

How do we build from the current corona crisis towards a more sustainable future?, with reference to one or more of the following perspectives:

Cultural, behavioural and societal change;
Government policy, regulatory & institutional change;
and/or Business leadership, governance and practice.

The term sustainable seems to generate many answers with a variety of interpretations, this essay accepts the definition 'development that meets the needs of the present without compromising the ability of future generations to meet their needs'. Therefore, the framework for a sustainable future should be one that is in line with the aims of the Paris Agreement. The Paris Agreement in 2015 called for all countries to work together to reduce greenhouse gas, which requires that 80% of current coal reserves, half of all oil reserves and one-third of natural gas reserves remain unused, to ultimately result in ideally 1.5°C warming above preindustrial levels by the end of this century (ClimateActionTracker, 2020). To achieve this, government involvement is instrumental to focus on climate policy, especially coming out of the coronavirus led recession. The UK is uniquely positioned to formulate a plan of change due to this Covid-19 time but also Brexit, for the coming decade(s). Both these key events will lead to the re-examination of relationships between the UK and countries and climate policy should play a role in these negotiations. Although Covid-19 has devastated and disrupted lives in a multitude of ways, it does present a grand opportunity for reform society for the better so it is more sustainable (Boffey, 2020). This essay puts forward the notion of Greenship as an opportunity to play a role in helping build a sustainable future. Greenship is a concept that takes green entrepreneurship and evolves it by, combining it with behavioural economics (in particular nudge theory) and Keynesian-esque government intervention. Greenship, at its core, needs the role of a body to coordinate with all university-led entrepreneurship infrastructures that are already in place to help the renewable sector expand. There have been studies that show, that although consumers favour renewable energies, only a fraction are users of this kind of energy (Zhang, 2015). Thus, there is a dissonance between intention and action, this is what Greenship will hope to bridge.

The current coronavirus and climate change seem to be interlinked in numerous ways. For example, studies have indicated that death rates are significantly higher in areas with worse air pollution levels, such as northern Italy (Carrington, 2020). Thus, reducing air pollution would help against the immediate fight against this virus by lowering the general health burden and it may also help prevent future pandemics from being so deadly. The coronavirus seems to have highlighted a key behavioural change, which is how powerful individual action can be to help protect people (Segalov, 2020). The Behavioural Insights Team (BIT) have helped the government utilize nudge theory for behavioural change (Mills, 2020). Therefore, there is an appetite, from the public for a future that is healthier and cleaner. The reason for targeting renewables is that the growth of this sector is central to climate change mitigation and the transition to a more sustainable energy system (IRENA, 2017). The coronavirus and climate change, both illustrate how the mechanisms of living need to change, for a healthier and sustainable future (Straver, 2020). In the past month, records for clean energy have been broken continuously, due to the combination of plentiful sun and wind, and low electricity demand has led to an unprecedented level of use of renewable power in the UK (Hook, 2020). Furthermore, a significant new record is being set (34 days as of May 14 and counting) for the longest period the grid has ever operated without coal (Hook, 2020). This illustrates that the renewable sector in the UK is heading in the right direction. The

government can aid this by establishing a Department for Sustainable Innovation, DSI, (named for this essay) or an independent body, with the mission to implement Greenship. Although unimaginative in name, the essence of this department is to coordinate with different institutions to propose and support innovative student-driven green initiatives, in the renewable sector. This state-driven innovation is inspired by the role played by local governments in China (Ji, 2020). There is evidence the local governments in China, have led to China positioning itself astutely, with a leading position in renewable energy output as well as in related technologies such as electric vehicles (Pearson, 2019). Iceland is another example, where government intervention has led to Iceland being hailed as the blueprint for renewable energy (Guðmundsdo' ttir, 2018). Iceland concentrated its efforts on renewable energies such as hydropower and geothermal (Guðmundsdo' ttir, 2018). Germany is another great example, where strong political commitment and funding, led to renewable energy innovations and public confidence (CPI, 2016). This was successfully done by (local) governments investing and coordinating collaboration between governments agencies, private firms and research organizations. Thus, DSI needs to be precise in its actions with who to collaborate, how to collaborate and how to best allocate resources. The DSI has to involve experts in the field to take ownership and positions within the department, for this to have any chance of success. As their experience will help with the facilitation and support of innovative enterprises. Entrepreneurs engage in a set of interactions concerning what they do and how they go about presenting their activities as part of the social context which they may be trying to change. However, in-depth mentorship is required, over, for example, project design, production, distribution and consumption. This mentorship needs to go beyond economic opportunity and focus on social value creation as well. This is where the DSI can play a pivotal role, by both helping guide interactions and by helping steer behaviours which inform culture for societal change.

The UK has a vast network of brilliant university-led Entrepreneurship Institutes (and Accelerator programs). I believe that taking advantage of this infrastructure is imperative, to help stimulate innovation in the renewable sector. The DSI needs to collaborate and coordinate with all these institutions in each major city. The DSI needs to establish a hub, with the sole purpose of championing start-ups, who try and tackle renewable energy. The DSI will have to coordinate with, for example, in London (KCL Entrepreneurship Institute), Teesside (LaunchPad), Warwick (Ignite) and many more and ask them to champion renewable energy ideas and start-ups. From personal experience, from being involved with the KCL Entrepreneurship Institute, I have seen how successful it can be, when an Institute set a target, such as helping STEM students to become founders. It did this by utilizing relationships with other companies, institutes and the teaching staff at universities. Over my 3 years as a KCL student, ambassador and intern with the Institute, I saw first-hand, how effective their collaboration with different faculties to get STEM students involved, with C the Signs being one success story, amongst many. This kind of entrepreneurial environment will also have positive spillover effects, hopefully attracting the best minds and companies, to study and create or help foster these creative minds. Unlike traditional fossil fuels, renewable energy sources are widely available around the world. Whether it is solar or wind power, tidal energy or hydroelectric plants, most countries have the potential to develop some clean energy themselves. Therefore, the race to be new energy leaders around the world is paramount, as it will affect the patterns of trade and the development of new alliances going forward (UNFCCC, 2019). If the DSI joined these institutes in championing renewable energy and gave further funding opportunities, then this would lead to a greater number of start-ups with that purpose.

The nudge aspect of Greenship is not as subtle as past nudges however by collaborating with

Entrepreneurship Institutes, it enables students to make better choices (Thaler, 2008). The collaboration with the institutes will provide a bridge between intention and action. However, the DSI will need to have resources available for the institutes such as greater lab equipment, access to mentors and guidance. Furthermore, there needs to be a real emphasis on mentors and companies engaging with grassroots ideas. There is still a veil over what are the complexities in the renewable industry. Therefore, companies can each year highlight key issues within the renewable energy sector, for example, there is a lack of effective use of big data in the energy sector (Energy Data Taskforce, 2019). Due to a lack of standardized approaches and a culture of little collaboration has blocked competition and innovation (Energy Data Taskforce, 2019). Thus, this could be highlighted in a *manifesto* of issues to tackle for renewable energy and then trickled down to the institutes. This will help later on, when entrepreneurs have to prove the legitimacy of their idea/solution to (local) potential investors to justify access to resources and funding opportunities. The idea of making a *manifesto* each year to show the changing needs and new issues that renewables or other sectors need is something that will help, as sometimes, it is easier to think of solutions if the problem is well known and this breaks down barriers of the renewable industry. For example, during Covid-19, a coal plant in North Dakota is being replaced, in part, with a one-acre battery array from Form Energy (Lacey, 2020). This will use a new technology capable of discharging for 150 hours which is more than 30 times longer than lithium batteries (Lacey, 2020). Thus illustrating, renewables are surging and coal is declining. The consequence of cheaper batteries is an expansion of the market which in turn drives investments that produce further improvements in cost and performance. Batteries are a key technology for de-carbonizing electric power. The trend is hugely significant because cheap batteries will be essential to shifting the world economy away from carbon-intensive energy sources like coal and gasoline (Quijano, 2020). Therefore, innovations in battery-powered led initiatives could be out on the *manifesto*.

Greenship is close in the spirit to the *Green Deal* outlined by the Committee on Climate Change's, six-point focused letter to the PM on the 6th of May, whereby climate policy plays a key role in the recovery of the economy. Whilst these actions are being taken with those institutions, the government needs to, in its reevaluation of relationship's, whether it be due to Brexit or having to bail out companies, put in clauses which require companies, to invest in renewable innovation by mentoring start-ups and sharing resources. This is inspired by Obama's Economic Recovery Plan, which had a clean energy angle (Tankersley, 2013). This is vital in creating the kind of society and economy that we need to transition towards (IRENA, 2017). Furthermore, companies should recognize, that these Entrepreneurship Institutes, present a unique chance to attract student of different degrees, mindsets, experiences and different academic levels in one place all to further innovation. There is evidence of companies collaborating with universities, such as Mobie, working together with Northumbria University to drive innovation in designing and delivering homes for the future (The Construction Index, 2019). This kind of collaboration is what the DSI will hope to coordinate on a vaster scale. To solve the climate crisis, the need for innovative technology is essential, therefore established companies need to highlight their climate-related barriers and contribute to the aforementioned *manifesto*. This can trickle down to students who can then attempt to tackle said barriers. This needs to go beyond, hackathons or case study exercises, there needs to be direct action with a long term commitment. The DSI can act as an impartial coordinator, whose main mandate is to match company mentors to the right start-ups. The DSI city hub(s) will provide the opportunity to select start-ups, from the institutes, who show promise in tackling climate-related issues, to continue their development at this hub. One major obstacle for start-ups leaving any accelerator programme is sustaining the momentum they have gathered in the programme

but without the crutch of the programme and funding. The DSI City Hub would provide further funding and support by providing specific help, which could increase its chances of success or seed investment.

Greenship could be a multiplier effect in terms of culture and behavioural norms, as well as a fiscal one. The start-ups that will spring up, due to DSI and the concept of Greenship, needs to embody the purpose of Greenship. It needs to embed those set of values alongside its other values to create a culture where sustainability is considered in all manner of decision making (Venter, 2016). Funding available from the DSI and Institutes should be predicated the purpose of the good or service, helps further the Paris Agreement agenda (Venter, 2016). The DSI needs to ignite the Greenship discussion with the private sector, one of the interesting ambitions of the Greenship concept is to provide the UK economy sustainability. One rather *radical* result of this discussion and concept is the idea of a Sustainable Innovation Fund (SIF) which is similar in spirit to the existing VCT (Cornwall, 2016). Just as VCT's have helped (and continue to) small UK companies, the SIF will help companies that have come through the DSI Hub(s), or, presently on how they have incorporated Greenship in their ethos and thus getting the DSI approval. The SIF is a financial instrument that allows the private sector and the invisible hand of the market to then take the reins (Cornwall, 2016). The notion of the government coordinating with venture capitalists has occurred in China, who coordinated with local venture capitalists to invest in tech start-ups (Pearson, 2019). The SIF aims to help create further jobs by rewarding Greenship innovation and strengthen the economy. It is recommended that the tax reliefs, initially, be slightly more advantageous than a traditional VCT, to help inspire investor confidence. However, after a set period, this should be re-evaluated and if deemed a successful financial vehicle of investment, then these tax reliefs can be lowered slightly if need be. This is why the private and public sector must help mentor student-led start-ups to truly integrate this Greenship into their governance. This is happening at a gradual pace, for example, the Bank of England introduced Climate Change into stress testing for investment banks. It has to collaborate, with the Bank of England, the FCA and also ESG indexes (such as MSCI). However, the DSI must take the lead in these debates and not only initiate conversations but sustain them, to produce leadership practices and company governance which encompasses this ethos. The issue, may not be as difficult, as it sounds, from the financial institutions, as there is an appetite, for ESG related financial instruments by the investors (Venter, 2016). It seems ESG and climate change are interchangeable in the City of London however both translate to finding more resilient companies and products.

It is clear Covid-19 has put a sustainable future in the spotlight, where solutions need to be created. Greenship provides an interesting opportunity as it integrates government policy, educational and private bodies to ignite entrepreneurship. By empowering the entrepreneur(s) with mentorship, a support network, legitimacy and networking opportunities, this will ensure a greater chance for the start-ups to reach their next stage. The inclusion of a manifesto surrounding renewable energy issues could significantly help lift the veil of mystery around the sector and break down barriers to get students from different degree disciplines to participate. By coordinating and collaborating with educational institutions, other public bodies and the private sector, Greenship has a chance to sit in the middle of this triangular conversation and help steer it towards a more sustainable future.

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