The total primary energy supply of the world within our fossil-fuel powered economy circa 2021 is 170 Petawatt-hours (PWh) per year. This is equivalent to around 70 PWh of electricity due to the greater conversion efficiency of electricity. For the purposes of this map we have assumed 128 PWh of total primary energy supply, allowing for economic growth and broadly shared prosperity.

We have already paved over or built structures on 800,000 km² of the earth (the area of the pink square). The same 800,000 km² area is also shown on the world map at matching scale.

Using 276,266 km² of land and 16,881 km² of ocean we can power the regenerative global economy of the 21st century using only wind, water, and solar. Total energy landscapes and energy oceanscapes comprise 1,392,599 km² and 487,892 km² respectively.

For more information about this graphic along with methodology, references, and documentation visit: https://landartgenerator.org/blog/archives/77565