Connections between climate change and international trade

By

Professor Dr Rafael Leal-Arcas

Biography of Professor Dr Rafael Leal-Arcas

1. Rafael Leal-Arcas is Professor of European and International Economic Law, a Jean Monnet Chair holder (awarded by the European Commission), Program Director of the LLM in International Economic Law, and former Director of Research at the Centre for Commercial Law Studies of Queen Mary University of London. He is also a visiting professor at New York University Abu Dhabi in the UAE and the Inaugural Lee Kong Chian International Visiting Professor of Law at the Yong Pung How School of Law of Singapore Management University, Singapore. Dr Leal-Arcas’s research is funded by the EU Commission’s Horizon 2020 program, most notably a grant of EUR14 million as part of a consortium of 21 institutions to work on renewable energy and smart grids. He is an expert on climate change, international trade and the links between both epistemic communities in the context of global economic governance. He has published 17 academic books and over 200 articles to date. He has served as a Visiting Scholar in the World Trade Organization’s Trade and Environment Division, Geneva, Switzerland.

2. In 2016, Professor Dr Rafael Leal-Arcas provided expert advice to the House of Lords on post-Brexit EU-UK trade agreements. Rafael serves as an expert of the group “Measures to Address Climate Change and the Trade System” in the framework of E15, an initiative jointly implemented by the International Centre for Trade and Sustainable Development (ICTSD) and the World Economic Forum (WEF), which brings together “over 200 experts from academia, practitioners, business and former policy makers, in defining the ideas, strategies and scenarios for how the global trade system can meet the challenges and demands of the world economy and sustainable development today and in 2025.”

*****

Linking climate change to international trade

3. Few people in the rich world may want to volunteer to reduce their living standards. At the same time, it is difficult to ask people from parts of the world that are still developing to sacrifice their chance to become rich. A middle-ground compromise could be technology that brings economies away from using fossil fuels as their principal source of energy. Technology could be instrumental to understand the links between international trade, sustainable development, and environmental protection, which have become increasingly important to understand how we can reach a sustainable future. We know by now that international trade can help decarbonize the economy and create jobs. This duality can be reached through the liberalization of trade in green goods, the circular economy, carbon border adjustment mechanisms (CBAM), or the blue economy, to mention but a few.

August 2021
The WTO context

4. The World Trade Organization (WTO) Agreement clearly states in its preamble that the international community should pursue free trade in the context of sustainable development. As a result, the future of the world economy cannot be separated from the future of the environment. This means that we need to re-imagine the rules of international trade (whether multilateral, regional, bilateral) for sustainable development. It also means that free trade needs to be consistent with environmental protection. Potential trade concerns should not be an obstacle for the formation of a club of carbon markets in a climate club.

5. One wonders whether existing WTO rules are sufficient for the envisaged transformation towards a low-carbon society in the context of the EU’s Green Deal or is it necessary to have a new agreement/interpretation of existing rules (e.g., on CBAM or subsidies)? If this is a necessary step, should it be part of an overall WTO multilateral reform package discussion or a separate discussion with a possible plurilateral agreement? If it is a plurilateral agreement outside the WTO, would that pose a risk for the most-favored-nation principle, which is a core principle in WTO law?

6. Going forward, the international community should aim at concluding agreements to eliminate barriers and tariffs on green goods; it should eliminate barriers to trade in environmental services; it should put an end to fisheries subsidies; and both the WTO and the World Bank should work together to phase down and gradually out fossil fuel subsidies, which are diametrically opposed to climate change mitigation. Moreover, the WTO rules (and other rules of international trade) should be drafted through the prism of sustainable development to serve the needs of the 21st century. This may only be achieved via plurilateral agreements, not multilaterally, since the WTO has proven time and time again that it is not feasible. For instance, a group of like-minded countries could take this initiative. In addition, carbon border adjustment mechanisms throughout the world may help put a price on carbon via a carbon tax. With climate a major global priority, it remains to be seen whether the EU will disrupt the global trading system as it will inevitably implement carbon border adjustment taxes.

Free trade agreements

7. In recent years, and certainly since the collapse of multilateral trade negotiations in 2008, we have seen the rise of free trade agreements (FTAs). Recent FTAs have environmental chapters that promote environmental protection. A case in point is the United States-Mexico-Canada Agreement (USMCA), although its deficiency is that anything related to climate change is omitted in the agreement. The good news is that many countries are promoting climate change-related technology and many governments throughout the world would like to see a pro-climate agenda in their trade policies (largely because it is in their interest—both in terms of health for their citizens and economic sustainability—to do so). That may mean trade restrictions as part of climate change mitigation measures.

8. The future trade agenda is full of mega-trends, side-effects of geopolitical conflicts (like that between the US and China, which will most likely be the most important bilateral relationship in the world for years to come in fields such as energy security,
international trade, climate change, or finance, to name but a few), it is about e-commerce (especially when it comes to data flows), as well as open, sustainable, and assertive trade. More cooperation in areas such as climate change and public health is urgently required. The recovery from covid-19 will imply the interaction between international trade policy and domestic policies and that trade policy is an enabler of other domestic policies. Countries are prioritizing the implementation and enforcement of their FTAs, especially the sustainability commitments in FTAs. A case in point where sustainability is at the heart of trade policy is the European Union (EU)-Mercosur FTA, as without sustainability clauses, there would be no political support in the EU for the ratification of this FTA as of early 2021. In fact, the notion of sustainability is present in all labor and environmental protection chapters in recent EU FTAs.

Carbon neutrality, green technology, and innovation

9. Equally, an increasing number of countries are aiming at carbon neutrality by 2050 or 2060 (which is perceived as benign unilateralism) as well as greater integration of trade policy with other domestic policies (such as sustainability—in its three dimensions, namely development, environmental, and social—and the digital economy). Similarly, governments could enact policies that greener consumption. Putting a price on carbon is a good way forward, making sure that companies and consumers pay for their emissions.

10. Moreover, we should not underestimate the phenomenal positive impact green technology can have on climate change mitigation. In recent times, there have been scientists stating negative views on the future of humanity and that humans should forget about solving the climate crisis and, instead, invest their efforts and money in migrating from Earth to other planets. However, technology evolves very rapidly. The current debate is that green hydrogen will guarantee a sustainable future for our planet. For instance, hydrogen sustains three times as much energy as kerosene and is lighter. In addition, public spending in research and technology is growing in most OECD countries, and more and better subsidies for R&D may take place.

11. Therefore, there are many reasons to believe that tomorrow’s technology will be able to tackle climate change effectively, especially if we continue to invest in green technology. In addition, many countries increasingly have green policies. Technological advancement is a clear example of human progress and, as a result, governments and companies should aim at the promotion of green technology to fight climate change. This can be done with the creation and proliferation of climate clubs, whether for countries or companies.

1 President Xi of China speaks of ‘ecological civilization’ to show its assertiveness in becoming a climate leader. Areas for potential cooperation with the US are, among others, carbon capture and storage, hydrogen power, and the development of green financial instruments to fund such cooperation. That said, Chinese leaders seem cautious in their bilateral relations with the West, which they see as a region of the world in economic decline and political instability, as opposed to the economic rise and social stability of China.

August 2021
Environmental taxes versus cap-and-trade

12. Climate change is the result of the largest market failure the world has ever seen: the prices of goods and services do not reflect the true costs associated with the impacts of GHG emissions that would result from climate change. Future effective policies must address market failures by creating a price on emissions (in other words, a carbon price), which can be created through a carbon tax or through a cap-and-trade system. Nevertheless, a global carbon price seems politically unrealistic at the moment.

13. Environmental taxes are very common in the EU and very unpopular in the U.S. The idea is to penalize bad environmental performers by placing higher taxes on those actors whose GHG emissions are high and to give credit to good environmental performers in order to promote environmentally friendly behavior and create an incentive for alternative power generation from wind, sun, and water. The counterargument is that hydropower as well as wind and geothermal energy are clean but naturally limited. As for solar energy, it is useful at the moment only for small-scale applications because no practical system exists yet for storing it for use at night or in bad weather. Natural gas, more efficient at producing energy than coal, is currently in short supply.

14. A global carbon tax is also a sensible recommendation. The idea behind it is a tax that would decrease the profits of users of carbon-based fuels and increase them for users of cleaner alternatives. In the same way, a tax on vehicles based on their fuel efficiency would help achieve the Kyoto goal. Expanded climate change economic incentives, such as tax breaks, for the development of more efficient systems of all types, would help us move faster towards minimizing our dependence on carbon-based fuels. A clear advantage of the tax method is that it generates revenue for governments. Taxes can be used as an incentive to innovate on GHG emissions reduction. However, it is not easy to ascertain the exact amount of a tax.

15. An alternative solution to a global carbon tax is to trade emission rights within a certain cap amount of GHG emissions. The cap-and-trade system would set a national limit on GHG emissions, decreasing over time, to carbon-emitting entities such as oil refineries, power plants, and energy-intensive industries. Governments would either allocate emission rights or auction them so that companies would buy and sell these rights among themselves, depending on the number of permits necessary to meet their obligations. Some members of civil society (notably non-governmental organizations (NGOs)) oppose the cap-and-trade method on the grounds that it is not about mitigating GHG emissions, and therefore will not serve to clean the environment.

16. Both methods are essentially the same, i.e., a sort of tax, but with a different approach. That said, the question remains: which should be set first—the price (tax) or the quantity (GHG emission allowance)? The practice of each, however, is different and most people prefer the cap-and-trade system because it creates markets that can link up and yield cost efficiency and positive scale and diversifying effects. Furthermore, the cap-and-trade approach responds better to the business cycle than a carbon tax would. Moreover, cap-and-trade has an excellent track record, putting an end to the U.S. acid rain problem at one fourth of the projected cost. In addition, the
cap-and-trade method sets the quantity of GHG emissions a country is allowed to emit, but allows the price to vary and to escalate in the market, which means that this method is very effective at reducing GHG emissions. Having said that, there are cases where, arguably, a tax would work better and would require less administrative complexity.

17. Below are some criteria for comparing a carbon tax with a cap-and-trade system: 1) the comprehensiveness of coverage of emitting sectors; 2) the certainty of achieving the desired reductions in GHG emissions; 3) the ability to achieve the lowest-cost reductions, i.e., the effectiveness of the system; 4) predictable charges and revenues; 5) the lack of volatility; 6) a clear price signal; 7) the ability to be enacted politically; 8) the ability to achieve global harmonization; 9) equity/income distribution, i.e., fairness, which is important for political acceptability; 10) the vulnerability to exceptions, favors, and manipulation; 11) the ease and speed of implementation as well as transaction costs (both social and administrative); 12) generating revenues for R&D and adaptation assistance, i.e., does the policy instrument promote innovation?; 13) the ability to influence unregulated sectors; and 14) the ability to provide temporal flexibility and participation, i.e., engaging the international community to consent.

18. Regarding the design of a cap-and-trade mechanism, several issues come to mind: 1) the size of the cap; 2) the timetable to achieve the goals; 3) what sectors of the economy are covered by the mechanism? 4) what is the point of regulation? 5) auction versus allocation of allowances; 6) the use of proceeds of auction (investment versus dividend); 7) the fate of the existing cap-and-trade programs; 8) the role of regulatory tools other than cap-and-trade; 9) the availability of offsets; 10) would the banking of excess emission credits be allowed? 11) carbon price safety valve; 12) the protection against the creation of hot spots; and 13) early action credit.

Knowledge gaps on the links between four major global concerns: trade, energy, climate change, and sustainability

19. There is a knowledge gap on the links between four major global concerns: trade, energy, climate change, and sustainability. Each one of them has its own culture; for instance, both trade and climate are similar in that they are global in scope, but they differ in institutional structure and governance in that trade is more developed due to its dispute settlement system, which is absent in climate change, whereas the climate regime operates more with persuasion than punishment. From this point of view, the trade regime is exclusive because punishment will take place if one is not in compliance with regulations. With the threat of climate change looming, and energy increasingly important to all aspects of human and economic development, learning more about these links is extremely timely. Specifically, it is necessary to do more research into the use of trade as a tool to achieve sustainable energy and therefore reduce poverty, while also addressing climate change.

20. An open trading system in all its three aspects (political, legal, and economic) is crucial for sustainable development to take shape. Pending questions remain, such as: What can citizens do to be more empowered in inter-state trade agreements? How can they be better informed? How should future trade and environmental agreements be designed to be socially acceptable and more inclusive of civil society? How can trade
agreements be modernized to help climate change? How can we reach social sustainability?

21. Politically, taking the Paris Agreement forward with its implementation is imperative to make sure no one is left behind, given that the Paris Agreement is as much about economic and social transformation as it is about climate change. The Agreement may not be perfect, but it is better than previous legal instruments. The concept of *in dubio pro natura*, advocated by Brazil’s National High Court Justice Antonio Benjamin, is the strongest legal form of environmental protection.\(^2\) And providing concessional financing for CO\(_2\) to incentivize countries to decarbonize their economies would assist in the transition to clean energy. While the transition to clean energy has discouraged oil and gas imports throughout the world, it has brought about an increase in coal use.

22. Regarding clean energy, the potential of solar energy is phenomenal: solar energy today represents only around 0.3% of global energy;\(^3\) one hour of sun can generate energy for the whole Earth for an entire year;\(^4\) in 14 and a half seconds, the sun emits enough energy to power the Earth for an entire day;\(^5\) and “we could power the entire world if we covered less than 3% of the Sahara Desert with solar panels.”\(^6\) So there is hope and great research and business opportunities. Moreover, predictions are that the fastest-growing occupation until 2028 will be that of solar installer.

23. No solution to the above big challenges is possible without cooperation among governments, companies, researchers (whose role is to provide good information to create good policy), and mobilization of individuals. Business may have a role to play when politicians fall short and help decarbonize the economy at large. While elected politicians may be too shy to risk failure and seem to suffer from short-termism, entrepreneurs seem to be riskophiles and persistent, with a long-term commitment, especially multibillionaire entrepreneurs—for instance, Elon Musk’s companies Space X and Tesla. Change may come sooner than later thanks to them. Technology seems to be the resource for success. To that, one should add the optimism of Harvard Professor Steven Pinker that things will only get better in the future because people generally think reasonably and logically and that the geopolitics of clean energy may make the world more peaceful and stable. Peace is certainly a key condition for sustainable development.

**Counter-intuitive trade-related arguments in the context of climate change**


\(^3\) Information gathered from the roundtable on "Science, Law and Climate Change - Innovating sustainable solutions" of the London Energy Forum. The event was held in The Law Society, London, UK, on 4 February 2016.

\(^4\) Solar Frontiers, The Economist (Dec. 1, 2015), https://www.youtube.com/watch?v=4-m9OR9vcaM.

\(^5\) Z. Shah, “In 14 and a half seconds, the sun provides as much energy to Earth as humanity uses in a day,” *CleanTechnica*, 18 April 2012, available at https://cleantechnica.com/2012/04/18/in-14-and-a-half-seconds/.

24. Two counter-intuitive trade-related points deserve to be mentioned. First, that trade agreements may be more effective legal instruments than environmental agreements for environmental-protection purposes is both counter-intuitive and surprising. Just as the huge improvement in quality of life after World War II was largely due to the expansion of world trade by lowering technical barriers, one can use the international trading system (whether regionally, bilaterally, plurilaterally, multilaterally or in any other form) to help mitigate climate change and enhance sustainable energy. If multilateralism is currently in crisis, plurilateralism might be an effective platform to work on the links between trade and climate action. How? By making sure that major greenhouse gas (GHG) emitters conclude mega-FTAs with each other to liberalize green goods and services.

25. Second, on the trade-climate change nexus, whether clean-energy technology eventually triggers a healthy competition or geopolitical friction will depend on international trade. If the Trump administration ends up creating a trade war, there will be less trade and, therefore, less international shipping for the transnational movement of goods. Thus, fewer emissions of GHGs will result, which is good for climate change. In conclusion, a trade war would be beneficial for climate change from the point of view of GHG emission reduction, but it will make the world poorer. So if climate change mitigation is about money, how can a trade war help fix the climate change problem? Moreover, a trade war may help with the reduction of GHG emissions, but would prevent global access to clean goods.

26. All of this would need to be implemented in terms of bottom-up governance. Recent examples of citizens’ discontent in EU governance show the apathy among voters for supranational parliamentary elections, whose participation has decreased in each and every election since the first in 1979. Instead, there is an increasing interest in national/sub-national parliamentary politics, as exemplified by Brexit and the Catalan independent movement, which are closer to the citizens than metanational/supranational/international entities. Greater use of social media (Twitter, Facebook, videos on YouTube) could be a very effective platform to educate youth—which is the segment of society that makes most use of it—on the links between trade and climate change, raise awareness at local level, and involve them in parliamentary elections. These ideas will make it possible to have sustainable and economically advantageous trade.

Concluding remarks: A global level playing field

27. The objectives of the Paris Agreement would need to be in alignment with the objectives of future legislation on clean energy. But what about international trade and investment? How can the objectives of the Paris Agreement be aligned with those of future trade agreements?

28. Many of today’s big changes are demographics, a shift in power from the West to the East, rapid urbanization, technology, health and well-being, and climate change and natural resources. The last two points are crucial to the arguments made in this chapter in the broader context of inclusive prosperity. Access to affordable and clean energy as well as climate action are two of the seventeen UN Sustainable Development Goals, which the international community is committed to meeting by

August 2021
2030. The Earth is our home and common inheritance. We need to make sure it is sustainably managed. We now have enough scientific knowledge to know that climate change is a problem. But the policies in place are wrong and good leadership is essential to meet the agreed targets. More specifically, collective action by all leaders would make a difference: we see that leaders are good at individual goals for their own company/country; what is required is collective vision of a dream to share among leaders.

29. In a nutshell, technology (which is absolutely crucial for full renewable energy) and leadership from the bottom up, not just top-down, are the essential ingredients for sustainable development. The solutions to climate change are all technological. This technology will come from the market. Technology and politics may not yet allow full potential of renewable energy (mainly solar). Most likely, we will continue with fossil fuels for years to come despite the fact that there are very good reasons to make a solid transition to renewable energy: it is good for climate action because it reduces CO2; it is good for energy security because there is less dependence on fossil fuels; it is good for consumers thanks to the creation of renewable-energy cooperatives; it is good for job creation thanks to green jobs; and it is good for trade creation thanks to renewable-energy exports.

---

7 On the role of the market, see E. Posner and E. G. Weyl, *Radical Markets: Uprooting Capitalism and Democracy for a Just Society*, Princeton University Press, 2018 (who argue that the way out of the current impasse is to expand the role of markets).