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PRIVATELY FINANCED INFRASTRUCTURE PROJECTS

Draft chapters of a legislative guide on privately financed infrastructure projects

Report of the Secretary-General

Addendum

Chapter II. SECTOR STRUCTURE AND REGULATION*

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LEGISLATIVE RECOMMENDATIONS

Market structure and competition

(1) In devising programmes to promote private sector investment in infrastructure development and operation, it is useful to review the assumptions under which State monopolies had been established, with a view to

(a) identifying the activities that still maintain the characteristics of natural monopoly and

(b) assessing the feasibility and desirability of introducing competition in other infrastructure sectors or segments thereof (see paras. 1-13).

Abolition of legal barriers and obstacles

(2) The opening of infrastructure sectors to private participation and competition requires the abolition of rules that prohibit private participation or new entry and the removal of other legal impediments to competition (see paras. 15-16).

Restructuring infrastructure sectors

(3) When formulating competition policies for individual infrastructure sectors, it is desirable to consider the possible need for, and the possible cost entailed by, separating the provision of infrastructure services from the operation of the underlying physical infrastructure (see paras. 18-21).

Transitional measures

(4) Where it is not advisable to introduce competition at once, the law may provide for temporary exclusivity rights, limitation in the number of concessionaires or other restrictions on competition. The scope and duration of such restrictions should normally be limited to the minimum required. The law may provide for periodic revisions of such restrictions with a view to ascertaining whether the conditions that justified them at the time when they were introduced still prevail (see paras. 33-34).

(5) Where the reform requires the restructuring or privatization of the incumbent public service provider, it is advisable to remove, restrict or shorten its exclusive rights or monopolies prior to the privatization (see para. 35).

Controlling residual monopolies

(6) Where the right to provide a specific service is restricted, it is advisable to award the pertinent licences or concessions through competitive selection procedures and to require that exclusive licences or concessions be rebid from time to time. The period between the initial award and the subsequent rebidding should take into account the level of investment and other risks faced by the licensee or concessionaire (see paras. 37-38).

(7) Where economically and technically feasible, it may be useful to divide the territory of residual monopolies into smaller regions (see para. 40).

Conditions for the award of licences and concessions

(8) Where entry to the market is not restricted, the role of the licensing authority may be only to ascertain whether the new entrant meets the basic legal requirements to provide the services. Where the number of entrants is limited, it is advisable to use a competitive selection procedure for the award of the single or multiple licences offered (see paras. 50).

Interconnection and access regulation

(9) Service providers should have the right to use the infrastructure of the network operator on conditions that are not less favourable than those granted by the network operator to its own services or to competing providers (see paras. 51-54).

Price and profit regulation

(10) Where monopolistic conditions prevail or where markets are not yet truly competitive, it may be desirable to introduce a price or profit regulation mechanism (see paras. 55-56).

(11) Price regulation may be limited to non-competitive market segments, while leaving prices in competitive segments free. It may be useful to set only the broad pricing principles in legislation while leaving their actual implementation to the regulatory body concerned and the terms and conditions of licenses or concessions. It is advisable to provide a mechanism for revision of the tariff formula (see para. 57).

Subsidies and universal service

(12) Where service providers are required to offer specific services without compensation or below cost, it may be necessary to consider appropriate forms of direct compensation (see para. 62).

Performance standards

(13) Service providers should be required to meet technical and service standards, which should be provided in detail, as appropriate, in implementing decrees, concessions, licences or other documents (see para. 63).

Independence and autonomy of regulatory bodies

(14) It is advisable to consider separating the regulatory functions from operational ones by removing any regulatory functions that may still be vested with public service providers and entrust them to a legally and functionally independent body (see paras. 67-69).

(15) It is further advisable to consider granting the regulatory body a sufficient level of autonomy to ensure that its decisions are made on technical rather than political grounds (see paras. 70-71).

Sectoral attributions of regulatory bodies

(16) It is advisable to consider the possible advantages and disadvantages, including cost considerations, of organizing regulatory responsibilities on a sectoral or rather cross-sectoral basis (see paras. 72-73).

Mandate of regulatory bodies

(17) It is useful for the law setting up a regulatory mechanism to stipulate a number of general objectives that should guide the actions of regulatory bodies (e.g. the promotion of competition, the protection of users' interests, the satisfaction of demand, the efficiency of the sector or the public service providers, their financial viability, the safeguarding of the public interest or of public service obligations, and the protection of investors' rights) (see para. 74).

Powers of regulatory bodies

(18) The law should set out with clarity whether the regulatory bodies have decision-making powers or purely advisory powers. The law should further specify which powers are vested with other governmental agencies and which ones with the regulatory body (see paras. 75-78).

Composition of the regulatory body

(19) Where the regulatory body takes the form of a regulatory commission, it may be advisable to keep the number of its members small (see para. 80).

(20) It may be useful to involve different institutions in the process leading to the nomination of the members of the regulatory commission and to require certain minimal professional qualifications, as well as the absence of conflicts of interest that might disqualify them for the function (see para. 81).

Disclosure requirements

(21) It may be desirable for the law to spell out certain specific obligations of public service providers, including the obligation to provide the regulatory body accurate and timely information on the operation of the company, and to grant the regulatory body specific enforcement rights. They may include enquiries and audits, including detailed performance

and compliance audits; sanctions for non-cooperative companies; power to issue orders or at least to initiate the issuance of orders; or penalty procedures to enforce disclosure (see paras. 84-86).

Procedures

(22) Legislation should require the publication of regulatory procedures, which should be objective and clear. Legislation should further require that regulatory decisions state the reasons on which they are based and be accessible to interested parties through publication or other means (see paras. 87-88).

(23) The regulatory process may include consultation procedures for major decisions or recommendations. To enhance transparency, comments or recommendations resulting from the consultation process may have to be published or made publicly available (see para. 89).

Sanctions

(24) The law may give the regulatory body adequate enforcement powers, including the power to modify a licence, concession or authorization, or to suspend it or withdraw it; the power to set the terms of contracts between public service providers (e.g. interconnection or access agreement); to initiate the break-up of a dominant public service provider; to issue orders to public service providers; to impose civil penalties including penalties for any delay in implementing the regulatory body’s decision, and to initiate judicial proceedings (see para. 94).

Appeals

(25) It is advisable for the law to establish appeal procedures against decisions of a regulatory body. The law may limit the causes that give ground to appeals in order to prevent frivolous or dilatory appeals (see para. 95).

NOTES ON LEGISLATIVE RECOMMENDATIONS

A. Market structure and competition

1. In most of the countries that have recently built new infrastructure through private investment, privately financed infrastructure projects are not only an alternative for traditional financing of public infrastructure, but an important tool for meeting national infrastructure needs. Therefore, the conditions under which individual projects are executed have been typically devised in the light of the overall policy of the host Government for the infrastructure sector concerned. Essential elements of national policies include the level of competition sought for each infrastructure sector, the way in which the sector is structured and the mechanisms used to ensure adequate functioning of infrastructure markets.

2. National policies to promote private investment in infrastructure are often accompanied by measures destined to introduce competition between public service providers or to prevent abuse of monopolistic conditions, where competition is not feasible. Competition has been found to reduce costs and increase the productivity of infrastructure investment, as well as to enhance responsiveness to the needs of the customers. Through the lower costs and better quality obtained, competition typically improves the business environment in all sectors of the economy, thus increasing the country's competitiveness. Private participation has further been found to foster the development of modern management techniques and innovative solutions. Where it involves companies from other countries, it can make an important contribution to foreign direct investment and the international transfer of know-how.

1. Elements for the analysis of infrastructure markets

3. The scope for competition varies considerably in different infrastructure sectors. While certain sectors have been successfully opened to free competition, other sectors, or segments thereof, have the characteristics of natural monopolies, in which case open competition is usually not an economically viable alternative (see paras. 5-9). In order to analyse monopolistic conditions (including presence of a dominant position) and to determine the potential for competition, it is necessary to assess carefully the relevant market, taking into account, as appropriate, the degree to which some markets may be interrelated or segmemented. For instance, reforms in the power and gas sectors have in some countries been considered together in view of the significant degree of substitutability (and thus competition) between these two sources of energy. The same holds true for transport, where different modes often compete with each other; the relevant market may, for example, be the market for freight transport, including rail, road, water and air freight, as the case may be.

4. The measures that may be required to promote competition in various infrastructure sectors will essentially depend on the prevailing market structure (see paras. 22-32). Key elements that characterize a particular market structure include barriers to entry of competitors (e.g. economic, legal, technical or other), the degree of vertical or horizontal integration, the number of companies operating in the market as well as the availability of substitute products or services. Together, these elements determine the degree to which a market is competitive or not. Therefore, their analysis is crucial to develop strategies for policy intervention.

2. Competition policy and monopolies

5. In devising programmes to promote private sector investment in infrastructure development and operation, a number of Governments have found it useful to review the assumptions under which State monopolies had been established with a view to (a) identifying those activities that still maintain the characteristics of natural monopoly and (b) assessing the feasibility and desirability of introducing competition in certain infrastructure sectors.

6. The term monopoly in the strict sense refers to a market with only one supplier. However, pure monopoly and perfect competition mark two ends of a spectrum. Most markets for commodities or services are characterized by a degree of competition that lies between those two ends. Generally, monopolies can be classified as natural monopolies, legal monopolies and *de facto* monopolies; each of them may require different policy approaches:

(a) *Natural monopolies* are those economic activities that allow a single provider to supply the whole market at a lower cost than two or more providers. This situation is typical for economic activities that entail large investment and high fixed costs but decreasing costs of producing an additional unit of services (e.g. an additional cubic metre of water) to attend an increase of demand. Natural monopolies tend to exhibit large up-front fixed investment requirements which make it difficult for a new company, lacking comparable economies of scale, to enter the market and undercut the incumbent;

(b) *Legal monopolies* are established by law and may cover sectors or activities that are natural monopolies or not. In the latter category, monopolies exist solely because competition is prohibited. The developments that had led many countries to the establishment of legal monopolies were often based on the consideration that national infrastructure needs, both in terms of quality and quantity, could not be adequately met by leaving infrastructure to the free market;

(c) Lastly, *de facto monopolies* may not necessarily be the result of economic fundamentals nor of legal provisions but simply the absence of competition resulting, for example, from the integrated nature of the infrastructure company and its ability to control essential facilities to the exclusion of other suppliers.

7. From a policy perspective, monopolies (of whatever form) pose a variety of problems. A service provider operating under monopolistic conditions is typically able to fix prices. The surplus profit that results from insufficient competition is called a “monopoly rent”. Monopoly rents may be perceived as being unfair, because they imply a transfer of wealth from consumers to producers. Furthermore, monopoly rents may be economically questionable, because they impose a net loss of welfare to the economy. This loss of welfare, which is sometimes called a “deadweight loss”, is the result of three main reasons:

(a) Monopoly rents are obtained through inflated prices which result from artificially low production (static inefficiency);

(b) Lack of competition reduces the rate of innovation and efforts to reduce production costs (dynamic inefficiency); and

(c) Particularly in infrastructure sectors, there may be secondary effects on other markets (e.g. lack of competition and efficiency in telecommunications has negative repercussions on, or increases the costs for, the economy at large).

8. Despite their negative economic effects, monopolies and other regulatory barriers have sometimes been maintained in the absence of natural monopoly conditions. One of the reasons cited for retaining monopolies is that they may be used to foster certain policy objectives, such as ensuring the provision of services in certain regions or to certain categories of consumers at a low prices or even below cost. Examples of services for which the price may not cover costs include lifeline telephone, water or power service, discounted transport for certain categories of travellers (e.g. school children, senior citizens), as well as other services for low-income or rural users. A monopolistic service provider is able to finance the provision of such services through internal “cross-subsidies” from other profitable services provided in other regions or to other categories of consumers. However, the experience of a number of countries has shown that cross-subsidies may be costly and poorly targeted; furthermore, they are usually not transparent and bypass the normal budget allocation mechanisms allowing to fund expenditures that may otherwise not pass public scrutiny. Some countries have found that other policy instruments, including direct subsidies payable to the service provider, were better suited to ensure the provision of those services and did not rely on a continued monopoly situation.

9. Another reason sometimes cited for retaining legal monopolies in the absence of natural monopoly conditions is to make the sector more attractive to private investors. Private operators may insist on being granted exclusivity rights to provide a certain service so as to reduce the commercial risk of their investment. However, this objective has to be balanced against the interests of consumers and the economy as a whole. Alternative, and socially less costly, options to make the environment more attractive to investors include measures aimed at enhancing transparency and reducing uncertainty related to the regulatory regime. For those countries where the granting of exclusivity rights is found to be needed as an incentive to private investment, it may be advisable to consider restricting competition on a temporary basis only (see further chapter IV, “Conclusion and general terms of the project agreement”, paras. 17-21).

3. Scope for competition in different sectors

10. Until recently, monopolistic conditions prevailed in most infrastructure sectors either because the sector was a natural monopoly or because regulatory barriers or other factors (e.g. vertically integrated structure of public service providers) prevented effective competition. However, rapid technological progress has challenged the economic fundamentals of many former natural monopolies. These changes have in many cases resulted in a gap between the economically desirable market structure and the legislation in force. This has prompted legislators in a number of countries to extend competition to infrastructure sectors by adopting legislation that abolishes monopolies and other barriers to entry, changes the way infrastructure sectors are organized and establishes a regulatory framework fostering effective competition. The extent to which this can be done depends on the sector, the size of the market and other factors.

11. In telecommunications, for instance, new telecommunications laws have been adopted in a number of countries largely as a result of the fast-changing technology in this sector. New wireless technology not only makes mobile telecommunications services possible, but is also increasingly competing with fixed (wireline) services. Fibre optic networks, cable television networks, data transmission over power lines, global satellite systems, increasing computing power, improved data

compression techniques, convergence between communications, broadcasting and data processing are further contributing to the breakdown of traditional monopolies and modes of service provision. As a result of these and other changes, telecommunications services have become competitive and countries are increasingly opening up this sector to free entry, while limiting access only to services that require the use of scarce public resources, such as radio frequency. In this context, market structure and competition rules need to be flexible enough to adapt to changing circumstances, which increasingly requires technologically neutral approaches.

12. In the energy sector, combined-cycle gas turbines and other technologies allowing for efficient power production on smaller scales and standardization in manufacturing of power generation equipment have led several countries to change the monopolistic and vertically integrated structure of domestic electricity markets. Increasing computing power and improved data processing software make it easier to dispatch electricity across a grid and to organize power pools and other mechanisms to access the network and trade in electricity. Like telecommunications, electricity is becoming a tradable commodity.

13. Technology is in many cases also at the origin of changing patterns in the transport sector: the introduction of containers and other innovations, such as satellite communications allowing to track shipments across the globe, have had profound consequences on shipping, port management, as well as rail and truck transport, while fostering the development of intermodal transport. This has led to faster, cheaper and more competitive transport modes and to the removal of transport sector monopolies that often prevailed.

B. Legislative measures to implement sectoral reform

14. Many countries have found that the introduction of private participation in infrastructure affords a unique opportunity to reconsider the existing market structure and regulatory setup. Legislative action typically begins with the abolition of rules that prohibit private participation in infrastructure and the removal of all other legal impediments to competition. Furthermore, where a decision has been made to open certain infrastructure sectors to competition, a number of countries have introduced changes in market structure or competition rules before, or in parallel with, the opening of the sector to private participation1/

[1] See *World Development Report 1994. Infrastructure for Development*, World Bank, Washington, D.C., 1994, and in particular chapter 3 “Using markets in infrastructure provision” (pp. 52-72).

1. Abolition of legal barriers and obstacles

15. Monopolistic situations that are not, or have ceased to be, the result of economic and technological fundamentals, but of legal prohibitions, are the easiest targets for reform. Introduction of competition in these activities is relatively simple and may not require the restructuring of the incumbent monopolistic public service provider. The main action needed is the removal of the legal barriers, which may need to be reinforced by competition rules (such as the prohibition of collusion, cartels, predatory pricing or other unfair trading practices) and regulatory oversight (see paras. 41-95).

16. For a number of activities, however, effective competition may not be obtained through the mere removal of legislated barriers without legislative measures to restructure the sector concerned. In some countries, monopolies have been temporarily maintained only for the time needed to facilitate a gradual, more orderly and socially acceptable transition from a monopolistic to a competitive market structure.

2. Restructuring infrastructure sectors

17. Even in the absence of economic or legal barriers to entry, vertically or horizontally integrated infrastructure companies may be able to prevent effective competition. Integrated companies may try to extend their monopolistic powers in one market or market segment to other markets or segments in order to extract monopoly rents in these activities as well. Separating the monopoly element (such as the grid in many networks) from competitive elements in a sector may require the unbundling of vertically or horizontally integrated activities. Unbundling also facilitates the regulation of the residual and less complex monopolistic segments. It should be noted that many unbundling options have only recently become available to policy makers as a result of technological progress.

(a) Vertical and horizontal unbundling

18. Vertical unbundling occurs when upstream activities are separated from downstream ones, for example by separating production, transmission, distribution and supply activities in the power sector. The objective is typically to separate key network components or essential facilities from the competitive segments of the business.

19. Horizontal unbundling occurs when one or more parallel activities of a monopolist public service provider are divided among separate companies, which may either compete directly with each other in the market (as is increasingly the case with power production) or retain a monopoly over a smaller territory (as may be the case with power distribution). Horizontal unbundling refers both to a single activity or segment being broken up (as in the power sector examples) and to substitutes being organized separately in one or more markets (as in the case of separation of cellular services from fixed-line telephony, for example).

20. By and large, infrastructure services tend to be competitive, whereas the underlying physical infrastructure often has monopolistic characteristics. By separating the two, many countries have found to have been able to design new and more efficient sector solutions. Unbundling allows the introduction of competition in segments of the sector that are not natural monopolies. The remaining monopolistic activities will either be exercised by a company (e.g. a power transmission or

railtrack company) whose activities will need to be regulated because they include a monopolistic segment. Unbundling allows the State and the regulatory body to adopt different tools and approaches for activities that are competitive or a natural monopoly.

21. However, the costs and benefits of these changes need to be carefully considered. Costs may include the costs associated with the change itself (e.g. transaction and transition costs, including the loss incurred by companies which lose benefits or protected positions as a result of the new scheme) and the costs resulting from the operation of the new scheme, in particular higher coordination costs (e.g. more complicated network planning, technical standardization, as well as regulation). Benefits, on the other hand, may include new investments, better or new services, more choice, lower economic costs. Costs and benefits will also vary depending on how the changes are implemented.

(c) Recent experience in major infrastructure sectors

(i) Telecommunications

22. Unbundling has not been too common in the telecommunications sector. In some countries, long distance and international services were separated from local services; competition was introduced in the former, while the latter remained largely monopolistic. In some of these countries, this trend is now being reversed with local telephone companies being allowed to provide long-distance services and long-distance companies being allowed to provide local services, all in a competitive context. Mandatory open access rules are common in the telecommunications sector, where the historic public service provider typically provides services in competition with other providers while controlling essential parts of the network.

(ii) Electricity

23. Most new electricity laws call for the unbundling of the power sector by separating generation, transmission and distribution. In some cases, supply is further distinguished from distribution in order to leave only the monopolistic activity (i.e. the transport of electricity for public use over wires) under a monopoly. In these countries, the transmission and distribution companies do not buy or sell electricity but only transport it against a regulated fee. Trade in electricity occurs between producers or brokers on the one hand and users on the other. In some of these countries, competition is limited to large users only or is being phased in gradually.

24. Where countries have opted for the introduction of competition in the power and gas sectors, new legislation has organized the new market structure, stipulating to what extent the market had to be unbundled (sometimes including the number of public service providers to be created out of the incumbent monopoly), or removed barriers to new entry. The same energy laws have also established specific competition rules, whether structural (e.g. prohibition of cross-ownership between companies in different segments of the market, such as production, transmission and distribution, or gas and electricity sale and distribution) or behavioural (e.g. third party access rules, prohibition of alliances or other collusive arrangements). New institutions and regulatory mechanisms, such as power pools, dispatch mechanisms or energy regulatory bodies, have been established to make these new energy markets work. Finally, other aspects of energy law and policy

have had to be amended in conjunction with these changes, including the rules governing the markets for oil, gas, coal, and other energy sources.

(iii) Water and sanitation

25. The most common market structure reform introduced in the water and sanitation sector is horizontal unbundling. Some countries have created several water utilities where a single one existed before. This is particularly common in, but is not limited to, countries with separate networks that are not or are little interconnected. One of the advantages of such unbundling is to facilitate comparing the performance of service providers.

26. Some countries have invited private investors to provide bulk water to a utility or to build and operate water treatment or desalination plants, for example. In this vertical unbundling, the private services (and the discrete investments they require) are usually rendered under contract to a utility and do not fundamentally modify the monopolistic nature of the market structure: the plants usually do not compete with each other and are usually not allowed to bypass the utility to supply customers. This is a matter of design, however, and in a few countries these services are provided in a competitive context. A number of countries have introduced competition in bulk water supply and transportation; in some cases, there are active water markets. Elsewhere, competition is limited to expensive bottled or trucked water and private wells.

27. The solid waste sector can be divided into different segments including collection, transfer stations, transport, landfill, incinerator or other disposal scheme, and recycling. Again, by unbundling these separable activities, Governments have been able to introduce competition in the sector. The size of the market will be a key parameter in determining whether competition can be introduced and the extent to which unbundling makes sense.

(iv) Transport

28. Increasingly, the distinction is made between transport infrastructure and transport services. The former may often have natural monopoly characteristics, whereas services are generally competitive. Competition in transport services should be considered not only within a single mode but also across modes, as trains, trucks, buses, airlines and ships tend to compete for passengers and freight.

29. With respect to railways, some countries have opted for a separation between the ownership and operation of infrastructure (e.g. tracks, signalling systems, train stations) on the one hand and of rail transport services (e.g. passenger, freight) on the other. In these schemes, the law does not allow the track operator to operate also transport services, which are operated by other companies often in competition with each other. Other countries have let integrated companies operate infrastructure as well as services but have enforced third party access rights to the infrastructure, sometimes called trackage rights. In these cases, transport companies, whether another rail line or a transport service company, have the right to access the track on certain terms, and the company controlling the track has the obligation to grant such access. Barriers to investment and operation in this sector are also gradually being removed.

30. In many countries, ports were until recently managed as public sector monopolies. When opening this sector to private participation, legislators have considered different models. Under the

landlord-port system, the port authority is responsible for the infrastructure as well as overall coordination of port activities; it does not, however, provide services to ships or merchandise. In service ports, the same entity is responsible for infrastructure and services. Competition between service providers (e.g. tugboats, stevedoring, warehousing) may be easier to establish and maintain under the landlord system. In addition to competition between service providers using common facilities or between competing facilities within a port, there may be strong competition between ports. Indeed, hinterlands overlap and shippers often have a choice of ports. A second type of sector reform may thus consist in encouraging competition between ports, be it by breaking up national port authorities, by strengthening intermodal connections of weaker ports, or by other means. Many Governments have found that by fostering competition between ports and within ports, service quality improves and the need to regulate decreases.

31. Legislation governing airports may also require changes, whether to allow private investment or competition between airports or within airports. Links between airport operation and air traffic control may need to be carefully considered as well. Within airports, many countries have introduced competition in handling services, catering, and other services to planes, as well as in commercial passenger services such as retail shops, restaurants, parking and the like. In some countries, the construction and operation of a new terminal at an existing airport has been entrusted to a new operator, hence creating competition between terminals. In others, new airports have been built on a BOT basis and existing ones are transferred to private ownership. Finally, many countries have found that liberalization of air transport (airline routes) greatly contributes to the demand for airport services and hence to the financial viability of private airport projects.

3. Transitional measures

32. Whether sector reforms involve abolishing legal barriers to entry, unbundling of separable market segments, other measures, or a combination thereof, Governments have often paid great attention to the reform process. The transition from monopoly to market may need to be carefully managed. Political, social or other factors have led some countries to pursue a gradual or phased approach to implementation. As technology and other outside forces are constantly changing, some countries have adopted sector reforms that could be accelerated or adjusted to take these changing circumstances into account.

(a) Phasing out barriers to entry

33. Some countries have felt that competition should not be introduced at once. In such cases, legislation has provided for temporary exclusivity rights, limitation in the number of public service providers or other restrictions on competition. The scope and duration of such restrictions should normally be limited to the minimum required (typically less than the scope and duration of the licence or concession). The first is set to give the incumbent adequate time to prepare for competition, adjust tariffs, while the latter is intended to provide the public service provider adequate incentives for investment and service expansion. Some laws include provisions for the loss of all or part of these exclusivity rights or protection if the public service provider does not comply with the requirements of its licence; an exclusivity on the provision of certain services may lapse, for instance, if the dominant public service provider does not effectively provide them. Other countries have included provisions calling for the periodic revision (at the time of tariff reviews, for example) of

such restrictions with a view to ascertaining whether the conditions that justified them at the time when they were introduced still prevail.

34. Recent experience in the telecommunications sector offers examples for this type of transitional measures. A number of modern telecommunications laws in many countries allow for full competition in all or most segments of the market. Legislators have often chosen to manage the transition to an open telecommunications sector gradually by lowering or removing barriers to entry and competition over a period of time, typically between one and seven years. Countries that have opted for the gradual approach have often started with the liberalization of terminal equipment (e.g. telephone sets, computer modems, private exchanges), followed by the introduction of one or more competing providers in mobile services (e.g. cellular telephony, paging) and the liberalization of value-added services (e.g. electronic mail, electronic databases, voice mail). After some years, long-distance and international services are opened up before local services and the sector as a whole including both infrastructure and services are liberalized. The advantage of this approach is to give incumbent public service providers the time to adjust to the new competitive context and, in particular, to adjust their tariffs in order to eliminate existing cross-subsidies between services. Some countries have pursued the same objective through other means, such as by gradually reducing high initial interconnection charges to cost-based levels as cross-subsidies are eliminated. The costs of a transition period include the delay in the benefits from competition accruing to users and, possibly, the weakening of the protected domestic public service providers relative to their foreign competitors operating in liberalized environments. In this sense, early reformers may have had more time to manage the transition to competitive markets than late reformers.

(b) Restructuring and privatization

35. Another transitional measure, at least in countries with state-owned public service providers, has been the restructuring or privatization of the incumbent service provider. All the reforms involving vertical and horizontal unbundling have by their nature required the restructuring of the incumbent public service provider. In addition, privatization of the State-owned public service provider has often been considered necessary to allow that company to compete effectively and fairly with new private entrants. While the sequence between privatization and liberalization has differed, liberalization has by and large either accompanied or preceded privatization. Some countries have proceeded otherwise and have privatized companies with significant exclusivity rights, often to increase privatization proceeds. They have, however, found it difficult and sometimes very expensive to remove, restrict or shorten at a later stage the exclusive rights or monopolies protecting private or privatized incumbents.

4. Controlling residual monopolies

36. Where natural monopoly conditions prevail and competition cannot be introduced *in* the market (that is, between companies competing for the same customers), many countries have introduced competition *for* the market (see paras. 37-39). Indirect competition between companies has also been created by way of benchmarks (see para. 40). In some cases, the Government may not be able to abolish legal barriers, to unbundle integrated sectors or to take other measures leading to the establishment of a competitive sector. In such cases, competition for the market and indirect competition may also be used to attenuate monopoly costs.

(a) Use of competitive selection procedures

37. Competition for the market refers to a process leading to the selection of a company among several competing consortia to be awarded the right to provide the infrastructure service (for a discussion of selection methods, see chapter III, "Selection of the concessionaire"). It provides a mechanism to reduce or eliminate monopoly rents by inviting competing companies to bid against each other for this right. It requires private participation though not necessarily at the exclusion of public sector candidates. Some local governments have, for example, awarded solid waste collection franchises or concessions to the incumbent public authority or successors thereof who won tenders in which they competed with private tenderers; in these cases, the actual threat of private entry resulted in significant improvements in public sector performance.

38. A number of countries have adopted legislation requiring that exclusive licences or concessions be rebid from time to time (see below, chapter X "Duration, extension and early termination", ___). The period between the initial award and the first (and subsequent) rebidding should take into account the level of investments and other risks faced by the investor. For solid waste collection licences not requiring heavy fixed investments the periodicity may be relatively short (e.g. every three to five years) whereas longer periods may be desirable for a power or water distribution contract, for example. In many countries, rebidding coincides with the end of the contract term, but in others a concession may be granted for a long period (e.g. ninety-nine years), with periodic rebidding (e.g. every ten or fifteen years). In the latter mechanism, which has been adopted in a few countries, the first rebidding occurs before the investor has fully recouped its investments; the incumbent has property rights that will need to be compensated if it does not win the next bidding round, in which case all or part of the bidding proceeds revert to the incumbent. Periodic rebidding may give public service providers strong performance incentives. While it may increase the longer term risk faced by investors and lenders, it may also provide them a valuable exit option.

39. Competition for the market may be used not only when the market in question is a natural monopoly, but also where resource constraints (such as wavelength spectrum availability) or Government decisions are limiting the number of concessions or licences awarded, hence creating a "scarcity" rent. If the Government decides to issue only two or three cellular licences, for example, the same mechanisms will be used to select the licensee; in these cases, however, the licence would normally not include exclusivity or, if it does, it would only be a temporary one allowing the Government to issue other licences a few years later.

(b) Geographical division of residual monopolies

40. By way of unbundling, many Governments have created the conditions for indirect, or "benchmark" competition, where concessionaires do not compete on the same territory but regulatory bodies are able to compare the performance of different companies (each with a regional monopoly) and use this information in the exercise of their regulatory functions (see chapter VIII, "Operational phase", ___). In this way, a regulatory body with authority over several concessionaires in a given sector (some of which may be publicly owned and operated) may be in a better position to regulate them. More generally, regulatory bodies may be able to use international prices as benchmarks against which to judge the costs and performance of regulated companies. These domestic and international reference points may provide strong indirect performance incentives to companies in monopolistic sectors. In some instances, such benchmark prices have even been included in tariff formulae.

C. Regulation of infrastructure services

1. General remarks

41. Regulation involves several distinct elements, including substantive rules, procedures, instruments and institutions. The regulatory framework in a given country and sector - which defines the rights and obligations of service providers, consumers, regulatory bodies and the Government - results from the interplay of these elements. Depending on the country and its legal and political traditions, this framework may be established by treaties, constitution, laws, executive decrees, regulations, decisions of regulatory bodies, case law, licences, concessions or other contracts or instruments.

(a) Historical context

42. Regulation of infrastructure was in many countries introduced to contain abuses of monopolistic providers and cartels of public service providers trying to maximize their profits by reducing output and increasing prices above the economically and socially desirable level. Governments have taken various approaches to control these monopolistic tendencies. In many instances, the monopolistic infrastructure service provider was set up as (or later became, following nationalization) a public sector enterprise. State or municipal ownership was seen in itself as a guarantee against abuses and as a protection of consumer interests; regulation was in these cases exercised by way of public ownership. In other countries or sectors, the infrastructure provider was or remained a private company. To control its operations and prevent the exercise of monopolistic pricing and marketing strategies, Governments often set up general (e.g. anti-trust) and sector-specific regulatory mechanisms. The first regulatory commissions were set up in the mid nineteenth century.

43. The shift toward greater private participation and competition has been accompanied and strengthened by a shift to less intrusive regulation of public service providers (whether State owned or private entities). Realizing that short-term political pressures often led to barriers to entry and other regulatory interventions that were not always in the public interest, many Governments have limited their level of discretion (often in contractual terms) and have opted for autonomous and independent regulatory mechanisms less exposed to political pressures. Where successfully introduced, these reforms have lowered the risks faced by private investors and hence financing costs.

(b) Objectives of regulation

44. The main purposes of regulation are to promote competition and efficiency, to address and correct to the extent possible market failures, and more generally to protect users from potential abuses by dominant or monopolistic public service providers and to protect investors from possible arbitrary government action. Regulatory intervention is often justified by a situation in which the market, left to its own devices, would not yield the desirable social outcome. Regulation may include control of monopoly power (including dominant positions), but also address environmental, safety, public health and other concerns. Those concerns are usually not specific to infrastructure sectors or to private companies, but are part of the overall regulatory framework that governs economic activity.

45. The nature of regulation differs substantially according to the characteristics of the sector. In natural monopolies, regulation focuses primarily on the production of the socially desirable level of services at economic prices, in particular by limiting the opportunities for the public service provider to collect monopoly rents. Where the sector as a whole is monopolistic, price control is often the key instrument. Where one or more segments of the sector are monopolistic and the rest competitive, special attention may need to be given to overseeing access by competitors to the monopolistic segments.

46. Another major factor is the degree to which market-based reforms have been or are being introduced. A change in market structure, the introduction of private participation or competition in infrastructure sectors generally require new rules and institutions. In sectors in transition to market-based competition, regulation focuses primarily on managing this transition by ensuring that competition is effectively introduced and promoted. Once a sector or segment has become competitive (as may be the case for telecommunications services in some countries), sector-specific regulation may give way to the general competition regime covering most sectors of the economy. The regulatory rules and institutions established by legislators typically take such factors into account. Flexibility is required to adapt to evolving conditions.

(c) Costs and benefits of regulation

47. Infrastructure regulation is a complex task requiring considerable resources. The process is relatively new for many countries and lessons can be drawn from the experience of those countries that have already implemented similar reforms.

48. However, it is important to weigh the costs and benefits of regulation. Effective regulation can foster the transition to competitive market, and protect consumers and investors, but it also has its costs. The direct costs of regulation include not only the costs of the regulatory machinery itself but also the costs of compliance by regulated enterprises. Indirect costs of regulation can be even more significant. Regulation may create distortions which at times may be larger than the market failures it was supposed to address. This may result from weak information available to regulatory bodies, capture of the regulatory process by interest groups, dearth of professional qualifications and experience of the regulatory body (which may be caused at least in part by inadequate regulatory resources and funding), lack of flexibility in rules and procedures or ill-considered or obsolete

substantive rules. Finally, as a sector moves toward a competitive market structure the need for specific regulation disappears.

2. Substantive rules

49. Regulatory interventions may be divided into two broad categories. The first category includes the various actions up to the award of licences or concessions; these include sector reform and legislation, and managing the selection process for the award of licences or concessions. The second category is the regulatory intervention following the award of such licences or concessions. The following paragraphs briefly discuss some of the main regulatory issues that are encountered in a similar context in different sectors, including the regulation of entry and exit of competitors, interconnection, prices (tariffs), subsidies and universal service, and quality and performance.

(a) Conditions for the award of licences and concessions

50. Entry and exit rules are at the core of the organization of infrastructure sectors. Rules may allow for free entry of service providers into a sector or segment thereof or may limit such entry to a number of providers as determined by government through a licensing or concession scheme. Where free entry is the rule, as is the case in an increasing number of countries for many telecommunications services or for power generation, the role of the licensing authority may be only to ascertain whether the new entrant meets the basic legal requirements to provide such services. In some countries, the new entrant simply has to file a declaration and may start services unless the licensing authority expresses an objection within a given time limit (for example, one month). Where the number of entrants is limited, Governments are often required by law to organize a competitive process for the award of the single or multiple licences offered (see further chapter III, “Selection of the concessionaire”).

(b) Interconnection and access regulation

51. In network industries, such as railway transport, telecommunications, power or gas supply, the historic or dominant public service provider may try to protect or limit access by third parties to its network, which is often the monopolistic segment in these industries. In order to introduce competition, mandatory rules for access to the network by new entrants have been introduced as a key aspect of sector reform and regulation. In some cases, such rules have complemented the vertical unbundling measures (see paras. 18-21), in others they have been adopted to foster competition in sectors that remained fully or partially integrated.

52. Access rules generally impose obligations on the network operator to provide access on terms that are fair and non-discriminatory from a financial as well as technical point of view. Non-discrimination implies that the new entrant or service provider is able to use the infrastructure of the dominant public service provider on conditions that are not less favourable than those granted by the network operator to its own services or to those of competing providers. It should be noted, however, that, for example, many pipeline access regimes do not require completely equal terms for the carrier and rival users. The access obligation may be qualified in some way: it may for instance be limited to spare capacity only or be subject to reasonable (rather than equal) terms and conditions.

53. Generally, regulatory bodies will wish to ensure that access prices are high enough to give adequate incentives to invest in maintenance and expansion of the required infrastructure and low

enough to encourage competition in the sector. Access pricing is usually cost-based. Where the network company provides services in competition with other providers, this may require that its activities be separated from an accounting point of view in order to determine the actual cost of the use by third parties of the network or parts thereof.

54. Technical access conditions may be equally critical, and dominant public service providers may be required to adapt their network to satisfy the access requirements of new entrants. Access may be to the network as a whole or to monopolistic parts or segments of the network (sometimes also referred to as bottleneck or essential facilities). Many Governments allow service providers to build their own infrastructure or to use alternative infrastructure where available; in such cases, the service provider may only need access to a small part of the network and cannot, under many regulations, be forced to pay more than the cost corresponding to the use of the specific facility he needs; this could be, for instance, the local loop in telecommunications, transmission capacity for the supply of electricity, or the use of a track section in railways.

(c) Price and profit regulation

55. Rules governing infrastructure sectors in most countries include price or profit regulation. The economic rationale is that, where monopolistic conditions prevail or where markets are not yet truly competitive, dominant public service providers may price their services too high to earn excess profits or too low (on a temporary basis) to drive out new entrants (predatory pricing). High prices and inadequate competition in infrastructure services may have a detrimental impact on the sector concerned and also on the national economy.

56. Infrastructure sectors have different market structures and scope for unbundling and competition. Increasingly, countries limit price regulation to non-competitive market segments, while leaving prices in competitive segments free. For example, cellular telephony prices may in some countries be left unregulated while local phone tariffs may remain regulated. In countries where road transport (or water transport) provides adequate competition, prices of rail transport may similarly be left unregulated. Where a company provides price-regulated services as well as unregulated services, safeguards may need to be established to prevent the company from cross-subsidizing its competitive activities with revenues from its regulated activities; to facilitate the enforcement of the prohibition of cross-subsidization, typical safeguards include separate cost accounting or the establishment of one or more subsidiaries to house the competitive or potentially competitive activities. Furthermore, in many countries price ceilings apply only to the dominant public service providers (to keep in check their ability to abuse their dominant position) and not to new entrants.

57. Many countries have chosen to set only the broad pricing principles in legislation while leaving their actual implementation to the concerned regulatory body and the terms and conditions of licences or concessions. Others have chosen to legislate tariff formulae. By and large, a balance is sought between the interests of users and those of investors and often also current and future users. For example, where tariffs are kept too low, public service providers are hurt, investors deterred and future users penalized as they will have to pay for postponed investments. The tariff regime will also require adequate stability and predictability, to enable public service providers and users to plan accordingly.

58. Many infrastructure projects require heavy capital investment with relatively long amortization periods. Tariff formulae cannot be set once and for all, as technology, exchange rates, wage levels, productivity and other factors are bound to change significantly (and often unpredictably) over such periods. Many countries have in place mechanisms for revision of tariff formulae. Periodic revisions (e.g. every four or five years) of the formula usually amount to a renegotiation of the contract, bearing in mind the interests of users and of the economy at large, as well as investors and lenders.

59. Legislators have opted for various price control systems, the most common being rate of return regulation and price cap regulation. Many tariff regimes have elements of both. Under rate of return regulation, infrastructure service providers are allowed a given return on their investments, usually expressed in percentage terms. Each year (or each time the regulatory body, the company or other interested parties deem that the prices in effect yield too much or too little profits) the regulatory body verifies the expenses of the utility, determines to what extent investments undertaken by the company are eligible for inclusion in the rate base, and calculates the revenues that need to be generated to cover the allowable expenses and the agreed-upon return on investment. Where available, regulatory bodies use risk-adjusted market rates to determine the rate of return figure. This system requires a substantial amount of information as well as negotiations (e.g. on eligible expenditures and cost allocation). It does not give public service providers strong incentives to improve efficiency as the efficiency gains they achieve in one year result in lower tariffs for the following year.

60. Under the price cap regime, a price formula is set for a given period (e.g. four or five years). Each year prices are allowed to fluctuate within the limits set by the formula. In some countries, the formula is a weighted average of various indices, in others it is a consumer price index minus a productivity factor. Where substantial new investments are required, the formula may include an additional component to cover these extra costs. The formula can apply to all services of the company or to selected baskets of services only, and different formulae may be used for different baskets. Services provided in a competitive environment may be excluded from the basket and deregulated, and the composition of the basket may be reviewed from time to time to take new market conditions into account. This price cap technique has been adopted increasingly in recent years. It may provide greater incentives for public service providers, as efficiency gains may be kept until the next adjustment period. In some countries, the price cap formula calls for partial pass-through of efficiency gains to consumers. The periodic readjustment of the formula is, however, based on rate-of-return type of calculations, requiring the same type of detailed information as indicated above, though on a less frequent basis.

61. Another price regulation technique that may be used to set prices, or more generally to monitor price levels, is benchmark or yardstick pricing. By comparing the prices of one public service provider with those of another and with international norms, regulatory bodies may be able to judge whether tariff adjustments requested by the public service provider are reasonable. Whatever technique is chosen, the complexity of the tariff mechanism should not exceed the administrative capacity of those in charge of implementing, monitoring and adapting it.

(d) Subsidies and universal service

62. In many countries, the law requires that specific services must be provided even if they have to be provided without compensation or below cost. Examples of free services are emergency

services (e.g. telephone calls to police, fire department, ambulances; inspection of alleged gas leaks or dangerous power lines). Services for which the price may not cover the costs include lifeline telephone, water or power service, discounted transport for certain categories of travellers (e.g. school children, senior citizens), as well as other services for low-income or rural users. Public service providers may recoup these service burdens or costs in several ways, including through Government subsidies, through funds or other official mechanisms created to share the financial burden of these obligations among all public service providers, or through internal cross-subsidies from other profitable services. Cross-subsidies should be distinguished from differentiated pricing, where different categories of users pay different prices (depending inter alia on the price elasticity of their demand), but where all prices cover, at least in the short run, marginal cost of the service. In this sense, price differentiation may be efficient and should not be prohibited. Direct Government or fund subsidies have the advantage of being more transparent and easier to monitor than cross-subsidies.

(e) Performance standards

63. Companies operating in regulated sectors generally have to meet a set of technical and service standards (see chapter IX, "Delays, defects and other failures to perform", ___). These are often too detailed to figure in the sector legislation and may be included in implementing decrees, concessions, licences or other documents. They include, for instance, minimum conditions to insure interconnection in networked sectors, quality standards (such as requirements with respect to water purity and pressure), ceilings on time to perform repairs, ceilings on number of faults or complaints, on-time performance for transport services, continuity in supply, as well as health, safety and environmental standards. Legislation may, however, impose the basic principles that will guide the drafting of detailed standards or require compliance with international standards.

3. Regulatory bodies

64. Legislative provisions governing regulation of infrastructure sectors generally include substantive as well as institutional rules. They are established by various bodies and are implemented and monitored by others. The term "regulatory bodies" refers to the institutional mechanisms required to implement and monitor the substantive rules.

65. Regulatory bodies are needed because in the area of the operation of infrastructure facilities it is generally necessary for the rules to allow for a degree of discretion; someone needs to apply or implement the substantive rules, interpret them, monitor compliance, impose sanctions, and settle disputes arising out of the implementation of the rules. The specific regulatory tasks and the amount of discretion they involve will be determined by the rules in question, which can vary widely.

(a) Range of institutional set-ups

66. The range of institutional mechanisms for the regulation of infrastructure sectors varies greatly. While many countries still entrust regulatory functions to Government departments (such as the concerned ministries or departments in charge of prices or competition matters), the general trend is toward the establishment of autonomous regulatory bodies, separate from the Government. The same country may subject some infrastructure sectors to autonomous and independent regulation while leaving others under ministerial regulation. Regulatory powers may also be shared

between an autonomous regulatory body and the Government, as is often the case with respect to licensing.

(b) Independence and autonomy of regulatory bodies

67. Regulatory bodies need to be isolated and protected from inappropriate pressures. Regulatory decisions need to be taken without interference from public service providers. To that effect, legislative provisions in most countries require the independence of the regulatory decision making process. Effective independence and autonomy go a long way towards reducing regulatory risks and hence reduce the cost of infrastructure services.

68. A primary requirement is the separation of regulatory functions from operational ones by removing any regulatory functions that may still be vested with the public service providers and entrust them to a legally and functionally independent entity. Examples of confusion between regulatory and operational functions may include the right of the incumbent public service provider to certify equipment for use on a network or to set interconnection or access conditions unilaterally, or the right of a port operator to allocate berths to incoming ships.

69. Another essential requirement is the total independence of regulatory bodies from the industry they are regulating. That independence is often underpinned by prohibitions for staff of the regulatory body to hold mandates, accept gifts, enter into contracts or have any other relationship (directly or through family members or other intermediaries) with regulated companies, their parents or affiliates. This independence is a condition for the credibility of the regulatory body. It also implies that, to avoid conflicts of interest, regulation should, in particular in countries and sectors in which state-owned enterprises operate, be free from interference from the Government and the owners of enterprises in the sector.

70. This leads to a related issue, namely the autonomy of the regulatory body relative to the Government. This autonomy may be needed to minimize the risk of decisions being made or influenced by a body that is also the owner of enterprises operating in the regulated sector, or a body acting on political rather than technical grounds.

71. Independence and autonomy should not be considered solely on the basis of the institutional position of the regulatory function, but also on the basis of its functional autonomy, which requires that regulatory bodies have the financial and human resources to discharge their responsibilities professionally and with integrity.

(c) Sectoral attributions of regulatory bodies

72. Regulatory responsibilities may be organized on a sectoral or cross-sectoral basis. Countries that have opted for a sectoral approach have in many cases decided to place closely linked sectors or segments thereof under the same regulatory umbrella, as may be the case for example for telecommunications, cable television and broadcasting; power and gas; airports and airlines; or, more generally, competing transport modes. Other countries have organized regulation on a cross-sectoral basis, in some cases with one regulatory entity for all infrastructure sectors, and in others with one entity for utilities (water, power, gas, telecommunications) and one for transport.

73. The decision to use one or another model depends in part on the country's regulatory capacity; the weaker it is, the more reason to reduce the number of independent structures and try to achieve economies of scope. Other reasons for having multi-sectoral agencies include: the common issues arising in the different infrastructure sectors and the ability to learn from the experience gained in other sectors; consistency in regulatory approach between sectors; the scope and sequence of the reform program (if it starts with one sector only, the entity will often be sector-specific); and better resistance to pressures from sectoral interest groups. One possible drawback of cross-sectoral bodies is that it may not foster the development of technical (i.e. sector-specific) expertise.

(d) Mandate of regulatory bodies

74. The law setting up a regulatory mechanism often stipulates a number of general objectives that should guide the actions of regulatory bodies, such as the promotion of competition, the protection of users' interests, the satisfaction of demand, the efficiency of the sector or the public service providers, their financial viability, the safeguarding of the public interest or of public service obligations, and the protection of investors' rights. Having one or two overriding objectives helps clarify the mandate of regulatory bodies and establish priorities among sometimes conflicting objectives. A clear mandate also increases a regulatory body's autonomy and credibility.

(e) Powers of regulatory bodies

75. Regulatory bodies may have decision-making powers, advisory powers or purely consultative powers or a combination of these different levels of powers depending on the subject matter. In some countries, the legislator has decided to give the regulatory body limited powers initially but has increased them later as the regulatory body established a track record of independence and professionalism. The legislation often specifies which powers are vested with the Government and which ones with a regulatory agency. Clarity in this respect is important to avoid unnecessary conflicts and confusion. Investors, as well as consumers and other interested parties, should know to whom to turn with various requests, applications or complaints.

76. Licensing of public service providers, for example, is in many countries a process involving the Government as well as the regulatory body. If the decision to award a project involves broad judgment of a political rather than technical nature, which may often be the case in the context of infrastructure privatization, final responsibility often rests with the Government. If, however, the award criteria are more technical, as may be the case with a liberal licensing regime for power generation or telecommunications services, many countries entrust the decision to an independent regulatory body. In other cases, the Government may have to ask the regulatory body's opinion prior to issuing the licence. On the other hand, some countries exclude direct involvement of regulatory bodies in the licensing process on the basis that it could affect the way they later regulate the use of these licences.

77. The jurisdiction of regulatory bodies normally extends to all enterprises operating in the sectors they regulate, with no distinction between private and public enterprises. The use of some regulatory powers or instruments may be limited by law to the dominant public service providers in the sector; a regulatory body may, for example, have price policing powers only vis-à-vis the incumbent or dominant public service provider, while new entrants may be allowed to set prices freely.

78. The matters on which regulatory bodies have to pronounce themselves range from normative responsibilities (e.g. rules on the award of licences, conditions for certification of equipment), to the award of licences, concessions or authorizations; the modification of such instruments; the approval of contracts or decisions proposed by the regulated entities (e.g. a schedule or contract on network access); the definition and monitoring of an obligation to provide certain services; the oversight over public service providers (in particular compliance with licence conditions, norms, performance targets); tariff setting or adjustments; vetting of subsidies, exemptions or other advantages that could distort competition in the sector; sanctions; and dispute settlement.

(f) Composition of regulatory bodies and their staff

79. The confidence of investors and the public in the professionalism, competence, efficiency and integrity of the regulatory function depends to a large extent on who is vested with this function. The way regulatory bodies and their staff are appointed, their qualifications and experience and the rules under which they operate are critical in this respect.

80. When setting up a regulatory body, a few countries have opted for a regulatory body comprised of a single officer, whereas most others have preferred a regulatory commission. A commission may provide greater safeguards against undue influence or lobbying and may limit the risk of rash regulatory decisions. A one-person regulatory body, on the other hand, may be able to reach decisions faster and may be held more accountable. To improve the management of the decision making process in a regulatory commission, the number of members is often kept small (typically three or five members). Even numbers are often avoided to prevent a deadlock, though the chairman could of course have a casting vote.

81. To increase the regulatory body’s autonomy, different institutions may be involved in the nomination process; in some countries, regulatory bodies are appointed by the Head of State based on a list submitted by parliament; in others the executive branch of the Government appoints the regulatory body but subject to confirmation by parliament or upon nominations submitted by parliament, users associations or other bodies. Minimal professional qualifications are often required of regulatory bodies, as well as the absence of conflicts of interest that might disqualify them for the function. Mandates of members of regulatory commissions may be staggered in order to prevent total turnover and appointment of all members by the same administration; staggering also promotes continuity in regulatory decision making. Mandates are often for a fixed term, may be non-renewable and may be terminated before the expiry of the term for limited reasons only (such as crime conviction, mental incapacitation, grave negligence or dereliction of duty). Certain requirements extend to the whole staff of the regulatory entity. Many laws grant a favourable personnel regime, including adequate pay scales, in order to attract qualified candidates and reduce the risk of corruption. Regulatory bodies are often faced with experienced lawyers, accountants and other experts working for the regulated industry and need to be able to acquire the same level of expertise, skills and professionalism, either in-house or by hiring outside advisors as needed. They are often allowed to subcontract certain regulatory tasks short of the ultimate regulatory decision to outside experts.

(g) Budget of the regulatory body

82. Adequate staff and pay-levels, budget for outside expertise and training, and stable funding sources are critical for the success of the regulatory body. In many countries, the budget of the regulatory entity is funded by fees and other levies on the regulated industry. Fees may be set as a percentage of the turnover of the regulated companies, or be levied for the award of licences, concessions or other authorizations. In some countries, the entity's budget is complemented as needed by budget transfers provided in the annual finance law, but this creates an element of uncertainty that may reduce the regulatory body's autonomy.

4. Regulatory process and procedures

83. Any regulatory framework includes procedural rules governing the way the institutions in charge of the various regulatory functions have to exercise their powers.

(a) Disclosure requirements

84. To allow regulatory bodies to carry out their responsibilities, legislation usually imposes specific obligations on regulated industries, including the obligation to provide the regulatory body accurate and timely information on the operations of the company, and grants regulatory bodies specific enforcement rights. They may include enquiries and audits, including detailed performance and compliance audits; sanctions for non-cooperative companies; injunctions or at least initiation of injunctions or penalty procedures to enforce disclosure.

85. Regulated companies are normally required to maintain and disclose their financial accounts and statements and to maintain detailed cost accounting allowing the regulatory body to track various aspects of the company's activities separately. Financial transactions between the company and affiliated companies may also require scrutiny, as companies may try to transfer profits to non-regulated businesses or foreign affiliates. Regulated enterprises may also have detailed technical and performance reporting requirements. However, the regulated enterprises will always be more knowledgeable about their cost structure than regulatory bodies and will only disclose the information they are effectively required to disclose and in the way that is most favourable to their interests.

86. Fostering competition in the infrastructure sector concerned is one method of dealing with this fundamental asymmetry in information. One of the benefits of introducing competition is that it provides the regulatory body multiple observations and reference points that allow it to determine whether proposals or positions of a regulated company are reasonable and in the public interest. Cost or technical information obtained from competitors may, for example, allow the regulatory body to disallow rate increases based on costs that are higher than the industry norm (see chapter VIII, "Operational phase", ___).

(b) Procedures

87. The credibility of the regulatory process requires transparency and objectivity, irrespective of whether regulatory authority is exercised by a Government department or minister or by an autonomous regulatory body. Rules and procedures should be objective and clear so as to ensure fairness and impartiality. For transparency purposes, the law should require that they be published.

Regulatory decisions should state the reasons on which they are based and should be made accessible to interested parties, through publication or other appropriate means.

88. Transparency may be further enhanced, as required by some laws, by the publication by the regulatory body of an annual report on the sector, the decisions taken during the exercise, the disputes that have arisen and the way they were settled, and so on. Such annual report may also include the accounts of the regulatory body and an audit thereof by an independent auditor. Legislation in many countries further requires that this annual report be submitted to a committee of parliament.

89. Regulatory decisions may impact on the interests of diverse groups, including the concerned public service provider, its current or potential competitors, and business or non-business users. In many countries, the regulatory process (whether managed by an agency or a ministry) includes consultation procedures for major decisions or recommendations. In some countries, this consultation takes the form of public hearings, in others of consultation papers on which comments from interested groups are solicited. Some countries have also established consultative bodies comprised of users and other concerned parties and require that their opinion be sought on major decisions and recommendations. To enhance transparency, comments, recommendations or opinions resulting from the consultation process may have to be published or made publicly available.

(c) Dispute settlement

90. The provision of infrastructure services may give rise to a wide range of disagreements or disputes, many of which typically fall within the province of the court system; this would be the case of disputes between public service providers and their suppliers and personnel. The same is true for disputes between public service providers and users, though consumers (or consumer associations) may often, in addition, lodge complaints with the regulatory body. Most major disputes to be settled by the regulatory body are likely to arise between infrastructure service providers, as would be the case with access or interconnection proceedings.

91. Another type of conflict that may arise between the regulated companies and the regulatory body or government concerns the modification of a licence or a tariff formula. These are often dealt with by the regulatory body and may be subject to appeal.

92. In addition, the legislation organizing the sector, investment protection treaties, and licence or contractual provisions often address the right of investors to resort to international commercial arbitration between the Government and the affected entity in case of a perceived breach of contract (see chapter XI, “Settlement of disputes”,__).

93. As any of these disputes may have a negative impact on the operations of the concerned company and in view of the public nature of most infrastructure services, many laws (and licence or contract provisions) have developed mechanisms that allow disagreements to be settled promptly without recourse to courts, the regulatory body or arbitration. These may include a technical expertise, audit or certification by an independent third party, as well as permanent conciliation panels or mechanisms.

(d) Sanctions

94. In many countries, the law gives regulatory bodies coercive or punitive powers. Such powers may include the authority to modify, suspend or withdraw a licence, concession or authorization; the right to set the terms of contracts between public service providers (e.g. interconnection or access agreements); to initiate the break-up of a dominant public service provider; to issue injunctions and orders to public service providers; to impose civil penalties including penalties for any delay in implementing the regulatory body’s decision, and to initiate criminal or other court procedures.

(e) Appeals

95. Legislators have often provided for appeal procedures against decisions of a regulatory body. The laws of many countries limit the causes that give ground to appeal, however, in order to prevent the regulatory uncertainty that may arise from appeals intended primarily to delay the effect of regulatory decisions. It is therefore desirable to strike a balance between the protection of legitimate rights of the regulated industry and the credibility of the regulatory system. It is often essential that decision be made quickly. For instance a refusal to grant access to a competitor could drive the competitor into bankruptcy if the matter cannot be resolved expeditiously. Where the right to appeal is granted, it should be to a body that has the required skills and expertise to adjudicate the matter. Some laws give public service providers the right to appeal against certain decisions of the regulatory body to the country’s competition authority, others to administrative tribunals or judicial courts.