

U.K. and U.S. Defense Worker Views on the Environmental Costs of War and Military Conversion

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Summary

With humanity now facing the possibility of catastrophic and irreversible climate change, the environmental costs of the world's military industries are increasingly being recognised as a significant part of the problem. This realization now even extends to the defense companies and weapons-exporting governments, themselves, who are currently in the process of discussing how to 'green' defense. Their proposals and programmes focus on technical change to achieve this, without considering reducing levels of production or lethality. The industry argues that it is crucial to maintain and grow the sector, both to protect national security but also to create and maintain jobs. However, environmentalists point to the need to reduce all unnecessary production so as to respect ecological limits. Some question the scale and value of the defense sector and argue for conversion to more useful civil employment and output.

Within this debate, the views of defense sector workers themselves have been largely absent, despite their importance for understanding the feasibility of conversion. As impacted workers, their ideas, hopes, and concerns will be necessary for undertaking a successful green transition of the sector. In response to this participation deficit, the research outlined in this paper focuses on the views of a cross-section of current and former defense workers on the environmental issues around their work and the case for military conversion. It includes workers in the United States (U.S.) and the United Kingdom (U.K.) as they are the two largest global defense exporters on a rolling 10-year basis².

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² DFiT. (2020). *UK defence and security export statistics for 2019*. Gov.UK. UK Dept for International Trade. <https://www.gov.uk/government/statistics/uk-defence-and-security-export-statistics-for-2019/uk-defence-and-security-export-statistics-for-2019#:~:text=In%202019%2C%20the%20value%20of,North%20America%20and%20Asia%2DPacific>. The U.S. is currently 1st in terms of national military spending and the U.K. 5th in a global league table, with U.S. and U.K. defense expenditures rising in 2020 to \$778 billion and \$59.2 billion, respectively. Source: Da Silva, D.; Tian, N.; Marksteiner, A. (2021). *Trends in world military expenditure, 2020*. SIPRI. https://sipri.org/sites/default/files/2021-04/fs_2104_milex_0.pdf

Further information on the project, including full project and policy reports, can be found at <https://decarbonising-defence.co.uk/>. The anonymised transcripts of the interviews can be found in the U.K. Data Archive Data Catalogue, under 'Data Collection #855918'.³

Context

The environmental impacts of defense are difficult to fully capture, as defense tends to be exempted from CO2 targets and associated governmental monitoring. However, reports suggest that the defense sector contributes exceptionally high rates of greenhouse gas (GHG) emissions and pollution, as well as using enormous quantities of non-renewable resources⁴. Since defense accounts for 50% of U.K., and 80% of U.S., Government GHG emissions, there is an increasing understanding that decarbonisation of the defense sector is vital to achieve Government net-zero ambitions⁵. Many defense organisations are also now addressing the environmental aspects of their work in recent reports, statements, innovations and strategies⁶. Defense sector departments and

³ Bell, K.; Prince, V.; McLoughlin, K.; Skinner, L. *Decarbonising and Diversifying Defence: A Workers' Enquiry for a Just Transition, 2021-2022*. U.K. Data Service.

<https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=855918>

⁴ For example, Bigger, P.; Neimark, B.D. (2017) *Weaponizing nature: The geopolitical ecology of the U.S. Navy's biofuel program*. *Political Geography*, 60, p. 13-22.

https://www.academia.edu/32274404/Weaponizing_nature_The_geopolitical_ecology_of_the_US_Navy_s_biofuel_program; Crawford, N. (2019, November 13). *Pentagon fuel use, climate change, and the costs of war*. Costs of War, Watson Institute, Brown University.

<https://watson.brown.edu/costsofwar/files/cow/imce/papers/Pentagon%20Fuel%20Use%2C%20Climate%20Change%20and%20the%20Costs%20of%20War%20Revised%20November%202019%20Crawford.pdf>; Belcher, O. et al. (2019, June 19). *Hidden carbon costs of the "everywhere war": Logistics, geopolitical ecology, and the carbon boot-print of the US military*. *Transactions of the Institute of British Geographers*, 45(1), p. 65-80, <https://rgs-ibg.onlinelibrary.wiley.com/doi/10.1111/tran.12319>;

Parkinson, S. (2021, June 15) *More fight, less fuel: the military approach to climate change*. Responsible Science blog. <https://www.sgr.org.uk/resources/more-fight-less-fuel-military-approach-climate-change>;

Parkinson, S. (2020, May). *The Environmental Impacts of the UK Military Sector*. Scientists for Global Responsibility. https://www.sgr.org.uk/sites/default/files/2020-05/SGR-DUK_UK_Military_Env_Impacts.pdf;

Parkinson, S. (2020, July 2). *Will the UK Reduce its Military Carbon Emissions?* Rethinking Security blog. <https://rethinkingsecurity.org.uk/2020/07/02/uk-military-carbon-emissions/>

⁵ Barry, B. (2021, August 9). *UK to adapt military to changing climate, but does it have the funds and backing of troops?* DefenseNews. <https://www.defensenews.com/opinion/commentary/2021/08/09/uk-to-adapt-military-to-changing-climate-but-does-it-have-the-funds-and-backing-of-troops/>; Frazer-Nash Consultancy. (2020). *Where next for UK Defence in an era of climate crisis?*

<https://www.fnc.co.uk/resources/where-next-for-uk-defence-in-an-era-of-climate-crisis/>

⁶ See, for example, U.S. Army. (2022). *United States Army climate strategy*. Department of the Army, Office of the Assistant Secretary of the Army for Installations, Energy and Environment. Washington, DC.

https://www.army.mil/e2/downloads/rv7/about/2022_army_climate_strategy.pdf; StartUs Insights.

(2022) *Top 10 Military Technology Trends & Innovations for 2022*. Research Blog. <https://www.startus-insights.com/innovators-guide/top-10-military-technology-trends-2022/>;

Dimitrova, D., Lyons, M.

Losada, P. et al. (2021, September 10). *The growing climate stakes for the defense industry*. Boston Consulting Group. <https://www.bcg.com/publications/2021/growing-climate-stakes-for-the-defense-industry>;

Honeywell. (2021). *How we'll reach carbon neutral by 2035*.

<https://www.honeywell.com/us/en/news/2021/04/how-we-will-reach-carbon-neutral-by-2035>;

Gov.UK. (2021, March 30). *Ministry of Defence Climate Change and Sustainability Strategic Approach*.

companies have begun proposing, and in some cases implementing, a number of ideas for decarbonisation, including: utilizing biofuels for powering ships and aircraft; increasing the energy efficiency of platforms and installations; electrifying vehicle fleets⁷; introducing electric unmanned aerial vehicles (UAVs)⁸; and using more efficient engines, lightweight materials and aero- or hydro- dynamic designs⁹. However, their documents, discourses and activities tend to focus primarily on technical change, with little attention to arms control, diplomacy and human security as means of reducing the carbon emissions and other environmental harms associated with defense¹⁰.

Some have called for a stronger focus on 'diversification' of the defense sector, i.e. converting defense sector business to non-military business fields. Since, in the main weapons producing countries, defense industries are heavily subsidised by the state via citizen taxation¹¹, there is a potential 'peace dividend' which can be gained from the transfer of resources from military to civilian use. This could address the unmet needs for housing, nutrition, clean water and sanitation around the world whilst reducing the harm to people, property, markets and the environment that conflict causes.

Yet for some time, particularly in the U.K. and the U.S., the defense economy has been considered important for sustaining employment. It might be assumed that defense sector workers, in particular, would argue against shifts or shrinkage in the industry that employs them. They might be assumed to be even more anxious to maintain the status quo given the rise of automation and the job relocations that have occurred in

<https://www.gov.uk/government/publications/ministry-of-defence-climate-change-and-sustainability-strategic-approach>; Owen-Burge, C. (2021, May 25). *MOD climate chief: Inaction will lead to a "more expensive, weaker military"*. Race to Zero. <https://racetozero.unfccc.int/mod-climate-chief-inaction-will-lead-to-a-more-expensive-weaker-military/>; Raytheon Technologies. (2022, July 13). *Sustainable aviation: How Raytheon Technologies is working to cut carbon emissions*. <https://www.rtx.com/news/2021/04/20/sustainable-aviation>; Rolls Royce. (2021a). *Our decarbonisation strategy*. <https://www.rolls-royce.com/innovation/net-zero/our-decarbonisation-strategy.aspx>; Rolls Royce. (2021b). *Leading the Transition to Net Zero Carbon*. <https://www.rolls-royce.com/~media/Files/R/Rolls-Royce/documents/others/rr-net-zero-exec-summary.pdf>; Rolls Royce. (2021c). *Our pathway to Net Zero*. <https://www.rolls-royce.com/innovation/net-zero.aspx#/>; Sutcliffe, J. (2021, July 27). *Our Commitment to Net Zero*. <https://www.baesystems.com/en-uk/blog/our-commitment-to-net-zero>; Judson, J. (2020, September 21). *US Army gives green light to shape vehicle electrification requirements*. DefenseNews. <https://www.defensenews.com/land/2020/09/21/army-gives-green-light-to-shape-vehicle-electrification-requirements/>

⁷ e.g. U.S. Defense Secretary, Lloyd Austin, in Vergun, D. (2021, April 22). *Defense secretary calls climate change an existential threat*. U.S. Department of Defense. [defense.gov](https://www.defense.gov).

⁸ See: Bowcott, H., Gatto, G., Hamilton, A. and Sullivan, E. (2021, July 1). *Decarbonizing defense: Imperative and opportunity*. McKinsey & Company. <https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/decarbonizing-defense-imperative-and-opportunity>

⁹ International Aircraft Transport Association (IATA). (2019, December). *Aircraft Technology Roadmap to 2050*. <https://www.iata.org/contentassets/8d19e716636a47c184e7221c77563c93/Technology-roadmap-2050.pdf>

¹⁰ e.g. Bigger, P.; Neimark, B.D. (2017) *Weaponizing nature: The geopolitical ecology of the US Navy's biofuel program*. Political Geography, 60, p. 13-22; Gardner, T. (2017, March 1). *U.S. military marches forward on green energy, despite Trump*. Reuters. <https://www.reuters.com/article/us-usa-military-green-energy-insight/u-s-military-marches-forward-on-green-energydespite-trump-idUSKBN1683BL>; Parkinson, S. (2021, June 15). *More fight, less fuel: the military approach to climate change*. Responsible Science blog. <https://www.sgr.org.uk/resources/more-fight-less-fuel-military-approach-climate-change>

¹¹ e.g. Campaign Against Arms Trade. (2014, October 1). *Arms to renewables: work for the future*. <https://caat.org.uk/publications/arms-to-renewables/>

recent years as governments and companies search for lower labour and environmental standards offshore.

Both the U.S. and U.K. trade unions have argued for a Just Transition for workers so as to avoid any negative impacts on the workforce as countries shift to sustainability. The main U.K. trade unions, for example, arguing for social justice in the transition to sustainability, have argued that those most affected should be allowed to lead the debate and priority setting¹². Yet, a survey run by the U.K. Prospect union found that 65% of those responding answered ‘no’ when asked ‘Does the government do enough to engage defence workers when shaping defence industrial policy?’, compared to less than 5% replying ‘yes’¹³.

This study aimed to bring workers into conversation to find out whether they really value jobs at any cost and what their issues and concerns might be around converting the sector. It intended to amplify their voices on these topics, building on models of participation¹⁴ that respect and value diverse perspectives and knowledge bases.

Method

The ‘workers’ enquiry’ took place between October 2021 and March 2022. 58 interviewees were recruited via defense sector companies; trade unions; defense interest groups, such as the Defense Forum and Defense and Security Portal Facebook groups; veteran organisations, including Veterans for Peace in the U.S. and U.K.; and community-based environmental groups. We also held ‘international trade union dialogue’ and ‘international expert dialogue’ focus groups, with representatives including the International Trade Union Confederation, and key unions with defense sector members in the U.S. and the U.K.. The methods and outputs were developed in consultation with a voluntary advisory committee which included representatives from defense companies, government departments, non-governmental organisations, academia and trade unions.

Worker Views

All the workers interviewed said they were concerned about climate change, as well as a range of other environmental issues. Many were trying to live and work in line with these concerns, as they stated in the following comments, for example:

I have been what you might call a tree hugger since the early 80's, late 70's... and I have been banging on about climate change since the 80's

¹² Prospect/GMB/Unite/Unison. (2018). *Demanding a Just Transition for Energy Workers*. <https://www.unison.org.uk/content/uploads/2019/01/just-transition-to-low-carbon-leaflet.pdf>.

¹³ Prospect. (2021, June 14). *Integrated defence review – member feedback*. https://library.prospect.org.uk/documents/202100568_integrated_defence_review_-_member_feedback

¹⁴ Bell, K.; Reed, M.S. (2021, June 8). *The tree of participation: A new model for inclusive decision-making*. *Community Development Journal*, 57(4), p. 595-614. <https://doi.org/10.1093/cdj/bsab018>

and the front of my head is flattened with banging my head against a brick wall, basically, but people are beginning to listen now (UK020).¹⁵

...the survival of the human race is at stake, the stakes could not be higher. ...Here in Oregon, wildfires are the worst there's ever been. We just had the worst ever tornados through our Midwest ...Climate change is upon us. It's here. It's getting worse (US003).

...we were actually just in Alaska and went to see the glaciers because I wanted to see them before they all melt into the ocean and that sea rise is going to – it's changing fishing industries; it's changing the quality of the food that we can get; and it's changing the lives of the people that it impacts (US013).

Most of the workers recognised that their occupational sector contributes to climate change. Many, echoing the discourses of companies and governments, felt that this could be reduced through technical, managerial and financial interventions without any need for changing the production levels or focus of the sector. Of those that did support some diversification of the defense sector, some of the interviewees saw this as primarily being about increasing civil production within defense sector companies, without deliberately reducing the defense component, as in the following comments:

Diversification for me, in my industry, means doing not only defense products but it also means civil and other related, or non-related activities. If you look at [ANONYMISED defense company] we have a civil business, we have the defense business which covers air, land and sea... It's a diverse portfolio but it's not wholly dependent on defense (UK001).

I think it makes all kinds of sense to integrate, if you will, the work force training that is going to be required both for military and civilian use. But, again, defense contracts come and then they go, and so we should always have that ability to be flexible enough to move people from the military side to civilian application (US017).

Some made the point that the defense sector already manufactures civil goods alongside military goods and use knowledge from one sector to benefit the other, as in the following excerpts:

The military have started to cherry pick civil products for use in defense and then maybe there are companies out there looking at what the military are doing and thinking "what's the civilian applications for those concepts?" Again, taking stuff from civil applications, like drones and remote-control vehicles, etc., and then put them in the battlefield and I suspect there are companies out there looking at what the military are doing, that are looking for civil applications for that technology (UK016).

¹⁵ Worker names have been withheld for confidentiality. They are identified by country and number, corresponding to transcripts in the database referenced in footnote #3.

I would say, in my career, probably close to 80% was commercial. But even some of that leaks over to defense.... Not big, not a large percentage of the work I did, but I worked in one of the largest machine shops in the country for [ANONYMISED]. So, we supplied machine parts support to various divisions (US017).

Overall, the workers interviewed had a range of views in terms of their support for, and resistance to, conversion. Some supported diversification as a way to broaden defense company business to create more job security and business stability, as illustrated in the excerpts below:

I think it probably goes back to that 'spreading the risk' so, if we take an organisation in the supply chain, is it sensible for them to invest in other, or try and bid for, other work that isn't defense related? I think that's probably a good decision. You don't want to put your eggs in one basket (UK018).

...there's the benefit that, if they diversify, they're not going to be dependent only on government funding. With different administrations funding gets either cut or they get increased so they're not going to be totally dependent on that. I think they're looking there for growth or as a safety net as far as not being completely dependent on government (US023).

Others considered that, particularly given the environmental problems associated with defense, only a scaling back of operations and production would prevent these problems. These workers wanted a more focused, reduced or repurposed defense sector with at least some limits on arms production and sales as the following interviewees argued:

Moving the defense into a format that is more focused towards home rather than abroad. I would be interested in that... I do think that the military and the defense sector do get involved in some things that either they shouldn't, or that they should not prioritise as much as they are. One example would be investment in arms in Saudi Arabia. I'm not in agreement with that... Defense should always be a last resort. That's kind of the point really (UK002).

Do we really need any more weapons? I don't think I can answer that...I think we do need, given the current state of play with the world, I think we do need some kind of defense but, in the same token, are we producing too much? (UK005).

Just greenwashing isn't going to do it. Just putting solar panels up isn't going to do it. So we're trying to stress that the only way to really lower emissions of the military is you've got to make the military smaller. By the way, do we really need to update all our ICBMs [Inter-Continental Ballistic Missiles]? Don't we have enough to blow up the world three

times over, or five times over? Why don't we take those resources and use them someplace else where they really should be? (US008).

Some of the workers interviewed discussed better uses for the defense subsidies, as in the arguments for a 'peace dividend'. Several proposed that other means of dealing with conflict need to be utilised to avoid the associated environmental and social harms of violent military engagement, including, for example, the comments below:

So, if we weren't spending as much [on defense] or if we were taking that money and putting it towards social needs, those could have a great impact on the quality of life for most Americans in terms of stuff like national healthcare and a lot of the safety net things that, say, most countries in Europe take for granted because they don't spend as much money on weaponry as we do... (US011).

... wars do directly cause, in terms of the amount of, you know, the emissions the military produces, I mean, I think of the U.S. as producing emissions equivalent to, sort of, several small countries. But I suppose the biggest one is the amount of resources that are taken up, like 40% of the discretionary budget of the U.S. is military... taking up enormous amounts of resources that could be transferred to mitigating the causes of war (UK019).

There's, sort of, this thing that people just grow up with respecting the people in the military, not understanding that they are the – they're just the face, the attractive face, for a vast network of military industrial production which poisons ground water and makes workers sick and eats up our tax dollars and has many, many other effects that are harmful.

Not only does the U.S. military not protect us, you know, in any meaningful way, it is actively harmful (US004).

...they use this depleted uranium to make artillery shells for piercing tanks and armour. And it works quite well. It's been used in Iraq a lot and still being used by the military today. However, when these armour piercing shells explode, they make this depleted uranium into uranium dust and spread out all over the environment. Mutations of our own military and the local populous have created a lot of deformed children. Same happened in Vietnam with Agent Orange. A close friend of mine was affected by Agent Orange. His son was born deformed and died in his arms at age five. A very sad story and yet that's one of many from not considering the consequences of what the military uses as weapons (US003).

Many of these more critical views of the defense sector came from ex-defense workers, particularly ex-military. However, some current defense workers were also very critical of the social and environmental harm caused by the defense sector. Some expressed guilt and discomfort about working in the sector. They were happy for their jobs to transform into civil roles, particularly if it involved undertaking work which would help

to address climate change and other environmental problems, as illustrated in the following comments:

In terms of my job, I do feel a little uncomfortable with the defense as a whole but there are things that I can do and I can encourage those around me to do in order to behave in a more sustainable and less wasteful way...(UK002).

... I am uncomfortable working in the defense industry at large so I am looking to make that move already because I'd rather be working for a business that's good for the planet rather than what I would really see as bad. ... For me, I see it as a potential route to a more fulfilling career because it's important for me to work on things that I care about (UK022).

I'm in a weird place because my politics don't really line up with the work that I do and so, on the one hand, I am really grateful that I have such a secure job in a secure industry but, on the other hand, it would be wonderful if my job didn't necessarily have to exist (US015).

I would jump at that [changing to a green job] in a heartbeat. ...Well, I guess, it's funny because one of the reasons that I didn't want to come to work at [ANONYMISED defense company] was because of the defense industry. I didn't want to work in a factory and I didn't want to work in something that supported making machines of war. Obviously, over time that's worn away but I've always said to people here that if something happened and we didn't have to have war anymore and we didn't have to make, you know, military engines and, you know, that kind of thing, I would be happy to lose this job and find another. And, if it was in a renewable resource, research or job, that would be fantastic. ...I would feel better about my life if I did that. ... I feel that it's important that I do my job properly in order to keep people safe. ... Would I prefer to do something that was more relevant for the world? Absolutely! (US013).

Most considered that it would not be easy to convert the defense sector. Some of those interviewed remembered previous unsuccessful attempts at conversion, including the following:

[Diversification] – We know that up in Scotland because we have got Faslane on our doorstep and CND and the STUC, Scottish Trade Union Congress, put out a document about maybe probably ten years ago now, putting the road to re-use the workers that are working in Faslane to make wind turbines, tidal power and all these sort of things (UK020).

We have a progressive caucus in our union in [ANONYMISED defense company] to make things that are more socially useful and not destructive, so we're real familiar with the concept. We tried at one point...to see if we could get a part of the defense law that if a company

made defense products that they had to have standing committees of workers and management to meet regularly to discuss what other products the company can make other than military products, but of course that didn't go anywhere (US011).

A number of the interviewees discussed the economic interests that underpin the defense sector and felt that this would be the main barrier to change. For example, they said:

...and just recently I read that arms companies have had the biggest profit ever and it's something horrendous like 500 billion pounds profit, not just turnover, but profit. It's massive, massive profits, so, until such time as money doesnae talk, it's [diversification is] gonna struggle here (UK020)).

... it's a very lucrative business for a start. I mean, I think when you have a permanent arms industry that has to make lots of money and sell arms then you're going to have a dynamic to fight wars (UK019).

... there's people who live off war and war based industries and you would have to overcome that barrier ... If you can convince them, I think, that they could make as much money in another field, that would be the barrier that would have to be broken (US013).

I think that there's just so much money, and I think it all just boils right down to that. There's just so much money in the defense side – My sense is that people who do a lot of defense work really don't want to get into the greening of the economy – the profit margins aren't as good as defense manufacturing. ... it's the premium on shareholder value that just drives every decision in corporate America, including the defense industry (US024).

There was also antipathy to the idea of diversification among a number of the interviewees. Their main objection was that the defense sector was essential and is 'socially useful'. They felt the sector needed to be adequately equipped to be able to respond to known and, as yet, unknown, threats. These interviewees felt strongly that the defense sector should not be reduced, as argued, for example, by the following workers:

... if we diversified from defense ... we would basically have no defense. We would lose our capabilities in order to defend ourselves and our interests both at home and abroad. That would, basically, not only render the nation mute but it would make them vulnerable to attacks that go on on a day-to-day basis, both in the cyber infrastructure and on the ground when we're trying to protect our interests (UK002).

... some U.S. colleagues once said to me that “you can save a few bucks and it costs a few lives” and that metaphor has never been truer... No-one's got a crystal ball and this stuff will come out and bite you. I mean, the Falklands was a great one on that ... These things happen and nobody knows about them until they hit... the way you live today has been bought in blood and a lot of people forget that. I don't, because once upon a time I was one of the individuals to stand in on a bloody war. But it's bought in blood, end of ... I'd like it not to, I really would, but unfortunately that's the way of it (UK017).

We do need a defense force in this country – there's no two ways around it. Every country does, but there's plenty of other areas, I think, where skills could be reused to support those green jobs – I don't think we need to be taking them from defense (UK030).

...a strong defense is what you have to have in order to show the world that you can take them on, and the United States... some people would like to call it ‘the protectors of the world’... (US007).

Some of the interviewees gave practical reasons for not converting the defense sector, such as that defense sector technologies would be overly complex for civil use, as discussed here:

... there wouldn't necessarily be a sensible civilian use for some of the equipment. It's overly complex for civilian needs so the cost of the equipment to pay for the development and testing would be prohibitively expensive for its – to make it financially viable for roll out into other industries... (UK010).

Some considered that diversification was unlikely to happen without incentivisation from governments, since the defense sector tended to be more profitable and well-resourced than the civil sector:

I guess if defense companies are finding that they're earning sufficient profit from just focusing on defense sales and defense technology then they're not, sort of, forced to change and look at other opportunities. Again, I suppose it's about incentivising companies to do that. I think there are probably lots of opportunities but they're not being pursued at the moment (UK007).

I don't think it's a priority for the defense sector because I think it is more lucrative to be in the defense sector and be paid public money to develop defense products than it is to be in private sector and take the risk with no guaranteed return (UK022).

Some of those interviewed clearly felt that having a secure, well-paid job, as the defense sector offers for some, was their priority, rather than what products they made. For example, here a union leader discussed how he needed to prioritise jobs:

On the plus, as the president of this local [trade union branch], as I've said from the beginning, I would certainly not condone anybody destroying the environment to keep their job, but my top priority is trying to make sure that we have work in jobs in the United States, and especially for my local. So, I don't make a lot of judgments on abortion, I don't make a lot of judgments on gun control, I don't make a lot of judgments on anything other than, what can you do to keep the people I represent in work? That's my job, and to be anything other than that, it would really be a disservice to the people that are paying my salary. Believe me, some of my own members try to argue with me about, "well, why are we giving political money to a senator, or a representative, who was against, or is for, gun control?" I don't care if he's for or against gun control, he supports defense spending. That's your job. You can't worry about guns, you can't worry about abortion, you can't worry about anything if you can't put food on your table and a roof over your head. So, that's what I care about first and foremost (US014).

Hence, there were diverse views among these workers regarding the case for conversion. This was a small group so we cannot generalize to defense workers overall. However, it is interesting that, even among this small cohort, some were interested in converting their work to civil production and would be interested in taking up 'green jobs'.

Conclusion

The defense sector is uniquely environmentally and socially harmful because of its indirect and downstream impacts on ecologies and humanity. As such, more than ever, it needs to be challenged as being an appropriate and effective solution to conflict. Even its justification as providing jobs is weak given the many socially useful alternative tasks that humans could be engaged in at this time.

The worker interviews provide insights into some of the views of those who depend on, or have depended on, jobs in the defense sector. We cannot say the extent to which the various views outlined here prevail amongst defense sector workers, more generally. Since the study was carried out, the U.K. Trade Union Congress voted by a very narrow majority to support increased arms spending (2,556,000 votes to 2,469,000) – a change in policy from their former commitment to arms diversification¹⁶. This may reflect the increasing militarisation of U.K. society over the last year.

However, it is clear that some defense sector workers see beyond the dominant discourses associated with the industry. It is evident that they are not solely concerned with their own jobs but are also highly motivated in terms of social and environmental justice, according to their own visions of what this looks like. In general, as long as their immediate economic and social interests are not threatened, the workers seemed to

¹⁶ Hudson, K. (2022, October 20). *TUC Congress: overturns Defence Diversification policy*. Campaign for Nuclear Disarmament. <https://cnduk.org/tuc-congress-overturns-defence-diversification-policy/>

enthusiastically embrace the transition to sustainability, though they were more diverse in their opinions as to whether this should include arms conversion. A clear message is that they want quality 'green' jobs to be available to them.

In addition, some felt that a much stronger focus on human security and diplomacy is required as alternative means of resolving conflict. Some pointed to the key question of whether this can happen within a system in which the military and defense sectors create enormous profits for companies and governments.

Defense sector workers need to be included in the conversation about how to transition to sustainability as they have valuable insights to offer and, when organised within the workplace, have the power to press for change. The discussion should not just be limited to technical and managerial solutions but to an overall assessment of what is truly valuable for society. Defense sector workers, their unions, and their communities, are an important source of expertise and can be a moral compass in the transition of the defense sector.