

## WPS3595

COMMENTS/ADDITIONS/CORRECTIONS WELCOME

## How widespread were private investment and regulatory reform in infrastructure utilities during the 1990s?<sup>1</sup>

Antonio Estache and Ana Goicoechea  
*The World Bank, INFVP*

### Abstract

This note provides a snapshot as of 2004 of the share of countries with an “independent” regulatory agency and with at least some private sector financing of its sectoral investment needs for electricity, water and sanitation and telecoms. Among other things, it shows that:

- For respectively, electricity, water and sanitation, and telecoms, 51%, 21% and 66% of the developing countries in the sample have an “independent” regulator; i.e. an agency separate from a Ministry and from the operator.
- For respectively, electricity generation, electricity distribution, water and sanitation, and telecoms, 47%, 36%, 35% and 59% of the developing countries in the sample have at least some private sector financing.
- The shares of both agencies and private sector involvement tend to increase with income levels.
- Latin and Central America and Eastern Europe are outliers among regions as almost systematically they have among the highest shares for both indicators across sectors (except water).

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## 1. Introduction

As the debate on the optimal infrastructure reform design heats up again in the development community, it seems useful to take stock of how much reform *actually* took place during the 1990s. This stocktaking is warranted because the generic debate tends to be much more dogmatic, or at least emotional, than based on facts. Among the many implicit assumptions built in these debates on infrastructure sector reforms in the 1990s, two stand out: (i) private operators have taken over the main dimensions of infrastructure service delivery and (ii) independent regulatory agencies (i.e. agencies separated from the Ministry and from the incumbent operator) have been created to supervise the residual private infrastructure monopolies in the sectors.<sup>2</sup>

The main purpose of this note is to report the results of a 2004 survey designed to provide a baseline on these two very basic dimensions of the reforms. The idea is to get an up-to-date rough snapshot of the extent to which the various regions of the world have actually introduced some private sector participation in infrastructure sectors and have created separate regulatory agencies. A few much more ambitious sector specific surveys have been conducted over the last five years or so (examples are Bacon and Besant-Jones (2001) for electricity, and Halpern (2002) for water) but these are already somewhat out of date. This note is not as rich in substantive coverage or as subtle in the design as these earlier surveys but it has the advantage of covering a much larger set of sectors and countries. Depending on the sectors, our sample sizes range from 124 to 207 countries, including developing, OECD and non-OECD developed countries.

The survey reflects the situation as of mid-2004. It was conducted between August and mid-November 2004. It draws on four main sources: (i) the publications of international or bilateral agencies (ITU, IEA, WHO, EEC, DFID, GTZ, AFD, ADB, IDB, and EBRD among others); (ii) the databases collected as part of research efforts and made available to other researchers in public sources (the research department at the World Bank, AEI- Brookings, and independent academic researchers); (iii) the desk officers for each sector in international organizations; (iv) government officials working on the relevant sectors.

When sending questionnaires or interviewing individuals the two specific questions asked were as follows: (a) Has a regulatory body that is separate from the utility and from the Ministry started to work?<sup>3</sup> (b) Is there *any* (significant) private participation in the financing of the sector?<sup>4</sup> The information collected does not say anything about the intensity or the share of the private sector contribution to the sector and it is well known that the relative importance of the private sector in a given infrastructure activity varies

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<sup>2</sup> A third dimension commonly mentioned is the unbundling of the sector. But this has many more facets and is hence less simple to summarize than the two dimensions discussed in this paper.

<sup>3</sup> Note that, to keep the questionnaire as simple as possible, we did not ask whether the agencies were multisectoral or sector specific. Some respondents volunteered this information but it was not sufficient to be able to have wide enough coverage. We expect to be able to generate this information from a follow-up questionnaire.

<sup>4</sup> Note that there is no normative assessment associated with the figures reported here.

significantly across countries. On the regulatory agency, we realize that the information collected only reflects the existence of the regulatory agency but it does not capture the extent to which the agency is *de facto* independent.

The multiplicity of sources has allowed us to check the robustness of the information reported. Indeed, in most sectors, we identified inconsistencies across sources which needed to be investigated and corrected. This required significant efforts to contact officials in the countries and when that option was not available to contact desk officers in international agencies. In general, there was a lack of systematic formal interaction with the original sources which may be the main limitation of this database. Since at this stage we are quite confident about the emerging big picture, we have decided to disseminate a summary of the information collected so far while we continue our quality control. This means that this note should be followed up by updates and corrections.

The rest of this note presents the information collected on the two basic indicators for each sector in two main forms: (i) across income groups as per the standard World Bank indicators' classification<sup>5</sup> and (ii) across geographical regions. The information collected on the first classification is generally much more robust than the second one because for some regions it was not possible to get large enough sample sizes (in particular for East Asia). The note covers electricity, water and sanitation, and telecoms. While we briefly discuss the main results of the survey for each sector, the main interest lies in the tables summarizing the information collected. In most cases, these tables speak for themselves. Note that in each table we have tried to be as clear as possible about sample sizes. Country specific data are provided in the appendix.

## 2. Electricity

For electricity, the main source of information was a questionnaire sent to task managers at the World Bank. However, this is the sector for which we benefited from the largest set of alternative sources of information. A web search of all available publications and a reality check with a series of commercially available databases yielded relatively robust information<sup>6</sup>. We distinguished between electricity distribution and generation because we expected to get a different rate of private sector participation in these two segments of the business.

Tables 1 to 6 give an overview of the institutional changes that took place in the electricity sector during the 1990s according to the responses obtained. It provides a snapshot as of mid-2004 of the number of countries with "independent" regulatory

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<sup>5</sup> Low income countries (LIC) are those in which 2001 GNI per capita was \$745 or less. Lower-middle income countries (LMC) are those in which 2001 GNI per capita was between \$745 and \$2,975. Upper-middle income countries (UMC) are those in which 2001 GNI per capita was between \$2,976 and \$9,205. High income countries are those in which 2001 GNI per capita was \$9,206 or more.

<sup>6</sup> See ABS Energy Research (2004), Bacon (1999), Estache and Gassner (2004a and 2004b), Henisz *et. al.* (2003), International Power Finance Review (2003-04), International Power and Utilities Finance Review (2004-05), Wallsten *et. al.* (2004), World Bank Caribbean Infrastructure Assessment (2004), and World Bank Global Energy Sector Reform (1999).

agencies (tables 1 and 2), of the number of countries with private participation in generation (tables 3 and 4) and in distribution (tables 5 and 6). The sample size represents over 75% of the countries of the world, about 90% of the developing countries and 50% of developed countries. The results are thus quite robust for developing countries but may reflect a sample selection bias for developed countries.

Table 1 shows that in electricity the commitment to the creation of an independent regulator seems to increase with the income level. About 60% of the countries have created such an agency. This average is misleading and hides a major difference between developed and developing countries with corresponding scores of 92% and 50% respectively.

**Table 1: Independent Electricity Regulatory Agency by Income Groups (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with IRA (% of sample)</b>
Developing countries	155	136	51%
Low income	65	61	38%
Lower-middle income	52	43	63%
Upper-middle income	38	32	63%
Developed countries (high income)	52	29	79%
<b>Total</b>	<b>207</b>	<b>165</b>	<b>56%</b>

Table 2 allows for an interesting refinement for developing economies. It shows that Latin America and Eastern Europe and Central Asia have actually been quite committed to the creation of these agencies while other developing regions have been much less committed, with the Middle East at the bottom of the list. It is interesting to note that the most committed regions have also engaged in additional activities of relevance to the effectiveness of reforms. Both Latin America and Eastern Europe have created regional associations of energy regulators, representing a step forward in benchmarking regional performances and hence generating data of the type used in this note.

**Table 2: Independent Electricity Regulatory Agency by Regions (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with IRA (% of sample)</b>
Sub-Saharan Africa	48	44	36%
East Asia & Pacific	22	11	36%
Eastern Europe & Central Asia	28	27	78%
Latin America & Caribbean	33	30	73%
Middle East & North Africa	16	16	19%
South Asia	8	8	50%
Rest of Countries	52	29	79%
<b>Total</b>	<b>207</b>	<b>165</b>	<b>56%</b>

Tables 3 and 4 show that roughly half of the countries around the world have private participation in electricity generation. Again, there is a significant difference between developing and developed countries and the shares seem to increase with income level. However, the difference between low and lower-middle income groups is less marked than the one for the creation of regulatory institutions. It is interesting to note that for developing regions there are 23 countries with regulatory agencies but without private participation in generation, and 15 countries with private participation but without an independent regulator.

**Table 3: Private Participation in Electricity Generation by Income Groups (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with Private Participation in Generation (% of sample)</b>
Developing countries	155	134	47%
Low income	65	59	41%
Lower-middle income	52	42	48%
Upper-middle income	38	33	58%
Developed countries (high income)	52	30	70%
<b>Total</b>	<b>207</b>	<b>164</b>	<b>51%</b>

Table 4 once more refines the regional pictures but not as precisely as for the agencies. First, for one region, East Asia, the sample size is not large enough to be able to draw good lessons from the table. Second, there was some confusion from the information collected as to how large the private sector participation had to be to be accounted for. We left it to the interviewees to decide whether the presence was significant enough or not. This is clearly a subjective criterion which may not be acceptable to everyone.

**Table 4: Private Participation in Electricity Generation by Regions (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with Private Participation in Generation (% of sample)</b>
Sub-Saharan Africa	48	46	41%
East Asia & Pacific	22	6	67%
Eastern Europe & Central Asia	28	27	41%
Latin America & Caribbean	33	31	68%
Middle East & North Africa	16	16	31%
South Asia	8	8	38%
Rest of Countries	52	30	70%
<b>Total</b>	<b>207</b>	<b>164</b>	<b>51%</b>

Table 5 shows that the role of the private sector is lower in distribution than in generation. Less than 40% of the countries have any type of private financing of their electricity distribution. There is some difference again according to income groups within developing countries. About 3 in 10 countries of the bottom two income groups have private participation in distribution, while for the upper-middle income group approximately 5 in 10 have private participation. However, note that the presence of private participation in developed countries is not too different from the one in developing countries.

**Table 5: Private Participation in Electricity Distribution by Income Groups (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with Private Participation in Distribution (% of sample)</b>
Developing countries	155	138	36%
Low income	65	62	29%
Lower-middle income	52	43	37%
Upper-middle income	38	33	48%
Developed countries (high income)	52	21	43%
<b>Total</b>	<b>207</b>	<b>159</b>	<b>37%</b>

Table 6 shows major differences across developing countries as well. The role of the private sector is significantly larger in Eastern Europe and Latin America than in any other part of the world with roughly 2 in 3 countries with private investment in distribution. This is more than the 43% share in developed countries. The Middle East and South Asia have been much less successful or interested in doing so (although it may be worth to point out that the sample size for East Asia and developed countries is not high enough to be able to draw generic conclusions on these two regions).

**Table 6: Private Participation in Electricity Distribution by Regions (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Countries with Private Participation in Distribution (% of sample)</b>
Sub-Saharan Africa	48	46	28%
East Asia & Pacific	22	10	20%
Eastern Europe & Central Asia	28	27	48%
Latin America & Caribbean	33	31	61%
Middle East & North Africa	16	16	13%
South Asia	8	8	13%
Rest of Countries	52	21	43%
<b>Total</b>	<b>207</b>	<b>159</b>	<b>37%</b>

### 3. Water and sanitation

For the water sector, the challenge in accounting for the existence of the private sector came with the large number of contractual forms that tend to prevail in the sector. Private capital was recorded when there are contracts that require capital investment by private parties in the sector. These contracts are: concessions, built-operate-transfer (BOT), and divestitures. On the other hand, service, management, affermage, and lease contracts were not classified as private capital<sup>7</sup>.

Tables 7 to 10 show that in this sector the information is less robust than for the others. We only have observations for about 66% of the countries of the world. Moreover the sample size is particularly small for developed countries. With these limitations in mind, the story that emerges is that significantly fewer countries have created independent regulators in the water sector than in electricity (or telecoms as discussed later). Less than 25% of the countries have an independent water utility regulator.

**Table 7: Independent Water Regulatory Agency by Income Groups (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with IRA (% of sample)
Developing countries	155	122	21%
Low income	65	55	11%
Lower-middle income	52	38	32%
Upper-middle income	38	29	28%
Developed countries (high income)	52	15	20%
Total	207	137	21%

Table 8 shows that Latin America is somewhat an upper bound outlier in the world since 1 in 2 countries in our large sample has created an agency. On the other hand, South Asia appears to be the lower bound outlier as no independent agency has been created in the region. The sample size for East Asia is not representative enough to be able to draw any lessons on this region. It is relevant to mention that the somewhat low commitment to the creation of independent water regulators might reflect the fact that the regulation of water utilities is part of the water resource management regulation, or that it is a decentralized matter at the municipal level, cases in which the creation of an independent regulator is seen as a costlier management model for the sector.

<sup>7</sup> Sources different from the questionnaire include: ABS Energy Research (2004), ADB Water in Asian Cities (2004), ADB Developing Best Practices for Promoting Private Sector Investment (2000), Bayliss (2002), Budds and McGranahan (2003), Estache and Gassner (2004a), Estache and Tracz (2004), Hall *et. al.* (2002a, 2002b, and 2002c), Lobina (2001), World Bank Sector Note on Water Supply (2004), World Bank Caribbean Infrastructure Assessment (2004), and World bank Water Supply and Sanitation and the MDGs (2003).

**Table 8: Independent Water Regulatory Agency by Regions (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with IRA (% of sample)
Sub-Saharan Africa	48	42	12%
East Asia & Pacific	22	8	25%
Eastern Europe & Central Asia	28	20	20%
Latin America & Caribbean	33	30	50%
Middle East & North Africa	16	14	0%
South Asia	8	8	0%
Rest of Countries	52	15	20%
<b>Total</b>	<b>207</b>	<b>137</b>	<b>21%</b>

Tables 9 and 10 show that the private sector has a relatively strong presence in the delivery of water services of middle-income countries. Indeed, it is not unusual to find BOT deals in major cities to treat water. These opportunities are however more limited in low income countries, where management contracts tend to be much more common than contracts that require at least some private sector financing.

**Table 9: Private Capital in Water and Sanitation by Income Groups (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with Private Capital (% of sample)
Developing countries	155	127	35%
Low income	65	55	18%
Lower-middle income	52	40	50%
Upper-middle income	38	32	47%
Developed countries (high income)	52	20	80%
<b>Total</b>	<b>207</b>	<b>147</b>	<b>41%</b>

Table 10 shows the strong variation across regions. Sub-Saharan Africa, the Middle East and South Asia, which include many of the poorest countries of the world, have had very little success in attracting private capital to the sector. In East Asia, there are only a few large concessions but many BOTs and service deals managed by international private companies, including very aggressive Asian companies who have managed to get a fair share of the deals in China and in Asia's "tiger countries". In contrast, for Latin America and Eastern Europe national private investment plays a very important role. Argentina, Brazil and Chile have enjoyed a reasonable collaboration of the international and national private capitals, and in Eastern Europe countries like the Czech Republic have developed a very active local private sector.

The diversity reflected in Table 10 also suggests that the ability to attract capital investment by private parties is driven by multiple factors and not only by income levels. In many countries, strategic decisions regarding water continue to be made at the local level, often municipal rather provincial or regional, allowing for a much wider variety of



preferences and supply structures than in the energy sector. Commercial risk levels might however be quite important as reflected by the low attractiveness of Sub-Saharan Africa, South Asia and the Middle East.

**Table 10: Private Capital in Water and Sanitation by Regions (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with Private Capital (% of sample)
Sub-Saharan Africa	48	44	20%
East Asia & Pacific	22	11	64%
Eastern Europe & Central Asia	28	21	62%
Latin America & Caribbean	33	29	41%
Middle East & North Africa	16	14	21%
South Asia	8	8	13%
Rest of Countries	52	20	80%
Total	207	147	41%

#### 4. Telecoms

For the telecom sector, we have relied on an annual publication by the International Telecommunications Union (ITU) called “Trends in Telecommunication Reform” (latest data available for 2004)<sup>8</sup>. The report lists countries with an independent regulatory agency. After consulting with ITU and World Bank ICT experts, our classification assumes that countries that do not appear in the list do not to have an independent agency. This allows us to have a sample of 207 countries for this indicator.

Tables 11 and 12 suggest that this is the sector in which the commitment to institutional reform has been the strongest. Two out of three countries in the world have an independent telecom regulator. The developing countries have in fact a stronger commitment to this reform than developed countries. The lowest income groups are particularly impressive in that regard.

**Table 11: Independent Telecom Regulatory Agency by Income Groups (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with IRA (% of sample)
Developing countries	155	155	66%
Low income	65	65	69%
Lower-middle income	52	52	60%
Upper-middle income	38	38	71%
Developed countries (high income)	52	52	56%
Total	207	207	64%

<sup>8</sup> Other sources used to crosscheck data include: Henisz et. al. (2003), Wallsten et. al. (2004), World Bank Caribbean Infrastructure Assessment (2004), and Zhen-Wei Qiang (2004).

Table 12 shows that the two poorest regions of the world, Sub-Saharan Africa and South Asia have been among the most committed to the creation of an independent regulator. Latin America is once again an outlier in its strong commitment to reform in comparison to other parts of the world. East Asia may be somewhat of a surprise in its modest commitment to reform since it appears that about 1 country in 4 has engaged in this specific institutional reform.

**Table 12: Independent Telecom Regulatory Agency by Regions (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with IRA (% of sample)
Sub-Saharan Africa	48	48	77%
East Asia & Pacific	22	22	27%
Eastern Europe & Central Asia	28	28	57%
Latin America & Caribbean	33	33	85%
Middle East & North Africa	16	16	50%
South Asia	8	8	100%
Rest of Countries	52	52	56%
Total	207	207	64%

Regarding private capital, we focus on the existence of private ownership in the local loop. Private capital is credited when the operators are partially or fully privatized (or equivalently when the operator is not state-owned). The story emerging from tables 13 and 14 is quite strong in showing that the commitment to the creation of an independent regulator is not a sufficient condition to attract private capital in the local loop. The presence of the private sector in the local loop of the lowest income groups is indeed much more limited than the commitment to regulatory reform. It turns out that for this group, corporatization of the operators is much more common than their privatization. Developed countries have had much fewer problems in attracting the private sector.

**Table 13: Private Capital in Telecommunications by Income Groups (2004)**

	Universe (# of countries)	Sample (# of countries with data)	Countries with Private Capital (% of sample)
Developing countries	155	146	59%
Low income	65	64	50%
Lower-middle income	52	50	62%
Upper-middle income	38	32	72%
High income	52	38	84%
Total	207	184	64%

The regional distribution reinforces the impression that the ability to attract private capital is not strongly correlated with the commitments to the creation of independent regulators. Africa, for instance, has 77% of the countries with telecom regulators and only 51% with private participation in the local loop—note that the regulator deals with the interconnection issues of the very successful mobile telephony whether the fixed operators are public or private. In contrast, East Asia, Eastern Europe and Central Asia, and the developed countries are the groups in which the presence of private capital is larger than the presence of independent regulators.

**Table 14: Private Capital in Telecommunications by Regions (2004)**

	<b>Universe (# of countries)</b>	<b>Sample (# of countries with data)</b>	<b>Share of Countries with Private Participation</b>
Sub-Saharan Africa	48	47	51%
East Asia & Pacific	22	18	61%
Eastern Europe & Central Asia	28	27	70%
Latin America & Caribbean	33	31	74%
Middle East & North Africa	16	15	33%
South Asia	8	8	50%
Rest of countries(developed)	52	38	84%
<b>Total</b>	<b>207</b>	<b>184</b>	<b>64%</b>

## 5. Conclusion

The main ambition of the paper was to generate data on the actual importance across sectors of the implementation of the two major reforms of the 1990s: the creation of independent regulators, and privatization. While the data are far from perfect, they provide a reasonable sense of the state of infrastructure reform around the world along these two dimensions.

The main obvious conclusions to be drawn from the survey are the following:

- The strongest commitment to the creation of an independent regulatory capacity in the world is in the telecoms sector and the weakest one is in the water and sanitation sector, since respectively, 64% and 21% of the countries have introduced independent agencies. Electricity also seems to be strongly committed to the reform as 56% of the countries have created an “independent” energy regulator.
- The institutional commitment to independent regulation is stronger in developing countries than in developed countries in telecoms and water and sanitation; it is only in electricity that it is stronger in developed countries.
- Around the world, private participation to meet the sectors’ financing needs is strongest in telecoms with 64% of the countries benefiting from some private financing in the local loop and it is the lowest in electricity distribution with 37%.
- The ability to attract private investment across sectors is generally higher for developed countries than for developing countries. The biggest gap is observed in water and sanitation.
- Within developing countries, the shares of both regulatory agencies and private sector involvement tend to increase with income levels.
- Latin America and Eastern Europe & Central Asia (ECA) are outliers among the regions as they have, almost systematically across sectors, the highest shares for both indicators (an exception is ECA in water).

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## **Appendix: Data by Country**

**Table A15: Extent of Reforms in Electricity Sector as of 2004**

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation in Generation? (Yes/No)	Have Private Participation in Distribution? (Yes/No)
LIC	SAR	Afghanistan	No	No	No
LMC	ECA	Albania	Yes	No	No
LMC	MNA	Algeria	Yes	Yes	No
UMC	EAP	American Samoa			
NOC	OTH	Andorra			
LIC	AFR	Angola	No	Yes	No
UMC	LRC	Antigua and Barbuda	No	No	No
UMC	LRC	Argentina	Yes	Yes	Yes
LIC	ECA	Armenia	Yes	Yes	Yes
NOC	OTH	Aruba			
OEC	OTH	Australia	Yes	Yes	
OEC	OTH	Austria	Yes	Yes	
LIC	ECA	Azerbaijan	No	No	No
NOC	OTH	Bahamas, The			
NOC	OTH	Bahrain	No	No	
LIC	SAR	Bangladesh	Yes	Yes	No
UMC	LRC	Barbados	Yes	Yes	Yes
LMC	ECA	Belarus	No	No	No
OEC	OTH	Belgium	Yes	Yes	No
LMC	LRC	Belize		Yes	Yes
LIC	AFR	Benin	No	No	No
NOC	OTH	Bermuda		Yes	
LIC	SAR	Bhutan	No	No	No
LMC	LRC	Bolivia	Yes	Yes	Yes
LMC	ECA	Bosnia and Herzegovina	Yes	No	No
UMC	AFR	Botswana	No	No	No
UMC	LRC	Brazil	Yes	Yes	Yes
NOC	OTH	Brunei			
LMC	ECA	Bulgaria	Yes	No	No
LIC	AFR	Burkina Faso	No	Yes	No
LIC	AFR	Burundi	No	No	No
LIC	EAP	Cambodia	Yes		Yes
LIC	AFR	Cameroon	Yes	Yes	Yes
OEC	OTH	Canada	Yes		
LMC	AFR	Cape Verde	Yes	Yes	Yes
NOC	OTH	Cayman Islands			
LIC	AFR	Central African Republic	No	No	No
LIC	AFR	Chad	No	Yes	No
NOC	OTH	Channel Islands			
UMC	LRC	Chile	Yes	Yes	Yes
LMC	EAP	China	No	No	No
LMC	LRC	Colombia	Yes	Yes	Yes
LIC	AFR	Comoros		Yes	Yes
LIC	AFR	Congo, Dem. Rep.	No	No	No
LIC	AFR	Congo, Rep.	No	No	No
UMC	LRC	Costa Rica	Yes	Yes	No
LIC	AFR	Cote d'Ivoire	Yes	Yes	Yes
UMC	ECA	Croatia	Yes	No	No
LMC	LRC	Cuba	No	No	No
NOC	OTH	Cyprus		No	No
UMC	ECA	Czech Republic	Yes	Yes	Yes
OEC	OTH	Denmark	Yes	Yes	Yes
LMC	MNA	Djibouti	No	No	No
UMC	LRC	Dominica	No	Yes	Yes
LMC	LRC	Dominican Republic	Yes	Yes	Yes
LMC	LRC	Ecuador	Yes		
LMC	MNA	Egypt, Arab Rep.	No	Yes	No
LMC	LRC	El Salvador	Yes		Yes
LIC	AFR	Equatorial Guinea	No	No	No
LIC	AFR	Eritrea	No	No	No
UMC	ECA	Estonia	Yes	Yes	Yes
LIC	AFR	Ethiopia	No	No	No
NOC	OTH	Faeroe Islands			
LMC	EAP	Fiji			
OEC	OTH	Finland	Yes		
OEC	OTH	France	Yes	No	No
NOC	OTH	French Polynesia			
UMC	AFR	Gabon	No	Yes	Yes
LIC	AFR	Gambia, The	No	Yes	No
LIC	ECA	Georgia	Yes	Yes	Yes
OEC	OTH	Germany	Yes	Yes	Yes
LIC	AFR	Ghana	Yes	Yes	Yes
OEC	OTH	Greece	Yes	Yes	No
NOC	OTH	Greenland			



Table A15: Extent of Reforms in Electricity Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation in Generation? (Yes/No)	Have Private Participation in Distribution? (Yes/No)
UMC	LRC	Grenada	No	Yes	Yes
NOC	OTH	Guam			
LMC	LRC	Guatemala	Yes	Yes	Yes
LIC	AFR	Guinea		Yes	Yes
LIC	AFR	Guinea-Bissau	No	No	No
LMC	LRC	Guyana	Yes	Yes	Yes
LIC	LRC	Haiti	No	No	No
LMC	LRC	Honduras	Yes	No	No
NOC	OTH	Hong Kong, China		Yes	
UMC	ECA	Hungary	Yes	Yes	Yes
OEC	OTH	Iceland		No	No
LIC	SAR	India	Yes	Yes	Yes
LIC	EAP	Indonesia	No	Yes	No
LMC	MNA	Iran, Islamic Rep.	No	No	No
LMC	MNA	Iraq	No	No	No
OEC	OTH	Ireland	Yes		
UMC	ECA	Isle of Man			
NOC	OTH	Israel	Yes	No	No
OEC	OTH	Italy	Yes	Yes	Yes
LMC	LRC	Jamaica	Yes	Yes	Yes
OEC	OTH	Japan		Yes	
LMC	MNA	Jordan	Yes	No	Yes
LMC	ECA	Kazakhstan	Yes	Yes	No
LIC	AFR	Kenya	Yes	Yes	No
LMC	EAP	Kiribati			
LIC	EAP	Korea, Dem. Rep.	No	Yes	No
OEC	OTH	Korea, Rep.	No	No	No
NOC	OTH	Kuwait	No	No	No
LIC	ECA	Kyrgyz Republic	Yes	No	No
LIC	EAP	Lao PDR	No		No
UMC	ECA	Latvia	Yes	No	No
UMC	MNA	Lebanon	No	No	No
LIC	AFR	Lesotho	No	No	No
LIC	AFR	Liberia	No	No	No
UMC	MNA	Libya	No	No	No
NOC	OTH	Liechtenstein			
UMC	ECA	Lithuania	Yes	Yes	Yes
OEC	OTH	Luxembourg	Yes	Yes	Yes
NOC	OTH	Macao, China			
LMC	ECA	Macedonia, FYR	Yes	No	No
LIC	AFR	Madagascar	No	No	No
LIC	AFR	Malawi	No	No	No
UMC	EAP	Malaysia	Yes	Yes	No
LMC	SAR	Maldives	No	No	No
LIC	AFR	Mali	Yes	Yes	Yes
UMC	MNA	Malta	Yes	No	No
LMC	EAP	Marshall Islands			
LIC	AFR	Mauritania	Yes	No	No
UMC	AFR	Mauritius	No	Yes	No
UMC	AFR	Mayotte			
UMC	LRC	Mexico	Yes	No	No
LMC	EAP	Micronesia, Fed. Sts.			
LIC	ECA	Moldova	Yes	No	Yes
NOC	OTH	Monaco			
LIC	EAP	Mongolia	Yes		No
LMC	MNA	Morocco	No	Yes	Yes
LIC	AFR	Mozambique	Yes	Yes	Yes
LIC	EAP	Myanmar	No		
LMC	AFR	Namibia	Yes	No	No
LIC	SAR	Nepal	No	No	No
OEC	OTH	Netherlands	Yes	Yes	Yes
NOC	OTH	Netherlands Antilles			
NOC	OTH	New Caledonia			
OEC	OTH	New Zealand	Yes	Yes	
LIC	LRC	Nicaragua	Yes	Yes	Yes
LIC	AFR	Niger	Yes	No	No
LIC	AFR	Nigeria	Yes	Yes	No
NOC	OTH	Northern Mariana Islands			
OEC	OTH	Norway	Yes	Yes	No
UMC	MNA	Oman	No	No	No
LIC	SAR	Pakistan	Yes	No	No
UMC	EAP	Palau			
UMC	LRC	Panama	Yes	Yes	Yes
LIC	EAP	Papua New Guinea			
LMC	LRC	Paraguay	Yes	No	No
LMC	LRC	Peru	Yes	Yes	Yes

Table A15: Extent of Reforms in Electricity Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation in Generation? (Yes/No)	Have Private Participation in Distribution? (Yes/No)
LMC	EAP	Philippines	Yes		Yes
UMC	ECA	Poland	Yes	Yes	Yes
OEC	OTH	Portugal	Yes	Yes	Yes
UMC	LRC	Puerto Rico		No	No
NOC	OTH	Qatar	No	Yes	
LMC	ECA	Romania	Yes	No	Yes
LMC	ECA	Russian Federation	Yes	Yes	Yes
LIC	AFR	Rwanda	Yes	No	No
LMC	EAP	Samoa			
NOC	OTH	San Marino			
LIC	AFR	Sao Tome and Principe	No	No	No
UMC	MNA	Saudi Arabia	No	No	No
LIC	AFR	Senegal	Yes	Yes	Yes
UMC	AFR	Seychelles			
LIC	AFR	Sierra Leone	No	No	No
NOC	OTH	Singapore	Yes		
UMC	ECA	Slovak Republic	Yes	No	Yes
NOC	OTH	Slovenia	Yes	No	No
LIC	EAP	Solomon Islands			
LIC	AFR	Somalia	No	No	No
LMC	AFR	South Africa	Yes	No	No
OEC	OTH	Spain	Yes	Yes	No
LMC	SAR	Sri Lanka	Yes	Yes	No
UMC	LRC	St. Kitts and Nevis	No	No	No
UMC	LRC	St. Lucia	No	Yes	Yes
LMC	LRC	St. Vincent and the Grenadines	No	No	No
LIC	AFR	Sudan	No	No	No
LMC	LRC	Suriname		Yes	
LMC	AFR	Swaziland	Yes	No	No
OEC	OTH	Sweden	Yes	Yes	Yes
OEC	OTH	Switzerland	No		
LMC	MNA	Syrian Arab Republic	No	No	No
LIC	ECA	Tajikistan	No	No	No
LIC	AFR	Tanzania	No	No	No
LMC	EAP	Thailand	No	Yes	No
LIC	AFR	Togo	Yes	Yes	Yes
LMC	EAP	Tonga			
UMC	LRC	Trinidad and Tobago	Yes	Yes	No
LMC	MNA	Tunisia	No	Yes	No
LMC	ECA	Turkey	Yes	Yes	Yes
LMC	ECA	Turkmenistan	No	No	No
LIC	AFR	Uganda	Yes	Yes	Yes
LIC	ECA	Ukraine	Yes	Yes	Yes
NOC	OTH	United Arab Emirates	No	Yes	
OEC	OTH	United Kingdom	Yes	Yes	Yes
OEC	OTH	United States	Yes	Yes	Yes
UMC	LRC	Uruguay	Yes	No	No
LIC	ECA	Uzbekistan	No	No	No
LMC	EAP	Vanuatu			
UMC	LRC	Venezuela, RB	Yes	Yes	Yes
LIC	EAP	Vietnam	No	No	No
NOC	OTH	Virgin Islands (U.S.)		No	No
LMC	MNA	West Bank and Gaza	No	Yes	No
LIC	MNA	Yemen, Rep.	No	No	No
LMC	ECA	Yugoslavia, FR (Serbia/Montenegro)	No	No	No
LIC	AFR	Zambia	Yes	No	Yes
LIC	AFR	Zimbabwe	No	No	No

Table A2: Extent of Reforms in Water Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
LIC	SAR	Afghanistan	No	No
LMC	ECA	Albania	Yes	Yes
LMC	MNA	Algeria	No	Yes
UMC	EAP	American Samoa		
NOC	OTH	Andorra		
LIC	AFR	Angola	No	No
UMC	LRC	Antigua and Barbuda	No	No
UMC	LRC	Argentina	Yes	Yes
LIC	ECA	Armenia	No	No
NOC	OTH	Aruba		
OEC	OTH	Australia		Yes
OEC	OTH	Austria	No	Yes
LIC	ECA	Azerbaijan	No	No
NOC	OTH	Bahamas, The		
NOC	OTH	Bahrain		
LIC	SAR	Bangladesh	No	No
UMC	LRC	Barbados	Yes	No
LMC	ECA	Belarus	No	
OEC	OTH	Belgium		Yes
LMC	LRC	Belize	Yes	
LIC	AFR	Benin	No	No
NOC	OTH	Bermuda		
LIC	SAR	Bhutan	No	No
LMC	LRC	Bolivia	Yes	Yes
LMC	ECA	Bosnia and Herzegovina	Yes	
UMC	AFR	Botswana	No	No
UMC	LRC	Brazil	No	Yes
NOC	OTH	Brunei		
LMC	ECA	Bulgaria	No	Yes
LIC	AFR	Burkina Faso	No	No
LIC	AFR	Burundi	No	No
LIC	EAP	Cambodia	No	Yes
LIC	AFR	Cameroon	No	Yes
OEC	OTH	Canada		
LMC	AFR	Cape Verde	Yes	Yes
NOC	OTH	Cayman Islands		
LIC	AFR	Central African Republic	No	No
LIC	AFR	Chad	No	No
NOC	OTH	Channel Islands		
UMC	LRC	Chile	Yes	Yes
LMC	EAP	China		Yes
LMC	LRC	Colombia	Yes	Yes
LIC	AFR	Comoros		
LIC	AFR	Congo, Dem. Rep.	No	No
LIC	AFR	Congo, Rep.	No	Yes
UMC	LRC	Costa Rica	Yes	No
LIC	AFR	Cote d'Ivoire	No	Yes
UMC	ECA	Croatia	Yes	Yes
LMC	LRC	Cuba		Yes
NOC	OTH	Cyprus	No	No
UMC	ECA	Czech Republic		Yes
OEC	OTH	Denmark	No	No
LMC	MNA	Djibouti	No	
UMC	LRC	Dominica	No	Yes
LMC	LRC	Dominican Republic	No	No
LMC	LRC	Ecuador	No	Yes
LMC	MNA	Egypt, Arab Rep.	No	No
LMC	LRC	El Salvador	No	No
LIC	AFR	Equatorial Guinea	No	No
LIC	AFR	Eritrea	No	No
UMC	ECA	Estonia	No	Yes
LIC	AFR	Ethiopia	No	No
NOC	OTH	Faeroe Islands		
LMC	EAP	Fiji		
OEC	OTH	Finland	No	Yes
OEC	OTH	France	No	Yes
NOC	OTH	French Polynesia		
UMC	AFR	Gabon	No	Yes
LIC	AFR	Gambia, The	No	No
LIC	ECA	Georgia	No	No
OEC	OTH	Germany	No	Yes
LIC	AFR	Ghana	Yes	No
OEC	OTH	Greece	No	Yes
NOC	OTH	Greenland		
UMC	LRC	Grenada	No	No

Table A2: Extent of Reforms in Water Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
NOC	OTH	Guam		
LMC	LRC	Guatemala	No	No
LIC	AFR	Guinea	No	No
LIC	AFR	Guinea-Bissau	No	No
LMC	LRC	Guyana	No	Yes
LIC	LRC	Haiti	No	
LMC	LRC	Honduras	Yes	Yes
NOC	OTH	Hong Kong, China		No
UMC	ECA	Hungary	No	Yes
OEC	OTH	Iceland	No	
LIC	SAR	India	No	Yes
LIC	EAP	Indonesia	No	Yes
LMC	MNA	Iran, Islamic Rep.	No	No
LMC	MNA	Iraq	No	No
OEC	OTH	Ireland	No	Yes
UMC	ECA	Isle of Man		
NOC	OTH	Israel		
OEC	OTH	Italy	Yes	Yes
LMC	LRC	Jamaica	Yes	No
OEC	OTH	Japan		
LMC	MNA	Jordan	No	No
LMC	ECA	Kazakhstan	No	Yes
LIC	AFR	Kenya	No	No
LMC	EAP	Kiribati		
LIC	EAP	Korea, Dem. Rep.		
OEC	OTH	Korea, Rep.		
NOC	OTH	Kuwait		
LIC	ECA	Kyrgyz Republic	No	
LIC	EAP	Lao PDR	Yes	No
UMC	ECA	Latvia	No	No
UMC	MNA	Lebanon	No	No
LIC	AFR	Lesotho	No	No
LIC	AFR	Liberia	No	No
UMC	MNA	Libya		No
NOC	OTH	Liechtenstein		
UMC	ECA	Lithuania	No	No
OEC	OTH	Luxembourg	No	
NOC	OTH	Macao, China		
LMC	ECA	Macedonia, FYR		No
LIC	AFR	Madagascar		No
LIC	AFR	Malawi	No	No
UMC	EAP	Malaysia	No	Yes
LMC	SAR	Maldives	No	No
LIC	AFR	Mali	Yes	Yes
UMC	MNA	Malta	No	
LMC	EAP	Marshall Islands		
LIC	AFR	Mauritania	No	No
UMC	AFR	Mauritius		No
UMC	AFR	Mayotte		
UMC	LRC	Mexico	Yes	Yes
LMC	EAP	Micronesia, Fed. Sts.		
LIC	ECA	Moldova		
NOC	OTH	Monaco		
LIC	EAP	Mongolia		No
LMC	MNA	Morocco	No	Yes
LIC	AFR	Mozambique	Yes	Yes
LIC	EAP	Myanmar		
LMC	AFR	Namibia	No	No
LIC	SAR	Nepal	No	No
OEC	OTH	Netherlands	No	Yes
NOC	OTH	Netherlands Antilles		
NOC	OTH	New Caledonia		
OEC	OTH	New Zealand		Yes
LIC	LRC	Nicaragua	Yes	No
LIC	AFR	Niger	Yes	Yes
LIC	AFR	Nigeria	No	No
NOC	OTH	Northern Mariana Islands		
OEC	OTH	Norway		
UMC	MNA	Oman		No
LIC	SAR	Pakistan	No	No
UMC	EAP	Palau	No	No
UMC	LRC	Panama	Yes	No
LIC	EAP	Papua New Guinea	No	No
LMC	LRC	Paraguay	Yes	No
LMC	LRC	Peru	Yes	No
LMC	EAP	Philippines	Yes	Yes

Table A2: Extent of Reforms in Water Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
UMC	ECA	Poland	No	Yes
OEC	OTH	Portugal		Yes
UMC	LRC	Puerto Rico		
NOC	OTH	Qatar		Yes
LMC	ECA	Romania	Yes	Yes
LMC	ECA	Russian Federation		Yes
LIC	AFR	Rwanda	No	No
LMC	EAP	Samoa		
NOC	OTH	San Marino		
LIC	AFR	Sao Tome and Principe	No	No
UMC	MNA	Saudi Arabia	No	Yes
LIC	AFR	Senegal	No	No
UMC	AFR	Seychelles		
LIC	AFR	Sierra Leone	No	No
NOC	OTH	Singapore		No
UMC	ECA	Slovak Republic	No	Yes
NOC	OTH	Slovenia	No	Yes
LIC	EAP	Solomon Islands		
LIC	AFR	Somalia		
LMC	AFR	South Africa	No	Yes
OEC	OTH	Spain	Yes	Yes
LMC	SAR	Sri Lanka	No	No
UMC	LRC	St. Kitts and Nevis	No	No
UMC	LRC	St. Lucia	No	No
LMC	LRC	St. Vincent and the Grenadines	No	No
LIC	AFR	Sudan	No	No
LMC	LRC	Suriname		
LMC	AFR	Swaziland	No	No
OEC	OTH	Sweden	No	
OEC	OTH	Switzerland		
LMC	MNA	Syrian Arab Republic	No	No
LIC	ECA	Tajikistan	No	No
LIC	AFR	Tanzania	No	No
LMC	EAP	Thailand		Yes
LIC	AFR	Togo	No	No
LMC	EAP	Tonga		
UMC	LRC	Trinidad and Tobago	No	No
LMC	MNA	Tunisia	No	No
LMC	ECA	Turkey		Yes
LMC	ECA	Turkmenistan	No	No
LIC	AFR	Uganda	No	No
LIC	ECA	Ukraine		
NOC	OTH	United Arab Emirates		
OEC	OTH	United Kingdom	Yes	Yes
OEC	OTH	United States		Yes
UMC	LRC	Uruguay	Yes	Yes
LIC	ECA	Uzbekistan		
LMC	EAP	Vanuatu		
UMC	LRC	Venezuela, RB	No	No
LIC	EAP	Vietnam	No	Yes
NOC	OTH	Virgin Islands (U.S.)		
LMC	MNA	West Bank and Gaza	No	No
LIC	MNA	Yemen, Rep.	No	No
LMC	ECA	Yugoslavia, FR (Serbia/Montenegro)	No	Yes
LIC	AFR	Zambia	Yes	No
LIC	AFR	Zimbabwe	No	No

**Table A3: Extent of Reforms in ICT Sector as of 2004**

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
LIC	SAR	Afghanistan	Yes	No
LMC	ECA	Albania	Yes	No
LMC	MNA	Algeria	Yes	No
UMC	EAP	American Samoa	No	
NOC	OTH	Andorra	No	No
LIC	AFR	Angola	Yes	Yes
UMC	LRC	Antigua and Barbuda	No	No
UMC	LRC	Argentina	Yes	Yes
LIC	ECA	Armenia	No	Yes
NOC	OTH	Aruba	No	
OEC	OTH	Australia	Yes	Yes
OEC	OTH	Austria	Yes	Yes
LIC	ECA	Azerbaijan	No	No
NOC	OTH	Bahamas, The	Yes	No
NOC	OTH	Bahrain	Yes	Yes
LIC	SAR	Bangladesh	Yes	No
UMC	LRC	Barbados	Yes	Yes
LMC	ECA	Belarus	No	No
OEC	OTH	Belgium	Yes	Yes
LMC	LRC	Belize	Yes	Yes
LIC	AFR	Benin	Yes	No
NOC	OTH	Bermuda	No	
LIC	SAR	Bhutan	Yes	No
LMC	LRC	Bolivia	Yes	Yes
LMC	ECA	Bosnia and Herzegovina	Yes	Yes
UMC	AFR	Botswana	Yes	No
UMC	LRC	Brazil	Yes	Yes
NOC	OTH	Brunei	Yes	No
LMC	ECA	Bulgaria	Yes	Yes
LIC	AFR	Burkina Faso	Yes	No
LIC	AFR	Burundi	Yes	No
LIC	EAP	Cambodia	No	No
LIC	AFR	Cameroon	Yes	No
OEC	OTH	Canada	Yes	Yes
LMC	AFR	Cape Verde	Yes	Yes
NOC	OTH	Cayman Islands	No	
LIC	AFR	Central African Republic	Yes	Yes
LIC	AFR	Chad	Yes	No
NOC	OTH	Channel Islands	No	
UMC	LRC	Chile	Yes	Yes
LMC	EAP	China	No	Yes
LMC	LRC	Colombia	Yes	Yes
LIC	AFR	Comoros	No	No
LIC	AFR	Congo, Dem. Rep.	Yes	No
LIC	AFR	Congo, Rep.	No	No
UMC	LRC	Costa Rica	Yes	No
LIC	AFR	Cote d'Ivoire	Yes	Yes
UMC	ECA	Croatia	Yes	Yes
LMC	LRC	Cuba	No	Yes
NOC	OTH	Cyprus	Yes	No
UMC	ECA	Czech Republic	Yes	Yes
OEC	OTH	Denmark	Yes	Yes
LMC	MNA	Djibouti	No	No
UMC	LRC	Dominica	No	Yes
LMC	LRC	Dominican Republic	Yes	Yes
LMC	LRC	Ecuador	Yes	No
LMC	MNA	Egypt, Arab Rep.	Yes	No
LMC	LRC	El Salvador	Yes	Yes
LIC	AFR	Equatorial Guinea	No	Yes
LIC	AFR	Eritrea	Yes	No
UMC	ECA	Estonia	Yes	Yes
LIC	AFR	Ethiopia	Yes	No
NOC	OTH	Faeroe Islands	No	
LMC	EAP	Fiji	No	Yes
OEC	OTH	Finland	Yes	Yes
OEC	OTH	France	Yes	Yes
NOC	OTH	French Polynesia	No	
UMC	AFR	Gabon	Yes	No
LIC	AFR	Gambia, The	Yes	No
LIC	ECA	Georgia	Yes	Yes
OEC	OTH	Germany	Yes	Yes
LIC	AFR	Ghana	Yes	Yes
OEC	OTH	Greece	Yes	Yes

Table A3: Extent of Reforms in ICT Sector as of 2004

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
NOC	OTH	Greenland	No	
UMC	LRC	Grenada	Yes	Yes
NOC	OTH	Guam	No	
LMC	LRC	Guatemala	Yes	Yes
LIC	AFR	Guinea	Yes	Yes
LIC	AFR	Guinea-Bissau	Yes	Yes
LMC	LRC	Guyana	Yes	Yes
LIC	LRC	Haiti	Yes	Yes
LMC	LRC	Honduras	Yes	No
NOC	OTH	Hong Kong, China	No	
UMC	ECA	Hungary	Yes	Yes
OEC	OTH	Iceland	Yes	Yes
LIC	SAR	India	Yes	Yes
LIC	EAP	Indonesia	Yes	Yes
LMC	MNA	Iran, Islamic Rep.	No	Yes
LMC	MNA	Iraq	No	No
OEC	OTH	Ireland	Yes	Yes
UMC	ECA	Isle of Man	No	
NOC	OTH	Israel	No	Yes
OEC	OTH	Italy	Yes	Yes
LMC	LRC	Jamaica	Yes	Yes
OEC	OTH	Japan	No	Yes
LMC	MNA	Jordan	Yes	Yes
LMC	ECA	Kazakhstan	No	Yes
LIC	AFR	Kenya	Yes	No
LMC	EAP	Kiribati	No	Yes
LIC	EAP	Korea, Dem. Rep.	No	
OEC	OTH	Korea, Rep.	Yes	Yes
NOC	OTH	Kuwait	No	No
LIC	ECA	Kyrgyz Republic	Yes	Yes
LIC	EAP	Lao PDR	No	Yes
UMC	ECA	Latvia	Yes	Yes
UMC	MNA	Lebanon	No	No
LIC	AFR	Lesotho	Yes	Yes
LIC	AFR	Liberia	No	No
UMC	MNA	Libya	No	No
NOC	OTH	Liechtenstein	Yes	No
UMC	ECA	Lithuania	Yes	Yes
OEC	OTH	Luxembourg	Yes	Yes
NOC	OTH	Macao, China	No	
LMC	ECA	Macedonia, FYR	No	Yes
LIC	AFR	Madagascar	Yes	Yes
LIC	AFR	Malawi	Yes	No
UMC	EAP	Malaysia	Yes	Yes
LMC	SAR	Maldives	Yes	Yes
LIC	AFR	Mali	Yes	Yes
UMC	MNA	Malta	Yes	Yes
LMC	EAP	Marshall Islands	No	Yes
LIC	AFR	Mauritania	Yes	Yes
UMC	AFR	Mauritius	Yes	Yes
UMC	AFR	Mayotte	No	
UMC	LRC	Mexico	Yes	Yes
LMC	EAP	Micronesia, Fed. Sts.	No	No
LIC	ECA	Moldova	Yes	No
NOC	OTH	Monaco	No	Yes
LIC	EAP	Mongolia	Yes	Yes
LMC	MNA	Morocco	Yes	Yes
LIC	AFR	Mozambique	Yes	Yes
LIC	EAP	Myanmar	No	No
LMC	AFR	Namibia	Yes	No
LIC	SAR	Nepal	Yes	No
OEC	OTH	Netherlands	Yes	Yes
NOC	OTH	Netherlands Antilles	No	
NOC	OTH	New Caledonia	No	
OEC	OTH	New Zealand	No	Yes
LIC	LRC	Nicaragua	Yes	Yes
LIC	AFR	Niger	No	Yes
LIC	AFR	Nigeria	Yes	No
NOC	OTH	Northern Mariana Islands	No	
OEC	OTH	Norway	Yes	Yes
UMC	MNA	Oman	Yes	No
LIC	SAR	Pakistan	Yes	Yes
UMC	EAP	Palau	No	
UMC	LRC	Panama	Yes	Yes
LIC	EAP	Papua New Guinea	Yes	No

**Table A3: Extent of Reforms in ICT Sector as of 2004**

Income Level (1)	Geographic Region (2)	Country Name	Have Independent Regulatory Agency? (Yes/ No)	Have Private Participation? (Yes/No)
LMC	LRC	Paraguay	Yes	No
LMC	LRC	Peru	Yes	Yes
LMC	EAP	Philippines	Yes	Yes
UMC	ECA	Poland	Yes	Yes
OEC	OTH	Portugal	Yes	Yes
UMC	LRC	Puerto Rico	No	
NOC	OTH	Qatar	No	Yes
LMC	ECA	Romania	Yes	Yes
LMC	ECA	Russian Federation	No	Yes
LIC	AFR	Rwanda	Yes	Yes
LMC	EAP	Samoa	No	No
NOC	OTH	San Marino	No	Yes
LIC	AFR	Sao Tome and Principe	No	Yes
UMC	MNA	Saudi Arabia	Yes	Yes
LIC	AFR	Senegal	Yes	Yes
UMC	AFR	Seychelles	No	Yes
LIC	AFR	Sierra Leone	No	No
NOC	OTH	Singapore	Yes	Yes
UMC	ECA	Slovak Republic	Yes	Yes
NOC	OTH	Slovenia	Yes	Yes
LIC	EAP	Solomon Islands	No	Yes
LIC	AFR	Somalia	No	Yes
LMC	AFR	South Africa	Yes	Yes
OEC	OTH	Spain	Yes	Yes
LMC	SAR	Sri Lanka	Yes	Yes
UMC	LRC	St. Kitts and Nevis	No	
UMC	LRC	St. Lucia	Yes	Yes
LMC	LRC	St. Vincent and the Grenadines	Yes	Yes
LIC	AFR	Sudan	Yes	Yes
LMC	LRC	Suriname	Yes	No
LMC	AFR	Swaziland	No	No
OEC	OTH	Sweden	Yes	Yes
OEC	OTH	Switzerland	Yes	Yes
LMC	MNA	Syrian Arab Republic	No	No
LIC	ECA	Tajikistan	No	Yes
LIC	AFR	Tanzania	Yes	Yes
LMC	EAP	Thailand	Yes	
LIC	AFR	Togo	Yes	No
LMC	EAP	Tonga	No	No
UMC	LRC	Trinidad and Tobago	Yes	No
LMC	MNA	Tunisia	Yes	No
LMC	ECA	Turkey	Yes	No
LMC	ECA	Turkmenistan	No	No
LIC	AFR	Uganda	Yes	Yes
LIC	ECA	Ukraine	No	No
NOC	OTH	United Arab Emirates	No	Yes
OEC	OTH	United Kingdom	Yes	Yes
OEC	OTH	United States	Yes	Yes
UMC	LRC	Uruguay	Yes	No
LIC	ECA	Uzbekistan	No	No
LMC	EAP	Vanuatu	No	Yes
UMC	LRC	Venezuela, RB	Yes	Yes
LIC	EAP	Vietnam	No	No
NOC	OTH	Virgin Islands (U.S.)	No	
LMC	MNA	West Bank and Gaza	No	
LIC	MNA	Yemen, Rep.	No	No
LMC	ECA	Yugoslavia, FR (Serbia/Montenegro)	No	Yes
LIC	AFR	Zambia	Yes	No
LIC	AFR	Zimbabwe	Yes	No



Notes to tables:

(1) The income level classification was made according to the WDI criteria :

- \* LIC: Low-income economies. Those in which 2001 GNI per capita was \$745 or less.
- \* LMC: Lower-middle-income economies. Those in which 2001 GNI per capita was between \$745 and \$2,975.
- \* UMC: Upper-middle-income economies. Those in which 2001 GNI per capita was between \$2,976 and \$9,205.
- \* OEC: High-income OECD. OECD countries in which 2001 GNI per capita was \$9,206 or more.
- \* NOC: High-income non-OECD. Non-OECD countries in which 2001 GNI per capita was \$9,206 or more.

(2) Composition of regions based on the World Bank's analytical regions for low and middle-income economies:

- \* EAP: East Asia and Pacific
- \* ECA: Europe and Central Asia
- \* LCR: Latin America and Caribbean
- \* MNA: Middle East and North Africa
- \* SAR: South Asia
- \* AFR: Sub-Saharan Africa

High income economies were classified as OTH