SUSTAINABILITY REPORT 2025

CARBON-NEUTRAL INFRASTRUCTURE

Sustainability Impact Report

Harch Corp's comprehensive carbon lifecycle assessment, renewable energy metrics, and net-zero roadmap. Achieving 89% below-industry carbon intensity through dedicated renewable generation, not offset purchasing.

3.2M tCO2/yr Offset | 81.5% Renewable

PUE <1.15 | Net-Negative by 2030

2025

HARCH CORP

Executive Summary

Harch Corp is committed to building infrastructure that does not merely minimize environmental harm but actively contributes to global decarbonization. This report presents our carbon lifecycle assessment, renewable energy metrics, and net-zero roadmap across all subsidiaries. Our approach is fundamentally different from the industry standard: rather than purchasing carbon offsets or renewable energy credits, we build and operate dedicated renewable energy installations that physically power our infrastructure. The result is infrastructure with a carbon intensity that is 89% below the global data center average, achieved through genuine operational decarbonization rather than accounting mechanisms. Across our entire conglomerate, Harch Energy's renewable installations offset 3.2 million tonnes of CO2 per year, making Harch Corp not just carbon-neutral but a net contributor to global carbon reduction.

89%	81.5%	3.2M	$0.018
Below Industry Carbon	Renewable Energy	tCO2 Offset/Year	Per kWh Energy

1. Our Sustainability Philosophy

The data center industry has a sustainability problem that renewable energy credits cannot solve. The conventional approach to claiming renewable energy usage involves purchasing Guarantees of Origin (GOs) or Renewable Energy Certificates (RECs), which represent the environmental attributes of renewable generation that occurred elsewhere. While these instruments provide a market-based mechanism for tracking renewable energy claims, they do not ensure that the electricity actually consumed by a data center comes from renewable sources. A data center in Ireland running on natural gas can claim 100% renewable energy by purchasing RECs from wind farms in Norway, but the actual carbon emissions from its electricity consumption remain unchanged. At Harch Corp, we believe this approach is insufficient for the scale of the climate challenge. Our philosophy is simple: if we want to claim that our infrastructure is sustainable, we must build the renewable energy installations that power it. This is not idealism; it is engineering pragmatism. By owning our energy supply, we eliminate the gap between what we claim and what we actually achieve, and we gain the operational control needed to optimize for carbon reduction in real-time.

2. Carbon Lifecycle Assessment

2.1 Scope 1: Direct Emissions

Scope 1 emissions encompass all direct greenhouse gas emissions from sources owned or controlled by Harch Corp. For our data center operations, these primarily consist of diesel generator emissions during backup power testing and rare grid-failure events. Our design philosophy minimizes Scope 1 emissions through two mechanisms: first, the use of 200MWh battery storage systems that provide ride-through

capability for renewable intermittency, reducing the frequency and duration of diesel generator operation; and second, the transition to green hydrogen fuel cells for extended backup scenarios, which produce only water as a byproduct. Our estimated Scope 1 emissions for data center operations are less than 0.5 gCO2/kWh, compared to the industry average of approximately 5-10 gCO2/kWh for facilities relying on diesel backup generators.

2.2 Scope 2: Indirect Energy Emissions

Scope 2 emissions represent the indirect greenhouse gas emissions from the generation of purchased electricity. For most data center operators, this is by far the largest source of emissions. Harch Intelligence's vertically integrated model fundamentally changes the Scope 2 calculation: because our electricity is generated by dedicated renewable installations owned by Harch Energy, our location-based Scope 2 emissions reflect the actual carbon intensity of our energy supply rather than the grid average. The average carbon intensity across our five hubs is approximately 47 gCO2/kWh on a location-based basis, which is 89% below the global data center industry average of approximately 440 gCO2/kWh. Using the market-based methodology, our Scope 2 emissions would be reported as zero because we do not purchase from the grid; however, we choose to report on a location-based basis because it provides a more accurate and transparent picture of our actual carbon footprint.

Emission Source	Harch Intelligence	Industry Average	Reduction
Scope 1 (Direct)	<0.5 gCO2/kWh	5-10 gCO2/kWh	>90% lower
Scope 2 (Energy, Location)	~47 gCO2/kWh	~440 gCO2/kWh	89% lower
Scope 2 (Energy, Market)	0 gCO2/kWh	0-440 gCO2/kWh	Zero by design
Total Operational	~47 gCO2/kWh	~450 gCO2/kWh	89.5% lower

Table 1: Carbon emissions comparison by scope

2.3 Scope 3: Value Chain Emissions

Scope 3 emissions encompass all indirect emissions in our value chain, including embodied carbon in hardware manufacturing, construction materials, and end-of-life disposal. While these emissions are significant, they are also the most difficult to measure and reduce. Harch Corp is taking several steps to address Scope 3 emissions: first, we are working with server manufacturers to extend hardware lifecycle from the typical 3-5 years to 5-7 years, following the model pioneered by OVHcloud which achieves server lifetimes of 4.5-9 years; second, we are investing in component refurbishment and recycling programs to reduce the embodied carbon of hardware refreshes; and third, we are using locally sourced construction materials for data center build-out, including cement from Harch Cement's Gambia operations, to reduce transportation emissions. We estimate that our Scope 3 emissions reduction strategies will decrease lifecycle carbon by approximately 30% compared to conventional data center operations by 2028.

3. Hub-Level Carbon Analysis

The carbon intensity of each hub varies based on its renewable energy mix and local grid carbon intensity. Our carbon-aware scheduling system leverages these differences to minimize aggregate carbon emissions by routing workloads to the cleanest available hub at any given time. The following table presents the hub-level carbon analysis, including the contribution of each renewable source and the resulting real-time carbon intensity during peak generation hours.

Hub	Primary Renewable	Secondary	Peak gCO2/kWh	Avg gCO2/kWh	Renewable %
Ouarzazate	Solar (800MW)	Wind (120MW)	8	18	97.2%
Dakhla	Wind (400MW)	Solar (200MW)	12	32	94.8%
Benguerir	Solar (350MW)	Wind (80MW)	28	55	88.5%
Tanger	Wind (200MW)	Solar (100MW)	45	95	82.1%
Casablanca	Grid (45%)	Solar (50MW)	120	210	45%

Table 2: Hub-level carbon intensity analysis with renewable energy sources

Ouarzazate Hub: With 97.2% renewable energy and a peak carbon intensity of just 8 gCO2/kWh, our Ouarzazate hub is one of the cleanest AI compute facilities on Earth. Located near the Noor Ouarzazate solar complex, the world's largest concentrated solar power facility, the hub benefits from exceptional solar irradiance of 2,800 kWh/m2/year and over 3,000 hours of sunshine annually.

4. Renewable Energy Infrastructure

Harch Energy operates a 2GW+ renewable energy pipeline dedicated to powering Harch Corp's infrastructure. This pipeline includes 1.2GW of solar photovoltaic, 800MW of onshore wind, 200MW of green hydrogen electrolyzer capacity, and 400MWh of battery storage. The Levelized Cost of Energy (LCOE) for solar is $14/MWh and for wind is $18/MWh, among the lowest in the world and enabled by Morocco's exceptional renewable resources. At full build-out, Harch Energy's installations will offset 3.2 million tonnes of CO2 per year, making Harch Corp a net contributor to global decarbonization rather than merely neutral.

Energy Asset	Capacity	LCOE	Annual Output	CO2 Offset
Solar PV	1.2GW	$14/MWh	2,400 GWh/yr	1.44M tCO2/yr
Onshore Wind	800MW	$18/MWh	2,100 GWh/yr	1.26M tCO2/yr
Green H2 Electrolyzer	200MW	-	40 kT H2/yr	0.4M tCO2/yr
Battery Storage	400MWh	-	Grid balancing	0.1M tCO2/yr
Total	2GW+	-	4,500+ GWh/yr	3.2M tCO2/yr

Table 3: Harch Energy renewable energy portfolio and carbon offset capacity

5. Net-Zero Roadmap

Harch Corp's net-zero roadmap is structured around three horizons, each targeting a specific set of emission sources and reduction mechanisms. Unlike many organizations that set distant net-zero targets without clear implementation plans, our roadmap is backed by committed capital, engineering designs, and construction timelines for the infrastructure required to achieve each milestone.

5.1 Horizon 1 (2025-2027): Operational Decarbonization

- Commission 100MW of dedicated renewable energy capacity co-located with Hub 1 (Ouarzazate) and Hub 2 (Dakhla)
- Achieve 81.5% renewable energy fraction across the platform, with carbon-aware scheduling fully operational
- Transition Casablanca hub from grid power to dedicated solar installation, increasing renewable fraction from 45% to 75%
- Implement battery storage at all hubs to eliminate diesel generator dependency for routine backup testing

5.2 Horizon 2 (2027-2028): Full Renewable Coverage

- Expand renewable capacity to 200MW to support Phase 2 data center expansion
- Commission green hydrogen fuel cell backup systems at Ouarzazate and Dakhla hubs, replacing diesel generators entirely
- Achieve 95%+ renewable energy fraction across the platform, with average carbon intensity below 30 gCO2/kWh
- Begin Scope 3 reduction program: extend hardware lifecycle, implement component refurbishment and recycling

5.3 Horizon 3 (2028-2030): Net-Negative Operations

- Complete 500MW build-out with full dedicated renewable energy supply from 2GW+ Harch Energy pipeline
- Achieve net-negative carbon operations: Harch Energy offsets exceed Harch Intelligence emissions
- Deploy next-generation immersion cooling for 15% additional energy efficiency improvement
- Publish independently verified annual carbon lifecycle assessment with third-party assurance
- Contribute to Morocco's national climate targets under the Paris Agreement NDC framework

6. PUE Performance and Targets

Harch Intelligence targets a design PUE below 1.15 for all new construction, with a roadmap to achieve below 1.10 by 2028 through the adoption of next-generation cooling technologies. The following table presents our PUE trajectory against industry benchmarks, demonstrating that our target is not merely competitive with the best operators but is achieved through a fundamentally different design philosophy that leverages Morocco's natural advantages in climate and renewable energy availability.

Year	Harch PUE Target	Industry Average	Best-in-Class
2025 (Design)	<1.15	1.56	1.09 (Google)
2026 (Phase 1)	<1.12	1.52 (projected)	1.08 (projected)
2027 (Phase 2)	<1.10	1.48 (projected)	1.07 (projected)
2028 (Phase 3)	<1.08	1.45 (projected)	1.06 (projected)

Table 4: PUE trajectory and industry benchmarks

7. Sustainability Certifications and Standards

Harch Corp is pursuing a comprehensive set of sustainability certifications that reflect our commitment to transparency and accountability. These certifications are not merely badges; they represent rigorous third-party verification of our environmental claims and operational practices. We are committed to publishing annual sustainability reports with independently verified data, and we encourage our customers to use our verified metrics in their own ESG reporting.

Certification	Status	Target Date	Scope
ISO 14001 (Environmental)	In Progress	Q2 2026	All subsidiaries

ISO 50001 (Energy Management)	In Progress	Q3 2026	Harch Intelligence + Energy
LEED Certified (Data Centers)	Planned	Q4 2027	New hub construction
BREEAM Excellent	Planned	Q4 2027	New hub construction
CDP Climate Change	Committed	2026	Full conglomerate
Science Based Targets (SBTi)	Committed	2026	Full conglomerate

Table 5: Sustainability certification roadmap