

## How did we get so lucky?

I guess we all know these things already, really. But we all live busy lives, so sometimes the things that are really important fall off the radar of our consciousness. So let's just take a minute to stop and notice where we are, and get our bearings.



Look all around you. Here's a planet full of every single thing humans could ever dream of or hope for. Everything we need to make cell phones, shiny cars and ever-faster computers. Stacked with everything we could need for food, clothing, shelter. All in a world covered mostly with water, so everything is covered with growing things, and the temperature stays about right. 10,000 times more energy than humans can use, shining down on us every day. Oh, and a hot core to our planet thanks to stuff left over, that was made in a supernova billions of years ago. That hot stuff keeps the surface moving around, just to keep the planet looking fresh. And it wraps Earth in a magnetic field, just to protect us from whatever else is going on out there.

When our ancestors first awoke to all this (even before they noticed the continents were drifting, or knew there was a magnetic field), they were pretty dumbstruck. When they finally developed the language skills to talk about it around the campfire, they called the Earth a Garden, a paradise so perfect it seemed made just for them. You might have to look a little harder today, but mostly this is still true. Everything we need is right here. Kinda makes you wonder: How did we get so lucky?

And all those stars! Zillions of them show up in telescopes, and now we know most or all of them have

planets too. None quite like Earth tho, that we know of. And it would be a miracle if ever in a million years we could find a way to travel to any of them. So I guess their main purpose, for us at least, is to remind us of just how lucky we actually are. Or maybe, we get to go out there after wearing out our welcome in this life here.

Kinda makes your head spin, and we are spinning, actually. At about 500 meters a second, if you're at the equator. At my latitude, we take things a little slower, only about 300 meters a second, since we don't have to go as far in a sidereal day. But that's the small stuff: actually we're racing at 30 kilometers a second in orbit around that providential star, our Sun. At it's moving at 18 km/second through the nearby stars, towards the constellation Hercules. And all those stars are moving at 250 km/second towards Cygnus as we swing around in our Galaxy every 250 million years. And then our Galaxy is moving at about 600 km/second towards Centaurus, relative to the rest of the Universe. And if we simplify things by combining those last three motions together, our sun is moving at 370 km/second towards the constellation Leo, relative to the to the cosmic light which fills the whole universe.

That cosmic light started on its path 13.9 billion years ago. There wasn't enough good stuff around to make an ideal planet like ours for another 9.3 billion years, so everything on this planet really only happened in the last 4.6 billion years. Now I know some folks don't like those numbers, they say God made it all in just six days. But I think that idea is rather insulting. To say it all happened in 6 days, and that the Creator has been sitting on his laurels ever since, is rather disrespectful, to say the least. If I'd spent my entire existence working on something, whether it took threescore and ten years, or 14 billion, and then someone came along and said, Oh, all that can really be done in just 6 days, I'd be really pissed off.

Someone said we shouldn't disrespect the Creator, we should love and honour the Creator. Which is hard to do when there is so little agreement on who that might be. But for sure, the Creator is patient (he's been at this for 14 billion years already, remember), so maybe he will be patient with our stupidity. In the meantime, perhaps the best way to love and honour the Creator is to love and honour his creation. For our purposes, that would mean this planet.

That same person also directed us to love our neighbours as ourselves. Now that's a tough one. Yes, we live on a beautiful planet, and it's full of beautiful people, but they're not always being nice to each other. Especially the guys running the show, who have a propensity to take everything and share nothing, as if it were all theirs. I guess those guys never went to kindergarten and didn't learn about that rule.

Anyway, there are sure a lot of problems on this planet; I won't begin to list them, because you know them already, and it just gets depressing. But then again, when you think about it, there are only really two big challenges, the ones we already noted above. Maybe we need to talk more about them.

Firstly, love creation. Most of our previous civilizations kinda messed up and died out; they didn't take care of things very well. To be fair, it wasn't always their fault. They had no understanding of water-borne disease, so they died of pollution of their own making. It happened to early civilizations everywhere (Indus valley, Tigris-Euphrates, the Mayan plateau, to name a few). Also, climates changed, and early peoples didn't know how to adapt.

Today we know a lot more. We can limit the spread of disease. We can avert massive climate change. We know how to fix things, how to love creation. Don't we?

Secondly, love your neighbour. But how can we do that when there is such competition and conflict over resources? Now there's some really good news here. Not so long ago, everything was proprietary: you found it, you owned it. You could charge everybody else big bucks, and get really rich, really fast. Especially energy, the prime resource. Without energy, nothing happens in this world. You find coal, or petroleum, or methane, and you've got it made, baby. The world will bow down to you and give you power, money, respect. Whether or not you really deserve it.

Now there are some folks who say that's just the way it is, get used to it. It seems they really believe that eight billion people, or however many, can expect to go on digging up the remains of ancestral life forms and burning them as fast as we can, all that will just carry on forever. But if you've given it two seconds of thought, you know in your bones that can't be true. That fossil energy can't last forever, especially when we're using it up a million times faster than nature can produce it. There's also the problem that strange things happen when you dump the fossil combustion products into the thin layer of air that protects us from empty space. When the atmosphere gets opaque to infrared light from all that carbon dioxide, things get hot & turbulent. Heard of any good hurricanes, floods, droughts or fires lately? Not much comfort in civilization if that's what we do to our planet.

This climate change thing could get really bad. Fortunately there's a solution so familiar that we have mostly ignored it. Think sunlight and water, and wind too.

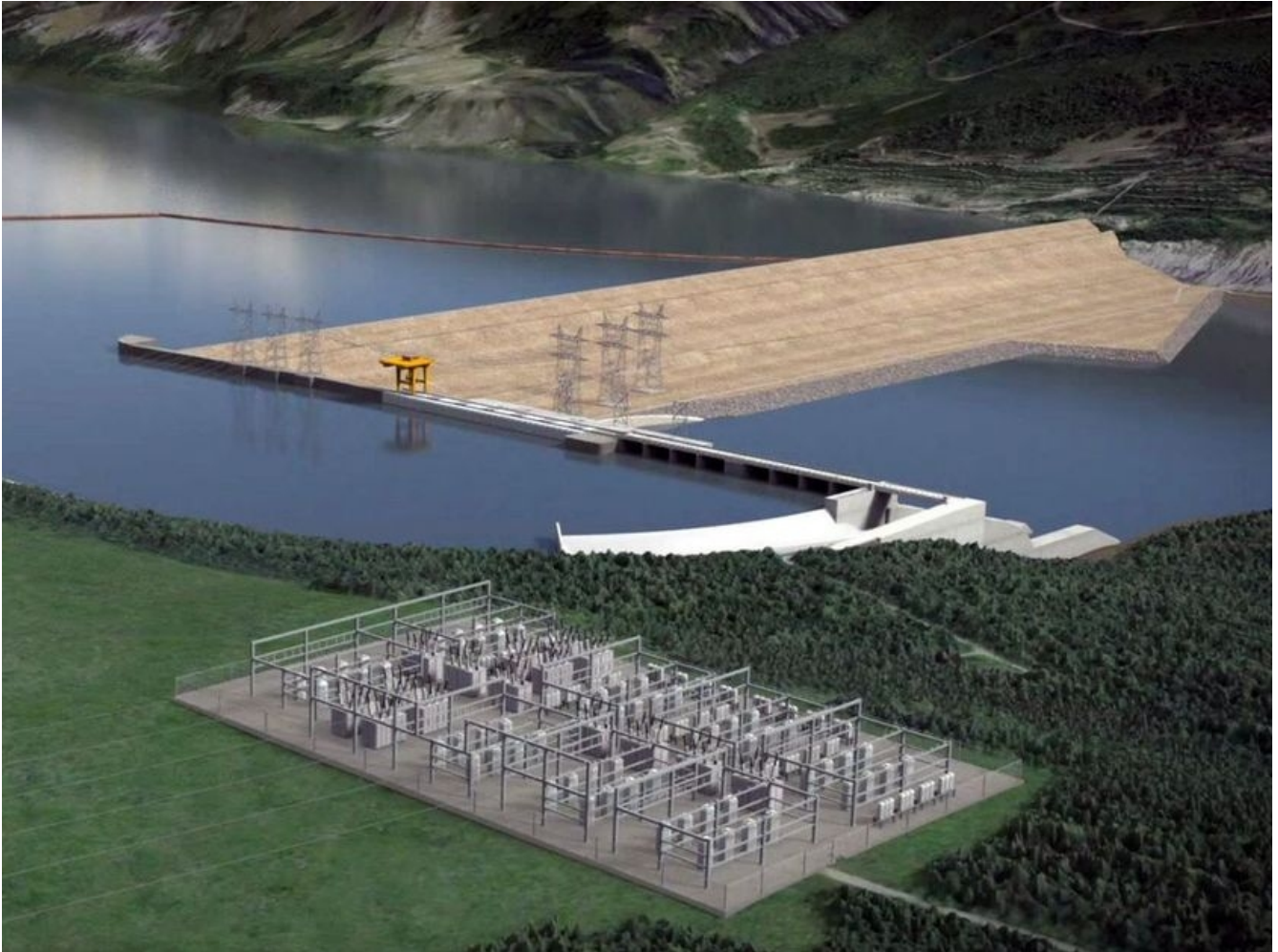
Everything about this began to change back in 1905. That's when a young patent clerk in Switzerland said "you can make electricity from sunlight." Einstein was his name, and he was right on. Took a while tho, before folks figured out good ways of collecting all those electrons set free by sunlight, and then getting them to do neat things for us, at a reasonable cost. Turned out pretty good. Now just about anyone can have all the energy they can use, flowing out from the most abundant stuff that's found in the Earth's crust (silicon), stirred by a bit of sunlight. And cheap too. By the way, sunlight is free. Not proprietary. Not capital intensive. Not even labour intensive. And inexhaustible, at least for the next 7 billion years. Heck, if everyone can have all the energy they need, cheap, maybe that Garden of Eden isn't so far away. And maybe we don't need to fight wars over oil and coal anymore, either. It was all kind of a waste doing that anyway, no?





Oh, the wind and water are free too. You just need some equipment to catch them. Actually, we've known how to do that for ages. Now we can do it efficiently, even.

So here we are in 2023. All our energy problems are solvable. We just need to know how to store that boundless sun-given energy for the exact moment we need it. Turns out, there is a way to do this. Dam! Why is it taking so long for us to get on with this? Like Nike says, 'just do it.'



So back to that spinning Earth thing. I've made that spin around the sun quite a few times myself, dozens even. Maybe you have too. Just hang on and enjoy the ride, I say. But some are here on their first few times around. **So let's leave them something to look forward to.**

**Welcome to sustainable energy. A better world is just waiting for us.**

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