INSTITUTE FOR DEFENSE ANALYSES

Navigating The Greenhouse Gas Accounting Regulatory Environment for Federal Contractors and the Department of Defense

Hannah L. Kirk
Jennifer L. Bewley
Ayeisha A. Brinson
R. Abraham Holland

February 2024

IDA Product 3000771

INSTITUTE FOR DEFENSE ANALYSES
730 East Glebe Road
Alexandria, Virginia 22305-3086

The Institute for Defense Analyses is a nonprofit corporation that operates three Federally Funded Research and Development Centers. Its mission is to answer the most challenging U.S. security and science policy questions with objective analysis, leveraging extraordinary scientific, technical, and analytic expertise.

About This Publication

This work was conducted under the IDA Systems and Analyses Center Central Research Program, Project C2287, "Climate & Energy Security Working Group" The views, opinions, and findings should not be construed as representing the official position of either the Department of Defense or the sponsoring organization.

Acknowledgments

The authors would like to thank Olivia Gozdz of the IDA Systems and Analyses Center, and Thomas D. Olszewski and Walter D. Valdivia of the IDA Science and Technology Policy Institute, who served as technical reviewers on this report.

For More Information

Jennifer L. Bewley, Project Leader
jbewley@ida.org, 703-845-2390

Leonard J. Buckley, Director, Science and Technology Division
lbuckley@ida.org, 703-578-2800

Copyright Notice

Rigorous Analysis | Trusted Expertise | Service to the Nation

Executive Summary

In response to the Biden-Harris Administration's broader initiative to reduce greenhouse gas emissions, the U.S. Department of Defense (DoD), General Services Administration (GSA), and the National Aeronautics and Space Administration (NASA) published a proposed amendment (87 FR 68312) to the Federal Acquisition Regulation (FAR) in 2022 (U.S. Department of Defense et al. 2022). The amendment introduces new reporting requirements for federal contractors to disclose their greenhouse gas (GHG) footprint and mitigation efforts. If adopted, this proposed rule would add compliance requirements on federal contractors and empower federal agencies to consider GHG impact as a criterion for awarding contracts. This paper introduces the concept of greenhouse gas accounting, key concepts, and main implications for DoD contractors.

For decades, much of the U.S. private sector has disclosed its GHG emissions and climate-related financial risk. As voluntary GHG emissions disclosures have increased over time, U.S. companies and non-profits have refined accounting methodologies and popularized certain emissions accounting and reporting standards. By the late 2010s, there was a near consensus on using a handful of standards, including the GHG Protocol Corporate Accounting and Reporting Standard (CARS) for developing an emissions inventory, the CDP (formerly Carbon Disclosure Project) reporting system for submitting disclosures, the Task Force on Climate-related Financial Disclosures (TCFD) Recommendations for informing those disclosures, and the SBTi for guiding emissions reduction efforts. The proposed FAR rule would require the use of these four non-governmental standards or "equivalents" (U.S. Department of Defense et al. 2022). By using already widely accepted non-governmental standards, agencies such as the DoD can assess their supply chain emissions while limiting government cost and reducing contractors' compliance burden.

As methods for GHG emissions accounting are reviewed, it will be important to monitor how other federal agencies (e.g., Securities and Exchange Commission) will meet the Biden-Harris Administration's goal to reduce greenhouse gas emissions. Other efforts by government agencies to monitor or evaluate GHG emissions include the National Institute of Standards and Technology's (NIST) Greenhouse Gas Measurements Program, or the White House Guidance on the Social Cost of Greenhouse Gas Emissions.

While Executive Order 14057 largely exempted the DoD from federal GHG emissions accounting and reduction requirements for national security and intelligence activities (The White House 2021b), activities by other federal agencies may affect DoD

decision-making. Furthermore, the proposed FAR rule could impose reporting and goal-setting requirements on many of the DoD's suppliers. The DoD will need to remain aware of GHG accounting methods as disclosure practices expand. This paper describes key GHG accounting terminology, relevant regulations and executive orders, and opportunities for further research in this area. This paper describes key GHG accounting terminology, relevant regulations and executive orders, and opportunities for further research in this area.

Contents

1. Introduction

In 2022, the U.S. Department of Defense (DoD), General Services Administration (GSA), and the National Aeronautics and Space Administration (NASA) published a proposed amendment (87 FR 68312) to the Federal Acquisition Regulation (FAR), the primary regulation guiding federal procurement (U.S. Department of Defense et al. 2022). The amendment introduces new reporting requirements for federal contractors to disclose their greenhouse gas (GHG) footprint and mitigation efforts; the amendment also directs contractors to use standards developed in the private sector for voluntary reporting. This regulation change is part of a larger Biden-Harris Administration initiative towards net-zero emissions from federal procurement (The White House 2021b). If finalized,[1] this amendment would disrupt the federal supply chain, imposing a substantial compliance burden on federal contractors and empowering federal agencies to consider GHG impact as a criterion for awarding contracts. This paper introduces the amendment, its key concepts, and its main implications for DoD contractors.

As federal agencies begin to include climate considerations in procurement decisions, there will likely be an influx of emissions disclosures and GHG reduction targets included in contracting proposals. Thus, federal agencies will need to develop a framework for evaluating GHG emissions reporting to make informed procurement decisions. This will likely drive a growing demand for GHG accounting expertise. This paper is part of an ongoing effort to better understand GHG accounting research. In reviewing this paper, readers will learn about key GHG accounting terminology, relevant regulations and executive orders, and opportunities for further research in this area.

[1] The proposed amendment to the FAR was published in November 2022. The public comment window closed in January 2023. As of September 2023, the FAR Council has not published a revised version of the amendment.

2. Background

The proposed FAR amendment is fundamental to the following discussion on GHG accounting standards and their applications for federal procurement, so it is important to define its key terminology:

1. **Greenhouse Gas Protocol (GHGP) Corporate Accounting and Reporting Standard (CARS):** the most commonly used GHG accounting standard in the world, particularly for private industry (World Resources Institute and World Business Council for Sustainable Development n.d.).
2. **CDP:** formerly known as the Carbon Disclosure Project. The CDP is a non-profit repository for environmental data, including voluntary GHG emissions disclosures (CDP 2023a).
3. **Task Force on Climate-Related Financial Disclosures (TCFD):** comprised of representatives from the private sector, including banks, insurance companies, accounting firms, and consulting firms[2] (Task Force on Climate-Related Financial Disclosures 2023). In 2017, they released a report of recommendations on how companies should disclose climate-related financial risk (i.e., financial risk associated with transitioning to a lower carbon economy) .
4. **The Science-Based Targets initiative (SBTi):** a partnership between the CDP, United Nations Global Compact, World Resources Institute, and the World Wildlife Fund (WWF). The SBTi conducts independent assessments of companies' emissions targets (Science Based Targets Initiative 2023).
5. **Greenhouse Gas Inventory:** a quantified list of an entity's gross[3] annual greenhouse gas emissions completed in accordance with the Greenhouse Gas Protocol (GHGP) Corporate Accounting and Reporting Standard (CARS) (U.S. Department of Defense et al. 2022).
6. **Scope One Emissions:** an organization's direct emissions from organizational sources (Figure 1). This includes emissions resulting from electricity generation

[2] The Task Force for Climate-Related Financial Disclosures (TCFD) disbanded in 2023 (Task Force on Climate Related Financial Disclosures 2024).

[3] Due to a lack of consensus methods on quantifying carbon sequestration effectiveness, GHG removals are considered "optional information" for a GHG inventory under the Greenhouse Gas Protocol Corporate Accounting and Reporting Standard **(**World Resources Institute and World Business Council for Sustainable Development 2015).

on the organization's property, physical or chemical processing of materials like cement or aluminum, and transportation of materials in organization-owned or controlled vehicles. Directly generated electricity is included in scope one even if the electricity is generated for a different organization's use. Scope one emissions also include fugitive emissions, which are intentional or unintentional releases (e.g., equipment leaks) (World Resources Institute and World Business Council for Sustainable Development 2015).

7. **Scope Two Emissions:** indirect emissions resulting from an organization's electricity usage (Figure 1). The emissions do not occur on the organization's property, but where the electricity is generated (e.g., coal plant). This includes emissions from the transportation and distribution of electricity. This does not include indirect emissions that occur upstream of electricity production (e.g., emissions from coal mining) (World Resources Institute and World Business Council for Sustainable Development 2015).
8. **Scope Three Emissions:** all other indirect emissions (Figure 1). These include emissions from the extraction and production of purchased materials, transportation of goods (in vehicles not owned or controlled by the organization), and outsourced or leased activities. Scope three emissions account for downstream emissions of an organizations' products (e.g., landfill emissions, emissions from a sold car). It also accounts for electricity-related emissions not covered by scope two (World Resources Institute and World Business Council for Sustainable Development 2015; World Resources Institute and World Business Council for Sustainable Development 2011).

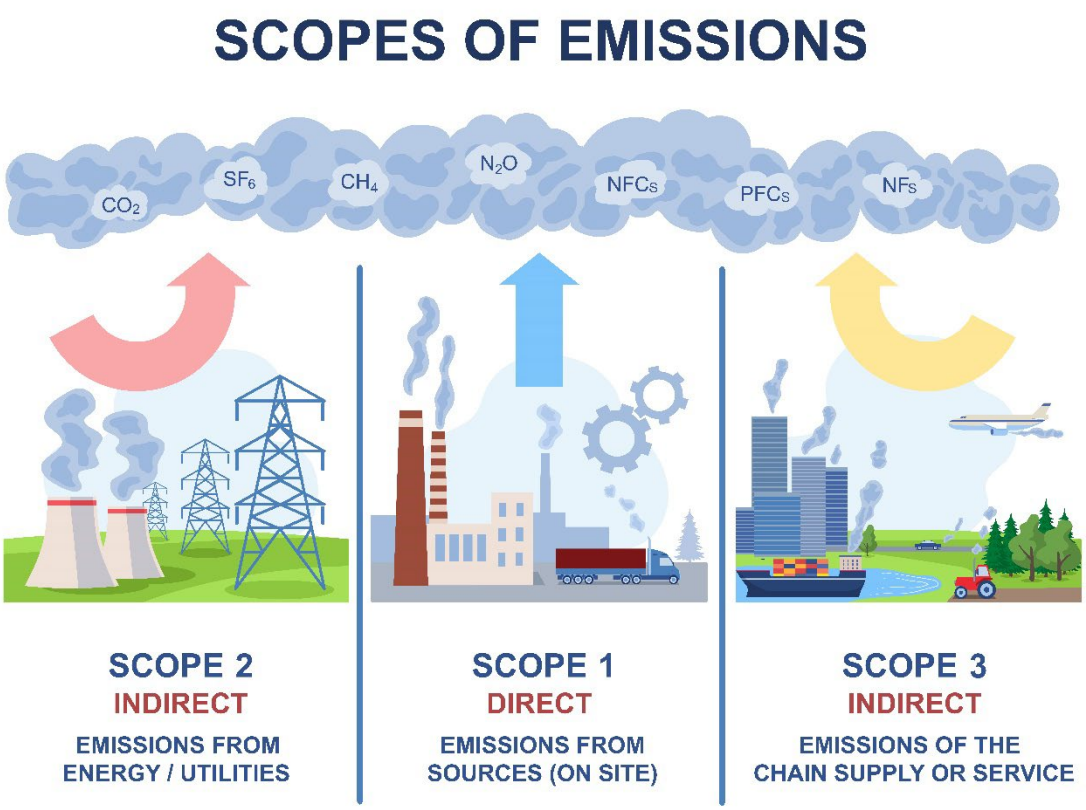

Figure 1. Emission scope types as defined by the Greenhouse Gas Protocol [Rudzhan Nagiev]/[iStock] via Getty Images.

For decades, much of the U.S. private sector has disclosed its GHG emissions and climate-related financial risk. As voluntary GHG emissions disclosures have increased over time, U.S. companies and non-profits have refined accounting methodologies and popularized certain emissions accounting and reporting standards. By the late 2010s, there was a near consensus on using a handful of standards. In 2021, 80% of S&P 500 companies disclosed climate-related risk to the CDP (CDP 2023a). Of Fortune 500 companies that disclosed GHG emissions in 2016, 92% used the Greenhouse Gas Protocol's (GHGP) accounting standards (World Resources Institute and World Business Council for Sustainable Development n.d.). In recent years, the U.S. government has followed the private sector's example by conducting its own GHG accounting and reporting. In doing so, they have at times relied upon the methods private entities developed and popularized.

In 2021, the Biden Administration announced requirements for federal agencies to disclose and reduce their own GHG emissions in Executive Order 14057: Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability (Table 1) (The White House 2021b). In order to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by 2050, Executive Order 14057 instructed federal agencies to

lead by example with climate-conscious procurement and reductions in scope one, two, and three greenhouse gas emissions (The White House 2021b). Executive Order 14008: Tackling the Climate Crisis at Home and Abroad (Table 1) also directs federal agencies to make climate-conscious procurement decisions (The White House 2021a). The U.S. government is the largest purchasing body in the world, with over $650 billion spent in contracts in fiscal year 2020 (U.S. Department of Defense et al. 2022). The federal government therefore possesses substantial power to influence national GHG emissions through direct emissions reductions and supply chain reform.

In another move to decarbonize the federal supply chain, President Biden published Executive Order 14030: Climate-Related Financial Risk (Table 1), requiring the FAR Council and the Council on Environmental Quality to consider amending the FAR (Table 1) to include emissions reporting requirements for federal contractors (The White House 8/29/2023; U.S. Department of Defense et al. 2022). The FAR Council coordinates government-wide procurement policy consistent with the FAR (U.S. General Services Administration 2023).

To comply with Executive Order 14030, FAR Council members of the DoD, GSA, and NASA proposed a change to the FAR in 2022 entitled "Disclosure of Greenhouse Gas Emissions and Climate-Related Financial Risk" (U.S. Department of Defense et al. 2022). This proposed rule would require contractors with over $7.5 million in federal contract obligations over the prior fiscal year (known as *significant contractors*) to disclose their scope one and two GHG emissions. It would require contractors with over $50 million in federal contract obligations over the prior fiscal year *(major contractors*) to disclose their scope one, two, and three GHG emissions. Major contractors would also need to set science-based GHG reduction targets.

Instead of prescribing a new federal GHG reporting standard, the proposed FAR amendment would require significant and major contractors to use existing non-governmental standards in their GHG disclosures. The amendment identifies four standards already widely used by private industry: the GHGP CARS for developing an emissions inventory, the CDP reporting system for submitting disclosures, the TCFD Recommendations for informing those disclosures, and the SBTi for guiding emissions reduction efforts. The proposed FAR rule would require the use of these four non-governmental standards or "equivalents" (U.S. Department of Defense et al. 2022). By using already widely accepted non-governmental standards, agencies can assess their supply chain emissions while limiting government cost and reducing contractors' compliance burden.

Table 1. Guide to Orders and Regulations Relating to GHG Accounting and Reporting

Order/Regulation	Relevance
Executive Order 14008: Tackling the Climate Crisis at Home and Abroad	Requires federal agencies to manage federal procurement to support robust climate action.[4]
Executive Order 14030: Climate-Related Financial Risk	Requires the FAR Council to consider amending the FAR to include a GHG reporting requirement for federal suppliers and to require agencies to prioritize suppliers with lower GHG emissions.[5]
Executive Order 14057: Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability	Requires federal agencies to reduce GHG emissions. Sets government-wide climate goals, including net-zero federal procurement.[6]
Federal Acquisition Regulation (FAR)	The predominant regulation on federal procurement.[7]
Proposed amendment to the FAR (87 FR 68312, 14 November 2022)	Requires certain federal contractors to disclose GHG emissions. In addition, certain contractors must set emissions reduction targets.[8]

4 https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

5 https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/20/executive-order-on-climate-related-financial-risk/

6 https://www.whitehouse.gov/briefing-room/presidential-actions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/

7 https://www.acquisition.gov/browse/index/far

8 https://www.federalregister.gov/documents/2022/11/14/2022-24569/federal-acquisition-regulation-disclosure-of-greenhouse-gas-emissions-and-climate-related-financial

3. Non-Governmental Standards Identified in the Proposed FAR Amendment

A. The Greenhouse Gas Protocol (GHGP) Corporate Accounting and Reporting Standard (CARS)

The proposed FAR amendment would require relevant federal contractors to use the GHGP CARS to develop a GHG inventory. The World Resources Institute and the World Business Council for Sustainable Development published the original GHGP CARS in 2001, and it is the most widely used GHG emissions accounting standard in the world (World Resources Institute and World Business Council for Sustainable Development 2015). This standard provides a methodology for creating an emissions inventory, which is a list of all emission sources across an organization and the calculated emissions resulting from those sources (U.S. Department of Defense et al. 2022). The GHGP CARS guides companies on how to set inventory boundaries (Figure 2), how to choose a base year, how to identify sources, and how to implement emissions calculation tools (World Resources Institute and World Business Council for Sustainable Development 2015).

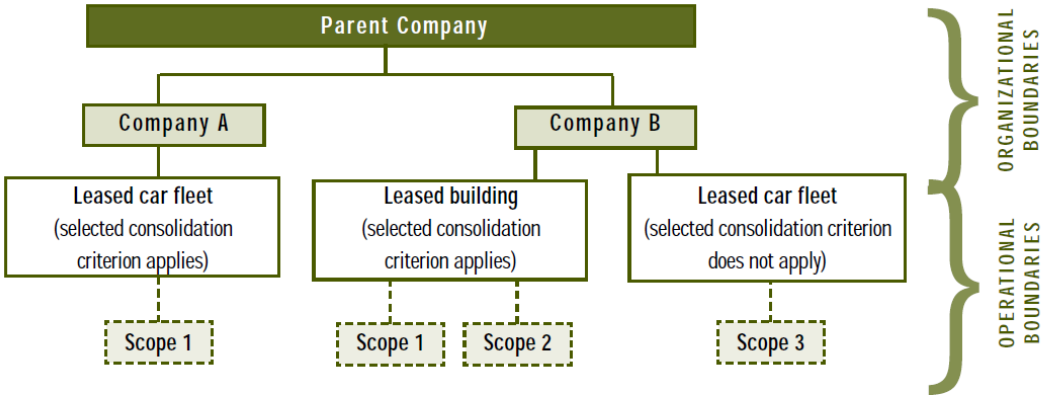

Figure 2. Example of inventory boundaries (World Resources Institute and World Business Council for Sustainable Development 2015).

The CARS mandates that participating organizations set operational and organizational boundaries for creating their greenhouse gas emissions inventories (World Resources Institute and World Business Council for Sustainable Development 2015). Setting an operational boundary requires companies to identify which emission scopes they plan to disclose. For voluntary reporting under the CARS, companies may choose to report all three emission scopes or only scopes one and two. Reporting all three scopes requires

more time and effort, but it better serves transparency and emissions reduction efforts. The CARS references DHL Express Nordic, a company which found that 98% of its emissions fell within scope three (World Resources Institute and World Business Council for Sustainable Development 2015). If DHL Express Nordic excluded its scope three emissions from its inventory, it would fail to identify major opportunities for emissions and cost reductions, and it might appear misleading to the public and its stakeholders. As written, the proposed FAR amendment would require only major federal contractors to disclose all three scopes (U.S. Department of Defense et al. 2022).

In addition to setting operational boundaries, the GHGP CARS requires participants to set organizational boundaries. Organizational boundaries are determined by the accounting approach organizations use to identify and consolidate emissions sources. Under CARS, there are two organizational approaches: equity share and control. Under an equity share approach, companies account for emissions in proportion to their financial stake in the emissions source. Under a control approach, an organization will only account for emissions at sources they financially or operationally control (Figure 3) (World Resources Institute and World Business Council for Sustainable Development 2015).

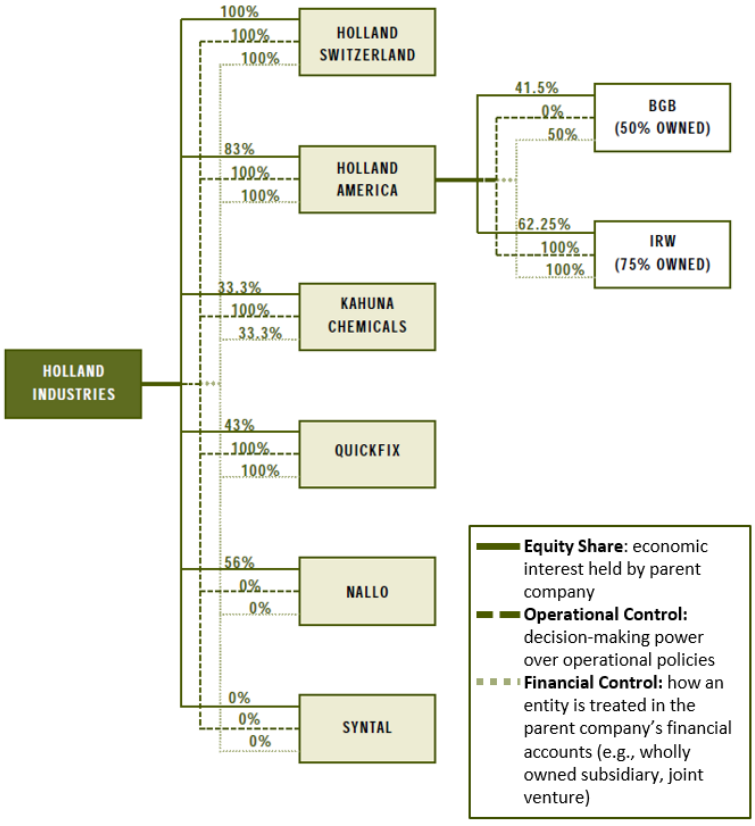

Figure 3. Example of equity share, operational control, and financial control operational boundary setting for parent company Holland Industries (World Resources Institute and World Business Council for Sustainable Development 2015). Legend was modified for clarity.

For the example shown in Figure 3, under an equity share approach, Holland Industries would account for GHG emissions in proportion to its economic interest in a given company. Under a control approach, it would account for 100% of GHG emissions from companies it operationally or financially controls. One exception is exemplified by Kahuna Chemicals. In this case, a financial control approach would only account for 33.3% of emissions because Kahuna Chemicals is a joint venture where three partners have joint financial control (World Resources Institute and World Business Council for Sustainable Development 2015).

Before organizations can calculate emissions, the CARS standard requires them to choose a base year. A base year is the starting point from which an organization can compare its GHG emissions over time. It can be a single year or a multi-year average (e.g., average emissions from 1990–2000). An organization may pick its own starting point, but it must be a time frame for which the organization has verifiable emissions data. Companies may use this flexibility to their advantage by selecting a base year in which they had high GHG emissions, thereby making emissions reductions appear more substantial.

The next accounting step under CARS is to identify emissions sources. For guidance, the CARS appendix provides a list of most common emissions types by scope type. The GHGP website has more resources on how to categorize sector-specific emission sources. After an organization has set inventory boundaries, chosen a base year, and identified sources, then it will proceed to calculate emissions.

When calculating emissions, CARS allows participating organizations to use proxy measures. It does not require organizations to conduct direct monitoring of emissions. The GHGP has emissions calculation tools available, but CARS allows organizations to use alternative calculation tools or develop their own. For consolidating emissions across all levels of the organization, organizations may use either a decentralized approach (i.e., facilities calculate their own emissions and report them to the larger organization) or a centralized approach (i.e., facilities report activity to a larger organization which calculates the emissions) (World Resources Institute and World Business Council for Sustainable Development 2015).

The GHGP CARS is intended for companies to voluntarily estimate emissions and identify areas for reduction and cost-savings; it is not appropriate for cross-organizational emissions comparisons. In order to incentivize participation, the GHGP designed the CARS to be flexible. As a result, the standard offers organizations too much discretion in creating their inventories for meaningful comparison. Two organizations might report different GHG emissions simply because one used an equity accounting approach and one used an organizational approach. As shown in the Holland Industries example from the GHGP CARS (Figure 3), the company would account for 100% of Holland America's emissions under a control approach, but only 83% of emissions under an equity approach.

The difference in GHG emissions between two companies may also be a result of using different proxy estimations in place of direct measurements.

The GHGP CARS also lets individual organizations decide which calculation tools to use. The standard provides guidance on creating a list of emission sources, but organizations may decide among a variety of tools for quantifying the emissions resulting from those sources. They can use GHGP-provided calculators, private emissions accounting software, or develop their own calculation tools. This results in GHG estimates derived from drastically different methodologies. A WWF analysis compared emissions estimates for the same products across different calculators, and found wide variation based upon the allocation method used (Figure 4).

$kgCO_2e/kg$ product	Footprint with economic value	Footprint with mass
Bovine meal (animal feed)	0.7	8.6
Maize gluten meal	1.4	1.1
Palm kernel expeller	1.4	7.0
Soybean hulls	1.3	3.4

Data source: GFLI emissions factor database

Figure 4. Differences in carbon dioxide emissions estimates for four products under two different allocation approaches: emissions calculated by economic value and by mass (Moberg and Devine 2023).

B. The CDP

The CDP was founded as the Carbon Disclosure Project in 2000, and renamed to "CDP" in 2013. It is a non-profit charity which runs a global carbon disclosure system (CDP 2023a). The proposed FAR rule would require relevant federal contractors to disclose their emissions using the CDP's annual Climate Change Questionnaire or an equivalent disclosure tool. Thousands of companies already disclose their emissions through the CDP's Climate Change Questionnaire (CDP 2023b). The questionnaire asks companies to disclose their scope one, two, and three emissions. It also collects information on the companies' emissions targets, emissions reduction performance, and emissions calculation methodology.

C. The Task Force on Climate-related Financial Disclosures' Recommendations (TCFD)

The CDP collects company data on several environmental performance metrics, not just GHG emissions. The proposed FAR rule would only require relevant federal contractors to fill out those portions of the CDP Climate Change Questionnaire that align with the TCFD recommendations for disclosures. The TCFD comprises representatives from the private sector, including banks, insurance companies, accounting firms, and consulting firms. In 2017, they released a report of recommendations on how companies should disclose climate-related financial risk (Task Force on Climate-Related Financial Disclosures 2023). According to the CDP, there are 25 questions (over a third of all questions) aligned to the TCFD recommendations in the Climate Change Questionnaire (CDP 2023c).

D. The Science-Based Targets Initiative (SBTi)

The proposed FAR rule would require major federal contractors (i.e., those with over $50 million in federal contract obligations) to set science-based emissions reduction targets (U.S. Department of Defense et al. 2022). *Science-based targets* refers to greenhouse gas reduction targets that align with what the latest climate science deems necessary to meet the goals of the Paris Agreement to limit global warming well below 2°C above pre-industrial levels (U.S. Department of Defense et al. 2022). Those targets would need to be validated by the SBTi, a partnership between the CDP, United Nations Global Compact, World Resources Institute, and the WWF. The SBTi conducts independent assessments of companies' emissions targets (Science Based Targets Initiative 2023).

4. Relevance to the U.S. Department of Defense

The DoD itself is largely exempt from federal GHG emissions accounting and reduction requirements, due to an exemption in Executive Order 14057 for activities related to national security and intelligence (The White House 2021b). The proposed FAR rule, however, could impose reporting and goal-setting requirements on many of the DoD's suppliers. Under the proposed FAR rule, significant and major contractors would be required to disclose their emissions in the System for Award Management (SAM), the official website for suppliers seeking government contract opportunities (U.S. Department of Defense et al. 2022).

The proposed FAR rule would require DoD contract officers to treat major and significant suppliers as "nonresponsible"—i.e., ineligible for federal contracts (Federal Acquisition Regulatory Council 2023)—if they fail to disclose their GHG emissions through SAM within the given time frame (U.S. Department of Defense et al. 2022). Significant and major contractors would be required to disclose scope one and scope two emissions within a year of the final rule's publication. Major contractors would have two years to disclose scope three emissions and set science-based targets. If a supplier appears to be noncompliant, the contract officer would request materials from the supplier that indicates it has an exception or is in the process of complying (Figure 5). If the officer does not receive sufficient documentation, they must determine the supplier "nonresponsible" (U.S. Department of Defense et al. 2022).

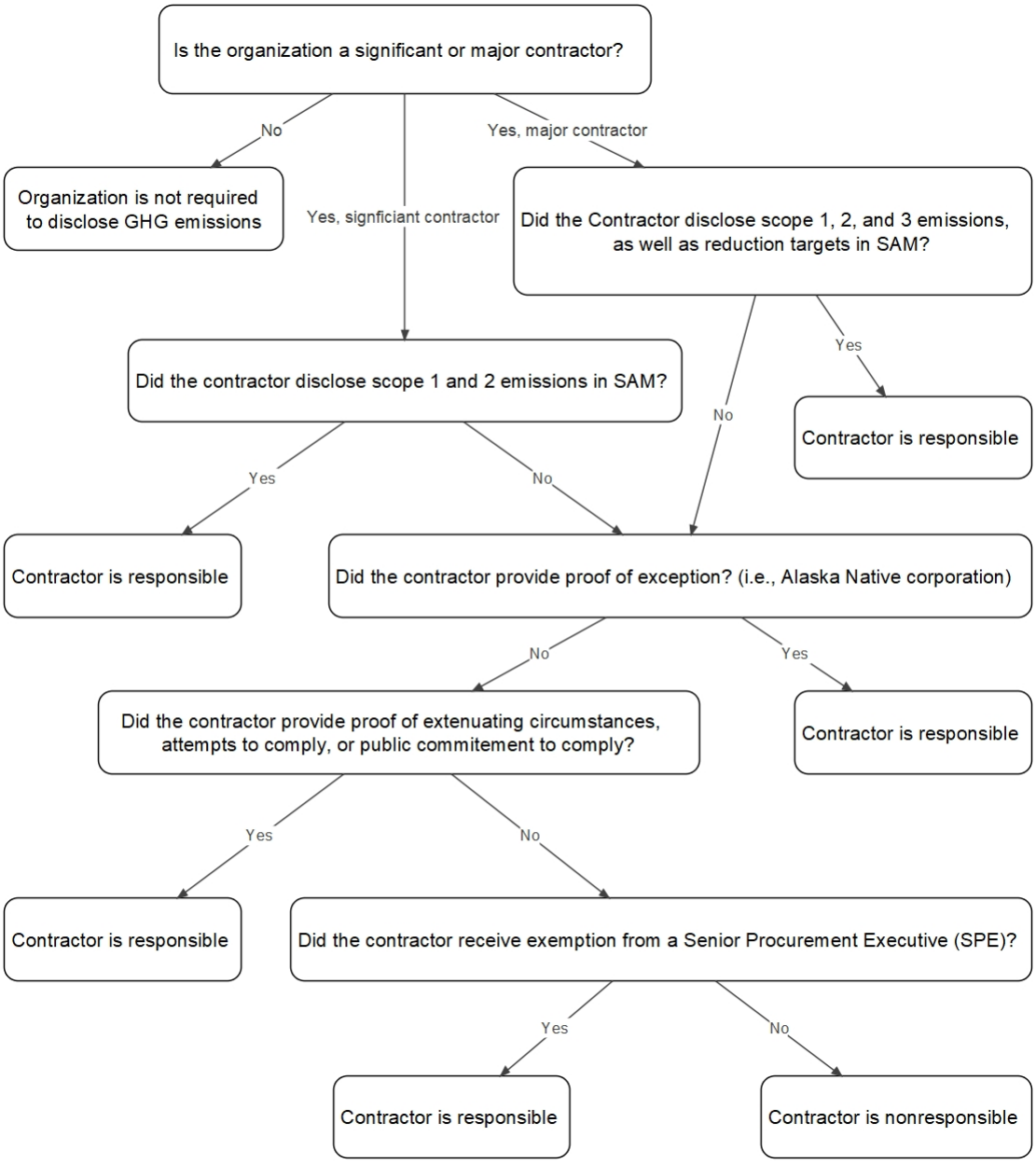

Figure 5. How government contracting officers will make responsibility designations under the proposed FAR rule. Note: Significant refers to contractors with at least $7.5 million in federal contract obligations, while major refers to contractors with over $50 million in obligations.

DoD suppliers may experience a lower compliance burden than contractors serving other agencies. The proposed FAR amendment allows Senior Procurement Executives (SPE) to waive disclosure requirements "for national security purposes or for emergencies, national security, or other mission essential purposes (U.S. Department of Defense et al.

2022).” Given the DoD’s national security-driven mission, it likely possesses wide discretionary power to grant exemptions.

The proposed FAR amendment does not prescribe to what extent, if any, contract officers must consider a supplier’s greenhouse gas emissions performance when awarding contracts. The rule intends to increase transparency in the supply chain, not necessarily to punish suppliers with high GHG emissions. Contractors, however, will likely perceive this amendment as a move in that direction. Various White House documents (Table 1) suggest an Administrative intent to prioritize suppliers who disclose and reduce their GHG emissions. Executive Order 14008: Tackling the Climate Crisis at Home and Abroad requires members of the National Climate Task Force, which includes the Secretary of Defense, to consider climate change in their contracting and procurement (The White House 2021a). Executive Order 14057 sets a goal of net-zero procurement, but as stated previously, this excludes national-security-related tasks (The White House 2021b). Executive Order 14030 orders the FAR Council to consider an additional amendment to the FAR requiring, “the social cost of greenhouse gas emissions to be considered in procurement decisions and, where appropriate and feasible, give preference to bids and proposals from suppliers with a lower social cost of greenhouse gas emissions” (The White House 8/29/2023). As written, the proposed amendment does not require procurement officials to prioritize lower-emitting entities. Regardless, contractors will likely prepare for that eventual outcome.

5. Areas for Further Research

This paper serves as an introduction to GHG accounting concepts and standards as they relate to federal procurement. It is not a comprehensive account. There are nuances to GHG accounting, and in particular its implications for federal contractors, that warrant deeper investigation.

A. Public Response

The proposed FAR rule was published in November 2022 and closed for public comment in January 2023 (U.S. Department of Defense et al. 2022). How did the public, and especially contractors, respond to the proposed rule? The FAR Council explicitly invited public comment on the appropriateness of the private sector standards they selected. Did commentators suggest alternative widely used standards?

B. Securities and Exchange Commission (SEC) Ruling

In 2022, the SEC published its own rule (87 FR 21334) on climate-related disclosures entitled, "The Enhancement and Standardization of Climate-Related Disclosures for Investors" (U.S. Securities and Exchange Commission 2022). This proposed rule would require publicly traded companies to report climate risks and GHG emissions. How do these proposed rules compare, and to what extent would it impact federal contractors? As stated by the FAR Council, many publicly traded companies are federal suppliers (U.S. Department of Defense et al. 2022). Lockheed Martin, Northrop Grumman, and General Dynamics are three of the largest defense contractors and are all publicly traded companies (The Wall Street Journal 2023b, 2023c, 2023a).

C. Department of Defense Applications

Future research will further explore how the GHG regulatory landscape will impact the DoD and its suppliers. How many DoD contractors would qualify as significant or major contractors under the proposed FAR rule? Given that the DoD is one of the largest employers in the world, are existing corporate standards well-equipped for evaluating such a large and complex supply chain (and operations)? Can we gain any insights from other large entities which have already adopted GHG emissions disclosure requirements (e.g., the European Union's European Sustainability Reporting Standards)?

It is unclear how many DoD activities will receive national security exemption from GHG disclosure and target-setting requirements. This will make estimating the DoD's true

scope three emissions difficult. One possible avenue for evaluating the DoD's supply footprint would be to index its suppliers and their GHG emissions. If this information is available, indexing DoD suppliers over time might reveal whether or not the DoD increasingly prioritizes low-emitting contractors.

D. New White House Guidance on Accounting for Social Costs of GHG Emissions

On his first day in office, President Biden re-established the Interagency Working Group (IWG) on the Social Cost of Greenhouse Gases (SC-GHG). SC-GHG refers to the "known damages that greenhouse gas emissions cause across society," (e.g., an elevated risk of weather and climate disasters) (The White House 2023). President Biden tasked the IWG with developing decision-making guidance for federal agencies. Following the IWG's recommendations, in September 2023, the President directed federal agencies to consider SC-GHG when developing and implementing budgets, making procurement decisions, and conducting environmental reviews under the National Environmental Policy Act (NEPA) (The White House 2023). This new directive has implications for DoD procurement, including how it relates to the proposed GHG disclosure requirements for federal contractors.

E. Direct GHG Monitoring

Organizations following the GHGP CARS often use proxies for emissions estimates when direct monitoring is not available or is prohibitively expensive (World Resources Institute and World Business Council for Sustainable Development 2015). While proxy estimates are convenient tools, they have limitations. Proxy estimates often fail to capture variety within an industry. Feedlot cattle production has a different GHG impact than pasture-raised cattle production, but a cattle GHG proxy estimate may fail to capture that distinction (Moberg and Devine 2023). To improve GHG emissions calculation accuracy, several government agencies are developing new methods for direct monitoring. In future research we will assess innovations from federal agencies like the National Institute of Standards and Technology (NIST). NIST runs the Greenhouse Gas Measurements Program, an initiative developing direct GHG monitoring tools and standards. In addition, NASA operates direct monitoring projects, such as the Orbiting Carbon Observatory-2 (OCO-2), a satellite which measures atmospheric carbon dioxide (Younger 2023).

Appendix A.
Other Relevant Documents

While researching references for this paper, we identified additional relevant documents that have not yet been reviewed. We will review these documents in the next phase of research.

Document Title	URL
A Road Map to Build a Climate - Resilient Economy	https://www.whitehouse.gov/wp-content/uploads/2021/10/Climate-Finance-Report.pdf
National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change	https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate#:~:text=As%20part%20of%20the%20NEPA,reasonably%20available%20information%20and%20data
Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances	https://www.epa.gov/system/files/documents/2022-11/epa_scghg_report_draft_0.pdf
Executive Order 13990: Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis	https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-protecting-public-health-and-environment-and-restoring-science-to-tackle-climate-crisis/
Office of Management and Budget (OMB) Memorandum M-22-08: Memorandum for the Heads of Executive Department and Agencies	https://www.whitehouse.gov/wp-content/uploads/2021/12/M-22-08.pdf
OMB Circular No. A-119 Revised: Memorandum for Heads of Executive Departments and Agencies	https://www.whitehouse.gov/wp-content/uploads/2017/11/Circular-119-1.pdf
Department of Defense Plan to Reduce Greenhouse Gas Emissions	https://media.defense.gov/2023/Jun/16/2003243454/-1/-1/1/2023-DOD-PLAN-TO-REDUCE-GREENHOUSE-GAS-EMISSIONS.PDF

Appendix B.
References

CDP. 2022. “TCFD Insights Series: S&P 500.” https://cdn.cdp.net/cdp-production/cms/reports/documents/000/006/550/original/CDP_TCFD-G7_Insights_Series_SP_500.pdf?1663671300.

CDP. 2023a. “About CDP.” https://www.cdp.net/en/info/about-us.

CDP. 2023b. “CDP Climate Change Questionnaire 2023.” https://guidance.cdp.net/en/guidance?cid=46&ctype=theme&idtype=ThemeID&incchild=1&microsite=0&otype=Questionnaire&tags=TAG-13071%2CTAG-605%2CTAG-599.

CDP. 2023c. “How CDP Is Aligned to the TCFD.” https://www.cdp.net/en/guidance/how-cdp-is-aligned-to-the-tcfd.

Federal Acquisition Regulation Subpart 9.1 - Responsible Prospective Contractors. 2023. Federal Acquisition Regulatory Council.

Moberg, Emily, and Katherine Devine. 2023. “Greenhouse Gas Accounting Efforts Undermined by Disparate Tools and Frameworks.” World Wildlife Fund. https://files.worldwildlife.org/wwfcmsprod/files/Publication/file/4wia10x22l_Standardized_GHG_Accounting_Business_Case_07_22_v8.pdf?_ga=2.227960477.1464869378.1691594527-302545667.1691594527.

National Institute of Standards and Technology. 2022. “About NIST.” https://www.nist.gov/about-nist.

Science Based Targets Initiative. n.d. “About Us: Who We Are." https://sciencebasedtargets.org/about-us.

Task Force on Climate-Related Financial Disclosures. 2023. “About | Task Force on Climate-Related Financial Disclosures (TCFD).” https://www.fsb-tcfd.org/about/#history.

The Wall Street Journal. 2023a. “BA | Boeing Co. Stock Price & News.” https://www.wsj.com/market-data/quotes/BA?mod=searchresults_companyquotes.

The Wall Street Journal. 2023b. “LMT | Lockheed Martin Corp. Stock Price & News.” https://www.wsj.com/market-data/quotes/LMT.

The Wall Street Journal. 2023c. “NOC | Northrop Grumman Corp. Stock Price & News.” https://www.wsj.com/market-data/quotes/NOC?mod=searchresults_companyquotes.

The White House. 2021a. "Executive Order 14008: Tackling the Climate Crisis at Home and Abroad." Federal Register. https://www.govinfo.gov/content/pkg/FR-2021-02-01/pdf/2021-02177.pdf.

The White House. 2021b. "Executive Order on Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability." https://www.whitehouse.gov/briefing-room/presidential-actions/2021/12/08/executive-order-on-catalyzing-clean-energy-industries-and-jobs-through-federal-sustainability/.

The White House. n.d. “Council on Environmental Quality | the White House.” https://www.whitehouse.gov/ceq/.

The White House. 2023. “FACT SHEET: Biden Administration Roadmap to Build an Economy Resilient to Climate Change Impacts.” https://www.whitehouse.gov/briefing-room/statements-releases/2021/10/15/fact-sheet-biden-administration-roadmap-to-build-an-economy-resilient-to-climate-change-impacts/.

The White House. 2021c. "Climate-Related Financial Risk." Federal Register. https://www.federalregister.gov/documents/2021/05/25/2021-11168/climate-related-financial-risk.

U.S. Department of Defense. 2023. “Department of Defense Plan to Reduce Greenhouse Gas Emissions: Office of the Under Secretary of Defense for Acquisition and Sustainment.” https://media.defense.gov/2023/Jun/16/2003243454/-1/-1/1/2023-DOD-PLAN-TO-REDUCE-GREENHOUSE-GAS-EMISSIONS.PDF.

U.S. Department of Defense, General Services Administration, and National Aeronautics and Space Administration. 2022. “Federal Acquisition Regulation: Disclosure of Greenhouse Gas Emissions and Climate-Related Financial Risk.” https://www.federalregister.gov/documents/2022/11/14/2022-24569/federal-acquisition-regulation-disclosure-of-greenhouse-gas-emissions-and-climate-related-financial.

U.S. Environmental Protection Agency. 2020. “Scope 1 and Scope 2 Inventory Guidance.” https://www.epa.gov/climateleadership/scope-1-and-scope-2-inventory-guidance.

U.S. General Services Administration. n.d. “Federal Acquisition Regulatory Council: About the FAR Council.” https://www.acquisition.gov/far-council.

U.S. Securities and Exchange Commission. 2022. “The Enhancement and Standardization of Climate-Related Disclosures for Investors.” https://www.federalregister.gov/documents/2022/04/11/2022-06342/the-enhancement-and-standardization-of-climate-related-disclosures-for-investors.

World Resources Institute, and World Business Council for Sustainable Development. 2015. “The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard.” https://ghgprotocol.org/sites/default/files/standards/ghg-protocol-revised.pdf.

World Resources Institute, and World Business Council for Sustainable Development. 2011. “Corporate Value Chain (Scope 3) Accounting and Reporting Standard.” https://ghgprotocol.org/sites/default/files/standards/Corporate-Value-Chain-Accounting-Reporing-Standard_041613_2.pdf.

World Resources Institute, and World Business Council for Sustainable Development. n.d. “Greenhouse Gas Protocol: Companies and Organizations.” https://ghgprotocol.org/companies-and-organizations.

Younger, Sally. 2023. “NASA Space Mission Takes Stock of Carbon Dioxide Emissions by Countries.” NASA: Global Climate Change. https://climate.nasa.gov/news/3251/nasa-space-mission-takes-stock-of-carbon-dioxide-emissions-by-countries/.

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
XX-02-2024	FINAL	

4. TITLE AND SUBTITLE

Navigating The Greenhouse Gas Accounting Regulatory Environment for Federal Contractors and the Department of Defense

5a. CONTRACT NUMBER

HQ0034-19-D-0001

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Kirk, Hannah L.
Bewley, Jennifer L.
Brinson, Ayeisha A.
Holland, R. Abraham

5d. PROJECT NUMBER

C2287

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

IDA Systems and Analyses Center
730 East Glebe Road
Alexandria, VA 22305-3086

8. PERFORMING ORGANIZATION REPORT NUMBER

IDA Product 3000771

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

IDA Systems and Analyses Center
730 East Glebe Road
Alexandria, VA 22305-3086

10. SPONSOR/MONITOR'S ACRONYM(S)

IDA

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release; distribution is unlimited (20 February 2024).

13. SUPPLEMENTARY NOTES

14. ABSTRACT

Recent Presidential Executive Orders have mandated federal agencies, including the Department of Defense, to disclose and reduce their own greenhouse gas (GHG) emissions, and to commit to reducing emissions through the procurement process by including emissions reporting requirements for federal contractors (EO 14030 and EO 14057). The U.S. federal government is the largest purchasing body in the world (over $650 billion in contracts in FY 2020) and therefore, possesses substantial power to influence national GHG emissions through direct emissions reductions and supply chain reform. Federal agencies began the rulemaking process in November 2022 to amend Federal Acquisition Regulations. As written, the proposed change to FAR would require significant and major contractors to use existing non-governmental standards in their GHG disclosures. This paper outlines key terms, standards, and issues associated with GHG accounting and reporting, as well as identified areas for further research.

15. SUBJECT TERMS

Greenhouse gas emissions; reporting requirements; Federal Acquisition Regulations; federal government; federal contractors

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Buckley, Leonard J.
Unclassified	Unclassified	Unclassified	SAR	26	19b. TELEPHONE NUMBER *(Include area code)* 703-578-2800

Reset

Standard Form 298 (Rev. 8/98)
Prescribed by ANSI Std. Z39.18