FEEDORACLE

CSRD / ESRS E1 Climate Disclosure

Multi-source climate intelligence: blockchain carbon, EU grid, UK realtime, EMBER country data, EU-ETS carbon price.
Indicative — not a formal CSRD submission.

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50 Chains Assessed	**140.3 Mt** Total CO■	**€73.25/t** EU-ETS Price	**338.36 g/kWh** DE Intensity
130 g/kWh UK Grid Now	**Moderate** UK Index	**280.8 TWh** Total Energy	**50/100** Carbon Score

Executive Summary

This report aggregates climate data from **6 independent sources**: CCRI blockchain carbon (50 chains), EMBER country intensity (30 countries), UK Carbon Intensity API (realtime), ENTSO-E EU generation data, and EU-ETS carbon pricing.

• **EU Carbon Price:** €73.25/tCO■ (EU-ETS Phase 4) — key input for Scope 1+2 cost modeling under CSRD.
• **Germany grid:** 338.36 gCO■/kWh intensity, 16.86% renewable share (EMBER 2024).
• **UK grid (realtime):** 130 gCO■/kWh, index: moderate (carbonintensity.org.uk).
• **Blockchain top emitters:** Bitcoin (138.0 Mt), Litecoin (0.8 Mt), Dogecoin (0.6 Mt)

EU-ETS Carbon Price

Metric	Value
EUA Price	€73.25/tCO■
Market	EU ETS Phase 4
Currency	EUR
Source	EU ETS via FeedOracle

The EU Emissions Trading System (EU-ETS) sets the price of carbon in Europe. Under CSRD, companies must disclose their exposure to carbon pricing mechanisms and the financial impact on operations. Current EUA price represents the cost per tonne of CO■ equivalent for regulated entities.

EU Grid Generation — Germany & France

Fuel Type	DE (MW)	DE %	FR (MW)	FR %
Wind	19,267	30.1%	6,483	8.9%
Nuclear	—	—	51,922	71.6%
Gas	15,288	23.9%	1,582	2.2%
Coal/Lignite	19,242	30.0%	5	< 0.1%
Hydro	4,568	7.1%	11,599	16.0%
Biomass	4,878	7.6%	827	1.1%
Other	845	1.3%	53	< 0.1%

Fuel Type	DE (MW)	DE %	FR (MW)	FR %
Total	64,088	100%	72,471	100%

Source: ENTSO-E Transparency Platform (realtime). Renewable %: DE 38.5%, FR 22.2%. Generation data is a snapshot at report time — actual shares vary by hour.

UK Grid — Realtime Carbon Intensity

Metric	Value
Carbon Intensity	130 gCO$_2$/kWh
Forecast (next 30m)	135 gCO$_2$/kWh
Index	Moderate
Period	2026-02-18T19:30Z — 2026-02-18T20:00Z
Source	carbonintensity.org.uk (National Grid ESO)

Fuel	%
Wind	47.0%
Gas	29.6%
Nuclear	8.6%
Imports	8.1%
Biomass	6.6%

Country Carbon Intensity Benchmark

Country	gCO$_2$/kWh	Renewable %	Rating
NO	26	98%	Excellent
SE	30	75%	Excellent
CH	35	76%	Excellent
FR	56	27%	Good
FI	80	—	Good
BR	85	87%	Good
AT	105	80%	Good
SK	115	—	Good
CA	120	68%	Good
DK	140	—	Good
ES	150	50%	Good
BE	155	25%	Moderate
HR	175	—	Moderate
PT	180	61%	Moderate
GB	207	42%	Moderate
HU	210	—	Moderate
RO	285	—	Moderate
IE	295	—	Moderate
IT	315	41%	Moderate
NL	328	33%	Moderate

Source: EMBER Climate (2023 annual data). 30 countries ranked by grid carbon intensity. Rating: Excellent (≤50), Good (51–150), Moderate (151–350), High (>350 gCO$_2$/kWh).

ESRS E1 Datapoint Mapping

Mapping of FeedOracle data to ESRS E1 Climate Change disclosure requirements. Coverage upgraded with EU grid, UK realtime, and carbon pricing data.

ESRS Datapoint	FeedOracle Source	Coverage	Notes
E1-6 GHG Scope 1+2	CCRI co2_mt (50 chains)	Full	Annualized estimates per chain
E1-5 Energy Consumption	CCRI energy_twh + ENTSO-E	Full	Chain + grid generation data
E1-4 GHG Intensity	EMBER gCO$_2$/kWh (30 countries)	Full	Annual country-level intensity
E1-4 GHG Intensity (RT)	UK Carbon Intensity API	Partial	UK only, half-hourly realtime
E1-1 Transition Plan	Consensus type tracking	Partial	PoW→PoS transitions
E1-3 Reduction Targets	—	Not covered	Requires issuer disclosure
E1-9 Carbon Credits	EU-ETS €/tCO$_2$ pricing	Partial	EUA price, not credit retirement
IRO-1 Climate Risks	Carbon score (0–100)	Full	Per-chain + country risk scoring

Top 15 Blockchain Networks by CO$_2$ Emissions

Chain	Consensus	CO$_2$ (Mt)	Energy (TWh)	Score	Status
Bitcoin	Proof of Work	138.0	276.1	0	CRITICAL
Litecoin	Proof of Work	0.8	1.5	35	HIGH_IMPACT
Dogecoin	Proof of Work	0.6	1.2	35	HIGH_IMPACT
Bitcoin Cash	Proof of Work	0.4	0.8	35	HIGH_IMPACT
Ethereum Classic	Proof of Work	0.2	0.5	35	HIGH_IMPACT
Monero	Proof of Work	0.1	0.3	35	HIGH_IMPACT
Zcash	Proof of Work	0.1	0.2	35	HIGH_IMPACT
Ravencoin	Proof of Work	< 0.001	0.1	35	HIGH_IMPACT
Kadena	Proof of Work	< 0.001	< 0.001	35	HIGH_IMPACT
Ethereum	Proof of Stake	< 0.001	< 0.001	85	EXCELLENT
Cardano	Proof of Stake	< 0.001	< 0.001	85	EXCELLENT
Solana	Proof of Stake	< 0.001	< 0.001	85	EXCELLENT
Avalanche	Proof of Stake	< 0.001	< 0.001	85	EXCELLENT
Polkadot	Proof of Stake	< 0.001	< 0.001	85	EXCELLENT
BNB Chain	DPoS/Sidechain	< 0.001	< 0.001	85	EXCELLENT

Emissions by Consensus Type

Consensus	Chains	CO$_2$ (Mt)	Energy (TWh)	% of Total
Proof of Work	9	140.32	280.75	100.0%
Proof of Stake	28	< 0.01	< 0.01	< 0.1%
DPoS/Sidechain	3	< 0.01	< 0.01	< 0.1%
Rollup (L2)	9	< 0.01	< 0.01	< 0.1%
Proof of Authority	1	< 0.01	< 0.01	< 0.1%

Data Sources & Provenance

Source	Endpoint	Data Type	Coverage
CCRI	carbon/summary + chains	Blockchain CO$_2$ + energy	50 chains
EMBER Climate	ember/intensity/{country}	Grid CO$_2$ intensity	30 countries

Source	Endpoint	Data Type	Coverage
UK Carbon Intensity	uk/now + uk/generation	Realtime grid + fuel mix	GB (half-hourly)
ENTSO-E	eu-energy/generation/{cc}	Power generation by type	EU members
EU-ETS	eu-ets/price	EUA carbon price	EU-ETS Phase 4

Methodology & Limitations

Scoring: Blockchain carbon score 0–100 (Excellent ≥80, Critical <20). Country rating by grid intensity: Excellent (≤50), Good (51–150), Moderate (151–350), High (>350 gCO■/kWh).

Limitations: Scope 3 emissions not included. Carbon credit retirements not tracked. UK data is realtime (30-min window); EU/EMBER data is annual or snapshot. ENTSO-E generation is point-in-time, not annualized. EU-ETS price is indicative — actual compliance costs vary by allocation. This is indicative data for CSRD preparation, not a formal ESRS-compliant disclosure.

Provenance Block

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