00:08

The 2020s were a crux in human history. They began with the first pandemic, a slap to the face of everyone, as they had to acknowledge that they were a single civilization on a single biosphere, utterly dependent on science to keep them alive. Civilization is a fragile thing. And although people started the '20s hoping to ignore that profound truth, even after the first pandemic, the great heat waves of 2023 torched any such hope. Humans cannot survive combinations of high heat and high humidity that rise above an index temperature called "wet-bulb 35." And that year, the wet-bulb 36 events in India, in Southeast Asia and in the American Midwest killed so many more people than the first pandemic that it was made clear to everyone things simply had to change. The arrival of the second pandemic put an exclamation mark on all that.

01:05

The question at that desperate point was: Could things change? Could humanity stop its destructive ways and restore balance to its relationship to its biosphere? Crucially, could it lower the global average temperature of the earth in time to avoid killing millions more people, more animals and indeed entire species? Looking back from our perspective 60 years later, this of course looks possible, because they did it. But it was by no means a sure thing. You have to imagine what it felt like at the time, when panic filled the air, and no one could be sure success was even physically possible. Many declared that humanity was doomed. This is why that decade gets called "the turbulent 20s" or "the terrifying 20s." Only much later did some historians begin to call it "the terrific 20s" or even "the roaring 20s," although that's a historian's joke and as usual, a bad one. It was not at all like the roaring twenties of a century before. It was much stranger than that.

02:03

In these critical years, lessons learned in the first pandemic got put to use. The scientific community had rallied to meet that crisis in an unprecedented way, unleashing a burst of cooperation and creativity never seen before. And now they did it again. Things that had once seemed impossible became the new normal, and the heat waves of 2023 spurred an all-hands-on-deck mentality, in which almost every solution ever proposed to help solve the climate crisis got accelerated to roll out and given a try.

02:33

The diversity of this effort makes any study of the 20s a very multidisciplinary affair -- which I like -- involving all of science, technology, engineering and medicine, STEM yes, our great tool kit, but also, crucially: governance, law, justice, diplomacy, philosophy and the arts, and most of all, finance. Rapid changes in civilization software were what allowed for the rapid changes in its

hardware. Crucially, the people of that time had to arrange to pay themselves to do the things necessary to heal the biosphere. Money had to go to good work rather than bad. This was the crux. With that change enacted, there was all manner of good work ready to be performed.

03:17

It has to be understood that before the 20s, capital always went to the highest rate of return. That was the law of capital, often literally the law. Restoring damage done to the biosphere, taking carbon dioxide back out of the atmosphere -- these did not yield the highest rate of return, so money went elsewhere, and thus the catastrophe struck home. Strange as it seems now, the funding of destruction might even have continued were it not for a basic change in the global political economy, a change oriented by science, organized under the Paris Agreement and then enacted by all the nations on earth.

03:51

The mechanism for this transformation was called the Network for Greening the Financial System, an organization of 89 of the world's central banks. Under the direction and encouragement of their governments, these central banks shifted the world to what some now call the carbon standard. It also gets called "carbon quantitative easing" or "the carbon coin." The idea was this: that new fiat money should be created precisely in proportion to the amount of carbon dioxide taken out of the atmosphere and sequestered in plants, soil or the rocks under our feet. And that new money was to be given to anyone who drew carbon back out of the air or demonstrably and over the long term refrained from burning it in the first place.

04:32

This monetary and fiscal policy reoriented a huge proportion of human work to decarbonizing projects, and there were a lot of them ready to go. Regenerative agriculture was one giant area, very important, as people still needed to eat while saving the world. Reforestation, where appropriate, was also a rapid method of carbon drawdown. So was direct air capture, which required an entirely new physical infrastructure, all paid for by carbon coins. Some captured carbon got rendered into replacements for concrete and steel, and that, too, earned carbon coins. Habitat restoration also helped, usually. Once people were getting paid to take care of the earth's land and animals, carbon drawdown then joined the effort to stop the mass extinction event that we had been slipping into.

05:19

Of course, clean energy is fundamental to powering all of this good work, and installing thousands of gigawatts of clean energy production was a mammoth task. Millions of people

spent their careers in this great infrastructural transformation. Indeed, there was so much work to be done in the 20s that governments funding it were able to create full employment. "Create full employment," which of course means an end to poverty. That there wouldn't be enough work for people, that there was a contradiction between people's health and the biosphere's health -- these were confusions so ingrained in the era before the 20s, they're now hard to understand. But hindsight is 20/20, if you'll excuse me saying so.

06:00

And as for keeping fossil fuels in the ground, this, too, had to be compensated, as many nations were literally banking on these resources, the burning of which would ironically have destroyed them. When petrostates like Venezuela, Saudi Arabia, Canada and Russia declared they were going to keep it in the ground, they were paid in carbon coins, on a timetable matched to how quickly they would have extracted and sold these fuels. At the level of cities, infrastructure changes got paid for as they reduced carbon burn. Mass transit projects, electric car recharging stations, infill construction, city agriculture, clean power generation -- all these actions earned carbon coins at the city level. And individuals could earn the coins as well, by efforts such as no-till agriculture or green ranching, peat bog creation, kelp farming and also swapping out dirty machines for clean ones. All such decarbonizing efforts now made money rather than cost money.

06:55

Well, of course, there were many problems created by this shift in value. Certifying carbon drawdown became a huge industry in itself, and anything that gets measured gets gamed. So this was not a simple matter. But it got done. And then ... the heat waves of 2027 made it seem as if all their good work had come too late, the people could no longer stop a slide into catastrophe. Things could have fallen apart that year, and there was enough turmoil to make it seem like that was what was happening. The countries that cast dust into the atmosphere the next summer to deflect sunlight into space and cool things off for a while -- these countries were excoriated by many, but thanked by many more. The sense of emergency grew strong, and political instability spread like wildfire. The creation of a dozen new countries by way of divorces, velvet or otherwise, was hard to reconcile with the climate emergency work. And for some years, history seemed to fall into chaos. Often seems that way.

07:53

The global temperatures cooled for a few years after that, and political temperatures cooled as well. Indigenous people took an active role in managing the lands that they knew the best, bringing back much-needed values of long-term care. Women's empowerment continued to expand by way of the continuous and undeniable work of women. And when the world's

population then began to level off, pressures of all kinds were reduced accordingly. The project also of leaving a big percentage of the earth's surface to our cousin species gained momentum, with large reserves of wildland connected by habitat corridors to make migrations possible again. And the mass extinction event that had looked inevitable began to shift into a global project of mutual care.

08:38

Although the sunlight deflection of 2028 remains by far the most famous act of geofinessing, it's important to recall the effort in Antarctica and Greenland to pump meltwater out from under the great glaciers that were then sliding faster and faster into the sea. Sea level rise could have been a catastrophe for everybody, not just near the coastlines, but everybody. But removing that meltwater beneath the glaciers caused their ice to bottom out on rock again, slowed the ice back to its historical norms. Sea level rise is still a concern, of course, but in this matter, as in so many, carbon drawdown is a huge help. It's the clear signal indicating that we have taken up our responsibility for keeping the biosphere in balance, that the parts per million of $CO_2$ in the atmosphere is now under our control and a matter of international treaty negotiation. This is really the great accomplishment of our time. It means we can put sea level, along with everything else, onto a shared path towards long-term stability. It's another way in which we can say we now live on the carbon standard.

09:39

We take that for granted now. But 60 years ago, it was a challenge no generation had had to beat. That they did it is something we should be grateful for, and indeed, the more historians like me look at the 20s, the more amazing they become. Those people really stepped up.

09:56

Thank you.