

## Down the Road

Would you pass the pepper please? No, the black pepper. There, ok, so where was I? Right, so basically everything was powered by oil and coal. Where did we get them from? We rent them from the earth. I guess I should start with oil, or liquid gold as some were taken to calling it. Oil is a very refined form of petroleum. Petroleum is from the Latin, “petros,” meaning rock and “oleum,” meaning oil. Basically petroleum is the fossilized remains of ancient phytoplankton that were deposited at the bottom of the sea and buried by millions of years of collected sediment.

In the beginning of the petroleum age, so, the 1860’s, we drilled holes deep into the ground and used giant pumps to suck up the petroleum. These petroleum derricks were ominous, deathly looking things. They moved up and down in an unending cycle, almost like those chicken toys that bob their heads up and down in water. They were all over Texas, giant fields of them. Like some bizarre feeding lot for metal chickens. The petroleum was first stored in old barrels, and from then on oil has always been measured in barrels. Why barrels? Kind of funny, I guess, because the first petroleum prospectors had plenty of extra whisky barrels lying around, so why not? Imagine that! First we got drunk off of whisky, then we got drunk off of petroleum. The petroleum was shipped up and down the country in railroad cars and barges to processing plants, and industrial centers that were becoming increasingly enamored with the versatility of the black sludge.

We were only able to directly pump petroleum from the ground until 1970. At that point all, of the easy petroleum was gone, and we had to turn to more destructive extraction methods. The worst was probably hydraulic fracturing; this was drilling into the bedrock and blasting a

chemical cocktail to break up the stubborn gobs of petroleum that were not totally liquefied. Fracking was an ecological nightmare. Petroleum companies would enter rural towns filled with farmers that had no money, and they'd persuade the people to sell their mineral rights, which included basically everything below their land. Then the petroleum companies would bring in giant convoys of semis, pumping rigs, and huge facilities for creating gas pipelines. The engineers could pump whatever they wanted into the ground, never mind the fact that these rural towns relied on well-water for drinking. No, by this time the developed world had become so reliant on oil that there was no price too high to pay. Environmentalists be damned.

So, after all of these poor farmers had given up their land for a pittance of its value, they were left with drinking water that literally ignited because of all of the shit in it. To make matters worse there was also an increasing frequency of earthquakes in the fracking belt. Although it was never conclusively proven, the correlation was pretty much undeniable.

There were some other bizarre methods of extracting petroleum. You remember when we took our trip to Canada and saw those huge deserted, scrubby, flats. That used to be a giant oil sand operation. Basically, these utility companies would heat up the sand to liquefy all of the tar and pump the petroleum to a gargantuan refining plant. This was probably the most disgusting thing you could ever lay your eyes on. Imagine bulldozers uprooting thousands of trees, and then levelling the ground into an ugly, steaming slurry, which just smelled unbelievable. Like hell.

Petroleum was shipped all over the world in giant tanker ships. Domestically we used pipelines and, when no one was watching, freight trains. Refining plants converted the petroleum into all manner of useful products. Tar for roads and shingles, plastics, industrial lubricants, diesel fuel, jet fuel and gasoline, to name a few. There was a creepy super bowl commercial back in 2017 paid for by the international petroleum conglomerates. They flashed their slogan on the

screen, it was something like “this ain’t your daddy’s oil.” Then they showed all of the glorious things petroleum could do: it could paint a pretty picture, it could power a rocket to the moon, it could even make an electric car! Whatever, the point is this stuff was everywhere.

Right so we also loved to burn this stuff called coal. Where did that come from? Coal is the remains of ancient plants, mostly ferns and giant horsetails. Anyway, when billions of these colossal plants became fossilized, their cellulose turned into coal. Coal was big in the 20<sup>th</sup> century; most of our power plants were coal-fired. When I was growing up, you couldn’t go a very far distance without seeing some giant chimneys rising into the air spewing out white smoke, chock full of sulfurous reactive chemical compounds that wreaked havoc in the stratosphere then returned to earth and acidified our waters and burned our eyes. Despite its ubiquity, most people didn’t realize that they were using coal, all the time, every day.

Even as greater emphasis began being placed on the dangers of the unremitting burning of oil, most people turned a blind eye to the consumption of electricity. To be fair, most people never dealt directly with the power plants. Instead they bought power from utility companies which operated the transmission lines: they didn’t exactly like the idea of people cutting back on their electricity demand. Most of this knowledge was hush hush, if you brought it up amongst respectable gentlemen, you were quietly branded a hippy and excused from the conversation. This meant that no one had any idea how much coal they were burning each month; people got their bill and that was that. There was this underlying idea that electricity was somehow cleaner than gasoline. Electric cars are the future! But again, every time anyone plugged anything into an outlet, anytime you flicked a light switch, there was coal to thank.

OK, would you please grab the cilantro? There is some in the fridge, no that’s parsley, honey, please, use your nose. There, that’s it. Right, so everyone, and I mean everyone,

environmentalist, hippy, liberal, whoever, loved their oil and coal. It was an unacknowledged addiction: the hidden firmament upholding our economy. How? Well our economy depended on people buying things, on people moving and driving everywhere. If consumers weren't stimulating the economy, the DOW would fall, and if the DOW fell, people would get nervous, and nervous people don't spend money, and an economy in which no one spends money is a stagnant economy. The economy was like some mythical monster, some *chimera*, that's a good GRE word, by the way. Anyway, so the stability of our country pretty much depended on people's willingness to travel places and buy things. To buy food processed in factories, made from ingredients shipped on giant tanker ships. To buy clothing made halfway around the world from cotton grown using intensive high yield, high output agriculture.

Alright, let's get out the tomatoes, we're going to need three of them. Will you wash them? Ya, so just kind of do the best you can to cut them into little cubes. You gotta' be quick with the knife though: don't just smoosh them. OK, that's fine, that's a good size. Anyway, so beginning in about the 1950's, scientists had been pointing to the increase of greenhouse gases in our atmosphere, and the impending crises of climatic instability. Up until about 2017 the giant energy companies did a great job spreading misinformation. I mean, when I stop to think about it now, the lobbyists and marketers for these companies must have been phenomenal. These were probably the people in high school who joined every single club, because "it looks good on a college app." Anyway, somehow, the fact that there was a limited supply of oil and coal hardly crossed anyone's mind. But, by and by, the unsustainability of fossil fuels, and the reality of climate change became undeniable to a greater and greater number of people.

Next are the jalapenos, there you go, dice them really fine. Oh, honey, don't get the seeds in there, your brother hates spicy food. Where were we? Right so in 2018, things started to first get

really noticeably terrible in the USA. Winter in Chicago ended in February. No more subfreezing days, not a hint of snow, we were getting 70 degree days! Then all sorts of strange things started happening. It was like the world was getting confused. Flowers and trees were blooming months earlier than they used to. None of their pollinators could survive. No pollinators, means no seeds. And so, after a couple of years, there were hardly any more wildflowers. Next went the insects, next went the amphibians, and the birds, then went the rodents, then went the bigger predators. Suddenly there was almost no wildlife. *Silent Spring* was a reality.

And that was only the start of it. Rainfall patterns became unpredictable, massive heat shocks rocked our agricultural system. You heard about the second dustbowl in the 2030's? Yup, this was worse than the first dustbowl. In the 1920's, farmers from Oklahoma could go to California expecting to find work, but this time around, not even California had any productive farms to speak of. Suddenly eating GMO's didn't seem so bad: eating any food sounded good!

Then there were the floods. The rain that farmers were praying for was going to all of the wrong places. Miami went first. No one was too upset over that one though. But when New York started to go, people began to take notice.

The international community finally decided to take action in 2020. The third round of Paris Climate Talks mandated a complete halt on the burning of fossil fuels. An emergency fund was created to begin the construction of wind farms and solar fields in the countries that could not afford to revamp their infrastructure quickly. That was back before we had any idea how royally we had screwed up all our climate. In retrospect, we were beyond optimistic, we were downright delusional. There was no possible "reversal." This was permanent. This was feeding itself.

That's right, have you learned about positive feedback loops? So basically, the products of a process become inputs for that process and the whole thing accelerates on its own accord. Right, so the first "oh shit" moment was when methane started to billow out of the icefields in Siberia in 2037. No one had any real sense of how large these reserves of natural gas were; geologists were mostly hunting for the last remaining oil reserves. The only people considering the methane were some underfunded scientists. Needless to say, the alarm bells came too late, and they were not loud enough. By the time people were starting the so called "great transition" to solar and wind, things were really heating up. Add this to the fact that without snow cover, none of the solar radiation was being reflected back into the atmosphere. The earth was becoming more efficient at absorbing heat, and it just kept getting hotter and hotter.

OK, let's start working on the tacos. I'm going to grab the soylent that I've been marinating. Would you grab the tortillas? I think your grandmother is coming in about an hour, so there's no need to rush. She'd actually be a great person to talk to about all of this. She lost a lot during one of the tornado outbreaks in the early 40's.

Where was I? Oh right, we were just getting to the war. Although well-intentioned, the climate agreement was woefully inadequate to regulate the continued usage of fossil fuels. Rich countries secretly stockpiled the last remaining reserves of petroleum, while poor countries quaked under the authority of wealthier countries inhibiting their industrial growth. Soon the developing countries broke into total instability. This was a huge problem for us, because most of our food was being imported from these smaller countries. What was that? This sounds like imperialism? Clever, but that term was deeply couched in international legalese. No one really had any idea where their fruits and vegetables were coming from in the middle of January.

Soon, international tempers started to flare over who was responsible for the dawning crisis of climate instability. Who was going to have to take in all of the climate-disaster refugees? Who was responsible for quelling international tensions? Who was going to engineer solutions? The dominant consumers of petroleum, the USA, China, and Japan were easy to point fingers at. At one point the US was consuming 19 million barrels of oil a day! Compare that to Zimbabwe or the Congo at 15,000 barrels a day. But the wealthy countries also had some of the strongest militaries, so who was going to challenge them?

Things started to escalate in 2042. Yup, this was the year World War Three broke out. A lot of people speculated over whether the US's attack on Russia was justified, but most people agreed that a major conflict was unavoidable at that point. Russia had released some top secret diplomatic documents showing that the US was basically stealing oil from the African Petroleum Producers Association. This started a flurry of international espionage, new reports were being released every week. It seemed like every country had dirt on every other country. France had secretly turned all of its coal fired power plants back online. China was trying to drill for petroleum in the Mongolian steppes. The list went on and on. All of the tension escalated into the most disorganized, maddeningly pointless war ever waged.

There was a deep sense of futility with this war, no one really understood how it would solve anything. Every country was running on increasingly depleted fuel reserves. Sustainable infrastructure was not coming online quick enough to fuel both the home front and the hungry war machines. Therefore, all the petroleum was going to the war effort. I think 2045 was the last time I ever filled up a car, by that time all the oil was in the hands of the government. The whole thing kind of felt like some massive international joke. I mean, in the past we went to war to secure resources, but now we were going to war for the scraps!

Even so, nationalism soared. People became totally obsessed with America. I was enlisted, so was just about every citizen over the age of 18. Being a staunch, pacifistic individual, I hopped the border to Canada. At the outset of the conflict, Canada had elected to completely isolate themselves from the rest of the world. They began to close their borders and stopped importing most goods from the US. Then they began a massive agricultural transformation. They had an incredible prime minister. He understood the climate problem better than anyone else. He immediately rescinded the permits of the oil sand companies. Straight up had them kicked out of the country.

Then he began to implement a massive composting program. He decided to look to the past for solutions to the declining food reserves his country faced. It turns out that before the green revolution, before western scientists decided that intensive agriculture bolstered by inorganic fertilization and genetic engineering was the only hope for feeding the densest population in the world, India was using an extremely ecologically harmonious way of growing food.

In the 1920's, India was heavily invested in composting. They had enormous facilities the size of runways lined with decomposing food. They would turn their compost with giant bulldozers and all of the food waste went back into the soil. You might have heard of the concept "closed loop," or "zero waste," you have the Indians to thank for that, honey.

Anyway, the Canadians took this idea and amplified it one hundred times. A lot of their boreal forests were dying as their permafrost melted away. But the climate in Nunavut and the Northwest Territories was becoming perfect for growing wheat. In essence, the climactic regime of South Dakota, North Dakota, Nevada, all of those bread basket states had immigrated north. So, Canadians became farmers. While the rest of the world was killing themselves over the last remaining oil resources, arguing over who was to take economic responsibility for the horrors



wrought by climactic disasters, over the refugee crises from the developing countries. Canada was growing food and completely reshaping its economy in the process.

They weren't the only peaceful country, most of Norway was privy of the stupidity of the war. As were the Balkans actually. Those are the countries around Greece. The former Yugoslavia, but now this is getting to be way before your time.

Meanwhile, in the US, most of the men were getting enlisted, and nobody had anything to eat. Families started moving away from cities. The women took their children and looked for whatever opportunities they could find. In the south, people were fleeing from hurricanes, in the western and eastern seaboard, people fled from intense flooding and periodic bursts of drought. The Midwest was the most climactically stable place to live, so naturally, a lot of the displaced people began taking up plots of land there.

Unfortunately, the only way to make money was to work for the heavily subsidized agricultural conglomerates. None of the tractors and giant combines had enough fuel to function, so human beings had to take up the slack. American women and children basically became serfs; our society had regressed back to feudalism. As you can imagine, the conditions in these farms were absolutely terrible, just dreadful. You had people living in raggedy tents, defecating in holes, working twelve hours, eating military rations that the army had rejected on the basis of low quality.

Morality in America, was extremely low: it was obvious to anyone that this trend could not continue. But, no one was in any position to stop any of it. America was at war; her men were fighting; her leaders had their hands tied on the global stage; everyone was trying to fend for themselves.

I was working as a soil scientist in Canada when I got a letter from your mother, she told me that my father had died. Too old for the draft board, he had taken it upon himself to use the last of his money to buy his own land in Wisconsin. He was about five years into his project and things were going very well. He had enough surplus food to give to his neighbors: he was even thinking about hiring some of my mother's friends. But then Syngenta wanted to come in and buy all of his land to grow hard red wheat, my father refused. He held the deed: this was his land: he was going to die on it. Well, in the absence of any real governing body in the US, the giant ag-corps could pretty much do what they wanted, so they forced my dad from his land. They razed his home in the middle of the night, then offered him a contract to work for them on his land. My dad's heart broke, seething in anger, he died shortly afterward.

Well so naturally, I was infuriated about the direction in which the US was headed. I mean, I loved my country. I really did. I was not going to go to war for a cause I knew was ridiculous, but I was not going to stand by while people were being killed by greedy bastards. So I gave the Canadian Agricultural Science Advisory Board my two weeks' notice, and then set off to Wisconsin. I didn't know the first thing about starting a resistance movement, but I figured now was the time to learn.

I quickly learned that there was already a growing body of discontent fomenting amongst Wisconsinites. Most of the intelligentsia had begun to draft a plan that would satisfy both the giant ag corps and all of the laborers. Using the knowledge I had learned from the Canadians, I drafted a proposal to transform land ownership in Wisconsin. I proposed creating a decentralized group of small, independent farms using the closed loop methods and diversified crop regimen which brought so much success to the Canadians. I used Canadian yield reports to show that under my plan we could actually produce more food than the current centralized organization.

After reading my report, Syngenta began to take notice of our plan. They agreed to let us implement our program in the eastern half of Wisconsin. The result was nothing short of amazing.

So then in 2045, all of the war machines were finally running out of fuel. World War Three became a war of attrition. It was becoming obvious that the US would hold out the longest. Most countries had submitted to American dominance. Russia and China still insisted on fighting. At this point Adam Musk became president and began drafting an international peace agreement. He used his scientific background and the marketing team of Tesla, his grandfather's company, to make every country realize how stupid it was to pour their last remaining resources into a fruitless conflict. Musk proposed that each nation should pool together all of their brightest minds to research solutions. He created a political reformist group, an economic committee, a climate committee, an engineering committee. Each group was solely focused on creating the best possible outcome for the most people. This seemed insane to everybody, but it wasn't totally unprecedented. I mean think about it. Back in WWII, the US government poured all of their money into making an atomic bomb. They literally found the smartest people anywhere, and paid them whatever, because this was a matter of life and death. Well same thing now, right, it's a matter of life and death. The world will not be able to support a large population unless these technologies are developed, unless new political and economic systems are instituted. Right, so that's where I am going next week. To the Brussels Project. I am on the agricultural board. No, I'm not really responsible for any of the major decisions. Hell, I'm from Wisconsin!

You know, a lot of people my age are talking about how humans will go extinct. I don't think that will happen for several million more years. It may be that humans will have to subsist

on lower levels of resources for quite some time. And quite honestly, honey, I am just fine with that. To be honest, I am fully convinced that this is the most natural station for a man. Here we are living closely in tune with the natural rhythms of life. We are living in season, we are producing what we need, and no more. We are wasting very little. This dear, I feel was worth fighting for. I mean sure we are going to have these freak, intense hail storms and maybe the occasional tornado straying close to the lake. But. Darling I tell you people are a lot less stressed out now than when I graduated college in 2017. Of course, there has been a huge amount of chaos in the interim. But let's look past that. Here comes your grandmother, Hello Mom. It's good to see her like this, out of bed, I mean. Her lungs really took a beating this winter. Dinner will be ready soon. I was just telling Claire what life used to be like. I wonder what the world will be like fifty years down the road.