

# The military carbon boot-print and arms conversion

Dr Stuart Parkinson

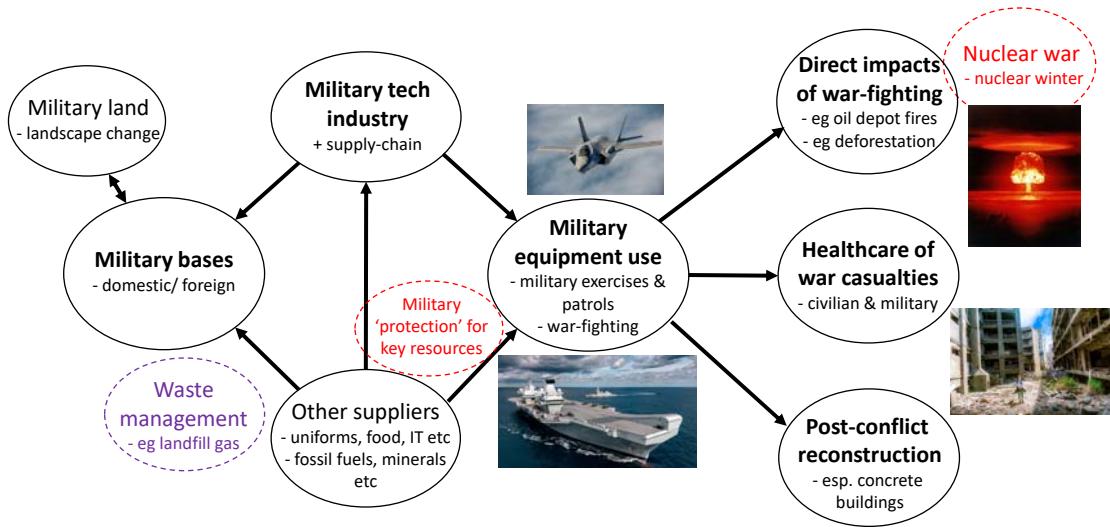


Scientists  
for Global  
Responsibility

**Arms Conversion Defence Diversification Group**

Two-part presentation which was part of a workshop on 'Militarism, climate change and global dissent' - one of the sessions at *From the Ground Up II* - a global online gathering organised by the COP26 coalition from 22 to 25 April 2021.

# Military carbon boot-print: key components



For more analysis, see (e.g.):

SGR (2020). <https://www.sgr.org.uk/publications/environmental-impacts-uk-military-sector>

[image credits: MOD; Gerd Altmann; Free Photos]

## Military carbon boot-print: some figures

	Carbon emissions of armed forces (tCO <sub>2</sub> e)	Military carbon footprint (tCO <sub>2</sub> e)	Sources
USA	56 million	na	Brown University (2019)
EU-27	8 million	25 million	SGR/CEOBS (2021)
UK	3 million	11 million	SGR (2020)
World	na	445 million	TPNS (2020)

- Military exempt from carbon reporting rules for civilian sectors
  - so data quality is often very poor
- Global military carbon footprint greater than Italy
  - A few percent of global total
- US armed forces' carbon emissions greater than Argentina
- **Militaries are generally exempt from carbon reduction targets**

- Carbon emissions of armed forces includes energy use from equipment, bases and civilian support agencies (scopes 1+2) and civilian business travel (small fraction of scope 3)
- Example of scale: UK military carbon footprint equivalent to use of 6 million average cars
- Data sources:

Brown University (2019).

<https://watson.brown.edu/costsofwar/papers/ClimateChangeandCostofWar>

SGR/CEOBS (2021). <https://www.sgr.org.uk/publications/under-radar-carbon-footprint-europe-s-military-sectors>

SGR (2020). <https://www.sgr.org.uk/publications/environmental-impacts-uk-military-sector>

TPNS (2020). <https://transformdefence.org/publication/indefensible/>

## The need for 'arms conversion'

- Military is major carbon emitter
- Global military spending is approx. \$2,000,000,000,000 a year
  - ...and increasing...
- Huge misuse of money & scientific/ industrial effort
- Competing for skilled workers in key environmental/ social sectors
  - e.g. renewable energy, energy conservation, energy storage, low carbon construction/ refurbishment, electric vehicles, medical technologies
- To improve global security, it's better to tackle root causes of conflict – including climate change, inequality etc



Military spending figures from:  
SIPRI (2019). <https://www.sipri.org/databases/milex>

*[image credit: iStock]*

## Arms conversion: some examples

- Key periods
  - Post World War II – mid-1940s
  - Post Cold War – early 1990s
  - When nations recover from war
- Case studies
  - Lucas Plan – UK; 1976
  - Post Cold War transitions – esp. Germany/ former Soviet nations; early 1990s
  - Post Apartheid transition – South Africa; early 1990s
  - COVID-19 ventilator challenge – UK; 2020
  - Defence Industry Adjustment programmes – USA

Nuclear Education Trust (2018). <http://www.nucleareducationtrust.org/defence-diversification-international-learning-trident-jobs>

# Arms conversion for a just and sustainable society Workshop

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Caroline Jones, Campaign Against Arms Trade

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Supported by the Arms Conversion Defence Diversification group

## Arms conversion: brief introduction

- Industrial conversion needed to tackle climate crisis, e.g.
  - Fossil fuel industry to renewable energy industry
  - Internal combustion engines to electric motors (in vehicles)
  - Plane/ car production to train/ bus/ bike production
  - Energy intensive industries to energy efficient industries
- What about 'arms conversion'?
  - Militaries are energy intensive, wasteful, and fuel arms races & wars
  - Missed opportunity
- Two main types of industrial conversion:
  - Company/ factory conversion
  - Economic conversion



*[image credit: Escif - <https://www.facebook.com/Escif-116160785113488/> ]*

## Arms conversion: the nuclear controversy

- Some argue that nuclear power is needed to help tackle climate crisis
  - Including via conversion from military uses
- Close links between civilian and military nuclear industries
  - Clear evidence that military nuclear interests promote civilian tech to preserve/ cross-subsidise their own skills/ industry base
  - *Undermines* nuclear disarmament efforts
- Nuclear weapons are major threat to global climate system
  - Even 'small' nuclear war would cause catastrophic climate disruption through smoke injected into upper atmosphere
- We do not support conversion projects which involve nuclear power



Johnstone (2020). <https://www.sgr.org.uk/resources/hidden-military-implications-building-back-civil-nuclear>

*[image credit: Clker-Free-Vector-Images]*



## Case study 1 – Lucas Plan (UK, 1976)

- Lucas Aerospace announced intention to cut jobs
  - Due to commercial pressures/ technological change
  - 50% sales were military
- Company workers/ trade union activists – ‘Combine Shop Stewards Committee’ – responded by producing ‘Alternative Corporate Plan’
  - Socially-useful production – moving away from military tech
  - Including: medical tech; renewable energy tech (wind/ solar/ marine); efficient transport tech (hybrid engines)
- Plan attracted widespread support – but rejected by company
  - Some ideas investigated as university projects

More info at:

<http://lucasplan.org.uk/story-of-the-lucas-plan/>

## Case study 2 – Ventilator challenge (UK, 2020)

- Early in the COVID-19 pandemic, UK National Health Service predicted major shortage of medical ventilators
- Govt set up ‘Ventilator Challenge’ for UK industry
  - Included sectors: medical; military tech; civilian aircraft; commercial/ racing cars; general engineering
  - Each ventilator ‘not quite as complex as a car’
- Most successful consortium
  - Modified existing design; set up new production line; 1,500+ technical staff and 31 companies directly involved
  - Produced 11,000 ventilators in 12 weeks
- But: nearly all ventilators went unused; staff returned to original duties afterwards



Parkinson (2020a). <https://www.sgr.org.uk/resources/industrial-conversion-during-covid-19-crisis>

*[image credit: PIRO4D]*

### Case study 3 – Bremen Defence Conversion Programme (Germany; 1992-97)

- Bremen – German state most dependent on military industry
- Post Cold War regional conversion programme set up
- Regional government, industry and trade unions collaborated
  - Working groups on alternative products
- Some funding from national govt and European Commission
- 50 company conversion projects; 5 related infrastructure projects
- One of the most successful conversion projects of Post Cold War era

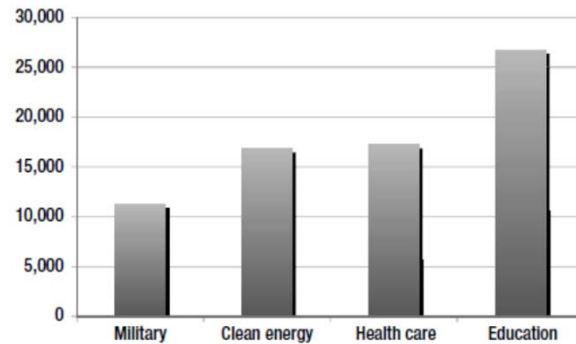
Nuclear Education Trust (2018). <http://www.nucleareducationtrust.org/defence-diversification-international-learning-trident-jobs>

## Case study 4 – National transition (UK; 1985-2018)

- Large arms industry jobs decline
  - Over 100,000 jobs lost in 10y (1985-95); 20,000 fall since
- But since about 2000, large growth of jobs in energy efficiency tech and renewables has more than compensated for losses
- 2018 figures:
  - 'Green industrial' sectors: 215,000 jobs; arms industry: 135,000
- Unplanned economic conversion leads to social justice issues
  
- *NB: all figures 'direct' jobs; govt/ industry figures*

Breakdown of green industrial jobs: 20% renewables; 65% energy efficiency tech; 10% low carbon vehicles (nuclear power not included)  
Parkinson (2020b). <https://www.sgr.org.uk/resources/arms-conversion-initial-lessons-covid-19-crisis>

## Job creation



### **Jobs created for \$1bn spending by US govt by sector**

Source: University of Massachusetts (2011)

*Figures include direct and indirect jobs*

- Military spending has low job creation potential
- Renewable energy sector has many skill overlaps with arms sector
  - e.g. electrical/ mechanical engineering, ICT, fluid dynamics

University of Massachusetts-Amherst (2011). The U.S. Employment Effects of Military and Domestic Spending Priorities: 2011 update. (authors: Pollin R., Garrett-Peltier H.)

[http://www.peri.umass.edu/fileadmin/pdf/published\\_study/PERI\\_military\\_spending\\_2011.pdf](http://www.peri.umass.edu/fileadmin/pdf/published_study/PERI_military_spending_2011.pdf)

## Successful arms conversion

- Collaboration between workers, communities, companies, local/national government
  - Dialogue
  - Multi-year plans
  - Re-training programmes
  - Most successful examples from, e.g., Germany in 1990s
- When govt/ industry resistant
  - Promote regional growth of renewable energy/ energy conservation industries
    - especially community-owned
  - Protest!

Nuclear Education Trust (2018). <http://www.nucleareducationtrust.org/defence-diversification-international-learning-trident-jobs>