



The APEC List of Environmental Goods

By Carlos Kuriyama¹

In November 2011, APEC Leaders set an ambitious target -- to develop a list of environmental goods (EG) which contribute to green growth and sustainable development, and to reduce applied tariffs on these goods to 5 percent or less by 2015. Taking this task upon themselves, APEC member economies discussed approaches, nominated products and analyzed proposals in order to arrive at a consented list, taking into account the varying interests and concerns of all APEC members at the same time.

After a series of intensive consultations that lasted right until the first week of September 2012 when the APEC Leaders were scheduled to convene their annual meeting, APEC members finally reached an understanding to endorse a list consisting of 54 EG². This is a remarkable accomplishment, and one that holds great significance for APEC. It represents a positive contribution by APEC towards the reduction of trade barriers for a number of goods that promote green growth. The result can be attributed as part of APEC members' efforts to encourage the use of goods that contribute to responsible environmental practices.

The purpose of this Policy Brief is to analyze the content of the APEC EG list, estimate its current trade value, and corroborate its significance for APEC. In addition, the 2015 tariff goal set by APEC Leaders will be compared with the current average MFN applied tariffs in order to find out how far APEC economies are from reaching their goal.

Finally, the potential repercussions of the APEC EG list will be discussed, in particular at the multilateral level.

What type of goods does it include?

The APEC EG list comprises 54 Harmonized System (HS) sub-headings at the 6-digit level belonging to different types of products. Table 1 shows the distribution of the APEC EG list by product category.

Most of the goods included in the APEC EG list correspond to three categories, namely: (1) renewable energy production; (2) environmental monitoring analysis and assessment equipment; and (3) management of solid and hazardous waste and recycling systems. These three categories collectively account for 42 out of the 54 HS sub-headings included in the list (77.8 percent of the sub-headings).

Ex-outs or additional product specifications in several HS sub-headings were also added in the list in order to focus on goods with a clear environmental benefit. However, in some cases, the list may cover goods that could have a dual use. In cases like this, at least one of the good's applications should contribute to promoting green growth. As an example, some parts and components for engines, machines or appliances could be used for environmental or non-environmental purposes.

Table 1: Distribution of the APEC EG List by Product Category

Category	Subheadings		Examples
	Number	Share	
Total HS sub-headings	54	100.0%	
Environmentally Preferable Products	1	1.9%	Bamboo flooring panels
Air Pollution Control	5	9.3%	Filtering and purifying machinery and apparatus for gases
Management of Solid and Hazardous Waste and Recycling Systems	12	22.2%	Fumaces, ovens and incinerators to destroy solid waste and pollutants
Renewable Energy Production	15	27.8%	Products for the generation of wind, solar, biomass, biogas, geothermal energy
Waste Water Management and Potable Water Treatment	5	9.3%	Sludge driers, water filters, water purification machines, parts of UV disinfection ozonizers
Natural Risk Management	1	1.9%	Surveying instruments and appliances
Environmental Monitoring Analysis and Assessment Equipment	15	27.8%	Manometers, gas and smoke analyzers, spectrometers, chromatographs, microtomes

Note: The HS sub-headings were grouped taking into reference the categories used by the Friends of the Chair of the EGS Group in WTO. See WTO document JOB(07)/54.

When preparing the endorsed EG list, APEC members also referred to past efforts since there is a certain degree of convergence between the APEC EG list and others. For example, 48 out of 54 6-digit HS sub-headings in this list are also part of the proposal by the Friends of the EGS Group in WTO³. Thirty-eight of the sub-headings in the APEC EG list are part of the combined OECD illustrative list and the list discussed at the APEC's Early Voluntary Sectoral Liberalization (EVSL) in the 1990s⁴.

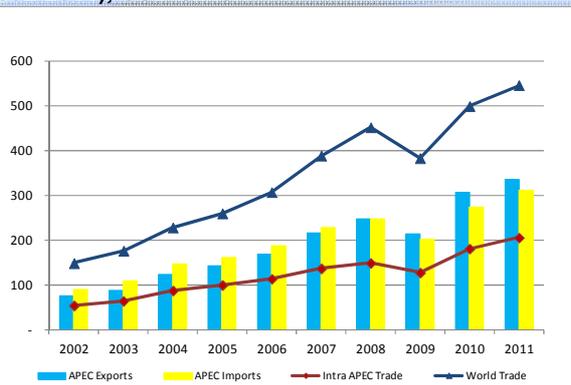
Trade relevance of the APEC EG list

Since the APEC EG list included sub-headings in different HS versions, estimating trade values will require homogenizing all sub-headings into one HS version only. The HS 2002 nomenclature was selected in order to show the evolution of trade flows over a relatively longer period. In this regard, correlation and conversion tables developed by the United Nations Statistics Division were used to harmonize all APEC EG list sub-headings into only one type of nomenclature⁵.

At present, APEC accounts for nearly 60 percent of world trade flows in the 54 HS sub-headings included in the APEC EG list. Its increasing relevance is also noticeable when comparing the worldwide growth rate of its trade flows with those of the rest of the goods not belonging to the APEC EG list. Global trade of the APEC EG list of products increased at an annual average rate of 15.5 percent between 2002 and 2011, while global trade of other goods went up only 11.5 percent per year over the same period.

Figure 1 shows an upward trend in the APEC EG list's trade flows during the period 2002-2011⁶. Only 2009 recorded a decline in trade as a consequence of the Global Financial Crisis, but flows have recovered since then. World trade flows of products included in the APEC EG list more than tripled throughout those years, reaching USD 545.6 billion in 2011. APEC exports rose even faster (18.1 percent per year) and totalled USD 336.1 billion. Furthermore, APEC's imports increased by 14.6 percent per year, reaching USD 311.3 billion. Intra-APEC trade also expanded by 15.8 percent per year and totalled USD 206.1 billion.

Figure 1: Trade of APEC List of Environmental Goods (2002-2011), USD billion



Source: WITS; Chinese Taipei's Bureau of Foreign Trade
Notes: The figures may be overestimated due to the inclusion of "ex-outs" and additional product specifications in the endorsed list.

As mentioned in the APEC PSU Policy Brief No. 3, some of the factors explaining this upward trend in EG trade are: 1) the increasing need to use resources more efficiently, which involves the application of technologies with lower carbon footprint; 2) rising oil prices, which are creating incentives to develop alternative energy sources and use energy-efficient products; 3) government regulations and increasing awareness on prevention, control and protection of the environment; and 4) greater participation of emerging economies into the global supply chain of EG.

Further analysis of the APEC EG list's trade flows by type of product indicates that APEC's exports to and imports from the world increased in all categories between 2002 and 2011. The products related to these two categories -- renewable energy production, and management of solid and hazardous waste and recycling systems -- experienced the highest growth rates and largest trade flows. In the case of renewable energy production, most of the growth was explained by components used in solar energy. Two sub-headings: 854140 (photosensitive semiconductor devices; light emitting diodes) and 901380 (optical devices, appliances and instruments, including solar heliostats), accounted for 72 percent of APEC's trade growth in this category. Regarding the management of solid and

Table 2: Distribution of the APEC EG List by Product Category, USD billion

Category	Exports			Imports		
	2002	2011	Avg Growth	2002	2011	Avg Growth
Total Trade by APEC	75.2	336.1	18.1%	91.2	311.3	14.6%
Environmentally Preferable Products	0.2	0.4	5.7%	0.1	0.4	13.0%
Air Pollution Control	3.7	9.6	11.1%	5.2	12.9	10.5%
Management of Solid and Hazardous Waste and Recycling Systems	18.1	73.7	16.9%	23.2	84.7	15.5%
Renewable Energy Production	32.0	190.3	21.9%	37.2	143.0	16.1%
Waste Water Management and Potable Water Treatment	5.4	18.7	14.9%	6.1	17.6	12.4%
Natural Risk Management	0.7	2.5	15.6%	0.8	2.4	13.2%
Environmental Monitoring Analysis and Assessment Equipment	15.2	40.9	11.7%	18.5	50.3	11.8%

Note: The HS sub-headings were grouped taking into reference the categories used by the Friends of the Chair of the EGS Group in WTO. See WTO document JOB(07)/54.
Source: WITS; Chinese Taipei's Bureau of Foreign Trade

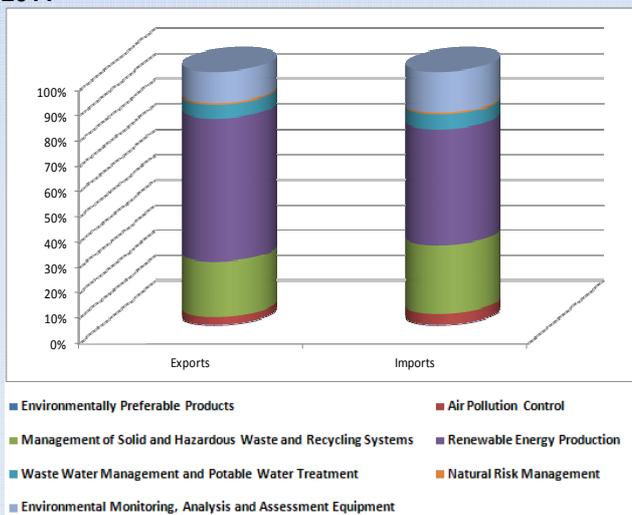
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APEC Member Economies: Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Philippines; Russia; Singapore; Chinese Taipei; Thailand; United States of America; and Viet Nam.

hazardous waste and recycling systems, 87 percent of APEC's trade growth was explained by two sub-headings: 847989 (other machines and mechanical appliances, which includes products for areas of environmental management such as water, waste water, drinking water production and soil remediation) and 847990 (parts of machines and mechanical appliances of heading 8479)⁷. A breakdown of APEC's trade by type of product is shown in Table 2.

Figure 2 illustrates the APEC EG list's share of APEC's worldwide trade by product category. Most of the EG list's trade by APEC economies can be explained by products in these three categories, namely: (1) renewable energy production; (2) management of solid and hazardous waste and recycling systems; and (3) environmental monitoring, analysis and assessment equipment. In 2011, these categories altogether accounted for nearly 90 percent of APEC's global trade of all products included in the APEC EG list.

Figure 2: APEC List of Environmental Goods - Distribution of APEC Trade by Type of Product, Year 2011



Note: The HS sub-headings were grouped taking into reference the categories used by the Friends of the Chair of the EGS Group in WTO. See WTO document JOB(07)/54.

Source: WITS; Chinese Taipei's Bureau of Foreign Trade

In terms of value, renewable energy production was found to be the most important category for APEC, representing around half of the EG list's trade by APEC members, despite accounting for less than a third of the HS sub-headings in the APEC EG list.

The growing interest to become less dependent on fossil

fuels and develop other energy sources such as solar, wind and geothermal, among others, has been playing a significant role in increasing APEC's trade flows in this category.

Low MFN tariffs...

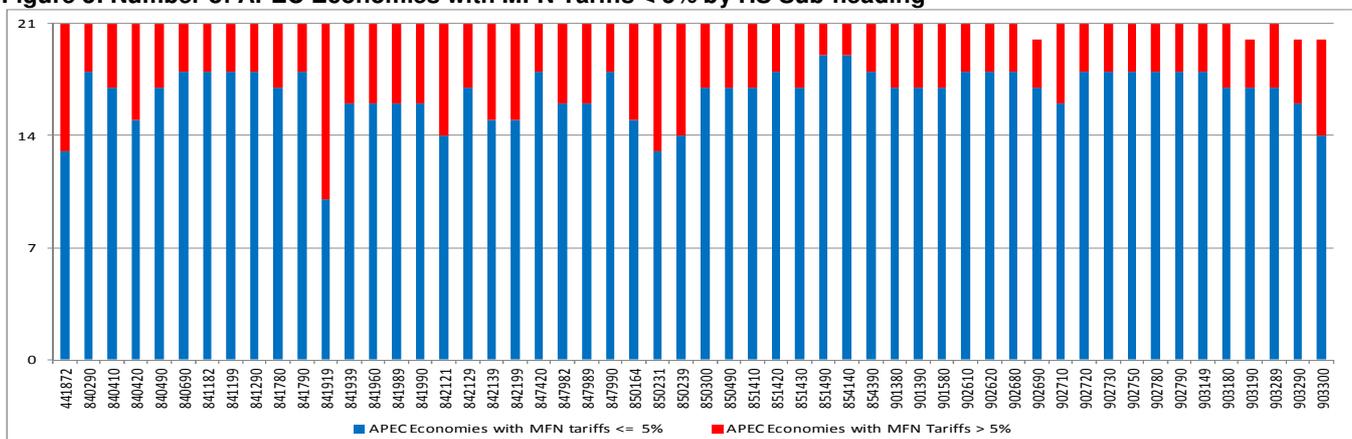
In terms of existing MFN tariffs in the APEC region for the 54 HS sub-headings that are in the EG list, the average MFN tariff was equal to 2.9 percent by the end of 2011. This is below the 5 percent threshold that was established by APEC Leaders in November 2011. However, this does not mean that APEC has already accomplished its objective and no further work is needed. Instead, a further examination of the tariff data found that the APEC EG list is still very relevant as progress has not been consistent across APEC members and HS sub-headings. In other words, there is still work that needs to be done.

A review of the MFN tariff rates by APEC economy and HS sub-heading reveals the need for further tariff reductions for most APEC member economies in order to meet the commitment of reducing tariffs to 5 percent or less by 2015. For instance, 16 out of 21 APEC economies have at least one HS sub-heading where MFN tariff rates do not meet this goal. Seven APEC economies have not reached this goal in at least 10 HS sub-headings, and four APEC economies for more than half of HS sub-headings included in the APEC EG list.

Furthermore, the tariff data shows that there are at least two APEC economies who are imposing MFN tariff rates that are above 5 percent in each HS sub-heading included in the EG list. There are also two products in which only two APEC economies have MFN tariffs that are above the limit: the HS sub-headings 851490 (parts of industrial or laboratory electric furnaces and ovens) and 854190 (parts of diodes, transistors or photosensitive semiconductor devices). In contrast, the HS sub-heading 841919 (other instantaneous or storage water heaters, non-electric) includes 11 APEC economies with MFN tariffs that are over 5 percent.

An average of four to five APEC economies reported MFN tariffs greater than 5 percent in any given HS sub-heading. Figure 3 compares for each HS sub-heading the number of APEC economies with MFN tariffs that are above and below or equal to the 5 percent threshold. The number of economies that already met APEC's goal by HS sub-heading is depicted in blue colour, while the rest is depicted in red colour. Blue is the prevalent colour in Figure 3, which means that APEC is closer and not farther away from completely meeting the goal by 2015.

Figure 3: Number of APEC Economies with MFN Tariffs < 5% by HS Sub-heading



Note: Some APEC economies did not report non ad-valorem MFN tariffs for a number of HS sub-headings. For those specific cases, the total count for APEC economies in this figure is not equal to 21.

Source: WTO

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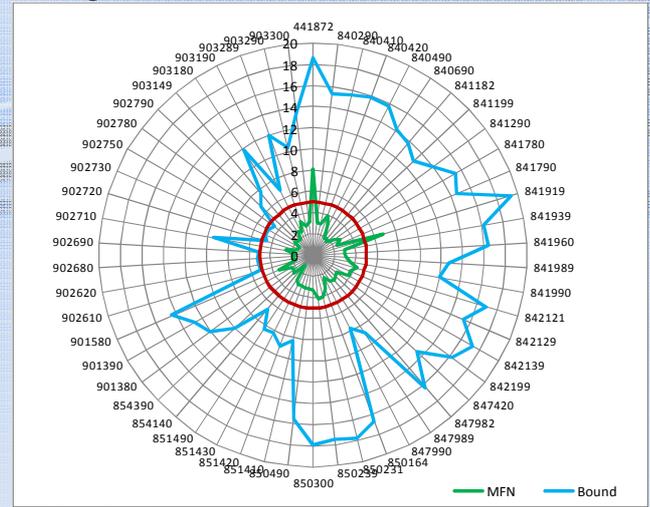
APEC Member Economies: Australia; Brunei Darussalam; Canada; Chile; China; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Papua New Guinea; Peru; Philippines; Russia; Singapore; Chinese Taipei; Thailand; United States of America; and Viet Nam.

In terms of maximum MFN tariff rates, 49 out of 54 HS sub-headings reported at least one APEC economy with MFN tariff above 10 percent. The highest maximum MFN tariff found was equal to 35 percent (HS 841919, other instantaneous or storage water heaters, non-electric). If the maximum MFN tariff rate across the APEC region is selected for each HS sub-heading, the average and median maximum values are equal to 14.5 percent and 13.3 percent, respectively, which denotes rates well above the established goal by 2015.

...but high bound tariffs

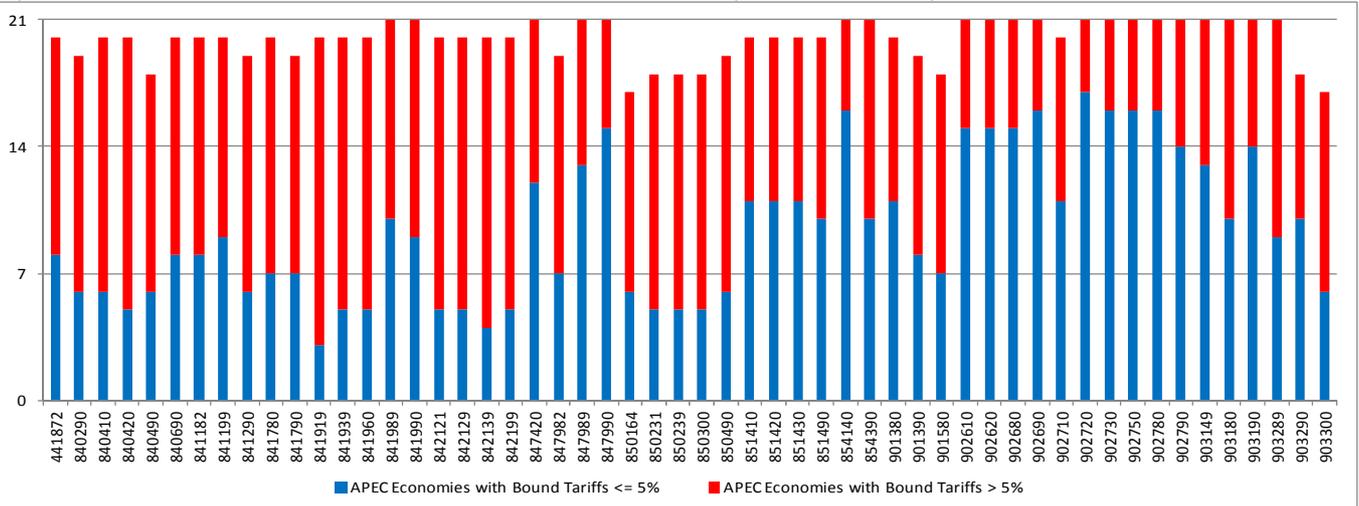
Our analysis show striking differences when comparing MFN tariff averages with bound tariff averages. Whereas the average MFN tariff for the APEC region was below the 5 percent goal for most of the HS sub-headings, the opposite occurs for the average bound tariffs. APEC's average bound tariff rate for the 54 HS sub-headings in the EG list was equal to 12 percent and only four HS sub-headings had average bound tariff rates below 5 percent. Figure 4 illustrates the difference in values between average MFN and bound tariffs by HS sub-heading and their proximity to the 5 percent goal.

Figure 4. MFN and Bound Tariff Averages by HS sub-heading



Note: The red circle denotes the 5 percent threshold agreed by APEC Leaders.
Source: WTO

Figure 5: Number of APEC Economies with Bound Tariffs < 5% by HS Sub-heading



Note: Some APEC economies did not present bound tariffs for a number of HS sub-headings. For those specific cases, the total count of APEC economies in this figure is not equal to 21.
Source: WTO

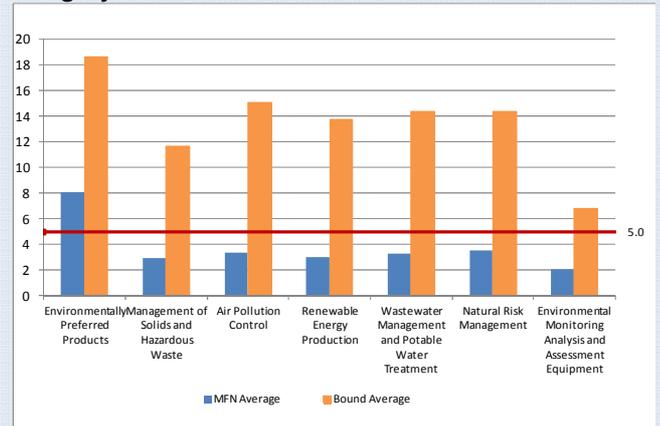
A closer look at the bound tariff rates in the APEC region also shows that only 2 out of 21 APEC economies have bound tariffs that are below 5 percent for all HS sub-headings included in the APEC EG list. However, one of them did not present any bound tariff at the multilateral level in 26 out of the 54 HS sub-headings in the APEC EG list⁸.

As opposed to MFN tariffs, bound tariffs above 5 percent are present in a greater proportion of APEC economies per HS sub-heading. Figure 5 shows that 21 out of the 54 HS sub-headings in the APEC EG list have bound tariffs above 5 percent in more than half of the APEC economies. The HS sub-heading 841919 (other Instantaneous or storage water heaters, non-electric) only had three APEC members with bound tariffs below the threshold, whereas the HS sub-heading 902720 (chromatographs and electrophoresis instruments) included 17 APEC members with bound tariffs lower than 5 percent.

A comparison of MFN and bound tariffs by product category indicates that the difference in average values is substantial in most categories. The product category concerning environmental monitoring, analysis and assessment equipment registered the lowest average bound tariff rate

(6.7 percent) and the lowest difference in average values (6.7 percentage points) between MFN and bound averages. Figure 6 shows that the rest of product categories had bound tariff values over 10 percent, which is more than double that of the 5 percent threshold.

Figure 6: Bound and MFN Average Tariff by Product Category



Source: WTO

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Tariff data shows that APEC is not far from fully reaching the 2015 goal to reduce the APEC EG list's MFN applied tariffs to a level of 5 percent or less. Some extra efforts would be needed at the economy-level in specific EGs to achieve this goal. However, in the current global scenario of weak economic growth, noting that bound tariffs are higher than MFN applied tariffs, it is important that APEC economies refrain from implementing protectionist measures that may increase the existing applied tariff levels.

Implications of the APEC EG list

Given that APEC is a voluntary forum, the APEC EG list is not binding and does not prejudice APEC members' positions in the WTO. Despite these characteristics, the APEC EG list remains very relevant for a number of reasons.

First of all, APEC Leaders endorsed the list as part of their commitment towards green growth and sustainable development. Since endorsement came from the highest level in each APEC member economy, there would be an added impetus for APEC members to achieve the 2015 goal. In a way, APEC has opened a path for trade liberalization in EG with this list.

Second, liberalizing EG trade has always been a contentious area and APEC has shown that it is able to reach an understanding on an area where others have been unable to. APEC has demonstrated its ability to work together and produce results despite each member's different approaches and interests. The APEC EG list reflects a balanced position among developing and industrialized APEC members, and provides an example on how concrete results can be achieved through extensive government-to-government consultations and constructive dialogue with stakeholders in the business sector. This breakthrough has given a boost to APEC's reputation and the challenge is now on its member economies to actualize the 2015 goal.

Third, the APEC EG list could offer a new perspective to the EG discussions in WTO. Since the WTO Doha Ministerial Meeting in November 2001 where the WTO's mandate to negotiate on the "the reduction or, as appropriate, elimination of tariffs and non-tariff barriers to environmental goods and services"⁹ was obtained, progress on this topic has been limited. The divergent approaches to negotiations on this topic among WTO members as well as the slowdown of the Doha Round in general have contributed to this lack of progress. The APEC EG list may well revive political momentum and help the WTO disentangle some contentious issues in the current EG multilateral discussions. Other parties outside APEC in the multilateral negotiations may also be encouraged to review the list and present counterproposals. In this context, the APEC EG list represents a noble effort which may lead to positive repercussions at the multilateral level.

Fourth, there is potential for the APEC EG to follow in the footsteps of WTO's Information Technology Agreement (ITA). In the case of ITA, APEC successfully scaled it up from a regional discussion to a plurilateral agreement, after negotiations were concluded successfully in December 1996 at the WTO Ministerial Conference in Singapore. In that particular case, APEC contributed significantly by presenting proposals that were able to facilitate consensus among the participants in WTO. APEC worked as a sort of "laboratory"

by providing a valuable inter-governmental mechanism of consensus that effectively moved forward the WTO debate and arrived at a plurilateral agreement that eliminated duties in several IT-related products.

Fifth, APEC's ability to develop an agreed EG list could serve as an inspiration to kick-start work in other areas. For instance, the technological cycle has accelerated in recent years and many new IT products are not covered by the original ITA. Similarly, products that have become obsolete or are not produced anymore still form part of the ITA. APEC could work towards updating the list of goods in the current ITA. This could have a substantial impact in reducing or eliminating barriers to trade in these IT products. Besides, given the concentration of production networks in the electronics sector in this region, there would be significant economic spillover effects in the trade liberalization of IT products.

Final Remarks

APEC's accomplishment in developing the APEC EG list is a culmination of several years of efforts. Since the talks on the APEC's Early Voluntary Sectoral Liberalization (EVSL) in the 1990s, it has not been possible to reach consensus on an EG list despite several attempts to do so. The breakthrough came in November 2011 when APEC Leaders made a decisive intervention and instructed their economies to develop the EG list. This led to an intensification of efforts in 2012, and the positive outcome that APEC has today.

For APEC, it is very important that its members were able to achieve a meaningful list comprising 54 sub-headings and with many different types of goods. If trade barriers are lowered or eliminated on all products included in the APEC EG list, not only within APEC but around the world, trade across borders would become more dynamic for this important market that is already worth USD 545.6 billion. Moreover, there would be positive spillovers for the society, for example, by providing cheaper access to products which promote environmental objectives such as increased use of energy-efficient products, the expansion of renewable energy sources and reduced air pollution, among others.

From the institutional perspective, this is a great opportunity for APEC to once again take the lead in WTO negotiations and help steer, in the right direction, the discussions on EG at the multilateral level. Apart from its achievement with the ITA, APEC has been an important player in the successful conclusion of the Uruguay Round which helped transform the General Agreement on Tariffs and Trade (GATT) into the WTO in 1995. With this breakthrough in the EG list, APEC can take the lead in kick-starting multilateral EG negotiations. If bound tariffs for EG are reduced to 5 percent or less, this would send an unequivocal signal of the willingness to reduce or eliminate tariffs on EG and support green growth and sustainable development worldwide.

Notes:

1. The author would like to thank Denis Hew and Aveline Low Bee Hui for their valuable comments and suggestions and Azul Ogazon and Collin Gerst for their valuable statistical and research assistance. The views expressed in this document are those of the author and do not represent the views of the APEC Secretariat or APEC member economies.
2. The APEC List of Environmental Goods can be found at http://www.apec.org/Meeting-Papers/Leaders-Declarations/2012/2012_aelm/2012_aelm_annexC.aspx
3. For more details on the list proposed by the Friends of the EGS Group in WTO, please see WTO, "Continued Work Under Paragraph 31 (III) of the Doha Ministerial Declaration. Committee on Trade and Environmental Special Session, JOB(07)/54, 27 April 2007".
4. For more details on the combined OECD indicative list and the list discussed at the APEC's EVSL, please see Department of Foreign Affairs and Trade, Australia, "Australia's Trade in Environmental Goods and Services". Economic Analytical Unit Working Paper.
5. The correlation and concordance tables are available at <http://unstats.un.org/unsd/trade/conversions/HS%20Correlation%20and%20Conversion%20tables.htm>
6. As discussed earlier at the APEC PSU Policy Brief No. 3, some factors including the unavailability of harmonized trade data at the HS 8 or 10-digit level prevents an accurate quantification of EG trade flows. In this regard, studies analyzing EG trade flows mostly use data at the HS 6-digit level. For more information, see the APEC PSU Policy Brief No. 3, available at: <http://www.apec.org/About-Us/Policy-Support-Unit/~media/0EBCBB67B44B4F06870EE4DA72FD9029.ashx>
7. Nevertheless, sub-headings 847989 and 847990 might be overestimating growth of EG trade of management of solid and hazardous waste and recycling systems, as those sub-headings also include machines, mechanical appliances and parts that might be used as components in motor vehicles.
8. The calculation of the average bound tariff only took into account the values presented by APEC economies at WTO.
9. See Paragraph 31(iii) of the WTO Doha Ministerial Declaration. Available at: http://www.wto.org/english/thewto_e/minist_e/min01_e/mindecl_e.htm#tradeenvironment

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