AVOIDING BUY AMERICA'S PITFALLS IN THE INFLATION REDUCTION ACT

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In August 2022, Congress passed and President Biden signed the Inflation Reduction Act ("IRA") into law. This legislation represents the United States' largest policy response to climate change in history. Unlike prior proposed climate packages at both the federal and the state levels, the IRA includes muscular domestic source content requirements. To guide IRA implementation efforts at the Internal Revenue Service ("IRS") and other administrative agencies, this Note studies the text and history of six different "Buy America" mandates enacted over the previous century. This Note devotes particular attention to the U.S. passenger rail manufacturing industry, documenting the successes and failures of Buy America industrial policy in that sector.

Part II contrasts the IRA's policy architecture with prior legislative attempts at addressing climate change. Part III examines prior Buy America policies in detail: Part III.A is a description of existing Buy America policy, including a close reading of statutory texts and how these texts are practically implemented. Part III.B offers a history of the Federal Transit Administration's Buy America mandate and its interplay with the secular decline of the U.S. passenger rail manufacturing industry. Part IV concludes by applying the lessons of Part III to the IRA.

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I. Introduction

On August 16, 2022, President Biden signed the Inflation Reduction Act ("IRA") into law.[1] This legislation is by far the largest and most significant American federal policy response to the climate crisis in history.[2] Its $370 billion in tax incentives, grant programs, and direct federal spending break from past federal efforts addressed to the climate crisis by pushing a robust industrial policy, channeling money to specific sectors (such as electric vehicles or hydrogen production), and explicitly focuses on creating union and manufacturing jobs.[3] In combination with the Infrastructure Investment and Jobs Act of 2021 ("IIJA")[4] and Executive Order 14005,[5] the IRA envisions a strong "Buy America" policy where all federal spending presumptively supports American businesses and workers. The IRA represents a novel attempt to wed climate change mitigation with blue-collar and rural America industrial economic support in one grand policy.[6]

As I write this, countless federal agencies are in the process of or have already codified regulations implementing the IRA's spending programs. The details of these regulations have already proved controversial.[7] The IRA's twin aims tee up an inherent tension—maximizing climate mitigation versus maximally promoting American industrial employment.

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[1] THE WHITE HOUSE, BUILDING A CLEAN ENERGY ECONOMY: A GUIDEBOOK TO THE INFLATION REDUCTION ACT'S INVESTMENTS IN CLEAN ENERGY AND CLIMATE ACTION 5 (2023), https://perma.cc/T6CK-C4SJ [hereinafter IRA GUIDEBOOK].

[2] *Id.*; Eric Van Nostrand & Arik Levinson, *The Inflation Reduction Act: Pro-Growth Climate Policy*, U.S. DEPT. OF TREASURY (Nov. 13, 2023), https://perma.cc/A5HW-CMBR ("The Inflation Reduction Act (IRA) is the largest investment in reducing carbon pollution in U.S. history.").

[3] *See* IRA GUIDEBOOK, *supra* note 1, at 5–6.

[4] Pub. L. No. 117-58, 135 Stat. 429 (2021). The IIJA's "Buy America" elements are described in Title IX, subtitled the "Build America, Buy America Act." Pub. L. No. 117-58, §§ 70901–70953, 135 Stat. 429, 1294–1316 (2021).

[5] Exec. Order No. 14005, 86 Fed. Reg. 7475 (Jan. 25, 2021).

[6] *See* IRA GUIDEBOOK, *supra* note 1, at 7–8.

[7] *See, e.g.*, Rachel Frazin, *Manchin Blasts Biden Guidance on EV Charger Tax Credit: 'Spits in the Face of Rural America,'* THE HILL (Jan. 24, 2024), https://perma.cc/NWX9-59FK (noting Senator Joe Manchin's critique of the Biden Administration's definition of nonurban areas for the purposes of an electric vehicle charging tax credit).

Fortunately, the United States can draw on its past experiences with industrial policy: for several decades, America has tied transportation and other forms of federal spending to buying American steel and manufactured products, underneath the headline "Buy America."[8] This Note investigates the history of Buy America to explore how to make the most of a dual-objective policy like the IRA.

In Part II, this Note begins with a background discussion of pre-IRA attempts at federal climate policy. This discussion will underscore exactly how politically necessary the domestic content dimension of the IRA was to its enactment. Part III.A will dig into Buy America's statutory language to illustrate the significant variation within existing domestic content policy. Part III.B zooms in further, deeply investigating the Federal Transit Administration's ("FTA") Buy America policy and its interplay with the history of U.S. transit manufacturing. This deep dive will produce concrete policy recommendations to help guide IRA implementation. Part IV concludes with tying these policy recommendations to the IRA specifically.

II. Background: IRA, Past Climate Policy, and Domestic Source Manufacturing Requirements

Active, interventionist industrial policy sits at the heart of the IRA. When running for president, Joe Biden made "homeshoring" a key part of his economic agenda. Launching his "Build Back Better" agenda in his rustbelt hometown of Scranton, Pennsylvania, Joe Biden proposed pumping hundreds of billions of dollars of federal spending to spur manufacturing in the health care, clean energy, and infrastructure sectors.[9] Build Back Better was a moderate version of the plan pushed by leading progressives: the "Green New Deal," which linked climate change

[8] *See infra* Part III.

[9] Eric Bradner, *Biden Unveils Economic Plan to Spur American Manufacturing*, CNN (July 9, 2020), https://perma.cc/8SZJ-DUAX.

mitigation to a more muscular role for the federal government in guiding economic development.[10] Similarly, in the negotiations yielding the final incarnation of the IRA, Senator Joe Manchin underscored homeshoring's importance to his support, linking national security to economic opportunity in the process: "The increased risk of geopolitical uncertainty demands that we turn our focus to increasing U.S. energy production and bringing good paying energy and manufacturing jobs back to America."[11]

Build Back Better, the Green New Deal, and the recently enacted IRA thus all represent significant departures from prior attempts at climate legislation during the Obama Administration. The signature climate bill in 2009 was the American Clean Energy and Security Act,[12] better known as the Waxman-Markey bill. The centerpiece of Waxman-Markey was a technocratic cap-and-trade scheme: the legislation set an economy-wide emission cap, distributed emissions "allowances" (fractions of that cap) to existing polluters and utilities, and authorized auctions to set the price of remaining allowances.[13] While the legislation did provide for some spending, such as distributing allowances to trade-exposed businesses (to ensure their continued competitiveness against dirty imports) and tax rebates for low-income households (to protect against higher energy costs), the tradeable permit scheme was the central mechanism for achieving the emissions target.[14]

Cap-and-trade has long been the darling of economists because "[m]arket-based approaches tend to equate marginal abatement costs [and thus] achieve aggregate pollution control

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[10] *See* Jeff Berardelli, *How Joe Biden's Climate Plan Compares to the Green New Deal*, CBS NEWS (Oct. 5, 2020), https://perma.cc/H4PW-3F67; Lisa Friedman, *What is the Green New Deal? A Climate Proposal, Explained*, N.Y. TIMES (Feb. 21, 2019), https://perma.cc/V39L-2Y83.

[11] Press Release, Senator Joe Manchin, Manchin Supports Inflation Reduction Act of 2022 (July 27, 2022), https://perma.cc/D3A4-JW3K.

[12] H.R. 2454, 111th Cong. (2009).

[13] CENTER FOR CLIMATE AND ENERGY SOLUTIONS, *AT A GLANCE* AMERICAN CLEAN ENERGY AND SECURITY ACT OF 2009 (June 26, 2009), https://perma.cc/VS98-863Y.

[14] *Id.*

targets at minimum cost."[15] By the time Congress took up Waxman-Markey, the U.S. had significant experience with cap-and-trade: the EPA had successfully administered cap-and-trade schemes to abate leaded gasoline in the 1980s, sulfur dioxide and acid rain under the 1990 Clean Air Act Amendments, and nitrogen oxides under the 1998 "SIP Call" and subsequent Clean Air Interstate Rule ("CAIR") and Cross-State Air Pollution Rule ("CSAPR") programs.[16] Waxman-Markey eventually stalled in the Senate, as "the Republican Party had grown increasingly hostile to the science of global warming and to cap-and-trade, associating the latter with a tax on energy and more government regulation."[17]

However, in the decade following Waxman-Markey's failure, the American Left began to abandon cap-and-trade, a form of carbon pricing, as a desirable policy lever. Political scientists described the inherent tension between a politically palatable, low carbon price and the need to drastically reduce emissions.[18] Senator Bernie Sanders, probably the leading national progressive in the Democratic Party, ran on a carbon tax in his 2016 presidential campaign but eschewed carbon pricing in 2020 in favor of the Green New Deal.[19] In 2019, Senator Ed Markey, the senatorial sponsor of both the 2009 cap-and-trade legislation and the Green New Deal proposal, explicitly prioritized "protect[ing] the most vulnerable" over putting a price on carbon.[20]

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[15] Richard Schmalensee & Robert N. Stavins, *Lessons Learned from Three Decades of Experience with Cap and Trade*, 11 REV. ENV'T ECON. & POL'Y 59, 59 (2017).
[16] *See id.* at 60–63, 65.
[17] Ryan Lizza, *As the World Burns*, NEW YORKER (Oct. 3, 2010), https://perma.cc/X6DS-FZW7.
[18] *See* Jessica F. Green, *It's Time to Abandon Carbon Pricing*, JACOBIN (Sept. 24, 2019), https://perma.cc/F8G9-R9K5 ("In short, the very mechanism that makes carbon-pricing politically palatable—a modest price—renders it ineffective at drastically reducing emissions."). *Cf.* Schmalensee & Stavins, *supra* note 15 at 72 ("First, because of the potentially large distributional impacts involved, the allocation of allowances is inevitably a major political issue. Free allowance allocation has proven to help build political support.").
[19] Carolyn Fischer & Grant D. Jacobsen, *The Green New Deal and the Future of Carbon Pricing*, 40 J. POL'Y ANALYSIS & MGMT. 988, 989 (2021).
[20] Elizabeth Kolbert, *Facing Pushback, Markey Makes the Case for the Green New Deal*, YALE ENV'T 360 (Mar. 5, 2019), https://perma.cc/P84X-FTAP.

Meanwhile, climate policies increasing consumer prices abroad caused mass political discontent. In France, President Emmanuel Macron's 2018 proposal to raise diesel and gasoline taxes spawned the *gilets jaunes* (yellow vests) movement, which in its first weeks led to hundreds of thousands on the streets, barricaded roads, and hundreds of burned cars and shops.[21] The opposition party, National Rally, won the most votes in the subsequent nationwide election in May 2019.[22] In Germany, a law from the governing "traffic light" coalition[23] banning the installation of new gas boilers in preference to electric heat pumps "almost tore the German government apart," leading the opposition Alternative for Germany ("AfD") party to surge from fourth place to second in the polls.[24] In Norway, high electricity prices in 2022 almost toppled the governing coalition and led to a leading labor union calling for Norway to leave the EU's energy union.[25] It's no surprise that American politicians, witnessing the worldwide political carnage caused by high energy prices, wouldn't rush to impose an energy-pricing scheme.

The Green New Deal's focus on labor and welfare in addition to raw energy prices promised a politically palatable path forward. Rather than using sticks to coax consumers into consuming less electricity, supply-side interventions promised an abundance of both clean energy and economic opportunity.[26] The IRA, as a significantly more limited version of the Green New

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[21] Angelique Chrisafis, *Who Are the Gilets Jaunes and What do They Want?*, GUARDIAN (Dec. 7, 2018), https://perma.cc/UE9N-XCYR.
[22] Angelique Chrisafis, *Marine Le Pen Ahead of Macron's Centrist Party, Say French Exit Polls*, GUARDIAN (May 26, 2019), https://perma.cc/AD7F-4SX3.
[23] "Traffic light" refers to the colors of the three governing coalition partners: red for the Social Democratic Party ("SPD"), yellow for the Free Democratic Party ("FDP"), and the green for the Greens.
[24] Karl Mathiesen, *How the Far Right Turned Heat Pumps into Electoral Rocket Fuel*, POLITICO (Oct. 4, 2023), https://perma.cc/4EHY-A66T.
[25] Varg Folkman, *Norway's Government Risks Crisis Over EU Energy Row*, POLITICO (Oct. 30, 2023), https://perma.cc/2TZ5-AMZG. *See also* Norges Høyesterett [Supreme Court of Norway] Oct. 31, 2023, 23-025348SIV-HRET (affirming the legality of the Norwegian parliament's vote to transfer some administrative authority in the electricity sector to an E.U. institution).
[26] *See* Van Nostrand & Levinson, *supra* note 2.

Deal,[27] kept this basic architecture with its focus on carrots—generous tax credits and direct federal spending, conditioned on muscular domestic sourcing requirements.[28] The proof is in the pudding: The Waxman-Markey bill never passed the Senate despite a 60-vote Democratic supermajority, while the IRA has become America's broadest climate bill ever enacted, despite razor-thin Democratic majorities in Congress.[29]

However, the downside of marrying two distinct interests into a single policy is that the Biden Administration had to trade off maximizing climate mitigation against maximizing job creation in low-income neighborhoods, "energy communities" (a euphemism for currently or formerly coal-producing or -consuming districts), and rural areas. The brouhaha over the electric vehicle ("EV") charging tax credit perfectly illustrates this tension.[30] The tax credit has two objectives: building out a national charging network and creating jobs in left-behind areas. The credit covers up to 30 percent of the cost of a charging station[31] but is geographically limited to census tracts that are "low-income communit[ies]"[32] or are "not an urban area."[33] While the term "low-income community" is statutorily defined, the Internal Revenue Service ("IRS") adopted a broad definition of "not an urban area": any census tract where at least 10% of its constituent blocks are not designated urban.[34] This maximizes availability of the tax credit and thus climate

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[27] *See* Matthew Miles Goodrich, *We Can Thank Green New Dealers for the Inflation Reduction Act*, NATION (Aug. 17, 2022), https://perma.cc/7NNM-Y67E.

[28] *See, e.g.*, IRA GUIDEBOOK *supra* note 1, at 2 ("Many of the clean energy tax provisions offer bonus credits to projects that . . . meet certain domestic content requirements.").

[29] *See* Daniel J. Weiss, *Anatomy of a Senate Climate Bill Death*, CTR. AM. PROGRESS (Oct. 12, 2010), https://perma.cc/7V2J-U5LM; Emily Cochrane, *House Passes Sweeping Climate, Tax and Health Care Package*, N.Y. TIMES (Aug. 12, 2022), https://perma.cc/8RCP-EPST.

[30] *See* Frazin, *supra* note 7.

[31] 26 U.S.C. § 30C(a).

[32] 26 U.S.C. § 30C(c)(B)(i)(I); 26 U.S.C. § 45D(e) (defining "low-income community").

[33] 26 U.S.C. § 30C(c)(B)(i)(II).

[34] INTERNAL REVENUE SERVICE, NOTICE 2024-20, GUIDANCE ON SATISFYING THE GEOGRAPHICAL REQUIREMENTS OF THE SECTION 30C ALTERNATIVE FUEL VEHICLE REFUELING PROPERTY CREDIT 11–12 (2024), https://perma.cc/M82F-KYWS. *See also* Section 30C Alternative Fuel Vehicle Refueling Property Credit, 89 Fed. Reg. 76759, 76760–61 (Sept. 19, 2024) (proposed rule applying the interpretation discussed in Notice 2024-20). Rather hilariously, this

mitigation potential, but also attenuates the policy goal of helping low-income and rural communities catch up. Senator Manchin, a linchpin of the IRA's enactment, was incandescent: He blasted the guidance as "spit[ting] in the face of rural America."[35]

The next part of this Note will explore this tension in greater detail by examining a similar dynamic with previous "Buy America" mandates. These mandates obligate certain federal grant recipients, particularly for Department of Transportation ("DOT") grant programs, to buy steel and manufactured goods made in America. They thus have the same basic structure: deliver a substantive goal (climate mitigation for the IRA, transportation infrastructure project delivery for prior DOT Buy America mandates) while boosting industrial employment. The Note will conclude with normative recommendations for guiding future IRA implementation.

III. Previous Buy America Mandates

A. History and Current landscape

The IRA is hardly America's first example of legislative policy promoting onshore manufacturing. Congress passed and President Herbert Hoover signed the first Buy American Act in 1933.[36] This early statute required the federal government to purchase domestically sourced unmanufactured and manufactured "articles, materials, and supplies" for public works and other kinds of public uses.[37] The law included exceptions when materials "are not [available] in sufficient and reasonably available commercial quantities and of a satisfactory quality," and the

definition of "not an urban area" embraces the census tract (tract 5117.05) containing Tesla's former headquarters, a significant portion of the Stanford Research Park, and the global headquarters of the law firms Cooley and Wilson Sonsini Goodrich & Rosati. *30C Tax Credit Eligibility Locator*, DEPT. OF ENERGY, https://perma.cc/D3GM-SPG9; *About: Census Tract 5117.05, Santa Clara County, California*, STANFORD DATA COMMONS, https://perma.cc/7TJN-DQ6B.

[35] Frazin, *supra* note 7.

[36] Pub. L. No. 72-428, tit. 3, 47 Stat. 1489, 1520–21 (codified as amended at 41 U.S.C. §§ 8301–8305); *see also* Lawrence Hughes, *Buy North America: A Revision to FTA Buy America Requirements*, 23 TRANSP. L.J. 207, 208–14 (1995) (providing more history on the legislative process yielding the 1933 Buy American Act).

[37] 41 U.S.C. § 8302.

law offered a further exception when the Buy America mandate would "be inconsistent with the public interest, [or] their cost to be unreasonable."[38] This basic statutory scheme—a broad domestic-purchasing mandate, with cost, availability, and public interest exceptions—defined later incarnations of Buy America policy.

The 1933 Buy American Act only applied to direct federal purchases and federal public works.[39] However, Congress subsequently extended Buy America mandates to federal grant recipients in 1978,[40] with the passage of the Surface Transportation Assistance Act.[41] A policy response to crisis in the U.S. steel industry in the 1970s,[42] this law obligated federal highway grant recipients to purchase American goods. A few years later, Congress extended the mandate to public transit projects.[43]

Today, in addition to the still-active 1933 Act,[44] there are at least six additional Buy America mandates, at scattered locations in the United States Code and with varying provisions.[45] These apply to:

1. The Federal Highway Administration ("FHWA")[46]
2. The Federal Transit Administration ("FTA")[47]

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[38] *Id.*
[39] *See id.* at § 8301(1) (defining "public use" as "use by, public building of, and public work of, the United States [and various federal territories]"); *id.* at § 8302.
[40] *See* Jeff Davis, *The Trump Infrastructure Agenda—What Would "Buy American, Hire American" Really Entail?*, ENO CTR. FOR TRANSP. (Jan. 18, 2017), https://perma.cc/U46H-H83R.
[41] Surface Transportation Assistance Act of 1978, Pub. L. No. 95-599, § 401, 92 Stat. 2689, 2756 (1978). Note that this and later mandates colloquially go by "Buy America," whereas the 1933 Act is named "Buy American" with a trailing "N."
[42] Davis, *supra* note 40.
[43] Surface Transportation Assistance Act of 1982, Pub. L. No. 97-424, § 165, 96 Stat. 2097, 2136–37 (1982).
[44] *See, e.g.*, United States v. Capitol Supply, Inc., 27 F.Supp.3d 91, 93 (D.D.C. 2014) (U.S. government attempt to enforce subpoenas, which, in turn, were directed to ascertaining a contractor's compliance with the 1933 Buy American Act).
[45] UNITED STATES DEPT. OF TRANSP., BUY AMERICA PROVISIONS - SIDE-BY-SIDE COMPARISON (Mar. 13, 2012), https://perma.cc/PTJ4-BS3G [hereinafter SIDE-BY-SIDE COMPARISON].
[46] 23 U.S.C. § 313.
[47] 49 U.S.C. § 5323(j).

3. The Federal Railroad Administration's ("FRA") High Speed Rail Program[48]
4. Amtrak[49]
5. The Federal Aviation Administration ("FAA")[50]
6. Public works funded by the 2009 American Recovery and Reinvestment Act ("ARRA")[51]

A full discussion of their distinctions is beyond the scope of this Note, and I direct the reader to DOT's excellent side-by-side table for the full details.[52] In the remainder of this subpart, I will guide the reader through some pertinent distinctions in the statutory language. The similarities in statutory language but differences in implementation will illustrate the key role agency discretion plays in the success (or lack thereof) of Buy America policy.

1. Regulatory Triggers

Despite the similar policy goals of these Buy America provisions, each provision uses different statutory language. The FHWA, FTA, FRA, and ARRA provisions all refer to "steel, iron, [and/or] manufactured goods" in establishing their scope.[53] The FAA provision omits "iron" but otherwise resembles the others.[54] The Amtrak provision sweeps broader, reaching both manufactured and unmanufactured "articles, material, and supplies."[55]

Additionally, each provision contains a different definition of minimum project size. For instance, the Amtrak provision only reaches procurement tenders costing at least one million dollars.[56] The FRA provision similarly only reaches projects costing more than one hundred

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[48] 49 U.S.C. § 24405.
[49] 49 U.S.C. § 24305(f).
[50] 49 U.S.C. § 50101.
[51] Pub. L. No. 111-5, § 1605, 123 Stat. 115, 303 (2009).
[52] SIDE-BY-SIDE COMPARISON, *supra* note 45.
[53] 23 U.S.C. § 313(a) (FHWA provision); 49 U.S.C. § 5323(j)(1) (FTA provision); 49 U.S.C. § 24405(a) (FRA provision). *See* Pub. L. No. 111-5, § 1605(a), 123 Stat. 115, 303 (ARRA provision, referring to "iron, steel, and manufactured goods").
[54] 49 U.S.C. § 50101(a).
[55] 49 U.S.C. § 24305(f)(2).
[56] 49 U.S.C. § 24305(f)(3).

thousand dollars.[57] The FTA's floor is one-hundred and fifty thousand dollars.[58] The FHWA's floor is defined in the regulations as the larger of $2,500 or 0.1% of the total contract cost.[59] By contrast, the FAA's provision has no *de minimis* floor.[60]

Finally, certain provisions provide alternative paths to compliance short of buying exclusively domestically sourced iron, steel, and manufactured goods. For instance, the FTA provision exempts rolling stock (a large-ticket budget line item in transit projects, and the only significant capital account line item for smaller bus-only companies) so long as 70% of the components were made in the United States and final assembly takes place domestically.[61]

2. Waivers

Recognizing the impossibility of an ironclad Buy America rule, Congress granted agencies discretion to waive requirements in certain circumstances.

1. Each of the six Buy America provisions allows the relevant secretary or agency head to waive the domestic source requirements if they find the requirements are "inconsistent with the public interest."[62] Agencies have interpreted this authority differently. For instance, the FTA has waived Buy America requirements for minivans and vans under the public interest authority where there were no Buy America–compliant vehicles on the market.[63]By contrast, FHWA has taken this authority much further. In 1983, shortly after the enactment

[57] 49 U.S.C. § 24405(a)(11).
[58] 49 U.S.C. § 5323(j)(13).
[59] Buy America Requirements, 23 C.F.R. § 635.410 (1993) (applicable only to "steel and iron materials").
[60] *See* SIDE-BY-SIDE COMPARISON, *supra* note 45.
[61] 49 U.S.C. § 5323(j)(2)(C).
[62] 23 U.S.C. § 313(b)(1) (FHWA provision); 49 U.S.C. § 5323(j)(2)(A) (FTA provision); 49 U.S.C. § 24405(a)(2)(A) (FRA provision); 49 U.S.C. § 24305(f)(4)(A)(i) (Amtrak provision); 49 U.S.C. § 50101(b)(1) (FAA provision); Pub. L. No. 111-5, § 1605(b)(1), 123 Stat. 115, 303 (ARRA provision). *See also* SIDE-BY-SIDE COMPARISON, *supra* note 45.
[63] Notice of Buy America Waiver of Domestic Content Requirement for Minivans and Vans, 81 Fed. Reg. 72667, 72667 (Oct. 20, 2016) (waiving Buy America domestic content requirement—but not the final domestic assembly requirement—for the purchase of 188 minivans for a Chicago-area suburban bus operator).

of its Buy America provisions in 1982,[64] FHWA issued an across-the-board waiver for all manufactured products other than cement and steel using its public interest authority.[65] FHWA expanded this waiver further in 1995, embracing pig iron, processed and reduced iron ore, scrap steel, and other materials used to manufacture steel.[66]

2. Each of the six Buy America provisions also authorizes the relevant agency head to waive the domestic source requirement if the covered materials are not manufactured or produced in the United States "in a sufficient and reasonably available amount or are not of a satisfactory quality."[67] Each provision's language differs slightly, but all contain the quantity and quality dimensions.[68] A prototypical example of the non-availability waiver in action is FTA's authorization of Sound Transit to purchase ultrastraight rail in order to keep the Northgate Link light rail extension within mandatory vibration thresholds.[69] There, the project sponsor filed a waiver request, and the agency granted a waiver limited to only that specific procurement—that is, *only* Sound Transit could purchase foreign

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[64] Surface Transportation Assistance Act of 1982, Pub. L. No. 97-424, § 165, 96 Stat. 2097, 2136–37 (1982).
[65] Buy America Requirements, 48 Fed. Reg. 53099, 53102 (Nov. 25, 1983).
[66] General Material Requirements; Buy America Requirements, 60 Fed. Reg. 15478, 15478–79 (Mar. 24, 1995). Interestingly, for both the manufactured products and iron components waivers, the FHWA relied on its "inconsistent with the public interest" authority despite the distinct "sufficient and reasonably available quantities" authority discussed *infra*. 48 Fed. Reg. at 53102; 60 Fed. Reg. at 15479.
[67] 23 U.S.C. § 313(b)(2) (FHWA provision); 49 U.S.C. § 5323(j)(2)(B) (FTA provision); 49 U.S.C. § 24405(a)(2)(B) (FRA provision); 49 U.S.C. § 24305(f)(4)(A)(iii) (Amtrak provision); 49 U.S.C. § 50101(b)(2) (FAA provision); Pub. L. No. 111-5, § 1605(b)(2), 123 Stat. 115, 303 (ARRA provision). *See also* SIDE-BY-SIDE COMPARISON, *supra* note 45.
[68] The "slightly" varying language, however, will catch the attention of the reader carefully parsing the first-order logic contained in the statutory language. *Compare* 23 U.S.C. § 313(b)(2) (FHWA provision: "are not produced . . . in sufficient and reasonably available quantities *and* of a satisfactory quality" (emphasis added)), *and* 49 U.S.C. § 50101(b)(2) (FAA provision: "are not produced in a sufficient and reasonably available amount *or are not* of a satisfactory quality" (emphasis added)) *with* 49 U.S.C. § 24305(f)(4)(A)(iii) (Amtrak provision: "are not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities *and are not* of a satisfactory quality" (emphasis added)). The FHWA and FAA provisions are equivalent under De Morgan's Law and implement a disjunctive test: the waiver applicant must show that domestic goods are either unavailable in sufficient quantity *or* of insufficient quality. The Amtrak provision seems to require that Amtrak show *both* insufficient quantity and quality. I can only assume this is a scrivener's error in the Amtrak statute, given that its logical formulation stands alone among the six in requiring both insufficient quantity *and* quality.
[69] Notice of Buy America Waiver for Ultrastraight Rail, 81 Fed. Reg. 89573, 89573 (Dec. 12, 2016).

ultrastraight rail under the waiver. Subsequent comers must request their own waivers. Indeed, FTA has issued at least *four* separate Buy America waivers for minivans in the last 15 years, each for a specific purchaser, even though the underlying fact of non-availability has remained constant.[70]

3. Five of the six Buy America provisions—all but Amtrak's—contain an exemption for when the domestic material mandate "will increase the cost of the overall project by more than 25 percent."[71] These provisions are apparently underutilized. I could find no notice in the Federal Register documenting a cost waiver for the FAA,[72] FTA,[73] or FRA[74] programs. I found just one documented cost waiver under the ARRA.[75] Only the FHWA has chosen to exercise its waiver authority, via a general rulemaking.[76] The FHWA waiver rule authorizes states to use federal funds on foreign materials so long as they solicit both domestic-source and foreign-source bids and the lowest domestic-source bid exceeds the foreign-source bid by more than 25%.[77]

4. Finally, as alluded to above under "Regulatory Triggers," the FAA and FTA programs contain *de facto* "final assembly" waivers—for FTA grants for purchasing rolling stock or certain FAA grants. Under the FTA waiver, the project sponsor can comply with Buy

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[70] *See, e.g.*, Notice of Buy America Waiver for Minivans and Minivan Chassis, 75 Fed. Reg. 35123, 35124 (June 21, 2010); Notice of Buy America Waiver for Minivans, 78 Fed. Reg. 71025, 71026 (Nov. 27, 2013); Notice of Buy America Waiver of Domestic Content Requirement for Minivans and Vans, 81 Fed. Reg. 72667, 72670 (Oct. 20, 2016); Notice of Partial Buy America Waiver for Vans and Minivans, 87 Fed. Reg. 64534, 65434 (Oct. 25, 2022).
[71] 23 U.S.C. § 313(b)(3) (FHWA provision); 49 U.S.C. § 5323(j)(2)(D) (FTA provision); 49 U.S.C. § 24405(a)(2)(D) (FRA provision); 49 U.S.C. § 50101(b)(4) (FAA provision); Pub. L. No. 111-5, § 1605(b)(3), 123 Stat. 115, 303 (ARRA provision). *See also* SIDE-BY-SIDE COMPARISON, *supra* note 45.
[72] FED. REG., *Document Search Results: "49 U.S.C. § 50101(b)(4)"*, https://perma.cc/8W92-E5B8.
[73] FED. REG., *Document Search Results: "49 U.S.C. § 5323(j)(2)(D)"*, https://perma.cc/V5P4-XCW2.
[74] FED. REG., *Document Search Results: "49 U.S.C. § 24405(a)(2)(D)"*, https://perma.cc/2ENQ-59Q9.
[75] Nationwide Categorical Waivers Under Section 1605 (Buy American) of the American Recovery and Reinvestment Act of 2009 (Recovery Act), 76 Fed. Reg. 30145, 30145–46 (May 24, 2011) (waiving Buy American requirements for 300 Spanish red clay tiles to reroof a library in Eagle Pass, Texas).
[76] Buy America Requirements, 23 C.F.R. § 635.410(b)(3)(ii) (2024), *as promulgated in* Buy America Requirements, 48 Fed. Reg. 53099, 53104 (Nov. 25, 1983).
[77] *Id.*

America by ensuring that final assembly of rolling stock takes place in the United States and that United States-sourced goods represent at least 70% of the cost of all components.[78] Similarly, under the FAA waiver, facility and equipment procurement is Buy America compliant if final assembly takes place in the United States and United States-sourced goods constitute 60% of the total cost of all components.[79]

3. Discussion

Despite similar statutory language across the various Buy America provisions, a few features of the regulatory landscape immediately stand out: the tremendous discretion committed to federal agencies, the focus on source of *materials* rather than the national origin of the *vendor*, and the provision of waivers and other escape hatches to avoid an impractical *per se* mandate.

One agency stands out as particularly aggressive in exercising its discretion: the FHWA. The FHWA has issued broad general waivers for all manufactured products and steel precursors like pig iron.[80] The FHWA is also the only agency to issue a general waiver applicable when the domestic-source requirement would increase the project cost by more than 25%.[81] Significantly, the FHWA has the largest budget of the agencies subject to Buy America mandates, so its relatively permissive policies affect the lion's share of federal transportation funding.[82]

This broad agency discretion allows presidential administrations to use the waiver process to selectively prioritize certain categories of projects over others. For instance, the first Trump

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[78] 49 U.S.C. § 5323(j)(2)(C).
[79] 49 U.S.C. § 50101(b)(3).
[80] *See supra* notes 65 & 66. Note, however, that FHWA is proposing to discontinue the general waiver for manufactured products. Buy America Requirements for Manufactured Products, 89 Fed. Reg. 17789, 17789 (Mar. 12, 2024) (notice of proposed rulemaking and request for comments regarding FHWA's proposal to end the general waiver for manufactured products, consistent with the Buy America provisions in the Infrastructure Investment and Jobs Act of 2021 and presidential policy embodied in Executive Order 14005).
[81] *See supra* note 76.
[82] FHWA's non-supplemental budget in FY2024 was $63 billion, versus FAA's $19 billion, FTA's $17 billion, and FRA's $3.4 billion (which included $2.5 billion for Amtrak). DEPT. OF TRANSP., FY2025 BUDGET HIGHLIGHTS 9–10 (2024), https://perma.cc/F5D3-EGXP.

Administration generally channeled federal transportation dollars towards highway projects and rural areas, reflecting that administration's political priorities.[83] Accordingly, the Trump FHWA approved at least six waivers for highway projects,[84] in addition to FHWA's existing generally applicable waivers for manufactured products, pig iron, and reduced iron ore. By contrast, the Trump FTA did not grant a *single* Buy America waiver to a transit project during the Administration's entire term,[85] likely forcing transit project sponsors to pay more for or accept lower quality domestic substitutes. Granting Buy America waivers thus functions as a mechanism to prioritize certain types of projects.

Secondly, the Buy America provisions all operate on the goods themselves, not the corporate identity of the manufacturer. The laws obligate the relevant agency head to only fund projects purchasing American iron, steel, and manufactured goods—or goods with sufficient domestic source content and with final assembly in the United States, for the FAA and FTA alternate compliance programs. Remarkably, foreign manufacturers may apply. For instance, the FTA helped fund contracts worth $2.6 billion won by Chinese state-owned enterprise CRRC for new passenger railcars in four U.S. cities.[86] While Congress has since barred federal transit funds to Chinese state-owned enterprises and CRRC is performing final assembly in Springfield,

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[83] *See* DAVID RANDALL PETERMAN, CONG. RSCH. SERV., R45916, THE TIGER/BUILD PROGRAM AT 10 YEARS: AN OVERVIEW 10, 8 (2019) (showing the share of TIGER/BUILD grants devoted to road spending increasing from 33% during the Obama Administration to 71% in the first two years of the Trump Administration; and showing a marked increase in award rates for rural projects).

[84] FED. HIGHWAY ADMIN., *Notice of Buy America Waiver Request*, https://perma.cc/R3RR-EYWW.

[85] FED. TRANSIT ADMIN., *Waivers Granted*, https://perma.cc/3LSH-YGWK (listing waiver requests approved during the Trump Administration).

[86] Gayla Cawley, *Feds Inspect Springfield Factory as Part of Probe into MBTA's Chinese Contractor*, BOSTON HERALD (Mar. 30, 2023), https://perma.cc/5H2M-DQW7.

Massachusetts,[87] CRRC's success under Buy America indicates the policy isn't well tailored to engender the development of a U.S. rolling stock manufacturing base.

Finally, the "final assembly" statutory language in the FAA and FTA provisions as well as the practice of granting broad categorical waivers signals how a *per se* Buy America rule is unworkable. Take the FTA's statutory provision and the CRRC scandal referenced in the prior paragraph. The genesis of the CRRC scandal was simple: there are no American companies manufacturing subway cars, even with the Buy America mandate in place.[88] The legislative history expresses a similar concern around infeasibility: In the debates leading to the creation of the FTA's "final assembly" provision, Representative Bill Archer worried that a "100 percent buy American [mandate] would significantly raise the cost of implementing new mass transit systems, and in some instances make it prohibitive . . . ."[89]

This concern about feasibility highlights the key tension at the center of Buy America industrial policy: To what extent should federal funding programs prioritize job creation versus substantive project or service delivery? By raising costs, Buy America undoubtedly pushes marginal projects into negative net benefit territory. From a Buy America perspective, that's no concern—as long as the agency spends all federally appropriated money, the money is creating domestic manufacturing jobs, satisfying Buy America's policy goal. But from a transportation

[87] *Id.* Notably, the MBTA CRRC contract did *not* use federal money, and so Buy America was not applicable. *Id.* Additionally, at least one train company rescinded its CRRC contract for cause. Thomas Fitzgerald, *SEPTA Cancels $185 Million Chinese Contract for Double-Decker Regional Rail Cars*, PHIL. INQUIRER (Apr. 12, 2024), https://perma.cc/9P2J-3DBZ.

[88] *See* Matt Murphy, *Chinese Company Hopes MBTA Contract Will Be U.S. Launching Pad*, WBUR (Oct. 22, 2014), https://perma.cc/LN3L-J4EP.

[89] 128 CONG. REC. 28954–55 (Dec. 6, 1982).

project sponsor perspective, Buy America makes it harder to deliver transportation projects, with little guidance in the statute as to how much friction is acceptable.[90]

In the next Part, this Note inquires into this tension by examining the history of the U.S. rail manufacturing sector and the role played by the FTA's Buy America mandate in shaping its current and future development. This investigation will inform this Note's concluding recommendations for future IRA implementation.

B. Case Study: FTA's Buy America Mandate

To this point, this Note has been primarily theoretical. I've examined statutory language and the prudential rationales underlying various policies, but I haven't yet deeply examined the interplay between statutory language and a real industrial base. This part provides a historical analysis of one industrial base and Buy America mandate—the American transit industry and the FTA's Buy America mandate. This part begins with a brief overview of the history of U.S. transit equipment manufacturing and the role that Buy America has played in the sector since its enactment in 1982.[91] It concludes with lessons and takeaways to guide the administrative implementation of the IRA.

1. History

The U.S. once led the world in rail manufacturing, and the rail industry represented a large share of the American industrial base. One hundred years ago, one-fifth of the Dow Jones

[90] For example, my local transit company faces a similar problem balancing between provision of service and provision of a historic landmark: the San Francisco Municipal Railway ("Muni") uses general transit operating funds, which pay for ordinary bus service, to operate cable cars that primarily cater to tourists. While cable cars offer public welfare benefits just like Buy America, Muni is in the unenviable position of using money earmarked for transit to instead pay for an unrelated public good. *Cf.* Joe Eskenazi, *The Muni Death Spiral: San Francisco Rolling Toward Recovery—or Ruin*, MISSION LOCAL (Mar. 1, 2021), https://perma.cc/X8LS-MMFN (discussing the inherent tension in appropriating general municipal transportation funds to cable cars, a "tourist attraction" running a large operating deficit).

[91] See *infra* note 102 and accompanying text.

Industrial Average comprised companies manufacturing rail equipment.[92] The U.S. led the world in rail technological development: One of the world's oldest electric railways, and perhaps the first mainline electric railway, was constructed in 1895 in Baltimore.[93] To comply with 1920s urban air pollution mandates, American companies subsequently created the world's first commercially successful diesel-electric powered locomotive.[94] In the 1930s, a consortium of transit industry companies created a standardized design for a modern electric streetcar to compete with the burgeoning auto industry; subsequently, American builders constructed 4,500 instances of the type and export-licensed the technology to Europe.[95]

However, competition with the automobile, not to mention significant U.S. government subsidies for this new travel mode, would prove too much for the transit industry to bear. Between 1945 and 1975, the transit market was completely eviscerated: Americans made fully 70.5% *fewer* trips via transit.[96] As the automobile gained market share and transit companies converted electric streetcar operations to motor bus, domestic streetcar production ended entirely between 1952 and 1972.[97]

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[92] DOW JONES INDEXES, DOW JONES INDUSTRIAL AVERAGE HISTORICAL COMPONENTS 6, https://perma.cc/2H3V-JPQR (listing American Car, American Locomotive, Baldwin Locomotive, and Westinghouse among the twenty Dow members in 1924). This total excludes upstream supplies, such as steel companies.

[93] *See generally* MEGHAN P. WHITE ET AL., HISTORIC AMERICAN ENGINEERING RECORD: BALTIMORE & OHIO RAILROAD, BALTIMORE BELT LINE (2022).

[94] *See CNJ No. 1000*, B&O R.R. MUSEUM, https://perma.cc/X9C5-83KR; *see also* Staten Island Rapid Transit Ry. Co. v. Publ. Serv. Comm'n, 16 F.2d 313, 316 (S.D.N.Y. 1926) (Learned Hand, J.) (enjoining enforcement of a New York statute banning the operation of highly polluting steam trains within New York City).

[95] *Historic Streetcar Frequently-Asked Questions*, MARKET ST. RY., https://perma.cc/R3SK-M5DT. The most foreign prolific builder was the Czechoslovak state-owned company Tatra, which built 13,991 instances of the American design. Russell Jones, *The Remarkable PCC Tramcar: Why Melbourne Missed Out*, MELBOURNE TRAM MUSEUM (2010), https://perma.cc/6QV4-CNCR.

[96] U.S. CONG. OFF. TECH. ASSESSMENT, U.S. PASSENGER RAIL TECHNOLOGIES 85, tbl. 13 (Dec. 1983), https://perma.cc/Y7TL-DKTC (in 1945, there were about 19 billion passenger rides; in 1975, there were about 5.6 billion passenger rides).

[97] *Id.* at 86.

Starting in the late 1960s, the federal government began funding purchases of rail rolling stock.[98] This intervention prevented the rail manufacturing market from immediately disappearing by allowing transit companies to conduct wholesale replacements of their fleets.[99] But the "erratic" pace of orders, the glut of manufacturing capacity from a deluge of aerospace and defense companies entering the market, and the high rate of inflation through the 1970s (coupled with the practice of fixed-price contracts) led to the "virtual demise of the domestic passenger railcar manufacturing industry."[100] By 1983, the only remaining prime domestic manufacturer of passenger equipment was Budd, held as a subsidiary of a German engineering company, alongside Amtrak's coach rebuilding facility and four plants assembling foreign-manufactured railcars.[101]

Congress enacted the modern version of the transit Buy America in 1982 with the passage of the Surface Transportation Assistance Act of 1982.[102] The language of the Buy America mandate remains substantially unchanged today.[103] The most significant difference is the escalation of the domestic content requirement necessary to qualify under the "final assembly" statutory waiver: In 1982, the requirement was 50%.[104] By 1994, the requirement escalated to 60%.[105] And in 2015, Congress further increased the requirement to 70% for fiscal years 2020 and later.[106]

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[98] *Id. See, e.g.*, Urban Mass Transportation Act of 1964, Pub. L. No. 88-365, § 3(a), 78 Stat. 302, 303 (1964) (creating the first federal funding program for purchasing urban transit rolling stock). This act included its own Buy America provision. *Id.* at § 9(c) ("All contracts . . . shall provide that in the performance of the work the contractor shall use only such manufactured articles as have been manufactured in the United States.").
[99] U.S. CONG. OFF. TECH. ASSESSMENT, *supra* note 96, at 86.
[100] *Id.* at 85, 86, 88–90. *See also id.* at 89 fig.14 (documenting the market exit of two legacy manufacturers—St. Louis and Pullman-Standard—alongside the rapid entry and exit of several defense manufacturers—Rohr, GE, and Boeing-Vertol).
[101] *Id.* at 90.
[102] Surface Transportation Assistance Act of 1982, Pub. L. No. 97-424, § 165, 96 Stat. 2097, 2136–37 (1982).
[103] *Compare id. with* 49 U.S.C. § 5323(j)(2)(C).
[104] Surface Transportation Assistance Act of 1982, § 165(b)(3)(A), 96 Stat. at 2136–37 (1982).
[105] Pub. L. No. 103-272, § 5323(j)(2)(C)(i), 108 Stat. 745, 823 (1994).
[106] Fixing America's Surface Transportation Act, Pub. L. No. 114-94, § 3011, 129 Stat. 1312, 1474 (2015).

2. Analysis, Lessons & Conclusions

The track record of the modern transit Buy America mandate is decidedly mixed. The mandate certainly creates jobs, but it hasn't engendered the development of a globally competitive American rolling stock industry. It also imposes significant costs on transit project sponsors that call into question the cost efficacy of the entire scheme.

The era predating the enactment of the modern FTA Buy America mandate offers an important lesson: *predictability* is an essential precondition to federal funding supporting a viable manufacturing base. Transit company practice in the 1960s and 1970s tended towards massive but erratic orders, arising from the need to replace entire obsolete fleets or equip brand new Great Society metros.[107] A manufacturer hoping to win these contracts faced an all-or-nothing dilemma—either the manufacturer wins the contract and is busy for years or it loses the bid and its capital stock lays idle.[108] Manufacturers would have fared better with a series of smaller, more frequent orders, to enable more orderly planning,[109] but federal policy in the era ignored industrial planning and instead only concerned provision of funds for capital purchases, research and development, and coordination with federal highway funding.[110]

The 1982 Buy America mandate imposing obligations on federal grant recipients ensured that the United States would retain at least some domestic transit vehicle manufacturing capability. As described above, the domestic U.S. transit industry was in free-fall into the 1980s as the federal government prioritized highway investments and the country suburbanized; Buy America required

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[107] U.S. CONG. OFF. TECH. ASSESSMENT, *supra* note 96, at 88. "Great Society metros" refers to large rapid transit projects funded or constructed during the Great Society era, such as the Washington Metro, San Francisco BART, or Atlanta's MARTA. *See* Katie Zezima, *Do You Ride the D.C. Metro? Thank the Great Society.*, WASH. POST (May 23, 2014), https://perma.cc/VMS6-635U.
[108] U.S. CONG. OFF. TECH. ASSESSMENT, *supra* note 96, at 90.
[109] *See id.*
[110] Urban Mass Transportation Act of 1964, Pub. L. No. 88-365, §§ 3, 6, 8, 78 Stat. 302, 303–06 (1964).

foreign bidders on American rolling stock contracts to set up domestic assembly operations.[111] Given the rapid exit of American manufacturers in the 1970s and 1980s, it's quite possible that America would have been forced to rely exclusively on imports in the absence of the 1982 mandate.

Congressional policy stanched the collapse of U.S. rail manufacturing *employment*,[112] but it did not keep American firms in the market nor did it enable the U.S. industry to compete on the international market. Buy America and its "final assembly" statutory waiver instead encouraged foreign firms to set up flexible and cheap U.S. assembly operations, supplied by a sprawling network of American subcomponent suppliers.[113] For instance, the top six manufacturers of passenger rail cars, serving 94% of the American market, are all foreign.[114] They all have significant non-U.S. business, allowing them to survive the vagaries in U.S. transit vehicle demand that helped fell U.S. manufacturers.[115] In addition, these manufacturers kept the high value added research and design work abroad, focusing instead on lower value assembly work at their American sites.[116] Some subcomponent manufacturers, however, have been able to compete globally: The American companies Cummins, Firestone, and Allison Transmission have all successfully penetrated the Chinese or Indian markets.[117]

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[111] MICHAEL RENNER & GARY GARDNER, GLOBAL COMPETITIVENESS IN THE RAIL AND TRANSIT INDUSTRY 9–10 (2010), https://perma.cc/9WE4-X8BR.

[112] *See Transportation Equipment Manufacturing: NAICS 336*, U.S. BUREAU OF LABOR STATISTICS, https://perma.cc/5WM2-FNLP.

[113] JOAN FITZGERALD ET AL., REVIVING THE U.S. RAIL AND TRANSIT INDUSTRY: INVESTMENTS AND JOB CREATION 13–14 (2010),https://jobstomoveamerica.org/wp-content/uploads/2019/12/Reviving-U.S.-Rail-Transit-Industry4.pdf https://perma.cc/HN45-G8HX.

[114] *Id.*

[115] *Id.*; *see also supra* notes 107–110 and accompanying text discussing the importance of stable, predictable orders for manufacturing companies.

[116] RENNER & GARDNER, *supra* note 111, at 10.

[117] Marcy Lowe et al., *Public Transit Buses: A Green Choice Gets Greener*, *in* MANUFACTURING CLIMATE SOLUTIONS: CARBON-REDUCING TECHNOLOGIES AND U.S. JOBS 21–22 (2009).

American assembly operations, meanwhile, have been unable to compete on either the domestic *private* market or any sort of international market due to excessive costs:

> Factories that assemble passenger railcars and transit vehicles typically lack private customers. Their dependence on contracts partially funded by federal grants means that they are comparatively small and may lack economies of scale that could help reduce unit costs.[118]

For instance, the top-two U.S. bus manufacturers, New Flyer Industries ("NFI") and Gillig, each sell about 1,000–1,500 buses per year, whereas the foreign manufacturer Daimler sells 30,000–40,000 (fully an order of magnitude larger) and Volvo over 10,000.[119] Unsurprisingly, NFI and Gillig produce and sell exclusively in the North American market, whereas Daimler and Volvo sell globally—Volvo alone has factories on four continents and customers in 85 countries.[120]

In addition, these American assembly plants are further hamstrung by the transit industry's practice of heavily customizing their orders. Customization can increase direct production costs by 20–30%, and customization adds further costs at other points in the procurement chain, including the transit company issuing the request for proposals, governmental funding entities reviewing grant applications, and manufacturers soliciting bids each must spend more time.[121]

As a result, rolling stock produced at Buy America-compliant assembly plants tends to be significantly more expensive than equivalent foreign-produced products. Japanese and South Korean buses cost about half as much as American buses, and the American market has fewer and less innovative options.[122] Recent light rail vehicle purchases in Los Angeles and San Francisco

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[118] MICHAELA D. PLATZER & WILLIAM J. MALLETT, CONG. RSCH. SERV., R44266, EFFECTS OF BUY AMERICA ON TRANSPORTATION INFRASTRUCTURE AND U.S. MANUFACTURING 12 (2019).
[119] Shanjun Li et al., *Public Transit Bus Procurement: The Role of Energy Prices, Regulation and Federal Subsidies*, 87 J. URBAN ECON. 57, 60 (2015). The foreign buses are significantly cheaper—in 2011, NFI's buses cost $450,000 each while Volvo's cost $272,000. *Id.* at 68 n.30.
[120] *Id.* at 60.
[121] FITZGERALD ET AL., *supra* note 113, at 16.
[122] PLATZER & MALLETT, *supra* note 118, at 17–18 (citing Li et al., *supra* note 119)).

were 40–70% more expensive than equivalent European procurements.[123] While the Los Angeles procurement created 400 jobs at a Kinki Sharyo factory in Palmdale, the contract's cost premium over comparable European procurements, $300 million, works out to some $750,000 per job.[124] This figure is consistent with other studies of the cost per retained manufacturing job for protectionist policies—the Peterson Institute for International Economics found the Trump steel tariffs imposed $900,000 on U.S. consumers and businesses per job saved or created.[125]

These costs should be cause for immense concern. They indicate that Americans are getting less bang for their transit spending buck—worse transit service for a given level of spending and reduced benefits (and political rewards to be reaped) of increased transit spending. Further, as a jobs-generation policy, the rolling stock Buy America program is significantly more costly than plain old apprenticeship programs. The Obama-era Department of Labor's American Apprenticeship Initiative cost just $6,000 per apprentice,[126] less than one hundredth the cost per temporary job at the Kinki Sharyo Palmdale facility.[127] By trying to both deliver transit infrastructure *and* create jobs at the same time, Buy America does neither well.

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[123] Alon Levy, *Why Free Trade in Rolling Stock is Good*, PEDESTRIAN OBSERVATIONS (May 27, 2018), https://perma.cc/3B2F-YZH3.

[124] *Id.* (computing $300 million as the cost premium for the L.A. Metro order); Steven Greenhouse, *Connecting Public Transit to Great Manufacturing Jobs*, AMERICAN PROSPECT (Spring 2018), https://perma.cc/H3V7-2DKS (reporting the creation of 400 jobs paying between $17.30 and $26.89 per hour at Kinki Sharyo's facility). The Los Angeles procurement was Buy America compliant. *See* L.A. CTY. METRO. TRANSP. AUTH., SPECIAL BOARD MEETING AGENDA: LIGHT RAIL VEHICLE PROCUREMENT app. C, at 3 (Apr. 30, 2012), https://perma.cc/AAG5-96GA ("We are proposing to apply the Buy America requirements currently applicable to . . . 'manufactured products' under the FTA and FHWA Buy America regulations rather than the Buy America requirements applicable to rolling stock.").

[125] Heather Long, *Trump's Steel Tariffs Cost U.S. Consumers $900,000 for Every Job Created, Experts Say*, WASH. POST (May 7, 2019), https://perma.cc/J95P-6SFE. *See also id.* (noting that the Trump tariffs on washing machines cost consumers $815,000 per job created); Gary Clyde Hufbauer & Euijin Jung, *The High Taxpayer Cost of "Saving" US Jobs Through "Made in America"*, PETERSON INST. INTL. ECON. (Aug. 5, 2020), https://perma.cc/3YCL-7KRH (providing greater analytical detail).

[126] ROBERT LERMAN ET AL., WHAT ARE THE COSTS OF GENERATING APPRENTICESHIPS? 9 (2022), https://perma.cc/9HB7-BW6K.

[127] *See supra* note 124.

Finally, in the bus market, there is evidence that the Buy America mandate leads to lower quality products. Under the rolling stock final assembly provision, federal grant recipients can comply with Buy America by purchasing rolling stock whose final assembly took place in the United States and when domestically produced components represent at least 70% of the cost of all components.[128] Bus manufacturers rely on domestically sourced major components, like the engine and transmission, to comply with the statute. However, this caps the amount of money a manufacturer can spend on the often-foreign built bus chassis; the bus chassis has a large impact on the bus's overall service life, so skimping on the chassis (in order to comply with Buy America) limits the vehicle's useful service life.[129] This dynamic forced North American Bus Industries to pull its innovative, high performing, but expensive composite-shell "CompoBus" from the market.[130] Manufacturing the composite shell domestically was too expensive,[131] and the foreign-built shell disqualified the bus from federal grant assistance, resulting in the CompoBus being uncompetitive in the transit market.[132]

IV. Avoiding Buy America's Pitfalls with the IRA

As discussed above, the FTA's experience with its Buy America mandate has a mixed track record. The mandate created American assembly jobs but did not create a long-term sustainable American rolling stock industry due to limited economies of scale, unpredictable procurement calendars, and excessive costs in the small North American rolling stock market. In designing the

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[128] 49 U.S.C. § 5323(j)(2)(C).
[129] FED. TRANSIT ADMIN., USEFUL LIFE OF TRANSIT BUSES AND VANS 23 (2007), https://perma.cc/Y9UH-R7EU.
[130] *Id.*
[131] *See id.* ("Manufacturing this composite structure in the Unites States was not considered an option given higher domestic production costs."); NORTH AMERICAN BUS INDUSTRIES, ANNUAL REPORT AND ACCOUNTS 2001, at 4 (2001), https://perma.cc/5PCQ-RX4A ("Buses are designed and the shells built in Hungary, where skills are high and manufacturing costs are comparatively low with final assembly and the installation of high-cost components being undertaken in a state-of-the-art facility in Alabama.").
[132] FED. TRANSIT ADMIN., *supra* note 129, at 23.

IRA's implementing regulations, there are several lessons can we glean these past experiences with Buy America policy.

Happily, the legislative text of the IRA solves at least two major problems with prior Buy America policy: inadequate predictability and inadequate funding. First, the IRA provides a predictable and consistent source of funding over the course of its operative life. Compare the IRA's payment facility to FTA's transit funding grant programs. Before reaching the benefited American manufacturer, FTA money passes through intermediary public transit companies as grants. Thus, it may take years, depending on the transit company's procurement calendar and how complicated their bidding process is, for a manufacturer to receive even a dime of an FTA grant. By contrast, the lion's share of IRA funding is rapidly accessible as a liquid tax credit[133]—if you build an EV charger or synthesize a kilogram of clean hydrogen satisfying the IRA's requirements, you get paid.[134] Better still, the IRA corrects an oversight in prior clean energy tax credits by directly paying tax-exempt governments, charities, and tribes that would otherwise reap no benefit from the subsidies.[135] Certainty of payment enables manufacturers and other tax incentive recipients to plan without regard to the unpredictability of winning a particular local government's competitive request-for-proposals bid—unlike in the FTA context, the IRA does not channel this money through third-party intermediaries.

Second, simply by providing a massive pool of money, the IRA ensures that a multiplicity of American manufacturers enter and remain in the market. Once again, the contrast with the early history of FTA grants is instructive. New federal funding in the 1970s led to a stampede of defense

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[133] Over 60% of the IRA's investment in climate and energy is in the form of tax incentives. *See The Inflation Reduction Act: Here's What's In It*, MCKINSEY & CO. (Oct. 24, 2022), https://perma.cc/64S7-FJAX.
[134] IRA GUIDEBOOK, *supra* note 1, at 9–11.
[135] Rachel Chang, *Understanding Direct Pay and Transferability for Tax Credits in the Inflation Reduction Act* , CTR. AM. PROG. (June 5, 2023), https://perma.cc/J26K-XPNL.

contractors entering the market, but the comparatively small amount of funding available—enough for just 344 cars per year in the 18 years between 1965 and 1982—could not justify that glut of capacity.[136] Meanwhile, in a much less populous country, Japan's intercity rail company *alone* was ordering 1,244 cars per year;[137] this strong local demand base undoubtedly helped Kinki Sharyo, Kawasaki, and other Japanese vendors compete in America. In appropriating the massive sum of $370 billion over ten years, the IRA corrects the mistake of the prior FTA Buy America mandate by committing significant funding.[138] This large federal investment has already opened a flood of private capital: Since the IRA went into effect, the Treasury has invested $78.4 billion into clean technologies while "crowding in"[139] private investment of *$414 billion*.[140]

The real battles and excitement, however, will come with the IRA's implementing regulations and their balancing of the IRA's twin goals of climate mitigation and economic development. As the previously-discussed brouhaha over the EV charging tax credit illustrates, specific IRA implementing guidance has already proved controversial by going too far towards one pole or the other.[141] Buy America has similar administrative flex—consider how the FHWA has long allowed state DOTs to purchase foreign-built manufactured products under a public

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[136] U.S. CONG. OFF. TECH. ASSESSMENT, *supra* note 96, at 89 tbl.15 (mean of the 18.25 years represented in the table); *id.* at 89 fig.14 (showing a crash in U.S. passenger rail manufacturing capacity).
[137] *Id.* at 93 tbl.19 (this total excludes local transit vehicles, so this figure significantly understates Japanese demand for rolling stock).
[138] IRA GUIDEBOOK, *supra* note 1, at 5. For comparison, this sum is more than double the $148.97 billion spent on federal assistance (both capital and operating) for all forms of mass transit between 2012-2021. AM. PUB. TRANSP. ASS'N, 2023 PUBLIC TRANSPORTATION FACT BOOK app. A, tbl. 95 (2023), available at https://perma.cc/62NN-UYCQ.
[139] The "crowding in" effect is the tendency of public sector investments to mobilize private sector investments, at least in certain circumstances. Heather Boushey, *The Economics of Public Investment Crowding in Private Investment*, THE WHITE HOUSE (Aug. 16, 2023), https://perma.cc/X4JC-3Y4Z. *See also* Réka Juhász et al., *The New Economics of Industrial Policy* 24 (Nat'l Bureau of Econ. Rsch., Working Paper No. 31538, 2023), https://perma.cc/YU2K-CWKN ("[A] number of papers suggest . . . the potential for public R&D to crowd in private innovation.").
[140] LILY BERMEL ET AL., CLEAN INVESTMENT MONITOR: TALLYING THE TWO-YEAR IMPACT OF THE INFLATION REDUCTION ACT 16–17 tbl.2 & fig.12 (2024), https://perma.cc/XT5B-TEPN.
[141] *See, e.g.*, *supra* notes 30–35 and accompanying text (documenting Senator Manchin's outrage at very permissive IRS guidance as to what qualifies as a non-urban census tract that can receive EV charging credits).

interest waiver,[142] which in turn allows highway projects to more easily comply with Buy America than comparable transit projects. To maximize the climate mitigation potential of the IRA, it's imperative that the IRS and other implementing agencies maximally flex the statutory language and continue to issue expansive guidance.

Here, the IRS chose an expansive definition of "not an urban area"[143]—any census tract where at least 10% of its constituent blocks are not designated urban.[144] This maximized availability of the EV charging credit and thus also maximized the climate change mitigation potential of 30C, albeit to Senator Manchin's chagrin. Flexing other statutory language in favor of wide availability over place-based economic development will get more money out the door faster, with corresponding greater decarbonizing effect on the Nation's capital stock.

Finally, federal agencies and Congress must continue work on environmental review streamlining,[145] permitting reform,[146] and other regulatory barriers to decarbonizing projects. Just as the transportation sector faces a formidable obstacle in the form of environmental review,[147] renewable energy and associated transmission projects have long faced significant permitting

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[142] *See supra* notes 80–82 and accompanying text. Indeed, the proposed repeal, s*upra* note 80, of the FHWA rule allowing purchase of foreign-manufactured products has attracted comments expressing the same concerns discussed above, like significantly higher prices for domestic components and total lack of availability. *See, e.g.*, TraStar, Inc., Comment Letter on the Proposed Rule to Reinstate Buy America Requirements for Manufactured Products (Apr. 19, 2024), https://perma.cc/Q2LN-B85Y (as an LED street and traffic light manufacturer, noting 30–50% cost premium for domestic LED street luminaire products and the lack of domestic sources for crucial components like LEDs).

[143] 26 U.S.C. § 30C(c)(3)(B)(i)(II).

[144] *See supra* note 34.

[145] *See, e.g.,* Zack Budryk, *White House Issues New Rule Streamlining Certain Environmental Reviews*, THE HILL (July 28, 2023), https://perma.cc/PGW2-VSQU.

[146] *See, e.g.*, *Biden-Harris Administration Announces First Actions Under New Permitting Efficiencies to Accelerate American Manufacturing and Clean Energy Future*, WHITE HOUSE (Sept. 19, 2023), https://perma.cc/YJ6Z-ZB7U.

[147] PLATZER & MALLETT, *supra* note 118, at 19 ("In its 2008 study of highway projects, GAO found that Buy America was mentioned much less often by state department of transportation officials than environmental requirements when asked about decisions to undertake projects without federal funds."). Of course, highway projects tend to have very significant environmental effects, and as discussed in this note, FHWA has historically run a comparatively lax Buy America policy.

barriers.[148] These barriers impose similar uncertainty on developers just as unpredictable, "feast-or-famine" transit company procurement imposes uncertainty on rolling stock manufacturers, inhibiting long-term planning.[149] Federal funding for decarbonizing infrastructure is no good if eligible projects spend years mired in permitting quagmires.[150]

To conclude, I encourage federal agencies implementing the IRA to take full advantage of discretion inherent in the IRA's statutory delegation to maximize climate mitigation potential. Doing so will not compromise the IRA's other goal—investing in left-behind areas—because other parts of the IRA directly and surgically advance this second goal.[151] Given the political capital expended in enacting the IRA and the reduced appetite to legislatively take up the climate problem in the near future, it's imperative that the United States extract as much climate mitigation from the IRA as possible.[152]

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[148] Dialogue among Scott Schang, Sharon Buccino, Horst Greczmiel, Thomas C. Jensen & Jeff Wright, *Expedited NEPA Review for Alternative Energy Projects*, 39 ENV'T. L. REP. 10581, 10583 (Mar. 10, 2009) (quoting Sharon Buccino: "I think we, NRDC and I, are really searching for ways to effectively use NEPA, so that it can fulfill its mission or idea of being a really powerful tool, a critical tool, *as opposed to an obstacle for getting clean energy done* and getting it done fast." (emphasis added)).

[149] *See supra* notes 107–110 and accompanying text.

[150] *Cf.* Esther Conrad et al., *Overcoming Roadblocks to California's Public EV Charging Infrastructure*, STAN. INST. FOR ECON. POL'Y RSCH. (Feb. 2024), https://perma.cc/8HPA-5E4F (discussing the critical importance of AB 1236 and AB 970, which removed most EV charging projects from the ambit of the California Environmental Quality Act and set specific timeframes for permit review, in unblocking EV charging infrastructure).

[151] *See, e.g.*, IRA GUIDEBOOK, *supra* note 1, at 39–40 (describing $10 billion in funding for rural electric cooperatives and $150 million for the Tribal Electrification Program).

[152] *See* Adam Orford, *Overselling BIL and IRA*, 51 ECOLOGY L. Q. (forthcoming) (manuscript at 40), https://perma.cc/86HX-ZTF2 ("If BIL and IRA have reduced the salience of climate change as a problem, entrenched spending policies to the detriment of mandates, and spent up whatever political capital existed for climate action for the foreseeable future, then it could be a very long time before it is possible to do anything else at the national level.").