

 **Energy Culture**
Art and Theory on
Oil and Beyond

Edited by
Imre Szeman
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West Virginia University Press
Morgantown 2019



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First edition published 2019 by West Virginia University Press
Printed in the United States of America

ISBN
Cloth 978-1-949199-11-6
Paper 978-1-949199-12-3

Library of Congress Cataloging-in-Publication Data

Names: Szeman, Imre, 1968– editor. | Diamanti, Jeff, editor.

Title: Energy culture : art and theory on oil and beyond / edited by Imre Szeman and Jeff
Diamanti.

Description: Morgantown : West Virginia University Press, 2019. | Series: Energy and society
series | Includes bibliographical references and index.

Identifiers: LCCN 2019019865 | ISBN 9781949199123 (pbk.) | ISBN 9781949199116
(cloth)

Subjects: LCSH: Fossil fuels–Social aspects. | Petroleum as fuel–Social aspects. | Renewable
energy sources–Social aspects.

Classification: LCC TP318 .E545 2019 | DDC 621.042–dc23

LC record available at <https://lcn.loc.gov/2019019865>

Cover and book design by Than Saffel / WVU Press

Cover image by Than Saffel / WVU Press based on Fig. 2.4. Map taken from the 2013 Arctic
Fibre Submarine Cable System Project Description / Project Proposal Plain Language
Summary, 3, gcc.ca/pdf/2013-10-23-Non-Tech-Summary.pdf.

*To A. P., for everything that has happened,
and everything still to come.*

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ACKNOWLEDGMENTS

Collaborative projects such as this one incur far too many debts, favors, inspirations, and supports to list them all here. The initial art and research residency in Banff, Alberta, from which this book emerged involved more than twenty researchers and artists, substantial support from the staff at the Banff Centre for Arts and Creativity, and many hours of invisible labor both in our respective homes and in the kitchens and studios that supported our month of collaboration. At the Banff Centre, we would like to thank Debbie Morgan, Brandy Dahrouge, Kelly Moynihan, and Charlene Quantz-Wold for a perfect month in the mountains.

Sean O'Brien, Caleb Wellum, and Jordan Kinder were instrumental in preparing the manuscript. Special thanks to Derek Krisoff, our editor at West Virginia University Press, for helping us see this through, and Than Saffel for turning this book into something worthy of the aesthetic ambitions of its brilliant contributors.

Jeff Diamanti would like to thank Marija, Marcel, and Lorenzo for luxury bowling, sushi on toy trains, and all you can eat dessert(s).

Imre Szeman would like to thank the energy, passion, and commitments of friends and colleagues—constant reminders of why the work we do needs to be done.

INTRODUCTION

Imre Szeman and Jeff Diamanti

This collection of scholarly and artistic interventions is the outcome of a month-long residency, Banff Research in Culture (BRiC). Held annually at the Banff Centre for Arts and Creativity in Alberta, Canada, and organized each year around a different theme, in 2016 BRiC focused on “energy culture”: the social habits and cultural imaginaries that have emerged out of the shared uses and abuses of energy around the world. A growing number of books now investigate the relationship between energy and culture, especially in the emergent field of “energy humanities.”¹ What distinguishes *Energy Culture* is that it is the first work to cross-pollinate artistic and scholarly research, and to highlight investigations generated, workshopped, and produced in a collaborative environment with the intent to intervene in our deep, unquestioned, and still underexplored relationship to energy. This intervention matters because only by understanding the full extent of our commitments to and dependence on high levels of dirty energy will the planet’s human inhabitants be able to make the social transitions and transformations needed to offset global warming.² Given the lack of action on climate change to date, no intervention could matter more.

Unlike conventional academic collections—which originate with an editorial call, followed by a series of individual submissions that roughly fit the theme, through to the end product, which is composed, revised, and finalized piece by piece—this book insists on the need for a different form of thinking, inquiry, and composition. The challenge of critically examining energy to conceive more fully its impact on culture and society—and thus, too, its overall significance for social and environmental transformation—demands experimental and speculative forms of research, modes of inquiry designed to enable the reconceptualization of energy as social form, and a broad reimagining of social form as a set of practices and frameworks always already entangled with energy systems.³ By 1943, anthropologist Leslie White had already produced the outlines of a vocabulary to speak about (in the words of one of his

influential essays) “Energy and the Evolution of Culture,” while more recently, Dipesh Chakrabarty has argued that historians ought to reexamine the forms of freedoms that characterize modern culture through the lens of the ever expanding base of fossil fuel use upon which they are built.⁴ The social sciences and humanities have long held that energy and culture interimplicate one another macrosocially and microsocially, developing implicitly and recursively over long periods of time. *Energy Culture* builds on this core insight by turning to critical and creative modes of inquiry both occasioned by, and designed to crack open, the invisibility and ubiquity of our twenty-first-century “petroculture,” which poses a set of conceptual and political challenges not easily overcome by desires for sustainability, equity, or justice. The three sections that make up *Energy Culture*—“Mapping Energy Culture,” “Figuring Energy Culture,” and “The Politics of Energy Culture”—name the vectors of inquiry that its contributors jointly pursued while in Banff in their efforts to answer the project’s overarching question: what needs to change in our research habits, interpretive frameworks, and social and political lives in order to more fully conceive of the planet’s energy culture as it exists and as it might yet exist?

The contributions to *Energy Culture* represent different modes of examining, looking, and narrating, from academic inquiries to art projects, and from participatory social practices to models of new ways of living and acting. What connects them is their concerted interrogation of the assumptions and presumptions that animate our relationship to energy, and especially to our main source of energy for close to two centuries: fossil fuels. The primary issues that these varied contributions seek to address—the operations of energy in shaping contemporary culture, and our critical ability to grapple with this as we attempt to move away from fossil fuels—exceed the analytic capacity of any one discipline or conceptual approach. No master narrative on energy will set us on a cleaner, more equitable path; if anything, faith in master narratives is part of the problem rather than an element of the solution. The pieces in this volume draw attention to specific aspects of the form and character of the energy culture that shapes us. In doing so, they also point to limits in the approach to energy of other pieces collected here. Because we deliberately avoid a master concept of energy, the chapters gathered here work together and also (at times) work productively against one another. *Energy Culture* is a critical collection in the truest sense: a group of pieces that speak to a single issue, each providing a piece of a larger picture that could not be grasped without their combined intellectual contributions and insights.

Despite the diversity of approaches and focal points, the contributions to *Energy Culture* start from two common insights. The *first* is that energy is

linked to culture in a *fundamental* way. The insight that culture is entangled with the infrastructure of energy, and, equally, that the continued expansion of the global energy system is contingent on global culture, moves these critical interrogations away from moralizing and shortsighted approaches to energy and environment. Rethinking energy and culture in terms of their mutual dependency builds on some of the most exciting new research in the environmental humanities, which emphasizes the depth of commitments made to high-energy lifestyles. In his stirring assessment of the multiple challenges posed by climate change, Amitav Ghosh reminds us that

culture generates desires—for vehicles and appliances, for certain kinds of gardens and dwellings—that are among the principal drivers of the carbon economy. A speedy convertible excites us neither because of any love for metal and chrome, nor because of an abstract understanding of its engineering. It excites us because it evokes an image of a road arrowing through a pristine landscape; we think of freedom and the wind in our hair; we envision James Dean and Peter Fonda racing toward the horizon; we think also of Jack Kerouac and Vladimir Nabokov, of a quintessential narrative whose very setting is the road. When we see an advertisement that links a picture of a tropical island to the word paradise, the longings that are kindled in us have a chain of transmission that stretches back to Daniel Defoe and Jean Jacques Rousseau: the flight that will transport us to the island is merely an ember in that fire. When we see a green lawn that has been watered with desalinated water, in Abu Dhabi or Southern California or some other environment where people had once been content to spend their water thriftily in nurturing a single vine or shrub, we are looking at an expression of a yearning that may have been midwived by the novels of Jane Austen.⁵

Ghosh places emphasis on the historical depth of these desires—the discourse and cultural logics of a winter vacation for suburbanites stretching back to Defoe and Rousseau, and the fantasies of lawns and gardens for homeowners across the planet linked to yearnings found in Jane Austen. In the desire for the middle-class safety of a backyard, a small slice of heaven that one can call one's own, or in the power and freedom of a car on the road, culture and energy constitute each other, and in the process constitute modern, global society as well.⁶

The economic and transport infrastructures that have been generated by the ever-expanding use of fossil fuels (and which in turn support and amplify

that self-same use) constitute a significant dimension of global energy culture. Just as significant—perhaps even more so—are the cultural desires to which Ghosh and the contributors to this volume draw our attention. While not everyone on the planet has access to the same levels of energy, the desire for the objects and services that come with energy use animate global imaginaries of the good life. The link of these desires to energy, and our practices of energy to these desires, can be difficult to separate from the sheer phenomenological givenness of modern culture and experience. What possible kind of critical response can be mounted to the constitution of the whole of one's cultural desires and social experience? Can one pull them apart to isolate the role of energy in figuring them? Can one do anything other than point speculatively to sites and practices of connection and constitution, and imagine some other way of putting the pieces of the puzzle together that uses fewer kilojoules each year? Taken together, the pieces in *Energy Culture* speak to the challenges of taking energy seriously for culture—a task that goes beyond (say) looking at films or novels that feature energy (an important first step in the practice of energy humanities), and that demands an interrogation of desires for representation, narrative, and amusement, of the modern system of social and cultural capital and its links to energy, and of the divisions of the social, cultural, political, and economic into which modernity has been so comfortably separated, with energy usually out of sight and out of mind.

To take energy seriously in relation to culture demands the exploration of new forms of being, belonging, ethics, and politics—new, that is, to a modernity that has sought to impose the violence of its logic and practices on all human communities, and in the process has also redrawn the map of relations to the nonhuman (when it hasn't torn up and abandoned this map altogether). While fossil fuels have been both qualitatively and quantitatively dominant in modern industry and culture, they have also coexisted with both residual and emergent energy sources, each with its own geographies, histories, and social implications. Energy culture unfolds unevenly, which is why in Ghosh's account the forms of desire and imaginaries to which fossil fuels stick are not always determined by what has come to be known as "petroculture," but nevertheless help harden our global reliance on the freedoms that come with fossil fuels. But other forms of attachment coexist with the petrocultural, and these will have to matter to any environmental and social politics to come. One doesn't need to look far to find counterexamples of living with energy. Warren Cariou points out that "traditional Aboriginal energy-use practices are characterized by what might be called *energy intimacy*, in which every community member necessarily has direct and personal relationships with the sources of their energy." In

Cariou's stirring rejoinder to the modern practices of energy use, he goes on to say that "energy intimacy means that energy is always contextualized, always specific to a particular place with which the energy user must establish an intimately familiar connection."⁷ The demand for and assertion of energy intimacy is a vibrant political act in an energy culture that is constituted (for most) around the distance of energy from source to the sites at which it is employed; notable exceptions are those minority communities, including Aboriginal communities, that have had to suffer the environmental and social consequences of the mass extraction and production of energy, and fossil fuels in particular.⁸

As another example of energy intimacy, consider the many rituals that rearticulate small groups to the ecological chain in a given activity, through what the German American philosopher Albert Borgmann calls focal things and practices.⁹ These include stocking and managing wood-burning stoves, performing Japanese tea ceremonies, and cycling, among many others. In common across these varied activities is the way that the human body is made to feel its way through the material stuff that entangles our cultural practices and rituals. Key to the difference between focal practices and fossil-fueled ones are the mediations that intervene between the body and its experience of the world. Technologies that mask the contingences of energy use help to bury what Patricia Yaeger has termed our "energy unconscious" in a field of forces so remote from their crude materiality that our habitus begins to disavow them altogether.¹⁰ Focal things, in contrast, forge an embodied epistemology so that the varied phenomenologies that come with the environmental contexts of different energy sources become rearticulated to our shared ways of knowing. One of the challenges faced in reimagining energy culture is that practices that put the subject in direct contact with the chain of materials involved, as in Borgmann, are difficult to imagine beyond small groups. Technologies and capacities bound to fossil fuels are ubiquitous and effervescent, well exceeding the sites usually targeted by environmentalist groups, such as the smokestack and the tailpipe. Mapping and decommissioning the ubiquity of fossil fuels, therefore, requires a variety of critical approaches, involving both exposition of how certain practices and beliefs involve an energy unconscious, and creative experimentation with new practices of energy intimacy that help to normalize the deintensification of fossil fuels.

If the first insight shared by the contributions to this volume is the deep imbrication of culture with energy, the *second* is that we presently occupy an interregnum in our relationship to the environment and the nonhuman. Through whatever medium they might employ, our sharpest critics have been tearing away at the infrastructures (physical as well as conceptual) of modernity—the

separations, prohibitions, and exclusions they enable, the desires and fantasies they underwrite (tropical winter vacations for everyone! lawns for all!), and the material resources they demand. Elizabeth Povinelli reminds us, however, that at present our gestures to exceed the logics of modernity remain within the dynamics of what she has termed “settler late liberalism.” Povinelli describes the current moment of the configuration of power as “geontopower.” This is not a new form of power, but constitutes the last gasp of modern biopower. Geontopower “does not operate through the governance of life and the tactics of death,” she writes, “but is rather a set of discourses, affects, and tactics used in late liberalism to maintain or shape the coming relationship of the distinction between Life and Nonlife.”¹¹ Povinelli cautions that the diagnostics that we have developed in relation to our understanding of—and desire to undo or manage—the gap between Life and Nonlife remains “a collection of governing ghosts who exist in between two worlds in late settler liberalism—the world in which the dependent oppositions of life (bios) and death (thanatos) and of Life (bios) and Nonlife (geos, meteoros) are sensible and dramatic and the world in which these enclosures are no longer, or have never been, relevant, sensible, or practical.”¹²

Posthumanisms, new materialisms, object-oriented ontologies, technoutopianisms—these are all among the “governing ghosts” to which Povinelli draws our attention. The study of energy culture also sits within this conceptual and political gap named by geontopower. Unlike some of the other fields of inquiry named above, the demands energy places on critical thought produce a heightened awareness of the dimensions and dynamics of our current interregnum; the investigations in this collection are alert to the temptations of safe, well-known ideas and the need to decisively interrupt them. While not imagining that they leapfrog late settler liberalism into the coordinates of some new mode of power and belonging, the contributions to *Energy Culture* insist on the need to attend to the governing ghosts of energy that haunt being and belonging. When solar panels extend to the horizon, will we strip away the lawns on our front and backyards? When fossil fuels become expensive and in short supply, will social life become a struggle over who gets to vacation in Oaxaca? Or will these infrastructures and desires no longer be part of what it means to occupy this time and space, with others, living and nonliving?

There are historical reasons why this interregnum is troubled in provocative ways when the focus is on energy culture. For instance, the specter of energy scarcity meaningful to environmentalisms of an earlier moment appears today flipped, turned by new extraction technologies into the specter of abundance, glut, and excess. In contrast to narratives of peak oil, there has

never been as much oil ready for market as there is today, and with economic and demographic growth plotted to continue deep into the century, this oil will have no shortage of buyers. Natural gas and coal have paradoxically become more abundant and profitable in the years following Chinese modernization and U.S.-led industrial agriculture. A social or environmental politics that waits for the natural end of supply will have decades, if not centuries, of misery ahead. Late-capitalist liberalism appears poised to trundle merrily along, at least with respect to the energy that fuels it; by now we have numerous accounts, including that of Andreas Malm, that effectively debunk the fiction that energy transitions occur historically because of the hidden and rational hand of the market.¹³ We are witnessing today a peculiar inversion of social and natural history, where what was the environmental background to history now appears in flux and revolt, while human history appears fixed, becoming the new ground to the figure of the environment.¹⁴

If energy is capacity, it is also a constraint—and in anthropogenic climate change, driven by centuries of practices animated by fossil fuels, energy has become the core constraint of our time, making it profoundly difficult to generate new cultural and social imaginaries, and original political and economic forms. What then are social scientists, humanists, and artistic researchers to do in this context of capacity and constraint, of the weight and apparent fixity of energy culture, which we understand needs to be changed even as we begin to grasp just how difficult it will be to change it—since it means to change, well, everything.

The contributions to *Energy Culture* aim to unsettle status-quo understandings and expectations of our relation to energy by collaboratively and creatively investigating the forms and figures that dent energy culture, both historically and in the present, in an effort to conceive of time-released tensions in future energy culture. The BRiC residency asked artists and researchers to collectively address energy's historical figures and futures, its visual and social economy, and its capacity to disfigure. In addition to taking up the challenge of critical analyses in the landscape of petrocultures, the contributions to *Energy Culture* collectively offer an affective, creative, and critical start to the transition and transformation of petrocultures into new cultures alive to environmental and social justice, traversing the multiple lines of force that energy has woven into the heart of contemporary society.

Energy Culture is organized according to the three primary vectors of inquiry that emerged from our collaborative research. In Part I, "Mapping Energy

Culture,” contributors detail the site-specific forms of energy that in the North American context make daily life contiguous with fossil fuels. Part II, “Figuring Energy Culture,” turns to the artistic and creative research occasioned by the ubiquity of fossil fuels in contemporary life, and the interdisciplinary challenge of creating new energy cultures. Part III, “The Politics of Energy Culture,” concludes the book by scanning the socioeconomic contradictions, impasses, and imperatives generated by the long transition into our fossil-fueled present. The work of the artists included here is intended to trouble and unnerve long-established ways of thinking about and relating to energy. The critics and theorists who participated in BRiC in 2016 and whose work is found in these pages engage in a similar labor, if from distinct angles and along different conceptual vectors. It is too simple a division to suggest that the artists attend to the visual vocabulary of energy cultures, while critics interrogate the language of energy; nevertheless, some of the contributors to this volume are attuned to the circulation of concepts related to energy through language—to the limits as well as possibilities contained in the explanations we commonly offer of the energy landscapes we inhabit.

Part I: Mapping Energy Culture

The Austrian artist Ernst Logar has engaged in an extended assessment of the social, cultural, and political significance of resource extraction. His best-known project is *Invisible Oil* (2008), which documents his careful and nuanced exploration of oil culture in Aberdeen, Scotland. The images included here are from “Tar Sands: Approaching an Anthropocentric Site,” an exhibit of his work held at Paved Arts in Saskatoon, Saskatchewan. At the core of the exhibit are screenprints of iconic images associated with oil in Fort McMurray, Alberta: a Suncor extraction site; the Athabasca River; a reclamation site (part of the network of reclamation projects described by Jordan Kinder in his contribution to this book); and a pipeline. These screenprints are generated using bitumen—the very stuff of the oil sands. They make up the rear wall of an aquarium filled with water taken from the Athabasca. These pieces insist that we see water and oil as bound up with one another in ways that should give us pause. The stuff of life in the aquariums is toxic, just as the Athabasca River has proven to be for First Nations communities that live downstream from the oil sands. Written into the priorities we assign to our use of oil and water is a narrative of power and privilege common to every practice of resource extraction.

Mél Hogan’s “Trespassage” explores the recent opening up of the Northwest Passage, the storied route linking the Atlantic and Pacific Oceans

via the Arctic Ocean. The Northwest Passage has claimed the lives of many explorers, including (most famously) Sir John Franklin, whose steam-powered ships set off to Canada in 1845. Since 2007, it has become possible to navigate a passage free from ice—a climate change-generated transition in how we understand the Arctic, which has now become a feasible site for extraction and the generation of profit. This has been as true with the passage of goods as it has been to the passage of information. “Each new attempt to traverse the Arctic speaks to a persistent urge to pass through more quickly than before,” Hogan writes, “to find a shortcut—to save time and money—a knowing *trespassage* that justifies itself with an efficiency of its own measure.” Hogan proposes *trespassage* as a concept through which to “rethink the conceptual entanglements of nature and media, where both serve as infrastructure that links time and space.” The medium Hogan explores is an undersea fiber-optic cable, which the company Quintillion Subsea Holdings intends to lay in the newly ice-free passage. While the company has promised to connect the inhabitants of northern Canada to the rest of the world, its true intent is to use the Northwest Passage to connect Tokyo, Montreal, New York, and London. As Arctic ice disappears, the high use of energy at these nodes of capital has created the perverse possibility of linking them all at even higher speeds, in the process bypassing the inhabitants of those spaces, whose lives have been forever altered by the ferocious commerce of Western energy culture.

Metaphors can enhance our ability to grasp complex realities and draw together, in a single figure, practices and processes that we might not otherwise understand as related. But they can also obscure reality, acting as convenient and confident narrative shorthand for realities that don’t actually exist. So it is with the figure of the “cloud,” that amorphous, transparent, immaterial space that houses our data and enables the near instantaneous transfer of information. As Jayne Wilkinson shows, one of the many things hidden by our commitment to cloud thinking is the material reality of our information age. The metaphor of clouds makes it seem as if we communicate through the atmosphere via invisible, immaterial networks—a clean way of connecting with one another that leaves no trace or physical impact. In reality, the global infrastructure of clouds can be found in infrastructure housed in our oceans. In addition to her own reflections on the social and political significance of the metaphor of clouds and the way that it impedes and obscures our view of today’s oceans, Wilkinson examines how our extant tropes of reading clouds and traversing oceans operate in relation to discussions of information, climate change, and energy. Her chapter draws on the work of writers such as Italo Calvino and Rebecca Solnit, and artists including Roni Horn and Nicole Starosielski.

Common to all of the artist projects in this book is the attempt to remap the spaces and places of energy—those networks and infrastructural systems of modernity that have reinforced our practices and habits in relation to energy. In her contribution, M. E. Luka describes some of the projects of the artist group Narratives in Space + Time Society (NiS+TS). Based in Halifax, Nova Scotia, NiS+TS plots sensorial walks for members of the community, which are intended to bring to life both well-known and lesser-known histories of the spaces they traverse. These walks are animated by Guy Debord's theory of *dérive*—a means by which to interrupt sedimented patterns of traversing space and the fixed experiences that accompany such movements. Luka describes the critical work undertaken by NiS+TS through the walks they curate examining the Halifax Explosion, an event that took place in World War I and damaged much of the city, resulting in widespread death and injury. "By walking through these spaces with community members, we help make visible not just how the Halifax Explosion's reverberations continue to be felt today but also how we could imagine a different present and future," she writes. Walking—using the energy of one's body instead of moving through city streets with the speed of the automobile—allows one to experience the space one inhabits very differently, and also leads to the production of a different kind of community than the one anchored to car culture. Above and beyond the lessons about the city learned by participants in these walks, their reduced time and scale generate opportunities for collectivity that seem to have drained away in our auto-mobilized cultures.

In their introduction to *Energy Humanities*, Imre Szeman and Dominic Boyer write: "There is a place for sober criticism and discussion in the enterprise of energy humanities; there is also a place for surreal vision and wild imagination."¹⁵ "Several Documents Pertaining to the Cascade Energy (transition) Park Corporation Corporation (CORPCORP)," created by Marissa Benedict, Cameron Hu, Christopher Malcolm, and David Rueter, is a marvelous example of how imagination can open up new vistas onto energy modernity. We are given little context for the images, maps, and texts that make up this contribution, other than a short note on the first page, which tells us that the documents we are about to flip through were in a thumb drive found in a parking lot in Joshua Tree, California. The documents throw us into the middle of a mystery. Just what are these scanned documents and audio transcripts about? Who generated this information, and why? What exactly is taking place in the Cascade Energy Park? Are these documents evidence of malfeasance, or are they simply misplaced documents into which we are mistakenly reading a narrative? Combining the creepy, unsettling affect of Jeff Vandermeer's *Southern Reach Trilogy* (is the area described here a variant of his Area X?) and Reza

Negarastani's experimental fiction *Cyclonopedia*,¹⁶ this piece offers no answers to these questions. And perhaps this is the point: by highlighting the narratives we normally depend on to relate energy to the environment, this piece unsettles our comfort with them, insisting that we need to connect the dots in a different manner than we have done up to now.

As the contributions by Hogan and Wilkinson highlight, the repurposing of nature to the ends of profit is an all-too-common feature of our energy culture. Indeed, even the process of cleaning up sites of oil extraction can repeat and reinforce our dominant relationship to energy, and can do so in a manner that legitimates the ongoing viability of dirty, damaging extraction. In "Sustaining Petrocultures," Jordan Kinder interrogates the logic of land-reclamation projects carried out by oil sands companies on those zones already stripped of bitumen. For oil sands companies, even if the process itself is complicated, the rationale for reclamation is simple: it aims to undo the damage companies have wrought in the process of strip-mining for oil, for both ethical and aesthetic reasons, and to sustain public trust in what they do. Reclamation projects like Gateway Hill, near Fort McMurray, are intended to return extraction sites to their original, natural state. Kinder offers a ferocious challenge to the practice of reclamation, which he sees as little more than a process intended to maintain, expand, and reproduce our energy culture. Reclamation projects produce not a renewed natural landscape, but a deeply artificial one. The artifice is a result not only of the poor job done in restoring these sites, but of the too-easy understanding of "natural" that would make it imaginable to technologically negate the human alteration of a landscape by altering it even further.

Part II: Figuring Energy Culture

The artists Heather Ackroyd and Dan Harvey (known as Ackroyd & Harvey) have repeatedly drawn attention to the complex coordinates of energy culture. In "Capitalism in the Corpse of a Whale," they remind us of the energy source and culture that existed just before the oil era. Whale oil came before fossil fuels: it lit up cities that burned the oil from the head of sperm whales and filled the pockets of whaling fleet owners and investors. Whale harvesting during the eighteenth and nineteenth centuries emptied out the oceans of whales; many species of whales, which continue to be hunted by some nations today, remain threatened with extinction. Ackroyd & Harvey detail an artwork they produced from the skeleton of a stranded minke whale, designed to bring attention to the ongoing human assault on the ocean (whether through fishing and whaling or through the dumping of plastics), and to alert us to the

consequences on the planet of protracted profiteering. Dipped in a highly saturated alum solution, the whale bones in their piece emerge crusted in bright crystals—an apt and powerful metaphor of the effects and implications of capitalism, whether of the whale era or of the oil age that has followed in its wake.

One of the most vibrant areas of the energy humanities has been literary studies, a field that has seen critics revisit literary history and literary texts to look for insight into our energy culture. In his elegant and erudite contribution, David Thomas asks himself whether literature and literary criticism can truly contribute to a renewed understanding of the social and cultural significance of energy in the way that some critics hope it might. The reason for his doubt is simple. Following writers such as Amitav Ghosh, Thomas explores whether the ecocritical attributes of contemporary literature have been oversold, especially with respect to encounters with our petrocultures. His chapter offers a relentlessly critical account of the limits of literature in relation to the environment, and points to the problems of deep or close reading of literary texts as a way to learn about energy. “Study of literary writing in the age of the Great Acceleration,” Thomas writes, “seems to offer more insight into the dreams and fantasies that permeated elite culture as the signature modalities of petrocapitalism developed, than into the underlying nature of the project itself.”¹⁷ What Thomas takes away from his assessment of the current practices of the energy humanities in relation to literature is an insight that underlies all of the contributions to *Energy Culture*. Even given his criticisms and hesitations, energy remains for Thomas “a lodestar for the kind of synthetic vision that we would need if we were to produce forms of social life that were capable of submitting the power of techno-science to a kinder and more holistic understanding of our place in the world.”

The brief interview with the artist Maria Michalis gives us insights into her own unique exploration of energy culture. Michalis’s interest in energy dates back to *EMERGY* (2008), a project that uses the human power of its participants to draw attention to our culture of convenience and wealth. Her projects require those experiencing them to exert energy—for instance, by pedaling a stationary bicycle—in order to bring her pieces to life. This constitutes a form of embodied knowledge and education essential to the task she intends her projects to carry out. From *S.OIL* (2012) to *Mapping the Terrain* (2016), Michalis transforms the sometimes abstract and distant systems of energy into material processes that one can experience physically as well as intellectually. This makes it possible to imagine energy as a dimension of modern life into which communities can politically intervene and shape to different purposes than our extant infrastructures.

For a significant part of philosophy's history, a nascent concept of energy lurked behind the development of ontologies and the outline of metaphysics. Energy played a crucial link, for instance, in the works of Leibniz, Helmholtz, and Nietzsche, between materiality and cosmic interconnectivity. Am Johal's "The Energy Apparatus" asks us to consider why energy has become conceptually and philosophically defanged, shifting from the expanse of philosophy to a relatively limited sphere of political contestation. Missing, Johal argues, is a theoretical lens that allows us to see both the macrosocial and historically specific ways in which the material origin of energy is tied to its true political force. Turning to Italian philosopher Giorgio Agamben's treatment of power and sovereignty over different forms of life, Johal provocatively considers whether oil has become the nonhuman sovereignty on which the legal apparatus of modernity is built. In productively asking how Agamben's discourse allows us to see energy anew as a social substance, Johal also brings insights from the energy humanities to bear on Agamben's own philosophical project, probing the limits and presuppositions that emerge from a blindness to energy's full significance and import.

One of the reasons that energy has long been invisible is the distance of oil fields from the urban conglomerations in which most of us live. Artists Hannah Imlach and Thomas Butler confront this distance by bringing energy to the city—not as potential threat, but as promise. *Aeolian Survey* is a planned art installation that would involve the installation of aeolian harps throughout Glasgow. The sound of these hidden harps—played by the wind moving across the rooftops of buildings—would be transmitted to an art gallery, where the accumulated sounds would be played over speakers. The main point of *Aeolian Survey* is to draw attention to the renewable energy potential of a city center. Scattered all over the city, the harps would "act as a synaesthetic mapping device, conveying the potential of local wind power through sound alone." But this piece would do more than just emphasize the potential of Scotland to generate a larger degree of its energy via renewables. "Mindful of the present," write Imlach and Butler, "we mix the roar of the electrified harp with location recordings made inside the very buildings they crown"—a sonic cross-section that collates evidence of electronically enhanced human activity. The gallery sounds bring to our attention both the generation of energy and its expenditure, creating an affective and personal encounter with a large, abstract system that can be difficult to confront or grasp.

In "Anecdotal Encounters on Driveways," artist Megan Green introduces us to the themes that have shaped her work on oil cultures. Feral suburbs, kitsch, and Newfoundland identity: these topics sound like stereotypes of

life in Fort McMurray, the city at the center of Canadian oil sands extraction. A Newfoundlander now living in Fort Mac, Green explores a very different petro-aesthetic than the one to which we have become accustomed. Instead of exploring its inhuman colors and otherworldly scale (as in the photographs of Edward Burtynsky or filmmaker Peter Mettler's *Petropolis*),¹⁸ Green turns to the quotidian character of life in the oil sands. For those living in Fort Mac, the oil sands are just part of the neighborhood—part of the sight, feel, and smell of the place. Those living near sites of extraction cannot rely on an aesthetic that criticizes from afar; in any case, as Green points out, this aesthetic repeats the practice of distanciation through which oil extraction has long enabled and legitimated its practices. Green also critiques the turn to nature as a solution or resolution of the environmental problems generated by energy extraction. Her art comprises the remnants of another form of resource extraction: game hunting, which for many who work in oil fields constitutes a turn to the natural and away from the damage enacted by the culture of extraction in which they spend their daily lives. Green's pieces and the anecdotal encounters that generate them point to the need for a new vocabulary of ethics and aesthetics through which we might reimagine our current relationship to resources.

Like the other artists in *Energy Culture*, Jacqueline Drinkall's work explores the sites, spaces, and modes through which our culture is imbricated with energy. Through her interrogation of the degree to which we are, in fact, creatures of petrocultures, she introduces a unique perspective on energy culture. Drawing on philosopher Catherine Malabou's concept of "plasticity," Drinkall insists on the impact of climate change on the cognitive capacities of the human brain—not just the configuration of our concepts, thoughts, or imaginaries, but the physical shape and wiring of the nervous system. "Lakes and mountains are not foreign to the ecosystem of the human brain," Drinkall writes, "and if humans destroy them, they destroy their brains and themselves." This strong equation of nature and neurology informs the two projects that she describes in her chapter. Both projects highlight the complex ways in which, in her words, "physical and neurological structures are bound to climate, energy cultures, and cybernetic systems."

Part III: The Politics of Energy Culture

One of the challenges that the planet will have to undergo over this century is to shift from fossil fuels to renewable forms of energy, and to do so while also expanding access to energy for most people on the planet. Exactly how we might expand energy use for citizens of developing countries while

minimizing or even reducing CO₂ levels is hard to fathom. Even the shift to renewable energy has proven difficult: the infrastructures and political systems generated by dirty energy have had a tendency to impede movements toward clean energy. Jenni Matchett, a former employee of one of North America's major solar energy companies, describes the models for solar deployment that have emerged in North America to date. The growth in solar energy technologies and the expanded consumer demand for solar does not on its own guarantee that individuals, communities, or municipalities can easily switch off coal or diesel generators and begin soaking in the energy of the sun. The electricity grid is an old system that needs updates to bring solar online, and the policies of governments and utilities are weighed down by accumulated practice, histories, and expectations. Matchett describes three models that have emerged for solar energy: solar energy marketed as a consumer product, solar energy as a retail investment asset (that is, an investment mechanism through which the development of solar is financed), and community solar. Matchett argues that only community solar will allow solar energy to become more than another commodity fashioned along capitalist market principles. In Matchett's contribution, we begin to see the ways in which the optimism attached to energy transition is already framed by a way of "just doing business" that emerged alongside the development of oil capital.

If solar power does not in and of itself move us out of oil capital, might there be other changes to existing infrastructure and social practices that would enable true energy transition to take place? Keller Easterling maps out the possibilities that would be opened up by the introduction of "the switch"—a space that allows for upshifting and downshifting into different forms and modes of transportation. Automated vehicles (AVs) have been presented recently as a mechanism through which it might be possible to address the worst excesses of car culture. However, without redefinitions of the space in which they are employed, AVs may generate as many problems as they create (for example, current mass transit riders may shift *en masse* to the greater convenience of AVs). Easterling shows how the creation of transportation hubs that would bring together hitherto distinct activities, such as shopping, education, and exercise, would ensure an optimal employment of travel—from mass transit to the individual use of AVs. Easterling points out how the switch might generate a reconstitution of the "essential disposition of power in cities" by creating possibilities that anyone could travel wherever they might like. She convincingly advocates the promotion of the switch as a form of politics by other means—one that generates a redefinition of the current configuration

of urban and suburban space, as well as the desires and practices densely coded into our current way of living together.

Darin Barney's focus on the infrastructures of fossil capital redefines pipelines, transistors, and refineries as sites not only of production, but also of class reproduction. This redefinition matters enormously for how we conceive of a politics adequate to desires for a large-scale energy transition. Barney forwards a series of theses on the relationship between energy infrastructures and the practice of sabotage in order to resuscitate what was a key mode of left politics in the past, as well as to help us understand how fossil fuels lubricate capitalist accumulation through a kind of preemptive sabotage of its own. Barney shows why intervening where the flows of energy mix and mingle with and as the flows of capital means exposing the smooth space of the economy as coextensive with the crude space of fossil fuels. Leaning on the essential technologies where energy is most tangible leads to a labor consciousness alert to its own energy *unconscious*.

Antonio Negri also draws into focus the tactics of a radical tradition born in the moment of fossil-fueled industrialization in order to identify the shape of energy resistance to come. Using the imagery of the furnace, Negri turns the chronological sequence of sabotage-strike into an index of the spark and fire of fossil capital, both as political struggle and literal, energetic force: "Sabotage is the spark of this protest. Often individual. But sabotage can also be collective (perhaps it's always collective), because it's hard to imagine a spark without a fire that burns. In fact, the strike can arise, as a collective behavior, when the spark, through organization and the awareness of the organization of labor, succeeds in setting fire to the prairie." If the prairie is the topography of contemporary capitalism, then the spark is the collective decommissioning of energy as a form of social domination. To set today's economic fabric on fire is to break capital's facility with fossil fuels. At the same time, economic and political developments recursive to today's energy system need to be politicized, including governance via biopolitics and the informatization of society. To carry out these political projects, Negri's chapter makes the case for a new kind of strike, sparked by a new kind of sabotage.

Our energy culture is deeply problematic and deeply troubling; the vocabulary and practices of energy companies have long been deployed to render the practices of extraction normal and natural. Matt Huber's *Lifeblood: Oil, Freedom, and the Forces of Capital* (2013) was one of the first books that looked closely at the complex ways in which contemporary social life was a product of the energy culture generated by capitalism. In his contribution, Huber argues that it is essential that we see energy as a material force of social division and

antagonism, especially between classes within society. Scholars have already explored energy as a site of social struggle and contestation; the originality of Huber's essay is his focus on energy consumption, as opposed to energy production, as a space of class division. At the heart of this essay is an exploration of the emergence of oil- and electricity-powered suburbs as a social space that creates racial, gender, and class exclusions and division. Huber makes the powerful argument that today we do not use too much energy, but *too little*; for most people in the world; certainly, for lower- and working-class communities and for racialized populations, energy use has always been circumscribed and limited. "Fossil fuels need not only be seen as the original sin of industrialism that we must reject and power down from," Huber writes, "but a dirty springboard to an abundant and clean energy future."

Mirroring the ubiquity of energy impact on our daily lives is the everywhere-ness of its environmental traces, from the plastic buildup in our oceans to the thick swirls of CO₂ floating in the atmosphere. Frequently overlooked in discourse on environmental justice is the slow violence enacted on vulnerable bodies by way of the metabolic cycles that connect human bodies to ocean and atmosphere. Concluding *Energy Culture* is a poem that bisects the lines of human and nonhuman, ocean and atmosphere. In her "Vortex of Light," Maya Weeks updates fundamental insights from the ecofeminist tradition of Carolyn Merchant, Vandana Shiva, and Maria Mies by connecting the petrocultural to what her poem calls "the chemical level." Written in a combination of poetic styles, Weeks's work moves across the sites and bodies that accumulate plastic, pausing on conceptual islands to ask such things as "BUT WHAT DO WE LOVE" before moving on to develop a speaking, lowercase "i" both drawn to and repelled by the materiality of plastic. The liberal standpoint animating so much environmentalism is made insufficient in "Vortex of Light," given the scope and scale of our petrocultural entanglement with natural systems: "Even if you live a good life in relation to pollution," the speaker suggests, "there are things you cannot see. A single / washing of a fleece jacket can release thousands of tiny plastic particles. More than one hundred / million microplastic particles are released into Advent Fjord every day."

As *Energy Culture* makes clear, the ongoing project of petrocultural critique is not only to unmask the world as one riddled with addiction to fossil fuels, but also to carve out moments and enclaves in which to refigure the project of our energy futures. This crucial tense—the future—that weighs on the present like a nightmare is, crucially, plural, since so many attempts are made daily to prefigure and overdetermine the future of energy, in what will always be a deeply political interpretation of sociocultural trends and tendencies

(consider the gap separating those who imagine that solar energy leads to “solar communism” and those who see alternative energies as an exciting new sector in which to generate massive profits).¹⁹ These trends and tendencies are contested and cumulative and so consist of myriad contradictions that are proving to be exceptionally hard to pry apart or even to grapple with. Critiquing the base assumptions upon which such projections into the future are made is an indispensable tool that humanists and social scientists bring to the problem of energy. But critique subtracts by design, leaving the plurality of the future tense opaque and unfocalized. The *creative* work of grappling with the conceptual, material, and historical character of energy—the work in which we see this collection participating—helps to focalize the embodied social practices of an asymmetrical energy culture, providing a model of what the most vigorous and alert forms of multimodal critique can add to the task of shaping new futures for our energy culture.

Notes

1. For an overview of the field of energy humanities, see Imre Szeman and Dominic Boyer, eds., *Energy Humanities: An Anthology* (Baltimore: Johns Hopkins University Press, 2017); and Graeme Macdonald and Janet Stewart, eds., *Routledge Handbook of Energy Humanities* (London: Routledge, forthcoming 2019). A text that promises to take the field in exciting and intriguing new directions is Brent Ryan Bellamy and Jeff Diamanti’s *Materialism and the Critique of Energy* (Chicago: MCM Prime, 2018), a collection that includes contributions from George Caffentzis, Andreas Malm, and Alberto Toscano, among others.
2. If it wasn’t already abundantly clear, change has to happen *now*. In “Revolution in a Warming World,” Andreas Malm points out the degree to which the use of our era’s dominant energy source—fossil fuels—and global warming are linked. He writes that “using conservative figures, excluding any future discoveries and deposits [of fossil fuels] made available by new technologies, Katarzyna Takorska and her colleagues place the effect in the ballpark of 8°C—hitting 17°C in the Arctic—rather than the previously believed 5°C. Converted into actual conditions for life on Earth, those average eight degrees would, of course, spell the end of all stories” (Andreas Malm, “Revolution in a Warming World,” *Socialist Register* 53 [2017]: 120–42, 132 [quote]).
3. This way of framing the question of energy deliberately builds on insights developed by Donna Haraway and others in the environmental humanities, captured in the dehyphenated concept of “natureculture.” The term “energy cultures” as a collection and as a concept turns on Haraway’s gesture—namely, to incorporate always the mutually supportive structure of being shared across the human and nonhuman divide in ethics and politics. Importantly, it also underscores the extent to which energy has *not* been thought actively as social form in the environmental

- humanities to date, and offers a sense of what a corrective to this oversight might look like.
4. Leslie White, "Energy and the Evolution of Culture," *American Anthropologist* 45, no. 3 (1943): 335–56; and Dipesh Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry* 35 (2009): 197–222.
 5. Amitav Ghosh, *The Great Derangement* (Chicago: University of Chicago Press, 2016), 9–10.
 6. On the expanding global fantasy of grass lawns and its environmental implications, see Yuval Noah Harari, *Homo Deus: A Brief History of Tomorrow* (New York: Penguin Random House, 2015), 58–64.
 7. Warren Cariou, "Aboriginal," in *Fueling Culture: 101 Words for Energy and Environment*, edited by Imre Szeman, Jennifer Wenzel, and Patricia Yaeger (New York: Fordham University Press, 2017), 18–19.
 8. On pipelines as mechanisms designed to inhibit energy intimacy, see Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (New York: Verso, 2011), 36–38; and Christopher Jones, *Routes of Power: Energy and Modern America* (Cambridge, MA: Harvard University Press, 2014), 124–43.
 9. Albert Borgmann, *Technology and the Character of Contemporary Life* (Chicago: University of Chicago Press, 1984).
 10. 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): 305–26.
 11. Elizabeth Povinelli, *Geontologies: Requiem to Late Liberalism* (Durham, NC: Duke University Press, 2016), 4.
 12. Povinelli, *Geontologies*, 16.
 13. Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York: Verso, 2016).
 14. See Bruno Latour, "Agency at the Time of the Anthropocene," *New Literary History* 45, no.1 (2014): 1–18; and Latour's interpretation of Jameson's now infamous claim that it is easier to imagine the end of the world than the end of capitalism in "On Some of the Affects of Capitalism," lecture at the Royal Academy, Copenhagen, February 26, 2014, www.bruno-latour.fr/sites/default/files/136-AFFECTS-OF-K-COPENHAGUE.pdf. See also Fredric Jameson, "Future City," *New Left Review* 21 (2003), where he writes: "Someone once said that it is easier to imagine the end of the world than to imagine the end of capitalism. We can now revise that and witness the attempt to imagine capitalism by way of imagining the end of the world" (76).
 15. Szeman and Boyer, "Introduction," in *Energy Humanities: An Anthology*, 10.
 16. Jeff Vandermeer, *Annihilation* (New York: Harper Collins, 2014); Reza Negarastani, *Cyclonopedia* (Melbourne: Re.Press, 2008).
 17. For an overview of the "Great Acceleration," see J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: Belknap Press/Harvard University Press, 2016).
 18. Edward Burtynsky, *Oil* (Göttingen: Steidl, 2011); and Peter Mettler, dir., *Petropolis: Aerial Perspectives on the Alberta Tar Sands* (DVD, Greenpeace Canada, 2010).
 19. See David Schwarzman, "Beyond Eco-Catastrophism: The Conditions for Solar Communism," *Socialist Register* 53 (2017): 143–60; and McKenzie Funk, *Windfall: The Booming Business of Global Warming* (New York: Penguin, 2014).