For too long, energy has been treated as a largely neutral input into societies—a necessary element of social life but not one that has any significant, defining impact on its shape, form, and character. The history of modernity, for instance, has been figured in relation to novel developments in literary culture, scientific discovery, the birth of cities, the expansion of individual political freedoms, the structures and strictures of colonialism, and the creation of the global nation-state system. It has seldom been narrated in relation to the massive expansion of socially available energy (and the energy of a specific form: fossil fuels, which are easy to transport and store) and the concurrent redefinition of social practices, behaviors, and beliefs occasioned by this historically unprecedented explosion of access to energy.¹ As we attempt to address the consequences of modern petrocultures and to transition beyond them, we need to include energy in our account of any and every aspect of the social and cultural landscapes we inhabit. Otherwise, we remain stuck, imagining techno-utopian solutions to our environmental crisis instead of getting to work redefining our existing social relations, structures, and behaviors.²

What does this mean for the study of literature and of culture more generally? Environmental scientist Vaclav Smil, who has repeatedly drawn attention to the broad historical and social significance of energy, has written that “timeless artistic expressions show no correlation with levels or kinds of energy consumption: the bison in the famous cave paintings of Altamira are not less elegant than Picasso’s bulls drawn nearly 15,000 years later.”³ This view of the relationship between energy and cultural production is sustainable only if one imagines the aesthetic as falling completely outside history—as in fact “timeless” in the way suggested here—and is in fact contradicted by Smil’s own comments elsewhere in “World History and Energy” about the depth of
energy’s impact on the development of the forms taken by societies throughout history. Smil’s claims about the lack of a relationship between art and energy come in the final section of his essay, in which he cautions against a too simple energy determinism in relation to historical development. One of the significant challenges of introducing energy into cultural and social analysis is figuring out exactly how to plot its impacts and effects. While adding energy to the study of literature and culture might not constitute something akin to a final explanation of these practices and their symbolic significance (as if energy were a substitute for the economic base, in the last instance, determining both the character of the economic base and the superstructure connected to it), it is equally problematic to write energy out of the picture as having no significance at all and thus requiring none of our critical and conceptual attention when we engage in the study of literature and culture.

An energy determinism is unsustainable. The claim that energy has no impact on literature and culture is equally unsustainable, whether we understand this impact in a narrowly material sense—in the very substance of the acrylic paints used on modern canvases, the stock used to shoot films, or the electricity required to run printing presses and generate cable signals—or in a social sense, through its figuration of social capacities and expectations. How might one begin to add energy to cultural analysis in a way that captures its force and impact without deferring to either one of these extremes? Does making a link between a specific energy system and a literary period (or movement, or form) open up a new way of analyzing texts? Or does it unnerve not just the how but the why of literary studies? Given the significance of energy for societies, we need to begin to add energy to our literary and cultural analysis. But just what does it mean to do so, especially in our accounts and understanding of world literature?

The history of energy is constituted by forms of energy giving way to other forms of energy—for instance, the dominance of water and wind in the United Kingdom in the early nineteenth century moving to coal by the middle to late part of the century. One way it might thus be possible to grasp the impact of energy on literary and cultural production is by engaging in a process of periodization—refiguring literary history around eras defined by wood, tallow, coal, whale oil, gasoline, and atomic power, as in the title of Patricia Yaeger’s provocative PMLA editor’s column on literature and energy.

The aim and intention of Yaeger’s loose periodization of energy is to begin a conversation about the material and social impact of energy within literary
studies. Such broad energocultural periodizations are rendered immediately problematic by the real character of energy systems. In our own energy period, it can be easy to overstate the degree to which oil or fossil fuels are in fact the dominant form of energy.\textsuperscript{8} To begin with, the forms of energy used at any given moment in history are inevitably mixed and changing. As new forms of energy are discovered and added to the mix, energy systems become more and more diverse and complicated; contemporary energy systems are made up of an array of energy forms—hydro, nuclear, solar, wind, and more, in addition to fossil fuels. The introduction of nuclear energy in the period following World War II has done very little to offset levels of fossil fuel use; and while the use of fossil fuels since 1850 has decisively reshaped the sources of energy consumed,\textsuperscript{9} the specific mix of the types of fossil fuels used (coal, gas, and oil) shifts and changes year in and year out. In an era that I've come to describe as a “petroculture” (to try to stress the ultimate importance of oil), the use of coal continues to grow, and not just in the developing world.\textsuperscript{10}

What might further trouble any easy definition of energy periods are the vast differences in levels and forms of energy use around the world. This is true between developed nations and even more so between developing and developed nations. Canada and Germany are both members of the G8 and are among the world’s most developed nations. But the mix of energy forms they use and the level of energy employed per capita makes it difficult to easily figure them as part of a period of single petroculture: Germany has a far greater proportion of sustainable energy than Canada as part of its overall energy portfolio, and it uses about half of the energy per capita that Canada does.\textsuperscript{11} When the comparison is made between developed and developing countries, the direct link between access to energy and levels of development becomes all too clear. Per capita energy use in Canada is twenty-five times greater than in the Democratic Republic of Congo and close to twenty times that in Benin and Haiti. These differences in energy use are connected to histories of colonialism, underdevelopment, and global political and economic power; even in petromodernity, large swaths of the planet are still powered by animal labor and the labor of human bodies. Finally, the assertion of a single petroculture obscures the huge differences in access to power within nations. Elites everywhere use more energy per capita than do poorer members of societies. While some elites have no doubt transitioned from fossil fuels to solar power in their homes in wealthier neighborhoods, the use of animal energy, wood, and coal continues to fuel societies around the world.\textsuperscript{12}

\textit{Oil Fictions}
Despite the complex map of contemporary energy use, it seems to me that energy periodization can open up new ways of figuring and analyzing literature in relation to the world in which it is produced. To begin with, a map that shows where energy is used, what kinds of energy are used, how much is used, and who uses it is a map of power, privilege, control, and dispossession. There is a strong correlation between energy use and GDP; increases in energy use per capita inevitably lead to economic growth and higher living standards. The politics of colonialism and postcolonialism were shaped by race and ethnicity, military power, and control over the trade of goods (with colonial powers benefiting at the expense of the colonies they controlled). Colonialism was also a period animated by access to energy and the search for and struggle to control ever more energy. Access to fossil fuel energy—first coal and then oil and gas—was essential to managing and maintaining colonial control; the struggle over energy remains a largely untold story within postcolonial literary studies (the present volume notwithstanding) and in the study of world literature, which has focused on other aspects of the combined and uneven development that has characterized modernity. At a minimum, tracking levels of energy use can allow us to identify nodes of power in the world and to consider the impact of these power differentials on cultural production. Indeed, one could argue that the “world” announced by the category of “world literature” does not in fact come into existence until the beginning of the era of fossil fuels: the production of the imaginary named “world” is fueled by the presence of energy sources, including coal and oil, that make the space of the globe increasingly available and accessible to travel, trade, and political power. A global map of energy, one that also captures differences in energy use within nations, highlights how power is actively materialized, with inevitable impacts on social and cultural capacity and sensibility.

A map of energy power is, however, not unlike our already existing understanding of power and privilege, from colonialism through to the postcolonial, neoliberal present. The strong connection between energy and political power, between levels of per capita energy use and socioeconomic status, means that existing narratives of global power tell us a great deal about the sociocultural impact of energy use, even if the specific importance of energy is rarely named. Might we thus do without critical appeals to energy, assuming that its force and social import will show up in the political, economic, and military structures and forces that it has fueled?
It seems clear to me that this would be a mistake. While it may be that there is a strong correlation between existing narratives of culture and power, the specific role of energy in shaping both cannot just be passed over. Likewise, we should not ignore the specificity of the experiences, social sensibilities, and cultural imaginaries produced by distinct energy systems. There is also a strong political rationale for foregrounding fossil fuels in the analysis of cultural production. Despite the mixed and uneven use of energy around the world at the present time and throughout modernity, it is possible to speak meaningfully of a period of petromodernity. Petroleum is the hegemonic form of energy at the present time. The claim that something has become hegemonic is intended to capture an organizing principle or a shaping dictate of a period; what is hegemonic about immaterial labor at the present time, for example, is not that the majority of people are involved in such forms of work but that it places demands on all forms of labor to “informationalize, become intelligent, become communicative, become affective.” It is in this sense that fossil fuels are hegemonic and that we live in a petroculture. The forms and amounts of energy used by individuals around the world remain mixed, but our cities have been shaped around fossil fuels and not nuclear energy or hydropower. The fantasy of suburban living and the freedom of highways owe nothing to wind farms and solar power; and no country imagines that the way forward in their development is to shape agricultural systems around plow and oxen as opposed to mechanical farming and fertilizers (as environmentally damaging as the latter might be). The enormous, unprecedented energy of fossil fuels has shaped (and continues to shape) our cultural and social imaginary in profound ways, including the character of our political structures and the principles and rationales around which we organize our economic practices and decisions. Being alert to the differences in energy use that I’ve already pointed to is essential. My intent in claiming that we understand modernity as a petromodernity isn’t to flatten out these differences in the same way that the Anthropocene has been critiqued for eliminating a more nuanced history of the human impact on the environment. It remains important, however, to identify the dominant rationales or logics that have shaped the world in which these differences exist, including those connected to the forms of energy in use.

In “Conjectures on World Literature,” Franco Moretti argues that we need to understand the world literary system as “one, and unequal: one literature (Weltliteratur, singular, as in Goethe and Marx) . . . but a system which is
different from what Goethe and Marx had hoped for, because it is profoundly unequal."\textsuperscript{17} So it is too with the system of energy use: one petroculture but a profoundly unequal one. Moretti’s essay provides a quick articulation of and justification for his system of “distant reading,” which is intended in part to identify dominant logics that have structured the world literary system. For him, the system of \textit{Weltliteratur} is organized by a triangle of forces: “foreign form, local material—and local form.”\textsuperscript{18} Moretti cites the Brazilian literary critic Roberto Schwarz, who provides an example of what the inequality of world literature produces at the level of content: “Foreign debt is as inevitable in Brazilian letters as in any other field. . . . It is not simply an easily dispensable part of the work in which it appears, but a complex feature of it.”\textsuperscript{19} One might imagine inequalities not only of financial power (which generates debt) but also of energy form and capacity to be figured differently at the center and at the periphery, shaping and forming what Moretti calls “local material[s]” in a strong and profound way. Jennifer Wenzel’s “Petro-Magic-Realism” offers an example of literary analysis that foregrounds the impact of energy on literary form at the periphery. In order to offer further specificity and analytic density to the widely used literary category of “magic realism,” Wenzel argues that the “political ecology” of Nigerian literature is better described as “petro-magic-realism,” “a literary mode that combines the transmogrifying creatures and liminal space of the forest in Yoruba narrative tradition with the monstrous-but-mundane violence of oil exploration and extraction, the state violence that supports it, and the environmental degradation that it causes.”\textsuperscript{20}

Such mappings of specific encounters between aesthetics and politics via the position of literature within petromodernity are essential; there are all too many oil encounters about which the whole story has yet to be told. If I had to assign a tendency that has emerged in literary critical attention to energy systems, and especially to the petrocultural system that has shaped the colonial encounter and the experience of the modern, it is the attempt to identify the sites and spaces in which the specific configuration of form and content names not only a political tension but also a tension animated by energy differentials. But the inclusion of energy inequality as an axis of analysis is hindered by one major problem—a defining aspect of oil in relation to culture that has to be placed at the center of any conceptualization of energy as an analytic tool within the study of world literature. \textit{The importance of fossil fuels in defining modernity has stood in inverse relationship to their presence in our cultural and social imaginaries}, a fact that comes as a revelatory surprise to
almost everyone who engages in critical explorations of energy today. The arts of a world powered by horses and the labor of bodies cannot help but be distinct from the expanded time, space, and power of our own petromodernity. Nevertheless, attention to energy differentials has been largely absent not only from critical investigations of literature and culture but also from literature and culture itself. Those who have begun to grapple with the cultural absence of oil in a period shaped by and around the substance have scanned literary history to find texts that have confronted oil hegemony, with productive results. But questions remain. Why has it been so difficult to locate a literary archive for what now appears to be so important a social and historical force? And despite this absence or gap, why does it seem necessary and important to locate this archive now?

One of the earliest links between energy and aesthetics was made by Amitav Ghosh in his 1992 essay “Petrofiction: The Oil Encounter and the Novel.” Ghosh’s essay is in part a review of Abdelrahman Munif’s monumental Cities of Salt quintet, which maps the emergence of American petroleum interests in the Middle East and its world-altering impact on those living on the Arabian Peninsula. “Petrofiction” also offers a broader critique of the failure of literary fiction to address what Ghosh names the “Oil Encounter”: the intertwining of the fates of Americans and those living in the Middle East around this commodity, a connection that continues to have far-reaching economic, cultural, and political reverberations. In the twentieth century, US power was strongly tied to oil. For the first half of the century, the United States was the world’s first true oil superpower, and it used its energy riches to develop a consumer culture built around automobiles, suburbs, and malls. Given the deep imbrication of the US economy and its politics with petroleum, Ghosh expresses puzzlement that no author has taken up the Oil Encounter as literary subject. Ghosh’s essay is now a quarter of a century old, and yet there are still far too few literary fictions that undertake an exploration of what could well be said to have defined the politics of the period since the discovery of oil in the mid-nineteenth century—the struggle over access to oil. For that matter, there are also not very many fictions that have dealt with the social, cultural, and political importance of energy and oil in any way, shape, or form. I’m not suggesting that there are no such fictions—there are, including such one-of-a-kind theory-fictions as Reza Negarestani’s Cyclonopedia: Complicity with Anonymous Materials (2008) and such recent postcolonial narratives as Helon Habila’s Oil on Water (2011). Very often, however, the presence of oil...
in a fiction is little more than shorthand for wealth and power, which could have other sources and be just as well figured in other ways.

Ghosh’s insight regarding the absence of oil and the Middle East from modern US fiction has resonated with critics and theorists who have attended to the representational challenge presented by fossil fuels. As the planet’s hegemon during the height of petromodernity, we might well expect to find it difficult for US fiction and culture to figure, directly and unalteringly, as one of the principal sites and sources of the nation’s power. From the perspective of the United States, oil is simply what makes the country “go” in a way that doesn’t necessitate comment or concern; as a result, it gets lost to the background of the physical apparatus within and against which social, cultural, and political life is played out, no more worthy of comment than furniture or the asphalt covering its streets—indeed, less so.

One of the distinctive elements of oil as an energy source is that, unlike coal energy (which does enter into Victorian-era writing), it is a resource whose consumption is dissociated from its extraction.23 The historian Christopher F. Jones points out that from the very beginning of the establishment of the oil pipeline system, “the users of oil gained [the] benefit of cheap energy without assuming responsibility for its environmental damage.”24 This ethical dissociation also speaks to oil’s place in the cultural and social imaginary—it vanishes to the background, invisible to narrative and thus to critique. What Munif’s Cities of Salt (1987) captures so perfectly is the blind sense of entitlement of those engaged in extracting oil and the sense of puzzlement of those native to the land whose space and culture have been invaded. Even more powerfully, it shows how the world made by oil can be seen only by those foreign to it. Cities of Salt manages to transform oil modernity into the science fictional time and space that it is, occupied by creatures of steel and asphalt animated by the liquid remains of plants millions of years old and whose imperatives and rationales seem so out of joint with the physical environment of the earth that it is hard to believe they are not from elsewhere in the universe. As Munif writes, “What new era had begun—what could they expect of the future? For how long could the men stand it? The night had passed, but what about the nights to come?”25 The fear and uncertainty that Ibn Rashed and his community experience in Cities of Salt is justified. The dissociation that enlivens the Americans is infectious; their appearance in the Middle East to hunt for the substance that fuels them is felt by the Arab community as a rupture in time with unknown consequences.

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Munif and other postcolonial writers have managed to grasp some of the social power of oil as a result of imaginative openings that the periphery provides. Just as the colonial system and the mechanisms of postcolonial power are evident to those who have to endure them, one might imagine that the significance of energy for shaping modernity is readily apparent in those spaces where petroculture has yet to take hold. Munif’s *Cities of Salt* shows the critical openings that the gap between center and periphery can provide. Yet the representational challenges posed by oil are deeper and more complex than this. Ghosh’s interest in Munif’s work arises in part because it stands as an exception: it is not just US fiction that fails to name oil as a key element of the human drama of the twentieth century but much of postcolonial fiction as well. For the most part, despite the evident sociohistorical importance of fossil fuels, they have in fact played a very small role in artistic and literary expression during the fossil fuel era. In this case, the exceptions—those texts that have been examined by literary critics working in the Energy Humanities—definitely prove the rule.

I suggested earlier that whether or not it was used everywhere in the world to the same degree (or indeed, whether it was used at all in some places), oil has to be seen as hegemonic—as an energy source that organizes life practice in a more fundamental way than we’ve ever allowed ourselves to believe. What this means is that despite the absence of fictions that take up oil or the oil encounter directly by making it a part of narrative, form, or both, *any and all* examples of cultural expression in the era of oil have in fact been crucially figured by it. In their introduction to *Oil Culture*, Ross Barrett and Daniel Worden write that “oil culture encompasses the fundamental semiotic processes by which oil is imbued with value within petrocapitalism . . ., the symbolic forms that rearrange daily experience around oil-bound ways of life.”

It is a point echoed by Frederick Buell in his overview of the framing of cultural and social narratives of the fossil fuel era—for him, “[energy] (especially oil) remains an essential (and, to many, the essential) prop underneath humanity’s material and symbolic cultures.” Might we thus read all of modern literature as a petroliterature and so too make energy a necessary component of literary analysis? The literary critic Graeme Macdonald has offered answers to these questions in his provocative and compelling overview of the key issues that have arisen for critics as they have begun to grapple with the entwined histories of energy and culture. For Macdonald, “fiction, in its various modes, genres, and histories, offers a significant (and relatively untapped)
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repository for the energy-aware scholar to demonstrate how, through successive epochs, particularly embedded kinds of energy create[d] a predominant (and oftentimes alternative) culture of being and imagining in the world; organizing and enabling a prevalent mode of living, thinking, moving, dwelling, and working.”

His article unfolds the implications of what fossil fuels have meant for being and imagining in the world and what they have meant, too, for the fictional forms that have developed in relation to this world shot through with “narrative energetics” and “psycho-social dynamics” linked to oil’s force and power.

Macdonald argues that the inclusion of energy in literary analysis allows us to better grasp how distinct forms of energy help to make possible distinct modes of being and imagining. It is thus tempting—and the results are interesting enough to try it out—to map specific moments of literature in relation to developments in energy history. Modernism can be read in relation to the dissociation that is a central part of the history of fossil fuel use, identifying in the key dates of 1870 (the moment when more energy was extracted from fossil fuels than from photosynthesis) and 1890 (the year in which more than half of global energy came from fossil fuels) significant moments in the history of energy with resonances in literature and culture. Or one might consider postmodernism in relation to the 1973 OPEC crisis, a moment in which narratives of petromodern futures and US hegemony were deeply unnerved and so, too, the self-certainties of narrative and the Western subject. Then, too, one could read postcolonialism as an affirmation of a new era of colonial power linked to the fact that the moment of decolonization was also one in which the mantle of the biggest producer of fossil fuels was being passed from the United States to Saudi Arabia, Venezuela, and other nations in the Global South. To do so would undeniably enrich the vocabulary of literary and cultural analysis and do so in a manner that forces us to increasingly recognize the significance of fossil fuels in the shape taken by modernity and to ask questions about how and why energy has for too long been a “nothing” in our assessments.

But while we might thus enrich the critical literary vocabulary, the addition of energy here hasn’t truly added an analytic element that helps us to better understand it. In each of the earlier examples, the work of analysis confers the sociocultural significance of developments in the world of energy by indexing it to changes we already know about; reconfigurations of energy neither produced modernism nor created postmodern style nor brought about the end of colonialism, which is not to say that they were insignificant. The
challenge as we begin to figure energy into literary and cultural analysis is to know how to explain the precise social impact of a force whose significance is indexed in part by the fact that its import was not figured in much of the culture produced over an extended period. Macdonald is right: all of modern culture is a petroculture; we might also say that world literature is a world petroliterature. But in identifying world literature as the literature of an oil era, are we doing anything more than asking that we now pay attention to how literature can be used as a space that can be mined for insight into the character of this petro-era, presumably for other purposes—that is, so that we might upend petroculture and bring it to an end?

Ian Baucom has written,

Although I have for some time accepted the force of Fredric Jameson’s dictum that “we cannot, not periodize,” until very recently it would not have occurred to me that postcolonial study, critical theory, or the humanities disciplines in general needed to periodize in relation not only to capital but to carbon, not only in modernities and post-modernities but in parts-per-million, not only in dates but in degrees Celsius. Is it productive or meaningful to undertake such a periodization? One could quibble with Baucom’s choice of carbon or temperature as the measure of a new periodization while still understanding the rationale for it—to reimage literature and culture in relation to environmental concerns. A periodization developed around energy and forms of fuel used captures something that Baucom’s proposed periods do not: changes to social capacities and possibilities, to the ways that access to energy—or equally, lack of access to it —creates a predominant way of being and imagining that we usually describe as being modern. Despite all of the caveats, qualifications, and warnings I’ve provided about reading world literature as a petroliterature—as a literature that has to exist within a system organized around the capacities, fantasies and desires, and imaginative and physical possibilities of oil—reading energy into literature and into the world does provide us with critical political resources we might otherwise lack, even if care must be taken with precisely how we figure literature in relation to energy.

There is one final connection between energy and literature that needs to be addressed. I asked at the outset whether including energy in literary studies unnerves not just its how but its why. Environmental historians J. R. McNeill...
and Peter Engelke describe the period since 1945 as the “Great Acceleration,” as a period that “unfurled in the context of a fossil fuel energy regime and . . . exponential growth in energy use.” It is also, they point out, “the most anomalous and unrepresentative period in the 200,000-year-long-history of relations between our species and the biosphere” and a period that is unlikely to continue. Shouldn’t we see literature as a key aspect of this period of Great Acceleration—not only as a practice that gives us insight into the period but also as a category and an activity (writing, reading, and interpreting) that is an outgrowth of fossil fuel use? I’m not suggesting here that literature is synonymous with the fossil fuel era—a claim that comes across as absurd given the historical range of texts studied in any literature department. What I’m proposing is that we think more seriously about the links between the expansion of socially available energy and the coming-into-being of a general social capacity for literary activity—that is, a segment of mass culture that emerged with expanded force and power at the beginning of the twentieth century just as fossil fuels became more abundant (more energy for more people means more culture, a missing piece of the puzzle in Thorstein Veblen’s assessment of the rise of mass culture).

There is a largely unarticulated but widely accepted liberal narrative of literature that links it to a developmental account of social capacity: more literature means more narrative, which means more freedom and more social possibilities—as if world literature were, in the end, a policy of the World Bank. One of the chief insights we gain by adding energy to world literature is that it allows us to see that all culture is petroculture because our understanding of culture is linked to oil’s initial promise of unending abundance. It is always supposed to be better for there to be ever more culture and ever more energy. In recognition of modern culture’s deep ties to energy, the link between literature and energy that critics and theorists have begun to make with ever greater frequency raises questions about the material and ecological weight of literature itself. To date, literature has avoided imagining its relationship to energy through units such as watts/hour or kilojoules/year, seeing itself as a medium that generates no environmental burden even as it proliferates awareness about the catastrophe of climate change. Figuring this metarelationship of literature to energy might well generate an important and original ecological relationship to the apparatuses and objects of modern petroculture and might do so in a manner that would also help undo the damaging self-certainties of the culture of liberal capitalism.

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This is an abridged and edited version of the original essay, which can be found in the *Journal of Postcolonial Writing* 53, no. 3 (2017): 277–88.

1. J. R. McNeill and Peter Engelke point out that by 1870, human beings were already using more energy from fossil fuels than the annual amount of energy produced by all the photosynthesis on the planet; since 1860, there have been one trillion barrels of oil used. See McNeill and Engelke, *The Great Acceleration: An Environmental History of the Anthropocene Since 1945* (Cambridge, MA: Belknap Press, 2014), 8.


4. Smil notes that “only a few coastal societies collecting and hunting marine species had sufficiently high and secure energy returns (due to seasonal migrations of fish or whales) such that they were able to live in permanent settlements and devote surplus energy to elaborate rituals and impressive artistic creations (for example, the tall ornate wooden totems of the Indian tribes of the Pacific Northwest)” (550). At a minimum, art as a social practice necessitates “surplus energy,” which means that varying levels of surplus energy, in conjunction with broader changes in society animated by shifting forms of energy, would produce distinct modes of art practice as well as altering the social significance of art. In all of the changes that Smil narrates in relation to energy, his identification of art as “timeless” speaks more to his own unwillingness to figure art in relation to energy than to art’s apparent ability to sidestep the historical shifts generated by changing forms and levels of energy.


9. Edward Renshaw points out that “animals contributed 52.4 per cent of total work output in the United States in 1850; human workers, 12.6 per cent; wind, water, and fuel wood, 27.8 per cent; and fossil fuels, 6.8 per cent. In 1950, work animals are estimated to have contributed only 0.7 per cent of total work output; human workers, 0.9 per cent; wind, water, and fuel wood, 7.8 per cent; and fossil fuels, 90.8 per cent” (284). “The Substitution of Inanimate Energy for Animal Power,” *Journal of Political Economy* 71, no. 3 (1963): 284–92. (Thanks to Jeff Diamanti for bringing this article to my attention.)

10. Christophe Bonneuil and Jean-Baptiste Fressoz point out that “if, in the twentieth century, the use of coal decreased in relation to oil, it remains that its consumption continually grew; and on a global level, there was never a year in which so


14. The dates are about right: Goethe claims in 1827 that a world literature is “beginning,” while Marx speaks famously in 1848 in the Communist Manifesto of a “world literature” arising out of “the many national and local literatures.” If these comments predate the oil era, they speak to the capacities and possibilities that are emerging as coal begins to be used to generate an increasingly larger part of the energy used in Europe and the United Kingdom.


18. Ibid., 65.

19. Ibid., 56.


21. See Ghosh, Great Derangement.

22. In Cyclonopedia, oil possesses qualities well beyond those we normally assign to it. Negarastani describes it as nothing less than a “satanic sentience” that “possesses tendencies for mass intoxication on pandemic scales (different from but corresponding to capitalism’s voodoo economy and other types of global possession systems)” (Melbourne: re.press, 2008), 26.


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29. Macdonald writes, “If all fiction is potentially energetic, valorizing energy use, then how do we kinetically assert our claims and configure our readings to make it more apparent?”


33. Ibid., 5.

34. See Amitava Kumar, ed., *World Bank Literature* (Minneapolis: University of Minnesota Press, 2002).