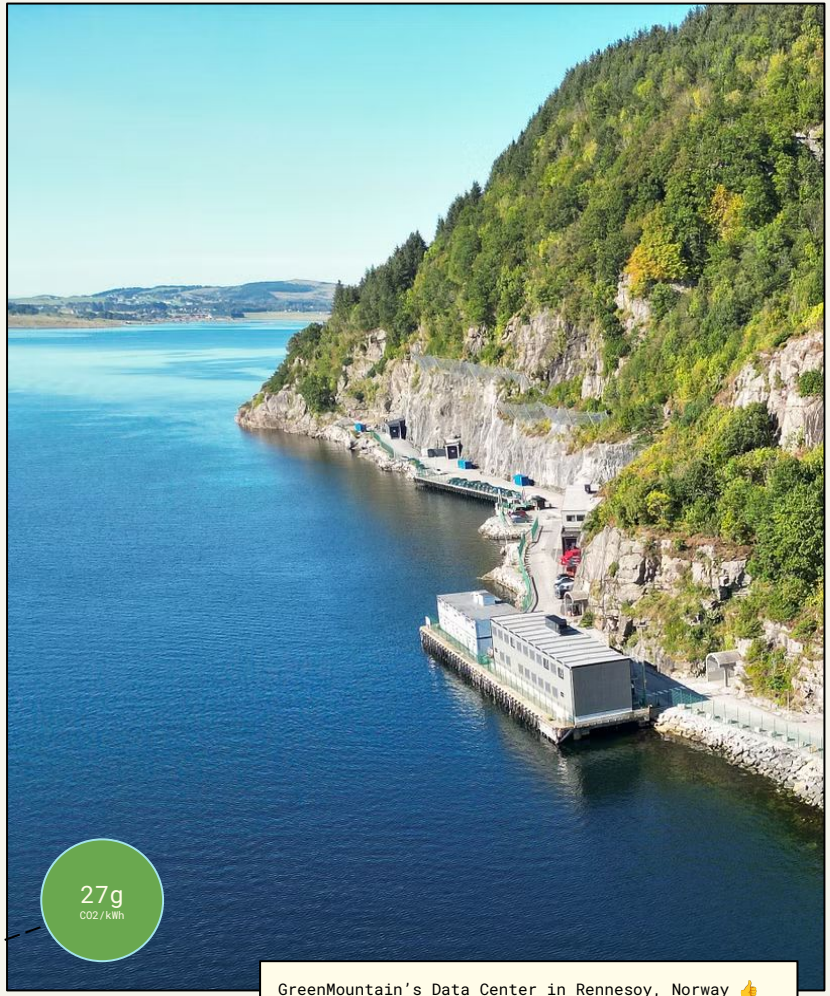
CarbonRunner

Shifting workloads like AI Training and GitHub Actions to the lowest-CO2 intensity grid regions.

Cutting Cloud emissions and cost.

Dryden - CEO of CarbonRunner.io




Kaizen Collision Center - Council Bluffs
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GXO
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us-central1	Iowa	87%	413	Low CO_2

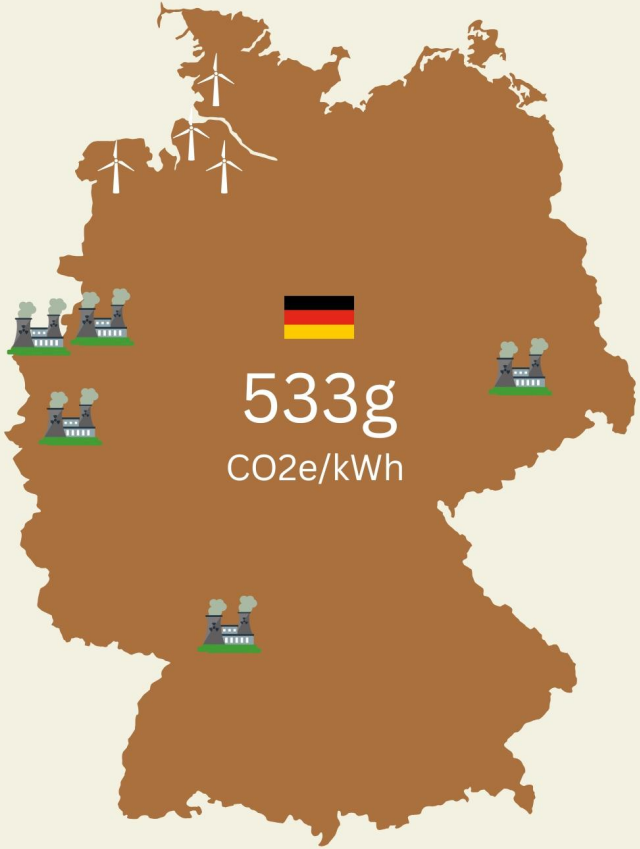
90% of global data centers are in high fossil fuel regions.

📈 Data centers currently accounts for **1.5% of global carbon emissions.**

⚡Compute is booming. In the US data center power demand expected to **quadruple** by 2030

👩‍💻 AI workloads will drive ~70% of new data center demand.

💧AI data centers to drive 11-fold rise in water



487 Data Centers

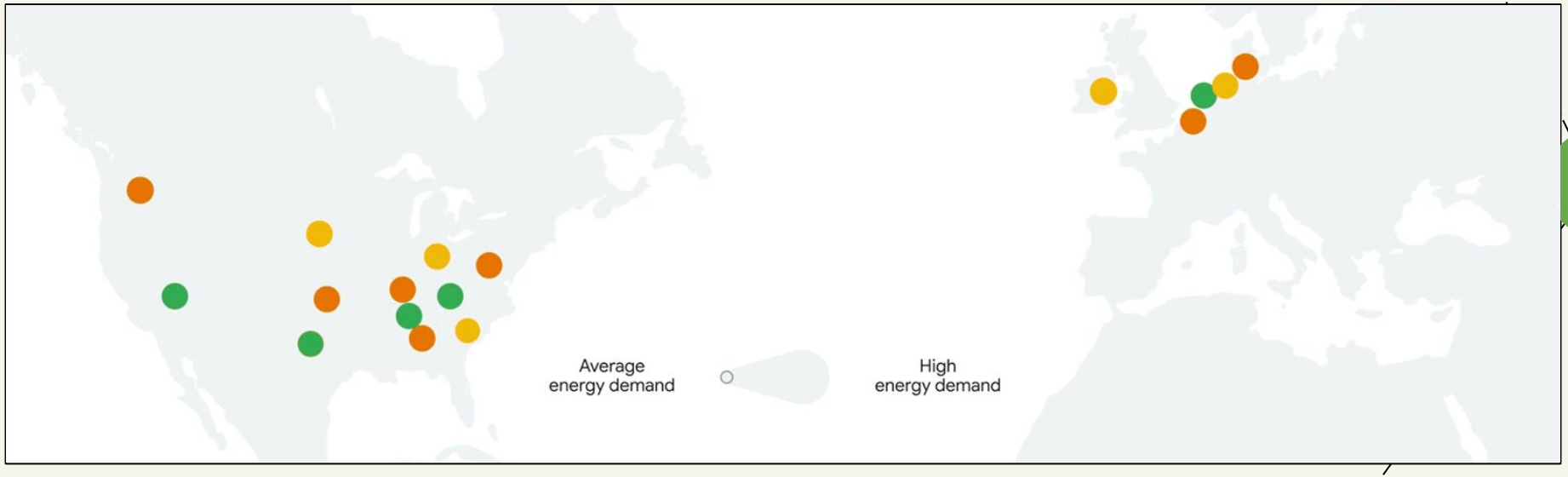
What CI/CD is your team running?

Bitbucket Pipelines?

GitLab CI/CD?

GitHub Actions?

In 2024, over +150 million devs, ran over 10.54 Billion compute minutes on GitHub Actions.




Chem. des Hauts Fourneaux
Arancia Lighting
Bectex SENC
Rue Robert-McKenzie
Rue Robert-McKenzie
Construction & Expertise PG
Chloretec
Rue de l'Industrie
Rue de l'Industrie
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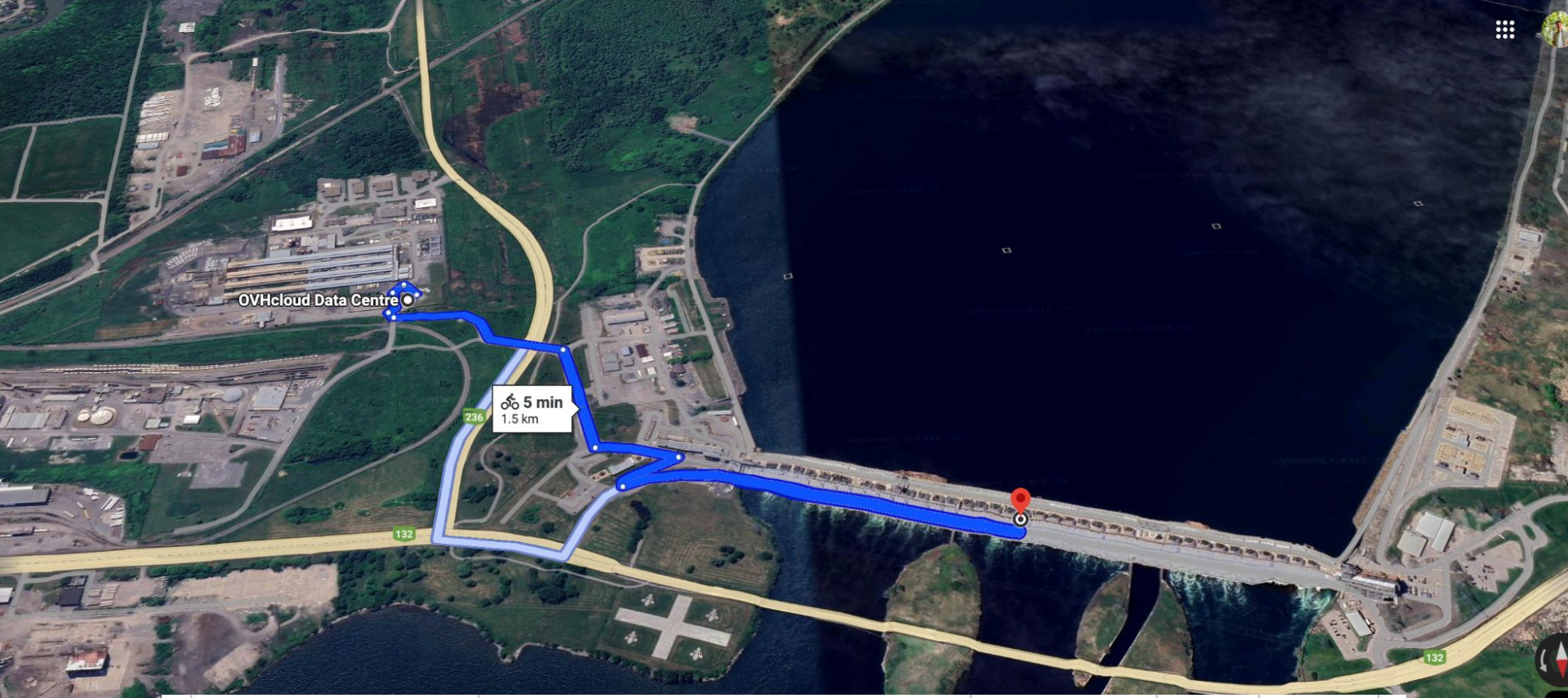
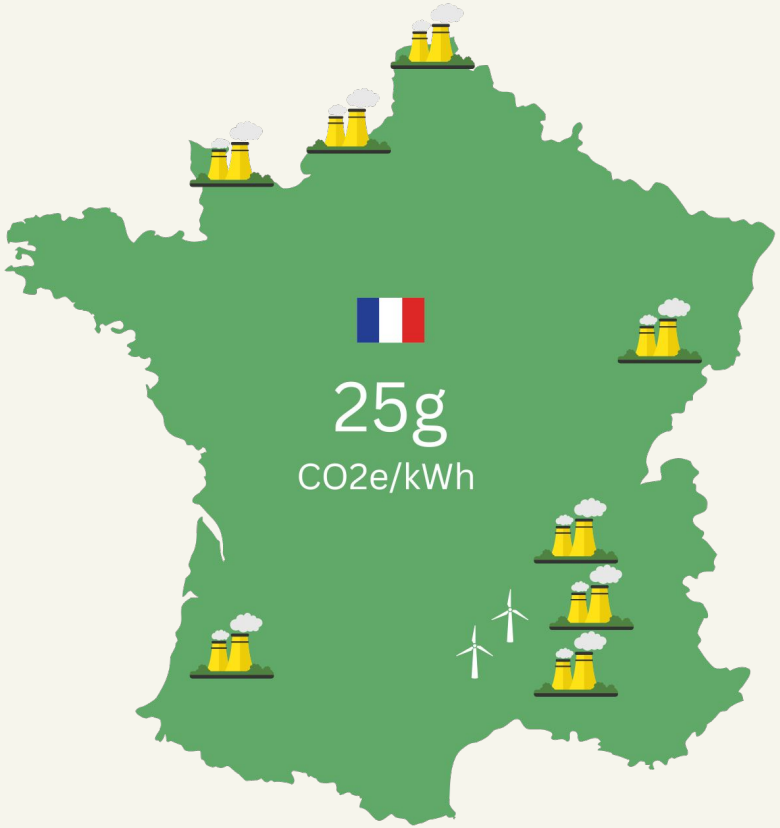


			kg CO_2eq/kWh		*l/kWh*
Beauharnois	BHS	Electricity Maps (2025) Québec-2024-Yearly. Carbon Intensity Data (April 3, 2025).	0.0261	1.25	1.33



321 Data Centers

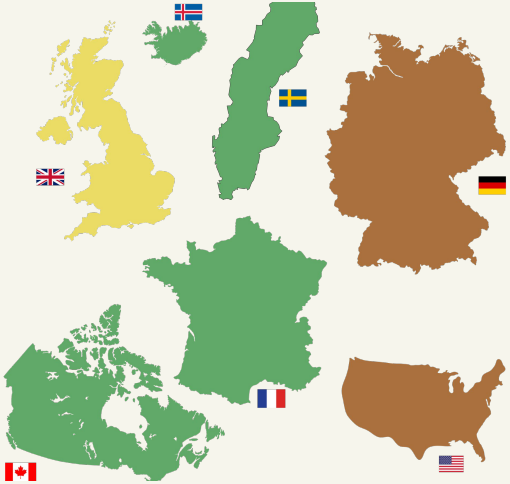
Shift workloads to the lowest-CO2 regions across multiple Cloud providers - in-real time.

🌱 **90% less emissions.** Only use data centers in regions **under 100gCO2/kWh.**

💰 Arbitrage multiple cloud providers to **find the fastest, cheapest available servers**.

💪 Resilience - **Use multiple cloud providers**, and data sovereignty built in.

How do we do it?



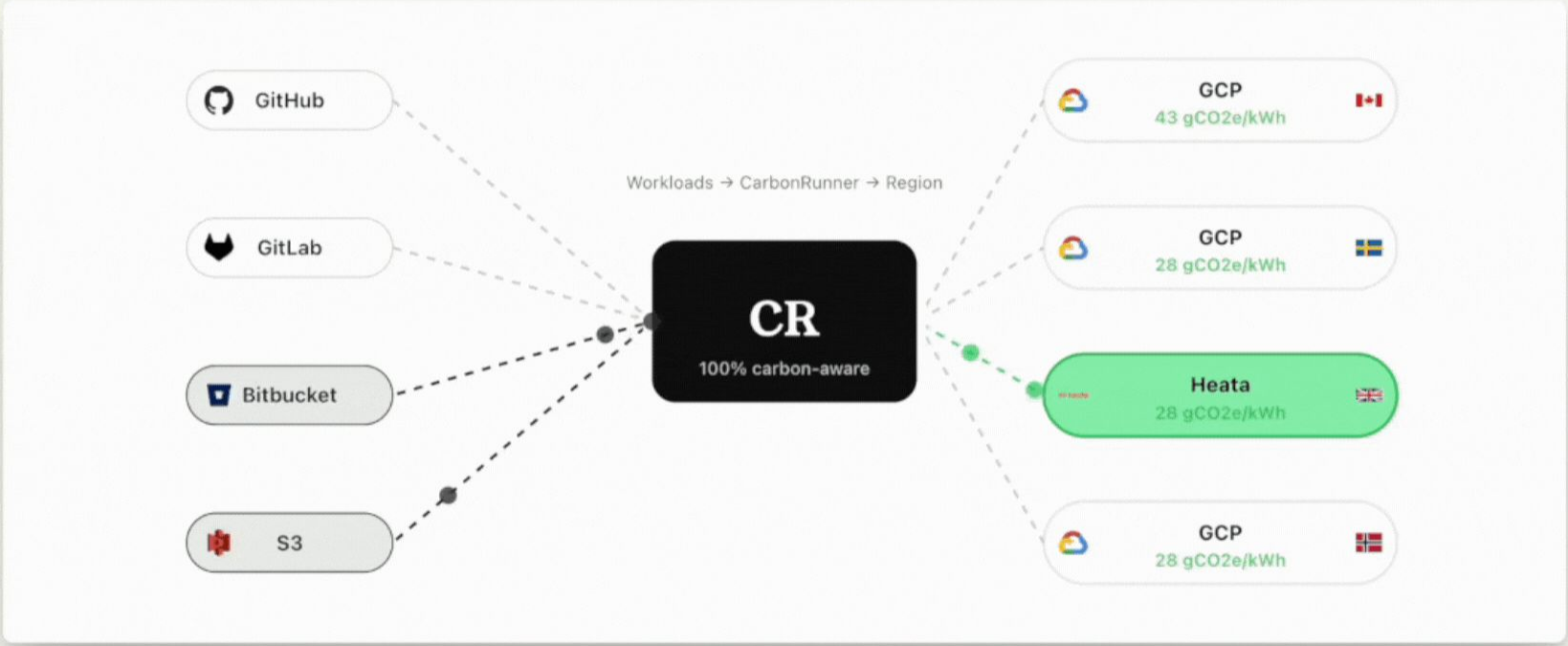
1. Live-grid data + water scarcity metrics

2. Cloud availability + AI prediction ranking.

3. Start server + run build or training

network, sending them to the lowest-carbon regions in real time.

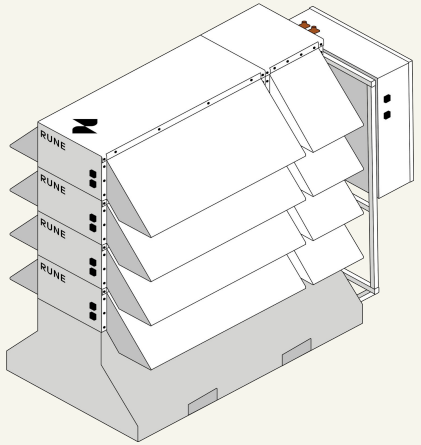
The result: up to **90% fewer emissions** — and lower costs.



Multi-cloud resilience & cost savings

Region preference & control Decide where

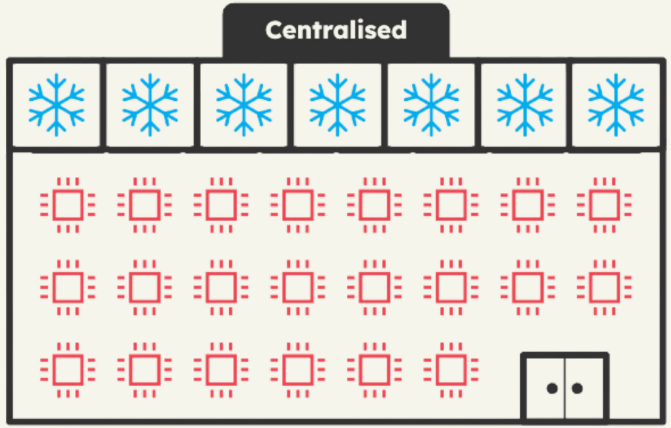
Faster builds than GitHub Actions Run your



Modular data centers on solar farms?

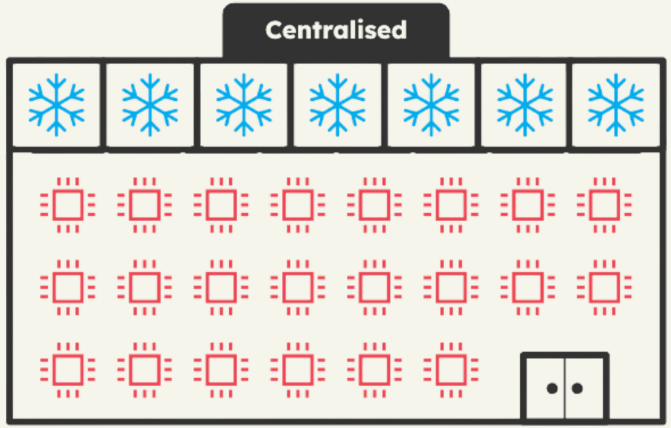
Or servers on home boilers?

Typical Data Centre



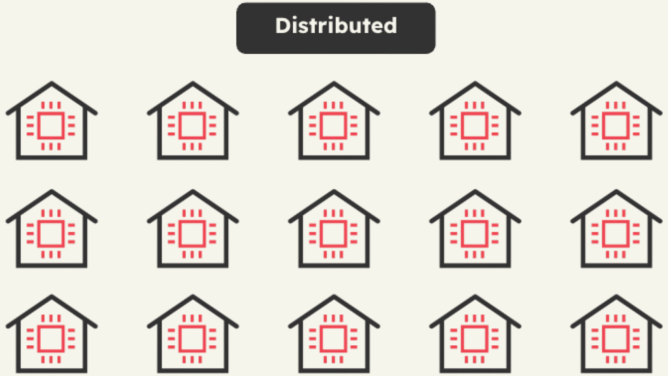
Heat wasted

Typical Data Centre

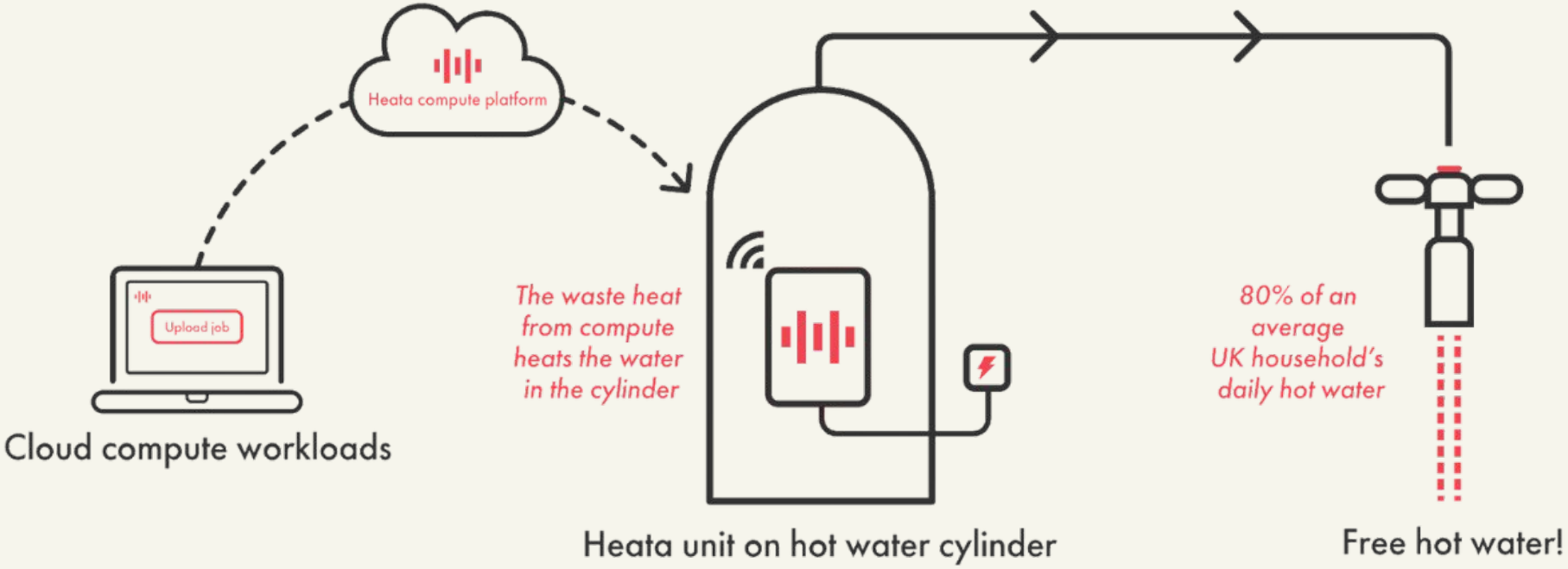


Heat wasted

heata

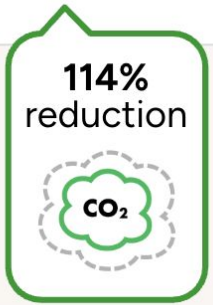


Heat re-used
No cooling


Heata compute platform
Upload job
Cloud compute workloads
The waste heat from compute heats the water in the cylinder
Heata unit on hot water cylinder
80% of an average UK household's daily hot water
Free hot water!

We shifted OVO's GitHub Actions to servers on home boilers in the UK - for 30x reduction in emissions.

	Gas Avoided [1] (kWh)	Cooling Avoided [2] (kWh)	Carbon Savings [3] (kg CO2e)	Hot Water Produced [4] (Litres)	Household Savings [5] (£)
Per job (av. runtime 2m 17s)	0.02	0.01	0.004	0.00*	0.0008
OVO's Annual CI/CD Workloads	60,625	22,500	17,369	688,030	3,322



* per job impact is negligible, therefore 0.0 litres is shown
[1] each heata unit avoids 0.007kWh gas per minute (verified by the BRE)
[2] baseline assumes a 1.5 PUE in a data centre
[3] based on current carbon intensity of electricity and gas in the UK
[4] heating water to 52C
[5] based on current average UK gas prices

+82K
Jobs shifted

44
Low CO2 Regions

5
Cloud providers

90%
Lower emissions

40%
Faster than GitHub

25%
cheaper per minute

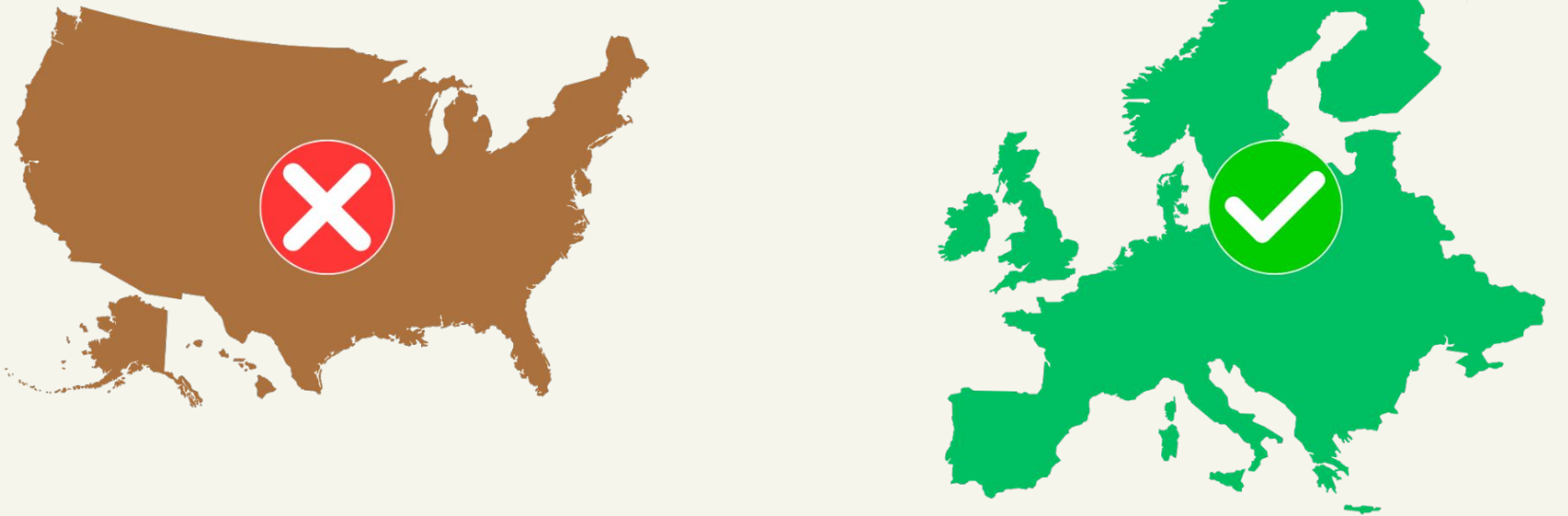
We're putting the "Action" to GitHub Actions.

Category	CarbonRunner	Github Actions
Price (4vCPU)	✅ Low	❌ High
Performance	✅ Fast	❌ Medium
Data Sovereignty	✅ Yes	❌ No
Region Preferencing	✅ Yes	❌ No
Sustainability	✅ 90% Lower	❌ No
Resilience	✅ Multi-cloud	❌ Single-cloud
ESG reporting	✅ Yes	❌ No

CarbonRunner vs GitHub Actions

Linux Build Performance & Cost

No USA? No problem...



Your compute, your choice.

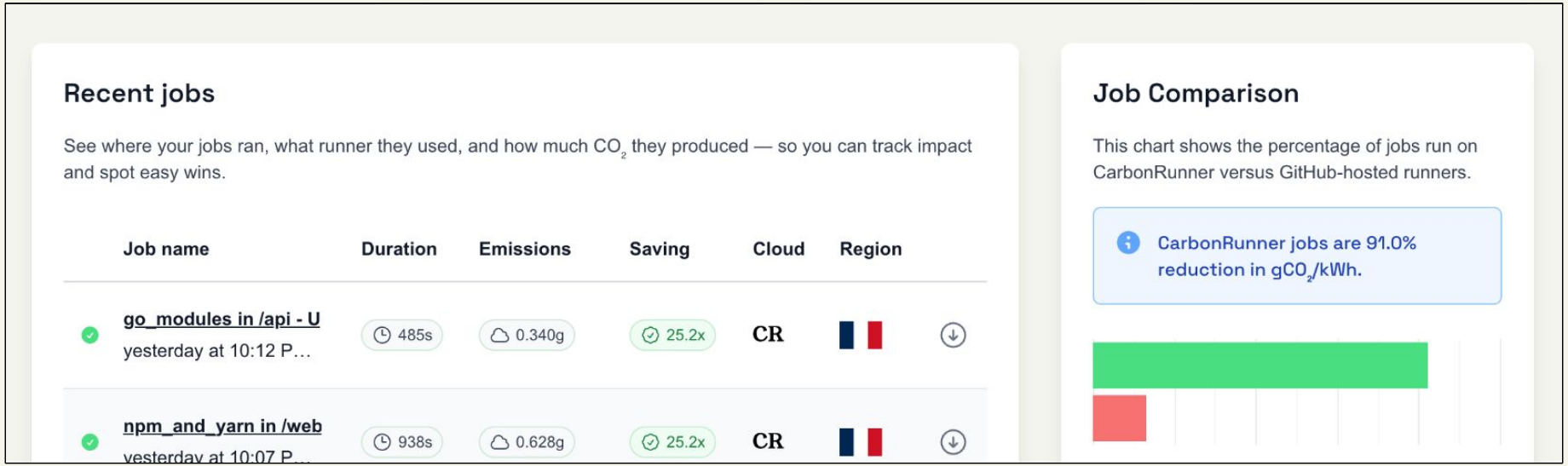
No AWS?
No problem...







Real-time carbon and cost data, turning CI/CD pipelines into an auditable ESG reporting.



436g
CO_2eq/kWh

The current global grid intensity average.

Full of lots of fossil fuels.

324g
CO_2eq/kWh

The current average grid intensity of Github runners.

Where over 10 million jobs are run each day.

Fun fact... right now CarbonRunner is a whopping **11x greener** than default GitHub Actions.

28g
CO_2eq/kWh

The average grid intensity of CarbonRunner

The world's first carbon-aware CI/CD infrastructure.

GitHub Actions Carbon Calculator

Find out the carbon footprint of your GitHub Actions

Total monthly minutes

5,200

Free minutes

2,000

Avg job run time - (MM:SS)

02:49

Average job runs

1,846

CPU Utilisation (%)

Examples: **Installing packages or light tests**

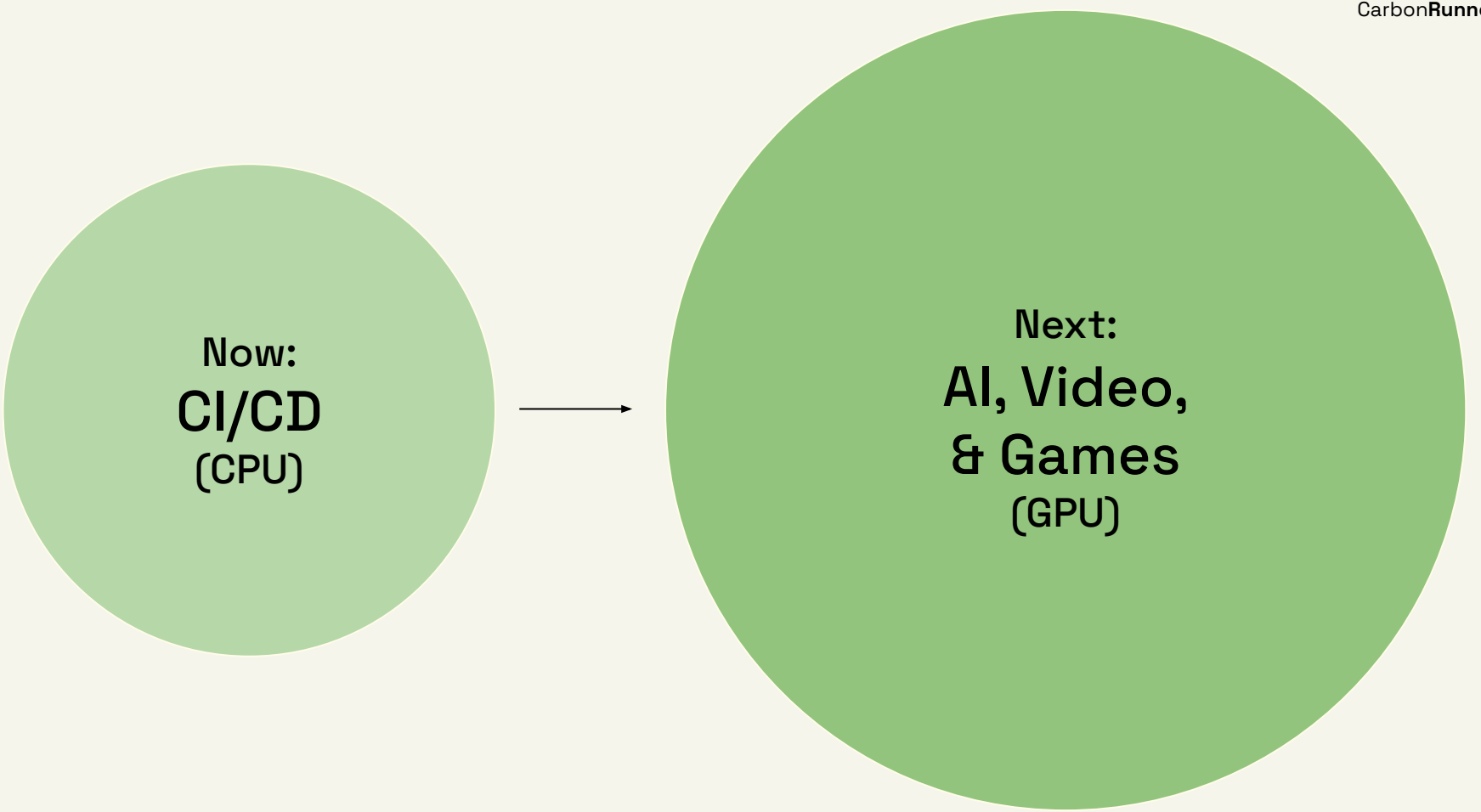
10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Runner types

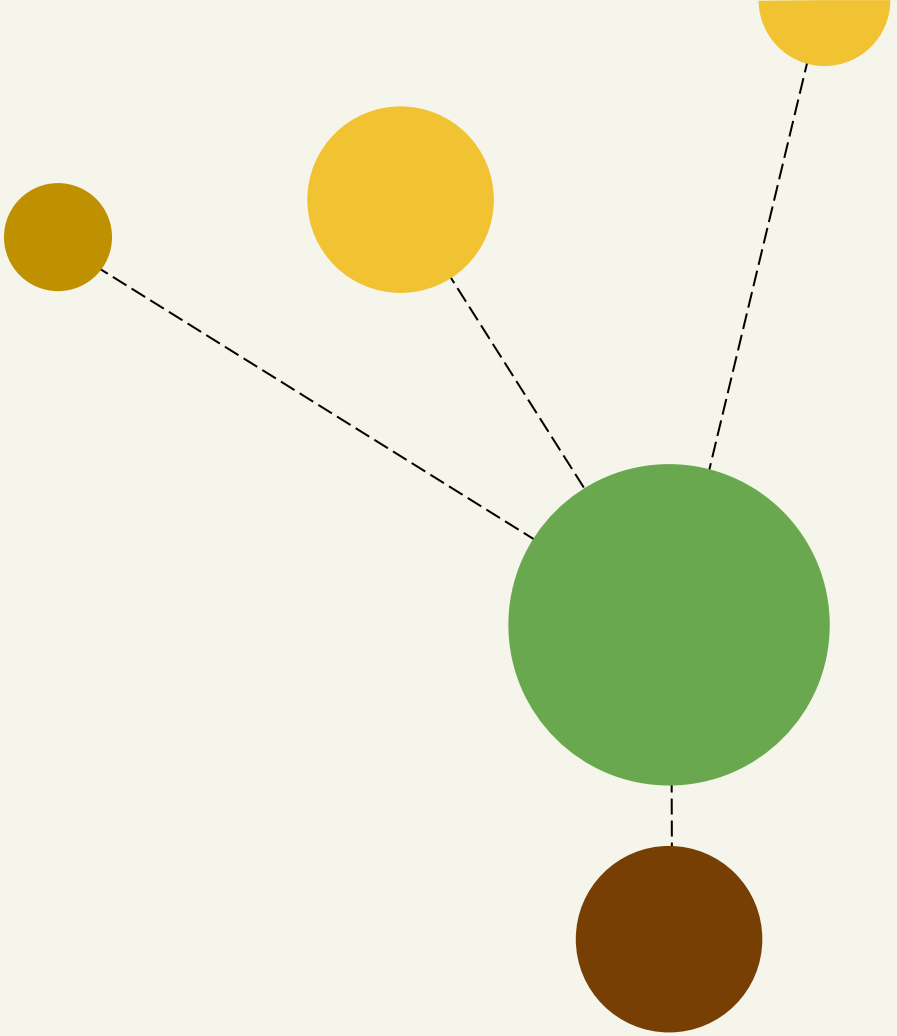
2vCPU is GitHub's default runner for private repos

1 VCPU | 2 VCPU | 4 VCPU | 8 VCPU | 16 VCPU | 32 VCPU

GitHub's minutes **aren't free** if they cost the planet!


Now:
CI/CD
(CPU)
Next:
AI, Video,
& Games
(GPU)

Developers have the secret key!



It's a single line of code to switch on CarbonRunner's intelligent infrastructure.

```
1
2  jobs:
3      deploy:
4  -       runs-on: ubuntu-latest
5  +       runs-on: carbonrunner-4vcpu-ubuntu-latest
6
```