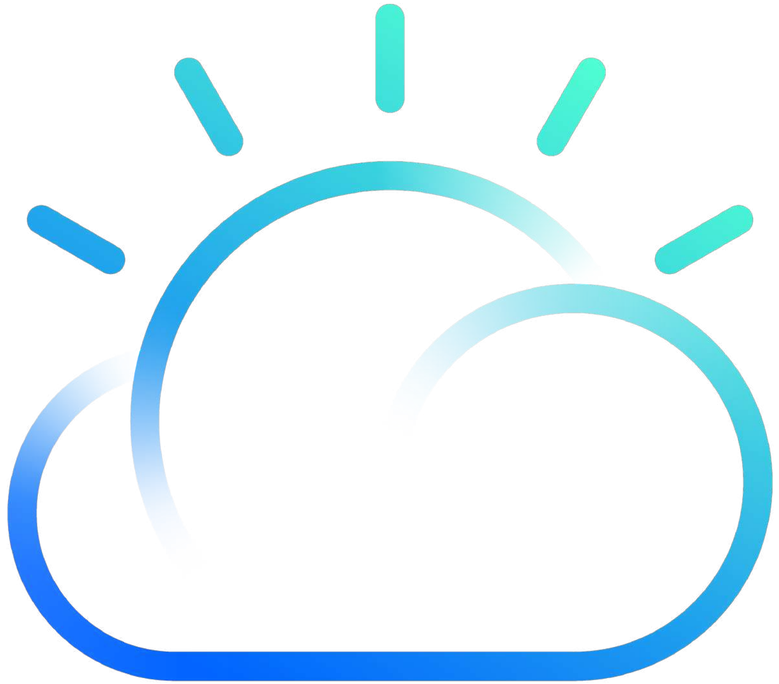
IBM | Borealis DATA CENTER

# Solving Today's Sustainability Challenges

# IBM Cloud

## Hybrid. Open. Resilient.

### The most open and secure public cloud for business

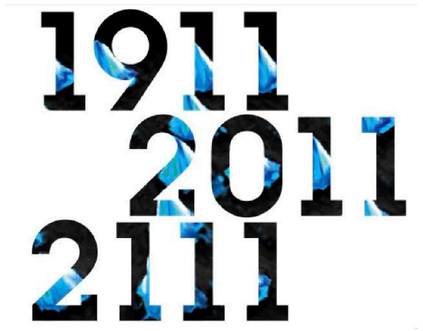


IBM

# 4 inescapable paradigms drive the need for Hybrid Cloud …

## History

…Hybrid Cloud enable continuous integration and transformation, irrespective of past decisions and current state of your journey




## Choice

…Hybrid Cloud embrace innovation across vendors and platforms with unified security- and operations processes

## Physics

…Hybrid Cloud opens up for workload mobility allowing you to process data where it is created and used

## Law

…Hybrid Cloud allow you to balance the benefits of Global Operations while complying with local regulations

# Challenges

Moving and modernizing workloads for the cloud

# IBM Cloud: Purpose-built for mission-critical workloads

# Clients make workload placement decisions based on 5 key dimensions

IBM Cloud is designed for mission critical workloads and is optimized for the needs of regulated industries

## Resiliency

- "*IBM Cloud is the most reliable cloud we have worked with globally*" – President and CTO, Dizzion
- 90% reduction in Severity 1 incidents

## Performance

- 3x more SAP ERP transaction throughput per core in Power Virtual Server compared to next best result from Google
- IBM Vela, GPU as a Service, IBM High Performance Computing

## Security

- Only you can see your data
- Ranked most secure and reliable amongst SAP-certified infrastructure
- Always on monitoring

## Compliance

- 30% reduction in Compliance costs
- 18 months faster ISV onboarding with validated IBM process

## Total Cost of Ownership

- 212% ROI for SAP on IBM Cloud
- 209% ROI for VMware on IBM Cloud

American Airlines · Anthem · ExxonMobil · Expedia · GEICO · Honeywell THE POWER OF CONNECTED

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# IBM Cloud is a full stack cloud platform

## Strategic focus on mission-critical solutions and regulated industries


https://www.ibm.com/cloud

### IBM Cloud catalog categories:

| | | |
|---|---|---|
| AI / Machine learning | Analytics | Automation |
| Blockchain | Compute | Containers |
| Databases | Developer tools | IBM Cloud Paks |
| Integration | Internet of things | Logging and monitoring |
| Mobile | Networking | Quantum |
| Security | Storage | |

### Featured IBM Cloud solutions

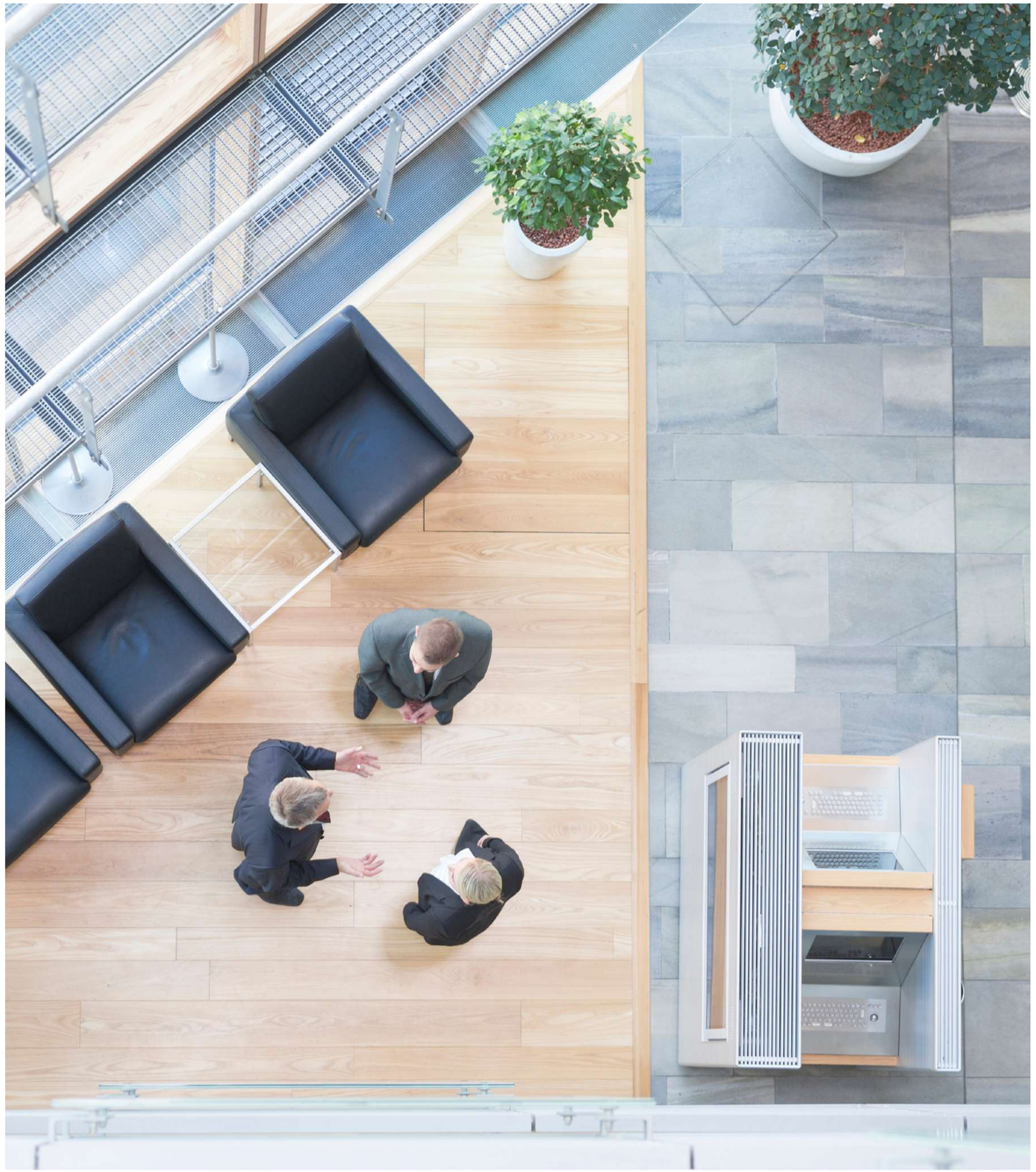
- AI for customer service
- Application modernization
- Backup & recovery
- Chatbot
- Cloud migration
- Cloud native
- Cloud strategy
- Confidential Computing
- Data migration
- Data science
- DevOps
- Dedicated hosting
- Edge computing
- Game hosting
- GPU computing
- High performance computing
- Hybrid cloud management
- Machine Learning
- Infrastructure management mobile
- SaaS integration
- SAP
- VMware
- Virtual Private servers
- Websites

# Some of the largest companies in the world run their business on IBM Cloud

**47** of the Fortune 50

**10** of the 10 largest banks

**8** of the 10 largest airlines



# IBM Cloud regions and zones

## IBM Cloud

- 46 data centers
- 27 availability zones
- 10 regions

## IBM Cloud regions

Americas

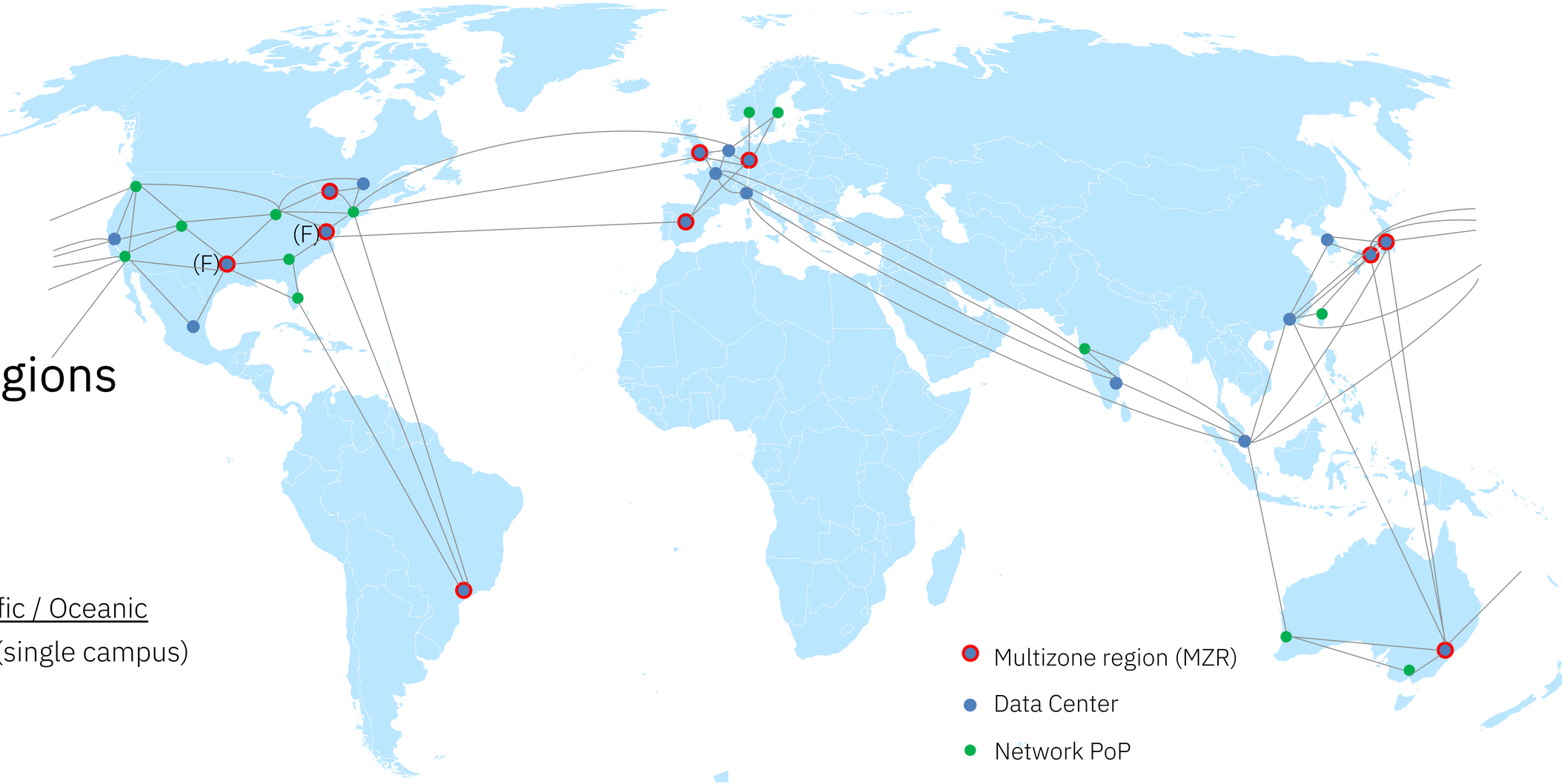
- Washington DC (F)
- Dallas (F)
- Sao Paulo
- Toronto

Europe

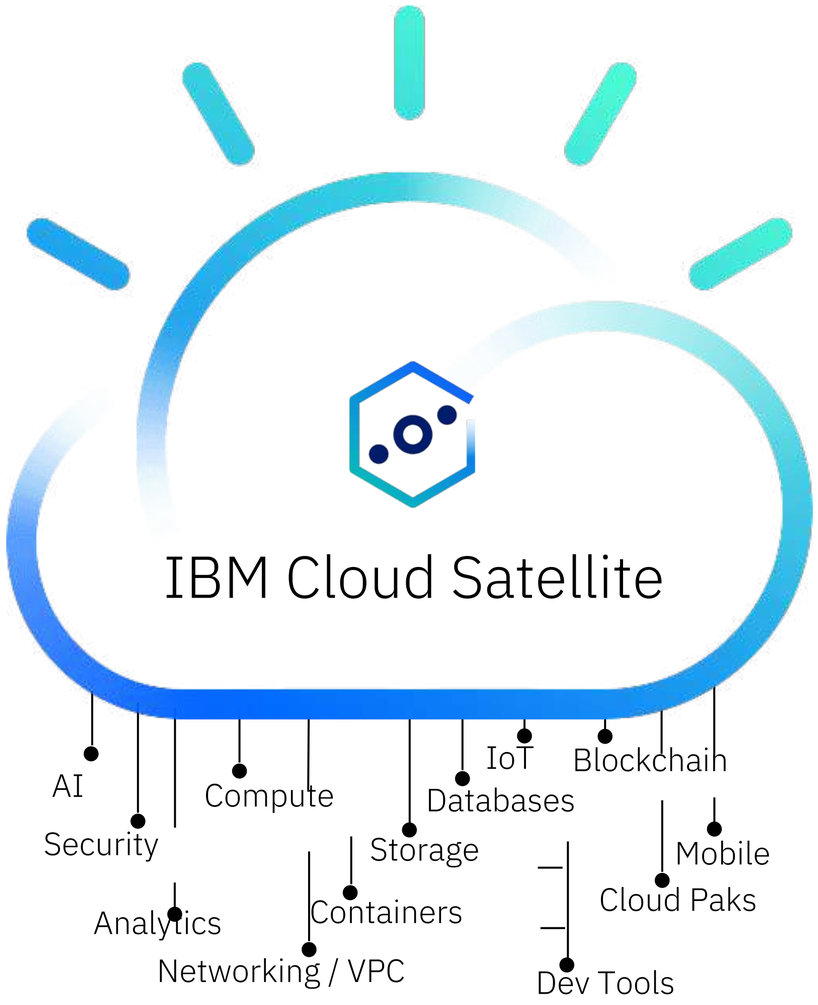
- Frankfurt
- London
- Madrid

Asia Pacific / Oceanic

- Osaka (single campus)
- Sydney
- Tokyo



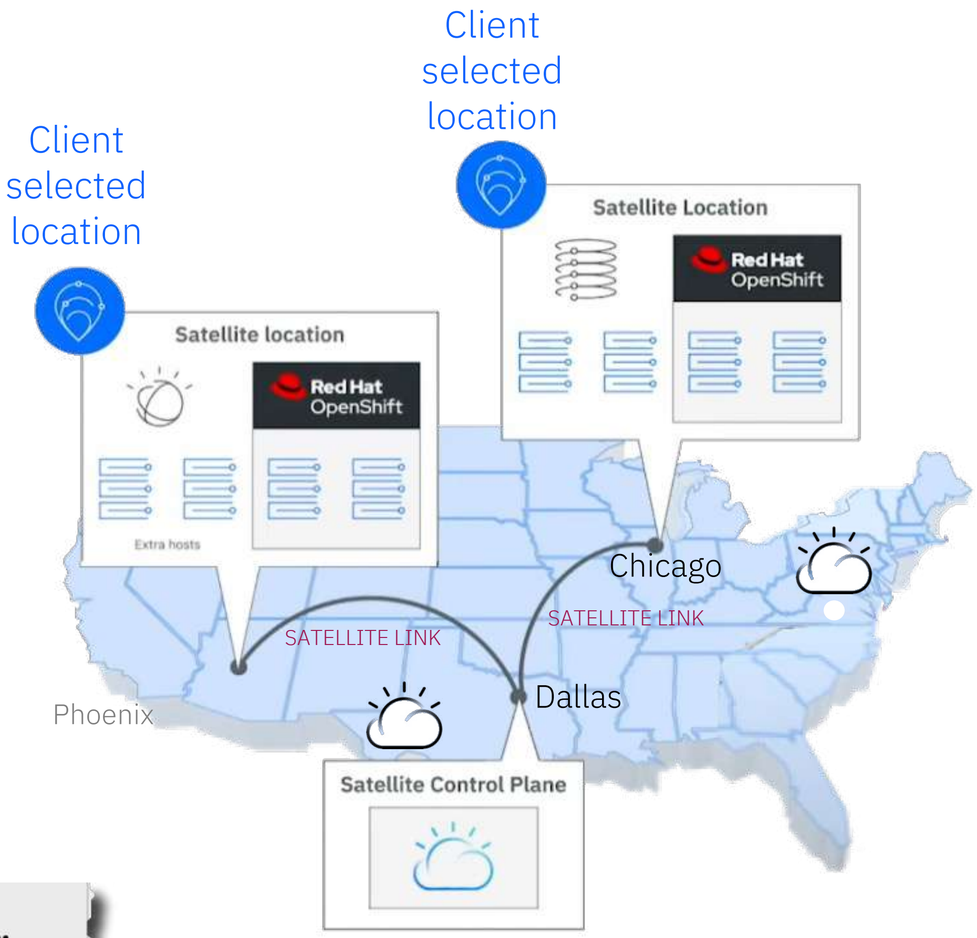
# IBM Cloud Satellite: bring the cloud to you, wherever you need it – IBM's distributed cloud




## Satellite Links

- Link → Data center
- Link → Branch office
- Link → Remote facility
- Link → Other clouds

*"It's shockingly good..."*
*- Ed Anderson, Gartner*




IBM Cloud Satellite enabled IBM Cloud data center

# Why IBM Cloud?

## Best for Regulated, Secure and Mission-critical workloads

1. Meet you where you are and support your entire journey
2. Enable workloads anywhere – any cloud, on-prem or at the edge
3. Technical assurance that only you can see your data
4. Prove regulatory compliance
5. Open approach

## Industry leading capabilities address critical enterprise use cases

### IBM Cloud for Financial Services

550+ FS Framework control requirements, externally validated. Onboard ISVs in weeks, not Quarters

### Confidential Computing

Secure enclaves. Technical assurance that only you can see your data

### Always On Compliance

Single management view for all Security and Compliance postures. Audit traceability - all the way down to the chipset

SAP

20% faster migration vs hyperscalers. Broadest platform selection and world record SAPS

vmware

209% ROI
40% boost in productivity Average
$1.3M DC cost savings

### Hyperscale

Setup 1000 VMs in <120 seconds
Virtual Private Cloud
Hyperscale virtual servers

### IBM Cloud Satellite

Consistent cloud services to build faster, securely and anywhere. Ecosystem that extends Satellite to new markets w value added services.

Red Hat

30K+ Kubernetes clusters in production, 10x release frequency & 44% less hardware cost

### Open & Robust Ecosystem

200+ Partners

American Airlines · Anthem · ExxonMobil · Expedia · GEICO · Honeywell THE POWER OF CONNECTED

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DATA CENTER

# Leaders in Sustainable Data Centers

# The Challenge

- Meeting the goals of the EU Green deal by 2030: climate neutrality by 2050, 55% reduction greenhouse gas emissions by 2030, increase use of renewable energy, improve energy efficiency, etc.
- Finding a site that fulfills your future needs in terms of sustainability and scalability
- Finding a site and experts that can support your changing needs
- Security and location
- Time to market
- Reliable and cost efficient operations
- Dedicated service and future proof of operations

# Carbon Intensity from Electrical Production


**THIS IS WHERE WE ARE NOW GLOBALLY**

440g*

**THIS IS WHERE WE NEED TO BE**
**EU SHORT TERM GOALS**

100g*

**THIS IS WHERE OUR NATIONAL POWER COMPANY IS NOW IN 2023**

0,38g*

Approximate numbers. Unit: g CO2-e/kWh. Source Landsvirkjun 2023.

# The Borealis Solution - ESG is in our DNA

100% renewable, 0 waste

PUE as low as 1.03

.38 g CO2-e/kWh electric carbon intensity

Lighting speed connectivity

Bridging continents through
4 submarine cables

Certified compliant

ISO 27001, ISO 27017, and ISO 27018 (Q4 2023)

EN 50600 (Q1 2024)

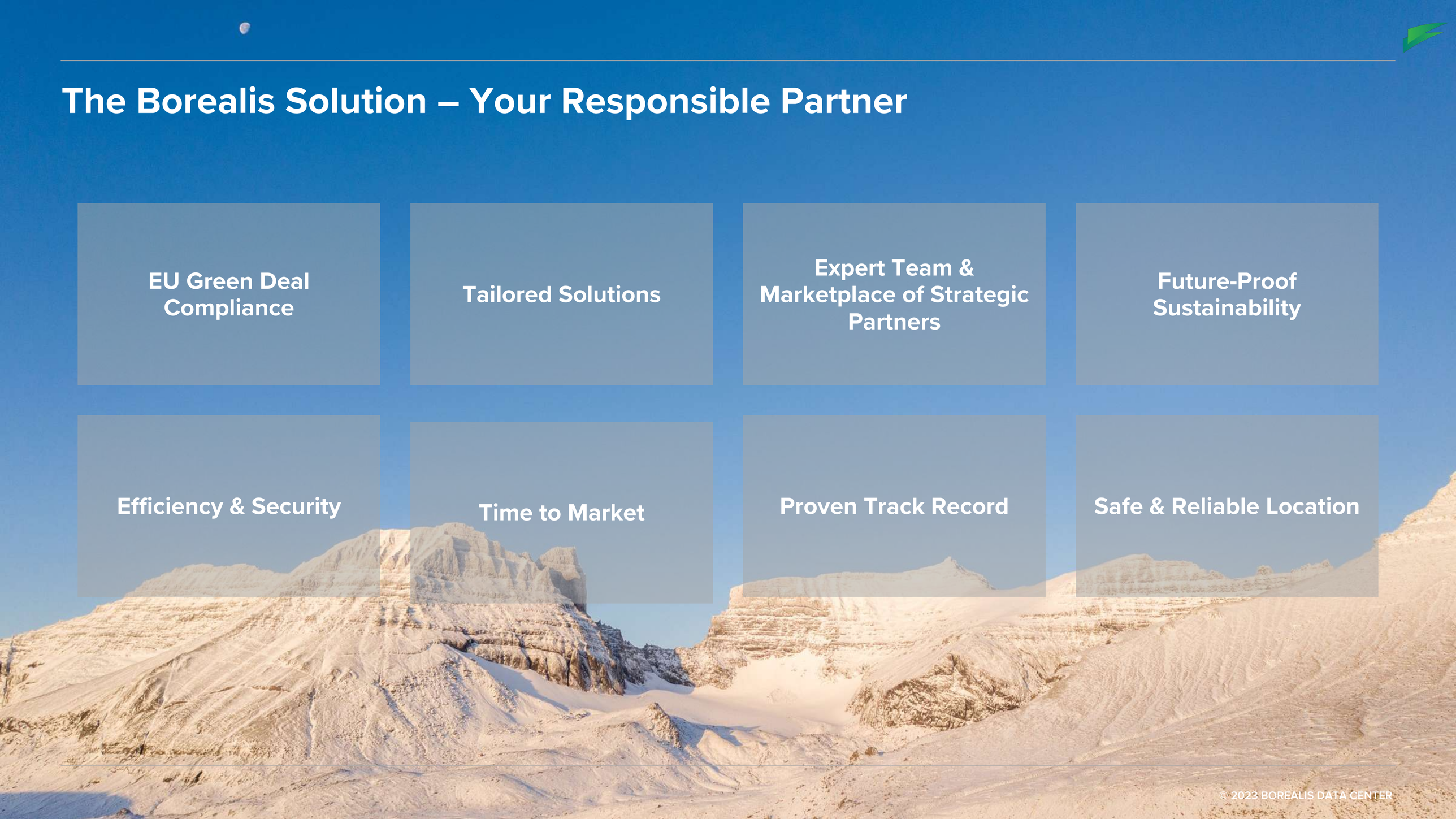
NVIDIA in progress

Ranked #1 safest country in the world for 14 years

Ranked #1 infrastructure

Ranked #1 hyperscale & cloud-scale data center

# The Borealis Solution – Your Responsible Partner



EU Green Deal Compliance

Tailored Solutions

Expert Team & Marketplace of Strategic Partners

Future-Proof Sustainability

Efficiency & Security

Time to Market

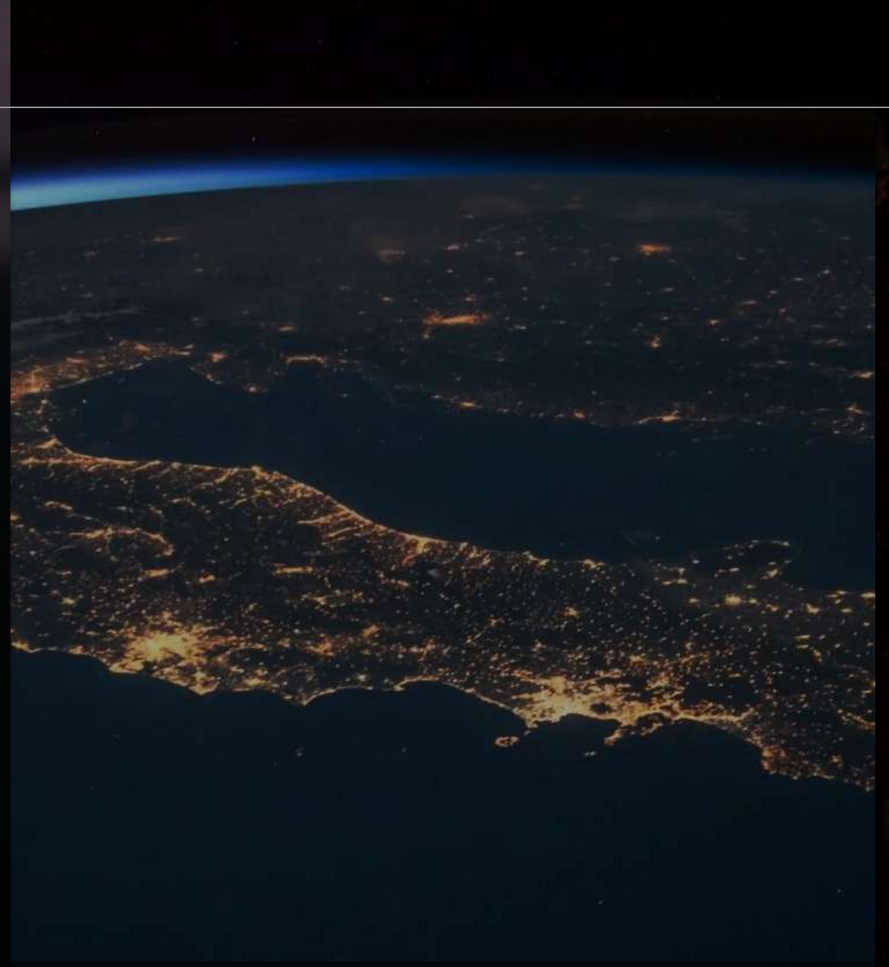
Proven Track Record

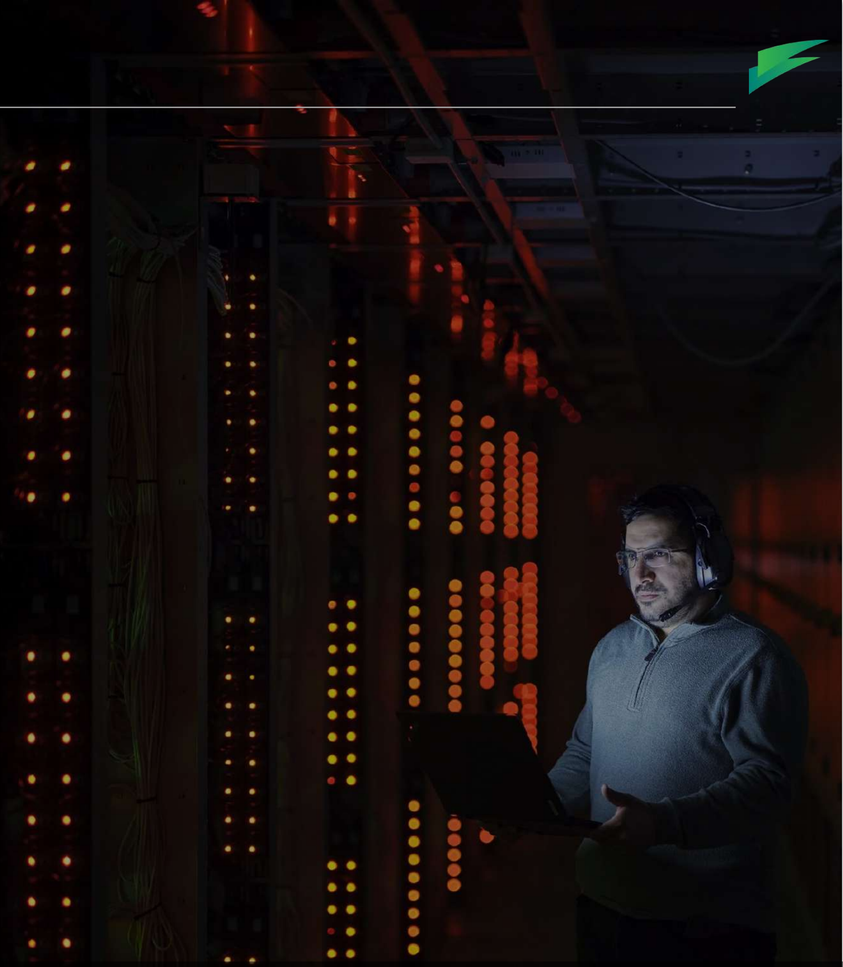
Safe & Reliable Location

# How can the Industry Leapfrog Towards Carbon-Free Operations?

- Location is key
- Move data not energy
- Workload distribution
- Select the right equipment
- Focus on high-density
- Work with sustainability-minded partners

# Core Service Offering





### High Availability

Our high availability services are tailored for mission-critical systems that demand uninterrupted uptime. With a focus on reliability and continuous operations, we ensure your essential business functions remain accessible and dependable.

### High-Performance Computing (HPC) and High Density (AI workloads)

Borealis excels in delivering high-performance computing capabilities. Our infrastructure is optimized to handle high-density workloads with demanding energy and cooling requirements. Experience exceptional performance and efficiency for your compute-intensive applications.

### Disaster Recovery

We offer sustainable and cost-effective solutions for disaster recovery. Our secondary site solutions provide the necessary redundancy to maintain compliance and ensure data availability. Gain peace of mind knowing that your compute and data assets remain accessible and protected.

## Blönduós Campus

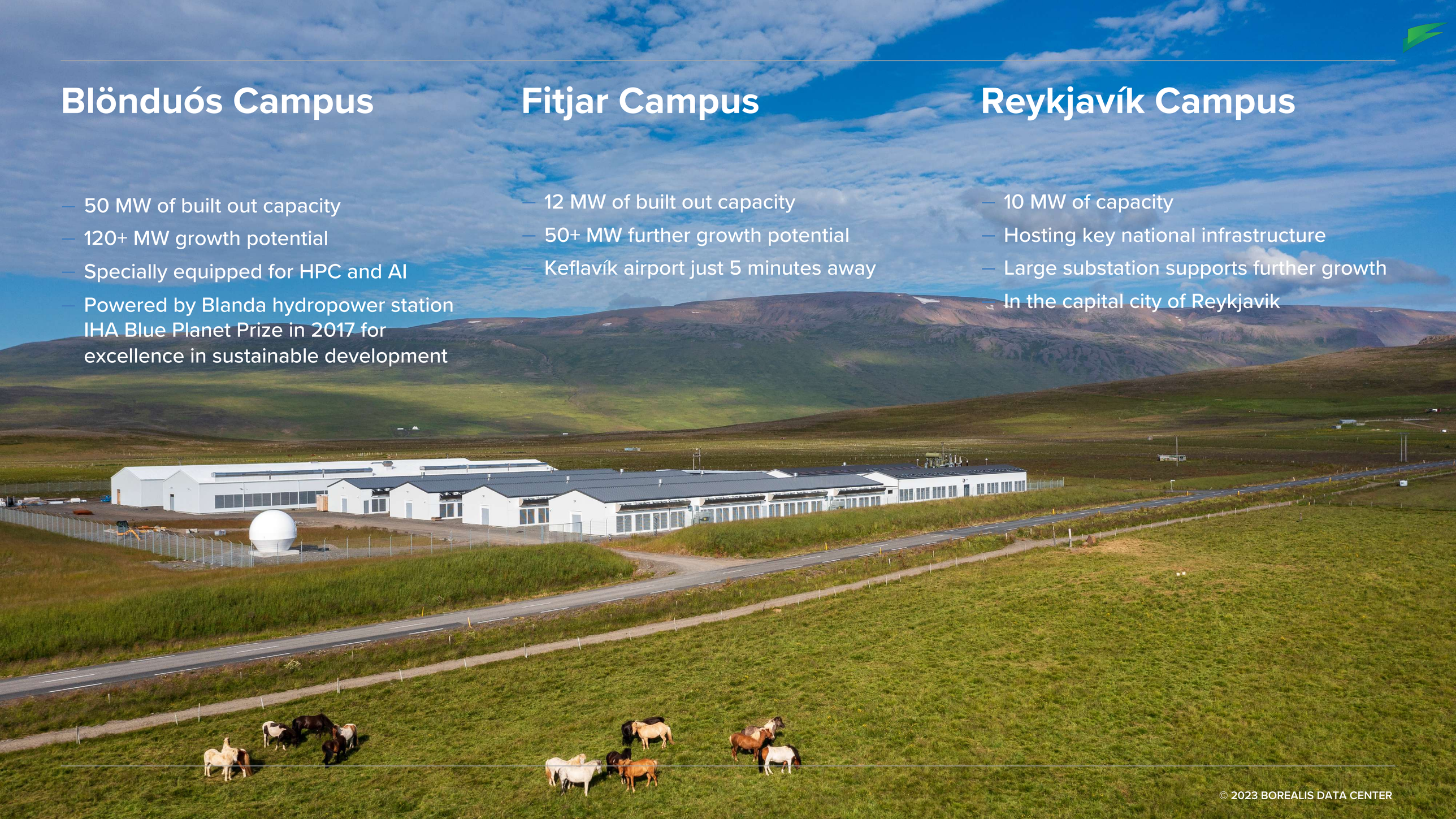
- 50 MW of built out capacity
- 120+ MW growth potential
- Specially equipped for HPC and AI
- Powered by Blanda hydropower station
  IHA Blue Planet Prize in 2017 for
  excellence in sustainable development

## Fitjar Campus

- 12 MW of built out capacity
- 50+ MW further growth potential
- Keflavík airport just 5 minutes away

## Reykjavík Campus

- 10 MW of capacity
- Hosting key national infrastructure
- Large substation supports further growth
- In the capital city of Reykjavik



# Future-proof your cloud strategy with carbon-neutral data centers

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# Introducing Borealis Cloud by IBM & Borealis Data Center

Borealis Cloud is well positioned to serve businesses in a whole range of use cases where maximizing energy usage and in parallel cutting on emission are most crucial, including, but not limited to:

**DATA STORAGE & BACKUP**
Meet your needs for cloud native managed services, no matter of your geographic location. Backup of your applications made easy while complying with local sovereignty.

**REGULATED WORKLOADS & ADDRESSING DATA RESIDENCY**

With Sustainable Cloud Services you can meet your needs without worrying about compliance. Simplify maintenance and roll out new features much quicker. Comply with local sovereignty and privacy regulations.

**HIGH PERFORMANCE COMPUTING**
Handle data flow in increasing volumes and speeds, create unique outcomes and options by performing advanced simulations and computations. Provide with high performance data analytics (HPDA) to new AI applications.

# The added value

**COMPLIANCE WITH PRIVACY REGS & LOCAL SOVREIGNTY**

Cloud Satellite allows to securely analyze data right where it’s located or being generated.

**ACCELERATE DECARBONIZATION**

CO2 emissions in Iceland come close to zero, resulting in a positive impact on your ESG reporting.

# Let’s co-create your greener IT future.


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