



you hear about...

climate change

you hear about...

energy

independence

you hear about...

carbon footprint

you hear about...

energy plans:

Pickens, Obama, Google, McCain...

what you want to know is...

how do i fit in?

what you need are...

**tools for making
the right consumer
choices**

wattzon.com

Because solving climate and energy challenges
requires everyone's help.

wattzon.com

Measure what is measureable, make measure-
able what is not.

- Galileo

wattzon.com

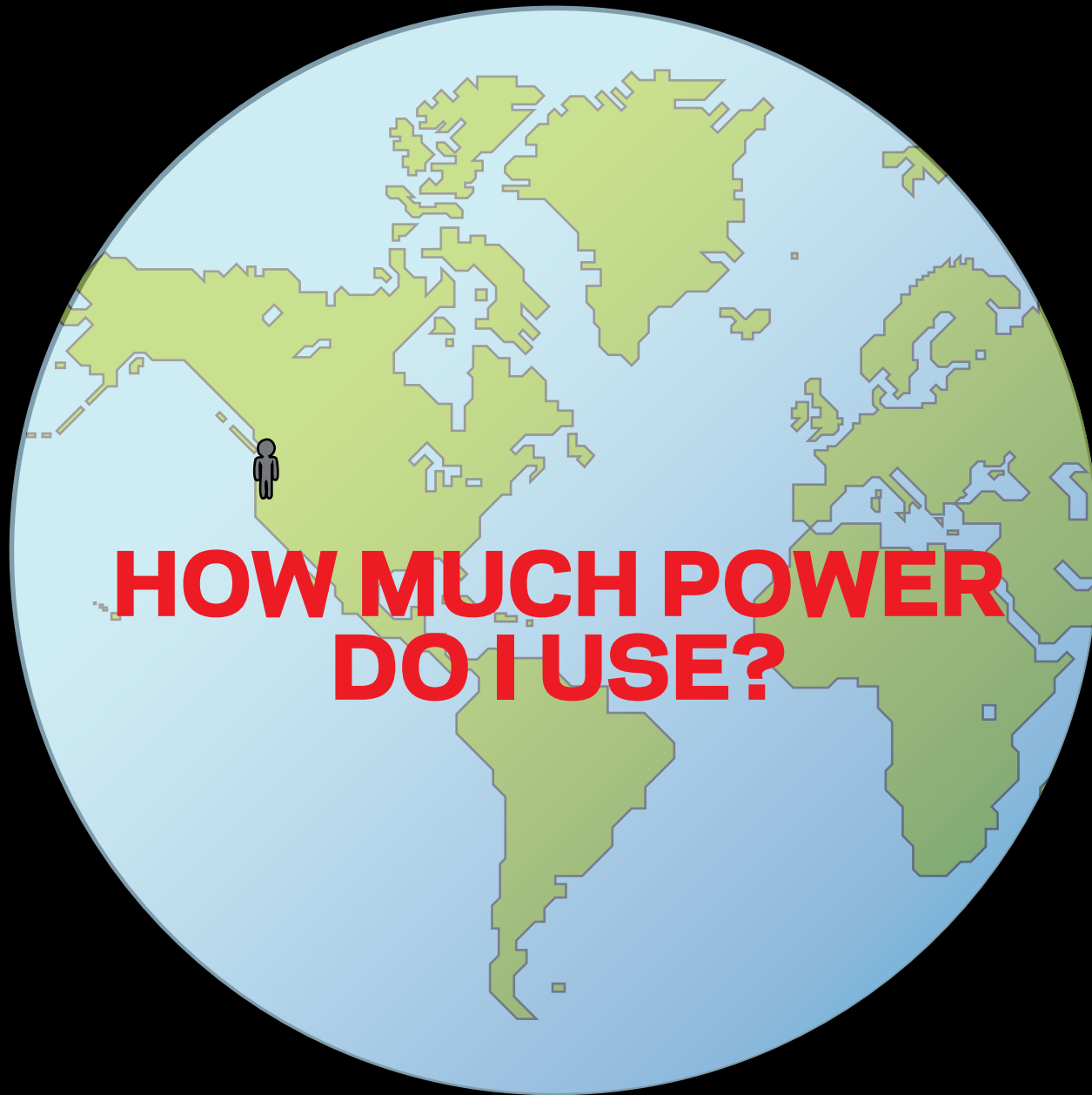
A social network around the notion of energy use and conservation.

A wiki methodology for assembling a profoundly complex dataset.

Share. Compare. Learn. Change.

What is my relationship to climate and energy?





**HOW MUCH POWER
DO I USE?**

Using units of power allows you to compare things that happen on markedly different time scales. yearly + monthly + daily + ...

Power, in Watts, is like an average.

The average amount of energy, in Joules, you use each second.

If you do something yearly (like fly 105,000 miles), it contributes:

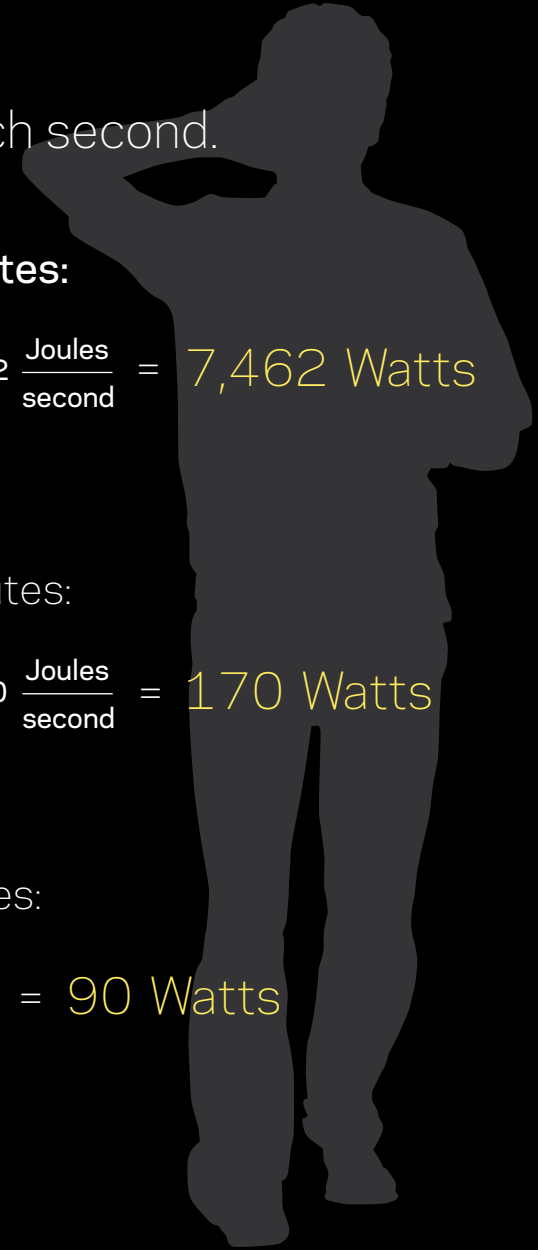
$$\frac{168,207 \text{ kilometers}}{1 \text{ year}} \times \frac{1 \text{ year}}{31,536,000 \text{ seconds}} \times \frac{1.40 \text{ megajoules}}{1 \text{ kilometer}} = 7,462 \frac{\text{Joules}}{\text{second}} = 7,462 \text{ Watts}$$

If you do something monthly (like your electricity bill), it contributes:

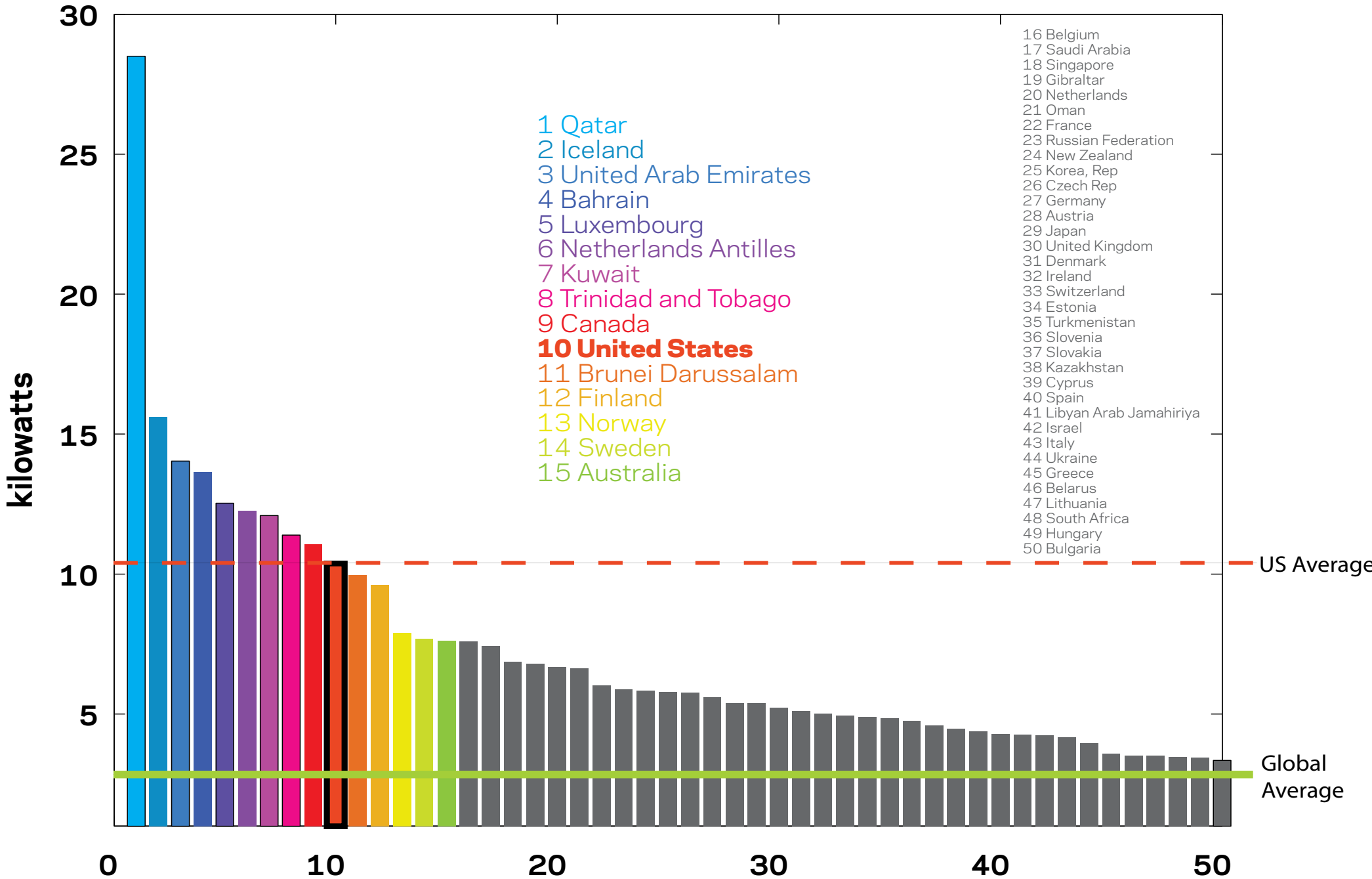
$$\frac{122 \text{ kilowatt} \cdot \text{hours}}{1 \text{ month}} \times \frac{1 \text{ month}}{2,952,000 \text{ seconds}} \times \frac{3.6 \text{ megajoules}}{1 \text{ kilowatt} \cdot \text{hour}} = 170 \frac{\text{Joules}}{\text{second}} = 170 \text{ Watts}$$

If you do something daily (like drink 1 Energy drink), it contributes:

$$\frac{1 \text{ energy drink}}{1 \text{ day}} \times \frac{1 \text{ day}}{86,400 \text{ seconds}} \times \frac{7.84 \text{ megajoules}}{1 \text{ bottle}} = 90 \frac{\text{Joules}}{\text{second}} = 90 \text{ Watts}$$



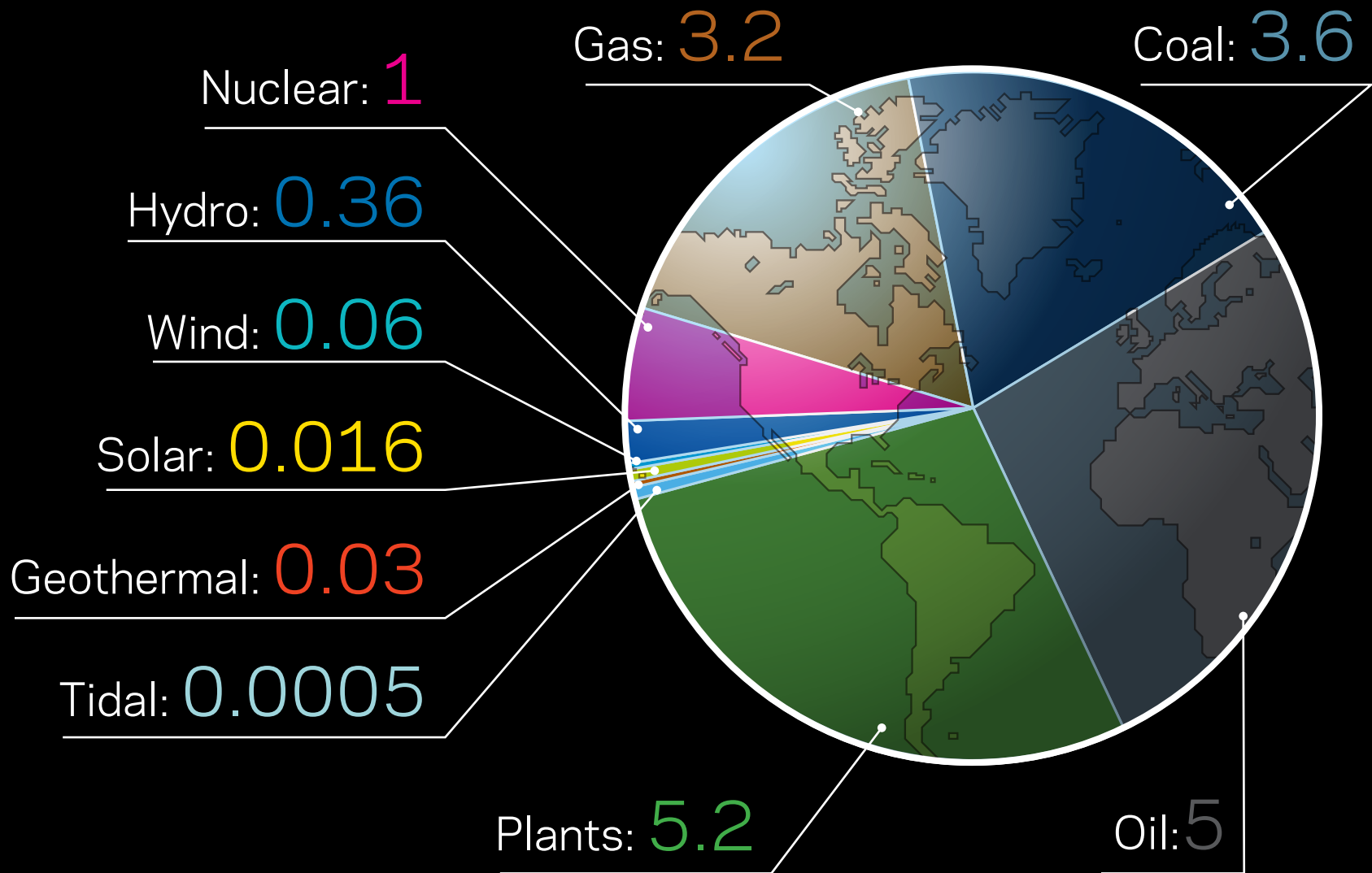
Per capita power use 2003



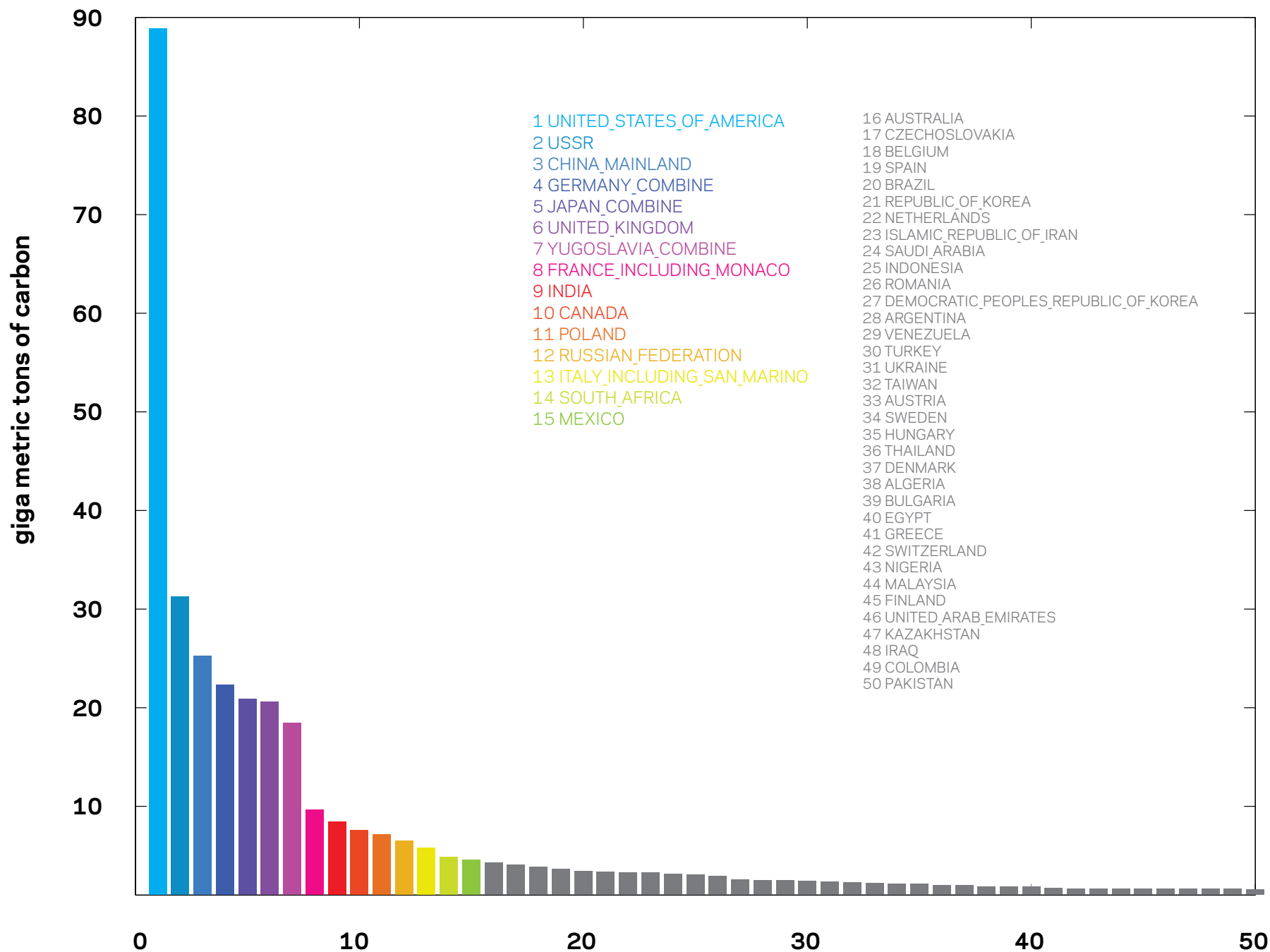
Energy production

Units shown in Terawatts (TW)

Humanity
18 TW

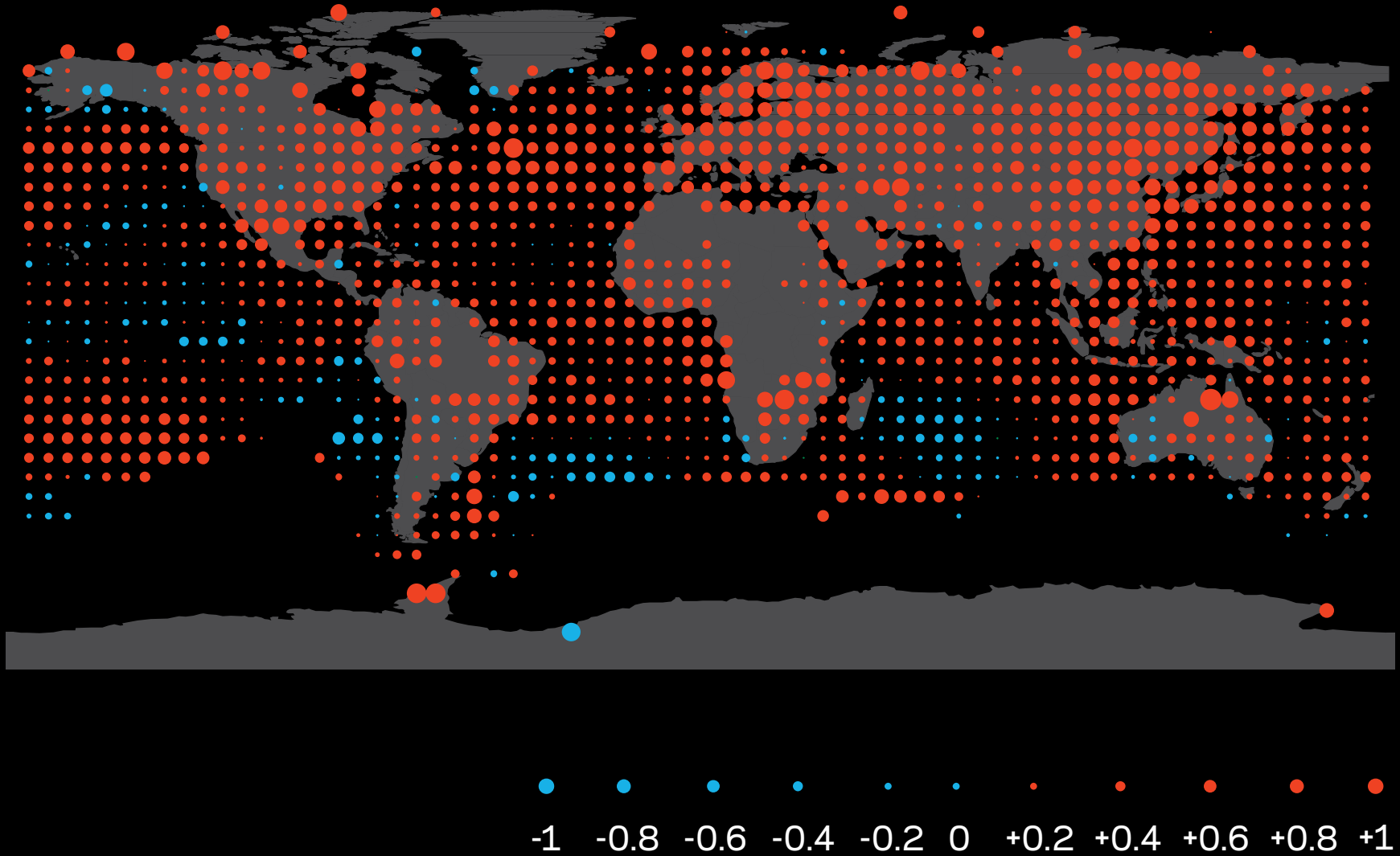


Cumulative national CO₂ emissions from fossil-fuel burning, cement manufacture, and gas flaring: 1751-2004



Temperature Changes around the world in the last quarter of the 20th century

Trends in °C per decade



What is the challenge?

Current Demand:

16 TW

Fossil Fuel:

3 TW

Existing non-carbon:

1.5 TW

New Clean Energy:

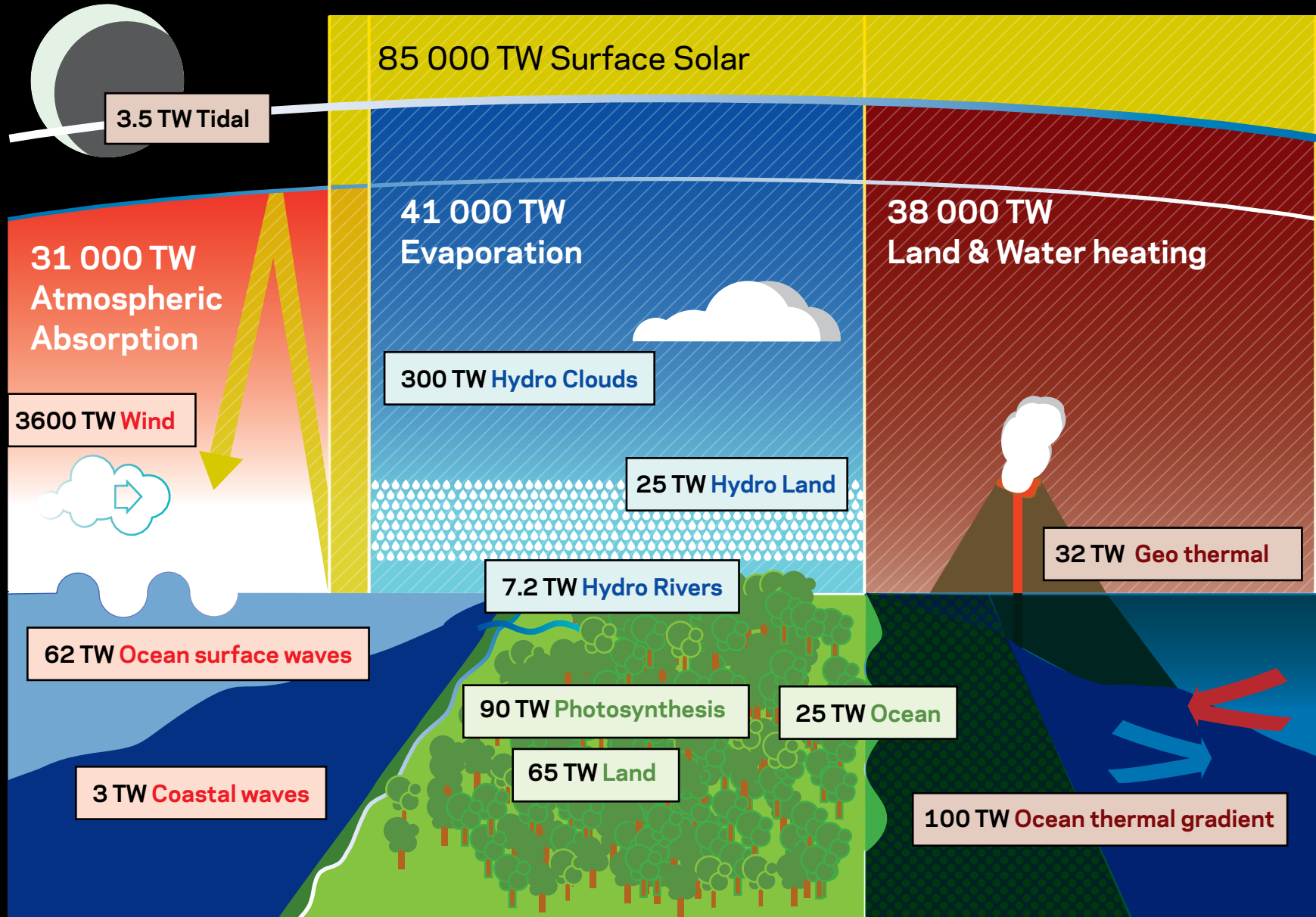
$16 - (3 + 1.5) = 11.5 \text{ TW}$



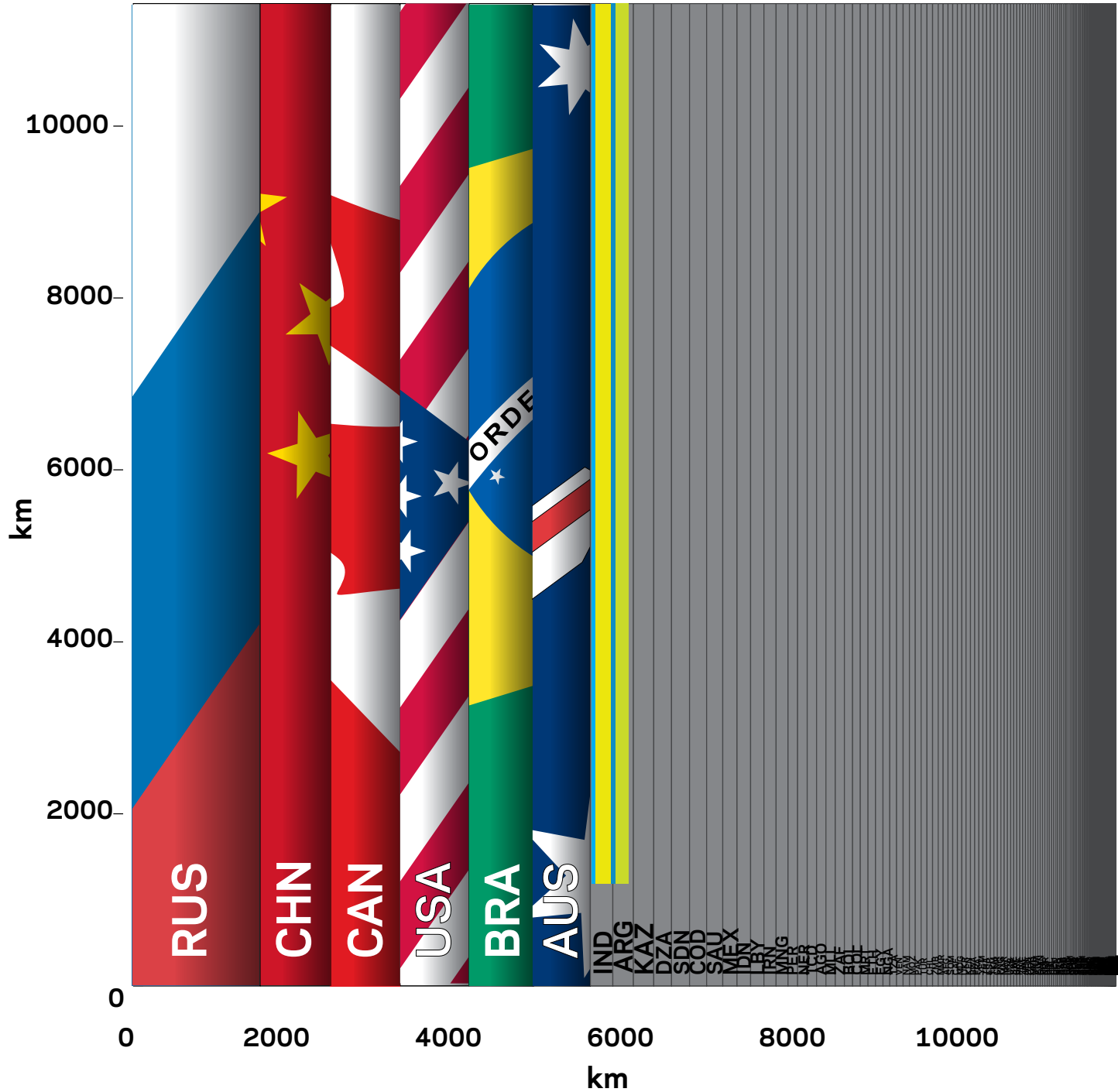
Sources of renewable energy.

Global consumption

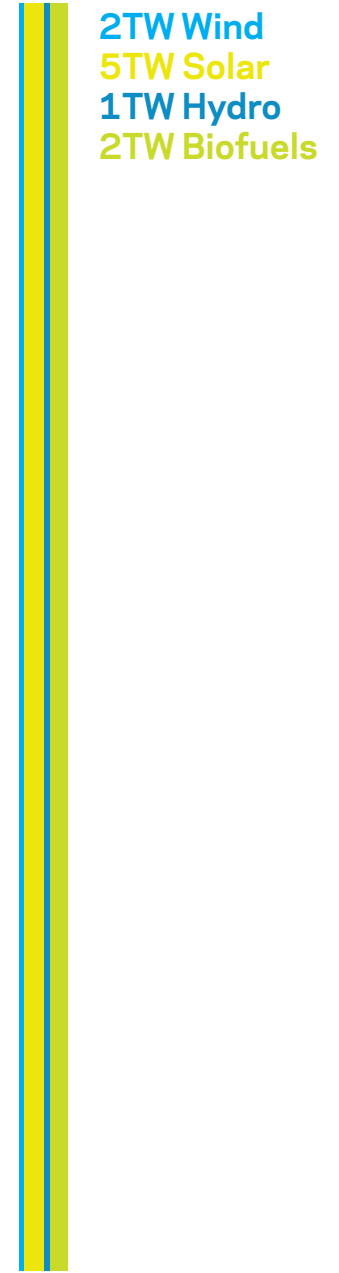
15 TW



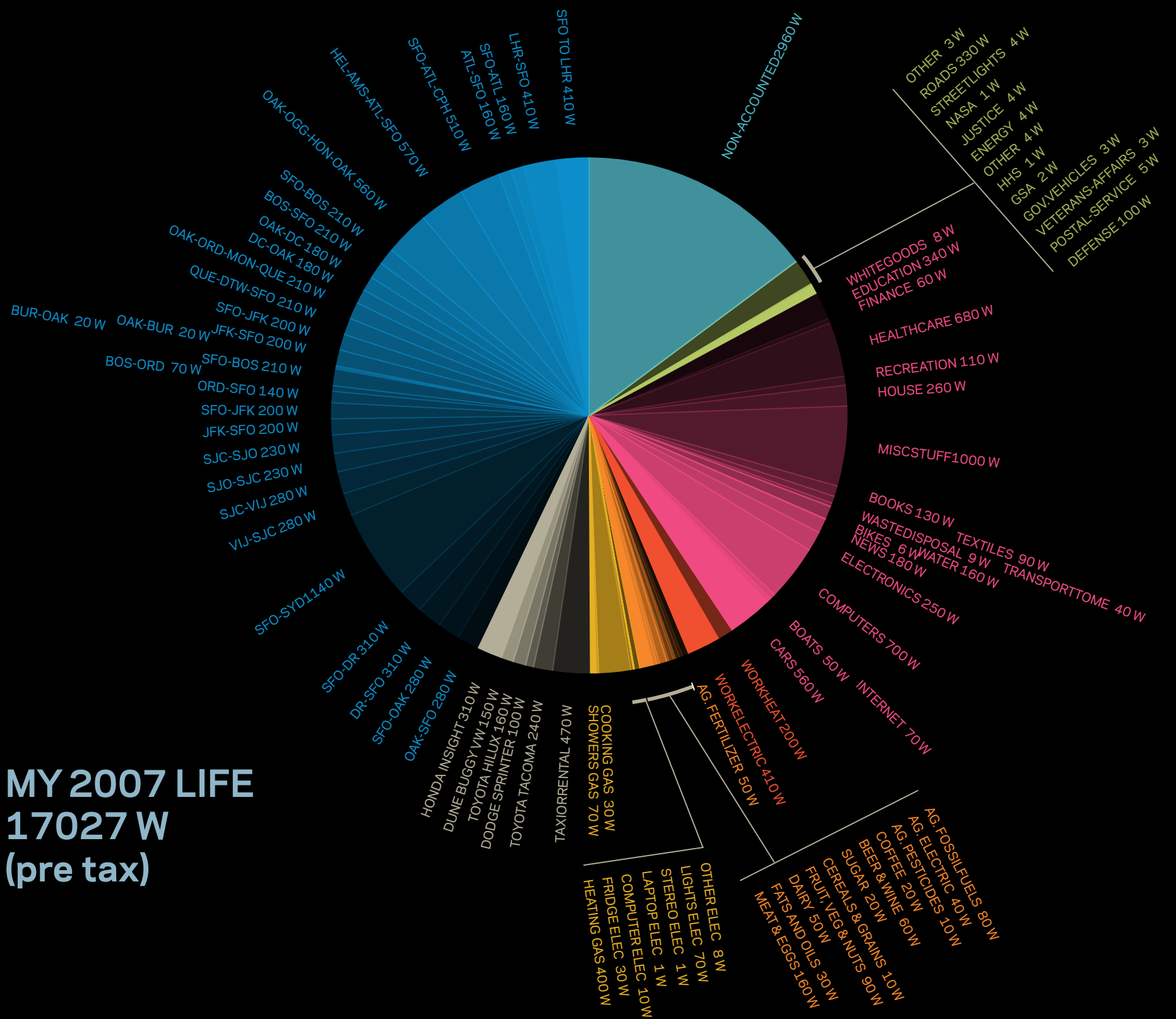
Land area by country represented as scaled stripes



"Renewistan" - 10TW

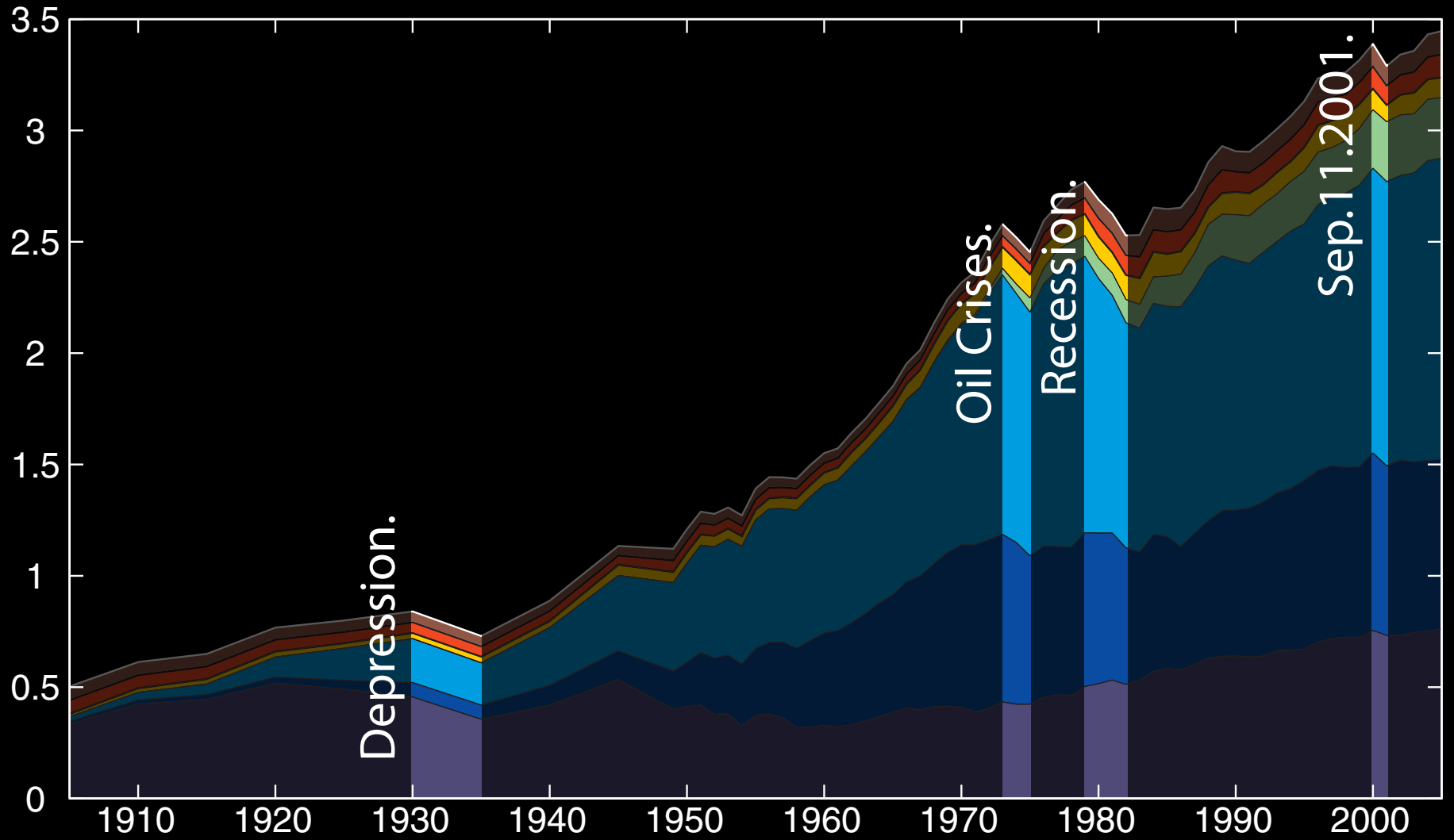


MY 2007 LIFE
17027 W
(pre tax)





US energy consumption (TeraWatts)



we hear about

**what is politically
possible**

we need to reframe the conversation as

**what is technically
necessary**