



# The Peacebuilding Implications of Energy Transitions to a Carbon-Neutral Future

by Cara Priestley

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## WORKING DOCUMENT

This is a working paper, designed to encourage further discussions around energy transitions and peacebuilding. Comments are welcome and can be sent to [quno@quno.ch](mailto:quno@quno.ch). [quno@quno.ch](mailto:quno@quno.ch).

## Introduction

The world has experienced major energy transitions in the past (the Industrial Revolution being a prime example), but due to the scale of the climate crisis we now face, 21<sup>st</sup> century energy transitions away from fossil fuels will need to be rapid.<sup>1</sup> They also need to be carefully planned and managed to avoid instability, economic shocks (even breakdown) and the potential impacts on peace, conflict and human rights. The COVID-19 experience of severe instability in oil prices and financial markets is a foretaste of the economic impacts specific to fossil fuels we may see if sustainable energy transitions are not designed and implemented in good time.<sup>2</sup> This is therefore an important moment to consider the urgency of securing timely, sustainable and just energy transitions in alignment with peace, conflict and human rights considerations.

This paper forms the second in a QUNO series on energy and peacebuilding. It follows on from the 2018 paper, “*The Role of Decentralized Renewable Energy in Peacebuilding*”, by Isobel Edwards, which explored the role of decentralized renewable energy as a peacebuilding tool.<sup>3</sup> This paper explores the peacebuilding implications of energy transitions towards a carbon-neutral<sup>4</sup> future. It examines, on the one hand, the potential risks that abrupt or unmanaged ‘cut off points’ from fossil fuels may pose for peace, and the role that sustainable and just transitions can play in mitigating this. At the same time, it analyses the significant opportunities that sustainable and just transitions away from fossil fuels can provide for peace, socio-economic and political stability, health, environmental regeneration and justice globally. The highlighting of risks is in no way to argue against the necessity of energy transitions, or to suggest that the risks outweigh the opportunities – rather, it is to further conversations on ensuring that transitions are as successful as possible.

This paper begins with an overview of the climate crisis and the need for local and global energy transitions, before outlining the links between energy supply and conflict. It then explores the risks to peace that may occur if energy transitions are abrupt and unmanaged, before exploring the significant opportunities that sustainable and just energy transitions pose for peace. Despite this binary categorisation into risks and opportunities, many of the aspects outlined can move fluidly between the two – each risk provides an opportunity if mitigated.

## Chapter I: Energy, Conflict, and Energy Transitions

### Climate Breakdown and the Need for Energy Transitions

This paper will now outline the climate crisis we are experiencing, the critical need for energy transitions away from fossil fuels, and the importance of both transforming *and* reducing our energy consumption, before leading on to discuss the peace implications of energy transitions.

The world is facing climate breakdown. Average global temperature for 2015-2019 is on track to be the hottest of any equivalent period on record, currently estimated to be 1.1°C above pre-industrial (1850-1900) levels.<sup>17</sup> Without urgent action, the current greenhouse gas (GHG) emission rate would lead to a global average surface temperature rise of approximately 4.8°C by 2100, compared to pre-industrial levels.<sup>18</sup> This would see vast areas of the world

become uninhabitable, with temperatures exceeding the threshold for human adaptability in certain areas.<sup>19</sup> As well as threatening the enjoyment of human rights and heightening existing social and economic inequalities, this is an existential situation for both human and non-human life on this planet.<sup>20</sup>

Natural resource management in general has very often been problematic with regards to ecological sustainability, exploitation around labour and wider human rights violations. Within this broader category of natural resource management lies both fossil fuels and renewable energy. Fossil fuels are the world's main source of energy (with carbon emissions having reached an all-time high in 2018<sup>21</sup>), and their unsustainable extraction and burning are driving climate breakdown. Despite the urgent need

### Definitions

#### Conflict

Conflict has been variously defined as a fight, struggle, or controversy between parties, a discord of action, feeling, or effect, or an antagonism or opposition.<sup>5</sup> Conflict in itself is not negative – if harnessed constructively, it can provide an opportunity for positive change.<sup>6</sup> However, if not managed well, conflict can become destructive, leading to a breakdown in communication, damaging social relations and exacerbating tensions that can eventually lead to violence.<sup>7</sup>

#### Rights-based approaches

A human rights-based approach is underpinned by international human rights law and recognizes the full spectrum of human rights: civil, cultural, economic, political and social rights.<sup>8</sup> Rights-based approaches to renewable energy projects, which incorporate public participation, can increase local policy acceptance and lead to more successful mitigation and adaptation outcomes, thus resulting in more effective, coherent, legitimate and sustainable projects.<sup>9</sup>

#### Fossil fuel dependent economies

Fossil fuel dependent economies are those which are highly dependent on oil and gas production to provide State revenue. These economies are likely to be particularly affected by the transition away from carbon-intensive resources, partly because they will simultaneously suffer from increased energy costs and decreased exports.<sup>10</sup>

#### Sustaining peace

The concept of sustaining peace<sup>11</sup> highlights that peacebuilding occurs in all stages of the conflict continuum, which requires a shift in focus from managing destructive conflict to preventing it from occurring in the first place.<sup>12</sup> Sustaining peace therefore requires all parts of society to create conditions in which destructive conflict will not arise, including making changes in political, economic and social structures, and protecting and promoting human rights, at the international as well as national and local levels, to address root causes of grievances.<sup>13</sup>

#### Sustainable and just transitions

The concept of a 'just transition' was borne of the labour movement as it became aware of the need to protect workers from the impacts of environmental policies, and has since expanded to conceptualise the societal-wide transition that will be necessary to combat climate breakdown. The 'sustainable' dimension means that the needs of the present generation should be met without compromising the ability of future generations to do the same.<sup>14</sup> Sustainable development has three dimensions: social, economic, and environmental, and energy transitions touch upon all three. Alongside good practice guidelines<sup>15</sup>, international law obligations on just transitions exist under the Paris Agreement.<sup>16</sup>

for a shift to sustainable energy systems, the World Energy Outlook 2019 report found that “[t]he gap between expectations of fast, renewables-driven energy transitions and the reality of today’s [fossil fuel] energy systems... remains stubbornly high.”<sup>22</sup>

Traditionally, there has been much discussion surrounding the concept of ‘peak oil’, which refers to the hypothetical point at which the production of oil peaks and then declines.<sup>23</sup> It is important, however, to move on from peak-oil debates, as they can prove a distraction from the fact that we have more fossil fuels to extract than is safe to burn.<sup>24</sup>

Despite the urgent need to keep remaining fossil fuels in the ground, the fossil fuel industry continues to pursue ever more environmentally destructive extraction methods. This can be seen through the rise of hydraulic fracturing (‘fracking’<sup>25</sup>) and tar sands extraction, processes of “extreme energy”<sup>26</sup> which have caused negative environmental risks<sup>27</sup> and major societal injustices<sup>28</sup>. Their existence demonstrates the reluctance of the fossil fuel industry to take meaningful steps towards energy transitions. The extreme wealth that fossil fuels concentrate in the hands of a few, and the vested interests that follow, is a large factor in this reluctance. Power is rarely relinquished easily, and with renewable energy having the potential to decentralize ownership and therefore redistribute power, it can be viewed as threatening to those upholding the status quo.

Efforts to stabilize climate change and prevent related societal grievances and destructive conflict require both a transformation *and* reduction of our energy consumption. Greater efforts should be made towards energy efficiency to complement the shift to renewables. Energy efficiency means using less energy to perform the same task and is therefore a method of reducing greenhouse gas emissions. The International Renewable Energy Agency (IRENA) has found that a combined approach of renewable energy and energy efficiency is “the most timely and feasible route to decarbonising the global energy system.”<sup>29</sup>

### Energy Supply and Conflict Risks

Energy extraction and the management of energy supplies can, and has been, the primary cause and objective of a destructive conflict, an instrument used as a means to an end, a secondary cause – or a mix of all three.<sup>30</sup>

As the main source of global energy, and in a world where fossil fuel resources provide power and vast sums of capital to those controlling them, fossil fuels have traditionally been the primary link between energy supply and conflict.

### Case Study: Costa Rica’s holistic transition

Costa Rica is one of the few States in the world with an electricity system almost entirely based on renewables; in 2019 it generated 99.15 percent of its electricity with renewable energy sources and has set itself the goal of reaching carbon neutrality by 2050.<sup>31</sup> Costa Rica has a historical tradition of linking peace, the environment and social goods, and this is also reflected in its carbon neutrality plan. The strategy is used “as an opportunity to address multiple societal challenges well beyond solely environmental motives”, including health care, poverty alleviation and gender equality.<sup>32</sup>

The first paper in this series, ‘The Role of Decentralized Renewable Energy in Peacebuilding’, explored how natural resource extraction and production processes can deepen power imbalances around resource access when local communities are excluded from decision making, leading to community tensions and potential destructive conflict.<sup>33</sup>

There is a diverse range of renewable energy sources, each with their own specificities regarding their contribution to the reduction of climate breakdown and their implications for peace, conflict, and human rights. Traditional biofuels remain the largest source of renewable energy, accounting for 60-70 percent of the total, as they remain the predominant cooking and heating fuel in many low-income households across the world.<sup>34</sup> However, land-intensive traditional biomass energy production is both environmentally harmful (as it releases carbon monoxide, carbon dioxide, nitrogen oxides and other pollutants) and has a higher risk of intensifying local conflicts than other renewable energy sources, related to its effect on natural resource availability through competition over land use and water.<sup>35</sup> After traditional biofuels, hydropower is the most dominant of the remaining renewable technologies. Wind, hydro, solar and geothermal have lower risks of creating inter-State and intra-State conflict, since they are abundant and geographically widespread.

Traditional renewables	Modern renewables
Traditional biofuels <sup>36</sup>	Hydropower, solar, wind, geothermal, modern biofuels <sup>37</sup>

The current economic and energy status quo has driven climate breakdown and fed destructive conflict. Managed and just transitions can help to avoid destructive conflict and social disruption during this necessary shift. Whilst it is important to explore the risks that an abrupt and unmanaged carbon transition may pose regarding destructive conflict,

this should not be construed as advocating for the continuation of the status quo – that is, the continuation of unequal and unjust systems and oppressive regimes which are pervasive around the world. Very often, positive societal changes arise precisely *from* challenges to the status quo – from upheavals, protests, demands for change, even conflict.

## Chapter 2: Risks that Unmanaged Energy Transitions May Pose for Peace

Having explored the concept of energy transitions and outlined the synergies between energy and conflict, this paper will now explore the ways in which, if the transition is not designed and implemented in a manner that is timely and cognisant of peace, conflict and human rights, there are risks it may imbue with regards to destructive societal upheaval and conflict.

### Domestic destabilization

Certain fossil fuel producing countries can be called ‘rentier States’, the term describing those whose economies are dependent on substantial external rent for state revenues<sup>38</sup>, have little economic diversification<sup>39</sup> and lack taxation<sup>40,41</sup>. They are, in effect, “able to buy loyalty, or at least political acquiescence, by operating a political economy model in which they distribute unearned wealth to their populations.”<sup>42</sup> A “rentier social contract” consists of the State offering goods, services and other perks to society in return for substantial autonomy in decision-making.<sup>43</sup> Where the social contract between ruling elites and citizens is based on fossil fuel income, there is specific relevance for questions of domestic societal unrest and upheaval relating to abrupt and unmanaged energy transitions.

For many fossil fuel producing States, an uncontrolled carbon transition could result in the disappearance of fossil fuel subsidies<sup>44</sup>, an erosion of government provided services and perks for citizens such as low taxes, a sharp rise in unemployment, increased social and political fracture, societal unrest, repressive State responses and violence. The implications for peace may arise if a transition is abrupt and does not account for justice and human rights concerns, leading to societal breakdowns.

Fossil fuel subsidy reform is a good example of how seemingly positive climate policies can backfire if they are not cognisant of inequalities within society and do not create genuine opportunities for social dialogue. In France, for example, the ‘Gilet jaune’ movement was borne of protests initially triggered by the government’s planned tax increase on gasoline and diesel, one objective being to raise funds for investment in renewable energy.<sup>45</sup>

Grievances were triggered as many saw the removal of these subsidies as unfairly putting the cost of climate action on ordinary people. If fossil fuels had instead been taxed at extraction, targeting those who profit rather than those who pay (with tax revenue directed towards renewable energy and vulnerable communities affected by price rises), the societal response could have been very different.

There is therefore a need to find equitable ways of dealing with fossil fuel subsidy reform. One way to do this is by ensuring that transition planning takes into account those indirectly affected by industry closure, such as low-income households who will be disproportionately affected by energy cost increases.<sup>46</sup> Citizen support for climate policy depends on the experience of fairness; taxation at profit source (extraction) enables governments to use tax revenue to support vulnerable citizens.

### Case Study: Indonesia Fossil Fuel Subsidy Reform

In 2014, the Indonesian newly elected government reformed subsidies on gasoline and diesel significantly.<sup>47</sup> The previously low fuel prices had created incentives for overconsumption of fossil fuels as well as representing a lost opportunity by using public funds for subsidies rather than investing in economic growth or social assistance to reduce poverty.<sup>48</sup> Importantly, the subsidy reform programme included the government providing monthly cash transfers to low-income households as compensation for increased prices.<sup>49</sup>

Indonesia’s fossil fuel subsidy reform took place at a time when world oil prices plummeted, meaning that when the subsidies were removed, the price of fuels actually fell.<sup>50</sup> This, along with the help to low-income households, avoided resentment towards the policy because ordinary people were not made worse off. With reform having been successful when oil prices were low, there is an interesting parallel with COVID-19’s impact on oil prices - this could be an opportune moment for many States to implement similar fossil fuel subsidy reforms.



## International Geopolitical Consequences

Domestic political turmoil has the potential to spill across national borders.<sup>51</sup> Geopolitics is concerned with “the connection between geography, space and the power of States”.<sup>52</sup> It has been highlighted that to phase out fossil fuels, “the entire global industrial ecosystem will need to be reengineered, retooled and fundamentally rebuilt”, with the potential for significant geopolitical shifts.<sup>53</sup> This has been seen before, such as when the drop in oil price in the 1980s partially led to the decline of the Soviet Union, leading in turn to the end of the Cold War – “arguably the biggest geopolitical shift since the end of the Second World War.”<sup>54</sup>

The risk here is not necessarily the geopolitical shifts themselves – these may indeed be positive and provide opportunities for a more peaceful future. For example, some foresee that geopolitical implications may look more like a “levelling of energy relations from asymmetric dependencies to mutual, horizontal dependencies”, with a diversion from existing energy alliances towards regional grid communities, a greater diversity of actors involved in energy policy<sup>55</sup> and potentially lower levels of global confrontations due to States gaining energy independence.

However, the risk is in not acknowledging that these shifts will occur, and as a result not being prepared to support States to undergo energy transitions in the least disruptive, and most conflict sensitive way possible. As energy transitions could cause a “geopolitical and strategic reshuffle”, with new “winners” and “losers” emerging from the shift in political and economic leverage, it is important to be alive to the risks this could pose with regards to destructive conflict.<sup>56</sup>

## Economic Upheaval

The impact of abrupt and unmanaged energy transitions on the global economy is important to explore in relation to peace and conflict dynamics. There are lessons to be learned from the COVID-19 pandemic, which is acting as a forebear with regards to the decline of the fossil fuel industry and the economic shocks that its collapse may create. A recent study has found that the COVID-19 pandemic could trigger a \$25tn collapse in the fossil fuel industry, causing global economic upheaval because their market value makes up a quarter of the world’s equity markets and they owe trillions of dollars to the world’s banks.<sup>57</sup> UN Secretary General António Guterres has stated that the pandemic’s economic impacts could create “major stressors” in fragile societies or less developed countries.<sup>58</sup> Wealthy countries, particularly those which produce and

export fossil fuels, are also at risk in this regard. Saudi Arabia, for example, is vulnerable to oil price drops; the COVID-19 induced steep fall in oil prices “decimated” the Saudi economy, leading to austerity measures.<sup>59</sup>

Here, then, one can see how the global energy and economic shift may risk negatively impacting peace and conflict dynamics if it is not managed justly and carefully – with not just those States deemed ‘fragile’ or ‘less developed’ at risk of economic and societal upheaval. COVID-19 has provided an opportune moment for States to create sustainable recovery plans with carbon-neutral targets, including substantial investment in modern renewable technologies, energy efficiency measures and fossil fuel subsidy reforms.

## Risks to Local Communities

International Panel on Climate Change (IPCC) findings consistently conclude that renewable energy sources play an essential role in providing energy services in a sustainable manner and in mitigating climate change.<sup>60</sup> As has been explored by QUNO previously, decentralized renewable energy sources can play an important role in peacebuilding, but they can come with their own risks in contexts which are not conducive to effective local cooperation – particularly if a State has weak local administrative or technical capacity, inadequate financial resources or inequitable distribution of resources.<sup>61</sup>

The following elements are important in ensuring that local renewable energy sources can be community owned: strong governance and technical capacity at the local level, robust local and national political commitment, initiatives for local capacity-building, strong legal frameworks for transparency and accountability, and an effective local judicial system and anti-corruption bodies.<sup>62</sup> Public participation is an essential pillar for local and decentralized energy – this includes access to information, participation in decision making and access to justice in environmental matters, as set out in the 1998 Aarhus Convention.<sup>63</sup>

In addition, if transition policies and projects are not managed carefully, they may bring their own range of societal ills. Rushed construction of hydropower energy sources, for example, which do not give local communities meaningful public participation with regards to decisions that affect them, have in many cases violated human rights such as through the forcible displacement of communities.<sup>64</sup> In contexts affected by conflicts, too, it is important that any recovery planning with a transition element is aware of the conflict history of an area and any potential ongoing grievances, and is able to act in conflict

sensitive manner. Whilst some may assume that the transition away from fossil fuels will inevitably achieve justice in and of itself, it is crucial that transition policies actively address social, economic, racial, gender and class inequalities.<sup>65</sup>

### **Implications of the Supply of 'Green' Minerals and Metals**

The reliance of certain renewable energy technologies (i.e. solar and wind) on the mining of minerals and metals is a conflict risk.<sup>66</sup> At least twenty-three minerals and metals have been identified as critical to the development and use of renewable technologies such as solar panels and wind turbines, with some of these located in countries with high measures of fragility.<sup>67</sup> If the value of certain minerals and metals goes up dramatically in unstable or fragile contexts, and they are not extracted in a way

that is environmentally sustainable and human rights compliant, this could drive destructive conflict.

However, the future for green minerals and metals is not entirely negative. Not all necessary minerals and metals are found in conflict-prone areas, and many can be found abundantly, with most of the 17 rare earth minerals plentiful and widely distributed.<sup>68</sup> The development of new technologies and metal substitution pathways can also play a significant role in addressing potential supply deficits, as can the recycling of certain minerals and metals.<sup>69</sup> If mining and production can be carried out in an ethical, human rights compliant and environmentally sustainable manner, and if investment is made in recycling and technological substitutions, the risk of destructive conflict being exacerbated or caused by mining for green technologies will be greatly reduced.

## **Chapter 3: Opportunities that Energy Transitions Pose for Peace**

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This paper will now detail some of the opportunities that energy transitions to a carbon-neutral future can engender with regards to peace and conflict – namely, a reduction of confrontations (global and local), energy decentralization, stability incentives, economic security, and reducing climate breakdown.

### **Reduction of Confrontations – Global and Local**

The transition from fossil fuels to renewables has the potential to create significant peace dividends. One way the transition could achieve this through the shift from energy resources being concentrated in specific geo-political locations (fossil fuels), to energy resources being available in some form in almost every country (renewables). This lessens the geopolitical importance of “energy choke points” such as the Straits of Malacca, the Suez Canal or the Strait of Hormuz, therefore likely reducing the risk of global confrontations over contested resources.<sup>70</sup> It is also possible that geopolitical power could become more evenly distributed and symmetrical after transitions to renewable energy, also creating peace dividends.<sup>71</sup>

Just and sustainable transitions to renewables also have the potential to reduce the necessity for strategic alliances between States predicated on favourable resource access, which can lead to the involvement of larger constituencies in conflicts. Instead, when coupled with proper energy efficiency measures, clean renewable energy can offer all countries long term energy independence which reduces

the need for inter or intra-State confrontations.<sup>72</sup>

Renewable energy sources can also provide peace dividends because renewable energy is more evenly distributed and its production covers larger areas, so its energy densities<sup>73</sup> are lower.<sup>74</sup> This makes it more challenging to obtain and exert control over such resources, as their low strategic value means that “it becomes less rational, not only from an economic but also geopolitical point of view, to use force to improve control over, or access to, energy resources.”<sup>75</sup> This is one of the reasons why the risk of renewable energy being a conflict objective is considered low, and significantly reduced compared with fossil fuel systems.

### **Energy Decentralization**

The transition to a carbon-neutral future can contribute to peace by offering States, peoples and communities energy independence through decentralized ownership, access and consumption. Decentralized renewable energy refers to renewable energy that is generated off the main grid and produced close to where it will be used.<sup>76</sup> This system can help to assert democratic control over energy sources and build stronger political constituency and social cohesion by retaining economic benefits locally and sharing benefits more broadly, and increasing capacity for communities' self-reliance.<sup>77</sup> This can reduce the potential for natural resource tensions in communities that can lead to destructive conflict.<sup>78</sup>

### Case Study: Denmark's decentralized wind energy

The Danish power system has moved from a highly centralized to a more decentralized system of electricity production, with around 1,000 decentralized combined heat and power (CHP) plants as well as wind turbines.<sup>79</sup> In 2017, the electricity grid in western Denmark lasted 985 hours without relying on centralised power plants.<sup>80</sup> Denmark has a tradition of cooperative ownership, and has therefore promoted local ownership of renewable energy sources (particularly wind energy). The 2009 Promotion of Renewable Energy Sources Act has allowed communities to collectively invest in wind energy since the 1970s; by 2013, 70-80 percent of existing wind turbines were owned by communities, with the rate of community ownership of renewable energy sources now one of the highest in the world.<sup>81</sup> Communities tend to obtain common ownership through a legal partnership, which operates similarly to a cooperative and with the sale of shares funding community projects.<sup>82</sup>

### Stability Incentives

Renewable energy requires stability to control, and this can provide incentives and opportunities for collaboration, both locally, regionally and transnationally. It has been argued that wind, hydro and solar renewable energy sources are “[m]ore likely to incentivise interstate collaboration than conflicts, since mutual benefits can be achieved from increased (regional) trade and interdependence.”<sup>83</sup> One such opportunity for cross-border collaboration can be found in the creation and use of shared energy grids. Because revenue can only be generated from renewables with stability, this may increase the likelihood of energy partnerships over antagonism. Indeed, it has been argued that the transition to renewable energy may strengthen regionalisation through the creation of “grid communities” which could have positive effects on geopolitical stability.<sup>84</sup>

It should be noted that electricity super grids may face the risk of cyber-hacking, with cross border electricity wires being vulnerable in this regard. However, as highlighted by IRENA, cybercrime is a risk that predates the energy transition, so whilst it is important to be vigilant, this should be kept in perspective and not used as a counterargument against renewable energy.<sup>85</sup>

### Economic Security

The shift to renewable energy provides opportunities for fossil fuel dependent economies to create a more

stable, equitable and productive economic future for their citizens.<sup>86</sup> The availability and variety of renewable energy sources in almost all countries removes the conflict potential of the ‘resource curse’, whereby countries rich in natural resources tend to have lower rates of economic stability and growth, and higher rates of authoritarianism, destructive conflict and corruption.<sup>87</sup> This risk of a ‘resource curse’ for renewables is low in comparison, partly because of their wide geographical availability.

Renewables can also feed into the peacebuilding framework as a tension reducer within communities by providing renewable energy supplies, jobs and other economic benefits – calming energy prices and providing resilient energy systems which are less prone to large-scale failure.<sup>88</sup> Studies indicate that renewable energy technologies create more jobs than fossil fuels.<sup>89</sup>

Timely, just and sustainable transitions can reduce the grievance potential that could be triggered by stranded assets. Stranded assets are those assets which at some point will no longer earn an economic return due to energy transitions, such as pipelines, drilling rigs and processing facilities.<sup>90</sup> In developing countries, stranded assets “could destabilize efforts to improve economic growth and socioeconomic development”, with the potential for increased social dissatisfaction and unrest.<sup>91</sup> For wealthy and developed fossil fuel producer economies too, stranded fossil fuel assets are a concern, with many pension funds investing heavily in the fossil fuel industry. If energy transitions were to happen at a manageable rate, however, adjustment costs and the repricing of carbon assets could reduce the chance of negative economic, social and political consequences.<sup>92</sup>

### Reducing Climate Breakdown

The climate crisis has well-known and legally established implications for human rights and human peace and security.<sup>93</sup> The implications to life and livelihoods of a 4.8C rise in global temperature compared to a 1.5°C rise for peace and human security are catastrophic. Climate pressures adversely influence resource availability, affect population dynamics, and strain societal institutions, which in turn can affect socioeconomic and political stability.<sup>94</sup> While climate change does not directly cause destructive conflict, it feeds into and exacerbates pre-existing tensions, thus increasing the likelihood of destructive conflict in certain contexts. Urgent and just transitions from fossil fuels reduce the threat of catastrophic temperature rise, and in turn can be used as a peacebuilding tool in regions threatened by such rising temperatures.

## Case Study: Spanish Just Transition for Coal Miners

In 2018, the Spanish mining unions won a ground-breaking deal for a Just Transition from coal mining, after years of struggle. Taking place between 2019-2023, the Just Transition deal replaces subsidies to the coal industry with a sustainable development plan and provides a variety of benefits to miners and their communities, including:

- Early retirement or redundancy payments as well as 35 days' pay for every year of service for miners.
- Money set aside to restore and environmentally regenerate former mining sites, with priority for employment in the jobs generated through these projects going to former miners.

- Money to be set aside to upgrade facilities in the mining communities
- An action plan for each mining community, including plans for developing renewable energy and improving energy efficiency, and investing in and developing new industries.<sup>95</sup>

Spain's Minister for Ecological Transition, Teresa Ribera, has said "Our aim has been to leave no one behind...That is why we offer the drawing up of 'Just Transition' contracts, with the aim of helping the regions to consolidate the employment of the future."<sup>96</sup>

## Conclusion

The sectoral and economic transformation we require to mitigate the worst effects of climate breakdown and to achieve a carbon-neutral future "is on a scale and within a time frame faster than any in human history."<sup>97</sup>

Whilst this paper has outlined several risks (locally, nationally and globally) that may occur from abrupt and unmanaged energy transitions, it has also highlighted the inherent opportunities that sustainable and just transitions can offer. It should be stated explicitly that the risks do not outweigh the opportunities; the imperative of the climate crisis means we must capitalize on these opportunities to move towards the realization of sustainable and just transitions across the world. It is essential that transition strategies are well-planned and timely – and crucially, that they have human rights, justice, international solidarity and cooperation, public participation and conflict sensitivity at the heart of them.

As sustainable and just transitions are rooted in creating positive alternatives to environmentally destructive processes and providing justice, safety and security for individuals, communities, industries and States, they have great significance for peace and conflict considerations. To ensure their maximum potential, governments and industry should ensure that transition policies are designed and implemented to achieve justice and counter inequalities in

and of themselves – that they define "both where we are going and how we get there."<sup>98</sup> With COVID-19 having provided an historic opportunity to 'green' our economies and energy systems, and with the planet's climate rapidly breaking down, there is a stronger case than ever to push for the advancement of rights-based, conflict sensitive and ecologically sustainable energy transitions towards a carbon-neutral future.

This paper was published by QUNO as the second in a series on energy and peacebuilding. We hope it provides food for thought on how to ensure that energy transitions are used as an opportunity for peace. As this is a working paper, QUNO would welcome engagement on these topics going forward, and is open for discussion and comments. Please contact Florence Foster (Representative for Peace and Disarmament) at [ffoster@quno.ch](mailto:ffoster@quno.ch) and / or Lindsey Fielder-Cook (Representative for Human Impacts of Climate Change) at [lfcook@quno.ch](mailto:lfcook@quno.ch) if you would like to discuss.



## References

- 1 Barry D. Solomon and Karthik Krishna, 'The coming sustainable energy transition: History, strategies, and outlook', *Energy Policy* 39 (11) (2011), p. 7422.
- 2 In early March, oil prices plummeted due to demand contraction (due to COVID-19) combined with the outbreak of a price war between the Organization of the Petroleum Exporting Countries (OPEC) and Russia. John Corrigan, 'COVID-19 and the oil price collapse: The impact on oilfield services', PWC (2020), <https://www.pwc.com/us/en/industries/energy-utilities-mining/library/covid-19-impact-on-oil-field-services.html>. Conversely, COVID-19 may provide the trigger for some States to accelerate their decarbonisation. For more on this, see the International Institute for Sustainable Development, 'How COVID-19 Could Impact the Clean Energy Transition', <https://www.iisd.org/library/covid-19-impact-clean-energy>.
- 3 Isobel Edwards, 'The role of decentralized renewable energy in peacebuilding', Quaker United Nations Office (2018), <https://quno.org/resource/2018/12/role-decentralized-renewable-energy-peacebuilding>.
- 4 Carbon neutrality means the achievement of a net result of zero carbon dioxide emissions, achieved by balancing carbon emissions with carbon removal or the elimination of carbon emissions altogether. See Sustainability for All, 'What is Carbon Neutrality', <https://www.activesustainability.com/climate-change/what-is-carbon-neutrality/>.
- 5 'Conflict', Dictionary.com, <https://www.dictionary.com/browse/conflict>.
- 6 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 2.
- 7 Ibid.
- 8 Cifedhop, 'The Human Rights Based Approach: a Field of Action for Human Rights Education', *Center for International Environmental Law* (2012), [https://www.ciel.org/wp-content/uploads/2014/11/HR\\_Approach\\_Climate\\_2012.pdf](https://www.ciel.org/wp-content/uploads/2014/11/HR_Approach_Climate_2012.pdf).
- 9 Lindsey Fielder Cook, 'Human Rights-Based Approaches to Climate Action', *Quaker United Nations Office* (2019), <https://quno.org/sites/default/files/resources/HumanRights-BasedApproaches%20FINAL.pdf>.
- 10 European Systemic Risk Board, 'Too late, too sudden: Transition to a low-carbon economy and systemic risk', (2016), [https://www.esrb.europa.eu/pub/pdf/asc/Reports\\_ASC\\_6\\_1602.pdf](https://www.esrb.europa.eu/pub/pdf/asc/Reports_ASC_6_1602.pdf), p. 14. See the International Renewable Energy Agency (IRENA)'s four categories of fossil fuel dependent States and their exposure and resilience to the energy transition: highly exposed, low resilience States; highly exposed, highly resilient States; moderately exposed, moderately resilient countries; and relatively low exposure countries. IRENA, 'A New World: The Geopolitics of the Energy Transformation' (2019), <https://www.irena.org/publications/2019/Jan/A-New-World-The-Geopolitics-of-the-Energy-Transformation>, p. 33.
- 11 'The Challenge of Sustaining Peace: Report of the Advisory Group of Experts for the 2015 Review of the United Nations Peacebuilding Architecture', United Nations (2015), [https://www.un.org/pga/wp-content/uploads/sites/3/2015/07/300615\\_The-Challenge-of-Sustaining-Peace.pdf](https://www.un.org/pga/wp-content/uploads/sites/3/2015/07/300615_The-Challenge-of-Sustaining-Peace.pdf); Human Rights Council Resolution A/HRC/RES/38/18, 'The contribution of the Human Rights Council to the prevention of human rights violations', United Nations (2018) [https://ap.ohchr.org/documents/dpage\\_e.aspx?si=A/HRC/RES/38/18](https://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/RES/38/18).
- 12 Amanda Cahill-Ripley and Diane Hendrick, 'Economic, Social and Cultural Rights and Sustaining Peace: An Introduction', *Friedrich-Ebert-Stiftung, Quaker United Nations Office, and Lancaster University* (2018), [https://quno.org/sites/default/files/resources/2018\\_03\\_Publication\\_ESCR%20%281%29.pdf](https://quno.org/sites/default/files/resources/2018_03_Publication_ESCR%20%281%29.pdf), p. 9.
- 13 Ibid., p. 10.
- 14 International Labour Organisation (ILO), 'Guidelines for a just transition towards environmentally sustainable economies and societies for all' (2015), [https://www.ilo.org/wcms-sp5/groups/public/---ed\\_emp/---emp\\_ent/documents/publication/wcms\\_432859.pdf](https://www.ilo.org/wcms-sp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_432859.pdf), p. 4.
- 15 See the ILO, 'Guidelines for a just transition' and the United Nations Framework Convention on Climate Change, 'Just Transition of the Workforce, and the Creation of Decent Work and Quality Jobs Technical Paper', <https://unfccc.int/sites/default/files/resource/Just%20transition.pdf>.
- 16 "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": Paris Agreement, *United Nations* (2015), [https://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](https://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf), p. 2.
- 17 Science Advisory Group to UN Climate Action Summit, 'United in Science' (2019), <https://ane4bf-datap1.s3-eu-west-1.amazonaws.com/wmocms/s3>, p. 5.
- 18 O. Edenhofer et al. (eds.), 'Summary for Policymakers' in *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, *Intergovernmental Panel on Climate Change* (2014), p. 8.

- 19 Tom Matthews, 'Global warming could mean parts of the planet become too hot for humans', *World Economic Forum* (2020), <https://www.weforum.org/agenda/2020/05/global-warming-heat-territory-earth-uninhabitable/>.
- 20 V. Masson-Delmotte et al. (eds.), 'Summary for Policymakers' in *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*, *Intergovernmental Panel on Climate Change* (2018), [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf), p. 9.
- 21 Zeke Hausfather, 'Analysis: Fossil-fuel emissions in 2018 increasing at fastest rate for seven years', *Carbon Brief* (2018), <https://www.carbonbrief.org/analysis-fossil-fuel-emissions-in-2018-increasing-at-fastest-rate-for-seven-years>.
- 22 International Energy Agency, 'World Energy Outlook 2019' (2019), <https://www.iea.org/reports/world-energy-outlook-2019>.
- 23 Whilst recent production data suggests that the all-time peak production may have occurred in November 2018, the difficulty in determining the time frame of 'peak oil' is "dependent on an ever-changing set of assumptions and variables" and is based on the assumption of prior knowledge of available reserves. Marc Lallanilla, 'Peak Oil: Theory or Myth?', *Live Science* (2015), <https://www.livescience.com/38869-peak-oil.html>.
- 24 Even oil companies such as BP have acknowledged this reality: "Existing reserves of fossil fuels – i.e. oil, gas and coal – if used in their entirety would generate somewhere in excess of 2.8 trillion tonnes of CO<sub>2</sub>, well in excess of the 1 trillion tonnes or so the scientific community consider is consistent with limiting the rise in global mean temperatures to no more than 2 degrees Centigrade." Carbon Tracker, 'Unburnable Carbon' (2017), <https://carbontracker.org/terms/unburnable-carbon/>
- 25 Greenpeace, 'Fracking', <https://www.greenpeace.org/usa/global-warming/issues/fracking/>.
- 26 Defined as part of the "range of relatively new, higher-risk, non-renewable resource extraction processes that have become more attractive to the conventional energy industry as the more easily accessible supplies dwindle". Damien Short et al., 'Extreme energy, 'fracking' and human rights': a new field for human rights impact assessments?', *International Journal for Human Rights* 19, no. 6 (2015), p. 4.
- 27 Short et al., 'Extreme energy, 'fracking' and human rights', p. 7; Concerned Health Professionals of New York, 'Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction) Sixth Edition' (2019), <http://concernedhealthny.org/compendium/>; Joe Hoffman, 'Potential Health and Environmental Effects of Hydrofracking in the Williston Basin, Montana', *Teach the Earth*, [https://serc.carleton.edu/NAGTWorkshops/health/case\\_studies/hydrofracking\\_w.html](https://serc.carleton.edu/NAGTWorkshops/health/case_studies/hydrofracking_w.html).
- 28 Fracking projects have been implemented on Indigenous territories without the obtaining of free, prior and informed consent as required by the UN Declaration on the Rights of Indigenous Peoples. See Ben Parfitt, 'Fracking, First Nations and Water: Respecting Indigenous rights and Better Protecting our Shared Resources', *Canadian Centre for Policy Alternatives* (2017), [https://www.policyalternatives.ca/sites/default/files/uploads/publications/BC%20Office/2017/06/ccpa-bc\\_Fracking-FirstNations-Water\\_Jun2017.pdf](https://www.policyalternatives.ca/sites/default/files/uploads/publications/BC%20Office/2017/06/ccpa-bc_Fracking-FirstNations-Water_Jun2017.pdf).
- 29 IRENA, 'Synergies Between Renewable Energy and Energy Efficiency' (2017), [https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Aug/IRENA\\_REmap\\_Synergies\\_REEE\\_2017.pdf](https://www.irena.org/-/media/Files/IRENA/Agency/Publication/2017/Aug/IRENA_REmap_Synergies_REEE_2017.pdf), p. 11.
- 30 André Månsson, 'Energy, conflict and war: Towards a conceptual framework', *Lund University* (2014), <https://portal.research.lu.se/portal/files/3841828/4698902.pdf>, p. 6, 7.
- 31 Renewables Now, 'Costa Rica's renewables share hits 99.15% in 2019', <https://renewablesnow.com/news/costa-rica-renewables-share-hits-9915-in-2019-696533/>.
- 32 Thomas Hirsch, Manuela Matthes and Dr. Joachim Fünfgelt, 'Guiding Principles & Lessons Learnt For a Just Energy Transition in the Global South', *Friedrich-Ebert-Stiftung* (2017) <https://library.fes.de/pdf-files/iez/13955.pdf>, p. 107.
- 33 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 2.
- 34 Hannah Ritchie and Max Roser, 'Renewable Energy', *Our World in Data*, <https://ourworldindata.org/renewable-energy>.
- 35 National Geographic, 'Bioenergy', <https://www.nationalgeographic.org/encyclopedia/biomass-energy/>.
- 36 Traditional biofuel production is the combustion of biomass such as wood, animal waste and traditional charcoal.
- 37 Modern biofuel production is defined as using efficient and clean combustion technologies for waste-to-biomass conversion e.g. liquid biofuels produced from bagasse and other plants; bio-refineries; biogas produced through anaerobic digestion of residues; wood pellet heating systems; and other technologies. A. Demirbas, 'Modernization of Biomass Energy Conversion Facilities', *Energy Sources, Part B: Economics Planning, and Policy* 2, no. 3 (2007), abstract; International Renewable Energy Agency, 'Bioenergy', <https://www.irena.org/bioenergy>.

- 38 Rolf Schwarz, *War and State Building in the Middle East* (University Press Florida, Gainesville: 2012), p. 121.
- 39 Matthew Gray, 'Occasional Paper No. 7: A Theory of "Late Rentierism" in the Arab States of the Gulf', *Center for International and Regional Studies, Georgetown University School of Foreign Service in Qatar* (2011), <https://repository.library.georgetown.edu/bitstream/handle/10822/558291/CIRSOccasionalPaper7MatthewGray2011.pdf?sequence=5>, p. 1.
- 40 Michael Herb, 'No Representation Without Taxation? Rents, Development and Democracy in Comparative Politics', *Comparative Politics* 37, no. 3 (2005), p. 298.
- 41 Alessandro Zicchieri, 'Is Rentier State Theory Sufficient to Explain the Politics of the UAE?', *E-International Relations* (2016), <https://www.e-ir.info/2016/02/04/is-rentier-state-theory-sufficient-to-explain-the-politics-of-the-uae/>.
- 42 Jane Kinninmont, 'Vision 2030 and Saudi Arabia's Social Contract: Austerity and Transformation', Chatham House (2017), <https://www.chathamhouse.org/publication/vision-2030-and-saudi-arabias-social-contract-austerity-and-transformation>, p. 18.
- 43 Ibid.
- 44 The WTO defines a subsidy as 'any financial contribution by a government, or agent of a government, that confers a benefit on its recipients in comparison to other market participants'. This can be used as a basis for identifying fossil fuel subsidies, which include subsidies for the production and consumption of coal, oil and gas. A fossil fuel subsidy can be described as 'government action that lowers the cost of fossil fuel energy production, raises the price received by energy producers, or lowers the price paid by energy consumers' and can therefore be said to favour the fossil fuel industry over other forms of energy, such as renewables. Shelagh Whitley and Laurie van der Burg, 'Fossil Fuel Subsidy Reform: From Rhetoric to Reality', *The New Climate Economy* (2015), [https://newclimateeconomy.report/2015/wp-content/uploads/sites/3/2015/11/Fossil-fuel-subsidy-reform\\_from-rhetoric-to-reality.pdf](https://newclimateeconomy.report/2015/wp-content/uploads/sites/3/2015/11/Fossil-fuel-subsidy-reform_from-rhetoric-to-reality.pdf), p. 6; Oil Change International, 'Fossil Fuel Subsidies Overview', <http://priceofoil.org/fossil-fuel-subsidies/>.
- 45 Joachim Roth and Ivetta Gerasimchuk, 'What Lies Beneath the Yellow Vests' Protests in France - Frequently Asked Questions', *International Institute for Sustainable Development* (2018), <https://www.iisd.org/gsi/subsidy-watch-blog/yellow-vest-protests>.
- 46 Georgia Piggot et al., 'Realizing a just and equitable transition away from fossil fuels', *Stockholm Environment Institute* (2019), <https://www.sei.org/wp-content/uploads/2019/01/realizing-a-just-and-equitable-transition-away-from-fossil-fuels.pdf>, p. 8.
- 47 Anna Zinecker et al., 'Real People, Real Change: Strategies for Just Energy Transitions', *International Institute for Sustainable Development* (2018), <https://www.iisd.org/sites/default/files/publications/real-people-change-strategies-just-energy-transitions.pdf>, p. 26.
- 48 Ibid.
- 49 Petar Vujanovic, 'Policies for Inclusive and Sustainable Growth in Indonesia: Economics Department Working Papers No. 1246', *OECD* (2015), [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP\(2015\)64&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2015)64&docLanguage=En), p. 31.
- 50 Zinecker et al., 'Real People, Real Change', p. 26.
- 51 IRENA, 'A New World: The Geopolitics of the Energy Transformation', p. 33.
- 52 Roman Vakulchuk, Indra Overland and Daniel Scholten, 'Renewable energy and geopolitics: A review', *Renewable and Sustainable Energy Reviews* 122 (2020), p. 1.
- 53 Simon Michaux, 'Oil from a Critical Raw Material Perspective', *Geological Survey of Finland* (2019), [http://tupa.gtk.fi/raportti/arkisto/70\\_2019.pdf](http://tupa.gtk.fi/raportti/arkisto/70_2019.pdf), p. 173.
- 54 IRENA, 'A New World: The Geopolitics of the Energy Transformation', p. 32.
- 55 Vakulchuk, Overland and Scholten, 'Renewable energy and geopolitics', p. 9.
- 56 Ibid., p. 5.
- 57 Jillian Ambrose, 'Coronavirus crisis could cause \$25tn fossil fuel industry collapse', *The Guardian* (2020), <https://www.theguardian.com/business/2020/jun/04/coronavirus-crisis-collapse-fossil-fuels-demand>.
- 58 Giles Clarke, 'COVID-19 threatening global peace and security, UN chief warns', *UN News* (2020), <https://news.un.org/en/story/2020/04/1061502>.
- 59 Bruce Riedel, 'As a Global Economic Crisis Wreaks Havoc on Saudi Arabia, the Kingdom Should Reduce Military Spending', *Brookings* (2020), <https://www.brookings.edu/blog/order-from-chaos/2020/05/27/as-a-global-economic-crisis-wreaks-havoc-on-saudi-arabia-the-kingdom-should-reduce-military-spending/>.
- 60 W Moomaw et al., 'Introduction in IPCC Special Report on Renewable Energy Sources and Climate Change Mitigation', *Intergovernmental Panel on Climate Change* (2011), <https://www.ipcc.ch/site/assets/uploads/2018/03/Chapter-1-Renewable-Energy-and-Climate-Change-1.pdf> p. 164.

- 61 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 9.
- 62 Ibid.
- 63 United Nations Economic Commission for Europe, 'Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters' (1998), <https://www.unece.org/env/pp/treatytext.html>. See also Ellie Roberts and Lynn Finnegan, 'Building Peace around Water, Land and Food: Policy and Practice for Preventing Conflict', Quaker United Nations Office (2013), <https://quno.org/sites/default/files/resources/QUNO%20%282013%29%20Building%20peace%20around%20water%20land%20and%20food.pdf>.
- 64 Piggot et al., 'Realizing a just and equitable transition away from fossil fuels', p. 3.
- 65 It is important to note that whilst this paper does not focus on the groups who face particularly adverse impacts with regards to these dynamics (such as Indigenous peoples, or women), this is a very important dimension.
- 66 Clare Church and Alec Crawford, 'Green Conflict Minerals: The fuels of conflict in the transition to a low-carbon economy', *International Institute for Sustainable Development* (2018), <https://www.iisd.org/library/green-conflict-minerals-fuels-conflict-transition-low-carbon-economy>, p. v.
- 67 Ibid., p. v, 14-15.
- 68 IRENA, 'A New World: The Geopolitics of the Energy Transformation', p. 54.
- 69 Pieter van Exter et al., 'Metal Demand for Renewable Electricity Generation in the Netherlands: Navigating a Complex Supply Chain', *Metabolic, Copper and the Universiteit Leiden* (2018), [https://circulareconomy.europa.eu/platform/sites/default/files/metal\\_demand\\_for\\_renewable\\_electricity\\_production\\_in\\_the\\_netherlands.pdf](https://circulareconomy.europa.eu/platform/sites/default/files/metal_demand_for_renewable_electricity_production_in_the_netherlands.pdf), p. 17; Church and Crawford, 'Green Conflict Minerals', p. 23.
- 70 IRENA, 'A New World: The Geopolitics of the Energy Transformation', p. 23.
- 71 Roman Vakulchuk, Indra Overland and Daniel Scholten, 'Renewable energy and geopolitics: A review', *Renewable and Sustainable Energy Reviews* 122 (2020), p. 6.
- 72 BBC Radio 4, 'The World Turned Upside Down' (2020), <https://www.bbc.co.uk/programmes/m000d1yq>.
- 73 Energy density refers to the amount of energy stored in a given system, substance, or region of space per unit volume.
- 74 André Månsson, 'A resource curse for renewables? Conflict and cooperation in the renewable energy sector', *Energy Research & Social Science* 10 (2015), p. 6. It should also be noted that renewable energy projects that use larger areas of land require specific rights-based approaches to ensure land grabs do not occur and that social cohesion dynamics are not disrupted.
- 75 Ibid.
- 76 Therma Mech, 'What is Decentralised Energy and Why is it Important?' (2019), <https://www.therma-mech.co.uk/what-is-decentralised-energy-and-why-is-it-important/>.
- 77 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 8.
- 78 International Organisation for Migration, 'IOM Tackles Gender Violence and Trafficking in Central African Republic' (2016), <https://www.iom.int/news/iom-tackles-gender-violence-and-trafficking-central-african-republic>.
- 79 Agora Energiewende, 'A Snapshot of the Danish Energy Transition: Objectives, Markets, Grid, Support Schemes and Acceptance' (2015), [https://www.agora-energiewende.de/fileadmin2/Projekte/2015/integration-variabler-erneuerbarer-energien-daenemark/Agora\\_Snapshot\\_of\\_the\\_Danish\\_Energy\\_Transition\\_WEB.pdf](https://www.agora-energiewende.de/fileadmin2/Projekte/2015/integration-variabler-erneuerbarer-energien-daenemark/Agora_Snapshot_of_the_Danish_Energy_Transition_WEB.pdf) p. 1, 17.
- 80 State of Green, 'Danish electrical grid independent of centralised power plants for 41 days' (2018), <https://stateofgreen.com/en/partners/state-of-green/news/danish-electrical-grid-independent-of-centralised-power-plants-for-41-days/>.
- 81 Mariya Gancheva et al., 'Models of Local Energy Ownership and the Role of Local Energy Communities in Energy Transition in Europe', *Commission for the Environment, Climate Change and Energy, European Committee of the Regions* (2018), <https://cor.europa.eu/en/engage/studies/Documents/local-energy-ownership.pdf> p. 17, 18.
- 82 Ibid., p. 17
- 83 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 6.
- 84 Vakulchuk, Overland and Scholten, 'Renewable energy and geopolitics', p. 7.
- 85 IRENA, 'A New World: The Geopolitics of the Energy Transformation', p. 58.
- 86 However, it should be noted that renewable energy can still be held as monopsonist markets. In a monopsony, a large buyer controls the market and because of their unique position, holds a large amount of power. For example, India holds the hydropower market in the Himalayas as a monopsony in the region. At least part of the risk here is economic reliance on one form of production, which leaves States somewhat vulnerable to economic instability, political pressure and (in some



cases) rentier behaviour. Again, this predicament speaks to the importance of equitable management of natural resources and public participation in order to ensure peaceful and just use of renewable energy resources.

87 Edwards, 'The role of decentralized renewable energy in peacebuilding', p. 4.

88 Ibid., p. 1.

89 IRENA, The European Commission and the ILO, 'Accelerating SDG 7 Achievement: Policy Brief 13: Interlinkages Between Energy and Jobs', <https://sustainabledevelopment.un.org/content/documents/17495PB13.pdf>, p. 4.

90 Carbon Tracker Initiative, 'Stranded Assets' (2017), <https://carbontracker.org/terms/stranded-assets/>.

91 Ben Caldecott et al., 'Stranded Assets: A Climate Risk Challenge' (2016), <https://publications.iadb.org/en/publication/12597/stranded-assets-climate-risk-challenge>, p. 13.

92 European Systemic Risk Board, 'Too late, Too Sudden', p. 2; Caldecott et al., 'Stranded Assets', p. 13.

93 Office of the High Commissioner for Human Rights (OHCHR), 'Understanding Human Rights and Climate Change', <https://www.ohchr.org/Documents/Issues/ClimateChange/COP21.pdf>; OHCHR, 'Key Messages on Human Rights and Climate Change', <https://www.ohchr.org/Documents/Issues/Cli->

[mateChange/KeyMessages\\_on\\_HR\\_CC.pdf](https://www.ohchr.org/Documents/Issues/ClimateChange/KeyMessages_on_HR_CC.pdf); OHCHR, 'Human rights and climate change', A/HRC/RES/35/20 (2017), [https://ap.ohchr.org/documents/dpage\\_e.aspx?si=A/HRC/RES/35/20](https://ap.ohchr.org/documents/dpage_e.aspx?si=A/HRC/RES/35/20); Florian Krampe, 'Climate Change, Peacebuilding, and Sustaining Peace', *IPI Global Observatory* (2019),

<https://theglobalobservatory.org/2019/09/climate-change-peacebuilding-and-sustaining-peace/>.

94 Vision of Humanity, 'Five charts: How Climate Change Could Affect Peace', <http://visionofhumanity.org/climate/climate-change-could-affect-peace/>.

95 Industriall, 'Spanish coal unions win landmark Just Transition deal' (2018), <http://www.industriall-union.org/spanish-coal-unions-win-landmark-just-transition-deal>.

96 European Trade Union Confederation, 'Spain guarantees a just transition for miners' (2018), <https://www.etuc.org/en/spain-guarantees-just-transition-miners>.

97 Samantha Smith, 'Just Transition: A Report for the OECD', *Just Transition Centre* (2017) <https://www.oecd.org/environment/cc/g20-climate/collapsecontents/Just-Transition-Centre-report-just-transition.pdf>, p. 1.

98 Climate Justice Alliance, 'What Do We Mean By Just Transition?', <https://climatejusticealliance.org/just-transition/>.

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