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A SOUTH AFRICAN STRATEGY FOR TRADE IN ENVIRONMENTAL GOODS

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About this publication

This policy paper discusses a possible South African strategy for trade in environmental goods. It forms part of a series of papers aimed at providing a barometer of South Africa's transition to sustainable development. It is a component of a global initiative spearheaded by the Green Economy Coalition (GEC).

The Green Economy Coalition (GEC) is the largest global alliance of organisations working on a green economy. The membership spans Asia, Africa, South America, North America and Europe and represents a wide range of interests including the poorest, the environment, business, the United Nations, research and governments. Despite its diversity, the coalition is committed to accelerating the transition to green and fair economies. In South Africa, Trade & Industrial Policy Strategies (TIPS) and the African Centre for a Green Economy (African Centre) are active members of the coalition.

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Key findings

- The rapid growth of trade in environmental goods creates opportunities for South Africa, but is complicated by rising global protectionism, which demands a pro-active strategy to support South African exporters.
- Global efforts to lower barriers to trade in environmental goods, such as the World Trade Organization (WTO) Environmental Goods Agreement, have made slow process, and do not include South Africa or other African states.
- Regional barriers to trade in environmental goods are low, with formal barriers in the SADC having been largely eliminated by the SADC protocol on trade.
- The largest obstacles to trade in environmental goods are non-tariff barriers, including local content rules, subsidies, a lack of alignment of product standards, and a blending of these restrictions with rules around feed-in tariffs and other government programmes. While these distort trade patterns, they have proven to be key drivers of the development of local industry and the transition to sustainable production processes, and therefore cannot be eliminated without creating substantial costs.

Key recommendations

- **Trade agreement:** South Africa should **remain out of the WTO's Environmental Goods Agreement.** The EGA offers minimal benefits for the country, as it does not address the core barriers to trade in environmental goods, and violates established South African principles on non-participation in plurilateral agreements.
- **Product classification:** Engagement on trade in environmental goods should instead focus on technical issues that facilitate better policymaking around the issue, core among these being a **revision of the Harmonised System** to allow for specific categories for environmentally-friendly goods. Refining the Harmonised System codes will eliminate unnecessary protection stemming from poorly categorised environmental goods, while also forming a sounder basis for future liberalisation.
- **Cross-cutting barriers:** At the regional level, trade policy focused on environmental goods does not seem to have a great deal of potential to promote trade. Focus should rather be on resolving **fundamental cross-cutting barriers,** such as logistics costs and customs efficiency.
- **Non-tariff barriers:** Non-tariff barriers in the environmental goods space serve an important role in facilitating the growth of the industry, and except in cases of outright abuse, focus should be **on equipping South African exporters to deal with the resulting distortions.** Providing the market intelligence, finance, and other support needed to deal with barriers is more likely to create benefits for South Africa than any attempts to stop the use of programmes like local content requirements.
- **Industrial development:** Finally, as a long-term goal, South Africa should consider **exploring cumulation of local content** rules for regional agreements. This would involve counting components sourced from the region as local, and thus allowing imports from the region to feed into the procurement of designated products.

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Abbreviations

AD/CVD	Anti-dumping/Countervailing duties
APEC	Asia-Pacific Economic Cooperation
CFTA	Continental Free Trade Agreement
DSB	Dispute Settlement Body
ED	Enterprise Development
EGA	Environmental Goods Agreement
EU	European Union
HS	Harmonized System (The Harmonised Commodity Description and Coding System)
IBSA	India, Brazil, South Africa
ICTSD	International Centre for Trade and Sustainable Development
ITC	International Trade Centre
LCRs	Local Content Requirements
LDC	Least Developed Countries
LED	Light-emitting diode
MOFCOM	Ministry of Commerce, People's Republic of China
OECD	Organisation of Economic Co-operation and Development
PV	Photovoltaic
RE	Renewable Energy
REIPPPP	Renewable Energy Independent Power Producer Programme Programme (REIPPPP
SADC	Southern African Development Community
SED	Socio-economic Development
TFTA	Tripartite Free Trade Agreement
UNEP	United Nations Environmental Programme
USA	United States of America
WTO	World Trade Organization

1 Introduction

The recent boom in green technologies has been driven by a wide range of factors, including international commitments and the growing political relevance of sustainable development in numerous countries. But the core factor has been rapid technological development in areas like renewable energy, which has seen sustainable options become increasingly more cost effective. The average contracted cost of solar PV in South Africa in 2017 was a quarter of what it was when the first round of renewable energy was contracted. And yet the major producers of these technologies tend to be clustered into a few corners of the world, particularly in the United States of America (US), Europe, and China. Dispersing that technology in a cost-effective manner is essential to speeding up the greening of the world economy, particularly for developing countries like South Africa that must import many of the most important new technologies. Facilitating trade in environmental goods, defined here as "activities which produce goods and services to measure, prevent, limit, or minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and ecosystems" (Sugathan, 2004), is therefore essential to assuring the green revolution is a truly global phenomenon.

Efforts to lower barriers to the trade in green goods, however, often sit in tension with another pillar of the transition to a green economy, that of using new green industries to develop local economic growth and manufacturing capacity. This economic imperative has resulted in a range of domestic programmes aimed at boosting local manufacturing or assembly of goods. This is most clearly witnessed in renewable energy, which features large subsidies to domestic producers, high feed-in tariffs [1], local procurement requirements for utility-led renewable energy programmes, and a range of other interventions.

At the tension point between these two demands, i.e. the greening imperative and the economic development imperative, is the question of trade in

[1] Feed-in tariffs refer to tariffs paid by energy utilities to independent power producers. Feed-in tariffs are commonly used in the renewable energy space, as a means to incentivise the development of renewable generation capacity.

environmental goods. While these local benefit programmes have the capacity to deepen buy-in for the transition to sustainable development and bring economic benefits, they also impose barriers on imports of low-cost green goods, which could rapidly speed up the transition process. The WTO and regional trading blocs have tried to use traditional trade liberalisation measures to lower barriers to the trade in environmental goods, to decrease the cost of the greening process. These traditional tools, while equipped to lower formal trade barriers like tariffs, are awkwardly positioned to challenge the interventions that countries use to promote green industries. It is not even clear this is desirable, given the importance of industry development to locking-in state commitments to green industries. These tensions run alongside ongoing debates about whether carbon-intensive global trade patterns are sustainable. While some evidence is that efficiency gains counteract the emissions needed to facilitate trade (for example, Khan et al, 2017), the debate itself puts into context the complexities of the relationship between trade and environmental sustainability (for a good overview, see WTO-UNEP, 2009).

This paper attempts to assess these tensions and suggests a way forward. It proceeds in two parts, each examining a separate component of the trade in environmental goods space: formal barriers at international and regional level and the rise of non-tariff barriers.

2 The global landscape for trade in environmental goods

2.1. Diagnostic: Rapid growth in trade in environmental goods, with limited formal barriers

The belief that the global market for environmental goods is set to boom over the next few decades, driven by a complex mix of advancing technologies, government policy initiatives, and increasing consumer interest in environmental issues, is almost unanimous. The International Trade Centre (ITC) estimates that the global market for environmental goods will grow from US$866 billion in 2011 to US$ 1.9 trillion by 2020 (Bucher, et al, 2014). Even more impressive estimates are made for specific sectors, notably renewable energy technologies, and annual investment in the renewable energy market of US$ 285.9 billion was recorded in 2015 (Ren21, 2016). In the US, twice as many people are employed in solar energy than in coal mining, and new technologies such as smart grid systems and battery storage may deepen the renewable energy transition (Korosec, 2015). Renewable energy has received most attention, but similar growth figures can be seen in sectors like water treatment and conservation, new waste management technologies, and a range of monitoring tools across the economy, to name only a few. Despite, among others, the general decline in trade volumes and political shifts hostile to both trade and the environment raising questions around these growth estimates, the sector does look set to expand rapidly. Understanding the rise of green trade is complicated by the fact that the data is not well suited to capture the "greenness" of products. The

Harmonised System[2] (HS) of goods classification does not distinguish, for example, between a biomass boiler and one that will be used in a traditional generation plant. To get around this, the analysis below uses a synthesis of three lists of environmental goods created by the Asia-Pacific Economic Cooperation (APEC), the Organisation of Economic Co-operation AND Development (OECD) and the World Bank. The result is a composite list of 161 products that ranges across different environmental sectors, as can be seen in Table 4. This list should still be treated with caution, given the divergent nature of the three lists that feed into it and the continued limitations of the data, but nevertheless it offers a useful guideline to assess global trade trends in environmental goods.

TABLE 1: COMPOSITE LIST OF ENVIRONMENTAL GOODS, BY PRODUCT CATEGORY

Product	Number of Items
Cleaner technologies and products	4
Environmental monitoring, analysis and assessment	34
Heat/energy savings and management	10
Noise and vibration abatement	1
Pollution management	26
Remediation and clean-up	4
Renewable energy	30
Solid waste management	22
Wastewater management	68
Water supply	5

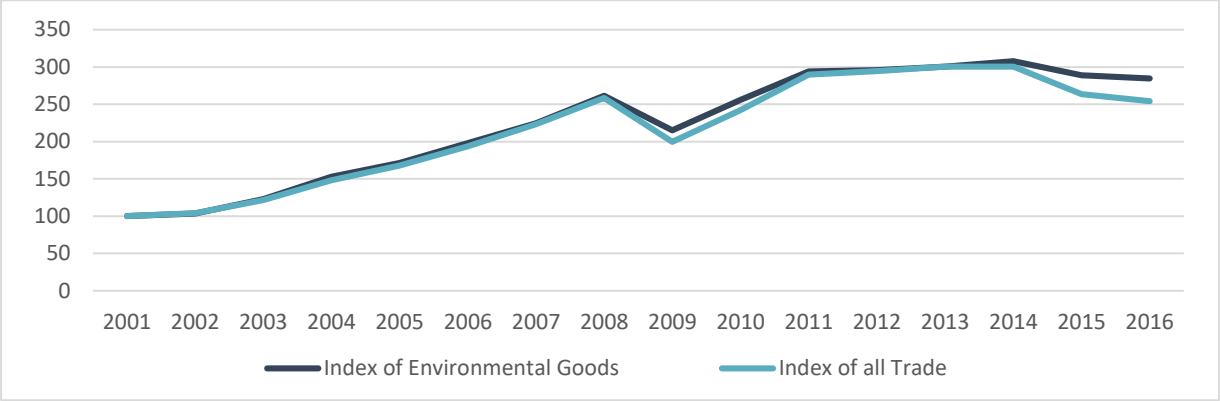
SOURCE: MONTMASSON-CLAIR, G., ET AL. 2017.

Note: total does not add up to product line total, as some items appear in more than one product category

Global trade in environmental goods expanded at an average rate of 7.8% per year between 2001 and 2016, for a cumulative growth over the period of 284%. This growth rate closely matches global trade, as can be seen in Figure 1, and may represent some interaction between the more generic goods on the list (such as chemicals and industrial equipment), which would likely move in close concert with the broader economy.

[2] The Harmonised System is a standard means of classifying traded goods by custom agencies. The HS system assigns a code at various levels of specificity, ranging from eight-digit (referring to a specific type of product) and two-digit (a broad category covering a range of products).

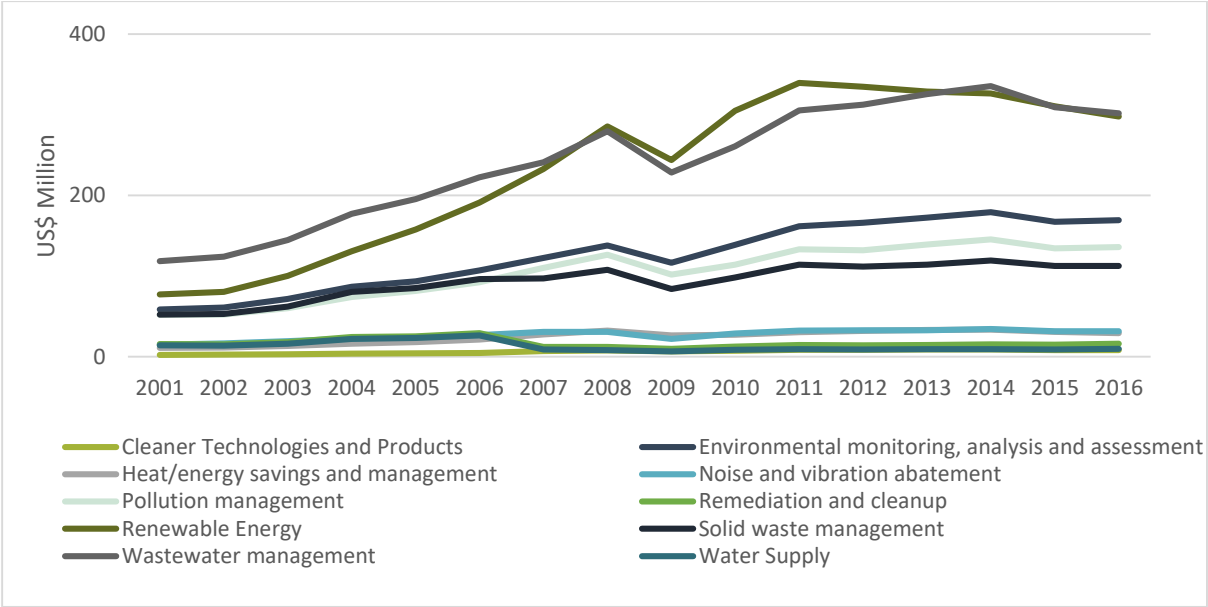
FIGURE 1: INDEX OF GLOBAL TRADE IN ENVIRONMENTAL GOODS VERSUS INDEX OF TOTAL TRADE (2001 = 100)



SOURCE: AUTHOR'S CALCULATIONS, BASED ON ITC TRADE MAP DATA

While the overall growth rate is solid, the more impressive results are evident when this picture is broken down by sector, as can be seen in Figure 2. Particularly striking is the rapid growth of renewable energy technologies, which expanded by 385% and a less intuitive expansion in wastewater management products, by 254%. The two represent two sides of the story of the sustainability transition: the rapid development of new technologies on the one hand, and the expansion opportunities offered by the greening of otherwise established industries on the other. Other sectors, such as heat/energy savings management or remediation and clean-up, grew at a much slower rate, or saw declines over the period. This does not necessarily mean these sectors do not offer opportunities, but indicates that many parts of the green economy remain underdeveloped

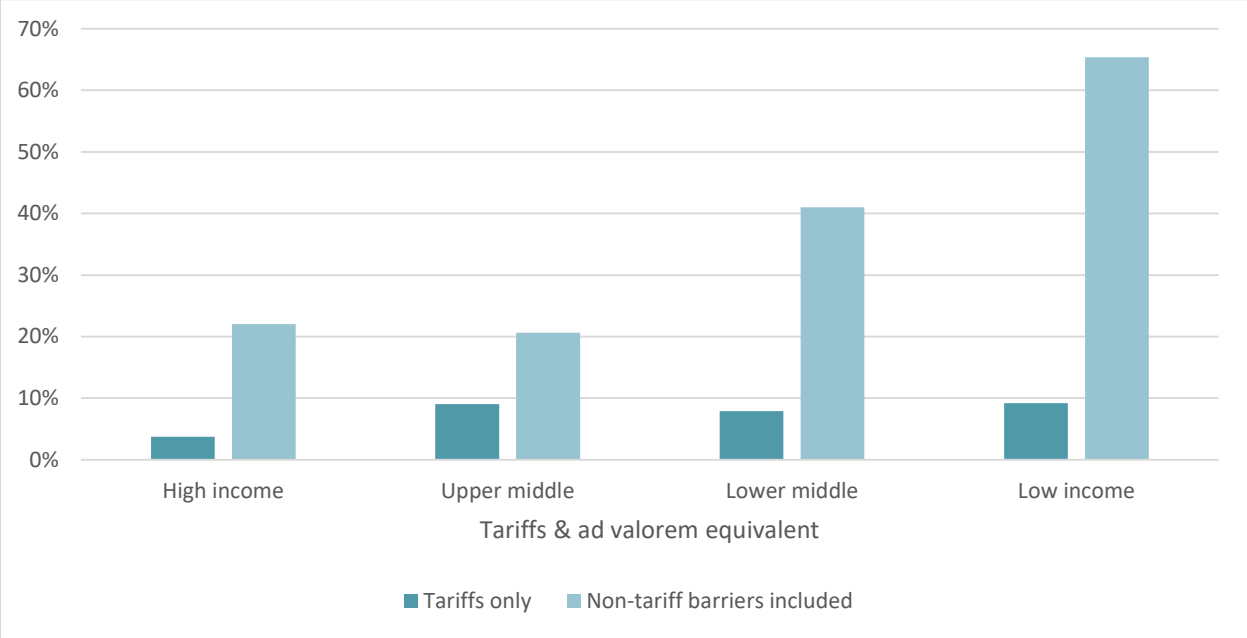
FIGURE 2: GLOBAL IMPORTS OF ENVIRONMENTAL GOODS BY SECTOR, FROM 2001 TO 2016



SOURCE: AUTHOR'S CALCULATIONS, BASED ON ITC TRADE MAP DATA

Much of the driving force behind this rapid growth in trade is the result of technological innovations, large government programmes, and efforts to develop manufacturing capacity in the environmental sector. As a countervailing force, trade barriers remain that may stifle the growth of this trade. As can be seen in Figure 3, these barriers remain low on average, and are mostly clustered around a collection of non-tariff barriers (discussed in detail in Section 3), some of which are not fully captured by the estimates in the figure.[3]

FIGURE 3: TRADE RESTRICTIVENESS INDEX OF ENVIRONMENTAL GOODS



SOURCE: DE MELO AND VIJIL, 2014.

Nevertheless, a large variation exists in this group, with some tariffs remaining high. Table 2 lists a selection of these. These traditional barriers tend to fall into one of two groups. In the first group, products attract barriers because the green good is lumped in along with traditional products, which have tariff barriers to protect local industry. Trade classifications do not distinguish cleaner paints from traditional products, for example, and thus green painting goods attract the same tariff as the rest of the industry. This makes up the bulk of protectionism facing green industries. In the second group, goods are protected specifically to promote local development of green industries.

[3] The figure uses traditional methodologies that capture barriers that add to the cost of trade, but which are often unsuited to assessing the impact of measures like local content.

TABLE 2: SELECTED ENVIRONMENTAL GOODS WITH THE HIGHEST APPLIED MOST FAVOURED NATION TARIFFS

ITC High Tariffs	Good	Use
220110	Mineral and aerated water not including sugar or sweetening matter nor flavourings	Resource Management Group: Potable water supply and distribution
220190	Ordinary natural water, not containing added sugar, other sweetening matter or flavoured; ice and snow (excluding mineral waters and aerated waters, sea water, distilled water, conductivity water or water of similar purity)	Resource Management Group: Potable water supply and distribution
220710	Undenatured ethyl alcohol, of actual alcoholic strength of >= 80%	Resource Management Group: Ethanol
320910	Paints and varnishes based on acrylic/vinyl polymers, dispersed or dissolved in an aqueous medium	Cleaner/resource efficient products
320990	Paints and varnishes based on polymers, dispersed in an aqueous medium, not elsewhere specified	Cleaner/resource efficient products
392490	Household articles and toilet articles, of plastics (excl. tableware, kitchenware, baths, shower-baths, wash-basins, bidets, lavatory pans, seats and covers, flushing cisterns and similar sanitary ware)	Waste collection equipment
851629	Electric space-heating and soil-heating apparatus (excl. storage heating radiators)	Remediation and Clean-up
853931	Fluorescent lamps, hot cathodes	Heat/energy savings and management
960310	Brooms/brushes of twigs/other veg mat bound together, with/w/o handles	Waste collection equipment
841911	Instantaneous gas water heaters (excl. boilers or water heaters for central heating)	Renewable energy: Solar
841919	Instantaneous or storage water heaters, non-electric, not elsewhere specified	Renewable energy: Solar
580190	Woven pile fabrics and chenille fabrics (excl. those of man- made fibres, wool or fine animal hair, terry towelling and similar woven terry fabrics, tufted textile fabrics and narrow woven fabrics of heading 5806)	Sewage treatment
681099	Articles of cement, of concrete or of artificial stone, not elsewhere specified	Hazardous waste and storage and treatment equipment
700800	Multiple-walled insulating units of glass	Heat/energy savings and management

SOURCE: BUCHER, ET AL, 2014

The growth of the global market for environmental goods presents opportunities for South Africa. A recent study, for example, identified four priority areas in which South Africa could succeed in exporting or substituting imports, namely: small-scale solar energy, water technologies, the biogas-to-transport value chain, and emerging biocomposite materials (Montmasson-Clair, et al., 2017). Taking advantage of these opportunities, however, relies on a global market that is accessible to South African firms. Accessibility requires both reducing export barriers, and maintaining sufficient policy flexibility to facilitate the development of the industry, as well as necessitating the country being engaged in the emerging governance infrastructure for the global trade in environmental goods.

Central to this governance infrastructure is the WTO's work on the Environmental Goods Agreement (EGA). The EGA is plurilateral (a multi-stakeholder set of negotiations that takes place outside the core multilateral process), and involves 17 individual member states and the European Union (EU), as can be seen in Table 3.[4] Talks officially began in July 2014, and were scheduled to proceed in two phases, the first focused on tariff barriers, and the second moving on to non-tariff issues. At the commencement of the discussions, WTO Director-General Roberto Azevedo noted that "(a)bove and beyond the economic benefits that enhanced trade in environmental goods will deliver, we remain conscious of the positive role that trade can play in environmental protection. The topic of environmental protection is of utmost importance in the WTO and the liberalisation of environmental goods is also a significant element of negotiations under the Doha Development Agenda" (WTO, 2014).

The EGA includes most major developed world economies (the US, EU, Japan) and a few developing and small developed countries that are particularly ive in trade negotiations (including China, Chile, and New Zealand). Like all WTO plurilateral agreements, the EGA will have an open ascension policy, meaning other member states could become signatories at any time, but the deal is nevertheless notable in its lack of representation from the Least Developed Country (LDC) group, African countries or from the influential India, Brazil, South Africa (IBSA) bloc.

TABLE 3: PARTIES TO THE ENVIRONMENTAL GOODS AGREEMENT

Parties to the EGA	
Australia	Korea
Canada	New Zealand
China	Norway
Costa Rica	Singapore
European Union	Switzerland
Hong Kong, China	Liechtenstein
Iceland	Chinese Taipei
Israel	Turkey
Japan	United States

SOURCE: WTO, ENVIRONMENTAL GOODS AGREEMENT (EGA), HTTPS://WWW.WTO.ORG/ENGLISH/TRATOP_E/ENVIR_E/EGA_E.HTM

[4] At the time of announcement in January 2014, the EGA comprised a smaller group of countries that initially excluded Israel, Iceland and Turkey.

The composition of the EGA is concerning, given the lack of representation by the traditional opposition voices to the positions advanced by the EU-US bloc. Plurilateral deals are already extremely controversial and often accused of being used to undermine the multilateral negotiating system. Developing countries, moreover, are the most likely to import sustainable technologies.

South Africa's absence from the group is a result of a principled stand against the use of plurilaterals, which are accused of undermining the commitment of all countries to the multilateral trading system, at the expense of smaller and less developed member countries. As the then-Ambassador to the WTO, Faizel Ismail, noted in the run-up to the Bali negotiations in 2013: "Major developed countries insist on 'new pathways' that shift the focus of the WTO to the issues and interests of developed countries and plurilateral approaches that exclude the majority of developing countries" (Polity, 2013). Nevertheless, the group does represent a large part of both the market for and productive capacity of environmental goods. Except for India and Brazil, the largest players in the environmental goods space are represented.

Goods included in the EGA can be placed into three categories: goods that have greener production methods, goods that are greener in their end use (for example, renewable energy), and goods that are more environmentally friendly in their disposal (for example, biodegradable plastics) (ICTSD, 2009). Nevertheless, the EGA is a trade negotiation and, as a result, features products that are added for national interest reasons, rather than for particularly green reasons. There is no clear check on the sustainability of goods, beyond what the other negotiating parties allow. Even when there is a good-faith effort to select green goods, this is difficult in trade negotiations, as the Harmonised System by which traded goods are categorised is not so detailed as to easily allow for the targeting of green products only. A component that may be vital for biomass boilers, for example, is not easily distinguishable from components for a boiler used in conventional industrial processes. The combination of these issues means the EGA could easily stray from its environmental basis, and that negotiations could feature traditionally fiercely contested goods, such as automotives, which could stall talks.

The specific list of goods under discussion changes rapidly and is kept private by the parties, but leaks are common. As of September 2015, the initial list included 650 product lines (European Federation for Transport & Environment, 2015), with a later version in December 2016 suggesting the list had since been winnowed down to 300 products (ICTSD, 2016). Of these, substantial agreement between negotiating parties was reportedly reached on 250 goods, while another 50 remained contentious. These include products that arguably have tenuous environmental benefits, such as a range of multi-purpose chemicals, as well as products such as bicycles which are good for the environment but the rollout of which is likely not restrained by tariffs.

The composition of the EGA is concerning, given the lack of representation by the traditional opposition voices to the positions advanced by the EU-US bloc.

Despite evidence of a strong level of consensus, the EGA finds itself in a difficult moment for the global trading system, and the WTO in particularly. Even before the rise of protectionist regimes in core trading countries, like the US, WTO talks were largely stalled. Though the completion of the Trade Facilitation agreement in Bali in 2013 was a small victory, no major agreement has been reached on core goods trade since the start of the Doha round in 2001. While the selective group of participants to the EGA may hope to circumvent most of the deep fault lines in the WTO, it seems hard to see

how the anti-trade and anti-renewable energy leadership of the US would agree to sign on to the EGA. And even if they did, there are fundamental questions about the capacity of the EGA to create benefits if it remains isolated among a small group of already open economies (as discussed in Section 3).

The stasis in multilateral trade negotiations has pushed discussions from WTO negotiations to regional blocs and international organisations. Trade in environmental goods has a relatively less established presence in these organisations, but there are exceptions, notably in the case of the APEC.

The 2012 meeting of APEC in Vladivostok saw the group agree to reduce tariffs on 54 environmental goods to a bound maximum of 5% by 2015 (APEC, 2012). The group announced in 2016 that all countries had met these commitments (APEC, 2016). Prior to the initiative, among all APEC countries, 808 of the 1 854 tariff lines covered by the list were set above 5%. Many of these tariffs were already quite low, with an average tariff for the 'above 5%' product group of 8.4% (Vossenaar, 2013). There are nevertheless some major exceptions, notably a big fall in China's 35% tariff on solar water heaters. The impact of these changes is unevenly dispersed within the group, with the US only having 11 tariff lines above the 5% threshold prior to the agreement, and Korea having 163 tariff lines above the threshold (ibid). The progress within the APEC is the most significant completed on environmental goods thus far, but, as is discussed below, much of this progress can be attributed to the competitive dynamics of the region, where a few ultra-competitive producers (like China and the US) have little need for protection, and the remainder are mostly non-producers and thus have little need for tariffs.

Few regional blocs outside of the APEC are actively discussing trade in environmental goods. Regional bodies frequently mention environmental issues, but have made little progress. In a sense, however, APEC's success in this area may be indicative of their failures to conclude broader trade agreements. Unlike the SADC or other regional organisations, APEC does not have a free trade agreement, and therefore has no pre-existing deal that includes environmental goods. For regional blocs with existing trade deals, talks on the specific basket of environmental goods are subsumed into broader agreements. In the Southern African Development Community (SADC), for example, the region's preferential trade agreement already eliminated tariffs on all of the environmental goods identified by APEC (although some individual SADC countries may have exceptions). The greater the overlap between established trade agreements and the lists of environmental goods, the weaker is the incentive to engage in talks on only the handful of remaining tariff lines, and the greater the likelihood that those goods will be sensitive (given that they were left out of the broader agreement).

Because of this, regional blocs are in some ways a more difficult prospect than the WTO, at least in this specific area. With the development of a run of free trade agreements among regional bodies in the 1990s, most have moved beyond discussions of formal trade barriers and on to non-tariff barriers and other issues. Where formal barriers remain, they are often confined to the most contentious issues, and are not an easy target for a green trade agreement. Leaving aside the Southern African Customs Union (which is already fully liberalised), South Africa's regional trade regime involves three different regional blocs, each with their own complicated relationship with green goods.

SADC signed a comprehensive trade agreement in the form of the 2005 amendments to the SADC Protocol on Trade, and has since substantially shifted focus away from tariff discussions (SADC, 2005). The current focus is on developing a regional industrial policy, which does include reference to the need to transition to a green economy as a cross-cutting issue, but which has solidified a view of policy advancement that is very different from the negotiated liberalisation that underpins talks on the EGA (SADC, 2015).

While these newer issues are more difficult to negotiate, they do make sense as a new avenue for

progress, since tariffs are not a substantial barrier for trade in environmental goods in the region. All the 164 tariff lines identified above as relating to environmental goods are duty-free for trade within countries covered by the SADC Protocol on Trade (although some derogations among individual countries may exist).

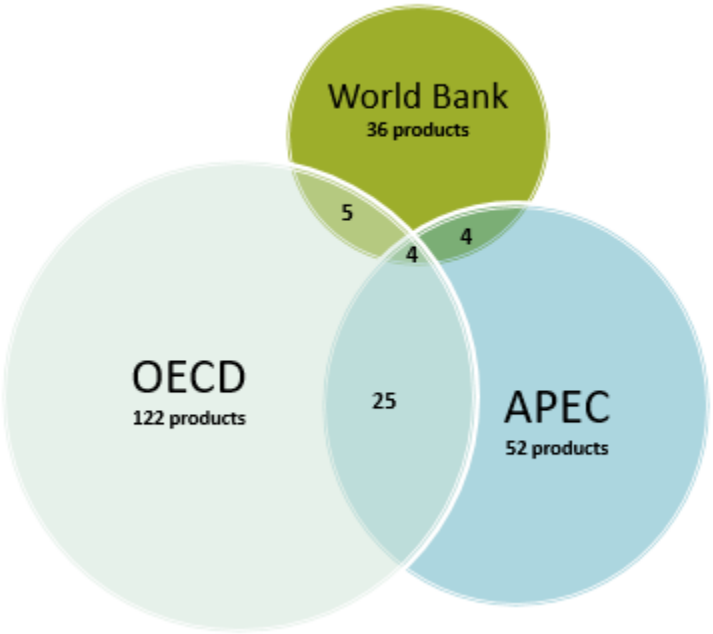
This low level of protection highlights the opportunity offered by trade within the region. Tariffs remain on 47 of those 164 tariff lines for countries trading on a most-favoured nation basis, and while important trade blocs, like the European Union, do have preferential access, the market access available to SADC countries can serve as a starting point for deepening regional trade.

This opportunity may be enhanced by the two additional blocs in which South Africa is participating or negotiating. The Tripartite Free Trade Area (TFTA), the cooperative deal between the three major Southern, East and Central African trade blocs, was agreed and announced on 10 June 2015, and completed work on a range of essential technical annexes like rules of origin in July 2017 (Tralac, 2017). The deal should extend SADC market access across much of the continent, but does not offer much beyond that, because of the unique structure of the TFTA. Since the TFTA is not so much a deal between its 27 negotiating parties, but rather between the three blocs, there is relatively little space for separate negotiating strands. Further progress may be possible in the Continental Free Trade Area, but the CFTA remains preliminary, with the modalities still being fleshed out. Even once negotiations get under way in earnest, the idea of negotiating a continental level agreement is a massive task and could easily span a decade or more.

Tariffs are already low, and may drop further, but they are not the primary barrier to trade in environmental goods in the region. Three key barriers are more pressing. First, the regional market for environmental goods remains quite small. While it is growing rapidly, the short-term prospects are concentrated in a handful of large markets. This means the likes of South Africa will need to act as a driver of trade in environmental goods in the short term. Second, well-established regional non-tariff barriers, like logistics, customs, and finance, remain serious barriers to trade, and are likely far costlier than tariff barriers. Third, a set of non-tariff barriers focused specifically on environmental goods, which are discussed below, affect the region as well.

Outside regional economic communities, work among international organisations has largely focused on creating lists of products that could be defined as environmental goods. The World Bank published a list of 36 products in 2007 (World Bank, 2007), as an attempt to winnow the longer initial list of environmental goods discussed by the WTO. The OECD published its list of 122 goods in 1999 which, stemming from a collaboration with Eurostat, was primarily an attempt to define the industry and create a basis for statistical measurement of environmental goods (EU, 2015). As can be seen in Figure 4, the various lists only barely overlap, highlighting the divergent nature of the products identified by the different groups. A full analysis of what comprises these lists is included in Section 2.

FIGURE 4: OVERLAP AMONG PRODUCTS IN THREE LISTS OF ENVIRONMENTAL GOODS



SOURCE: AUTHOR'S COMPOSITION

Efforts to create a list of environmental goods are an important stage that could enable more coordinated action on the topic, but real progress in negotiating liberalising environmental goods is scarce. The WTO talks are consistently reported as being close to resolution, but these claims should be treated with caution, considering both the difficulties the WTO has had in finalising agreements, and political changes in important negotiating countries like the US. Similarly, shallow regional agreements, such as the APEC agreement, are easy in the absence of more substantial agreements and pre-existing low tariffs in the bloc. Outside those two cases, there is little evidence of advances. That does not mean that trade policy is not affecting trade in environmental goods, but it does indicate that negotiations are not currently the primary mechanisms by which that happens.

2.2. Recommendations

South Africa faces a global trading environment with three established governance levers: the work on the EGA at the WTO, the technical definitional work of international organisations, and the work of regional bodies outside the African continent. All these processes take place in trading blocs or international organisations to which South Africa is not a party or in which it has minor influence. And yet, actively engaging with this international space is vital to ensuring that South Africa's nascent environmental goods industries have the market access they need to grow.

While the Environmental Goods Agreement may seem the most obvious forum for which to advance South Africa's environmental trade agenda, it poses problems. Perhaps the most important is the plurilateral structure of the agreement, which limits the benefits on offer, and works to further undermine the multilateral trading system. While some would argue that plurilaterals offer a more practical negotiating forum through which to make

progress on WTO issues, they run the risk of balkanising trade into a number of agreements that work for the negotiating parties, but are inappropriate for those outside the negotiations. The result is a collection of agreements that are technically open to accession by all, but are practically only available to a select group of economies that would benefit from the deal. Creating a trade agreement that works for all requires the arduous process of hearing from all, and the plurilaterals' undermining of consensus negotiations invalidates their usefulness for the global trading system.

South Africa has taken a principled stance not to participate in plurilaterals, and should not break on this unless the EGA offers substantial benefits. This is unlikely. Leaving aside uncertainty over whether the EGA will be agreed, any possible final agreement would seem to focus primarily on tariffs. Tariffs are not the major barrier to trade in environmental goods. Most tariffs are already low, with the more robust protectionism coming in the form of non-tariff barriers, such as local content requirements. The mis-targeting of tariff barriers by the EGA offers limited benefits to South Africa, yet the EGA would be politically unpalatable if it targeted the behind-the-border issues that are the major barriers to trade in environmental goods. Thus, whatever approach is taken, the EGA does not seem to offer enough to reverse the country's position on plurilaterals.

South Africa then should focus its efforts on laying the groundwork for more effective trade in environmental goods that do not require a large trade agreement. The central effort should be lobbying towards a revision of the Harmonized System (HS) that is used to classify traded goods. Many of the highest barriers to green goods are not caused by a direct attempt to protect an environmental industry, but result from environmental goods being classified into the same categories as more traditional sensitive products. Solar components, for example, may face trade barriers that are targeting television components, as both have central parts that fall into the LCD category. This is particularly important for South Africa, because so many of the potential export opportunities suited to the country's industrial structure are in intermediate parts for green goods. These intermediate components are most likely, however, to be categorised into broad categories that are unlikely to be liberalised for environmental reasons, because they stretch across so many industries. Lobbying for an HS that allows countries to distinguish green components may make it worthwhile for potential component exporters, like South Africa, to take part in future environmental goods agreements. But, more importantly, it would allow countries to be more selective in what products attract trade protectionism, and may help spark a lowering of trade barriers in environmental goods, while still providing adequate policy-space to protect sensitive goods.

Beyond the global space, the Southern African region is a bright prospect for South Africa's trade in environmental goods, however there is much less to be said for a strategy to reduce barriers or promote this specific bundle of environmental goods. Formal barriers like tariffs are already very low, and it is unclear how additional work streams on areas like industrial policy will be put into effect.

The core recommendation to promote trade in the region is that any approach should not focus exclusively on environmental goods. Regional barriers are cross-cutting, and more progress could be made through a combination of promoting local industrial development and eliminating the biggest barriers to trade in the region, by streamlining border posts, upgrading road, rail and port infrastructure, smoothing unnecessary regulatory differences, and deepening regional value chains. These problems have not proved easy to solve, but they must be the priority.

In some cases, trade policy needs to specialise in areas like environmental goods; in others the focus must remain on the fundamentals. Getting the basics right should be the highest priority.

3 Navigating non-tariff barriers to trade in environmental goods

3.1. Diagnostic: Large non-tariff barriers with no obvious way forward

While green trade is subject to a range of non-tariff barriers that affect all products, such as cumbersome customs procedures and misaligned standards, two forms of obstacles that are specific to green goods are particularly prevalent.

First, are a set of trade barriers aimed at preventing "dirty" products from entering an economy. Many of these are commonplace in trade negotiations. The US, for example, has clauses that stipulate minimum environmental standards in 13 of its 14 trade agreements (US State Department); while a range of countries are debating border carbon adjustments, which would levy a tax on imports to assure they pay the equivalent of domestic carbon taxes. The stated reason for this green protectionism is two-fold. The first is to promote environmental protection among trading partners; the second, is to create a level playing field for local producers in countries that have high environmental standards. Both are contentious. The biggest problem is that developing countries rarely have the same level of environmental controls found in developed countries, and often have hard limits on the capacity of firms to implement these controls, such as being embedded in a coal-intensive power system (as is the case in South Africa) or having limited capacity to make the complex changes to production processes needed to comply with environmental standards. This opens developing country imports to the threat of being blocked by developed economies, under the electorate-friendly packaging of environmental protectionism. For firms that are thus forced to adapt their production processes, the results are often not a "levelling of the playing field", but a closing off of routes that firms might otherwise have been able to take to compete against the productive advantage frequently wielded by developed economy firms.

Environmental protectionism tends to be highly idiosyncratic, differing from agreement-to-agreement and country-to-country. A full scoping of the various challenges these protections offer is thus beyond the scope of this paper. Nevertheless, closely monitoring the rise of green protectionism is vital, and South Africa must be active in both lobbying against unfair protectionism and

equipping firms to grapple with trade barriers where they cannot be avoided.

Equally pressing, however, and the focus of this section, are a range of obstacles that result from intentional policy decisions aimed at slowing the flow of green goods into a country and instead promoting local industry. As can be seen in Table 4, a range of barriers are commonplace. While these barriers are seen across multiple industries, they are particularly prevalent in the case of green goods, because the sustainability transition is typically either a state-led process or centralised enough to provide a great deal of state oversight and control. This allows for the rollout of preferential procurement schemes or the introduction of special requirements through policies like feed-in tariffs for renewable energy, which can sometimes act as *de facto* subsidies.

TABLE 4: STATE INTERVENTIONS IN RENEWABLE ENERGY AS OF 2014

Support measure	Countries utilising
Feed-in tariff	Australia; Austria; Canada; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Israel; Italy; Japan; Luxembourg; Malta; Netherlands; Portugal; Slovakia; Slovenia; Spain; Switzerland; United Kingdom; Algeria; Argentina; Bosnia/Herzegovina; Bulgaria China; Dominican Republic. Ecuador; Iran; Jordan; Kazakhstan; Latvia; Lithuania; Macedonia; Malaysia; Mauritius; Montenegro; Panama; Peru; Serbia; Thailand; Turkey; Uruguay; Armenia; Ghana; Honduras; India; Indonesia; Lesotho; Moldova; Mongolia; Nicaragua; Nigeria; Pakistan; Palestinian Territories; Philippines; Senegal; Sri Lanka; Syria; Ukraine; Kenya; Rwanda; Tajikistan; Tanzania; Uganda
Direct capital subsidy, grant, rebate or favourable loan	Australia; Austria; Canada; Croatia; Cyprus; Czech Republic; Denmark; Finland; France; Germany; Greece; Hungary; Italy; Japan; Luxembourg; Malta; Netherlands; Norway; Oman; Poland; Portugal; Slovakia; Slovenia; South Korea; Spain; Sweden; Switzerland; United Kingdom; United States; Argentina; Bosnia and Herzegovina; Botswana; Bulgaria; Chile; China; Dominican Republic; Russia; Turkey; Uruguay; Egypt; Ghana; India; Indonesia; Lesotho; Nigeria; Pakistan; Philippines; Sri Lanka; Vietnam; Bangladesh; Kyrgyzstan; Nepal; Tanzania; Uganda; Zambia
Local content requirement	China (Wind, 1997); Brazil (Wind, 2002); India (Solar, 2010); Canada (Wind, 2003; Wind/Solar, 2009); Ukraine (Wind/Solar, 2013); US (Wind/Solar/Others, 2009); Spain (Wind, 1994); Italy (Solar, 2011); France (Solar, 2012); Croatia (Wind/Solar/Others, 2012); South Africa (Wind/Solar, 2011); Turkey (Wind/Solar/Others, 2011); Argentina (Wind, 2005); Malaysia (Wind/Solar/Others, 2010)
Financial or tax incentives for local manufacturing	UK (Green Products, 2009); Brazil (Wind, 2009); US (Wind/Solar/Others, 2009)
Use of customs duties/import tariffs to favour domestic goods or promote domestic manufacturing	Brazil (Wind, 2009); Russia, Belarus and Kazakhstan (Solar, 2010); China (Wind, multiple years); Venezuela (all electricity generation products, 2009)
Export credit assistance	Denmark (Wind, various years); United States (Green Products to Korea, 2009; Renewable Energy (RE) to Abu Dhabi, 2013; Others); OECD (All RE, 2012)
Research, development and demonstration support for domestic companies	China (Wind, Solar, various years); United States (Solar, Offshore Wind; 2011/2013); Denmark (Wind, various years); Germany (Wind, Solar, various years)

SOURCE: LEWIS, 2014.

On balance, three types of barriers are particularly important: local content requirements, subsidies, and extensive research and development funding.

Local content requirements remain particularly important, largely because the rollout of green goods is closely linked to a state process, and the intertwining of procurement in issues such as the rollout of renewable energy means there are large levers for using local content rules. Green sectors are not unusual in this regard, with most developing countries employing some form of local content provision in strategic industries (UNCTAD, 2014). Local content requirements have traditionally been successful in stimulating short-term growth across a range of industries, but questions have remained about the long-term

sustainability of these efforts. Long-term benefits seem to rely on adequate support to allow firms to become competitive across time, or depend on consistent long-term procurement, which is unlikely to be feasible in some green industries, like renewable energy, but may be possible in others, such as water technologies.

Box 1: South Africa's Renewable Energy Independent Power Producer Procurement Programme

The REIPPPP has driven a rapid expansion of renewable energy in the country since **2011**, with

102 projects

contracted into the programme

and the potential to generate

6 138 MW of power

For a country like South Africa, public procurement and LCRs have been essential to the development of green industries. The Renewable Energy Independent Power Producer Procurement Programme (REIPPPP) has driven a rapid expansion of renewable energy in the country since 2011, with 102 projects contracted into the programme and the potential to generate 6 138 MW of power. The REIPPPP includes local content provisions, particularly for solar panels, although these came through too late for many of these projects. Regardless, the programme did generate local content community development benefits.

TABLE 5: ECONOMIC DEVELOPMENT REQUIREMENTS FOR REIPPPP PROJECTS

Economic development elements	Minimum threshold	Maximum target
Job Creation (South Africa)	Various indicators	
Job Creation (Local)	12% of RSA Employees	20% of RSA employees
Local Content	Differs by Technology	
Ownership (BEE)	12%	30%
Ownership (Community)	5%	2.5%
Management Control	0%	40%
Preferential procurement	Various indicators	
Enterprise development (ED)	n/a	0.6% of project revenue
Socio-economic development (SED)	1% of project revenue	1.5% of project revenue

SOURCE: WWF, 2015

The types of local content provisions used in the REIPPPP are probably legal under WTO rules, because the contracting party is state-owned energy utility Eskom, and state-owned enterprises are surprisingly not regarded as the state under the Subsidies and Countervailing Measures Agreement. They also created real benefits for South Africa, with a substantial share of the REIPPPP spend going to local content. While most local assemblers and manufacturers have closed due to uncertainty over the programme, the REIPPPP nevertheless created local manufacturing capacity for global firms, such as Jinko Solar, DCD Wind, SolaireDirect and ARTsolar.

South Africa offers an illustrative example. The local industrial capacity developed to conform to local content requirements for the REIPPPP (explored in Box 1) was quickly decimated by the stalling of the programme, with most local producers believing their South African operations were not worthwhile without consistent demand from government procurement. Local Content Requirements (LCRs) can fail, but rapid dismantling of these types of initiatives seems to offer little chance of developing new industries in areas where existing industrial capacity does not exist, and runs the risk of destroying what has already been developed.

From a trade perspective, a crucial question remains the extent to which LCRs limit export potential. If they do, then the widespread adoption of local content may limit most countries to hosting small industries that have a captured market locally, but have no realistic hope of exporting goods. Different countries will have different experiences. LCRs have a negligible effect on exports of high-tech, often proprietary components like solar LED modules, but affect the type of common parts that are easy to make much more. This imbalance risks benefiting developed countries, that produce the higher-end parts, and harming developing countries, where industry tends to focus on simple fabrication. This can be particularly worrying for efforts to integrate into global value chains, where intermediate goods, which are simple enough to fabricate but expensive enough to contribute significantly to an LCR, are pulled from the value chain by LCRs. A study by the OECD found that 80% of declines in exports that result from LCRs are in intermediate goods (OECD, 2016). The same study found that an LCR in one sector reduces exports in all other sectors, as higher costs in the LCR-protected industry leads to losses of competitiveness for all industries connected to it via a value chain (ibid).

Given the uncertainty around LCRs, there is an impulse in some quarters, such as the US (prior to 2017), to pursue trade rules that limit their use. This has been sought by those pushing to review the WTO's Agreement on Government Procurement, and was a popular approach in many of the next generation behind-the-border trade deals pursued by the US prior to the new administration, such as the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership. Given how important LCRs are to the growing local manufacturing in so many developing countries (such as South Africa), this approach is a non-starter. It does not have adequate political support from any major trading nation outside the developed world, and is clearly not the right approach, given the proven short-term development results of local content rules.

From a policy perspective, the greater focus should be on adapting trade and industrial policy to a world that will remain dominated by LCRs. LCRs by no means present insurmountable barriers to trade in environmental goods, but they demand greater awareness of a complex export market from those developing industrial policy. With few simplified central sources of information on where LCRs exist, it is difficult for policymakers to understand the potential of their exporters, even when facing a global market with low tariff barriers. Deeper understanding of the limits imposed by LCRs is essential.

Outside local content, subsidies in various forms remain the most significant non-tariff barrier. Few outright subsidies remain in place, and most follow one of two channels. The first, specifically in renewable energy, is feed-in tariffs for renewable energy that are well in excess of costs, and that include provisions that give preference to local manufacturers or suppliers. This is, again, a grey area between legitimate industry creation and excessive trade-distorting support. South Africa, for example, began the REIPPPP with prices for solar PV that were 300% higher than current prices. This was an intentional move designed to make investment in the solar industry attractive, until such a point that the industry reaches sufficient scale and efficiency to allow the price to come down. More concerning are when high prices are maintained for long periods, and take the form of *de facto* subsidy that gives firms a large base of

domestic income from which to leverage to enter foreign markets.

Apart from feed-in tariffs, other forms of subsidies, notably those flowing towards research and development (R&D), distort trade. This is the more common model in developed economies, such as the US and the EU, and raises many of the same questions as feed-in tariffs do. Developing newer, more efficient technology is good for the planet and for industry, but developing that technology for certain firms in certain countries can be distorting for trade. Again, access to these subsidies is not always limited to firms from the countries in which they are offered, but it is commonplace to have eligibility restrictions that favour local firms.

The constant connecting thread between these non-tariff barriers is that none of the policies are necessarily undesirable, even when they are trade distorting. All are good industrial policy levers that could create local industries that benefit from the transition to sustainable development pathways. While this might sometimes result in slightly more expensive or less efficient green technologies, the creation of a vested interest in the green process can facilitate buy-in from the public and from firms, and this can create support for the transition to a green economy beyond arguments on environmental sustainability.

Nevertheless, while these policies may develop local industry, they do likely undermine foreign trade. This is often difficult to sustain for smaller economies, particularly because of the boom and bust nature of markets based on public procurement, which might see times of massive expansions of renewable energy generation capacity, alternating with times of simple maintenance of the existing fleet. Local manufacturers in smaller economies would ideally shift production to exports during the troughs in demand, but this is difficult when barriers in other countries force a reliance on domestic markets. Even then, access to export markets may be impossible without these supporting policies creating an industrial base in the first place. The embrace by the global community of these interventions (like LCRs) may limit access to export markets, but firms that do not have adequate space to develop (through the likes of LCRs) will never reach the scale to export in the first place. Non-tariff barriers in green industries thus face a familiar trade policy conundrum: trade protectionism is great until everyone starts doing it.

From a policy perspective, the greater focus should be on adapting trade and industrial policy to a world that will remain dominated by Local Content Requirements

Few negotiating platforms are likely to create change in these non-tariff barriers in the short term, but these policies are still shaped by actions taken by dispute settlement at the WTO and unilaterally through countervailing measures. For all the WTO's problems, the Dispute Settlement Body (DSB) remains a highly respected centre for adjudicating trade disputes, and has been active in the environmental goods space, most notably in renewable energy. The DSB lists six recent disputes in the area of solar and wind energy, as can be seen in Table 6.

TABLE 6: WTO DISPUTE SETTLEMENT BODY CASES INVOLVING SOLAR AND WIND ENERGY

Year Commence	Respondent	Complaint	Description	Status
2012	United States of America	China	China challenged countervailing measures adopted by the US over alleged subsidies paid to a number of products, including solar panels and wind towers	The panel ruled in favour of China in some respects, and asked the US to adjust its measures. No finding was made on wind towers.
2013	India	United States	The US challenged India's local content provisions in its national solar programme.	The panel ruled in favour of the United States
2010	Canada	Japan	Japan challenged Canada's local content provisions in the state of Ontario's feed-in tariff programme.	The panel ruled in favour of Japan on local content, but in favour of Canada on whether the feed-in tariff represented a subsidy.
2012	EU (Italy, Greece)	China	China requested consultations with the EU, Greece and Italy about certain measures, including domestic content restrictions, that affect the renewable energy feed-in tariff programmes	Ongoing
2016	United States of America	India	India challenged local content provisions and subsidies in eight US states.	Ongoing
2010	China	United States of America	The US challenged a selection of grants, funds and awards to wind energy manufacturers in China.	Ongoing

SOURCE: AUTHOR'S COMPILATION, BASED ON RECORD ON WTO DSB WEBSITE.

Most of these disputes centres around either subsidies provided to manufacturers or efforts to integrate local content requirements into feed-in and other procurement programmes. The subsidy issues have received a great deal of attention, largely because of China's controversial use of large subsidies to develop the solar PV and wind sectors. Subsidies are, however, highly idiosyncratic, and largely depend on a specific set of circumstances, limiting their importance in setting trade precedent.[5] Far more influential has been the DSB's rulings on the use of local content provisions in procurement programmes by India and the Canadian state of Ontario, both of which have established a precedent ruling that local content requirements are not in alignment with WTO obligations. This has far-reaching consequences, because at least 14 major markets, including South Africa, use local content rules. The ruling does not necessarily establish a precedent in all cases, and will not apply unless a country is challenged at the DSB (a step usually reserved for large economies),

[5] The governance of subsidies under WTO rules is complex, but the general rule applied is that subsidies are illegal under WTO rules in cases where they distort trade. While this is clear in cases where subsidies explicitly target import substitution or export promotion (prohibited subsidies), it is more complex to establish in more domestically-focused subsidies that may nevertheless have an impact on trade (actionable subsidies). In the latter case, the dispute settlement body makes a ruling based on the specifics of the subsidy in question.

but nevertheless demonstrates how the global governance of trade in environmental goods is powerfully influenced by dispute settlement procedures.

Outside of the WTO, countries have unilaterally blocked trade over the use of certain support provisions. A selection of these can be found in Table 7. As can be seen in the table, such moves remain clustered among the core group of large economies that have been making use of the DSB, but with a greater emphasis on using anti-dumping or countervailing duties as the core driver for their intervention, largely because these measures can be used by countries without external deliberation. The use of these measures, and the fact that they cross the major markets and producers of environmental goods, mean that talks in trade disputes must be considered alongside direct trade negotiations as playing a vital role in the broader global governance framework for trade in environmental goods.

TABLE 7: SELECT CASES OF BILATERAL TRADE ACTION RELATED TO RENEWABLE ENERGY, UP TO 2014

Date Launched	Dispute Type	Forum	Complainant	Respondent	Industry or Programme Targeted	Status
November 2011	Anti-dumping/counter-vailing duties (AD/CVD) Investigation	US Department of Commerce / ITC	United States	China	Solar panels	Tariffs in place, appeal filed to expand scope
November 2011	LCRs	Ministry of Commerce, People's Repuboic of china (MOFCOM)	China	United States of America	State-level RE support programmes	Pending
July 2012	AD/CVD investigation	MOFCOM	China	United States of America, South Korea, European Union	Polysilicon	Pending
July 2012	AD/CVD investigation	European Commission	European Union	China	Solar panels	Price undertaking arranged, including an import quota and minimum price
January 2012	AD/CVD investigation	US Department of Commerce/ ITC	United States	China, Vietnam	Wind component	Tariffs in place
November 2012	AD/CVD investigation	Indian Ministry of Commerce	India	China, Taiwan, Malaysia, United States	Solar panels	Pending
November 2011	LCRs, subsidies	MOFCOM	China	United States	US State-level renewable energy support programmes	Pending

SOURCE: LEWIS, 2014.

While dispute settlement and countervailing measures can change the calculus of the use of measures like local content, they are unlikely to radically alter the global environment. Disputes tend to be clustered around the large economies, and most countries approach the use of countervailing measures cautiously, wary of damaging broader relationships that stretch well beyond environmental goods. Monitoring of such unilateral measures is, however, essential.

3.2. Recommendations

Non-tariff barriers are by far the most serious barriers facing trade in environmental goods, but that does not mean the focus should be on eliminating them. All the barriers identified above play a vital role in promoting local manufacturing development and accelerating the sustainability transition. The drive to promote trade in environmental goods will founder if it attempts to bring an end to a range of beneficial interventions that command political support. As such, South Africa's strategy in managing non-tariff barriers must focus on models that improve the trade performance of these interventions, and equip firms to overcome distortions. Of these, two core recommendations are important.

First, where negotiations do take place on environmental goods, countries should consider the potential to introduce clauses that allow for cumulation of local content.[6] While the legality of such a clause would be questionable under the Enabling Clause,[7] they would allow for new regional engagement on the new types of trade barriers facing exporters. The cumulation of local content would work in a similar way as it does for origin: a good would count as local whether it was produced in country or in a regional partner subject to the agreement. Such an agreement would be controversial, but would allow for a more efficient distribution of production within a region, while still creating benefits for the countries involved. For example, smaller countries, which tend to find LCRs unfeasible, could have a useful negotiating chip in talks with their larger neighbours. If a country aims for environmental progress above all, the cumulation offer could be traded for funding from the host countries of the export firm, allowing for a more rapid transition to a green economy. But the core benefit would likely be to allow countries to compete like-to-like, using LCRs to avoid unproductive import competition from advanced countries, while still competing against regional neighbours, and thus gaining access to potential export markets that could sustain locally-developed industries in the future, and build the scale needed to compete in other export markets further afield.

Non-tariff barriers are by far the most serious barriers facing trade in environmental goods, but that does not mean the focus should be on eliminating them

Second, and perhaps most importantly, trade policy must rather focus on equipping firms to deal with distortions, rather than attempting to remove them. All the strategies detailed above are long term, and will move only as quickly as the system of trade negotiations. In the short term, South Africa's policy should be focused on identifying export opportunities that take into account industrial policy actions in the rest of the world, and help promote local manufacturing of goods

[6] Cumulation generally refers to rules of origin, the restrictions in trade agreements that define how much value a country must add to a product for that product to be said to have originated in that country. Cumulation of rules of origin allows for the value added by certain third countries to count as local value added. For example, a product that is made in South Africa, using components from Botswana, and exported to the EU could count a portion of those Botswanan components as "locally-made", because all three are party to an Economic Partnership Agreement that allows for some cumulation of origin.

[7] Regional trade agreements are technically in conflict with many WTO rules, but are exempt from these conflicts through the enabling clause, which allows for regional agreements to form the building blocks of broader trade integration.

that are not caught up in the distortions of the rest of the world. Montmasson-Clair, *et al*. (2017), for example, explores South Africa's industrial development opportunities within the embedded generation, biogas-to-transport, water and biocomposite sectors, and more sector targeting of this sort is needed.

A full scoping should be undertaken on the global context of trade restrictions in the environmental goods space. Where South Africa's productive capabilities coincide with sectors that are highly protected, the government should support industries in navigating the often-onerous requirements for exports, including providing preferential trade finance as needed. Building export capacity of industries that develop through local content and related policies is essential to free up resources to support ever-more sectors, and thus a concentrated effort is needed to help firms overcome the barriers identified here, such as differing standards or local content rules.

4

Conclusion

The growth of trade in environmental goods, and the broader green economy, is not a simple process of market development. It is a messy combination of state support, international agreements, rapid technological change and, of course, the actions of many different firms. Conceiving of the green goods market in isolation from this messiness may lead to a range of simple interventions aimed at unpicking trade barriers like local content rules. Embracing the messiness, and acknowledging factors like the challenges of creating new industries and maintaining buy-in for the greening process, shows that such an approach would be misguided.

Trade policy cannot view the environmental goods space as another set of tariffs to reduce. Rather, it must view it as a space that requires innovative collaboration to assure that necessary policy support to domestic industries does not undermine the long-term sustainability of the industries they are trying to create. The surest way for the transition to a sustainable future to maintain momentum is for it to benefit as many people as possible. This means maximising trade while protecting the capacity of states to develop their local industries.

Trade policy cannot view the environmental goods space as another set of tariffs to reduce

South Africa must equip firms to deal more effectively with a highly distorted market, and give trade policy officials practical tools to make change, such as a revised HS system. Adoption of policies like local content at home must be joined to an understanding of the difficulties this creates when local content policies are used in potential export markets, and must be accompanied by a commitment to assisting South African exporters in navigating a more complex world.

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This policy paper proposes a South African strategy for trade in environmental goods

It forms part of a series of papers aimed at providing a barometer of South Africa's transition to sustainable development.

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