Philosophical and Ethical Contributions to the Sustainable Energy Discourse: A Report[1]

Giovanni Frigo

1. Introduction

"Understanding Impact" was the theme of the 4th Public Philosophy Network (PPN) Conference held in Boulder, CO on February 8-10, 2018. The central focus of the meeting concerned "the best practices to improve the uptake of philosophy, both across the disciplines, and throughout society."[2] Broadly understood, public philosophy is a new development within the profession. It invites other publicly engaged academics, STEM researchers, administrators, policy professionals, web content creators, alternative publishers, and journalists to join the discussion about several policy-relevant issues. Significant themes are, for example, climate change, transhumanism, big data, genetically modified organisms, and energy transitions. A key premise of doing public philosophy is that these and similar issues are complex conundrums which can greatly benefit from the perspective and insights of philosophizing. In line with this orientation, the aim of the Public Philosophy Network is to increase the impact of philosophy in the public sphere. Accordingly, most participants at the conference insisted on the worth of philosophical inquiry as a means to enhance contemporary debates. Many presentations and workshops tackled real world problems, proposing "a wide range of topics related to understanding and advancing public philosophy."[3] For example, spaces for innovative philosophical engagements are opening up in prisons, local communities, and with children.[4] Moreover, many presenters stressed the need to self-reflect on the role of

---

[1] This report is based on a workshop session at the 4th annual Public Philosophy Network conference, "Understanding Impact," at Boulder CO USA in February 2018. Participants in the session included Bob Briggle (Colorado citizen), Rae Briggle (Colorado citizen), Ben Mylius (Columbia University), Michael Menser (Brooklyn College), Keith "Maggie" Brown (University of North Texas), Adam Briggle (University of North Texas). I am extremely grateful to all the participants of this workshop. I would like to particularly thank Ben Mylius for his careful and attentive revision of the report, and Adam Briggle for his kind support and priceless advice.

[2] See URL = <https://philosophyimpact.org/>.

[3] Ibid.

[4] For instance, Nancy McHugh et al. presented their experience about "Teaching Philosophy in Prison." Eric Weber discussed the challenges for locally grown communities of philosophical conversation in his "Communities take Roots." And Benn Johnson and Rika Tsuji shared their research about "Doing Philosophy for Children" and especially "with" them.

philosophy in public life, sometimes pairing it with concerns about the socio-political marginalization of the field and the risk of its irrelevance.

2. Philosophy and Energy

We are living in times of energy transitions, or the progressive switch to renewable and more sustainable energy systems. The topic of energy is evidently at the center of the public discourse and of the multifaceted work of energy practitioners (engaged consumers, policy makers, government officials, grassroots activists, nonprofit leaders). Moreover, energy is profoundly linked to other controversial issues, some of which are rather new (for example, anthropogenic climate change) while others seem everlasting (for example, the human-nature relationship, the limited supply of natural resources, future generations). Although these are pivotal issues to be debated in both policy and (geo)politics, they also imply profound cultural assumptions, ideas and values that are often invisible or taken for granted. For example, what we *think* and *do* regarding specific energy projects such as a mine, a solar farm, or hydraulic fracturing typically affect both the human and the non-human world in many ways. In turn, these consequences depend on the specific positions we hold politically or about the human-nature relationship. Since the theoretical assumptions of the energy discourse are essentially philosophical, I argue that public philosophy should engage energy issues more directly and comprehensively. In this sense, it is essential to ask: what does philosophy have to say about energy? What is specific about the possible contribution of philosophy?

Even though energy is typically understood as a technical affair that pertains to the work of natural scientists and engineers, the emergence over the last decade of energy humanities[5] and anthropology/ethnography of energy[6] is a sign that several intellectuals have started to take energy issues more seriously, pursuing investigations outside of previous disciplinary tracks. The last decade has also witnessed the flourishing of several centers (for example, the Center for Energy and Environmental Research in the Human Sciences (CENHS) at Rice University), networks (for example, the Petrocultures Research Group, Energy Justice Network), and educational programs attentive to the theme of energy (production, distribution, consumption, waste, efficiency) typically explored in relation to sustainability. However, despite these promising developments and a few notable exceptions,[7] professional philosophers have not yet tackled the topic of energy in any comprehensive way. For instance, in a broad review of several social sciences journals published over 15 years focused on energy scholarship, Sovacool et al. showed

[5] See Szeman and Boyer (2017).
[6] See: Rüdiger (2008); Strauss et al. (2013); Nader et al. (2010); and Smith and High (2017).
[7] See: Chapman Brown (1917); Bunge (2000); Mitcham and Rolston Smith (2013); Jamieson (2014); Briggle (2015); and Geerts et al. (2016).

that "one author within the entire sample of thousands reported training or institutional affiliation with philosophy or a philosophy department, yet questions about equity, futurity, and distribution are predominately about ethics, ontology, and epistemology."[8] I have discussed elsewhere[9] the fact that historically, conventional or "disciplinary" philosophy has not paid much attention to the conceptualization of energy, nor to the major links existing between energy and ecological issues as they influence public life, politics, and policy. This is in contrast to other fields, like anthropology as noted above. And it is especially surprising if we consider that non-mainstream areas of philosophical inquiry such as environmental philosophy and philosophy of technology are very often tied to questions centering on energy, either directly or indirectly. If we look at the conceptualization of energy, for example, we discover that it is a construct elaborated throughout the 18th and 19th centuries by the natural sciences and applied through engineering. This means that many people think and learn about energy according to a reductionist paradigm. This understanding of energy, and indirectly of nature, privileges an anthropocentric, instrumental, mechanistic, quantitative, and mathematized view of the non-human world. It strongly depends on the fact that the scientific study of energy has been influenced, from its outset, by the goals of the Industrial Revolution begun in Europe in the same period. This brief genealogy of the study of energy allows us to appreciate the context in which its modern conceptualization originated and why philosophical analysis can be important. Philosophy can indeed contribute to the conundrum of energy transition by unveiling, for instance, some cultural elements – ideas and values – that are working underneath the technical debate. Philosophy has the potential to create a more open and inclusive debate, making us aware of the influential, yet hidden assumptions of our thinking about energy and suggesting alternative paths, about non-Western energy conceptualizations for instance.

The reason why this has not happened until recently probably depends on the fact that, in reality, academic philosophy has mostly relied on the expertise of techno-science, engineering, and economics about energy, playing the secondary role of *ancilla scientiae*. It is not difficult to see that the attitudes of these other disciplines have so far assumed and implied a rather narrow techno-fix mentality, and recently embraced the mantra of decoupling human development from ecological impact in order, for instance, to achieve "a great Anthropocene" on an Earth that is assumed to be a "human planet."[10] In this sense, both the public discourse and the work of energy practitioners have been almost monopolized by the language of engineers and economists. However, systemic and infrastructural energy challenges are complex and require innovative reflections on the ontological, moral, religious, gendered, socio-economic, and political dimensions of

[8] Sovacool (2014, p. 15).
[9] Frigo (2017).
[10] Caine et al. (2014); Asafu-Adjaye et al. (2015); Nordhaus et al. (2016).

energy. For example, the location, size, and functioning of a coal mine in China,[11] a wind farm in the Netherlands[12] or Texas,[13] or a biofuel industry in Brazil,[14] impact the lives of both people and non-human beings very differently. Thus, there is a need for more public, philosophical engagement because energy projects imply key ethical and political issues. Even the social acceptance of renewable energy may be a constraining factor in achieving successful energy transitions.[15] As Janet Stephenson perfectly put it, to "work effectively across disciplines, social scientists [and public philosophers] will need to learn something of what *energy* means, and physical scientists will need to learn something of what energy *means*."[16]

3. Towards a Public Philosophy of Energy

The workshop entitled *Philosophical and Ethical Contributions to the Sustainable Energy Discourse* was designed to start filling this gap. During a two-hour session, seven thinkers from three different countries worked together on three main questions. First: what are the philosophical and ethical implications of energy transitions – that is, the notorious challenge of switching entire energy systems from fossil fuels to sustainable and renewable energy? Second: considering the notion of energy justice (sometimes referred to as a "nexus"), and given that justice is a key philosophical concept, can and should public philosophy become part of the conversation? And, if so, how? Third and finally, a question more closely tied to "understanding impact," the overarching theme of the PPN conference: how can we envision the role of public philosophy in the energy discourse at large? In other terms, how can philosophy have a more significant impact on the work of energy practitioners? In each of the next three sections, I begin by summarizing the main perspectives that emerged during the workshop. Then, I further clarify my position and suggest radical and/or alternative paths to continue to think, *philosophically*, about energy.

4. Philosophical and Ethical Implications of Energy Transitions

In a quick brainstorming session, we pointed out that the most obvious ethical implications of energy transitions include obligations to future generations, the threatening issue of climate change, and we briefly talked about population ethics. The dialogue then switched to politics, following both Keith "Maggie" Brown's and Michael

[11] See Andrews-Speed and Ma (2008); Smil (2004).
[12] See Rasch and Köhne (2017).
[13] See Swofford and Slattery (2010).
[14] See Wilkinson and Herrera (2010); and La Rovere et al. (2011).
[15] See Wüstenhagen, Wolsink, and Bürer (2007).
[16] See Stephenson (2017, p. 106).

Menser's insights about the relationship between energy and (political) power. For Brown, a doctoral student at UNT who cruised around the PPN conference playing the innovative role of "peripatetic plenarist,"[17] a key question is that of the siting and ownership of energy production facilities. In turn, to really unveil the political dimension of energy transitions we need to ask questions about authority, because energy as the ability-to-do is, for Brown, trapped in the sticky spiderweb of techno-economic progress and global financial capitalism. Brooklyn College Professor Michael Menser raised the question on whether, politically speaking, we have in place institutions that are conducive to actual energy transitions, namely if current institutions are "elastic" and participative enough to allow energy transition in truly democratic ways, meaning with active, bottom-up involvement of the citizens affected. Menser stressed the paradoxical situation we are often facing: rather static institutions are supposed to deal with something as fluid and dynamic as energy transitions. This structural inadequacy calls, just by itself, for the involvement of public philosophy. Menser's engagement with these issues has also been carried out within the *Philosophy of the City Research Group*, another exciting project related to public philosophy.[18] Moreover, his work has been dealing with participatory democracy, especially in relation to urban environments, bioregionalism and community resilience.[19]

Maggie Brown continued this train of thought suggesting that to meaningfully talk about energy we must address power issues, because our analysis falls short if it does not question the place where energy decisions are made, and actual fuels/electricity produced. In the real world of energy policies and projects there is a thin line, sometimes a blurry one, between private and public spheres. In some places, for instance, the ownership and management of the electric grid is public while in others it is not. In some contexts, the extraction of fossil fuels is a mixture of public and private interests, and overall it always seems to require a highly organized, hierarchical system of power that runs the risk of both monopolizing the sector and hindering concrete public participation. Do we need more philosophers in the public sector, in the private one, in both, in none? For Menser, a sharper distinction needs to be made between types of energy production, because there is a key difference regarding power and authority when it comes to actual energy infrastructures. On the one hand there is the necessarily oligarchic, vertical organization of fossil fuels production, and on the other hand the opportunity of a more open scenario in the case of renewable energy. This difference does not imply that renewable energy systems are necessarily more democratic, or ontologically different

[17] In an original way, the organizers of this conference asked Brown – who is famous at the University of North Texas (UNT) for philosophically engaging the youth – to move around the different sessions à la Socrates, asking presenters and attendees about their concerns, ideas, and hopes regarding public philosophy.
[18] See URL = <http://philosophyofthecity.org/philosophy-of-the-city-research-group/>.
[19] See: Menser (2018) and (2013); Menser, Ramasubramanian, and et al. (2016); and Menser and Hayduk (2014).

from the fossil fuels ones, but rather that they allow for alternative structures and distributions of power. Menser claimed that "there are all kinds of transitions" and indeed public philosophers should have a role, for instance, in the political transitions that surround or oversee the energy ones. He then talked about his experience of doing public philosophy as part of the Trade Unions for Energy Democracy,

> a global, multi-sector initiative to advance democratic direction and control of energy in a way that promotes solutions to the climate crisis, energy poverty, the degradation of both land and people, and responds to the attacks on workers' rights and protections.[20]

The irony of the Enlightenment, for Menser, is that throughout modernity people have erroneously equated more power with more freedom. However, in reality people have progressively become more powerless in both their understanding of, and control over, energy systems. Given that the fossil fuel economy is not very resilient and considering the "fast" nature of renewable energy (its directedness), Menser shared his hope for a future in which energy control will be more diffused and localized within smaller grids that will tend to become more and more autonomous, and therefore more resilient than current ones.

Continuing the theme of autonomy and resilience, Columbia University's doctoral student Ben Mylius pointed out that interrupting the flow of goods and transportation across a few very bridges into Manhattan would suffice for throwing the island into complete chaos. Then Mylius shared the story of a recent energy transition, of sorts, which received huge coverage in Australia and elsewhere: the story of Tesla CEO Elon Musk's project to build a 100MW battery system in South Australia, a state that has suffered significant and highly-politicized electrical blackouts over the past several years.[21] Mylius suggested that one way philosophers could contribute to public conversations around projects like these would be to unpack the assumptions that underpinned them: for example, by differentiating between solutions that take some set of parameters as fixed (for example, energy consumption, population behavior) and aim to work within them, and solutions which locate the problem, or part of it, in those parameters themselves. These sorts of conversations are an important, but often neglected, part of public conversations around big-picture projects. Public philosophy can help deprovincialize and historicize our path dependencies in order to overcome them. In the Australian case, one possible implication (or an easy critique) of this view is that a similar project could have been carried out in a different place, for example by

[20] See URL = <http://unionsforenergydemocracy.org/>.
[21] See, for instance, URL = <https://www.theguardian.com/australia-news/2017/dec/01/south-australia-turns-on-teslas-100mw-battery-history-in-the-making>.

providing electricity to some of the 1.5 billion people who still do not have access to it. Similarly, Colorado Springs's citizen Bob Briggle said that energy transitions are very fascinating from the perspective of dwellers too, and highlighted that providing at least some electricity to the world's poorest in order to ease their everyday struggles should be indeed a priority.

Although there may be several philosophical implications of current energy transitions, it is interesting to notice that our dialog dealt more with alternative ways of envisioning the socio-political structure of energy systems, or how people resist the top-down domination of governments, states, and municipalities. For instance, this topic connects well to the work of political scientist and anthropologist James C. Scott, where we can find a similar radical challenge to the political domination that structures also the built environment.[22] Often contrasted with Gramsci's notion of hegemony,[23] Scott's idea of resistance of the subalterns resonates with a rather novel attitude embraced by a growing number of people. Indeed, when it comes to energy transitions, the more radical position is probably held by those who strive for their own power independence, a phenomenon sometimes connected to a "post-scarcity anarchism," or the belief that society is capable of revolutionary developments when technology is used in an ecologically sensitive manner.[24] Other times, it represents a way to go "back to the land" or the simple desire for voluntary simplicity, frugality and autonomy that

> renders off-grid living a uniquely radical, but also contradictory and even paradoxical, constellation of practices through which new marginal spatialities are constituted.[25]

In practice, these tendencies become the efforts to deliberately challenge authority and to live "off-grid" through forms of "technological anarchism" that are literally blooming around the world,[26] and are particularly promising in countries where (neo)colonial practices have been oppressing indigenous people by imposing Western models of development. We concluded this first conversation by sharing the belief that philosophy can surely contribute to the discussion about energy transition, and specifically delve into the political alternatives to the monopoly of power production.

---

[22] See Scott (2012), (2000), and (1990).
[23] See Gramsci (1971).
[24] See Bookchin (1986) and (1980).
[25] See Vannini and Taggart (2013).
[26] See: Forde (2017); Boute (2016); Islar et al. (2017); and Singh et al. (2017).

5. Energy Justice

These considerations led us to the second theme of our workshop, the notion of energy justice, an emergent area of research that has been proposed and developed so far especially by anthropologists, geographers, and social scientists.[27] I introduced the topic by going to the roots of Western civilization. Although philosophers have written about justice since Plato, and environmental philosophers have addressed *environmental* justice since the 1970s, it seems *energy* justice is emerging as a more nuanced, or at least specific area. At the same time, it is surprising that philosophers have so far overlooked this notion by delegating its development to social scientists. Energy justice is a concept developed within academia, and at least since 2013 it has begun to get traction through several publications and at least two special issues of top energy journals. Energy justice scholarship has so far explored four types of justice: distributional, procedural, recognition, and restorative. Therefore, a question was raised: *Given that justice is a key philosophical concept, can and should public philosophy become part of the conversation? And, if so, how?*

Keith "Maggie" Brown started out by paraphrasing the Pre-Socratic thinker Anaximander: "justice is in itself the energy of the cosmos." If knowledge is power, Brown continued, the power of knowledge directly applies to energy justice. Therefore, what public philosophers can do is to show that, ultimately, to talk about energy we must talk about power issues. Mylius asked whether part of "doing philosophy" is "translating ideas between registers or paradigms," and whether there is potential for public philosophers to frame their work in this way.

On a different note, Michael Menser appeared more critical of the energy justice approach. He affirmed that "energy justice should be re-conceived as energy democracy; it helps to break the energy question out of the technical box into the political framework of power and who has power and access to it and how a new energy system could make people less vulnerable and dependent and more empowered and resilient."

In order to address the policy dimensions of justice meaningfully, and also to raise the possibility of public philosophy becoming part of the conversation, Colorado Springs' citizen Rae Briggle called our attention to the fact that there are powerful lobbies within Congress (and similar political bodies in other countries) that are constantly stirring the course of public policy, and often not toward an enhancement of justice. She suggested that public philosophers would be preferable to lobbyists and should try to have a more

[27] See: Jenkins et al. (2016); Jenkins et al. (2017); Heffron and McCauley (2017); and McCauley et al. (2013).

direct role into the clogs of the policy machine by finding ways to step-in and propose paths forward while being able to understand and use what we learnt from the past.

I think that the most interesting extension of energy justice can come from environmental philosophy, and would be possible by assuming either a sensiocentric or a bio/ecocentric perspective. In other terms, I suggest that philosophy can contribute to a further development of energy justice by arguing for an inter-species type of justice. This extension of the notion of justice beyond the boundaries of human beings is not only possible, but also needed by countless other species that are suffering the increased pressure of human impacts on ecosystems. Obviously, this line of reasoning entails groundbreaking implications and corresponding huge challenges. On the one hand, it involves the acknowledgement that, ecologically speaking, humans have become an invasive species. And on the other hand, it involves the recognition that the non-human world also needs energy and resources, and most of all space in order to survive and thrive. Shifting towards an inter-species energy justice constitutes, of course, a debatable option, but is nonetheless something quite novel that public philosophy should consider.

6. Public Philosophy and the Energy Discourse

Third and finally, we moved on to the topic that was more directly connected with the theme of the PPN conference – understanding impact – by discussing the possible impact of public philosophy in the energy discourse. We recalled that in the Opening Keynote Panel on Thursday evening, Professor and Director of the Institute for Philosophy and Public Policy at George Mason University, Andrew Light, underlined that most contemporary policy issues, energy included, are dominated by the perspective and language of economists. Indeed, a big portion of the energy policy literature deals with approaches rooted in cost-benefit analysis and relies on proactionary techno-fix mentality. But, as suggested above, the topic of energy is clearly of public interest, and has a myriad of ethical, ontological and even aesthetic implications. This realization spurred out the third and final question of our workshop: *How do you envision the role of public philosophy in the energy discourse at large*? *In other terms, how can philosophy have a more significant impact on the work of energy practitioners?*

The participants agreed that a key role of philosophy lies in the capacity of showing and pointing out assumptions that are tacitly working underneath the surface. Following this "traditional" role of the discipline, public philosophers might unveil what is hidden behind the curtains of the energy discourse. But is this all? Ben Mylius asked if there was something that philosophers could generally, or even uniquely, offer to the public conversation: some point of view or set of tools that is currently absent or

underutilized. Or perhaps, as UNT Professor Adam Briggle provocatively suggested, philosophers should just "shut up" because there are concrete emergencies out there, and we "already know" that they are going to be fixed by engineers and economists, not philosophers. But then Briggle proposed that there could be a role for public philosophers, namely a way to get involved in the discussion by becoming actively part of the decision-making of real-world problems. This role, for Briggle, can become visible in two innovative ways, both of which would allow public philosophers to reach out and have more impact when it comes to energy issues. Following a line of reasoning that he developed with Robert Frodeman in the final part of *Socrates Tenured*, Briggle suggested that public philosophers can work as "insiders" within specific energy issues as either "field philosophers" or "philosopher-technocrats."[28] For instance, he concluded, the work of public philosophers could be useful within city agencies, activist groups, and policy-oriented organizations. However, it must be recognized that all these roles typically happen within hierarchical decision-making, in contrast to the "more democratic ways" presented earlier. There is an inevitable tension between these perspectives, but also cracks for novelty. The most provocative but challenging option for a professional philosopher who wants to engage energy transitions publicly is to operate bottom up by become part of collectives à la Menser or grassroot movements à la Briggle. But again, these options practically imply that one foot would remain in academia supporting the other in the "real world."

Keith "Maggie" Brown recommended that more phenomenology is needed as an innovative way to do philosophy of energy. In the tradition following on from the work of Edmund Husserl, Brown suggested that phenomenological methods can help grasping more invisible and yet essential dimensions of energy. Phenomenology, in this sense, would "bracket" the "natural" assumptions about what we take as a "given," and reduce the unnecessary elements, in order to "see" the essential (invariant) structures that are being taken for granted in the energy discourse. What a genuine public philosopher would do – in the guise of a phenomenologist, pragmatist, or technocrat – is to problematize and contribute to explore the ontological, ethical and cultural dimensions of energy issues.

Another option is available, but it risks being either dangerous or elitist. It involves stepping outside of the comforts and the bureaucratic hierarchies of the university altogether and embracing a different lifestyle in which philosophy is central, yet not a regular job in an office. Perhaps it would be a life of activism, political battles, and poverty, an existential mission. Or, given different social structure and organization, there will be room and support for publicly funded intellectuals, who would serve and

[28] See Frodeman and Briggle (2016a) and (2016b).

benefit the community at large as professional thinkers. But who are the philosophers willing to pursue this path?

In the end, we could not answer this question. We only agreed on a key point, that philosophy can remain faithful to its classical task, the willingness to ask fundamental questions, while contributing in meaningful and more impactful ways also to the theme of energy. This could be possible provided that public philosophers walk the talk and write more accessible, yet relevant contributions capable of reaching the interest of a large audience. At the same time, I may add, self-proclaimed public philosophers should take the work developed in workshops such as this and bring it outside the academic domain, where the energy debate is actually happening. Regarding the possible impact of public philosophy, I would suggest that a key topic that is currently overshadowed in the energy discourse is human population growth. Given the rich philosophical scholarship about future generations (although mostly understood as offspring "of humans"), the debate between natalism versus human population reduction, the ecological issue of overpopulation, and the provocative perspectives of bio/ecocentrism, I think that philosophy can shed some light on the theoretical assumptions of this thorny topic, and perhaps be part of a reasonable solution.

7. Conclusion

This brief but intense workshop was organized with the goal of starting to fill the gap between the need for a serious engagement of public philosophy and the theme of energy (transitions) and the current lack thereof. It gathered seven thinkers, from three countries, who engaged in a colorful dialogue regarding the philosophical implications, as well as the possible contributions of public philosophy within the theme of energy. The discussion covered three main topics: the philosophical implications of energy transition; energy justice; and the role of public philosophy/philosophers in the current energy debate. Although the positions and the views differed in perspective and orientation, all the participants of the workshop agreed that a public philosophy of energy is truly needed. A future, better, and useful philosophy of energy requires that energy practitioners listen to philosophers, and that the latter engage the public outside of academia as much as possible. At least, this workshop offered the possibility to philosophize together about energy and to envision possible alternative paths to increase the public impact of philosophy. Therefore, this report should be understood as a hopeful, initial attempt to contribute philosophically to the very substantive policy issue of energy transitions.

REFERENCES

Andrews-Speed, P. and Ma, X. 2008. "Energy Production and Social Marginalisation in China." *Journal of Contemporary China* 17: 247–272.

Asafu-Adjaye, J., Linus Blomqvist, S.B., Brook, B., Defries, R., Ellis, E., Keith, D., et al. 2015. "An ECOMODERNIST Manifesto." The Breakthrough Institute, CA. Available online at URL = <https://static1.squarespace.com/static/5515d9f9e4b04d5c3198b7bb/t/552d37bbe4b07a7dd69fcdbb/1429026747046/An+Ecomodernist+Manifesto.pdf>.

Bookchin, M. 1980. *Toward an Ecological Society*. Montreal - Cheektowaga, NY: Black Rose Books.

------. 1986. *Post-Scarcity Anarchism.* Montreal - Buffalo: Black Rose Books.

Boute, A. 2016. "Off-Grid Renewable Energy in Remote Arctic Areas : An Analysis of the Russian Far East." *Renewable and Sustainable Energy Reviews* 59: 1029–37.

Briggle, A. 2015. *A Field Philosopher's Guide to Fracking*. New York - London: Liveright Publishing Co.

Bunge, M. 2000. "Energy: Between Physics and Metaphysics." *Science and Education* 9: 457–61.

Caine, M., Lloyd, J., Luke, M., Margonelli, L., Moss, T., Nordhaus, T., Pielke Jr., R., et al. 2014. *Our High-Energy Planet*. The Breakthrough Institute, AZ. Available online at URL = <https://thebreakthrough.org/images/pdfs/Our-High-Energy-Planet.pdf>.

Chapman Brown, H. 1917. "Matter and Energy." *The Journal of Philosophy, Psychology and Scientific Method* 14: 57–65.

Forde, E. 2017. "The Ethics of Energy Provisioning: Living off-Grid in Rural Wales." *Energy Research & Social Science* 30: 82–93.

Frigo, G. 2017. "Energy Ethics, Homogenization, and Hegemony: A Reflection on the Traditional Energy Paradigm." *Energy Research & Social Science* 30: 7–17.

Frodeman, R. and Briggle, A. 2016a. *Socrates Tenured: The Institutions of 21st-Century Philosophy*. New York: Rowman & Littlefield.

------. 2016b. "When Philosophy Lost Its Way." *The New York Times*, (11 January). Available online at URL = <https://opinionator.blogs.nytimes.com/2016/01/11/when-philosophy-lost-its-way/>.

Geerts, R-J. Gremmen, B., Jacobs, J., and Ruivenkamp, G. 2016. "Towards a Philosophy of Energy." *Scientiae Studia* 12: 1–12.

Gramsci, A. 1971. *Selections from the Prison Notebooks*. Q. Hoare and G. Nowell Smith (eds.), New York: International Publishers.

Heffron, R.J. and McCauley, D. 2017. "The Concept of Energy Justice across the Disciplines." *Energy Policy* 105: 658–67.

Islar, M., Brogaard, S., and Lemberg-Pedersen, M. 2017. "Feasibility of Energy Justice: Exploring National and Local Efforts for Energy Development in Nepal." *Energy Policy* 105: 668–76.

Jamieson, D. 2014. "Energy, Ethics, and the Transformation of Nature. In D. G. Arnold (ed.), *The Ethics of Global Climate Change*. Cambridge: Cambridge Univ. Press.

Jenkins, K., McCauley, D., and Forman, A. 2017. "Energy Justice: A Policy Approach." *Energy Policy* 105: 631–34.

Jenkins, K., McCauley, D., Heffron, R., Stephan, H, and Rehner, R. 2017. "Energy Justice: A Conceptual Review." *Energy Research & Social Science* 30: 174–182.

La Rovere, E.L., Pereira, A.S., and Simões, A.F. 2011. "Biofuels and Sustainable Energy Development in Brazil." *World Development* 39: 1026–1036.

McCauley, D., Heffron, R.J., Stephan, H., and Jenkins, K. 2013. "Advancing Energy Justice: The Triumvirate of Tenets." *International Energy Law Review* 32: 107–110.

Menser, M. 2013. "The Bioregion and Social Difference: Learning from Iris Young's Metropolitan Regionalism." *Environmental Ethics* 35: 439–59.

------. 2018. *We Decide! Theories and Cases in Participatory Democracy, Global Ethics and Politics*. Philadelphia, PA: Temple University Press.

Menser, M., and Hayduk, R. 2014. "Participatory Budgeting: Governing at the Grassroots." *Clarion*. Available online at URL = <http://www.psc-cuny.org/clarion/february-2014/participatory-budgeting-governing-grassroots>.

Menser, M. and Ramasubramanian, S., et al. 2016. "Strategies for Community Resilience Practice for the Jamaica Bay Watershed." In E. Sanderson, J.W. Solecki, and A. Parris (eds.), *Prospects for Resilience: Insights from New York City's Jamaica Bay*. Washington, DC: Island Press.

Mitcham, C. and Smith, E.R., 2013. "Energy Constraints." *Science and Engineering Ethics* 19: 313–19.

Nader, L., Cesarino, L., and Hebdon, C. 2010. "The Energy Reader: Introduction." In L. Nader (ed.), *The Energy Reader*. Hoboken, NJ: Wiley-Blackwell. 1-16.

Nordhaus, Ted, Shaiyra Devi, and Alex Trembath. 2016. "Energy for Human Development." *The Breakthrough Institute* (16 November). Available online at URL = <https://thebreakthrough.org/index.php/issues/human-development/energy-for-human-development>.

Rasch, E.D.D., and Köhne, M. 2017. "Practices and Imaginations of Energy Justice in Transition. A Case Study of the Noordoostpolder, the Netherlands." *Energy Policy* 107: 607–614.

Rüdiger, M. (ed.) 2008. *The Culture of Energy*. Newcastle, UK: Cambridge Scholars Publishing.

Scott, J.C. 2012. *Two Cheers for Anarchism*. Princeton: Princeton Univ Press.

------. 2000. "Seeing Like a State." *Economy and Society* 29: 160–78.

------. 1990. *Domination and the Arts of Resistance: Hidden Transcripts*. New Haven, CT: Yale Univ. Press.

Singh, A., Strating, A.T., Herrera, A.R., Hylke W., van Dijk, H.W., and Keyson, D.V. 2017. "Towards an Ethnography of Electrification in Rural India: Social Relations and Values in Household Energy Exchanges." *Energy Research & Social Science* 30: 103–115.

Smil, V. 2004. *China's Past, China's Future: Energy, Food, Environment*. London: Routledge.

Smith, J. and High, M.M. 2017. "Exploring the Anthropology of Energy: Ethnography, Energy and Ethics." *Energy Research & Social Science* 30: 1–6.

Sovacool, B.K. 2014. "What Are We Doing Here? Analyzing Fifteen Years of Energy Scholarship and Proposing a Social Science Research Agenda." *Energy Research & Social Science* 1: 1–29.

Stephenson, J. 2017. "What Does Energy Mean? An Interdisciplinary Conversation." *Energy Research & Social Science* 26: 103–106.

Strauss, S., Rupp, S., and Love, T. 2013. *Cultures of Energy: Power, Practices, Technologies*. Walnut Creek, CA: Left Coast Press.

Swofford, J. and Slattery, M. 2010. "Public Attitudes of Wind Energy in Texas: Local Communities in Close Proximity to Wind Farms and Their Effect on Decision-Making." Energy Policy 38: 2508–2519.

Szeman, I., and Boyer, D. (eds.) 2017. *Energy Humanities: An Anthology*. Baltimore, MD: John Hopkins Univ. Press.

Vannini, P. and Taggart, J. 2013. "Voluntary Simplicity, Involuntary Complexities, and the Pull of Remove: The Radical Ruralities of Off-Grid Lifestyles." *Environment and Planning* 45: 295–311.

Wilkinson, J. and Herrera, S. 2010. "Biofuels in Brazil: Debates and Impacts." *Journal of Peasant Studies* 37: 749–768.

Wüstenhagen, R., Wolsink, M., and Bürer, M.J. 2007. "Social Acceptance of Renewable Energy Innovation: An Introduction to t/he Concept." *Energy Policy* 35: 2683–2691.