



Expanding Labor Mobility Pathways Can Help the American Heavy Equipment Industry Tackle the Shortage of Technicians

Executive Summary

The heavy equipment industry is facing an acute labor shortage. According to a recent poll conducted by the National Immigration Forum, 68% of heavy equipment employers reported that the shortage of technicians is causing delayed production or servicing of equipment. As a consequence, the technician shortage is expected to cause \$2.2 billion in annual losses between 2023 and 2025 for the heavy equipment industry. Worryingly, the need for heavy equipment technicians grows at a faster rate (9%) than the average for all occupations (4%). The Department of Labor projects that the United States will need over 150,000 new technicians within the next decade.

Ceteris paribus, it will be impossible for the sector to hire that many American technicians, so employers will be forced to look for technicians from abroad. However, the current options to hiring technicians from abroad are insufficient, obsolete, costly, and often burdensome. A recent poll suggests that 29% of heavy equipment employers tried to hire foreign nationals or immigrant workers during the past year. Most of them faced many administrative and cost-related challenges. In addition, the United States' heavy equipment industry is competing for foreign-born labor against other advanced economies, which are adopting policies and laws that make hiring and retaining technicians from abroad easier.

Therefore, expanding and facilitating the labor mobility pathways for qualified technicians from abroad to work in the United States is essential. This paper explores the current workforce challenges that heavy equipment employers face and offers solutions to help the industry operate at full steam with the help of the immigrant workforce.

Introduction

The United States is facing a severe [labor shortage](#).¹ As of September 2024, there were only [five available workers](#) for every seven job openings every month.² This labor deficit – which has [persisted](#) since mid-2021³ – is partly due to a decline in the labor force participation rate. According to the U.S. Chamber of Commerce, approximately [1.7 million workers](#) are "missing" from the U.S. workforce compared to what would be expected pre-pandemic.⁴

Unfortunately, the heavy equipment industry is no exception. According to the most recent report of the Associated Equipment Distributors (AED) Foundation, the sector is [losing](#) 11% of earnings and 9% of revenue due to its inability to locate enough qualified American technicians.⁵ In other words, the heavy equipment technician shortage is expected to cause [\\$2.2 billion](#) in annual losses between 2023 and 2025 for the industry.⁶

According to a recent poll conducted by the National Immigration Forum and the Associated Equipment Distributors Foundation (hereafter NIF-AEDF poll), 71% of heavy equipment employers reported that the shortage of technicians is causing delayed

¹ National Immigration Forum; America's Labor Shortage: How Low Immigration Levels Accentuated the Problem and How Immigration Can Fix It; February 28, 2022. (Available at <https://immigrationforum.org/article/americas-labor-shortage-how-low-immigration-levels-accentuated-the-problem-and-how-immigration-can-fix-it/>)

² U.S. Bureau of Labor Statistics; Job Openings and Labor Turnover Summary. (Available at <https://www.bls.gov/news.release/jolts.nr0.htm>; Accessed on September 1, 2024.)

³ Federal Reserve Bank of St. Louis (FRED); Job Openings: Total Nonfarm. (Available at <https://fred.stlouisfed.org/series/JTSJOL>; Accessed on November 1, 2024.)

⁴ U.S. Chamber of Commerce; Understanding America's Labor Shortage; October 15, 2024. (Available at <https://www.uschamber.com/workforce/understanding-americas-labor-shortage>)

⁵ Bethany Bostron, Jesse Jordan, & Timothy Planert; The Equipment Industry Technical Workforce: Addressing the Technician Shortage; William & Mary and AED Foundation; 2017. (Available at <https://aedfoundation.org/wp-content/uploads/2017/01/AEDF-CollWMStudyII-Part1.pdf>)

⁶ AED Foundation; Identifying the Impact of the Technician Shortage on the U.S. Economy; 2022. (Available at <https://aedfoundation.org/2022-foundation-report/>)

production or servicing of equipment, 65% reported that the labor shortage has increased their operating costs due to demands of higher wages and benefits, and 38% reported lost sales due to delays and inability to meet market demand.⁷

Worryingly, the heavy equipment industry's labor needs are projected to grow 9% from 2023 to 2033⁸ – much faster than the 4% average for all occupations.⁹ According to projections from the U.S. Department of Labor (DOL), the country will need to train and hire over 150,000 technicians within the next decade, including 22,600 heavy vehicle and mobile equipment service technicians,¹⁰ 8,500 diesel service technicians,¹¹ 8,900 aircraft and avionics equipment technicians,¹² 21,200 automotive service technicians,¹³ 800

⁷ Poll conducted by the National Immigration Forum and the Associated Equipment Distributors Foundation (AEDF) between October and December 2024 among AED members. The poll was distributed by email and was completed by 48 respondents as of December 13, 2024.

⁸ U.S. Bureau of Labor Statistics; Heavy Equipment Service Technicians; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/heavy-vehicle-and-mobile-equipment-service-technicians.htm#:~:text=Inspect%2C%20repair%2C%20and%20replace%20defective%20or%20worn%20parts%2C%20such,large%20equipment%2C%20such%20as%20cranes>)

⁹ U.S. Bureau of Labor Statistics; Employment Projections: Occupations with the most job growth; August 29, 2024 (Available at <https://www.bls.gov/emp/tables/occupations-most-job-growth.htm>)

¹⁰ U.S. Bureau of Labor Statistics; Heavy Vehicle and Mobile Equipment Service Technicians; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/heavy-vehicle-and-mobile-equipment-service-technicians.htm>)

¹¹ U.S. Bureau of Labor Statistics; Diesel Service Technicians and Mechanics; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/diesel-service-technicians-and-mechanics.htm>)

¹² U.S. Bureau of Labor Statistics; Aircraft and Avionics Equipment Mechanics and Technicians; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/aircraft-and-avionics-equipment-mechanics-and-technicians.htm>)

¹³ U.S. Bureau of Labor Statistics; Automotive Service Technicians and Mechanics; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/automotive-service-technicians-and-mechanics.htm>)

calibration technicians,¹⁴ 6,800 wind turbine technicians,¹⁵ 3,700 farm equipment technicians,¹⁶ and 80,400 industrial machinery technicians.¹⁷

In addition, the average age of heavy equipment technicians, 43.8 years,¹⁸ is above the median age of workers in the United States, 41.6 years.¹⁹ The fast growth of labor needs and the aging technician workforce make a complex combination for the heavy equipment industry at least for the next ten years. If all things remain equal, this situation is expected to be a long-term problem for the heavy equipment industry of the United States.

Therefore, after struggling for years to find qualified American workers – due to poor perceptions of vocational careers among the youth and the rapidly retiring Baby Boomer Generation²⁰ – the heavy equipment industry has been forced to consider recruiting technicians from abroad. Fortunately, the United States – the largest recipient of immigrants in the world²¹ – has a robust immigration pipeline that has helped alleviate, in part, the adverse effects of the shortage of American-born technicians. According to the NIF-AEDF poll, 29% of heavy equipment employers reported trying to hire foreign nationals or immigrant workers during the past year.²²

¹⁴ U.S. Bureau of Labor Statistics; Calibration Technologists and Technicians August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/calibration-technologists-and-technicians.htm>)

¹⁵ U.S. Bureau of Labor Statistics; Wind Turbine Technicians; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/wind-turbine-technicians.htm>)

¹⁶ U.S. Department of Labor; Farm Equipment Mechanics and Service Technicians. (Available at <https://www.careeronestop.org/Toolkit/Careers/Occupations/occupation-profile.aspx?keyword=Farm%20Equipment%20Mechanics%20and%20Service%20Technicians&location=US&onetcode=49-3041.00>; Accessed on October 5, 2024)

¹⁷ U.S. Bureau of Labor Statistics; Industrial Machinery Mechanics, Machinery Maintenance Workers, and Millwrights; August 29, 2024. (Available at <https://www.bls.gov/ooh/installation-maintenance-and-repair/industrial-machinery-mechanics-and-maintenance-workers-and-millwrights.htm>)

¹⁸ Zippia; Heavy Equipment Technician Demographics and Statistics in the U.S.; 2022. (Available at <https://www.zippia.com/heavy-equipment-technician-jobs/demographics/>)

¹⁹ U.S. Bureau of Labor Statistics; Employment Projections: Median age of the labor force, by sex, race, and ethnicity; August 29, 2024. (Available at <https://www.bls.gov/emp/tables/median-age-labor-force.htm>)

²⁰ Bethany Bostron, Jesse Jordan, & Timothy Planert; The Equipment Industry Technical Workforce: Addressing the Technician Shortage; AEDF and William & Mary Public Policy; 2017 (Available at https://aednet.org/wp-content/uploads/2020/08/Foundation_AEDF-WM-USSkillsGapReport-LB3-4-16.pdf)

²¹ United Nations, International Organization for Migration; World Migration Report 2022. (Available at <https://worldmigrationreport.iom.int/wmr-2022-interactive/>)

²² Poll conducted by the National Immigration Forum and the Associated Equipment Distributors Foundation between October and December 2024.

However, heavy equipment industry employers have to resort to insufficient, obsolete, and often burdensome alternatives to hire technicians from abroad. According to the poll mentioned above, among those heavy equipment employers who tried to hire more immigrant workers, 53% were eventually deterred by the complicated administrative process, 29% experienced a denial from the U.S. Department of Labor (DOL) or U.S. Citizenship and Immigration Services (USCIS), and 18% experienced other difficulties in the recruitment process, including high costs associated with hiring foreign-born workers.²³

In addition, many of the [available work visas](#) for potential foreign-born technicians are limited to people with a bachelor's degree.²⁴ That requirement automatically disqualifies many potential technicians from abroad with only vocational or technical training.²⁵

Moreover, the United States' heavy equipment industry is competing for immigrant workers against other countries like [Canada](#)²⁶ and [Australia](#),²⁷ which are also experiencing a [shortage of technicians](#).²⁸ These countries, however, are [adopting](#) modern policies and laws that address the demand for labor by expanding the mobility pathways

²³ Poll conducted by the National Immigration Forum and the Associated Equipment Distributors Foundation between October and December 2024.

²⁴ National Immigration Forum; Explainer: Immigrant and Nonimmigrant Work Visas; April 5, 2024. (Available at <https://immigrationforum.org/article/explainer-immigrant-and-nonimmigrant-work-visas/>)

²⁵ Such as the TN visa, H-1B visa, E-3 visa, and H-1B1 visa, among others. The [TN visa](#) allows Canadian and Mexican professionals to work in the United States for up to three years, but the job offer has to fall under one of the [63 specified qualifying professions](#) requiring at least a bachelor's degree. The [H-1B visa](#) allows U.S. employers to hire noncitizen workers for "[specialty occupations](#)" requiring a bachelor's degree in various fields. The [E-3 visa](#) allows U.S. employers to hire Australian workers in occupations that require specialized knowledge and the attainment of a bachelor's degree. The [H-1B1](#) visa allows U.S. employers to hire Chilean and Singaporean nationals in specialty occupations.

²⁶ Government of Canada; Minister Fraser launches Canada's first-ever Tech Talent Strategy at Collision 2023; June 27, 2023. (Available at <https://www.canada.ca/en/immigration-refugees-citizenship/news/2023/06/minister-fraser-launches-canadas-first-ever-tech-talent-strategy-at-collision-2023.html>)

²⁷ Australian Government; Hire an Overseas Worker; January 18, 2024. (Available at <https://business.gov.au/people/employees/hire-an-overseas-worker#:~:text=You%20can%20employ%20an%20overseas,a%20permanent%20or%20temporary%20basis>)

²⁸ Australian Government; Technicians and Trades Workers; 2021 (Available at <https://www.jobsandskills.gov.au/sites/default/files/2021-12/3%20Technicians%20and%20Trades%20Workers.pdf>)

of technicians.²⁹ In turn, Canada and Australia are currently outpacing the United States' ability to hire and retain technicians from abroad.³⁰

Current options for heavy equipment employers to hire technicians from abroad

Among the few and limited options for heavy equipment industry employers who want to hire technicians from abroad are the following:

- I. Obtain a permanent labor certification to hire foreign-born technicians who fall within the Second (EB-2) and Third (EB-3) Preference categories for employment immigration visas;
- II. Hire temporary equipment technicians through the H-2B program;
- III. Hire international students with F-1 visas and J-1 visas after they graduate for up to three years;
- IV. Hire international students with M-1 visas after completing their vocational training for up to six months; and
- V. Hire spouses of J-1, L-1, or H-1B visa holders.

I. Obtaining a Permanent Labor Certification to hire foreign-born technicians

For heavy equipment employers who want to hire foreign-born technicians through the EB-2³¹ or EB-3³² visa programs, the Permanent Labor Certification Process, colloquially known as PERM, is a difficult barrier to overcome.³³ This process – overseen by the DOL

²⁹ Garros Gong; Canada's New Tech Talent Strategy Aims to Attract Workers from Around the World; July 5, 2023. (Available at <https://theconversation.com/canadas-new-tech-talent-strategy-aims-to-attract-workers-from-around-the-world-208810#:~:text=New%20visa%20work%20permit&text=The%20H%2D1B%20visa%20acts,U.S.%20in%20the%20tech%20realm%3F>)

³⁰ Kate Hooper, Jeanne Batalova & Julia Gelatt; Migration Policy Institute (MPI); Canada's New Tech Talent Strategy Takes Aim at High-Skilled Immigrants in the United States; July 2023 (Available at <https://www.migrationpolicy.org/news/canada-recruitment-us-immigrant-workers>)

³¹ EB-2 visas are reserved for professionals holding an advanced degree and people with exceptional ability.

³² EB-3 visas are reserved for skilled workers, professionals, and other workers whose positions require less than two years of training.

³³ National Immigration Forum; Explainer: PERM Labor Certification Process; April 25, 2023. (Available at <https://immigrationforum.org/article/explainer-perm-labor-certification-process/>)

– is designed to protect the U.S. labor market by requiring employers to establish that there are no able, qualified, and available American workers willing to accept a job offer. Then, employers must demonstrate that hiring technicians from abroad "will not adversely affect the wages and working conditions of similarly employed U.S. workers."

To obtain this labor certification, employers must conduct the following burdensome [five steps](#)³⁴ in chronological order:

1. Create a full-time position with a title and specific duties;
2. Obtain a prevailing wage determination from DOL to show that hiring a foreign worker will not adversely affect the wages and working conditions of similarly-placed U.S. workers;³⁵
3. Conduct a labor market test which requires employers to advertise the open position within the United States;
4. If the labor market test shows that there aren't enough qualified workers already in the U.S. to perform the job, employers can submit a PERM application to DOL; and
5. Recruit and hire a foreign worker.

These five steps require a [considerable amount of time](#).³⁶ On average, as of October 2024, the labor certification takes 439 days, but if the application requires an audit, it can take up to 496 days. In addition, the labor certification process can be costly and complicated for many employers, especially small to mid-sized companies, who cannot afford experts to oversee it.

In addition to the bureaucratic obstacles, the employment-based green cards (including EB-2 and EB-3) are numerically limited and subject to a per-country cap. Every year, the U.S. sets aside only 140,000 employment-based green cards for workers from all around

³⁴ National Immigration Forum; Schedule A: The Solution to Expedite the Hiring of Essential Immigrant Workers by Skipping the Burdensome Labor Certification Process; January 23, 2024. (Available at <https://immigrationforum.org/article/schedule-a-the-solution-to-expedite-the-hiring-of-essential-immigrant-workers-by-skipping-the-burdensome-labor-certification-process/>)

³⁵ U.S. Department of Labor; Prevailing Wages (Available at <https://flag.dol.gov/programs/prevailingwages#:~:text=How%20Are%20Prevailing%20Wages%20Determined,for%20use%20in%20some%20programs>; Accessed on November 21, 2024)

³⁶ U.S. Department of Labor; Prevailing Wage Determination Processing Times (Available at <https://flag.dol.gov/processingtimes>; Accessed on November 21, 2024)

the world. However, various administrative complications have left hundreds of thousands of green cards unissued over the years.³⁷ In addition to the numerical limit, there are per-country caps on green cards.³⁸ This means that, under existing federal law, individuals from any one country cannot be issued more than seven percent of the total number of green cards each year. While seemingly reasonable, in practice, this means that individuals from countries with high numbers of green card applicants, such as India, China, Mexico, and the Philippines, face backlogs lasting years or even decades.

Due to the bureaucratic obstacles and the numerical limitations, it is very difficult for the heavy equipment industry to rely on EB-2 and EB-3 visas as a solution for its labor shortage problems.

II. Hire temporary equipment technicians through the H-2B program

The H-2B visa program allows heavy equipment employers to hire technicians from abroad.³⁹ This visa – reserved for temporary, non-agricultural jobs – is initially valid for up to one year with the possibility for extensions up to a maximum of three years.

However, the limited number of H-2B visas, the high competition among all industries to hire workers from abroad through this program, its temporality, and the bureaucratic process to qualify for it, make it impossible for the heavy equipment industry to satisfy its labor needs through H-2B visas.⁴⁰

³⁷ National Immigration Forum; Fact Sheet: Unused Green Card Recapture; October 1, 2021. (Available at <https://immigrationforum.org/article/fact-sheet-unused-green-card-recapture/>)

³⁸ National Immigration Forum; Legal Immigration to the United States: National Quotas & America's Immigration System; January 30, 2024. (Available at <https://immigrationforum.org/article/legal-immigration-to-the-united-states-national-quotas-americas-immigration-system/#:~:text=Per%20the%20Immigration%20Act%20of,based%20and%20employment%2Dbased%20immigrants.>)

³⁹ U.S. Citizenship and Immigration Services (USCIS); H-2B Temporary Non-Agricultural Workers. (Available at <https://www.uscis.gov/working-in-the-united-states/temporary-workers/h-2b-temporary-non-agricultural-workers>)

⁴⁰ Wage and Hour Division, U.S. Department of Labor; Fact Sheet #78: General Requirements for Employers Participating in the H-2B Program. (Available at <https://www.dol.gov/agencies/whd/fact-sheets/78-h2b-overview>)

Congress set the number of H-2B visas allowed for each fiscal year at 66,000.⁴¹ However, due to the historical and current demand of H-2B visas, Congress has authorized supplemental caps through the appropriations process for the last several fiscal years.⁴² For instance, for FY 2024 the administration announced 64,716 additional H-2B visas.⁴³

In addition to the numerical limitations of H-2B visas, heavy equipment employers who wish to benefit from this program face another bureaucratic obstacle that can cost money and time. First, employers must apply for a temporary labor certification from the DOL.⁴⁴ After obtaining the temporary labor certification from DOL, employers must file a petition for a nonimmigrant worker before USCIS.⁴⁵ Finally, after USCIS approves the petition, the prospective heavy equipment technician must apply for an H-2B visa at a U.S. consulate.⁴⁶

In essence, the H-2B visa program is a good option for companies that need temporary heavy equipment technicians. This visa could be beneficial in addressing labor shortages, especially during peak seasons when they face higher demand for skilled technicians. However, it is not easy to obtain this visa, and it is not a viable long-term solution to a technician shortage for all the reasons mentioned above.

III. Hire international students with F-1 or J-1 visas for up to three years

⁴¹ National Immigration Forum; Explainer: Immigrant and Nonimmigrant Work Visas; April 5, 2024. (Available at <https://immigrationforum.org/article/explainer-immigrant-and-nonimmigrant-work-visas/>)

⁴² Department of Homeland Security & Employment and Training Administration; Exercise of Time-Limited Authority To Increase the Numerical Limitation for FY 2024 for the H-2B Temporary Nonagricultural Worker Program and Portability Flexibility for H-2B Workers Seeking To Change Employers; November 17, 2023. (Available at <https://www.federalregister.gov/documents/2023/11/17/2023-25493/exercise-of-time-limited-authority-to-increase-the-numerical-limitation-for-fy-2024-for-the-h-2b>)

⁴³ Department of Homeland Security; DHS to Supplement H-2B Cap with Nearly 65,000 Additional Visas for FY 2024; November 3, 2023. (Available at <https://www.dhs.gov/news/2023/11/03/dhs-supplement-h-2b-cap-nearly-65000-additional-visas-fiscal-year-2024>)

⁴⁴ Employment and Training Administration; Foreign Labor Certification. (Available at <https://www.dol.gov/agencies/eta/foreign-labor>)

⁴⁵ Department of Homeland Security; Petition for a Nonimmigrant Worker (Available at <https://www.uscis.gov/sites/default/files/document/forms/i-129.pdf>)

⁴⁶ U.S. Embassy and Consulates in Mexico; Information for H-2 Applicants and U.S. Petitioners; May 23, 2023. (Available at <https://mx.usembassy.gov/h-2-visa-information/>)

Many countries rely on the influx of international students to retain, train, and hire foreign-born technicians. Luckily for the American heavy equipment industry, the United States is by far the world's [leading recipient](#) of international students.⁴⁷ In 2023, the country received [1,503,649](#) international students from all over the world.⁴⁸ The vast majority of international students travel to the United States with either [F-1 or J-1 visas](#),⁴⁹ depending on the source of the money to pay for their studies. In theory, that popularity should translate into a larger pool of heavy equipment technicians. However, international students have very few options to be employed off campus while they complete their degree,⁵⁰ and most do not have a guaranteed path to stay in the U.S. after graduation. Those who wish to remain in the United States to work as heavy equipment technicians have very few and [limited alternatives](#), such as obtaining Optional Practical Training (OPT) or Academic Training (AT).⁵¹

OPT and AT are great options for heavy equipment employers to hire foreign-born technicians for up to three years. On the one hand, [OPT](#) is a temporary employment authorization that allows international students with F-1 or M-1 visas to work in the United States after they graduate from a U.S.-accredited academic institution.⁵² Similarly, [AT](#) is a temporary employment authorization for international students with J-1 visas.⁵³

While they represent a good alternative for the heavy equipment industry to partially alleviate the sector's labor deficit, OPT and AT do not represent a permanent solution for

⁴⁷ National Immigration Forum; Five Solutions to Reverse the Declining Popularity of the U.S. Among International Students; June 20, 2023. (Available at <https://immigrationforum.org/article/five-solutions-to-reverse-the-declining-popularity-of-the-u-s-among-international-students/>)

⁴⁸ Department of Homeland Security; 2023 SEVIS Report; May 22, 2024. (Available at <https://studyinthestates.dhs.gov/2024/05/read-the-2023-sevis-by-the-numbers-report>)

⁴⁹ National Immigration Forum; Explainer: Optional Practical Training (OPT) and Academic Training (AT); April 30, 2024. (Available at <https://immigrationforum.org/article/explainer-optional-practical-training-opt-and-academic-training-at/>)

⁵⁰ Department of Homeland Security; F-1 Curricular Practical Training (CPT); November 28, 2023. (Available at <https://studyinthestates.dhs.gov/sevis-help-hub/student-records/fm-student-employment/f-1-curricular-practical-training-cpt>)

⁵¹ National Immigration Forum; Explainer: Optional Practical Training (OPT) and Academic Training (AT); April 30, 2024. (Available at <https://immigrationforum.org/article/explainer-optional-practical-training-opt-and-academic-training-at/>)

⁵² Congressional Research Service (CRS); Optional Practical Training (OPT) for Foreign Students in the United States; April 9, 2024. (Available at <https://sgp.fas.org/crs/homesecc/IF12631.pdf>)

⁵³ Harvard International Office; J-1 Academic Training. (Available at <https://www.hio.harvard.edu/academic-training>)

the heavy equipment technician shortage. Both OPT and AT have a limited duration. OPT and AT recipients are allowed to work in the United States for 36 months after graduation only if their job falls within the [DHS STEM Designated Degree Program List](#) in the fields of science, technology, engineering, or mathematics.⁵⁴ If their job is not included in the aforementioned STEM list, international students can work in the United States for only 12 months after graduation. Notably, the recently updated DHS STEM Designated Degree Program List includes [66 categories](#) of technicians who are eligible for the 36-month work period after graduation.⁵⁵

IV. Hire international students with M-1 visas who come to the U.S. for vocational training

A good but limited option for heavy equipment employers who wish to hire foreign-born technicians is the M-1 visa. Commonly known as the vocational student visa, the [M-1 visa](#) program allows international students to come to the United States to attend a certified technical school in the United States.⁵⁶ In these [vocational schools](#), international students often participate in programs where they learn everything related to the operation, maintenance, and repair of heavy machinery.⁵⁷ On average, between 2019 and 2023, the United States granted slightly over [5,800](#) M-1 visas annually.⁵⁸

From the NIF-AEDF poll, we learned that 4% of respondents currently employ this visa to help meet workforce needs. Additionally, a respondent shared that member businesses are already "working to target local high schools and technical schools to provide

⁵⁴ Department of Homeland Security; Student and Exchange Visitor Program; DHS STEM Designated Degree Program List; July 22, 2024. (Available at <https://www.ice.gov/doclib/sevis/pdf/stemList2024.pdf>)

⁵⁵ Department of Homeland Security; Student and Exchange Visitor Program; DHS STEM Designated Degree Program List; July 22, 2024. (Available at <https://www.ice.gov/doclib/sevis/pdf/stemList2024.pdf>)

⁵⁶ Boundless; The M-1 Student Visa, Explained. (Available at <https://www.boundless.com/immigration-resources/m-1-student-visa-explained/>; Accessed on November 26, 2024.)

⁵⁷ U.S. Citizenship and Immigration Services (USCIS); Students and Employment. (Available at <https://www.uscis.gov/working-in-the-united-states/students-and-exchange-visitors/students-and-employment>; Accessed on November 26, 2024.)

⁵⁸ U.S. Department of State; Nonimmigrant Visas Issued by Classification 2019-2023. (Available at https://travel.state.gov/content/dam/visas/Statistics/AnnualReports/FY2023AnnualReport/FY2023_AR_Table_XVB.pdf; Accessed on November 26, 2024.)

internships and scholastic financial support," which are the exact venues where immigrant workers in M-1 status could be recruited.⁵⁹

For those interested in working in the United States following graduation from their vocational program, this visa affords up to 6 months of post-graduate practical training.⁶⁰ Those in M-1 status cannot work while enrolled in the vocational studies and, therefore, can only accept employment during the practical training (PT) period. This PT opportunity must be directly related to the program of study. Due to the limited duration of PT, while it may help meet urgent and seasonal needs, it is not a sustainable, permanent alternative to meeting long-term labor demands. Extensions of stay may be granted if the student needs more than one year to finish their program or any relevant practical training.⁶¹ These extensions are limited to one-year maximum increments at a time and a three-year maximum limit of extensions.

V. Hire spouses and dependents of J-1, L-1, or H-1B visa holders

Besides the visas listed above – specifically created to hire foreign nationals in the United States – there are other visas that heavy equipment employers can use to hire foreign-born technicians. The spouses and dependents of J-1⁶², L-1⁶³, and H-1B⁶⁴ visa holders are eligible for J-2, L-2, and H-4 visas, respectively.⁶⁵ These visa categories are uncapped and allow recipients to work as heavy equipment technicians.⁶⁶

⁵⁹ NIF-AEDF poll

⁶⁰ National Immigration Forum; Explainer: Optional Practical Training (OPT) and Academic Training (AT); April 30, 2024. (Available at <https://immigrationforum.org/article/explainer-optional-practical-training-opt-and-academic-training-at/>)

⁶¹ Department of Homeland Security; Study in the States: M-1 Extensions of Stay (Available at <https://studyinthestates.dhs.gov/students/complete/m-1-extensions-of-stay>)

⁶² The J-1 visa allows foreign nationals to participate in exchange visitor programs in the United States. The exchange visitor categories include professors and research scholars, college students, and other specialized activities.

⁶³ The L-1 visa allows U.S. employers to transfer an executive or manager from one of its affiliated offices abroad to one of its offices in the United States.

⁶⁴ The H-1B visa allows U.S. employers to hire noncitizen workers for “specialty occupations” requiring a bachelor’s degree in various fields.

⁶⁵ National Immigration Forum; Explainer: Immigrant and Nonimmigrant Work Visas; April 5, 2024. (Available at <https://immigrationforum.org/article/explainer-immigrant-and-nonimmigrant-work-visas/>)

⁶⁶ U.S. Department of State; Nonimmigrant Visas Issued by Classification; 2024 (Available at https://travel.state.gov/content/dam/visas/Statistics/AnnualReports/FY2023AnnualReport/FY2023_AR_Table_XVB.pdf)

These visas, however, are insufficient to satisfy all the heavy equipment industry's present and future labor needs. In the long run, relying on the spouses and dependents of the primary visa holders is not viable. The primary visas they are attached to are temporary. And in the case of J-1 and J-2 visas, some recipients must return to their home countries for at least two years before becoming eligible for a permanent immigrant visa in the United States.⁶⁷

The heavy equipment industry can use these visas as a provisional band-aid to tackle their labor shortage. Nevertheless, this option is far from being an ideal solution to satisfy the imminent labor needs of the heavy equipment industry within the next decade.

Proposed solutions to expand and facilitate labor mobility pathways of equipment technicians

The heavy equipment industry can benefit from simple legislative changes and administrative solutions to tackle its ongoing labor shortage. Among the many alternatives, we have identified the following eight priorities the United States can implement to help heavy equipment employers attract, retain, train, and hire foreign-born technicians:

- I. Learn good practices from other countries to hire qualified equipment technicians;
- II. Update the "Schedule A Occupation List" to include heavy equipment technicians as an occupation experiencing acute labor shortages;
- III. Increase the annual cap of H-2B temporary workers;
- IV. Create a new visa category for individuals coming to the United States to work in nonagricultural positions that do not require a bachelor's degree;
- V. Ensure Dreamers' access to employment authorization by passing a permanent legislative solution for them;
- VI. Recapture unused green cards;
- VII. Expand the employment and residency alternatives for international students after graduation and during their studies;

⁶⁷ Clemens, Michael A.; Neufeld, Jeremy; Nice, Amy M. (2024): Expelling excellence: Exchange visitor restrictions on high-skill migrants in the United States, IZA Policy Paper, No. 214, Institute of Labor Economics (IZA), Bonn (Available at <https://www.econstor.eu/bitstream/10419/302872/1/190290706X.pdf>)

VIII. Engage in Bilateral Labor Agreements with allied countries to create mobility opportunities for equipment technicians.

I. Learn good practices from other countries to hire qualified equipment technicians

The United States is not the only advanced economy experiencing a [shortage of workers](#).⁶⁸ Labor markets across advanced economies have [tightened](#) since 2010, a trend expected to accentuate in the next decade.⁶⁹ Some countries, however, are adapting better than others to help their economies operate at full capacity. Among the many solutions implemented by some advanced economies to tackle the labor shortage, some countries are [modernizing](#) their current laws and policies to improve the attraction and retention of foreign-born workers.⁷⁰ The United States, on the other hand, has [not been able to pass](#) a major immigration reform for more than three decades.⁷¹ As a consequence, employers across the nation – including the heavy equipment industry – have not been able to take [full advantage](#) of much-needed foreign-born workers who want to work in the United States.⁷²

Among the nations that have adapted their immigration policies and laws to their labor demands, Canada's good practices are worthy of study and emulation. In Canada, there

⁶⁸ International Labour Organization (ILO); Imbalances between supply and demand Recent causes of labour shortages in advanced economies; May 6, 2024. (Available at <https://www.ilo.org/publications/imbalance-between-supply-and-demand-recent-causes-labour-shortages>)

⁶⁹ McKinsey Global Institute; Help wanted: Charting the challenge of tight labor markets in advanced economies; June 26, 2024. (Available at <https://www.mckinsey.com/mgi/our-research/help-wanted-charting-the-challenge-of-tight-labor-markets-in-advanced-economies>)

⁷⁰ Garros Gong; Canada's New Tech Talent Strategy Aims to Attract Workers from Around the World; July 5, 2023. (Available at <https://theconversation.com/canadas-new-tech-talent-strategy-aims-to-attract-workers-from-around-the-world-208810#:~:text=New%20visa%20work%20permit&text=The%20H%2D1B%20visa%20acts,U.S.%20in%20the%20tech%20realm%3F>)

⁷¹ Aline Barros, Voice of America; On Immigration Reform, US has Accomplished Next to Nothing in Decades; June 3, 2024. (Available at <https://www.voanews.com/a/on-immigration-reform-us-has-accomplished-next-to-nothing-in-decades/7641193.html>)

⁷² Harry Hannah, Stimson; Broken Immigration Policy Undercuts Potential US Advantage; February 1, 2024. (Available at <https://www.stimson.org/2024/broken-immigration-policy-undercuts-potential-us-advantage/#:~:text=The%20Red%20Cell%20Project&text=Is%20the%20United%20States%20inadvertently,comparative%20advantage%20for%20the%20U.S.>)

are [many options](#) for foreign-born workers to work in the country.⁷³ Among the available options, the [Provincial Nominee Program](#) (PNP) is the mechanism through which most migrant workers have entered Canada in recent years.⁷⁴ In general, the PNP allows provinces⁷⁵ to nominate migrant workers to help fill job vacancies and tackle the workforce needs of employers in those provinces.

The PNP is a [shared responsibility](#) between the federal and provincial governments.⁷⁶ On the one hand, provinces determine the specific economic and labor needs of their jurisdictions and design their respective PNPs. The federal government, on the other hand, is in charge of the admissibility screening and the final selection of provincial nominees.

In order to be considered, the provincial nominees must [fulfill](#) some educational, language, work experience, and financial stability requirements.⁷⁷ In addition, provinces must [demonstrate](#) that there are not enough Canadian citizens available for the occupations experiencing a labor shortage.⁷⁸ This system allows provinces to have better control over the number and qualifications of workers that their provinces need. In addition, this program [enables](#) provinces to better distribute immigrant workers across towns and regions outside the major cities.⁷⁹

⁷³ Canada Visa; Immigration Options for Foreign Workers. (Available at <https://www.canadavisa.com/pnp-work-in-canada.html>)

⁷⁴ Government of Canada; Immigrate as a Provincial Nominee; August 8, 2024. (Available at <https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/provincial-nominees.html>)

⁷⁵ A [province](#) in Canada (similar to states in the United States) is a major political unit and administrative division that shares power with the federal government. Canada has ten provinces: Ontario, Quebec, Nova Scotia, New Brunswick, Manitoba, British Columbia, Prince Edward Island, Saskatchewan, Alberta, and Newfoundland and Labrador.

⁷⁶ Garnett Picot, Feng Hou and Eden Crossman; The Provincial Nominee Program: Provincial Differences; March 27, 2024. (Available at <https://www150.statcan.gc.ca/n1/en/pub/36-28-0001/2024003/article/00003-eng.pdf?st=yudrGCr0>)

⁷⁷ Garnett Picot, Feng Hou and Eden Crossman; The Provincial Nominee Program: Provincial Differences; March 27, 2024. (Available at <https://www150.statcan.gc.ca/n1/en/pub/36-28-0001/2024003/article/00003-eng.pdf?st=yudrGCr0>)

⁷⁸ Government of British Columbia; About the BC Provincial Nominee Program; October 29, 2024. (Available at <https://www.welcomebc.ca/immigrate-to-b-c/about-the-bc-provincial-nominee-program>)

⁷⁹ Garnett Picot, Feng Hou and Eden Crossman; The Provincial Nominee Program: Provincial Differences; March 27, 2024. (Available at <https://www150.statcan.gc.ca/n1/en/pub/36-28-0001/2024003/article/00003-eng.pdf?st=yudrGCr0>)

In the United States, there have been bipartisan efforts to pass legislation that would be similar to the Canadian PNP. For instance, in 2023, Senators John Thune (R-South Dakota), Amy Klobuchar (D-Minnesota), Pete Ricketts (R-Nebraska), and John Hickenlooper (D-Colorado), introduced a bill (called [Seasonal Act](#)) that would enable governors experiencing labor shortages in their states to petition the Department of Homeland Security (DHS) and the Department of Labor (DOL) for supplemental H-2B visas.⁸⁰ According to the bill, governors would only be allowed to petition for more visas if the following four requirements are met:

1. The number of H-2B visa applications from all qualifying employers in the state exceeds the numerical limitation for each fiscal year;
2. The state's unemployment rate is at or below [3.5%](#) in at least 9 of the 12 most recent monthly reports issued by the Bureau of Labor Statistics.⁸¹
3. Petitioning governors must certify that there is a persistent, unmet need for labor in their states; and
4. Governors must demonstrate the supplemental H-2B visas will not displace domestic workers or negatively affect average wages in the state.

The bill, however, has not gained enough traction to be voted in Congress. Nevertheless, it represents a smart alternative to tackle the persistent labor deficits across the United States. Empowering state governors to identify local workforce needs and permit the recruitment of additional temporary workers from abroad would help their respective states achieve optimal performance. The Seasonal Act would be a [beneficial](#) bill for the heavy equipment industry to hire more technicians from abroad.⁸²

II. Update the Schedule A Occupation List to include heavy equipment technicians

⁸⁰ National Immigration Forum; Bill Analysis: SEASONAL Act; August 23, 2023. (Available at <https://immigrationforum.org/article/bill-analysis-seasonal-act/>)

⁸¹ U.S. Bureau of Labor Statistics; Unemployment Rates for States. (Available at <https://www.bls.gov/web/laus/laumstrk.htm>)

⁸² Representative John Curtis (R-UT) introduced a similar bill in 2019 titled “State Sponsored Visa Pilot Program Act.” See. Curtis Introduces State Sponsored Immigration Program, November 19, 2019. (Available at <https://curtis.house.gov/news/documentsingle.aspx?DocumentID=1646>)

The [Schedule A Occupation List](#)⁸³ is a list created in 1965 that allows the DOL to maintain a [list of pre-certified occupations](#) experiencing labor shortages that would be exempt from the burdensome permanent labor certification process, explained above.⁸⁴

Notably, the Schedule A list [changed](#) numerous times between 1969 and 1990 to adapt to the needs of the labor market.⁸⁵ However, between 1990 and 2005, the occupational list did not change [substantially](#).⁸⁶ And since 2005, Schedule A has [not changed](#) at all.⁸⁷ As it stands, [Schedule A](#) only includes physical therapists, professional nurses, and people of exceptional ability in the sciences or the arts.⁸⁸

There is a growing appetite among policymakers and advocates to update the Schedule A list to include occupations in key economic areas facing acute labor shortages, such as the heavy equipment industry. Notably, updating Schedule A [would not expand](#) the number of visas available for immigrant workers.⁸⁹ It would simplify and expedite hiring foreign workers in areas with significant worker shortages without going through the permanent labor certification process.

III. Increase the annual cap of H-2B temporary workers

With recent labor statistics showing persistent shortfalls in the heavy equipment industry, Congress should focus on increasing the annual cap of temporary H-2B visas, set at 66,000. While allowing the White House to release up to 64,716 additional H-2B visas,

⁸³ National Immigration Forum; Schedule A: The Solution to Expedite the Hiring of Essential Immigrant Workers by Skipping the Burdensome Labor Certification Process; January 23, 2024. (Available at <https://immigrationforum.org/article/schedule-a-the-solution-to-expedite-the-hiring-of-essential-immigrant-workers-by-skipping-the-burdensome-labor-certification-process/>)

⁸⁴ Code of Federal Regulations; § 656.5 Schedule A. (Available at <https://www.ecfr.gov/current/title-20/chapter-V/part-656/subpart-B/section-656.5>)

⁸⁵ Cecilia Esterline, Niskanen Center; The case for updating Schedule A; October 17, 2022. (Available at <https://www.niskanencenter.org/the-case-for-updating-schedule-a/>)

⁸⁶ Congressional Research Service (CRS); Permanent Employment-Based Immigration: Labor Certification and Schedule A; December 20, 2023. (Available at <https://sgp.fas.org/crs/homesecc/IF12555.pdf>)

⁸⁷ Letter from Senators Hickenlooper, Cramer, Manchin, and Rounds to the U.S. Department of Labor. December 11, 2023. (Available at https://www.hickenlooper.senate.gov/wp-content/uploads/2023/12/DOL_Schedule-A-Letter_FINAL.pdf)

⁸⁸ Code of Federal Regulations; § 656.5 Schedule A. (Available at <https://www.ecfr.gov/current/title-20/chapter-V/part-656/subpart-B/section-656.5>)

⁸⁹ Lindsay Milliken, Jeremy Neufeld and Greg Wright; How immigration can fix labor shortages — without hurting U.S. workers; December 13, 2023. (Available at <https://www.washingtonpost.com/opinions/2023/12/14/labor-shortages-immigration-schedule-a/>)

the need for these workers outstrips the number of available visas. Increasing the annual numerical cap would provide the heavy equipment industry with the necessary human resources to sustain their operations.

IV. Create a new visa category for individuals coming to the U.S. to work in positions that do not require a bachelor's degree

As explained above, many of the [available work visas](#) for potential foreign-born technicians are limited to people with a bachelor's degree.⁹⁰ That requirement automatically disqualifies many potential technicians from abroad with only vocational or technical training.⁹¹ Therefore, it is critical to create a new visa category for individuals coming to the United States to work in positions that do not require a bachelor's degree.

In recent years, there have been bipartisan efforts to pass legislation that would create a visa with these characteristics. The most recent and prominent one is the Essential Workers for Economic Advancement Act ([H.R. 3734](#)).⁹² This bill – that has Republican and Democratic support – would create a new “[H-2C](#)” nonimmigrant visa for individuals coming to the United States to work in nonagricultural, “less-skilled” positions.⁹³ The bill would create an initial maximum of 65,000 temporary H-2C visas, though the number of visas could increase or decrease in future years. This bill would [establish](#) a market-driven visa system to help employers, including those in the heavy

⁹⁰ National Immigration Forum; Explainer: Immigrant and Nonimmigrant Work Visas; April 5, 2024. (Available at <https://immigrationforum.org/article/explainer-immigrant-and-nonimmigrant-work-visas/>)

⁹¹ Such as the TN visa, H-1B visa, E-3 visa, and H-1B1 visa, among others. The [TN visa](#) allows Canadian and Mexican professionals to work in the United States for up to three years, but the job offer has to fall under one of the [63 specified qualifying professions](#) requiring at least a bachelor's degree. The [H-1B visa](#) allows U.S. employers to hire noncitizen workers for “[specialty occupations](#)” requiring a bachelor's degree in various fields. The [E-3 visa](#) allows U.S. employers to hire Australian workers in occupations that require specialized knowledge and the attainment of a bachelor's degree. The [H-1B1](#) visa allows U.S. employers to hire Chilean and Singaporean nationals in specialty occupations.

⁹² H.R.3734 - Essential Workers for Economic Advancement Act; Introduced in the House of Representatives by Rep. Lloyd Smucker (R-Pennsylvania) on May 25, 2023. The bill is cosponsored by 2 Democrats and 2 Republicans. (Available at <https://www.congress.gov/bill/118th-congress/house-bill/3734?s=1&r=6&q=%7B%22search%22%3A%5B%22%22%5D%7D>)

⁹³ National Immigration Forum; Bill Summary: Essential Workers for Economic Advancement Act; July 11, 2023. (Available at <https://immigrationforum.org/article/essential-workers-for-economic-advancement-act-bill-summary/>)

equipment industry, to find technicians and other types of workers for hard-to-fill positions while still prioritizing U.S. workers.⁹⁴

V. Ensure Dreamers' access to employment authorization by passing a permanent legislative solution

The heavy equipment industry could benefit from a permanent legislative solution for Dreamers. A [Dreamer](#) is an undocumented immigrant who came to the United States as a child.⁹⁵ Dreamers often have only known the U.S. as home and identify as Americans. There are as many as [3.6 million](#) Dreamers residing in the United States, including approximately 530,000 that are currently protected under Deferred Action for Childhood Arrivals (DACA).⁹⁶ These young people who have grown up and lived in the U.S. for most of their lives have become critical members of our communities.

DACA recipients fill critical positions in the workforce and are [essential contributors](#) to the American economy.⁹⁷ Through DACA, they can work legally, pay their fair share of taxes, and build businesses that hire American workers. They are employed in a wide range of occupations, including thousands who are self-employed.

Yet, the legality of DACA is the subject of ongoing litigation. In 2023, a lower federal court ruled that DACA is [unlawful](#).⁹⁸ However, the judge stayed (paused) the effects of his ruling for current DACA recipients, allowing them to continue to retain work authorization and protection from deportation. The stay, however, could be lifted and the protections ended

⁹⁴ Representative Lloyd Smucker (Press Release); Smucker Introduces Bills to Build 21st Century Workforce; March 13, 2019. (Available at <https://smucker.house.gov/media/press-releases/smucker-introduces-bills-build-21st-century-workforce>)

⁹⁵ National Immigration Forum; Fact Sheet: Deferred Action for Childhood Arrivals (DACA); May 21, 2024. (Available at <https://immigrationforum.org/article/fact-sheet-on-deferred-action-for-childhood-arrivals-daca/>)

⁹⁶ National Immigration Forum; Fact Sheet: Deferred Action for Childhood Arrivals (DACA); May 21, 2024. (Available at <https://immigrationforum.org/article/fact-sheet-on-deferred-action-for-childhood-arrivals-daca/>)

⁹⁷ Coalition for the American Dream; Forfeiting the Trillion-Dollar Dream: The long term, human and economic cost of ending DACA; June 2024. (Available at https://www.coalitionfortheamericandream.us/wp-content/uploads/2024/06/240529_C4AD_DACAReport_v2_Web.pdf)

⁹⁸ National Immigration Forum; Explainer: U.S. District Court Judge Hanen Finds New DACA Rule Unlawful; September 14, 2023. (Available at <https://immigrationforum.org/article/explainer-u-s-district-court-judge-hanen-finds-new-daca-rule-unlawful/>)

at any time.⁹⁹ Moreover, if DACA recipients were to lose protection and fall out of the workforce, their absence would further reduce the legal workforce.

Congress can solidify the legal status of DACA recipients and other Dreamers by passing a permanent legislative solution to ensure they retain work authorization and protection against deportation. A legislative solution would remove the threat of pending litigation, ensuring that Dreamers can continue to remain in the United States – and the legal workforce – and allow them to continue to work and contribute to strengthening our economy and communities.

VI. Recapture unused green cards

The heavy equipment industry should encourage Congress to pass a bill to recapture unused green cards. As explained above, every year, the U.S. sets aside a specific number of available green cards for individuals worldwide. However, over the years, various administrative complications have left hundreds of thousands of green cards unissued.¹⁰⁰ In addition, existing numerical limitations and per-country caps on green cards have only accentuated a backlog of over 5 million.

Green card recapture is a simple strategy that would allocate the total number of unused green cards since 1992 to applicants waiting in the backlog without increasing numerical limitations or per-country caps.¹⁰¹ This strategy could benefit the heavy equipment industry, among other industries, by expanding the pool of hireable workers in the United States.

VII. Expand the employment and residency alternatives for international students after graduation and during their studies

⁹⁹ FWD.US; DACA Court Case Updates: Summary of Litigation and Potential Supreme Court Case; September 17, 2024. (Available at <https://www.fwd.us/news/daca-court-case/>)

¹⁰⁰ National Immigration Forum; Fact Sheet: Unused Green Card Recapture; October 1, 2021. (Available at <https://immigrationforum.org/article/fact-sheet-unused-green-card-recapture/>)

¹⁰¹ National Immigration Forum; Fact Sheet: Unused Green Card Recapture; October 1, 2021. (Available at <https://immigrationforum.org/article/fact-sheet-unused-green-card-recapture/>)

The heavy equipment industry should encourage Congress to pass laws aimed at expanding and enhancing the few alternatives for international students to stay in the U.S. after graduation. Among the many possibilities, Congress should consider extending the OPT period for STEM and non-STEM graduates. In addition, expanding the extra-curricular employment opportunities for international students would allow them to contribute to the economy as heavy equipment technicians while they complete their degrees. In addition, it is essential to allow spouses and adult dependents of F-1 and M-1 visa holders to work in the United States while their partners complete their studies.

In a time of labor shortages across multiple sectors, expanding extra-curricular work opportunities in this manner will allow the United States to economically benefit from its trained talent and fill needed roles in the workforce, including in the heavy equipment industry.

VIII. Engage in Bilateral Labor Agreements with allied countries to create mobility opportunities for equipment technicians

Another solution to tackle the labor needs of the heavy equipment industry is through [bilateral labor agreements](#) (BLA).¹⁰² BLAs are international arrangements between two nations — a host country and a source country — that specify the number and qualifications of temporary migrant workers that a host country is willing to admit, and a source country is capable of sending. Traditionally, BLAs result from diplomatic negotiations between a nation struggling to find enough workers to fill vacancies within specific sectors of its domestic labor market (host country) and a country with a surplus of workers in those specific sectors (source country).

BLAs are useful options for host countries to solve labor shortages, manage the irregular flow of migrants, control the qualifications of workers needed in their domestic labor markets, and solidify their diplomatic presence. Although utilized sporadically by U.S. policymakers, BLAs (such as the [United States-Mexico-Canada Free Trade Agreement](#)),¹⁰³

¹⁰² National Immigration Forum; Bilateral Labor Agreements: A Beneficial Tool to Expand Pathways to Lawful Work; July 20, 2022. (Available at <https://immigrationforum.org/article/bilateral-labor-agreements-a-beneficial-tool-to-expand-pathways-to-lawful-work/>)

¹⁰³ Office of the United States Trade Representative; United States-Mexico-Canada Agreement. (Available at <https://ustr.gov/trade-agreements/free-trade-agreements/united-states-mexico-canada-agreement>)

the [US-Singapore Free Trade Agreement](#),¹⁰⁴ the [US-Chile Free Trade Agreement](#),¹⁰⁵ and the [US-Australia Free Trade Agreement](#))¹⁰⁶ have proven effective in responding to economic needs and filling important labor force gaps.

To benefit the heavy equipment industry through existing BLAs, the U.S. government must include heavy equipment technicians in the list of eligible workers under the free trade agreements mentioned above. That simple change would allow the heavy equipment industry to satisfy their labor needs with technicians from nations that are close diplomatic allies of the United States.

Conclusion

The heavy equipment industry is facing a shortage of technicians, which is affecting the optimal operation of businesses and industrial equipment nationwide. However, there are simple solutions to the problem. Expanding labor mobility pathways can help the heavy equipment industry alleviate its shortage of technicians. With modest policy changes supported by both Republicans and Democrats, the United States can open its doors to foreign-born technicians who can contribute to the economic dynamism of the heavy equipment industry. Industry employers want to use all the available legal pathways to hire technicians from abroad, so policymakers should ensure such pathways are readily available and easily accessible. The heavy equipment industry is essential for the economic prosperity of the United States. Therefore, helping to tackle its labor shortage with the help of foreign-born technicians will aid the industry, the economy, and the nation.

¹⁰⁴ Office of the United States Trade Representative; US-Singapore Free Trade Agreement. (Available at <https://ustr.gov/trade-agreements/free-trade-agreements/singapore-fta>)

¹⁰⁵ Office of the United States Trade Representative; US-Chile Free Trade Agreement. (Available at <https://ustr.gov/trade-agreements/free-trade-agreements/chile-fta>)

¹⁰⁶ Office of the United States Trade Representative; US-Australia Free Trade Agreement. (Available at <https://ustr.gov/trade-agreements/free-trade-agreements/australian-fta>)