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**Environmental Goods:  
A Comparison of the APEC and  
OECD Lists**

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Joint Working Party on Trade and Environment

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### **Abstract**

This paper compares two lists of environmental goods that have been used in the WTO negotiations on liberalising trade in environmental goods and services. It describes the genesis of the lists, which were compiled in the late 1990s. The OECD list was developed as a basis for analysing trade and tariffs. The APEC list emerged from nominations by member economies of the Asia-Pacific Economic Co-operation forum, as part of an effort to attain early voluntary liberalisation of trade in particular sectors. The concluding section of the chapter identifies common elements in the two lists and explains important differences.

JEL Classifications: F13, F18, Q53, Q56

*Keywords:* environmental goods, trade negotiations, pollution-control technology

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The report, which is also available in French, can be found on the OECD website at the following address: <http://www.oecd.org/trade> and <http://www.oecd.org/trade/env>

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## ENVIRONMENTAL GOODS: A COMPARISON OF THE APEC AND OECD LISTS

### Executive Summary

The Doha Ministerial Declaration calls for negotiations on “environmental goods”, but stops short of defining them. It was not surprising therefore that discussions in the WTO Committee on Trade and Environment in Special Session (CTE-SS), entrusted with these negotiations, began by examining the substantial amount of work already undertaken by the OECD and APEC (Asia-Pacific Economic Cooperation forum). This paper compares and contrasts both the developmental history and the specific content of the two lists.

It is important to understand that the objectives of the two exercises differed, as did the procedures for generating the lists. They are therefore not strictly comparable. The OECD list was the result of an exercise intended to illustrate, primarily for analytical purposes, the scope of the “environment industry”. It flowed directly from joint OECD and Eurostat work on a manual for national statisticians to assist them in measuring their national environmental industries. On the basis of the general categories of goods and services, the JWPTE added examples of specific goods. This OECD list could therefore be broad, because adding products to the list had no particular policy consequences. Moreover, the OECD’s larger list was created deductively: starting from general categories based on the classifications in the environment industry manual, it added specific examples in order to produce an estimate of average tariffs on a previously undefined class of goods.

The APEC approach, on the other hand, started with nominations, not unlike the request-offer procedures traditionally used in trade negotiations. This yielded a list of goods which was then arranged according to an agreed classification system. Further, since the aim of the APEC list was to obtain more favourable tariff treatment for environmental goods, APEC member economies limited themselves to specific goods that could be readily distinguished by customs agents and treated differently for tariff purposes. For this reason, issues related to “like products”, products defined by particular processes or production methods, and products defined by their life-cycle impacts were not addressed, with the result that some goods were omitted from the list that were included on the OECD list. This constraint of practicality could be relaxed in the OECD’s analysis because its aim was merely to illustrate what might be included.

Both the OECD and the APEC lists have helped frame the current WTO negotiations on environmental goods. It is hoped that this detailed comparison of the two lists will facilitate understanding of how and for what purposes they were devised, as well as make clear why many, if not most, WTO members regard the lists as helpful but not definitive.

### Introduction

Paragraph 31(iii) of the Doha Ministerial Declaration calls for negotiations on “the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services”. “Environmental goods” were not further defined in the declaration. However, the OECD and APEC (Asia-Pacific Co-operation) had already done a substantial amount of work to identify the scope of environmental goods; each of these organisations established a list of candidate goods. Although the lists were developed for purposes other than the WTO negotiations, and therefore have to be considered as

indicative, several countries have considered them useful starting points for those negotiations. In fact, in September 2002, the WTO Secretariat was asked to circulate both lists to the Non-agricultural Market Access Negotiating Group (NAMA), the WTO body that is conducting negotiations on environmental goods,<sup>1</sup> and subsequently to the Committee on Trade and Environment meeting in Special Session (CTE-SS), with which the NAMA works closely.<sup>2</sup> Since then, several other OECD members have submitted proposals that include some goods from both lists.

### **Genesis of the two lists**

The dynamic nature of their market, together with the role they can play in strengthening environmental protection, have made environmental goods obvious candidates for a trade liberalisation initiative, one that could benefit the environment and boost international trade. However, trade negotiators face a basic difficulty: there is no well-defined “environmental goods sector”. Rather, environmental goods are found in a wide range of industrial and trade classification nomenclatures. As one study noted, “This business is less a sector than an agglomeration of providers of many types of goods, services and technologies that are usually integrated into production processes and are often hard to tease out as separate items.” (US Office of Technology Assessment, 1994, p. 149)

Specific end-of-pipe pollution abatement and clean-up technologies — such as catalytic converters for automobile exhausts — are obvious candidates for any list of environmental goods. Outside this narrow area, however, classifying goods as “environmental” raises fundamental issues. Many goods used for environmental protection and resource management have other uses: for example, pumps can be used in a wastewater treatment facility or in industrial uses not related to environmental remediation. Other goods may be considered “good for the environment” by virtue of their relative (as opposed to absolute) performance; as almost all goods and technologies have substitutes that are cleaner or more efficient, the resulting definition might be extremely broad. No attempt is made here to resolve classification issues, but readers are advised to bear them in mind when considering the product coverage of any list of environmental goods.

The following sections trace separately the development of the OECD and APEC lists. In fact, their developmental phases ran closely parallel and intersected at several points, the one exercise informing the other. That is not surprising, as six (and later seven) countries<sup>3</sup> were members of both organisations. However, the lists were intended to serve different purposes. The OECD list was the result of an exercise to illustrate, primarily for analytical purposes, the scope of the “environment industry”. The categories of goods could therefore be broad, because adding products to the list would have no specific policy consequences. By contrast, the APEC list resulted from policy discussions relating to anticipated changes in tariffs. Whereas the OECD list was meant to be indicative and a framework for undertaking economic analysis in general and analysis of trade flows and tariff barriers in particular, the APEC list — negotiations on which ended before full consensus was reached — was the direct result of negotiated offers in the context of a trade liberalisation initiative.

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<sup>1</sup>. Under the negotiating structure adopted by the Trade Negotiations Committee in February 2002, negotiations on market access for non-agricultural products were to take place in the Negotiating Group on Market Access, and negotiations on services in the Council for Trade in Services in Special Session. Negotiations on trade and environment were to take place in the Committee on Trade and Environment meeting in Special Session.

<sup>2</sup>. The lists are contained in WTO documents TN/MA/S/6 and TN/TE/W/18.

<sup>3</sup>. Australia, Canada, Japan, Korea (which joined the OECD late in 1996), Mexico, New Zealand and the United States.

*The OECD list*

The OECD's interest in environmental goods and services arose as part of its work on environmental policy and industrial competitiveness. A 1992 report prepared by the Industry Committee described market developments in the environment industry and the role of environmental policies (OECD, 1992). A subsequent report (OECD, 1996a) expanded and deepened the analysis, collected available data, and showed a clear need to improve information on the industry and undertake further analysis.

Publication of these results prompted numerous questions. What was the situation for exports of environmental technologies? Was it possible to measure the impact on industrial competitiveness of the application of cleaner technologies? How could environmental and economic policy encourage and support growth, job creation and trade in goods and services of the environment industry? It soon became apparent that to answer such questions, it was necessary to address major statistical and methodological difficulties related to problems of industry delimitation and data availability.

In 1994 the US government (the Environmental Protection Agency and the Department of Commerce) hosted a meeting of experts in Washington, DC. The main aim was to identify ways to collect more comprehensive and consistent information, particularly on production, employment, trade, investment and R&D, and to provide a more solid foundation for policy analysis (OECD, 1996b). Before statistics could be gathered, however, a clearer definition and classification of the environmental goods and services industry was needed. To this end, the OECD, in collaboration with Eurostat (the Statistical Office of the European Communities), formed an Informal Working Group on the Environment Industry composed of experts from OECD countries who, as part of their work at national ministries, national statistical offices, or public or private research institutes, were responsible for collecting and analysing data on the environmental goods and services industry.

At its first meeting in Luxembourg, in April 1995, the OECD/Eurostat Informal Working Group agreed on an interim definition of, and classification system for, the environment industry (OECD, 1996c). After considering various alternatives, the Working Group agreed on the following definition:

The environmental goods and services industry consists of activities which produce goods and services to measure, prevent, limit, minimise or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimise pollution and resource use.

The Working Group went on to add, "For cleaner technologies, products and services, despite their importance, there is currently no agreed methodology which allows their contribution to be measured in a satisfactory way." (OECD/Eurostat, 1999, p. 10) This is why products defined in terms of their energy efficiency, for example, were not included in the original OECD list.

The definition and classification were tested during 1996 and 1997 by reorganising available data in OECD countries and collecting new data. In the meantime, Canada, the Commission of the European Communities, France and the United States started using the OECD/Eurostat classification to design and carry out new surveys and studies on the environment industry.

During 1997 the OECD/Eurostat Informal Working Group continued to refine and improve its interim definition and classification system. Meanwhile, the OECD's Joint Working Party on Trade and Environment (JWPTE) took an interest in the subject. The OECD/Eurostat Informal Working Group was concentrating on defining relevant industry activities (for both goods and services) to improve analysis and to obtain coherent, comparable statistics in national surveys; the JWPTE was interested in developing a framework for future trade liberalisation efforts in the environmental goods and services (EG&S) sector. In the absence of any internationally agreed product list of environmental goods, it attempted to develop such a list based on 6-digit HS (Harmonized System) trade nomenclature product numbers and arranged according to the groups, categories and sub-categories of environmental goods developed by the Informal Working Group. Given the nature of the OECD/Eurostat classification system, it was possible to identify a greater number of HS commodity codes for the six sub-categories of group A ("Pollution Management"), than for the two sub-categories of group B ("Cleaner Technologies and Products") or the ten sub-categories of group C ("Resources Management"). The final list, which is reproduced in Table A1, was completed in 1998 and was published in both a JWPTE working paper (OECD, 1999) and the final report of the Informal Working Group (OECD/Eurostat, 1999). It was also reproduced, unchanged, in *Environmental Goods and Services: The Benefits of Further Global Trade Liberalisation* (OECD, 2001).

It must be stressed that the OECD list was meant to be illustrative rather than definitive, and particularly for use in analysing levels of tariff protection. As the "Note" to the list published in OECD/Eurostat (1999b) explains, "The list is not exhaustive; not all environmental goods are covered. Some environmental goods have no equivalent HS commodity code. Some HS commodity codes include goods which may not be environmental goods." It is with respect to the last point that some of the most important differences between the OECD and APEC lists occur. In producing the OECD list, no attempt was made to go beyond the 6-digit (sub-heading) HS codes and identify only those goods that could be considered "environmental". By contrast, the APEC list was produced through an essentially "bottom-up" process, and includes many "ex-headings" (nationally defined tariff lines) of goods that fall under more aggregate commodity descriptions.

### ***The APEC list***

The roots of the APEC list of environmental goods can be traced to a November 1995 meeting in Osaka, Japan, at which APEC leaders agreed to identify industries in which the progressive reduction of tariffs could have a positive impact on trade and on economic growth in the Asia-Pacific region, or for

which there was regional industry support for early liberalisation. A year later, at their meeting in Subic Bay, Philippines, APEC leaders issued more precise instructions, directing ministers responsible for trade (hereafter “trade ministers”) to “identify sectors where early voluntary liberalisation would have a positive impact on trade, investment and economic growth in the individual APEC economies as well as in the region and submit recommendations on how this can be achieved”.

At their May 1997 meeting in Montreal, APEC trade ministers directed officials to identify sectors that might be candidates for early voluntary liberalisation. A wide variety of APEC economies then put forward 62 nominations from more than 40 sectors, for consideration at a subsequent meeting of senior officials in August. Most proposals were supported by several economies, but few were supported by all (Yamazawa and Scollay, 2003). Environmental goods and services, as a distinct category, was proposed by four economies — Canada, Japan, Chinese Taipei and the United States — drawing on the original working OECD definition of the environmental sector to guide the initial work of classification (Dee *et al.*, 1998). Ultimately, a total of nine economies proposed goods under this category.

By the time of the November 1997 APEC leaders’ meeting in Vancouver, the nominations had been arranged into 41 sectors. At that meeting, 15 sectors clearly enjoyed the greatest support for early voluntary sectoral liberalisation (EVSL). These 15 sectors were then divided into two tiers. The first comprised nine sectors identified for fast-track treatment: environmental goods and services, fish and fish products, forestry products, medical equipment and instruments, energy, toys, gems and jewellery, chemicals, and a telecommunications mutual recognition agreement. The second tier comprised sectors (oilseeds and oilseed products, food, rubber, fertilisers, automotive products, civil aircraft) which were judged to require more preparatory work before they would be ready for implementation.<sup>4</sup>

Acting on the decisions of leaders and ministers in Vancouver, senior officials instructed sectoral co-ordinators to finalise agreements or arrangements that would include, in addition to market opening, elements of facilitation and economic and technical co-operation. Building on work undertaken in autumn 1997, and including extensive inter-session work, two additional rounds of experts’ meetings were held in Penang and Kuala Lumpur to further develop the Vancouver proposals in advance of the June 1998 Kuching meeting of APEC trade ministers. By the time of the meeting, a framework for addressing EVSL, including draft product lists, end tariff rates and timetables, had been worked out. Both at Kuching and in subsequent meetings in 1998, including in Kuantan, further efforts were made to develop each of the proposals. Table A2 provides the revised, consolidated list of environmental goods (also known as the “Kuantan version”), the list that was eventually transmitted to the WTO.

Because environmental goods are not defined as a sector in the HS nomenclature, liberalisation of necessity had to be pursued on a product-specific basis (Oxley, 1999). Proceeding from the OECD definition of activities that form part of the environmental industry, APEC economies identified, by HS codes, a positive list of products to be covered under the agreement. Tariffs for the specified products were, in principle, to be completely eliminated by 1 January 2003.<sup>5</sup> However, in recognition of the need to deal with product-specific concerns raised by individual economies, some flexibility was allowed. In the case of environmental goods, for example, elimination of some tariffs could be delayed until 2005 for a small number of products, or until 2007 in the case of developing economies (Table 1).

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<sup>4.</sup> Proposals for the second tier of sectors were further developed for assessment and review by APEC ministers at the Kuching meeting in June 1998 (Dee *et al.*, 1998).

<sup>5.</sup> Targets for the environmental goods and services sectors were initially “to be determined” and were only finalised subsequent to the June 1998 Kuching meeting of APEC trade ministers.



**Table 1. APEC's EVSL for environmental goods: flexibility proposals by the sectoral co-ordinator**

Schedule target	Implementation schedule
Preferred outcome	Tariffs eliminated over 4 years, in 4 equal cuts, with the first cut taking place six months after conclusion of the agreement, subject to the completion of domestic legislative procedures, and subsequent cuts taking place by 1 January 2001, 2002 and 2003.
Minimum conformity	Industrialised economies: 90% of tariff lines to be reduced to 0% by 1 January 2003. Developing economies: 80% of tariff lines to be reduced to 0% by 1 January 2003.
Flexibility	Industrialised economies: any remaining non-zero tariff lines to be reduced to 0% by 1 January 2005. Developing economies: the first tranche (at least half) of any remaining non-zero tariff lines to be reduced to 0% by 1 January 2005; the last tranche of non-zero tariff lines to be reduced to 0% by 1 January 2007

*Sources:* Sectoral co-ordinator for environmental goods and services, "Report on agreements/arrangements for market opening, facilitation and other measures", 11 November 1998; Government of New Zealand, "Preparations for the 1999 Ministerial Conference — APEC's 'Accelerated Tariff Liberalisation' (ATL) Initiative — Communication from New Zealand", Document No. WT/GC/W/138 (26 January 1999), World Trade Organization, Geneva.

In the negotiations, there was a certain amount of caution on the part of some economies that may have been reluctant to see items with high tariffs targeted for liberalisation. In addition, some economies were quite sensitive to the "dual use" issue. They reasoned that, while certain items might have a use, even an important use, in an environmental context, they might also be used in other contexts, with the result that the effects of tariff liberalisation would not be limited to the environment sector. Further, even when HS tariff lines contained items that were essential to the environment industry, other products that were not so environmentally relevant might also fall under the same 6- or 8-digit tariff sub-heading.

The APEC economies found ways to address many of these concerns, for example through: *i)* the inclusion of a 6-digit heading if the products were predominantly environmental, or so central to environmental uses that their inclusion was absolutely necessary; or *ii)* the specification of an "ex-heading" when APEC economies wished to provide duty-free treatment to a specific product. In the latter cases, it would be left to individual economies to specify how that product would be reflected in their own national tariff schedules. All of these issues tended to make economies cautious about inclusion of HS sub-headings and products, and this made the APEC list shorter than it might otherwise have been.

Notably absent from the consolidated list of environmental goods were chemicals used for processes such as water purification or wastewater treatment. Chemicals were omitted not because they were regarded as non-essential for environmental protection and remediation, but because APEC members wanted to avoid entangling the EVSL initiative for environmental goods with the one for chemicals, particularly as the latter called only for harmonising tariff rates (Tables A3 and A4). The proposal for EVSL of chemicals had a longer history, beginning with the Uruguay Round's Chemical Tariff Harmonisation Agreement (CTHA), to which several APEC economies were already signatories as part of their Uruguay Round tariff commitments (Box 1).

The logic of avoiding overlap between EVSL lists was *not* applied to goods from the medical equipment and instruments sector, 36 of which are included in the environmental goods list under the category for monitoring and analysis equipment.<sup>6</sup> There is also a smaller overlap between the list for

<sup>6.</sup> Several products included on the list (particularly under HS 9027 and 9031) also form part of the schedule of commitments entered into by Parties to the WTO's Information Technology Agreement, several of whom are also members of APEC.

energy and the list for environmental goods, with 17 tariff lines common at the 6-digit level, ten of which refer to different ex-headings.

**Box 1. The EVSL initiative for chemicals**

Chemicals such as hydrated lime and magnesium dioxide are used in many environmental processes, such as water purification, wastewater treatment and air pollution control. They were omitted from APEC's EVSL initiative for environmental goods because they were covered under a separate EVSL initiative for chemicals.

The chemicals EVSL initiative — later to become part of the Accelerated Tariff Liberalisation initiative — had its origins in the Uruguay Round of multilateral trade negotiations. In 1991, chemical associations from several countries proposed that chemical tariffs be harmonised at 0%, 5.5% or 6.5%, depending on the class of the chemical product. The harmonisation initiative covered all of HS Chapters 28-39, except for a handful of items that were considered to be part of the Uruguay Round agricultural negotiations. The industry proposal became the basis for the Uruguay Round Chemical Tariff Harmonisation Agreement (CTHA), to which about two dozen countries became signatories.<sup>1</sup> Since then, several other countries have adopted the CTHA as part of their WTO accession commitments, and others still in the process of acceding have signalled their willingness to undertake the CTHA commitments. Currently, over 30 (mainly OECD member) countries are in the process of implementing the CTHA, with more to join once their accession negotiations are completed.

When APEC ministers called for the nomination of sectors for EVSL in mid-1997, the United States and Singapore each nominated the full range of products covered by the CTHA and the tariff rates agreed to in the Uruguay Round for those products. Australia and Hong Kong, China, joined with the United States and Singapore to co-sponsor a broad chemicals initiative. Several other proposals were also received for sub-sectors of the chemicals sector, and fertilisers was selected by APEC ministers as a separate product group for liberalisation beyond that provided for in the CTHA.

1. At the end of the Uruguay Round, the CTHA encompassed the Quad (Canada, the European Commission [on behalf of the 12 EU member states], Japan, and the United States), Korea, Norway, Singapore and Switzerland. In 1995 this number increased with the addition of three new member states to the European Union.

*Source:* Government of New Zealand, "Preparations for the 1999 Ministerial Conference — APEC's 'Accelerated Tariff Liberalisation' (ATL) Initiative — Communication from New Zealand — Addendum", Document No. WT/GC/W/138/Add.1 (22 April 1999), World Trade Organization, Geneva.

During the remainder of 1998, additional technical experts' meetings took place to elaborate the details of the various EVSL frameworks. The resultant proposal, presented to trade ministers and APEC leaders at their annual meeting in Kuala Lumpur in November 1998, was a comprehensive package that included undertakings on four elements: tariffs, services, non-tariff measures and economic and technical co-operation (Ecotech). While taking note of the progress made in finalising the EVSL package, ministers could not agree to move forward on its tariff elements. A decision was therefore taken to refer the tariff elements of the EVSL proposals to the WTO, for possible adoption on a binding basis by the full WTO membership. In so doing, the ministers also pledged to work "constructively to achieve critical mass in the

WTO necessary for concluding agreement in all nine [first-tier EVSL] sectors”.<sup>7</sup> Malaysia, as APEC Chair, communicated this outcome to the WTO General Council in December 1998.

New Zealand, as APEC Chair for 1999, later circulated two papers to WTO members, explaining the history of the EVSL initiative and providing details on the liberalisation targets, flexibility approaches, and positions reached by APEC economies for each sector by the time of the Kuala Lumpur ministerial and leaders’ meetings. The expectation was that the tariff elements of the Accelerated Tariff Liberalisation (ATL) initiative — as the EVSL initiative became known in the WTO — would be advanced as a whole for consideration and adoption at the Third WTO Ministerial Conference in Seattle (December 1999). Owing to the complicated nature of the Seattle meeting, however, little progress was made on the package.

Meanwhile, work on other aspects of the EVSL initiatives — namely, reducing non-tariff barriers, facilitating trade and encouraging economic and technical co-operation — has continued within APEC. For example, APEC members have been encouraged to submit and support proposals for economic and technical co-operation projects that will facilitate trade in environmental goods. An APEC Cleaner Production Strategy<sup>8</sup> has been developed and approved which includes a list of generic, illustrative activities for implementing the strategy: *i*) cleaner production training modules; *ii*) sector-based demonstration projects and case studies; *iii*) technical conferences and seminars; *iv*) environmental management systems (*e.g.* ISO 14001) workshops and training activities; *v*) study tours and cleaner production fellowships; *vi*) technical exchanges; *vii*) electronic information exchanges; *viii*) use of industrial extension support systems to promote cleaner production among SMEs; and *ix*) development of guidebooks and manuals. In 2003, the APEC Secretariat circulated a questionnaire<sup>9</sup> to its members on the impacts on APEC economies of measures to liberalise and facilitate trade in environmental services. Member economies have since presented case studies of their experiences on a voluntary basis, to generate momentum for services liberalisation in light of its perceived benefits.

### Comparison of the OECD and APEC lists

Table A5 combines the OECD and APEC lists of environmental goods into a single composite list, to facilitate comparison. Goods were organised according to the categories and sub-categories used in the OECD/Eurostat scheme and, within those sub-categories, ordered by 6-digit HS nomenclature sub-headings. In most cases, categories used in the APEC list correspond to those in the OECD list;<sup>10</sup> hence the assignment of goods from the APEC list to OECD categories was straightforward, although assumptions had to be made as to the sub-categories to which a few goods should be assigned. Also, in nine cases (see note to Table A5), goods from the APEC list were assigned to OECD categories other than those to which they belong in the original APEC list. An example is ozone, an ex-heading under HS 8543.89: in the APEC list it appears under wastewater management; in the composite list it was also assigned to potable water treatment.

Counting only entries with corresponding HS codes, the OECD list appears to be about 50% longer than the APEC list (Table 2). However, when one eliminates multiple listings at the 6-digit level, they are more similar in length: there are 132 unique HS codes in the OECD list, compared with 104 in the APEC

7. The APEC ministers also noted that “This process of expanding participation beyond APEC will not prejudice the position of APEC members with respect to the agenda and modalities to be agreed at the Third WTO Ministerial Conference.”

8. [www.apec.org/apec/ministerial\\_statements/sectoral\\_ministerial/environment/1997\\_environment.html](http://www.apec.org/apec/ministerial_statements/sectoral_ministerial/environment/1997_environment.html).

9. [www.apec.org/apec/documents\\_reports/group\\_on\\_services/2003.html#I](http://www.apec.org/apec/documents_reports/group_on_services/2003.html#I).

10. The exception is the APEC category “Other recycling systems” (ORS), which corresponds to the OECD sub-category “3.6. Recycling equipment” under the general category of “3. Solid waste management”.

list. The composite list has 233 entries identified with an HS code, covering 198 goods. These magnitudes are small compared with the total number of lines contained in WTO members' national tariff schedules, which range from fewer than 6 000 (in the schedules of Australia and India) to over 11 000 (in the schedules of Hungary, Korea, Mexico and Turkey).<sup>11</sup>

Strictly speaking, the two lists overlap little at the HS six-digit level. In all, less than 30% of the goods in the combined list are common to both lists, and about half of the goods on either list can be found on the other. The greatest areas of overlap are found in the categories of recycling equipment (OECD sub-category A.3.6), incineration equipment (sub-category A.3.7), and measuring and monitoring equipment (sub-category A.6.1). Even then, for about one-quarter of the common goods, the APEC list refers to one or two specific goods, rather than to all the goods contained within the tariff line. For example, the OECD product list refers to "Parts for spark-ignition internal combustion piston engines", whereas the APEC list covers only the ex-heading category of industrial mufflers.

**Table 2. Summary statistics of APEC and OECD lists of environmental goods**

Statistic	Number or %
<b>OECD list</b>	
Total HS sub-headings	164
Unique HS sub-headings	132
<b>APEC list</b>	
Total HS sub-headings	109
Unique HS sub-headings	104
— of which qualified by ex-heading specification	44
<b>Composite list</b>	
Total HS sub-headings	233
Unique HS sub-headings	198
Tariff lines common to both the OECD and APEC lists	54
— of which qualified by ex-heading specification	13
Percentage overlap (54 out of 198)	27 %

Source: Table A5.

One reason for the surprising lack of overlap is a difference of emphasis. Under the category "Heat/energy savings and management", the OECD list specifies 14 tariff lines and the APEC list only three. The OECD list contains five tariff lines each under the sub-categories "Hazardous waste storage and treatment equipment" and "Waste collection equipment"; the APEC list contains none. On the other hand, the APEC list contains a much larger number of goods under the category "Environmental monitoring, analysis and assessment", including some goods not mentioned in the OECD list, such as gas and electricity meters. Almost all of the goods contained in the OECD list under this category also appear on the APEC list.

Another reason for the small degree of overlap is the omission of some tariff lines from the APEC list because the particular goods were already included on lists prepared for other EVSL initiatives, notably for chemicals. Thus, while particular chemicals, such as chlorine, hydrogen peroxide and magnesium hydroxide, which fall within HS Chapters 28 through 39, are sprinkled across the OECD product list under categories ranging from air pollution control to renewable energy (in the case of methanol), with most

<sup>11</sup>. WTO Secretariat, "WTO Members' Tariff Profiles", WTO Document No. TN/MA/S/4/Rev.1, Geneva.

listed under wastewater management, they are, with one exception,<sup>12</sup> absent from the APEC list for environmental goods. However, all of the chemicals appearing on the OECD list were covered by APEC's separate, and more encompassing, EVSL proposal for chemicals.

In several cases, the APEC list provides greater specificity for goods mentioned in the OECD list but for which no HS codes were provided. Examples are trash compactors and parts for trash compactors (corresponding to the OECD's sub-category "compactors"), electromagnets (OECD: "magnetic separators"), inflatable oil spill recovery barges (OECD: "oil spillage cleanup equipment"), wind-powered electric generating sets (OECD: "wind turbines"), and hydraulic turbines and water wheels (OECD: "hydroelectric plant"). Had the OECD gone into greater detail for these sub-categories, the degree of overlap between the two lists would no doubt have been greater.

Notably, the APEC list includes specific products — including several goods from or for agriculture — corresponding to categories of goods suggested by the OECD but for which no HS codes were specified and no concrete examples were provided. For example, New Zealand had nominated biodegradable erosion-control matting and ecologically safe ground covers (both ex-headings of HS 4601.20), as well as hot-water weed-killing systems (an ex-heading of HS 8436.80), for EVSL. All three of these items are classified in the APEC list as relating to wastewater management. (Under the OECD list they would more logically be classified as goods used to make agriculture more sustainable.) Similarly, Canada nominated booms or socks consisting of ground cobs of corn (maize) contained in a textile covering (an ex-heading of HS 2302.10) as an environmental good used in remediation and cleanup.

## Conclusions

In reviewing the history of the OECD and APEC product lists of environmental goods, it is clear that the two exercises were interlinked and informed each other. For example, the drafters of the APEC list consciously based their categories of environmental goods in large part on the work being undertaken at the time by the OECD/Eurostat Informal Working Group on the Environment Industry.<sup>13</sup> At the broad level, therefore, the two lists are quite similar.

However, the objectives of the two exercises differed, as did the procedures for generating the lists. The OECD's larger list was created deductively: starting from general categories based on classifications appearing in the environment industry manual (OECD/Eurostat, 1999), and adding more specific examples, where available, in order to produce an estimate of average tariffs<sup>14</sup> on a previously undefined class of goods. The APEC approach started with nominations, not unlike the request-offer procedures traditionally used in trade negotiations. This yielded a list of goods which was then arranged according to an agreed classification system.

It is important also to understand the APEC list in the context of the larger EVSL initiative with which it was associated. Environmental goods constituted only one of 15 sectors falling under the initiative, and one of nine when it was referred to the WTO and became part of the Accelerated Tariff Liberalisation initiative. Neither the APEC nor the OECD exercise sought to exclude any categories of goods *a priori*. However, because of the broad coverage of the EVSL initiative and its segmentation into

<sup>12.</sup> The exception relates to two products listed under HS 3926.90 (Other articles of plastics and articles of other materials of HS 3901 to 3914; other): bio-film medium that consists of woven fabric sheets that facilitate the growth of bio-organisms; and rotating biological contactor consisting of stacks of large (HDPE) plates that facilitate the growth of bio-organisms. The APEC list includes these under wastewater management.

<sup>13.</sup> See WTO document No. WT/GC/W/138.Add.1 (22 April 1999).

<sup>14.</sup> For the latest information on tariffs, see the table at [www.oecd.org/env](http://www.oecd.org/env).

distinct sectors, each with a different set of liberalisation target dates and rates, certain goods such as chemicals, which are clearly necessary for limiting or correcting environmental damage, were not included in the EVSL initiative for environmental goods. This was more apt to be the case as liberalisation targets for other sectors diverged further from those for environmental goods.

Moreover, since the aim of the APEC list was to obtain more favourable (different) tariff treatment for environmental goods, APEC member economies limited themselves to considering only those goods that could be readily distinguished by customs agents and treated differently for tariff purposes. For this reason, issues related to “like products”, products defined by particular processes or production methods, and products defined by their life-cycle impacts, were not addressed, with the result that some goods were omitted that may have been included in the OECD list. This constraint of practicality could be relaxed in the OECD analytical study because its aim was to illustrate what could potentially be included.

Perhaps the most elementary observation to make from any comparison of the various lists of environmental goods produced to date is that the number of goods that could be included in an eventually agreed list is potentially large. Clearly, both the OECD and the APEC lists have helped frame the current WTO negotiations on environmental goods. But it is also clear that many, if not most, WTO members regard the lists as just that: helpful but not definitive.

**Table A1. The OECD's illustrative product list of environmental goods**

Category and product description	HS code
<b>A. POLLUTION MANAGEMENT</b>	
<b>1. Air pollution control</b>	
<i>1.1 Air-handling equipment</i>	
Vacuum pumps	8414.10
Compressors of a kind used in refrigerating equipment	8414.30
Air compressors mounted on a wheeled chassis for towing	8414.40
Other air or gas compressors or hoods	8414.80
Parts for air or gas compressors, fans or hoods	8414.90
<i>1.2 Catalytic converters</i>	
Filtering or purifying machinery and apparatus for gases	8421.39
Parts for filtering or purifying machinery	8421.99
<i>1.3 Chemical recovery systems</i>	
Limestone flux	2521.00
Slaked (hydrated) lime	2522.20
Magnesium hydroxide and peroxide	2816.10
Activated earths	
Filtering or purifying machinery and apparatus for gases*	8421.39
Parts for filtering or purifying machinery*	8421.99
<i>1.4 Dust collectors</i>	
Filtering or purifying machinery and apparatus for gases*	8421.39
Parts for filtering or purifying machinery*	8421.99
<i>1.5 Separators/precipitators</i>	
Other glass fibre products	7019.90
Machinery for liquefying air or other gases	8419.60
Other machinery for treatment of materials by change of temperature	8419.89
Filtering or purifying machinery and apparatus for gases*	8421.39
Parts for filtering or purifying machinery*	8421.99
<i>1.6 Incinerators, scrubbers</i>	
Other furnaces, ovens, incinerators, non-electric	8417.80
Filtering or purifying machinery and apparatus for gases*	8421.39
Parts for filtering or purifying machinery*	8421.99
Industrial or laboratory electric resistance furnaces	8514.10
Industrial or laboratory induction or dielectric furnaces	8514.20
Other industrial or laboratory electric furnaces and ovens	8514.30
Parts, industrial or laboratory electric furnaces	8514.90
<i>1.7 Odour control equipment</i>	
Parts for sprayers for powders or liquids	8424.90
<b>2. Wastewater management</b>	
<i>2.1 Aeration systems</i>	
Compressors of a kind used in refrigerating equipment*	8414.30
Air compressors mounted on a wheeled chassis for towing*	8414.40
Other air or gas compressors or hoods*	8414.80
Parts for air or gas compressors, fans or hoods*	8414.90
<i>2.2 Chemical recovery systems</i>	
Limestone flux*	2521.00
Slaked (hydrated) lime*	2522.20
Chlorine	2801.10
Anhydrous ammonia	2814.10
Sodium hydroxide solid	2815.11
Sodium hydroxide in aqueous solution	2815.12
Magnesium hydroxide and peroxide*	2816.10
Activated earths*	
Aluminium hydroxide	2818.30
Manganese dioxide	2820.10

Category and product description	HS code
Manganese oxides (other)	2820.90
Lead monoxide	2824.10
Sodium sulphites	2832.10
Other sulphites	2832.20
Phosphinates and phosphonates	2835.10
Phosphates of triammonium	2835.21
Phosphates of monosodium or disodium	2838.22
Phosphates of trisodium	2835.23
Phosphates of potassium	2835.24
Calcium hydrogenorthophosphate	2835.25
Other phosphates of calcium	2835.26
Other phosphates (excl. polyphosphates)	2835.29
Activated carbon	3802.10
Water filtering or purifying machinery and apparatus	8421.21
Other machinery for purifying liquids	8421.29
Parts for filtering or purifying machinery*	8421.99
<i>2.3 Biological recovery systems</i>	
<i>2.4 Gravity sedimentation systems</i>	
Flocculating agents	
<i>2.5 Oil/water separation systems</i>	
Other centrifuges	842119
Parts of centrifuges	8421.91
Water filtering or purifying machinery and apparatus*	8421.21
Other machinery for purifying liquids*	8421.29
Parts for filtering or purifying machinery*	8421.99
<i>2.6 Screens/strainers</i>	
Other articles of plastic	3926.90
Water filtering or purifying machinery and apparatus*	8421.21
Other machinery for purifying liquids*	8421.29
Parts for filtering or purifying machinery*	8421.99
<i>2.7 Sewage treatment</i>	
Flocculating agents	
Woven pile & chenille fabrics of other textile materials	5801.90
Tanks, vats, etc., > 300 l	7309.00
Tanks, drums, etc., >50 l < 300 l	7310.10
Cans < 50 l, closed by soldering or crimping	7310.21
Other cans < 50 l	7310.29
Hydraulic turbines	8410.00-13
Parts for hydraulic turbines	8410.90
Incinerators, non-electric*	8417.80
Weighing machines capacity <30 kg	8423.81
Weighing machines capacity >30 kg <500 kg	8423.82
Weighing machines	8423.89
Parts for sprayers for powders or liquids*	8424.90
Industrial/lab electric resistance furnaces*	8514.10
Industrial/lab induction, dielectric furnaces*	8514.20
Industrial/lab electric furnaces & ovens, n.e.s.*	8514.30
Parts, industrial & lab electric furnaces*	8514.90
<i>2.8 Water pollution control, wastewater reuse equipment</i>	
<i>2.9 Water handling goods and equipment</i>	
Articles of cast iron	7325.10
Root control equipment	
Positive displacement pumps, hand-operated	8413.20
Other reciprocating positive displacement pumps	8413.50
Other rotary positive displacement pumps	8413.60
Other centrifugal pumps	8413.70
Other pumps	8413.81
Valves, pressure reducing	8481.10
Valves, check	8481.30
Valves, safety	8481.40
Other taps, cocks, valves, etc.	8481.80
Instruments for measuring the flow or level of liquids	9026.10



Category and product description	HS code
Instruments for measuring or checking pressure	9026.20
<b>3. Solid waste management</b>	
<i>3.1 Hazardous waste storage and treatment equipment</i>	
Other articles of cement, concrete	6810.99
Other articles of lead	7806.00
Other electric space heating and soil heating apparatus	8516.29
Lasers	9013.20
Vitrification equipment*	
<i>3.2 Waste collection equipment</i>	
Household & toilet articles of plastic	3924.90
Brooms, hand	9603.10
Brushes as parts of machines, appliances	9603.50
Mechanical floor sweepers	9803.90
Trash bin liners (plastic)	
<i>3.3 Waste disposal equipment</i>	
Compactors	
Refuse disposal vehicles	
Polypropylene sheeting, etc.	3920.20
<i>3.4 Waste handling equipment</i>	
<i>3.5 Waste separation equipment</i>	
Magnetic separators	
<i>3.6 Recycling equipment</i>	
Magnetic separators*	
Machinery to clean, dry bottles, etc.	8422.20
Other mixing or kneading machines for earth, stone, sand, etc.	8474.39
Other machines for mixing/grinding, etc.	8479.82
Other machines, n.e.s., having individual functions	8479.89
Tire-shredding machinery	
<i>3.7 Incineration equipment</i>	
Other furnaces, ovens, incinerators, non-electric*	8417.80
Parts of furnaces, non-electric	8417.90
Industrial or laboratory electric resistance furnaces*	8514.10
Industrial or laboratory induction or dielectric furnaces*	8514.20
Other industrial or laboratory electric furnaces and ovens*	8514.30
Parts, industrial or laboratory electric furnaces*	8514.90
<b>4. Remediation and cleanup</b>	
<i>4.1 Absorbents</i>	
<i>4.2 Cleanup</i>	
Other electric space heating and soil heating apparatus*	8516.29
Lasers*	9013.20
Vitrification equipment*	
<i>4.3 Water treatment equipment</i>	
Surface active chemicals (not finished detergents)	
Oil spillage cleanup equipment	
Other electrical machines and apparatus with one function	8543.89
<b>5. Noise and vibration abatement</b>	
<i>5.1 Mufflers/silencers</i>	
Parts for spark-ignition internal combustion piston engines	8409.91
Parts for diesel or semi-diesel engines	8409.99
Silencers and exhaust pipes, motor vehicles	8708.92
<i>5.2 Noise deadening material</i>	
<i>5.3 Vibration control systems</i>	

Category and product description	HS code
<i>5.4 Highway barriers</i>	
<b>6. Environmental monitoring, analysis and assessment</b>	
<i>6.1 Measuring and monitoring equipment</i>	
Thermometers, pyrometers, liquid-filled	9025.11
Other thermometers, pyrometers	9025.19
Hydrometers, barometers, hygrometers, etc.	9025.80
Other instruments for measuring liquids or gases	9026.80
Parts of instruments for measuring, checking liquids or gases	9026.90
Instruments for analysing gas or smoke	9027.10
Chromatographs, etc.	9027.20
Spectrometers, etc.	9027.30
Exposure meters	9027.40
Other instruments using optical radiation	9027.50
Other instruments for physical or chemical analysis	9027.80
Parts for instruments, incl. microtomes	9027.90
Ionising radiation measuring & detecting instruments	9030.10
Other optical instruments	9031.49
Other measuring or checking instruments	9031.80
Manostats	9032.20
Hydraulic/pneumatic automatic regulate, control instruments	9032.81
Other automatic regulate, control instruments	9032.89
Auto emissions testers	
Noise measuring equipment	
<i>6.2 Sampling systems</i>	
<i>6.3 Process and control equipment</i>	
Thermostats	9032.10
Electrical process control equipment	
On-board monitoring/control	
<i>6.4 Data acquisition equipment</i>	
<i>6.5 Other instruments/machines</i>	
<b>B. CLEANER TECHNOLOGIES AND PRODUCTS</b>	
<b>1. Cleaner/resource efficient technologies and processes</b>	
Electrochemical apparatus/plant	
Extended cooking (pulp)	
Oxygen delignification	
Ultrasonic cleaning	
Fluidised bed combustion	
<b>2. Cleaner/resource efficient products</b>	
CFC substitutes	
Hydrogen peroxide	2801.10
Peat replacements (e.g. bark)	
Water-based adhesives	
Paints and varnishes, in aqueous medium, acrylic or vinyl	3209.10
Other paints and varnishes, in aqueous medium	3209.90
Double-hulled oil tankers	
Low-noise compressors	
<b>C. RESOURCES MANAGEMENT GROUP</b>	
<b>1. Indoor air pollution control</b>	
<b>2. Water supply</b>	
<i>2.1 Potable water treatment</i>	
<i>2.2 Water purification systems</i>	
Chlorine*	2801.10

Category and product description	HS code
<i>2.3 Potable water supply and distribution</i>	
Water, incl. natural or artificial mineral water	2201.00
Distilled and conductivity water	2851.00
Ion exchangers (polymer)	3914.00
<b>3. Recycled materials</b>	
<i>3.1 Recycled paper</i>	
<i>3.2 Other recycled products</i>	
<b>4. Renewable energy plant</b>	
<i>4.1 Solar</i>	
Instantaneous gas water heaters	8419.11
Other instantaneous or storage water heaters, non-electric	8419.19
Photosensitive semiconductor devices, incl. solar cells	8541.40
<i>4.2 Wind</i>	
Windmills	
Wind turbines	
<i>4.3 Tidal</i>	
<i>4.4 Geothermal</i>	
<i>4.5 Other</i>	
Methanol	2905.11
Ethanol	2207.10
Hydroelectric plant	
<b>5. Heat/energy savings and management</b>	
Catalysts	3815.00
Multiple walled insulating units of glass	7008.00
Other glass fibre products*	7019.90
Heat exchange units	8419.50
Parts for heat exchange equipment	8419.90
Heat pumps	
District heating plant	
Waste heat boilers	
Burners: fuel other than oil or gas	
Fluorescent lamps, hot cathode	8539.31
Electric cars	
Fuel cells	
Gas supply, production and calibrating metres	9028.10
Liquid supply, production and calibrating metres	9028.20
Thermostats*	9032.10
<b>6. Sustainable agriculture and fisheries</b>	
<b>7. Sustainable forestry</b>	
<b>8. Natural risk management</b>	
Satellite imaging	
Seismic instruments	
<b>9. Eco-tourism</b>	
<b>10. Other</b>	

\* Indicates that the HS code appears previously in the table.

**Table A2. Proposed product coverage under APEC's EVSL initiative for environmental goods**

	Environ. activity <sup>1</sup>	HS	ex <sup>2</sup>	HS 6-digit description	Additional product specification
1	R/C	2302.10	ex	Bran, sharps and other residues, whether or not in the form of pellets, derived from the sifting, milling or other working of corn	Booms or socks consisting of ground corn cobs contained in a textile covering
2	WWM	3926.90	ex	Other articles of plastics and articles of other materials of HS 3901 to 3914; other	Bio-film medium consisting of woven fabric sheets that facilitate the growth of bio-organisms
3	WWM	3926.90	ex	Other articles of plastics and articles of other materials of HS 3901 to 3914; other	Rotating biological contactor consisting of stacks of large (HDPE) plates which facilitate the growth of bio-organisms
4	WWM	4601.20	ex	Mats, matting and screens of vegetable materials	Erosion control matting (biodegradable)
5	WWM	4601.20	ex	Mats, matting and screens of vegetable materials	Ecologically safe ground covers (biodegradable)
6	WWM	5603.14	ex	Non-wovens, whether or not impregnated, coated, covered or laminated: of manmade filaments; weighing more than 150 g/m <sup>2</sup>	Fabric of polyethylene/polypropylene/nylon for filtering wastewater.
7	WWM	5911.90	ex	Textile products and articles, for technical uses, specified in note 7 to this chapter; other	Environmental protection cloth
8	M/A	6902.10	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight, singly or together, more than 50% of the elements Mg, Ca or Cr, expressed as MgO, CaO or Cr <sub>2</sub> O <sub>3</sub>	Industrial incineration
9	M/A	6902.20	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight more than 50% of alumina (Al <sub>2</sub> O <sub>3</sub> ), of silica (SiO <sub>2</sub> ) or of a mixture or compound of these products	Industrial incineration
10	M/A	6902.90	ex	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; other	Industrial incineration
11	M/A	6903.10	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing by weight more than 50% of graphite or other carbon or of a mixture of these products	Laboratory refractory equipment
12	M/A	6903.20	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing by weight more than 50% of alumina (Al <sub>2</sub> O <sub>3</sub> ) or of a mixture or compound of alumina and silica (SiO <sub>2</sub> )	Laboratory refractory equipment
13	M/A	6903.90	ex	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; other	Laboratory refractory equipment
14	M/A	6909.19	ex	Ceramic wares for laboratory, chemical or other technical uses; other	Laboratory equipment

	Environ. activity <sup>1</sup>	HS	ex <sup>2</sup>	HS 6-digit description	Additional product specification
15	M/A	7017.10		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of fused quartz or other fused silica	
16	M/A	7017.20		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of other glass having a linear coefficient of expansion not exceeding $5 \times 10^{-6}$ per Kelvin within a temperature range of 0 °C to 300° C	
17	M/A	7017.90		Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; other	
18	APC	8404.10		Auxiliary plant for use with boilers of HS 8402 or 8403 (for example, economisers, super-heaters, soot removers, gas recoverers)	
19	APC	8404.20		Condensers for steam or other vapour power units	
20	APC	8405.10	ex	Producer gas or water gas generators, with or without their purifier; acetylene gas generators and similar water process gas generator, with or without their purifiers	Include only those with purifiers
21	N/V	8409.91	ex	Parts suitable for use solely or principally with the engines of HS 8407 or 8408; suitable for use solely or principally with spark-ignition internal combustion piston engines.	Industrial mufflers
22	APC	8409.99	ex	Parts suitable for use solely or principally with the engines of HS 8407 or 8408; other	Industrial mufflers
23	REP	8410.11		Hydraulic turbines and water wheels of a power not exceeding 1 000 kW	
24	REP	8410.12		Hydraulic turbines and water wheels of a power exceeding 1 000 kW but not exceeding 10 000 kW	
25	REP	8410.13		Hydraulic turbines and water wheels of a power exceeding 10 000 kW	
26	REP	8410.90		Hydraulic turbines and water wheels; parts, including regulators	
27	WWM	8413.60	ex	Pumps for liquids, whether or not fitted with a measuring device; other rotary positive displacement pumps	Submersible mixer pump to circulate water in wastewater treatment process; sewage pumps, screw type
28	WWM	8413.70	ex	Pumps for liquids, whether or not fitted with a measuring device; other centrifugal pumps	Centrifugal pumps lined to prevent corrosion; centrifugal sewage pumps
29	PWT	8413.81	ex	Pumps for liquids, whether or not fitted with a measuring device; other pumps	Wind turbine pump
30	M/A	8414.10		Vacuum pumps	
31	APC	8414.59		Fans (and blowers) other than table, floor, window, ceiling or roof fans with a self-contained electric motor of an output not exceeding 125W	
32	M/A	8414.80		Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; other	
33	S/H	8417.80	ex	Industrial or laboratory furnaces and ovens, including incinerators, non-electric; other than bakery ovens and furnaces for treatment of ores	Waste incinerators
34	S/H	8417.90	ex	Parts of industrial or laboratory furnaces and ovens, including incinerators, non-electric	Parts of waste incinerators
35	REP	8419.19	ex	Other instantaneous or storage water heaters, non-electric	Solar water heaters

	Environ. activity <sup>1</sup>	HS	ex <sup>2</sup>	HS 6-digit description	Additional product specification
36	M/A	8419.40		Distilling or rectifying plant	
37	H/E	8419.50		Heat exchange units	
38	M/A	8419.60		Machinery for liquefying air or other gases	
39	M/A	8421.19		Centrifuges, including centrifugal dryers, other than cream separators and clothes dryers	
40	WWM	8421.21		Filtering or purifying machinery and apparatus for liquids: for filtering or purifying water	
41	WWM	8421.29		Filtering or purifying machinery and apparatus for liquids; other	
42	APC	8421.39		Filtering or purifying machinery and apparatus for gases; other	
43	M/A	8421.91	ex	Parts of centrifuges, including centrifugal dryers	Centrifuges, accessories & parts; except clothes dryers and clothes dryer furniture
44	APC	8421.99		Parts of filtering or purifying machinery and apparatus for liquids or gases	
45	ORS	8422.20		Machinery for cleaning or drying bottles or other containers	
46	WWM	8428.33	ex	Other continuous-action elevators and conveyors, for goods or materials; other, belt type	Belt-type above-ground conveyor used to transfer solids or slurries between plants
47	WWM	8436.80	ex	Other agricultural, horticultural, forestry, poultry-keeping or bee-keeping machinery	Hot-water weed-killing system
48	S/H	8462.91	ex	Machine tools for working metal, other than punching or notching and combined punching and shearing; hydraulic presses	Shredders/balers for metals; hydraulic
49	S/H	8472.90	ex	Other office machines	Paper shredders
50	S/H	8474.10	ex	Sorting, screening, separating or washing machines	Machines of a kind for use in screening and washing coal
51	ORS	8474.10	ex	Sorting, screening, separating or washing machines	Waste foundry sand reclamation equipment
52	ORS	8474.32	ex	Machines for mixing mineral substances with bitumen	Asphalt recycle equipment
53	WWM	8479.82	ex	Mixing, kneading, crushing, grinding, screening, sifting, homogenising emulsifying or stirring machines	Agitator for wastewater treatment
54	ORS	8479.82	ex	Mixing, kneading, crushing, grinding, screening, sifting, homogenising emulsifying or stirring machines	Other than kneading machinery
55	S/H	8479.89	ex	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Radioactive waste press
56	WWM	8479.89	ex	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Trash compactors
57	PWT	8479.90	ex	Parts of machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Parts of trash compactors
58	REP	8502.31		Generating sets, electric, wind-powered	
59	S/H	8505.90	ex	Electromagnets; other, including parts	Electromagnet
60	S/H	8514.10	ex	Industrial or laboratory furnaces and ovens; electric, resistance-heated	Waste incinerators or other waste treatment apparatus
61	S/H	8514.20	ex	Industrial or laboratory furnaces and ovens; electric, induction or dielectric	Waste incinerators or other waste treatment apparatus
62	S/H	8514.30	ex	Industrial or laboratory furnaces and ovens, electric, other	Waste incinerators or other waste treatment apparatus

	Environ. activity <sup>1</sup>	HS	ex <sup>2</sup>	HS 6-digit description	Additional product specification
63	S/H	8514.90	ex	Parts of industrial or laboratory electric furnaces and ovens or other laboratory induction or dielectric heating equipment	Parts of waste incinerators
64	REP	8541.40	ex	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light-emitting diodes	Solar cells
65	WWM	8543.89	ex	Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this chapter; other	Ozone production system
66	R/C	8907.10	ex	Inflatable rafts	Inflatable oil spill recovery barges
67	R/C	8907.90	ex	Other floating structures	Pollution protection booms
68	M/A	9015.40		Photogrammetric surveying instruments and appliances	
69	M/A	9015.80		Other surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses	
70	M/A	9015.90	ex	Parts and accessories of surveying, hydrological, meteorological or geophysical instruments and appliances, excluding compasses	Photogrammetric instruments; parts and accessories for articles of HS 9015.40
71	M/A	9022.29		Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or veterinary uses	
72	M/A	9022.90	ex	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or veterinary uses	Parts and accessories for goods of HS 9022.29
73	M/A	9025.11		Thermometers and pyrometers, not combined with other instruments: liquid-filled, for direct reading	
74	M/A	9025.19		Thermometers and pyrometers, not combined with other instruments: other than liquid-filled, for direct reading	
75	M/A	9025.80		Hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers and psychrometers, recording or not, and any combination of these instruments	
76	M/A	9025.90		Parts and accessories for hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers and psychrometers, recording or not, and any combination of these instruments	
77	M/A	9026.10		Instruments and apparatus for measuring or checking the flow or level of liquid	
78	M/A	9026.20		Instruments and apparatus for measuring or checking pressure	
79	M/A	9026.80		Other instruments and apparatus	
80	M/A	9026.90		Parts and accessories for articles of HS 9026	
81	M/A	9027.10		Gas or smoke analysis apparatus	
82	M/A	9027.20		Chromatographs and electrophoresis instruments	
83	M/A	9027.30		Spectrometers, spectrophotometers and spectrographs using optical radiations (ultraviolet, visible, infrared)	
84	M/A	9027.40		Exposure meters	
85	M/A	9027.50		Other instruments and apparatus using optical radiations (ultraviolet, visible, infrared)	

	Environ. activity <sup>1</sup>	HS	ex <sup>2</sup>	HS 6-digit description	Additional product specification
86	M/A	9027.80		Other instruments and apparatus for physical or chemical analysis	
87	M/A	9027.90		Microtomes; parts and accessories	
88	M/A	9028.10		Gas meters	
89	M/A	9028.20		Liquid meters	
90	M/A	9028.30		Electricity meters	
91	M/A	9028.90		Parts and accessories for articles of HS 9028	
92	M/A	9030.10		Instruments and apparatus for measuring or detecting ionising radiations	
93	M/A	9030.20		Cathode-ray oscilloscopes and cathode-ray oscillographs	
94	M/A	9030.31		Multimeters	
95	M/A	9030.39		Other instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device	
96	M/A	9030.83		Other instruments and apparatus for measuring or checking electrical quantities, with a recording device	
97	M/A	9030.89		Other instruments and apparatus for measuring or checking electrical quantities	
98	M/A	9030.90	ex	Parts and accessories (for nominated articles of HS 9030)	
99	M/A	9031.10		Machines for balancing mechanical parts	
100	M/A	9031.20		Test benches	
101	M/A	9031.30		Profile projectors	
102	M/A	9031.80		Other measuring or checking instruments, appliances and machines, not elsewhere specified in this chapter	
103	M/A	9031.90	ex	Parts and accessories (for nominated articles of HS 9031)	
104	M/A	9032.10		Thermostats	
105	M/A	9032.20		Manostats	
106	M/A	9032.81		Hydraulic and pneumatic instruments and apparatus	
107	M/A	9032.89		Automatic regulating or controlling instruments, other	
108	M/A	9032.90		Parts and accessories	
109	M/A	9033.00		Parts and accessories (not specified or included elsewhere in this chapter) for machines, appliances, instruments or apparatus of Ch. 90	

1. APC = air pollution control; H/E = heat/energy management; M/A= monitoring/analysis, N/V = noise/vibration abatement; ORS = other recycling systems; PWT = potable water treatment; R/C = remediation/cleanup; S/H = solid/hazardous waste; WWM = wastewater management.

2. An "ex" in the column indicates that only the "ex-heading" product (described in the last column) is nominated.

Source: World Trade Organization, "List of Environmental Goods — Paragraph 31 (iii) — Note by the Secretariat", Document No. TN/TE/W/18, 20 November 2002, Geneva.



**Table A3. APEC's EVSL proposal for chemicals: product list<sup>1</sup>**

HS	Item description (exclusions)
28	Inorganic chemicals; organic or inorganic compounds of precious metals, of rare earth metals, of radioactive elements or of isotopes
29	Organic chemicals (but excluding HS 2905.43, mannitol, and 2905.44, D-glucitol [sorbitol])
30	Pharmaceutical products
31	Fertilisers
32	Tanning or dyeing extracts; tannins and their derivatives; dyes, pigments and other colouring matter; paints and varnishes; putty and other mastics; inks
33	Essential oils and resinoids; perfumery, cosmetic or toilet preparations (but excluding HS 3301: essential oils, including concretes and absolutes; resinoids; oleoresins; extracts obtained by enfleurage of maceration; other terpenic and aqueous solutions)
34	Soap, organic surface active agents, washing preparations, lubricating preparations, waxes
3506	Prepared glues and other adhesives, put up for retail sale, not exceeding a net weight of 1 kg
3507	Enzymes; prepared enzymes not elsewhere specified or included
36	Explosives; pyrotechnic products; matches; pyrophoric alloys; certain combustible preparations
37	Photographic or cinematographic goods
38	Miscellaneous chemical products (but excluding HS 3809.10, finishing agents with a basis of amylaceous substances; and HS 3823.23, sorbitol other than that of HS 2095.44)
39	Plastics and articles thereof

1. Tables 2.A3 and 2.A4 list the tariff nominations contained in the EVSL proposal for chemicals (supported by the United States, Singapore, Australia, and Hong Kong, China). These were specified for the meeting of the APEC leaders in November 1997 (reproduced in Dee *et al.*, 1998). The tariff nominations were put forward as HS codes common to the customs tariff schedules of each country. Two-digit nominations mean that the entire chapter was proposed; four-digit nominations relate to specific sub-chapters.

**Table A4. APEC's EVSL for chemicals: flexibility proposals by the sectoral co-ordinator**

Target	
End tariff rates	CTHA harmonised rates ( <i>i.e.</i> 0% to 6.5%)
End dates for implementation	By 2001 for rates below or equal to 10%; by 2004 for other rates
Minimum conformity	80% of tariff lines to reach CHTA rates (0% to 6.5%) by 2004
Flexibility	For the remaining 20% of tariff lines: <ul style="list-style-type: none"> <li>• 15% to CHTA rates by 2006</li> <li>• 5% (not exceeding 10% of imports) to CHTA rates by 2008</li> <li>• Applied tariff rates of 20% or more to be reduced to 10% by 2004</li> </ul>

**Table A5. Comparison of products covered under APEC's EVSL initiative for environmental goods and the OECD's illustrative list of environmental goods**

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
<b>A. POLLUTION MANAGEMENT</b>				
<b>1. Air pollution control</b>				
	X	8404.10	Auxiliary plant for use with boilers of HS 8402 or 8403 (for example, economisers, super-heaters, soot removers, gas recoverers)	
	X (ex)	8405.10	Producer gas or water gas generators, with or without their purifier; acetylene gas generators and similar water process gas generators, with or without their purifiers	Includes only those with purifiers
<i>1.1 Air-handling equipment</i>				
X	X	8414.10	Vacuum pumps	
X		8414.30	Compressors of a kind used in refrigerating equipment	
X		8414.40	Air compressors mounted on a wheeled chassis for towing	
	X	8414.59	Fans (and blowers) other than table, floor, window, ceiling or roof fans with a self-contained electric motor of an output not exceeding 125 W	
X	X	8414.80	Other air or gas compressors or hoods	
X		8414.90	Parts for air or gas compressors, fans or hoods	
<i>1.2 Catalytic converters</i>				
X	X	8421.39	Filtering or purifying machinery and apparatus for gases	
X	X	8421.99	Parts for filtering or purifying machinery	
<i>1.3 Chemical recovery systems</i>				
X		2521.00	Limestone flux	
X		2522.20	Slaked (hydrated) lime	
X		2816.10	Magnesium hydroxide and peroxide	
X			Activated earths	
X	X	8421.39	*	Filtering or purifying machinery and apparatus for gases
X	X	8421.99	*	Parts for filtering or purifying machinery
<i>1.4 Dust collectors</i>				
X	X	8421.39	*†	Filtering or purifying machinery and apparatus for gases
X	X	8421.99	*†	Parts for filtering or purifying machinery
<i>1.5 Separators/precipitators</i>				
X		7019.90	Other glass fibre products	
X	X	8419.60	Machinery for liquefying air or other gases	
X		8419.89	Other machinery for treatment of materials by change of temperature	
X	X	8421.99	*†	Parts for filtering or purifying machinery
<i>1.6 Incinerators, scrubbers</i>				
X	X (ex)	8417.80	Other furnaces, ovens, incinerators, non-electric waste incinerators	
X	X	8421.39	*†	Filtering or purifying machinery and apparatus for gases; other
X	X	8421.99	*†	Parts of filtering or purifying machinery and apparatus for liquids or gases
X	X (ex)	8514.10	Industrial or laboratory electric resistance furnaces	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.20	Industrial or laboratory induction or dielectric furnaces	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.30	Other industrial or laboratory electric furnaces and ovens	Waste incinerators or other waste treatment apparatus

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
X	X (ex)	8514.90	Parts, industrial or laboratory electric furnaces	Parts of waste incinerators
<i>1.7 Odour control equipment</i>				
X		8424.90	Parts for sprayers for powders or liquids	
<b>2. Wastewater management</b>				
<i>2.1 Aeration systems</i>				
X		8414.30	* Compressors of a kind used in refrigerating equipment	
X		8414.40	* Air compressors mounted on a wheeled chassis for towing	
X	X	8414.80	*† Other air or gas compressors or hoods	
X		8414.90	* Parts for air or gas compressors, fans or hoods	
	X (ex) <sup>3</sup>	8543.89	† Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this chapter; other	Ozone production system
<i>2.2 Chemical recovery systems</i>				
X		2521.00	* Limestone flux	
X		2522.20	* Slaked (hydrated) lime	
X		2801.10	Chlorine	
X		2814.10	Anhydrous ammonia	
X		2815.11	Sodium hydroxide solid	
X		2815.12	Sodium hydroxide in aqueous solution	
X		2816.10	* Magnesium hydroxide and peroxide	
X			* Activated earths	
X		2818.30	Aluminium hydroxide	
X		2820.10	Manganese dioxide	
X		2820.90	Manganese oxides (other)	
X		2824.10	Lead monoxide	
X		2832.10	Sodium sulphites	
X		2832.20	Other sulphites	
X		2835.10	Phosphinates and phosphonates	
X		2835.21	Phosphates of triammonium	
X		2835.22	Phosphates of monosodium or disodium	
X		2835.23	Phosphates of trisodium	
X		2835.24	Phosphates of potassium	
X		2835.25	Calcium hydrogenorthophosphate	
X		2835.26	Other phosphates of calcium	
X		2835.29	Other phosphates (excl. polyphosphates)	
X		3802.10	Activated carbon	
X	X	8421.21	Water filtering or purifying machinery and apparatus	
X	X	8421.29	Other machinery for purifying liquids	
X	X	8421.99	Parts for filtering or purifying machinery	
<i>2.3 Biological recovery systems</i>				
<i>2.4 Gravity sedimentation systems</i>				
	X		Flocculating agents	
<i>2.5 Oil/water separation systems</i>				
X	X	8421.19	Other centrifuges	
X	X	8421.21	*† Water filtering or purifying machinery and apparatus	
X	X	8421.29	*† Other machinery for purifying liquids	
X	X	8421.91	Parts of centrifuges	
X	X	8421.99	* Parts for filtering or purifying machinery	

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
<i>2.6 Screens/strainers</i>				
X	X (ex)	3926.90	Other articles of plastics and articles of other materials of HS 3901 to 3914; other	1. Bio-film medium consisting of woven fabric sheets that facilitate the growth of bio-organisms
			Other articles of plastics and articles of other materials of HS 3901 to 3914; other	2. Rotating biological contactor consisting of stacks of large (HDPE) plates that facilitate the growth of bio-organisms
	X (ex)	5603.14	Non-wovens, whether or not impregnated, coated, covered or laminated: of man-made filaments; weighing more than 150g/m <sup>2</sup>	Fabric of polyethylene, polypropylene, or nylon for filtering wastewater
X	X	8421.21	*† Filtering or purifying machinery and apparatus for liquids: for filtering or purifying water	
X	X	8421.29	*† Filtering or purifying machinery and apparatus for liquids; other	
X	X	8421.99	*† Parts for filtering or purifying machinery	
<i>2.7 Sewage treatment</i>				
X			Flocculating agents	
X		5801.90	Woven pile & chenille fabrics of other textile materials	
	X (ex)	5911.90	Textile products and articles, for technical uses, specified in note 7 to this chapter; other	
X		7309.00	Tanks, vats, etc., > 300 litres	
X		7310.10	Tanks, drums, etc., >50 litres <300 litres	
X		7310.21	Cans < 50 litres, closed by soldering or crimping	
X		7310.29	Other cans < 50 litres	
X		8410.00	Hydraulic turbines 00	
X	X	8410.11	Hydraulic turbines 11	
X	X	8410.12	Hydraulic turbines 12	
X	X	8410.13	Hydraulic turbines 13	
X	X	8410.90	Parts for hydraulic turbines	
X	X	8417.80	* Incinerators, non-electric	
X		8423.81	Weighing machines capacity <30 kg	
X		8423.82	Weighing machines capacity >30 kg <500 kg	
X		8423.89	Weighing machines	
X		8424.90	* Parts for sprayers for powders or liquids	
	X (ex)	8428.33	Other continuous-action elevators and conveyors, for goods or materials; other, belt type	Belt-type above-ground conveyor used to transfer solids or slurries between plants
	X (ex)	8479.82	Mixing, kneading, crushing, grinding, screening, sifting, homogenising emulsifying or stirring machines	Agitator for wastewater treatment
X	X (ex)	8514.10	*† Industrial/lab electric resistance furnaces	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.20	*† Industrial/lab induction, dielectric furnaces	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.30	*† Industrial/lab electric furnaces & ovens, n.e.s.	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.90	*† Parts, industrial/lab electric furnaces	Parts of waste incinerators
<i>2.8 Water pollution control, wastewater reuse equipment</i>				
<i>2.9 Water handling goods and equipment</i>				
X		7325.10	Articles of cast iron	
X		8413.20	Root-control equipment	
X		8413.50	Positive displacement pumps, hand-operated [centrifugal pumps]	

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
X	X (ex)	8413.60	Pumps for liquids, whether or not fitted with a measuring device; other rotary positive displacement pumps	Submersible mixer pump to circulate water in wastewater treatment process; sewage pumps, screw type
X	X (ex)	8413.70	Pumps for liquids, whether or not fitted with a measuring device; other centrifugal pumps	Centrifugal pumps lined to prevent corrosion; centrifugal sewage pumps
X		8413.81	Other pumps	
X		8481.10	Valves, pressure-reducing	
X		8481.30	Valves, check	
X		8481.40	Valves, safety	
X		8481.80	Other taps, cocks, valves, etc.	
X	X	9026.10	Instruments for measuring the flow or level of liquids	
X	X	9026.20	Instruments for measuring or checking pressure	
<b>3. Solid waste management</b>				
<i>3.1 Hazardous waste storage and treatment equipment</i>				
X		6810.99	Other articles of cement, concrete	
X		7806.00	Other articles of lead	
X		8516.29	Other electric space heating and soil heating apparatus	
X		9013.20	Lasers	
X			Vitrification equipment	
<i>3.2 Waste collection equipment</i>				
X		3924.90	Household & toilet articles of plastic	
X		9603.10	Brooms, hand	
X		9603.50	Brushes as parts of machines, appliances	
X		9603.90	Mechanical floor sweepers	
X			Trash bin liners (plastic)	
<i>3.3 Waste disposal equipment</i>				
X		3920.20	Polypropylene sheeting, etc.	
	X (ex)	8462.91	Machine tools for working metal, other than punching or notching and combined punching and shearing; hydraulic presses	Shredders/balers for metals; hydraulic
	X (ex)	8472.90	Other office machines	Paper shredders
X			Compactors	
	X (ex) <sup>3</sup>	8479.89	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Trash compactors
	X (ex) <sup>4</sup>	8479.90	Parts of machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Parts of trash compactors
X			Refuse disposal vehicles	
<i>3.4 Waste handling equipment</i>				
<i>3.5 Waste separation equipment</i>				
	X (ex)	8474.10	Sorting, screening, separating or washing machines	Machines of a kind for use in screening and washing coal
	X (ex)	8505.90	Electromagnets; other, including parts	Electromagnet
X			Magnetic separators	
<i>3.6 Recycling equipment</i>				
X	X	8422.20	Machinery for cleaning or drying bottles or other containers	
	X (ex)	8474.10	† Sorting, screening, separating or washing machines	Waste foundry sand reclamation equipment
	X (ex)	8474.32	Machines for mixing mineral substances with bitumen	Asphalt recycle equipment
X		8474.39	Other mixing or kneading machines for earth, stone, sand, etc.	

List coverage		HS <sup>1</sup>	Product description	Additional product specification	
OECD	APEC				
X	X (ex)	8479.82	Mixing, kneading, crushing, grinding, screening, sifting, homogenising emulsifying or stirring machines	Other than kneading machinery	
X	X (ex)	8479.89	†	Machines and mechanical appliances having individual functions, not elsewhere specified or included in this chapter, other	Radioactive waste press
X			*	Magnetic separators	
X				Tire-shredding machinery	
<b>3.7 Incineration equipment</b>					
	X (ex) <sup>5</sup>	6902.10	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight, singly or together, more than 50% of the elements Mg, Ca or Cr, expressed as MgO, CaO or Cr <sub>2</sub> O <sub>3</sub>	Industrial incineration	
	X (ex) <sup>5</sup>	6902.20	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; containing by weight more than 50% of alumina (Al <sub>2</sub> O <sub>3</sub> ), of silica (SiO <sub>2</sub> ) or of a mixture or compound	Industrial incineration	
	X (ex) <sup>5</sup>	6902.90	Refractory bricks, blocks, tiles and similar refractory ceramic constructional goods, other than those of siliceous fossil meals or similar siliceous earths; other	Industrial incineration	
X	X (ex)	8417.80	*†	Industrial or laboratory furnaces and ovens, including incinerators, non-electric; other than bakery ovens and furnaces for treatment of ores	Waste incinerators
X	X (ex)	8417.90	Parts of industrial or laboratory furnaces and ovens, including incinerators, non-electric	Parts of waste incinerators	
X	X (ex)	8514.10	*†	Industrial or laboratory furnaces and ovens; electric, resistance heated	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.20	*†	Industrial or laboratory furnaces and ovens; electric, induction or dielectric	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.30	*†	Industrial or laboratory furnaces and ovens, electric, other	Waste incinerators or other waste treatment apparatus
X	X (ex)	8514.90	*†	Parts of industrial or laboratory electric furnaces and ovens or other laboratory induction or dielectric heating equipment	Parts of waste incinerators
<b>4. Remediation and cleanup</b>					
<b>4.1 Absorbents</b>					
	X (ex)	2302.10	Bran, sharps and other residues, whether or not in the form of pellets, derived from the sifting, milling or other working of corn	Booms or socks consisting of ground corn cobs contained in a textile covering	
<b>4.2 Cleanup</b>					
X		8516.29	Other electric space-heating and soil-heating apparatus		
X		9013.20	*	Lasers	
X				Vitrification equipment	
<b>4.3 Water treatment equipment</b>					
X				Surface active chemicals (not finished detergents)	
X	X (ex)	8543.89	†	Other electrical machines and apparatus with one function	Ozone production system
	X (ex)	8907.10		Inflatable rafts	Inflatable oil spill recovery barges
	X (ex)	8907.90		Other floating structures	Pollution protection booms
X				Oil spillage cleanup equipment	
<b>5. Noise and vibration abatement</b>					
<b>5.1 Mufflers/silencers</b>					
X	X (ex)	8409.91	Parts suitable for use solely or principally with the engines of HS 8407 or 8408; suitable for use solely or principally with spark-ignition internal combustion piston engines	Industrial mufflers	
X		8409.99	Parts for diesel or semi-diesel engines		

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
X		8708.92	Silencers and exhaust pipes, motor vehicles	
			<i>5.2 Noise-deadening material</i>	
			<i>5.3 Vibration control systems</i>	
			<i>5.4 Highway barriers</i>	
			<b>6. Environmental monitoring, analysis and assessment</b>	
			<i>6.1 Measuring and monitoring equipment</i>	
X (ex)		6903.10	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing by weight more than 50% of graphite or other carbon or of a mixture of these products	Laboratory refractory equipment
X (ex)		6903.20	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; containing by weight more than 50% of alumina (Al <sub>2</sub> O <sub>3</sub> ) or of a mixture or compound of alumina and of silica (SiO <sub>2</sub> )	Laboratory refractory equipment
X (ex)		6903.90	Other refractory ceramic goods (for example, retorts, crucibles, muffles, nozzles, plugs, supports, cupels, tubes, pipes, sheaths and rods), other than those of siliceous fossil meal or of similar siliceous earths; other	Laboratory refractory equipment
X (ex)		6909.19	Ceramic wares for laboratory, chemical or other technical uses; other	Laboratory equipment
X		7017.10	Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of fused quartz or other fused silica	
X		7017.20	Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; of other glass having a linear coefficient of expansion not exceeding $5 \times 10^{-6}$ per Kelvin within a temperature range of 0 °C to 300 °C	
X		7017.90	Laboratory, hygienic or pharmaceutical glassware, whether or not graduated or calibrated; other	
X		8414.10	Vacuum pumps	
X		8414.80	Air or vacuum pumps, air or other gas compressors and fans; ventilating or recycling hoods incorporating a fan, whether or not fitted with filters; other	
X		8419.40	Distilling or rectifying plant	
X		8419.60	Machinery for liquefying air or other gases	
X		8421.19	Centrifuges, including centrifugal dryers, other than cream separators and clothes dryers	
X (ex)		8421.91	Parts of centrifuges, including centrifugal dryers	Centrifuges, accessories & parts; except clothes dryers and clothes-dryer furniture
X		9015.40	Photogrammetric surveying instruments and appliances	
X		9015.80	Other surveying, hydrographic, oceanographic, hydrological, meteorological or geophysical instruments and appliances, excluding compasses	
X (ex)		9015.90	Parts and accessories of surveying, hydrological, meteorological or geophysical instruments and appliances, excluding compasses	Photogrammetric instruments; parts and accessories for articles of HS 9015.40
X		9022.29	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or veterinary uses	
X (ex)		9022.90	Apparatus based on the use of X-rays or of alpha, beta or gamma radiations for other than medical, surgical, dental or	Parts and accessories for goods of HS 9022.29

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
			veterinary uses	
X	X	9025.11	Thermometers and pyrometers, not combined with other instruments: liquid-filled, for direct reading	
X	X	9025.19	Thermometers and pyrometers, not combined with other instruments: other than liquid-filled, for direct reading	
X	X	9025.80	Hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers and psychrometers, recording or not, and any combination of these instruments	
	X	9025.90	Parts and accessories for hydrometers and similar floating instruments, thermometers, pyrometers, barometers, hygrometers, and psychrometers, recording or not, and any combination of these instruments	
	X	9026.10	† Instruments and apparatus for measuring or checking the flow or level of liquid	
	X	9026.20	† Instruments and apparatus for measuring or checking pressure	
X	X	9026.80	Other instruments and apparatus	
X	X	9026.90	Parts and accessories for articles of HS 9026	
X	X	9027.10	Gas or smoke analysis apparatus	
X	X	9027.20	Chromatographs and electrophoresis instruments	
X	X	9027.30	Spectrometers, spectrophotometers and spectrographs using optical radiations (ultraviolet, visible, infrared)	
X	X	9027.40	Exposure meters [including sound-level meters]	
X	X	9027.50	Other instruments and apparatus using optical radiations (ultraviolet, visible, infrared)	
X	X	9027.80	Other instruments and apparatus for physical or chemical analysis	
X	X	9027.90	Microtomes; parts and accessories	
	X	9028.10	Gas meters	
	X	9028.20	Liquid meters	
	X	9028.30	Electricity meters	
	X	9028.90	Parts and accessories for articles of HS 9028	
X	X	9030.10	Instruments and apparatus for measuring or detecting ionising radiations	
	X	9030.20	Cathode ray oscilloscopes and cathode-ray oscillographs	
	X	9030.31	Multimeters	
	X	9030.39	Other instruments and apparatus, for measuring or checking voltage, current, resistance or power, without a recording device	
	X	9030.83	Other instruments and apparatus for measuring or checking electrical quantities, with a recording device	
	X	9030.89	Other instruments and apparatus for measuring or checking electrical quantities	
	X (ex)	9030.90	Parts and accessories (for nominated articles of HS 9030)	
	X	9031.10	Machines for balancing mechanical parts	
	X	9031.20	Test benches	
	X	9031.30	Profile projectors	
X		9031.49	Other optical instruments	
X	X	9031.80	Other measuring or checking instruments, appliances and machines, not elsewhere specified in this chapter	
	X (ex)	9031.90	Parts and accessories (for nominated articles of HS 9031)	
X	X	9032.20	Manostats	
X	X	9032.81	Hydraulic and pneumatic instruments and apparatus	
X	X	9032.89	Automatic regulating or controlling instruments, other	



List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
	X	9032.90	Parts and accessories	
	X	9033.00	Parts and accessories (not specified or included elsewhere in this chapter) for machines, appliances, instruments or apparatus of Ch. 90	
	X		Auto emissions testers	
			<i>6.2 Sampling systems</i>	
			<i>6.3 Process and control equipment</i>	
X	X	9032.10	Thermostats	
	X		Electrical process control equipment	
	X		On-board monitoring/control	
			<i>6.4 Data acquisition equipment</i>	
			<i>6.5 Other instruments/machines</i>	
<b>B. CLEANER TECHNOLOGIES AND PRODUCTS</b>				
<b>1. Cleaner/resource-efficient technologies and processes</b>				
	X		Electrochemical apparatus/plant	
	X		Extended cooking (pulp)	
	X		Oxygen delignification	
	X		Ultrasonic cleaning	
	X		Fluidised bed combustion	
<b>2. Cleaner/resource-efficient products</b>				
	X		CFC substitutes	
	X	2847.00 <sup>6</sup>	Hydrogen peroxide	
	X		Peat replacements (e.g. bark)	
	X		Water-based adhesives	
	X	3209.10	Paints and varnishes, in aqueous medium, acrylic or vinyl	
	X	3209.90	Other paints and varnishes, in aqueous medium	
	X		Double-hulled oil tankers	
	X		Low-noise compressors	
<b>C. RESOURCES MANAGEMENT GROUP</b>				
<b>1. Indoor air pollution control</b>				
<b>2. Water supply</b>				
<i>2.1 Potable water treatment</i>				
<i>2.2 Water purification systems</i>				
	X	2801.10	* Chlorine	
	X (ex) <sup>3</sup>	8543.89	† Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this chapter; other	Ozone production system
<i>2.3 Potable water supply and distribution</i>				
	X	2201.00	Water, incl. natural or artificial mineral water	
	X	2851.00	Distilled and conductivity water	
	X	3914.00	Ion exchangers (polymer)	
<b>3. Recycled materials</b>				
<i>3.1 Recycled paper</i>				
<i>3.2 Other recycled products</i>				
<b>4. Renewable energy plant</b>				
<i>4.1 Solar energy</i>				
	X	8419.11	Instantaneous gas water heaters	
	X	X (ex)	8419.19 Other instantaneous or storage water heaters, non-electric	Solar water heaters

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
X	X (ex)	8541.40	Photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light-emitting diodes	Solar cells
<i>4.2 Wind energy</i>				
X			Windmills	
X			Wind turbines	
	X (ex)	8413.81	Pumps for liquids, whether or not fitted with a measuring device; other pumps	Wind turbine pump
	X	8502.31	Generating sets, electric, wind-powered	
<i>4.3 Tidal energy</i>				
<i>4.4 Geothermal energy</i>				
<i>4.5 Other</i>				
X		2207.10	Ethanol	
X		2905.11	Methanol	
X			Hydroelectric plant	
	X	8410.11	†	Hydraulic turbines and water wheels of a power not exceeding 1 000 kW
	X	8410.12	†	Hydraulic turbines and water wheels of a power exceeding 1 000 kW but not exceeding 10 000 kW
	X	8410.13	†	Hydraulic turbines and water wheels of a power exceeding 10 000 kW
	X	8410.90	†	Hydraulic turbines and water wheels; parts, including regulators
<b>5. Heat/energy savings and management</b>				
X		3815.00	Catalysts	
X		7008.00	Multiple-walled insulating units of glass	
X		7019.90	*	Other glass fibre products
	X	8404.20	Condensers for steam or other vapour power units	
	X (ex)	8409.99	Parts suitable for use solely or principally with the engines of HS 8407 or 8408; other	Industrial mufflers
X	X	8419.50	Heat exchange units	
X		8419.90	Parts for heat exchange equipment	
X			Heat pumps	
X			District heating plant	
X			Waste heat boilers	
X			Burners: fuel other than oil or gas	
X		8539.31	Fluorescent lamps, hot cathode	
X			Electric cars	
X			Fuel cells	
X	X	9028.10	†	Gas supply, production and calibrating metres
X	X	9028.20	†	Liquid supply, production and calibrating metres
X		9032.10	*	Thermostats
<b>6. Sustainable agriculture and fisheries</b>				
	X (ex) <sup>3</sup>	4601.20	Mats, matting and screens of vegetable materials	1. Erosion control matting (biodegradable) 2. Ecologically safe ground covers (biodegradable)
	X (ex) <sup>3</sup>	8436.80	Other agricultural, horticultural, forestry, poultry-keeping or bee-keeping machinery	Hot-water weed-killing system
<b>7. Sustainable forestry</b>				
<b>8. Natural risk management</b>				

List coverage		HS <sup>1</sup>	Product description	Additional product specification
OECD	APEC			
<i>8.1 Satellite imaging</i>				
<i>8.2 Seismic instruments</i>				
<b>9. Eco-tourism</b>				
<b>10. Other</b>				

1. An asterisk (\*) indicates that the HS code appears previously in the OECD list; a cross (†) indicates that the HS code appears previously in the APEC list.

2. An "ex" in the column indicates that only the "ex-heading" product (described in the last column) is nominated.

3. Classified under "Wastewater management" in the APEC list.

4. Classified under "Potable water treatment" in the APEC list.

5. Classified under "Monitoring/analysis" in the APEC list.

6. Originally listed as HS 2801.10 in the OECD list.

Source: Tables A1 and A2.

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