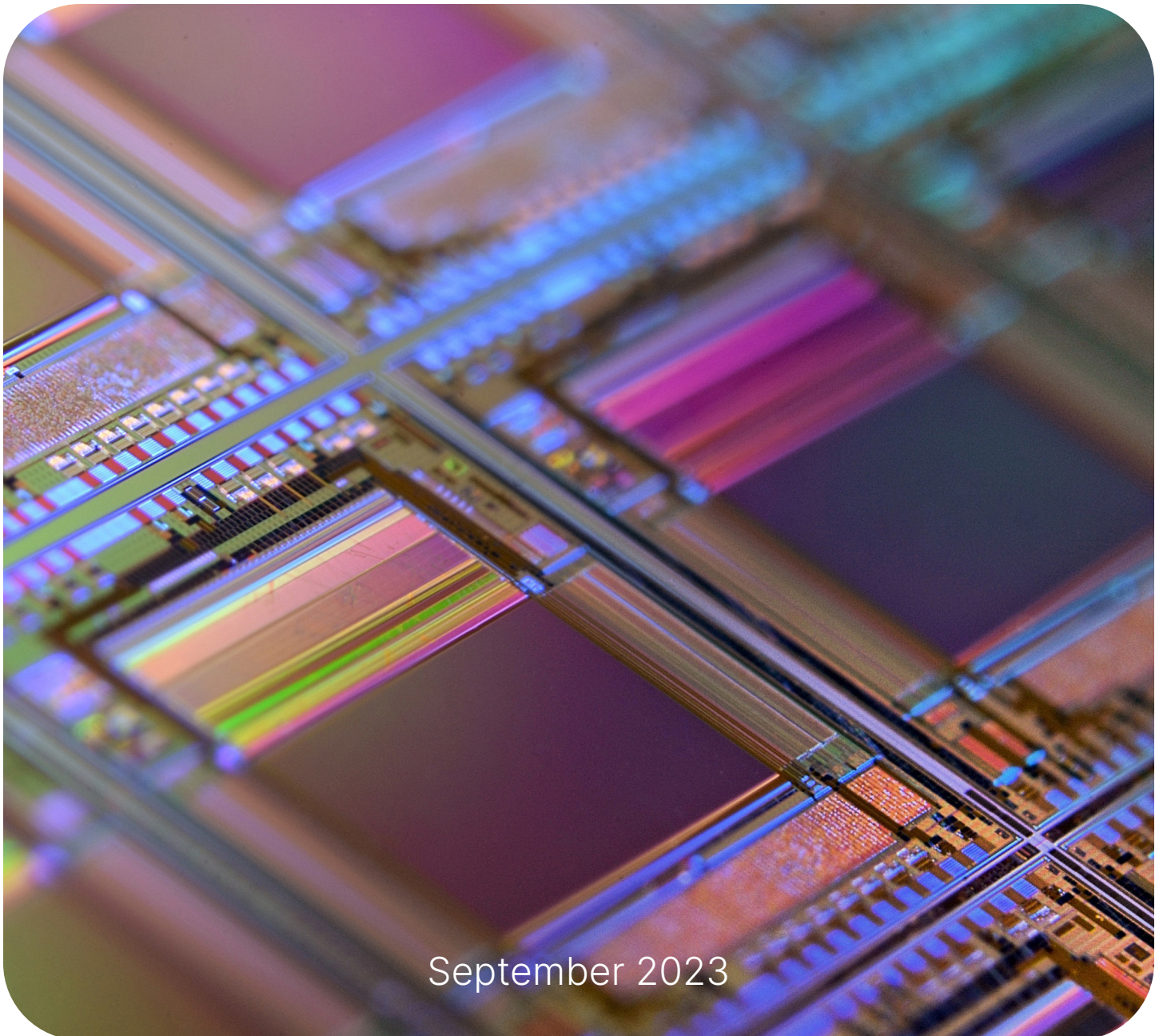


North American Competitiveness Working Group

# President Biden's Industrial Policy and Prospects for North American Regionalization

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The emergent U.S. industrial policy under President Biden seeks to foster high technology manufacturing and job creation in the U.S., strengthen supply chains for U.S. manufacturing, and challenge China's technological rise under a policy of strategic competition with China. This is a U.S.-centric policy that creates challenges for Mexico and Canada and places them in a supplier role supporting the U.S. Under the Biden policy, North America acts as an economic region, but with a clear demarcation between the U.S. as the leader of the region and Mexico and Canada as supporting actors. This reduces the degree of economic integration within North American that might otherwise occur.

This paper will review the key elements of Biden's industrial policy, discuss their impact on Mexico and Canada and comment on ways in which the two countries might respond. Finally, it comments on prospects for North American regionalization considering the Biden industrial policy and potential Mexican and Canadian responses to that policy.

## **EXECUTIVE SUMMARY**

Key measures implementing the Biden industrial policy include (1) the CHIPS and Science Act (CHIPS Act), (2) the Inflation Reduction Act (IRA), (3) the Bipartisan Infrastructure Law (BIL), (4) President Biden's Supply Chain Resilience Initiative (Supply Chain Initiative), and (5) the Biden Administration's policy initiatives toward China on technology issues.

The Biden industrial policy presents challenges to Canada and Mexico. Its incentives under the CHIPS Act and the IRA to bring manufacturing to the U.S. in semiconductors and clean technology place Mexico and Canada at a competitive disadvantage in those fields. The two countries are left with the options of matching the incentives offered by the U.S. or finding opportunities in support of the U.S. dominant role. One exception to the general rule is in electric vehicles, where more integration among the U.S., Mexico and Canada is encouraged. The CHIPS Act also provides some money in support of international semiconductor supply chains, but it is not yet clear how those funds will be used.

The BIL provides substantial financial assistance to states and other subnational governments for infrastructure construction and development. The sectors covered include roads and bridges, public transportation, clean energy, power transmission, water, and broadband. The BIL financial assistance will have a direct impact on the economy because of the size of the investment. However, that financial assistance is subject to “Made in America” requirements to ensure that it supports jobs in the U.S. Because Mexico and Canada are not exempt from those requirements, the two countries will be limited in their ability to serve as suppliers for U.S. infrastructure projects with BIL funding.

Under the Biden Supply Chain Initiative, the Biden administration has sought to strengthen supply chains providing critical goods and materials to the U.S., including international supply chains with Canada and Mexico. The administration has opened lines of communication in this regard with both countries, including through the North American Leaders Summit.

The Biden policy of strategic competition with China, including challenges to China’s technological rise, is accompanied by an expressed desire for the U.S. to strengthen ties with its allies. This includes working “with Canada and Mexico to advance a North American vision for the future that draws on our shared strengths and bolsters U.S. global competitiveness.”<sup>1</sup> But the substance of that North American vision has yet to be clarified.

Although there are issues as to the role of Mexico and Canada within the Biden industrial policy, that policy does imply a North American region, but with a clear demarcation between the U.S. as the leader of the region, and Mexico and Canada as supporting actors. The U.S. assumes leadership by building a high technology manufacturing base located within the U.S., with the only exception to this U.S.-centric approach a role for Canada and Mexico in the manufacture of electric vehicles and the supply of critical minerals and components for the batteries to be used in those vehicles. Otherwise, Canada and Mexico are left to a supplier role. This reduces the degree of economic integration within North America, particularly as to high technology manufacturing, that might otherwise occur. Greater economic integration will require greater U.S. cooperation on strengthening supply chains with Mexico and Canada, particularly in the technology space.

## **1. THE CHIPS AND SCIENCE ACT (CHIPS ACT)**

The CHIPS Act provides incentives for the private sector to invest in semiconductor facilities in the U.S. and creation of jobs at those U.S. facilities. It also provides funding to support international semiconductor supply chains. These provisions present a challenge to Mexico and Canada. They will incentivize investment and job creation in the U.S. rather than Mexico or Canada. But they also raise the prospect that Mexico and Canada could participate in semiconductor supply chains in support of the U.S. semiconductor industry if

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<sup>1</sup> *National Security Strategy, October 2022, The White House, page 40, <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>.*



their role can be articulated and the private sector finds the specific opportunities offered to them within the two countries commercially viable.

**Financial Incentives for Semiconductor Manufacturing in the U.S.** The CHIPS Act provides for \$39 billion in financial assistance over 5 years to incentivize investment in facilities and equipment in the U.S. for the fabrication, assembly, testing, advanced packaging, production, or research and development of semiconductors, materials used to manufacture semiconductors, or semiconductor manufacturing equipment.<sup>2</sup> Up to \$6 billion may be used for the cost of direct loans and guarantees for loans in a principal amount not to exceed \$75 billion.<sup>3</sup> The authorized financial assistance will be distributed through a formal application process under the auspices of the U.S. Department of Commerce.<sup>4</sup> Both U.S. and foreign companies can apply, excluding Chinese owned or controlled companies among other “foreign entities of concern.”<sup>5</sup>

**Tax Incentives for Semiconductor Manufacturing in the U.S.** The CHIPS Act also provides an investment tax credit equal to 25% of the qualified investment by an “eligible taxpayer” (which will exclude Chinese owned or controlled companies) in a facility for which the primary purpose is the manufacturing of semiconductors or semiconductor manufacturing equipment. This means that the developer of such a facility in the U.S. can recover 25% of the qualified investment in the project. This credit applies only to property the construction of which begins by December 31, 2026.<sup>6</sup>

**Financial Support for International Technology Security and Innovation (ITSI).** The CHIPS Act provides \$500 million over 5 years, at \$100 million per year, in support of semiconductor supply chain security and international information and communications technology (ICT) security.<sup>7</sup> These ITSI funds, to be allocated by the U.S. Department of State, could potentially benefit both Mexico and Canada with respect to semiconductor supply chain activities for projects consistent with Department of State priorities. A key issue will

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<sup>2</sup> CHIPS and Science Act, Public Law 117–167 (“CHIPS Act”), Section 102(a); William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Sections 9902, 9909 (15 USC 4652, 4659). The CHIPS Act also provides \$11 billion dollars for advanced microelectronics research and development in support of U.S. manufacturing. CHIPS Act Section 102(a), Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Section 9906 (15 USC 4656).

<sup>3</sup> CHIPS and Science Act, Public Law 117–167 (“CHIPS Act”), Section 102(a); William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Sections 9902, 9909 (15 USC 4652, 4659).

<sup>4</sup> See “Notice of Funding Opportunity: Commercial Fabrication Facilities,” National Institute of Standards and Technology (NIST), U.S. Department of Commerce, <https://www.nist.gov/chips/notice-funding-opportunity-commercial-fabrication-facilities>.

<sup>5</sup> William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Sections 9901(6), 9907 (15 USC 4651(c), 4657).

<sup>6</sup> CHIPS Act, Section 107 (Internal Revenue Code 48D).

<sup>7</sup> CHIPS Act, Section 102(c); William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Sections 9905 and 9202(a)(2) (15 USC 4655 and 47 USC 906(a)(2)).

be how to approach the Department of State to discuss and seek funding for potential projects.

**Department of State Priorities.** The \$500 million of ITSI funding over 5 years is for both semiconductor supply chains and ICT security. The Department of State has set the following priorities as to semiconductor supply chains: (1) Securing critical material inputs; (2) Strengthening international policy coordination; (3) Expanding and diversifying assembly, testing, and packaging capacity in the Indo-Pacific and the Americas; and (4) Protecting national security, including collaboration with international partners on export controls and licensing policies.<sup>8</sup>

**No Formal Process for Request of Funds.** Unlike for allocation of financial incentives for semiconductor manufacturing in the U.S., where the U.S. Department of Commerce has established a formal application process, there is no such formalized process to request funds under the ITSI funding mechanism. Therefore, it will be necessary to approach the Department of State directly to present potential joint projects and then to seek funding for those projects.

**Potential Impact on Mexico and Canada.** The \$39 billion in financial assistance and the advanced manufacturing investment tax credits will incentivize increased semiconductor manufacturing in the U.S. From the time the CHIPS Act was introduced in the Spring of 2020 through the months following its enactment, over \$210 billion in private investments to increase domestic semiconductor fabrication in the U.S. was announced.<sup>9</sup> This puts Mexico and Canada at a competitive disadvantage in attracting new investment in semiconductor fabrication. At the same time, the CHIPS Act also contemplates strengthening of international supply chains for the semiconductor industry, not including supplies from China. This presents the question of how Mexico and Canada and Mexico might respond to the CHIPS Act.

The State Department priorities for the \$500 million International Technology Security and Innovation funding include (1) securing critical minerals and (2) expanding and diversifying downstream capacity, i.e., assembly, testing, and packaging capacity. Both Mexico and Canada could explore state action in these areas, with the assistance of the U.S., in support of potential private sector investment.

To the extent Mexico and Canada decide to pursue research on potential paths forward as to semiconductors, it is possible that one or both countries could seek support for these

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<sup>8</sup> “Department of State Allocating \$100 Million in FY 2023 for CHIPS Act Projects,” Fact Sheet, March 14, 2023, <https://www.state.gov/department-of-state-allocating-100-million-in-fy-2023-for-chips-act-projects/>.

<sup>9</sup> Semiconductor Industry Association, “The CHIPS Act Has Already Sparked \$200 Billion in Private Investments for U.S. Semiconductor Production,” December 14, 2022, updated August 15, 2023, <https://www.semiconductors.org/the-chips-act-has-already-sparked-200-billion-in-private-investments-for-u-s-semiconductor-production/>. In an August 9, 2023 Fact Sheet, the Biden White House states that “[c]ompanies have announced \$166 billion in investments in semiconductors and electronics in the one year since President Biden signed CHIPS into law.” <https://www.whitehouse.gov/briefing-room/statements-releases/2023/08/09/fact-sheet-one-year-after-the-chips-and-science-act-biden-harris-administration-marks-historic-progress-in-bringing-semiconductor-supply-chains-home-supporting-innovation-and-protecting-national-s/>.

efforts through the \$500 million International Technology Security and Innovation funding mechanism.

Mexico and Canada might also decide that there are better prospects outside of the semiconductor sector for the deployment of public resources and public support. For example, Canada, as noted below, is committing public resources to attracting clean technology investment to Canada, with a major emphasis outside of the semiconductor space.

## 2. THE INFLATION REDUCTION ACT (IRA)

The IRA provides tax credits and financial benefits to incentivize (1) manufacturing of clean technologies in the U.S., including solar and wind energy, energy storage systems, and batteries for electric vehicles, and (2) production of critical minerals in the U.S. As a general matter, tax credits are “self-executing,” which means they are obtained simply by claiming them within the terms of the tax law, while the financial benefits require going through an application process. Self-executing tax credits give the taxpayer/developer much more control in obtaining the corresponding incentive, without the delays involved in an application process. Financial benefits, on the other hand, provide funding that the developer might not otherwise be able to obtain on its own.<sup>10</sup>

The IRA tax credits and financial benefits will drive substantial investment and job creation in the U.S. in the sectors of clean technologies and production of critical minerals. Accordingly, Canada and Mexico will need to determine how their own clean technology industries and related supply chains fit in with those of the U.S.

The IRA takes a different approach for electric vehicles, where it provides a consumer tax credit against the purchase price of an electric vehicle if (1) final assembly of the vehicle takes place in North America, and (2) the battery for the vehicle meets requirements as to specified percentages of critical minerals and battery components from within North America or, in the case of critical minerals, from countries with which the U.S. has trade agreements. This broadens the opportunities for Mexico and Canada, each of which will have to determine how to respond.

**Bonus Tax Credits for Clean technology Projects meeting Domestic Content Requirements.** The IRA provides bonuses to the production tax credit (PTC)<sup>11</sup> or investment

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<sup>10</sup> It may be possible for taxpayers eligible for the tax credits discussed in this section to obtain outside financing through the anticipatory “sale” of those credits, which is permitted under the IRA. IRA Section 13801(b), Internal Revenue Code § 6418. Note that the law contemplates certain information reporting and registration processes upon the permitted sale of tax credits, Internal Revenue Code § 6418(g)(1). The IRS has issued proposed regulations in this regard, on which taxpayers may rely pending issuance of the final regulations. <https://www.federalregister.gov/documents/2023/06/21/2023-12799/section-6418-transfer-of-certain-credits>.

<sup>11</sup> PTC is based on the amount of electricity generated by the project, calculated as a specified number of cents multiplied by the kilowatts of electricity generated in a year. PTC can continue for 5 or 10 years from the date the project is placed in service, depending on the nature of the project.

tax credit (ITC)<sup>12</sup> available for clean technology projects, e.g. solar and wind projects and energy storage projects, if the iron, steel and manufactured products used in such projects meet complex domestic content requirements, i.e. requirements as to manufacturing and/or production within the U.S.<sup>13</sup> Because the tax credits are important to the overall financing of these projects, it is critical to obtain the available bonuses, which means meeting the domestic content requirements.<sup>14</sup>

**Advanced Manufacturing Production Credit, for Activities within the U.S.** The IRA provides for an advanced manufacturing production tax credit (MPTC) in support of (1) clean technology manufacturing, including with respect to solar and wind project components and batteries for electric vehicles, and (2) production of specified critical minerals, but only if that manufacturing or production occurs within the U.S.<sup>15</sup>

- **Example:** The MPTC available for batteries for electric vehicles is equal to \$35 per kilowatt-hour for each U.S. made battery cell.<sup>16</sup> A Federal Reserve Bank of Dallas study projects that 332 gigawatt-hours of new EV battery manufacturing capacity will be built in the U.S. between 2021 and 2026.<sup>17</sup> At \$35 per kilowatt hour, battery cells with 332 gigawatt hours of capacity manufactured in the U.S. and sold in the year 2026 would be entitled to an MPTC of \$11.6 billion for that year. According to the U.S. Department of Energy, nearly \$85 billion in investment for new U.S. EV battery manufacturing and related supply chain plants has been announced through February 2023.<sup>18</sup> The large MPTC available for EV batteries manufactured in the U.S. likely played a role in attracting that investment.

**Qualifying Advanced Energy Project Credit, for Investment within the U.S.** An investment tax credit of up to 30%<sup>19</sup> is available for an “advanced energy project” located in the U.S. This is focused, among other things, on (1) facilities for the production or recycling of certain clean technology products, including among others renewable energy products,

12 ITC is a tax credit equal to a percentage of the “qualified investment” in the clean energy project, taken only once in the year that the project is placed in service. The taxpayer cannot take both ITC and PTC but must choose between them.

13 Inflation Reduction Act, Public Law 117-169 (IRA), Section 13101, Extension and Modification of Credit for Electricity Produced from Certain Renewable Resources (Internal Revenue Code § 45); IRA Section 13701, Clean Electricity Production Credit (Internal Revenue Code § 45Y); IRA Section 13102, Extension and Modification of Energy Credit (Internal Revenue Code § 48); IRA Section 13702, Clean Electricity Investment Credit (Internal Revenue Code § 48E).

14 There are other add-ons to the available PTC and ITC if the projects meet prevailing wage and apprenticeship requirements, and if the projects are located in specific geographical areas.

15 IRA Section 13502, Advanced Manufacturing Production Credit (Internal Revenue Code § 45X).

16 Internal Revenue Code § 45X(b)(1)(K).

17 M.D. Plante and J. Rindels, “Automakers’ bold plans for electric vehicles spur U.S. battery boom” (Chart 1 data), October 11, 2022, Federal Reserve Bank of Dallas, <https://www.dallasfed.org/research/economics/2022/1011>.

18 Department of Energy, “Biden Clean Energy Plan Update: March 2023,” March 27, 2023, <https://www.energy.gov/articles/biden-clean-energy-plan-update-march-2023>.

19 To obtain the full 30%, the taxpayer must meet prevailing wage and apprenticeship requirements.

energy storage systems and components, carbon sequestration products, electric vehicles and related components, and certain hybrid vehicles and components, and (2) facilities for the processing, refining, or recycling of critical materials.<sup>20</sup> This means that the developer of such an advanced energy project in the U.S. can recover up to 30% of the qualified investment in the project.<sup>21</sup>

#### **Loan Guarantees for Clean Projects using New or Significantly Improved Technologies.**

The U.S. Department of Energy (DOE) is authorized to guarantee the financing for eligible projects that reduce, avoid, utilize, or sequester greenhouse gases and use new or significantly improved technologies, up to \$40 billion in principal amount, such authority to remain available through September 30, 2026.<sup>22</sup> Eligible projects must be located in the U.S. and may include, among other categories, renewable energy systems; carbon capture, utilization, and sequestration practices and technologies; production facilities for fuel efficient vehicles (including electric vehicles); energy storage technologies; and projects that increase the domestically produced supply of critical minerals.<sup>23</sup>

**Advanced Technology Vehicles Manufacturing (ATVM) Direct Loan Program.** Prior to passage of the IRA, the DOE was authorized to issue direct loans through the U.S. Federal Financing Bank (a part of the U.S. Treasury), subject to the availability of appropriated funds, that would pay no more than 30% of the cost of “reequipping, expanding, or establishing a manufacturing facility in the United States to produce (A) qualifying advanced technology vehicles; (B) qualifying components; or (C) ultra efficient vehicles.”<sup>24</sup> This program was capped at \$25 billion in total lending. The IRA appropriated \$3 billion for the costs of loans under this ATVM direct loan program, to remain available through September 30, 2028, and also removed the previous \$25 billion cap.<sup>25</sup> The DOE estimates that the \$3 billion appropriation will provide for roughly \$40 billion in loan authority under the ATVM direct loan program.<sup>26</sup> This means that the DOE will be able to issue loans up to this amount, where the

<sup>20</sup> IRA Section 13501, *Extension of the Advanced Energy Project Credit (Internal Revenue Code § 48C)*. Note that a taxpayer cannot take both this investment tax credit and the MPTC discussed above if the goods that would be subject to the MPTC are made at a facility for which the investment tax credit is claimed. Such “double-dipping” is prohibited.

<sup>21</sup> Up to \$10 billion in credits may be allocated, of which up to \$6 billion may be allocated to qualified investments which are not located in certain benefited census tracts, including those with brownfield sites or which were previously dependent on hydrocarbon activity. Internal Revenue Code § 48C(e)(2). Because of the allocation requirement, this tax credit is not self-executing and requires an application for certification of eligibility to take the credit. Internal Revenue Code § 48C(e)(1), (3).

<sup>22</sup> IRA Section 50141(a), *Energy Policy Act of 2005, Section 1703 (42 USC 16513)*. The IRA also appropriates \$3.6 billion for the costs of the guarantees made under the foregoing authority. IRA Section 50141(b).

<sup>23</sup> *Energy Policy Act of 2005, Section 1703 (42 USC 16513); 10 CFR Part 609, § 609.3 (Loan Guarantees for Projects that Employ Innovative Technologies)*.

<sup>24</sup> *Energy Independence and Security Act of 2007, Section 136(d) (42 USC 17013(d))*.

<sup>25</sup> IRA Section 50142.

<sup>26</sup> DOE Loan Programs Office, “Inflation Reduction Act of 2022,” <https://www.energy.gov/lpo/inflation-reduction-act-2022>.



loan can pay for not more than 30% of facility costs to produce a range of advanced technology vehicles and their components, including for electric and low emission vehicles.<sup>27</sup>

**Domestic Manufacturing Conversion Grants.** The IRA also appropriates \$2 billion to the DOE, to be available through September 30, 2031, to provide grants for domestic production of efficient hybrid, plug-in electric hybrid, plug-in electric drive, and hydrogen fuel cell electric vehicles. The recipient of the grant will be required to provide not less than 50% of the cost of the project carried out using the grant.<sup>28</sup>

**Energy Infrastructure Reinvestment Financing.** Under another program established by the IRA, the DOE can provide guarantees for loans, up to \$250 billion in principal amount, for projects that retool, repower, repurpose, or replace energy infrastructure that has ceased operations or enable operating energy infrastructure to avoid, reduce, utilize or sequester air pollutants or greenhouse gas emissions.<sup>29</sup> Commitments for such loan guarantees may be made through September 30, 2026.<sup>30</sup> Although not focused on manufacturing, this program could be used to support retooling existing energy infrastructure for new manufacturing plants for clean energy products or services.<sup>31</sup>

**Potential Impact on Mexico and Canada.** The foregoing IRA provisions – (1) bonus ITCs and PTCs for clean technology products meeting domestic content requirements; (2) the Advanced Manufacturing Production Credit (MPTC), for production of clean technology products and materials within the U.S.; (3) the Qualifying Advanced Energy Project Credits (investment tax credit) for energy investment within the U.S.; (4) the \$40 billion in loan guarantees for clean projects located in the U.S. using new or significantly improved technologies; (5) the Advanced Technology Vehicles Manufacturing (ATVM) Direct Loan Program for ATVM production facilities in the U.S., with availability of roughly \$40 billion; (6) the Domestic Manufacturing Conversion Grants of up to \$2 billion for domestic production of electric and hybrid vehicles; and (7) the Energy Infrastructure Reinvestment Financing, providing for loan guarantees up to \$250 billion in principal amount, which could be used to retool U.S. energy infrastructure to clean technology manufacturing – all incentivize increased manufacturing of clean technology products and production of critical minerals in the U.S. These provisions put Mexico and Canada at a competitive disadvantage in attracting new investment in the covered areas. So how might Mexico and Canada respond?

One response is to match the U.S. incentives. As its answer to the IRA, Canada has proposed new tax credits for clean technology in its 2023 budget. A senior Canadian official estimates the value of the credits at roughly C\$80 billion over the next decade, with

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<sup>27</sup> The IRA also permits loans for production facilities for trains or locomotives, maritime vessels, aircraft, and hyperloop technology, but only if these emit low or zero emissions of greenhouse gases. IRA Section 50142(a).

<sup>28</sup> IRA Section 50143.

<sup>29</sup> IRA Section 50144, Energy Policy Act of 2005, Section 1706 (42 USC 16517).

<sup>30</sup> *Id.*

<sup>31</sup> DOE, Loan Programs Office, “Energy Infrastructure Reinvestment,” <https://www.energy.gov/lpo/energy-infrastructure-reinvestment>; DOE, Loan Programs Office, “#DeployDeployDeploy: 2. The Energy Infrastructure Reinvestment (EIR) Program,” September 15, 2022, <https://www.energy.gov/lpo/articles/deploydeploydeploy-2-energy-infrastructure-reinvestment-eir-program>.

C\$25 billion going toward clean electricity generation alone.<sup>32</sup> Canada will also earmark C\$15 billion over five years for a Growth Fund to attract private investment in new and green technologies.<sup>33</sup> According to a Canadian budget document, “Without swift action, the sheer scale of U.S. incentives will undermine Canada’s ability to attract the investments needed to establish Canada as a leader in the growing and highly competitive global clean economy. If Canada does not keep pace, we will be left behind.”<sup>34</sup> Mexico has not taken any similar actions.

It may also be possible for Mexico and Canada to find manufacturing niches in the technology space where the U.S. incentives do not overcome native advantages. This may be particularly applicable to Mexico, where the costs of labor are lower than in the U.S. For any given product, this will require a comparison of cost (including incentives) and feasibility between production in the U.S. and production in Mexico or Canada, as applicable.

With respect to critical minerals, the U.S. does not have all the critical minerals it needs, so Mexico and Canada can help to fill the production and processing gap, notwithstanding the incentives offered in the U.S. Canada has partnered with the US in a Joint Action Plan on Critical Minerals Collaboration that focuses on improving critical mineral security in both countries.<sup>35</sup> It is already working with the U.S., together with Australia, on a “Critical Minerals Mapping Initiative.”<sup>36</sup> Canada’s Critical Minerals Strategy highlights Canada’s abundant supplies of critical minerals, particularly for clean technology applications.<sup>37</sup> Mexico also

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32 R. Tumilty, “Chrystia Freeland abandons budget balance plan, adding \$50 billion in debt,” March 28, 2023, *National Post*, <https://nationalpost.com/news/politics/chrystia-freeland-brings-canada-back-to-deficit-adding-50-billion-in-debt>.

33 S Scherer, “Canada C\$15 bln fund to attract private investment in technologies -source,” April 6, 2022, <https://www.reuters.com/world/americas/exclusive-canada-set-up-c15-bln-fund-attract-more-private-investment-source-2022-04-06/>.

34 M. Forrest, “Canada’s C\$80B response to U.S. clean energy push: ‘We will not be left behind,’” March 29, 2023, *Politico*, <https://www.politico.com/news/2023/03/29/canada-u-s-clean-energy-ira-00089284>.

35 Government of Canada, News Release, January 9, 2020, <https://www.canada.ca/en/natural-resources-canada/news/2020/01/canada-and-us-finalize-joint-action-plan-on-critical-minerals-collaboration.html>.

36 U.S. Geological Survey, “Critical Cooperation: How Australia, Canada and the United States are Working Together to Support Critical Mineral Discovery,” October 16, 2020, <https://www.usgs.gov/news/featured-story/critical-cooperation-how-australia-canada-and-united-states-are-working>.

37 “The Canadian Critical Minerals Strategy, from Exploration to Recycling: Powering the Green and Digital Economy for Canada and the World,” Government of Canada, 2022, <https://www.canada.ca/content/dam/nrcan-rncan/site/critical-minerals/Critical-minerals-strategyDec09.pdf>. The Critical Minerals Strategy is backed by up to C\$3.8 billion in federal funding allocated in Canada’s Budget 2022, to cover a range of industrial activities, from geoscience and exploration to mineral processing, manufacturing, and recycling applications. Government of Canada, News Release, December 9, 2022, <https://www.canada.ca/en/natural-resources-canada/news/2022/12/minister-wilkinson-releases-canadas-38-billion-critical-minerals-strategy-to-seize-generational-opportunity-for-clean-inclusive-growth.html>.

has critical minerals needed for clean technologies, particularly lithium, although there are potential headwinds to development of Mexico's critical mineral resources.<sup>38</sup>

**Electric Vehicles and Broader Content Requirements.** Certain U.S. consumer tax credits under the IRA related to the purchase of electric vehicles are predicated on (1) final assembly of the vehicles in North America; (2) specified percentages of the value of critical minerals contained in the batteries for such vehicles to be (i) extracted or processed in the U.S. or in any country with which the U.S. has a free trade agreement in effect, or (ii) recycled in North America; and (3) specified percentages of the value of the components contained in such batteries to be manufactured or assembled in North America.<sup>39</sup>

These locational requirements provide opportunities to both Mexico and Canada. Mexico and Canada already have well-developed auto industries, and both will need to develop strategies on how to take advantage of these opportunities, building on what already exists.

In this regard Ford is already producing its Mustang Mach-E electric vehicle at its Cuautitlán facility in Mexico, for sales to the North American and European markets.<sup>40</sup> General Motors is converting its plant in Ramos Arizpe, Mexico, for the production of electric cars.<sup>41</sup> And Tesla has announced that it will build a facility, to be called Gigafactory Mexico, just outside Monterrey, Mexico for the production of its electric cars.<sup>42</sup>

Canada recently announced that Volkswagen is investing \$7 billion to establish its first overseas electric vehicle battery manufacturing plant in St. Thomas, Ontario.<sup>43</sup> To attract this investment, Canada committed to matching the US MPTC of \$35 per kilowatt-hour for each battery cell that Volkswagen makes, and the government of Ontario is providing

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38 E. Crowley, J. Sevilla-Macip, R. Amiel, "Mexico nearshoring potential for critical minerals," Jul 26, 2022, S&P Global Market Intelligence, <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/mexico-nearshoring-potential-for-critical-minerals.html>.

39 IRA, Section 13401, Clean Vehicle Credit (Internal Revenue Code § 30D).

40 "Ford would double Mustang Mach-E production in the State of Mexico," August 16, 2022, Mexico Now, <https://mexico-now.com/ford-would-double-mustang-mach-e-production-in-the-state-of-mexico/>.

41 C. Randall, "GM begins converting electric car plant in Mexico," April 1, 2022, electrive.com, <https://www.electrive.com/2022/04/01/gm-begins-converting-electric-car-plant-in-mexico/>.

42 F. Lambert, "Tesla officially announces Gigafactory Mexico to build next-gen electric vehicle," March 1, 2023, electrek, <https://electrek.co/2023/03/01/tesla-gigafactory-mexico-build-next-gen-electric-vehicle/>.

43 Office of the Premier, Government of Ontario, News Release, "Volkswagen's New Electric Vehicle Battery Plant Will Create Thousands of New Jobs," April 21, 2023, <https://news.ontario.ca/en/release/1002955/volkswagens-new-electric-vehicle-battery-plant-will-create-thousands-of-new-jobs>.

C\$500 million in direct incentives to Volkswagen and other indirect incentives, e.g., in infrastructure improvements.<sup>44</sup>

### 3. THE BIPARTISAN INFRASTRUCTURE LAW (BIL)

The BIL provides infrastructure funding for roads and bridges, public transportation, clean energy, power transmission, water, and broadband, among other sectors.<sup>45</sup> Upon its signing in November 2021, news reports highlighted the \$550 billion in new funding that the BIL provided.<sup>46</sup> The new law also provided for roughly \$650 billion in previously authorized funding for roads and other infrastructure, including nearly \$300 billion for the Highway Trust Fund and \$90 billion for public transit over five years.<sup>47</sup>

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44 *Id.*

45 Public Law 117-58. The name given to the law in its text is “The Infrastructure Investment and Jobs Act,” although the Biden Administration calls it the “Bipartisan Infrastructure Law,” which is the name used here.

46 E.g. J. Ponciano, “Everything In The \$1.2 Trillion Infrastructure Bill: New Roads, Electric School Buses And More,” *Forbes*, November 15, 2021, <https://www.forbes.com/sites/jonathanponciano/2021/11/15/everything-in-the-12-trillion-infrastructure-bill-biden-just-signed-new-roads-electric-school-buses-and-more/?sh=57ed8c93161f>

47 *Id.*



A May 2022 guidebook on the BIL issued by the White House<sup>48</sup> showed funding available to State, Local, Tribal, and Territorial Governments, including both new and re-authorized funding, as summarized in Table 1.

**Table 1: Bipartisan Infrastructure Law Investments<sup>49</sup>**

<b>Transportation</b>	<i>(\$Billions)</i>
Roads, Bridges and Major Projects	\$326.3
Passenger and Freight Rail	63.0
Public Transportation	82.6
Airports and FAA Facilities	25.0
Ports and Waterways	16.7
Road, Railroad and Gas Pipeline Safety	37.6
Electric Vehicles, Buses, and Ferries	18.6
<b>Climate, Energy, and the Environment</b>	
Clean Energy, Power Transmission	75.0
Water	64.3
Resilience (Climate Change, Cyber)	37.9
Environmental Remediation	21.6
<b>Broadband</b>	
Broadband Infrastructure Deployment	64.4
<b>Other Programs - Through Regional</b>	
Commissions, Departments and EPA	8.7
<b>Total</b>	<b>\$841.7</b>

48 "A Guidebook to the Bipartisan Infrastructure Law for State, Local, Tribal, and Territorial Governments, and Other Partners," The White House, May 2022 ("BIL Guidebook"), <https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf>

49 Data is from BIL Guidebook, pages 12-13, 57, 65, 93, 99, 117, 138, 153-54, 227-28, 267-69, 372, 386, 399-400. This table does not include all funding provided for in the BIL.

The BIL constitutes part of President Biden's industrial policy. To link its infrastructure funding to U.S. job creation, the BIL includes Made in America provisions that potentially exclude foreign suppliers, including those from Mexico and Canada. The BIL also facilitates physical movement of critical supplies and strengthens U.S. supply chains for clean technologies. Each of these aspects of the BIL has consequences for Mexico and Canada, discussed below.

**Made in America Provisions and Impact on Foreign Suppliers.** Title IX of the BIL, entitled "Build America, Buy America,"<sup>50</sup> seeks to ensure that the financial assistance it provides to non-federal actors, i.e., states and other subnational governments, to build infrastructure is subject to a "domestic content preference."<sup>51</sup> This means that an infrastructure project will be preferred for BIL funding where:

- all iron and steel used in the project are produced in the United States;
- the manufactured products used in the project are produced in the United States (where produced in the U.S. is generally defined as having components made in the U.S. with a cost greater than 55 percent of the total cost of all components)<sup>52</sup>; or
- the construction materials used in the project are produced in the United States.<sup>53</sup>

There are exceptions to these requirements based on cost and availability.<sup>54</sup> Also, these requirements must be applied "in a manner consistent with United States obligations under international agreements."<sup>55</sup>

Regarding international agreements that might provide a way to escape the Made in America domestic content preference, Canada is a party to the WTO's Agreement on Government Procurement (GPA) and Mexico is a party to the U.S.-Mexico-Canada Agreement (USMCA), including its government procurement provisions. The U.S. Trade Agreements Act provides for a waiver from U.S. preferences for domestic supply **in federal procurement** to GPA or USMCA parties.<sup>56</sup> But this exemption does not apply to federal financial assistance to non-federal actors, which is the type of funding that the BIL provides.

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<sup>50</sup> BIL, Sections 70901-70953.

<sup>51</sup> BIL, Sections 70913, 70914.

<sup>52</sup> BIL, Section 70912(6)(B)(ii)

<sup>53</sup> BIL, Section 70912(2). For purposes of this requirement, cements, aggregates such as stone, sand or gravel, and aggregate binding agents or additives are not treated as construction materials. Section 70917(c).

<sup>54</sup> BIL, Section 70914(b).

<sup>55</sup> BIL, Section 70914(e).

<sup>56</sup> See 19 USC 2511.

Accordingly, both Canada and Mexico are subject to the BIL domestic content preference requirements.<sup>57</sup>

As a general matter, these requirements will prevent BIL funds for infrastructure projects from being used to purchase iron, steel, manufactured goods, or construction materials from Mexico or Canada, unless there is a price or availability exemption or other grounds for a waiver apply.<sup>58</sup> Those lost opportunities could be substantial considering the amount of money BIL provides for infrastructure funding.

**Facilitating Physical movement of Critical Supplies and Goods.** The ability to physically transport critical supplies efficiently and in a timely manner is a fundamental element of a strong supply chain. A substantial portion of the money that the BIL dedicates to transportation will contribute to this end. To facilitate international trade, the BIL invests over \$16.7 billion to improve infrastructure at coastal ports, inland ports and waterways, and land ports of entry along the U.S. borders.<sup>59</sup> Most importantly for Mexico and Canada, this includes \$3.85 billion for a Land Ports of Entry Modernization and Construction Program.<sup>60</sup>

Mexico and Canada may want to consult with the U.S. federal government on the planned land ports of entry to highlight the two countries' land port logistical needs, and to coordinate Mexico and Canada's own land port of entry plans with those of the U.S.

More broadly, insofar as Mexico or Canada find inadequacies in the domestic U.S. transportation system for trade purposes, whether that involves inadequate roads, highways, bridges, rail service or multi-modal transportation, they could raise these issues with the U.S. federal government and the border states to determine if any BIL funding might be available to remedy the identified shortcomings.

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<sup>57</sup> On the other hand, the U.S. states or other subnational governments that receive BIL funding will themselves be engaged in procurement. Under the GPA, many, but not all, U.S. States (but not municipal governments) have assumed GPA obligations as to non-discriminatory procurement, subject to specified thresholds. [GPA, U.S.A. - Sub-Central Government Entities, Annex 2](#) (Entities). Canada as a party to the GPA could assert these obligations against the U.S. States subject to the GPA. Mexico is not a party to the GPA, and the USMCA, to which Mexico is a party, does not include any obligations on the part of any U.S. state government. USMCA, Chapter 13, Schedule of the United States, Section B. Therefore, only Canada may be able to assert an international agreement, the GPA, against certain state governments engaged in procurement with BIL funds if the specified contracts meet the applicable thresholds. The current thresholds are contract values (U.S. currency) of \$499,000 for goods, \$499,000 for services, and \$7,032,000 for construction contracts. [GPA, U.S.A. - Sub-Central Government Entities, Annex 2](#)(Thresholds).

<sup>58</sup> Where Canada can assert GPA obligations against U.S. state governments that have assumed those obligations (see footnote 57), a public interest waiver may be warranted. Under these circumstances, "a waiver of a Made in America [domestic content preference] condition to ensure compliance with such [GPA] obligations may be in the public interest." U.S. Office of Management and Budget, Memorandum, April 18, 2022, "Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure," page 11, <https://www.whitehouse.gov/wp-content/uploads/2022/04/M-22-11.pdf>.

<sup>59</sup> BIL Guidebook, page 97, <https://www.whitehouse.gov/wp-content/uploads/2022/05/BUILDING-A-BETTER-AMERICA-V2.pdf>.

<sup>60</sup> *Id.*

**Strengthening Supply Chains for Clean Technologies.** A key area of concern in the BIL is supply chains for clean energy technologies.<sup>61</sup> The BIL includes appropriations of \$6 billion for grants to support U.S. processing of advanced battery materials and manufacturing and recycling of advanced batteries,<sup>62</sup> and \$920 million over four years to support mapping of critical minerals in the U.S.<sup>63</sup> and critical material innovation, efficiency, and alternatives.<sup>64</sup>

These provisions track with the provisions already noted in the CHIPS Act and the IRA for the U.S. to develop internal supply chains and self-sufficiency to the extent possible in cutting edge technologies and the critical minerals supporting those technologies. In response, Mexico and Canada should focus in the short term on providing products and critical minerals that the U.S. cannot provide itself, or where the U.S. seeks diversity of supply. To this end, Mexico and Canada should ask for briefings and status reports on the U.S. efforts to develop self-sufficiency so that that they can focus their own development program on products and critical minerals that will supplement and complement U.S. supply chains. For the longer term, Mexico and Canada may want to seek broader U.S. cooperation so that the U.S. places more emphasis on building a robust regional approach to supply chains rather than focusing on self-sufficiency.

## 4. SUPPLY CHAIN RESILIENCE INITIATIVE

The Biden administration has put substantial effort into strengthening U.S. supply chains, both domestic and international, in response to the disruptions caused by COVID-19 and the perceived excessive dependence of the U.S. on foreign suppliers, particularly China, for critical supplies. A key component of that effort was passage of the legislation already reviewed, i.e., the CHIPS Act, the IRA and the BIL. However, the Biden administration also took administrative actions focused on strengthening U.S. supply chains and creating U.S. jobs through those supply chains to the extent possible. This section of the paper reviews key administrative actions in this regard and the implications for Mexico and Canada.

**The Biden Executive Order on U.S. Critical Supply Chains.** On February 24, 2021, President Biden signed an Executive Order directing an all-of-government assessment of U.S. critical supply chains, including an assessment of vulnerabilities and plans for strengthening resilience.<sup>65</sup> The focus was on four product areas: (1) semiconductor manufacturing

<sup>61</sup> BIL, Division D, Title II, Supply Chains for Clean Energy Technologies, Sections 40201-40211.

<sup>62</sup> BIL, Section 40207(b), (c). BIL, Division J, Appropriations, Title III, Department of Energy, Energy Programs, Energy Efficiency and Renewable Energy, \$3 billion for battery material processing grants under Section 40207(b) and \$3 billion for battery manufacturing and recycling grants under Section 40207(c).

<sup>63</sup> BIL, Section 40201. BIL, Division J, Appropriations, Title VI, Department of the Interior, Environment and Related Agencies, Department of the Interior, U.S. Geological Survey, \$320 million for mapping initiative.

<sup>64</sup> BIL, Section 41003(c). BIL, Division J, Appropriations, Title III, Department of Energy, Energy Programs, Fossil Energy and Carbon Management, \$600 million to carry out critical material innovation, efficiency, and alternatives.

<sup>65</sup> Executive Order on America's Supply Chains, February 24, 2021, <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/02/24/executive-order-on-americas-supply-chains/>.



and advanced packaging, (2) high-capacity batteries, including electric vehicle batteries, (3) critical minerals and other strategic materials, including rare earth elements, and (4) pharmaceuticals and active pharmaceutical ingredients. The Executive Order recognized the need to build domestic capacity, but also to cooperate on resilient supply chains with “allies and partners who share our values.”

**Results of the U.S. Critical Supply Chain Assessment.** On February 24, 2022, the Biden administration announced an Action Plan to revitalize American manufacturing and strengthen long-term resilience across critical supply chains.<sup>66</sup> The Biden-Harris Action Plan built upon reports issued by seven U.S. cabinet agencies on their respective supply chain issues<sup>67</sup> and a “Capstone Report” regarding the actions the administration had taken over the prior year to reduce the vulnerability of U.S. supply chains across key sectors.<sup>68</sup> Both the administration’s Action Plan and the cabinet agency reports have implications for Mexico and Canada.

**International Supply Chain Opportunities.** The Biden-Harris Action Plan proposes to “restore U.S. global leadership on supply chains” through engagement with trading partners. With respect to Mexico and Canada, the Biden-Harris Action Plan contemplates U.S. engagement with the two countries as follows:

For Mexico, the Action Plan contemplates coordination on supply chain issues through the U.S.-Mexico High-Level Economic Dialogue (HLED). At the September 2022 meeting of the HLED, the U.S. and Mexico established a Supply Chain Working Group, with an initial focus on the U.S.-Mexico semiconductor and information and communications technology (ICT) supply chain ecosystems.<sup>69</sup>

For both Mexico and Canada, the Biden-Harris Action Plan contemplates coordination on supply chain issues through the Competitiveness Committee of the U.S.-Mexico-Canada Agreement (USMCA/TMEC) and through the North American Leaders Summit (NALS). The NALS offers an important channel of communication because of the participation of the Presidents of the U.S. and Mexico and the Prime Minister of Canada. For the January 2023 NALS, the White House announced that it would pursue various initiatives regarding semi-

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66 *The Biden-Harris Plan to Revitalize American Manufacturing and Secure Critical Supply Chains in 2022* (“Biden-Harris Action Plan”), February 24, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/02/24/the-biden-harris-plan-to-revitalize-american-manufacturing-and-secure-critical-supply-chains-in-2022/>

67 *The reports were issued by the Department of Defense, Department of Homeland Security, Department of Commerce, Department of Energy, Department of Agriculture, Department of Transportation, and Department of Human Resources. The Biden-Harris Action Plan, cited above, provides links to each of these reports.*

68 *Executive Order on America’s Supply Chains: A Year of Action and Progress*, February 24, 2022, <https://www.whitehouse.gov/wp-content/uploads/2022/02/Capstone-Report-Biden.pdf>.

69 *FACT SHEET: 2022 U.S. – Mexico High-Level Economic Dialogue*, The White House, September 12, 2022 <https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/12/fact-sheet-2022-u-s-mexico-high-level-economic-dialogue/>.

conductors and critical minerals.<sup>70</sup> This included a semiconductor supply chain mapping project to develop a collective understanding of unmet needs and identify complementary investment opportunities.<sup>71</sup>

Mexico and Canada should make full use of these channels of communication to continue the initiatives already underway, but also to raise their own issues and concerns.

**U.S. Cabinet Agency Supply Chain Opportunities.** Mexico and Canada should evaluate each of the seven U.S. cabinet agency reports referenced in the Biden-Harris Action Plan to determine what opportunities are available to the two countries to support supply chains critical to the respective agencies.

**U.S. Federal Procurement and the Buy American Act.** The Biden administration's efforts to strengthen the supply chains of U.S. Cabinet agencies highlights the significance of U.S. government procurement, which involves purchases of approximately \$600 billion per year.<sup>72</sup> All U.S. federal procurement is subject to the Buy American Act (BAA).<sup>73</sup> As part of the Biden industrial policy, the Biden Administration has taken steps to strengthen implementation of the BAA to "increase U.S. content in the products the federal government buys and support the domestic production of products critical to our national and economic security."<sup>74</sup> As noted above, the U.S. Trade Agreements Act provides for a waiver from domestic content preferences to GPA or USMCA parties in federal procurement.<sup>75</sup> Since Canada is a party to the GPA and Mexico is a party to the USMCA, they are subject to a waiver from the BAA for procurement within the scope of the respective agreements.<sup>76</sup>

Nevertheless, the administration's activities with respect to the BAA should be closely monitored. Among other things, certain U.S. senators have argued that the U.S. does not

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<sup>70</sup> FACT SHEET: Key Deliverables for the 2023 North American Leaders' Summit, The White House, January 10, 2023, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/01/10/fact-sheet-key-deliverables-for-the-2023-north-american-leaders-summit/>.

<sup>71</sup> *Id.*

<sup>72</sup> "FACT SHEET: Biden-Harris Administration Issues Proposed Buy American Rule, Advancing the President's Commitment to Ensuring the Future of America is Made in America by All of America's Workers (Buy American Fact Sheet)," The White House, July 28, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/07/28/fact-sheet-biden-harris-administration-issues-proposed-buy-american-rule-advancing-the-presidents-commitment-to-ensuring-the-future-of-america-is-made-in-america-by-all-of-americas/>.

<sup>73</sup> See e.g., 41 U.S. Code Chapter 83 - BUY AMERICAN.

<sup>74</sup> Buy American Fact Sheet, July 28, 2021. Apart from President Biden's administrative actions, the BIL includes provisions intended (1) to standardize and simplify how Federal agencies comply with, report on, and enforce the Buy American Act and other Buy America laws, (2) to minimize waivers, and (3) to maximize, through terms and conditions of Federal financial assistance awards and Federal procurements, the use of goods, products, and materials produced in the United States. BIL, Sections 70921-70924, 70931-70937.

<sup>75</sup> See 19 USC 2511.

<sup>76</sup> Contracts must meet certain threshold to come within the scope of the GPA and the USMCA. For the GPA, the current thresholds for U.S. federal government contracts are contract values (US currency) of \$183,000 for goods, \$183,000 for services and \$7,032,000 for construction contracts. [GPA, U.S.A. - Central Government Entities - Annex 1](#). For the USMCA, the current thresholds for U.S. federal government contracts are contract values of \$80,317 for goods and services, and \$10,441,216 for construction contracts, USMCA, Chapter 13, Schedule of the United States, Section A.

get enough benefit from the GPA in the form of procurement opportunities from other GPA parties and should suspend trade waivers based on the GPA, at least for procurement under COVID-19 relief legislation.<sup>77</sup> This would open the door to broader requests for suspension of GPA waivers and have severe, adverse effects on GPA party countries that pursue procurement opportunities in the U.S. There is no indication that the Biden administration is inclined to follow the senators' call for suspension of the BAA waivers.

## 5. CHALLENGING CHINA'S TECHNOLOGICAL RISE

The Biden administration is taking steps to challenge China's technological rise. These actions do not directly impact Mexico and Canada, but they set a tone for business relations between the U.S. and China that may lead the U.S. to strengthen its North American alliances, with the potential for increased North American economic integration.

**Export Controls on China.** The U.S. has been placing increasingly tough controls on technology transfers to China, on national security grounds. In October 2022, the U.S. substantially increased the scope of these controls by restricting exports to China of advanced semiconductors, chip-making equipment, supercomputer components, and related software and technology. It also sought to prevent non-U.S. parties from activities that could support China's semiconductor and supercomputing manufacturing capabilities.<sup>78</sup>

**CHIPS Act and IRA restrictions on China.** The CHIPS Act includes provisions that prevent Chinese owned or controlled companies from taking advantage of the CHIPS Act benefits. It does so by including such companies in the definition of "foreign entities of concern," which are not entitled to CHIPS Act benefits.<sup>79</sup> The CHIPS Act also prevents other companies from taking CHIPS Act benefits and then engaging in any significant transaction involving the material expansion of semiconductor manufacturing capacity in China.<sup>80</sup> The IRA seeks to exclude China from serving as a battery supplier for electric vehicles by providing that a consumer will not be entitled to an electric vehicle consumer tax credit on an electric vehicle if, after specified dates, any components or critical minerals in the

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77 Senator Tammy Baldwin Press Release, "U.S. Senators Tammy Baldwin and Sherrod Brown Call on President Biden to Prioritize American Companies for Projects Funded by the American Rescue Plan," March 15, 2021, <https://www.baldwin.senate.gov/news/press-releases/baldwin-brown-call-on-biden-prioritize-american-companies-for-projects-funded-by-american-rescue-plan>.

78 See A. Swanson, "Biden Administration Clamps Down on China's Access to Chip Technology," *New York Times*, October 7, 2022, <https://www.nytimes.com/2022/10/07/business/economy/biden-chip-technology.html>.

79 For example, with respect to the \$39 billion in financial incentives under CHIPS Act Section 102(a) to be distributed through the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Sections 9902 (15 USC 4652), an application for funding shall not be approved if the applicant is found to be a foreign entity of concern. 15 USC 4652(a)(2)(C)(v).

80 15 USC 4652(a)(6)(C).

battery for such vehicle come from a “foreign entity of concern.”<sup>81</sup> Once again, that includes a Chinese owned or controlled company.

**Potential Expansion of Restrictions on China to Other Technologies.** The foregoing restrictions may portend broader actions to challenge China’s technological rise. The CHIPS Act calls for the Director of the National Science Foundation to contract with the Academies of Sciences, Engineering, and Medicine to carry out an assessment of the “relative balance in leadership” between the U.S. (and allied and partner countries) and China in key technology focus areas, with an initial list of 10 key technology focus areas.<sup>82</sup> This implies potential further actions against China if the U.S. sees itself at risk of falling behind China in any of these key technology focus areas.

**The North American Role in Bolstering U.S. Competitiveness.** In the U.S. National Security Strategy, October 2022, one of the announced objectives is to “work with Canada and Mexico to advance a North American vision for the future that draws on our shared strengths and bolster U.S. global competitiveness.”<sup>83</sup> However, that North American vision is not further defined.

**Implications for Mexico and Canada.** The Biden administration’s posture of strategic competition with China, including the challenge to China’s technological rise, and the reference to a “North American vision” provide an opportunity to Mexico and Canada to highlight their importance to the U.S. as part of a North American region, counterbalancing China. This in turn presents the question of what does the “North American region” mean and what does it encompass. Mexico and Canada will need to identify the benefits they hope to obtain by means of participation in a North American region and negotiate for creation of structures implementing regionalization that will provide the anticipated benefits. This process is now underway.

In the case of Canada, the White House has announced progress in “Strengthening the U.S.-Canada Partnership.”<sup>84</sup> This includes several important initiatives, discussed in more detail below, that provide a solid basis for further cooperation in the high technology space. Key elements of the U.S.-Canada Partnership include coordination of incentive programs, early incorporation of private sector actors, and identified sources of public funding for partnership projects.

In the case of Mexico, there are ongoing discussions on industrial cooperation and economic integration through the High-Level Economic Dialogue. There seems to be less progress in these discussions than in the U.S.-Canada discussions, in particular because

81 CHIPS Act, Section 13401(e)(2); Internal Revenue Code § 30D(d)(7).

82 CHIPS Act, Section 10387(h)(6). The initial list of key technology focus areas is set forth at Section 10387(c).

83 National Security Strategy, October 2022, The White House, page 40, <https://www.whitehouse.gov/wp-content/uploads/2022/10/Biden-Harris-Administrations-National-Security-Strategy-10.2022.pdf>.

84 “FACT SHEET: Strengthening the United States-Canada Partnership,” The White House, March 24, 2023. <https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/24/fact-sheet-strengthening-the-united-states-canada-partnership/>



there is no committed funding to advance specific projects. The U.S.-Mexico projects under discussion are covered in the next section of this paper.

## THE BIDEN INDUSTRIAL POLICY AND PROSPECTS FOR NORTH AMERICAN REGIONALIZATION

The foregoing review shows that President Biden's industrial policy is U.S.-centric. That policy creates challenges for Mexico and Canada and places the two countries in a supplier role supporting the U.S. In this sense, North America under the Biden policy acts as an economic region, but with a clear demarcation between the U.S. as the leader of the region and Mexico and Canada as supporting actors.

The U.S. assumes regional leadership by building a high technology manufacturing base located within the U.S., with the only exception to this U.S.-centric approach being a role for Canada and Mexico in the manufacture of electric vehicles and the supply of critical minerals and components for the batteries to be used in those vehicles. Otherwise, Canada and Mexico are left to a supplier role. This reduces the degree of economic integration within North America, particularly as to high technology manufacturing, that might otherwise occur. Greater economic integration will require greater U.S. cooperation on strengthening supply chains with Mexico and Canada, particularly in the technology space.

## U.S. AIMS AND RELATED CHALLENGES FOR CANADA AND MEXICO.

The specific U.S. aims for North America focus on enhancing U.S. global competitiveness. But this posture presents challenges to Canada and Mexico. We review below the specific U.S. aims and their impact on the two countries.

**Canada and Mexico as a Source of Supply where the U.S. is not Self-Sufficient.** The current Biden economic policy places particular emphasis on Mexico and Canada's ability to provide products and materials to the U.S. where the U.S. cannot meet its own needs. Mexico and Canada certainly benefit in fulfilling this role, e.g., through sale of critical minerals that are unavailable or in short supply in the U.S. However, if regionalization means only filling the gaps in U.S. self-sufficiency, that does not provide enough economic benefit for Mexico and Canada. Canada expressed concern that it risked "de-industrialization" if

it did not match the IRA incentives to compete with the U.S. for clean technology investment.<sup>85</sup> Providing only critical minerals was not acceptable.

**Canada and Mexico as an Alternate Source of Supply; Supply Chain Resilience.** Current U.S. policy also contemplates that Mexico and Canada could play a greater role as an alternate source of supply, including in the case of emergencies, for products and materials that are otherwise available in the U.S. This is an issue of supply chain resilience. But if Mexico and Canada are asked to serve in a backup role, they must be adequately compensated for such backup service. To illustrate the issue, at the start of the COVID crisis, there was a severe shortage of personal protective equipment (PPE) and the U.S. looked all over the world for supplies. Through the BIL, the U.S. has now taken steps to create a U.S. source of supply.<sup>86</sup> If the U.S. seeks backup PPE from Mexico or Canada, it will have to provide compensation for that backup, which might include direct payment for backup capability or ongoing purchases of PPE for delivery into emergency reserve stocks.

**Canada and Mexico and Global Supply Chains.** The CHIPS Act and the IRA provide an invitation to Canada and Mexico to cooperate on international supply chains. But those laws do not fully support that invitation.

The IRA, for example, invites Canada and Mexico to participate in a North American strategy for electric vehicles, particularly in terms of supplying critical minerals and components for electric vehicle batteries. But this invitation is then undermined by the IRA tax and financial incentives to build electric battery manufacturing facilities in the U.S. As noted above, Canada expressed concern that if it did not match the IRA incentives, it risked being left behind, even de-industrialization. Accordingly, Canada has now provided its own incentive program to match the IRA and thereby attract clean technology manufacturing to Canada. The announced Volkswagen electric vehicle battery plant to be located in Ontario Canada shows the success of that effort. But can Canada continue to match fund IRA incentives on the scale that it did for Volkswagen?

The CHIPS Act provides funding to develop international supply chains in the semiconductor sector, and the U.S. has proposed that Canada and Mexico focus on testing,

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<sup>85</sup> R. Tumilty, "Chrystia Freeland abandons budget balance plan, adding \$50 billion in debt," March 28, 2023, *National Post*, <https://nationalpost.com/news/politics/chrystia-freeland-brings-canada-back-to-deficit-adding-50-billion-in-debt>.

<sup>86</sup> BIL, Sections 70951-70953.

packaging, and assembly. At the same time, the CHIPS Act tax and financial incentives extend to investment for testing, packaging, and assembly, once again preferring the U.S.<sup>87</sup>

## PATHS TOWARD DEEPER SUPPLY CHAIN COOPERATION AMONG THE U.S., CANADA, AND MEXICO

This paper has identified the challenges presented to Mexico and Canada by the Biden industrial policy. But what are the ways that the Biden administration could seek deeper supply chain cooperation with its two North American allies? The following are some potential steps toward greater cooperation.

**Key Elements of a Supply Chain Cooperation Strategy.** The U.S., Mexico and Canada have acted to build cooperation in semiconductor supply chains, clean technologies, and critical minerals. Those efforts should continue, with a focus on concrete U.S.-Canada and U.S.-Mexico supply chain opportunities, and potential cooperation in (1) incentivizing the private investment needed to pursue those opportunities, and (2) funding the public sector actions needed to support private sector investment. Beyond this, the U.S. and Canada and the U.S. and Mexico should strengthen lines of communication and engage in dialogue on public sector matters that support deeper supply chain cooperation. This includes planning and development of physical infrastructure needed for trade in goods, such as land ports of entry, airports, roads, railways, and pipelines; education and training programs; and research and development (R&D) programs.

**Strengthening the U.S.-Canada Partnership.** Canada and the U.S. have already taken important steps along this path by building a “U.S.-Canada Partnership.” The actions to date include specific initiatives that involve coordination of incentive programs, i.e., complementary action in place of a zero-sum game, identification of private sector actors as potential participants in specific deals, and coordination of public funding needed to support specific supply chain initiatives. Canada and the U.S. are also engaged in joint R&D efforts, e.g., in critical minerals. The specific initiatives underway include the following:<sup>88</sup>

- The U.S. announced \$250 million in Defense Production Act (DPA) funding for U.S. and Canadian companies to mine and process critical minerals for electric vehicle and stationary storage batteries, with awards contemplated for Spring 2023. The Canadian Critical Minerals Infrastructure Fund will make C\$1.5 billion available to support clean energy and transportation infrastructure projects necessary to accelerate critical minerals production, and make an additional C\$ 1.5 billion avail-

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<sup>87</sup> CHIPS Act, Section 102(a); William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021, Public Law 116–283, Section 9902(a)(1) (15 USC 4652(a)(1)).

<sup>88</sup> These U.S.-Canada initiatives are presented in “FACT SHEET: Strengthening the United States-Canada Partnership,” The White House, March 24, 2023, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/24/fact-sheet-strengthening-the-united-states-canada-partnership/>, and “Joint Statement by President Biden and Prime Minister Trudeau,” The White House, March 24, 2023, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/03/24/joint-statement-by-president-biden-and-prime-minister-trudeau/>.

able through the Strategic Innovation Fund to support advanced manufacturing, processing, and recycling.

- Both the U.S. and Canada will advance a cross-border semiconductor packaging corridor, beginning with Canada and IBM providing a significant investment to develop new and expanded packaging and testing capabilities at IBM's Bromont, Canada facility.
- The U.S. announced an additional \$50 million in DPA funding for U.S. and Canadian companies to advance packaging for semiconductors and printed circuit boards, with Canada to provide up to C\$250 million for semiconductor projects from the Strategic Innovation Fund.
- The United States and Canada committed to identify opportunities between the two countries to promote training and work opportunities in priority areas such as clean energy and skilled trades, and bring together key players from multinational companies, unions, state and provincial governments, and educational and training institutions to grow the pool of talent needed for critical supply chains.
- Under the U.S.-Canada Joint Action Plan on Critical Minerals Collaboration, U.S. government agencies involved in the critical minerals effort will work with Canadian counterparts on increased information and data sharing, joint efforts to promote private sector engagement, coordination on research and development, and cooperation at multilateral fora.

All these steps provide a solid foundation for further cooperation and collaboration on U.S.-Canada supply chains.

**U.S.-Mexico Discussions on Increased Supply Chain Cooperation.** The High-Level Economic Dialogue (HLED) is the primary forum for U.S.-Mexico discussions on increased supply chain cooperation. Specific U.S.-Mexico initiatives underway include the following:<sup>89</sup>

- The U.S. and Mexico established a Supply Chain Working Group, with an initial focus on the U.S.-Mexico semiconductor and information and communications technology

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<sup>89</sup> These U.S.-Mexico initiatives are presented in "FACT SHEET: 2022 U.S. – Mexico High-Level Economic Dialogue," The White House, September 12, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/12/fact-sheet-2022-u-s-mexico-high-level-economic-dialogue/>, and "FACT SHEET: U.S.-Mexico High-Level Economic Dialogue Mid-Year Review," Office of the U.S. Trade Representative, April 2023, <https://ustr.gov/about-us/policy-offices/press-office/fact-sheets/2023/april/fact-sheet-us-mexico-high-level-economic-dialogue-mid-year-review>.



(ICT) supply chain ecosystems. The U.S. has proposed that Mexico could provide greater testing, packaging, and assembly of semiconductors.<sup>90</sup>

- The Mexican Ministry of Economy signed a Memorandum of Understanding with leading technology companies and manufacturers to facilitate emerging technologies and workforce development in Mexico.
- Mexico's Ministry of Foreign Relations is working with U.S. academic institutions on supply chain development. Together with the University of California, industry representatives, and academics, the Ministry established a Transport Electrification Working Group to support the U.S. and Mexican automotive industries' transition to the production of electric vehicles. With the University of Arizona, the ministry signed a Memorandum of Understanding to pave the way for an alliance of U.S. and Mexican universities along with microelectronics manufacturers to train workers and build semiconductor production in North America.

The two governments committed to invest in border infrastructure and modernization projects through President Biden's Bipartisan Infrastructure Law, which dedicates \$3.4 billion for 26 major construction and modernization projects at land ports of entry on both U.S. borders, and Mexico's commitment during the July 2022 meeting of the two presidents to invest \$1.5 billion in border infrastructure between 2022 and 2024.

These U.S.-Mexico initiatives appear to be less developed than the steps described above with respect to the U.S.-Canada Partnership. Among other things, they have less financing attached to them, except in the case of border infrastructure and modernization, where each country has identified funding that will be available. It remains to be seen if the other U.S.-Mexico initiatives presented, now in the talking stage, will lead to concrete actions with private sector investment.

**Taking Advantage of Mexico and Canada's Trade Agreements.** The U.S., Canada and Mexico would all benefit from a trade and export strategy that takes advantage of Canada and Mexico's trade agreements and preferential tariff rates. As noted by Shannon K. O'Neil at the Council on Foreign Relations, "Canada and Mexico have preferred access to many global markets where the United States pays full fare. Their respective portfolios of free-trade agreements each cover some 1.5 billion consumers, representing nearly 60 percent of global GDP. Feeding into Canadian or Mexican manufacturing supply chains can give U.S. producers and parts makers preferential access to the world's consumers, which they currently lack on their own."<sup>91</sup> In this situation, Canada and Mexico could serve as an

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<sup>90</sup> A. Swanson, "The U.S. Touts Big Investments for Mexico, Testing Its Nationalist Policies," September 13, 2022, *New York Times*, <https://www.nytimes.com/2022/09/13/world/americas/us-mexico-investments-biden.html>.

<sup>91</sup> See S. O'Neil, "The Myth of the Global: Why Regional Ties Win the Day," *Foreign Affairs*, July/August 2022, <https://www.foreignaffairs.com/articles/united-states/2022-06-21/myth-global-regional-ties-win>.

export manufacturing platform for products incorporating U.S. parts and components, to the benefit of all parties.

**Taking Greater Advantage of Mexico's Low Labor Costs.** Labor costs in Mexico are now lower than those in China. The U.S. and Canada should take advantage of this cost advantage for products with a high labor component, for the benefit of all three countries.

According to a study by PWC, "labor costs in China have risen with rising living standards, tripling since 2020, and surpassing labor costs in Mexico in 2015. This rise challenges strategies that have fueled sourcing and production decisions for more than two decades."<sup>92</sup> As a result, "US manufacturers shifting production from China could cut operating costs, on average, by an additional 23% if they near-shored to Mexico."<sup>93</sup>

There are many ways in which the U.S. and Canada could take advantage of a strategy focused on low-cost Mexican labor, including for example (1) relying on Mexico for emergency supplies with a high labor content such as PPEs, (2) using supply chain mapping efforts to identify components in supply chains for various clean technologies that have high labor content and which could be obtained at lower cost through manufacturing in Mexico, (3) seeking interpretations or waivers of Made in America and Buy American laws and regulations that would permit a greater percentage of content to be produced through Mexico's IMMEX program (which provides for duty-free import of components into Mexico to be assembled into an intermediate good or final product for re-export), and (4) supporting Mexico on nearshoring where production of goods had previously moved to China due to low labor and ocean shipping costs but could now be carried out more cost-effectively in Mexico.<sup>94</sup>

It is noteworthy that Chinese companies are already expanding their footprint in Mexico to take advantage of Mexico's access to the U.S. through the U.S.-Mexico-Canada agreement.<sup>95</sup> The U.S. and Canada should be equally aggressive in building upon Mexico's resources and capabilities as a trading partner.

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92 PWC, "Beyond China: US manufacturers are sizing up new - and more diversified and cost-efficient - global footprints," July 2020, <https://www.pwc.com/us/en/library/fit-for-growth/assets/ffg-industrial-supply-chain-footprint.pdf>

93 *Id.*

94 See P. Goodman, "'OK, Mexico, Save Me': After China, This Is Where Globalization May Lead," January 1, 2023, *New York Times*, <https://www.nytimes.com/2023/01/01/business/mexico-china-us-trade.html>.

95 P. Goodman, "Why Chinese Companies Are Investing Billions in Mexico," February 3, 2023 (updated June 20, 2023), *New York Times*, <https://www.nytimes.com/2023/02/03/business/china-mexico-trade.html>.

Increased North American regionalization will require greater cooperation among the three North American countries to develop deeper U.S.-Canada and U.S.-Mexico supply chains, particularly in the high technology space. This commentary on the Biden industrial policy and prospects for North American regionalization presents some key issues that should be considered in building that cooperation.

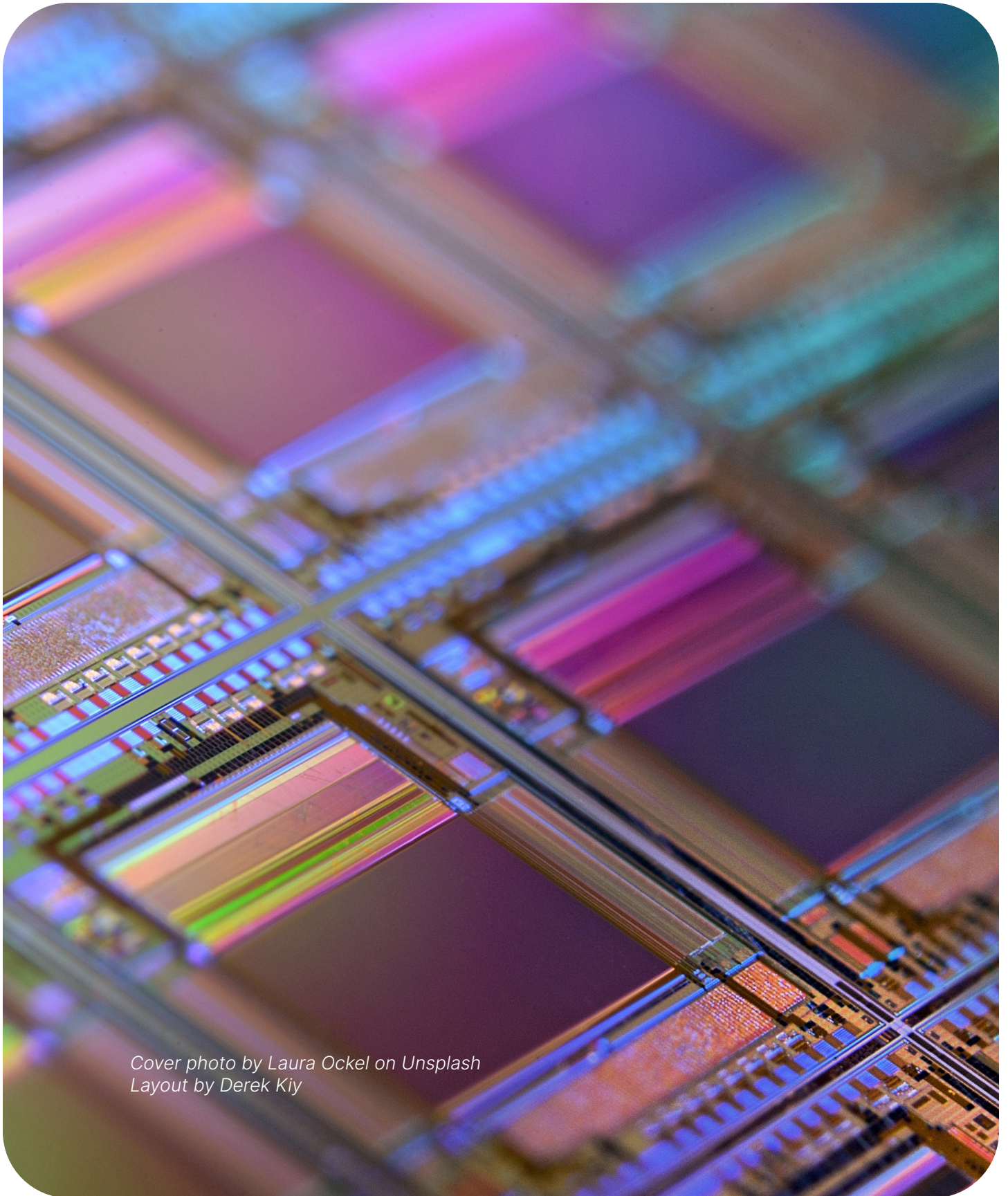
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## ABOUT WORK GROUP

**The North American Competitiveness Working Group** is a collaboration of the [Center for U.S.-Mexican Studies](#), the [George W. Bush Institute](#), the [Future Borders Coalition \(Canada\)](#), the [Mexican Council on Foreign Relations \(COMEXI\)](#) and the [Institute of the Americas](#). The working group was convened to evaluate and make recommendations on the United States' emergent industrial policy and its impact on the relocation of global production chains, particularly relating to North America. The working group will propose policy approaches to ensure that the current U.S. focus on strategic competition with China strengthens North American economic integration, boosting the productivity, prosperity and competitiveness of the U.S., Mexico, and Canada.





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