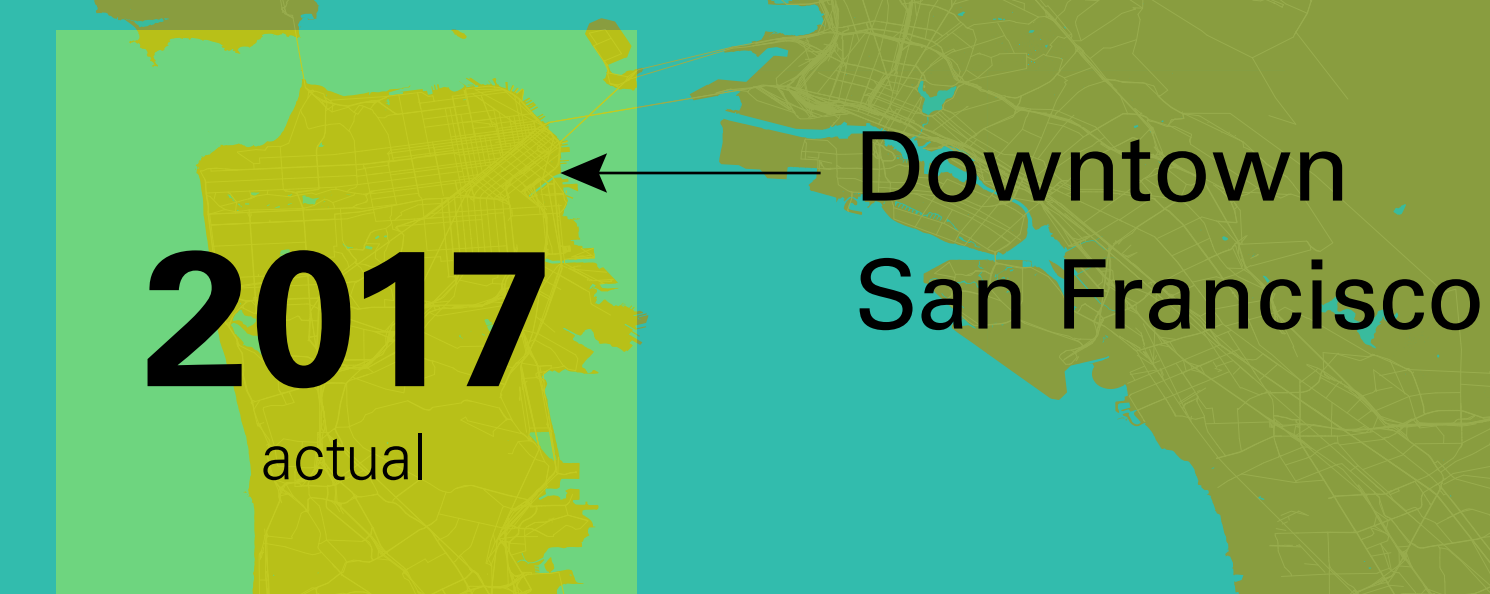
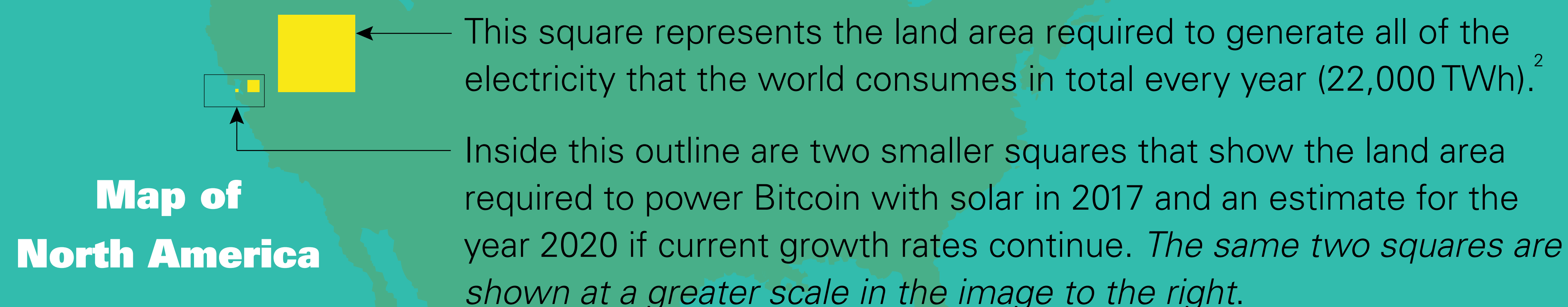


Land Area Required to Power Bitcoin *WITH SOLAR*

Coinciding with a surge in the value of Bitcoin in 2017, it was revealed that the electricity used for transactions and for the mining of new Bitcoin is on track to exceed 33 terrawatt-hours (TWh) per year.¹ The rate of increase is such that electricity consumption by Bitcoin could increase to more than 500 TWh per year by the early 2020's.

To put this in perspective, we've created this information graphic to show how much land area we would need to generate that much electricity if we were to only use solar photovoltaic panels.

Even today, Bitcoin consumption would already require a solar array larger than the city of San Francisco!



**Map of
San Francisco
Bay Area**



How do we reconcile our desire for more data and computing power with our desire for a clean and sustainable world?

land art generator initiative
RENEWABLE ENERGY CAN BE BEAUTIFUL

References

1. <https://digiconomist.net/bitcoin-energy-consumption> is the definitive source for tracking Bitcoin electricity consumption. Articles calling attention to the issue include: <https://inhabitat.com/one-bitcoin-transaction-takes-more-energy-than-a-household-uses-in-a-week/> and <https://grist.org/article/bitcoin-could-cost-us-our-clean-energy-future/>
2. <https://www.eia.gov/electricity/data/browser/> electricity only (does not include heat energy, internal combustion engine transport, etc). 100 kWh per square meter per year used to estimate land area requirements for solar PV.
3. This estimate does not include Ethereum and other digital currencies, which consumed an additional 11 TWh in 2017 and could grow even faster than Bitcoin.
4. Today, Bitcoin CO2 emissions are more than the emissions of a massive coal-fired power plant: <https://www.sourcewatch.org/>
5. Comparing Bitcoin consumption (33 TWh) and existing solar production: The total electricity generated by utility-scale solar in the United States in 2016 was 36 TWh. Distributed solar (such as rooftop installations) generated 18 TWh (EIA).