‘Warming Up’ to Sustainable Procu

With the federal government slow to lead in confronting climate change, it's time for the acquisition workforce to 'warm up' to sustainable procurement practices.

BY STEVEN L. SCHOONER AND MARKUS SPEIDEL

Despite the well-established scientific consensus,[1] climate change remains a polarizing issue. We recognize that this short piece is unlikely to alter the views of climate change skeptics – and we're also sympathetic to the extent that the topic can be intimidating, depressing, and overwhelming. Nonetheless, the U.S. Global Change Research Program Science Assessment pulled no punches in explaining:

> [B]ased on extensive evidence, ...it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century. For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.... There is broad consensus that the further [*sic*] and the faster the Earth system is pushed towards warming, the greater the risk of unanticipated changes and impacts, some of which are potentially large and irreversible.[2]

With this in mind, this article *presumes* that climate change is a genuine phenomenon in an effort to, plant the seeds for change and spur discussion about how the acquisition workforce can step up to address climate change by 'warming up' to sustainable procurement practices.

Addressing Climate Change Via Sustainable Procurement

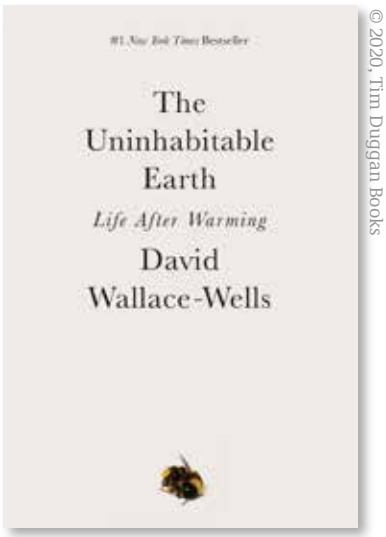
> [T]he military's analysis of climate change [envisions] a future in which global warming wreaks havoc across the planet, producing multiple disasters simultaneously and jeopardizing the survival of weak and resource-deprived states.... A world of multiple failed states, vast "ungoverned spaces," ...recurring mass migrations[, ...and t]he collapse of economic and governmental institutions...would disrupt vital trading networks and help foster deadly pandemics. In the worst-case scenarios, the major powers will fight over water and other vital resources....[3]

Easily lost in the wake of the COVID-19 pandemic's devastation and disruption is the recognition that our nation is woefully unprepared to confront, let alone cooperate with the global community to slow, climate change. Given our delayed response, future generations will inherit the consequences.[4] Once we acknowledge the coming debacle that scientific consensus suggests climate change will present,[5] it becomes clear that slowing climate change poses one of the most daunting challenges in human history. Sustainable procurement empowers procurement professionals to begin now to help alter our current course.

Like the pandemic and the associated economic downturn, climate change poses a complex group action problem. Indeed, success depends upon *global* cooperation – to include a greater respect of the science and a collective global and societal embrace of sacrifice. (No, we can't really "have it all.") Given the need for action, we shouldn't waste a good crisis.[6] We have our work cut out for us.

Sadly, the research suggests that our individual actions – e.g., reducing our individual carbon footprints – matter little given the magnitude of behavioral change required. Sure, we can drive Prius' and Teslas, fly less, and eat less beef, but to ultimately succeed in slowing (and potentially reducing) climate change, *governments* and *powerful private-sector organizations* must engage in the fight:

> [T]he climate crisis demands political commitment well beyond the easy engagement of rhetorical sympathies, comfortable partisan tribalism, and ethical consumption.... Eating organic is nice, but if your goal is to save the climate, your vote is much more important.[7]



Human experience and memory offer no good analogy for how we should think about the [warming] thresholds, but, as with world wars or recurrences of cancer, you don't want to see one.... [T]he fact that we have brought [the zero earth or an unlivable planet] nightmare eventually into play at all is perhaps the overwhelming cultural and historical fact of the modern era....

—David Wallace-Wells, *The Uninhabitable Earth*

Unfortunately, one of the current COVID-19 pandemic's most dispiriting lessons is that our society appears to lack the sense of community, will, and discipline to sacrifice for the common good. Collectively, we seem to have forgotten that "human rights wither without a language of duties."[8] Obsessed with individual "rights" without regard for corresponding "responsibilities," a sufficiently significant portion of the population has refused to obey stay-at-home orders, maintain physical distance, or wear masks in public,[9] making the United States a statistical oddity: A wealthy, developed state leads the world in COVID-19 infections and deaths even as other states have seemingly controlled their outbreaks and regained some sense of economic, social, and community normalcy.[10] None of that bodes well for confronting climate change.

Government Action Required

Therein lies the rub. Where government leadership is necessary, the United States lacks an organized, coordinated federal plan of action on climate change. The same administration that seeks to withdraw from the World Health Organization (WHO) amidst a pandemic also initiated withdrawal from the Paris Agreement on Climate Change.[11] That leadership vacuum is both foreboding and unsustainable. As Hope Jahren, an American geochemist and geobiologist at the University of Oslo, explains: "Every single scientist I know is freaked out by the steep increase in carbon dioxide of the last 50 years. But we are more freaked out by

the fact that our governments are not as freaked out about it as we are."[12]

While rejection of climate change science dominates headlines, the apolitical professionals charged with securing our national defense offer a more rational and sober model. *In All Hell Breaking Loose: The Pentagon's Perspective on Climate Change*, Michael T. Klare explains:

> [W]hile discussion of climate change has indeed largely disappeared from the Pentagon's public statements [under the current administration], its internal efforts to address the effects of global warming have not stopped. Instead, ...many senior officers are convinced that climate change is real, is accelerating, and has direct and deleterious implications for American national security....[13]

Given the outsized role that defense procurement plays in our community, the Department of Defense (DOD)'s perception of climate change as a significant national security threat, and, of course, its continued efforts to prepare accordingly, offer some insight into the potential future impact of climate change.

In *All Hell Breaking Loose,* Klare also identifies a wide range of global warming–related risks – from water, food, or energy scarcity to massive drought-, flood-, or fire-induced refugee migrations[14] to "a whole new ocean" opened by melting of the polar ice caps, creating a new theater of military operations.[15] (Refer to **FIGURE 1** at right.)

Klare repurposes the term "ladder of escalation," which historically "describe[d] the increasingly intense and destructive stages of combat one might expect in a direct confrontation [between superpowers, from] small-scale clashes employing conventional weapons, ...[ultimately leading to] strategic nuclear barrage and mutual annihilation." In the climate change context, Klare's ladder of escalation culminates in *all hell breaking loose* when "the armed forces are called upon to overcome multiple emergencies [(e.g., humanitarian disaster relief, support for beleaguered foreign states, and disruptions to the global supply (and food) chains)] while their bases are out of commission [due to flooding or fires or drought] and large numbers of their troops are engaged in domestic relief operations, leaving them ill-equipped to address any major threats at all." DOD's current challenge is preparing for that escalation. Providing sustainable procurement strategies to potentially avoid these worst-case scenarios will be ours.

In other words, while the United States and other major global players

FIGURE 1. Klare's Map of Disappearing Arctic Ice and Opening of a "Whole New Ocean"

Michael T. Klare, *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change* (Metropolitan Books: 2019)

FIGURE 2.
The United Nations' Sustainable Development Goals (SDGs)*

*Source: United Nations, Department of Economic and Social Affairs (2018), *available at* https://www.un.org/development/desa/dspd/2030agenda-sdgs.html.

might fiddle about as the world heats and, literally, burns, the risks of refusing to engage with the global community grows, and the window available to implement the steps necessary to slow climate change shrinks. By necessity, that must eventually change.[16] At that point, the acquisition workforce will find itself as the vanguard, implementing policies and purchasing solutions to combat climate change.

Our Piece of the Puzzle: Sustainable Procurement

Procurement professionals will play a critical role in the coming effort to slow the pace of climate change. While it's premature to predict what technological solutions will evolve or what we will buy or how, our critical, evolved role will lie in *sustainable procurement,* which, if effectively implemented, will dramatically alter markets and fundamentally change purchasing behaviors. First and foremost, procurement professionals will need to rethink how we define our profession, assess our outcomes, and bring value to our government customers. Here, our sense is that NCMA — and *Contract Management*'s readership — must lead, train, and advocate for our profession to rapidly progress up a different learning curve. Perhaps a community of practice is the place to start?

Outside the United States, momentum is slowly and laboriously building around sustainable procurement. The United Nations and the Paris-based Organization of Economic Cooperation and Development (OECD) are leading the organizational and thematic discussion with an eye toward seeking "policy coherence" on these issues.[17] (Refer to **FIGURE 2** above.)

While foreign states and the major multinational corporations already think in these terms, the U.S. federal government and its procurement system remain far behind the curve.[18] Sure, *Federal Acquisition Regulation* (*FAR*) Part 23 includes numerous sustainable procurement requirements, Energy Star® information technology and appliances have become ubiquitous, and creative government initiatives range from LEED buildings[19] and massive solar arrays on military installations[20] to the U.S. Navy's Great Green Fleet (literally fueled, at least in part, by a petroleum-beef fat mix and, of course, nuclear power).[21] However, U.S. efforts currently lack both "policy coherence" and "teeth."

For instance, experience suggests that the breadth and complexity of the Obama administration's relevant executive orders (EOs)[22] might have diluted their effects. (Ask yourself: how

often does guidance from those EOs factor into the acquisition planning process? When was the last time it directly altered the outcome of one of your procurements?) And that was before the Trump administration revoked and replaced them with an EO that subordinated energy and environmental performance to "actions that reduce waste, cut costs, enhance the resilience of federal infrastructure and operations, and enable more effective accomplishment of [the government's] mission...."[23]

All of which leaves us with unclear guidance, a lack of mandates, and an absence of urgency.[24] Denial, and the corresponding dearth of policy and leadership, is, well, *unsustainable* in the face of steadily warming temperatures, rising seas (and salination of coastal farmlands and aquifers), melting polar ice caps, crop failures, and increasingly severe storms, droughts, floods, and fires.

Rejecting the Tyranny of Low Price

Successfully establishing a sustainable procurement regime will require dramatic change, including, among other things, overcoming the persistent tyranny of low price, understanding and adopting lifecycle costing, considering externalities in the value proposition, and, of course, specifying and identifying truly sustainable solutions.

Since time immemorial, and increasingly since the acquisition reform initiatives of the 1990s, our profession has struggled to escape the tyranny of "low price." And yet, frustratingly, as individual consumers, we consistently, reflexively pay price premiums for higher customer satisfaction and superior quality. With the exception of true commodities,[25] consumers routinely pay more for goods and services that make life or work more efficient, last longer, fail less frequently, fit more comfortably, look (or taste) better, require less maintenance, and cost less to operate. To that extent, each of us, as consumers, conceptually understands that low prices often lead to "false economies." And, as consumers, we act and spend our money accordingly.

Our professional (and, alas, congressional) obsession with purchase prices, particularly *low* purchase prices — i.e., those objective numbers easily captured in the System for Award Management (SAM),[26] correlated to annual budgets, and compared to other purchases — runs afoul of basic economic theory. You don't need an economics degree to know that a low price isn't "worth it" if you don't use what you buy, it doesn't work, it doesn't meet your needs, or you frequently need to repair or replace it. You also understand that paying a lot more for something might later prove to be a "bargain" if you recoup much of your expenditure through resale. (Think, for example, of a high-end automobile, aircraft, or watercraft, with a multidecade useful life.)[27]

Rethinking Value Through Lifecycle Cost

All of this is why economists and shrewd businesspeople think in terms of lifecycle cost (or "total cost of ownership") rather than focusing on purchase price. Commonly articulated elements of lifecycle cost include those identified in **FIGURE 3** on page 39.

Valuation of traditional lifecycle cost elements is relatively straightforward. For example, it's relatively easy to "value" the fuel savings associated with purchasing a hybrid automobile. The price premium (or higher purchase price) for the hybrid engine is obvious, while any increased fuel efficiency reduces operating costs over the automobile's useful life (or your ownership of the vehicle). Of course, any such savings vary depending upon the distance driven. (Additional incentives, such as federal and state tax credits or commuting time saved with express lane privileges, might further offset the price premium.) In other words, lifecycle analysis seems a lot like common sense, and it serves as a powerful tool to understanding what value a purchase returns or what a monetary outlay is actually "worth."

Now for the hard part. To meaningfully engage in *sustainable procurement*, we need to affirmatively add "*externalities*" to the lifecycle cost analysis.[28] Think of an externality as a (positive or negative) side effect or a consequence or, arguably, a known or even unanticipated cost or benefit in a transaction. Identifying externalities and calculating their monetary "values" (or costs) is more complex.

Externalities: Paying the "Real Price"

When a municipality invests in public transportation, such as adding an underground or elevated rail line, positive externalities include the benefits to other commuters that they don't directly pay for, such as time saved in their daily commutes or cleaner air, which might, in turn, lead to lower healthcare costs (for individuals, employers, or society). Upgraded urban transportation might also make

the city more attractive to younger workers or home buyers, drive up home prices, inject energy and talent into the region, spur economic activity (with new restaurants or entertainment venues), and increase municipal and state tax revenues. Alas, assigning a dollar value to these benefits is challenging, and quantifying externalities — often more art than science — remains in its infancy.

Although quantifying externalities might be difficult,[29] it's not impossible. Economics departments and business schools have taught lifecycle cost (LCC), total cost of ownership (TCO), and even lifecycle accounting or assessment (both LCA) for decades, and these tools are beginning to gain traction in European Union (EU) procurement circles.[30] We too need to think — seriously and strategically — about more aggressively employing LCC to integrate sustainability into our vernacular, policies, procedures, and practices.

Lifecycle cost analysis and increased focus on externalities can bring transparency to real — and often hidden — costs of unnaturally inexpensive solutions that we too frequently take for granted. For example, "estimates for the total global fossil fuel subsidies paid out each year run as high as $5 trillion,"[31] and that doesn't include the byproducts or costs associated with gasoline-generated engine exhaust such as pollution, reduced life expectancy, increased healthcare costs, infant mortality, etc.[32]

Breaking the Cycle: The Work Ahead

Sustainability needs to become part of our professional community's everyday thinking, nomenclature, policy, practice, and self-assessment. Eventually, Congress will have no choice but to recognize the need for, value of, and imperative to invest in (i.e., pay price premiums for) more efficient and less harmful solutions.

Because money always matters, we need to hone our ability to explain the long-term economic imperatives through LCC analysis, including environmental externalities at all phases of procurement — i.e., generating requirements, drafting solicitations and evaluation factors, evaluation and negotiation, and, of course, post-award contract administration and quality control. Here, data-driven analysis of the potentially ravaging effects of climate change–driven disasters paints a compelling picture that makes the price premiums appear less daunting and more "worth it." Consider that economists value the difference between 1.5 and 2 degrees of additional global warming at $20 trillion. Once warming reaches 3.7 degrees, compounding disasters might cost $551 trillion.[33] In this light, the familiar, inexpensive fossil fuel solution isn't really a "bargain."

On a more positive note, accelerating sustainable procurement will create and spur markets for innovative technologies. As governments increase demand — and demonstrate a willingness to pay premium prices for — alternative solutions to fossil fuels, such as photovoltaic panels and wind turbines to capture, harness, and store solar and natural air flow energy, public resistance will wane with familiarity, private industry will respond with more efficient tools, and the prices for these technologies will plummet.[34] As an example, we could start, as early as tomorrow, to kickstart economies mired in pandemic-inflicted slumps with sustainable procurement projects that offer great value for "COVID-19 response packages."[35]

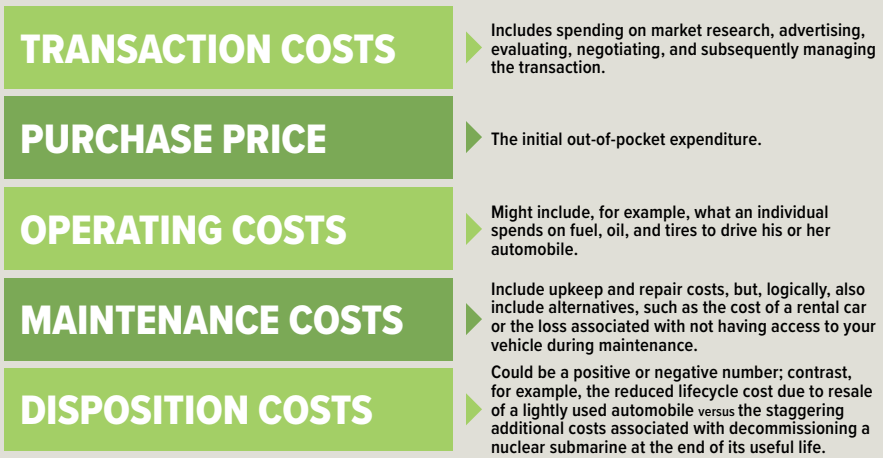
Impediments: Not Just Money

None of this is easy. Decades of experience reminds us that the tyranny of low price is a pernicious and resilient impediment to meaningful procurement reform. Unless and until we evaluate the success of our procurement system in terms of our ability to support the agency's mission while ensuring a sustainable future, instead of merely comparing prices paid, we are doomed to underperform in the context of sustainable procurement.

More broadly, including sustainability-related externalities in acquisition planning and, potentially, once again including them as a mandatory evaluation factor in negotiated procurements, is only the tip of the iceberg. (It's easy to forget that, prior to the acquisition reforms of the 1990s, the *FAR c*ontained a mandatory evaluation factor related to "environmental objectives, such as promoting waste reduction, source reduction, energy efficiency, and maximum practicable recovered material content...."[36] which was quietly jettisoned during the "*FAR* Part 15 Rewrite.")

Dramatic cultural change will also be necessary to inject sustainable purchasing practices into the government's tens of millions of micropurchases, a number which will only increase if the General Services Administration succeeds in further raising the micropurchase threshold to $25,000.[37] Similarly, a growing body of empirical evidence suggests that our highest priority should be integrating sustainable procurement

FIGURE 3. Common Elements of Lifecycle Cost



into both multiple- and single-award indefinite-delivery/indefinite-quantity contracting vehicles,[38] because, well, that's where the action is. And, of course, sustainability concerns will have to be addressed through carefully crafted specifications (e.g., minimum standards) in sealed bidding procurements (which, admittedly, continue to shrink in significance) and in post-award contract management – specifically quality control (or ensuring contractors make good on their performance promises).

In a world with limited resources and a typically overwhelmed acquisition workforce, we have our work cut out for us.[39]

Leading Change: The Moral Imperative

The Anthropocene is here,[40] and the time for preserving *life as we know it* is past. Even if we instituted all of our now-defunct Paris Accord[41] agreements tomorrow, we would still expect enough warming to collapse the planet's ice sheets and flood Miami, Hong Kong, Jakarta, and innumerable other urban centers.[42] But *limiting the extent of devastation* that climate change wreaks *is* within our control, for now. As with COVID-19 (at a minimum, until a vaccine becomes widely available), we must flatten the curve: here meaning the curve of CO2 emissions.

Our future quality of life depends upon our global community fundamentally changing the way we behave. As Jahren cautions, "It's not time to give up – but it is time to get serious."[43] To be part of the solution, we need to change the way we think about procurement, freeing ourselves from viewing price as the "coin of the realm," and reassessing the "value" of the goods and services we buy in light of their effects on the environment. To do so, we need to understand, identify, and value environmentally related externalities as part of a more sophisticated, critical analysis of lifecycle cost. Our goal here is to plant the seeds for growth and change. (Alas, we alone can neither make nor implement procurement policy.)

Regardless of of our individual beliefs, we should all be able to agree that if the climate *is* changing,[44] then the stakes are high. The sooner we, as procurement professionals, contemplate our small yet critical role in attempting to slow global warming, the better equipped we will be to effect positive change.[45] Let's get ahead of the curve, rethink the nature of our work and purpose, embrace innovative and effective sustainable procurement strategies, and lead the change that's needed.

The status quo is untenable. The alternative is unthinkable. CM

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ENDNOTES

1 *See, generally*, the various reports of The Intergovernmental Panel on Climate Change, *available at* https://www.ipcc.ch/reports/ (hereinafter "IPCC Reports").

2 D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, B. DeAngelo, S. Doherty, K. Hayhoe, R. Horton, J.P. Kossin, P.C. Taylor, A.M. Waple, and C.P. Weaver, "2017: Executive summary," In: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* (D.J. Wuebbles, D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)) (Washington, DC: U.S. Global Change Research Program): 12–34, doi: 10.7930/J0DJ5CTG. (*See also* https://nca2018.globalchange.gov/ *and* https://science2017.globalchange.gov/.)

3 Michael T. Klare, *All Hell Breaking Loose: The Pentagon's Perspective on Climate Change* (New York: Henry Holt, 2019): 12.

4 In retrospect, scientists and environmentalists likely erred in focusing earlier efforts on charismatic megafauna (e.g., whales and polar bears), instead of the far greater risk of planet inhabitability. (*See, generally,* David Wallace-Wells, *The Uninhabitable Earth: Life After Warming* (New York: Penguin Random House, 2019): 150–153 (equating "climate parables" about "stranded polar bears and...struggling coral reefs" with "a

climate red herring").) Nor did we succeed at protecting these animals anyway. (*See, generally,* Phoebe Weston and Patrick Greenfield, "Almost 3 Billion Animals Affected by Australian Brushfires, Report Shows," *Guardian* (July 28, 2020), *available at* https://www.theguardian.com/environment/2020/jul/28/almost-3-billion-animals-affected-by-australian-megafires-report-shows-aoe.)

5 *See, generally,* IPCC Reports, note 1.

6 Although this sentiment is frequently associated with Niccolo Machiavelli, the *Oxford Dictionary of Quotations* (8th ed., 2014 (Elizabeth Knowles, ed.)) attributes it to Rahm Emanuel, cited in Jonathan Weisman, "Obamanomics: A Throwback to the '70's," *Globe and Mail* (November 2008).

7 Wallace-Wells, *see* note 4, at 186–187.

8 Samuel Moyn, "Rights vs. Duties: Reclaiming Civic Balance," *Boston Review* (May 16, 2016), *available at* http://bostonreview.net/books-ideas/samuel-moyn-rights-duties (noting that when H.G. Wells "solicited Ghandi's support for [a] bill of rights on war aims, the mahatma recommended that Wells write a cosmopolitan charter of duties instead").

9 *See, e.g.,* Jesse Wegman, "Seriously, Just Wear Your Mask," *New York Times* (July 2, 2002), *available at* https://www.nytimes.com/2020/07/02/opinion/coronavirus-masks.html; *and* Jeremy Konyndyk, "Exceptionalism Is Killing Americans: An Insular Political Culture Failed the Test of the Pandemic," *Foreign Affairs* (June 8, 2020), *available at* https://www.foreignaffairs.com/articles/united-states/2020-06-08/exceptionalism-killing-americans.

10 For example, experience now suggests that states' rushes to lift restrictions on their citizens and reopen their economies (and bars and restaurants), embodied a short-sighted view, which, in retrospect, likely inflicted more harm than good, as early-opening hotspots experience spikes in infections, hospitalizations, and mortality rates, undoing hard-won progress and rendering prior sacrifices seemingly pointless. (*See* "The U.S. surge is being driven largely by states that moved to reopen early," *and* "U.S. Hits Another Record for New Coronavirus Cases," *New York Times* (July 9, 2020), *available at* https://www.nytimes.com/2020/07/09/world/coronavirus-updates.html.

11 The first-ever universal, legally binding global climate change agreement, adopted at the Paris Climate Conference (COP21) in December 2015, is a global framework to limit warming to under 2°C, aims to strengthen countries' ability to deal with the effects of climate change, and support countries in those efforts. (UNFCCC, *The Paris Agreement* (2015), *available at* https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement.) *See also* Secretary of State Michael R. Pompeo, Press Statement: On the U.S. Withdrawal from the Paris Agreement (November 4, 2019), *available at* https://www.state.gov/on-the-u-s-withdrawal-from-the-paris-agreement/.

12 Hope Jahren, *The Story of More: How We Got to Climate Change and Where to Go From Here* (New York: Vintage Books, 2020): 129.

13 Klare, *see* note 3, at 12.

14 On that score, the United Nations "projects 200 million climate refugees by 2050" (Wallace-Wells, *see* note 4, at 7); *see also* Abraham Lustgartan, "Where Will Everyone Go?: The Great Climate Migration," *ProPublica* and *New York Times* Magazine (July 23, 2020), *available at* https://features.propublica.org/climate-migration/model-how-climate-refugees-move-across-continents/ *and* https://www.nytimes.com/interactive/2020/07/23/magazine/climate-migration.html ("[W]ithout preparation and planning, the sweeping scale of change could prove wildly destabilizing. The United Nations and others warn that in the worst case, the governments of the nations most affected by climate change could topple as whole regions devolve into war."); *and* Sonia Shah, "Climate Change Will Drive People Across Borders," *Foreign Affairs* (July 29, 2000), *available at* https://www.foreignaffairs.com/articles/central-america-caribbean/2020-07-29/climate-change-will-drive-people-across-borders (despite the UN's projection that 200 million people could be displaced for climate-related reasons by 2050, "no legal framework exists to help such migrants relocate, let alone to protect them in their most vulnerable moments.").

15 Klare, *see* note 3, at 125-130.

16 With apologies for our optimism and potentially misguided faith in humanity and our governance institutions, we acknowledge that one all-too-likely result is that continued delusion, denial, dysfunction, and paralysis might indefinitely maintain the status quo, with disastrous consequences. For a serious projection of such a dystopian future, consider Naomi Oreskes and Erik M. Conway, *The Collapse of Western Civilization: A View From the Future* (New York: Columbia University Press, 2014). (The authors, science historians affiliated with Harvard and California Institute of Technology, respectively, package, as a novella-length speculative fiction essay, the logical outcome of our current trajectory. Among other things, they identify impediments to necessary, proactive solutions ranging from doubt mongers (and science deniers), market failure (driven by rigid devotion to free-market capitalism, in that "the invisible hand never picks up the check"), neoliberal purists (whose ideological worship of deregulation drowns out the rational implementation of precautionary regulation), the risk-averse inability of the scientific community to effectively communicate the scope of the pending crisis to the public, and "the carbon-combustion complex" (i.e., "the interlinked fossil fuel extraction, refinement, and combustion industries, financiers, and government 'regulatory' agencies that enabled and defended destabilization of the world's climate in the name of employment, growth, and prosperity").)

17 The sustainability agenda is much broader than "green procurement," including disciplines we typically consider social and economic policies, such as gender equality, and others we consider "compliance-related," such as bribery (and foreign corrupt practices), human trafficking, and money laundering. "The Sustainable Development Goals (SDGs) are broad and ambitious…encompass[ing] social, environmental, and economic aspects." (https://www.un.org/development/desa/dspd/2030agenda-sdgs.html.) *See also* the World Trade Organization programme to promote the use of sustainable procurement practices, *available at* https://www.wto.org/english/tratop_e/gproc_e/annexe_e.pdf.

18 Consistent with the U.S. federal procurement system, NCMA's *Contract Management Standard*™ (*CMS*™), ANSI/NCMA ASD 1-2019 (2d ed., 2019) does not address the global trend emphasizing sustainable procurement. Indeed, NCMA's *Contract Management Body of Knowledge*® *(CMBOK*®), sixth ed. (Ashburn, VA: National Contract Management Association: 2019) fails to address sustainability or environmentally preferable (or friendly) purchasing beyond providing definitions of these terms.

19 LEED (i.e., "Leadership in Energy and Environmental Design") provides a framework for healthy, highly efficient, and cost-saving green buildings. (*See, generally,* https://www.usgbc.org/help/what-leed.)

20 *See, generally,* Fort Huachuca General Services Administration (GSA) News Release, "U.S. Military Breaks New Ground with Largest Solar Installation" (April 25, 2014), *available at* https://www.gsa.gov/about-us/newsroom/news-releases/us-military-breaks-new-ground-with-largest-solar-installation (touting the 155-acre project, which allows the base to "island" off the power grid, as "a model for innovative partnering"); Army Office of Energy Initiatives, "O.E.I. Fact Sheet, Fort Huachuca Renewable Energy Project" (January 2015), *available at* https://www.asaie.army.mil/Public/ES/oei/docs/Fort%20Huachuca_%20Fact%20Sheet_16Jan2015.pdf (noting that "more than 57,000 solar panels" supplying 18-megawatts (MW) provides only about 25% of the installation's electrical needs); *and* Kevin Byrne, "Panda-Shaped Solar Power Plant Opens in China," *AccuWeather* (July 1, 2019), *available at* https://www.accuweather.com/en/weather-news/panda-shaped-solar-power-plant-opens-in-china/358686 (Shanxi province plant produces 50 MW, with a 100 MW capacity, adding to China's status as the global leader in solar power production – with over 78 gigawatts of installed solar capacity in 2016).

21 Klare, *see* note 3, at 204.

22 Executive Order 13693, "Planning for Federal Sustainability in the Next Decade" (March 19, 2015), *available at* https://obamawhitehouse.archives.gov/the-press-office/2015/03/19/executive-order-planning-federal-sustainability-next-decade (see Section 16(a)–(b), superseding Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" (October 5, 2009), *available at* https://www.fedcenter.gov/programs/eo13514/).

23 Executive Order 13834, "Efficient Federal Operations" (May 17, 2018), *available at* https://www.federalregister.gov/documents/2018/05/22/2018-11101/efficient-federal-operations. (Suffice it to say that procurement professionals cannot implement rules they have never heard of. Because the FAR Case to implement the 2018 EO is still pending review as a proposed rule (FAR Case 2019-010, "Efficient Federal Operations"), the *FAR* contains references to two revoked EOs, but not the current one. (*See* FAR 23.102, 23.201, 23.402, 23.702, 23.704, 23.801, 23.901, and 22.1001.) The proposed rule based on the 2015 EO was never finalized before being overtaken by the subsequent proposed rule.)

24 *See, generally,* the U.S. Environmental Protection Agency (EPA)'s Environmentally Preferable Purchasing Program, *available at* https://www.epa.gov/greenerproducts/buying-green-federal-purchasers *and* https://www.epa.gov/greenerproducts/about-environmentally-preferable-purchasing-program. (To get a sense of the proliferation of eco-labels and logos, *see also* https://www.epa.gov/what-you-can-do/labels-and-logos.)

25 In this context, gasoline offers a recognizable, if odious, example.

26 *See* System for Award Management (https://beta.

sam.gov/). *See also* USASpending.gov, (https://www.usaspending.gov) *and* FAR 4.602(a).

27 For example, commercial aircraft have useful lives of 15–25 years, even after which they might have a residual value of 5–20%. (The International Air Transport Association (IATA) "Airline Disclosure Guide: Aircraft Acquisition Cost and Depreciation" (2016), https://www.iata.org/contentassets/4a4b100c43794398baf73dcea6b5ad42/airline-disclosure-guide-aircraft-acquisition.pdf.)

28 *See* Jason J. Czarnezki and Steven V. Garsse, "What Is Life-Cycle Costing?" in *Cost & EU Public Procurement Law: Life-Cycle Costing for Sustainability* (Marta Andhov *et al.,* eds., 2019): 3, 8, 10, 14 ("LCC can include capture, measure, quantify, and monetize environmental, social, and health effects of products and services"); Marta Andhov, Roberto Caranta, and Anja Wiesbrock, "The European Union Law of Life-Cycle Costing," *ibid*., at 20, 30 ("Since the introduction of the new provision [Article 68 of Public Sector Directive 2014/24/EU] LCC have been seen as a tool with a great potential to significantly facilitate [sustainable public procurement] by encouraging contracting authorities to 'think outside the (price) box in the context of sustainable public procurement.'"); *and* Jason J. Czarnezki, *Green Public Procurement: Legal Instruments for Promoting Environmental Interests in the United States and European Union* (2019): 132 (EU "Directive 2014/24 both provides a working definition of life-cycle costing and lays down award criteria through which contracting authorities (and entities) may take account of externalities in their purchasing decisions....").

29 A related challenge lies in assessing the environmental effect of sustainable procurement efforts. As a procurement data expert fretted: "[I]f we do not know exactly how countries perform, there is a lot of risk of greenwashing while our horizon is obscured by emission particles" with the "greenwashing culture [eating] the green procurement strategy for breakfast." (Karolis Granickas, "How to Tell Green Procurement from Greenwashing," Open Contracting Partnership (July 15, 2020), *available at* https://www.open-contracting.org/author/kgranickas/.)

30 To be clear, despite commonly being relegated to the background, the concept and nomenclature of LCC and TOC are familiar in U.S. defense procurement, particularly for major system acquisition. (*See, generally,* "Defense Acquisition Community, Lifecycle Costs LCC," *available at* https://www.dau.edu/cop/log/Pages/Topics/Life%20Cycle%20Cost%20LCC.aspx; *compare, e.g*., Oana S. Pantilimon Voda, "Innovative and Sustainable Procurement: Framework, Constraints and Policies," in *Research Handbook on EU Public Procurement Law* (Christopher Bovis, ed. 2016): 215, 224–225 (discussing implementation of a "circular economy and lifecycle costing" to address externalities where the "most economically advantageous tender" (MEAT) criteria are used. (American procurement officials might not realize that MEAT is the EU's analog to "value for money" or the "cost-technical tradeoff.")) (Also, for the purposes of this short piece, we need not be distracted by the nuances that differentiate LCC, TOC, TCO, or LCA. The critical point is that the focus on low prices distracts us from thinking critically about whether what we bought was "worth it" or whether it gave us an appropriate "return on investment.")

31 Wallace-Wells, *see* note 4, at 70. *See also* Majority Staff of H. Select Comm. on the Climate Crisis, 116th Cong., Rep. on Solving the Climate Crisis, at 60 (Comm. Print 2020) (recommending Congress amend the Federal Power Act to direct FERC to find rates "unjust, unreasonable, unduly discriminatory, or preferential if they do not incorporate the cost of externalized greenhouse gas emissions"); *and* "Solving the Climate Crisis," *available at* https://climatecrisis.house.gov/report.

32 For example, sustainable procurement would neutralize subsidies, such as the longstanding, artificially competitive price advantage that fossil fuel generating solutions have historically exploited. That should not be difficult. By analogy, many contracting officers have experience with FAR Subpart 45.2, where "potentially unfair competitive advantages that might result from an offeror or contractor possessing Government property" are neutralized by "adjusting the offers by applying, for evaluation purposes only, a rental equivalent factor...."

33 Wallace-Wells, *see* note 4, at 27.

34 As innovative sustainable solutions accumulate, and subsequent advances capitalize on and leverage preceding ones, there should be a compounding effect, which further exponentially accelerates innovation, not unlike the explosive growth in computing power that resulted from incessant demand for smaller, faster chips. (*See e.g., Over 50 Years of Moore's Law: Fueling Innovation We Love and Depend On, available at* https://www.intel.com/content/www/us/en/silicon-innovations/moores-law-technology.html ("In 1965, Gordon Moore made a prediction...that computing would dramatically increase in power, and decrease in relative cost, at an exponential pace. The insight, known as Moore's Law, became...a springboard for innovation.").

35 *See, e.g.,* Farid Yaker and Ju Hee Ahn, "Making Sustainable Public Procurement Part of the COVID-19 Fiscal Response," *Green Growth Knowledge* (June 15, 2020), *available at* https://www.greengrowthknowledge.org/blog/making-sustainable-public-procurement-part-covid-19-fiscal-response (identifying construction, public transportation, high-impact energy products, and sustainable health products as particularly high leverage for COVID-19 recovery).

36 Compare FAR 15.605(b)(1)(iv), "Evaluation Factors and Subfactors (1996)," prior to the FAR Part 15 re-write (mandatory factors included price/cost, past performance, quality, and environmental objectives) with the current FAR 15.304, "Evaluation Factors and Significant Subfactors (2020)" (mandatory factors include price/cost, quality, past performance, and small business subcontracting).

37 *See, e.g*., Jason Miller, "GSA Taking A Bite Out of Buying Commercial Products," Federal News Network (May 3, 2019), *available at* https://federalnewsnetwork.com/contracting/2019/05/gsa-taking-the-bite-out-of-buying-commercial-products/ ("GSA is asking Congress, once again, to increase the [micropurchase threshold] to $25,000...."); *and* "The Recommended Micro-Purchase Threshold Increase - An Opportunity!", GSA Interact (July 19, 2018), *available at* https://interact.gsa.gov/blog/recommended-micro-purchase-threshold-increase-opportunity.

38 Steven L. Schooner, "Indefinite-Delivery/Indefinite-Quantity Contracts: Time to Correlate Practice and Policy?" 32 *Nash & Cibinic Rep.* ¶ 44 (2018) (discussing "Defense Contracting: Use by the Department of Defense of Indefinite-Delivery Contracts from Fiscal Years 2015 through 2017," GAO-18-412R (May 10, 2018), *available at* https://www.gao.gov/products/GAO-18-412R.

39 Moreover, policymakers and legislators might struggle to distinguish the sustainable procurement agenda from the plethora of redistributive social and economic policies (for example, found in FAR Parts 19, 25, and 26) that permeate the federal acquisition process, but that is a topic for another day (or article). Unlike small business preferences, which focus on the contractors (or groups or types or communities of contractors) who gain or lose opportunities, sustainable procurement policies focus on *procurement outcomes* (such as reduced emissions or greater efficiencies).

40 "The Anthropocene Epoch is an unofficial unit of geologic time, used to describe the most recent period in Earth's history when human activity started to have a significant effect on the planet's climate and ecosystems.... The word Anthropocene is derived from the Greek words *anthropo,* for 'man,' and *cene* for 'new,' coined and made popular by biologist Eugene Stormer and chemist Paul Crutzen in 2000.... A popular theory is that it began at the start of the Industrial Revolution of the 1800s, when human activity had a great effect on carbon and methane in Earth's atmosphere." (National Geographic Resource Library, *available at* https://www.nationalgeographic.org/encyclopedia/anthropocene/.)

41 UNFCCC, *see* note 11.

42 Wallace-Wells, *see* note 4, at 11; *see also* Hans Nicholas Fong, "Indonesia's New Capital Will Be an Environmental Disaster — and Yet Another Protected Rainforest Will Be Destroyed," *Independent* (September 1, 2019), *available at* https://www.independent.co.uk/voices/indonesia-capital-jakarta-sinking-borneo-rainforest-joko-widodo-a9087681.html ("The Indonesian government reasoned [the move is necessary because]...Jakarta is rapidly sinking and is suffering from...choking air pollution."); Bill Chappell, "Jakarta Is Crowded and Sinking, So Indonesia Is Moving Its Capital to Borneo," NPR (August 26, 2019), *available at* https://www.npr.org/2019/08/26/754291131/indonesia-plans-to-move-capital-to-borneo-from-jakarta; *and* Rosa de Acosta and Max Rust, "China's Mighty Yangtze Is Heaving from Rain and the Three Gorges Will Be Tested," *Wall Street Journal* (July 25, 2020), *available at* https://www.wsj.com/articles/chinas-mighty-yangtze-is-heaving-from-rain-and-the-three-gorges-will-be-tested-11595675012 (stating that flooding due to climate change is not limited to coastal regions; in China it has "impacted more than 45 million people in 27 of China's provinces, exacting an economic cost of more than 116 billion yuan ($16.5 billion) since the beginning of June 2020).

43 Jahren, *see* note 12, at 140.

44 Again, while we acknowledge the now-polarized nature of this issue, we refer readers to the various IPCC Reports (*see* note 1).

45 Of course, seeds need time to germinate, sprout, and grow. Meanwhile, embracing institutional change is no mean feat. Experts in change management identify a *sense of urgency* as the critical first steps. (*See* Michael J. Madison, "An Invitation Regarding Law and Legal Education, and Imagining the Future" (University of Pittsburgh Legal Studies Research Paper No. 2018-03, 2018): 3, *available at* https://ssrn.com/abstract=3122624; *see also* Steven L. Schooner, "Book Review: Change, Change Leadership, and Acquisition Reform," 26 *Pub. Cont. L. J*. 467 (1997).)