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Q&A

"Energy Humanities and American History"

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Over the past two decades, the energy humanities has emerged as a critically important field within the humanities. Scholarship in the field—which is wide-ranging and inter- and cross-disciplinary—has drawn attention to the significance of energy production, use, and circulation in shaping every dimension of human experience, from the concrete logic of physical infrastructures to socio-cultural practices and discourses that might seem at first to have little to do with wood, coal, oil, gas, or nuclear power. Historians have increasingly taken note, with some already making influential contributions to energy humanities. Even so, the precise relationship between the historical studies and the energy humanities has seldom been explored in any great detail. As the energy humanities grows more visible and stronger in impact, now is the time to ask: what can history and the energy humanities learn from one another? And how might the analytic of energy open up new ways of writing history—particularly in the case of the United States, the fossil fuel nation *par excellence*—and vice versa?

In May of 2025, Imre Szeman and Caleb Wellum, leading scholars in energy, sustainability, and culture at the University of Toronto, facilitated a conversation with colleagues drawn from different disciplines and institutions about the state and potentials of the new energy humanities. As evidenced in the (lightly-edited) transcript of the dialogue below, this roundtable discussion offers some preliminary answers to the questions posed above. In a generative discussion—one addressing themes both sweeping and specific—Szeman and Wellum talk with political scientist Cara Daggett, historian Bob Johnson, and literary scholar Jennifer Wenzel about everything from energy humanities' distinctiveness in relation to environmental humanities to its essential place within the liberal arts and social sciences, the historiography of fossil fuels to the limits of American exceptionalism, and from the libidinal attachments of petroculture to the complex politics of energy transition. They discuss the political aims and ambitions of the energy humanities, the current place of the field in American historical studies, the ways in which historical methods can help defamiliarize the energy cultures we take for granted, and how energy humanities can push historians to rethink some of their core assumptions about U.S. history and modernity more generally.

In addition to providing an insight into the energy humanities, Szeman, Wellum, and we at *Modern American History* hope this discussion is taken as an invitation to historians of the United States. Energy should be seen as more than just an occasional theme, topic, or issue for scholarly study. Rather, it constitutes a vital analytic that offers new insights into the politics of

the past, present, and future. At a moment of energy transition (stalled in some places, accelerating in others) and planetary crisis, to us, this invitation feels more urgent than ever.

Imre Szeman

How would you describe the energy humanities? What makes it distinct from the environmental humanities or other environmentally inflected fields of scholarship, such as ecocriticism or environmental history? Is energy humanities just about the humanities, or about critical investigations of energy and the arts and social sciences, too?

Jennifer Wenzel

Here's one way of thinking about the difference: We can all rattle off the centrality of things like values, narratives, and imaginaries in relation to energy that are commonly cited in definitions of the energy humanities, but it seems to me that energy humanities is primarily about fuel and force, whereas the environmental humanities is primarily about "nature," in whatever sense.

The implication of that distinction is that energy humanities is both more narrow and more broad than environmental humanities, though they obviously have major intersections. And they've converged more and more as climate change has become a central concern in energy humanities. But, I think that the focus on fuel and force opens up questions of industry and economy, and therefore, what we might think of the energy humanities as unambiguously anthropocentric, in a way that's different from environmental humanities.

Cara Daggett

I felt goosebumps when you were talking because I have in my notes: "energy humanities narrower and also broad!"

If we think about fuel and force, which are about change over time, another way that energy humanities is broader than the environmental humanities is that it opens onto questions of the cosmos and even of religion, of life and death. Not that the study of the environment doesn't. But environmental studies are often situated in biological, ecological, and evolution sciences that feel intimate to humans. Energy humanities is narrower because we are often talking about specific human activities with technology and industrialism. Most energy research on these areas is highly technocratic, and energy humanities is arguing that we need a humanistic understanding of fuel and force. This focus on the human can feel surprising because in other settings, energy humanities scholars spend a lot of time asking the humanities to think beyond the human. So, we have this narrower focus on fuel and force, and also the broadening spirit of energy, because energy can zoom out to the interstellar, to physics that feels very distant from humans.

Caleb Wellum

Cara, your point about the humanistic elements of the energy humanities resonates with me as one of its defining features. This has become clear to me in contrast to environmental history, one of the fields I was initially trained in, which has often been quite interested in bringing scientific knowledge into historical analysis and narration. The energy humanities, at least as I see it right now, is not insisting that we need deeper engineering expertise to help us understand the role of energy in history, in the way that environmental historians have tried at various times to bring insights from ecology or biology to understand the role of the environment in history, and to write better history as a result. The energy and environmental humanities are, of course, cousins in the sense that both emerged as a response to environmental

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and political crises, but the shape that response has taken has been quite different. Environmental historians tried to enlarge their discipline by engaging science, while energy humanists are insisting that the humanities can bring much-needed insights to issues typically treated as scientific and technological. They also argue that thinking about a new analytic—energy—can make for more rigorous, insightful, and useful humanities scholarship.

Bob Johnson

You all answered the second question Imre asked: what makes the energy humanities distinct from other fields of scholarship? I agree completely with what you've all said about the breadth and depth of the field.

But I want to approach this question from the crow's nest view. I think we can define the energy humanities simply as the rematerializing of cultural critique. In some sense, it's as basic as that. To use the Marxist metaphor, the energy humanities brings the heavens back down to earth by revising how we understand the material basis of literature, film, TV, and ideology. It does so by insisting that culture arises from, is shaped by, and depends upon the deep metabolism of energy flows, like oil pipelines, coal mines, refineries, high voltage electricity lines. These things are, at least as I see it, at the origin of the modern world or anything we call modern, and they structure the field's contributions.

As a historian who is getting older, I remember when, in the 1980s and 1990s, the discipline of history became so focused on making "the cultural turn," on taking representation seriously. The study of representative form became all the rage. The energy humanities is, in some ways, a correction to that overcorrection. It insists that we now take a deep material turn to study the literal energies, such as coal or natural gas, that activate life and culture. I think it is trying to strike it at a deeper strata than Marx ever struck. Some people have tried to give this new materialism a name. I think the credit might go to the literary scholar Patricia Yaeger, who gave it this elevating name—the "energy unconscious"—which she said mobilized thought and practice.[1] I personally like to think of the energy humanities as an attempt to locate the Derridean absent center of modern history and culture, the deep material foundation that no one speaks of but that nonetheless defines what modern time, space, and experience can be. As Imre once said to me, it's kind of like an archeology of the present. That's at least a stab at a crow's nest view of the field.

Imre Szeman

These are all excellent points. I'll add two other things, given what you have all said.

I think energy humanities shares with history a concern with time. It's interested in a specific moment in time: what happens between 1830 and 2025. The 1820s is when coal starts to be used at an increasingly high level, and 2025 is when the International Energy Agency says that we've plateaued out on the amount of fossil fuels we're using, which I think is true even despite recent political developments in the United States. I don't think the energy humanities worry too much about energy in the eighteenth century, and there are reasons for that. It's not that the dates I've just mentioned prescribe the boundaries of the energy humanities. Still, I do think that there's something specific to these dates that interests it the most. Something new develops in history during this period, and that's the development of lots of fuel, lots of capacity, and lots of force.

The other concern is the atmosphere, which can be expressed with another number: 400 parts per million, the limit above which we are playing with fire. So, there's always a project that comes with the energy humanities. To me, it's not just about understanding something that

[1]Patricia Yaeger, "Editor's Column: Literature in the Ages of Wood, Tallow, Coal, Whale Oil, Gasoline, Atomic Power, and Other Energy Sources," *PMLA* 126, no. 2 (2011): 305–310.

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humanists want to grasp about human experience, about representation, and about the development of culture and relationship to specific conjunctures. It's about a project of changing the atmosphere via changes to how we live now.

Caleb Wellum

Your point about the shared concern with time is really important. On the syllabus for an undergraduate course that I teach on the history of the environment, I include a quotation from Andreas Malm: "Wherever we look at our changing climate, we find ourselves in the grip of the flow of time." In the book this comes from, *Fossil Capital*, Malm argues forcefully for the importance of historical knowledge to help us grasp the nature of the climate crisis.[2] And that means, for him, going back to what he argues is its birth in the nineteenth century.

The discipline of history, concerned as it is with change and continuity over time, is well positioned to help us understand the causes of the shift to fossil fuels and to see the various temporalities of the climate crisis, to see it as a historical crisis of accumulation. Malm says in that book that there is coal in our present atmosphere that was burned in the nineteenth century. That notion really sticks with my students. It helps them to see the urgency and importance of historical investigation and to see the material historicity of the crisis.

Jennifer Wenzel

Can I make a small caveat? I don't entirely disagree with Imre's periodization. I wouldn't want to suggest to historians of earlier periods that they're off the hook and that there aren't earlier crises or earlier transitions where looking at energy can transform what you see. I do think we inhabit a world whose origins we can point to in the early nineteenth or late eighteenth century, but energy can open up the study of periods before those times, too. Bob mentioned Patsy Yaeger, and her "Literature in the Ages of . . ." column is excellent for this kind of historical capaciousness.

Bob Johnson

As you were talking, Imre, I was thinking about J.R. McNeill's argument in *Something New Under the Sun*.[3] He contends that fossil fuels were, in fact, something new under the sun in terms of the longer story of humanity. This is especially true, he says, because it speaks to the moment that humanity became a dominant species with the power to move mountains and to reshape the atmosphere—the power to do things not on just local levels, but on global levels. I think that the period you're naming, Imre, is the period when humans extracted themselves from other species and started to do something on a planetary level. That's very interesting.

Dave Christian and Bill Gates have funded and developed the Big History Project which tries to capture this point by rewriting our history from the Big Bang through the creation of planets and solar systems to the advent of life.[4] In this new timeline, humans start to matter after tapping fossil fuels, right about when you're talking about, around 1830. Prior to that, humans don't rate much or fit into the story.

[2]Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York, 2016).

[3]J. R. McNeill, *Something New Under the Sun: An Environmental History of the Twentieth-Century World* (New York, 2000).

[4]See https://www.oerproject.com/teach-big-history-project (accessed July 30, 2025).

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Cara Daggett

Where I've studied energy has been precisely the dates you described, Imre, so as a description of the field, it feels right. And yet, I have been challenged in that research—to the extent that we're talking about capitalism, colonialism, even modernity—that these things go back, we could say to 1500. And this is where my mind starts to bend because energy itself, the very object that we're studying, was born in the nineteenth century as a modern object of politics.

I'm not comfortable with big history projects that project this thing called energy across history because in the same sense that all this industrialization happens in the nineteenth century, so too does energy thinking—the idea that you can compare civilizations by caloric intake or watts consumed, for example. That raises questions for our field. I was going to talk about this later in terms of future directions for energy humanities, but I would like to see us grapple with this thing called energy and its relationship to modernity—both the idea of energy as metaphor but also the fuel systems that it names. I guess I both agree with the nineteenth century as an origin point, but I'm also pushing myself to try to think about continuities before that.

Jennifer Wenzel

I'm thinking about Jason Moore's account of European colonialism, in terms of the exhaustion of woodlots in Europe and the appeal of forests in the New World—a dynamic that's completely enmeshed with questions of labor.[5]

For me, the shift from the framework of petrocultures, where many of us started, to energy humanities is a broadening move, particularly in terms of an orientation toward the future, because it emphasizes a horizon of moving beyond fossil fuels—both in our analyses and in the energy mix. In terms of energy humanities' orientation toward the past, then, I worry a bit about pegging the entire field to that nineteenth-century thermodynamic definition of energy and then closing the door on questions which may have been understood differently in earlier periods. I think people are worried about what fuels and forces are available to them, even if it's not wrapped up with a definition or ideology of energy as work. Perhaps there's a useful analogy in the dissemination of postcolonial studies into the study of earlier periods; it's not that the historical dynamics or terms are identical to a post-1492 world, but some of the questions have been indispensable.

Imre Szeman

Coming back to what Bob was saying about when human beings matter, let me just point to one more thing, which is scale. I recall coming across one of the earliest studies that I saw as an example of what I would now call energy humanities, which was an article by the political economist Edward Renshaw, published sometime in the 1960s.[6] The question Renshaw asked was: when do people stop using animals to get around or to move stuff? I believe his statistic was that in 1850, 94 percent of locomotion was with horses. By 1950, there were virtually no horses in the picture. Other things—mainly automobiles—had come in to replace them. I see energy studies are about a very specific moment in the history of the planet, this transition from horses to automobiles and its consequences for the planet.

There is for sure a long history of energy shaping history. For example, humans have historically burned a lot of wood. Wood mobilized colonialism. Nowhere in North America today do we have the forests that were originally on the continent, due to the scale of colonial extraction. But during this period of colonial extraction, everything that took place pre-1830 or so, the

[5]See Jason Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York, 2015).

[6]Edward Renshaw, "The Substitution of Inanimate Energy for Animal Power," *Journal of Political Economy* 71, no. 3 (1963): 284–92.

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accumulation of parts per million of greenhouse CO_2 in the atmosphere wasn't accelerating in the dramatic way it has during modernity, and certainly not in the way it has more recently. I stick by the time period I pointed out as the most significant one on which to focus.

I suppose the political project in energy humanities at this moment is driven by the recognition that there are limits past which there is a crisis that we won't or can't think our way beyond—that we can't do much about by changing constitutions, how we vote, or what we protest. We might imagine that we could turn to new political forms—to a global system of mutual aid, for instance, if, in fact, we could make a global anarchist turn happen—but such a shift still wouldn't do anything to that parts-per-million measure. So, we're now faced with a very different set of questions about what we have made ourselves into and what that means for what comes next.

Caleb Wellum

Now that we've laid out some definitions and signposts for how to think about what the energy humanities are, I want to ask everyone here: are there any energy humanities works that you think historians should be familiar with—that you have benefited from and would like to promote or share with others?

Bob Johnson

I don't think there is a single text to read. I actually find the field to be maddeningly weedy and unmanicured, but I'm a little bit conservative in this sense. I like a canon, and I like metanarratives. Personally, I'd prefer a clear pivot we could use to organize our scholarship and mobilize our politics around. I think some of what Cara did in *The Birth of Energy* is trying to get that job done for us.

In thinking about how we talk about the field, I like the metaphor of the "Burkean parlour."[7] He [Kenneth Burke] suggests that all scholars and students walk into a parlor to join a conversation that has started long before they entered the room and will continue long after they've left the room. Burke imagines it as "the endless conversation." It seems to me that if the energy humanities are part of an ongoing conversation; to join that conversation, there are a couple of texts you have to be familiar with, even if those texts are flawed. First, you need to read up on the metabolism of modern life, which means reading some of the nerdy stuff of Vaclav Smil, for example. But more important for those of us in this room is a text like Andreas Malm's *Fossil Capital* because it provides us with a direct link for talking about the relationship between energy and the rise of modern capital, including all of those things we are invested in like class inequality, labor relations, economic growth, and the rise of fossil fuel technologies. Similarly, Timothy Mitchell's *Carbon Democracy* is probably also a key to the conversation because it shows how modern energy infrastructures have enabled capital accumulation and the disempowerment of workers.[8] Perhaps even more important is the *Energy Humanities* website that Caleb and Imre have put together. That site has run fascinating forums on these two books, which describe how senior scholars view them as shaping the field's formation.[9]

So, Mitchell's and Malm's are two texts you to know to gain entrance to the parlor conversation. Whether or not you find those texts to be convincing or not is kind of irrelevant.

[7]Kenneth Burke, *Philosophy of Literary Form: Studies in Symbolic Action* (Baton Rouge, 1941).

[8]Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (New York, 2011).

[9]*Energy Humanities* was established in 2020 to share new research in the energy humanities. It will relaunch in late 2026 as a peer-reviewed, open access journal in partnership with the Open Library of the Humanities. For the forums on *Fossil Capital* and *Carbon Democracy,* see: https://www.energyhumanities.ca/article-type/forum (accessed July 30, 2025).

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Jennifer Wenzel

Thinking of the readers of this journal, I would suggest for U.S.-focused scholars what I see as a pair of companion texts: Matt Huber's *Lifeblood* and Stephanie LeMenager's *Living Oil*.[10] I see these as seminal energy humanities works that are interested in the role of oil in the twentieth-century United States. I would say that Huber is looking at it from the outside. He's not really including himself in the phenomenon that he describes: the significance of oil in the rise of a particular kind of U.S. right wing libertarian politics in the late twentieth century. LeMenager, though, is looking at this history from the inside and including herself in her own narrative about how the twentieth-century United States love affair with oil *feels*, quite literally.

Caleb Wellum

I was going to cheat just a little bit and suggest a book that predates the formation of the energy humanities that we've been talking about, but one that significantly influenced my thinking and historical practice. That book is Anson Rabinbach's *The Human Motor*.[11] I think it is a wonderful model for historians interested in thinking politically and culturally about energy in the past. I know Cara has worked with this book in her research, and so I hope I'm not stealing your thunder! But Rabinbach is talking about this period of energy's emergence as a concept and the various ways in which ideas and metaphors of energy ramified through an emerging social modernity. It is a real achievement.

A more recent text I would recommend is Terra Schwerin Rowe's *Of Modern Extraction*, which brings together religion, a well-acknowledged aspect of U.S. politics and culture, with energy, a still under acknowledged but key hinge of U.S. politics and culture.[12] Rowe brings them together—as well as other histories of thought—in a deep way that I, as a historian, find to be very helpful to think alongside.

Cara Daggett

Well, you just named all my books! I would like to emphasize my admiration for Terra's book. It is really phenomenal. And in terms of a book that reaches back before the nineteenth century, following mining culture in early modern Germany, for example, and how it was interacting with Protestantism, that book taught me many new things, and also made it impossible for me to understand energy without taking into account religion, broadly defined, as cultural meanings around what is sacred and what is evil.

Another newer book that does what I'm hoping the field can continue to do is Victor Seow's *Carbon Technocracy*, which is about energy regimes in modern East Asia.[13] He follows a coal mine in twentieth-century China, one of the biggest ones in East Asia, through Japanese imperialism to the Chinese Communist state, and the way that technocratic states took shape to administer this mine, a technocracy that persists across these different political systems. The book expands us beyond Western cases and does what the energy humanities and energy history can do, which is not treat the energy as merely a blunt thing, but instead to look at how modern politics develops through trying to do things with energy.

[10]Matt Huber, *Lifeblood: Oil, Freedom, and the Forces of Capital* (St. Paul, MN, 2013); Stephanie LeMenager, *Living Oil: Petroleum Culture in the American Century* (New York, 2024).

[11]Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York, 1990).

[12]Terra Schwerin Rowe, *Of Modern Extraction: Experiments in Critical Petro-Theology* (London, 2022).

[13]Victor Seow, *Carbon Technocracy: Energy Regimes in Modern East Asia* (Chicago, 2021).

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Imre Szeman

I have three texts that I would recommend. What impresses me about each is the way that the author shows that fuel, energy, or force doesn't just shape economies or play a role in geopolitics or international relations but cuts across all social relations. It shows up not only in the deepest metaphysics or epistemologies of the present, but also in spatial domains, the symbolic, and the cultural, even in the psychic. The three I have in mind are texts written by our panelists—not that I want to embarrass the three of you!

The first is Bob Johnson's *Carbon Nation*.[14] Once you read through this book, it's hard to understand American culture in the same way again. What Bob does so well is that he doesn't just look at narratives that are explicitly about oil. He looks at the unconscious of energy that cuts through the entire American psyche.

Another book is Cara's *The Birth of Energy*, which I think has come to bookend a cycle of work in the energy humanities—it's maybe the end of the first phase of the field.[15] Whatever comes after will have to engage with her book. Of the many interesting things in the book is that Cara shows how powerfully energy came to be a moral ideal. It's not just something that operates at the level of the economy, but also about how work should be done, by whom, and who should control it. She gets to the heart of how energy-fueled ideas and practices of progress and efficiency discipline labor, draw distinctions between genders, enable forms of political legitimation and exploitation, and so on.

The last text I'll mention is the amazing article: "Petro-Magic Realism" by Jennifer. If Cara's book is the bookend of the first phase of energy humanities, Jennifer's article is maybe its origin.[16] What Bob does for the big picture of American culture, Jennifer does for a specific genre—magic realism—explaining how it is inflamed by or enabled by the material energetic conditions from which it emerges. After reading her essay, you can no longer think about magic realism in Nigerian literature without thinking about oil, a connection which only seems obvious in hindsight. The elegant way in which Jennifer connects energy to culture and shows how it works in literature is something from which I've learned a great deal. It's a text I come back to as a reminder of what energy humanities is all about.

Bob Johnson

In my own search to find something that knits the material world of energy and the ideological world of western culture together, I see Cara's *The Birth of Energy* as a key text. For those of us who teach western history, we already have these big baked-in narratives of the nineteenth century: social Darwinism, the new imperialism, etc. that we write entire lectures around. What Cara's book does is inject the thermal dynamic revolution into these narratives by showing us that scientific discoveries in energy and their application rise to the level of an ideology or discourse that we can rewrite American history around. I'm not sure that we know how to do that, but I thought the book, which I had the pleasure of reviewing when it first came out, was approaching a problem that we're all trying to figure out.

I'm also excited that Jennifer has got a book coming out, *Beyond the Fossil-Fueled Imagination: How and Why to Read for Energy*, and I'm hoping that somehow we can collectively figure out how to knit this history together. And I should note here, of course, that Caleb and Imre have been working to institutionalize this work, to get us into the room to figure things out together from different disciplinary perspectives. Imre has done a lot of the meta stuff that knits together different disciplines around this concept of the energy humanities, but I think there's still a lot of work to do to figure out this shift and its implications that we've been talking about.

[14]Bob Johnson, *Carbon Nation: Fossil Fuels in the Making of American Culture* (Lawrence, KS, 2014).

[15]Cara Daggett, *The Birth of Energy: Fossil Fuels, Thermodynamics, and the Politics of Work* (Durham, NC, 2019).

[16]Jennifer Wenzel, "Petro-Magic Realism: Toward a Political Ecology of Nigerian Literature," *Postcolonial Studies* 9, no. 4 (2006): 449–64.

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Jennifer Wenzel

I would like to say something that shifts us toward the next question, about where the discipline of history fits in the intellectual project of the energy humanities. I want to highlight something that Imre asked in 2007 in his article, "System Failure": "What if we were to think about the history of capital not exclusively in geopolitical terms, but in terms of the forms of energy available to it at any given moment?"[17] I feel like that's a question that launched a thousand ships. In literary studies, people often point to that Yaeger article I mentioned to calibrate literary history with energy history, but Imre got to that periodizing insight first. I think of it as a *modes of combustion* narrative. Putting that question on the table was a really generative moment for all of us.

Imre Szeman

We have already heard in our discussion the names of historians we have found valuable and who have contributed to the development of the energy humanities. But let's talk more specifically where the discipline of history fits into the intellectual project of energy humanities. What can historians contribute?

Cara Daggett

Asking questions about energy is what made me become a historian. The field of energy humanities is trying to defamiliarize the water we are swimming in. And to me, historical research, as well as historiography—how we even think about time and progress and material change—is the most helpful approach for defamiliarizing the present. You could go with Foucault, who is not strictly a historian, and I do—and I love genealogy as a method—but ultimately, Foucault is turning to history to do a genealogy of the present.

I loved Bob's provocation about this unfinished project of rewriting American history through energy. Part of what makes it so hard is that we're so deeply imbricated in petroculture, and by we, I mean we Americans, of which I am one. It's hard to think outside of cheap and flowing fossil fuels as a material basis for freedom, for the American dream. You need history to do that, to take us to places and times where that material basis was absent or not yet secured.

Bob Johnson

I really like this idea of defamiliarizing the water we're swimming in, which makes this project very difficult.

I think that history is the mapping of time to some purpose. And I think because the past is so messy and confusing—because the world's data is infinite—historians have to make some sort of determination after they've collected evidence about what constitutes a meaningful event and how events are related to each other. You have to tell a story. On the one hand, your neighbor mowing the grass is part of history; you getting into an argument with your friend is also part of history. But most people don't see these types of happenings as rising to the level of an event outside of your personal life. So, we have to think through those questions as historians, about which events count and how the ones that matter are related.

As an example, when the Islamic terrorist group Al Qaeda hit the World Trade Centre in 2001, we rethought what events mattered and which events really needed to get more prominence in the telling of history. I think that the energy humanities, by foregrounding the slow violence of climate change, which traces back to carbon emissions, is asking us to think

[17]Imre Szeman, "System Failure: Oil, Futurity, and the Anticipation of Disaster," *South Atlantic Quarterly* 106, no. 4 (Fall 2007): 805–23.

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about how we select out events in a way that would retell the modern story in a way that will empower us in some way, that will help explain to us what our frailties might be and the things we've lost in the past, as we've watched a certain version of modernity take shape. To go back to something you guys said earlier, the energy humanities doesn't do a whole lot of work in the eighteenth century, but I do think that this earlier history *is* still there, pressing on the edges of the stories we are telling.

Jennifer Wenzel

I think of the prefix "petro-," as a periodizing term, petromodernity being the most obvious example. But to go back to something that Imre was saying about this 1830 to 2025 period: if we're going to think about the fossil era in terms of history as the mapping of time, then it's a multi-scalar, multi-layered temporality, in terms of those millions of years of fossilization, which make this very brief fossil-fueled era possible, and then the effects of carbon dioxide in the atmosphere long into the future. That Malm point Caleb mentioned. I do think that time becomes much more difficult to map in the fossil era than in previous eras.

Caleb Wellum

The historians' interest in and skill at understanding and analyzing the *contingencies* of change over time is not only intellectually valuable to the energy humanities project, but it can also be an empowering contribution. Historians can help us think with nuance and detail about directions not taken, about the operations of power—and contestations over power—in the ways in which certain histories have developed. They can also magnify and explore the contingent moments and events that could have been otherwise, opening up a sense of possibility for change in the present and near future.

I also think that historians can glean from the energy humanities, to echo Bob's earlier comment, the critical resources for rethinking what constitutes an event when energy becomes a primary analytic concern. I think adding energy to our critical and conceptual toolkit has significant potential to help us reimagine and rewrite the core historical narratives, big and small, of the past 200 or more years.

Bob Johnson

I just want to say quickly that years ago Imre gave me a phrase that helps me think about the contribution our field makes to the discipline of history. He said that what we are doing is, in some sense, writing an alternative history of modernity. I have always thought that this was a useful way to think about the energy humanities.

Jennifer Wenzel

I think Cara put it well in terms of coming to history through energy. I had always been a historicist literary critic, but the ways I'm thinking historically now have everything to do with what Bob just said. We're doing a history of modernity, or even a history of alternatives to modernity. One of my favorite moves to make with students is to talk about early automobiles as not powered by gasoline but by all kinds of fuels and forces including electricity, steam, etc. Gordon Sayre has a great little piece on this.[18] There's no necessary or inevitable connection

[18]Gordon Sayre, "Automobile," in *Fueling Culture: 101 Words for Energy and Environment,* eds. Imre Szeman, Patricia Yaeger, and Jennifer Wenzel (New York, 2017), 54–56.

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between gasoline and the automobile. It's crucial to think about these kinds of contingencies and paths not taken.

Caleb Wellum

Is there any sense in which the approaches or frameworks of the energy humanities challenge or put pressure on the discipline of history as it's currently constituted? Or to put it another way: how would you like to see historians take up the question of energy in their work or practice?

Imre Szeman

Here's a provocation that I put to people sometimes to get them to understand what I see as what energy humanities is doing. It's a little over the top, but I still think it helps. Energy humanities *isn't* about paying attention to all the places, in texts and reality, where energy pops up. When students in literature bump into the idea of energy humanities, they immediately run to find examples of energy in fiction—Upton Sinclair's *Oil!* Or they might start to investigate films with oil themes, such as George Steven's *Giant*. Or they might look at the work of photographers who look at communities living near extraction sites.

All this is excellent and important work to do. But I feel that if you're focusing on representations of energy, you're missing the bigger picture, which is that the importance of energy to life means that it must be noted in *everything* we study, whether it's explicitly about energy or not. It's about noting what Jennifer said at the very beginning of this roundtable—the importance of force and fuel.

How does one do that? It's not only by doing a history of nuclear energy. It's by investigating what the advent of nuclear energy means for all aspects of life after the Second World War, and not only in the United States. There have been such cultural histories written, like Joseph Masco's *The Future of Fallout, and Other Episodes in Radioactive World-Making*, though they may not think of themselves as exemplifying what energy humanities is all about.[19]

Caleb Wellum

Way back in the 1960s, E.H. Carr in *What is History?* argued that the very constitution of the historical is not only social, political, and cultural.[20] It also has to do with the industrial and technological context in which historical thinking and writing takes place. I think another way of saying what you're saying is historians need to be thinking differently about energy resources and technologies of energy production and consumption as part of what constitutes the historical as such.

Jennifer Wenzel

That's exactly what I was thinking in preparation for this conversation. What energy humanities invites is a kind of rereading or a counter history of what has always been there in the literary corpus or in the archive. It is about recognizing that any given social and political struggle is, among other things, a struggle over energy. Limiting oneself to looking for novels or sources primarily about oil or climate change (e.g., Amitav Ghosh) is a wrongheaded, or at least limited, way of thinking about it.[21] A better approach might be: what difference can energy make to the questions that historians ask?

[19]Joseph Masco, *The Future of Fallout, and Other Episodes in Radioactive World-Making* (Durham, NC, 2021).
[20]E.H. Carr, *What is History?* (London, 1961).
[21]Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (Chicago, 2017).

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Bob Johnson

I like that a lot. As you guys were talking, I was thinking about a couple of books, one of which is Stephen Kern's *The Culture of Time and Space, 1880–1918*.[22] Kern says that by the 1880s, the West was experiencing an energy crisis—a crisis of energy *abundance*. He argues that all this energy flowing into society both as fuel and as a force in this period had a game-changing cultural impact. Picasso's Cubism, modern jazz, the phenomenology of how we walk through the world and map out our futures: all of this, he says, has something to do with the changing metabolism of life. This is provocative, I think. Similarly, anthropologists in the 1940s, such as Leslie White, were making the case that history is at root the story of energy—that history basically amounts to social growth through societies' ever-increasing levels of energy usage.[23] Of course, that kind of determinism is anathema to the energy humanities, but we do have to think carefully about how energy and ideology inform one another, how both share a structure, how both enable and delimit what can happen.

Cara Daggett

At the same time, I wouldn't frame energy itself as the primary analytical category. That might give the impression of replacing existing frameworks with energy as a kind of master term, which is misleading. Instead, I think it's more useful to treat your question, Caleb, as a provocation: to encourage people to recognize how technology—already widely understood as a complex historical and infrastructural force—is inseparable from energy.

Most historians and scholars are already attuned to this connection. It's impossible to understand modern technology without also accounting for the deep expectations that drive it—the assumption of abundant light, of endless and preferably cheap energy, which underwrites what technology comes to mean politically, socially, and culturally. In the same way that we can rewrite American history through energy, we can ask how energy abundance, for example, changed the human relationship to technology. Framing it this way might help move us beyond the tendency to collapse energy into a single material symbol—like the coal mine or the solar panel. Technology, after all, is already something people are prepared to understand more capaciously.

Jennifer Wenzel

Can I add one caveat? It's a point we're all probably taking for granted, but I think it's important to articulate, particularly for historians thinking about these questions for the first time. As Bob said, we don't want to be determinist.

Something that's important in energy humanities is the idea of energy simultaneity. That's the persistence of the use of almost any fuel or force that has ever been used by humans, even as new fuels and forces come into the mix. So, we aren't saying that there's an identifiable, discrete age of coal in which everyone's using coal and not anything else. The importance of this insight is the unevenness of the forms of relationship to energy around the globe. Much of what we've been saying has been tacitly from a Global North perspective of cheap and easy energy, to quote Imre.

But part of what energy simultaneity means is that there are all kinds of relationships to energy that continue to be at work, which obviously has implications for how we think about transition in the present and the future.

[22]Stephen Kern, *The Culture of Time and Space, 1880–1918* (Cambridge, MA, 1983/2003).

[23]Leslie White, "Energy and the Evolution of Culture," *American Anthropologist* 45 no. 3 (1943): 335–56.

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Caleb Wellum

Why do you think U.S. historians have not been as quick to embrace an energy analytic as historians in Europe? To me, Europeans seem more enthusiastic to embrace energy, though perhaps this is a little too big of distinction to draw. Cara, you've been in Europe for a while. What do you think?

Cara Daggett

I'm not sure I want to be quoted on this! Let me start by saying that I'm not familiar enough with the discipline of U.S. history to say anything definitively. But my sense is that the energy humanities is most exciting outside the United States, and I would include Canada in that outside and also Latin American studies. That's not to discount the fact that there are many people in the United States—present company included—who are important to the energy humanities. But as I'm building collegial networks and going to conferences, I'm starting to appreciate how many of these are rooted outside the United States. Why?

There is something about the U.S. study of energy more broadly that tends to be less critical or humanistic. I wonder if that's because the United States is a petro-empire—one that is, at the moment, crumbling. We're living through this experience of ruination. While it isn't done yet, intellectually, socially and culturally, the United States is in the midst of a kind of defeat.

There's a German historian, Reinhart Koselleck, who theorized that defeat gives you an epistemological advantage for breakthroughs in historical thinking.[24] In order to rewrite American history through energy, I wonder if the first precondition would be to gain distance from some very deep attachments to the American project—to American progressivism and exceptionalism that even the most critical scholars continue to hold on to. I would include myself in this. This is a difficult task. You can look at something like *The 1619 Project*, which reimagined American history through the institution of slavery, and see the emotions and controversies aroused by moving history in a very different direction.[25]

To be clear: Europe isn't, by contrast, a utopia of self-reflection, healed from its colonial past. Absolutely not. It has all the far-right, anti-immigrant, extractivist politics happening that we find in the United States, too. But still, the conditions for intellectual inquiry may be different in Europe or Canada or South America than they are in the United States simply because of the American experience as the world's biggest petro-empire. This may account for what you're suggesting, Caleb.

Bob Johnson

Maybe we should end there. That was a pretty good answer already. I have just a couple thoughts to add that might be useful.

Let's assume, Caleb, that you're right about this stereotype you've thrown out there. If so, there are two material facts that I think structure why the United States and Europe are different on this score. The first is that the size, shape, and density of the territory and population matters. The first fact is that the United States has only about 1/3 the density of Europe. That brings us to a second fact. The United States never experienced resource scarcity in the same ways that Europe did or that populated parts of China and Africa have. There are very complicated reasons for this relative lack of scarcity which get back to the conversations Imre wanted to have about forests and the metabolic stuff that sits behind historical causation. Nonetheless, because of these two facts—scale and relative abundance—Americans were in a very different position

[24]Reinhart Koselleck, *Futures Past: On the Semantics of Historical Time* (New York, 2004).

[25]Nikole Hannah-Jones, Caitlin Roper, Ilena Silverman, and Jake Silverstein, eds. *The 1619 Project: A New Origin Story* (New York, 2021).

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when they adopted fossil fuels early on. The infusion of subsoil calories into the nation's metabolism worked a kind of ecological magic on the ways of doing business that changed the calculus by which the nation could reproduce human populations, grow food, and so on. By the time the United States would have hit what historians like E. A. Wrigley has described as pre-industrial resource limits, it had already adopted technologies and new metabolic strategies to circumvent those limits.[26]

Consequently, as others have pointed out—and both Caleb and LeMenager have written about this—the United States long ago developed a deeply affective and even erotic attachment to oil and, at times, even to coal.[27] This manifests today in the cultural spectacle of extraction as well as the love of massive trucks, coal-fired power, oversized vehicles, and now even cybertrucks. Whether on the political right or left, there's a libidinal investment in scale, in fossil-fueled mobility, in the esthetics of bigness. In a strange and often perverse way, this might be understood as an unspoken acknowledgment of how deeply tethered the United States remains to fossil fuels—a kind of umbilical cord to the oil pump.

What's striking is how rarely this connection has been fully interrogated. There have been moments of reflection, of course—say, in the 1920s, when Americans first thought the U.S. might run out of oil, or in the 1970s, when Jimmy Carter gave his so-called "malaise" speech during the energy crisis. These were moments of reflection when Americans questioned whether capitalism or unmitigated economic growth might require a bit of humility. But even in these moments, there was never a durable reckoning with this history of abundance that we are dealing with now.

Imre Szeman

I would push back a little bit about studies of energy being something that European historians do better than U.S. historians. I'm thinking specifically of France. At the moment, it seems that there is a lot of attention being paid to energy by French scholars because of recent English translations of authors such as Jean-Baptiste Fressoz or Pierre Charbonnier.

A colleague at the University of Lyon, who works on energy, Frédéric Caille, would offer a different story about the lay of the land in France. He's recently written a book about the history of solar energy in France, which dates to the nineteenth century.[28] Caille has described to me a decades-long frustration finding scholarly interlocutors in France and support for his research on energy within the French academy. He puts this down in part to the stiffness of academic disciplines in France, which exerts a great deal of control over what counts as legitimate research—Foucault, Bourdieu, and all the rest of the figures we know are not good examples of standard academic practice in the country, but outliers.

In Caille's view, the lack of energy researchers in the country is also due to how energy is viewed in France. To put it bluntly, energy just isn't a problem—there's nothing to be addressed, there's nothing to solve. The abundance of nuclear energy means, for the French government and much of the population, that France already uses renewable energy—transition accomplished! If that's the case, there's not much to write about or advocate for intellectually. The historian Jean-Baptiste Fressoz had three books about climate change published in 2024 alone.[29] But this probably shouldn't be taken as evidence of the strength of interest in energy in

[26]E.A. Wrigley, *Energy and the English Industrial Revolution* (Cambridge, UK, 2010).

[27]Caleb Wellum, *Energizing Neoliberalism: the 1970s Energy Crisis and the Making of Modern America* (Baltimore, 2023); LeMeneger, *Living Oil*.

[28]Frédéric Caille, L'*Invention de l'énergie solaire: La veritable histoire d'Augustin Mouchot* (Paris, 2023).

[29]Jean-Baptiste Fressoz, *Happy Apocalypse: A History of Technological Risk* (New York, 2024); *More and More and More: An All-Consuming History of Energy* (London, 2024); Jean-Baptiste Fressoz and Fabien Locher, *Chaos in the Heavens: The Forgotten History of Climate Change* (New York, 2024).

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French scholarship. Remember, Fressoz was at Imperial College London and only recently moved to the Centre national de la recherche scientifique.

Caleb Wellum

I think there may be a kind of nuclear exceptionalism in France that makes it distinct from the rest of Europe—an exception that proves a larger rule.

When Bob was talking, I found myself thinking about American exceptionalism and how it creates a kind of blind spot when it comes to energy. I went back in my mind to David Potter's *People of Plenty* from 1954—a classic mid-century account of the so-called "American character."[30] Potter argues that the abundance of resources in North America shaped U.S. political culture and institutions. But he struggles to fully account for the contingency of those resources—he ultimately credits American ingenuity and technological innovation for unlocking abundance. So even in a book so focused on material conditions, there's still this strong current of exceptionalism: a belief in uniquely dynamic American political and economic capacities that sidelines energy as secondary or tertiary.

That came back to me when Cara was talking about American progressivism. It reminded me of a book I love on the New Deal, and of a broader body of literature that tries to understand why the New Deal coalition dissolved, and how we might recover something like it. What's striking is how little that literature says about energy—about how the postwar boom was inseparable from cheap and abundant energy, or how energy systems underwrote the social formations of that period. The dissolution of the New Deal in the 1970s and 80s is usually explained in political terms—individualism, racial politics, shifts in party identity—but there's a huge gap when it comes to energy. And I think that gap may come from the same place: a deeply rooted American exceptionalism that sees politics as autonomous, and energy as background or taken for granted.

Jennifer Wenzel

As a non-historian, I'm hesitant to jump in, but I would add two things.

It's not incidental that the rise of energy humanities in North America, especially in terms of its institutionalization, happens in Edmonton and Houston, and that North America itself is the epicenter of the global oil industry. But the very structure of the question also feels familiar to me. It's a kind of grass-is-always-greener perspective. Why are people over there doing this? While this field over here isn't doing it right, or not doing it yet? Perhaps it's more a way of structuring an argument than an actual assessment of the conditions of academic knowledge in either instance.

Imre Szeman

We've been having this rich and expansive conversation about energy humanities—its origins, what it does, what it provokes, what its aims and politics are. And we've also been threading this through the discipline of history, since this is a journal of history and we're speaking to historians. So, I want to invite all of you—and you too, Caleb—to help think about how energy history is playing out in U.S. politics right now.

Let me try to frame it like this: we're watching a very specific American political formation unfold. Call it populism, authoritarianism, right-wing nationalism—whatever name we want to give it, what interests me is the energy imaginary that underpins it. Because it's certainly bound up with fossil fuels. There's something profoundly embedded in American identity—especially

[30]David Potter, *People of Plenty: Economic Abundance and the American Character* (Chicago, 1954).

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postwar American entitled whiteness and its fantasy of order and disorder—that links fossil fuels to a certain vision of who the nation is and what it's owed from its citizens.

When we see the backlash against electric vehicles or renewable energy on the part of the current U.S. government, I don't think we should read that as a rejection of technology *per se*. After all, this is the same political formation that's excited about AI, microchips, and the next wave of Silicon Valley innovation. It's not anti-tech. It's anti-renewables specifically—because renewables threaten a historical narrative, a structure of feeling, a sense of continuity, a sense of identity that have come to be connected to fossil fuels.

That's why I want to ask, in conclusion: am I right to think of energy as being integral to the current U.S. political imaginary? Are fossil fuels always there in American history, at least since the late nineteenth-century, just beneath the surface of things, ready to appear at times with greater intensity? And if so, how does this work? Is there some significance to the fact that the first thing two successive Trump governments have declared upon victory is to "Drill, baby, drill"? What kind of historical or political sensibility is being activated or re-activated by means of this proclamation?

Bob Johnson

That's an excellent prompt. My first reaction is that what we're witnessing right now is a kind of atavistic eruption—an almost primal response. Something is being threatened, and that threat triggers a deep, visceral reaction in some people. It's as if a core national identity—one built around certain material and ideological certainties—is under siege, and the response is to leap, even barbarically, to its defense.

But before we analyze that too much, we need to say clearly that the broader context here is the dismantling of democracy. Any analysis of the current political regime must start there—with the systematic undermining of democratic institutions: the takeover of the Department of Justice, the CIA, the FBI, the Department of Defense. This is the context of authoritarian consolidation, and we can't lose sight of that.

At the same time, there's a strange realism in what's happening—something that the liberal wing of American politics, especially within the Democratic Party, doesn't really want to confront. As Jennifer and Cara said earlier, American prosperity has long been built on fuel and force, on oil and coal, on extraction and combustion—and that history has an erotic charge, a libidinal attachment to energy abundance, to control, to speed, and to domination.

The liberal imagination, even when it gestures toward energy transition—say, through Elon Musk's Tesla or clean-tech dreams—has never fully reckoned with the scale and continuity of extraction. The truth is, we're still producing more oil and coal than ever, even as we claim to be leaving that era behind. And so, what we're seeing now is a refusal to confront that paradox. Rather than dealing with the contradictions head-on, this political formation is saying: "We're not changing. We're doubling down." And that, too, has to be understood as part of the fossil imaginary.

Cara Daggett

That's such a great question. First, I have to say, my impression is that historians tend to be understandably careful in diagnosing the present, much less in predicting the future. There's not enough distance yet, not enough archival solidity. That's part of why I don't always feel like a historian myself. I love to talk about the present.

And I think there's a lot of continuity in U.S. energy policy—particularly the ongoing logic of energy domination. The phrase "energy domination" was new, but it named an old pattern, as we've been talking about in this interview. Yes, that domination is materially rooted in oil and gas, but what we're seeing now—this intense defiance—is about something more. We haven't

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talked much about extractivism yet, though I've learned a great deal from Imre and Jennifer's caution about turning extractivism into an all-encompassing explanation.[31] But I still find extractivism useful when understood as a political relation—one premised on asymmetry, on the exercise of power through unreciprocated taking.

That, to me, is how fossil fuels have always functioned in the United States—not just as energy sources but as vehicles of domination layered with a politics of justification and concealment. This isn't just a problem on the right: liberalism has also signed on to that narrative, investing in the idea that technology or progress will redeem the violence of extraction.

What's happening now is that people are being asked to see extractivism for what it is—to recognize its violence and inequality. And that provokes different responses. On the liberal side, the tendency is to look away, to externalize the problem, or to believe that AI or green capitalism will fix it. Or putting solar panels on top of AI data centers. But on the authoritarian or fascist side, the response is: "Yes, it's violent—and that's the point." There's a thrill in it. A libidinal investment in violence as power.

That leads to my closing provocation: I wonder if petroculture might survive the end of oil and gas. How is it finding new expression through other fuels, other systems, including lower-carbon ones? Petrocultures were formed through the material capacities of oil and coal; they are rooted in a specific material basis. But they led to expectations about fuel and force more broadly. If we magically eliminated fossil fuels tomorrow, we would not be free of their deep ideological and emotional structures so quickly. That's the open question, as shifts in energy systems continue to take place around us. That's where I think the field might be going.

Jennifer Wenzel

I've long thought that attention to energy—including the study of it—tends to flash up at moments of danger. Earlier, Bob raised the historian's question: *what is an event?* That's stayed with me. I want to think about whether climate change, and particularly the undeniable materiality of its effects—the increasing frequency and visibility of extreme weather, not just in the Global South but now clearly in the United States—might function as that kind of event. Not in the sense of a singular rupture, but as a shift that poses a real challenge to the deep equation that American culture is oil culture. You could add guns to that equation, of course. But there's something provocative in what's been said already—that U.S. culture may be more fundamentally aligned with oil than with democracy. After all, across centuries, the United States has routinely failed to fulfill its democratic promises. Oil, by contrast, has been remarkably consistent in shaping national identity.

So, the question I keep returning to is: will this current project to brand climate change as "woke" succeed? Because that's what's happening. We're witnessing a coordinated effort to make problems disappear by banishing their vocabulary. Stop saying "climate," and maybe climate change goes away. Stop saying "race," "gender," "inequality"—and maybe the conditions themselves are no longer real. It's a politics of erasure through language, and yet the material crises don't vanish. Even when ruthlessly defunded, the issues remain: melting ice caps, rising seas, environmental injustice, structural violence.

What I'm trying to figure out is whether this rhetorical strategy can actually hold. On one side, we have what Cara aptly called the crumbling fossil empire, and on the other, we have raging storms, fires, droughts, displacement—pressures that don't bend to ideology. What kinds of calculations are people making in the face of that contradiction—if, indeed, individual reasoning is still possible in an environment so saturated by misinformation, polarization, and precarity?

[31]Imre Szeman and Jennifer Wenzel, "What Do We Talk About When We Talk About Extractivism?" *Textual Practice* 35, no. 3 (2021): 505–23.

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And then there are the contradictions inside the administration's own logic. They impose tariffs supposedly in the name of reindustrialization, but then move to dismantle Biden's Inflation Reduction Act—which, for all its flaws, was itself a reindustrialization plan. They declare an energy emergency but only allow fossil fuels to count as legitimate responses. They float the idea of buying Greenland—but to what end? If climate change isn't real, if renewables aren't needed, then why do you need Greenland? It's incoherent.

None of this is to say the agenda isn't dangerous—it's brutally strategic. But its internal contradictions might offer openings—points of vulnerability where resistance, counter-narratives, or public clarity could take root. That's what I'm holding onto.

Caleb Wellum

That was said so wonderfully—I don't really want to add much more. It feels like a good place to end. But maybe just this: what we've been talking about really underscores the power of the petrocultural imaginary that took shape in the second half of the twentieth century—and our collective inability to let go. For the past seventy years, many Americans—and Canadians, too—have been structurally dependent on fossil fuels and that dependence has been deeply sedimented into people's lives and routines. Many people don't see a viable way out—not just technologically, but economically and socially. Their sense of security and well-being is tied to access to cheap gasoline, to the ability to drive to the exurbs where they live and work. Fossil fuels are still imagined and experienced as the infrastructure of ordinary life.

And part of the problem is that the U.S. political system has failed to lead. It hasn't adapted, and it hasn't helped people imagine or build alternatives. So, for many, fossil fuels still feel synonymous with the American way of life. They're understood not just as energy sources, but as the foundation of U.S. geopolitical power—the thing that makes empire run. Trump, as we speak, is literally in one of the oil centers of the world—in Saudi Arabia—and I'm sure fossil capital is shaping that visit in ways we don't even fully see yet.

To me, this feels like a moment of imperial crisis, a moment when the old operating system of the American empire is faltering but still clinging to its core logic. And I think, as Cara pointed out earlier, the cultural and psychosexual dimensions of that logic are inseparable from its political expression. That too is part of the story of why it's so hard to move on.

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