Human Rights.

All PDG suppliers are required to comply with the PDG Responsible Supply Chain Standard.

For more details, please refer to the PDG Supplier Code of Conduct - <https://princetonondg.com/pdg-supplier-code-of-conduct/>

In 2024, we enhanced our engagement with our suppliers and vendors on sustainability:

- **Vendor onboarding process:**
Now includes a comprehensive checklist incorporating ESG criteria to assess the ESG maturity status of our vendors and suppliers. Inquiries are made about suppliers' environmental impact from operations, labor practices, and governance structures to ensure alignment with PDG's sustainability goals.
- **Vendor Screening Form:**
ESG criteria are included in vendor assessments to ensure sustainability considerations are an integral part of the evaluation process. We evaluate suppliers' adherence to environmental regulations, commitment to social responsibility, and transparency in governance practices.
- **Measuring Scope 3 emissions:**
We have started measuring our Scope 3 emissions and are working on a plan to reduce the carbon footprint of our supply chain by working closely with our partners and vendors.



10

Appendix

GRI Content Index

Statement of use	PDG has reported the information cited in this GRI content index for the period 01/01/2023 – 31/12/2023 In accordance with the GRI Standards.
GRI 1 used	GRI 1: Foundation 2021

GRI STANDARD		DISCLOSURE	LOCATION
GRI 2: General Disclosures 2021	GRI 2-1	Organizational details	8-9
	GRI 2-2	Entities included in the organization’s sustainability reporting	4-5
	GRI 2-3	Reporting period, frequency and contact point	4-5, 99
	GRI 2-4	Restatements of information	No restatement
	GRI 2-5	External assurance	96
	GRI 2-6	Activities, value chain and other business relationships	5-13
	GRI 2-7	Employees	76
	GRI 2-8	Workers who are not employees	N/A
	GRI 2-9	Governance structure and composition	22-23

GRI STANDARD	DISCLOSURE		LOCATION
GRI 2: General Disclosures 2021	GRI 2-10	Nomination and selection of the highest governance body	22
	GRI 2-11	Chair of the highest governance body	22-23
	GRI 2-12	Role of the highest governance body in overseeing the management of impacts	22
	GRI 2-13	Delegation of responsibility for managing impacts	22
	GRI 2-14	Role of the highest governance body in sustainability reporting	22
	GRI 2-15	Conflicts of interest	84
	GRI 2-16	Communication of critical concerns	22-23
	GRI 2-17	Collective knowledge of the highest governance body	N/A
	GRI 2-18	Evaluation of the performance of the highest governance body	Confidential
	GRI 2-19	Remuneration policies	Confidential
	GRI 2-20	Process to determine remuneration	Confidential
	GRI 2-21	Annual total compensation ratio	Confidential

GRI Content Index

GRI STANDARD		DISCLOSURE	LOCATION
GRI 2: General Disclosures 2021	GRI 2-22	Statement on sustainable development strategy	6-7
	GRI 2-23	Policy commitments	84
	GRI 2-24	Embedding policy commitments	23, 58, 81-87
	GRI 2-25	Processes to remediate negative impacts	4, 20-23, 32
	GRI 2-26	Mechanisms for seeking advice and raising concerns	84
	GRI 2-27	Compliance with laws and regulations	84
	GRI 2-28	Membership associations	15
	GRI 2-29	Approach to stakeholder engagement	32-33
	GRI 2-30	Collective bargaining agreements	N/A
GRI 3: Material Topics	GRI 3-1	Process to determine material topics	24
	GRI 3-2	List of material topics	25-31
	GRI 3-3	Management of material topics	24

GRI STANDARD		DISCLOSURE	LOCATION
GRI 204: Procurement Practices	GRI 204-1	Proportion of spending on local suppliers	N/A
GRI 205: Anti-Corruption	GRI 205-2	Communication and training about anti-corruption policies and procedures	In FY23, 100% of employees received Anti-Bribery and Corruption policy training
	GRI 205-3	Confirmed incidents of corruption and actions taken	Zero confirmed incidents of corruption in FY23
GRI 302: Energy	GRI 302-1	Energy consumption within the organisation	Confidential
	GRI 302-3	Energy intensity	48-49
GRI 303: Water and Effluents	GRI 303-1	Interactions with water as a shared resource	54-55
	GRI 303-2	Management of water discharge-related impacts	54-55
GRI 304: Biodiversity	GRI 304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	N/A
GRI 305: Emissions	GRI 305-1	Direct (Scope 1) GHG emissions	36-37
	GRI 305-2	Energy indirect (Scope 2) GHG emissions	36-37
	GRI 305-3	Other indirect (Scope 3) GHG emissions	36-37
	GRI 305-5	Reduction of GHG emission	38-39

GRI Content Index

GRI STANDARD		DISCLOSURE	LOCATION
GRI 308: Supplier Environmental Assessment	GRI 308-1	New suppliers that were screened using environmental criteria	100% of new suppliers were screened using environmental criteria. (Refer to page 87 for more details)
	GRI 401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	72-77
GRI 401: Employment	GRI 401-3	Parental leave	PDG has parental leave policy available for all full-time employees. In FY23, 100% of employees who took parental leave have returned.
	GRI 403-1	Occupational health and safety management system	62-66
GRI 403: Occupational Health and Safety	GRI 403-2	Hazard identification, risk assessment, and incident investigation	62-66
	GRI 403-3	Occupational health services	62-66
	GRI 403-4	Worker participation, consultation, and communication on occupational health and safety	62-66
	GRI 403-5	Worker training on occupational health and safety	62-66
	GRI 403-6	Promotion of worker health	62-66
	GRI 403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	62-66
	GRI 403-8	Workers covered by an occupational health and safety management system	100% FTEs are covered under industry leading insurance policy.

GRI STANDARD		DISCLOSURE	LOCATION
GRI 403: Occupational Health and Safety	GRI 403-9	Work-related injuries	Confidential
	GRI 403-10	Work-related ill health	Confidential
GRI 404: Training and Education	GRI 404-2	Programmes for upgrading employee skills and transition assistance programmes	77
	GRI 404-3	Percentage of employees receiving regular performance and career development reviews	At PDG, 100% of employees receive regular performance and career development review.
GRI 413: Local Communities	GRI 413-1	Operations with local community engagement, impact assessments, and development programmes	78-79
GRI 414: Supplier Social Assessment	GRI 414-1	New suppliers that were screened using social criteria	100% of new suppliers were screened using social criteria. (Refer to page 87 for more details)
GRI 418: Customer Privacy	GRI 418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	Zero confirmed incidents of customer privacy and losses of customer data in FY23.

ESG Assurance



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INDEPENDENT LIMITED ASSURANCE REPORT IN CONNECTION WITH SCOPE 1, SCOPE 2 and SCOPE 3 GHG EMISSIONS IN PRINCETON DIGITAL GROUP LIMITED (“PDG” or “GROUP”) SUSTAINABILITY REPORT FOR THE YEAR ENDED 31 DECEMBER 2023

We have performed a limited assurance engagement on Princeton Digital Group (Singapore) Management Private Limited (“PDG” or “Group”)’s Sustainability Report for the year ended 31 December 2023 (“Sustainability Report 2023”) and selected Global Reporting Initiative (“GRI”) Universal Standards 2021 disclosures (“Disclosures”) as identified below (collectively, the “Sustainability Information”).

Our assurance engagement does not extend to information in respect of earlier periods included in or linked to from the Sustainability Report 2023, including any images, audio files or embedded videos.

Limited Assurance Conclusion

Based on the procedures we have performed as described under the “Summary of the work we performed as the basis of our assurance conclusion” and the evidence we have obtained, nothing has come to our attention that causes us to believe that:

- (a) the selected GRI Disclosures as identified in the table below, are not calculated, in all material respects, in accordance with the relevant topic-specific disclosures requirements in the GRI Universal Standards 2021.

Material Topic	GRI Standards - Topic-Specific Disclosure Requirements	Selected GRI Disclosures
Emissions	GRI 305-1 (2016) Energy direct (Scope 1) greenhouse gas (GHG) emissions	1,490 tCO ₂ e
	GRI 305-2 (2016) Energy indirect (Scope 2) greenhouse gas (GHG) emissions (Location-based)	160,154 tCO ₂ e
	GRI 305-2 (2016) Energy indirect (Scope 2) greenhouse gas (GHG) emissions (Market-based)	136,641 tCO ₂ e
	GRI 305-3 (2016) Other indirect (Scope 3) (Category 6: Business Travel) greenhouse gas (GHG) emissions	783 tCO ₂ e

We do not express an assurance conclusion on information in respect of earlier periods included in or linked to from the Sustainability Report 2023, including any images, audio files or embedded videos.

PDG’s Responsibilities

Management of PDG is responsible for:

- Selecting or establishing suitable criteria for preparing the Sustainability Information;
- Preparing the Sustainability Report 2023 and selected GRI Disclosures in accordance with GRI Universal Standards 2021 respectively (collectively known as “Reporting Criteria”); and
- Designing, implementing and maintaining internal control over information relevant to the preparation of the Sustainability Information that is free from material misstatement, whether due to fraud or error.

Deloitte & Touche LLP (Unique Entity No. T08LL0721A) is an accounting limited liability partnership registered in Singapore under the Limited Liability Partnerships Act (Chapter 163A).



Understanding how PDG has prepared the Sustainability Information

The absence of a commonly used generally accepted reporting framework or a significant body of established practice on which to draw to evaluate and measure sustainability information allows for different, but acceptable, measurement techniques that can affect comparability between entities and over time.

Consequently, the Sustainability Information needs to be read and understood together with the Reporting Criteria and the basis of preparation set out in the Introduction section under "About This Report" of the Sustainability Report 2023, which PDG has used to prepare the Sustainability Information.

Our Responsibilities

We are responsible for:

- Planning and performing the engagement to obtain limited assurance about whether the Sustainability Information is free from material misstatement, whether due to fraud or error;
- Forming an independent conclusion, based on the procedures we have performed and the evidence we have obtained; and
- Reporting our conclusion to the Senior Management of PDG.

As we are engaged to form an independent conclusion on the Sustainability Information as prepared by management, we are not permitted to be involved in the preparation of the Sustainability Information as doing so may compromise our independence.

Professional Standards Applied

We performed a limited assurance engagement in accordance with Singapore Standard on Assurance Engagements 3000 (Revised) – Assurance Engagements other than Audits or Reviews of Historical Financial Information ("Standard").

Practitioner's Independence and Quality Management

We have complied with the independence and other ethical requirements of the *Accounting and Corporate Regulatory Authority ("ACRA") Code of Professional Conduct and Ethics for Public Accountants and Accounting Entities ("ACRA Code")*, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies Singapore Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Summary of the work we performed as the basis of our assurance conclusion

We are required to plan and perform our work to address the areas where we have identified that a material misstatement of the Sustainability Information is likely to arise. The procedures we performed were based on our professional judgement. In carrying out our limited assurance engagement on the Sustainability Information, our procedures included the following:

- Evaluated the suitability in the circumstances of PDG's use of the Reporting Criteria, as the basis for preparing the Sustainability Information;
- Through inquiries, obtained an understanding of PDG's control environment, processes and information systems relevant to the preparation of the Sustainability Information, but we did not evaluate the design of particular control activities, did not obtain evidence about their implementation and did not test their operating effectiveness;



- Evaluated whether PDG's methods for developing estimates are appropriate and had been consistently applied, but our procedures did not include testing the data on which the estimates were based and we did not separately develop our own estimates against which to evaluate PDG's estimates;
- Sample tested a number of items to or from supporting records, as appropriate;
- Performed analytical procedures by comparing the expected targets to actual emissions or consumption, and by comparing current period to prior period, and made inquiries of management to obtain explanations for any significant differences we identified; and
- Considered the presentation and disclosure of the Sustainability Information.

The procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

Purpose and Restriction on Distribution and Use

This report is made solely to the Senior Management of PDG in accordance with our engagement letter dated 29 January 2024 for the purpose of providing a limited assurance conclusion on the Sustainability Information. As a result, this report may not be suitable for another purpose.

We disclaim any assumption of responsibility for any reliance on this report to any person other than the Senior Management of PDG, or for any purpose other than that for which it was prepared.

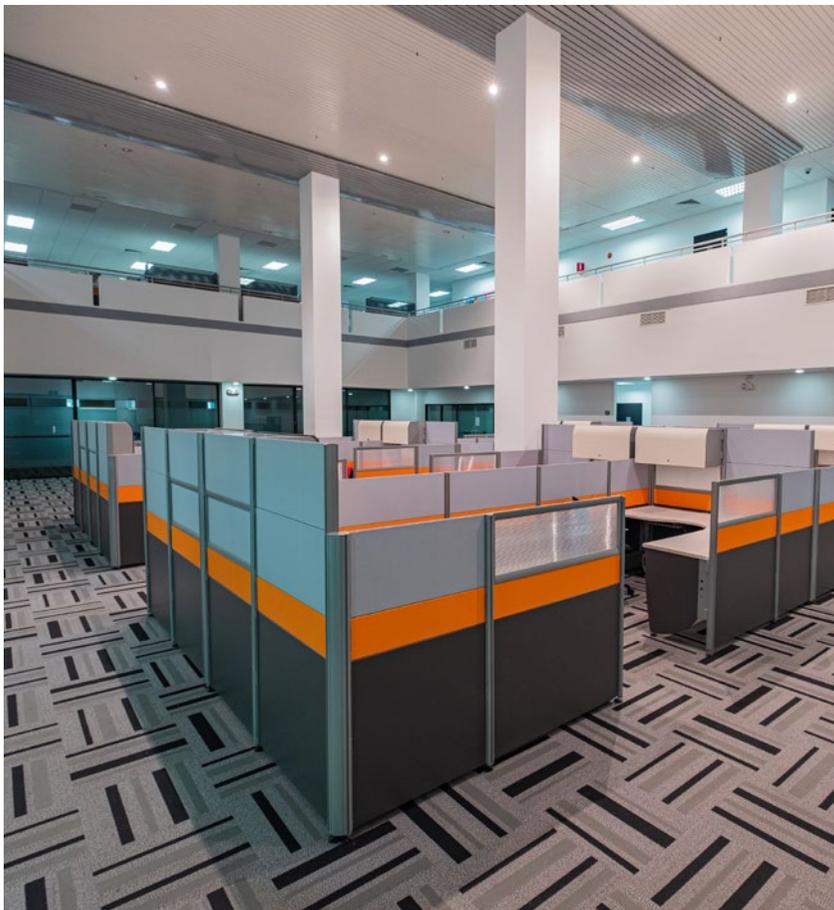
A handwritten signature in black ink that reads "Deloitte x Touche Tohmatsu".

Public Accountants and
Chartered Accountants
Singapore

09 July 2024

Contact

PDG strives to improve through feedback from our stakeholders. Please send suggestions to us at info@princetondg.com.



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PDG

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