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 June 2022 **Quadrans Mainnet** energy impact report.

Download report

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: Lightnodes, 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 is expanding over time with a +2% 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 13.4% while the CO_2 produced diminished by 14.1% compared to the previous month.
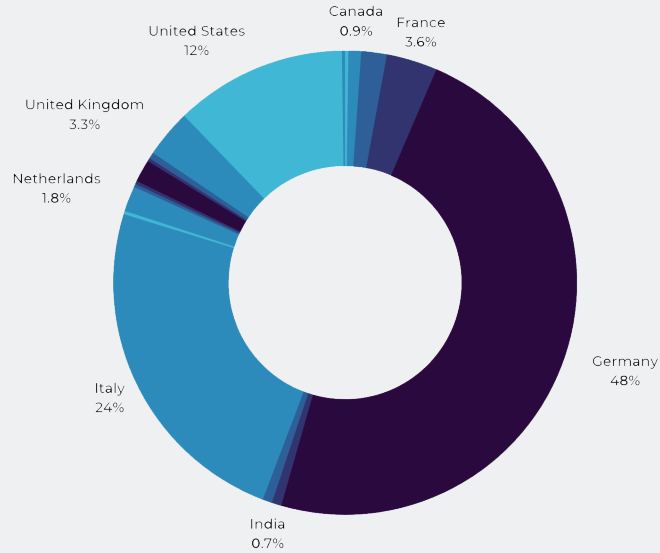
Quadrans Nodes Distribution - June 2022

Immagine (1):
Quadrans Node distribution

	Mainnet energy consumpion per year (KW)	**Mainnet Kg CO2 x year**	**Energy per transaction considering 60K TPS (W)**	**gCO2 x Transaction (Considering 60K TPS)**
Current month	1913.43	575.72	0.0000123	0.00000370
Delta on previous month	-13.4%	-14.1%	-13.4%	-14.1%

Table (1):
Schema del meccanismo di ricompensa

From the report's findings, an average **Quadrans** transaction uses 0.000013 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).

| Comparision (w/ source)	Watts	Kilowatthour	Equivalent Quadrans transactions (*1000)
Average US household (per year)		10649	801413301,2
One Google search		0,0003	22,57714249
One Quadrans transaction	0,000012	0,00	1
Using an LED lightbulb (per hour)	10	0,01	752,5714163
Fully charging iPhone 13 battery		0,01241	933,9411277
Using a CFL lightbulb (per hour)	13	0,013	978,3428412
Working on a computer/monitor/router (per hour)	158	0,158	11890,62838
Using a 60W incandescent lightbulb (per hour)	60	0,06	4515,428498
Keeping coffee warm on drip coffee maker (per hour)	70	0,07	5267,999914
Watching an LCD television (per hour)	150	0,15	11288,57124
Playing a video game on a PS5 (per hour)	197	0,197	14825,6569
Running large refridgerator (per hour)	180	0,18	13546,28549
Brewing coffee on drip coffee maker (per hour)	1,5	1500	112885712,4
Cooking in an electric oven (per hour)	2,4	2400	180617139,9
Central air conditioning (per hour)	3,5	3500	263399995,7
One gallon of gasoline		33,7	2536165,673

| Comparision (w/ source)	Watts	Kilowatthour	Equivalent Quadrans transactions (*1000)
One Ethereum transaction		216	16255542,59
One Bitcoin transaction		2059	154954454,6

Table (2):
Schema del meccanismo di ricompensa

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.
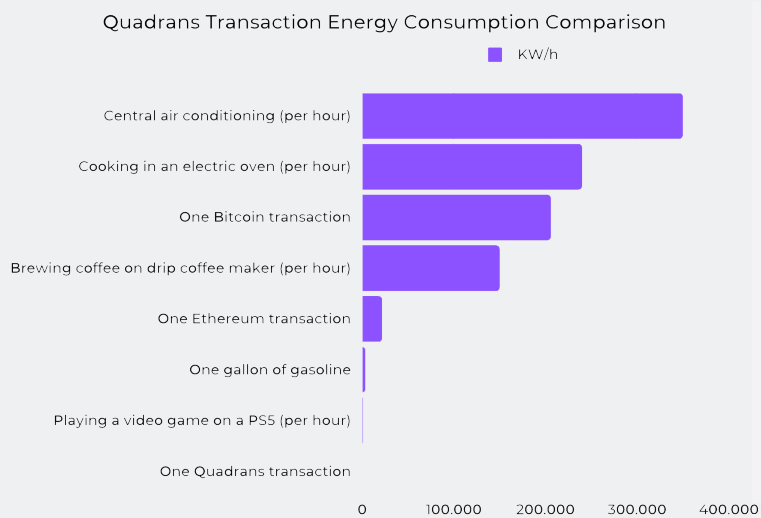
3 QUADRANS ENERGY ENVIRONMENTAL IMPACT PER NATION

Quadrans Energy Environmental Impact per Nation- June 2022

■ Total Montly Estimated Energy Consumption (KW)
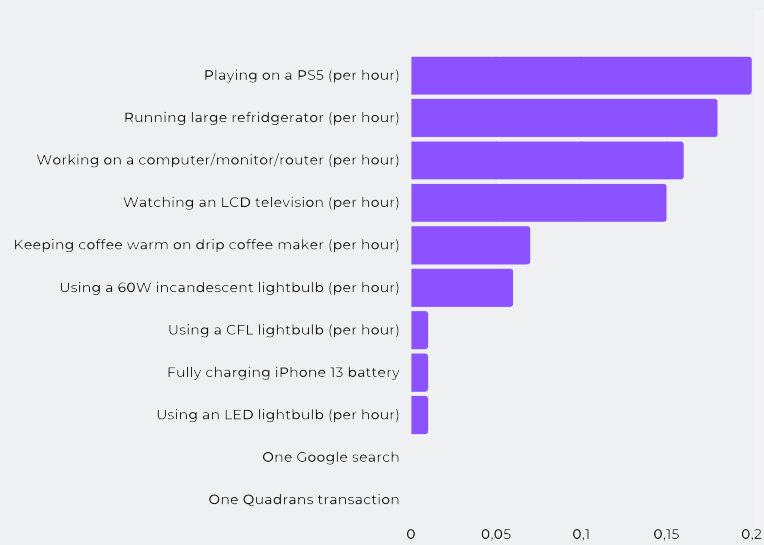
Total monthly CO2 emissions (KG)
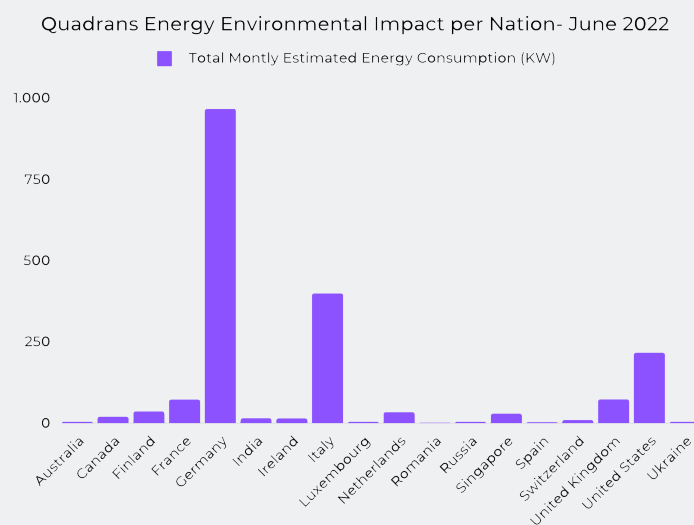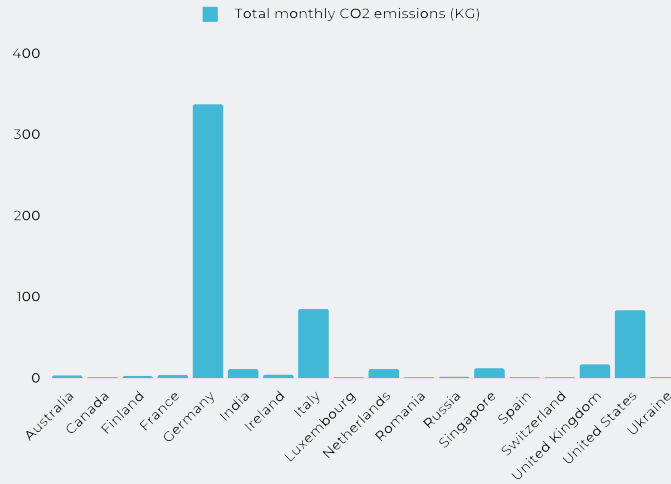
4 COMPARISON

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 Transaction Energy Consumption Comparison

KW/h

Playing on a PS5 (per hour)
Running large refridgerator (per hour)
Working on a computer/monitor/router (per hour)
Watching an LCD television (per hour)
Keeping coffee warm on drip coffee maker (per hour)
Using a 60W incandescent lightbulb (per hour)
Using a CFL lightbulb (per hour)
Fully charging iPhone 13 battery
Using an LED lightbulb (per hour)
One Google search
One Quadrans transaction

0   0,05   0,1   0,15   0,2

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