

# The Race to Carbon Neutrality: What Does it Mean for Territorial Autonomies and Diversity Management?

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## Abstract

This paper highlights the rapid development and implementation of sustainable energy policy and its effects on Territorial Autonomies. It explores current and potential future developments on the Åland Islands off the south-west coast of Finland, and the Guangxi Zhuang Autonomous Region in southern China. Findings suggest that Territorial Autonomies would benefit from a more comprehensive sub-regional approach to global energy sustainability and carbon neutrality.

## Keywords

Carbon Neutrality, Territorial Autonomy, Guangxi Zhuang Autonomous Region, Åland Islands

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## 1. Introduction

Sustainable energy will play a decisive role in reaching the targets of the United Nations Sustainable Development Goals (SDGs) and the Paris Climate Agreement. Much is made of headline international agreements to make the world more equitable. However, engagement with communities on a local, regional, and sub-national level is needed to bring about effective policy towards sustainable development. A recent OECD report found that at least 60% of SDG targets will not be reached without proper engagement of sub-national governments (OECD, 2020). In order to reach these targets, sustainable energy will play a vital role as energy supply and demand has far more interconnectivity than any other SDG (IPCC, 2018).

Nation states and territorial autonomies will implement as much or as little of the suggested SDGs that they are willing to implement. The Paris Agreement ‘does not contain legally binding provisions that require countries to take domestic legal action’ (Cléménçon, 2016). This flexibility has led many nations to take different approaches and prioritise differing energy mixes. Territorial autonomies are often unique in their geographic, economic, and political situations. In energy policy, and in other fields, territorial autonomies are an untapped area of study in their often localised approaches to global problems.

Many countries have now committed to becoming carbon neutral, as well as pledging to implement the Sustainable Development Goals. This paper will explore existing sustainable energy policy in the Åland Islands, Finland, and the Guangxi Zhuang Autonomous Region, China.

## 2. Territorial Autonomy – Literature Overview

Maria Ackrén found that there were 65 cases of territorial autonomies around the world from the Azores Islands of Portugal, to Zanzibar of Tanzania (2009). Although there is no universally agreed legal definition of territorial autonomy, academics have a variety of narrow and broad definitions. For example, Dinstein defines territorial autonomy as ‘to rule over oneself according to one’s own laws or rules’ (1981), whereas World Autonomies have a broader definition of an ‘asymmetrical or symmetrical self-government of a territorial entity within a state, which is characterized by substantial ethno-cultural and/or territorial diversity’ (World Autonomies, 2016).

This essay will use two case studies that have dissimilar levels of autonomy. The Åland Islands are seen as a ‘good example’ to study as a solution to ethno-territorial disputes (Suksi, 2013) by many in the world. In Åland, territorial autonomy, demilitarisation, and provisions in international law and in the Finnish constitution are the foundations of its

prosperity. There are many layers to autonomy: problems which arise from power-sharing, security, identity, and human rights all have many contexts and solutions.

In China, over 114 million people are officially recognized as belonging to an ethnic minority (Sixth National Census, 2011). According to Chen, the Chinese Communist Party view regional ethnic autonomy as: ‘an ethnic affairs management system developed in accordance with the basic principles of Marxist ethnic theory and in combination with China’s conditions’ (Chen, 2020).

In China’s constitution, ethnic minorities play an important role. The first paragraph states: ‘Chinese people of all ethnic groups jointly created its magnificent culture and have a proud revolutionary tradition’ (People’s Republic of China, 2020). Although many autonomous regions in China underutilise existing laws, the constitution goes on to highlight the right to political, economic, language, educational, and cultural rights for minorities.

This is in stark comparison to various western media reports of ethnic minorities being subject to increased human rights violations in China. Chinese state media is often quick to highlight that it retains its citizens’ collective solidarity and patriotism with the Chinese state. According to Xi Jinping’s Thought on Socialism with Chinese Characteristics for a New Era, Point 13 is to ‘Establish a common destiny between Chinese people and other people around the world with a “peaceful international environment”’ (Jinping, 2017).

Despite media reports of the human rights of minorities not being followed, minorities often play a starring role in Chinese culture, and with star appearances on peak-time television variety shows. In the recent big-budget Chinese movie *My People, My Country* (我和我的祖国), one of the seven emotive stories about the successes of the 70 Years of the People’s Republic of China was based in the autonomous region of Inner Mongolia. Released in 2019, it tells the story of two homeless brothers – with distinct dialect – celebrating ‘The Guiding Star’ (白昼流星) of a Chinese Spacecraft landing nearby.

Critics have also highlighted the need for China to future proof its laws in relation to territorial autonomy, as the exercise of the power given by the constitution is not ‘legally or politically well protected’ (Haiting, 2012) and have called for measures to ‘focus as much on the process as on the decisions [made]’ (Wu, 2014). Others have underlined the strong degree of autonomy in a Chinese context with scholars presenting data demonstrating narrowing inequalities: ‘the state policy to promote ethnic egalitarianism has been successfully implemented to a large extent’ (Wu, X. and He, G., 2018). In school exams, minorities are even eligible for ‘bonus points’ (Xuequan, 2017).

The Guangxi Zhuang Autonomous Region of China undoubtedly has less territorial freedom than that of Åland, with some academics stating that ‘no meaningful autonomy exists’ in China (Ackrén, 2009), and that no regional-level autonomous regulation has been

passed due to impasses in preferential central government subsidies. Guangxi Zhuang was the first region to formerly commence drafting of autonomous regulation, and the only region to submit it to central government not once, but twice (Feng, 2016). For the purpose of this essay, the Guangxi Zhuang Autonomous Region will be regarded as autonomous following Michael Tkacik's view that Autonomies 'can be arranged on a spectrum of personal, cultural, functional, administrative and legislative autonomy' (2008).

### **3. The link between Self-Government and Energy Policy Potential**

If existing and draft laws are utilised and implemented more, this could be game changing in diverging energy policy from national frameworks. According to the People's Republic of China's Regional Ethnic Autonomy Law enacted in 1984:

Autonomous areas' organs of self-government have the right to independently manage economic construction, grass land and forest, and natural resources, and to independently develop and manage educational, scientific, technological and cultural undertakings, public health, and other related projects. (People's Republic of China, 1984).

When it comes to energy – and in particular sustainable energy and development – the line between domestic and international policy with regards to the state's legal obligations has become increasingly blurred. International institutions are often handed the responsibility to lead and advocate for sustainability initiatives. This can lead to a scapegoating of institutions while abdicating responsibility of national governments. For example, the Trump-led US administration spoke of the Paris Climate Agreements within the United Nations Framework Convention on Climate Change that 'disadvantages the United States to the exclusive benefit of other countries' (The White House, 2017).

Despite the apathy of some, sustainability and carbon neutral energy systems are critical for assuring quality of life and underpin the attainment of the UN's 2030 Agenda for Sustainable Development. Countries across the world will need to reduce their dependence on fossil fuels significantly in order to achieve negative carbon emissions. As fossil fuels are likely to continue to play an important role in the short and medium term, the deployment of carbon capture, use, and storage (CCUS) technologies are 'essential' to achieve carbon neutrality (Brkic, 2021). CCUS technology is widely recognized as a necessary technology for large scale decarbonization of coal, gas, and heavy industry sectors, and to bridge the gap until next generation carbon-neutral energy technologies are commercialized. For example, a recent UN report by a number of sustainable energy experts concluded that CCUS is 'an essential step towards mitigating climate change' (United Nations Economic Commission for Europe, 2021).

This essay will explore the potential of the autonomous regions of Åland, Finland, and Guangxi Zhuang, China, in developing strong sustainable carbon neutral and CCUS energy policy through multi-level governance amongst integrated regions. The two contrasting case studies will be highlighted to demonstrate the different approaches in effective multi-level energy governance.

#### **4. Guangxi Zhuang Autonomous Region and Energy Policy**

The Guangxi Zhuang Autonomous Region (广西壮族自治区) is a southern, coastal, sub-tropical region of China that borders Vietnam. It is the sole region of China to access the member states of the Association of Southeast Asian Nations (ASEAN) by land and sea. Guangxi has access to plentiful resources that could lead to a more sustainable energy-led economy. For example, it has cassava resources – a perennial woody shrub – which can be a fuel ethanol substitute for gasoline, potentially reducing oil imports and reliance on coal (Dai et al., 2006). It can be grown in harsh environments where staple foods such as rice and wheat cannot. Guangxi could increase its yield to match its Southeast Asian partners, as recent research indicates bioethanol is a strong low-carbon alternative to traditional fossil fuels (Jiao et al., 2019). Research into this area has strong support and funding from the Guangxi government.

Guangxi was made an autonomous region in 1958 as a gesture to support the cultural autonomy of the minority ‘Zhuang’ people. In practice, this enabled the creation of a local government that can independently administer ‘educational, scientific, cultural, medical, sport or tourism activities’ (Mériade, 2018). The governor of the local government must be of ‘Zhuang’ origin. Political priorities and members are aligned with the local communist party and the national five-year plans.

Although China has limited direct democracy, Guangxi was one of the first to hold village elections (O’Brien and Li, 2000). Guangxi is represented by China at regional organisations and bodies, such as ASEAN. ASEAN recently implemented the Regional Comprehensive Economic Partnership, which at the time of writing, is the world’s biggest trade deal, and has the potential to harmonise and raise up sustainable practices across the Asia-Pacific region.

The governor oversees a strategically important region of China for future sustainable energy in reaching carbon neutrality. As energy is often a cross-cutting subject of policy making, and also increases provincial power in administering budgets, whether Guangxi utilises its powers to its fullest extent is unclear. Chinese politics and public policy are often described by scholars as ‘complex and opaque’ (Su, 2019).

Nevertheless, the local government of Guangxi is proactive in energy policy by instigating high level meetings with regional and national energy companies, implementing rural power grid transformations, and initiating studies into local energy reliability (Di, 2018; Portal of the People's Government of Guangxi Zhuang Autonomous Region, 2020).

Guangxi's vast forests are some of the China's biggest 'carbon sinks', which naturally collect carbon from the atmosphere. Nearby offshore basins could become the basis of Asia's CO<sub>2</sub> storage capacity, with massive ports in the region already capacity building after seeing an uptick in trade due to wider Asian integration. The region also has one of the lowest carbon footprints in China (Wang and Shi, 2012).

Nuclear, wind, and solar energy generation are strong low-carbon alternatives to fossil fuels (Pehl et al., 2017) and huge infrastructure projects underway in the region reflect current contemporary sustainable energy approaches. For example, one of China's first domestic nuclear reactors is nearing completion, which is expected to reduce dependency on other nations and cut millions of tonnes of carbon. It also has the added value of transitioning away from imported coal, which is subject to regional quota limits from central government.

In July 2020, media reports showed submitted plans for a solar power project the size of around 40 football pitches which would supplement existing wind farms in the city of Liuzhou. Liuzhou has also directed its automobile expertise towards the production of electric vehicles which could see an increase in electricity usage in the region and beyond. In November 2020, the city of Chongzuo signed a framework agreement with state owned company 'Energy China' to create a mega-city project with energy, transportation, and mine restoration.

Guangxi successfully petitioned the central government to allow the autonomous region to be a part of the Greater Mekong Subregion Economic Cooperation Program. Cities in Guangxi such as Dongxing (on the Vietnam border) have also been designated experimental zones to expand cross-border cooperation. Furthermore, there has been the creation of joint industrial parks with Southeast Asian countries where 'Guangxi government and state-owned enterprises in Guangxi play leading roles' (Guangxi Daily, 2017). These international connections are vital to support sustainable energy trade and transboundary cooperation.

In a United Nations report, the electricity inter-connectivity between Vietnam and Guangxi were commended (United Nations Economic and Social Committee for Asia and the Pacific, 2008). In 2012, Guangxi Construction Engineering Group signed an Electricity Project Cooperation Agreement with Thailand, which included wind power generation projects (Feng et al., 2020).

The flagship project of the Autonomous region is the Beibu Gulf Economic Zone, which gives greater independence from national policies to enable tax and business incentives to domestic and foreign companies. There is academic evidence that entrepreneurs in Guangxi are increasingly using their economic power into formal political power (Chen et al., 2008). The collection of cities in the Beibu Gulf includes many foreign companies, including Finland's Stora Enso.

By developing clusters of industry, better economies of scale and the potential for carbon capture and storage facilities to have high impact has been created. This is no coincidence: top-down political will from Beijing and the Guangxi region has supported innovation and new policy directives.

Community support for economic growth, development, and sustainability to remove air pollution from high-population areas has also played a supporting role in driving political action. Buy-in from international stakeholders for sustainable economic development has also facilitated the commencement of the rapid change required for the 2030 agenda and enabled China to take a leading role in international diplomacy and global energy governance.

This pathway of strengthening autonomy through economic means has been the catalyst for increasing the existing international and interregional cooperation available in the region. Guangxi is in a stronger position to negotiate further autonomy thanks to its success in boosting sustainable economic growth through existing autonomous mechanisms.

The economic soft power dynamics may be emulating the wider global strategy of China's Belt and Road Initiative to promote economic development and inter-regional connectivity.

Sustainability will require regions to work together in energy sustainability. As highlighted by the projects in development, Guangxi is often used as a testing ground for pilot projects by state and foreign enterprise. This innovation and ideas-led economy will enable Guangxi to be well suited to developing and implementing carbon-neutral policies.

China recently announced its target to become carbon neutral by 2060. Guangxi's own target is to reduce CO<sub>2</sub> intensity by 16% (People's Republic of China, 2011). The state-owned Guangxi Power Grid Corporation owns the vast majority of the electrical grid in the region and is a subsidiary of the wider conglomerate China Southern Power Grid. The company's initiatives have even been mentioned as good practice during Sino-Swedish corporate social responsibility workshops (Sino-Swedish Cooperation on Corporate Social Responsibility, 2016).

National reforms have encouraged regional energy integration which could be seen as strengthening China's authoritarian system. Nonetheless, Guangxi's current limited autonomy in the field of energy can be expanded. Guangxi can take heed from Guangdong



province's negotiations for substantial autonomy in retaining fixed amounts of tax revenue in order to expand its electricity generation capacity (Wu, 2019).

As carbon capture and storage will be essential in transitioning to carbon neutrality, Guangxi is in a prime position to manoeuvre itself as a major player in the wider Asia region through its regional inter-connectivity and capacity for innovation. CO<sub>2</sub> storage, particularly beneath the ocean floor, will require international frameworks that go beyond borders. Guangxi's experience of working within national and autonomous frameworks has shown that the worlds of business, technology, and international diplomacy all collide when it comes to forming comprehensive energy policy and has the potential to develop these experiences into effective policy making.

Creative innovative partnerships with neighbouring states and companies in energy and in other fields have all contributed to present-day policy in Guangxi. Although it is unclear how much influence China's regions have in the formation and implementation of national energy policy, recent policy developments indicate that Guangxi is at the forefront of transformational, cross-cutting sustainable energy policy.

## **5. Åland Islands and energy policy**

The Åland Islands are an archipelago in the Baltic sea between Sweden and Finland. In general, islands are often dependent on others to supply energy. This energy is often unsustainable and comes in the form of fossil fuels. However, whilst Åland has relied on electricity from Sweden – due to its proximity – it also has a high voltage DC cable connection to Finland as of 2016 (Child, et al., 2017). This recent development is in line with international calls (and investment) for varied cross-border energy sources. The Nordic investment bank financed the Finnish cable connection so that two fossil-fuelled reserve power units could be shut down (Nordic Investment Bank, 2012).

Energy experts have concluded that a fully sustainable energy system for Åland can be achieved by 2030 (Child, et al., 2017). Regional cooperation in 'storage solutions and hydropower availability in Finland, Sweden and Norway can offer further flexibility and security' (Child, et al., 2017). In 2016, Åland committed to the United Nations 2030 Sustainable Development Goals, and in 2014 The Parliament and Government of Åland committed to full sustainability by 2051 (Government Of Åland, 2016). This plan was even awarded the European Sustainability Award of 2019.

Greta Thunberg is far more known in Åland than by much of the population in China. Community-led action and grassroots initiatives play a much more primary role in energy policy through the Island's Parliament, the Finnish Parliament, as well as close involvement with the Nordic Council and key European Union Institutions including the European



Committee of the Regions. This has led to strong development of wind turbines with the long-term goal of exporting energy to Sweden and Finland, rather than importing.

The construction of the Långnabba wind power project will increase the electric energy self-sufficiency rate for Åland from 18% to 65% when completed (Vind AX Ab, 2021). Furthermore, the Åland Government announced plans for a further 500 wind turbines on an area of a thousand square kilometres (Bailey, 2021).

Multinational organisations take a strong interest in islands energy plans as they can often be used to test innovative solutions in variable renewable energy systems towards decarbonisation. These could include unique solutions for Åland, including ferry charging stations (Kumar et al., 2020) and hydrogen production for ferry operations (Grannas, 2019). In the future, Åland could also play a vital role in connecting eastern Europe with carbon storage facilities in the North Sea in Norway.

Åland also benefits from a special economic zone which allows tax-free sales on boats stopping at the islands, and for which they receive a return from the nationally collected taxes. The government of Åland has set-up a semi-state owned venture of government and Finnish research centres called Smart Energy Åland. The aim of venture is to turn to 100% renewable energy, and then export the knowledge and learning from this demonstration to Finland and further afield.

This massive drastic alteration in policy may be partly due to research conducted in 2017 that found that Åland had the highest carbon footprint per capita in the European Union. Academic studies of leadership in Åland shows that “there is lack of local adoption and holistic planning for energy transition” (Häger, 2020).

Nonetheless, although imperfect, the Åland example has given a strong voice to citizens of the islands with a particular highlight being the language rights afforded to them. Nations could learn from the good practice in Åland in order to accommodate multi-level systems. Finland, which Åland is a part of, is a world leader in carbon neutrality targets. It aims to be carbon neutral by 2035, which is far quicker than the EU’s ‘European Green Deal’ of 2050. By ensuring all stakeholders – including the autonomous region of Åland – are on board, as this strong engagement facilitates and supports the transition needed.

As Finland joined the European Union in 1995, scholars have argued that Åland Islands (and even nation states) have lost influence (Szwed, 2018). One could point to Finland’s pioneering carbon neutral stance going beyond the minimum required by the EU as not enough. This may lead to apathy and ambivalence towards multinational institutions. However, Åland has demonstrated its willingness to engage in European wide energy policy, including presentations at the European Committee of the Regions and active involvement in the Conference of European Regional Legislative Assemblies.

The Parliament of Åland also must consent to international treaties which fall within the competences of Åland (Act on the Autonomy of Åland). In the case of Åland's consent to the Paris climate agreement, controversy ensued when Finland moved to ratify the agreement before asking for Åland's consent. Consent was finally given despite pro-independence party "*Ålands framtid*" (Åland's Future) seeking a delay to pursue commitments from Finland on Åland's autonomy.

One major request from the Parliament of Åland has been for a Member of European Parliament for itself. This would further increase Åland's presence at the European level. If it chose to, a Member of European Parliament could mould EU energy policy through parliamentary committees such as the Committee on Industry, Research, and Energy, and find allies to accelerate environmental policy and legislation on Åland. Despite intense lobbying, even from the Finnish government at times, this issue has not been resolved (Silverström, 2008). Brexit enabled a distribution of MEPs across the remaining member states including one more to Finland (moving from 13 to 14).

Positive cooperation in energy at the EU level has made an impact on security and sustainability on the continent. The Energy Union launched in 2015 has encouraged market integration and boosted renewable energies, as well as many other directives to harmonise working methods and create new flows of investment. This has directly benefitted the Åland Islands, with sustainable energy plans supported through technical and financial means such as the recent *Clean Energy Transition Agenda for Kökar*, a municipality of Åland (Clean Energy for EU Islands, 2020).

In energy policy and beyond, that Åland continually pushes for progress not only maintains its current situation but advances itself and other autonomies in cross-cutting policy, including energy within existing structures.

## 6. Discussion

Nations may share far more common ground with a territorial autonomy of a similar size and economy than that of a major state. Good policy making can be developed when all stakeholders can share knowledge. Modern-day policy making can, and should, accommodate modern day compromises: permeable institutional structures can enable multifaceted approaches rather than existing black and white status quo approaches. There also lies potential for regions who wish to become more autonomous through different pathways.

Despite the Chinese central government not passing particular parts of Guangxi's autonomous regulations, Guangxi has striven towards autonomy through existing frameworks, primarily those with economic incentives such as special economic zones. In

the years to come, inter-dependability and global connectivity may become a commodity and be essential for the wider nation. In the future it could become a valuable bargaining chip to encourage further autonomy and, critically, funding from central government.

Both approaches can be valuable for others who wish to seek autonomy at various levels of engagement and ‘acceptability’. Guangxi has successfully maximised its permitted autonomy through its international partners to make an individual impact despite its lack of comprehensive institutions of autonomy, as well as dispute mechanisms rooted in the rule of law.<sup>1</sup>

Åland has shared similarities by involving the international community in its transition to autonomy. Both have equally strong motivations to enhance regional energy cooperation. Creating synergies through international partnerships can support a more prosperous and sustainable economy.

Cultural differences and different approaches to challenges such as democratic institutions look unlikely to change in China in the near future. As the East Asian approach of strong governmental action tackling COVID-19 appears to have been far more successful than western approaches, it does not appear that China will seek to emulate perceived western ideals of liberal democracy anytime soon.

## 7. Conclusion

This paper has highlighted current thinking and trends in two vastly different territorial autonomies. Through their unique autonomous approaches in energy, innovation in business, technology and diplomacy develops. Valuable research on small scale projects can help contribute to wider national and international goals and targets.

Both the case studies included in this paper have a lot to lose from climate change. The economies of Guangxi and Åland have a strong reliance on international transport and agriculture. These sectors could be heavily affected by climate change and its effects on the local environment. Therefore, it is essential for both to speed up their actions in moving towards sustainability and carbon neutrality. This essay has briefly touched on the potential for the Åland Islands and Guangxi to be world leaders and pioneers in creating innovation-led sustainable carbon neutral economies.

Territorial autonomies play a vital role in global energy sustainability and carbon neutrality by testing innovative solutions in their unique energy system settings. When nations fail to face up to the task, autonomous regions can often be the catalyst to better data-driven solutions for bigger nations to scale up future efforts. Therefore, this paper

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<sup>1</sup> These key principles are highlighted by Yash Ghai in Åland’s Autonomy in Comparative Perspective, 2011

concludes that more needs to be done to integrate good practice and innovation from territorial autonomies in multinational diplomacy beyond current frameworks.

The knowledge of territorial autonomies would benefit from a more comprehensive sub-regional approach to global energy sustainability and carbon neutrality. There is a wealth of knowledge which can be shared, not only amongst territorial autonomies themselves, but also amongst nations. If the Åland example has taught us anything, it is that confidence in leadership with various safeguards is essential and can inspire others to do the same (Spiliopoulou Åkermark, 2011).

Autonomy in differing economic and political contexts could become a key tool in facilitating the rapid energy transition away from fossil fuels. Successful autonomous regions implementing sustainable development could lead others to consider more sub-regional policy approaches in order to benefit local and national targets.

Both regions have a strong rural population and have been autonomous for a number of decades. Although peace should never be underestimated, both are in a good position to develop wider societal goals marking their valuable contributions to global society. Diversity management in these territorial autonomies is evolving to be far more than keeping the peace.

Creating unique world class innovation in various sectors is also one way of protecting autonomy, and underlining why autonomy is important, not just to minorities, but to nation states and the wider world.

Both are part of something bigger: be it a nation state or wider interregional economic commissions. Recognising the role that territorial autonomies can play in contributing to massive global actions may be a key way to ensure relevance and unique expertise. This form of soft power from territorial autonomies can give leverage to minorities; not only to survive the decline in global human rights, but to thrive through longevity, robust institutions, and skill sharing.

Future research could focus on how territorial autonomies can play a role in a comprehensive sub-regional approach to global energy sustainability and carbon neutrality. Exemplary approaches of territorial autonomies in environmental policy and legislation could be further expanded to scale up global action towards the 2030 agenda for sustainable development. Research is also required in seeking international examples of positive collaboration in sustainability between territorial autonomies and nation states. Non-traditional international partnerships have the potential to transform into 'win-win' international diplomacy and subsequently become a defining aspect of territorial autonomies continued survival.

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