

GLOBAL BITCOIN MINING DATA REVIEW

Q2 2021

JULY 1, 2021

BITCOIN MINING COUNCIL

23 MINING COMPANIES REPRESENTING 32% OF THE NETWORK



BITRIVER

BLOCKCAP™



CANADA COMPUTATIONAL UNLIMITED INC.



celsius network



CORE SCIENTIFIC®



COMPUTENORTH



DATAVENTURES



FRONTIER MINING



GALAXY DIGITAL



HIVE



HUT8



Managed Crypto Mining



EXECUTIVE SUMMARY

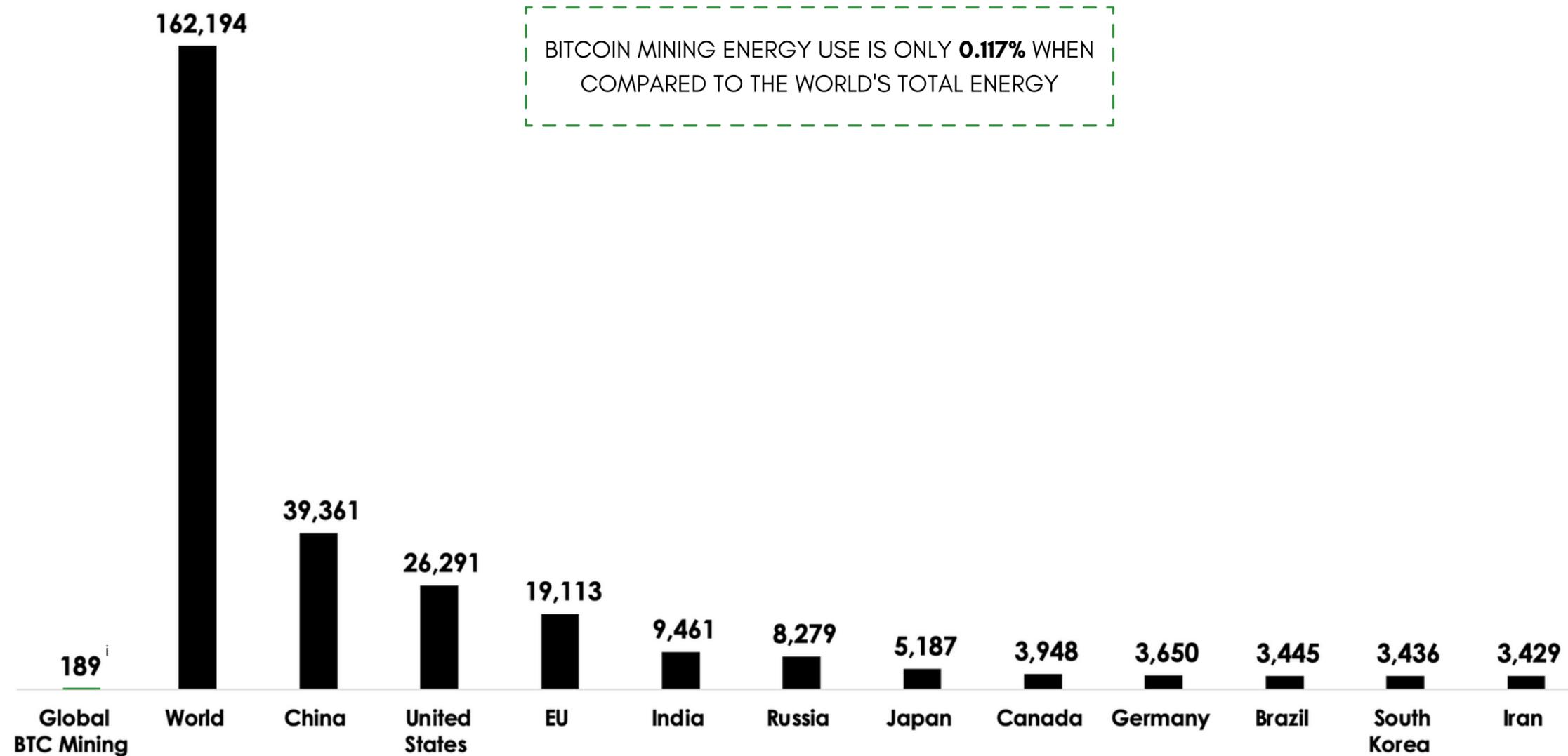
Bitcoin mining uses a negligible amount of energy, is rapidly becoming more efficient, and is powered by a higher mix of sustainable energy than any major country or industry.

PRESENTATION OVERVIEW

- 1** GLOBAL BITCOIN MINING ENERGY USE IS NEGLIGIBLE
 - 2** GLOBAL BITCOIN MINING HAS THE HIGHEST SUSTAINABLE ENERGY MIX
 - 3** BITCOIN MINING ENERGY USE VS GLOBAL ENERGY USE
 - 4** BITCOIN MINING ENERGY USE VS UNITED STATES ENERGY USE
 - 5** Q1 VS Q2 2021 BITCOIN MINING METRICS
- SOURCES AND METHODOLOGY

GLOBAL BITCOIN MINING ENERGY USE IS NEGLIGIBLE¹

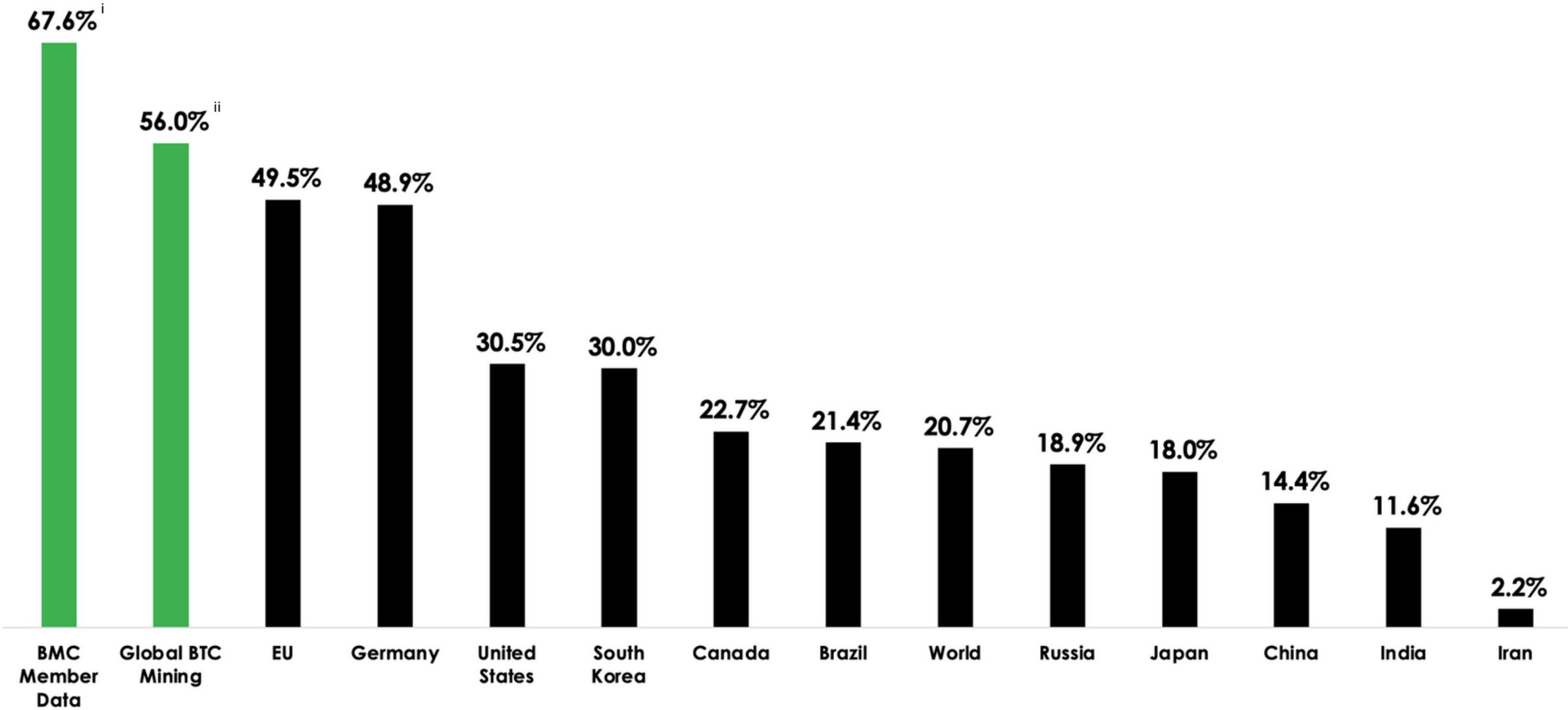
PRIMARY ENERGY CONSUMPTION: BITCOIN MINING VS COUNTRIES (TWh)ⁱⁱ



SOURCES: ⁱ [HTTPS://CBECI.ORG/](https://cbeci.org/) (UPDATED: JUNE 29, 2021). ESTIMATED BITCOIN MINING ELECTRICITY USAGE AND ESTIMATED ENERGY USAGE. ANNUALIZED VALUES ARE USED FOR BITCOIN MINING ENERGY AND ELECTRICITY USE. ⁱⁱ BP'S STATISTICAL REVIEW OF WORLD ENERGY (2021). [HTTPS://WWW.BP.COM/EN/GLOBAL/CORPORATE/ENERGY-ECONOMICS/STATISTICAL-REVIEW-OF-WORLD-ENERGY/PRIMARY-ENERGY.](https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/primary-energy)

GLOBAL BITCOIN MINING HAS THE HIGHEST SUSTAINABLE ENERGY MIX²

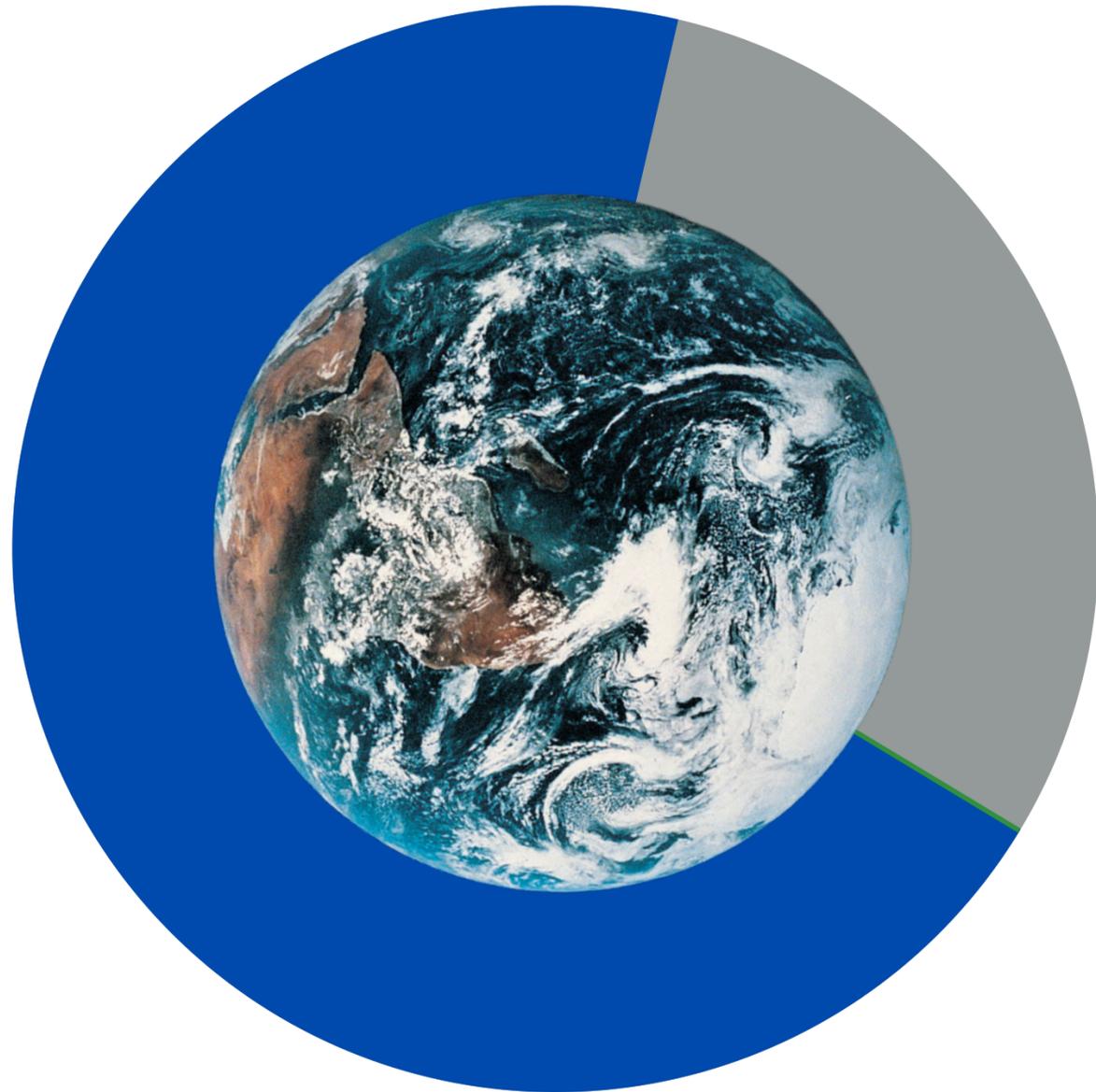
PRIMARY ENERGY SUSTAINABLE POWER MIX: BITCOIN MINING VS COUNTRIES (% OF TWh)ⁱⁱⁱ



SOURCES: ⁱ VALUE REPRESENTS DATA COMPILED FROM BMC ADVISORY COUNCIL MINERS. ANNUALIZED PRIMARY ENERGY USE.
ⁱⁱ ESTIMATED GLOBAL BITCOIN NETWORK ANNUALIZED POWER BASED ON BMC ANALYSIS, ASSUMPTIONS AND EXTRAPOLATION.
ⁱⁱⁱ COUNTRY DATA COMPILED FROM BP'S STATISTICAL REVIEW OF WORLD ENERGY (2021). [HTTPS://WWW.BP.COM/EN/GLOBAL/CORPORATE/ENERGY-ECONOMICS/STATISTICAL-REVIEW-OF-WORLD-ENERGY/PRIMARY-ENERGY.](https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/primary-energy)



BITCOIN MINING ENERGY USE VS TOTAL GLOBAL ENERGY USE³



162,194 TWhⁱ
TOTAL ENERGY GENERATED WORLDWIDE

50,000 TWhⁱⁱ
ENERGY LOST DUE TO INEFFICIENCIES

189 TWhⁱⁱⁱ
**ENERGY CONSUMED BY BITCOIN MINING
ON THE WORLD'S ELECTRIC GRID**

**GLOBAL BITCOIN
MINING CONSUMES
0.1%**
OF THE WORLD'S ENERGY PRODUCTION

**GLOBAL BITCOIN
MINING CONSUMES
0.4%**
OF THE WORLD'S ENERGY WASTED

BITCOIN MINING ENERGY USE VS US ELECTRICITY GENERATION USE⁴



10,463 TWhⁱ
TOTAL ENERGY USED TO GENERATE & DISTRIBUTE ELECTRICITY IN THE US

6,800 TWhⁱ
ELECTRICAL SYSTEM ENERGY WASTED OR LOST IN THE US

189 TWhⁱⁱ
ENERGY CONSUMED BY BITCOIN MINING ON THE WORLD'S ELECTRIC GRID

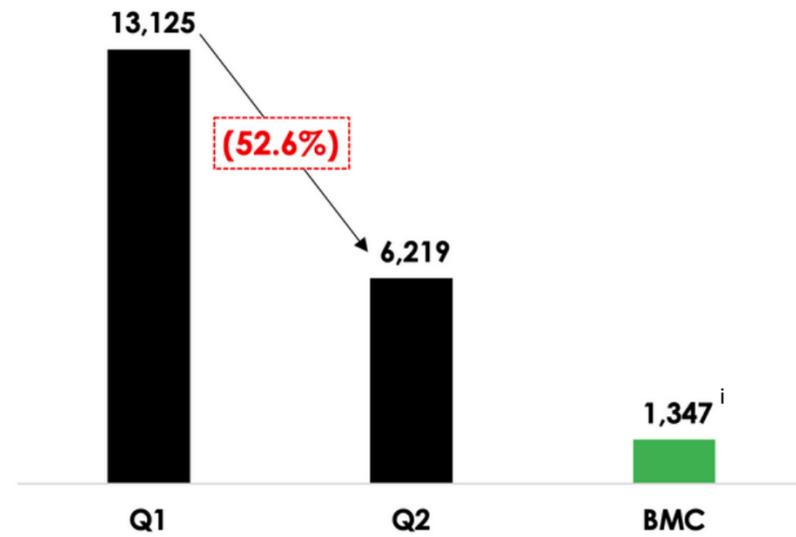
65% OF ALL ENERGY
USED TO GENERATE & DISTRIBUTE ELECTRICITY IN THE US IS LOST OR WASTED

GLOBAL BITCOIN MINING CONSUMES 2.8%
OF THE ELECTRICAL SYSTEM ENERGY WASTED OR LOST IN THE US

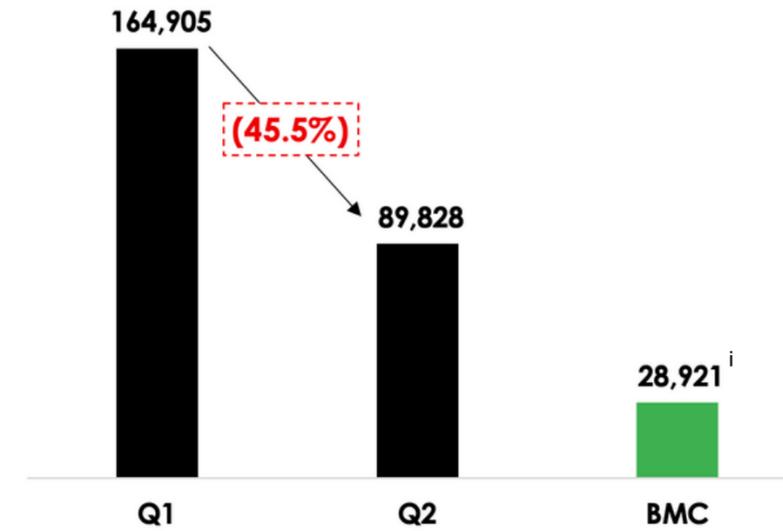
Q1 VS Q2 2021 BITCOIN MINING METRICS⁵

IN Q2, THE SUSTAINABLE ENERGY MIX REACHED 56%

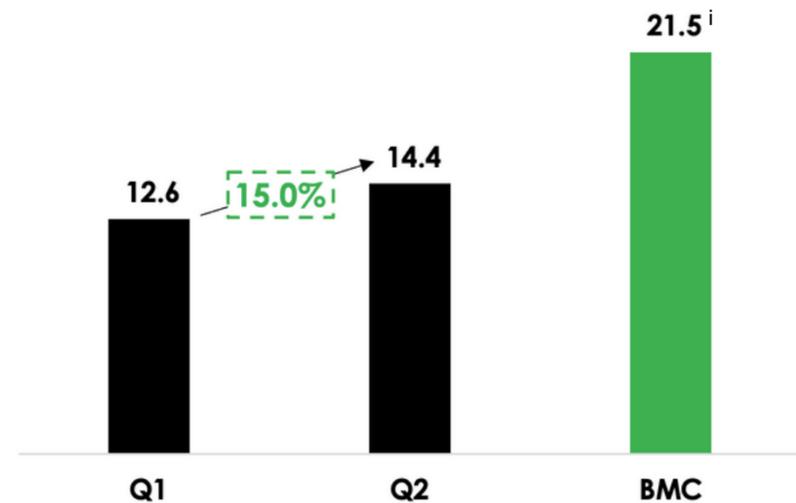
FLEET ELECTRICITY CONSUMPTION (MW)ⁱⁱ



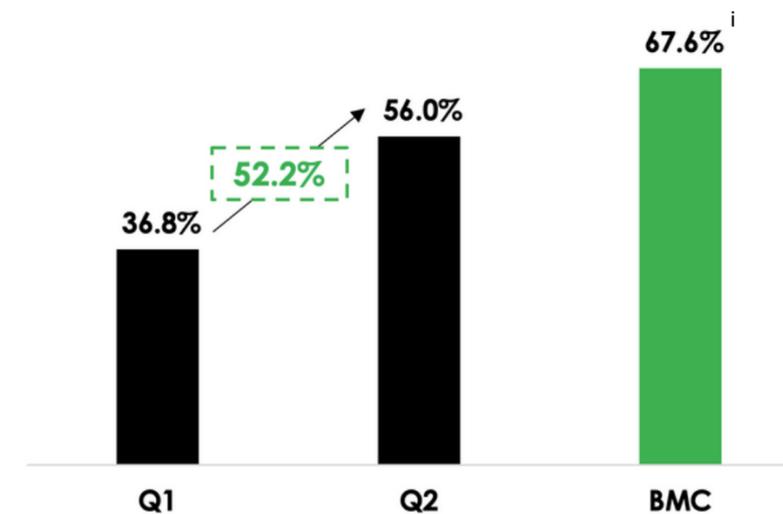
HASHRATE (PH)ⁱⁱ



NETWORK EFFICIENCY (PH/MW)ⁱⁱ



SUSTAINABLE ELECTRICITY (%)ⁱⁱ



SOURCES & METHODOLOGY

BMC SURVEY METHODOLOGY:

THE BMC SURVEYED BITCOIN MINERS AROUND THE WORLD ASKING THREE QUESTIONS; 1.) HOW MUCH ELECTRICITY DOES YOUR TOTAL FLEET CONSUME TODAY?; 2.) WHAT IS THE TOTAL % OF SUSTAINABLE ELECTRICITY* WITHIN YOUR FLEET'S POWER GENERATION MIX TODAY?; 3.) WHAT IS THE TOTAL AGGREGATE HASHRATE OF YOUR FLEET TODAY?

**THE ANNOTATED TERM "SUSTAINABLE ELECTRICITY" WAS DEFINED AS ELECTRICITY GENERATED BY: HYDRO, WIND, SOLAR, NUCLEAR, GEOTHERMAL, AND CARBON-BASED GENERATION WITH NET CARBON CREDITS. BMC'S "SUSTAINABLE ELECTRICITY" DEFINITION IS BASED ON THE PRINCIPLES BROUGHT FORWARD BY THE [EIA'S "NET ZERO BY 2050" REPORT](#). THE REPORT FOCUSES ON THE NEEDED GLOBAL ENERGY TRANSFORMATION AND RECOMMENDS THE USE OF RENEWABLE ENERGY GENERATION, NUCLEAR AND THE USE OF CREDITS TO INCENTIVIZE AND SUPPORT ADDITIONAL DEVELOPMENT OF RENEWABLE ENERGY DEVELOPMENT.*

SOURCES:

- 1 [HTTPS://CBECI.ORG/](https://cbeci.org/) (UPDATED: JUNE 29, 2021). ESTIMATED BITCOIN MINING ELECTRICITY USAGE AND ESTIMATED ENERGY USAGE. ANNUALIZED VALUES ARE USED FOR BITCOIN MINING ENERGY AND ELECTRICITY USE. BP'S STATISTICAL REVIEW OF WORLD ENERGY (2021). [HTTPS://WWW.BP.COM/EN/GLOBAL/CORPORATE/ENERGY-ECONOMICS/STATISTICAL-REVIEW-OF-WORLD-ENERGY/PRIMARY-ENERGY](https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/primary-energy).
- 2 VALUE REPRESENTS DATA COMPILED FROM BMC ADVISORY COUNCIL MINERS. ANNUALIZED PRIMARY ENERGY USE. ESTIMATED GLOBAL BITCOIN NETWORK ANNUALIZED POWER BASED ON BMC ANALYSIS, ASSUMPTIONS AND EXTRAPOLATION. COUNTRY DATA COMPILED FROM BP'S STATISTICAL REVIEW OF WORLD ENERGY (2021). [HTTPS://WWW.BP.COM/EN/GLOBAL/CORPORATE/ENERGY-ECONOMICS/STATISTICAL-REVIEW-OF-WORLD-ENERGY/PRIMARY-ENERGY](https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/primary-energy).
- 3 BP'S STATISTICAL REVIEW OF WORLD ENERGY (2021), [HTTPS://WWW.BP.COM/EN/GLOBAL/CORPORATE/ENERGY-ECONOMICS/STATISTICAL-REVIEW-OF-WORLD-ENERGY/PRIMARY-ENERGY](https://www.bp.com/en/global/corporate/energy-economics/statistical-review-of-world-energy/primary-energy). INTERNATIONAL ENERGY AGENCY, [HTTPS://WWW.IEA.ORG/DATA-AND-STATISTICS/DATA-PRODUCT/WORLD-ENERGY-STATISTICS-AND-BALANCES](https://www.iea.org/data-and-statistics/data-product/world-energy-statistics-and-balances). [HTTPS://CBECI.ORG/](https://cbeci.org/) (UPDATED: JUNE 29, 2021) ANNUALIZED VALUES ARE USED FOR BITCOIN MINING ENERGY AND ELECTRICITY USE.
- 4 [HTTPS://WWW.EIA.GOV/TOTALENERGY/DATA/MONTHLY/PDF/FLOW/TOTAL ENERGY 2020.PDF](https://www.eia.gov/totalenergy/data/monthly/pdf/flow/total_energy_2020.pdf). [HTTPS://CBECI.ORG/](https://cbeci.org/) (UPDATED: JUNE 29, 2021) ANNUALIZED VALUES ARE USED FOR BITCOIN MINING ENERGY AND ELECTRICITY USE.
- 5 BMC ADVISORY COUNCIL MEMBERSHIP DATA, ANALYSIS AND EXTRAPOLATION. AS SUBMITTED AS AT JUNE 30, 2021.



THANK YOU