



The **E15** Initiative

STRENGTHENING THE GLOBAL TRADE AND INVESTMENT  
SYSTEM FOR SUSTAINABLE DEVELOPMENT



**Re-examining 'Green Light' Subsidies in the  
Wake of New Green Industrial Policies**

Mark Wu

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E15 Expert Group on Reinvigorating Manufacturing:  
New Industrial Policy and the Trade System

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7 Chemin de Balexert, 1219 Geneva, Switzerland  
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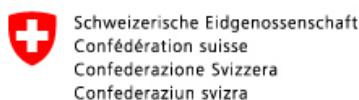
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# ABSTRACT

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For sustainable solutions to emerge to address climate change and other global environmental problems, investments are required at various points of the supply chain—from basic research and development (R&D) to commercialization. The level of investment may be sub-optimal or market failures may lead to price distortions, which cause consumer adoption of green goods to be lower than socially desired. Some governments have chosen to intervene to redress market failures. This is giving rise to a new wave of industrial policy, with a green tinge. Subsidies are a key instrument in operationalizing such an industrial policy. Of course, environmental considerations are not the only impetus behind green industrial policies involving subsidies. Complicating the narrative, governments often have additional motivations for such programmes. Further, it is not always the case that governments have the necessary capacity to tailor subsidy policies correctly without inducing waste. Subsidies associated with green industrial policies may introduce distortions and increase inefficiencies. The World Trade Organization's (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement) has sought to strike a balance between granting WTO Members sufficient policy autonomy to deploy subsidies to in pursuit of policy goals while limiting the negative impact of subsidies on trade. The SCM Agreement prohibits outright subsidies contingent on the use of domestic over imported goods and subsidies contingent on export performance. All others are permissible so long as they do not have an "adverse effect" on trading partners.

WTO Members are also permitted to impose countervailing duties (CVDs) in response to subsidies which cause material injury to the domestic industry manufacturing a "like" product. However, Article 2.1(b) of the SCM Agreement clarifies that a subsidy is to be considered non-specific if it is granted according to certain objective criteria or conditions that are strictly adhered to, and eligibility is automatic. For the first five years of the WTO (1995–99), the SCM Agreement contained a safe harbor available to all Members for particular forms of subsidies. These included certain types of research subsidies, subsidies providing assistance to disadvantaged regions, and subsidies promoting the adaptation of existing facilities to environmental requirements. These were classified into the legal category of "non-actionable subsidies." Colloquially, these were referred to as "green light subsidies."

The provision providing for "green light" subsidies was time-limited. On 1 January 2000, this safe harbor was not renewed by WTO Members, leading to its automatic expiration. Consequently, subsidies for industrial policies favoring renewable energy products are subject to WTO disciplines, just as they would be if they were designed for any other industrial good. However, disciplines on subsidies are not identical across WTO Members. Article 27 of the SCM Agreement provides for special and differential treatment of subsidies provided by least developed countries (LDCs) and a collection of select other developing countries. With the growing recognition that certain environmental products trigger positive externalities for climate change and other problems concerning the global commons, is it necessary to reintroduce a category of non-actionable "green light" subsidies for environmental goods?

This paper suggests that the disappearance of non-actionable subsidies in WTO rules has not greatly impacted the ability of countries to implement green industrial policies. It points out that some think reintroducing a category of non-actionable subsidies is unnecessary and/or undesirable, given the existing policy space for certain forms of subsidies that are not subject to effective challenge under WTO rules and because of the possibility of Type II errors. However, should one think that WTO rules ought to be altered to provide greater flexibility for subsidies for green industries, we must move beyond the original categories listed in Article 8 to consider additional approaches of the type the paper outlines. Whether such reforms work to spur greater investment and manufacturing capacity in green industries would depend on fiscal, structural, and political considerations, which differ by country. Under a certain set of conditions, however, the re-introduction of modified rules for environmental "green light" subsidies could serve to bolster a country's potential for green industrial policy. The question is whether the related gains for global public goods are significant enough to make it worthwhile to push forward on reforming WTO subsidy rules to offer greater policy flexibility, given that such subsidies are inherently distortionary.

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# LIST OF ABBREVIATIONS

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CVDs	countervailing duties
EC	European Communities
EU	European Union
FITs	feed-in tariffs
GATT	General Agreement on Tariffs and Trade
GDP	gross domestic product
GNP	gross national product
LCRs	local content requirements
LDCs	least developed countries
R&D	research and development
RET	renewable energy target
SCM Agreement	Agreement on Subsidies and Countervailing Measures
UN	United Nations
US	United States
WTO	World Trade Organization

# INTRODUCTION

For sustainable solutions to emerge to address climate change and other global environmental problems, investments are required at various points of the supply chain—from basic research and development (R&D) to commercialization. The level of investment may be sub-optimal because of the market's failure to take into account the positive externalities associated with a switch to green products and technologies. In addition, market failures may lead to price distortions, which cause consumer adoption of green goods to be lower than socially desired. Some governments have chosen to intervene to redress market failures. This is giving rise to a new wave of industrial policy, with a green tinge. Subsidies are a key instrument in operationalizing such an industrial policy.

Of course, environmental considerations are not the only impetus, nor necessarily even the main driving force, behind green industrial policies involving subsidies. Complicating the narrative is the fact that governments often have additional motivations for such programmes. These may include seeking—(1) to develop manufacturing and export competitiveness in an industrial sector where it is believed demand will grow over time; (2) to increase the number of manufacturing jobs; (3) to induce the transfer of technologies associated with the manufacturing of green goods; (4) to capture associated political benefits; (5) to provide rents to certain interest groups; or (6) to protect domestic firms from foreign competition. Any series of the above rationale, as well as others left unmentioned, can enter into the mix when making policy decisions. Further, it is not always the case that governments have the necessary capacity to tailor subsidy policies correctly without inducing waste. Therefore, simply because an industrial policy is green does not necessarily mean that it is welfare enhancing (from either a national or global level). Subsidies associated with green industrial policies may introduce distortions and increase inefficiencies.

The World Trade Organization's (WTO) Agreement on Subsidies and Countervailing Measures (SCM Agreement) has sought to strike a balance between granting (WTO) Members sufficient policy autonomy to deploy subsidies to in pursuit of policy goals while limiting the negative impact of subsidies on trade. The SCM Agreement prohibits two forms of subsidies outright—(1) subsidies contingent on the use of domestic over imported goods (that is, subsidies with local content requirements [LCRs]), and (2) subsidies contingent on export performance. All others are permissible so long as they do not have an "adverse effect" on trading partners.

WTO Members are also permitted to impose countervailing duties (CVDs) in response to subsidies which cause material injury to the domestic industry manufacturing a "like" product. However, certain forms of subsidies are not countervailable on the grounds that they constitute general, or non-specific, subsidies. Article 2.1(b) of the SCM Agreement clarifies that a subsidy is to be considered non-specific if it is granted according to certain objective criteria or conditions that are strictly adhered to, and eligibility is automatic. Footnote 2 further clarifies that objective criteria or conditions "mean criteria or conditions which are neutral, which do not favor certain enterprises over others, and which are economic in nature and horizontal in application, such as number of employees or size of enterprise."

For the first five years of the WTO (1995–99), the SCM Agreement contained a safe harbor available to all Members for particular forms of subsidies. These included (1) certain types of research subsidies, (2) subsidies providing assistance to disadvantaged regions, and (3) subsidies promoting the adaptation of existing facilities to environmental requirements. These were classified into the legal category of "non-actionable subsidies." Colloquially, these were referred to as "green light subsidies" in accordance with a traffic-light classification scheme for subsidies. Even if such subsidies produced adverse trade effects for trading partners, they were not subject to remedy according to Article 7 of the SCM Agreement.<sup>1</sup> Similarly, even if such subsidies caused injury to a domestic industry, the party benefiting from such a subsidy could not be subject to CVDs.<sup>2</sup>

The provision providing for "green light" subsidies was time-limited. On 1 January 2000, this safe harbor was not renewed by WTO Members, leading to its automatic expiration. Consequently, subsidies for industrial policies favoring renewable energy products are subject to WTO disciplines, just as they would be if they were designed for any other industrial good. However, disciplines on subsidies are not identical across WTO Members. Article 27 of the SCM Agreement provides for special and differential treatment of subsidies provided by least developed countries (LDCs) and a collection of select other developing countries.

With the growing recognition that certain environmental products trigger positive externalities for climate change and other problems concerning the global commons, is it necessary to reintroduce a category of non-actionable

1 Rather, remedies are subject to Article 9 of the SCM Agreement, which will be discussed later in this paper.

2 See footnote 35 of the SCM Agreement. Note that the footnote further clarifies that measures referenced in Article 8.1(a) may be investigated to determine whether or not the measure is specific. In addition, any non-actionable subsidy that has not been notified to the SCM Committee in line with Article 8.3 may be investigated, but such subsidy shall be treated as non-actionable if found to conform to the standards set forth in Article 8.2.

“green light” subsidies for environmental goods? In recent years, a growing number of CVDs are being imposed against environmental goods. Declaring certain types of subsidies to be non-actionable would be one mechanism to safeguard against the potential of the negative impact of CVDs. It would also enhance the policy certainty of governments, which may otherwise fear opening themselves up to a potential WTO case when providing a given subsidy.

Beyond the question of whether Article 8 should be reintroduced, there is also the question of its design. If a category of non-actionable subsidies were to be included again, should it conform to its original design or should it be modified for greater impact? This paper explores the above questions in the wake of the rising use of green industrial policies—by developed and developing countries—to promote the development of renewable energy industries.

## THE RISE AND FALL OF NON-ACTIONABLE SUBSIDIES

### THE DEVELOPMENT OF ARTICLE 8 OF THE SCM AGREEMENT

The concept of including a category of non-actionable subsidies as a safe harbor from subsidies disciplines was first floated in the Tokyo Round by the United States (US), but then abandoned.<sup>3</sup> It re-emerged during the Uruguay Round negotiations, at the behest of the European Communities (EC).<sup>4</sup> Several other countries subsequently raised the concept in their submissions.<sup>5</sup> The Chair of the Negotiating Group on Subsidies and Countervailing Measures, Michael Cartland, then proceeded to consolidate various proposals into a draft text with four categories. Opposition from the US and others, however, led the proposal to be pared back in the Dunkel draft. However, with the Clinton administration taking charge in 1993, the US negotiating position again shifted toward becoming more open toward inclusion of a safe harbor.<sup>6</sup> This change cleared the way for renewed negotiations and eventual agreement on a category of “green light” subsidies.

Article 8 of the SCM Agreement provided for three categories of non-actionable subsidies:<sup>7</sup> They were (1) assistance for research activities conducted by firms or by higher education or research establishments on a contract basis with firms; (2)

assistance to disadvantaged regions within the territory of a WTO Member; and (3) assistance to promote adaptation of existing facilities to new environmental requirements imposed by law and/or regulations, which result in greater constraints and financial burden on firms. Because the first and third categories are most applicable to green industrial policies, I discuss them in greater detail below.<sup>8</sup>

**R&D subsidies:** The EC, Canada, Nordic countries, Japan, and Switzerland had all pushed to include this as a category, while the US had initially resisted. However, the US policy shifted during the Clinton administration, resulting in a broadened exemption (compared to the Dunkel draft).<sup>9</sup> Nevertheless, not all R&D subsidies are treated as non-actionable. To qualify, the subsidy must

- Cover no more than 75 percent of the costs of industrial research or 50 percent of the costs of pre-competitive development activity; and
- Be limited exclusively to (i) personnel costs, (ii) costs of instruments, equipment, land and buildings, (iii) costs of consultancy and equivalent services, (iv) costs of additional overhead, and (v) other running costs directly incurred as a result of the research activity.

**Subsidies for environmental adjustment costs:** The initial Cartland I and II drafts had proposed a broadly worded safe harbor for subsidies for the purpose of “environmental protection (limited to compensation aids).” US resistance led the Cartland III and IV drafts to be pared back to cover subsidies for “adoption of new equipment and/or production processes” to tackle “nuisances and pollution,”<sup>10</sup> and for the category to be eliminated altogether in the Dunkel draft.<sup>11</sup> However, the concept was resurrected at the last minute due to a shift in US negotiating position. The final draft exempted

3 | See MTN/NTM/W/26, 28 Oct. 1975, pp. 7–8; Winham (1986: 173).

4 | MTN.GNG/NG10/W/7, 11 June 1987, pp. 4–5.

5 | These include Canada, Colombia, India, Japan, a set of four Nordic countries, Switzerland, and the US.

6 | See Horlick and Clarke (1994: 47); Stewart (1999: 229); Doane (1995: 160); Bigdelli (2011: 7–8).

7 | The category found in the initial Cartland I and II drafts, which was not contained in the final agreement, is that of “employment adjustment assistance provided to workers.” See MTN.GNG/NG10/W/38 at p. 7.

8 | Those interested in the second category should refer to Article 8.2(b) of the SCM Agreement.

9 | See Horlick and Clarke (1994: 47); Bigdelli (2011: 7).

10 | See draft Article 8.2(c) of MTN/GNG/NG10/W/38/Rev.2, 2 Nov. 1990; MTN/GNG/NG10/W/38/Rev.3, 6 Nov. 1990.

11 | MTN.TNC/W/FA, 20 Dec. 1991, art. 8.2.

a limited category of environmentally beneficial subsidies, provided it conformed to the following requirements.

- Cover no more than 20 percent of the cost of adaptation of an existing facility (that is, one in operation for at least two years at the time when the environmental requirements are imposed) to meet new requirements imposed by law and/or regulation, which result in greater constraints and financial burdens on the firm.
- Be a one-time non-recurring payment.
- Does not cover the cost of replacing and operating the assisted investment, which must be fully borne by the firms.
- Is directly linked to and proportionate to a firm's planned reduction of nuisances and pollution, and does not cover any manufacturing cost savings which may be achieved.
- Is available to all firms which can adopt the new equipment and/or production processes.

Article 8.3 of the SCM Agreement required that any subsidy programme that a WTO Member believed was non-actionable needed to be notified in advance of its implementation to the SCM Committee, if it wished to invoke the safe harbor. The WTO Secretariat was to review the notification and submit a report to the SCM Committee. The SCM Committee would then make a determination of whether the notified subsidy programme qualified for the exemption. Article 8.5 further stipulated that a WTO member could subsequently challenge the determination of the SCM Committee (or its failure to make such a determination) in a binding arbitration. Further, a WTO Member could also challenge the violation of the conditions set forth in the notified programme in an individual case.

In addition, even after a non-actionable subsidy was recognized as such by the SCM Committee, Article 9 of the SCM Agreement provided a mechanism for a WTO Member to raise issues about its subsequent trade impact. To do so, a WTO Member would need to assert that the non-actionable subsidy provided by another WTO Member was causing serious adverse effects to its domestic industry whose damage would be difficult to repair. The two sides were then required to enter into consultations with the aim of developing a mutually acceptable solution. If they could not, the matter would be referred to the SCM Committee to examine the evidence of serious adverse effects. If the SCM Committee determined that the alleged effects existed, it could request modifications be made to the non-actionable subsidy. In the event that the WTO Member granting the subsidy refused to make modifications six months after the recommendation was made, the SCM Committee could authorize that the requesting Member take appropriate countermeasures commensurate with the nature and degree of the effects determined to exist.

Finally, Article 31 of the SCM Agreement noted that the provisions of Article 8 were of a provisional nature, to apply only for an initial period of five years. It charged the SCM Committee with reviewing whether to extend or modify the provision no later than 180 days before its expiration.

## THE EXPIRATION OF ARTICLE 8 OF THE SCM AGREEMENT

During the five years in which the category of non-actionable subsidies was in effect, not once did any WTO Member notify the SCM Committee of a non-actionable subsidy pursuant to Article 8.3 of the SCM Agreement.<sup>12</sup> The SCM Committee did attempt to address a number of issues related to Article 8, including the notification and arbitration procedures. However, such procedures were never utilized.<sup>13</sup>

As the five-year temporary period approached its end, the issue of whether to extend or modify Article 8 surfaced at several meetings of the SCM Committee. Two other provisions (Articles 6.1 and 9) were also due to expire, so the debate over extension of these provisions took place jointly. Three different camps emerged in the course of these discussions.

The first were a set of countries, primarily developed, who supported the extension of the provisions as they stood. They offered the principal argument that there had been little experience in terms of their use, and, therefore, it was too soon to judge whether the provisions required modification or served primarily to benefit only a limited set of WTO Members. Among the countries that fell into this camp were Canada, Chile, Czech Republic, EC, Hong Kong (China), Israel, Mexico, Poland, South Korea, Switzerland, and Turkey.<sup>14</sup>

Several developing countries announced that they did not support extending Article 8 because in their view it catered primarily to the interests of developed countries. They would only consider an extension if modifications were made to better take into account the interests of developing countries with respect to subsidies. Short of such modifications, this group favored allowing the category of non-actionable subsidies to lapse.<sup>15</sup> Among the countries that fell into this

<sup>12</sup> G/SCM/M/24, 26 April 2000, para. 44.

<sup>13</sup> G/SCM/M/2, 25 Sept. 1995, pp. 6–9; G/SCM/M/9, 13 Sept. 1996, pp. 8–11; G/SCM/M/13, 6 Mar. 1997, p. 12; G/SCM/M/15, 28 Jan. 1998, pp. 8–9; G/SCM/M/16, 15 July 1998, pp. 8–11.

<sup>14</sup> G/SCM/M/24, 26 April 2000, paras. 23–26, 28, 32, 34, 37–40, 42.

<sup>15</sup> The proposal, as reflected in paragraph 78 of the draft declaration for the Seattle Ministerial, was for the SCM Committee to extend the provisions first and then address the development concerns following the Ministerial.



camp were Brazil, the Dominican Republic, Honduras, India, Malaysia, Pakistan, and the Philippines.<sup>16</sup>

Note that very few of the countries in the second camp offered specific proposals as to what types of modifications were necessary. One exception was India, which proposed an expansion of the special and differential treatment available for developing countries' subsidies beyond that provided in Article 27. India noted that it would support extension only if subsidies prohibited under Article 3 (that is, export subsidies and subsidies with linkages to LCRs) would be deemed non-actionable for developing countries.<sup>17</sup>

A third camp also favored having the provisions lapse, but not for development-related reasons. New Zealand favored its outright expiry because it saw little utility in these categories.<sup>18</sup> The US also announced that although its sympathies were closer to those in the first camp, it "had always had mixed views on these provisions." As there was no consensus in favor of this viewpoint, the US "was happy to live with the result" of having the provisions expire.<sup>19</sup> Japan endorsed a similar view.<sup>20</sup>

Switzerland warned that "by eliminating the possibility of subsidizing adaptation to new environmental laws, the WTO would give a rather negative and wrong signal to the public."<sup>21</sup> Nevertheless, the discord among countries was too large to allow for compromise. Cosby and Mavroidis (2014) have suggested that the inability to reach a compromise on Article 6.1 (also due to expire) for further presumptions of adverse effects may have further contributed to the difficulty, as the two provisions may have been viewed as linked.<sup>22</sup> Further, the disastrous Seattle Ministerial contributed to uncertainty among developing countries that their needs would be addressed. Consequently, on 1 January 2000, Article 8 expired, and the category of non-actionable subsidies disappeared.

## EXISTING SPECIAL AND DIFFERENTIAL TREATMENT FOR DEVELOPING COUNTRIES ON SUBSIDIES

With the expiration of Article 8, all subsidies are deemed actionable. However, Article 27 provides for special and differential treatment, thereby allowing certain developing countries greater latitude when enacting subsidy policies.

Article 27.2 grants greater policy flexibility to a subset of developing countries listed in Annex VII of the SCM Agreement. Annex VII encompasses all WTO Members that are classified as LDCs by the United Nations (UN) as well as two non-LDCs—Kenya and Zimbabwe. Originally, 18 other developing countries were included, but each was deemed to have graduated once its gross national product (GNP) per capita reached US\$1,000 per annum.

In particular, developing countries listed in Annex VII may provide export subsidies to a given product so long as that product does not reach export competitiveness. Export competitiveness is defined as having a share of at least 3.25 percent of world trade for two consecutive calendar years. If a given product acquires export competitiveness, then the Annex VII country must phase out its export subsidies for such product over a course of eight years.

Beyond this special allowance for Annex VII countries, Article 27 also provides for preferential consideration of subsidies granted by all WTO Members that are developing countries.

Article 27.8 stipulates that there shall be no presumption that a subsidy granted by a developing country results in serious prejudice under any of the four conditions stipulated in Article 6.1. In other words, in the case of a non-developing country, serious prejudice is deemed to occur when (a) the total ad valorem subsidization of a product exceeds 5 percent; (b) subsidies cover operating loss sustained by an industry; (c) subsidies cover the operating loss sustained by an enterprise (except for one-time, non-recurring measures that address long-term solutions and avoid acute social problems); and (d) there is direct forgiveness of debt. However, for developing countries, no such presumption may be made.

Instead, to demonstrate serious prejudice resulting from a developing country's subsidy, one must demonstrate that it gives rise to one of the following circumstances—(a) displacement or impediment of imports of another WTO Member to the market of the subsidizing country; (b) displacement or impediment of exports of another WTO Member to the market of a third-country market; (c) a significant price undercutting, price suppression, or price depression effect, or significant lost sales for a like product; or

16 | G/SCM/M/24, 26 April 2000, paras. 21–22, 29–31, 36.

17 | G/SCM/M/24, 26 April 2000, para. 36.

18 | G/SCM/M/24, 26 April 2000, para. 35.

19 | G/SCM/M/24, 26 April 2000, para. 33.

20 | G/SCM/M/22, 17 Feb. 2000, para. 8.

21 | G/SCM/M/24, 26 April 2000, para. 24.

22 | For that view, they cite Stewart (1993).

(d) an increase in the world market share of the products of the subsidizing country compared to the average share held in the previous three years and that this increase follows a consistent trend over a period when subsidies have been granted. Only when one of these four circumstances is met can WTO Members bring a claim against the subsidy of a developing country. In addition, Article 6.7 lists a series of situations in which displacement or impediment cannot be deemed to have occurred.<sup>23</sup>

Additionally, Article 27.12 stipulates that two forms of subsidies provided by developing countries are essentially non-actionable. These include (1) direct forgiveness of debts; and (2) subsidies to cover social costs, in whatever form. Included in the second category are subsidies related to a privatization programme, provided that (i) such subsidies are time-limited and notified to the SCM Committee, and (ii) the programme results in the eventual privatization of the enterprise concerned.

Finally, Article 27.10 provides that whenever a WTO Member imposes a CVD against a product originating from a developing country, it must terminate such action if the overall level of subsidies granted becomes less than 2 percent of the value of the product, as calculated on a per unit basis. It must also terminate the CVD if the total volume of subsidized imports drops below 4 percent of total imports of the like product in the importing WTO Member, unless the collective share of developing country members whose individual shares represent less than 4 percent exceeds 9 percent of total imports of the like product. Consequently, as will be discussed later, CVD actions taken against renewable energy products produced in developing countries are concentrated on a handful of large emerging powers with strong export capabilities.

Therefore, even with the expiration of Article 8, developing countries have slightly wider latitude to impose subsidy policies for renewable energy products on account of the special and differential treatment provided in Article 27.

## THE RISE OF SUBSIDIES AS AN INSTRUMENT OF GREEN INDUSTRIAL POLICIES

In the intervening 15 years since Article 8's expiration, governments have relied on a variety of subsidies to launch initiatives focused on renewable technologies. Industrial policies have featured most prominently in two sectors—solar panels and biofuels—but have surfaced in others (for example, wind, biomass, and the like) as well.<sup>24</sup> Without a safe harbor, governments have needed to tread carefully to ensure that their subsidies conform to WTO rules for prohibited and actionable subsidies.

The types of subsidies deployed can be divided roughly into four categories. An illustrative list follows below.<sup>25</sup>

### (1) Subsidies to lower the cost of production to producers

- Direct financial grant
- Preferential loans/preferential financing
- Provision of inputs on preferential terms
- Tax exemption/tax credit/other tax incentives
- Accelerated depreciation allowances on equipment
- Public supply of R&D
- Land use preferences
- Preferential insurance

### (2) Subsidies to increase the productivity of producers

- Direct investment in energy-related infrastructure
- Direct investment in export-related infrastructure specific to given producer(s)
- Incentives to attract human resource expertise specific to the industry (for example, expatriate returnees)

23 These include (a) when the complaining country places export restrictions or prohibitions on the like product, or when the third country imposes import restrictions or prohibitions on the like product from the complaining country; (b) when the importing country operating a monopoly or state trading shifts, for non-commercial reasons, away from imports of the complaining country to another country; (c) natural disasters, strikes, transport disruptions, or other *force majeure* that substantially affect production, qualities, quantities, or prices of the product available for export from the complaining Member; (d) when the complaining Member has export-limiting arrangements; (e) when the complaining Member voluntarily decreases the availability of exports of the like product; and (f) failures to conform to standards or other regulatory requirements.

24 For reports that detail specific government initiatives in this area, see, for example, Steenblik (2007) and the associated case studies; REN21 (2014: 75–91).

25 This list is drawn from those mentioned in UNEP (2008); REN21 (2014).

### (3) Subsidies to reduce uncertainty of returns for producers

- Feed-in tariffs (FITs)/price guarantees
- Demand guarantees
- Mandated deployment rates

### (4) Subsidies to promote consumer adoption of renewable energy technology

- Direct financial grant
- Tax credit
- Rebates for equipment purchases
- Price controls
- Public procurement

Some of the above mentioned subsidy policies may be linked directly with general instruments deployed for industrial policy purposes. These include LCRs and/or export requirements, both of which are prohibited under Article 3 of the SCM Agreement unless a WTO Member is exempt on account of Article 27. For example, a subsidy may be given only for a product where at least a given percentage of its value is produced domestically. As will be discussed in the subsequent section, several WTO disputes have arisen from governments implementing FITs with LCRs.

Subsidy policies may also be linked with policies not directly prohibited by WTO Agreements, but which nevertheless promote a national industrial manufacturing strategy. For example, a land-use grant may be tied to an investment approval that is conditional on the establishment of a joint venture and/or technology transfer from a foreign producer to a domestic producer for a renewable energy sector.

In addition, the above mentioned policies may be tied with a broader industrial policy framework that extends beyond the renewable energy sector. Examples include general infrastructure development, human capital projects, regulatory streamlining, and so on.<sup>26</sup> With respect to such policies, the key question, so far as the SCM Agreement is concerned, is whether such subsidies are "specific" to an enterprise or industry or a group of enterprises or industries. Specificity arises when a granting authority explicitly limits the availability of subsidies to certain enterprises. It can also exist in de facto form through a consideration of multiple factors outlined in Article 2.1(c), such as whether the subsidy programme is used predominantly by a limited set of enterprises, whether disproportionately large amounts are granted to certain enterprises, and the manner in which discretion is exercised by the granting authority.

To the extent that these associated policies are not specific, such policies will not be subject to an effective challenge through WTO litigation or CVDs. In addition, Article 6.7 stipulates a number of circumstances in which serious prejudice cannot be deemed to have arisen as a result of a subsidy policy; again, this helps to shield certain subsidies from challenge. Overall, then, policy space does exist for governments to employ a range of subsidy policies to encourage the development and deployment of renewable energy policy. The key, so far as industrial policy for renewable

energy industries is concerned, is that such policies be made generally available to all, rather than crafted in a specific manner to facilitate a discriminatory or protectionist policy goal.

How extensive is the use of subsidies for renewable energy? As of 2014, more than 100 countries had adopted some form of fiscal incentives for renewable energy.<sup>27</sup> This included a substantial number of developing countries. At least 26 lower middle-income countries and 21 low-income countries had some type of policy in place, with the most popular being tax reductions.<sup>28</sup> Therefore, the disciplining of renewable energy subsidies is no longer simply an issue concerning the policy space of developed and upper middle-income developing countries, but one that also impacts most WTO Members.

Finally, there are questions over how much is being provided in the form of subsidies for renewable energy industries by WTO Members and its breakdown across industries. Currently, there is no reliable estimate of these figures. Reports simply note which governments are providing for such subsidies without attempting to develop a common methodology for its calculation or reconcile differences across countries.

## RECENT TRADE DISPUTES OVER GREEN INDUSTRIAL POLICIES

The subsidies associated with green industrial policies have contributed to rising trade tensions. Several WTO cases have been brought against countries for measures associated with their green industrial policies (Table 1; note the list is specific to subsidies and does not reflect challenges against anti-dumping measures).

In addition, several governments have initiated CVD investigations into renewable energy products (Table 2).

In several instances, a country filed a WTO complaint in response to trade remedy measure taken against its renewable

26 | See Background Paper for the E-15 Expert Group for additional details.

27 | See REN21 (2014: 89–91).

28 | See REN21 (2014: 89–91) for more details. Ghosh (2011) suggests that emerging economies, in particular, stand out because they have significant energy needs and stand at the crossroads of choosing between alternative energy technologies.

energy product. Recent cases include a challenge by China (DS449) over US measures taken against Chinese wind power equipment and solar panels, and challenges by Argentina (DS473) and Indonesia (DS480) concerning European Union (EU) measures on biodiesel.<sup>29</sup>

Note that WTO cases and CVD actions are concentrated against only a handful of countries. As noted earlier, special

disciplines apply for CVD actions taken against products originating in developing countries. Only a handful have the export capacity necessary to cause injury to the domestic

29 Note that although the EU imposed both anti-dumping and CVD measures against Argentine and Indonesian biodiesel imports, the WTO complaints filed by both countries were limited to challenges of the EU's anti-dumping measure. On the other hand, the Chinese case against the US challenged both the anti-dumping and CVD measures.

TABLE 1:  
WTO Challenges Concerning Renewable Energy Support

Case	Complainant(s)	Challenged measure(s)
<i>Canada – Certain Measures Affecting the Renewable Energy Generation Sector (DS412)</i>	European Union (EU) and Japan	FIT programme with local content requirement
<i>China – Measures Concerning Wind Power Equipment (DS419)</i>	United States	Grants, funds, or awards to manufacturers with local content requirements
<i>European Union and a Member State – Certain Measures Concerning the Importation of Biodiesels (DS443)</i>	Argentina	Ministerial order regulating the allocation of quantities of biodiesel necessary to achieve the EU's mandatory target for renewable energy
<i>European Union and Certain Member States – Certain Measures Affecting the Renewable Energy Generation Sector (DS452)</i>	China	FIT programmes with local content requirements
<i>India – Certain Measures Relating to Solar Cells and Solar Modules (DS456)</i>	United States	Support measures for manufacturers with local content requirements
<i>European Union and Certain Member States – Certain Measures on the Importation and Marketing of Biodiesel and Measures Supporting the Biodiesel Industry (DS459)</i>	Argentina	Measures to promote the use of energy from renewable sources, and measures to establish support schemes for the biodiesel sector

TABLE 2:  
Recent CVD Investigations Concerning Renewable Energy Products

Investigating authority	Country under investigation	Product(s)	Date of initiation
European Union	United States	Biodiesel	June 2008
Peru	United States	Biodiesel	Aug. 2009
Australia	United States	Biodiesel	June 2010
European Union	Canada and Singapore	Biodiesel (circumvention)	Aug. 2010
United States	China	Crystalline silicon photovoltaic modules and key components	Oct. 2011
European Union	United States	Bioethanol	Nov. 2011
United States	China	Utility-scale wind towers	Jan. 2012
China	United States	Solar grade polysilicon	July 2012
European Union	China	Crystalline silicon photovoltaic modules and key components	Aug. 2012
China	European Union	Solar grade polysilicon	Nov. 2012
European Union	Argentina	Biodiesel	Nov. 2012
European Union	Indonesia	Biodiesel	Nov. 2012
European Union	China	Solar glass	Feb. 2013
United States	China	Crystalline silicon photovoltaic cells and modules	Jan. 2014
India	China	Castings of wind operated electricity generators	May 2014
Peru	Argentina	Biodiesel	July 2014
Canada	China	Certain photovoltaic modules and laminates	Dec. 2014

producer of the like product and/or generate other forms of adverse effects on trading partners are required under Article 5 of the SCM Agreement.

Therefore, for many developing countries, the relevant question is not necessarily one whether the expiration of Article 8 is serving as a constraint on their ability to impose subsidy policies to support renewable energy. Such policies today are being adopted without legal challenge from trading partners. Instead, the questions are (1) whether such policies would take on an altered form with the reintroduction of a category of non-actionable subsidies; and (2) whether additional legal certainty is necessary or helpful, and whether the lack of it impedes policymaking.

## HOW SIGNIFICANT IS THE EXPIRATION OF ARTICLE 8 FOR THE ABILITY TO IMPLEMENT GREEN INDUSTRIAL POLICIES?

With respect to those countries that have found themselves subject to legal challenge, a further question is whether any of the above disputes would have been avoided if Article 8 had been renewed.

Any argument that the expiration of Article 8, as originally formulated, constricts the ability of governments to implement green industrial policies relies on a presumption that (a) funding associated with the particular type of non-actionable subsidy would be forthcoming, and (b) the lack of such funding has inhibited the development of domestic renewable energy industries. In a time of growing fiscal austerity and concerns over fiscal deficits, questions can be raised whether the first condition holds in certain countries. Nevertheless, let us set aside this concern for now and consider each of the two original categories of non-actionable subsidies applicable to green technologies.

### EXPIRATION OF PERMISSIBLE RESEARCH SUBSIDIES

The first is the Article 8.2(a) exemption for R&D subsidies provided they meet certain conditions discussed above. Few reports suggest that WTO rules have had a chilling effect on

government support for basic research or pre-commercial development of renewable technologies. The main constraints appear to be fiscal limitations and/or an ideological aversion to “selecting winners and losers” through direct firm support of early-stage R&D. Further, the CVD actions taken against states to date have not been targeted against research subsidies directed by states. Thus, while an overt acknowledgment that such subsidies are non-actionable may be beneficial, it is unlikely that a lack of this has constrained such subsidies or that a re-acknowledgment would greatly bolster such support.

### EXPIRATION OF PERMISSIBLE SUBSIDIES FOR ENVIRONMENTAL ADJUSTMENT COSTS

The second is the Article 8.2(c) exemption for subsidies to offset environmental adjustment costs. Note that this exemption applies to “new environmental requirements imposed by law and/or regulations.” In some instances, government policies have simply encouraged the use of renewable energy sources through subsidies but have not made it mandatory via law and/or regulation. Subsidies provided in such instances do not qualify as non-actionable.

However, there are at least two types of instances where government measures are mandatory in nature, and hence, would meet the requirement. The first is a mandatory renewable energy target (RET), where a government requires electricity retailers to source a given percentage of total sales from renewable sources by a fixed time frame. By early 2014, at least 144 countries had RETs in place. This included 95 developing countries and emerging economies, up from 15 in 2005.<sup>30</sup> The exemption would apply to subsidies given to retailers to offset the higher costs associated with adapting their facilities to meet this mandate (for example, additional electricity grid management tools, storage, and so on). Such costs, at present, are not the major source of concerns for retailers subject to a RET. Rather, their main financial pain comes from the higher costs associated with purchasing electricity from more expensive renewable sources. Any subsidy provided to offset these costs would not qualify, as this is a recurring rather than one-time cost and not associated with adaptation of a facility.

Subsidies arguably could extend to the providers of energy supplied to retailers subject to a RET. If this is the case, then the potential for impact is larger. For example, a power producer with a plant that relies on coal could be given a subsidy to adapt its facility to natural gas. Depending on how the RET is designed (and therefore, how the costs of the RET are borne), such a subsidy might qualify under the Article 8.2(c) exemption since it does concern adaptation of an existing facility. This increased demand would, in turn, spur greater industrial development of the newer source. At

30 | REN21 (2014: 14).

present, such subsidies are deemed actionable, but remain permissible so long as they do not trigger any adverse effect on trade.

The second are mandatory emissions trading schemes enacted for a given sector, also sometimes referred to as “cap-and-trade” schemes. To meet a given emissions requirement, a firm may need to adjust its existing facility to lower its emissions. Subsidies associated with the cost of such a transition could qualify as non-actionable. Again, only one-time conversions of an existing facility (for example, conversion from gas heating to solar heating) would qualify; recurring costs and construction/purchase of a new environment-friendly facility would not.

The end result is that the positive impact differs by sector. Industries with green technologies that can be retrofitted onto existing facilities, such as the shale gas industry, would stand to benefit the most, as higher subsidies would spark greater demand. In contrast, industries that require construction of a new facility would not, since the non-actionable subsidy category covers only adaptation of existing facilities to meet environmental objectives. Examples of renewable sectors that would not stand to gain as much might include biomass and wind power, where projects often involve new construction rather than retrofitting.

Whether the resumption of this type of non-actionable subsidy will have much of a positive impact on green industrial policy turns on the question of whether the following conditions hold true. Do governments have additional funds at their disposal? If so, are these funds not being employed to help producers offset the cost of environmental adjustment because of concerns over WTO subsidy rules? Has the lack of such funding negatively impacted the enactment of pro-renewable policies? And were such policies to be enacted, would it spur the development of a domestic green industry rather than contribute to greater consumption of imported green goods?

The answers to the above questions vary by country. Provided the answer to any of the above is no, then although the revival of this category of non-actionable subsidies could, in theory, bolster green industrial policies, its actual effect may be limited. Put differently, we have little direct evidence suggesting that the expiration of Article 8 has had a serious negative impact on the ability of particular states to execute a green industrial policy. By extension, then, we cannot be certain that the re-enactment of a category of non-actionable subsidies along the lines of Article 8, as originally drafted, would have much of a positive impact.

## REVIVING NON-ACTIONABLE SUBSIDIES FOR GREEN INDUSTRIAL POLICY: SOME OPTIONS

If the hope is to provide greater legal certainty to the enactment of certain subsidy policies to promote the development of renewable energy industries, the scope of the non-actionable category must be broadened beyond the original Article 8. The question becomes how best to do so.

In theory, we understand the broad justification for declaring such subsidies to be outright permissible. While such subsidies may trigger distortions and cause adverse trade effects, their negative welfare effects are offset by a series of countervailing positive benefits. These include benefits associated with addressing market failures, encouraging technological spillovers, and eliminating constraints leading to sub-optimal investments (Rodrik 2013). Benefits in one country, therefore, can contribute to positive effects for other countries that offset the negative impact of trade distortions.

Whether we can operationalize this theory in practice through the creation of clear legal rules is another matter. Economists have argued that the breadth of issues arising from green industrial policy makes it unlikely that anything resembling a general theory can be constructed (Karp and Stevenson 2012). Moreover, given the dynamic forces affecting trade, it is difficult, if not impossible, to anticipate correctly the size of associated distortions *ex ante*. Consequently, it becomes difficult to construct a principles-based legal rule.

The end result is that we have a broad-based understanding of why a certain category of subsidies might be declared outright permissible but lack a firm grasp of how to translate this understanding into a general economic theory that can serve as the underpinning of actual legal rules. Instead, drafters are left trying to act on the basis of an *ex ante* estimation of potential costs and benefits associated with positive externalities stemming from certain types of subsidy policies. This results in a patchwork of criteria-based safe harbor categories, akin to what was found in the original Article 8 as well as the Agreement on Agriculture.

One fair question to be asked is whether the creation of additional legal rules under such circumstances is positive or not. Cosbey (2013) notes that although “subsidies may be an appropriate tool for green industrial policy in certain cases, ... it is difficult to see how trade rules might accommodate their sensible use without also allowing their misuse.” This raises the

age-old question of the trade-offs between Type I versus Type II errors.<sup>31</sup> In light of that subsidies are inherently distortive but we lack absolute certainty regarding the size of potential positive externalities associated with certain subsidies, does one prefer the costs associated with being over-inclusive versus under-inclusive when establishing legal rules? This paper leaves it to readers to answer this difficult, but important, question. It simply argues that if one's preference is to set additional disciplines (that is, if one's preference is for Type I over Type II errors), then one ought to consider expanding the scope of non-actionable subsidies beyond that originally established in Article 8.

## APPLICABLE CONSTRAINTS

In what follows, this paper provides some suggestions for how Article 8 might be reconstituted for those who desire its reintroduction. To aim for some realistic possibility of agreement among WTO Members with divergent interests, some political constraints should be duly noted.

First, at present, the WTO is highly unlikely to embrace any revival of non-actionable subsidies whose primary objective is to expand policy space for enactment of industrial policy, even if it has second-order benefits for the environment. Consequently, any options put forward must lead with environmental interests as its core objective. Therefore, proposals which put increased flexibility for industrial policy first appear to be off-the-table, especially if they contravene provisions found in other WTO Agreements.<sup>32</sup>

Second, the divide between developed and developing countries which thwarted Article 8's renewal in 1999 remains. Most developing countries continue to view the revival of non-actionable subsidies as a move that would primarily benefit developed countries and a handful of large developing countries. Developed countries, on the other hand, are loathe to grant special and differential treatment to all developing countries, especially given the rise of China as an industrial power. China and other large developing countries have made it clear that they will not agree to be treated differently from other similarly situated developing countries. Thus, any viable proposal must either extend to all WTO Members, or alternatively, be limited only to a set of developing countries identified through pre-existing objective criteria.

Third, it is unlikely that any new agreement will include any funding facility that would deliver support to developing countries and LDCs to bolster support for renewable energy industries, akin to what is provided for in the WTO Trade Facilitation Agreement. Therefore, any analysis should proceed in line with the existing fiscal constraints faced by governments.

With the above constraints in mind, let us examine specific options for the path forward.

## EXPANSION OF LIST OF CATEGORIES OF PERMISSIBLE SUBSIDIES

One set of options is to expand the scope of permissible subsidies for promoting the development of green industries beyond the original set listed in Article 8. Below are a few potential candidates.

**Subsidies for renewable energy infrastructure development and upgrades:** One key bottleneck for development of a green industrial sector is the infrastructure to effectively capture and transport its output. In some countries, supply and/or distribution of electricity, gas, water, and other outputs may be done by private enterprises, rather than public utilities and/or entities under state control. Such enterprises may lack the incentives to develop and/or upgrade the infrastructure to accommodate new renewable sources. WTO rules could be amended to allow the state to provide such subsidies to offset the cost. Alternatively, even when supplied by the state, such investments may have serious "adverse effects" because specific upgrades and/or improvements benefit certain domestic producers disproportionately. Explicitly allowing the state to spend its funds on infrastructure development and improvements could be justified on the basis of positive externalities associated with addressing bottlenecks on account of market failures.

Note that the question of dual use that has confounded the WTO environmental goods negotiations applies in this context; infrastructure projects can be employed for dual-use purposes and are not necessarily dedicated for renewable energy. Nevertheless, despite its complexity, negotiators will likely be able to find a way through the dual use question. As the example of the WTO environmental goods negotiations illustrates, doing so simply requires that negotiators exercise careful consideration of the major bottlenecks and highest-impact areas, so as to arrive at a list that balances the underlying interests of the multiple negotiating parties.

**Feed-in-tariff and/or other demand/price guarantee schemes (without LCRs):** Whether a FIT served as a subsidy or not was an issue that the Appellate Body evaded in *Canada-Renewable Energy*. Nevertheless, assuming that it is, it may be helpful to clarify that FITs below a certain de minimis threshold are generally permissible, so long as they

31 | A Type I error is a false positive, or an incorrect rejection of a true null hypothesis. In this case, the legal rules would classify a subsidy incorrectly as non-actionable on the presumption that its positive externalities outweigh the negative impact of its distortions, when this is not the case. A Type II error is a false negative, or the failure to reject a false null hypothesis. In this case, the legal rules would fail to classify a subsidy as non-actionable, when its positive externalities do outweigh its trade distortions.

32 | For example, it is unlikely that WTO Members would accept reforms of the SCM Agreement that would exempt parties from their obligation under GATT Article III:5, even though this might serve to enhance an industrial policy objective.

are not entangled with LCRs. Overall, FITs and other forms of price/demand guarantees have proven helpful to guarantee investors a certain level of returns necessary to spark investment in renewable energy sectors. Consequently, the number of countries deploying them has increased to more than 50.<sup>33</sup> Again, explicit recognition that such schemes are legal might prove beneficial in terms of eliminating concerns that certain designs may cause “adverse effects” because they favor one set of producers over another.

Note that FITs with LCRs would need to be carved out of the exemption because they remain highly controversial and the negative trade distortions are likely larger than spillover benefits. Also, beyond a certain point, the FIT may be larger than what is necessary to address the market failure. Thus, the idea is for negotiators to agree on a *de minimis* threshold, for which they can be relatively certain that the FIT’s impact on overall welfare is positive. FITs that fall within this threshold would qualify for the safe harbor. WTO Members, of course, could choose to provide a FIT beyond the threshold, but such a policy, were it deemed a subsidy under WTO rules, would be actionable and subject to an adverse effects test.

**Consumer grants/rebates for renewable energy, subject to limitations:** It remains unclear the extent to which different degrees of clean and dirty sources of energy will be treated as “like products” under SCM jurisprudence. To the extent that some will be treated as “like,” it would again be helpful to acknowledge that subsidies to encourage consumer adoption of clean energy sources is legal. Such rebates may be subject to limitations (for example, not to exceed a certain percentage of total cost, shown to be necessary to address externalities, and so on).

The three suggestions above are simply illustrative. Others could also be devised, provided they meet the general condition that the positive effects for trading partners outweigh the potential negative trade distortions.

## OTHER POTENTIAL APPROACHES

Besides expanding the list of permissible categories, three other types of approaches are also worth considering. Note that these ideas are not mutually exclusive and can be coupled with one another as well as the ideas listed in other parts of the sub-section.

**Capped allowance:** One approach would be to permit each WTO Member a capped allowance on an agreed-upon list of environmentally beneficial subsidies,<sup>34</sup> modeled on the Agreement on Agriculture. The quota level would be set according to a formula, taking into account factors such as overall gross domestic product (GDP), per capita GDP, level of existing export competitiveness in green goods, and so on. It would be adjusted on a regular basis. WTO Members would be required to notify the SCM Committee of the substance and value of each subsidy that it seeks to include within

its allowance; any unreported subsidy programmes would remain actionable. This approach has the benefit of increasing transparency by creating incentives for Article 8 notifications, which was previously ignored.

**Balancing test:** Several scholars have suggested introducing a balancing test, designed along the lines of the General Agreement on Tariffs and Trade (GATT) Article XX chapeau test, applicable to a broader range of environmentally beneficial subsidies (Cosbey and Mavroidis 2014; Howse 2010; Tran 2010; Green 2006). This range could be identified through a list format (see above), or it can be broadly worded (for example, subsidies to promote the development of sustainable solutions to address global climate and environmental problems) and left open to future judicial interpretation. The purpose of applying the balancing test is to weed out subsidies aimed primarily for economic/trade gain rather than environmental gain. Subsidies which meet the substantive conditions, as well as the conditions of the balancing test, would be permissible. The introduction of such a test would permit adjudicators to analyze explicitly the degree of trade-related distortions caused by the subsidy policy in relation to the scale of its positive externalities.

How might such a test be operationalized? Howse (2010), Tran (2010) and Green (2006) have proposed explicitly adopting the concept of GATT Article XX, as broadly understood to apply to environmental measures, to the SCM Agreement outright. Howse has argued that this can be done without any textual amendment; instead, the WTO could simply issue an interpretative understanding that the existing GATT Article XX can be used as a defense against any violation of the SCM Agreement, since the latter constitutes simply a *lex specialis* (law governing a specific subject matter) to the GATT’s rules on subsidies.<sup>35</sup>

Cosbey and Mavroidis (2014: 30) have suggested adopting an alternative test, akin to the Bastable test. Their approach would deem an industrial policy subsidy to be worthwhile “if the total costs of support are outweighed by the present discounted value of the benefits derived.” They readily acknowledge the difficulties of measurement, but note that their test would seek to balance the distortionary costs against the future environmental benefits of the subsidy policy. Further, they assert that the test should seek to bless only policies that breed economic success. As

33 For examples, note that details of solar FITs and renewable energy credits for specific countries can be found at <http://www.pv-magazine.com/services/photovoltaic-feed-in-tariffs/#axzz3FSjR2SgG>.

34 Gryshko (2011), for example, has suggested that this list consist of subsidies “that contribute to the implementation of policies and measures listed in Article 2.1(a) of Kyoto Protocol” which are “consistent with established principles (e.g., non-discrimination, transparency, information and knowledge sharing, including technology transfer).”

35 Note that Tran (2010) invokes the same argument as Howse (2010) but also raises two other possible arguments to justify the adoption of GATT Article XX.



they note, "If a green industrial policy is a failure from the economic perspective, it is necessarily also a failure from the environmental perspective."

**Restrictions on CVD actions against green goods:** As Table 2 highlighted, the bulk of trade actions against renewable energy products have come in the form of CVD actions. Several proposals have been made to restrict the use of trade remedies for environmental goods. These include suggestions for time limitations, scope limitations, mandatory application of a public interest test, and mandatory application of the lesser duty rule.<sup>36</sup> As these suggestions are elaborated upon in another E15 Think Piece,<sup>37</sup> this paper will not dive into them in great detail, but simply note that such ideas are also worthy of consideration in this context.

## DEVELOPMENT-RELATED CONSIDERATIONS

The suggestions above are designed to enhance policy flexibility for developed and developing countries alike. However, given the sensitivities of developing countries that the reintroduction of Article 8 primarily benefits developed countries, it may be worth considering whether to include additional measures aimed primarily at developing countries. Some potential examples include the following.

**Subsidies for off-grid renewable energy products:** Such products have the potential to improve the quality of life of underserved rural and poor urban communities while achieving environmental gains. Investment may be sub-optimal due to the distributed nature of consumers and the need for location-specific solutions. WTO Members should decide whether to limit the exemption to consumer subsidies or to also include production subsidies. (Note that to date, no challenge has ever been made to such subsidies. This proposal would simply be to provide policy certainty.)

**Increase scope for certain production subsidies in LDCs:** To provide greater flexibility for LDCs to execute a green industrial policy, one might consider allowing for more lenient rules on certain forms of production subsidies for LDCs. Note that Article 27 already provides wider latitude for developing countries and LDCs to enact such subsidies. An additional form of special and differential treatment could be provided to LDCs (or Annex VII countries), whereby they would be allowed to provide production subsidies outright, even when serious prejudice results of the form stipulated in Article 27.8. Only when a LDC acquires a certain level of export competitiveness for a given product, as defined by its share of global trade in that product, would it be subject to Article 27.8. When that criterion is triggered, the LDC (or Annex VII country) would be required to phase out such subsidies over a fixed period of time or eliminate the adverse effect. Such an allowance might create greater incentives for firms to base production for part of the global value chain in LDCs (or Annex VII country).

Finally, what about the existing prohibitions against subsidies with LCRs? Should these be relaxed for LDCs and other developing countries? Or as Mattoo and Subramanian (2013) have suggested, should the prohibition against export subsidies be relaxed for developing countries that are not LDCs?<sup>38</sup> Given the political sensitivity of these issues, this paper recommends leaving these rules unaltered. Otherwise, such proposals have the potential to derail any effort to reintroduce greater policy space for green subsidies.

However, for those who may disagree and think such forms of subsidies are essential for industrial policy success, one potential idea to consider is to grant permission for LDCs (or Annex VII countries) to enact certain types of production subsidies only when structural conditions are met. To be sure, this idea is likely to be highly controversial, since WTO rules on safe harbors for subsidies traditionally have been conditioned only on elements linked closely to the subsidy policy itself. In other words, the WTO has not sought to regulate "behind the border" with respect to other broader policy objectives and instead allowed countries to make policy mistakes freely. Nevertheless, new structuralists contend that only countries with certain structural conditions in place are likely to succeed in spurring production through subsidies embedded with LCRs (Lin 2012). Countries without such conditions are likely to fail. The idea then is to permit LDCs (or Annex VII countries) to enact certain prohibited subsidies contingent on their enactment of other structural policies required for success.

How would this be operationalized? WTO rules would seek to link the trade and development-related objectives directly and monitor progress on both fronts for certain LDCs (or Annex VII countries). A country that embarked on wider domestic reforms which increased its absorptive capacities for sustainable development and trade competitiveness would be rewarded with greater policy flexibility to enact subsidies associated with an industrial policy. This idea is not entirely new; an example of a programme where trade and development objectives are directly linked is the Cotton Development Initiative. But whether LDCs and developed countries could agree on this type of conditionality in exchange for greater policy flexibility remains to be seen.

36 See Lester and Watson (2013); Cimino and Hufbauer (2014); Wu and Salzman (2014).

37 See the paper by Jonas Kasteang for the E15 Clean Energy Technologies and the Trade System Group.

38 Their proposal is to make such subsidies actionable rather than prohibited. Note that LDCs already have wider latitude to enact export subsidies on account of Article 27. Therefore, the proposal is limited only to developing countries that are not LDCs.

## CONCLUSION

This paper has suggested that the disappearance of non-actionable subsidies in WTO rules has not greatly impacted the ability of countries to implement green industrial policies. Critical elements of industrial policy subsidies would have remained actionable or impermissible, even had Article 8 of the SCM Agreement been extended.

In light of the above, a legitimate question is whether there is any need to reintroduce a category of non-actionable subsidies to support the development of green industries. As this paper points out, some think this is unnecessary and/or undesirable, given the existing policy space for certain forms of subsidies (for example, non-specific subsidies) that are not subject to effective challenge under WTO rules and because of the possibility of Type II errors. However, should one think that WTO rules ought to be altered to provide greater flexibility for subsidies for green industries, we must move beyond the original categories listed in Article 8 to consider additional approaches of the type(s) outlined above.

Would such reforms work to spur greater investment and manufacturing capacity in green industries? The answer turns on fiscal, structural, and political considerations, which differ by country. If countries face supply-side constraints on funding, then an expansion in terms of permissibility for subsidies has little impact. The same is true for a country that lacks the basic structural conditions to develop manufacturing capacity. Similarly, in a country where significant political support for an expanded environmental mandate already exists without an adjustment cost subsidy, the subsidy acts as a re-distribution tool but will not necessarily improve competitiveness for domestic green tech producers.

Under a certain set of conditions, however, the re-introduction of modified rules for environmental "green light" subsidies could serve to bolster a country's potential for green industrial policy. The question is whether the related gains for global public goods are significant enough to make it worthwhile to push forward on reforming WTO subsidy rules to offer greater policy flexibility, given that such subsidies are inherently distortionary.

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