
CHAPTER 8: THE FUTURE DEVELOPMENT OF REGULATORY SUPPORT MECHANISMS – UNIFICATION, HARMONISATION, CONVERGENCE, DIVERGENCE OR REGULATORY COMPETITION?

The regulation and governance of renewable energy has historically been highly fragmented internationally, with ‘no overarching regulation that specifically addresses energy.’¹ There are a number of international organisations that have renewable energy within their purview: the IRENA, the IEA, the Energy Charter and the EU. However, these organisations either have limited membership (the IEA and the EU), or have not yet actively sought to promote the legal harmonisation of renewable energy law or intervened in trade disputes (IRENA and the Energy Charter).²

From an economic perspective, countries legislate to support the accelerated deployment of electricity generated from renewable energy sources in order to correct a number of market failures that afflict the sector. These market failures were analysed in Chapter 5, and include the failure to price externalities into energy prices, positive spillovers and learning effects, and information asymmetries. The existing research on the market failures that affect the renewable energy sector suggests that the same failures seem to exist in many countries around the world. Unfortunately, to date there has not been a comprehensive analysis of the scale and impact of these market failures in every country that has renewable energy laws. That said, it would be a fair assumption

¹ Joanna I Lewis, ‘The Rise of Renewable Energy Protectionism: Emerging Trade Conflicts and Implications for Low Carbon Development’ (2014) 14(4) *Global Environmental Politics* 10, 28.

² Ibid. See also Alexandra Wawryk, ‘International Energy Law: An Emerging Academic Discipline’ in Paul Babie, Paul Leadbeter (eds), *Law as Change: Engaging with the Life and Scholarship of Adrian Bradbrook* (University of Adelaide Press, 2014) 223, 240.

that the market failures affect different countries to varying degrees. The most obvious difference in the market failures is in respect of the failure adequately to price in the positive externalities associated with diversifying supply and ensuring energy security in electricity generated from renewable energy sources. This market failure will be more of an issue for countries that are energy importers and so have a clear energy security problem, as opposed to the countries that are energy exporters.

However, given that renewable energy laws are largely seeking to address the same underlying problem – that of the presence of market failures affecting the sector – one might assume that similarities may also start to emerge in their legislative solutions. Further, with globalisation contributing to the ‘intensification of economic, political, social and cultural relations across borders,’³ the legal and policy convergence literature suggests that over time countries with similar social and economic development should gravitate towards similar policies and instruments.⁴

Thus this chapter considers the likely future development of renewable energy law. Section 8.1 of the chapter questions whether the benefits of laws harmonising or converging outweigh the costs involved in terms of the loss of local preferences. The following sections draw together the analysis conducted in previous chapters to examine whether national renewable energy laws are likely internationally to unify (Section 8.3), harmonise (Section 8.4) or converge (Section 8.5) in the future as the renewable energy technologies become more similar, widespread and bankable. Or are the national renewable energy laws more likely to diverge (Section 8.6) internationally or even actively compete via

³ Hans-Henrik Holm and Georg Sørensen, ‘Introduction’ in Holm, Hans-Henrik and Georg Sørensen (eds), *Whose World Order: Uneven Globalization and the End of the Cold War*. Boulder (Westview, 1995) quoted in Peter Drahos and John Braithwaite, ‘The Globalisation of Regulation’ (2001) 9(1) *The Journal of Political Philosophy* 103, 104.

⁴ See e.g. Emanuela Carbonara and Francesco Parisi, ‘The Paradox of Legal Harmonization’ (2007) 132(3/4) *Public Choice* 367, 367-8; Andrew Jordan, Rüdiger Wurzel and Anthony Zito, ‘Innovating with ‘New’ Environmental Policy Instruments: Convergence or Divergence in the European Union?’ (Paper presented at the 2000 Annual Meeting of the American Political Science Association, Marriott Wardman Park, 31 August – 3 September 2000) 6; Daniel W Drezner, ‘Globalization, harmonization and competition: the different pathways to policy convergence’ (2005) 12 *Journal of European Public Policy* 841, 841.

regulatory competition (Section 8.7) as countries continue to pursue their national self-interest? This discussion is exemplified by a discussion of the development of the European Union renewable energy law as well as some of the international conflicts that have emerged in the past five years within the renewable energy sector such as the Chinese Wind Subsidy WTO Dispute. These case studies provide a basis for understanding how regional and international institutions are shaping the future development of national renewable energy laws.

8.1 WHAT ARE THE ADVANTAGES AND DISADVANTAGES OF NATIONAL RENEWABLE ENERGY LAWS BECOMING MORE SIMILAR INTERNATIONALLY?

There are said to be a number of benefits that are derived from laws becoming more similar across jurisdictions, regardless of whether this is achieved by the processes of legal harmonisation or legal convergence. The presence of similar or identical laws or standards across jurisdictions arguably promotes and facilitates international trade, especially for multinational corporations operating across national boundaries.⁵ This is because when companies have to comply with the same laws or standards across jurisdictions, information costs and the barriers to entry to the market are lowered,⁶ while legal certainty and predictability are improved.⁷ The combination of these benefits should in theory lead to increased competition, greater economies of scale and thus lower costs for the end-consumer.⁸ Such a move should also lead to reduced compliance

⁵ See e.g. Thomas K Cheng, 'Convergence and Its Discontents: A Reconsideration of the Merits of Convergence of Global Competition Law' (2012) 12 *Chicago Journal of International Law* 433, 455, 461; House of Representatives Standing Committee on Legal and Constitutional Affairs, Parliament of Australia, *Harmonisation of legal systems: Within Australia and between Australia and New Zealand* (2006) 9.

⁶ Larry E Ribstein and Bruce H Kobayashi, 'An Economic Analysis of Uniform State Laws' (1996) 25(1) *The Journal of Legal Studies* 131, 138.

⁷ Polina Dlagnekova, 'The need to harmonise trade-related laws within countries of the African Union: An introduction to the problems posed by legal divergence' (2009) 15(1) *Fundamina* 1, 23-4.

⁸ See e.g. Carsten Hefeker, 'The Limits of Economic Policy Convergence in Europe' (2013) 2 *Intereconomics* 83, 85; Dlagnekova, above n 7, 10; Gustav Resch, Malte Gephart, Simone Steinhilber, Corinna Klessmann, Pablo del Rio and Mario Ragwitz, 'Coordination or

costs and minimise cross-jurisdictional conflicts.⁹ In addition, when the differences between different countries' laws are reduced, there are also fewer incentives for, and benefits to be derived from, multinational companies engaging in forum shopping.¹⁰ The benefits attached to this are considerable, with Rodrik arguing that the diversity of national institutional arrangements are the most important source of transaction costs in international exchanges, accounting for nearly 35 per cent of the total transaction costs in *ad-valorem* terms.¹¹

Arguably, one of the greatest benefits of harmonising or converging laws is achieved when international externalities exist in a market, which cannot be resolved by countries operating individually in their own self-interest.¹² For example, while individual countries can act to reduce their own greenhouse gas emissions, addressing climate change requires collective international action to maximise their joint welfare¹³ and minimise future negative externalities. However, in order for collective action on international externalities to be successful, countries must have similar objectives for intervening in the market and must be committed to achieving those goals.¹⁴ This is unlikely to be achieved through national renewable energy laws, at least in the short to medium term, as such a consensus is lacking in the renewable energy sector. This is because, as discussed in Chapter 6, 28 different legislative objectives were identified in the primary framework pieces of renewable energy legislation of the 95 countries with renewable energy laws. This is evidence of the heterogeneity of national preferences.

Harmonisation? Feasible Pathways for a European RES Strategy Beyond 2020' (2013) 24 *Energy and Environment* 147, 158.

⁹ Cheng, above n 5, 438, 454, 461; Dlagnekova, above n 7, 23.

¹⁰ Ribstein and Kobayashi, above n 6, 138-9; see also Cheng, above n 5, 459.

¹¹ Dani Rodrik, 'Globalization and growth—looking in the wrong places' (2004) 26 *Journal of Policy Modeling* 513, 514.

¹² Aleh Cherp, Jessica Jewell and Andreas Goldthau, 'Governing Global Energy: Systems, Transitions, Complexity' (2011) 2 *Global Policy* 75, 76; Filomena Chirico and Pierre Larouche, 'Convergence and Divergence, in Law and Economics and Comparative Law' in Pierre Larouche and Peter Cserne (eds), *National Legal Systems and Globalization* (Asser Press, 2013) 9, 23-4.

¹³ Carbonara and Parisi, above n 4, 85.

¹⁴ Cheng, above n 5, 465-71; see also Arunabha Ghosh, 'Governing clean energy subsidies: Why legal and policy clarity is needed' (2011) 5(3) *Biores* <<http://www.ictsd.org/bridges-news/biores/news/governing-clean-energy-subsidies-why-legal-and-policy-clarity-is-needed>>.

However, legal harmonisation or convergence may also impose some significant costs, while legal divergence may offer some advantages. For example, negotiating and drafting harmonised legislation, domestically implementing and administering it and ensuring supra-national monitoring and compliance all require significant resources.¹⁵ This process may not only affect the primary law, but may also require changes to be made to secondary laws and regulation. If these costs are significant enough, they may even outweigh the potential benefits to be achieved by harmonising or converging, making such a process unnecessary and/or undesirable.¹⁶

These costs are not just economic; they may also have strong social and political elements to them, which in turn may affect the legitimacy of the harmonised laws. Indeed, it is often argued that different national laws can better reflect the local legal traditions, customs and norms, as well as social, cultural and economic preferences.¹⁷ They are more likely to provide a solution to the particular domestic problem at hand and to do so in a manner that maintains the legitimacy of the legislative response among their citizens.¹⁸ In addition, Hefeker has argued that divergent national laws may also lead to greater levels of political accountability and public engagement:

When political decisions are made at a level that is close to the population, citizens can better influence decisions and more easily hold politicians accountable who deviate too much from the electorate's interests. In addition, when people have more direct influence in policy, they are more likely to develop an interest in those policies.¹⁹

In order to achieve harmonised laws, political concessions are often required to win public acceptance. This may cause a number of problems that could have an impact on the effectiveness and efficiency of these laws. For example, where the resulting harmonised laws provide uniform levels of support to all countries,

¹⁵ House of Representatives Standing Committee on Legal and Constitutional Affairs, above n 5, 9-10; Carbonara and Parisi, above n 4, 398-9.

¹⁶ House of Representatives Standing Committee on Legal and Constitutional Affairs, above n 5, 11-2.

¹⁷ See e.g. Carbonara and Parisi, above n 4, 370; Hefeker, above n 8, 85.

¹⁸ See e.g. Carbonara and Parisi, above n 4, 369; Bertrand Crettez, Bruno Deffains and Oliver Musy, 'On the dynamics of legal convergence' (2011) 156 *Public Choice*, 347.

¹⁹ Hefeker, above n 8, 85.

geographic regions, renewable energy sources and technologies, this will not sufficiently reflect countries' domestic contexts, leading to 'higher rents for those producers which make use of least-cost technologies and sites.'²⁰ Alternatively, if the harmonised support scheme permits and provides differing levels of support (and hence benefits) by country but the costs are borne equally or out of proportion to the benefits, this may lead to local opposition and a reduction in public acceptance.²¹

A further problem is that when countries harmonise their laws, there are inevitably 'winners' and 'losers'. Winning countries are those whose laws are most proximate to the regulatory standard to which the other countries are transplanting, harmonising or converging towards. This means that they gain the benefits of other countries making their laws more similar to their own with minimal costs.²² Losing countries are those that bear the brunt of the cost of switching and adaptation. As a result, Garoupa and Ogus have argued that each country prefers its own legal rules and practices to prevail as the regulatory standard that others are harmonising to or converging towards.²³

When countries harmonise or converge their laws to a regulatory standard, it is likely that one of two scenarios will eventuate. In the first scenario ('the race to the bottom'²⁴ scenario), the regulatory standard to be adopted will broadly represent the lowest common denominator and will be achieved by virtue of political compromise. Depending on the subject matter of the legislation, this may be an undesirable outcome, especially where environmental or labour standards are involved. In the context of regulatory support for renewable energy, this is likely to mean providing insufficient financial support for all but

²⁰ Resch, Gephart, Steinhilber, Klessmann, del Rio and Ragwitz, above n 8, 158.

²¹ Ibid.

²² Drahos and Braithwaite, above n 3, 107-8. See also David Jacobs, *Renewable Energy Policy Convergence in the EU: The Evolution of Feed-in Tariffs in Germany, Spain and France* (Ashgate Publishing, 2012) 14.

²³ Nuno Garoupa and Anthony Ogus, 'A Strategic Interpretation of Legal Transplants' (2006) 35 *The Journal of Legal Studies* 339, 347.

²⁴ See e.g. Mads Andenæs, Camilla Baasch Andersen and Ross Ashcroft, 'Towards a theory of harmonisation' in Mads Andenæs and Camilla Baasch Andersen (eds), *Theory and practice of harmonisation* (Edward Elgar, 2011) 572, 582.

the most commercialised renewable energy sources and no certainty about the life-span of the funding. This means that the country may be able to deploy renewable energy quickly (likely in a boom/bust cycle), but may not get a diverse energy mix. In the second scenario ('the race to the top' scenario), the regulatory standard to be adopted represents the 'high-water mark' of a single country. In the context of renewable energy laws, this may mean long-term favourable financial incentives that are stable and available to different energy sources and technologies at a level that reflects their relative commercialisation through the use of banding. In the short term at least, the second scenario is likely to impose significantly higher costs on less developed countries, which are less likely to have laws near the 'high-water mark.'²⁵

A further advantage of legislative divergence is that it encourages regulatory innovation and encourages competition among jurisdictions to produce better and more efficient laws.²⁶

8.2 THE FUTURE DEVELOPMENT OF REGULATORY SUPPORT MECHANISMS: SAME, SAME OR DIFFERENT?

As shown above, at least from a theoretical perspective, the regulatory support mechanisms used in the national renewable energy laws should become more similar over time, likely through the process of convergence. Unfortunately, other than in Europe, where there have been a large number of studies,²⁷ the

²⁵ House of Representatives Standing Committee on Legal and Constitutional Affairs, above n 5, 10.

²⁶ House of Representatives Standing Committee on Legal and Constitutional Affairs, above n 5, 10. See also Crettez, Deffains and Musy, above n 18, 2.

²⁷ Lena Kitzing, Catherine Mitchell and Poul Erik Morthorst, 'Renewable energy policies in Europe: Converging or diverging?' (2012) 51 *Energy Policy* 192; Resch, Gephart, Steinhilber, Klessmann, del Rio and Ragwitz, above n 8; Jacobs, above n 22; Pablo del Rio, Mario Ragwitz, Simone Steinhilber, Gustav Resch, Sebastian Busch, Corinna Klessman, Isabelle de Lovinfosse, Jana V Nysten and Angus Johnston, 'Key policy approaches for a harmonisation of RES(-E) support in Europe – Main options and design elements' (Report, European IEE Project Beyond2020, March 2012); Sian Crampsie, 'Renewables convergence?' (2011) 34(14) *Utility Week* 9; Tatiana Romanova, 'Legal Approximation in Energy: A New Approach for the European Union and Russia' in Caroline Zuzemko, Andrei V Belyi, Andreas Goldthau and Michael F Keating (eds), *Dynamics of Energy Governance in Europe and Russia* (Palgrave Macmillan, 2012); Miquel Muñoz, Volker Oschmann and J David Tàbara, 'Harmonization of renewable electricity feed-in laws in the European Union' (2007) 35 *Energy Policy* 3104; Roger Hildingsson, Johannes Stripple

degree of unification, harmonisation, convergence, divergence or regulatory competition within the regulatory support mechanisms in national renewable energy laws is not currently known. There are several reasons for this. First, even now, there is no comprehensive and reliable database of the national renewable energy laws for every country in the world with such laws, let alone a historical one. Second, any detailed study of all of the specific regulatory support mechanisms contained within the national renewable energy laws of the 95 countries with such laws would require a large team of researchers and a considerable budget for translation. To date, this task has proven too ambitious for any research team to undertake.

Due to these limitations, the next section will examine the processes of unification, harmonisation, convergence, divergence and regulatory competition within the renewable energy sector using representative case studies to explain the likely operation of each process. At this juncture, it should also be noted that there is no agreement about the legal meaning of these concepts, with many of the definitions in the academic literature showing significant variance.²⁸ The discussion below will explain the definition of each concept adopted in this thesis as part of the analysis.

and Andrew Jordan, 'Governing renewable energy in the EU: Confronting a governance dilemma' (2012) 11 *European Political Science* 18; Malgorzata Alicja Czeberkus, *Renewable Energy Sources: EU policy and law in light of integration* (LLM Thesis, University of Iceland, 2013); Per-Olof Busch and Helge Jörgens, 'Europeanization through diffusion? Renewable energy policies and alternative sources for European Convergence' in Francesc Morata and Israel Solorio Sandoval (eds), *European Energy Policy* (Edward Elgar, 2012).

²⁸ See e.g. Eva J Lohse, 'The Meaning of Harmonisation in the Context of European Union Law – a Process in Need of Definition' in Mads Tønnesson Andenæs and Camilla Baasch (eds), *Theory and practice of harmonisation* (Edward Elgar, 2011) 282; Fernando Gomez and Juan Jose Ganuza, 'How to build European private law: an economic analysis of the lawmaking and harmonization dimensions in European private law' (2012) 33 *European Journal of Law and Economics* 481, 483; Resch, Gephart, Steinhilber, Klessmann, del Rio and Ragwitz, above n 8, 150-1.

8.3 UNIFICATION

Unification, or 'hard,' 'formal' or 'total harmonisation', involves all participating countries transplanting a uniform set of rules selected at an interstate level or by a supranational organisation.²⁹ Under unification, the relevant laws of the participating countries are effectively homogenised, with no differentiation, flexibility or derogation permitted.³⁰

To date, there has not been any unification of either regulatory support mechanisms or national renewable energy laws more generally. This is not surprising, as it is exceptionally rare for countries to agree to completely unify their laws, given that it effectively amounts to them ceding their sovereignty over the issue to a supranational organisation for as long as they are a party to the unified laws. Given the lack of differentiation, flexibility or derogation, unified laws are also considered to be a hard sell politically, especially for the countries that stand to lose their comparative advantage through not having efficient and cost-effective laws tailored to their own specific contexts. This is particularly relevant if one country has to bear more of the costs for less of the benefits than another country.

8.4 HARMONISATION

Harmonisation is a 'top-down' coercive process in which countries use overarching legislative or other formal instrument-based mechanisms to achieve parity between legal systems.³¹ This process often involves binding multilateral agreements with negotiations facilitated by a supranational organisation. These agreements specify the objectives and targets to be achieved, with countries then responsible for modifying their own internal laws to ensure those defined objectives and targets are achieved.³²

²⁹ Bertrand Crettez, Bruno Deffains and Régis Deloche, 'On the optimal complexity of law and legal rules harmonization' (2009) 27 *European Journal of Law and Economics* 129, 131.

³⁰ Garoupa and Ogus, above n 23, 343.

³¹ House of Representatives Standing Committee on Legal and Constitutional Affairs, above n 5, 1.

³² Carbonara and Parisi, above n 4, 368.

Within Europe, countries traditionally exercised national sovereignty over the area of setting energy law and policy. Indeed, prior to the ratification of the Lisbon Treaty in 2009, the EU did not have an explicit 'shared competence' between the Union and the Member States in the field of energy.³³ Instead, it had to rely on more general shared competences, such as the internal market and environment, in order to exert indirect influence over the renewable energy sector. This lack of a specific shared competence affected the options available to the European Parliament and European Commission when they began to support the accelerated deployment of renewable energy.³⁴ In particular, it meant that the EU Member States were able to design and implement their own regulatory support mechanisms to accelerate the deployment of renewable energy within their own countries. Even following the introduction of a 'shared competence' and a specific article on Energy contained in Article 194 of the Treaty of the Functioning of the European Union in 2009, the EU still does not have exclusive control, due to a reservation inserted in Article 194(2) of the TFEU. This reservation enables a Member State to 'determine the conditions for exploiting its energy resources, its choice between different energy sources and the general structure of its energy supply.'³⁵ It is within this context that there have thus far been two unsuccessful attempts to harmonise the regulatory support mechanisms used in the renewable energy sector within the EU. Each of these attempts will be discussed below.

³³ Now *Treaty on European Union*, opened for signature 7 February 1992, [2009] OJ C 115/13 (entered into force 1 November 1993) Art 4; *Treaty on the Functioning of the European Union*, opened for signature 7 February 1992, [1992] OJ C 115/199 (entered into force 1 November 1993) Art 4(2)(i).

³⁴ Jacobs, above n 22, 29.

³⁵ *Treaty on the Functioning of the European Union*, opened for signature 7 February 1992, [1992] OJ c 115/199 (entered into force 1 November 1993) Art 194(2). It is not yet known how this Article may be interpreted: see e.g. Angus Johnston and Eva van der Marel, 'Ad Lucem? Interpreting the New EU Energy Provisio, and in particular the Meaning of Article 194(2) TFEU' (2013) *European Energy and Environmental Law Review* 181; Kristín Haraldsdóttir, 'The Limits of EU Competence to Regulate Conditions for Exploitation of Energy Resources: Analysis of Article 194(2) TFEU' (2014) *European Energy and Environmental Law Review* 208.

8.4.1 THE FIRST EU HARMONISATION ATTEMPT

The origins of the first attempt to harmonise the support mechanisms within the EU are found within the 1995 Energy White Paper³⁶ and the 1996 Green Paper, 'Energy for the Future.' The latter document argued for 'a stable and Community wide framework for renewable energy sources.'³⁷ Then, in 1997, the Commission outlined the first common European policy strategy dealing with renewable energy, in which it proposed the establishment of a non-legally binding goal of doubling the share of renewable energy to 12 per cent by 2010.³⁸ During this period, there was intense discussion within the EU about whether harmonisation was appropriate and, if so, what form it should take. Proponents of harmonisation argued that it was necessary to avoid market distortions caused by having national regulatory support schemes, that it would support the development of a European internal energy market and be more efficient and cost effective.³⁹ Meanwhile, opponents argued that harmonisation would lead to higher costs and could also prove disruptive to the development of the European renewable energy sector.⁴⁰

The debate came to a head following the release of the first draft of what would later become the Renewable Energy Directive in October 1998.⁴¹ The draft Directive proposed that a European-wide quota-based green certificate scheme be established and that FITs be prohibited.⁴² This proposal was strongly supported by some of the early adopters of green certificate schemes, such as the

³⁶ Commission of the European Communities, *An Energy Policy for the European Union*, COM(95) 682 Final (13 December 1995).

³⁷ Commission of the European Communities, *Energy for the Future: Renewable Sources of Energy*, COM(96) 576 Final (20 November 1996) 28.

³⁸ European Commission, *Energy for the Future: Renewable Sources of Energy – White Paper for a Community Strategy and Action Plan*, COM(97) 599 Final (26 November 1997) 10.

³⁹ Jacobs, above n 22, 36-7; Secretary-General of the European Commission, *Electricity from renewable energy sources and the internal electricity market*, SEC(1999) 470 Final (13 April 1999).

⁴⁰ Jacobs, above n 22, 38.

⁴¹ Francesc Morata and Israel Solorio Sandoval (eds), *European Energy Policy* (Edward Elgar, 2012) 75-6.

⁴² *Ibid.*

United Kingdom;⁴³ however, it also faced staunch opposition from both Germany and Spain, which both had FIT schemes in place.⁴⁴ This opposition was compounded in 2001 when the European Court of Justice held in *PreussenElektra v Schleswag*⁴⁵ that the German feed-in law, which the Commission had referred to the Court for its assumed breach of European competition law and the principles governing the liberalisation of the European electricity market, was not incompatible with EU law.

These factors led to the final version of the 2001 Directive on Electricity Production from Renewable Energy Sources⁴⁶ postponing harmonisation of the support schemes until 2012. Instead, it fixed indicative renewable energy targets for each Member State to achieve by 2010 but, in accordance with the principle of subsidiarity, Member States were able to select the most appropriate support mechanism to achieve those targets. The support schemes adopted by Member States were to be reviewed in accordance with Article 4 of the Directive by 2005, and if necessary, be 'accompanied by a proposal for a Community framework with regard to support schemes for electricity produced from renewable energy sources.'⁴⁷ It was this review that played a key role in failure of the second opportunity for the EU to harmonise the support schemes across all Member States.

While this first attempt at harmonisation ultimately failed, research conducted by Morata and Sandoval has indicated that the support for green certificate schemes by the Commission and the political uncertainty around the future of FITs led to at least two countries (Denmark and Holland) adopting a green certificate scheme.⁴⁸

⁴³ Hildingsson, Stripple and Jordan, above n 27, 21.

⁴⁴ Ibid; Morata and Sandoval, above n 41, 79.

⁴⁵ [2001] EUECJ C-379/98.

⁴⁶ Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market [2001] OJ L 283.

⁴⁷ Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market [2001] OJ L 283 Art 4(2).

⁴⁸ Morata and Sandoval, above n 41, 78.

8.4.2 THE SECOND EU HARMONISATION ATTEMPT

In December 2005, the review into the support schemes adopted by the Member States to support renewable electricity was delivered.⁴⁹ This review had two key conclusions:

1. that FITs were more efficient than quota-based green certificate systems in deploying new renewable generation capacity; and
2. that FITs were also more cost-effective than quota-based green certificate systems.

This second conclusion was unexpected, and effectively quashed any plans in the short-medium term to harmonise a quota-based green certificate scheme across Europe.⁵⁰ Further, in the review, the Commission described the potential harmonisation of feed-in tariffs as ‘difficult’⁵¹ due to the problems associated with effectively pricing a Europe-wide FIT, so chose not pursue that course of action. Instead, the Commission advocated that countries should optimise their national systems and intensify cooperation between Member States.⁵²

In 2007, a target of 20 per cent of energy consumption to come from renewable energy sources by 2020 was approved.⁵³ This became a central tenet of the 2009 Directive, which abrogated the 2001 Directive.⁵⁴ In an early leaked draft of the 2009 Directive, the Commission proposed unrestricted certificate trading in guarantees of origin (GO).⁵⁵ This was strongly opposed by a number of

⁴⁹ European Commission, *The support of electricity from renewable energy sources*, COM(2005) 627 Final (7 December 2005).

⁵⁰ Muñoz, Oschmann and Tàbara, above n 27, 3105.

⁵¹ European Commission, *The support of electricity from renewable energy sources*, COM(2005) 627 Final (7 December 2005) 4.

⁵² *Ibid* 16.

⁵³ European Renewable Energy Council, *Renewable Energy in Europe: Markets, Trends and Technologies* (Routledge, 2010) 4.

⁵⁴ *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance)* [2009] OJ L 140.

⁵⁵ Jacobs, above n 22, 34. A ‘guarantee of origin’ means an electronic document which has the sole function of providing proof to a final customer that a given share or quantity of energy was produced from renewable sources as required by Article 3(6) of Directive 2003/54/EC: *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of*

countries, particularly those with FIT schemes, which they felt would be undermined by this move.⁵⁶ This opposition led the second attempt to at least partly harmonise the support schemes to fail. This point is made explicitly by Recital 25 of the Directive, which states:

Member States have different renewable energy potentials and operate different schemes of support for energy from renewable sources at the national level... For the proper functioning of national support schemes it is vital that Member States can control the effect and costs of their national support schemes according to their different potentials. One important means to achieve the aim of this Directive is to guarantee the proper functioning of national support schemes...⁵⁷

Instead of unrestricted GO trading, in the final 2009 Directive, Member States are now able to engage in 'flexible cooperation mechanisms' such as the statistical transfer of renewable energy produced in excess of their 'mandatory' national target⁵⁸ to other Member States.⁵⁹ They are also now permitted to participate in joint projects and support schemes.⁶⁰

Thus, to date, all attempts to internationally harmonise regulatory support mechanisms within the EU have failed. Despite this, research suggests that there has been a degree of convergence in the support schemes, but that this has occurred in spite of, rather than because of, the European Commission's attempts to harmonise the schemes. Ironically, it also appears that the convergence has been around the uptake of FITs rather than green certificates, which up until recently had been the European Commission's preferred form of support scheme. This, coupled with the addition of the reservations contained in Article

the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance) [2009] OJ L 140, Art 2(j).

⁵⁶ Ibid.

⁵⁷ *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance)* [2009] OJ L 140 rec 25.

⁵⁸ The national targets vary by Member State, taking into account their existing energy mix and resources. The combined targets equate to a 20% EU-wide target for renewable energy production in 2020.

⁵⁹ *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance)* [2009] OJ L 140 Art 6.

⁶⁰ *Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance)* [2009] OJ L 140 Arts 7-11.

194(2) of the TFEU, suggests that countries guard their ability to be able to make their own decisions with regard to energy supply. As a result, for as long as countries seek different objectives in their national renewable energy laws, they are unlikely to agree to harmonise their regulatory support mechanisms.

8.5 CONVERGENCE

Convergence, or ‘soft’, ‘informal’ or ‘minimum harmonisation’, is a ‘bottom-up’ voluntary process in which the laws and regulations of different countries become more similar over time in a given field. It is premised on the belief that the common set of underlying principles adopted is ‘flexible enough to be adapted to countries under disparate socio-economic circumstances.’⁶¹ The primary goal of convergence is to facilitate similar levels of market access to investors and other participants within the countries in order to encourage trade and commerce.⁶²

There are four key ways in which laws may converge. First, convergence may occur unilaterally, with a country independently transplanting the ‘statutes and principles belonging to other systems, be they legal rules of other countries or customs whose acceptance is widespread.’⁶³ Second, two countries may simultaneously devise and implement the same legal solution to the same problem with no knowledge of the other countries efforts.⁶⁴ Third, one country may emulate the solutions or laws of another country, learning from the experience of more experienced jurisdictions.⁶⁵ This process is usually assisted by communication between the governments, legislators, lawyers, judiciary,

⁶¹ Cheng, above n 5, 445.

⁶² Anatole Boute, ‘Improving the Climate for European Investments in the Russian Electricity Production Sector: (II) the Role of Regulatory Convergence’ (2008) 26 *Journal of Energy & Natural Resources Law* 327, 333.

⁶³ Carbonara and Parisi, above n 4, 368.

⁶⁴ Jacobs, above n 22, 14.

⁶⁵ Cheng, above n 5, 441, 480. See also Gomez and Ganuza, above n 28, 484-5; Jordan, Rüdiger and Zito, above n 4, 7.

public servants and/or drafters of the two countries.⁶⁶ Holzinger et al have stated that 'countries that share a common language, common borders, and common traditions are more likely to adopt similar policies.'⁶⁷ However, Jordan et al have stated that 'the policy convergence literature suggests that states following similar pathways of social and economic development will naturally gravitate towards common policies and policy instruments,' though they do also note that 'societal convergence is highly contested.'⁶⁸ This process may also be facilitated by regional or international organisations through the issuance of best practices and recommendations.⁶⁹ Finally, the participating countries may use cooperative and coordinated adaptation processes to encourage diverse legal rules and traditions to converge. In this context, cooperation refers to joint efforts between countries to help achieve their national renewable energy objectives.⁷⁰ Coordination, meanwhile, refers to the exchange of information between governments that may lead over time to improved knowledge about the design and implementation of regulatory support mechanisms. The use of the term 'coordination' within the context of the EU has its own special meaning and refers to the 'Open Method of Coordination.'⁷¹

⁶⁶ Gomez and Ganuza, above n 28, 486.

⁶⁷ Katharina Holzinger, Christoph Knill and Thomas Sommerer, 'Environmental Policy Convergence: The Impact of International Harmonization, Transnational Communication, and Regulatory Competition' (2008) 62 *International Organization* 553, 582.

⁶⁸ Jordan, Rüdiger and Zito, above n 4, 6.

⁶⁹ Cheng, above n 5, 445.

⁷⁰ Busch and Jörgens, above n 27, 68.

⁷¹ Resch, Gephart, Steinhilber, Klessmann, del Rio and Ragwitz, above n 8, 151-2.

8.5.3.1 JOINT SUPPORT SCHEMES: THE SWEDISH-NORWEGIAN ELECTRICITY CERTIFICATE MARKET

Following ongoing opposition towards its attempts to harmonise, the EU has moved towards coordination and cooperation between Member States, focusing on the development of best practices. As stated above, one method of cooperation between Member States is the ability to establish Joint Support Schemes in accordance with Articles 10 and 11 of the 2009 Directive.⁷² One example of such a scheme is the Joint Swedish-Norwegian Electricity Certificate Market, which was established on 1 January 2012 in order to increase the combined renewable electricity production in both countries by 26.4 TWh by the end of 2020,⁷³ so that they can meet their goals under the 2009 Directive. This joint scheme stipulates that ‘Sweden and Norway are responsible for financing half of the increase each, but it is up to the market to decide where and when the new production is to take place.’⁷⁴ For example, during 2012, 68 per cent of the anticipated new production came from Swedish wind power.⁷⁵ It is still too early to say how effective this model will be, with the first review of the Swedish-Norwegian Electricity Certificate Market scheduled for 2015.

Interestingly, the recent European Court of Justice judgment in *Ålands Vindkraft AB v Energimyndigheten*⁷⁶ confirmed that the existence of these cooperative measures within the 2009 Directive does not require Member States to permit renewable energy producers generating electricity within the confines of another Member States to participate in their national support schemes. This means that unless the Member States formally agree to participate in a joint support scheme, Member States may elect to only provide their regulatory

⁷² Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance) [2009] OJ L 140 Arts 10-1.

⁷³ Swedish Energy Agency and the Norwegian Water Resources and Energy Directorate, ‘Joint Swedish-Norwegian Electricity Certificate Market Annual Report 2012’ (Report, 2012) 3.

⁷⁴ *Ibid.*

⁷⁵ *Ibid* 16.

⁷⁶ (C573-12) [2014] ECR 2037.

support mechanism to renewable energy projects located within their borders, providing this limitation is justified on environmental grounds.

Other than through Joint Support Schemes within the EU, the full extent of convergence is unknown. For example, it is likely that countries are now benefiting from coordinated knowledge sharing through bodies such as the IRENA, the IEA and regional organisations, or by emulating best practices in regulatory support mechanisms. However, the extent of this convergence is difficult to quantify and requires further research.

8.6 DIVERGENCE

The laws of a country usually incorporate the local preferences of its citizenry, as well as its unique political, economic, social, legal and environmental contexts. This process reinforces the legitimacy of a country's national laws and explains why countries adopt differing legal solutions to similar problems.⁷⁷ In fact, it could be argued that, in the absence of economic or political interdependencies between countries or the presence of international externalities, the divergence of laws should be the natural state of affairs. While there are costs involved in countries adopting different national renewable energy laws, largely in the form of transaction costs for international market participants, there are also some benefits to divergence. The benefits of divergence are most obvious when the differing national laws reflect local preferences.

There are a number of ways in which laws addressing the same problem may diverge: conceptual divergence (differing definitions of fundamental terms); normative divergence (differing underlying principles, goals or objectives); substantive divergence (differing legal instruments and mechanisms); and procedural divergence (differing administrative procedures regarding implementation and interpretation). All of these forms of divergence have the

⁷⁷ Chirico and Larouche, above n 12, 14.

potential to have an impact on the design and operation of regulatory support mechanisms.

It is difficult to know the extent of this phenomenon without a comprehensive longitudinal study of the regulatory support mechanisms contained within the national renewable energy laws of every country that has such laws. However, in light of the above, it is likely that the starting position among the majority of countries with national renewable energy laws appears to be one of divergence (the exception being the Member States and candidate countries of the EU).

8.7 REGULATORY COMPETITION

Theories of regulatory competition argue that, in the context of industries subject to economic market integration and free trade,⁷⁸ national legislation becomes a competitive parameter.⁷⁹ In this environment, governments face pressure to reduce or remove the regulatory burdens that may impair the competitiveness of economic actors operating within their jurisdiction to avoid these actors moving elsewhere.⁸⁰ Thus, regulatory competition has been defined as ‘the process whereby regulators deliberately set out to provide a more favourable regulatory environment in order to improve the competitiveness of domestic industries or to attract more business activity from abroad.’⁸¹

In the short-medium term, regulatory convergence may be said to lead to active divergence as countries actively seek to compete via their legislation. There are three possible outcomes for this process:

1. Countries may become more protectionist in order to support their domestic industries by increasing the regulatory barriers for foreign

⁷⁸ Jacobs, above n 22, 219.

⁷⁹ Hanne Søndergaard Birkmose, ‘Regulatory Competition and the European Harmonisation Process’ (2006) 17 *European Business Law Review* 1075, 1076; see also Dale D Murphy, ‘The Puzzle and an Explanation’ in Dale D Murphy (ed), *The Structure of Regulatory Competition: Corporations and Public Policies in a Global Economy* (Oxford University Press, 2006) 4.

⁸⁰ Holzinger, Knill and Sommerer, above n 67, 560.

⁸¹ Birkmose, above n 79, 1076.

competitors to enter the national market.⁸² ‘This is often coupled with industry support in the form of regulatory support mechanisms for domestic industry participants. This is likely to lead to higher domestic prices and may also pose difficulties for exporters if other countries adopt a tit-for-tat approach.’⁸³ This approach to regulatory competition is also likely to result in international trade conflicts for potential breaches of the General Agreement on Tariffs and Trade (GATT), SCM Agreement and anti-dumping laws.

2. Countries may seek to lower the level or standards of their regulation in order to make themselves a more attractive destination for foreign investors. If this competition-in-laxity is sustained, it may lead to a ‘race to the bottom’ with countries competing to introduce lower and weaker standards.⁸⁴
3. Countries may seek to increase the regulatory support mechanisms available to producers in a ‘race to the top’.⁸⁵ These mechanisms may target a number of areas in an attempt to ‘increase the probability that a locally preferred design becomes internationally successful,’⁸⁶ such as innovation, regulation, market structures, competitiveness and export orientation.⁸⁷ Often countries adopting this approach will be seeking to become the lead market for the product.⁸⁸ This approach is most visible in international markets where: a) demand outweighs supply; and/or b) a country has a strategic reason such as economic or security concerns

⁸² See e.g. Holzinger, Knill and Sommerer, above n 67, 560; Murphy, above n 79, 12.

⁸³ Murphy, above n 79, 13.

⁸⁴ See e.g. Dale D Murphy, ‘Evidence and Implications’ in Dale D Murphy (ed), *The Structure of Regulatory Competition: Corporations and Public Policies in a Global Economy* (Oxford University Press, 2006) 216; Birkmose, above n 79, 1078.

⁸⁵ Mario Ragwitz, Wolfgang Schade, Barbara Breitschopf, Rainer Walz, Nicki Helfrich, Max Rathmann, Gustav Resch, Christian Panzer, Thomas Faber, Reinhard Haas, Carsten Nathani, Matthias Holzhey, Inga Konstantinaviciute, Paul Zagamé, Arnaud Fougeyrollas and Boris Le Hir, ‘EmployRES: The impact of renewable energy policy on economic growth and employment in the European Union’ (Report, Karlsruhe, 27 April 2009) 10.

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

for seeking to accelerate their deployment. In the long run, this becomes uneconomic as due to financial restrictions countries cannot continue to increase the levels of support offered.

In the longer term, regulatory competition actually leads to the convergence of laws because in an international market the countries that are competing with each other are likely to be subject to similar market pressures and respond in similar ways.⁸⁹ For example: country A has a national renewable energy law that is perceived to provide a strong competitive market for investment, country B wants to enact a national renewable energy law, so copies the legislation of country A, making minor improvements. When country A goes to review and amend its laws, it may look to the improvements made by country B and adopt them with its own minor improvements. Over time, this will lead to their laws becoming more similar, leading Gomez et al to state that it leads to 'a sort of competitively harmonized legal regime.'⁹⁰ A number of empirical studies suggest that the *direction* of the convergence - i.e., whether it is going to be a 'race to the bottom' or a 'race to the top' - is less predictable.⁹¹

8.7.1 TRADE CONFLICTS ARISING FROM NATIONAL RENEWABLE ENERGY LAWS

Within the renewable energy sector, regulatory competition is almost always coupled with interventions justified on the grounds of industrial policy. Industrial policy has been described as 'a strategy to revitalize, improve, and develop an industry,'⁹² and 'a set of policies that selectively favours the development of certain industries over others.'⁹³ The rationale for the use of

⁸⁹See e.g. Holzinger, Knill and Sommerer, above n 67, 561; Anthony Ogus, 'Competition between National Legal Systems: A Contribution of Economic Analysis to Comparative Law' (1999) 48 *The International and Comparative Law Quarterly* 405, 407-8.

⁹⁰ Gomez and Ganuza, above n 28, 485-6.

⁹¹ Jacobs, above n 22, 15.

⁹² Bob Carbaugh and Max St Brown, 'Industrial Policy and Renewable Energy: Trade Conflicts' (2012) 5(1) *Journal of International and Global Economic Studies* 1, 2.

⁹³ Johannes Schwarzer, 'Industrial Policy for a Green Economy' (Report, International Institute for Sustainable Development, June 2013) iii.

industrial policy is that it enables governments to correct market failures, which are encumbering the development of new industries, and the research and development, commercialisation and widespread adoption of new technologies.⁹⁴

Within the renewable energy sector, industrial policy commonly takes the form of direct market interventions within the national economy to foster the development of indigenous renewable energy sources, support domestically designed and manufactured technologies, and to encourage job creation.⁹⁵ These market interventions can take a number of forms, including local content clauses, import tariffs, the provision of tax incentives, low interest rate loans, loan guarantees and subsidies. These interventions act to reduce prices for consumers, increase the prices paid to renewable energy technology manufacturers or generators of electricity from renewable energy sources, or reduce the cost of production.⁹⁶ Almost invariably, they also favour domestic producers at the expense of their foreign competitors.

The development of national renewable energy laws that favour domestic production over foreign imports on the basis of industrial policy actively hinders the operation of the free market economy. This prompts two common criticisms. First, doubts have been cast on the ability of the government to correct market failures and to deliver a comparative advantage to their domestic renewable energy technologies by picking winners.⁹⁷ Second, due to the protectionist nature of these laws, they almost invariably lead to international disputes about whether they breach WTO law and free trade agreements.⁹⁸

⁹⁴ Carbaugh and Brown, above n 92, 1-2.

⁹⁵ See e.g. Lewis, above n 1, 11.

⁹⁶ Carbaugh and Brown, above n 92, 1-2.

⁹⁷ See e.g. Carbaugh and Brown, above n 92, 4, 12; Paolo D Farah and Elena Cima, 'Energy Trade and the WTO: Implications for Renewable Energy and the OPEC Cartel' (2013) 16 *Journal of International Economic Law* 707, 726.

⁹⁸ Lewis, above n 1, 16; Carbaugh and Brown, above n 92, 2; Anton Ming-Zhi Gao, 'Promotion of renewable electricity: Free trade and domestic industrial development' in Kim Talus (ed), *Research Handbook on International Energy Law* (Edward Elgar, 2014) 408.

In recent years, there have been a number of referrals of national renewable energy laws that impose unfair trade barriers on imports to organisations such as the WTO, Chinese Ministry of Commerce, European Commission, US Department of Commerce/International Trade Commission, and the Indian Ministry of Commerce.⁹⁹ These disputes are summarised in Table 8.1 below.

⁹⁹ See e.g. Marie Wilke, 'Feed-in Tariffs for Renewable Energy and WTO Subsidy Rules: An Initial Legal Review' (Issue Paper No 4, Institutional Centre for Trade and Sustainable Development, November 2011).

TABLE 8.1: RENEWABLE ENERGY RELATED INTERNATIONAL TRADE DISPUTES AS AT JULY 2014¹⁰⁰

Date Launched	Dispute Type¹⁰¹	Forum	Complainant	Respondent	Third Parties	Industry or Program Targeted	Status
November 2011	AD/CVD investigation	US Department of Commerce/ITC	United States	China	NA	Solar panels	Tariffs implemented, then scope subsequently broadened and tariffs increased
November 2011	LCRs	MOFCOM	China	United States	NA	State-level RE support programs	Pending
July 2012	AD/CVD investigation	MOFCOM	China	United States, South Korea, European Union	NA	Polysilicon	Tariffs imposed
July 2012	AD/CVD investigation	European Commission	European Union	China	NA	Solar panels	Price undertaking arranged, including an import quota and minimum price

¹⁰⁰ Lewis, above n 1, 22.

¹⁰¹ AD/CVD = Antidumping and countervailing duty disputes, LCR = Local content requirements

Date Launched	Dispute Type¹⁰¹	Forum	Complainant	Respondent	Third Parties	Industry or Program Targeted	Status
January 2012	AD/CVD investigation	US Department of Commerce/ITC	United States	China, Vietnam	NA	Wind components	Tariffs in place
November 2012	AD/CVD investigation	Indian Ministry of Commerce	India	China, Taiwan, Malaysia, United States	NA	Solar panels	Pending
September 2010	LCRs, Subsidies	WTO	Japan, European Union	Canada	United States	Ontario Province's FIT Policy	Canada asked to come into compliance
December 2010	LCRs, Subsidies	WTO	United States	China	European Union, Japan	Chinese wind subsidy	Resolved in bilateral negotiations
November 2011	LCRs, Subsidies	MOFCOM	China	United States	NA	US State-level RE support programs	Pending
November 2012	LCRs, Subsidies	WTO	China	European Union, Greece, Italy	Japan, Australia, Argentina	Feed-in tariffs of certain EU member states'	Pending
February 2013	LCRs, Subsidies	WTO	United States	India	Japan, Australia	India's National Solar Mission	Pending
TBD	LCRs, Subsidies	WTO?	India	United States	NA	US State-level support programs	No filing yet but information being gathered through WTO channels

As shown above, the rise of international trade disputes involving the renewable energy sector is a relatively recent but rapidly growing phenomenon. Unfortunately, due to the time taken for the WTO to hear disputes and the propensity for countries to settle them there is often limited information available about the current status of the disputes. However, one pattern that is clear is that China is the most common respondent to these claims. To highlight how these cases reflect regulatory competition and industrial policy, a case study of the Chinese wind subsidy dispute will be discussed below.

8.7.2 CASE STUDY: CHINESE WIND SUBSIDY WTO DISPUTE

China has often been accused of using its renewable energy regulations to promote its clean technology industry, which has been identified as a key growth industry for the twenty-first century.¹⁰² Indeed, Premier Wen Jiabao has explicitly stated:

We will accelerate the development of a low-carbon and green economy so as to gain an advantageous position in international industrial competition.¹⁰³

This has led to complaints that the Chinese are using their renewable energy regulations, and in particular, those directed at providing subsidies, to enable Chinese manufacturers to be more competitive with foreign companies.¹⁰⁴ In 2005, the market share of foreign turbine firms in China was 75 per cent.¹⁰⁵ To counter this growth, 'the National Development and Reform Commission (NDRC) introduced a cap that required Chinese wind farms to source at least 70 per cent of turbine parts from domestic producers.'¹⁰⁶ This regulatory policy was so effective that, over a three-year period, the market share of foreign turbine firms

¹⁰² Daniel Yergin, *The Quest: Energy, Security and the Remaking of the Modern World* (Penguin Press, 2011) 544-5.

¹⁰³ Wen Jiabao, 'Strengthen Confidence and Work Together for a New Round of World Economic Growth' (Speech delivered at the World Economic Forum, Switzerland, 28 January 2009) quoted in Yergin, above n 102, 544.

¹⁰⁴ Yergin, above n 102, 544-5.

¹⁰⁵ Vinod K Aggarwal and Simon Evenett, 'The Financial Crisis, "New" Industrial Policy, and the Bite of Multilateral Trade Rules' (2010) 5 *Asian Economic Policy Review* 221, 234.

¹⁰⁶ *Ibid.*

had declined by 55 percentage points to a 20 per cent market share.¹⁰⁷ Over this period, China also went from having only six domestic wind turbine manufacturers to being the number one producer of wind turbines in the world in 2009.¹⁰⁸ Following international pressure, the domestic content cap was subsequently revoked,¹⁰⁹ only to be replaced a few years later by conditional subsidies that gave preferential treatment to domestic wind turbine manufacturers.

In 2011, the US Government on behalf of the United Steelworkers consulted the WTO over the Chinese Special Fund for Wind Power Equipment Manufacturing subsidies,¹¹⁰ which they alleged breached Article 3 of the WTO's Agreement on Subsidies and Countervailing Measures ('SCM').¹¹¹ The relevant clauses of this Article state:

- 3.1 ... the following subsidies, within the meaning of Article 1, shall be prohibited:
 - (b) subsidies contingent, whether solely or as one of several other conditions, upon the use of domestic over imported goods.
- 3.2 A Member shall neither grant nor maintain subsidies referred to in paragraph 1.¹¹²

The Chinese Special Fund for Wind Power Equipment Manufacturing subsidies were explicitly designed to support the domestic research and development of MW-scale wind turbine systems in China. The qualifying criteria for this subsidy contained local content clauses, including:

- to be eligible companies must be State-owned or Chinese-controlled wind power equipment manufacturers (incl. wind turbine and component manufacturers);

¹⁰⁷ Ibid.

¹⁰⁸ Ibid 232.

¹⁰⁹ Ibid 234.

¹¹⁰ «风力发电设备产业化专项资金管理暂行办法» [Management Regulations on Special Fund for the Industrialization of Wind Power Manufacturing Sector in China] (Ministry of Finance Document No 476, People's Republic of China, 11 August 2008).

¹¹¹ Office of the United States Trade Representative: Executive Office of the President, 'China Ends Wind Power Equipment Subsidies Challenged by the United States in WTO Dispute' (Press Release, 6 June 2011) <<http://www.ustr.gov/about-us/press-office/press-releases/2011/june/china-ends-wind-power-equipment-subsidies-challenged>>.

¹¹² *Marrakesh Agreement Establishing the World Trade Organisation*, opened for signature 15 April 1994, [1994] 1867 UNTS 3 (entered into force 1 January 1995) annex 1A Arts 3.1-2.

- the developed equipment must have Chinese Intellectual Property Right (IPR), i.e. the company must own the critical technology or techniques; and
- the wind turbine systems must be manufactured, installed and tested in China and must be operated without fault for more than 240 hours.¹¹³

This meant that, in contravention of Articles 3.1(b) and 3.2 of the SCM, the subsidies were providing preferential financial assistance to Chinese wind turbine manufacturers that used domestic components and manufacturing rather than purchasing imports.¹¹⁴ Given that individual grants ranged between \$US 6.7 million and \$US 22.5 million, it has been estimated that the total value of the subsidy given to Chinese manufacturers may have totalled several hundred million dollars between 2008 and 2011.¹¹⁵ Following the WTO consultations between the United States and China on 11 February 2011, China formally revoked the Management Regulations on the Special Fund.¹¹⁶

The problems experienced by foreign companies trying to gain access to the Chinese wind market are not unique. Companies working in the renewables sector within the region have often complained about the overt discrimination displayed towards foreign firms trying to gain a foothold in some of the world's largest renewable electricity markets.¹¹⁷ Indeed, foreign wind turbine manufacturers such as the Indian wind turbine manufacturer, Suzlon,¹¹⁸ have complained that they have been hamstrung by the frequent regulatory

¹¹³«风力发电设备产业化专项资金管理暂行办法» [Management Regulations on Special Fund for the Industrialization of Wind Power Manufacturing Sector in China] (Ministry of Finance Document No 476, People's Republic of China, 11 August 2008).

¹¹⁴ Office of the United States Trade Representative: Executive Office of the President, above n 109.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

¹¹⁷ For example, a Senior Executive from a large wind turbine manufacturer has previously complained to the author about informal local content clauses and the preferential treatment of domestic firms in the bidding for Korean onshore and offshore windfarms. See also Reuters, 'Foreign Firms Cry Foul Over China Wind Power Rules', *Reuters* (online), 14 May 2009 <<http://in.reuters.com/article/2009/05/14/china-wind-idINPEK31992120090514>>.

¹¹⁸ Aggarwal and Evenett, above n 105, 233.

changes,¹¹⁹ as well as a lack of transparency around the decision-making processes being applied to bidding rounds for projects.¹²⁰ It would seem that explicit divergence in the form of regulatory competition in order to further national industrial policy is prevalent within the renewable energy sector, particularly among those countries that are active as technology innovators.

8.8 CONCLUSION

In a sector that has experienced substantial growth both in investment and in installed capacity over the past ten years, the benefits of the regulatory support mechanisms within national renewable energy laws becoming more similar are clearly evident, especially for international market participants. Greater similarity in national renewable energy laws should lead to lower transaction costs, greater competition and, ultimately, lower prices for the ultimate consumers.

The issue of whether regulatory support mechanisms are growing more similar or more divergent over time requires further research. However, from the case studies detailed above, some patterns are evident. The starting position for most countries seems to be one of substantive divergence, with different regulatory support mechanisms being designed and implemented in different countries. This is a natural response to their different natural resources, legal traditions, governmental and socio-economic structures, and customs and norms, which in turn reinforces the legitimacy of their national laws. This process is even evident within the EU, where the Member States explicitly inserted into the Treaty of the Functioning of the European Union a reservation that will ensure their ability to control their own energy mix and support systems going forward.

¹¹⁹ Reuters, 'Foreign Firms Cry Foul Over China Wind Power Rules', above n 117.

¹²⁰ Aggarwal and Evenett, above n 105, 233-4.

That said, over time the theory suggests that the regulatory support mechanisms should become more similar as countries seek to engage in either a 'race to the bottom' or a 'race to the top.' Despite this, there has never been an attempt to unify the renewable energy laws of two countries and two attempts to harmonise regulatory support mechanisms at the EU level have failed. Instead, the EU has decided to try to foster a coordinated and cooperative approach between Member States in order to encourage a soft convergence of their support schemes over time. The recent move by Sweden and Norway to establish a Joint Support Scheme for their electricity certificates is an example of how this soft convergence may occur. However, it is too early to tell whether this process will be successful. Further research is required to understand more fully the processes of cooperation and coordination between other countries, especially given the establishment of the IRENA, which facilitates this process.

The other phenomenon that has recently come to the fore is that of explicit and very intentional divergence through the process of regulatory competition. This often reflects national industrial policy goals such as bolstering the domestic industry through the imposition of local content clauses or the provision of preferential subsidies to nationals of the country. The huge growth of the Chinese wind turbine manufacturing industry under both preferential subsidies and local content requirements, and the loss of market share by foreign firms suggests that adopting divergent regulatory support mechanisms can lead to substantial financial benefits for a country.