SUSTAINABLE DEVELOPMENT GOALS

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7 AFFORDABLE AND CLEAN ENERGY

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for all

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Introduction

Since the industrial revolution coal and oil have provided the fuel source for the energy industry, while in more recent times nuclear fission and renewable energy have also staked their claim. However, access to this critical resource has remained limited for the most impoverished in our world, while those who do have it utilise it to excess. In a globe that is becoming increasingly interconnected and digital, electricity is becoming increasingly important, particularly as demand increases. Climate change is the pre-eminent threat to our existence and the energy sector is largely at fault. Throughout recent history, multiple global strategies have been employed to try and curb the degradation caused by this sector, with rather mixed results.

The Millennium Development Goals

The Millennium Development Goals consisted of eight broad targets for the wold to reach before 2015 (Takada and Francchia, 2007; United Nations, 2015). While no goal specifically targeted energy, Goal 7 (Ensure Environmental Sustainability) did include some targets for measuring and reducing energy consumption. Despite this, global emissions of carbon dioxide have increased by over 50 per cent since 1990 (United Nations, 2015), demonstrating that the MDGs did not comprehend adequately neither the domestic (cooking and dwelling) nor the industrial requirements of the developed and developing worlds. Despite fear that the failure of countries to achieve the MDGs by 2015 would dissuade a second round of development targets (Feeny and Clarke, 2009) the United Nations ushered in a more comprehensive list of goals, with a greater emphasis on specific targets and indicators, at the end of the MDG period.

Sustainable Development Goal 7

The Sustainable Development Goals were adopted unanimously in 2015. Unlike the MDGs, the SDGs include energy: SDG7, ensure access to affordable, reliable, sustainable and modern energy for all. Transitioning first world nations away from coal, gas and other non-renewable means of energy production is a challenge in itself, but supporting developing nations with sustainable sources of power is an even greater one. Former United Nations Secretary-General Ban Ki-moon indicated in 2011 that 'sustainable development is not possible without sustainable energy' (Sustainable Energy for All, 2019). SDG7 aims to achieve universal access to modern

energy; increase the global percentage of renewable energy; double the improvement in energy efficiency; promote access, technology and investments in clean energy; and expand and upgrade energy services for developing countries.

As the targets make clear, SDG 7 does not exist in a vacuum but is related to and co-dependent on several of the other Goals. Goals 1 (No Poverty), 2 (Zero Hunger), 9 (Industry, Innovation and Infrastructure), 11 (Sustainable Cities and Communities) and 13 (Climate Action) are all contingent on clean and reliable energy. Despite some progress on all fronts, roughly 840 million people remain without electricity, while access to clean cooking fuels and technologies is also lacking. The global electrification rate rose from 83% in 2010 to 89% in 2017, while the use of clean cooking fuels rose from 57% to 61%. The renewable energy share of final energy consumption only increased from 16.6% in 2010 to 17.5% in 2016, while global primary energy intensity improved from 5.9 to 5.1 (International Energy Agency, International Renewable Energy Agency, United Nations Statistics Division, World Bank, & World Health Organization, 2019).

Energy & the Asia Pacific
At the start of the century, the Asia Pacific region held more than half of the world's people without access to modern energy (Chandra Saha, 2003). Since 2000, figures indicate vast improvement, with over 900 million people gaining access to electricity in developing Asia (International Energy Agency, 2019). The percentage of the population with access to electricity rose from 67% to 91%, while 525 million people gained access to clean cooking fuels in the same period (International Energy Agency, 2019). Most of this growth however occurred in China and India.

These circumstances illustrate the complexities in achieving the Goals, particularly SDG7. Some experts predict that the global demand for energy will be more than 50% higher in 2030 than what it was 2011, with China and India accounting for more than 45% of the increase (Leary and Esteban, 2011). In a bid to catch up to the rest of the world, some developing nations are heavily reliant on coal and oil consumption from other countries (notably Australia and the Middle East) and this could create a strong imbalance in energy security in Asia Pacific (Intriligator, 2015). This could have further political and security ramifications with the strategic importance of sea lanes and ports between the Persian Gulf and the south and east China seas (Intriligator, 2015). On the positive side, nations in the Asia Pacific region has shown a propensity to legislate for a different approach and to incorporate environmental causes and the promotion of sustainability and a green economy in their courts and into law (Ladan, 2018).

Furthermore, even though China is a major renewable energy producer, much of the Asia-Pacific is lagging, even as attempts are made to industrialise and modernise in an environmentally conscious way (Chandra Saha, 2003). Countries such as India, Vietnam, Mynanmar, Cambodia, Papua New Guinea and several other Asia-Pacific nations have decreased their total renewable energy share between 2010 and 2016 (International Energy Agency, International Renewable Energy Agency, United Nations Statistics Division, World Bank, & World Health Organization, 2019) as they attempt to balance renewable energy strategies with the developmental strategies necessary to provide employment and alleviate poverty. Ensuring that policy prescriptions recognise this diversity of place and experience is crucial to genuine progress on SDG7.

The European Union
EU Progress and the 2020 Strategy
Whilst the Asia-Pacific is focused on delivering electricity and clean cooking fuels to its entire population, the EU must look to rapidly transition to renewable energy in light of strong member state economies and high proportion of people with access to electricity (International Energy Agency et al, 2019; Liobikienė, 2017). In 2010, as a precursor to the SDGs, the European

Union adopted and set targets in the Europe 2020 Strategy, which outlined its goals in education, poverty, employment, research and development, and climate change and energy. The climate change and energy targets included:

- greenhouse gas emissions 20% lower than 1990 levels
- 20% of energy coming from renewables
- 20% increase in energy efficiency (Eurostat, 2019).

As of a European Commission report in 2016, all four indicators for the climate change and energy target were set to be reached by the year 2020. This progress is even more significant considering the improvement in the majority of EU states in this category despite significant economic instability during this period (Rogge, 2019).

Smart Specialisation
One tool used by the EU to reach its goals is Smart Specialisation (S3), a regional policy making tool that utilises an areas' strength to create the best outcomes possible on a particular topic. Smart Specialisation is a cornerstone of the EU 2020 agenda (Sandu, 2012), particularly in energy, where it helps policy makers maximise their resources and identify groups, regions or countries with common energy interests (Uihlein and Navarro, 2016).

The European Commission encourages the use of national/regional Research and Innovation Strategies for Smart Specialisation as a means to deliver a more targeted approach to policy creation and research. The two major components of this tool are to identify a region's own strengths and assets (smart) and to define shared vision of regional innovation (strategy), encouraged by a bottom-up approach with collaboration between businesses, public entities and knowledge institutions (Cebolla and Navas, 2019). One way that S3 is being applied in Europe is in the fostering of a green energy sector as countries seek to reach their Europe 2020 targets and beyond (Steen, Faller & Ullern, 2017). This has been demonstrated in in Germany with the development of an on and offshore wind industry (Steen, Faller & Ullern, 2017).

The strength of S3 is in its ability to change, adapt, and develop the capabilities of the regions that adopt it. While originally developed for the European Union and its multitude of differing regions with varying capabilities, it has been adopted, in its early stages, as policy tool to support regions in Australia to transition from a coal and fossil fuel dependent economy in Gippsland, Victoria.

Normative Power, Gippsland and the Asia Pacific
Due to the EU's size, economy and global and regional importance it is able to bring some influence to bear on other states' policies. The European Union has tried already to influence major global actors (the United States and Brazil) in energy and the environment, particularly with biofuels, but with limited success (Renckens, Skogstad, & Mondou, 2017).

The European Union Centre at RMIT has been exploring the capacity for S3 to be used in Gippsland regarding energy policy, and the ability for a largely coal dependent community to transition to cleaner fuels. Community workshops discovered that local knowledge and expertise already existed in the region, allowing for both smart (the strengths and assets of the region) and regional innovation (specialisation). While SDG 7 largely tries to aim for broader access to energy globally, the challenge for first world nations lies in the transitioning to greener power supplies.

Limitations of SDG 7
As outlined above, SDG7 is an integral part of the Global Transformation Agenda and achieving its targets will be essential to the success of the other 16 Goals. However, it has been argued that

the targets, indicators and definitions all pose significant problems, and that they are not actually helpful or clear in what they mean (Hillerbrand, 2018).

Calzadilla and Mauger (2018), for example, argue that the SDGs do not properly define key terms. For example, terms such as 'access to', 'modern' or 'sustainable energy' are left relatively broad and ambiguous, leaving them up to scrutiny in international law and weak interpretation. Others have argued that the targets and indicators for some SDGs are in conflict with others—that is, achieving one will hinder another (Fader, Cranmer, Lawford, Engle-Cox, 2018). However, in the same study investigating this potential for trade-offs, SDG 7 and its targets and infrastructure requirements were in little competition with other goals, with only certain types of biofuels and land requirements for agriculture (for example solar panels being identified as issues (Fader, Cranmer, Lawford, Engle-Cox, 2018).

Green-Green dichotomies or conflicts between goals and targets are just one possible limitation of the Sustainable Development Goals. There is also a question about how well this Goal (and perhaps others) is aligned with the Paris Accords. While progress has been made to achieve the Goals, change is not happening fast enough to realize the SDGs by 2030 (United Nations, 2017). Whether it is because the goals are unclear, or the lack of a model for countries to follow (Büyüközkan, Karabulut, Mukul, 2018) significant action and leadership is needed. Notwithstanding the complexity and tensions in debates in the EU on energy policy, and how regional differences can be managed, the EU continues to be the global leader on action to achieve the outcomes sought by SDG 7. The achievement of SDG 7 is crucial to the overall achievement of the Global Agenda, and in turn, will depend on cohesive action to address the broader framework of Goals implied by the Paris Accords on Climate Action.

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