

**Unclassified**

**TD/TC/WP(2004)8/FINAL**

Organisation de Coopération et de Développement Economiques  
Organisation for Economic Co-operation and Development

**15-Feb-2005**

**English - Or. English**

**TRADE DIRECTORATE  
TRADE COMMITTEE**

**Working Party of the Trade Committee**

**MANAGING REQUEST-OFFER NEGOTIATIONS UNDER THE GATS: THE CASE OF  
ENVIRONMENTAL SERVICES**

**OECD Trade Policy Working Paper No. 11**

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**JT00178659**

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## ABSTRACT

This study forms part of on-going OECD work on trade in services, in co-operation with UNCTAD, aimed at assisting WTO Members in managing request-offer negotiations under the GATS. The key objective is to help officials of WTO Members in both gaining a greater insight into the particular issues of importance in the environmental services sector and how they might be approached in the negotiations. The current set of GATS negotiations offers WTO Members an opportunity to achieve greater levels of liberalisation of environmental services, which 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 in relation to their nature, although the flexibility provided for in the GATS can be used to schedule them to take account of their characteristics. Risks of market failure to achieve social objectives appear to be less significant for environmental non-infrastructure and support services.

*Keywords:* environmental, services, barriers, benefits, exports, liberalisation, regulation.

## ACKNOWLEDGEMENTS

This study has been prepared by Massimo Geloso Grosso of the OECD Trade Directorate, under the supervision of Julia Nielson and Dale Andrew, Head of the Trade Policy Linkages Division. It has been discussed in the Working Party of the Trade Committee which has agreed to make these findings more widely available through its de-classification under the responsibility of the Secretary General. It is available on the OECD website in English and French at the following address: <http://www.oecd.org/trade>

The author wishes to thank Mireille Cossy from the WTO Secretariat, Simonetta Zarrilli from the UNCTAD Secretariat, Ronald Steenblik from the OECD Trade Directorate and Cristina Tebar-Less from the OECD Environment Directorate, for helpful comments and discussions during the preparation of the study, and Grant Ferrier from Environmental Business International for useful data on the sector.

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## EXECUTIVE SUMMARY

This paper forms part of the ongoing project on trade in services to produce a set of sector specific checklists in co-operation with UNCTAD. The aim is to assist WTO Members in gaining a greater insight into the particular issues of importance in the environmental services sector and how they might be approached in current request-offer negotiations under the GATS.

The environmental services sector is difficult to identify as a coherent sector. Environmental services have traditionally been understood in terms of infrastructure that provides water and waste treatment services, often by the public sector. More recently, however, new regulatory requirements and other factors have created a need to move beyond these infrastructure services, generating demand for other “non-infrastructure” environmental services and environment-related support services.

Environmental infrastructure services have historically been provided in most countries by municipalities for public policy reasons or for their *natural monopoly* characteristics. Nevertheless, in recent years trade in these services has increased, following changes in their provision leading to stronger presence of the private sector. Particularly in developing countries, due to lack of domestic capacity, a decision to involve the private sector usually includes encouragement of foreign participation. A variety of approaches have in parallel been developed to allow private participation in these services, ranging from government procurement to different kinds of public private partnerships (PPPs) — emerged as alternatives to privatisation.

Trade in environmental non-infrastructure (e.g. air pollution control) and support services (e.g. environmental consulting) has also been growing. These services are becoming increasingly important as they represent new approaches to resource use and in general higher environmental awareness and standards in societies.

In light of compelling environmental problems, strengthening the environmental services sector, particularly in developing countries, is of key importance. Enhanced trade and investment liberalisation in environmental services can provide developing and developed countries alike with greater access to these services, potentially leading to significant economic and environmental benefits. In the case of environmental infrastructure services, liberalisation is seen especially as a way to increase investment and infrastructure performance, leading to greater availability of these services to the benefit of the environment and the health of the population. For environmental non-infrastructure and support services, gains can be made through increased competition, which can lead to lower costs, innovation and the provision of improved services. Enhanced domestic capacity can in turn lead to development of export capacity and broader economic benefits.

Nonetheless, liberalising trade in environmental services, particularly infrastructure services, is no easy task. Liberalisation must be appropriately designed and supported by a strong regulatory framework. To achieve public policy objectives in the new environment, new regulatory tools are required, including with respect to pricing, universal access and service standards. While these fall largely outside the scope of the GATS, they are important accompanying measures for successful liberalisation.

Risks of market failure to achieve social objectives appear to be less significant for environmental non-infrastructure and support services. This is because, unlike environmental infrastructure services

where business to individual consumers' activities are very important, these services are largely supplied from business to business. On the other hand, some regulatory spheres, such as service standards, remain very important for these services.

The current set of GATS negotiations offers WTO Members an opportunity to achieve greater levels of liberalisation in an orderly and flexible manner. Flexibility is needed to carefully plan liberalisation, identify segments and modes of supply where it is compatible with national and development goals, and put in place appropriate regulation.

Several important issues confront governments in the negotiations. As noted earlier, there is a strong public service aspect to the provision of environmental infrastructure services. Governments clearly retain the right to provide these services through monopoly public utilities. The GATS leaves it entirely for Members to decide whether they provide these services, or whether they entrust their provision to a third party. Indeed, for services that do not fall under the Article 1.3 carve-out, WTO Members fully retain the possibility of excluding from their GATS commitments sectors (or subsectors) where they believe private sector participation could threaten e.g. availability, quality and affordability of these services. In addition, when private sector participation is allowed, governments should be confident of their ability to regulate. Scheduling commitments on environmental infrastructure services thus raises questions in relation to the nature of these services. Nevertheless, the schedules of some WTO Members provide some useful ideas on how to make commitments on these services to take account of their characteristics.

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

Finally, governments must have information about the full range of measures preventing access to environmental markets of trading partners. This is particularly true in the case of environmental services as they involve a variety of services and a large number of measures potentially affecting market access in these services. Against this backdrop, the paper provides a checklist of questions on trade-restricting measures that WTO Members can ask each other (and be prepared to answer) when framing requests and assessing offers.

## MANAGING REQUEST-OFFER NEGOTIATIONS UNDER THE GATS: THE CASE OF ENVIRONMENTAL SERVICES

### I. INTRODUCTION

1. This paper forms part of ongoing OECD-UNCTAD work aimed at assisting WTO Members to successfully conduct request-offer negotiations under the GATS.<sup>1</sup> It aims at giving greater specificity to the generic negotiating checklists developed in Part II of “Managing Request-Offer Negotiations under the GATS” (OECD 2002), by applying them to environmental services. The objective is to assist WTO Members in gaining a greater insight into the particular issues of importance in the environmental services sector and how they might be approached in the negotiations.

2. Today, one-half of the world population still lacks access to basic sanitation and one person in five has no access to safe drinking water. More than 90% of sewage in developing countries is discharged directly into rivers, lakes and coastal waters without any treatment 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.

3. Strengthening the environmental services sector is therefore of key importance. There is growing recognition that increased trade and investment in environmental services could 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 levels of liberalisation in an orderly and flexible manner.

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

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

6. After an overview of key trends in global environmental markets and trade presented in the next section, Section III reviews current developments in the GATS, including definition issues, current commitments and progress in ongoing negotiations. Section IV then discusses the benefits flowing from greater openness of environmental services markets, while Section V presents the characteristics and priorities of different kinds of environmental services. Section VI reviews options available to WTO Members when scheduling commitments, and Section VII discusses key issues for consideration in the

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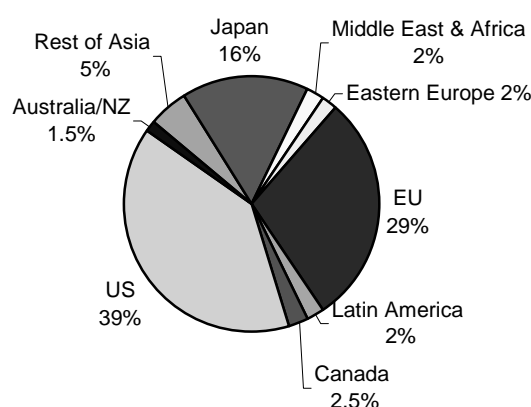
<sup>1</sup> Under this joint OECD-UNCTAD project, sectoral negotiating checklists have been completed on insurance (OECD 2003), energy (UNCTAD 2003a) and legal services (OECD 2004). A further checklist on construction services will be completed by UNCTAD.

negotiations. The last section presents the checklists of questions that WTO Members may wish to consider in approaching the request-offer process.

## II. TRENDS IN GLOBAL ENVIRONMENTAL MARKETS AND TRADE

7. The global environmental market as a whole (including environmental goods and services) reached an estimated USD 563 billion in annual revenues in 2002, with the US, the EU and Japan accounting for about 85% (see Chart 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 same size as the pharmaceutical or information technology industries.

**Chart 1. The global environmental industry by region, 2002**



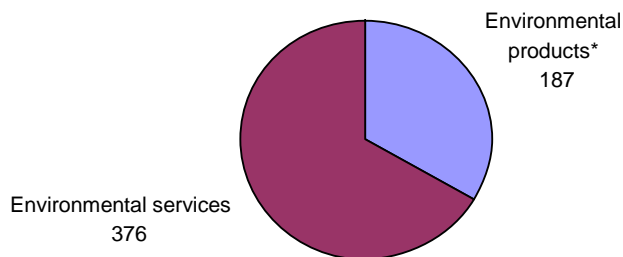
Source: Environmental Business International (EBI).

8. The environmental services sector is difficult to identify as a coherent sector. Traditionally, environmental services have been understood in terms of 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).<sup>2</sup> 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.

9. In 2002, the environmental services sector accounted for over 65% of the environmental industry (see Chart 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 Chart 3).

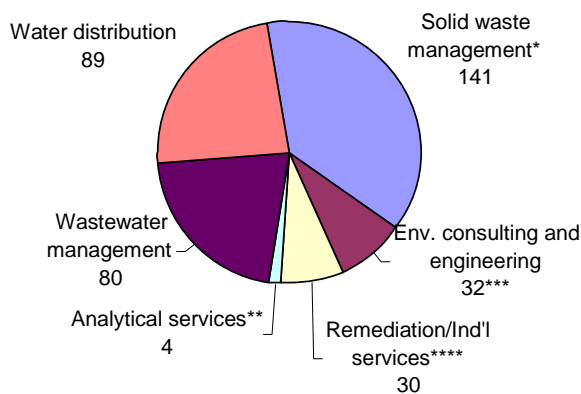
<sup>2</sup> The distinction between environmental infrastructure, non-infrastructure and support services is used throughout this paper for analytical purposes. (It derives from a similar distinction developed recently by UNCTAD.) However, it is not a classification of environmental services, nor does it aim to replace the current WTO classification or any other classifications of environmental services discussed in Section III of this paper.

**Chart 2. Size of the global environmental industry by segments, 2002 (\$billion)**



Source: EBI. \*Environmental products includes mainly equipment and products recovered from waste.

**Chart 3. The global environmental services segment, 2002 (\$billion)**

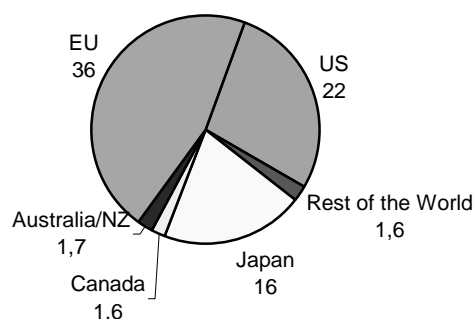


Source: EBI. Note: The categories represented in this chart are those used by EBI and do not correspond with sub-sectors in the WTO Classification. \*Solid waste management includes also hazardous waste management. \*\*Analytical services includes testing of "environmental samples" (soil, water, air and some biological tissues). \*\*\*Env. consulting and engineering includes engineering, consulting, design, assessment, permitting, project management and monitoring. \*\*\*\*Remediation/industrial services includes physical clean up of environmental sites, buildings and environmental cleaning of operating facilities.



10. Many of the same factors — increased environmental regulation, public awareness as well as 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 due to data limitations, some rough estimates do exist for the environmental industry as a whole, including both goods and services. These figures suggest that the EU, the US and Japan were the leading exporters in 2002, accounting combined for roughly 90% of total exports (see Chart 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, though their exports are increasing. Currently, their exports tend to be oriented mainly towards regional markets.

**Chart 4. Global exports of environmental goods and services, 2002 (\$billion)**



*Source:* EBI. Note: This table is based on best estimates derived from interviews with companies, researchers and government agencies and not the product of more comprehensive research comparable to the other EBI charts and tables presented in this paper.

11. Table 1 presents a list of the top 50 companies world-wide supplying both environmental goods and services, which accounted for almost 20% of global environmental revenues, or over USD 100 billion in 2001. The table shows that the first 50 firms based on revenues were from the US (22); Germany and Japan (8 each); France and the UK (4 each); Denmark (2); and Canada and Spain (one each). Of the top ten companies, there were 4 from the US, 2 each from France and Japan and 1 each from Germany and the UK. An interesting aspect to note 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 waste water and sewage management). For example, the French Company Vivendi Environment (called Veolia Environment since 2003), which has operations in more than 100 countries, earns 40% of its turnover from manufacturing customers.<sup>3</sup> Suez has 485,000 industrial and commercial clients world-wide.<sup>4</sup>

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

<sup>3</sup> <http://www.veoliaenvironnement.com/en/profiles/companies>.

<sup>4</sup> <http://www.suez.com/metiers/english/environnement/index.php>.

**Table 1. Top 50 Environmental companies in the world, 2001**

<b>Company</b>	<b>Country</b>	<b>Env'l Revs \$mil</b>
1 Vivendi Environnement SA	France	17 230
2 Suez (Ondeo, Sita)	France	13 970
3 Waste Management	US	11 320
4 Allied Waste	US	5 470
5 RWE Entsorgung AG	Germany	4 790
6 Bechtel Group Inc.	US	2 640
7 Severn Trent	UK	2 380
8 Ebara Corp	Japan	2 300
9 Republic Services	US	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)	US	1 820
13 Hochtief AG	Germany	1 760
14 AWG plc (Anglian Water)	UK	1 740
15 Shaw Group (IT Corp, S&W)	US	1 610
16 Safety Kleen Corp.	US	1 510
17 Earth Tech	US	1 460
18 United Utilities	UK	1 440
19 CH2M Hill Cos.	US	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)	US	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)	UK	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	US	730
33 Foster Wheeler Corp. (part of Tetra Tech)	US	730
34 Linde	Germany	720
35 Fluor Daniel Inc.	US	720
36 Rethmann Entsorgungs	Germany	710
37 URS Corp	US	700
38 Organo	Japan	700
39 Parsons Engineering Science	US	680
40 Philipp Holzmann	Germany	600
41 Tsukishima Kikai	Japan	590
42 MWH Global (Montgomery-Watson)	US	570
43 Alstom	France	560
44 Tetra Tech Inc.	US	550
45 Rhodia Eco Services	France	510
46 Casella Waste Systems Inc. (Rutland, VT)	US	480
47 Battelle Memorial Institute	US	450
48 Camp Dresser & McKee Inc.	US	440
49 Jacobs Engineering	US	410
50 Stericycle	US	390

Source: EBI.

13. 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 the transmission of architectural and engineering specifications and design plans for environmental projects, or reports of specialist environmental

consultants. The rise of the internet in the past few years greatly increases the scope for cross-border supply of these types of services.

### III. CURRENT DEVELOPMENTS IN THE GATS

#### *Definition of environmental services*

14. 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: (a) sewage services; (b) refuse-disposal services; (c) sanitation and similar services; and (d) other (cleaning services for exhaust gases, noise abatement services, nature and landscape protection services, and other environmental services not elsewhere classified).<sup>5</sup> Thus, 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.

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

16. 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 when countries submit their requests and offers. The EC proposes the creation of seven sub-sectors based on the environmental media (air, water, soil, waste, noise and so forth), closely resembling the first category of the OECD-Eurostat classification (pollution management group). The EC submission, similarly to 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).

17. The communication presented by Switzerland is close to the EC proposal, except for water distribution, which Switzerland has not included (WTO 2001a). Australia is also in favour of broadening the current classification and supports in principle the approach proposed by the EC (WTO 2001b). The US supports proposals that incorporate a core list of environmental services comprised primarily of the currently classified environmental services sectors (WTO 2000b), though in its preliminary offer it has proposed to reorganise the sectoral description according (with some differences) to the EC proposal (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).

18. One 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. Some Members propose that, in addition to the identification of “core” environmental services, a list be established that would comprise services which 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

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<sup>5</sup> 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 in sewage treatment services and tank emptying and cleaning services.

subject to a “cluster” or “check-list”, which could be used as an *aide-mémoire* during the negotiations. The results would then be scheduled in the relevant GATS sectors other than environment.

### *Existing commitments and beyond*

19. Under the GATS, WTO Members are subject to limited general obligations, which apply to all Members and, for the most part, to all services sectors including environmental services.<sup>6</sup> These include most-favoured-nation (MFN) treatment and transparency. Market access (Art. XVI) and national treatment (Art. XVII) are not general obligations, but are granted only in sectors which a Member lists in its national schedule of specific commitments and to the extent indicated in the schedule.

20. 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 have subsequently acceded to the WTO, all except Mongolia have made commitments in at least one sub-sector of environmental services.

21. The Uruguay Round was only 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.

22. 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 the decision on the appropriate forum to conduct negotiations on these services.<sup>7</sup> Consultations in the Special Session of the Committee on Trade and Environment revealed that there is broad support for the idea that the negotiations on environmental services be conducted as part of the overall services negotiations in the Special Session of the Council for Trade in Services (WTO 2002).

23. In the first phase of the negotiations, several WTO Members tabled general proposals outlining their interests in the negotiations on environmental services. Several Members submitted proposals on environmental services, of which two are developing countries. The proposals share a number of common elements. Most of them 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 increasing transparency of regulations in the sector is also often raised and, to a lesser extent, the transfer of technology and know-how (Table 2 lists in more detail the key elements contained in the proposals).

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

<sup>7</sup> 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.”

Table 2. Main features of the negotiating proposals

Member	Benefits of liberalisation	Measures affecting trade	Modes of supply	Regulations	Transfer technology of	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/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

cont. Table 2

<p>EC proposals) (2)</p>	<p>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</p>	<p>Members should reduce measures affecting trade in the sector, e.g. monopoly restrictions on foreign investment and the movement of key personnel, licensing, economic needs tests, residency and nationality requirements</p>	<p>It would be desirable to enhance commitments on modes 1, 2 and 3 for all sub-sectors and eliminate relevant restrictions</p> <p>Discussions should aim at improving the temporary movement of natural persons for the provision of specific services</p>		
<p>Switzerland</p>	<p>Liberalisation can lead to several benefits, e.g. lower prices and greater availability, and transfer of know-how (particularly in the area of prevention)</p>	<p>Attempts should be made at reducing several measures affecting trade in the sector, e.g. general investment limitations, economic needs tests and licensing</p>	<p>Broader commitments on Mode 3, but also 1 (where feasible) and 2, would facilitate trade in the sector. There must also be negotiations on Mode 4</p>	<p>The transfer of technology and know-how is key, because it leads to higher standards of public health and well-being world-wide</p>	
<p>US</p>	<p>Liberalisation can lead to several benefits particularly for developing countries, e.g. less expensive, and better quality services, increased availability, innovation, and improved health and environment</p>	<p>Negotiations should aim at reducing market access and national treatment measures</p> <p>Discussions should also address measures in related sectors such as professional services and business services (e.g. advertising)</p>	<p>Liberalisation would be most beneficial in the context of GATS modes 3 and 4</p>	<p>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</p> <p>The guidance described in the US submission on transparency would benefit this sector as well</p>	

Note: This table does not include issues of classification as these were dealt with in the previous section.

24. 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.

25. As part of this second phase of the negotiations, Members have thus been exchanging initial requests and offers. While requests are addressed bilaterally to negotiating partners (and it is thus not possible to know their exact number or content), offers are traditionally circulated multilaterally (because of the MFN rule) and several of them are publicly available. 48 Members have so far submitted initial overall offers.<sup>8</sup> Of these, 12 have been derestricted by the Members concerned and are publicly available on the WTO website.<sup>9</sup> Another 13 are available via national or other websites.<sup>10</sup> Of the 25 offers which are publicly available, 11 offer to make new commitments on environmental services.

26. Several of the 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 (see Table 3 below). 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, is proposing 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 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
US	
New Zealand**	

Source: WTO Members' offers. 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".

<sup>8</sup> Argentina; Australia; Bahrain; Bolivia; Brazil; Bulgaria; Canada; Chile; China; Chinese Taipei; 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; Republic of 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; Thailand; Turkey; United States and Uruguay.

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

<sup>10</sup> Argentina; Bulgaria; Colombia; Hong Kong, China; India; Israel; Mexico; Panama; Paraguay; Poland; Singapore; Switzerland and Uruguay.

#### IV. BENEFITS OF OPEN MARKETS FOR ENVIRONMENTAL SERVICES

27. Liberalising trade in environmental services can lead to significant environmental and economic benefits. In the case of environmental infrastructure services, gains can be made especially 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, resulting in 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 additionally improve the efficiency of utilities through the introduction of incentives to reduce wasteful costs and collect revenues.

28. 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).

29. Liberalisation of trade in environmental services can also provide easier access to environmentally sound technology and know-how (see Box 1). In particular, partnerships between firms in developed and developing countries are proving a viable tool for helping firms from developing countries to acquire state-of-the-art technologies. For foreign firms, such partnerships facilitate their activities in developing and emerging markets, where environmental and business conditions can be quite different from those at home (UNCTAD 2003b).

##### Box 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 actual passage of the technology that is embedded in the imported service from the innovating country to the receiving country, implying a passive technology spillover.

Potentially more important are the *active* knowledge spillovers (learning and adaptation of the embedded technology), which might disseminate 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 thus 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.

30. Strengthened 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 in similar environmental problems is key. 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 the local conditions.

31. There are additional benefits that can be realised through greater liberalisation of environmental services. Increased availability and efficiency of these services can make importing countries more attractive destinations for foreign direct investment. Employment could also benefit particularly in



developing countries as they possess significant human capital. The expansion in 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).

32. 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. 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 has been on these services given that they 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 for these sub-sectors, owing to their status as basic services. The study showed that 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 (OECD 2001).

33. Examples are also mounting of export opportunities in environmental services for developing countries. 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 (see Box 2).

#### **Box 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 at the state level, 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 the 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 cooperation 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 for importing and adapting to local conditions technology for cleaning up industrial sites, for the management of aquatic resources, and for the incineration of 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 a 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 their 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 countries of Mercosur, export opportunities for both State-owned and private companies can dramatically increase.

*Source:* Zarrilli 2003. Information drawn from Rei and Lucon 2003.

34. Particular export opportunities exist in offering an integrated package of goods and services or providing multidisciplinary services. Municipalities can be serviced by a single such 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 waste water 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<sup>11</sup> (Zarrilli, 2003).

## V. CONCERNS AND PRIORITIES OF DIFFERENT KINDS OF ENVIRONMENTAL SERVICES

### Environmental infrastructure services

#### *Private sector participation*

35. Historically, trade in environmental infrastructure services — including water, sewage, and solid waste management — has been limited because they were mainly provided by municipalities (although some 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 given that the existing infrastructure — e.g. sewage pipes — is often prohibitively expensive to duplicate.

36. Nevertheless, in recent years trade in environmental infrastructure services has increased, following changes in their provision leading to stronger presence of the private sector. In emerging economies and developing countries, in particular, the underlying driver of decisions to permit private participation is to increase investment, improve infrastructure performance and introduce competition where feasible. Due to lack of domestic capacity and finance, when developing countries governments decide to open these services to private participation, it often includes a decision to encourage foreign participation.

37. Competition is for instance possible for solid waste management services, given that these services do not have 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 (OECD 2005, forthcoming). Opportunities also exist to introduce competition in sewage treatment.

38. But 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 waste water 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

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<sup>11</sup> Ultra-pure water entails purity specifications so high that every possible measure is taken to avoid contamination (e.g. microbial). It is often associated with the semi-conductor and pharmaceutical industries.

privatisation — where ownership is transferred through outright divesture (see Box 3 below). 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 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 3. Different forms of private sector participation in environmental services markets<sup>12</sup>**

#### *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 non-governmental organisations and governments.

Source: OECD 2001.

<sup>12</sup> It should be noted that these solutions are not mutually exclusive.

***Addressing concerns about liberalisation***

39. 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 both in terms 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.

40. 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 for some concrete country 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 competition *in* the market can be feasible and trade liberalisation can lead to price decreases, private sector involvement in environmental network services such as sewage collection can lead to increases in existing fees for service supplied by the government — as often the price fixed under governmental monopoly does not even 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 wherever that capital investment comes from somebody has to pay for it: if not users then taxpayers or aid donors. Cost reflective tariffs are needed to bring about the investment necessary to maintain, replace, modernise and expand the facilities and services. User fees are also crucial to the promotion of 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 cost-reflective tariffs necessary to attract needed investment, governments may need to put in place policies that help to meet the needs of those parts of the population, often in poor periurban areas, who 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 itself increase services for the poor, as competition introduces a range of price and quality options making service possible to populations at lower income levels. Tools for inducing the private sector to invest in coverage in low-income areas may also need to be an integral part of any reform program. A common measure to extend 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 alternatively be targeted at operators in order to create incentives to extend access into otherwise unprofitable areas.
- **Regulating to meet service standards.** Government responsibility extends beyond ensuring 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. There exist a number of approaches to induce companies to meet standards, ranging from mandatory service obligations to market-based instruments. Under mandatory service obligations, the regulator sets standards that the companies must meet or otherwise face fines or even the 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 through improvements in efficiency. Particularly in developing countries where large shares of the population do not have access to services, countries are introducing flexible regulation that provides the strongest incentives for the utility to seek creative approaches to meet 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, as 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 thus need to ensure that the interests of consumers are defended against potential abuses from 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, together with strong education and information programmes describing the changes and their reasons. 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 in turn assist in mobilising them to play a role in monitoring the performance of service suppliers and the enforcement of regulation.

**Box 4. Examples of some regulatory approaches and outcomes**<sup>13</sup>*Tariff policy in the Chilean water and sewage sectors*

Chile introduced a new tariff formula in its water and sewage sectors gradually 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 to not expropriating their return-on-capital through under-pricing and to curtail the chance of monopoly rents. Tariffs are calculated every five years to cover the long run marginal cost<sup>14</sup> of a “model” or benchmark company, and then readjusted to permit a “reasonable” return on assets (allowing at least a seven percent 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 in order to make it harder 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 its 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 services. Consumers also had to pay higher prices, but the effects were ameliorated 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, this rise was spread across all consumers equally, with serious implications for affordability by low income households. These concerns had not been foreseen and were not addressed early on in the reform process. The new tariff became very unpopular and public disapproval turned to resentment after 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 the water and sewage services in Buenos Aires. Those consumers who were already connected to the system initially benefited from a significant drop in tariffs and an improvement in the 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 was one of the issues that 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 US\$ 120 for water or sewage, repayable over five-years in interest-free instalments averaging US\$ 4 per month. Despite the fact that the changes resulted in a decrease in average bills in poor areas of 74%, from US\$61 to US\$16, even at this level the rates remained unaffordable for the poor. In addition, the renegotiation saw a reduction in some of the 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 different reform efforts had failed to improve water and sewage services in Senegal, the government decided in 1996 to introduce private participation in the sector. A state-owned holding company, SONES (*Société Nationale 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 private company bills all consumers and collects the revenue at the tariff set by the government. The company then receives a fixed fee

<sup>13</sup> This box contains also examples where experience was not positive, with the aim of providing some guidance on the pitfalls to be avoided if the benefits of liberalisation are to be realised and sustained.

<sup>14</sup> 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.

(covering costs and a regulated profit) for the total volume of water sold and remits the difference between the revenues collected and the fee to the government. This mechanism does not create any disincentives to serve poor households as the company receives the same remuneration for all kinds of consumers (that is the affermage fee is the same for each cubic meter of water sold). The contract between SONES and SDE is said to be an "enhanced" affermage contract in the sense that it incorporates some investment requirements as well as incentives in the fee formula to meet targets on leakage and bill collection. A social connection program was designed to expand service among low-income households. SDE receives an additional fee for each new connection in eligible poor households, through a fund financed by the government and donors. There is a profit included in this fee to give incentives to the company to install social connections. This programme was also consistent with the social tariff established as part of the affermage contract which, as seen earlier, is a contract that does not create disincentives to serve poor households. Additionally, the government financed with the help of donors and NGOs the construction of "standpoints" (public water points) for low-income areas with no private connection. Eight years later, this reform has resulted in significantly better services. There has been a 20% increase in the amount of water supplied, and the number of customers connected has increased by 35%. Exceeding its target requirements, SDE has installed a cumulative total of 89,000 new connections, among which 76% are social connections provided at low cost to poor households. Senegal compares well in terms of water coverage with other African countries. According to the last Senegalese Household Survey (2001), drinking water is available (less than 15 minutes away) to more than 70% of the 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 which 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 to the covered population for the calculation of compliance with coverage targets. Responding to the need for alternatives for reaching the poor, one of the concessionaires has 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 where each homeowner makes 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 of 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 6 to 24 month periods. Introduced in early 1999, the program had provided water connections to 19,000 poor households by the end of that year, and as of 2001 the figure had risen to over 50,000. The other concessionaire was equally unconventional in serving the poor, arranging to sell bulk water to a steel tank manufacturing company which then installed small networks to serve poor communities.

*Source:* Brocklehurst and Janssens 2004; Estache, Gomez-Lobo and Leipziger 2000; Haselip 2004; PPIAF and WSP 2001; Shirley, Xu and Zuluaga 2000; and Zerah, Graham-Harrison and Brocklehurst 2001.

41. Another challenge relates to the need to put in place appropriate policies to facilitate adjustment following private sector involvement and increase of competition in environmental infrastructure services. Private participation may lead to employment reduction in often overly-staffed public utilities (although 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, making a living from garbage collection and sorting is quite common. While sometimes large operators may control the process, it is more often small-scale independent entrepreneurs who seek to make a living for their families. They need to be seen as stakeholders in the new arrangements and as potential employees, as they typically have useful knowledge and experience. Governments can also grant adjustment assistance, such as retraining and relocation support. These types of 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).

42. 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.

Provision of technical assistance and capacity building to support liberalisation are thus particularly important for these countries.

## **Environmental non-infrastructure and support services**

### *Growing importance of these services*

43. Environmental infrastructure services still represent the primary needs for many developing countries. However, several developing countries are at a stage of economic and environmental development where consideration of environmental non-infrastructure services is occurring. These services are becoming increasingly important as they represent new approaches to resource use and in general higher environmental awareness and standards in societies. Unlike environmental infrastructure services, there currently exists a knowledge gap on these services, and it thus appears useful to provide GATS negotiators and policy makers with information on them — what kind of activities they involve, who are the providers, who are the clients, and what kind of techniques are used (see below).

44. Changes in regulatory approaches and participation in multilateral environmental agreements (MEAs) have also created demand, including in a number of developing countries, for a series of related environmental services that are necessary as direct inputs in 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 waste water facility before it is built. Monitoring of air pollution emissions may be undertaken by specialised analysis and assessment firms.

45. Unlike environmental infrastructure services, particularly water and sewage, which are mostly provided by utilities and large operators, 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 for environmental infrastructure services, business to individual consumers' activities are very important (although as noted business to business can also be quite significant), environmental non-infrastructure and support services are largely provided from business to business. This significantly decreases the risks of market failure to achieve social objectives for these services, though some regulatory spheres, such as service standards, remain very important.

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

### *Characteristics of environmental non-infrastructure services<sup>15</sup>*

#### *Air pollution control*

47. This category broadly refers to emission monitoring and control services of pollutants into the air, both from 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

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<sup>15</sup> This section draws on OECD 2005, forthcoming. The discussion is organised using a modified version of the relevant 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.



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 of the other services not based around infrastructure, the main private clients for air-pollution services are point-source emitters of air pollutants — generally, operators of fossil fuelled electric power generating stations, waste incinerators and petrochemical refineries.

48. In the case of stationary sources, usually technicians will visit a facility, insert a sampling tube into the exhaust gasses, pump a sample of the gas through a filter, aqueous solution, or both. The filter or solution is then sent off 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 suspect vehicle is stopped, directed to the side of the road, and has a device 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 these types of 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*

49. Noise can be a nuisance. It can also damage people's hearing and reduce worker productivity. Often it reflects a 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. (And many countries set limits on occupational exposure to noise.) Tracing a noise problem to its source is not always easy. A loose bearing may be causing it, or perhaps a misaligned exhaust fan. But intervention on the basis of a wrong guess can be costly. For that reason, the monitoring and abatement of noise has developed into a specialised service.

#### *Nature and landscape protection services*

50. 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 between 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.<sup>16</sup>

51. Governments are not the only clients of these services, and in fact may be less important than private firms. One growing client base for these services is golf courses. In the United States, for example, the U.S. Golf Association is supporting research to find ways to use native plants in golf courses so as to improve habitat for plant and wildlife while reducing irrigation and fertilizer costs. Interest in exploiting the biodiversity promoting potential of golf courses is already spreading to other countries, and is finding favour in developing countries that are 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 coast line provides better protection against storm damage.

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<sup>16</sup> <http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=94060>.

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

52. The remediation of soil and of water are normally two distinct types of services, though often soil remediation may be required to keep 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 themselves responsible for the contamination or not, 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 in their plight, numerous firms have emerged that are able to come onto a property and decontaminate it, or at least ensure that the existing contamination does not spread.

53. Another form of remediation service is mine-site rehabilitation.<sup>17</sup> In OECD countries, companies engaged in the extraction of minerals and petroleum are required, or may be expected to do so by shareholders, to restore any 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, so services related to seed and plant selection and propagation are typically performed by outside contractors.

54. Water protection and remediation services have been driven by increases in the seaborne transport of crude oil and petroleum products, and the demands of governments for 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 in order 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*

55. 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.<sup>18</sup> International conventions implemented in the past, including the 1979 Convention on Long-Range Transboundary Air Pollution, have been important instruments to address the problems of acid precipitation and have spurred the development of related services.

56. 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, are different. Monitoring acid deposition involves, basically, setting up rainfall gauges and then measuring the precipitation’s pH and analysing the concentration of different acids.

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<sup>17</sup> 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”.

<sup>18</sup> <http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=94090>.

## VI. FORMULATION OF THE LIBERALISATION COMMITMENTS

57. The GATS provides Members with a range of choices in making specific commitments. This is particularly important in the area of environmental services given that they comprise a wide variety of services encompassing different needs and concerns. Flexibility is needed to carefully plan liberalisation, identify segments and modes of supply where it is compatible with national and development goals, and put in place an appropriate regulatory framework. Available options include:

- 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 discriminate 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 can allow time to undertake necessary steps to strengthen these segments domestically and to introduce 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 to pursue these objectives, especially through 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 any 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.

## VII. ISSUES FOR CONSIDERATION IN THE NEGOTIATIONS

### *Key issues for different kinds of environmental services*

58. Several important issues confront negotiators and policy makers in current GATS discussions on environmental services. As seen earlier, 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. Governments clearly 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).

59. First, for all sectors, services provided to the public in the exercise of governmental authority, meaning any service supplied neither on a commercial basis nor in competition with one or more service suppliers, are excluded from the agreement (Article 1.3). Since there is no single model of public services within WTO Membership, as the concept varies according to the different 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 subsectors) where they believe private sector participation could threaten for example availability, quality and affordability of these services. Thus, Members can maintain the service as a (public or private) monopoly — GATS negotiations have no influence on the decision of Members to privatise certain undertakings (EC 2003).

60. In addition, when private sector participation is allowed, governments should be confident of their ability to regulate in the new environment, which often requires several years of experience, including with foreign participation.<sup>19</sup> Scheduling commitments on environmental infrastructure services thus raises questions in relation to the nature of these services. Nevertheless, the schedules of some WTO Members provide useful ideas on how to make commitments on these services to take account of their characteristics.

61. One possibility could be to include in the commitments only services purchased by private industry. For example, the US commitments on environmental services cover activities such as waste water and solid/hazardous waste management that have been “contracted by private industry” (it is common for polluting manufacturing firms to have their own waste water 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”.

62. Another approach could 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.”

63. 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”.

64. 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 in relation to the distinction between PPPs (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 (see Cossy 2003).

65. 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 that entail less regulatory risks. With respect to these services, in particular, a key question

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<sup>19</sup> 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 exist yet, 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).

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.

66. 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 proposal (discussed in Section III) for a “cluster” or “check-list” of environment-related services, which could be used as an *aide-mémoire* during the negotiations, could be a useful approach to minimise any potential problems.

### *Measures affecting trade in environmental services*

67. Governments must also have information about the full range of measures preventing access to environmental markets of trading partners. The questions presented in the next section are one useful means of obtaining this information, which may not be readily available especially to developing-country negotiators given the lack of technical and negotiating capacity in these countries. This is particularly true in the case of environmental services, given that they involve a wide variety of services and a large number of measures potentially affecting market access in these services.

68. For starters, given that the majority of trade in environmental services takes place through Mode 3, general foreign investment requirements, as well as sector-specific ones, are very important for international trade in these services. These can 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 foreign company operations. There may be additional requirements for licensing businesses and professionals for operation or practice which can arise from consumer protection and public health and safety regulations. Typically, there are also more specialised licensing requirements applicable 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 where they apply equally to both foreign and local suppliers, or not automatic where they are 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 to trade if they discriminate between foreign and local companies, or if they are not administered in an efficient manner<sup>20</sup> (OECD 2001).

69. Limitations on the movement of natural persons are also very important, particularly for environmental non-infrastructure and support services, 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, though, restrictions on intra-corporate-transferees may be more relevant, while for environment-related professional services, restrictions on contractual service suppliers can also play an important role. Identifying and capturing export opportunities in these services will also require emphasis on efficient regulation and mutual recognition of qualifications.

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<sup>20</sup> In GATS terms, licensing and qualification requirements (see paragraph 69) 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 licenses, 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 national treatment, they come under the scope of Article VI on domestic regulation.

70. As noted above, modes 1 and 2 can additionally be relevant, particularly for environmental non-infrastructure and support services where plans or samples can be sent across borders or be collected by the clients themselves. While mode 2 is very difficult to regulate, restrictions on Mode 1 can significantly impact trade in these services. For instance, it may be required to be a resident in the importing country to supply that country's market on a cross-border basis (residency requirements). This can become a significant hurdle to trade for these types of environmental services.

71. Moreover, environmental services trade may be affected by measures which are largely beyond the scope of the GATS. For example, government procurement is an important factor given the high proportion of environmental services procured by government entities. Local preferences and lack of transparency in procurement processes are among the measures potentially affecting trade in environmental services. There is, accordingly, a need for services negotiators to be alert to such potential impediments and ensure that proper co-ordination exists with officials in related policy fields (e.g. procuring agencies). Doing so can help ensure that all different 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.

72. 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. Assessment of this capacity will necessarily determine the nature and pace of liberalisation. Provision of technical and financial assistance to developing countries to build regulatory capacity are thus an important dimension of the GATS negotiations.

## VIII. THE CHECKLISTS

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

73. The checklists below can be used by WTO Members to frame and assess requests and offers in the area of environmental services. While they are primarily framed in request mode, it is important that "requesting" countries also be prepared to be on the receiving end of similar questions. The two-way policy interaction afforded by request-offer negotiations can underpin attempts to benchmark a country's domestic approach to environmental services regulation with 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 to take place between trade officials and regulators and officials in other government agencies, as well as with private stakeholders in business and civil society.

74. Questions that may arise in such domestic dialogue so as to inform the request-offer process include the following (these may be usefully raised with trading partners as well, as is done in Table 4 below):

- What is the policy objective being pursued by the relevant regulatory measure?
- Is the objective different for environmental infrastructure services, where business to individual consumers' activities are very important, as opposed to non-infrastructure services and support services 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 provides a list of questions relating more specifically to environmental service-related measures that may be addressed under the GATS.

**Table 4. Negotiating checklists**

<b>GATS-related issues</b>	
a) Measures affecting cross-border supply (Mode 1)	<ol style="list-style-type: none"> <li>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?</li> <li>2. What types of environmental services are allowed, or restricted, as regards cross-border supply?</li> <li>3. Are there any restrictions on the electronic transmission of environmental and related services by non-established foreign service providers?</li> <li>4. Are consumer access or connection to internet or other electronic networks available through monopoly or exclusively authorised providers?</li> <li>5. Is the transfer of capital, payments and/or use of credit cards for such transactions permitted? Is it subject to authorisation?</li> <li>6. If entry is restricted, what are the reasons provided by the government?</li> <li>7. Where and how clearly are such limits spelled out?</li> </ol>
b) Measures governing commercial presence/ownership (Mode 3)	<p style="text-align: center;"><b>Private participation</b></p> <ol style="list-style-type: none"> <li>1. Is there a government monopoly in the environmental services sector such that private investment is not permitted? If so, in which sub-sectors?</li> <li>2. For environmental infrastructure services, how is private participation allowed (concessions, BOTs, etc.)?</li> <li>3. 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?</li> </ol> <p style="text-align: center;"><b>Foreign ownership</b></p> <ol style="list-style-type: none"> <li>1. In which segments is foreign ownership allowed in the provision of environmental services?</li> <li>2. When laws restrict foreign shareholdings in local environmental companies, what is the maximum foreign equity permitted or the minimum local shareholding?</li> </ol> <p style="text-align: center;"><b>Screening laws</b></p> <ol style="list-style-type: none"> <li>1. Are proposed foreign investments in the environmental sector subject to screening by a specialised authority in the host State?</li> <li>2. Are there economic needs tests for approval of foreign investment? If so, in which sub-sectors? Are these tests transparent?</li> <li>3. 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)?</li> <li>4. Which authorities are charged with the investment screening?</li> <li>5. Which criteria apply in evaluating applications for approval?</li> <li>6. 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 State authorities to an investment proposal?</li> </ol> <p style="text-align: center;"><b>Legal and joint venture requirements</b></p> <ol style="list-style-type: none"> <li>1. Are environmental firms required to establish locally through a particular legal form of establishment (i.e. subsidiary, branch, representative office)?</li> <li>1. 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</li> </ol>

	<p>and sourcing requirements?</p> <ol style="list-style-type: none"> <li>2. Is entry of the foreign environmental firm conditional on the substantial involvement of local participants in the ownership and management of the investment project (joint venture requirement)?</li> <li>3. Is local control (e.g. 51% or more of the equity contribution) required over the (equity/contractual) joint venture? Does the law provide for progressive increase in control over the venture?</li> <li>4. Are there requirements regarding the composition of the board of directors?</li> <li>5. What is the prescribed legal form of the joint undertaking (general partnership, professional corporation or limited liability company)?</li> </ol>
c) Measures relating to licensing	<ol style="list-style-type: none"> <li>1. What laws and regulations discipline licensing of environmental activities?</li> <li>2. What types of licenses and regimes apply in different segments? What is the rationale for such licensing?</li> <li>3. Who issues and monitors licenses?</li> <li>4. Are licenses automatic or not automatic?</li> <li>5. Are licenses open ended or for a definite time?</li> <li>6. What licensing procedures (e.g. application or bidding procedures) are applied? Under what circumstances are different procedures used?</li> <li>7. What provisions apply to modification, termination and revocation of licenses?</li> </ol>
d) Measures governing the movement of natural persons (Mode 4)	<ol style="list-style-type: none"> <li>1. How are entry and work permits obtained?</li> <li>2. 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?</li> <li>3. Do the restrictions apply to natural persons seeking long-term establishment or to individuals travelling for business purposes for short periods of time?</li> <li>4. Is the entry of foreign experts subject to economic needs tests? Are such tests transparent?</li> <li>5. Are there residency or nationality requirements with respect to certain categories of personnel employed by locally established environmental or environment-related firms?</li> <li>6. Are equivalent professional qualifications for environmental support services obtained abroad recognised in the importing country?</li> <li>7. Are there prior experience requirements or post qualification experience attached to the granting of visas?</li> </ol>
e) Preferential liberalisation measures	<ol style="list-style-type: none"> <li>1. 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?</li> <li>2. What conditions must foreign suppliers of environmental support services fulfill to meet the requirements of existing mutual recognition agreements to which host country providers are parties to?</li> <li>3. Does the importing country maintain preferential access arrangements for developing country-service providers?</li> </ol>

***Additional questions of relevance to negotiators***

75. As noted earlier, 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 lack of them) not (currently) subject to negotiations under the GATS may still affect the value of liberalisation commitments. Table 5 lists a number of additional policy issues that may require the attention of negotiators on environmental services.



**Table 5. Negotiating checklists**

<b>Other issues</b>	
a) Government procurement	<ol style="list-style-type: none"> <li>1. What procurement procedures are applied for environmental services (e.g. tendering)? Under what circumstances are different procedures used?</li> <li>2. How are intended procurements publicised?</li> <li>3. Are there registration, residence or other requirements for potential suppliers?</li> <li>4. Is procurement subject to (i) local content; (ii) technology transfer; (iii) local employment; (iv) investment or local presence in the importing country?</li> <li>5. Do procuring entities grant price advantages to domestically-owned companies over foreign companies?</li> <li>6. Are there lists of approved suppliers? If so, what are the procedures for checking the capability of firms applying for inclusion on tenderers' lists?</li> <li>7. 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?</li> <li>8. 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?</li> <li>9. What, if any, are the procedures available for parties, domestic and foreign, to lodge complaints against the award of a contract?</li> <li>10. 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?</li> </ol>
b) Regulatory measures <sup>21</sup>	<ol style="list-style-type: none"> <li>1. Which authorities are in charge of adopting and implementing regulation of environmental services?</li> <li>2. 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)?</li> <li>3. What measures (at which level) and mechanisms are in place to assure fulfilment of universal access to basic environmental services? In which sub-sectors? Are they objective and transparent? Are foreign service suppliers subject to different or additional conditions than domestic suppliers in relation to public service obligations?</li> <li>4. 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 been considered?</li> <li>5. How is uncompetitive behaviour, such as abuse of monopoly power, addressed?</li> <li>6. Are these institutions independent from the government? How is accountability ensured?</li> <li>7. Are price changes phased in and the public informed about the reasons for the change? Are there any programmes in place to promote the participation of consumers and other stakeholders in regulation?</li> </ol>
d) Temporary entry for services-related tools of the trade?	<ol style="list-style-type: none"> <li>1. Are there any restrictions on the temporary entry of service-related tools of the trade (e.g. construction equipment, technical and training material or engineering software and design tools)?</li> <li>2. Do restrictions apply to the temporary intra-firm transfer of service-related equipment?</li> <li>3. Do restrictions on services-related tools of the trade apply to contractual service suppliers?</li> <li>4. Do customs procedures exist in the importing country allowing for duty-free temporary admission of services-related tools of the trade?</li> </ol>
e) Other relevant measures	<ol style="list-style-type: none"> <li>1. Are there subsidies for environmental services providers? In which segments?<sup>22</sup></li> <li>2. Are there IPR laws or regulations which may inhibit the transfer of environmentally sound technology?</li> </ol>

<sup>21</sup> Some of these measures may be covered by the GATS if they either represent market access or national treatment limitations, or fall under Article VI on domestic regulation — thus overlapping with measures relating to licensing in Table 4 above.

<sup>22</sup> Subsidies may be covered by the GATS if they discriminate between foreign and national providers, that is, if they constitute national treatment measures.

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