9. Harnessing the Sun in Tech-on-Climate Discourse

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The Materiality of the Sun

While we all have an idea, or an image, of what the Sun is, its materiality can be hard to comprehend. The Sun is a yellow dwarf star of 4.5 billion years old. It is not a solid entity but instead consists of different regions made up of hydrogen and helium that go through cycles of high and low activity. The distance between the Sun and Earth is 150 million kilometers, while the Sun itself has a diameter of 1.4 million kilometers. Despite the distance, the Earth's very life depends on the heat and light produced by the nuclear reactions in the Sun's core (at an astonishing 15 million degrees Celsius) (fig. 1). The Earth and all other objects in our solar system are secured in their place by the Sun's gravity. Our planet's existence is thus tethered to the Sun, which is currently estimated to be halfway through its lifetime. In another 5 billion years, the Sun will morph into a giant star, making life on earth impossible (NASA).

The Sun's vital material role in sustaining life on Earth makes it a constant protagonist in human cultures, and a subject in many religions and myths. Most historical religions, for example, include a Sun god: the Incas worshipped Inti, the Egyptians had Ra, and the Greeks their Helios. These Sun gods were seen as central deities that bring light and provide life. Scientific knowledge has given us—and keeps giving—more detailed knowledge about the Sun's importance: it provides humans with Vitamin D and enables plants to grow through photosynthesis, to give two examples. But the Sun can endanger the same life it makes possible, something which has become increasingly apparent in the ongoing climate crisis. As the Earth's atmosphere continues to trap the Sun's heat, temperatures rise, causing droughts and heatwaves.[1] But while the Sun is connected to the damaging effects of the climate crisis, it is also framed as part of the solution: the Sun's very light could provide an alternative climate-safe source of power in the form of solar energy.

1 Note that the fact that the Sun's heat gets trapped in the atmosphere does not mean that the Sun causes climate change. This "greenhouse effect" is caused by human activities that release gases such as CO2 (NASA, "Causes").

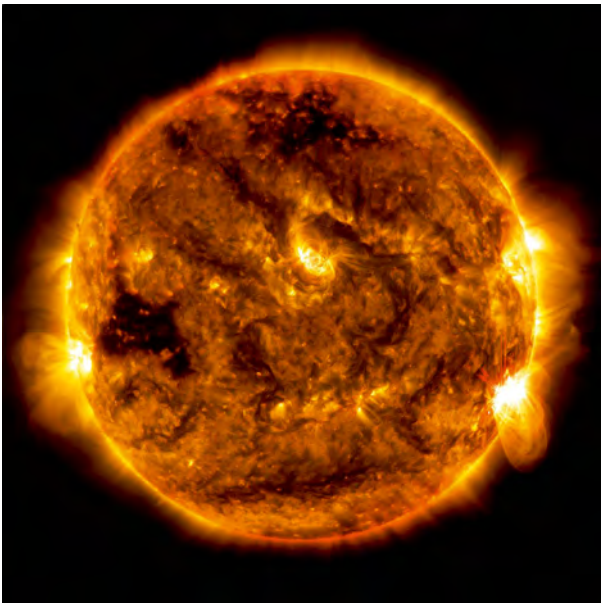

Fig. 1: The Sun emits a mid-level solar flare (a burst of radiation), captured by NASA's Solar Dynamics Observatory on October 1, 2015. Source: NASA/SDO].

While myths and religious narratives revolving around the Sun have existed for centuries, in the light of the climate crisis, new myths emerge about the Sun as energy source. In this chapter, I ask: what myths about the Sun's materiality are reproduced in contemporary discourse surrounding the climate crisis? More specifically, I will focus on "tech-on-climate discourse:" the production of promotional materials regarding the climate crisis by Big Tech companies. A focus on this field reveals how the Sun is mediated as a material of digital culture, functioning as a symbol of a green future that is made possible by Big Tech. I argue that the Sun is harnessed as a discursive marker of a greener future that disregards the complex reality of the Sun and solar energy.

Digital Culture and the Climate Crisis

The climate crisis urges countries and economies to decrease the use of fossil fuels and increase the use of renewable energy. While an energy transition sounds straightforward, it comes with a complex cultural transformation. A growing group

of scholars in the field of energy humanities puts oil and energy at the center of their research in order to understand the ways in which energy is interwoven with our everyday lives (e.g., Szeman and Boyer; Wilson et al.). To better understand the relation between energy and everyday life, the tech sector that boosts a lot of today's energy use cannot be overlooked. Tech companies have become powerful economic actors because of the ownership of essential software and hardware, the collection of data from their billions of users, and the interconnection of services on which many corporate and individual users depend. But the sector also consists of an enormous global physical infrastructure of factories, offices, data centers, and energy sites that requires large amounts of materials, land, and human labor to function (Hu). Because their large environmental impact forms a reputational risk, tech companies such as Amazon, Alphabet, Apple, Meta, and Microsoft, also known as the "big five," are taking explicit positions as pioneers in the energy transition. While tech companies do invest in renewable energy and the recycling of finite materials, I argue that their green framing is more a matter of marketing strategy than of environmental concern.

Through their promotional materials the companies present a vision of the future centered on sustainability and innovation. In the images that platforms reproduce, meant to symbolize sustainability and innovation, the Sun and solar energy play a central role. Take for example the video "The Future of Energy" (2020) by Amazon's cloud service Amazon Web Services (AWS), in which a promise of smart sustainability is signified by the Sun. A voice-over claims that "our" energy use needs to be "more sustainable, more intelligent, and more efficient than ever before." Considering its focus on the future of energy, the video is shot at an unexpected location: an oil production plant. For Amazon, being sustainable is not about moving away from fossil fuels, but about using and processing these more efficiently. The video frames Amazon's core values of efficiency and intelligence as a promise of sustainability, by including images beaming in sunlight. The video contains shots filmed at dawn, in which the Sun reflects on a field of solar panels. In another shot, sun rays give the oil plant and the workers a warm, orange glow. The Sun plays a twofold role in the video: it functions as a source of natural light and as a form of energy. Both forms of representation of the Sun embody Amazon's positive future vision, in which solar panels can peacefully exist next to fossil fuels. Such a dream of an ideal future, which highlights the generating potential of energy, is an example of an "energy imaginary" that tech companies create in their tech-on-climate discourse (Williams, "This Shining Confluence").

While the use of solar imagery might seem innocent, as a means to produce corporate energy imaginaries they deserve critical scrutiny. The "Future of Energy" is not a science-fiction movie, it is a promotional video that Amazon uses to convince businesses of the values of their cloud service. The video and webpage on which it appears are full of corporate vernacular: AWS stands for sustainable and responsible

innovation, transformation, and acceleration ("AWS Energy"). These promises are accompanied by a still from the "Future of Energy" video showing the sun rays glowing on Amazon laborers. The Sun is thus mobilized as a symbol of Amazon's climate discourse.

Amazon, however, is not the only company that looks to the Sun for salvation. In the "Better" video by Apple (2014), CEO Tim Cook's voice-over states that Apple wants to be a better company and make the planet a better place. The video has, in comparison with Amazon's video, a cleaner appeal in line with the identity of the brand and consists of attractive shots of immaculate factory interiors and green energy sites.[2] Although Apple's video is set at a different location, both videos beam in sunlight and present the Sun as a source of light and energy. Whereas smartness and efficiency are key terms in Amazon's green energy imaginary, Apple's commercial centers on the word "better," with Cook stating that "better is a force of nature." In the video, a parallel is drawn between technology (innovation) and the Sun, with both presented as forces of nature that drive humanity forward with their infinite generative potential.

The Energy Imaginary as Naive Fantasy

In the examples of Apple and Amazon, the Sun appears as a central and attractive visual element. By associating themselves with the Sun and the infrastructures of solar energy, tech companies frame themselves as enablers of a bright and sustainable future. The After Oil Collective uses the term "solarity" to refer to "a state, condition, or quality developed in relation to the sun, or to energy derived from the sun" (n.p.). In the book *Solarities: Seeking Energy Justice*, the collective writes that many have turned toward the Sun for its positive qualities, a turn that "is replete with desire and hope" (5). This hope goes beyond the promise of an energy transition. Imre Szeman and Dominic Boyer argue in *Energy Humanities: An Anthology* that the Sun is seen as a solution to the present as a whole; as a promise of stability. These qualities of solarity are harnessed in tech-on-climate discourse: as a source of hope in times of crisis. By drawing on the positive qualities of the Sun as a provider of infinite warmth and light, a new green future vision arises that is both hopeful and abundant.

However, I would argue that in the case of tech companies' energy imaginaries, the positive attitude toward solarity leads to a false framing. In general, tech companies aim to positively imagine their climate impact by foregrounding infrastructural artefacts such as green energy sites and data centers bathing in sunlight, while fossil fuels and e-waste remain obfuscated. Tech-on-climate discourse thus constantly

2 For a more extensive analysis of Apple's brand identity and the idea of technology as second nature, see Niessen.

plays with the balance between visibility and invisibility, in which the Sun plays an instrumental role: it is used to highlight that which companies want to foreground. As Szeman and Barney write, solar imaginaries blur "concept, fantasy, and infrastructure together in a manner that makes it difficult to disentangle solar fiction from solar reality" (1–2). The material reality of tech companies' infrastructure and the potential of solar energy become entangled with an idealized version of a tech- and solar-powered future. This future disregards the fact that the generation of solar energy through solar panels and batteries also depends on finite materials that need to be mined and cannot be infinitely expanded to feed Big Tech's hungry machine.

Tech companies thus frame themselves as philanthropic institutions that want to do good by, as Mél Hogan explains, "partnering with nature" (631). This idea of partnership fails to consider the impact of the underlying economic, infrastructural, and material forces that make continuous growth possible. Jesse Goldstein describes this framing as an element of green capitalism: a form of greenwashing that presents technological innovations with the goal of "planetary improvement." As Hogan writes: "in order to green their cycles of production, Big Tech is 'investing' in nature and in public infrastructure in ways that not only sustain but also unwittingly serve to encourage consumption" (636). What tech companies present as a partnership with nature is, in fact, a continuation of the extractivist logic of fossil-fueled petrocultures (Wilson et al.). A transition to renewable energy alters the infrastructural presence of tech companies, but does not break with the logic of continuous growth and consumption. The Sun is thus strategically "applied" as a shiny veneer to symbolize a fantasy of a cultural transition that does not actually take place.

The growth narrative is also harmful because it frames nature as an ecosystem that can be controlled and monetized. Portraying "nature" as an ecosystem that can thrive if it is technically managed offers tech companies a powerful position, but creates false hope about the future of the climate crisis.[3] In this limited vision, the Sun as material is being molded and mediated in a way that benefits tech companies. Following anthropologist Tim Ingold, I suggest that the materiality of the Sun is appropriated for specific, economic purposes; the Sun as raw material is converted "into the finished forms of artifacts" (Ingold 432). The Sun as artifact is a mediated object, distinct from the Sun as raw material, revealing a flawed and simplified framing of the relationship between Sun, solar energy, Big Tech and the climate crisis. This is the myth that tech companies produce: an optimistic narrative that consists of a mix of fact and fantasy.

3 For more on the Earth as programmable object see Gabrys.

Beyond the Myth of Energy without Mediation

While the Sun and its solar infrastructures play an obvious promotional role in tech-on-climate discourse, the impact of Sun myths should not be underestimated. The After Oil collective refers to the myths surrounding solar energy as a dream:

> The dream of solar is that we can access energy as energy: energy without mediation, energy without the need for fuel and so without leaving any trace of its use. This is the dream of infinite energy without needing to worry about its impact, either as extraction or as emission. (6–7)

This solar dream, or fantasy, presents a non- and never existing future, but one that nonetheless has real consequences. As Hogan writes, the myth of green tech companies partnering with nature is made up of "thin narratives that deploy textual and visual rhetorical strategies intended to obfuscate and overwrite resource exploitation" (647). The result is a staged version of the material effects of tech companies that shows a misrepresentation of solar energy as infinite and clean resource.

The misrepresentation of the Sun's materiality is, I argue, illustrative of how tech companies frame nature at large in economic and managerial terms. In this framing, Rhys Williams writes, "the natural world in its entirety may come to be seen as simply an inefficient and outmoded system of production" ("Turning Toward the Sun" 161). Such managerial perspectives, when applied to nature and the Sun, might be expressed in projects such as the geo-engineering of large scale Sun deflectors, as promoted by tech mogul Bill Gates.[4] These methods might accelerate the planet's crisis they intend to avert because of their potentially detrimental effects, but also as solutionist fantasy that never relinquishes the need for growth.[5] New myths about the ways in which the Sun's materiality can be controlled need to be countered by stories that acknowledge that an energy transition also entails a cultural transition in terms of values and practices regarding "the why and how of energy" (Wilson et al. 4). What we need is a form of "cultural sustainability," a cultural and theoretical production of new future visions that bring together the Sun, solar energy, technology, humans, and nonhumans in a nature-culture continuum (Meireis and Rippl; Smelik). And while these stories might also envision people and landscapes bathing in sunlight, they should not obfuscate the complex reality of solarity and the energy transition.

4 See Gates' recent book on climate change for an insight into his views on geo-engineering.

5 See for example the discussion on the possibilities and risks of such experiments in the Guardian (Carrington).

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