

QUADRANS BLOCKCHAIN SUSTAINABILITY REPORT

1 ABSTRACT

The Quadrans network, open-source, public, decentralised and sustainable blockchain for storage and data sharing is designed to scale effectively for global adoption to improve the execution of processes and facilitate data management. This is December 2022 Quadrans Mainnet energy impact report.

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2 QUADRANS SUSTAINABILITY

Quadrans is a sustainable blockchain that performs energy-efficient transactions. Over the past year, the **Quadrans Foundation** has carried out an analysis to understand how large **Quadrans'** energy footprint actually is.

Quadrans impact was analyzed by considering social development not only economically but also environmentally.

With the information available in the **Quadrans network** status, the carbon footprint of the **Quadrans** blockchain can be instantly extracted based on the activity and location of the nodes.

Quadrans' first blockchain sustainability report focuses primarily on its network activity and carbon footprint and looks at its three different entities: Lighnodes, Miners and Masternodes.

The report revealed how **Quadrans'** energy use compares to day-to-day activities, as well as other current blockchain networks - and highlights how the energy cost of **Quadrans'** network transactions is nearly negligible compared to its social purpose in protecting and storing data.

Remarkably, **Quadrans** also delivers a lower carbon footprint impact than the first two capitalized projects.

The validator network remains stable over time with a slightly growth on previous month supporting the overall strength of the network and decentralization goals. Yet any resulting emissions will be mitigated through continued network development. Indeed, the network overall consumption (Kw/h) decreased by 2.74% while the CO2 produced decreased by 2.57% compared to the previous month.

As the 2022 comes to an end, the report also include a chart on the monthly energy performance recorded by the network.

Quadrans Nodes Distribution - December 2022

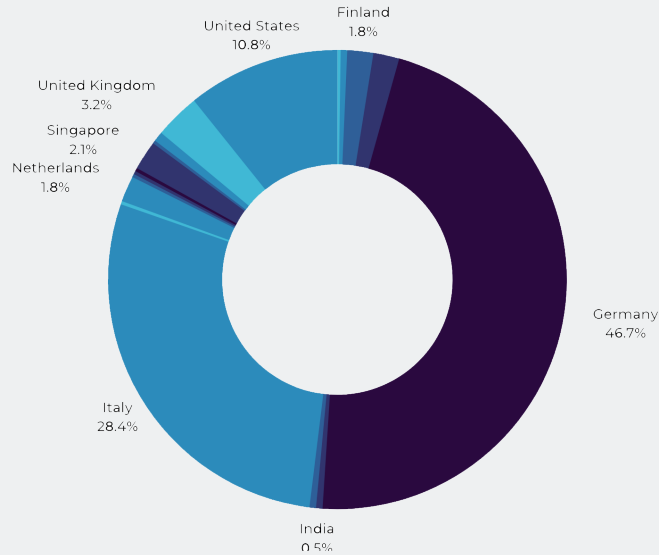


Immagine (1):
Quadrans Node distribution

	Mainnet energy consumption per month (KW)	Mainnet Kg CO2 x month	Energy per transaction considering 60K TPS (W)	gCO2 x Transaction (Considering 60K TPS)
Current month	1937.91	588.11	0.00001246	0.0000038
Delta on previous month	-2.74%	-2.57%	-2.74%	-2.57%

Table (1):
Reward mechanism scheme

From the report’s findings, an average **Quadrans** transaction uses 0.000012 watts - that’s 20 times less energy than a Google search! Find more comparisons in the “Comparison” section.

Although the average energy use of **Quadrans** transactions is steadily increasing, due to its network expansion and adoption, it still remains well below the energy impact of any Proof-of-Work blockchain like Ethereum (amounting to 16.26 billion **Quadrans** transactions) and Bitcoin (amounting to 154.45 billion **Quadrans** transactions).

Comparison (w/ source)	Watts	Kilowatthour	Equivalent Quadrans transactions (*1000)
Average US household (per year)	10649000	10649.00	801413301.25
Central air conditioning (per hour)	3500	3.50	263400.00
Cooking in an electric oven (per hour)	2000	2.00	150514.28
One Bitcoin transaction	2059000	2059.00	154954454.62
Brewing coffee on drip coffee maker (per hour)	1500	1.50	112885.71
One Ethereum transaction	30000	30.00	2257714.25
One gallon of gasoline	33700	33.70	2536165.67
Playing a video game on a PS5 (per hour)	197	0.20	14825.66
Running large refridgerator (per hour)	180	0.18	13546.29
Working on a computer/monitor/router (per hour)	158	0.16	11890.63
Watching an LCD television (per hour)	150	0.15	11288.57
Keeping coffee warm on drip coffee maker (per hour)	70	0.07	5268.00
Using a 60W incandescent lightbulb (per hour)	60	0.06	4515.43
Using a CFL lightbulb (per hour)	13	0.01	978.34
Fully charging iPhone 13 battery	12.41	0.01	933.94
Using an LED lightbulb (per hour)	10	0.01	752.57

Comparison (w/ source)	Watts	Kilowatthour	Equivalent Quadrans transactions (*1000)
One Google search	0.3	0.00	22.58
One Quadrans transaction	0.000013	0.00	0.00

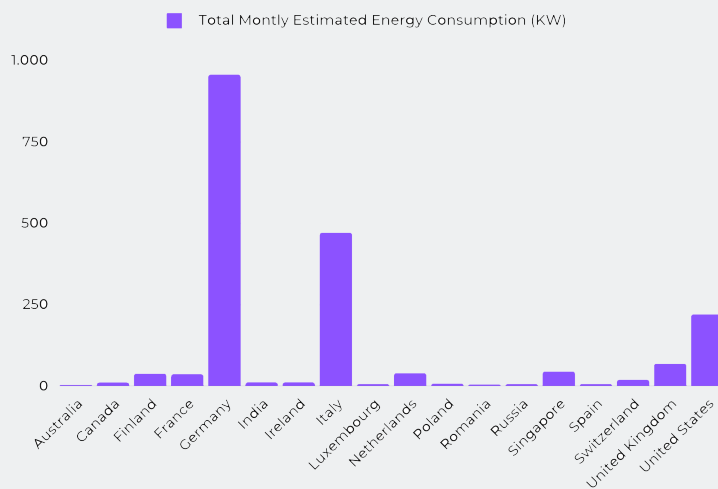
Table (2):
Reward mechanism scheme

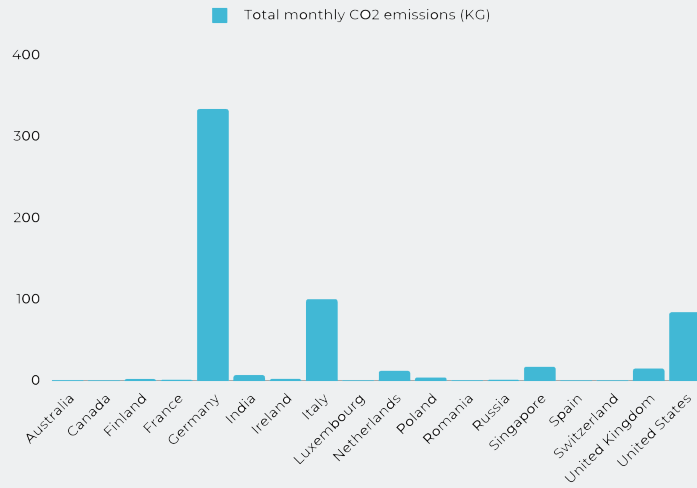
When evaluating grants for new projects, it is in the **Quadrans Foundation's** interest to distribute its energy impact and consider the carbon footprint of its nodes.

The **Quadrans Foundation** is committed not only to the overall distribution of the Consensus but also to the mitigation of energy consumption (however low) in specific areas.

3 QUADRANS ENERGY ENVIRONMENTAL IMPACT PER NATION

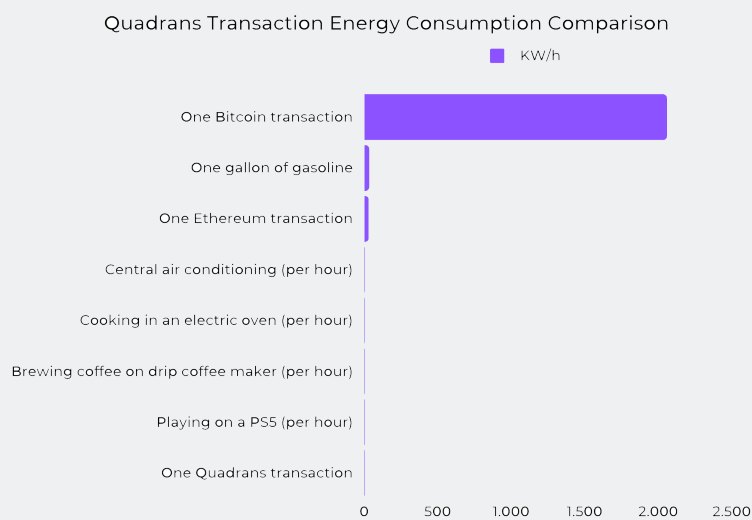
Quadrans Energy Environmental Impact per Nation- December 2022

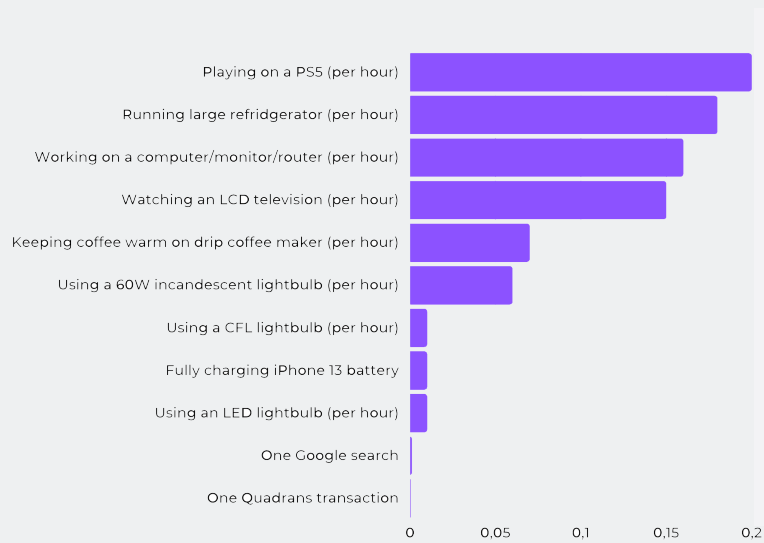




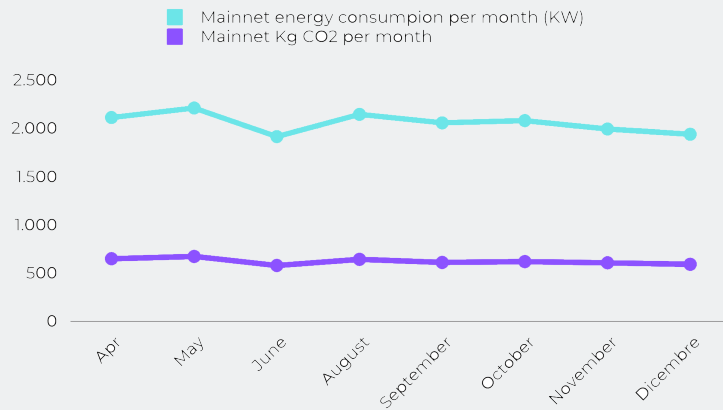
4 COMPARISON

Comparing the energy intensity of a **QuadranS** transaction to a Bitcoin transaction is the same as comparing your way to the supermarket to the maximum Earth-Sun distance (about 150 billion KM). On a simpler note, with the energy required to fully charge an iPhone 13 battery, you can perform 1 million **QuadranS** transactions.





Quadrans Energy Impact - 2022 Trend



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