

Policy brief: The cost of a just transition

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KEY FINDINGS

A just transition centers around protecting fossil fuel workers and fossil fuel-dependent communities, ensuring they are not left behind in the transition toward clean energy. In this brief, we surveyed international practices on public support for the workforce transition in coal-related industries, with a special focus on quantifying the average cost of diverse worker support policies across countries. Our key findings include:

- Based on a deep dive into seven countries with sufficient quantitative data—Poland, Spain, the United States, Canada, the United Kingdom, Australia, and Germany—employment support has been carried through three categories: rehiring, income compensation, and health payment.
- Across these countries, we found that rehiring support was the most commonly utilized policy tool, and that total rehiring support per country ranged from a low of \$195 million to a high of \$784 million.
- On a per-worker basis, income compensation policies are most expensive across countries, as it is typically paid out over multiple years. The average cost of a just transition is over \$23,000 per worker for rehiring support, over \$253,000 per worker for income compensation policies, and about \$13,000 per worker for health support policies.
- We also found that the majority of just transition compensation packages were provided by the national government. However, despite the need for engagement from national governments, it is still critical that the policies be tailored to local needs.
- Effective programs implemented thus far have relied on a wide range of policy solutions to aid workers in the economic transition. Each of the countries that we researched utilized a variety of policies, most including at least one policy from each of the three categories identified.

BACKGROUND

In coal-reliant countries, many people and communities' livelihoods are dependent on coal. A just transition protects the individuals' and communities' lives that will be impacted during a clean energy transition. A successful economic just transition for workers would require that those impacted in the coal industry be provided fiscal and social support, recognizing the spatial distribution of coal jobs and that impacts on workers may have a ripple effect throughout communities. For this brief, we will focus on worker support policies that assist miners and/or coal power plant workers whose jobs are impacted by the clean energy transition.

By conducting a comprehensive review of existing data, literature, and policy documents, we found a wide range of different policies from governments and companies seeking to assist workers and communities in the clean energy transition. Data on the cost of worker support policies was limited by the number of countries that have already enacted or prepared just transition policies and associated financial information that allowed us to properly assess the cost of a just transition. In the end, we focused on countries with preexisting data on coal transition worker support policies, ending up with seven countries - Poland, Spain, the United States, Canada, the United Kingdom, Australia, and Germany. We found three main subcategories of worker support policies: rehiring support, income compensation, and health support. For the policies that we researched with available financial information, we found that rehiring support was the most commonly utilized policy tool, and that total rehiring support per country ranged from \$194,920,000 to \$783,585,000. Most of the financial support programs

Table 1. Average cost by support category per worker in seven countries

Country	Rehiring	Income	Health	Total per worker
Poland	\$7,030	-	\$2,340	\$9,370
Spain	\$12,740	\$343,460	\$28,150	\$384,350
United States	\$15,470	-	\$7,860	\$23,330
Canada	\$25,320	75% weekly earnings	-	\$25,320 + 75% weekly earnings
United Kingdom	\$34,340	-	-	\$34,340
Australia	\$45,120	-	-	\$45,120
Germany	-	\$163,380	-	\$163,380

discussed in this brief are financed by national governments, but a few of the policies noted were provided by regional governments or companies. In our analysis, we calculated the average cost per worker of different support policies. The total per worker calculation improves the applicability of this research, as other countries would be able to compare the cost of a worker support policy for their coal workers.

This policy brief summarizes the cost of a just transition to support workers in coal-reliant countries. Based on our analysis of three key areas for worker support policies from coal transitions in other countries, we identify the best opportunities for policy adoption to ensure that workers' rights are incorporated in an energy transition so no one is left behind.

REHIRING SUPPORT

We separated rehiring support (assistance in finding a new job) into three further subcategories: retraining and educational programs, hiring incentives (e.g. giving companies funds with which to hire former coal workers), and relocation support. For workers who are not at retirement age or entering early retirement, retraining, and educational programs are critical to providing them with the necessary skills to thrive in a new career. One type of retraining support is tuition vouchers. In Canada, the government gave workers a one-time payment of approximately \$9,500 to use as a tuition voucher to take technical education courses or attend classes at a public university in Alberta.¹ In Eastern Wielkopolska, Poland, ZE PAK, the region's biggest coal company, is undergoing a 2030 clean energy transition and their Employee Council incorporated a \$7,030 tuition voucher for courses and professional exams in their transition proposal.² Another retraining policy is installing employee support centers. In Australia, the Worker Transition Center in Latrobe Valley provides counseling and training services and has served over 1,400 former coal power workers.³ Several of Germany's policies to support workers impacted by coal's decline provided financial support for public organizations to create and extend training facilities.⁴ While Germany's social security system already provides counseling for workers through training programs and job-seeking assistance, this assistance has been expanded upon to specifically aid former coal miners and plant workers.

To further assist coal workers in the job market search, countries can also provide hiring incentives in the form of direct payments (grants, subsidies, etc.) to companies and businesses to hire former coal workers. One of the United Kingdom's most successful regional just transition policies was the Regional Growth Fund (RGF), which provided hiring incentives to former coal regions through low-interest loans to the region for economy-boosting and job-creating/safeguarding initiatives. Overall, the RGF safeguarded 141,000 jobs for \$1.6 billion, an average cost of \$13,740 per job.⁵ Oftentimes, hiring incentives require that workers be retrained, linking hiring incentives to retraining initiatives. In Australia, following the closure of the Hazelwood Power Station, the Victoria state government began providing employers \$3,730 for each former coal power worker they hired and retrained.

In the US, the Appalachian Regional Commission's Partnerships for Opportunity and Workforce and Economic Revitalization Initiative (ARC POWER) grants, which are locally targeted investments in coal communities in Appalachia, provided an average of \$2,940 for rehiring alone, but \$6,470 for retraining and rehiring in combination.⁶ Not only can former coal workers be provided with the skills for a new job, but with hiring incentives, they can have greater security in getting a new job through established connections with companies and employers.

Our analysis found relocation funds are the least commonly utilized rehiring support. In Canada, laid-off workers that move at least 40 km for a new full-time job are eligible for a one-time lump sum payment of up to \$3,960.⁷ In Germany, workers can receive support for travel expenses and relocation services from the National Employment Agency.⁸ In total, each of these policies seeks to prevent direct unemployment from a coal transition. For workers who are still able to participate in the labor force, retraining programs and job-seeking assistance are critical tools that set them up for long-term success in a world without coal.

Table 2. Cost of the average rehiring package per worker in six countries

Country	Average rehiring package per worker (USD)
Poland	\$7,030 ⁹
Spain	\$12,740 ¹⁰
United States	\$15,470 ¹¹
Canada	\$25,320 ^{12,13,14}
United Kingdom	\$34,340 ¹⁵
Australia	\$45,120 ¹⁶

INCOME COMPENSATION

Income compensation policies can be divided into three categories: adjustment period assistance akin to unemployment benefits, early retirement, and severance pay. Most adjustment period assistance is allocated by the government (or company) to workers that lost their job during the transition and have yet to find new work. It is important to provide former coal workers with the tools to continue in the workforce, or funds if retiring, but it is also imperative to ensure that workers are not left without money for themselves and/or their families in the interim. Canada's Coal Workforce Transition Program issues adjustment payments providing 75% of the miner or power plant worker's previous weekly earnings every two weeks for 45 weeks until the worker finds a full-time job.¹⁷ In Germany, strong baseline labor policies already provide allowances for unemployed workers looking for jobs.¹⁸ Therefore, coal miners and power plant workers are already entitled to benefits that enable them to continue earning during the transitional period.

Another commonly utilized compensation tool is early retirement. For workers exiting the labor market, early retirement ensures they receive compensation for the years they spent working in mines and coal-fired power plants. Germany's 2020 coal exit law outlines their plan for phasing out all coal power by 2038 and allocates a maximum of \$5.9 billion for workers to receive transitional aid for up to five years until they reach pension age.¹⁹ This assistance is allocated for older workers who are likely too old to find a new job but have not yet qualified for pension benefits. In our research, we found early retirement policies in four countries. In Spain, early retirement became essential in 2010 when the EU passed legislation requiring that member countries stop supporting economically viable coal mines by 2018.²⁰ In response to the expected increase in mine closures, the Spanish government worked with mining unions to create the Plan Del Carbón, a just transition policy roadmap that included \$195 million for early retirement.²¹ Later, in 2016, the European Commission provided financing for the

early retirement of Spanish miners as part of a \$2.36 billion deal, retiring workers over 48, those that had worked for an affected mining company for over 20 years, and those that had contributed to the coal mining social security fund for at least 25 years.²² For countries with an aging coal workforce, early retirement policies are critical as workers are unlikely to benefit from retraining programs if they are only a couple of years away from retirement.

Finally, four countries — Germany, the US, the United Kingdom, and Spain — provided severance pay to workers that lost their jobs during their coal transitions. Germany's national labor policies provide two years of wage subsidies to laid-off workers, and additionally, from 1966 to 1979, Germany disbursed €230 million (in 2005 euros) in one-time payments to coal workers that lost their jobs from mine closures and/or rationalization.²³ While this severance pay policy ended in 1979 as they focused on other compensation policies, Spanish coal workers have successfully advocated for severance pay on multiple occasions in recent years. Between 2014-2017, a cluster of mines in the northwest of Spain shut down, and to ease economic hardship, the national government provided miners with voluntary severance, at an average amount of about \$44,000 per miner.²⁴ Additionally, in 2016, miners that were not eligible for early retirement under the European Commission package were offered severance pay of around \$11,070 plus 35 days' pay for every year they mined.²⁵

Table 3. Cost of the average income compensation package per worker in three countries.

Country	Payment timeline	Average income compensation package per worker (USD)
Spain	Total	\$343,460 ²⁶
Canada	Every 2 weeks (max 45) until hired	75% of previous weekly earnings ²⁷
Germany	5 years	\$163,380 ²⁸

HEALTH SUPPORT

Existing coal transition support packages in four countries provide health packages or compensation to coal miners for negative occupational health outcomes. Coal production is not only harmful to the environment but also to its workers. Coal miners and power plant workers are exposed to hazardous conditions in the name of energy production and care for their occupational illnesses were occasionally incorporated into just transition policies. Former coal miners in Spain are provided one-time payments of \$28,150 in compensation for harms to their health from mining, namely, asbestosis,²⁹ while miners in the United States with coal workers' pneumoconiosis receive \$7,920 to \$15,840 from the Black Lung Disability fund annually, which is funded by the federal government's excise tax on coal when mine operators cannot pay.³⁰ Other health supports provided include community health vouchers, used in Poland, and addiction recovery and education grants, financed in the United States. Through the support of the EU Just Transition Fund, the energy company ZE PAK Group, and union workers in Eastern Wielkopolska, Poland drafted a just transition package that includes one-time health vouchers of \$2,340 for psychological assistance.³¹ The addiction recovery funds in the United States are funded by ARC POWER grants, which as of March 2022 had earmarked an average of \$6,620 per person in its projects to aid in fighting opioid addiction in Appalachian communities.³² Health supports crafted thus far have been precisely tailored to the needs of the coal communities that receive them, using national or supranational funds to finance regional programs.

Table 4. Cost of the average health support package per worker in three countries.

Country	Average health support per worker (USD)
Poland	\$2,340 ³³
Spain	\$28,150 ³⁴
United States	\$7,860 ^{35,36}

POLICY OPPORTUNITIES

In our research, the majority of just transition compensation packages that extended beyond one company were provided by the national government. While there are cases of regional governments (ex. Victoria in Australia) and coal companies (ex. ZE PAK in Eastern Wielkopolska, Poland) financing substantial parts of their transition, for a comprehensive transition away from coal, compensation has typically been provided at the national level. There are numerous benefits to national government investment in regional coal transition. While this brief focuses on supporting coal workers, the impacts of a transition will extend beyond directly impacted employees and into surrounding communities. As a result, further regional investment is needed, and national governments have a greater capacity to provide economic assistance, especially in regions facing economic downturns from shifts in the energy sector.

However, despite the need for engagement from national governments, it is still critical that the policies selected are tailored to local needs. Considerations included in existing programs include the age of workers, relevant emerging economic opportunities in the region with the need for trained laborers, and healthcare needs of coal workers and communities, ranging from compensation for occupational harms to investment in local addiction care.

Additionally, effective programs implemented thus far have relied on a wide range of policy solutions to aid workers in the economic transition. Each of the countries that we researched utilized a variety of policies, most including at least one policy from each of the three categories identified. For example, not all workers will benefit from an early retirement package, as they may not be near retirement age, or otherwise may want to continue their engagement in the workforce. Therefore, it is important that the government handling the transition understand what the employees need, and tailor the support package to prevent direct unemployment. If the coal workforce is young, most funds will be channeled towards rehiring and job-seeking assistance policies, alongside severance pay, whereas with an older workforce, it can be directed towards early retirement.

The countries analyzed reveal that financing a just transition for coal workers requires considerable financial investment. In the future, as more countries transition away from coal, international aid may be needed to support these efforts. Germany, for example, has spent €140 billion on their decades-long transition, a significant investment, one which will have to occur at a faster timescale in other countries in order to meet the 1.5C target. In the future, as coal phaseout continues, it is essential that the contributions of workers be acknowledged and compensated through proper assistance as the energy industry transitions.

Table 5. Low and high government supports by subcategory (payment per worker)

Government support of just transition					
Support type	Subcategory	Financier	Payment timeline	Payment per worker (USD)	
				Low	High
Rehiring	Hiring Incentives	National & Regional	One-time	\$2,940	\$13,740
	Relocation	National	One-time	\$3,960	\$3,960
	Training	National, Regional, & Industry	One-time	\$6,060	\$41,380
Income compensation	Adjustment Period Financial Assistance	National	Every 2 weeks (max 45) until hired	75% of workers' previous weekly earnings	
	Early Retirement	National	Total	\$384,740	\$844,370
	Severance Pay	Supranational & National	One-time	\$11,070	\$44,000
Health	Compensation for harms to health	National & Industry	Low, Annual/ High, One-time	\$7,920	\$28,150
	Community health vouchers	National & Industry	One-time	\$2,340	\$5,090
	Addiction recovery and education	National	One-time	\$200	\$6,620

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Citation: C. Dahl, C. Squire, R. Cui. (May 2023). "Policy Brief: International experience in a just coal workforce transition through fiscal support." Center for Global Sustainability at the University of Maryland, 7 pg.