

# The Great Simplification

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[00:00:00] **Nate Hagens:** Greetings. Here is a quick overview of some things in the news wide boundary style.

[00:00:18] Okay. this is not actually this week's news, but I only discovered it this week as I have not been paying close attention. But in late 2025, we made a new all time high in crude oil production. Yes, we've already been making new highs, including the natural gas liquids and other lower BTU, lower quality liquids that make plastic baggies and such and are now labeled as oil.

[00:00:44] But Q4 2025 marks a new all-time high in crude plus condensate category. Which is truly oil. in mid 2020 after oil's price plunge. In my public presentations, I said that November, 2018 would be the all time high of crude and condensate with 90% confidence. Well, I was wrong. some of the new highs and the extension was debt fueled.

[00:01:19] Some of it was productivity, on drilling and finding oil from ai. Some of it was opec, policy, opening the spigot. Some of it's a lag from the 2022 price spike, from the Russia, Ukraine War. but in total new all time highs in oil, crude oil. The engine of the carbon pulse has not peaked. While we're on the topic, here is a recent graph of US production.

[00:01:49] And as I mentioned last week, the biophysical gauntlet is where prices that would benefit consumers are not high enough for oil producers to justify investment. so we had, near term peak, late in last year, and now there's, a decline and oil is. Under \$60 a barrel. There are not any more significant shale resources in the United States after the Permian enters permanent decline.

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[00:02:20] So I suspect that the next great migration will be to the Montey and DuVernay shales in Alberta. And as a wide boundary, but obvious comment, the last I checked, Alberta was not part of the United States. Okay. A related thing in the energy news, that I also didn't foresee is that electricity prices would be increasing now much faster than gasoline heating oil, diesel and the like.

[00:02:52] This recent chart shows that from 2013 to 2020, electricity prices in the USA were pretty flat, but from 21. until now they're up almost 40%. Part of this is the accelerating demand for 24 7 data center access for electricity. But another influencing factor is yes, we're growing our total net electrical, power output, but the amount which is dispatchable.

[00:03:22] Has now been declining in the USA for almost 20 years. What's grown since 2007 is non dispatchable, AKA weather dependent power like wind and solar. While the. Always there when you flip the switch, stuff like coal and gas and hydro that can be released on demand or nuclear load following has declined in aggregate, primarily led by coal.

[00:03:50] But this is important because the grid doesn't run on energy capacity. It runs on power, on demand, usable energy per unit. Time delivered exactly when the loads appear. Of course, in systems terms, successful organisms and infrastructures evolve to maximize power, not just energy. So the ability to instantaneously meet demand is a core fitness trait.

[00:04:15] Of an animal, but also a modern grid and, a modern economy. Wind and solar are excellent, but they're variable and their ups and downs rarely match our human. Our current human demand profile, which creates gaps that must be filled by something that can ramp fast historically natural gas or else very large storage, capacity or.

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[00:04:41] Overbuilt transmission. That's why most countries with lots of wind and solar today are still hella dependent on gas. The reason this is especially relevant now is we're adding ai. Large data centers are always on loads with tight uptime service level agreements. They don't want power. On average, they need 24 7 firmness.

[00:05:06] So meeting sharp new demand with peaker plants, long distance lines and specialized cooling pushes costs up. For electricity and makes the system more brittle if there's not enough. dispatchable headroom. So in short, the quest, or dare I say, compulsion for artificial intelligence, large language models, is now raising the premium on firm capacity for power.

[00:05:40] And if grids slip into brownouts or blackouts, these digital cognitive slaves that our current financial system are heavily leaning on would go dark or go to sleep. another reason that operators and businesses are prioritizing firm supply as AI scales. Two more context points on this. First, most rebuildable renewables, produce electricity, which is only a 20% slice of total energy use.

[00:06:10] And as we switch a lot of other things, industrial heat transport to electricity, that's gonna also amplify the need for firm capacity on the power side. And second variability itself has a cost. A steady stream of usable power is worth more to a complex economy than the same number of kilowatt hours arriving in, lumpy bursts.

[00:06:37] That's why dispatchability fast controllable output that matches demand remains the grid's keystone as loads grow, especially from always on large language models. I think there's trouble ahead for electricity. this is Wednesday, February 4th at 5:00 PM a few minutes ago. Google's shares slid after hours 'cause they announced they're gonna spend more to access data in 2026 than believed.

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[00:07:11] And I do wonder how the compulsion for compute. We'll merge with our debt overshoot situation. And if, the quest for a GI or a SI becomes a national security issue, some of these tech companies might be nationalized in order to have the money to pay for more compute. But how would that even work? I'm gonna think about that and I'll come back with something more substantial in the near future.

[00:07:42] Okay. in the environmental news side. and I cannot imagine ever doing a wide boundary news update without some mention of ecology in the biosphere because we do not get wider boundary. Or more important than that. But there's important to reality and important to the human perception of reality.

[00:08:06] and this is the news update. a couple weeks ago at Davos, the World Economic Forum shared results from its annual global risks perception survey of about a thousand experts near term. Experts elevate social and geopolitical risk like misinformation and armed conflict, but over a 10 year horizon, the top risks all were ecological, extreme weather, biodiversity loss, and ecosystem collapse, critical changes to earth systems.

[00:08:38] I think this survey result is a great window into aggregate human behavior and the madness of human crowds. Of course the bigger long-term risks are ecological, but it's almost as if they're too large that it's easier to argue and delineate, policies on things like polarization or misinformation or peace instead of war and the like.

[00:09:05] Because when I saw this graphic, it was like this shazam of clarity into the more than human predicament. I imagine this large ornate corporate executive conference table with all the risks having a seat, and while polarization and war and debt and misinformation were presiding and arguing the biosphere.

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[00:09:32] The elephants, the oceans, the forest, the flora, and the fauna all had their hands up patiently waiting to voice their concerns and suggested and needed interventions. But the conversations about AI and dead and currencies and war and basic needs for more people are so animated and so strident that the concerns of the natural world only managed to whisper amongst themselves.

[00:10:01] Never get called on. And I imagined in my mind that as they waited, they diminished my favorite book, series of all time. Better than Tolkien even is Robin Hobbes, the far seer trilogy. It's actually nine books, three trilogies in it. The protagonist has an often used phrase, never do what you can't undo until you've considered what you can't do once you've done it.

[00:10:33] And I think we humans will one day ruin the day that we put the issues and requirements of our living, breathing natural world on the back burner, so to speak politically. There are still things we can do locally and globally, but I fear for the day when there's not a lot we can do once we've done it.

[00:10:52] Moment. And again, the wide boundary question here, from viewing this survey that I think we all should be asking, if the world's experts agree on the top risks a decade from now, how do we call on those? With the hands raised on how to do things now? In their defense, which is ultimately also in our defense and all those who come after us.

[00:11:19] Lastly, This is the first time I'll mention Jeffrey Epstein on this platform, and I hope it's the last, the wide boundary reason I'm mentioning him is not the spectacle of what was released this week, but the institutional and cultural signal. Lots of people been chattering about it and sending.

[00:11:43] Messages and texts. And at first glance, I thought the Epstein News, earlier this week was disgusting and depressing and mostly irrelevant. but after reflecting on it wide boundary vantage, it's actually anything but. And firstly, it's

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evidence out in the open on how things really work in elite circles, in modern societies, and perhaps all human societies in the past.

[00:12:16] We just now have a window to it with tech and the internet and, the way that media work. Secondly, it is a mirror for all to see. On who we are as a culture. Sure. It's the dark triad demographic rising to the top phenomenon and the behavioral expressed there. But it is a chance for us, for all of us to say, with eyes and hearts and minds wide open, no, this is not who we are.

[00:12:49] And what has to be held up in this new public spotlight is human behavior. And how others are treated and no amount of smarts or inventiveness or social acumen or fame should ever excuse the behavior. Many people are now seeing widespread evidence of from people who are revered in our society. And I think how society responds to all this, now that it's all out in the open, fully merges with the other large and open questions of the unfolding more than human predicament.

[00:13:27] Who are we really, I think, I believe that we are more than this and as disgusting as this all was and is, maybe it's a cultural wake up call. Of who we don't want to be. And there are many other examples of this that we're seeing by the day. And as a super wide boundary aside, probably none of this would've happened, and come out if it weren't for a small group of humans.

[00:13:59] Mostly the victims standing up for what mattered and what was right, speaking out and at times. In our biophysical macro situation, decades happen within weeks, but it's also possible in our human social milieu that sometimes centuries might happen within days.

[00:14:27] Not so much news as, an op-ed at the end of the news. lots more to say in the very near future. I will talk to you soon.