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Labor Policies to Enable Fairness for Workers and Communities in Transition

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About the Project

This report is the fourth in a series prepared by Resources for the Future (RFF) and Environmental Defense Fund (EDF) that examines policies and programs to promote fairness for workers and communities in a transition to a low-carbon economy, often referred to as a just transition. These reports are grouped thematically to summarize the “tools in the toolbox” for policymakers considering how to develop effective strategies for addressing transition in regions where fossil fuel production and/or consumption have been a leading employer and driver of prosperity. The series also presents illustrative local cases of transition in the United States and policy innovation abroad.

This fourth report focuses on federal labor policies and includes a limited discussion of state programs. Please visit www.rff.org/fairness-for-workers or www.edf.org/ensuring-fairness-workers-clean-economy for more information, other reports in the series, blog posts, and more.

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Abbreviations

AEFLA	Adult Education and Family Literacy Act
AJC	American Job Center (DOL)
AOTC	American Opportunity Tax Credit
ARC	Appalachian Regional Commission
BLS	Bureau of Labor Statistics (DOL)
CTAA	Community Trade Adjustment Assistance (DOL)
COBRA	Comprehensive Omnibus Budget Reconciliation Act
DBA	Davis-Bacon Act
DOL	US Department of Labor
DOE	US Department of Energy
E&T	Employment and Training (SNAP)
EDA	Economic Development Administration (Department of Commerce)
ERISA	Employee Retirement Income Security Act
ES	Employment Service (DOL)
ETA	Employment and Training Administration (DOL)
FLSA	Fair Labor Standards Act
FNS	Food and Nutrition Service (USDA)
GAO	Government Accountability Office
IRAP	Industry-Recognized Apprenticeship Program (DOL)
IRS	Internal Revenue Service
JSC	Jobs Strategy Council (DOE)
JT	just transition
LLC	Lifetime Learning Credit
LMRDA	Labor-Management Reporting and Disclosure Act
MaTCH	Makerspace Training, Collaboration, and Hiring (SBA)
MSHA	Mine Safety and Health Administration (DOL)
MSPA	Migrant and Seasonal Agricultural Worker Protection Act
MTAP	Microloan Technical Assistance Program (SBA)
NFJP	National Farmworker Jobs Program (DOL)
NDWG	National Dislocated Worker Grants (DOL)
OECD	Organization for Economic Cooperation and Development
OSHA	Occupational Safety and Health Administration (DOL)
POWER	Partnerships for Opportunity and Workforce and Economic Revitalization
PRIME	Program for Investment in Micro-Entrepreneurs (SBA)
RAP	Registered Apprenticeship Program (DOL)

REO	Reentry Employment Opportunities (DOL)
RTAA	Reemployment Trade Adjustment Assistance (DOL)
SBA	Small Business Administration
SBDC	Small Business Development Center
SCORE	Service Corps of Retired Executives (SBA)
SCSEP	Senior Community Service Employment Program (DOL)
SNAP	Supplemental Nutrition Assistance Program (USDA)
TAA	Trade Adjustment Assistance (DOL)
TAAF	Trade Adjustment Assistance for Farmers (USDA)
TANF	Temporary Assistance for Needy Families
TRA	Trade Readjustment Allowance (DOL)
UI	Unemployment Insurance (DOL)
USDA	US Department of Agriculture
VA	US Department of Veterans Affairs
VBOC	Veterans Business Outreach Center (SBA)
VR	vocational rehabilitation
WARN	Worker Adjustment and Retraining Notification
WBC	Women Business Center (SBA)
WDB	Workforce Development Board (DOL)
WIA	Workforce Investment Act
WIOA	Workforce Innovation and Opportunity Act
WORC	Workforce Opportunities for Rural Communities (DOL)
WOTC	Work Opportunity Tax Credit
WtW	Welfare-to-Work

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1. Executive Summary

Workers and communities that are heavily dependent on fossil fuel economies—including the production of coal, oil, and natural gas—are likely to experience disruptions in the status quo as society addresses climate change through the advancement of clean energy alternatives. This report reviews a range of federal (and some state) workforce development policies and labor standards designed to ensure fairness for workers and communities during this transition to a low-carbon economy—what some refer to as “just transition.”

This report is one of a series that has examined various tools to support workers and communities in transition, including economic development policies, infrastructure and environmental remediation policies, and the array of policies that make up the broader social safety net in the United States. Here, we focus on programs and policies that explicitly seek to aid workers in securing stable, family-supporting jobs. We examine programs led by the Department of Labor, the Treasury Department, the Small Business Administration, the Department of Education, the Department of Agriculture, and other agencies. We identify the administrative structures, funding levels, and major mechanisms through which these programs are delivered, and we review evidence of their effectiveness where possible.¹

For ease of analysis, we group programs into two main categories: workforce development and labor standards. Both policy types aim to support workers, but they differ in that the former tends to transfer federal funds (in the form of various services and supports) to help workers build new skills and secure jobs, while the latter tends to establish legally enforceable protections for workers.

The workforce development programs we study leverage four primary activities:

- *Career services*: programs that help workers find and retain employment, including job search assistance, interview and résumé preparation, job retention training, and job placement.
- *Job training*: capacity building for workers, such as classroom vocational training, on-the-job training, and apprenticeships; as well as “soft” skills development (language proficiency, time management, financial literacy), basic education, ad hoc technical assistance, and mentoring.
- *Direct financial and ancillary supports*: programs that help workers undertake training and job search by providing direct financial supports, in the form of cash payments to compensate for lost wages, and/or ancillary supports, such as child care, subsidized housing, or substance abuse therapy.
- *Research and programmatic technical assistance*: initiatives that leverage existing government research and logistical capacity to support various workforce development efforts.

1 Please see Section 6 for a detailed description of individual policies and programs.

The labor standards we review generally target four major areas:

- *Fair compensation and benefits*: minimum thresholds for workers' pay and benefits.
- *Unionization protections*: standards that enhance workers' ability to participate in, and have a meaningful impact on, unions, which have played an important role in empowering workers to negotiate better pay, benefits, and conditions from employers.
- *Transition support*: policies that specify the treatment of, or resources made available to, workers transitioning between jobs—to reduce long-term unemployment and the hardships associated with temporary unemployment.
- *Occupational safety*: standards that require certain working conditions and reduce workplace hazards for employees.

Based on our review of major federal and selected state labor policies, we draw the following 11 insights that can help inform future policymaking for communities affected by a long-term shift away from fossil energy.

1.1. Insights about Workforce Development Policies

1. Given the complex nature of the workforce development system, **centralized service delivery and effective interagency and intergovernmental coordination are essential**. Centralized service delivery is a feature of major existing US workforce development programs, like the American Job Center system. This will help ensure that workers can easily access the many programs designed to help them, and that federal resources are spent efficiently.
2. **Career services can improve the functioning of labor markets by helping workers succeed in training programs, and by efficiently matching workers with employers**. Career services may be more cost-effective than other workforce development programs, such as job training, underscoring the importance of including career services in just transition policy.
3. Because coal communities often experience high levels of poverty and substance abuse, **wrap-around supports like child care and substance abuse therapy for workers undergoing transition may be especially important in establishing conditions for success in workforce development programs**.
4. **Tailoring workforce training programs to local circumstances can improve outcomes for workers, and is therefore likely to enhance the effectiveness of transition policy**. The literature suggests that workforce training programs are more successful when they rely on local partnerships, are tailored to the needs of local economies, and involve decentralized decisionmaking. Indeed, many federal workforce development programs (e.g., those offered by the Appalachian Regional Commission) integrate local partnerships to tailor services to a community's needs and opportunities.
5. **Programs targeted to specific populations, whether based on demographics (e.g., women, veterans, low-income youth) or employment circumstances (e.g., coal sector workers), may have advantages when the displaced workers**

form a distinct group with distinct needs. However, some argue against such targeting because it can be difficult to identify the cause of worker displacement. In a just transition context, fossil energy workers can be identified fairly easily, but those working in energy supply chains and indirectly affected sectors (e.g., energy-intensive manufacturing) may be more difficult to identify.

6. **Close collaboration with industry & employers in the creation and management of workforce development services is a central aspect of a number of US workforce programs, and will likely play an important role in designing effective just transition workforce policies.** Such collaboration ensures that programs are relevant to local labor market demands, benefit from industry expertise, and have a high likelihood of leading to secure employment after training.
7. **The timing of workforce interventions matters.** For example, there is evidence that notifying workers in advance notice if they will be losing their job can, not surprisingly, reduce the amount of time spent unemployed and improve their wages when they find new employment. Research also suggests the benefits of timely engagement could be augmented if paired with early job-search assistance and retraining. Considering the timing of interventions will therefore likely shape the effectiveness of just transition policy.

1.2. Insights about Labor Standards

1. Broadly speaking, labor standards have been shown to be positively correlated with economic productivity and growth, and can help economies avoid and recover from economic shocks by boosting domestic/local demand and by making workers more resilient. These findings indicate that **meaningful labor standards are important in a just transition—not only to provide needed protections for workers but also to undergird a strong and efficient economy.**
2. **Labor standards can create basic protections for workers in transition,** including by requiring advance warning before termination (e.g., WARN), providing bridge benefits like employer-sponsored health care (e.g., COBRA), and ensuring that in new jobs, workers are protected against workplace hazards (e.g., OSHA).
3. Compensation standards like a minimum wage have been correlated with periods of strong economic growth and may improve distributional equity by boosting earnings for low-income workers. However, economists disagree on whether a higher minimum wage produces net benefits for workers. **Policymakers should carefully consider how federal compensation standards can best support energy workers in transition.**
4. **Labor standards can help bolster unionization, which the literature connects to a range of positive outcomes for workers and the economy as a whole.** Benefits of unionization include more equitable compensation, an active voice for workers in their firms and communities, reduced job turnover, and greater incentives to invest in productivity-enhancing job training. Unionization can help ensure that new jobs for workers in transition provide benefits similar to those of prior fossil energy jobs.

2. Introduction

For three decades, coal communities in the United States have faced major declines in employment and economic activity. Coal jobs fell by half between the late 1980s and the early 2000s (from just over 150,000 in 1987 to about 70,000 in 2004), and coal production has been on a steady slide ever since it peaked in 2008 (Morris 2016). These declines have been linked to the increased mechanization of coal mining, the booming competitiveness of natural gas and renewable energy, and to some extent state and federal environmental policy (Morris 2016; Barrett 2001).

These larger transformations in the US energy economy have produced sizable benefits for many, including reductions in greenhouse gas emissions and local air pollutants, major investments in new energy infrastructure, and associated job opportunities. However, few of these benefits have been felt in coal country, where instead the experience has been unemployment, uncertainty, and economic upheaval. As global society advances approaches to tackling climate change, many of these trends are expected to accelerate and extend to other regional economies built around fossil fuels. Policymakers are therefore considering measures to help affected workers and communities adapt and thrive in a low-emissions future.

The concept of *fairness for workers and communities*—language we borrow from the BlueGreen Alliance—suggests that addressing climate change need not disproportionately burden individuals working in the production or industrial use (e.g. electricity generation) of fossil fuels. The idea that decarbonization should prioritize fairness for affected workers is commonly referred to as a just transition. Originally attributed to Tony Mazzocchi, former leader of the Oil, Chemical, and Atomic Workers union, the just transition concept has a range of meanings in various forums, with one of the more widely cited frameworks coming from the International Labour Organization’s “Guidelines for a Just Transition Towards Environmentally Sustainable Economies and Societies for All” (ILO 2015). To maintain consistency with academic literature and major domestic and international policies, such as the Paris Agreement,² we use “just transition” and “JT” throughout this series, and in so doing we reference the concept of fairness for workers and communities provided by the BlueGreen Alliance (BlueGreen Alliance 2020).

The vast array of public policies that can help ensure fairness for workers and communities while addressing climate change includes policies targeting economic development, environmental remediation, infrastructure expansion, public benefits, and labor. This paper provides insight for policymakers into which labor policies may play a role in supporting a just transition. We review existing federal (and some state) labor policies, and we assess the evidence on program effectiveness. We are unable to address all such policies, so we focus on the major programs we believe may play a substantial role in supporting a just transition.

2 The preamble of the Paris Agreement states: “Taking into account the imperatives of a just transition of the workforce and the creation of decent work and quality jobs in accordance with nationally defined development priorities...”

We group labor policies into two main categories: (1) workforce development policies, which includes career services, job training, direct financial support for workers in transition, and research and technical assistance; and (2) labor standards, which include standards on compensation and benefits, labor organizing, and occupational safety. Table 1 and Table 2 provide a succinct overview of the major policies reviewed, and Table 3 provides a summary of the available evidence on program effectiveness and outcomes. Please see Section 6 for a detailed description of individual policies and programs.

Table 1. Workforce Development Policies Examined in This Report³

Policy or program	Activities	Federal mechanism(s)	Targeted communities	FY2020 spending (\$M)
<i>Department of Labor, Employment and Training Administration</i>				
Unemployment Insurance	Financial support	Direct payments	Unemployed workers	\$131,449 ⁴
Adult, Youth, and Dislocated Worker Training Programs	Job training Career services	Grants	Dislocated workers, adults, youth (ages 16–24)	\$2,820
Job Corps (with USDA)	Job training Career services Foundational support	Service contracts with federal funding	Disadvantaged youth*	\$1,744
Employment Service	Career services Employer supports Technical assistance	Grants	Not targeted	\$690
Trade Adjustment Assistance for Workers	Job training Career services Financial support	Grants	Trade-affected workers	\$640
Senior Community Service Employment Program	Job training Career services	Grants	Seniors	\$405
National Dislocated Worker Grants	Job training Career services	Grants	Dislocated workers	\$271
Trade Readjustment Allowance	Financial support	Direct payments	Dislocated workers	\$207 ⁵
Apprenticeship Program	Job training Career services Foundational support	Grants	Not targeted	\$175

³ See appendix for sources of funding estimates.

⁴ Total includes \$129 billion in paid benefits and \$2.5 billion in administrative expenses. Anomolously high due to Covid-19 recession; previous 5-year annual avg (from 2015-2019) is \$34 billion (Whittaker and Isaacs 2019).

⁵ Part of TAA appropriation.

Policy or program	Activities	Federal mechanism(s)	Targeted communities	FY2020 spending (\$M)
Evaluations & Research	Evaluation, research	Cooperative agreements	Not targeted	\$104
Reentry Employment Opportunities	Job training Career services Foundational support	Agency research	Previously incarcerated individuals	\$98
YouthBuild Program	Job training	Grants	Disadvantaged youth*	\$95
National Farmworker Jobs Program	Job training Career services Foundational support	Grants	Migrant farmworkers	\$92
Native American Program	Job training Career services	Grants	Native Americans	\$55
Workforce Opportunities for Rural Communities Initiative	Job training Career services	Grants	Not targeted	\$29 ⁶
Technical Assistance	Technical assistance	Access to agency expertise	Employers Dislocated workers	--
<i>Small Business Administration</i>				
Small Business Centers (various)	Job training Career services Technical assistance	Cooperative agreement	Small business owners (also specific programs for women and veterans)	\$174 ⁷
Microloan Technical Assistance Program	Technical assistance Job training	Lending	Small business entrepreneurs	\$35
SCORE	Job training Career services	Cooperative-agreement	Small business entrepreneurs	\$12
Boots to Business	Job training	Grants	Veterans	-- ⁸
Program for Investment in Micro-Entrepreneurs	Job training Career services Technical assistance	Grants	Entrepreneurs from underserved communities	\$6
Entrepreneurship Education Initiative	Job training	Grants	Underserved communities	\$3
MaTCH Pilot Competition	Job training	Prize/Grant	Makerspace communities	--

6 This is the number for distributed funds in 2020, not including program administration, which was not available as a line item in DOL appropriations documents at the time of writing.

7 Includes Small Business Development Centers, Women Business Centers, Veterans Business Outreach (which itself includes the Boots to Business program), and Native American Outreach.

8 Included in the Small Business Centers spending estimate above.

Policy or program	Activities	Federal mechanism(s)	Targeted communities	FY2020 spending (\$M)
<i>US Department of Agriculture</i>				
Employment and Training Program, Supplemental Nutrition Assistance Program (SNAP)	Job training Career services	Grants	Workers receiving SNAP	\$614
Trade Adjustment Assistance for Farmers	Job training Career services Technical assistance	Grants	Trade-affected farmers	--
<i>Department of Education</i>				
Vocational Rehabilitation Grants	Job training Career services	Grants	Disabled workers	\$3,610
Adult Education	Job training Coursework	Grants	Adults without high school education, English language learners	\$679
<i>Other agencies</i>				
IRS, Education and Training Tax Incentives (various)	Financial support	Tax credit Tax deduction	Not targeted	\$20,600 ⁹
Department of Defense, Post 9/11 GI Bill	Job training Career services Financial support Foundational support	Direct payments	Veterans	\$11,575
Appalachian Regional Commission, POWER Initiative	Job training	Grants	Workers in Appalachian communities	\$48
Department of Energy, Job Strategy Council	Employer supports Technical assistance Evaluation, research	In-house service	Energy workers	--
<i>State programs</i>				
New Mexico Energy Transition Act	TBD	TBD	Energy-dependent communities	--
Illinois Future Energy Jobs Act	Job training	Service contracts with federal funding	Disadvantaged communities	--
California Clean Energy Jobs Act	Job training	Grants	Disadvantaged communities	--
California Clean Energy Workforce Training	Job training	Grants Cooperative agreement	Disadvantaged communities	--

9 Combination of FY20 tax expenditures for Work Opportunity Tax Credit and “Credits for tuition for post-secondary education” (JCT 2019).

Table 2. Labor Standards Examined in This Report

Legislation	Policy type	Targeted workers
Fair Labor Standards Act (FLSA)	Fair compensation and benefits	Not targeted
Davis-Bacon Act (DBA) and related acts	Fair compensation and benefits	Not targeted
Employee Retirement Income Security Act (ERISA)	Fair compensation and benefits	Not targeted
Migrant and Seasonal Agricultural Worker Protection Act (MSPA)	Fair compensation and benefits	Migrant and seasonal workers
Labor-Management Reporting and Disclosure Act (LMRDA)	Unionization protection	Not targeted
Labor standards in federal transit law	Unionization protection	Transit workers
Comprehensive Omnibus Budget Reconciliation Act (COBRA) continuation of health-care provisions	Transition support	Displaced workers
Worker Adjustment and Retraining Notification (WARN) Act	Transition support	Predisplacement workers
Occupational Safety and Health (OSH) Act	Occupational safety	Workers facing hazards
Federal Mine Safety Act	Occupational safety	Miners

Table 3. Evidence on Program and Policy Outcomes

Program	Outcome type	Outcome
Job Corps	Earnings and employment	Job Corps participants saw 12% earnings gain and 3% higher employment relative to nonparticipants over first 4 years of study period, but minimal additional gains in the following 5 years (Schochet et al. 2008). However, authors find that program does not pass a cost-benefit test, with benefits (from increased earnings, reduced use of other public benefits, and reduced crime over first 4 years) estimated at \$4,000 per participant, versus program costs of approximately \$16,500 per participant.
Employment and Training Administration, Adult and Dislocated Workers Programs (WIOA)	Earnings	Participants increased earnings by 7 to 20% over 30 months after participating in adult or dislocated worker program intensive services, compared with those who received only core services (Fortson et al. 2017). Cost-benefit analysis found net benefits to society (\$8,573), participants (\$6,630), and taxpayers (\$1,943)—all in 2012 dollars. However, authors found that job training services did not benefit participants because of earnings forgone during training.
Trade Adjustment Assistance Job Training	Earnings and employment	Trainees in 1988 and 1989 experienced a 10% increase in employment relative to TAA enrollees who did not receive training, but no effect on wages (Marcal 2001). More recent research found that TAA trainees, compared with non-participants, increased reemployment rates by 10 to 12 percent and reduced their earnings losses by 8 to 10 percent (Reynolds and Palatucci 2012). Decker and Corson (1995) find that TAA has successfully identified workers who were permanently laid off and experiencing a large decrease in earnings.
Small Business Administration, Entrepreneurship Training	Earnings	Participants in “achievement motivation training” reported large benefits, including growth in: monthly sales (246% growth for participants versus 24% nationally), monthly profits (294% versus 54%), and personal income (150% versus 34%) over 3 years in the 1970s (Miron and McClelland 1979). This finding was based on voluntary self-reporting, and so arguably represents a biased sample.
Small Business Development Centers	Business survival rates Fiscal benefit	Chrisman et al. (1987) find SBDC clients in Georgia and South Carolina started more businesses and saw greater business survival rates compared with nonclients. And, they estimate that tax revenues generated by SBDC-related new businesses outweighed program costs by factors of 3.8 and 1.5 for Georgia and South Carolina, respectively. However, survey response rates were quite low (12 percent and 14 percent, respectively), raising potential concerns over the validity and generalizability of results (Gu et al. 2008).
SCORE	Program participation	Two studies found that SCORE has generally been successful, increasing business participation in Small Business Administration programs and reducing costs by using volunteer labor (Brudney 1986; Brudney and Gazley 2002). However, results are largely qualitative and do not measure business longevity, sales, employment, or other outcomes of interest.

Program	Outcome type	Outcome
Work Opportunity Tax Credit	Earnings and employment	<p>Short-term results showed that WOTC eligibility was linked to 6% higher probability of being employed within 6 months of becoming eligible. However, over the following 18 months, effects were close to zero.</p> <p>For eligible individuals who actually became certified to participate in the program (as opposed to merely being eligible), earnings increased by 9% relative to uncertified workers. However, these higher wages were equal to just 38% of subsidy itself, suggesting that majority of subsidy was going to employers (Hamersma 2008).</p>
Occupational Safety and Health Act	Workplace injuries	<p>Bartel and Thomas (1985) estimate that if firms complied perfectly with all OSHA standards, workplace injuries would decline by roughly 10 percent. They argue that the small effect of OSHA regulations is due not to lack of funding or enforcement, but rather to the standards' focus on capital equipment instead of the mix of equipment, workers, and environment that together contribute to accidents. Gray and Mendeloff (2005) find declining effects of OSHA standards on injury rates over time. For example, inspection resulting in penalty reduced injury rates by 15% in the early 1980s, 8% in the late 80s and just 1% in the 90s (Gray and Mendeloff 2005).</p>
Fair Labor Standards Act	Earnings and macroeconomic growth	<p>Reich (2015) finds the FLSA ended a downward wage trend in late 1930s, and a correlation between increases in real minimum wage and US economic growth. However, Neumark and Wascher (2006) find that roughly two thirds of academic analyses on minimum wage policy since the 1990s identify a negative relationship between minimum wage increases and employment, particularly for young and low-skill workers.</p>
WARN Act	Employment	<p>Addison and Blackburn (1994) find that early notice before a job termination reduces probability of joblessness (presumably because it gives workers time to find a new job), but that it does not decrease the duration of joblessness for workers who become unemployed. However, they find that the WARN Act has not increased the number of workers who received advance notification of termination.</p>

2.1. Scope of This Review

Workers in transition can be supported in many ways. Public policies that provide workforce training, establish job safety standards, or provide cash benefits to dislocated workers are clear examples. However, a broad range of other policies benefit workers as well. For example, economic development policies and public infrastructure spending are in part designed to expand employment opportunities (see Raimi et al. 2020; Raimi 2020a). The scope of this review, however, is limited to policies that support workers through workforce development and labor standards.

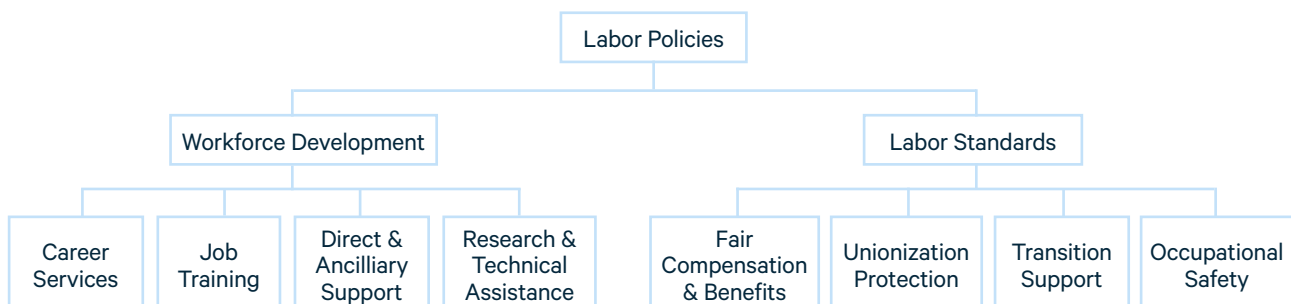
Workforce development, as defined here, aims to increase the capacity of workers through career counseling, training, and financial assistance; labor standards ensure safe working conditions and meaningful benefits for employees.

Rather than cover all policies that train workers or establish labor standards in the United States, we select those policies we believe have particular relevance to a just transition. Even with these limitations, we discuss more than 30 individual policies or programs (summarized in Table 1 above). In the sections that follow we provide brief descriptions of many of these policies, and we encourage readers interested in more detail to see our policy summaries in Section 6. These summaries include information on policy origins, specific services offered by the policy or program, administrative structure, eligibility, and recent congressional appropriations levels.

2.2. Types of Labor Policies

As noted above, we organize our analysis by considering two main forms of labor policy: workforce development and labor standards. We disaggregate these two categories further to explore different policy approaches, as depicted in Figure 1 (below). We provide the theoretical underpinnings for these approaches in Sections 2.2.1 and 2.2.2 and offer some insights from the relevant research in this area.

Figure 1. Organization of Labor Policies Examined in This Report



2.2.1. Workforce Development

One of the well-studied economic arguments in favor of workforce development policy is that the economy suffers when workers and employers have difficulty matching efficiently (OECD 2005). Some evidence for inefficient matching comes from Kuhn (2002) and Jacobson et al. (1993a,1993b), who find that displaced workers experience long periods of joblessness after job loss. Additional research suggests the duration of unemployment tends to be greater for workers who have been in the labor force longer, since they have often become highly specialized in a field or task and find it more difficult to transition to new work (Fallick 1996; Cavaco et al. 2013). Worker-employer matching can also stall because of information problems—for example, if workers lack awareness of the nature or availability of new jobs (Mortensen and Pissarides 1999). These findings suggest that workforce development policies (including access to better information and career services) can facilitate matching and improve outcomes for workers—and the economy as a whole.¹⁰

The literature also shows that the human capital growth facilitated by job training and education—cornerstones of workforce development policy—is fundamental to economic growth (Hanushek and Woessmann 2015).

Job training has another, more subtle theoretical benefit: it can increase the efficiency of government spending. Given that government has incomplete information about workers, such programs can identify individuals who are ready and willing to train for a job in a new industry or location (Feenstra and Lewis 1994). And because some government benefits are intended to flow only to those seeking new employment, identifying these individuals makes it simpler for benefits to reach their intended recipients (Blackorby and Donaldson 1988).

Some research on public job training programs indicates positive returns for program participants. For example, European and Australian research indicates that for participants, job training boosts self-confidence, improves health (both physical and mental), increases civic engagement, and raises levels of job satisfaction (Cedefop 2011; Buchanan et al. 2016).

Other studies, however, show mixed results. Broadly speaking, the literature shows that public job training programs often fail to improve employment outcomes in the short term; studies focused on medium- and long-term employment outcomes find more positive results (Lubyova and van Ours 1999; Puhani 1999; Kluve et al. 2004; Sianesi 2004; Fay 1996; Heckman et al. 1999; Martin and Grubb 2001; Kluve et al. 2002; Fitzenberger and Speckesser 2007; Fitzenberger and Völter 2007; Lechner et al. 2011; Choi and Kim 2012).

The literature also provides guidance on policy *tailoring*—where workforce development programs are customized to fit local needs. Several researchers agree

10 There is mixed evidence as to whether the US has been facing a skills mismatch between worker training and labor demand. Carnevale et al. (2010) find evidence of a skills mismatch, but Cappelli (2015) and Osterman and Weaver (2014) see no skills shortage.

that tailoring helps connect workers to employers, improving employment outcomes for workers (Harper-Anderson 2008; Pynes 2004). Leigh (1990) also finds that to improve effectiveness, job training programs should be based locally and involve decentralized decisionmaking to better meet local needs.

2.2.2. Labor Standards

Labor standards have various economic implications. First, they theoretically may increase economic productivity. For example, discrimination in the labor market has been shown to weaken productivity (Bivens 2003; Acemoglu and Shimer 2000), and certain labor standards curb such discrimination. Furthermore, higher-wage jobs create incentives for workers (and firms) to invest more in training and skill development, again with yields to productivity (Bivens 2003; Maskus 1997).

Similarly, researchers have shown a positive correlation between labor standards and a country's economic growth and stability. Bivens (2003), Acemoglu and Shimer (2000), Christensen and Buchele (2003), and Buchele and Christensen (2001) show a positive connection between economic performance and labor standards in OECD nations, and Palley (2004) demonstrates similar trends in developing countries. Bivens (2003) argues that labor standards can help economies avoid and recover from economic shocks (of which energy transition may be an example) by boosting domestic demand and making workers more empowered and resilient.

Labor standards can also make income distributions more equal, especially by boosting earnings for lower-income workers. Some research suggests these higher earnings not only advance distributional equity, but can also stimulate aggregate demand for goods and services, since lower-wage workers tend to spend more of their income than more affluent workers and owners of capital (Bivens 2003; Card and Krueger 1995; Machin and Manning 1997).

The economic debate over labor standards has perhaps been most salient in the context of minimum wage requirements. The textbook supply-and-demand model of labor markets predicts that minimum wages raise unemployment by making labor more expensive, thus reducing the quantity of demand for labor. However, research based on empirical analysis suggests an increase in the minimum wage may not always lead to a loss of jobs (e.g., Card and Krueger 1995).

Finally, some labor standards support unionization, which has been shown to have a broad range of economic benefits. For example, unionization reduces job turnover by facilitating communication and conflict resolution between employees and employers, and reducing turnover can help employees develop valuable skills and increase employer incentives to invest in long-term training, both of which enhance productivity, competitiveness, and economic performance (Bivens 2003). In addition, the improved communication between employer and employee gives workers a more active voice in their firms and in the political process (Bivens 2003). Union density and collective bargaining have also been shown to be positively correlated with a more equitable distribution of society's wealth (Aidt and Tzannatos 2002).

3. Workforce Development

A centerpiece of just transition policy is the suite of policies designed to develop the skills and resources of workers. The federal government and multiple states provide a range of such policies and programs, including access to labor market information, career counseling, job training, and incentives for education. As stated in the Workforce Innovation and Opportunity Act (WIOA) of 2014, the purpose of US federal workforce development policy is to “increase the employment, retention, and earnings of participants, and increase attainment of recognized postsecondary credentials by participants, and as a result, improve the quality of the workforce, reduce welfare dependency, increase economic self-sufficiency, meet the skill requirements of employers, and enhance the productivity and competitiveness of the Nation” (Foxx 2014).

We organize workforce development programs into four main categories:

- career services;
- job training;
- direct financial and ancillary supports; and
- research and programmatic technical assistance.

Our review of workforce programs yields seven insights, summarized here and discussed in detail in the sections that follow.

1. Given the complex nature of the workforce development system, **centralized service delivery and effective interagency and intergovernmental coordination are essential.** Centralized service delivery is a feature of major existing US workforce development programs, like the American Job Center system. This will help ensure that workers can easily access the many programs designed to help them, and that federal resources are spent efficiently.
2. **Career services can improve the functioning of labor markets by helping workers succeed in training programs, and by efficiently matching workers with employers.** Career services may be more cost-effective than other workforce development programs, such as job training, underscoring the importance of including career services in just transition policy.
3. Because coal communities often experience high levels of poverty and substance abuse, **wrap-around supports like child care and substance abuse therapy for workers undergoing transition may be especially important in establishing conditions for success in workforce development programs.**
4. **Tailoring workforce training programs to local circumstances can improve outcomes for workers, and is therefore likely to enhance the effectiveness of transition policy.** The literature suggests that workforce training programs are more successful when they rely on local partnerships, are tailored to the needs of local economies, and involve decentralized decisionmaking. Indeed, many federal workforce development programs (e.g., those offered by the Appalachian

Regional Commission) integrate local partnerships to tailor services to a community's needs and opportunities.

5. **Programs targeted to specific populations, whether based on demographics (e.g., women, veterans, low-income youth) or employment circumstances (e.g., coal sector workers), may have advantages when the displaced workers form a distinct group with distinct needs.** However, some argue against such targeting because it can be difficult to identify the cause of worker displacement. In a just transition context, fossil energy workers can be identified fairly easily, but those working in energy supply chains and indirectly affected sectors (e.g., energy-intensive manufacturing) may be more difficult to identify.
6. **Close collaboration with industry & employers in the creation and management of workforce development services is a central aspect of a number of US workforce programs, and will likely play an important role in designing effective just transition workforce policies.** Such collaboration ensures that programs are relevant to local labor market demands, benefit from industry expertise, and have a high likelihood of leading to secure employment after training.
7. **The timing of workforce interventions matters.** For example, there is evidence that notifying workers in advance notice if they will be losing their job can, not surprisingly, reduce the amount of time spent unemployed and improve their wages when they find new employment. Research also suggests the benefits of timely engagement could be augmented if paired with early job-search assistance and retraining. Considering the timing of interventions will therefore likely shape the effectiveness of just transition policy.

Table 4 summarizes the programs we review in this section, their distinctive features, and their relevance to just transition.

Table 4. Workforce Programs Reviewed in This Section

Program	Key features and relevance to just transition
Employment and Training Administration (ETA) programs, Department of Labor	ETA operates variety of workforce training, career counseling, and job placement services that support workers transitioning to new jobs and/or to whole new industries—by providing opportunities to build skills and helping to secure employment.
Unemployment Insurance	Primary US income support program. Individuals are eligible for up to 26 weekly cash payments, also administered by ETA. In JT context, this program serves as temporary backstop for dislocated workers.
Small Business Administration (SBA) programs	SBA provides opportunities for building small business management and entrepreneurship skills, including accounting, marketing, business expansion, financing, and human resources. This could apply directly to transitioning energy workers looking to start their own business, or indirectly to support economic development and employment opportunities in communities undergoing transition.
SNAP Employment and Training Program	Available to SNAP participants. Program offers career counseling, training, community service opportunities, work experience, self-employment program, and job retention services. In JT context, program could be available to low-income individuals affected by energy transition.
Adult Education and Family Literacy Act	Programs established by this act provide education to adults who have less than high school education and/or are English language learners. In JT context, it could provide important skills to workers seeking new employment opportunities. Example of how JT policy could support not just vocational development but broader education of workers in transition.
Vocational rehabilitation grants	Grants to deliver job training services to Americans with disabilities. Example of population-targeted workforce development program, various versions of which could be relevant to just transition.
Tax benefits for education	Various tax incentives are available to individuals pursuing further education. Workers displaced in energy transition could access these benefits. Policy could also serve as model for developing new tax incentives following energy transition.
Post 9/11 GI Bill	Post 9/11 GI Bill offers financial incentives and direct support to veterans seeking additional education after serving. Similar program could be designed for energy workers undergoing economic transition.
Appalachian Regional Commission (ARC) POWER grants	ARC awards POWER grants to state and local agencies undertaking range of projects—including workforce development—in coal-dependent communities. Example of geographically targeted, locally customized grantmaking program in coal country.
Jobs Strategy Council, Department of Energy	Council is focused on research, technical assistance, and interagency coordination regarding workforce development in energy sector. Program is targeted at energy industry and therefore will likely be valuable in JT context.
California Clean Energy workforce training policies	California has several programs to train workers for new employment opportunities in “green” jobs. These are sector-focused policies that also target disadvantaged communities.
Illinois Future Energy Jobs Act	This act authorized training programs focused on clean energy jobs and targeted toward minorities, former foster children, those with criminal records, and low-income, rural, and environmental justice communities. Example of state policy that directly incorporates workforce development goals into clean energy program.
New Mexico Energy Transition Act	This act mandates net zero emissions target by 2045–2050, in addition to eventual closure of all of state’s coal plants, while providing assistance to affected communities. Example of how JT policies can be incorporated into broader climate action policies, and how states can advance their own JT agendas.

3.1. Career Services

Career services are workforce development supports for planning and pursuing career goals, including access to labor market information and personal marketing tools (like résumé-writing guides and job interview prep), skill assessments, career planning, and job search and job placement assistance.

Career services are likely to play a central role in a just transition by providing the general career counseling and planning needed to navigate a career change, by identifying the most suitable job training programs, and by helping workers connect with new employers. Career services are the foundation on which most other aspects of workforce development are built.

Indeed, career services for displaced workers have been shown to be integral components of successful and cost-effective workforce development programs (Leigh 1990). Leigh (1990) concludes that job search assistance—a common career service—is more cost-effective than other workforce development programs, such as job training. Similarly, career services have been shown to improve the functioning of labor markets by making workers more aware of their options (OECD 2005).

The federal government offers numerous workforce development programs that include career services. In most programs, these are combined with other services like job training. Below are some prominent examples.

3.1.1. Employment and Training Administration, Department of Labor

The Employment and Training Administration (ETA) is the primary federal agency offering workforce development programs, including job training, career services, and other programs to improve the US labor market and enhance employment opportunities (DOL 2020g). Below we discuss ETA programs that provide career services; ETA programs that provide other workforce resources are discussed in subsequent sections.

3.1.1.1. State Formula Grant Programs

The largest ETA programs that include career services are three state formula grant programs: (1) Adult Employment and Training Activities, (2) Youth Activities, and (3) Dislocated Workers Employment and Training Activities. Collectively, they were funded at \$2.8 billion in FY2020 (Bradley 2015; Pascrell 2019). All three programs offer some combination of career and training services, many of which are likely to be helpful in a JT context, including:

- basic outreach—ensuring that potential jobseekers are aware of and have access to the many offerings of the federal workforce development system;

- career planning—including in some cases the creation of an individual employment plan, an individualized plan that maps an individual’s career goals and identifies the best combination of career services to reach those goals, jointly developed by the participant and a career planner;
- skills and needs assessment—identifying an individual’s existing skills and any skill gaps, as well as needs for foundational supports such as child care, English language instruction, financial literacy, and substance abuse therapy (these assessments are administered through self-service online tools or one-on-one with a career specialist);
- case management and referrals—ongoing support to participants from a career planner, who refers them to the various support services and training opportunities to achieve their career goals, many of which may be offered by partner programs; and
- access to labor exchanges and job listings (Bradley 2015).

Box 1. The Statutory Evolution of ETA Workforce Programs

Workforce Investment Act (WIA)

Established in 1998, the Workforce Investment Act (then the nation’s primary workforce development policy) was designed to provide an integrated delivery system for federal workforce development programs—specifically, One-Stop career centers that provided locally-tailored employment and training support. The centers, numbering about 3,000 nationwide, were run by Workforce Investment Boards comprising local business, labor, and government representatives (Bradley 2013).

Workforce Innovation and Opportunity Act (WIOA)

In 2014, the Workforce Innovation and Opportunity Act (WIOA) amended and built upon the WIA. WIOA reauthorized ETA adult, youth, and dislocated workers’ services, delivered through state formula grants, as well as certain demographically targeted national programs (Bradley 2015). WIOA made several improvements on WIA:

- It combines core and intensive workforce services (which job seekers had to undergo in sequence under WIA) into one set of “career services,” eliminating the need for job seekers to undergo core services before accessing intensive programs.
- It requires recertification of American Job Centers (successors to the One-Stop centers) every three years to improve performance.
- It synchronizes local workforce development efforts and regional development strategies.
- It increases use of performance indicators, reporting, and evaluation (DOL 2020a).

All three programs rely on a local service delivery model, called American Job Centers (AJCs) and are overseen by state and local Workforce Development Boards (WDBs) (see *Box 2* for more detail on WDBs and AJCs). This model seems well supported by findings in the literature that tailoring services to the local context produces more successful employment outcomes for workers (Harper-Anderson 2008; Leigh 1990). This is likely to be particularly important to a just transition, whose unique local economic changes are the primary concern. One potential vulnerability of this model in a JT context, however, is that it may be less effective in assisting workers considering employment in other regions (in cases where the decline of an incumbent industry like coal means there are few viable local alternatives).

Another interesting aspect of the state formula grant programs is the extent to which they target specific populations of workers. As mentioned above, this kind of targeting can improve the effectiveness of workforce development programs in cases where the target population is relatively easy to identify (OECD 2005). Targeting will almost certainly be a feature of a just transition workforce policy aiming to help workers from specific sectors, such as coal mining.

The ETA state formula grant programs exhibit various approaches to targeting. Eligibility across the three programs is structured as follows:

- Adult Employment and Training Activities, for any individual ages 18 and older;
- Dislocated Workers Employment and Training Activities, for adults ages 18 and older who have been laid off or notified of an imminent layoff, are sufficiently attached to the workforce, and are unlikely to return to their prior industry, as in the case of a facility closure in their community; and
- Youth Activities, for low-income individuals ages 14 to 21 who are considered to be in one of five at-risk designations (Bradley 2015).

One implication of targeting is that program features can be customized to the needs of the target population. For example, the Dislocated Workers program provides “rapid response” services for workers undergoing a sudden change in employment status. Rapid response activities may include information on relevant ETA training programs, on-site contact with employers and employee representatives, and services less directly connected to the workforce, such as assistance for local communities to develop a response plan to a sudden plant closure (Bradley 2015).

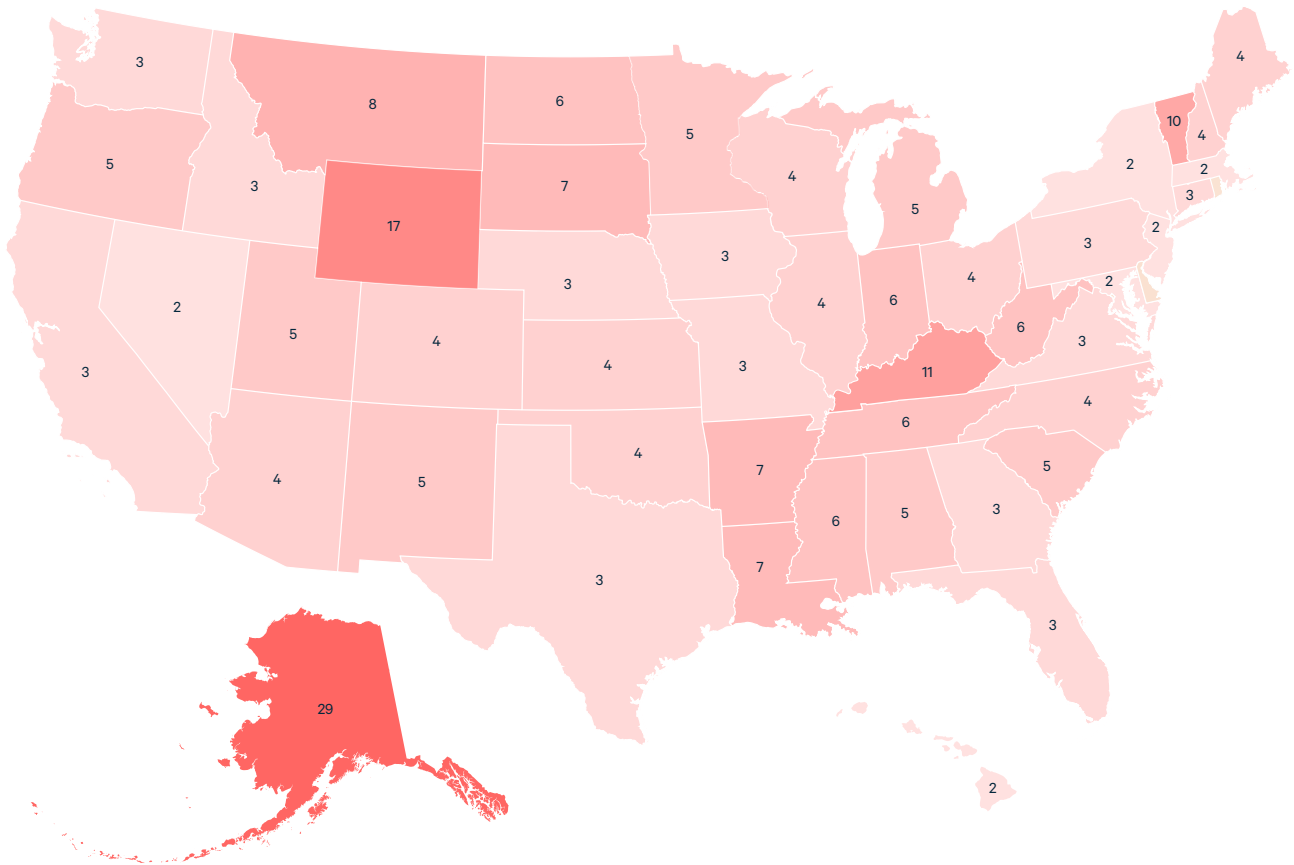
Box 2. Spotlight on Administrative Structure: WDBs and AJCs

ETA operates through a network of Workforce Development Boards (WDBs), consisting of representatives from business, labor, government and other stakeholder groups. Each state has a state-level WDB appointed by the governor, as well as local WDBs, which are appointed by local elected officials. The state WDB creates a Unified State Plan (a four-year strategy for implementing workforce development activities across the state), establishes formulas for the allocation of certain ETA grant funds, identifies local workforce development areas, and generally assists the governor on workforce development. The local WDBs conduct local workforce development planning and oversee the primary ETA service delivery mechanism—a network of roughly 2,500 American Job Centers (AJCs), a WIOA modernization of the One-Stop career center system created under the WIA.

AJCs are intended to be a central point of service for various workforce development resources and related services. AJCs, for example, facilitate access to job training, employment counseling, and job placement—incorporating various services offered by ETA, as well as those offered by the Small Business Administration, the Social Security Administration, the Supplemental Nutrition Assistance Program, and other federal agencies and programs. AJCs also provide access to Unemployment Insurance benefits, Temporary Assistance to Needy Families, and Trade Adjustment Assistance, and they collaborate with other local and regional centers to form a comprehensive network of workforce development services. Services are delivered both directly by AJCs and by local partners (Collins et al. 2019).

Of the roughly 2,500 AJCs nationwide, many are in coal country: 20 in West Virginia, 95 in Kentucky, 59 in Virginia, and 66 in Pennsylvania (CareerOneStop 2020a). Although the numbers are relatively proportional to state populations, their concentration does not reflect the number of coal workers who might be affected by major energy transition. For example, West Virginia is a relatively small state but had an estimated 13,988 coal workers in 2019 (EIA 2020). In contrast, Kentucky, which has nearly five times as many job centers, had 6,257 coal workers in 2019 (EIA 2020). Policymakers hoping to build on existing policy structures should understand the regional deployments of these policies to expose what coverage gaps might be problematic in a transition. Figure 2 shows the number of AJCs per 500,000 residents in each state.

Figure 2. Distribution of American Job Centers (AJCs) per 500K Residents



Source: DOL (2020f)

Fortson et al. (2017) examine how the ETA Adult and Dislocated Workers programs have affected labor market outcomes. The authors randomly assigned ETA program participants from across the country to three tiers of service offered in the programs (tier 1, core services; tier 2, intensive services; tier 3, training) and gathered survey and financial data from participants¹¹. The authors found that tier 2 customers earned 7 to 20 percent more than those in tier 1. However, the authors found that tier 3 services did not benefit customers because of the earnings forgone during their training programs.

These results suggest that personalizing just transition career services (the step from tier 1 to 2) can have significant benefits, and that earnings forgone during training can be significant, perhaps making an argument for providing income support during training (Section 3.3.1). The argument for the latter is even more salient in cases where public policy induces displacement, which may be the situation in many transition contexts.

11 Tier 1 customers receive access to information and web tools, tier 2 services include core services plus personalized career guidance or preparation and job search assistance, and tier 3 includes the previous two tiers plus job training opportunities.

3.1.1.2. Employment Service

In addition to the state formula grant programs, ETA administers the Employment Service (ES), a career counseling, job placement, and referral program. ES is the foundation of the AJC system (Box 2). It delivers grants to states to provide the following services (delivered through the AJC system):

- career counseling;
- job search workshops and job listings;
- applicant screenings and other recruitment services for employers;
- work tests for the state unemployment compensation system; and
- referral of unemployment insurance claimants to other federal workforce development resources (Bradley 2015; DOL 2020h; Collins et al. 2019).

As indicated in the literature review (Section 2.2.1), economic inefficiencies result when the labor market does not effectively match workers with new employers. The literature also indicates that displaced workers tend to experience long periods of unemployment after losing a job, and workers who have been in the labor force for many years experience longer-than-average periods of unemployment after losing a job. These findings suggest that job placement programs such as the ES could be instrumental in a JT context, where the concern is minimizing harm to individuals who may be displaced, many of whom may have been employed in the incumbent industry for a long time.

Box 3. Tailored, Targeted, and Sector-Based Workforce Development

A central consideration in designing workforce development policies is aligning the programs with the demands of the economy and populations most in need. To this end, we have discussed how some workforce development policies and programs are *tailored* (place-based) or *targeted* (criteria-based), and still others are *sector-based*. We discuss these concepts in more detail below.

Tailored workforce development programs incorporate locational variability and rely on partnerships to better meet the needs of local economies and communities. ETA's American Job Centers are an example of a tailored program: each of the roughly 2,500 centers collaborates with community partners to deliver workforce development opportunities in that locale. Funded activities at AJCs are largely steered by Workforce Development Boards, which contain representatives of local business, labor, and government organizations. Other examples of tailored programs:

- The SBA's Regional Innovation Clusters connect businesses, educational institutions, financiers, and public institutions to develop regional industry hubs.
- The ETA's Employment Service provides states grants to connect individuals with local employers seeking workers.

Targeted workforce development programs provide services to a specific subset of people based on age, income, employment status, or other criteria. ETA's Senior Community Service Employment Program, for example, is targeted specifically at low-income, unemployed seniors. Other examples of targeted programs:

- The ETA's Job Corps Program offers skills training to disadvantaged youth.
- The SBA's Boots to Business Program provides entrepreneurship training to transitioning service members.
- The Department of Education's Vocational Rehabilitation Grants offers financial assistance to disabled individuals.
- The ETA's Dislocated Worker Grants fund career services for workers laid off as a result of general economic conditions or changes.

Sector-based workforce development programs, which in many ways could be considered a subcategory of targeting, foster skills for a specific industry or occupation. California's Clean Energy Workforce Training Program, for example, provides skills training to help workers secure employment in the clean energy industry. Other examples of sector-based programs:

- The Energy and Advanced Manufacturing Workforce Initiative, in the Department of Energy (DOE), provides workers with training and opportunities to secure employment in advanced manufacturing.
- The Illinois Future Energy Jobs Act established an apprenticeship program to help low-income and formerly incarcerated individuals build skills for employment in the solar industry.
- DOE's Utility Industry Workforce Initiative prepares former service members for jobs in the electric utility industry.

Programs can fall under multiple designations. For instance, SBA's Women's Business Centers are both *targeted* at women-owned businesses and *tailored* to their local communities. ARC's POWER grants are *targeted* at coal communities in Appalachia and require recipients to *tailor* their workforce development services to their local communities. And the Utility Industry Workforce Initiative (mentioned above) is *targeted* at veterans and *sector-based* in the utility industry.

In a just transition context, each strategy has something to offer. Because communities respond to transition differently, tailoring can ensure that localities get the specific support they need. Targeting can address the needs of directly affected individuals, such as fossil energy workers, but may fail to support indirectly affected individuals, such as those working in energy-intensive manufacturing industries (Rosen 2002). Sector-based strategies can prepare the workforce for a changing economy but may fail to support the neediest individuals (Schrock 2013).

See Section 2.2.1 for a discussion of findings from research on the effectiveness of these various approaches to delivering workforce development services.

3.1.1.3. Job Corps

Another ETA program, Job Corps, provides career services, skills training, and other programming for disadvantaged youth in support of their education and employment. Students access services through Job Corps centers throughout the country (131 nationwide as of 2015) for up to a two-year period (DOL 2020j). Job Corps provides an array of career services, from upfront career planning to job placement services (Bradley 2015).

Schochet et al. (2008) examine the Job Corps program using nine years of data for more than 15,000 individuals from 1994 through 2003. They find that Job Corps participants saw a 12 percent earnings gain and 3 percent higher employment relative to nonparticipants over the first four years of the study period, but minimal additional gains in the following five years. However, the authors find that the program does not pass a cost-benefit test, with benefits (including increased earnings, reduced use of other public benefits, and reduced crime over the first four years) estimated at less than \$4,000 per participant, versus program costs of approximately \$16,500 per participant.

The Job Corps program is a targeted career services program—here, the target population is disadvantaged youth. As mentioned in relation to the Dislocated Workers state formula grant program, this targeting allows the program to be designed around the unique needs of the target population—a feature that could be helpful in designing just transition career services. In this case, the ancillary supports, such as child care, are an example of such customization.

3.1.1.4. Other ETA Programs Offering Career Services

Several other ETA programs incorporate career services, all of which are targeted:

- The Senior Community Service Employment Program provides employment services and other benefits (Section 3.3.1.3) for low-income, unemployed seniors (ages 55 or over, with income no more than 125 percent of the poverty level) (DOL 2020b).
- Reentry Employment Opportunities (REO) provides formerly incarcerated individuals with access to occupational skills training and apprenticeships while facilitating access to other services, such as housing, child care, transportation, family unification, and legal assistance (DOL 2020g).
- The Indian and Native American program provides education, intensive training, and other services to support the employment or job retention of American Indian, Alaska Native, and Native Hawaiian individuals, and to promote economic development of Native American communities (DOL 2020f; Bradley 2015; Pascrell 2019).

3.1.2. Vocational Rehabilitation Grants, Department of Education

Vocational rehabilitation (VR) grants, established under Title I of the Rehabilitation Act (1973) and reauthorized by Title IV of WIOA, help state agencies prepare disabled individuals for employment. The purpose of these grants is to create opportunities for individuals who might struggle to find employment because of a disability by providing them with counseling, job search and placement assistance, training and education, and postemployment support services (Bradley 2015). To receive VR funds, states must submit a unified workforce development plan, as required under WIOA.

The VR program is an important example of a workforce development program designed for communities in need of a range of ancillary supports in addition to standard career services. Given that some coal-producing communities often experience higher-than-average levels of poverty and substance abuse (Metcalf and Wang 2019), this type of wraparound service delivery model—where career services are combined with supports like child care and substance abuse therapy—may be especially important in establishing conditions for success in communities undergoing transition.

3.2. Job Training

A significant focus for career services is to connect workers with appropriate job training opportunities. Job training sits at the heart of workforce development policy and programming and is a basic tool in the policymaker’s toolbox for advancing the skills of workers in transition—and thereby providing workers with long-term pathways to quality work. The many types of training include classroom vocational training, on-the-job training, and apprenticeships, as well as preapprenticeships, “soft” skills development (language proficiency, time management, financial literacy, etc.), basic education, ad hoc technical assistance, and mentoring. There are also many ways of delivering such trainings, including by *tailoring* trainings to local circumstances, or *targeting* training opportunities to specific populations (*Box 3*)—both of which will likely be important for a just transition, where workers from specific geographies (e.g. fossil energy producing regions) and sectors (e.g., coal production) are the main focus. Many federal job training programs combine the various forms of training and include elements of both tailoring and targeting.

As mentioned in Section 2.2.1, research indicates that job training increases worker earnings and produces such noneconomic benefits as higher self-confidence, improved health (both physical and mental health), increased civic engagement, and higher levels of job satisfaction for program participants (Cedefop 2011; Buchanan et al. 2016).

Below we describe several prominent federal job training programs.

3.2.1. Employment and Training Administration, Department of Labor

3.2.1.1. State Formula Grant Programs

As mentioned in Section 3.1, the three ETA state formula grant programs—Adult Employment and Training Activities, Dislocated Workers Employment and Training Activities, and Youth Activities—provide job training services, as well as the career services described above. Exact training offerings differ by state and local area, as determined by state and local WDBs (*Box 2*), reflecting the unique needs of state and local labor markets and underlying socioeconomic conditions. WDBs include representatives from the business community, ensuring that employers play a role in shaping trainings relevant to the local economy, maximizing the chances that trainees not only build industry-relevant skills but ultimately secure a quality job.

ETA-sponsored trainings are generally delivered by AJCs (*Box 2*) or by independent third parties deemed by the governor and state WDB as “eligible providers” of training services. Eligible providers are generally institutions of higher education (like a community college), a business, or other entity that offers a registered apprenticeship program (per the National Apprenticeship Act), or other independent training agencies (Bradley 2015).

The Adult and Dislocated Workers programs both offer various types of training:

- basic skills training, such as English language proficiency and job readiness training (which includes training in “soft skills” like time management, communication skills, financial literacy, and teamwork);
- classroom training on occupational skills;
- on-the-job training; and
- apprenticeships (which tend to combine on-the-job training with classroom work and are often developed and operated in conjunction with an employer).

The ETA Youth program similarly provides occupational training, apprenticeships, and other work-related skill development, but in addition it supports students in the completion of secondary school and in preparation for postsecondary educational opportunities (Bradley 2015).

In total there are 14 program features that all local WDBs must offer youth. Many of these features would fit in the category of career services, or what we refer to in this report as ancillary supports (Section 3.3). This provides another example of a “wrap-around” and well-coordinated service portfolio—one that provides not only opportunities for people to train in employable skills but also the foundational and logistical supports needed to participate in trainings with stability. As mentioned above, given higher-than-average levels of poverty and substance abuse in coal communities (Metcalfe and Wang 2019), this multipronged approach to workforce policy is likely to be important in a just transition context.

3.2.1.2. National Grant Programs

In addition to the state formula grant programs, ETA administers national competitive grant programs focused on training and skill enhancement (see Section 6 for more detail on each program).

3.2.1.2.1. The National Dislocated Worker Grants (NDWG) (WIOA Section 170) Program

This competitive grant program augments the Dislocated Workers state formula grant program discussed above. The NDWG program awards grants to entities that provide training services—and some career services—to dislocated workers or Department of Defense employees at risk of dislocation because of an installation closure or realignment.

All of the dislocated workers programs have a strong nexus with just transition issues, where the main concern is providing assistance to workers experiencing dislocation due to changes in the energy and industrial economy. See Section 3.1.1.1 for a definition of dislocated worker.

3.2.1.2.2. The YouthBuild (WIOA Section 171) Program

This program provides competitive grants to support initiatives designed to help disadvantaged youth develop occupational and educational skills by mobilizing them to build affordable housing and energy-efficient, high-quality community facilities.

The core skills offered by YouthBuild are related to the building trades and developed through on-the-job construction and renovation of housing and community facilities. However, the program also supports youth with leadership development, mentoring, and career training for other occupations (Bradley 2015).

YouthBuild provides a model for just transition workforce policy, where job training and career services are combined with direct employment and the construction of infrastructure needed to bolster the community and local economy (in this case housing).

3.2.1.2.3. National Farmworker Jobs (WIOA Section 167) Program

Also known as the Migrant and Seasonal Farmworker Program, this program provides competitive grants for training, career services, and housing to help migrant farmworkers and their dependents obtain or retain employment and sound housing.

This program is another example of a multipronged workforce policy that provides ancillary supports as well as training and career services, in recognition of specific burdens facing the target population—burdens that compound the challenges of seeking employment. The National Farmworker Jobs Program (NFJP) is also an example of a workforce policy that targets an individual economic sector (agriculture), just as JT policy will need to target energy and other emissions-intensive sectors. Furthermore, the NFJP is tailored to workers primarily located in rural regions, as are many of the workers and communities undergoing or likely to undergo an energy transition.

3.2.1.3. Apprenticeship Program

The Apprenticeship Program in ETA implements a range of initiatives to support the delivery of apprenticeships and currently has a focus on high-growth industries and providing better apprenticeship access to women and youth workers (DOL 2020g).

An apprenticeship, as defined by the DOL Office of Apprenticeship, is “an industry-driven, high-quality career pathway where employers can develop and prepare their future workforce, and individuals can obtain paid work experience, classroom instruction, and a portable, nationally-recognized credential” (Apprenticeship 2020).

Cornerstones of the ETA Apprenticeship Program are Registered Apprenticeship Programs (RAPs) and Industry-Recognized Apprenticeship Programs (IRAPs). These are industry-driven programs, supported and certified by ETA, for workers to obtain knowledge and skills while earning a living and gaining industry-recognized credentials. They have five core components (DOL 2020n):

- paid work, allowing apprentices to earn a living while they learn skills;
- on-the-job learning;
- classroom learning;
- mentorship and supervision;
- an industry-recognized credential upon completion (and in many cases a postsecondary degree).

RAPs and IRAPs are offered by individual companies, industry groups, unions, nonprofits, and educational institutions. Both programs are validated by DOL or a state apprenticeship agency that ensures quality standards. In many states, businesses are eligible for state tax credits for hiring apprentices.

Lerman (2018) states that the “benefits of apprenticeships include reliably documenting appropriate skills, raising worker productivity, increasing worker morale, and reducing safety problems.” He also finds that apprenticeships are more cost-effective in teaching employable skills than pure schooling, and that apprenticeships uniquely improve both demand and supply sides of the labor market.

On the worker (supply) side, Lerman (2018) cites a study of apprenticeships in 10 US states that shows improvements in worker earnings following apprenticeship (Reed et al. 2012). He also cites European findings that apprenticeships boost wages (by about 4 percent per year of training); apprenticeships tend to run two to four years (Fersterer et al. 2008). And he references work showing that apprenticeship programs decrease youth unemployment (Kis and Field 2009; OECD 2010).

On the employer (demand) side, research indicates that apprenticeships are a powerful recruitment tool: the employer is guaranteed that employees have a certain skill level, and the employer has the opportunity to assess the overall caliber of workers (during apprenticeship) before hiring. This same research shows that many apprenticeship-sponsoring firms entirely recoup their investment in training by the end of the

apprenticeship (Muehleman and Wolter 2014). And a survey of nearly 1,000 US firms showed that 97 percent of apprenticeship-sponsoring employers would recommend registered apprenticeships to other firms, with 86 percent saying they would “strongly recommend” (Lerman et al. 2009). Lastly, Lerman (2018) points to research in Germany that correlates apprenticeship with improvements in workplace innovation, including innovation in technological applications and other advancements in production processes (Bauernschuster et al. 2009).

Box 4. Pre-Apprenticeship Programs (DOL 2020n)

One type of workforce development that may be particularly relevant for transitioning communities is preapprenticeship, which prepares workers to enter a Registered Apprenticeship (RA). At the federal level, various programs offer these services, including JobCorps, YouthBuild, and the Post 9-11 GI Bill.

DOL offers best practices for preapprenticeship programs (DOL 2020m):

- Trainings should be designed in partnership with the sponsoring employers and should build entry-level skills that meet industry standards as well as job readiness skills (including soft skills).
- Programs should increase the accessibility of RAs, including for disadvantaged individuals; to this end, the program should include recruitment and assistance in applying for RAs.
- Curriculums should offer hands-on experience that reflects the requirements of a related RA.
- Programs should be accompanied by support services that help participants succeed, like child care, transportation, and counseling.
- Programs should establish formal agreements with employers or sponsors for entry into RAs following the preapprenticeship.
- Programs should recruit potential employers or sponsors to establish new RAs.

As exemplified by a number of the specific programs discussed in this section, preapprenticeship programs are particularly helpful in situations of transition, where workers need income while training yet may not have the entry-level skills needed to be eligible for a job in a new sector or an apprenticeship in a new sector, and where there is often a complex set of challenges in the background, such as substance abuse, child care needs, or unique health care requirements (e.g. health conditions associated with coal mining).

Apprenticeships are likely to play an important role in just transition—where there is a simultaneous need to bring in a paycheck while advancing skills for a new or modified career pathway. Additionally, the integral role of industry in defining and delivering trainings is a strong feature, since new employment opportunities may appear in emerging industries (such as clean energy industries like carbon capture and sequestration, hydrogen production, and renewable energy installation) that demand novel, highly specialized skill sets. However, one can also imagine potential geographic challenges if apprenticeships—say, in emerging industries—are available with firms situated outside the regions undergoing decline. The need for geographic synchronization between new jobs and displaced workers is a deep challenge facing just transition policy.

3.2.1.4. Workforce Opportunity for Rural Communities Initiative

The Workforce Opportunity for Rural Communities (WORC) Initiative is an ETA¹² grantmaking program designed to align workforce development initiatives with regional development strategies in Appalachian and Mississippi Delta communities undergoing a difficult economic transition (ETA 2020).

Grants are available to organizations delivering workforce development services, with emphasis on projects that align with state, regional, or community economic development strategies; there is also emphasis on workforce development projects that help address the opioid crisis in Appalachia.

The WORC Initiative has a clear link to just transition, and one of the defining features is the explicit harmonization of workforce training and broader economic development strategies. This type of approach is discussed by (Harper-Anderson 2008), who emphasizes the importance of coordinating education, workforce development, and economic development efforts.

3.2.1.5. Trade Adjustment Assistance for Workers

The Trade Adjustment Assistance (TAA) program—established by the 1974 Trade Act and reauthorized through FY2021 by the Trade Adjustment Assistance Reauthorization Act of 2015—is a multiagency initiative to mitigate negative labor market and economic effects of federal trade policy. Because of its similar motivation, TAA provides policy examples relevant to just transition.

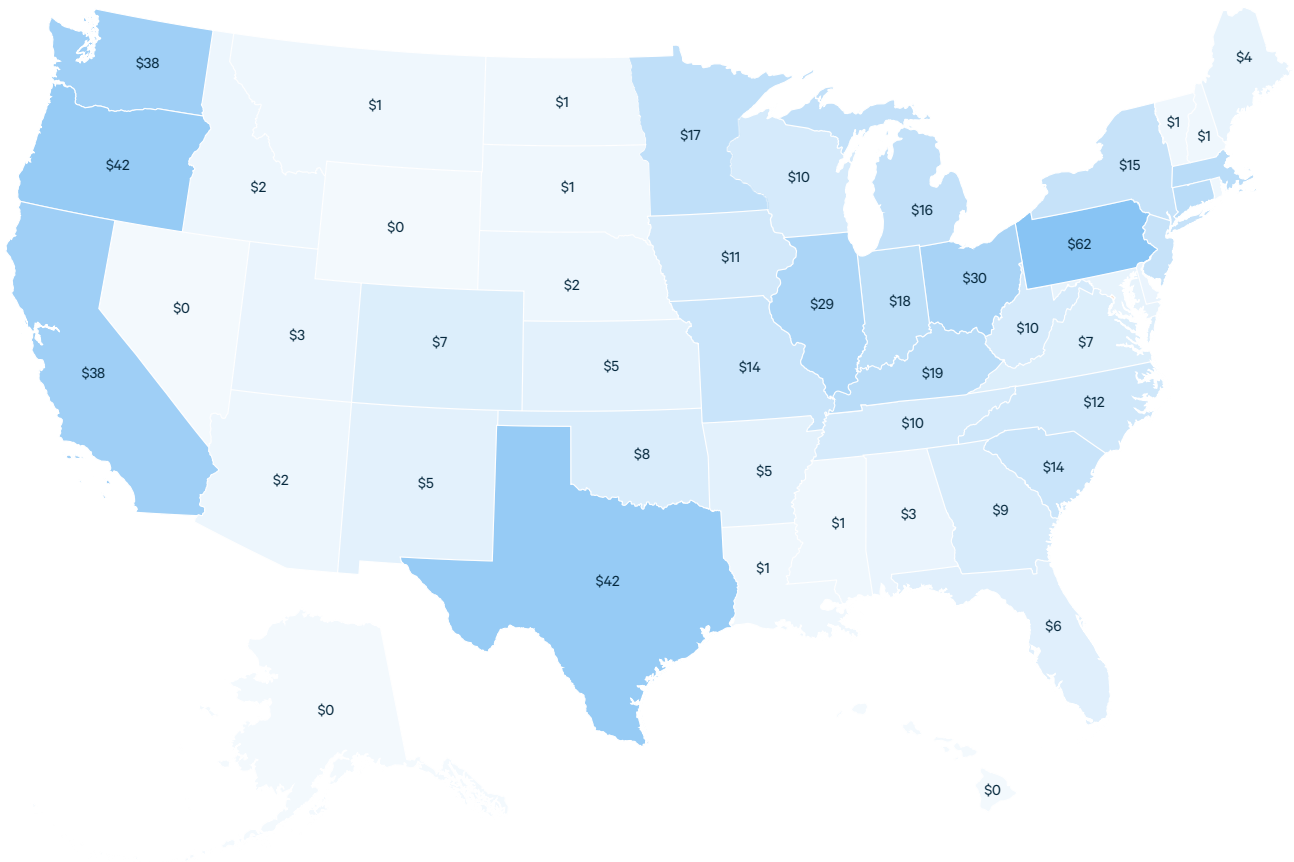
TAA is a *targeted* program. To be eligible, workers must go through a two-step process. First, a group of workers must petition ETA for a determination that their jobs were lost or are in jeopardy at least in part because of foreign trade, as defined by various criteria (Section 6).

12 ETA administers WORC in partnership with the Appalachian Regional Commission (discussed below) and the Delta Regional Authority (an economic development agency covering eight states near the Mississippi River Delta).

Second, after a group is certified, individual workers in that group apply to local AJCs for TAA benefits, such as job training and career services. In addition to training, like the majority of workforce programs, TAA provides various ancillary supports, such as case management and direct financial supports like relocation and job search allowances (Section 3.3). In FY2018, ETA certified 80 percent of worker group petitions, and nearly 35,000 workers received TAA support services (Adamopoulos 2018). Figure 3 shows the total 2019 TAA spending by state.

If a similar two-step process were developed in a just transition policy, one consideration is how to make step 1, the determination process, user-friendly and efficient. Delays in determinations could lead to unnecessary economic hardship for workers and communities and cause political blowback. One way around this could be to presumptively declare a determination for certain groups of workers (e.g., all coal miners or all workers at coal-fired power plants) while creating a process for other groups to petition.

Figure 3. TAA Spending in FY2019 (million\$), by State



Source: DOL (2019c).

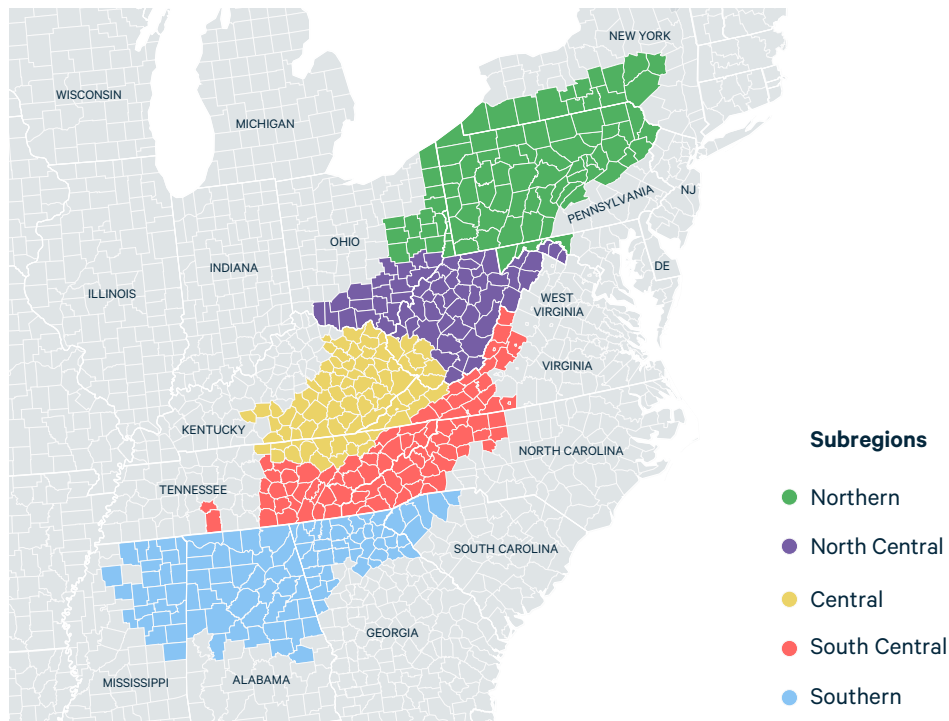
Decker and Corson (1995) find that TAA has successfully identified workers who were permanently laid off and experiencing a large decrease in earnings. They also find that participants saw an increase of about 20 percent in their reemployment rate. However, they see no effect on earnings. Marcal (2001) uses the same TAA survey data and finds similar results, with TAA trainees experiencing a 10 percent increase in employment relative to TAA enrollees who did not receive training, but no effect on wages.

Reynolds and Palatucci (2012) use more recent survey data and find further evidence that TAA training improves outcomes. Compared with untrained TAA participants, trainees increased reemployment rates by 10 to 12 percent and reduced their earnings losses by 8 to 10 percent. A recent analysis by Barnette and Park (2016) found that TAA training reduced wage losses by 46 percent.

3.2.2. Appalachian Regional Commission POWER Grants

The Appalachian Regional Commission (ARC), a collaboration among local, state, and federal partners, was established by Congress in 1965 as a regional agency focused on building community capacity and bolstering economic development across a 13-state area from New York to Mississippi (ARC 2020a), as shown in Figure 4.

Figure 4. Counties Supported by the Appalachian Regional Commission



Source: ARC (2009).

ARC’s education and training programs address a range of subjects, including workforce skills, early childhood education, dropout prevention, and improved college attendance. ARC programs provide important examples for just transition policymaking. Arguably one of the most significant features is that ARC programs are often both “tailored” and “targeted” (*Box 3*). ARC’s POWER program, for example, targets both a sector (coal) and a region (Appalachia), and it tailors its service delivery to each community where services are offered. As energy economies—especially coal, oil and gas production—are situated in specific geographic basins, this geographic targeting could be an important model for just transition policymakers to consider.

3.2.3. Small Business Administration Entrepreneur Training and Technical Assistance

An important component of US workforce training policy is the group of programs offered by the Small Business Administration (SBA) in support of entrepreneurs. SBA was founded as a cabinet-level agency in 1953 to protect and expand the interests of small businesses and to strengthen the US economy overall. It provides financial assistance to small businesses, sets targets for federal procurement dollars to go to small businesses, advocates on behalf of small businesses, and delivers training and technical assistance to small businesses and aspiring entrepreneurs (Department of the Treasury 2019).

SBA-funded skill development focuses on small business management and entrepreneurship. This includes advising on all aspects of business management—accounting, marketing, business expansion, financing, human resources—as well as more nuanced issues, such as securing government procurement contracts (which was explicitly called for in the enacting legislation). Some of these opportunities are organized training programs, similar to the structured courses offered by ETA. Other of these opportunities—those referred to as “technical assistance”—are delivered on an ad hoc basis to meet the immediate needs of small business operators and entrepreneurs.¹³ Below we briefly discuss several SBA training and technical assistance programs (see Section 6 for more detail and information on additional SBA programs).

3.2.3.1. Small Business Development Center, Women’s Business Centers, and Veterans Business Outreach Centers

Small Business Development Centers (SBDCs), Women’s Business Centers (WBCs), and Veterans Business Outreach Centers (VBOCs) support small businesses by facilitating access to a host of SBA programs at low or no cost. Entrepreneurs can access expertise in business start-up, marketing, technology transfer, government contracting, manufacturing, sales, accounting, exporting, and other topics. Most of the services are provided on a one-on-one confidential counseling basis (Dilger 2020b); however, SBA centers also provide structured group courses, workshops, and webinars,

13 Because these technical assistance services advance the skills of business managers and entrepreneurs, we consider them a type of training.

often in partnership with a chamber of commerce, college, or community development organization (e.g., see UMass Amherst 2019).

SBDCs are open to all small businesses, whereas WBCs are focused on women-owned businesses, and VBOCs provide entrepreneurial training and resources for transitioning service members, veterans, and their spouses.

Each state—as well as the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and American Samoa—has one lead SBDC service center (except for Texas and California, which have four and six, respectively). These lead SBDCs coordinate and provide resources to the 900 local SBDC outreach locations nationwide. This system allows each SBDC to tailor its support to local circumstances. There are 125 WBCs and 22 VBOCs nationwide (Dilger 2020a).

Training for entrepreneurs is an important component of a just transition workforce development policy. Not only does it support entrepreneurs in running their businesses, but it also helps facilitate the establishment of small businesses in declining regional economies. New businesses are the engines of transition, offering new jobs to workers and rebuilding the state and local tax base. The SBA centers, like the American Job Centers, are also a good example of centralized service delivery. This is particularly useful when multiple programs offered—something that is likely to be the case in the just transition context. SBA centers may therefore provide a useful administrative example for how to design just transition service delivery.

3.2.3.2. Microloan Technical Assistance Program

The Microloan Technical Assistance Program (MTAP) funds business training and technical assistance to small businesses that borrow funds under the SBA microloan lending program. Though not required by SBA, many microloan intermediaries (the entities that interface with participants) require borrowers to participate in the MTAP as a condition of receiving access to the core microloan financing. This combination of financing and training is a unique feature of this program (Dilger 2019). It could be seen as another example of bundled service delivery, where a single program offers an array of services that, when offered in tandem, increase the probability of success for program participants. This is a model that is likely to benefit workers and communities in transition.

3.2.3.3. SCORE

SCORE is a 501(c)(3) nonprofit that partners with SBA to provide mentoring, education, and online resources to small businesses and entrepreneurs. It maintains a network of more than 11,000 volunteer business mentors across 300 local chapters and 800 branch offices (SCORE 2019).

Two separate studies find that SCORE has generally been successful, increasing business participation in SBA programs and reducing costs by working with volunteers (Brudney 1986; Brudney and Gazley 2002). However, these results are

largely qualitative and do not measure business longevity, sales, employment, or other outcomes of interest.

SCORE provides interesting examples for just transition policymaking. First is simply the administrative structure. The use of a 501(c)(3) may allow for independence and flexibility in service delivery that could be useful for communities in transition. Second, the model of peer-to-peer mentoring is likely to have beneficial application in a JT context. Insights and skills, as well as perhaps nuanced empathy, can be transferred from individuals in similar circumstances. And third, although the SCORE model pairs entrepreneurs, a similar approach could connect municipal officials, planning agency leaders, or local nonprofit directors trying to address the fiscal challenges of transition and support to communities in transition. In many ways this is a model of sharing best practices, which is a proven method for building both organizational and individual capacity.

3.2.3.4. Makerspace Training, Collaboration, and Hiring (MaTCH) Pilot Competition:

The MaTCH Pilot Competition is an SBA initiative, launched in May 2019, that awards \$1 million in total prizes to proposals for creating or expanding job-specific training programs in existing makerspaces. Programs are judged on their ability to place participants in skilled positions following their completion of the course, with the goal of having all program graduates “immediately placed in positions with previously identified employers that are in need of skilled labor” (SBA 2020b). Programs are also encouraged to offer industry or trade certifications where possible.

The MaTCH program provides an interesting example of how to use the technical capacities of existing facilities for innovative job training and skill development. The program also demonstrates the use of a prize or pilot policy model as a way to facilitate competition and innovation in workforce development service delivery. Both features could inform just transition policy design in cases where facility assets may be limited—for example, in rural and low-income regions, where existing community assets must be used creatively—and in cases where innovation in workforce service delivery is essential to meet both the workforce demands of emerging sectors and the needs of workers and communities in difficult circumstances.

3.2.3.5. Evaluation of SBA Programs

Chrisman et al. (1987) use survey data from 1980 to 1984 and find that SBDC clients in Georgia and South Carolina started more businesses and saw greater business survival rates compared with nonclients. They estimate that tax revenues generated by SBDC-related new businesses outweighed program costs by factors of 3.8 and 1.5 for Georgia and South Carolina, respectively. However, survey response rates were quite low (12 percent and 14 percent, respectively), raising potential concerns over the validity and generalizability of results (Gu et al. 2008).

More broadly, Miron and McClelland (1979) investigate the effects of SBA entrepreneurship training for small businesses using survey data from individuals

participating in “achievement motivation training” sessions in nine U.S. cities over roughly three years in the early 1970s. They compare a variety of outcomes for participants with the nation as a whole, finding large benefits, including growth in monthly sales (246 percent growth for participants versus 24 percent nationally), monthly profits (294 percent versus 54 percent), and personal income (150 percent versus 34 percent). Although these results are quite positive, the data exclude a substantial number of participants who either dropped out or did not report outcomes.

Improving SBA program efficiency has been an ongoing objective of federal policymakers, with many arguing that some of its technical assistance programs are duplicative. The Obama administration repeatedly recommended ending funding to the Program for Investment in Micro-Entrepreneurs technical assistance program on this basis. Likewise, the House Committee on Small Business has called for streamlining SBA’s technical assistance programs in each of its “Views and Estimates” letters to the House Budget Committee since FY2013 (Dilger 2020b).

3.2.4. Post-9/11 GI Bill

The Department of Veterans Affairs administers several programs, collectively known as GI Bills, that provide educational and training opportunities to former service members and their families. The Post-9/11 Veterans’ Education Assistance Act of 2008 (also known as the Post-9/11 GI Bill) has, since FY2013, accounted for roughly 80 percent of the department’s spending on GI Bills. The Post-9/11 GI Bill provides to eligible veterans benefits that include tuition, tutor payments, relocation assistance, and other costs associated with education (Dortch 2018).

GI Bills are examples of demographically targeted workforce training policies, and they are another example of how targeting allows for program customization relevant to the needs and circumstances of the target population—likely a feature that would strengthen the efficacy of workforce programs in a just transition context. One unique feature of the GI Bill model of targeting is what we may consider its *transferability*, or perhaps more accurately its *extendability*—that is, it is accessible not only to the primary target population (former service members) but also to their families. Insofar as transition circumstances impose broad challenges for communities, this extendability may be worth considering in a JT context.

Another important feature of the GI Bill system is that it supports not only vocational training but education of all kinds, including higher education. Policymakers may not want to limit the training and educational opportunities for workers in transition and therefore may find a useful example in the GI Bills.

3.2.5. Adult Education and Family Literacy Act

The Adult Education and Family Literacy Act (AEFLA) (WIOA Title II), administered by the Department of Education, is the primary source of federal funding for states to administer basic education programs for out-of-school adults. The programs seek to

foster literacy, employable skills, self-sufficiency, child care skills, and attainment of secondary education equivalency.

Like the Post-9/11 GI-Bill, AEFLA provides an example of workforce development that goes beyond vocational training to broader forms of education. As discussed above, policymakers may want to consider including such features in JT policy, providing the greatest possible array of opportunities for self-advancement to workers and communities in transition.

3.2.6. Vocational Rehabilitation Grants

Another Department of Education program, Title I of the Rehabilitation Act of 1973, seeks to prepare disabled individuals for employment by providing vocational rehabilitation grants for training programs. The goal of VR grants is to facilitate training and employment for individuals whose disabilities may make it difficult for them to find work. The grants support counseling, job search assistance, training, education, and postemployment support services.

Because work in many fossil fuel-producing jobs is physically demanding, it is not uncommon for workers to have disabilities. The VR grant program combines the workforce development aspects of just transition with a thoughtful approach to supporting and engaging workers and communities with disabilities. This is another example of program targeting as well as bundled service delivery.¹⁴

3.2.7. State Job Training Programs

Here we look at a small subset of state workforce development policies that have a strong nexus with just transition—specifically, policies that are focused on energy sector jobs. Each program emphasizes training for clean energy jobs specifically. Although clean energy will surely play an important part in the decarbonization aspects of a just transition, jobs in this sector will likely be only a portion of opportunities for workers in transition, and we do not presuppose that just transition workforce development policy would or should be limited to employment in clean energy. That said, for the dual goals of decarbonization and workforce development, channeling clean energy capital—and associated economic opportunities—toward communities hardest hit by transition can be a win-win. In addition, the state policies we review below generally target historically underserved communities rather than recently displaced workers.

14 See Higdon and Robertson (2020), an earlier report in this series, for a discussion of the array of benefits designed to support workers with disabilities, including the Black Lung Liability Trust Fund.

3.2.7.1. New Mexico

In 2019, New Mexico enacted [Senate Bill 489](#), the Energy Transition Act. The legislation sets targets for decarbonizing the electricity sector and promoting renewable energy development, including a goal that all electricity from public utilities come from emissions-free sources by 2045. The legislation also establishes three funds to support workers and communities affected by the closure of coal-fired power plants. To develop these plans, agencies are required to gather input from stakeholders and the public. Many details of these programs have yet to be developed; however, the legislation did include some specifics related to how the programs should be *targeted* (which communities should be eligible).

One such detail is that eligible communities must be in a county that is within 100 miles of the closing facility and experiences the loss of at least 40 related jobs. Workers are eligible for support if they have been laid off within the previous 12 months and received at least 75 percent of their income from employment at the affected plant. This is an example of a JT-specific targeting framework that federal policymakers may want to consider. One challenge, however, will be determining what constitutes a “related” job loss, given the many degrees of interdependence in the context of major economic transitions.

3.2.7.2. Illinois

The Future Energy Jobs Act (IL Public Act 099-0906) implements many changes to Illinois energy and environmental policies: expanding energy efficiency investments, boosting renewable and zero-carbon electricity generation, providing funding for job training, and more.

Large utilities (those with more than 3 million customers in the state) are required to spend \$10 million per year in 2017, 2021, and 2025 on job training programs. The job training programs are targeted toward minorities, former foster children, those with criminal records, and low-income, rural, and environmental justice communities.

One unique feature is that many of the clean energy and renewable energy projects funded by the Future Energy Jobs Act are to be located in the same disadvantaged communities where job training is targeted. This approach to combining workforce development with meaningful capital investment in target communities produces several benefits that policymakers designing just transition policy might consider. For one, it provides an immediate infusion of capital to the local economy, producing a near-term stimulus to the local economy and extending a lifeline to state and local governments struggling to maintain fiscal solvency amid transition. Also, many projects establish the conditions for long-term economic stability by building a new asset base and infrastructure in areas where assets are dwindling with the receding industries. Finally, in terms of workforce development, these targeted capital investments could (though do not necessarily) boost local labor demand, increasing the chances that training participants can land a job within their own community at the end of their programs.

3.2.7.3. California

Two California initiatives are designed to support clean energy workforce development statewide. Similar to the Illinois Future Energy Jobs Act, both programs target historically disadvantaged and underemployed communities.

The *Clean Energy Workforce Training Program* aims to train a workforce (including unemployed individuals, existing workers who need new skills, low-wage workers, and youth entering the workforce) capable of taking advantage of new employment opportunities in “green” jobs, such as energy and water efficiency, renewable energy generation, and electric grid modernization (Gaffney et al. 2014).

Similarly, the *California Clean Energy Jobs Act* seeks to increase jobs in clean energy, in part by offering clean energy workforce training programs—especially for disadvantaged youth and veterans. Eligible grantees include community and technical colleges, local WBDs, and building trades organizations.

3.3. Direct Financial and Ancillary Supports

Beyond career services and training for workers, some federal workforce policies provide direct financial support or other foundational supports, such as subsidized housing. Policies that incorporate these supports acknowledge that workers undergoing transition may face barriers—lost income, substance abuse, relocation costs, child care costs, and more. By providing housing support, subsidized employment, tax credits, and vouchers for different services, various federal policies aim to address this need and make workforce development opportunities more accessible. Below we group such policies into three categories—income supports, tax incentives, and ancillary supports—and discuss prominent examples.

3.3.1. Income Supports

3.3.1.1. Unemployment Insurance

The primary national income support program in the United States is Unemployment Insurance (UI), which provides temporary taxable payments to unemployed individuals, typically based on a percentage of earnings over the most recent year. The main component of the UI program is Unemployment Compensation, which provides weekly cash payments for up to 26 weeks to eligible individuals. These payments can be extended in certain cases for an additional 13 or 20 weeks via the Extended Benefits program (Collins et al. 2019). Individuals are eligible if they have been separated from their job through no fault of their own and meet their state’s work and wage requirements (CareerOneStop 2020).

As the mainstay income support program in the United States, UI is likely to be important in a just transition, and policymakers may want to consider potential modifications targeted for individuals experiencing economic hardship due to energy transition (please see Higdon and Robertson (2020) for more detail).

3.3.1.2. Trade Adjustment Assistance for Workers

The TAA program, discussed above, provides various income supports as well as job training to workers who have been displaced because of an international trade-related market disruption. A number of TAA benefits are direct financial transfers to eligible workers (see Section 3.2 for detail on TAA eligibility) to mitigate the immediate financial upheaval of job loss. Below is a summary of TAA programs that provide direct financial benefits.

3.3.1.2.1. Trade Readjustment Allowance

Trade Readjustment Allowance (TRA) is a weekly cash payment for TAA-certified workers who are enrolled in an eligible training program and have exhausted their state UC benefits. Through TAA funding channels, these workers receive payments equal in value to their previous UC payments. Workers can receive up to 130 weeks of combined UC and TRA, the last 13 weeks of which are provided only if needed to support a worker in completing an eligible training (Collins 2019).

TRA is an example of a carve-out income support that builds on the foundation of the UI-UC system. Such a carve-out could be a suitable way of extending UI benefits to workers displaced by energy transition.

3.3.1.2.2. Reemployment Trade Adjustment Assistance

Reemployment Trade Adjustment Assistance (RTAA) supports individuals age 50 or older who return to work earning less than in their prior trade-affected jobs. The program covers 50 percent of the difference between the workers' current and previous earnings, with a maximum benefit of \$10,000 over two years. To be eligible, individuals must either work full-time or work at least 20 hours a week and be enrolled in TAA-approved training (Collins 2019).

RTAA is an example of wage insurance, which may help ensure that workers who lose a job because of the energy transition are kept whole. The job training and career services programs discussed above are vital in preparing workers for a new career, but they do not have the power to ensure that a new job will be equal in quality to a worker's previous job, including with respect to compensation. This is where income supports like wage insurance are instrumental: they can guarantee workers some degree of parity in pay (not the only determinant of job quality, but an important one). Further research should be devoted to studying the extent to which the 50 percent and \$10,000 limits, mentioned above, are adequate to truly achieve income parity for workers in transition.

3.3.1.2.3. Relocation and Job Search Allowances

TAA-eligible workers who secure long-term employment outside their commuting range, following disruption from federal trade policy, can receive financial assistance either to cover commuting and "subsistence" costs (Job Search Allowance) or to

relocate closer to their new place of work (Relocation Allowance). Allowances are available for up to 90 percent of costs and up to \$1,250 for each category (Collins 2019).

This provision clearly has relevance to a just transition, acknowledging that transition comes with often-overlooked costs like relocation and that public agencies plausibly have a role in defraying such costs.

3.3.1.3. Employment and Training Administration Programs

ETA sponsors various programs that include income supports, which could provide useful examples for just transition policy, or may even have a direct role in a transition package. The important feature shared by all these programs from a just transition perspective is that they provide subsidized employment during training. While the goal of the federal government's primary workforce development policy (the WIOA) is to provide unsubsidized employment, programs that subsidize employment as a bridge to unsubsidized jobs may play an important role in just transition.

Four ETA programs that include subsidies for employment are summarized briefly below.

3.3.1.3.1. Apprenticeship Program

As mentioned above (Section 3.2.1.3), the apprenticeships supported by the ETA Apprenticeship Program provide a source of income for participants while they build their skills, making such programs highly effective for workers in transition.

3.3.1.3.2. Youth Activities State Formula Grant Program

The ETA Youth program (Section 3.2.1.1) subsidizes employment for eligible youth by requiring local WDBs to allocate at least 20 percent of their Youth Activities funds to covering paid and unpaid employment with an "occupational education component" (Bradley 2015).

3.3.1.3.3. The National Dislocated Worker Grants Program

In addition to providing training and career services, the National Dislocated Worker Grants (NDWG) program allows grantees to cover "disaster relief employment." These funds directly cover wages for work related to a disaster for a period of up to 12 months (Bradley 2015).

3.3.1.3.4. Senior Community Service Employment Program

The Senior Community Service Employment Program (SCSEP), also known as the Community Service Employment for Older Americans program, provides part-time, paid community service positions and work-based training, as well as access to employment services, for low-income, unemployed seniors (ages 55 and over, with income no more than 125 percent of the poverty level). Seniors conduct community

service at nonprofit and public organizations, thereby providing millions of hours of service to agencies in need while also receiving a subsidized wage (DOL 2020b).

3.3.2. Tax Incentives

3.3.2.1. Work Opportunity Tax Credit

The Work Opportunity Tax Credit (WOTC) incentivizes employers to hire individuals from disadvantaged communities, including qualified veterans, ex-felons, those with mental or physical disabilities, and those receiving support from Temporary Assistance for Needy Families (TANF), Supplemental Nutritional Assistance Program (SNAP), or Supplemental Security Income (SSI). The WOTC is limited to the amount of business income tax liability or social security tax owed, and claimed against the employer's income tax or social security tax for taxable or tax-exempt employers, respectively (IRS 2020b).

Hamersma (2008) examines the WOTC and Welfare-to-Work (WtW) tax credit programs and their effects on employment and earnings. Short-term results show that WOTC or WtW eligibility is linked to a 6 percent higher probability of being employed within six months of becoming eligible. However, over the following 18 months, the effects are close to zero.

For wage effects, WOTC or WtW certification (the point at which an eligible individual becomes an active participant in the program) has been shown to increase earnings by 9 percent relative to uncertified workers. However, these higher wages are equal to just 38 percent of the subsidy itself, suggesting that the majority of the subsidy goes to employers. In addition, there is no evidence that certified workers hold their jobs for longer than uncertified workers (Hamersma 2008). Hamersma also finds low participation rates, suggesting the program has a relatively small impact on the labor market.

One concern with the WOTC program has been that employers could maximize their tax credit by accelerating worker turnover, receiving the credit with each new eligible employee. However, a 2001 report finds that this phenomenon is very limited to nonexistent (GAO 2001).

WOTC is an example of a demographically targeted tax credit, and it therefore could provide a template for a tax credit for businesses that hire workers in the energy transition.

3.3.2.2. Lifetime Learning Credit

The Lifetime Learning Credit (LLC) can be used on tuition and education-related expenses paid by students in an undergraduate, graduate, or professional degree program. There is no limit on the number of years one can claim the credit, and it can be used for courses that improve job skills. It is worth up to \$2,000 dollars in each tax

return, or 10 percent of the first \$10,000 in education costs. At the time of publication, individuals must make less than \$69,000 annually to claim the LLC (IRS 2020a).

3.3.2.3. American Opportunity Tax Credit

The American Opportunity Tax Credit (AOTC) is a time-limited benefit available to students pursuing a degree or other education credential, including vocational school. The AOTC provides up to \$2,500 per eligible student with an individual income under \$90,000. It can be claimed on only four tax returns per eligible student (IRS 2020b).

Both the LLC and the AOTC could be helpful for defraying education costs for workers in transition. However, one weakness of such a policy in a just transition context—as with any tax credit for individuals—is that workers and communities in transition may not have enough tax liability to make use of the credit. Alternatively, currently employed workers anticipating transition may earn more than the current eligibility thresholds. Policymakers could therefore consider making such a credit refundable and subject to a higher income eligibility threshold for workers in transition.

Another weakness is that the tax code (and its various tax incentives) is not known for its user-friendly accessibility. This may reduce the extent to which workers and communities in transition would realistically use such a benefit. This obstacle could perhaps be addressed by including information and tax filing assistance at workforce service delivery sites, such as AJCs.

3.3.2.4. Business Deduction for Work-Related Education

Individuals can deduct the costs associated with work-related education from their taxable income. Qualifying education expenses include the following:

- education required by one’s employer by law or to keep one’s present salary, status, or job;
- education required to maintain or improve work skills needed in one’s current position;
- education that does not qualify one for a new trade; and
- education that was not required to acquire one’s present position (IRS 2020b).

In a worker transition context, policymakers may want to consider relaxing limitations on deducting expenses associated with securing new employment.

3.3.3. Ancillary Supports

In addition to direct financial supports in the form of unemployment compensation, subsidized wages, or other income supports, workforce development programs often include what we call ancillary supports—assistance for foundational life needs, including housing, transportation, substance abuse therapy, and childcare. These

supports could be essential for many workers in transition, enabling them to be successful in job training programs and the broader process of securing employment. The following programs offer such supports.

3.3.3.1. ETA Programs

A number of the ETA programs discussed in detail above (Section 3.1.1) provide ancillary supports. We offer brief summaries of the ancillary support components below.

3.3.3.1.1. Job Corps

As discussed above, Job Corps provides various employment-related services and skills trainings to disadvantaged youth ages 16 to 24. In addition, Job Corps offers ancillary supports to help program participants succeed, including supports for child care, transportation, recreational activities, and living expenses (Bradley 2015).

3.3.3.1.2. National Farmworker Jobs Program

One of the core functions of the National Farmworker Jobs Program (NFJP), in addition to career services and job training, is to ensure that quality housing is available to migrant and seasonal farmworkers. ETA provides grants to local entities that subsidize housing for farmworkers. Funds cover “direct payments for emergency and temporary housing and for direct investments in housing assistance for [farmworkers] at their permanent residence” (DOL 2020l).

3.3.3.1.3. Reentry Employment Opportunities

As discussed above, the Reentry Employment Opportunities (REO) program provides employment and reentry services to formerly incarcerated individuals. In addition to job training, REO funds supports such as child care, housing, transportation, family unification services, and legal assistance (DOL 2020g).

3.3.3.2. SNAP Employment and Training Program

The Employment and Training (E&T) program provides SNAP participants with skills, training, and education to find quality work. In addition, E&T funding can cover supportive services that enable individuals to participate in E&T programming. Supporting services can include transportation, child care, and educational supplies required to complete the E&T programming (USDA 2020).

3.4. Research and Programmatic Technical Assistance

A basic goal of the American workforce development system is providing workers, job seekers, entrepreneurs, policymakers, and others with access to high-quality information, research, and expertise. This includes conducting foundational labor market research, like that produced by the Bureau of Labor Statistics, as well providing what we refer to here as *programmatic technical assistance*—federal assistance to state and local governments, industries, and service delivery entities in the design and delivery of effective workforce development initiatives.¹⁵ An energy transition of the scale underway, and of the scale contemplated with deep decarbonization, will present novel challenges to labor markets and the economy. High-quality data and information will enable researchers, policymakers, and stakeholders to navigate these challenges, giving them the building blocks needed for understanding the nuances of the challenges and for formulating appropriate policy responses. Below is a summary of a sample of federal resources that provide these functions.

3.4.1. DOE Jobs Strategy Council

The Jobs Strategy Council (JSC) was created in 2014 to channel the expertise of the Department of Energy—through conducting research, producing toolkits, facilitating interagency coordination and providing technical assistance to businesses and communities—to support the workforce and economic development needs of the US energy and advanced manufacturing sectors (DOE 2020). The JSC was a component of the Obama administration’s POWER Initiative, with the directive to provide DOE expertise as needed to POWER grant recipients on a range of energy topics.

The JSC charter lists several objectives, such as the following:

- conducting research and reporting on US energy job growth, including oversight of the US Energy and Employment Report;
- identifying barriers to entry and compiling studies on skills needed for various energy sector jobs to inform workforce development policies;
- implementing workforce development strategies to leverage opportunities in the energy sector; and
- collaborating with other agencies and programs to ensure policy synergy and avoid duplicating efforts.

The JSC coordinates specific workforce initiatives with the goal of addressing skills gaps and providing a pipeline of qualified workers in energy and advanced manufacturing sectors. The JSC workforce programs target their efforts on veterans and disadvantaged populations. Examples:

¹⁵ We distinguish programmatic technical assistance from technical assistance to small businesses and entrepreneurs (Section 3.2, Job Training).

- *Energy and Advanced Manufacturing Workforce Initiative.* This initiative coordinates efforts across agencies with portfolios of activities or funding opportunities in energy and advanced manufacturing job growth and training (DOE 2020).
- *Utility Industry Workforce Initiative.* This initiative promotes the employment and training of exiting service members, veterans, and their spouses in preparation for jobs in the utility industry (DOE 2020).
- *Pittsburgh Veterans and Transitioning Service Members Hiring Initiative.* This initiative supports the City of Pittsburgh and the Allegheny Conference in improving the city’s workforce development system, with an emphasis on training veterans for energy and manufacturing jobs in Pittsburgh (JSC 2016).
- *Aluminum Association Workforce Initiative.* This initiative, which builds on a cooperative agreement between DOE and the Aluminum Association, supports the development of a skilled workforce for the aluminum industry, with emphasis on improving energy-efficient operations in the aluminum industry (JSC 2016).

The JSC is one of the few federal workforce development initiatives focused specifically on the energy sector, making it particularly relevant to a just transition. One of its primary functions is to interface with industry partners to identify the workforce needs and opportunities for various energy and manufacturing sectors. This function is likely to be instrumental in designing effective workforce development programs in a just transition context, with both incumbent and emerging employers in the energy and industrial sectors. The JSC arguably has a comparative advantage over other federal programs that partner with industry in workforce development (such as the ETA Apprenticeship Program) insofar as DOE can bring its own technical expertise to the table—for example, helping industries integrate innovative production activities (from plant improvements in energy efficiency to technology research and development) with workforce training. The JSC also could be important in a coordinated interagency effort to provide workforce development in a JT context.

3.4.2. Department of Labor Programs

Below is a sample of DOL programs related to research and programmatic technical assistance; this set is not meant to be an exhaustive representation of what DOL offers in this domain.

3.4.2.1. Bureau of Labor Statistics

The Bureau of Labor Statistics (BLS) is the federal government’s chief data collection agency on topics related to labor market activity, working conditions, and productivity in the US economy. The BLS website provides public data on these subjects (BLS 2020). Data from the BLS is leveraged by public and private entities to support decision making, and there is extensive “customer service” available for individuals or organizations interested in utilizing the data.

3.4.2.2. Technical Assistance Program

As required by WIOA, ETA provides three forms of “programmatic” technical assistance related to its workforce development programs:

- general technical assistance to train local and state WDBs;
- technical assistance to states that do not meet performance accountability measures for dislocated workers, funded through no more than 5 percent of the Dislocated Worker National Reserve; and
- creation of a system for sharing workforce development best practices among states (Bradley 2015).

3.4.2.3. Research and Evaluation Program

The ETA Division of Research and Evaluation gathers evidence on the effectiveness of DOL’s programs to inform future policymaking. WIOA authorizes DOL to undertake three forms of research and evaluation:

- ongoing evaluation of programs and activities authorized by WIOA;
- biennial publication of a five-year plan for research, studies, and multistate projects to identify needs and solutions for employment or workforce training, including specialized analysis of the needs of various subpopulations and industries and systems for sharing best practices; and
- pilot projects and demonstrations to meet the needs of dislocated workers (Bradley 2015).

Each of these DOL programs provides an important scaffolding of knowledge and information exchange for all the workforce development policies discussed above. This includes knowledge about the needs of specific labor markets and workers, and a system for building and disseminating best practices for workforce development. This nerve center is likely to be important in a just transition context, where American workers will confront both novel opportunities and challenges, and therefore where high-quality information will be needed to develop and adapt effective policy solutions. Just transition workforce policy also may deploy a historic amount of public funds, calling for robust post hoc program evaluation to ensure that taxpayer dollars are spent efficiently over time and that measurable benefits for workers and communities are being achieved.

4. Labor Standards

Whereas workforce development programs aim to prepare individuals to enter or reenter the labor market, strong labor standards ensure that employment opportunities are safe and fairly compensated—in other words, that new jobs are quality jobs. Below we discuss a sample of federal labor standards, emphasizing those with a strong link to a just transition.

We separate these labor standards into four main categories:

- fair compensation and benefits;
- unionization protections;
- transition support; and
- occupational safety.

Our review of labor standards yields the following insights related to a just transition:

1. Broadly speaking, labor standards have been shown to be positively correlated with economic productivity and growth (Bivens 2003; Palley 2004; Christensen and Buchele 2003; Acemoglu and Shimer 2000), and can help economies avoid and recover from economic shocks by boosting domestic/local demand and by making workers more resilient (Bivens 2003). These findings indicate that meaningful labor standards are important in a just transition—not only to provide needed protections for workers but also to undergird a strong and efficient economy.
2. Labor standards can create basic protections for workers in transition, including by requiring advance warning before termination (e.g., WARN), providing bridge benefits like employer-sponsored health care (e.g., COBRA), and ensuring that in new jobs, workers are protected against workplace hazards (e.g., OSHA).
3. Compensation standards like a minimum wage have been correlated with periods of strong economic growth (Reich 2015) and may improve distributional equity by boosting earnings for low-income workers (Bivens 2003; Card and Krueger 1995; Machin and Manning 1997). However, economists disagree on whether a higher minimum wage produces net benefits for workers. Policymakers should carefully consider how federal compensation standards can best support energy workers in transition.
4. Labor standards can help bolster unionization, which the literature connects to a range of positive outcomes for workers and the economy as a whole. Benefits of unionization include more equitable compensation, an active voice for workers in their firms and communities, reduced job turnover, and greater incentives to invest in productivity-enhancing job training. Unionization can help ensure that new jobs for workers in transition provide benefits similar to those of prior fossil energy jobs.

Table 5 summarizes the programs we review in this section, their distinctive features, and their relevance for a just transition.

Table 5. Labor Standards Reviewed in This Section

Program	Features and relevance to just transition
Fair Labor Standards Act (FLSA)	Establishes the federal minimum wage, overtime pay rules, and youth employment standards in private and public sectors. Minimum wage rules and compensation standards help ensure a base level of pay for workers, including workers in transition.
Davis-Bacon Act (DBA) and related acts	Protects workers from wage underbidding on federally-funded (or otherwise financially supported, e.g., loan guarantees) projects. Contractors and subcontractors are required to pay their workers at least local prevailing wage and benefits. Insofar as federal funding for major projects like infrastructure may play an important role in just transition, DBA could ensure fair compensation.
Employee Retirement Income Security Act (ERISA)	Sets minimum standards for voluntarily established retirement and health plans in private industry. Aims to increase information available to workers about their job-related benefits so that they can make informed decisions. As intended, helps workers in transition know their rights with respect to benefits as they both phase out of incumbent jobs and into new jobs.
Migrant and Seasonal Agricultural Worker Protection Act (MSPA)	Establishes hiring, wage, housing, transportation and recordkeeping standards to protect migrant and seasonal agricultural workers. This could ensure better working conditions for transitioning workers in agricultural sector. Example of <i>targeted</i> labor standard.
Labor-Management Reporting and Disclosure Act (LMRDA)	Establishes regulations for labor unions to ensure that workers have access to democratic process and representation. This policy generally helps keep unions strong and healthy. Regarding transition, policymakers may need to look for ways to support unionization, an important aspect of job quality—including in emerging sectors like clean energy.
Federal Transit Act labor standards	In addition to establishing protections for employees operating federally-funded mass transit, the Federal Transit Act protects any existing collective bargaining agreements that transit workers may have with their employer and the continuation of collective bargaining rights. Another example of a labor standard that bolsters unionization, and an example of a sector-specific labor standard.
Comprehensive Omnibus Budget Reconciliation Act (COBRA) health care provisions	Requires group health plans sponsored by employers with 20 or more employees to offer employees and their families temporary extension of health coverage after coverage would normally end—including through work termination. Policies like this that ensure dislocated workers have access to affordable health care provide a fundamental support for workers in transition.

Program	Features and relevance to just transition
Worker Adjustment and Retraining Notification (WARN) Act	Protects workers from unexpected termination due to plant closure. Businesses must give 60 days' notice to their employees if possible. This kind of advanced notice has been shown to help workers find new opportunities and avoid periods of unemployment amidst transition.
Occupational Safety and Health (OSH) Act	Regulates workplace hazards, including toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, and unsanitary conditions. In a transitioning economy, with established industries under intense financial strain and the rapid growth of new industries, helps ensure that workplaces are safe—a criterion for decent, quality work.
Federal Mine Safety Act	Amended the Federal Coal Mine Safety and Health Act of 1969 to consolidate all federal regulations for mining industry—coal, metal, and nonmetal—under single statutory structure. Its safety requirements could protect miners even as profit margins narrow and firms look to cut costs. Example of <i>targeted</i> labor standard.

4.1. Fair Compensation and Benefits

Labor standards that regulate wages and benefits for workers aim to set minimum acceptable compensation for workers across the country. Following an energy transition, there may be a temporary surplus in labor supply from workers leaving declining industries. In the absence of minimum wage or compensation standards, economic theory predicts that employers would offer lower wages and fewer benefits to new workers. Policies like those described below would help ensure workers receive a fair wage regardless of labor market slack, and generally that new jobs for workers in transition are quality jobs.

4.1.1. Fair Labor Standards Act

The Fair Labor Standards Act (FLSA) establishes a federal minimum wage, overtime pay rules, and youth employment standards for workers across private and public sectors. The federal minimum wage is set at \$7.25 per hour as of July 24, 2009. Overtime pay (for hours over 40 in a week) is set at one and a half times the regular rate of pay. The act covers employers that have \$500,000 or more in annual revenue or operations that interact with the health care industry, or that are a part of a public agency—in short, it protects the vast majority of workers (DOL 2020j). FLSA acts as a federal minimum standard that all states must adhere to. Most states have additional, more stringent standards.

Reich (2015) reviewed changes in the minimum wage since the passage of FLSA in 1938 and credits the bill with ending a downward trend in wages in the late 1930s. Looking over the 20th century, Reich (2015) observes that from 1939 through the 1970s, the federal minimum wage steadily increased in real terms, coinciding broadly with economic growth for all regions of the nation. In the 1980s and beyond, the US economy generally experienced slower economic growth, and the real federal minimum wage declined in real terms (Figure 6). In contrast, the minimum wage in California continued to increase through this same period, where the rate of economic growth was also greater.

However, economists disagree on whether a higher minimum wage produces net benefits for society, since it increases employment costs and could subsequently increase the price of goods. One review of the extensive literature on minimum wage policy since the 1990s finds roughly two thirds of academic analyses identify a negative relationship between minimum wage increases and employment, particularly for young and low-skilled workers (Neumark and Wascher 2006). However, Neumark and Wascher caution that many of the analyses with very small negative or even positive employment effects take an overly narrow temporal or sectoral view, potentially masking true impacts of wage increases. Minimum wage policies are relevant to a just transition insofar as they help ensure that the new jobs awaiting workers in transition meet minimum quality standards. Wages are only one factor in job quality, but a significant one.

4.1.2. Davis-Bacon Act

The Davis-Bacon Act (DBA) is a more specific wage standard. Enacted in 1931, it protects local workers from wage underbidding for federally-funded construction projects. The law requires contractors and subcontractors working on federally funded or assisted contracts exceeding \$2,000 to pay their workers at least the local prevailing wage and fringe benefits, as evidenced by similar projects in the area .

DBA rules initially applied to federal building construction, low-income housing financed by Housing and Urban Development, federal highway infrastructure, and national park infrastructure. The requirements were later extended to a variety of “Related Acts” that applied to federal grants, loans, loan guarantees, and insurance programs. These related acts refer to 60 or so statutes that require Davis-Bacon prevailing wages to be honored, even though they go beyond the bounds of the original DBA. The McNamara-Ohara Service Contract Act and Walsh-Healey Public Contracts Act established minimum wages and labor standards (like those outlined in DBA) for service contracts and goods provision for the government, respectively.

DBA could be particularly relevant in a just transition context if federally funded infrastructure projects are deployed as a local stimulus initiative. DBA rules could ensure fair compensation for workers on new infrastructure projects.

4.1.3. Employee Retirement Income Security Act of 1974

Beyond wages, some labor standards aim to regulate job benefits. The Employee Retirement Income Security Act (ERISA) is a federal law (administered primarily by the Employee Benefits Security Administration) that sets minimum standards for voluntarily established retirement and health plans in private industry. Standards include providing information about plan features; fiduciary responsibilities for plan managers; required grievance and appeals processes for participants; and if a defined benefit plan is terminated, guaranteed benefits through the federal Pension Benefit Guaranty Corporation (DOL 2020e).

Benefits are a critical component of job quality. For workers in transition, standards like those established by ERISA therefore play an important role in ensuring that new jobs are quality, family-supporting jobs.

4.1.4. Migrant and Seasonal Agricultural Worker Protection Act

The Migrant and Seasonal Agricultural Worker Protection Act (MSPA) establishes hiring, wage, housing, transportation, and recordkeeping standards to protect migrant and seasonal agricultural workers. These workers have typically not enjoyed the protections established in other labor standard acts. The law requires farm labor contractors to register with DOL. Basic protections include providing detailed records of payment, ensuring that any housing meets health and safety standards, and requiring that all vehicles operated by laborers are inspected and insured (DOL 2020k).

4.2. Unionization Protections

Wages and benefits are typically top of mind when workers consider the attractiveness of employment, but the extent to which jobs are unionized is also an important measure of job quality. This is particularly salient in a just transition context, where a comparatively high density of jobs in carbon-intensive industries like fossil fuel-producing sectors are unionized. If one goal of a just transition is to ensure that new jobs are of equal quality to incumbent jobs, policymakers may need to look for ways to support unionization—including in emerging sectors like clean energy. Some US labor standards support the unionization of labor, as discussed below.

4.2.1. Labor-Management Reporting and Disclosure Act

The Labor-Management Reporting and Disclosure Act (LMRDA) establishes regulations for labor unions, ensuring that workers have access to democratic processes and that unions are effective at meeting the needs of their members. LMRDA establishes a bill of rights for union members, binding reporting processes for unions and their officers, standards for the regular election of union officers, and protections for union funds and assets. The regulations under LMRDA are regulated through the Office of Labor Management Standards.

4.2.2. Federal Transit Act labor standards

Union representation protections are codified for certain industries, specifically in the public sector. In addition to establishing protections for employees operating federally funded mass transit, the Mass Transit Employee Protections provisions of the Federal Transit Act protect any existing collective bargaining agreements that transit workers may have with their employer and the continuation of collective bargaining rights (OLMS 2020b).

Such protections could be relevant for sectors or industries that are attracting large numbers of new workers in a just transition context. However, one limitation to this program is that it primarily offers protections for organized labor only where collective bargaining has already been established. In cases where workers seek employment in emerging sectors, such as clean energy, collective bargaining agreements may not yet be established.

4.3. Transition Support

Most labor standards apply to an ongoing worker-employer relationship, but some standards specifically offer protections for workers between jobs or on the verge of losing a job. These protections are relevant in a JT context, since large numbers of workers are expected to leave their current employers. Generally speaking, these standards require employers to take some responsibility for displaced workers.

4.3.1. Comprehensive Omnibus Budget Reconciliation Act

The Comprehensive Omnibus Budget Reconciliation Act (COBRA) provides continuity of health care insurance coverage when workers are between jobs. In essence, COBRA requires group health plans sponsored by employers with 20 or more employees to offer employees and their families a temporary extension of health coverage after coverage would normally end. Events that qualify an individual for coverage include work termination, divorce from or death of a primary insurance holder, or employee enrollment in Medicare. Coverage can be extended from 18 to 36 months, depending on the event. Although the coverage is required to be extended under COBRA, the insured individual is expected to pay up to 102 percent of the premium to remain on the plan (DOL 2020c).

4.3.2. Worker Adjustment and Retraining Notification Act

The Worker Adjustment and Retraining Notification (WARN) Act protects workers from unexpected termination from a planned closure of a plant or other facility. The law requires businesses that can reasonably foresee changes to business operations that will require mass layoffs or facility closure to give 60 days' notice to their employees. Businesses must adhere to WARN if they have 100 or more full-time workers (not counting those employed less than six months) or employ 100 or more workers who, combined, work at least 4,000 hours a week. Additionally, the business must be a private for-profit business, private nonprofit organization, or quasi-public entity separately organized from the regular government (DOL 2003). There are three primary events that trigger a WARN notification requirement:

- a *plant closing* leading to 50 or more lost jobs;
- a *mass layoff* leading to 500 or more lost jobs; or
- a *mass layoff* leading to 50 or more lost jobs if the loss accounts for more than 33 percent of jobs at the site.

The WARN Act also stipulates exemptions for employers, such as when unforeseen economic or natural disaster shocks force a sudden plant closure or layoffs (Collins 2012).

Researchers have found that the kind of notice required by the WARN Act can reduce the probability of unemployment following a work transition (Addison and Blackburn 1994). However, they do not see a reduction in the duration of joblessness when it does occur. The authors also find, however, that the WARN Act has not succeeded in increasing the occurrence of advanced notice before job termination.

Data on WARN are limited because employers are not required to report notices to the federal government, only to their employees. The Government Accountability Office (GAO) reported in 2003 that for 1,257 events that appeared to require notification under the WARN Act, no corresponding layoff notice had been filed with the state (Robertson 2003). GAO accordingly recommended several changes to WARN, including producing educational materials to clarify the rules for employers (Robertson 2003).

4.4. Occupational Safety

Labor standards help ensure that workplaces are safe for employees—a criterion for decent, quality work. In a transitioning economy, with established industries under intense financial strain and the rapid growth of new industries, regulations that protect workers' safety could be important.

4.4.1. Occupational Safety and Health Act

The core workplace safety regulation is the Occupational Safety and Health (OSH) Act. The law was designed to regulate work hazards, including toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. The act established two administrative bodies: the Occupational Safety and Health Administration (OSHA) to manage regulations and enforcement, and the National Institute for Occupational Safety and Health to conduct and share research. Section 18 of the OSH Act gives states the right to make their own workplace standards, subject to OSHA approval that such state standards are “at least as effective” as the national standards (Szymendera 2020).

Bartel and Thomas (1985) use business-level data from 22 states from the 1970s to examine how firms' compliance with OSHA standards affects worker injury rates. They begin their analysis by noting that previous statistical analysis have failed to find a significant benefit. They estimate that if firms complied perfectly with all OSHA standards, workplace injuries would decline by roughly 10 percent,¹⁶ which the authors characterize as a small effect. They argue that the small effect of OSHA regulations is due not to lack of funding or enforcement, but rather to the standards' focus on capital equipment instead of the complex mix of equipment, workers, and environment that contribute to accidents.

Gray and Mendeloff (2005) build on this work by examining the effect of OSHA inspections on injury rates in the manufacturing sector from 1979 to 1998. Using firm-level data and a log-linear model, they find declining effects over time. For example, an inspection that results in a penalty reduced injury rates by 15% in the early 1980s, 8% in the late 80s and just 1% in the 90s. The authors are not able to explain the cause of the decline in efficacy but note that these trends were consistent across firm types, sizes, and other factors. They do, however, find inspections with penalties were more effective at reducing injuries in smaller and nonunionized facilities.

4.4.2. Federal Mine Safety Act

The 1977 Federal Mine Safety Act (the Mine Act) amended the Federal Coal Mine Safety and Health Act of 1969 by consolidating all federal regulations for the mining industry—coal, metal, and nonmetal—under a single statutory structure. The Mine

16 This result is statistically significant at the $p=0.10$ level, but not at the stricter $p=0.5$ level.

Act requires semiannual inspections at all surface mines, strengthened and expanded rights for miners, enhanced protection of miners from retaliation, mandatory miner training provisions, and mine rescue teams for all underground mines (MSHA 2020a). Specified miner rights include full compensation when mines are closed for safety or health concerns, medical examination and coverage, and updated mine safety standards enforced by the Mine Safety and Health Administration (MSHA) (MSHA 1977). In addition to enforcing the Mine Act, MSHA offers mine operators training and technical assistance on safety and Mine Act compliance. Safety regulations for the mining industry could help ensure that cost-saving measures during an energy transition do not endanger workers.

5. Conclusion

For decades, US coal communities have faced steep declines in employment and economic activity. These declines have been linked to the increased mechanization of mining, the booming competitiveness of natural gas and renewable energy, and to some extent environmental policy. As societies establish policies to reduce greenhouse gas emissions—addressing the challenge of climate change—many of these trends are expected to accelerate and may even extend to oil and gas producing regions. In this context, policymakers are considering measures to help affected workers and communities adapt to the transition and thrive in a low-emissions future.

This paper has focused on US federal (and some state) labor policies that may play a role in supporting fairness for workers and communities as they transition away from fossil fuel production, transformation, and industrial consumption (e.g. coal-fired electricity generation)—what some refer to as a *just transition*. To maintain consistency with academic literature and major domestic and international policies, such as the Paris Agreement, we use the just transition language, and in so doing we reference the concept of *fairness for workers and communities* provided by the BlueGreen Alliance (BlueGreen Alliance 2020).

Unable to incorporate all US labor policies, we have focused on programs we believe may either significantly help support a just transition or provide examples for future just transition policy. These policies are grouped in two main categories: workforce development and labor standards. We have reviewed roughly 40 workforce development policies and 10 labor standards. Where evidence is available in the literature, we have assessed the effectiveness of these policies.

We distill the following 11 primary insights from our work—seven related to workforce development and four related to labor standards.

5.1. Insights about Workforce Development

1. Given the complex nature of the workforce development system, **centralized service delivery and effective interagency and intergovernmental coordination are essential**. Centralized service delivery is a feature of major existing US workforce development programs, like the American Job Center system. This will help ensure that workers can easily access the many programs designed to help them, and that federal resources are spent efficiently.
2. **Career services can improve the functioning of labor markets by helping workers succeed in training programs, and by efficiently matching workers with employers**. Career services may be more cost-effective than other workforce development programs, such as job training, underscoring the importance of including career services in just transition policy.
3. Because coal communities often experience high levels of poverty and substance abuse, **wrap-around supports like child care and substance abuse therapy for**

workers undergoing transition may be especially important in establishing conditions for success in workforce development programs.

4. **Tailoring workforce training programs to local circumstances can improve outcomes for workers, and is therefore likely to enhance the effectiveness of transition policy.** The literature suggests that workforce training programs are more successful when they rely on local partnerships, are tailored to the needs of local economies, and involve decentralized decisionmaking. Indeed, many federal workforce development programs (e.g., those offered by the Appalachian Regional Commission) integrate local partnerships to tailor services to a community's needs and opportunities.
5. **Programs targeted to specific populations, whether based on demographics (e.g., women, veterans, low-income youth) or employment circumstances (e.g., coal sector workers), may have advantages when the displaced workers form a distinct group with distinct needs.** However, some argue against such targeting because it can be difficult to identify the cause of worker displacement. In a just transition context, fossil energy workers can be identified fairly easily, but those working in energy supply chains and indirectly affected sectors (e.g., energy-intensive manufacturing) may be more difficult to identify.
6. **Close collaboration with industry & employers in the creation and management of workforce development services is a central aspect of a number of US workforce programs, and will likely play an important role in designing effective just transition workforce policies.** Such collaboration ensures that programs are relevant to local labor market demands, benefit from industry expertise, and have a high likelihood of leading to secure employment after training.
7. **The timing of workforce interventions matters.** For example, there is evidence that notifying workers in advance notice if they will be losing their job can, not surprisingly, reduce the amount of time spent unemployed and improve their wages when they find new employment. Research also suggests the benefits of timely engagement could be augmented if paired with early job-search assistance and retraining. Considering the timing of interventions will therefore likely shape the effectiveness of just transition policy.

5.2. Insights about Labor Standards

1. Broadly speaking, labor standards have been shown to be positively correlated with economic productivity and growth, and can help economies avoid and recover from economic shocks by boosting domestic/local demand and by making workers more resilient. These findings indicate that **meaningful labor standards are important in a just transition—not only to provide needed protections for workers but also to undergird a strong and efficient economy.**
2. **Labor standards can create basic protections for workers in transition,** including by requiring advance warning before termination (e.g., WARN), providing bridge benefits like employer-sponsored health care (e.g., COBRA), and ensuring that in new jobs, workers are protected against workplace hazards (e.g., OSHA).

3. Compensation standards like a minimum wage have been correlated with periods of strong economic growth and may improve distributional equity by boosting earnings for low-income workers. However, economists disagree on whether a higher minimum wage produces net benefits for workers. **Policymakers should carefully consider how federal compensation standards can best support energy workers in transition.**
4. **Labor standards can help bolster unionization, which the literature connects to a range of positive outcomes for workers and the economy as a whole.** Benefits of unionization include more equitable compensation, an active voice for workers in their firms and communities, reduced job turnover, and greater incentives to invest in productivity-enhancing job training. Unionization can help ensure that new jobs for workers in transition provide benefits similar to those of prior fossil energy jobs.

6. Appendix: Summary of Policies

Below are detailed summaries of workforce development policies related to just transition topics, the majority of which are included in this report. For each program or set of programs, we provide an overview and then summarize design, administrative structure, eligibility constraints, and funding levels if available.

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6.1. DOL Employment and Training Administration

6.1.1. Overview

The Employment and Training Administration (ETA), an agency of the Department of Labor (DOL), is the primary federal agency for workforce development and dislocation programs, including job training programs for adults and youth, Unemployment Insurance, aspects of the Trade Adjustment Assistance program (covered in Section 6.2), and reentry programs for former prisoners (the Second Chance Act) (DOL 2019a; Stitt 2018). The general mission of ETA is to provide training, employment, and other services to improve the US labor market and enhance employment opportunities (DOL 2020g). Most of these programs, as well as the vast majority of the funding ETA deploys each year, are authorized under the Workforce Innovation and Opportunity Act (Box A1) and administered through American Job Centers across the country (DOL 2019a).

For FY2020, ETA was appropriated \$3.6 billion for Training and Employment Services (Section 3.1.1), with almost \$2.8 billion in grants to states for implementation of adult, youth, and dislocated worker employment and training activities; and \$800 million for national programs (Pascrell 2019). Additionally, Unemployment Insurance outlays for FY2020 were estimated at \$131.5 billion (DOL 2020k). This is much higher than average, due to the spike in unemployment from the Covid-19 related economic recession—for example, the five-year annual average from FY2019 through FY 2015 was \$34.4 billion per year (Whittaker et. al 2019).

Box A1. Evolution of ETA Workforce Programs

Workforce Investment Act, 1998

The Workforce Investment Act (WIA) was designed to provide an integrated delivery system for federal workforce development programs—specifically, about 3,000 one-stop career centers nationwide that provided locally tailored employment and training support. The centers were run by Workforce Investment Boards consisting of local business, labor, and government representatives. WIA's primary goal, specified in Title I of WIA and led by ETA, was employment. Title II, administered by the Department of Education, focused on adult education and literacy programs (Bradley 2013).

Workforce Innovation and Opportunity Act, 2014

The Workforce Innovation and Opportunity Act (WIOA) supersedes and builds on the Workforce Investment Act. WIOA reauthorized ETA adult, youth, and dislocated workers' services, delivered through state formula grants—as well as certain demographically targeted national programs. The Department of Education administers adult education and literacy programs and State

Vocational Rehabilitation Services for individuals with disabilities (Bradley 2015). WIOA reformed WIA in several ways:

- It combines core and intensive workforce services—which job seekers had to undergo in sequence under WIA—into one set of “career services,” eliminating the need for job seekers to undergo core services before accessing intensive programs.
- It requires recertification of American Job Centers (the one-stop career centers) every three years to improve performance.
- It synchronizes local workforce development efforts and regional development strategies.
- It increases use of performance indicators, reporting, and evaluation (DOL 2020a).

6.1.2. Mechanisms and Implementation

6.1.2.1. Administrative Structure

ETA is led by an assistant secretary who is confirmed by the Senate. The agency has six regional offices and 11 federal program offices. Each regional office is led by a regional administrator, and each regional office oversees WIOA-authorized employment and training services, Trade Adjustment Assistance, Unemployment Insurance, and other grants while also providing technical assistance to the state and local governments and organizations delivering these services (DOL 2020o). Each of the federal program offices oversees a specific aspect of ETA operations (e.g., Offices of Grants Management and Contracts Management) or a discrete aspect of its program portfolio (e.g., Office of Workforce Investment, Office of Trade Adjustment Assistance, Office of Job Corps) (DOL 2020m).

A central aspect of how ETA operates its workforce development programs is the network of Workforce Development Boards (WDBs), which comprise representatives from business, labor, government, and other stakeholder groups. Each state has a state-level WDB appointed by the governor, as well as local WDBs appointed by local elected officials. A state WDB creates a unified state plan for workforce development activities, establishes formulas for the allocation of certain ETA grant funds, identifies local workforce development areas, and generally assists the governor on workforce development. The local WDBs conduct local workforce development planning and oversee the primary ETA service delivery mechanism—a network of roughly 2,500 American Job Centers (AJCs), which replaced the One-Stop career center system created under WIA.

AJCs are intended to be a central point of service for workforce development resources and related services. For example, they facilitate access to job trainings,

employment counseling, and job placement—both services offered by ETA and those offered by other federal agencies (e.g., Small Business Administration, Social Security Administration, Supplemental Nutrition Assistance Program). AJCs also provide access to Unemployment Insurance (UI), Temporary Assistance for Needy Families (TANF), and Trade Adjustment Assistance (TAA), and they collaborate with other local and regional centers to form a comprehensive network of workforce development services. Services are delivered both directly by AJCs and by local partners. At [careeronestop.org](https://www.careeronestop.org), workers can find their local AJC and navigate to its website to view its suite of services (Collins et al. 2019).

For the Job Corps program described in Section **6.1.2.2.4**, services are delivered through a separate network of Job Corps centers nationwide, which are typically administered privately through a contract with DOL. Centers identify potential applicants and then use outreach and admissions officers to enroll students (Bradley 2015).

6.1.2.2. Programs and Qualified Entities

To start, it's worth sharing the principles underlying ETA workforce development programs (as stipulated by WIOA and preceding laws):

- delivering “demand driven” workforce services focused on local career pathways—that is, services that fit the needs of local employers and the career pathways available;
- coordinating and aligning federal workforce development services by providing a central point of service in each locale (delivered through AJCs);
- emphasizing local control of the services offered and service providers’ eligibility to participate;
- providing universal access to services (regardless of workers’ age or background) and giving program participants their own “client” experience, where they can choose from various services; and
- practicing performance evaluation and accountability, to ensure ongoing program success and innovation (Bradley 2015).

Below is a description of individual ETA programs.

6.1.2.2.1. Training and Employment Services

Training and Employment Services administers the universe of ETA programs designed to provide workers with “family-sustaining jobs” and match employers with a skilled workforce (DOL 2020h). The bulk of funding for Training and Employment Services—\$3.6 billion in FY2020—goes to state formula grant programs authorized under WIOA and facilitated through local WDBs. The remainder goes to national training programs, each with its own administrative structure.

6.1.2.2.2. State Formula Grant Workforce Training Programs

In its core training programs authorized under WIOA, ETA allocates funds for state and local employment services through three state formula grant programs: Adult Employment and Training Activities, Youth Activities, and Dislocated Workers Employment and Training Activities. ETA delivers funds directly to states based on their relative unemployment statistics and concentration of disadvantaged adults and youth; and most states further allocate funds to local entities. The programs, and their grant formulas, are described in greater detail below.

Adult Employment and Training Activities include job search assistance, career planning, occupational training, on-the-job training, and labor market information (Figure A1 lists all services). Of the funds delivered to a state, 15 percent can be reserved for statewide workforce investment activities either required under WIOA (e.g., assistance to local areas to establish AJCs, evaluations of state workforce investment programs, and other accountability and technical assistance functions) or additional allowable workforce investment activities (e.g., administrative costs, research, and provision of incentives to locally delivered services).

Eligible participants in Adult Activities must be ages 18 and up (Bradley 2015).

State grants for Adult Activities are allocated based on the following formula (DOL 2019d; Conway 2019):

- one-third, state relative share of total unemployed in areas of substantial unemployment (12-month average);
- one-third, state relative share of excess unemployed (12-month average); and
- one-third, state relative share of disadvantaged youth and adults (American Community Survey 2011–2015).

Figure 5. Local Adult and Dislocayed Workers Activities

Career Services	Training Services
Eligibility Determination	Occupational Skills (e.g. classroom training)
Outreach, Intake, Orientation and Referrals	On-the-Job Training
Labor Exchange Services, including Job Search Assistance and Information on In-Demand Occupation	Combioned Workplace, Training with Related Instruction
Workforce and Labor Market Information	Skill Upgrading and Retraining
Performance and Cost Information for Eligible Training and Education Providers	Entreprenurial Training
Performance Measurement Data for Local Area	Transitional Jobs
Information On and Referral to Supportive Services	Job Readiness Training
Information on Filing for Unemployment Compensation	Adult Education and Literacy Combined with Training
Assistance in Establishing Eligibility for Financial Aid for non-WIOA Training and Education Programs	Customized Training in Conjunction with an Employer
Services to Obrain or Retain Employment (see note)	
Follow-Up Services for at least One Year to Participants Who are Placed in Unsubsidized Employment	

Youth Activities include locally managed tutoring, alternative secondary school programs, counseling, mentoring, occupational skills training, and leadership development programs. As in the adult program, 15 percent of funds delivered to any given state can be reserved for required and allowed statewide activities.

Eligible participants in Youth Activities program are low-income individuals ages 14 to 21 who are considered within one of five at-risk designations (Bradley 2015).

State grants for Youth Activities are allocated based on the following formula (DOL 2019d; Conway 2019):

- one-third, state relative share of total unemployed in areas of substantial unemployment (12-month average);
- one-third, state relative share of excess unemployed (12-month average); and
- one-third, state relative share of disadvantaged youth/adults (American Community Survey 2011–2015).

Dislocated Worker Employment and Training Activities is programmatically much the same as Adult Activities, but it is intended to provide quick relief to dislocated workers. Funding is subject to different state allotment formulas. Specifically, the program requires 25 percent (and allows up to 40 percent) of total statewide funds to be reserved specifically for “rapid response” activities, which target services to dislocated workers to help them find new jobs as quickly as possible. Rapid response activities may include provision of information on ETA training programs, on-site contact with employers and employee representatives, assistance to local communities to develop a response plan, and establishment of a labor-management agreement to determine training needs.

Additionally, WIOA created a Dislocated Worker National Reserve, which funds National Dislocated Worker Grants ([Section 3.2.1.2.1](#)).

Eligible participants in Dislocated Workers Activities are adults ages 18 and up who have been laid off or notified of an imminent layoff, are sufficiently attached to the workforce, and are unlikely to return to their prior industry, as in the case of a facility closure in their community. There is no eligibility requirement related to the cause of termination (Bradley 2015).

State grants for Dislocated Workers Activities are allocated based on the following formula (DOL 2019d; Conway 2019):

- one-third, state relative share of total unemployed (12-month average);
- one-third, state relative share of excess unemployed (12-month average); and
- one-third, state relative share of long-term unemployed (12-month average).

Finally, each program is also subject to minimum provisions, including—among other rules—no less than 0.25 percent of total funds for states. The Youth and Adult programs also have a maximum of 130 percent of the prior year’s allotment, whereas the Dislocated Workers program has no maximum.

6.1.2.2.3. National Programs

Beyond its state formula grant workforce training programs, ETA manages several national programs, authorized under WIOA, that provide additional benefits to specific groups.

The Indian and Native American (Section 166) program provides education, intensive training, and other services to support the employment or job retention of American Indian, Alaska Native, and Native Hawaiian individuals, and to promote economic development of Native American communities. The secretary of Labor distributes funds for the program every four years through a competitive grants process or cooperative agreements with eligible entities, which are Indian tribes, tribal organizations, Alaska Native entities, Indian-controlled organizations, and Native Hawaiian organizations (DOL 2020g; Bradley 2015).

For FY2020, Congress appropriated \$55 million for the Section 166 program (Pascrell 2019).

The National Farmworker Jobs Program (Section 167), also known as the Migrant and Seasonal Farmworker Jobs Program, provides competitive grants for training, technical assistance, and housing to help migrant farmworkers obtain or retain employment. With the exception of funds for migrant farmworker housing, it functionally creates a parallel version of the state formula grant programs described in **Section 3.1.1.1**. The secretary of Labor distributes grants under the program every four years to eligible entities, which are state and local agencies and development boards (DOL 2020g; Bradley 2015).

For FY2020, Congress appropriated \$92 million for the Section 167 program (Pascrell 2019).

Technical Assistance (Section 168) requirements under WIOA mandate that the secretary of Labor provide three forms of technical assistance (Bradley 2015):

- general technical assistance to train local and state Workforce Development Boards and carry out the transition from WIA to WIOA programs;
- technical assistance to states that do not meet performance accountability measures—reporting on performance indicators—for dislocated workers, funded through no more than 5 percent of the Dislocated Worker National Reserve; and
- creation of a system for sharing workforce development best practices among states.

Evaluation and Research (Section 169) efforts authorized under WIOA require the secretary of Labor to conduct three forms of evaluation and research (Bradley 2015):

- continuing evaluations of WIOA-authorized programs and activities (**Sections 6.1.2.2.1** and **6.2.2.2**), funded through grants, contracts, or cooperative agreements;
- biennial publication of a five-year plan for research, studies, and multistate projects to identify needs and solutions for employment or training of various subpopulations; and
- demonstration or pilot projects to meet dislocated worker needs, funded through no more than 10 percent of the Dislocated Worker National Reserve.

In certain years, there have also been special appropriations for evaluation and research programs that support the reentry employment for ex-offenders (\$98 million in FY2020) and provide grants for state data system improvements under the Workforce Data Quality Initiative (\$6 million in FY2020) (Pascrell 2019).

The National Dislocated Worker Grants (Section 170) program, funded through the remainder of the Dislocated Worker National Reserve not used under Section 167 and 168 programs, awards grants to entities that provide job search assistance and training services for dislocated workers or Department of Defense employees at risk of dislocation due to an installation closure or realignment. Eligible entities for grants are state and local Workforce Development Boards (Bradley 2015).

For FY2020, Congress appropriated \$271 million for the Dislocated Worker National Reserve, the majority of which supports these grants (DOL 2020g).

The YouthBuild (Section 171) program provides competitive grants to support programs that are designed to help disadvantaged youth develop occupational and educational skills, as well as an appreciation for community service, by mobilizing them to build affordable housing and energy-efficient, high-quality community facilities. Homes built or retrofitted through the YouthBuild program are sold or rented exclusively to homeless or low-income individuals. Beyond construction work, the program supports youth with career training for other occupations. Eligible individuals are ages 16 to 24 and a member of a low-income family, in foster care, a youth offender, an individual with a disability, a school dropout, a migrant youth, or otherwise deficient in basic skills (Bradley 2015).

For FY2020, Congress appropriated \$95 million for the YouthBuild program (Pascrell 2019).

The Apprenticeship Program in ETA implements a range of initiatives to support the delivery of apprenticeships across the country. It currently focuses on placing apprentices in high-growth industries and providing better apprenticeship access to women and youth workers (DOL 2020g).

Cornerstones of the ETA Apprenticeship Program are Registered Apprenticeship Programs (RAPs) and Industry-Recognized Apprenticeship Programs (IRAPs). These are industry-driven (and ETA supported) programs for workers to obtain knowledge and skills while earning a living and gaining industry recognized credentials. They include five core components (DOL 2020n):

- paid work, allowing apprentices to earn a living while they learn skills;
- on-the-job learning;
- classroom learning;
- mentorship and supervision; and
- an industry-recognized credential upon completion (and in many cases a postsecondary degree).

RAPs and IRAPs are offered by individual companies, industry groups, unions, nonprofits, and educational institutions. They are validated by DOL or a state apprenticeship agency to ensure that programs meet rigorous quality standards. And in many states, businesses are eligible for state tax credits for hiring apprentices.

ETA supports apprenticeships with grants and cooperative agreements to apprenticeship service providers. ETA also aims to reduce barriers to women's enrollment in apprenticeship programs, particularly in certain industries such as health care, manufacturing, and IT. The Trump administration set a goal of enrolling 1 million new apprentices in FY2018–FY2021 (DOL 2020g).

For FY2020, Congress appropriated \$175 million to expand apprenticeship opportunities (Pascrell 2019).

The *Reentry Employment Opportunities (REO)* program provides grants to entities that offer current or formerly incarcerated individuals occupational skills training that leads to apprenticeships and industry-recognized credentials. REO grantees also provide ancillary services to support these communities, including mentoring and career counseling, and connect participants with outside services related to housing, child care, transportation, family unification, and legal assistance (DOL 2020g).

For FY2020, Congress appropriated \$98 million for REO (DOL 2020g).

6.1.2.2.4. Jobs Corps

The Job Corps program aims to provide skills training for disadvantaged youth to support their employment, education, or enrollment in the military. Students access services through Job Corps centers throughout the country (as of 2015, there were 126 nationwide) for up to a two-year period. These services include the following:

- academic, employment, and social skills training;
- technical and/or on-the-job skills training;
- counseling and social support services, such as childcare.

Eligible individuals for the Job Corps program are ages 16 to 24 and low-income and also fall into one of the following categories: (1) deficient in basic skills deficient, (2) a school dropout, (3) homeless or a foster child, (4) a parent, or (5) in need of additional education to reach self-sufficiency.

For FY2020, Congress appropriated \$1.7 billion for the Job Corps program (Pascrell 2019).

6.1.2.2.5. Unemployment Insurance

ETA provides grants to states to administer the Unemployment Insurance (UI) program and to deliver funds to workers (DOL 2020q). The program provides temporary taxable payments to unemployed individuals, typically based on a percentage of earnings

over the most recent year. Workers are eligible if they have been separated from their job through no fault of their own and meet their state's work and wage requirements (CareerOneStop 2020). For FY2020, \$2.8 billion was appropriated for state grants to administer unemployment insurance (Pascrell 2019), and FY2019 projected outlays for benefits were around \$26.6 billion (Collins et al. 2019).

6.1.2.2.6. Employment Service

The Employment Service (ES) was authorized by the Wagner-Peyser Act of 1933 (and was amended by WIOA) to consolidate and coordinate employment services. The central purpose of ES is to match individuals looking for jobs with companies seeking workers, and it is the foundation of the modern American Job Centers. ES delivers grants to states to provide the following services:

- career counseling;
- job search workshops and provision of job listings;
- applicant screenings and other recruitment services for employers;
- work tests for the state unemployment compensation system; and
- referral of unemployment insurance claimants to other federal workforce development resources.

ES also administers the Work Opportunity Tax Credit (**Section 3.3.2**) and directly interfaces with the UI program, whose recipients are typically required to register with ES (Bradley 2015; DOL 2020h; Collins et al. 2019).

6.1.2.2.7. Other Programs

ETA has several other functions in addition to those discussed above.

The Senior Community Service Employment Program (SCSEP), also known as Community Service Employment for Older Americans, provides part-time, paid community service positions and work-based training as well as access to employment services for low-income, unemployed seniors (ages 55 or over, with income no more than 125 percent of the poverty level). Seniors perform community service at nonprofit and public organizations, thereby providing millions of hours of service to agencies in need. In FY20, Congress appropriated \$408 million for SCSEP (DOL 2020b).

The Foreign Labor Certification, administered by the Office of Foreign Labor Certification (in ETA), deems employers eligible to hire foreign workers on a temporary or permanent basis. Certification is designed to screen employers based on need for foreign workers, with an aim of ensuring that employers' hiring practices do not depress American workers' wages or employment opportunities.

6.1.2.2.8. Work Opportunity Tax Credit

See **Section 6.7**.

6.2. Trade Adjustment Assistance

6.2.1. Overview

Established with the 1974 Trade Act and reauthorized (through FY2021) and restructured by the Trade Adjustment Assistance Reauthorization Act of 2015, Trade Adjustment Assistance (TAA) is a cross-agency initiative to assist four designated stakeholder groups—nonfarm workers, farmers, firms, and communities—that are adversely affected by federal trade policy. Here we discuss only TAA for farm and nonfarm workers and aspects of TAA for Communities to match the workforce focus of this paper.

6.2.2. Mechanisms and Implementation

6.2.2.1. Administrative Structure

ETA manages TAA programs for nonfarm workers and the US Department of Agriculture (USDA) manages programs for farmers. Both DOL and the Economic Development Administration (EDA, in the Department of Commerce) administered aspects of TAA for Communities, but this program is no longer active (we discuss its workforce components below nonetheless).

6.2.2.2. Programs and Qualified Entities

6.2.2.2.1. Trade Adjustment Assistance for Nonfarm Workers

ETA administers TAA programs through its Office of Trade Adjustment Assistance in partnership with state agencies that handle workforce development and unemployment, and in collaboration with the local American Job Centers (Section 3.1.1). TAA funds are distributed to states to administer programs—they are not delivered directly from DOL to workers. States are also in charge of gathering and reporting to DOL their data on program participation and outcomes (Collins 2019).

Workers can receive the following benefits under the TAA program:

- *Training and reemployment services* prepare workers for new employment, including training subsidies, relocation and job search allowances, and case management.
- *Trade Readjustment Allowance (TRA)* is a weekly payment for TAA-certified workers who have exhausted their state unemployment compensation and are enrolled in an eligible training program. TRA is equivalent in value to unemployment compensation, and the two are available for a combined 130 weeks.

- *Reemployment Trade Adjustment Assistance (RTAA)* provides a cash payment for workers over the age of 50 who are reemployed at a lower wage. The cash payment is equal to half (50 percent) of the difference in wages, up to \$10,000 over two years.
- *Health coverage tax credit* covers 73 percent of health insurance premiums (Collins 2019).

Eligible workers are those who belong to a group that DOL has deemed trade-affected, as defined by the following criteria:

1. A significant number or proportion of workers in the group have been displaced or are under threat of displacement; and
2. One or more of the following criteria triggered that displacement:
 - sales, production, or both decreased absolutely as a result of imports;
 - the workers' firm shifted operations to a foreign country;
 - the workers' firm acquired articles or services from a foreign country;
 - the workers' firm is a supplier to another firm that employs TAA-eligible workers;
 - the workers' firm is a downstream producer to another firm that employs TAA-eligible workers; and/or
 - the workers' firm is publicly identified in an International Trade Commission investigation.

After a group is certified, individuals apply to local American Job Centers for benefits. To be eligible for TRA and the Health Coverage Tax Credit, workers must also have exhausted their unemployment compensation benefits and be enrolled in training within 26 weeks of separation or TAA certification.

In FY2018, ETA certified 80 percent of worker group petitions, and nearly 35,000 workers received TAA support services. Roughly 60 percent of eligible workers in FY2018 were from manufacturing sectors; 30,000 workers received employment and case management, 12,000 received occupational training, 7,000 received training leading to an associate's degree, and 20,000 received TRA (DOL 2019b).

TAA funding for nonfarm workers is a mandatory program appropriated annually by Congress into the Federal Unemployment Benefits and Allowances account, which is apportioned into three activities: Training and Other Activities, Trade Benefits (i.e., TRA), and Alternate and Reemployment TAA (DOL 2019b). Appropriations for the program in FY2020 were \$640 million (DOL 2020g).

6.2.2.2. Trade Adjustment Assistance for Farmers

USDA administers the Trade Adjustment Assistance for Farmers (TAAF) program, which delivers technical assistance and financial benefits to farmers and fishermen affected by increased imports.

TAAF requires that USDA first certify that a producer is eligible to participate in the program. Once eligible, individual producers can receive two kinds of benefits:

- *Technical assistance* includes initial training in marketing and improving the yield of the commodity, as well as the feasibility of producing an alternative to the commodity affected by imports. It may also include supplemental funds to support the cost of any travel to receive this technical assistance.
- *Financial assistance* to implement a business plan to adjust operations is available only to those who have already received technical assistance. It provides up to \$4,000 to develop an initial business plan and, once an initial plan has been completed, up to \$8,000 to implement a long-term business adjustment plan.

Any producer with a gross income of more than \$500,000 in nonfarm income or \$750,000 in farm income is ineligible for TAAF support (McMinimy 2016).

Producers must establish their eligibility through a two-step process:

1. A producer group must establish, via a petition, that imports caused at least a 15 percent decline in either price, quantity, or production value of a commodity.
2. Once a producer group is certified, an individual producer within that group must show USDA additional information to receive benefits:
 - that the commodity was produced in the current year and at least one of the three previous years;
 - that the quantity of the commodity decreased compared with a previous year, or the price for the commodity decreased compared with the prior three-year average; and
 - that no benefits were received through another TAA program.

TAAF received annual appropriations of \$90 million from 2003 to 2007, and then again in 2009, 2010, and the first quarter of 2011, before lapsing. The Trade Preferences Extension Act of 2015 reauthorized TAAF through FY2021 at up to \$90 million per year, subject to annual appropriations. However, no appropriations have been made since the first quarter of FY2011. Even while the program was receiving regular appropriations at the full authorization levels, prior to 2011, it was underutilized; actual budgetary outlays were just \$49 million, versus a total of \$459 million appropriated over a 5¼-year period (McMinimy 2016).

6.2.2.2.3. Community Trade Adjustment Assistance

Community Trade Adjustment Assistance (CTAA) was established in 2009 under the Trade and Globalization Adjustment Assistance Act (a subtitle of the American Recovery and Reinvestment Act) to provide assistance to communities experiencing job losses as a result of international trade. It had three subprograms, implemented by EDA and DOL:

- *Technical assistance and grants.* Technical assistance is available for municipal planning¹ focused on diversifying and boosting the local economy, as are implementation grants² for up to \$5 million to realize the local trade adjustment measures identified in these plans (after the plans are approved by EDA). The Interagency Community Assistance Working Group, led by EDA and consisting of representatives from USDA, DOL, and several other federal agencies, helps trade-affected communities access other federal assistance programs.

In FY2009, Congress appropriated \$40 million for CTAA, followed by \$16 million in FY2010, all of which was to be shared with the TAA for Firms program. EDA operated the CTAA program for just one year, FY2010, before it was repealed for being “duplicative.” EDA issued \$37 million in grants to 36 entities that year (EDA 2017)

Eligible entities for technical assistance and grants were municipal governments for jurisdictions with groups of workers, firms, or agricultural producers that met eligibility criteria under TAA for workers, firms, or farmers. EDA had to affirmatively determine that the community was significantly threatened by job losses related to one of these three certifications (CRS 2011).

- *Community College and Career Training grants.* This subprogram was a grant opportunity for community colleges developing training programs for workers experiencing trade impacts. Grants were administered by ETA and limited to one 36-month grant of \$1 million per institution (CRS 2011). In 2010, it was appropriated \$2 billion of mandatory spending from 2011 to 2014, or \$500 million per year (DOL 2020p).
- *Eligible entities for the grants were accredited institutions of higher education (or consortia of institutions), including private and for-profit schools, offering two-year or less-than-two-year programs that serve workers eligible for TAA for workers. EDA funds were awarded based on the likelihood that such programs can deliver employment opportunities, and the need for such a training program in the community, such as the absence of comparable services) (CRS 2011).*
- *Industry or sector partnership grants.* This was a never-funded grant program to assist public-private partnerships that were contributing to workforce development in trade-affected communities. Recipients could use funds to identify local training gaps, match skill workers with firms, train and retrain workers, disseminate best practices among local industries, and assist firms in finding qualified employees. Grants were administered by DOL and limited to one grant of \$2.5 million per partnership, or \$3 million for communities with no Community College and Career Training funding. Congress authorized a total of \$90 million across fiscal years 2009 through 2011 but never appropriated funds for the program in these years, so it remained unused (CRS 2011).

1 As directed by EDA, these plans were to be developed with broad stakeholder participation, including federal, state and local agencies serving the community, labor, and the business community.

2 EDA was required to prioritize small and medium communities in its distribution of implementation grants.

- Eligible partnerships were voluntary organizations operating in communities with populations certified eligible for TAA for workers, farmers, or firms. Grantees were required to have representation from business, labor, nonprofit, educational, and governmental stakeholders.

6.3. Appalachian Regional Commission

6.3.1. Overview

The Appalachian Regional Commission (ARC), a collaboration among local, state, and federal partners, was established by Congress in 1965 as a regional agency focused on building community capacity and bolstering economic development across a 13-state area running from New York to Mississippi. ARC initiatives include grant, loan, and research programs with the following goals (ARC 2020a):

- to facilitate business development;
- to improve education, skills, and public health to ready the workforce and help communities thrive;
- to expand critical infrastructure such as broadband, transportation, and water and wastewater systems;
- to leverage natural and cultural assets to strengthen the community; and
- to build capacity of current and next-generation leaders to sustain community development.

ARC was a central component of the POWER Initiative, a package of policies proposed by the Obama administration to assist communities experiencing economic hardship connected to the decline of the coal industry. Under that program, ARC would administer substantial financial grants for economic development to coal communities (ARC 2016b).

ARC received FY2020 appropriations totaling \$175 million, a \$10 million increase over the FY2019 enacted appropriations of \$165 million (ARC 2019a). Funding for the POWER Initiative under ARC has been stable at \$50 million a year (ARC 2019b).

6.3.2. Mechanisms and Implementation

6.3.2.1. Administrative Structure

The governing structure of ARC combines federal, state, and local leadership. The 14 commission members are the governors of 13 Appalachian states (as defined in the founding statute: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, and West Virginia) and a federal official who is appointed by the president and is subject to Senate confirmation. ARC is cochaired by this federal representative and one of the 13 governors, with a new governor cochair elected each year.

The commission works with a network of 73 multicounty planning and development agencies called local development districts, with boards composed of local elected officials, businesspeople, and other local leaders. The districts' primary role is to identify community priorities for ARC programs, to facilitate local economic development planning, and to build local leadership engaged in community development.

The day-to-day operations of ARC are led by the executive director and a staff of about 50 people, all based in Washington, DC. Administrative costs are shared equally by federal and state governments. Grant budgets are also determined based on cost sharing with recipients (ARC 2020a).

6.3.2.2. Programs and Qualified Entities

ARC accepts grant applications from state and local agencies (particularly economic development councils), local government boards, and nonprofit organizations. Applicants must coordinate with their state leadership to apply and are expected to coordinate with local, regional, and state stakeholders prior to submitting a grant application. States can either approve an application to be passed on to ARC or decline to submit the proposal. To be funded, projects must promote the strategic goals listed above.

The program is designed to serve residents in Appalachian communities with the greatest economic need. ARC uses a formal hierarchy of economic distress to prioritize projects. The index is based on the three-year average unemployment rate, the poverty rate, and per capita income in each county under ARC's purview. Organizations and agencies serving counties in greater economic distress are more likely to receive grants (ARC 2019c).

Grantees are also expected to match ARC funds to the extent that they are able. Matching requirements are based on the economic distress designations. Grantees can be eligible for up to 80 percent funding allowance for projects if they are proposing a project for a county designated as distressed.

ARC funds projects affecting the Appalachian region in the following program areas (ARC 2020a):

- *asset-based development*: helping communities strengthen and build local assets, including “natural, cultural, structural, and leadership” resources;
- *community infrastructure*: supporting the development and management of physical infrastructure, with an emphasis on water and wastewater systems;
- *telecommunications*: helping make advanced communications systems available;
- *transportation*: facilitating progress in addressing transportation challenges that affect economic growth;
- *education and training*: promoting workforce skills, early childhood education, dropout prevention, and improved college attendance;
- *energy*: helping communities develop clean energy projects and new energy businesses grow and create local jobs;

- *entrepreneurship and business development*: investing in businesses and entrepreneurs to strengthen the economy;
- *health*: promoting wellness and disease prevention and providing resources for hospitals and rural clinics, including equipment, training, and community education;
- *leadership development and capacity building*: building leadership development skills, fostering broad citizen involvement, supporting the development of strategic planning processes, and promoting collaborations among stakeholders; and
- *tourism development*: supporting tourism projects, including rehabbing facilities and infrastructure, training artists to improve marketing skills, and investing in new technologies that increase tourism.

ARC also maintains programs that cross these focus areas and provide support and funding to economic projects. Here we consider only the programs related to workforce and entrepreneurial development.

6.3.2.3. POWER Initiative Grants

Since FY2016, ARC has received \$50 million in federal funding annually to administer programs related to the POWER Initiative. The majority of the funding (e.g., \$45 million in FY2019) is channeled into various grantmaking programs (ARC 2016b). Currently, ARC administers two main grantmaking programs in affiliation with the POWER Initiative:

- *Economic policy implementation projects*. These are generally capped at \$1.5 million per project (except for broadband projects, which are capped at \$2.5 million per project). Unlike planning or research grants, this funding supports implementation projects—those used to mobilize a policy or plan to create jobs or make an economic impact.
- *Technical assistance and programmatic planning*. Grants can be up to \$50,000 per award.

Applications are considered based on how well they align with the POWER investment priorities: building a competitive workforce, enabling entrepreneurship, developing community-based industry clusters, improving substance-abuse response, and strengthening broadband access.

To be considered for an ARC grant, applicants must demonstrate the following:

- The community has experienced hardship as a result of the energy transition. In particular, “opportunity zones” established in 2017 under the Tax Cuts and Jobs Act receive special consideration and tax breaks for grants and expansive economic projects.
- The project has been developed collaboratively with state, local, and regional stakeholders, prioritizes a large scale approach; includes assessment in the design, leverages market analysis, targets community and economic restructuring, considers sustainability, demonstrates organizational capacity to achieve goals, and offers a return on investment in the form of jobs and economic growth.

The first goal of ARC’s five-year strategic plan for 2016–2020 was to invest in entrepreneurship and business development, and POWER grants played a major role in this strategy (ARC 2016a). Of the 242 POWER grants awarded between 2015 and 2020, 77 went to projects with an explicit focus on fostering entrepreneurship. Examples include an entrepreneur-investor networking organization in Alabama, an entrepreneurial training center at a North Carolina community college, and a social enterprise accelerator in Ohio (ARC 2020b).

As of February 2020, ARC had invested \$195 million in POWER-related projects since FY2016, including 242 projects in 350 counties across Appalachia, and leveraging an estimated \$911 million of private investment (ARC 2020b).

In FY2016–FY2017, 33 percent of requested funds were awarded, and in FY2018 only 15 percent of requested funds were awarded, indicating unmet demand for POWER grants (Cecire 2019).

6.4. Small Business Administration

6.4.1. Overview

The Small Business Administration (SBA) was founded as a cabinet-level agency in 1953 to protect and expand the interests of small businesses and to strengthen the US economy overall. SBA provides financial assistance to small businesses, including loans, grants, and equity investment capital; delivers training to small businesses and new entrepreneurs; sets targets for federal procurement dollars to go to small businesses; advocates on behalf of small businesses; improves job opportunities for veterans, women, and employees with disabilities; and more. In general, SBA also aims to promote “free competitive enterprise” and reduce “regulatory burden,” which includes advocacy in Congress and federal rulemaking (SBA 2020f).

For FY2020, SBA was appropriated \$1 billion, of which \$155 million was authorized for loan guarantee programs (McCaul 2019).

SBA’s broad and independent mandate, training services, and network of regional and local development centers make it a potential tool for transition assistance. The programs discussed below are a subset of SBA services that can contribute to workforce development.

Under the POWER Initiative, two grantmaking tracks were established to provide support to coal communities—Planning Grants and Implementation Grants—and SBA was one of four funding sources for the latter. POWER provided \$3 million combined through SBA’s Regional Innovation Clusters and Growth Accelerators program (Section **6.4.2.2.2**) to support the development of high-potential industries and workforce opportunities (White House 2015). The programs discussed below are a subset of SBA services that can contribute to economic diversification and community development.

The SBA budget tends to vary significantly, largely based on the levels of congressionally appropriated disaster assistance (**Section 3.3.1.3.2**); additionally, loan repayment rates and broader macroeconomic trends can affect the total available funds for the agency in any given year. Below is a snapshot of SBA appropriations for FY2018–FY2020, as of December 2019 (Dilger 2019).

Table 6. Small Business Administration Appropriations and Available Funds (million\$)

Fiscal Year	Disaster Assistance	Disaster Assistance Supplemental	Business Loan Credit Subsidies	Other Programs	Appropriation	Total Available Funds
2020	\$177.2	\$0.0	\$104.0	\$717.3	\$998.5	NA
2019	\$10.0	\$0.0	\$4.0	\$701.4	\$715.4	\$1,408.8
2018	\$0.0	\$1,659.0	\$3.4	\$697.4	\$2,359.8	\$1,828.7

Source: Dilger (2019).

6.4.2. Mechanisms and Implementation

6.4.2.1. Administrative Structure

SBA is a cabinet-level federal agency, led by the SBA administrator. It delivers services nationally, regionally, and locally through a network of 10 regional offices—each with its own regional administrator—and 68 district offices, which are overseen by the regional offices (Dilger and Lowry 2019). Additionally, two Disaster Field Offices—one in Atlanta and one in Citrus Heights, California—provide support to those rebuilding their businesses after a disaster.

SBA also administers financing and small-business technical assistance through third parties, including the following:

- 63 Small Business Development Centers (SBDCs), public-private partnerships that provide management and technical assistance to small businesses through a network of 900 outreach locations;
- 125 Women’s Business Centers (WBCs), which provide tailored assistance to women-owned businesses;
- 22 Veterans Business Outreach Centers (VBOCs), which provide business training and counseling to veterans, transitioning service members, and military spouses;
- 144 microloan intermediaries, which provide management and technical training to SBA Microloan Program borrowers and potential borrowers;

- 299 Small Business Investment Companies, which improve small business access to venture capital and are licensed by SBA; and
- Certified Development Companies, nonprofit organizations certified by SBA that provide loans to small businesses and generally promote economic development in their communities.

6.4.2.2. Programs and Qualified Entities

SBA's complex administrative structure, including heavy use of third parties, and manifold programmatic areas make it challenging to summarize the full suite of agency services. Instead, we provide an overview of the agency's entrepreneurial development programs, which are the ones most relevant to a just transition. These programs improve entrepreneur education and target underrepresented demographics in entrepreneurship, such as women, minorities, and veterans. Other programs include:

- *Loan guaranty programs* promote lending to small businesses that can't access credit through conventional channels. In both FY2019 and FY2020, these programs collectively received all-time highs of \$155 million in appropriations, roughly 10 percent of total available SBA funds (Dilger 2019).
- *Capital investment programs* help small businesses access capital markets and commercialize new technologies.
- *Trade support programs* help small businesses access foreign markets.
- *Disaster assistance programs*.
- *Advocacy programs* through which the SBA provides counsel to and advocacy for small businesses.

6.4.2.2.1. Veterans Business Outreach Center and Boots to Business

SBA's Office of Veterans Business Development houses assistance programs specifically for transitioning service members, veterans, and military spouses. The two highlighted below are the main veterans programs nationwide. In FY2020, the office received \$14 million in appropriations.

The Veterans Business Outreach Center program provides entrepreneurial training and resources for transitioning service members, veterans, and their spouses. Offerings include business plan development, counseling sessions for service-disabled veterans, mentorship programs, and trainings in topics like online marketing, international trade, and accounting. There are 22 VBOCs nationwide, with at least one in each of SBA's 10 regions (SBA 2020e).

Boots to Business provides a two-day training course to transitioning service members to help them develop entrepreneurial skills. The program, though housed at SBA, also qualifies as part of the Department of Defense's Transition Assistance Program (SBA 2020a). After completion of the initial program, individuals may continue training through SBA partner institutions and Small Business Development Centers. SBA also provides five-year grants to organizations executing Boots to Business programs (SBA 2020c).

6.4.2.2.2. Entrepreneurial Development Initiative (Regional Innovation Clusters)

Also known as Regional Innovation Clusters, the Entrepreneurship Development Initiative was set up in FY2009 to connect business, research, education, finance, and government institutions for building regional supply chains and developing industry hubs. In FY2020, the program received \$5 million in appropriations (Dilger and Lowry 2019).

6.4.2.2.3. Entrepreneurship Education Initiative

The Entrepreneurship Education Initiative offers two tracks of small business assistance, targeted at underserved communities. The first, the Emerging Leaders Initiative, provides a seven-month executive leadership training, which culminates in participants' producing a three-year growth plan for their businesses. The second provides free online business courses through the SBA Learning Center. In FY2020, the program received almost \$3 million in appropriations (Dilger and Lowry 2019).

6.4.2.2.4. SCORE

SCORE, a 501(c)(3) nonprofit partner of SBA, annually receives a congressional grant through SBA. SCORE provides mentoring, education, and online resources to small business entrepreneurs through a network of more than 11,000 volunteer business mentors across 320 local chapters and 800 branch offices. Appropriations for SCORE have increased steadily over the past two decades, with SCORE consistently using its full annual budget (SCORE 2019; Dilger 2019).

6.4.2.2.5. Makerspace Training, Collaboration, and Hiring Pilot Competition

The Makerspace Training, Collaboration, and Hiring (MaTCH) Pilot Competition was a \$1 million prize program to fund job and skill training programs in existing Makerspaces (community-operated workspaces for students and/or adults to experiment and learn). The prizes included seed grants of \$25,000 for early concepts, proof-of-principle grants of \$100,000 for growing yet proven concepts, and scale grants of various sizes for capacity building of well-established programs. Winners were announced in August 2019 (SBA 2020g). The program is no longer active.

6.4.2.2.6. Program for Investment in Micro-Entrepreneurs

SBA's Program for Investment in Micro-Entrepreneurs (PRIME) provides grants to organizations that support low-income or otherwise disadvantaged entrepreneurs. Eligible organizations are nonprofits, development organizations, and Indian tribes focused on microenterprise services for entrepreneurs. Grants are divided into four categories—technical assistance (75 percent of funds), capacity building (15 percent), research and development (portion of remainder), and discretionary (portion of remainder)—and generally issued for one year up to \$250,000 (SBA 2020d). PRIME has received roughly \$5 million in annual appropriations for the past several years (Dilger 2019).

6.5. Jobs Strategy Council

6.5.1. Overview

Created in 2014, the Jobs Strategy Council (JSC) is an initiative in the Department of Energy (DOE) designed to implement the Energy Jobs Strategy—a roadmap designed by DOE to support the economic and workforce development needs of the US energy and advanced manufacturing economies (DOE 2020). JSC integrates DOE's research, technology, and investment resources and focuses on three core areas: economic development, workforce development, and research (DOE 2020). Among its objectives are the following:

- conducting research and reporting on US energy job growth, including oversight of the US Energy and Employment Report;
- identifying barriers to entry and compiling studies on skills needed for various energy sector jobs to inform workforce development policies;
- creating an economic development toolkit for the implementation of policies;
- implementing workforce development strategies to leverage opportunities in the energy sector; and
- collaborating with other agencies and programs to ensure policy synergy and avoid duplicating efforts.

JSC was a component of the POWER Initiative, a package of policies proposed by the Obama administration to assist communities experiencing economic hardship because of the decline of the coal industry. Under that program, DOE committed to providing technical assistance on deploying energy efficient technology through JSC. Recipients of POWER grants had access to expertise on a wide range of energy topics championed by JSC (EDA 2016).

6.5.2. Mechanisms and Implementation

6.5.2.1. Administrative Structure

JSC is a cross-cutting initiative consisting of members from roughly 20 DOE offices, including representatives from the National Laboratories. The program also houses several working groups tailored to specific policy domains, such as the labor working group, the vehicle working group, the national labs working group, the interagency skills working group, and the career pathways working group.

6.5.2.2. Programs and Qualified Entities

JSC's primary research products are freely available to the public. Regarding its other programs, generally speaking, firms and economic development organizations in the energy space can access the technical expertise and financial resources cultivated by

JSC. In most cases, it is simply facilitating access to existing DOE programs, each of which has its own eligibility criteria.

6.5.2.2.1. Research

JSC conducts research on the scope, impact, and opportunities associated with energy employment. Its primary effort is improving the gathering and reporting of energy jobs data, in partnership with the Bureau of Labor Statistics. The research is collected in the annual US Energy and Employment Report (DOE 2020).

6.5.2.2.2. Workforce Initiatives

JSC coordinates several workforce initiatives to address skills gaps and provide a pipeline of qualified workers in the energy and advanced manufacturing sectors. The workforce programs target veterans and disadvantaged populations. Examples include the following:

- *Energy and Advanced Manufacturing Workforce Initiative.* This initiative coordinates efforts across federal agencies with policy portfolios in energy and advanced manufacturing job growth and training, including DOE, DOL, Education, Defense, Commerce, and the National Science Foundation. The initiative also engages industry partners, state and local governments and workforce training institutions (DOE 2020). DOE keeps an online database of relevant opportunities that different agencies provide.
- *Utility Industry Workforce Initiative.* This initiative promotes the employment and training of exiting service members, veterans, and their spouses in the utility industry. A wide variety of federal agencies, labor unions, and trade associations are involved in this initiative, as well as the Center for Energy Workforce Development (a workforce recruitment and training nonprofit organization run by electric and gas utilities and their trade associations) (DOE 2020).
- *Pittsburgh Veterans and Transitioning Service Members Hiring Initiative.* JSC is collaborating with the City of Pittsburgh and the Allegheny Conference to support and improve the city's workforce development and create a veterans employment pipeline. The program trains veterans and prepares them for the energy and manufacturing jobs in Pittsburgh (JSC 2020b).
- *Aluminum Association Workforce Initiative:* DOE supports the aluminum industry through workforce initiatives to promote energy-efficient applications. The agreement between JSC and the Aluminum Association details the following goals: to expand the number of US aluminum jobs, to improve the workforce development systems feeding into the industry, to invest in cross-cutting technologies that will enhance US manufacturing, and to identify energy-efficient manufacturing innovations in the industry (JSC 2020b).

6.5.2.2.3. Economic Development and Place-Based Initiatives

One of JSC's core functions is to improve access to DOE's extensive financial and technical assistance resources for planners and policymakers at the regional, state, and local levels. This includes place-based initiatives—projects developed with local partners to stimulate job creation in the energy sector and facilitate economic growth. Previous projects have included solar energy deployment and workforce training for low-income households in Baltimore, energy diversification and grid modernization in Pittsburgh, and technical assistance and process facilitation to develop “a modern economic vision around energy, innovation and technology” for communities in the Rio Grande Valley of southern Texas (JSC 2020a).

6.5.2.2.4. POWER Initiative

JSC was directed in 2016 to provide support to entities that received grants under the Obama administration's POWER Initiative. POWER grantees had access to DOE technical expertise on a wide range of energy topics, including integrating combined heat and power in existing energy systems; designing energy efficiency strategies to create jobs and energy savings; deploying carbon capture, utilization, and storage technologies for existing power plants; reusing energy and mining land sites; and expanding renewable energy deployment and jobs (EDA 2016).

6.6. Post 9/11 GI Bill

6.6.1. Overview

The Department of Veterans Affairs (VA) runs programs that fund educational and training opportunities for veterans and their families—programs generally referred to as GI bills. Since FY2013, the vast majority of GI Bill funds go to the Post-9/11 GI Bill, which is why we focus on that program here.

In 2008, Congress passed the Post-9/11 Veterans' Education Assistance Act of 2008, also known as the Post-9/11 GI Bill. The law aimed to create equality of benefits for reservists and regular Armed Forces members, ensure comprehensive educational benefits, advance military recruitment goals, and improve military retention by making benefits transferable. The program was expected to spend more than \$12 billion and benefit almost 800,000 individuals in FY2018 (Dortch 2018).

The benefits are expansive and include payments for tuition, books, tests, and any relocation or travel costs associated with education. Eligible individuals can use their benefits for college or an advanced degree, technical training, on-the-job training or certification, licensing and certification, and flight training, among other opportunities. The program also interacts with programs established under previous GI bills, detailed below.

6.6.2. Mechanisms and Implementation

6.6.2.1. Administrative Structure

Numerous GI bills are administered by the VA, starting with the first GI bill in 1944. Funding is provided through appropriations based on the estimated obligations the program will have to eligible participants. Obligations for FY2020 were estimated at \$11.6 billion, about \$15,900 per participant (Dortch 2018).

VA funding has increased in recent years. In FY2020 Congress appropriated \$217 billion in funds for the benefits arm of the agency broadly (116th Congress 2019).

6.6.2.2. Programs and Qualified Entities

Eligible individuals for GI benefits include veterans and service members of the Army, Navy, Marine Corps, Air Force, and Coast Guard, including the reserve components, and commissioned officers of the Public Health Service and the National Oceanic and Atmospheric Administration (Dortch 2018). Individuals must have had at least 90 days of active service since 2001 and have been honorably discharged.

Benefits are available to active service members, reserves, and certain eligible transferees (spouses and children of eligible service members). Eligible individuals have a “window of entitlement” when they can claim benefits, generally 36 months from the start of benefit use.

6.6.2.2.1. Direct Payments

The primary element of the post 9/11 GI bill is direct payments to eligible individuals to compensate for education and training expenses. Covered education expenses include courses at an educational institution, coursework required by SBA for financial assistance, certification or licensing for a specific profession, qualified entrepreneurship courses, admissions tests for higher education, tests to establish prior learning or knowledge for course credit, test prep courses, on-the-job training or apprenticeships, special training or education required to pursue another approved education course, and refresher or remedial courses. Table A2, compiled by the Congressional Research Service, shows the maximum payment type for each benefit available through the 9/11 GI Bill. Benefits include course costs, housing costs, and some assistance for relocation and travel assistance to facilitate participation. Where tuition and fees are not completely covered, veterans can leverage the Yellow Ribbon Program, a voluntary cooperative agreement between educational institutions and the VA. To cover the gap, the VA will match contributions from educational institutions up to the total cost of tuition and fees (Dortch 2018).

Table 7. Maximum Payments for Tuition and Fees, Housing, and Books and Supplies, August 1, 2018–July 31, 2019

Type of education or training	Tuition and fees	Monthly housing allowance	Books and supplies stipend
<i>Nonactive duty individuals in programs of education leading to degree</i>	At public institution, total cost minus student aid At private or foreign institution, up to \$23,672	Military housing equivalent available	\$1,000 per year
<i>Active duty individuals in programs of education leading to a degree</i>	At public institution, total cost minus student aid At private or foreign institution, up to \$23,672	None	\$1,000 per year
<i>Apprenticeship or on-the-job training</i>	None	Military housing equivalent available	\$83 per month
<i>Flight training</i>	\$13,527	None	None
<i>Correspondence training</i>	\$11,498	None	None
<i>Individuals in programs of education not leading to degree</i>	\$23,672	Military housing equivalent available	\$83 per month

Source: Dortch (2018).

6.6.2.2.2. Related VA Programs

The following programs have an important links with the Post-9/11 GI Bill but are administered separately. Generally, veterans and service members with more than one qualifying active-duty event under the Post-9/11 GI Bill can combine benefit programs administered by the VA to receive up to 81 months of benefits (though they cannot receive the benefits concurrently). If individuals make an irrevocable election for the Post-9/11 GI Bill after using some other VA benefit, the Post-9/11 GI Bill entitlement is equal to the remaining months of entitlement under the other program. If the benefits under one program have been totally exhausted, individuals may make an irrevocable election to use the same period of qualifying active duty service to get 12 months of additional benefits (up to 48 months total) under the Post-9/11 GI Bill.

- *Vocational Rehabilitation and Employment Program.* This program, which predates the 2008 GI Bill, provides job training and related services to veterans with service-connected disabilities. Participants can receive financial assistance based on the number of dependents, type of education or training pursued, and rate of attendance. Individuals eligible for both programs can leverage these vocational benefits and Post-9/11 GI Bill benefits as it suits them. Benefits for full-time training through this program are \$885 a month as a subsistence allowance (Dortch 2018).
- *Unemployment Compensation for Ex-Servicemembers.* Recent active-duty military personnel or reservists eligible for Post-9/11 GI Bill benefits may also be eligible to receive Unemployment Compensation for Ex-Servicemembers, or “UCX,” which provides income support while they search for work. Individuals receiving a Post-9/11 GI Bill allowance cannot receive this income support for the same period, except under special circumstances (Dortch 2018).

6.7. Tax Benefits for Education

6.7.1. Overview

The Internal Revenue Service (IRS) offers a wide variety of tax adjustments and benefits for people paying for education. Among these programs are benefits available to participants in work training or professional development programs as well as individuals pursuing a degree or special certification. These programs are relevant to an economic transition, since they reduce the burden for workers seeking to learn new skills that can help them find quality employment.

The main programs relevant for workers’ education are the Lifetime Learning Credit (established in 1998), the American Opportunity Tax Credit (established in 2009), and the business deduction for work-related education.

6.7.2. Mechanisms and Implementation

6.7.2.1. Administrative Structure

IRS administers and enforces all components of the tax codes, including benefits for worker education.

6.7.2.2. Programs and Qualified Entities

In general, education benefits are available to individuals spending income on courses at an accredited institution. Benefits come in the form of tax credits (reducing the amount of taxes owed) and tax deductions (reducing the amount of income that IRS considers taxable).

6.7.2.2.1. Lifetime Learning Credit

The Lifetime Learning Credit (LLC) can be used on tuition and education-related expenses paid by students in an undergraduate, graduate, or professional degree program. There is no limit on the number of years one can claim the credit, and it can be used for courses that improve job skills. It is worth up to \$2,000 dollars in each tax return, or 10 percent of the first \$10,000 in education costs. Individuals must make less than \$68,000 annually to claim the LLC. Workers who return to school to gain further skills can use this credit to reduce their tax burden (IRS 2020a).

6.7.2.2.2. American Opportunity Tax Credit

The American Opportunity Tax Credit (AOTC) is a time-limited benefit available to students pursuing a degree or other education credential, including vocational school. It provides up to \$2,500 per eligible student with an income less than \$90,000. The AOTC can be claimed on only four tax returns per eligible student. In other words, someone who receives the AOTC for an undergraduate degree cannot use it later for a vocational degree (IRS 2020b).

6.7.2.2.3. Business Deduction for Work-Related Education

Individuals can deduct the costs associated with work-related education from their taxable income. Qualifying expenses include the cost of education required by one's employer by law or to keep one's present salary, status, or job; education that maintains or improves work skills needed in one's current position; education that does not qualify one for a new trade; and education that was not required to acquire one's present position. For example, a worker hired under the condition that she get a certification before starting work cannot deduct education expenses because the education is a minimum requirement for current work (IRS 2020b). In a transition context, these deductions can be used to help workers continue their education after starting a new position.

6.7.2.2.4. Work Opportunity Tax Credit

The Work Opportunity Tax Credit (WOTC) supports employers in hiring individuals from disadvantaged demographics, including those receiving support from TANF, the Supplemental Nutritional Assistance Program (SNAP), or Supplemental Security Income; qualified veterans; ex-felons; and those with mental or physical disabilities. The WOTC is limited to the amount of business income tax liability or Social Security tax owed and is claimed against the employer's income tax or Social Security tax for taxable or tax-exempt employers, respectively (IRS 2020b).

Generally, for workers who remain on the payroll for 125 to 399 hours, the employer can receive a 25 percent credit for the first \$6,000 in wages; for workers who remain for at least 400 hours, this rises to a 40 percent credit. For veterans compensated by the government for a service-connected disability, these 25 and 40 percent credits are applicable to up to \$24,000 in wages annually. For long-term TANF recipients (at least 18 months prior to hiring date), the 25 and 40 percent credits are applicable to the first \$10,000 in wages in the first year, and a 50 percent credit is applicable to the first \$10,000 in wages in a second year (Scott 2013).

The program certified 2 million employees in FY2017, the majority of whom were SNAP recipients. The Office of Management and Budget estimates that WOTC claims amounted to \$1.3 billion in FY2017, with about \$1 billion claimed by corporations and the remainder by tax-exempt organizations. The WOTC was reauthorized in 2015 through January 1, 2021, with a new category for long-term unemployment recipients (individuals unemployed for at least 27 consecutive weeks who received federal or state benefits at some point) (Collins and Donovan 2018).

6.8. Federal Labor Standards

6.8.1. Overview

The federal government—primarily through DOL—administers several laws regulating various aspects of work in the United States, largely focused on protecting workers' rights. It is beyond the scope of our project to profile all such laws; however, below we provide brief summaries of the US labor policies we think have an important link to the topic of just transition:

- Davis-Bacon Act (DBA)
- Fair Labor Standards Act (FLSA)
- Occupational Safety and Health (OSH) Act
- Employee Retirement Income Security Act (ERISA)
- Comprehensive Omnibus Budget Reconciliation Act (COBRA) continuation of health-care provisions
- Labor-Management Reporting and Disclosure Act (LMRDA)
- Worker Adjustment and Retraining Notification (WARN) Act

- Federal Mine Safety and Health Act
- Migrant and Seasonal Agricultural Worker Protection Act (MSPA)
- Federal Transit Act labor standards

Whereas many workforce development policies focus on creating jobs and preparing workers, these policies focus on ensuring that employment opportunities offer workers meaningful compensation and a safe environment. They set minimum standards for benefits and work conditions across industries, from the point of hiring through retirement.

6.8.2. Mechanisms and Implementation

6.8.2.1. Administrative Structure

Most federal labor standards are administered through the Department of Labor.

6.8.2.2. Programs and Qualified Entities

6.8.2.2.1. Davis-Bacon Act

The Davis-Bacon Act (DBA) was enacted in 1931 to protect local workers from wage underbidding for federal construction projects. The law requires the federal government to pay contractors and subcontractors the local prevailing wage and fringe benefits (as evidenced by similar projects in the area) for any federally funded construction project exceeding \$2,000 (DOL 2020d).

The act initially created prevailing wage rules that apply to federal government construction contracts. Beyond federal government buildings, DBA rules applied to low-income housing financed by Housing and Urban Development, federal highway infrastructure, and national park infrastructure. The requirements were later extended to a variety of “Related Acts” that applied to federal grants, loans, and insurance programs. These related acts refer to 60 or so statutes that require Davis-Bacon prevailing wages to be honored, even though they go beyond the bounds of the original act. The McNamara-O’Hara Service Contract Act and Walsh-Healey Public Contracts Act established minimum wages and labor standards (like those outlined in DBA) for service contracts and goods provision for the government, respectively.

DOL’s Wage and Hour Division oversees the enforcement and determines the prevailing wages across the country. DBA rules also require that workers be paid weekly and that the wage schedule be posted publicly at the work site.

6.8.2.2.2. Fair Labor Standards Act

The Fair Labor Standards Act (FLSA) establishes the minimum wage, overtime pay rules, and youth employment standards for workers across private and public sectors. The

federal minimum wage is set at \$7.25 per hour as of July 24, 2009. Overtime pay (for hours exceeding 40 in a week) is set at one and one-half times the regular rate of pay. The act covers employers that have \$500,000 or more in annual revenue or operations that interact with the health care industry, or are a part of a public agency—in short, it protects the vast majority of workers (DOL 2020i). FLSA acts as a federal minimum standard that all states must adhere to. Most states have additional, more stringent standards.

6.8.2.2.3. Occupational Safety and Health Act

In 1970, Congress passed the Occupational Safety and Health (OSH) Act to enforce safer conditions for American workers. The law was designed to regulate work hazards, including toxic chemicals, excessive noise levels, mechanical dangers, heat or cold stress, or unsanitary conditions. The act established two administrative bodies: the Occupational Safety and Health Administration (OSHA) to manage regulations and enforcement, and the National Institute for Occupational Safety and Health to conduct and share research. The FY2019 enacted appropriations were \$558 million for the former and \$336 million for the latter (Gonzalez 2019).

6.8.2.2.4. Employee Retirement Income Security Act

The Employee Retirement Income Security Act (ERISA) of 1974 is a federal law that sets minimum standards for voluntarily established retirement and health plans in private industry. Standards include the following: providing information about plan features; minimum standards for participation, vesting, benefit accrual, and funding; fiduciary responsibilities for plan managers; required grievance and appeals processes for participants to get benefits from their plans; an established right to sue for benefits and breaches of fiduciary duty; and if a defined benefit plan is terminated, guaranteed benefits through the Pension Benefit Guaranty Corporation (DOL 2020e).

6.8.2.2.5. Comprehensive Omnibus Budget Reconciliation Act

Many Americans receive health insurance from their employer. When workers are between jobs, the Comprehensive Omnibus Budget Reconciliation Act (COBRA) provides continuity of coverage. In essence, COBRA requires that group health plans sponsored by employers with 20 or more employees offer employees and their families a temporary extension of health coverage after coverage would normally end. Events that qualify an individual for coverage include work termination, divorce from or death of primary insurance holder, or employee enrollment in Medicare. Coverage can be extended from 18 to 36 months, depending on the event. Although coverage is required to be extended under COBRA, the insured individual is expected to pay up to 102 percent of the premium to remain on the plan (DOL 2020c).

6.8.2.2.6. Labor-Management Reporting and Disclosure Act

The Labor-Management Reporting and Disclosure Act (LMRDA) established regulations for labor unions to ensure that workers have access to a democratic

process and representation. LMRDA has several components: a bill of rights for members, binding reporting processes, regular election of union officers, and protections for organization funds and assets. The regulations under LMRDA are regulated through the Office of Labor Management Standards, whose FY2019 appropriations exceeded \$41 million (OLMS 2020a).

6.8.2.2.7. Worker Adjustment and Retraining Notification Act

The Worker Adjustment and Retraining Notification (WARN) Act protects workers from unexpected termination from the planned closure of a plant or other facility. The law requires businesses that can reasonably foresee changes to business operations that will require mass layoffs or facility closure to give 60 days' notice to their employees. Businesses must adhere to WARN if they have 100 or more full-time workers (not counting those employed less than six months) or employ 100 or more workers who, combined, work 4,000 hours a week. Additionally, the business must be a private for-profit business, private nonprofit organization, or quasi-public entity separately organized from the regular government (DOL 2003).

6.8.2.2.8. Federal Mine Safety and Health Act

The 1977 Federal Mine Safety and Health Act (the Mine Act) amended the Federal Coal Mine Safety and Health Act of 1969 to consolidate all federal regulations for the mining industry, both coal and metal or nonmetal, under a single statutory structure. The Mine Act requires semiannual inspections at all surface mines, strengthened and expanded rights for miners, enhanced protection of miners from retaliation, mandatory miner training provisions, and mine rescue teams for all underground mines (MSHA 2020a). Specified miner rights include full compensation when mines are closed for safety or health concerns, medical examination and coverage, and updated mine safety standards to enforced by the Mine Safety and Health Administration (MSHA 1977). The FY2019 enacted appropriations for MSHA was \$374 million (MSHA 2020b).

6.8.2.2.9. Migrant and Seasonal Agricultural Worker Protection Act

The Migrant and Seasonal Agricultural Worker Protection Act (MSPA) establishes wage, housing, transportation, and recordkeeping standards to protect migrant and seasonal agricultural workers. These workers have typically not enjoyed the protections established in other labor standard acts. The law requires farm labor contractors to register with DOL and provide detailed records of payment, ensure any housing is up to health and safety standards, and have all vehicles operated by laborers inspected and insured (DOL 2020k).

6.8.2.2.10. Federal Transit Act labor standards

The Mass Transit Employee Protections, codified in the Federal Transit Act ([49 U.S.C. § 5333\(b\)](#)), requires certain standards for workers when federal funds are used to build, improve, or operate public transit systems. Laws protect any existing collective

bargaining agreements, the continuation of collective bargaining rights, protections against decreased wages, priority reemployment, and paid worker retraining programs. Protective arrangements must be in place before federal funds can be leveraged for a mass transit project. DOL evaluates and enforces the protective arrangements.

6.9. Adult Education and Family Literacy Act

6.9.1. Overview

Title II of the Workforce Investment Act of 1998 (P.L. 105-220) created the Adult Education and Family Literacy Act (AEFLA), which supports secondary education and English language proficiency programs for adults. AEFLA was reauthorized by Title II of the Workforce Innovation and Opportunity Act of 2014 (Collins 2014a).

Although the program remained mostly the same, the WIOA reauthorization placed emphasis on states' creating a unified education and workforce training plan to facilitate the transition for adults to employment and higher education. These unified plans are developed by states (Collins 2014a).

Congress has increased appropriations for AEFLA in recent years. In 2014 authorized activities were funded with \$578 million. Between FY2015 and FY2020, WIOA authorized annual increases in AEFLA appropriations. Authorized appropriations in FY2020 were \$791 million (Pascrell 2019).

6.9.2. Mechanisms and Implementation

6.9.2.1. Administrative Structure

Funding is distributed to states from the US Department of Education through its Office of Vocational and Adult Education, which administers the AEFLA program at the national level. States can maintain some funds for statewide programs, but most funds must be distributed to independently operated programs within the state (Collins 2014a).

6.9.2.2. Programs and Qualified Entities

Funding is provided to state agencies, which may use some federal funds for statewide activities. However, the majority of funds must be subgranted to eligible local providers, such as local educational agencies, institutions of higher education, and community-based organizations.

There are two main considerations for funding distribution:

- *Number of adults without a high school diploma.* This is the basis for 88 percent of state grant fund allotment, and the funds support basic education services.

- *Number of recent immigrants with established permanent residence.* This accounts for 12 percent of funds and supports English literacy and civics education (Collins 2014a).

AEFLA funds three major types of education programs:

- *adult basic education:* courses for adults whose literacy and numeracy skills are below the high school level;
- *adult secondary education:* courses for adults whose literacy skills are approximately at the high school level (education appropriate for those hoping to achieve their GED); and
- *English literacy:* courses for adults who are not proficient in the English language.

A small portion of funds is reserved for “national leadership activities” to help improve the quality and effectiveness of adult education programs. These activities might include research, evaluation, or technical assistance to states based on need (Collins 2014a).

6.10. Vocational Rehabilitation Grants

6.10.1. Overview

Title I of the Rehabilitation Act of 1973 establishes federal vocational rehabilitation (VR) grants, which can be used to create programs that prepare disabled individuals for employment. The Rehabilitation Act was amended and the grants program was reauthorized by Title IV of the Workforce Innovation and Opportunity Act of 2014 (Foxx 2014; Collins 2014b).

The goal of VR grants is to facilitate the training and employment of individuals who struggle to find work because of a disability. Services include counseling, job search and placement assistance, training and education, and postemployment support services.

Funding for VR state grants is mandatory funding. By law, each year’s appropriation must equal the prior year’s appropriation plus an increase equal to inflation. Appropriations in FY2020 were just over \$3.6 billion for VR grants to states (ED 2020).

6.10.2. Mechanisms and Implementation

6.10.2.1. Administrative Structure

VR state grants are administered at the federal level by the Rehabilitation Services Administration in the Department of Education. Funding is approved by Congress and then distributed to the states, which are required to match some portion of the federal funds they receive. The federal share is 79 percent; states must provide the remaining 21 percent. If a state is unable to match, the unmatched funds are distributed to other

states (Collins 2014b).

6.10.2.1.1. Programs and Qualified Entities

To receive funds under WIOA, states must present a unified workforce development plan. The plan must detail how various workforce development programs work together to deliver stated goals.

An individual's eligibility for VR services is determined independently by state VR agencies. Generally speaking, an individual must have a disability that creates a barrier to employment and requires VR services to gain employment (Collins 2014b). Priority is given to individuals with the most severe disabilities.

Three core activities can be conducted with VR grants:

- *Individual workforce development.* Eligible individuals, referred to as clients, work with VR agency personnel on an individualized plan for employment. The plan details a specific employment goal and the VR strategy to achieve that goal. Goals can vary by client but are limited by the mission and goals of the VR agency. VR strategies include career counseling, job training, and general assistance to maintain employment, such as securing transportation subsidies (Collins 2014b).
- *Employer support.* States may also use their VR funds for networking and services to employers interested in hiring individuals with disabilities. These services include technical assistance, job matching, and education about funding sources to support employment of disabled individuals (Collins 2014b).
- *Preemployment transition.* At least 15 percent of each state's VR grant must be allocated to preemployment transition services for students with disabilities (Collins 2014b). The services are similar to general VR program but focus on creating and finding opportunities for students to facilitate their transition to the workforce. Services under this program include career counseling, work-based learning experiences (such as internships or apprenticeships), further education counseling, workplace readiness training (increasing independence), and self-advocacy guidance.

6.11. SNAP Employment and Training Program

6.11.1. Overview

SNAP Employment and Training (SNAP E&T) is a federally funded, state-administered program that provides SNAP participants with skills and education to find quality work. The E&T component of SNAP was created by the Food Stamp Act of 1985. Historically, SNAP benefits were available only to families that could prove that they were actively seeking work. The 1985 law changed the requirements such that individuals could seek benefits if they were looking for work or participating in SNAP-sanctioned education and training (FNS 2020).

In 2019, Congress enacted appropriations of approximately \$73.5 billion for the entire SNAP program, and approximately \$614 million for the Employment and Training programs (USDA 2020).

6.11.2. Mechanisms and Implementation

6.11.2.1. Administrative Structure

The SNAP E&T program is funded by federal government appropriations, but programs are administered at the state level. SNAP is run through the USDA Food and Nutrition Service (FNS). States have the authority to determine what specific programs will be provided within the federal guidelines. Congress determines funding for states to establish and maintain E&T programs, but states can get additional funding, which they are required to match 50 percent, by applying directly to FNS.

Responsibilities and program administration can also be delegated to state partners approved by FNS, such as colleges or American Job Centers contracted by the state. These third-party partners can also receive 50-50 matching funds from the federal government for their operational costs.

6.11.2.2. Programs and Qualified Entities

Individuals receiving SNAP benefits in the month of participation who are able to work upon completion of the program can participate in a SNAP E&T program (USDA 2020). Individuals currently receiving TANF benefits are ineligible (USDA 2020). SNAP E&T programs must offer one or more of the following services: job search assistance, training, community service opportunities, work experience (through apprenticeships), a self-employment program, educational programs, vocational education, and job retention services.

SNAP funding can also cover supportive services that enable individuals to participate in the E&T programming. Supporting services can include transportation, child care, and educational supplies required to complete the E&T program (USDA 2020).

A 2017 USDA FNS survey found that the total cost per participant for the average E&T program operator was \$1,805, of which \$1,196 was administrative and \$609 was direct services costs (including basic education, job training, higher education, and support service) (Rowe et al. 2017).

6.12. California Clean Energy Workforce Training Program

6.12.1. Overview

In 2009 California launched the Clean Energy Workforce Training Program, supported by funds from the American Recovery and Reinvestment Act and funds under the Workforce Investment Act, with the objective of training workers for employment in the clean energy industry. From its launch through 2012, the program invested approximately \$50 million (public-private, evenly split) in supporting local and regional workforce training programs. At the time, it was the nation's largest state-sponsored green jobs training program (CA EDD 2012).

The goal of the program was to train a workforce (including unemployed individuals, existing workers in need of re-skilling, low-wage workers and youth entering the workforce) capable of taking advantage of new employment opportunities in green jobs, such as energy and water efficiency and renewable energy generation, transmission, and distribution. Training combined professional and personal skills development (Gaffney et al.2014).

The program had two main components, one facilitated by the California Employment Development Department (EDD) and the other by the California Employment Training Panel (ETP). For the former, the California Energy Commission provided \$16 million of state energy program funding (from the American Recovery and Reinvestment Act), which was combined with \$10 million from the governor's discretionary 15 percent account under the Workforce Investment Act, for a total of \$26 million. These public funds were matched one-for-one by private dollars, making the total investment around \$50 million. For the latter component, the California Energy Commission provided an additional \$3 million (Gaffney et al; CA EDD 2012).

6.12.2. Mechanisms and Implementation

6.12.2.1. Administrative Structure

Employment Development Department. This training program was developed collaboratively with the California Energy Commission and the California Workforce Investment Board. EDD administered the grants (using an existing workforce development system), provided technical assistance to grantees, and reported on progress. Funds were awarded to community colleges and **local workforce investment and development boards** (entities located throughout the state that administer federal Workforce Investment Act programs and oversee the delivery of workforce services in their area), which delivered the trainings and interfaced directly with workers and students; 28 boards received funds over the course of the program (CA EDD 2012).

Employment Training Panel. This small state agency provides job skills training to increase the global competitiveness of employers. Funds are provided to employers to enhance the skills of their employees. The California Energy Commission established an agreement with this agency to support subcontractors who provided job training services. Funding—\$4.5 million from the American Recovery and Reinvestment Act for subcontractor contracts, with \$0.5 million dedicated to administration (Gaffney et al. 2014)—was augmented by Workforce Investment Act discretionary funds.

6.12.2.2. Programs and Qualified Entities

Community colleges and local Workforce Development Boards were the entities eligible to receive program funds from the state. The worker training programs were open to all prospective workers.

6.12.2.2.1. Employment Development Department

In late 2009, EDD funds were awarded to 28 community colleges and local Workforce Development Boards, which served 4,940 individuals by providing the following services over 18 months:

- outreach to prospective workers, job search and placement assistance, and labor market information;
- assessments, counseling, and career planning for prospective workers; and
- basic skills and occupational training for prospective workers.

Occupational training consisted of several programs:

- *Green building and clean energy retraining.* These programs focused on developing the skills of unemployed or underemployed individuals with existing skills in the construction industry, to prepare them for jobs in green building and clean energy. The green building programs focused on residential and commercial green building practices, energy and water efficiency, and state code compliance. The clean energy programs focused on the application of construction skills for utility-scale clean electricity generation, transmission, and distribution projects.
- *Green building and clean energy preapprenticeship training.* These programs, developed in partnership with specific industry sectors, were for individuals with little or no experience in construction or clean energy. They provided a combination of basic technical skills and personal “soft” skills, with the goal of facilitating entry into the green building and clean energy fields.
- *On-the-job programs.* Implemented toward the end of the Clean Energy Workforce Training Program, these programs provided on-the-job training in various green industries through four existing grantees (CA EDD 2012).

6.12.2.2.2. Employment Training Panel

To receive ETP funds, employers had to provide meaningful job training and maintain employees in a role for a certain amount of time (90 consecutive days or 200 hours over a year, depending on the position). Subcontractors were tasked with estimating the cost of a job training program and reporting retention rates (Gaffney et al. 2014). ETP administered one main program:

- *Green Building and Clean Energy Career Advancement*. This program focused on developing new skills for existing employees, new hires, and subcontractor employees in the two fields (Gaffney et al. 2014).

6.13. California Clean Energy Jobs Act

6.13.1. Overview

The California Clean Energy Jobs Act was created through ballot Proposition 39 (2012) and enacted by state Senate Bill 73 (2013). The act authorizes spending up to \$550 million annually, with funds transferred from the state's general fund, for five years beginning in 2013 to fund energy efficiency retrofit projects at public schools (including higher education) and other public facilities (California Energy Commission 2017). The policy was also designed to increase jobs in clean energy, including by offering workforce training programs.

6.13.2. Mechanisms and Implementation

6.13.2.1. Administrative Structure

The program was administered by the California Energy Commission, which worked with other California state agencies to develop and implement the program, including the Department of Education, the Community Colleges Chancellor's Office, the Department of Finance, the Public Utilities Commission, the Workforce Investment Board, and the Conservation Corps. Annual funding levels are determined through the state budget (California Energy Commission 2017).

6.13.2.2. Programs and Qualified Entities

Grants for energy efficiency and renewable energy projects are available to local education agencies (county offices of education, school districts, charter schools, and state special schools) and community colleges. Local education agencies submit proposals to the State Superintendent for Public Schools, and grants are awarded on a formulaic basis, with 85 percent of funds based on average daily attendance levels, and 15 percent based on the number of students eligible for free or reduced-priced lunch (CA EDD 2012). Senate Bill 73 stipulates minimum funding levels for different size systems. Community colleges submit their proposals to the Community College Chancellor's Office.

For the job training programs, efforts are focused on developing skills for disadvantaged youth and veterans. Eligible grantees include community and technical colleges, local workforce investment boards, and building trades organizations.

6.13.2.2.1. Energy Efficiency Investments

Under Senate Bill 73, 89 percent of funds for energy efficiency retrofitting are to be allocated to local education agencies and 11 percent are reserved for community colleges (California Energy Commission 2017).

6.13.2.2.2. Planning and Technical Assistance

During FY2013–2014 and FY2014–2015, \$28 million in additional funding was allocated annually to the California Energy Commission for no- or low-interest loans to conduct energy audits, develop proposals, and support technical assistance to the state Energy Conservation Assistance Education Program. Of this funding, 90 percent went to K-12 schools and 10 percent to community colleges. The state has also appropriated \$5 million to \$6 million annually for the state Conservation Corps to carry out energy surveys and other activities at schools (California Energy Commission 2017).

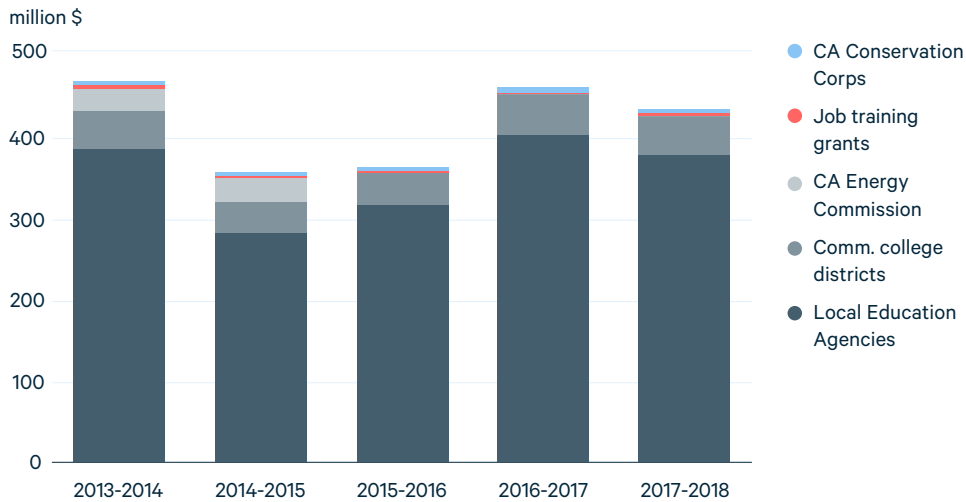
Local education agencies are instructed to take into account the potential for projects to provide employment and economic benefits for local communities.

6.13.2.2.3. Workforce Training

For workforce training programs, Senate Bill 73 directs the state Workforce Development Board to develop and administer a competitive grant program for entities providing training opportunities focused on energy efficiency and clean energy projects, including apprenticeship programs and regional partnerships. Under the state's Workforce Development Board, \$3 million is allotted annually for workforce training (California Energy Commission 2017).

Figure 6 illustrates the distribution of revenue from FY2013–14 through FY2017–18.

Figure 6. California Clean Energy Jobs Act Funding, by Program



Source: California Energy Commission (2017).

6.14. Illinois Future Energy Jobs Act

6.14.1. Overview

The Future Energy Jobs Act (2016 Senate Bill 2814, [Public Act 099-0906](#)) implements many changes to state energy and environmental policies, including expanded energy efficiency investments, boosting renewable and zero-carbon electricity generation, and providing funding for job training and consumer assistance. In this overview we summarize the main provisions and then go into more detail on the job training components.

6.14.1.1. Energy Efficiency

The Future Energy Jobs Act requires ComEd to reduce its energy usage by 22 percent and Ameren Illinois to reduce its energy usage by 16 percent by 2030. These utilities are also required to spend at least \$30 million annually on energy efficiency programs for low-income customers (Wooten 2016).

6.14.1.2. Renewable Portfolio Standard

The act reforms the existing Illinois renewable portfolio standard of 25 percent by 2025 by adding a requirement that all associated renewable energy credits come from new wind and solar built in Illinois. It requires 50 percent of new solar to come from community and distributed solar installations, 40 percent from utility-scale solar generation, and 2 percent from projects located on brownfields (Illinois State Legislature 2016). This is funded by a starting budget of \$180 million per year, growing over time to \$220 million per year (State of Illinois 2020). The act prioritizes how funds

should be spent: (1) fulfilling existing contracts; (2) low-income solar program (Solar for All); (3) new renewables; and (4) all other renewable energy credit targets.

6.14.1.3. Community Solar and Solar for All Program

This program, funded at roughly \$10 million per year, was designed to grow the low-income solar market. The program has four major elements:

- Low-income distributed generation incentive (23 percent) provides financial incentives for low-income customers to adopt solar, with a goal of at least 25 percent designated for environmental justice communities.
- Low-income Community Solar Project Initiative (37 percent) provides financial incentives for customers to participate in community solar, with a goal of at least 25 percent of funding going to environmental justice communities.
- Nonprofit and public facility incentive (15 percent) offers financial inducements for institutions to deploy distributed generation, with a goal of at least 25 percent of funding going to environmental justice communities.
- Low-income Community Solar Pilot Projects (25 percent, up to \$50 million cumulatively) appears intended to generate broader economic benefits in the communities where they are constructed.

6.14.1.4. Job Training

The legislation also supports job training and apprenticeships, with emphasis on providing opportunities to low-income communities.

6.14.2. Mechanisms and Implementation

6.14.2.1. Administrative Structure

The job training provisions of the act may be administered by the utility or its chosen contractor. The apprenticeship program is to be an “accredited or otherwise recognized apprenticeship program.” The multi-cultural jobs training program is to be run by “diversity-focused community organizations” that have a history of providing job training.

6.14.2.2. Programs and Qualified Entities

Job training programs are targeted toward minorities, former foster children, those with criminal records, and low-income, rural, and environmental justice communities. The job training programs are to be located in the same communities where the energy and energy efficiency projects are being developed.

Large utilities (those with more than 3 million customers in Illinois) must spend \$10 million per year in 2017, 2021, and 2025 to fund job training programs, divided as follows:

- \$3 million for a solar training pipeline, to train workers in solar installation and to establish a pool of skilled installers, with emphasis on selecting trainees from the communities where solar projects incentivized by the policy are being built; carve-outs are included for individuals from environmental justice communities (at least 50 percent), former foster youth, and those with criminal records;
- \$3 million for apprenticeship programs of four years or less focused on solar installation or other activities; and
- \$4 million for multicultural jobs programs supporting “diversity-focused community organizations” that have a history of providing job training.

6.15. New Mexico Energy Transition Act

6.15.1. Overview

In 2019, New Mexico enacted [Senate Bill 489](#), the Energy Transition Act. The bill sets targets for electricity generators to produce 100 percent of their power from zero-emissions sources by 2045 (for public utilities) and 2050 (for co-ops). The act also requires the state’s coal plants to be decommissioned by 2023 (for public utilities) or 2032 (for other utilities) and increases the state’s renewable portfolio standard for both utilities and co-ops.

To help finance the closure of coal plants, particularly one large plant in the state’s northwest, utilities are permitted to issue “energy transition bonds” totaling up to \$375 million per plant, of which up to \$30 million is to be used for plant decommissioning and mine reclamation, \$20 million for worker severance and retraining, and the remainder to the undepreciated value of the plant. These bonds will in turn be financed through a dedicated “energy transition charge” added to ratepayer’s monthly bills.

Finally, the act establishes several requirements for utilities, including that they explicitly account for the local economic and employment benefits of building new generation sources in certain communities; and that they hire a substantial share of apprentices from diverse backgrounds for the construction of new plants.

6.15.2. Mechanisms and Implementation

6.15.2.1. Administrative Structure

To support workers and communities affected by closures of coal-fired generators, the legislation establishes three funds, each to be administered by a different state agency. To develop plans to use these funds, the agencies are required to gather input from stakeholders and the public, including holding at least three public meetings each. Plans are also informed by locally convened advisory committees, which are required to have diverse stakeholders.

Table 8 summarizes the three programs and the lead agencies.

Table 8. New Mexico Energy Transition Programs

	Adminsitrator	Objective	Share of energy transition bond funding
Indian Affairs Fund	Department of Indian Affairs	Assist affected native and tribal communities	<1%
Economic Development Assistance Fund	Economic Development Dept.	Enhance community economic development and diversification	2%
Displaced Worker Assistance Fund	Workforce Solution Department	Assist affected workers	3%

6.15.2.2. Programs and qualified entities

Specifics of the programs are to be developed by the administrative agencies, with public input.

In developing power projects to replace retiring generators, utilities are required to develop “replacement resources” in the same school district as the retiring coal generator, and to pay local property taxes (or payments in lieu of taxes). Utilities are required submit proposals for new generation projects to the state utility commission, taking into account the new plants’ relative ability to support economic development and employment for those who affected by the closure of coal-fired plants.

Communities eligible for assistance under these programs must be in a county that is within 100 miles of the closing plant and experiences the loss of at least 40 related jobs. Workers are eligible for support if they have been laid off within the previous 12 months and received at least 75 percent of their income from employment at the affected plant.

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