Chapter 4

Managing Request-Offer Negotiations under the GATS The Case of Environmental Services

by

Massimo Geloso Grosso
OECD Trade Directorate

This study is part of ongoing OECD work on trade in services, in co-operation with UNCTAD, to assist WTO members manage request-offer negotiations under the GATS. The objective is to help officials in WTO members both to gain greater insight into issues of importance in the environmental services sector and to see how they might be approached in the negotiations. The current GATS negotiations offer WTO members an opportunity to achieve greater liberalisation of environmental services, and this may lead to significant economic and environmental benefits for all countries. Nevertheless, liberalisation, particularly of environmental infrastructure services, must be appropriately designed and supported by a strong regulatory framework. Making commitments in these services thus raises questions relating to their nature, although the flexibility provided for in the GATS makes it possible to schedule them to take account of their characteristics. Risks of market failure to achieve social objectives appear to be less significant for environmental services unrelated to infrastructure and for support services.

Please cite this chapter as OECD Trade Policy Working Paper No. 11.

Introduction

This chapter contributes to ongoing OECD-UNCTAD work aimed at helping WTO members conduct request-offer negotiations successfully under the GATS.[1] It seeks to make the generic negotiating checklists developed in Part II of "Managing Request-Offer Negotiations under the GATS" (OECD, 2002) more specific by applying them to environmental services. The objective is to help WTO members gain greater insight into issues of importance in the environmental services sector and to see how they might be approached in the negotiations.

Today, half of the world's population still lacks access to basic sanitation and one person in five does not have access to safe drinking water. More than 90% of sewage in developing countries is discharged untreated directly into rivers, lakes and coastal waters and about half of the urban population lacks adequate waste disposal. Air pollution has also been a growing problem, as urban expansion and industrialisation have been accompanied by increasing road traffic and energy consumption.

Strengthening the environmental services sector is therefore very important. It is increasingly recognised that more trade and investment in environmental services can provide developing and developed countries alike with greater access to these services, potentially leading to significant environmental and economic benefits (a "win-win" outcome). The current set of GATS negotiations offers WTO members at all levels of development an opportunity to achieve greater liberalisation in an orderly and flexible manner.

There is, at the same time, increasing awareness that opening environmental services markets to foreign competition is no easy task. It involves a broad set of policies, regulatory instruments and institutions. This is particularly true for environmental services, which encompass a wide variety of services with different concerns and priorities. It is therefore necessary to plan liberalisation carefully, ensure compatibility with national and development goals and put the necessary regulations in place. This can pose challenges, particularly for developing countries, which are more likely to have weaker regulatory regimes and more limited administrative and negotiating capacity.

The central purpose of the checklists on environmental services developed here is to help WTO members by highlighting some key issues which they may wish to consider in framing and assessing requests and offers. The checklists are indicative in nature. Considering the great diversity of WTO members' economic interests, export potential and development needs, country-specific fine-tuning is required to enhance their operational value.

After the overview of key trends in global environmental markets and trade presented in the next section, current developments in the GATS are reviewed, including definitional issues, current commitments and progress in ongoing negotiations. The following section then discusses the benefits flowing from greater openness of environmental services markets. Next, the characteristics and priorities of different kinds of environmental services are presented. Options available to WTO members when scheduling commitments are then reviewed, and key issues for consideration in the

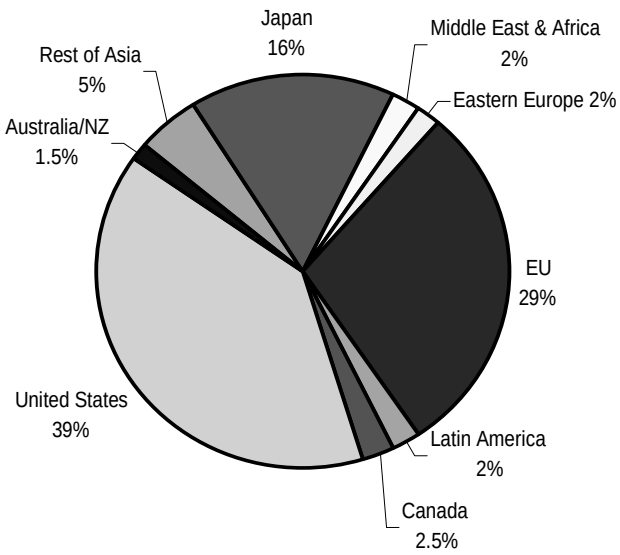
1. Under this joint OECD-UNCTAD project, sectoral negotiating checklists have been completed on insurance (OECD, 2003), energy (UNCTAD, 2003a) and legal services (OECD, 2004). A further checklist on construction services will be completed by UNCTAD.

negotiations are discussed. The final section presents the checklists of questions that WTO members may wish to consider in approaching the request-offer process.

Trends in global environmental markets and trade

The global environmental market as a whole (including environmental goods and services) reached an estimated USD 563 billion in annual revenues in 2002; the United States, the EU and Japan accounted for about 85% (Figure 4.1). The industry is estimated to have grown by over 15% between 1996 and 2002. Most analysts expect that it will continue to expand, reaching over USD 600 billion by 2010, roughly the size of the pharmaceuticals or information technology industries.

Figure 4.1. The global environmental industry by region, 2002



Source: Environmental Business International (EBI).

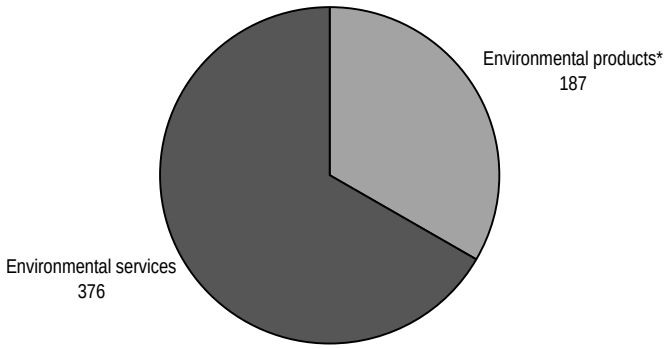
It is difficult to view the environmental services sector as a coherent whole. Traditionally, environmental services have been understood in terms of the infrastructure that provides water and waste treatment services, often by the public sector. More recently, however, a need has been felt to move beyond these infrastructure services, creating demand for other "non-infrastructure" environmental services (*e.g.* air pollution control) and environment-related support services (*e.g.* environmental consulting).[2] This is due to several factors, including new regulatory requirements for the management and control of pollution, growing public sensitivity to environmental problems, and trends in private participation and liberalisation that have generated private demand for a range of environmental services.

2. The distinction between environmental infrastructure, "non-infrastructure" and support services is used throughout the chapter for analytical purposes. (It derives from a similar distinction developed by UNCTAD.) However, it is not a classification of environmental services, nor does it aim to replace the current WTO classification or any other classifications of environmental services discussed in the next section of the chapter.

In 2002, the environmental services sector accounted for over 65% of the environmental industry (Figure 4.2). The infrastructure segments of water, sewage and solid waste management represented over 80% of the global environmental services market, although environmental non-infrastructure and support services are becoming increasingly important (see Figure 4.3).

Figure 4.2. Size of the global environmental industry by segments, 2002

USD billions

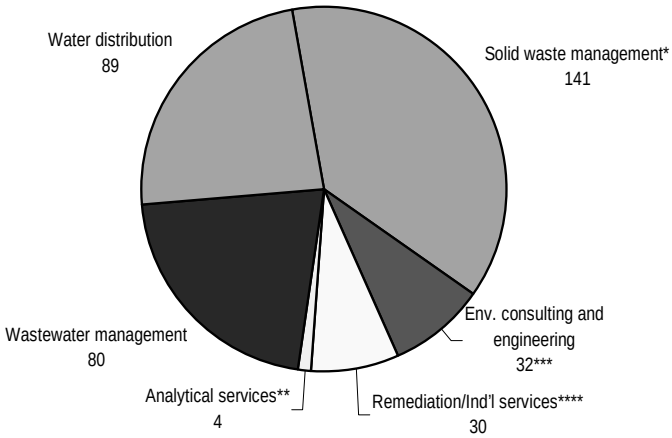


*Mainly equipment and products recovered from waste.

Source: EBI.

Figure 4.3. The global environmental services segment, 2002

USD billions



Note: The categories are those used by EBI and do not correspond to sub-sectors in the WTO classification.

* Also includes hazardous-waste management.

** Includes testing of "environmental samples" (soil, water, air and some biological tissues).

*** Includes engineering, consulting, design, assessment, permitting, project management and monitoring.

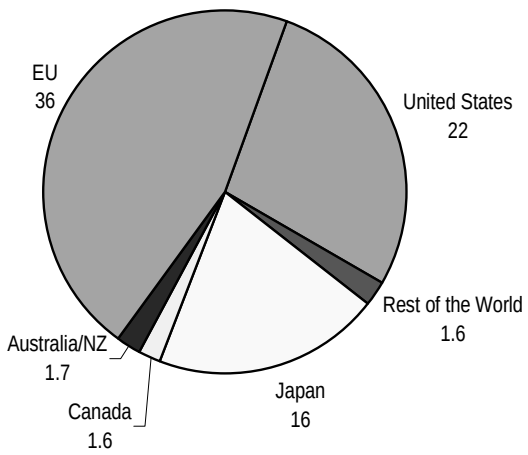
**** Includes physical clean-up of environmental sites, buildings and environmental cleaning of operating facilities.

Source: EBI.

Many of the same factors — increased environmental regulation, public awareness and trends in private participation — are also contributing to the increase in international trade in environmental services. While it is difficult to obtain an idea of the volume of trade because of data limitations, some rough estimates exist for the environmental industry, including both goods and services. These figures suggest that the EU, the United States and Japan were the leading exporters in 2002, accounting together for roughly 90% of total exports (Figure 4.4). Australia, New Zealand and Canada are expanding their environmental exports, but do not account for a large share of the global market. Developing countries are net importers of environmental services, although their exports are increasing. Currently, their exports tend to go mainly to regional markets.

Figure 4.4. Global exports of environmental goods and services, 2002

USD billions



Note: The figures are based on best estimates derived from interviews with companies, researchers and government agencies and are not the product of more comprehensive research comparable to the other EBI figures and tables presented in this chapter.

Source: EBI.

Table 4.1 lists the top 50 companies worldwide supplying both environmental goods and services based on revenue; they accounted in 2001 for almost 20% of global environmental revenue, or over USD 100 billion. Among the top 50 firms based on revenue, 22 were from the United States, Germany and Japan each had eight, France and the United Kingdom each had four, Denmark had two and Canada and Spain each had one. Of the top ten, four were from the United States, France and Japan each had two and Germany and the United Kingdom each had one. An interesting aspect is the share of some of these companies' business-to-business activities not only in related consulting services, but also in infrastructure services (*e.g.* outsourced industrial wastewater and sewage management). For example, the French company Vivendi Environnement (called Veolia Environnement since 2003), which has operations in more than 100 countries, earns 40% of its turnover from manufacturing customers.[3] Suez has 485 000 industrial and commercial clients worldwide.[4]

3. www.veoliaenvironnement.com/en/profiles/companies.

4. www.suez.com/metiers/english/environnement/index.php.

Table 4.1. Top 50 environmental companies worldwide, 2001

	Company	Country	Environmental revenue (USD millions)
1	Vivendi Environnement SA	France	17 230
2	Suez (Ondeo, Sita)	France	13 970
3	Waste Management	United States	11 320
4	Allied Waste	United States	5 470
5	RWE Entsorgung AG	Germany	4 790
6	Bechtel Group Inc.	United States	2 640
7	Severn Trent	United Kingdom	2 380
8	Ebara Corp	Japan	2 300
9	Republic Services	United States	2 260
10	Mitsubishi Heavy Industries	Japan	2 160
11	Kubota (Ind'l Eq div.)	Japan	1 830
12	Betz Laboratories Inc. (now GE Betz)	United States	1 820
13	Hochtief AG	Germany	1 760
14	AWG plc (Anglian Water)	United Kingdom	1 740
15	Shaw Group (IT Corp, S&W)	United States	1 610
16	Safety Kleen Corp.	United States	1 510
17	Earth Tech	United States	1 460
18	United Utilities	United Kingdom	1 440
19	CH2M Hill Cos.	United States	1 420
20	Vestas	Denmark	1 280
21	Kurita Water Industries	Japan	1 260
22	Noell Gmbh	Germany	1 100
23	Washington Group International (M-K)	United States	1 040
24	Fomento de Construcciones y Contratas	Spain	1 040
25	Hitachi Zosen	Japan	970
26	Takuma (Envl Eq & M/M divs)	Japan	920
27	Kelda Group (Yorkshire)	United Kingdom	910
28	Philip Services	Canada	810
29	Bilfinger + Berger	Germany	810
30	NEG Micon	Denmark	790
31	Babcock Borsig (Deutsche Babcock)	Germany	790
32	Black & Veatch	United States	730
33	Foster Wheeler Corp. (part of Tetra Tech)	United States	730
34	Linde	Germany	720
35	Fluor Daniel Inc.	United States	720
36	Rethmann Entsorgungs	Germany	710
37	URS Corp	United States	700
38	Organo	Japan	700
39	Parsons Engineering Science	United States	680
40	Philipp Holzmann	Germany	600
41	Tsukishima Kikai	Japan	590
42	MWH Global (Montgomery-Watson)	United States	570
43	Alstom	France	560
44	Tetra Tech Inc.	United States	550
45	Rhodia Eco Services	France	510
46	Casella Waste Systems Inc. (Rutland, VT)	United States	480
47	Battelle Memorial Institute	United States	450
48	Camp Dresser & McKee Inc.	United States	440
49	Jacobs Engineering	United States	410
50	Stericycle	United States	390

Source: EBI.

The largest environmental companies are thus concentrated in developed countries. However, companies from developing countries participate increasingly in the water and sewage sub-sectors, as well as in environmental support services like environmental consulting. These are often companies from Asia and Latin America, which have acquired technological and services capabilities, in part through joint-venture investment in the environmental sector in their own countries (Zarrilli, 2003).

Most trade in environmental services takes place through commercial presence (Mode 3) with the accompanying presence of natural persons (Mode 4). The importance of cross-border trade (Mode 1) and consumption abroad (Mode 2) is also increasing, particularly for environmental support services. Cross-border supply may be particularly relevant for transmitting architectural and engineering specifications and design plans for environmental projects, or reports of specialist environmental consultants. The Internet has greatly increased the scope for cross-border supply of such services.

Current developments in the GATS

Definition of environmental services

In the WTO services sectoral list (W/120), which is largely based on the Provisional United Nations Central Product Classification (Provisional CPC), the environmental services sector comprises: *i)* sewage services; *ii)* refuse disposal services; *iii)* sanitation and similar services; and *iv)* other (cleaning services for exhaust gases, noise abatement services, nature and landscape protection services, and other environmental services not elsewhere classified).[5] The classification reflects a traditional view of environmental services as largely public infrastructure services supplied to the general community, and focuses mainly on waste management and pollution control.

In recent years, the OECD and Eurostat have developed for analytical purposes a more comprehensive classification of the environmental industry, for both goods and services. This classification aims to be as complete and flexible as possible for classifying the industry as it is at present and allowing for changes such as the development of new types of environmental services. It is divided into three broad categories according to the type of economic activity: *i)* pollution management group; *ii)* cleaner technologies and products group; and *iii)* resources management group (see OECD/Eurostat, 1999, for details).

The WTO Committee on Specific Commitments has also been exploring ways to modernise the existing GATS classification of environmental services. Several members have submitted proposals suggesting alternative definitions of environmental services that could be used for submitting requests and offers. The EC proposes the creation of seven sub-sectors based on the environmental medium (air, water, soil, waste, noise and so forth); these closely resemble the first category of the OECD/Eurostat classification (pollution management group). The EC submission, like the OECD/Eurostat classification system, includes a category for "Services related to the collection, purification and distribution of water", which is not classified in either W/120 or the Provisional CPC, but which is often closely associated with environmental services (WTO, 2000a).

5. Subsequent versions of the CPC Classification (CPC Ver. 1.0 and 1.1) have introduced greater disaggregation in some of the sub-sectors of environmental services. For example, sewage services have been divided into sewage treatment services and tank emptying and cleaning services.

A communication by Switzerland is close to the EC proposal, except for water distribution, which Switzerland did not include (WTO, 2001a). Australia is also in favour of broadening the current classification and supports in principle the EC's proposed approach (WTO, 2001b). The United States supports proposals that incorporate a core list of environmental services composed primarily of the currently classified environmental services sectors (WTO, 2000b), though in its preliminary offer it proposed to reorganise the sectoral description according to the EC proposal (with some differences, see below). Colombia considers it would be useful to establish a model list incorporating new services not already included in the current classification (WTO, 2001c).

An important feature of the GATS classification (and of most classifications) is that services sectors are classified in a mutually exclusive way. In other words, services in one sector cannot be covered by another sector. In addition to the identification of "core" environmental services, some members propose establishing a list that would cover services that are not environmental *per se*, but which are nevertheless important to the provision of environmental services, for instance because they have environmental end uses (such as engineering or R&D). These environment-related services would be subject to a "cluster" or "checklist", which could be used as an *aide-mémoire* during negotiations. The results would be scheduled in the relevant (non-environmental) GATS sectors.

Existing commitments and beyond

Under the GATS, all WTO members are subject to limited general obligations, which apply, for the most part, to all services sectors including environmental services.[6] These include most-favoured nation (MFN) treatment and transparency. Market access (Article XVI) and national treatment (Article XVII) are not general obligations, but are granted in sectors which a member lists in its national schedule of specific commitments and to the extent indicated in the schedule.

During the Uruguay Round, 38 WTO members (counting the then 12 EC member states as one) made commitments on one or more of the four sub-sectors of environmental services. The number of commitments in the individual sub-sectors is roughly equal: 29 on sewage, refuse disposal and other environmental services; 30 on sanitation and similar services; and slightly fewer on individual segments of other environmental services. Of the 20 members that subsequently acceded to the WTO, all except Mongolia have made commitments in at least one sub-sector of environmental services.

The Uruguay Round was just a first step in a longer-term process of multilateral rule making and liberalisation for services trade. WTO members agreed "to enter into successive rounds of negotiations with a view to achieving a progressively higher level of liberalisation" (GATS Article XIX). Negotiations on services started in January 2000 as part of the "built-in agenda"; at Doha, in November 2001, WTO members agreed to begin a new, comprehensive round of negotiations and to build on the work done on services since 2000.

In the course of discussions on environmental services, a question was raised about the reference in the Doha Ministerial Declaration to environmental services and whether it might influence a decision on the appropriate forum to conduct negotiations on these

6. Air traffic rights and services directly related to the exercise of traffic rights are excluded from the scope of the GATS.

services.[7] Consultations in the Committee on Trade and Environment in Special Session (CTE-SS) revealed that there is broad support for the idea that the negotiations on environmental services should be conducted as part of the overall services negotiations in the Special Session of the Council for Trade in Services (WTO, 2002).

In the first phase of the negotiations, several WTO members tabled general proposals outlining their interests in the negotiations on environmental services. Several, including two developing countries, submitted proposals on environmental services. The proposals share several common elements. Most recognise the potential benefits flowing from greater market openness in the environmental services sector and call for further liberalisation through the reduction of measures affecting trade in the sector. The need to facilitate the establishment of foreign firms (Mode 3) and the movement of key personnel (Mode 4) is also frequently mentioned. Several members highlight the fact that negotiations on environmental services should not impair members' ability to regulate. The importance of greater transparency of regulations in the sector is often raised as is, to a lesser extent, the transfer of technology and know-how (Table 4.2 lists the key elements of the proposals in more detail).

The guidelines and procedures for the negotiations adopted by the WTO Council for Trade in Services, and later reaffirmed in paragraph 15 of the Doha Ministerial Declaration, set the request-offer approach as the main method for negotiating specific market access commitments in services. It was agreed that members should submit initial requests by 30 June 2002 and initial offers by 31 March 2003. The agreement of 1 August 2004 reaffirmed members' commitment to progress in the services negotiations and called on them to table new or revised offers by May 2005.

As part of this second phase of the negotiations, members have been exchanging initial requests and offers. While requests are addressed bilaterally to negotiating partners (and it is therefore not possible to know their exact number or content), offers are traditionally circulated multilaterally (because of the MFN rule) and several are publicly available. So far, 48 members have submitted initial overall offers.[8] Of these, 12 have been derestricted by the members concerned and are publicly available on the WTO Web site.[9] Another 13 are available via national or other Web sites.[10] Of the 25 offers that are publicly available, 11 offer to make new commitments on environmental services.

7. Paragraph 31: "With a view to enhancing the mutual supportiveness of trade and environment, we agree to negotiations, without prejudging their outcome, on:…(iii) the reduction or, as appropriate, elimination of tariff and non-tariff barriers to environmental goods and services."

8. Argentina; Australia; Bahrain; Bolivia; Brazil; Bulgaria; Canada; Chile; China; Colombia; Costa Rica; Czech Republic; Dominican Republic; European Communities and its Member States; Fiji; Gabon; Guatemala; Hong Kong, China; Iceland; India; Israel; Japan; Jordan; Kenya; Korea; Liechtenstein; Macao, China; Mexico; Mauritius; New Zealand; Norway; Panama; Paraguay; Peru; Poland; Singapore; Slovak Republic; Slovenia; Sri Lanka; St Kitts and Nevis; Senegal; Switzerland; Suriname; Chinese Taipei; Thailand; Turkey; United States; Uruguay.

9. Australia; Canada; Chile; the European Communities and its Member States; Iceland; Japan; Liechtenstein; New Zealand; Norway; Slovenia, Turkey; United States.

10. Argentina; Bulgaria; Colombia; Hong Kong, China; India; Israel; Mexico; Panama; Paraguay; Poland; Singapore; Switzerland; Uruguay.

Table 4.2. Main features of the negotiating proposals

Member	Benefits of liberalisation	Measures affecting trade	Modes of supply	Regulations	Transfer of technology	Other elements
Australia		There are several measures, *e.g.* limitations on the type of legal entity, general limitations on foreign investment and licensing requirements, that should be addressed in the negotiations	Members should eliminate limitations on commercial presence that cannot be justified	Government licensing and ownership regulations should be transparent and not unnecessarily restrictive		
Canada	Liberalisation can lead to several benefits, *e.g.* greater transparency, lower prices and greater availability, transfer of knowledge, and a healthier environment	Members should aim at eliminating measures affecting trade in the sector, such as investment and establishment measures, entry and stay of personnel and licensing requirements	Members should eliminate limitations on commercial presence and on the temporary movement of personnel	An important aspect is the regulatory framework in which this sector operates. The GATS reaffirms the right to regulate, but in a transparent manner The lack of transparency of regulatory regimes should be addressed		
Colombia	Commercial presence of foreign firms may be beneficial for developing countries (*e.g.* increased investment, technology transfer, and improved environment)		To strike a balance in the negotiations, commitments on Mode 4 need to be improved	Professional qualifications of foreigners should be taken into account (*e.g.* equivalent levels of education and experience)		Private participation would lead to more efficient management in the provision of the service and ensure wider coverage The level of development of the members should be taken into account
Cuba	With appropriate regulations, liberalisation can help the development of the sector in developing countries		Progress should be made in modes of supply of interest to developing countries	Members must be able to regulate, *e.g.* to preserve the national environment	Difficulties in accessing technology and know-how should be eliminated	Different levels of development should be taken into account, particularly through progressive liberalisation, differential treatment and capacity building

Member	Benefits of liberalisation	Measures affecting trade	Modes of supply	Regulations	Transfer of technology	Other elements
EC (2 proposals)	Liberalisation leads to a win-win scenario, *i.e.* transfer of technology, price and efficiency effects for domestic budgets and improved welfare, health and environment	Members should reduce measures affecting trade in the sector, *e.g.* monopoly issues, restrictions on foreign investment and the movement of key personnel, licensing, economic needs tests, residency and nationality requirements	It would be desirable to enhance commitments on Modes 1, 2 and 3 for all sub-sectors and eliminate relevant restrictions Discussions should aim at improving the temporary movement of natural persons for the provision of specific services			
Switzerland	Liberalisation can lead to several benefits, *e.g.* lower prices and greater availability, and transfer of know-how (particularly in the area of prevention)	Attempts should be made to reduce several measures affecting trade in the sector, *e.g.* general investment limitations, economic needs tests and licensing	Broader commitments on Mode 3, but also Modes 1 (where feasible) and 2, would facilitate trade in the sector. There must also be negotiations on Mode 4		The transfer of technology and know-how is key, because it leads to higher standards of public health and well-being worldwide	
United States	Liberalisation can lead to several benefits particularly for developing countries, *e.g.* less expensive, better quality services, increased availability, innovation, and improved health and environment	Negotiations should aim at reducing market access and national treatment measures Discussions should also address measures in related sectors such as professional services and business services (*e.g.* advertising)	Liberalisation would be most beneficial in the context of GATS Modes 3 and 4	Members must be able to regulate, *e.g.* ensure performance and quality controls, and that service providers are fully qualified and carry out their tasks in an environmentally sound manner The guidance described in the US submission on transparency would benefit this sector as well		

Note: This table does not include issues of classification, which were dealt with above.

Several members that have made submissions have *de facto* adopted a classification similar, though in some cases with differences, to the one proposed by the EC (Table 4.3). A number of submissions therefore relate to items added as part of the EC classification, such as protection of ambient air and climate, remediation and clean-up of soil and water, and noise and vibration abatement. No member, however, has proposed to make commitments on water distribution. Other members have offered to make new commitments using the WTO/CPC classifications and, in one case, this includes new commitments in all four categories of the Provisional CPC. Some members have also

proposed to remove market access and national treatment limitations to improve their current schedules.

Table 4.3. Classification used by members proposing new commitments on environmental services

EC classification*	WTO/120/Prov. CPC
Australia	Hong Kong, China
Japan	Iceland
Norway	Israel
Switzerland	Panama
United States	
New Zealand**	

Note: The table includes only publicly available offers.

*The EC classification has in some cases been adopted with variations.

**The commitments are limited to "consultancy related to the provision of environmental services".

Source: WTO members' offers.

Benefits of open markets for environmental services

Liberalising trade in environmental services can lead to significant environmental and economic benefits. In the case of environmental infrastructure services, gains can be made in particular through private companies' access to global capital markets. Since the provision of these services requires high levels of investment and expertise, the commercial presence of foreign enterprises may contribute to increased investment and thus to greater availability of these services to the benefit of the environment and the health of the population. This is likely to be most beneficial in emerging economies and developing countries where environmental problems are compelling and where domestic financial concerns may require even more careful balancing of environmental with other priorities. Liberalising these services can also improve the efficiency of utilities by introducing incentives to reduce wasteful costs and collect revenues.

Improved market access for non-infrastructure environmental services, including support services, could offer new market opportunities for firms in both developed and developing countries and also provide all countries, in particular developing countries, with greater access to these services while lowering their cost. The increased competition resulting from greater market access for foreign firms can lead to innovation and the provision of improved environmental services, thereby benefiting the environment (WTO, 2000b).

Liberalisation of trade in environmental services can also provide easier access to environmentally sound technology and know-how (Box 4.1). In particular, partnerships between firms in developed and developing countries are proving a valuable tool for helping firms in developing countries to acquire state-of-the-art technologies. For foreign firms, such partnerships facilitate activities in developing and emerging markets, where environmental and business conditions can be quite different from those at home (UNCTAD, 2003b).

Box 4.1. Trade in services as a channel for technology transfer

Trade in services is a potential vehicle for the transfer and dissemination of technology. Cross-border supply (Mode 1) can involve the passage of the technology embedded in the imported service from the innovating country to the receiving country, resulting in a passive technology spillover.

Potentially more important are the *active* knowledge spillovers (learning and adaptation of the embedded technology) that might diffuse from Modes 3 and 4. In particular, the establishment of a foreign commercial presence and the temporary presence of highly skilled foreign personnel may provide opportunities for person-to-person communication and learning by doing. This can occur through formal training and informal knowledge sharing. It could therefore facilitate the transfer and dissemination of technological knowledge and, even more importantly, non-codified (tacit) knowledge, typically pertaining to technical expertise and professional know-how. Additionally, as far as Mode 4 is concerned, interaction between domestic and foreign firms (backward and forward linkages) may favour technological diffusion (person-to-person communication and learning by doing through informal knowledge sharing or formal training).

Source: UNCTAD 2003a.

Stronger domestic capacity built via imports may also lead to the development of export capacity, enabling developing countries to become international providers of these services. Some developing countries may be able to compete in sub-regional or regional markets where experience with similar environmental problems is important. Moreover, they may be able to offer a range of products and services that are not only price-competitive, but also based on technology adapted to local conditions.

Other benefits can also be realised through greater liberalisation of environmental services. The increased availability and efficiency of these services can make importing countries more attractive destinations for foreign direct investment. Employment can also benefit in developing countries as they possess significant human capital. The expansion of the environmental services sector can provide employment opportunities for unskilled as well as skilled labour in these countries, as some environmental segments are labour-intensive such as solid-waste management and consulting. Enhanced access to environmental services can also contribute to the competitiveness of key industries. There is evidence that some of the fastest-growing industrial sectors in developing countries, such as steel or energy, would benefit from improved access to environmental services (OECD, 1997).

Recent OECD work has provided concrete examples of economic and environmental benefits accruing to a range of developing countries from liberalisation of their environmental services markets (OECD, 2001). The study provides over 60 examples of foreign private participation in the provision of environmental infrastructure services in developing countries in the past decades. The focus is on the services that represent the most immediate environmental services priorities for most developing countries; they are also the most demanding in terms of financial resources and represent bigger budgets than non-infrastructure services. In addition, much more information is readily available, owing to their status as basic services. There have been a number of “win-win” outcomes from trade and investment liberalisation of these services, in terms of roll-out of services to the population and industry, environmental quality improvements, participation by local firms and provision of local jobs.

Examples of export opportunities in environmental services for developing countries are also mounting. Cuba, for example, has supplied environment-related services in the form of studies, assessments and consultancies to various countries in Latin America (UNCTAD, 2003b). Similarly, enterprises in Brazil have undertaken initiatives to import environmentally sound technologies from foreign firms, build capacity and become international providers of environmental services (Box 4.2).

Box 4.2. Business opportunities for Brazil

Brazil was the first country in Latin America to implement a coherent package of environmental legislation. In addition, individual states developed legislation, the most advanced probably being the State of São Paulo, where a public company, CETESB (*Companhia de Tecnologia de Saneamento Ambiental*), developed the capacity to absorb, adapt and modify environmentally sound technologies imported from developed countries. CETESB runs training activities aimed at upgrading the technical skills of its personnel, and it is responsible for approving large construction projects, after assessing their environmental impact. The company runs a number of projects of great importance to the country and the region. With the co-operation of the United States Environmental Protection Agency, and using funds made available by the World Bank, CETESB has started a pilot project with a group of private firms in the State of São Paulo aimed at replacing end-of-pipe technology (treatment of wastes and polluting streams) with cleaner technology (pollution and waste prevention). It has undertaken initiatives to import and adapt technology for cleaning up industrial sites to local conditions, for managing aquatic resources, and for incinerating industrial waste. It has also implemented a project to reduce air pollution from mobile sources in São Paulo. The results of these projects are relevant to other countries in the region that share the same problems of air contamination (especially in large cities), dependence on end-of-pipe technology, and limited capacity to deal with highly sophisticated technology.

CETESB has been providing consultancy services to other Latin American countries (Argentina, Uruguay, Paraguay and Mexico), has opened its training courses to technicians from foreign countries (including Portuguese-speaking African countries) and is thinking about developing a marketing strategy to sell its services to foreign countries. The income generated by these activities would represent a new source of financing for environmental initiatives in the State of São Paulo. Some private firms are also providing environmental services abroad. The technologies and services provided by these companies may be more appealing to neighbouring countries than those supplied by firms from developed countries because of knowledge of environmental problems specific to the region, cultural affinities, a similar language and greater understanding of the way in which business is carried out in the region. If Brazilian legislation becomes the basis for the development of environmental legislation in other MERCOSUR countries, export opportunities for both state-owned and private companies may increase dramatically.

Source: Zarrilli (2003), based on Rei and Lucon (2003).

Export opportunities exist for offering an integrated package of goods and services or providing multidisciplinary services. Municipalities can be serviced by a single company performing interrelated services (*e.g.* the collection, transport, disposal, recycling and conversion to energy of waste). In developing countries, some firms are pursuing this business strategy. In Malaysia, a private company whose main business is to operate wastewater plants is following the example of the British and French water companies, providing integrated water services domestically and to other countries in the Asia-Pacific region. Another Malaysian company, which operates engineered water treatment systems, has boosted its capabilities by starting a manufacturing facility. This has given the firm the capacity not only to design and operate its water treatment services, but also to manufacture them. The company is expanding its activities in Indonesia and Thailand

through acquisition and is moving to the specialised market of ultra-pure water[11] (Zarrilli, 2003).

Concerns and priorities for different kinds of environmental services

Environmental infrastructure services

Private sector participation

Historically, trade in environmental infrastructure services — including water, sewage and solid-waste management — has been limited because they were mainly provided by municipalities (although countries such as France have a long tradition of supply by private operators). Government provision was seen as necessary either to ensure socially equitable access to these services or because of their natural monopoly characteristics. The scope for competition in environmental network services has traditionally been limited as the existing infrastructure, *e.g.* sewage pipes, is often prohibitively expensive to duplicate.

Nevertheless, in recent years trade in environmental infrastructure services has increased, following changes in provision which have led to a stronger presence of the private sector. In emerging economies and developing countries, in particular, the drivers of decisions to permit private participation are to increase investment, improve infrastructure performance and introduce competition where feasible. Owing to the lack of domestic capacity and finance, when developing countries' governments decide to open these services to private participation, they often decide to encourage foreign participation.

Competition is possible for solid-waste management services, given that these do not have any constraints related to network duplication. Although these services have traditionally been performed by municipalities, private regulated provision does exist. Already, in both OECD and non-OECD countries, much of the waste generated by food retailers, shopping centres, restaurants and office buildings is collected by private waste collection and disposal service providers (see Chapter 5). Opportunities also exist to introduce competition in sewage treatment.

Even when competition *in* the market may not be feasible — *e.g.* local networks of sewers — it is possible to introduce competition *for* the market through government procurement and monopoly franchises. The procurement of environmental infrastructure services by the public sector would appear to be most relevant for the construction, operation and upgrading of public utilities such as water supply and wastewater treatment, as well as solid-waste collection and disposal (OECD, 2001). Many countries have also used innovative strategies to facilitate private participation in these services. Public-private partnerships (PPPs), such as concessions and build-operate-(own)-transfers have emerged as alternatives to privatisation, with ownership transferred through outright divesture (Box 4.3). A concession contract, for example, grants a private company, typically through competitive bidding, the exclusive right to provide a service for a specified period by using existing facilities and developing new ones. Thus, a concession agreement entails only a temporary transfer of the infrastructure assets (such as sewage

11. Ultra-pure water entails purity specifications so high that every possible measure is taken to avoid contamination (*e.g.* microbial). It is often used in the semiconductor and pharmaceutical industries.

pipes) to the private sector. At the end of the concession period, the assets are transferred back to the public authority (World Bank, 2004).

Box 4.3. Different forms of private sector participation in environmental services markets[1]

Operation, maintenance and services contract

The public sector remains the primary provider of the infrastructure and only contracts out portions of its operation to the private sector. The private sector carries out one or more specified tasks or services for periods from five to seven years. It must perform the service at the agreed costs and must typically meet performance standards set by the public sector. The contract is generally awarded through traditional competitive bidding procedures. The private sector is paid a predetermined fee for the service and does not have a relationship with the end users, all financial interactions being directly with the government. The public sector is responsible for funding any capital investments needed to expand or improve the system.

Concession

An operator (the concessionaire) is awarded full responsibility for the delivery of infrastructure services in a specified area, including all related operation, maintenance, fee collection and management activities. It is responsible, in addition to providing the service, for any capital investment required to build, upgrade or expand it, as well as for financing investments through tariffs paid by system users. The public sector establishes performance standards and ensures that the concessionaire meets them. The fixed infrastructure assets are entrusted to the concessionaire for the duration of the contract (25-30 years) but remain government property.

Build-operate-transfer (BOT) contract

Under a BOT, the operator finances, builds and operates a new infrastructure facility or system according to performance standards set by the government. The operation period is usually 10-20 years. The public sector retains ownership of the infrastructure facilities and becomes both the customer and the regulator of the service. The operator provides the capital to build the new facility. In return, the public sector agrees to purchase a minimum level of output to ensure that the operator recovers its costs during operation.

Joint venture

A joint venture is a company jointly owned by two or more corporate entities, any one of which can be a government-owned or private enterprise, in which the two (or more) companies assume co-responsibility for the delivery of infrastructure. The public- and private-sector partners can either hold shares in a new company or assume joint ownership of an existing company, which provides urban infrastructure services.

Community-based provision

Community-based provision starts when financial or institutional limitations prevent the government from providing adequate services to particular sectors of the population, forcing residents to find their own means of meeting their needs. Community-based providers might include individuals, families, or local micro-enterprises. Initial organisational and material costs are often provided by non-governmental organisations (NGOs), private charities, official development assistance (ODA), the government or the community itself. Maintenance costs are generated by local charges or revenues. Community based organisations often play a key role in organising poor residents into taking collective action and in representing their interests in negotiations with NGOs and governments.

1. These solutions are not mutually exclusive.

Source: OECD (2001).

Addressing concerns about liberalisation

These changes are having the effect of gradually bringing environmental infrastructure services into the realm of the market and exposing them to international trade. However, although the benefits of liberalisation can be very important in terms both of increased efficiency and of service access and affordability, past experience has shown that reforms must be appropriately designed and supported by a strong regulatory framework.

If a government decides to involve private firms, including foreign ones, in the provision of services previously provided solely by the public sector, it needs to shift from being the manager of these services to being their regulator. To achieve public policy objectives in the new environment, new regulatory tools and approaches are required (see below, including Box 4.4 for concrete examples). While these fall largely outside the scope of the GATS, they are important accompanying measures for successful liberalisation:

- *Regulating tariff pricing*. Unlike solid-waste management where market competition is feasible and trade liberalisation can lead to price decreases, private-sector involvement in environmental network services such as sewage collection can lead to higher fees for services supplied by the government, as prices fixed under governmental monopoly often do not cover the cost of providing the service. User fees are one of the most controversial aspects of private-sector involvement. Infrastructure network services are capital-intensive services and whatever the source somebody has to pay: if not users then taxpayers or aid donors. Cost-reflecting tariffs are needed to bring about the investment necessary to maintain, replace, modernise and expand facilities and services. User fees are also crucial for promoting conservation principles and new attitudes in user households and commercial enterprises. A decision to involve the private sector in providing these services does not mean the end of regulation in this fundamental regulatory sphere. Governments retain a key role in regulating utility prices in liberalised markets. The key challenge relates to setting rates that strike a socially acceptable balance between the interests of investors and consumers; attracting needed capital; and ensuring that tariffs are just and reasonable and contribute to universal service objectives. These goals are difficult to achieve simultaneously, and the optimal choice of regulatory mechanisms depends on several factors related to the stage of national development.

- *Regulating to achieve universal access*. In addition to introducing the cost-reflecting tariffs necessary to attract investment, governments may need to put in place policies that help to meet the needs of the population, often in poor peri-urban areas, that cannot afford to pay as much for infrastructure services as wealthier citizens. Allowing entry — particularly in segments where product competition is feasible, *e.g.* solid-waste management — can increase services for the poor, as competition introduces a range of price and quality options that make possible service to populations with lower income levels. Tools to induce the private sector to invest in coverage in low-income areas may also need to be an integral part of any reform programme. A common measure for extending access to service is to include network expansion obligations in contracts with private providers. Governments have also used various forms of subsidies directed at poorer groups of society, although effective targeting remains a challenge. Subsidies can also be used to create incentives for operators to extend access into otherwise unprofitable areas.

- *Regulating to meet service standards.* Government responsibility extends beyond ensuring the availability of service at an affordable price. Service standards in environmental infrastructure services have emerged as a major regulatory issue, not least because many functions of modern society critically depend on these services. Standards include type of service, service quality, service reliability and customer relations. A number of measures induce companies to meet standards, ranging from mandatory service obligations to market-based instruments. Under mandatory service obligations, the regulator sets standards which the companies must meet or face fines or even cancellation of the contract. These schemes entail broader social benefits by ensuring that consumers are protected through guaranteed standards of performance. Market-based instruments, on the other hand, aim at providing incentives to companies to meet targets by increasing efficiency. Particularly in developing countries where large shares of the population do not have access to services, flexible regulation are being introduced that provide the utility with strong incentives to seek creative approaches to meeting service standards, while ensuring that important public policy objectives, *e.g.* water quality, are not compromised.

- *Effective regulatory agencies and competition authorities.* The establishment of appropriate regulatory agencies and competition authorities designed to signal government's commitment to potential private investors and protect consumers from exploitation are essential to the reform process. In a natural monopoly situation, which is the case for water supply and sewage collection, private participation does not, for the most part, lead to a competitive market, but to the replacement of a public monopoly with a private one. Regulatory agencies and competition authorities therefore need to ensure that the interests of consumers are defended against potential abuses by a private enterprise operating in a non-competitive environment. The crucial tasks performed by these institutions — *e.g.* setting tariffs and quality standards, as well as ensuring enforcement — require considerable expertise in appraising the structure, behaviour and performance of markets. Regulatory agencies and competition authorities also need to be both largely independent from political influence and accountable for their actions.

- *Transparency and users' involvement.* There is evidence that even people with low incomes are willing to pay for environmental infrastructure services when the services are reliable and the cost of delivering them is reasonably transparent and understandable. Experience also suggests that people and businesses will pay more when they receive new or improved services. In the context of reform, this suggests that dissemination of detailed information about the improvement in services, and the capital investment needed to create these improvements, is essential for public acceptance of increases in overall prices. The new or improved services need to be clearly described and rate changes need to be phased in and accompanied by education and information programmes describing the changes and the reasons for them. Phasing in price increases allows people and businesses to adjust to price changes if the schedule of change is communicated in advance and people believe that it will actually be implemented (Gleick *et al.*, 2002). Making information available to consumers can mobilise them to play a role in monitoring the performance of service suppliers and the enforcement of regulation.

Box 4.4. Examples of some regulatory approaches and outcomes[1]

Tariff policy in the Chilean water and sewage sectors

Chile gradually introduced a new tariff formula in its water and sewage sectors from 1990 to 1995, when it reformed its publicly owned Santiago Metropolitan Sanitary Works Enterprise (*Empresa Metropolitana de Obras Sanitarias*, or EMOS) by means of a regulatory framework mimicking the design of a concession with a private utility. EMOS was still a state-owned company but started to operate under private law (privatisation ultimately occurred in 1999) and under the supervision of an independent regulatory agency. The tariff policy was designed both to signal to potential private investors that the government was committed not to expropriate their return on capital by under-pricing but would curtail the possibility of monopoly rents. Tariffs are calculated every five years to cover the long-run marginal cost[2] of a "model" or benchmark company and are then readjusted to permit a "reasonable" return on assets (allowing at least a 7% return on capital). The water tariff is also indexed to a price index. To reduce the risk of monopoly rents, the construction of the model company was a black box so that it would be difficult for the company to manipulate the information. The tariff has thus incentive properties similar to a price cap. If EMOS can be more efficient than the model, it earns additional profits, giving the company an incentive to maximise efficiency. At the end of the period, tariffs may be adjusted downward to force the company to share its gains with consumers. The reforms led to significant gains to the government through taxes and dividends, while consumers benefited from almost 100% coverage of expanding demand, better water pressure and fewer interruptions of service. Consumers also had to pay higher prices, but the effects were softened by direct subsidies. Employees gained from wages closer to market wages.

High tariffs in two water and sewage concessions in Argentina

In 1995 private participation was introduced in the water and sewage sector in the province of Tucuman, Argentina. A 30-year concession contract was awarded to a consortium composed of Compagnie Générale des Eaux and a local investor. Aggressive investment targets were set in the contract. These had a major impact on prices, which rose by up to 68%. In addition, the increase was spread across all consumers equally, with serious affordability implications for low-income households. This problem had not been foreseen and was not addressed early in the reform process. The new tariff became very unpopular and public disapproval turned to resentment following outbreaks of turbid water. A non-payment campaign was organised and an anti-privatisation local government was elected. The financial situation of the concessionaire further deteriorated and several attempts to renegotiate the contract failed. A social tariff was then proposed but public confidence had been lost and the case ended in international arbitration.

In May 1993, a 30-year concession contract was awarded to a private company to operate water and sewage services in Buenos Aires. Consumers already connected to the system initially benefited from a significant drop in tariffs and better quality and reliability of service. Expansion targets set by geographical area, with poor areas prioritised, resulted in large numbers of new households being connected. However, an unpopular decision to pass the cost of system expansion on to new consumers in the form of a hefty infrastructure charge led to public unrest and early contract renegotiation. This very high connection charge, unaffordable for the poor, was replaced by a bimonthly Universal Service and Environmental Improvement fee (SUMA), which was levied on all customers regardless of when they connected to the network. Connection charges were reduced to USD 120 for water or sewage, repayable over five years in interest-free instalments averaging USD 4 per month. In spite of the fact that the changes resulted in a decrease of 74% in average bills in poor areas, from USD 61 to USD 16, the rates remained unaffordable for the poor. In addition, the renegotiation saw a reduction in targets for expansion, again to the detriment of the poor, who are the primary residents of the unserved areas.

Providing incentives to extend water services in Senegal

After various reform efforts failed to improve water and sewage services, the government decided in 1996 to introduce private participation in the sector. A state-owned holding company, SONES (*Société National des Eaux du Sénégal*), was established to own the assets, carry out investments and regulate the water sector. SONES signed an "enhanced" affermage contract with the private company *Sénégalaise des Eaux* (SDE, a subsidiary of the French water company SAUR) to operate water utilities. Under a traditional affermage contract, the company bills all consumers and collects revenue at the tariff set by the government. It then receives a fixed fee (covering costs and a regulated profit) for the total volume of water sold and remits the difference between the revenue collected and the fee to the government. This does not create disincentives to serve poor households as the company receives the same remuneration for all consumers (*i.e.* the affermage fee is the same for each m^3 of water sold). The contract between SONES and SDE is said to be "enhanced" contract in that it incorporates some investment requirements for meeting targets on leakage and bill collection as well as incentives in the fee formula. A social programme was designed to expand service to low-income households. SDE receives a fee for each new connection in eligible poor households, through a fund financed by the government and donors. The fee includes a profit to give an incentive to install social connections. This programme was consistent with the social tariff established as part of the affermage contract. Additionally, with the help of donors and NGOs, the government financed the construction of "standpoints" (public water points) for low-income areas with no private connection. Eight years later, this reform had resulted in significantly better services. There has been a 20% increase in the amount of water supplied, and customer connections have increased by 35%. Exceeding its target requirements, SDE has installed a total of 89 000 new connections, 76% of which are social connections provided to poor households. According to the last Senegalese Household Survey (2001), drinking water is available (less than 15 minutes away) to more than 70% of households (almost 90% in Dakar).

Adapting standards to expand access to water and sewage to the poor in Manila

Manila introduced private participation in its water and sewage network in 1997 under two separate concessions. The two concessionaires have been encouraged to use innovative technology and third-party provision by contracts that do not contain strict standards for what constitutes a connection, do not disallow third-party provision and allow the concessionaire to add households served through means other than conventional utility connections for calculating compliance with coverage targets. Responding to the need for alternatives for reaching the poor, one of the concessionaires developed a system known as Bayan-Tubig (Water for the Community) for water delivery in densely populated, hard-to-reach slum areas. An underground water line carries water to the perimeter of a slum neighbourhood, and is then extended above ground, partially covered, attached to a wall, or lying on the surface. The line connects to a battery of meters from which homeowners make their own plastic connection, using small diameter pipes running from the main to households on the surface or along walls. Maintenance responsibility for the plastic pipes lies with the customers. Community-based organisations and NGOs play a role in intermediation and mapping the network. Estimates suggest that the Bayan-Tubig connections have reduced water connection costs for poor families by up to 25%. As even these reduced costs are sometimes a challenge, the concessionaire has also introduced interest-free repayment schemes over periods of six to 24 months. Introduced in early 1999, the programme had provided water connections to 19 000 poor households by the end of that year, and as of 2001 the figure had reached over 50 000. The other concessionaire served the poor equally unconventionally, arranging to sell bulk water to a steel tank manufacturing company which then installed small networks to serve poor communities.

1. Certain of the examples describe an experience that was not positive, in hopes of providing some guidance on pitfalls to be avoided if the benefits of liberalisation are to be realised and sustained.

2. The marginal cost is the change in total costs per unit change in output. Long-run marginal cost (LRMC) is estimated over the "long run", *i.e.* that time period over which all costs are variable. It therefore comprises changes in both capital and operating costs.

Source: Brocklehurst and Janssens, 2004; Estache *et al*., 2000; Haselip, 2004; PPIAF and WSP, 2001; Shirley *et al*., 2000; Zerah *et al*., 2001.

Another challenge relates to the need for policies to facilitate adjustment following private-sector involvement and increased competition in environmental infrastructure services. Private participation may lead to a reduction in employment in often over-staffed public utilities (but this can be mitigated by the creation of new employment resulting from an expansion of the network and service). In addition, in many developing countries, it is quite common to make a living from garbage collection and sorting. While large operators sometimes control the process, more often small-scale independent entrepreneurs make a living for their families in this way. They need to be seen as stakeholders in the new arrangements and as potential employees, as they generally have useful knowledge and experience. Governments can also grant adjustment assistance, such as retraining and relocation support. Such public support, of limited duration and in gradually declining amounts, can promote the transition to a more efficient environmental sector over the long term (OECD, 2001).

Experience has also shown that there is no universally appropriate model for reform. Every liberalisation programme must take account of each segment's features, as well as the country's economic, institutional, social and political characteristics. Furthermore, the elaboration of adequate regulatory instruments and the establishment of institutions can be costly and may require sophisticated skills, and thus present challenges that are likely to be most acute in emerging economies and developing countries. For these countries, provision of technical assistance and capacity building to support liberalisation are thus particularly important.

Environmental non-infrastructure and support services

Growing importance of these services

Environmental infrastructure services are still the primary need of many developing countries. However, several are now at the stage of economic and environmental development where they have begun to consider environmental non-infrastructure services. These services involve new approaches to resource use and generally reflect higher environmental awareness and standards. Unlike environmental infrastructure services, these services currently suffer from a knowledge gap, and it appears useful to provide GATS negotiators and policy makers with information on them: what kinds of activities are involved, who are the providers, who are the clients, and what kind of techniques are used.

Changes in regulatory approaches and participation in multilateral environmental agreements (MEAs) have also created demand, including in some developing countries, for a series of related environmental services that are necessary as direct inputs for delivering services in both environmental infrastructure and non-infrastructure services. These support services include engineering, analytical and monitoring, R&D, and consulting services (see OECD/Eurostat, 1999, for details). For example, engineering services are needed to plan a wastewater facility before it is built. Monitoring of air pollution emissions may be undertaken by specialised analysis and assessment firms.

Unlike environmental infrastructure services, environmental non-infrastructure and support services are often provided by small and medium-size enterprises (SMEs), although they may also be supplied by integrated environmental service companies, or by the environmental department of large professional firms in the case of support services. In addition, while, business-to-consumer activities are very important for environmental infrastructure services, environmental non-infrastructure and support services are largely

provided from business to business. This significantly decreases the risks of market failure for achieving social objectives for these services, though some regulatory spheres, such as service standards, remain very important.

Besides commercial presence and the presence of natural persons, which are the main modes of supply of environmental infrastructure services, cross-border supply and consumption abroad may also be involved at different stages in the provision of these other types of services. For example, in the case of air pollution control, air monitors are often set up by a service provider, but samples are collected by the client and then sent to the service provider's laboratory for analysis.

Characteristics of environmental non-infrastructure services[12]

Air pollution control

This category broadly refers to monitoring and control of emission of pollutants into the air, from both mobile and stationary sources. Operation of private air pollution control facilities by independent service providers is not yet commonplace, but monitoring of emissions and of ambient air conditions is. Techniques for monitoring emissions from stationary sources differ from those for monitoring mobile sources, and both differ from monitoring the quality of ambient air. As with many other services not based around infrastructure, the main private clients for air pollution services are point-source emitters of air pollutants, such as operators of fossil-fuelled electric-power generating stations, waste incinerators and petrochemical refineries.

In the case of stationary sources, technicians usually visit a facility, insert a sampling tube into the exhaust gases, and pump a sample of the gas through a filter, aqueous solution, or both. The filter or solution is then sent to a laboratory, which may be located on site or even in another country, for analysis. The monitoring of emissions from mobile sources, mostly cars and lorries, is typically a service that is closely tied to policing. A suspected vehicle is stopped, directed to the side of the road, and a device is applied to its tail pipe to measure emissions of carbon monoxide (CO) and unburned hydrocarbons. Governments are the main clients for this type of service. Monitoring of ambient air quality uses techniques similar to those used for point sources. Government agencies are major consumers of such services, but so are operators of large point-source emitters of pollutants, *e.g.* a facility that must obtain a permit limiting ambient concentrations of pollutants.

Noise and vibration abatement services

Noise can be a nuisance. It can also damage people's hearing and reduce worker productivity. Often it reflects poor design or fault in a system. Companies therefore have an interest in trying to keep the noise of their machinery and plants to a minimum, and to isolate it where it is unavoidable. (Many countries set limits on occupational exposure to noise.) Tracing a noise problem to its source is not always easy. The cause may be a loose bearing or a misaligned exhaust fan. Because intervention on the basis of a wrong guess can be costly, the monitoring and abatement of noise has become a specialised service.

12. This section draws on Chapter 5. The discussion is organised according to a modified version of the headings suggested by the OECD/Eurostat Informal Working Group of Experts (OECD/Eurostat, 1999). The main modification is the addition of a category for "nature and landscape protection services". Reference to these headings is without prejudice to the positions WTO members may take in current negotiations.

Nature and landscape protection services

This category of services refers to a diverse range of activities related to the protection and restoration of individual populations, species or ecosystems, and of the geographic features on which they depend. According to the Provisional CPC, it includes services related to the protection of ecological systems such as drylands, lakes, coastlines and coastal waters; services consisting of studies of the interrelationship of environment and climate (*e.g.* the greenhouse effect), including services related to the assessment of natural disasters and their abatement; and other landscape protection services.[13]

Governments are not the only clients of these services, and in fact may be less important than private firms. Golf courses are one growing client base for these services. In the United States, for example, the US Golf Association supports research to find ways to use native plants in golf courses so as to improve habitat for plant and wildlife while reducing irrigation and fertiliser costs. Interest in exploiting the biodiversity-promoting potential of golf courses is spreading to other countries, and is finding favour in developing countries interested in promoting eco-tourism. Not all services in this sub-sector pertain to problems on land. Many hotels and tourist resorts built along coasts near places of natural beauty understand the value to their businesses of restoring and protecting aquatic ecosystems both because tourists are drawn to them, and because a healthy and stable coastline provides better protection against storm damage.

Remediation and clean-up of soil, surface water and groundwater

The remediation of soil and of water normally involves two distinct types of services, although soil remediation often requires keeping toxic pollutants from leaching into groundwater aquifers. Demand for soil remediation services developed in OECD countries during the 1970s, typically as a response to concerns over health problems connected with past (often illegal) dumping of dangerous chemicals on the ground. Over the years, thousands of contaminated sites have been identified in various OECD countries, many of them less than a hectare in size. Owners of affected properties, whether or not they are themselves responsible for the contamination, are generally unable to sell the land until it has been cleaned or otherwise rendered harmless. They may also find themselves liable for any damage caused to other people or property. To help them, firms have emerged that able to come onto a property and decontaminate it, or at least ensure that the existing contamination does not spread.

Mine-site rehabilitation is another form of remediation service.[14] In OECD countries, companies engaged in the extraction of minerals and petroleum are required, or may be expected by shareholders, to restore land they have disturbed to something close to its original state. The heavier, earth-moving aspects of this work are typically carried out by the mining companies themselves. But the restoration of biodiversity and landscape requires specialist — and often local — knowledge, and services related to seed and plant selection and propagation are typically performed by outside contractors.

Water protection and remediation services have been driven by increases in the seaborne transport of crude oil and petroleum products, and government demands for

13. http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=94060.

14. The different services classification systems leave room for interpretation about this kind of activity. Except for the fact that it can be considered “remediation”, it might logically fall under another environmental services category, “nature and landscape protection services”.

quicker and more effective responses to spills when they occur. Compared with soil remediation, cleaning up after oil spills employs rather simple technologies. Usually, long, floating barriers (called booms) are placed around the floating oil slick to contain it and prevent it from spreading. Once contained, some of the oil may be removed by "skimmers", either vacuum pumps connected to tanks, or floating disk-and-rope skimmers, to which the oil adheres. In other situations, absorbent materials, such as talc, straw and sawdust, are spread over the oil slick and then collected for processing. Service providers are typically companies that can be called at a moment's notice to fly a team to the site of an oil spill, usually with most of its chemicals, rafts, booms and other cleaning gear in tow.

Environmental protection services not elsewhere classified

This category covers certain other environmental services not included under any of the above headings. The Provisional CPC provides as examples monitoring, controlling and damage-assessment services relating to the deposition of acidifying compounds from the atmosphere ("acid rain") to soils, surface waters and buildings.[15] International conventions implemented in the past, including the 1979 Convention on Long-range Transboundary Air Pollution, have been important instruments for addressing the problems of acid precipitation and have spurred the development of related services.

The monitoring of emissions of acidifying compounds is performed using techniques that are similar to those employed in monitoring emissions of other gases from point sources; only the chemistry, and therefore the reagents needed, differ. Monitoring acid deposition involves, basically, setting up rainfall gauges and then measuring the precipitation's pH and analysing the concentration of different acids.

Formulation of liberalisation commitments

The GATS provides members with a range of choices when making specific commitments. This is particularly important in the area of environmental services, as these comprise a wide variety of services encompassing different needs and concerns. Flexibility is needed to carefully plan liberalisation, identify segments and modes of supply that are compatible with national and development goals, and put in place an appropriate regulatory framework. For example:

- Members are free to exclude a sub-sector or activity within that sub-sector.
- Members may make partial commitments in certain sub-sectors, activities within these sub-sectors and modes of supply, by limiting access or discriminating against foreign suppliers, to protect public policy objectives or provide a supportive environment to the domestic industry.
- Members may take a gradual approach by pre-committing certain sub-sectors for future liberalisation; this transition period allows time to undertake the steps necessary to strengthen these segments domestically and to introduce the necessary regulation.
- Developing countries may specify limitations in their schedules in order to strengthen their domestic capacity, including through access to technology and know-how. The GATS framework provides these countries with additional flexibility

15. http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=94090.

to pursue such objectives, especially in Articles IV and XIX. However, care should be exercised in crafting these limitations to ensure that they do not ultimately deter trade and investment in environmental services, thereby retarding the development of domestic capacity.

- Members can maintain non-discriminatory domestic regulatory measures, such as licensing and qualification requirements, with no obligation to schedule them (as long as they also do not constitute market access measures). These measures fall within the scope of Article VI of the GATS.

Issues for consideration in the negotiations

Key issues for different kinds of environmental services

In current GATS discussions on environmental services, negotiators and policy makers must face several important issues. Clearly, there is a strong public service aspect to environmental services, particularly infrastructure services. Accordingly, governments may choose to provide these services through monopoly public utilities and they obviously retain the right to do so. The GATS leaves it entirely for members to decide whether they provide these services directly or indirectly (through public undertakings), or whether they entrust their provision to a third party (EC, 2003).

First, for all sectors, services provided to the public in the exercise of governmental authority, *i.e.* any service supplied neither on a commercial basis nor in competition with one or more service suppliers, are excluded from the agreement (Article I.3). Since there is no single model of public services — the concept varies according to sectors or segments, national traditions and legal conditions — the coverage of the carve-out will vary depending on the country and service concerned. With regard to the services covered by the agreement, each member maintains the right to determine the specific obligations that can be imposed on the operators. Members fully retain the possibility of excluding from their GATS commitments sectors (or sub-sectors) which they believe private-sector participation could threaten, such as the availability, quality or affordability of the services. Thus, members can maintain the service as a (public or private) monopoly: GATS negotiations have no influence on members' decisions to privatise certain undertakings (EC, 2003).

In addition, especially when private-sector participation is allowed, governments should be confident of their ability to regulate; this often requires several years of experience, including the regulation of foreign participation.[16] Scheduling commitments on environmental infrastructure services thus raises questions relating to the nature of these services. Nevertheless, the schedules of some WTO members provide useful ideas on how to make commitments on these services that take account of their characteristics.

16. The GATS explicitly recognises WTO members' sovereign right to regulate the supply of services within their territory in pursuance of public policy objectives. It should be noted, though, that whenever members make commitments in a given sector, they are obliged to administer their services regulation for that sector in a transparent and predictable manner (Article VI.5). In this context, the GATS calls upon members to develop disciplines for certain specific measures that affect trade in services, namely qualification requirements and procedures, technical standards and licensing requirements (Article VI.4). Such disciplines, which do not yet exist, would aim to ensure that those specific measures are based on objective and transparent criteria and that they do not unnecessarily hamper trade in services, having regard to the need to ensure service quality and other public policy objectives (EC, 2003).

One possibility could be to include in the commitments only services purchased by private industry. For example, US commitments on environmental services cover activities such as wastewater and solid- and hazardous-waste management that have been "contracted by private industry" (it is common for polluting manufacturing firms to have their own wastewater treatment system). The Swiss schedule states that "Nothing in this commitment should be construed to include public work function whether owned and operated by municipalities, cantons or federal government or contracted out by them."

Another approach would be to state clearly that the public sector has a primary role in supplying these services to the public and/or that policy decisions may be delegated to a decentralised level. For example, the schedule of Croatia indicates that, with respect to commercial presence, sewage services "are legally considered as municipal activities, provided primarily by entities owned by local authorities. Private operators may be allowed to provide those services on the basis of a concession granted by local authorities."

A similar, though horizontal, limitation can be found in the EC schedule, which indicates that "In all EC Member States services considered as public utilities at a national or local level may be subject to public monopolies or to exclusive rights granted to private operators." This limitation is complemented by a footnote explaining that "Public utilities exist in sectors such as related scientific and technical consulting services, R&D services on social sciences and humanities, technical testing and analysis services, environmental services, health services, transport services and services auxiliary to all modes of transport. Exclusive rights on such services are often granted to private operators, for instance operators with concessions from public authorities, subject to specific service obligations. Given that public utilities often also exist at the sub-central level, detailed and exhaustive sector-specific scheduling is not practical."

Another issue related to scheduling these services might arise from the government procurement carve-out. Recent discussions in the Working Party on GATS Rules reveal that there are uncertainties among members regarding the distinction between public-private partnerships (for concessions and BOTs) and government procurement (WTO, 1999). Pending the development of a multilateral set of definitions, these concerns can be addressed through the scheduling of adequate limitations (Cossy, 2003).

At the same time, consideration could be given to include environmental non-infrastructure and support services, which are becoming increasingly important from an economic and environmental standpoint, and entail fewer regulatory risks. With respect to these services, the key question for negotiators is whether it would be desirable to think of sectoral as opposed to horizontal commitments, especially on Mode 4 where existing commitments are mainly horizontal.

In the case of environmental support services, it is also important to ensure that any commitments in the environmental services sector are not undermined by the lack of complementary commitments in other sectors. As noted above, support services interact with both environmental infrastructure and non-infrastructure services. If, say, a commitment is made for air pollution control, it may turn out to be of marginal benefit if a corresponding commitment is not made for testing and analysis services. The above proposal for a "cluster" or "checklist" of environment-related services, which could be used as an *aide-mémoire* during the negotiations, could help minimise potential problems.

Measures affecting trade in environmental services

Governments must also have information about the full range of measures that prevent access to environmental markets of trading partners. The questions presented below offer a useful means of obtaining this information, which may not be readily available to negotiators, particularly from developing countries that may lack technical and negotiating capacity. This is particularly true for environmental services, which involve a wide variety of services and a large number of measures that potentially affect market access.

First, because most trade in environmental services takes place via Mode 3, both general and sector-specific foreign investment requirements are very important for international trade. These include conditions for approval of foreign investment and limitations on the level of foreign ownership, the type of legal entity required, the ownership of specific assets and the scope of operations of foreign companies. There may be additional licensing requirements for businesses and professionals motivated by consumer protection and public health and safety regulations. Typically, more specialised licensing requirements also apply to environmental services providers, *e.g.* for handling and disposal of hazardous substances or for specialised environmental data monitoring and analysis. Licensing requirements may be automatic and apply equally to foreign and local suppliers, or non-automatic and subject to approval (or quotas) for foreign businesses. These measures form part of countries' "right to regulate" and should not in themselves be regarded as barriers to trade in environmental services. However, they may become barriers if they discriminate between foreign and local companies, or if they are administered in an inefficient manner[17] (OECD, 2001).

Limitations on the movement of natural persons are also very important, particularly for environmental non-infrastructure and support services, which are typically provided by SMEs that need to bring in highly specialised professionals. Mode 4 restrictions can also be important for environmental infrastructure services, such as solid-waste management. For these services, however, restrictions on intra-corporate transferees may be more relevant, while for environment-related professional services, restrictions on contractual service suppliers can be important. Identifying and capturing export opportunities in these services will also require emphasis on efficient regulation and mutual recognition of qualifications.

Modes 1 and 2 can also be relevant, particularly for environmental non-infrastructure and support services; for example, plans or samples can be sent across borders or be collected by the clients. While Mode 2 is very difficult to regulate, restrictions on Mode 1 can affect trade in these services significantly. For instance, residency in the importing country may be required in order to supply that country's market on a cross-border basis. This can be a significant obstacle to trade for these types of environmental services.

Moreover, environmental services trade may be affected by measures which are largely beyond the scope of the GATS. For example, government procurement is an

17. In GATS terms, licensing and qualification requirements may have both a scheduling and a domestic regulatory element. The GATS does not explicitly require these measures to be included in schedules of commitments, unless they discriminate between local and foreign suppliers or, in the case of licences, if they are used to limit the number of service suppliers through numerical quotas, monopolies, exclusive supplier rights, economic needs tests, etc. (*i.e.* if they constitute national treatment or market access measures). When licensing and qualification requirements relate neither to market access nor to national treatment, they come under the scope of Article VI on domestic regulation.

important factor owing to the high share of environmental services procured by government entities. Local preferences and lack of transparency in procurement processes are among measures potentially affecting such trade. There is, accordingly, a need for services negotiators to be alert to such potential impediments and ensure proper co-ordination with officials in related policy fields (*e.g.* procuring agencies). This can help ensure that the various aspects of liberalising trade in environmental services are taken into account and that countries secure commercially meaningful and development-promoting commitments from their trading partners.

A key issue for many developing countries is the question of regulatory capacity — the human and institutional resources to devise, administer and enforce the required regulatory framework for successful liberalisation. This capacity will determine the nature and pace of liberalisation. Provision of technical and financial assistance to developing countries to build regulatory capacity is thus an important dimension of the GATS negotiations.

The checklists

Questions to raise with trading partners (and be prepared to answer) concerning the value of a request or offer

The checklists below can be used by WTO members when framing and assessing requests and offers in the area of environmental services. While they are primarily framed in request mode, "requesting" countries also need to be prepared to receive similar questions. The two-way policy interaction afforded by request-offer negotiations can underpin attempts to benchmark a country's approach to environmental services regulation against that of its main trading partners and identify means of achieving greater policy convergence or move in the direction of best regulatory practices. Such benchmarking, and the related need (in response to potential requests from trading partners) to identify more precisely what policies and measures can (and cannot) be addressed in the negotiations may also allow a useful policy dialogue between trade officials and regulators and officials in other government agencies, as well as with private stakeholders in business and civil society.

Questions that a country can use to inform the request-offer process include the following (they may also be usefully raised with trading partners; see Table 4.4 for a list of questions relating more specifically to environmental service-related measures that may be addressed under the GATS):

- What is the policy objective being pursued by the relevant regulatory measure?
- Is the objective different for environmental infrastructure services, where business-to- consumer activities are very important, as opposed to non-infrastructure services and support services which are largely supplied business to business?
- Is the measure periodically reviewed?
- Is the policy objective being fulfilled by the measure?
- Can the policy objective be equally achieved through other less-trade restrictive means?

Table 4.4. Negotiating checklists

GATS-related issues

Measures affecting cross-border supply (Mode 1)	• Can non-resident suppliers of environmental and environment-related services serve the market on a cross-border basis (*i.e.* without an established presence)? Is it necessary to channel those transactions through intermediaries? • What types of environmental services are allowed, or restricted, as regards cross-border supply? • Are there any restrictions on the electronic transmission of environmental and related services by non-established foreign service providers? • Is consumer access or connection to the Internet or other electronic networks available through monopoly or exclusively authorised providers? • Is the transfer of capital, payments and/or use of credit cards for such transactions permitted? Is it subject to authorisation? • If entry is restricted, what are the reasons given by the government? • Where and how clearly are such limits spelled out?
Measures governing commercial presence/ownership (Mode 3)	**Private participation** • Is there a government monopoly in the environmental services sector such that private investment is not permitted? If so, in which sub-sectors? • For environmental infrastructure services, how is private participation allowed (concessions, BOTs, etc.)? • How is it regulated at the central and local levels? What are the procedures and criteria used? Is preference given to any particular enterprise or group of enterprises? Is it a transparent process? **Foreign ownership** • In which segments is foreign ownership allowed in the provision of environmental services? • When laws restrict foreign shareholdings in local environmental companies, what is the maximum foreign equity permitted or the minimum local shareholding? **Screening laws** • Are proposed foreign investments in the environmental sector subject to screening by a specialised authority in the host country? • Are there economic needs tests for approval of foreign investment? If so, in which sub-sectors? Are the tests transparent? • Are there nationality or residency requirements for foreign establishment investment (*e.g.* to gain the right to practice environment-related professional services such as engineering)? • Which authorities are charged with the investment screening? • Which criteria apply in evaluating applications for approval? • Are investors offered rights of judicial review against unfavourable decisions by the screening authorities? Are clear administrative guidelines issued from which investors can reasonably predict the response of host country authorities to an investment proposal?
Measures governing commercial presence/ownership (Mode 3)	**Legal and joint venture requirements** • Are environmental firms required to establish locally through a particular legal form of establishment (*i.e.* subsidiary, branch, representative office)? • Are foreign established companies subject to specific performance requirements, including: *i)* licensing requirements and technology transfer rules; *ii)* remittance and foreign exchange restrictions limiting external financial transfers; and *iii)* local hiring and sourcing requirements? • Is entry of the foreign environmental firm conditional on substantial involvement of local participants in the ownership and management of the investment project (joint venture requirement)? • Is local control (*e.g.* 51% or more of the equity contribution) required over the (equity/contractual) joint venture? Does the law provide for a progressive increase in control over the venture? • Are there requirements regarding the composition of the board of directors? • What is the prescribed legal form of the joint undertaking (general partnership, professional corporation or limited liability company)?

Measures relating to licensing	• What laws and regulations discipline licensing of environmental activities? • What types of licences and regimes apply in different segments? What is the rationale for such licensing? • Who issues and monitors licences? • Are licences automatic or non-automatic? • Are licences open-ended or for a definite time? • What licensing procedures (*e.g.* application or bidding procedures) are applied? Under what circumstances are different procedures used? • What provisions apply to modification, termination and revocation of licences?
Measures governing the movement of natural persons (Mode 4)	• How are entry and work permits obtained? • Are there any restrictions on the movement of intra-corporate transferees? What about contractual service suppliers? For the latter, do the same restrictions apply to employees of firms and to independent professionals? • Do the restrictions apply to natural persons seeking long-term establishment or to individuals travelling for business purposes for short periods of time? • Is the entry of foreign experts subject to economic needs tests? Are such tests transparent? • Are there residency or nationality requirements with respect to certain categories of personnel employed by locally established environmental or environment-related firms? • Are equivalent professional qualifications for environmental support services obtained abroad recognised in the importing country? • Are prior experience or post-qualification experience requirements attached to the granting of visas?
• Preferential liberalisation measures	• Are there any preferential agreements affecting the supply of environmental and support services? Which measures are subject to preferential treatment? Do preferential measures also apply to the movement of natural persons? • What conditions must foreign suppliers of environmental support services fulfil to meet the requirements of existing mutual recognition agreements to which host country providers are party? • Does the importing country maintain preferential access arrangements for developing-country service providers?

Additional questions of relevance to negotiators

Effective access to environmental services markets involves the interplay of a wide range of measures. While the GATS provides important means to tackle many of the hurdles that potentially impede access to and presence in services markets, other policy measures (or their lack) not (currently) subject to negotiations under the GATS may still affect the value of liberalisation commitments. Table 4.5 lists a number of additional policy issues that may require the attention of negotiators on environmental services.

Table 4.5. Negotiating checklists

Other issues

Government procurement	• What procurement procedures are applied for environmental services (*e.g.* tendering)? Under what circumstances are different procedures used? • How are intended procurements publicised? • Are there registration, residence or other requirements for potential suppliers? • Is procurement subject to: *i)* local content; *ii)* technology transfer; *iii)* local employment; *iv)* investment or local presence in the importing country? • Do procuring entities grant price advantages to domestically owned companies over foreign companies? • Are there lists of approved suppliers? If so, what are the procedures for checking the capability of firms applying for inclusion on tenderers' lists? • What criteria are taken into account in the award of tenders? Are criteria for award of contracts made available in advance to potential suppliers? How are tenders received, registered and opened? • Are entities required to publish details of contracts awarded or notify unsuccessful tenderers? Are entities required to publish, or provide to unsuccessful bidders, pertinent reasons why their bid was rejected? • What, if any, are the procedures available for parties, domestic and foreign, to lodge complaints against the award of a contract? • Does the procurement regime distinguish between the procurement of environment-related goods and services? If so, what rules apply in cases of joint procurement involving both goods and services?
Regulatory measures[1]	• Which authorities are in charge of adopting and implementing regulation of environmental services? • Must the authorities follow detailed standards or rules in setting prices for environmental utilities? What is the price mechanism used (*e.g.* price cap or cost plus)? • What measures (at which level) and mechanisms are in place to ensure fulfilment of universal access to basic environmental services? In which sub-sectors? Are they objective and transparent? Are foreign service suppliers subject to conditions different from or additional to domestic suppliers in relation to public service obligations? • Which regulations are in place to ensure environmental service quality? Which technical standards apply? Are they transparent? Are alternative, more efficient ways to meet the standards considered? • How is uncompetitive behaviour, such as abuse of monopoly power, addressed? • Are these institutions independent from the government? How is accountability ensured? • Are price changes phased in and the public informed about the reasons for the changes? Are there any programmes in place to promote the participation of consumers and other stakeholders in regulation?
Temporary entry for services-related tools of the trade	• Are there any restrictions on the temporary entry of services-related tools of the trade (*e.g.* construction equipment, technical and training material or engineering software and design tools)? • Do restrictions apply to the temporary intra-firm transfer of service-related equipment? • Do restrictions on services-related tools of the trade apply to contractual service suppliers? • Do customs procedures exist in the importing country allowing for duty-free temporary admission of services-related tools of the trade?
Other relevant measures	• Are there subsidies for environmental services providers? In which segments?[2] • Are there intellectual property rights (IPR) laws or regulations which may inhibit the transfer of environmentally sound technology?

1. Some of these measures may be covered by the GATS if they represent market access or national treatment limitations, or if they fall under Article VI on domestic regulation — thus overlapping with measures relating to licensing in Table 4.4.

2. Subsidies may be covered by the GATS if they discriminate between foreign and national providers, that is, if they constitute national treatment measures.

References

Brocklehurst, C. and J.G. Janssens (2004), "Innovative Contracts, Sound Relationships: Urban Water Sector Reform in Senegal". Water Supply and Sanitation Sector Board Discussion Paper Series, No. 1, World Bank, January.

EC: Commission of the European Communities (2003), "Green Paper on Services of General Interest", Brussels.

Cossy, M. (2003), "Water Services and the GATS — Selected Legal Issues", a version will be included in Edith Brown Weiss, Laurence BoissonDeChazournes and Nathalie Bernasconi-Osterwalder (eds.), *Water and International Economic Law*, Oxford University Press, Oxford.

Estache, A., A. Gomez-Lobo and D. Leipziger (2000), "Utilities 'Privatization' and the Poor's Needs in Latin America: Have We Learned Enough to Get It Right?", Infrastructure for Development: Private Solutions and the Poor, June, World Bank.

Gleick, O., G. Wolff, E. Chalecki and R. Reyes (2002), "The New Economy of Water: The Risks and Benefits of Globalization and Privatization of Fresh Water", Pacific Institute, Oakland, California.

Haselip, J. (2004), "The Globalisation of Utilities Liberalisation: Impacts Upon the Poor in Latin America", CSGR Working Paper No. 138/04, June.

OECD (1997), *Cleaner Production and Waste Minimisation in OECD and Dynamic Non-member Economies*, OECD, Paris.

OECD/Eurostat (1999), *Environmental Goods and Services Industry Manual for the Collection and Analysis of Data*, OECD, Paris.

OECD (2001), *Environmental Goods and Services: The Benefits of Further Global Trade Liberalisation*, OECD, Paris.

OECD (2003), "Managing Request-Offer Negotiations under the GATS: The Case of Insurance Services", TD/TC/WP(2003)17/FINAL, OECD, Paris.

OECD (2004), "Managing Request-Offer Negotiations under the GATS: The Case of Legal Services", TD/TC/WP(2003)40/FINAL, OECD, Paris.

PPIAF: Public-Private Infrastructure Advisory Facility and WSP: Water and Sanitation Program (2001), "New Design for Water and Sanitation Transactions: Making Private Sector Participation Work for the Poor", World Bank, Washington, DC.

Rei, F. and O. Lucon (2003), "Enhancing Domestic Capacity in the Environmental Services Sector: The Case of Brazil", in *Energy and Environmental Services: Negotiating Objectives and Development Priorities*, UNCTAD.

Shirley, M. M., L. C. Xu and Ana Maria Zuluaga (2000), "Reforming Urban Water Supply: The Case of Chile", World Bank, Washington, DC.

UNCTAD (2003a), *Managing Request-Offer Negotiations under the GATS: The Case of Energy Services*, Geneva.

UNCTAD (2003b), "Environmental Goods and Services in Trade and Sustainable Development: Note by the Secretariat", TD/B/COM.1/EM.21/2, Geneva.

World Bank (2004), *Reforming Infrastructure — Privatisation, Regulation and Comp*etition, IBRD, World Bank, Washington, DC.

WTO: World Trade Organization (1999), "Documents of the Working Party on GATS Rules Relating to Concessions; Note by the Secretariat", Document No. WT/WGTGP/W25.

WTO (2000a), "Communication from the European Communities and their Member States: GATS 2000: Environmental Services", Document No. S/CSS/W/38.

WTO (2000b), "Communication from the United States: Environmental Services", Document S/CSS/W/25.

WTO (2001a), "Communication from Switzerland: GATS 2000: Environmental Services", Document No. S/CSS/W/76.

WTO (2001b), "Communication from Australia: Negotiating Proposal for Environmental Services", Document No. S/CSS/W/112.

WTO (2001c), "Communication from Colombia: Environmental Services", Document S/CSS/W/121.

WTO (2002), "Statement of the Chairman of the Committee on Trade and Environment to the Trade Negotiations Committee", Document No. TN/TE/1.

Zarrilli, S. (2003), "International Trade in Environmental Services and the Developing Countries", in *Energy and Environmental Services: Negotiating Objectives and Development Priorities*, UNCTAD, 2003.

Zerah, M.H., K. Graham-Harrison and C. Brocklehurst, (2001), "The Buenos Aires Concession: the Private Sector Serving the Poor", UNDP and World Bank.

Table of Contents

Acronyms 6

Executive Summary 7

Chapter 1. Environmental Goods and Services: A Synthesis of Country Studies 13

Chapter 2. Environmental Goods: A Comparison of the APEC and OECD Lists 39

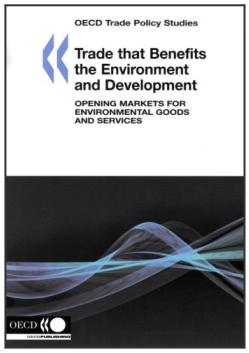
Chapter 3. Liberalising Trade in "Environmental Goods":
Some Practical Considerations 73

Chapter 4. Managing Request-Offer Negotiations under the GATS:
The Case of Environmental Services 95

Chapter 5. Synergies between Trade in Environmental Services and
Trade in Environmental Goods 129

Acronyms

APEC	Asia-Pacific Economic Co-operation
ASEAN	Association of Southeast Asian Nations
CACM	Central American Common Market
CAFTA-DR	Central American-Dominican Republic Free Trade Agreement
CEEC	Central and Eastern European Countries
CEFTA	Central European Free Trade Agreement
COMESA	Common Market of Eastern and Southern Africa
CTE	Committee on Trade and Environment
CTS	Council on Trade in Services
EAC	East African Co-operation
EG&S	environmental goods and services
GDP	gross domestic product
GNP	gross national product
FDI	foreign direct investment
JWPTE	Joint Working Party on Trade and Environment
MEA	multilateral environmental agreement
MERCOSUR	Southern Common Market
MFN	most-favoured nation
NAFTA	North American Free Trade Agreement
NGO	non-governmental organisation
NTB	non-tariff barrier
PPP	purchasing power parity
PPP	public-private partnership
PPM	processes and production methods
Quad	United States, European Union, Japan and Canada
RTA	regional trade agreement
SAPTA	South Asian Preferential Trade Arrangement
SMEs	small and medium-sized enterprises
TBT	technical barriers to trade
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
WCO	World Customs Organization
WTO	World Trade Organization



From:

Trade that Benefits the Environment and Development

Opening Markets for Environmental Goods and Services

Access the complete publication at:
https://doi.org/10.1787/9789264035782-en

Please cite this chapter as:

Geloso Grosso, Massimo (2006), "Managing Request-Offer Negotiations under the GATS: The Case of Environmental Services", in OECD, *Trade that Benefits the Environment and Development: Opening Markets for Environmental Goods and Services*, OECD Publishing, Paris.

DOI: https://doi.org/10.1787/9789264035782-7-en

This work is published under the responsibility of the Secretary-General of the OECD. The opinions expressed and arguments employed herein do not necessarily reflect the official views of OECD member countries.

This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area.

You can copy, download or print OECD content for your own use, and you can include excerpts from OECD publications, databases and multimedia products in your own documents, presentations, blogs, websites and teaching materials, provided that suitable acknowledgment of OECD as source and copyright owner is given. All requests for public or commercial use and translation rights should be submitted to rights@oecd.org. Requests for permission to photocopy portions of this material for public or commercial use shall be addressed directly to the Copyright Clearance Center (CCC) at info@copyright.com or the Centre français d'exploitation du droit de copie (CFC) at contact@cfcopies.com.