Economic Notes

BRAZIL
Natural Gas Sector Regulatory Framework
Dominique Babelon

June 1995

The World Bank
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BRAZIL
Natural Gas Sector Regulatory Framework

Informal Sector Note

A. Objective and Impact

1. The objective of this note is to: (a) complement the recent Green Cover Report on *Natural Gas Pricing and Regulation* (March 10, 1994), in light of the recently passed Concession Law and Government-announced proposals for Constitutional change; (b) further detail the scope, contents and form of regulations and the nature of the regulatory agency, highlighting some of the critical linkages and trade-offs between the various elements of these regulations; (c) contribute to the articulation within the Bank of recommendations for a regulatory framework, particularly in light of the forthcoming Gas Development Project; and (d) subsequently assist the Government of Brazil in designing a regulatory framework for natural gas; these recommendations would be discussed in the context of a workshop later this year to assist the group in charge of preparing the regulatory framework in reviewing experiences worldwide, review critical issues associated with its formulation in Brazil, and assess possible options.

B. Background

2. The Brazilian oil and gas sectors are dominated by PETROBRAS, which holds a legal monopoly over gas exploration, production, import, export, and transport on the one hand, and exploration, production, import, export, refining and maritime and pipeline transport of oil and oil products (natural gas chief competitors) on the other. Furthermore, at state level, state-owned companies have a constitutional monopoly over gas distribution.

3. Currently, total domestic gas production is about 20 million cubic meters per day (MMCMD), but most of it (65%) is used in PETROBRAS own operations, rejected, or flared. Total natural gas sales by the company thus amount to about 9 MMCMD, including 5.2 to the interconnected Rio-Sao Paulo markets (about 3.5 from the Campos basin, and the balance from the Merluza field). There are other smaller systems in the North and North East and in Espirito Santo, but their output and sales are small and these systems are not interconnected to the main network.

4. According to current estimates, gas sales from Bolivia through the planned Brazil-Bolivia pipeline will reach 16 MMCMD after 8 years. With a planned 32 inch diameter, the pipeline has a potential to carry up to 30 MMCMD. Thus, this particular project will multiply by four, possibly even by six or seven the availability of gas for sale in the south eastern markets of the country, requiring major market development efforts and distribution network extensions. For all practical purposes, this pipeline will control gas supplies to Brazil major markets for a long time to come. If the pipeline is controlled by
PETROBRAS, its dominance of both the gas and the (competing) oil products markets will be complete. Thus, the question of the pipeline ownership and control cannot be discussed in isolation from regulatory reforms, in particular the elimination of legal and constitutional monopolies.

5. State distribution companies will also be faced with a major market development task for which they are ill-prepared. Many state distribution companies are being created to establish the new distribution networks required to absorb Bolivian gas, but have no experience in that business. It is reported that BR, the subsidiary of PETROBRAS in charge of oil products distribution, is taking major minority participation in almost all of these distribution companies. BR, however, does not have experience with natural gas distribution and market development, and has an inherent conflict of interest since it is a major distributor of competing oil products. Major involvement of PETROBRAS in distribution would further reinforce its already dominant position on the market. Uncertainties with respect to the ability of these distribution companies to effectively and fairly develop gas distribution thus constitute a major risk for the Brazil-Bolivia gas pipeline project.

6. The government has presented a number of Constitutional amendments to Congress. These include:

- the elimination of the obligations of states to provide gas distribution services through state-owned companies (they may elect to provide them directly or through concessions to the private sector); and

- the right of the Federal Union (which would retain the monopoly of gas exploration, production, trade, import, export and transport) to exercise its monopolies through contracts with the private sector.

7. If these amendments are passed, they will open the way for substantial involvement of the private sector at all stages of the gas chain.

C. Regulatory Framework—General Considerations

8. The design of the regulatory framework will vary significantly depending on the extent of constitutional and/or legal changes and the degree of de-facto vertical integration. If PETROBRAS remains the exclusive gas merchant in the country and continues to control all aspects of the oil and gas businesses, the scope of regulations incorporated in laws may need to be more detailed, and the powers of the regulator to be substantial, to avoid arbitrariness in the pricing and allocation of gas supplies and to prevent abuse of economic power by PETROBRAS. Therefore, a strong law would be needed, spelling out PETROBRAS rights and obligations, and ways it has to exercise the Union monopoly, subject to regulator's oversight. It is argued that, if PETROBRAS continues to control production, trade and transmission of gas, it should not be allowed to hold controlling interests in gas distribution, because of conflicts of interest with its own oil product businesses and risks of discrimination in gas pricing and supplies to the various local distribution companies (LDCs). Prices of gas (as commodity) may also require regulatory oversight, as will prices of refined oil products if PETROBRAS retains its monopoly over their import, export, production and pipeline transport.

9. Such a framework, however, would have the major drawbacks of heavy and intrusive regulations, which many countries are now moving away from by introducing competition at stages where natural monopolies do not exist (in particular gas production and trade), and by
using competitive bidding for transport and distribution concessions. Drawbacks include the extensive scope for disputes, a large burden on the regulator, excessive reliance on contractual arrangements to impose limitations on the monopolist, not to mention the traditional difficulty for the government to effectively regulate state-owned enterprises. In Brazil, where the tradition of such regulators does not exist, the balance of power may continue to favor PETROBRAS, on which the regulator will need to rely for all information on both the oil and gas sectors. The regulator would have a difficult task resolving issues of unfair oil and gas competition, for instance, which would require extensive insight in PETROBRAS operations and sales strategies. The task will be impossible unless PETROBRAS activities in gas trade and transmission activities are clearly separated into different subsidiaries and managed at arms-length from each other and from PETROBRAS oil businesses, and unless PETROBRAS is prevented from participating in distribution.

10. In contrast, if PETROBRAS's monopolies over import, transport and distribution of gas were eliminated, it would be possible to award transmission pipelines as concessions under a competitive bidding process, and also to award private concessions for needed distribution network expansions. States could also then consider privatizing their distribution companies as a way to increase efficiency and raise capital needed for the quick network expansion needed to distribute imported gas. A system of open access to the gas transportation network could be established, with mutual exclusivity of gas transport and merchant functions. In the longer term, open access could significantly accelerate the regional integration of gas networks. Pricing regulation would be limited to transport and distribution tariffs, with gas commodity and oil product prices left to the market. The task of the regulator would be considerably eased.

11. Between these two models there are a number of other options and possible transitional arrangements. Overall, however, in the interest of the sector's development and long term efficiency (in terms of introduction and promotion of competition, lighter regulations and increased consumer choice), it is suggested that organizational and regulatory options should be promoted that support the elimination of monopolies and encourage competition. While in the short term, the objective is clearly to get the Brazilian gas industry off the ground, it is important that the mechanisms implemented to achieve this goal be compatible with an eventual transition to a competitive gas market. The following paragraphs examine in more detail some of the regulatory implications of these options.

12. Finally, compatible regulatory frameworks in Brazil and its neighboring countries, particularly those which are potential gas exporters to Brazil through the planned Brazil-Bolivia pipeline, are important. Argentina has already implemented wide-ranging reforms aiming at the introduction of competition and has privatized its gas industry. Peru, Bolivia and Peru are all at various stages of deregulation or de-monopolization of their gas and oil industries. A gas regulatory framework in Brazil consistent with these trends would encourage the integration of energy markets in the region and enable investors in the Brazil-Bolivia transmission pipeline to exploit the upstream potential of the pipeline as soon as possible (thereby reducing average costs to users).

D. Main Issues

(a) Scope and Timing of Constitutional Revision and Future Structure of the Sector

13. In designing a regulatory framework for the sector, it is necessary at this point to keep
options open, pending the outcome of the Constitutional revision. However, an attempt can be made to design a framework in such a way that later changes may be minimized in case all monopolies are eliminated and the Government decide to award private concessions and licenses in gas activities. This is not an easy task, since the scope and form of regulations and the type and functions of the regulator depend on the extent of Constitutional reform.

14. If Congress passes the current Government proposals, there will be room for many agents in the sector at all stages of the chain. In this case, the Government will quickly need to develop a vision of the future structure of the industry, consistent with these proposals. It will need to incorporate corresponding requirements into legislation so that concession agreements and private contracts do not incorporate provisions which de facto prevent achieving the desired structure and constrain the introduction of competition for an indefinite period.

15. Even if the amendments proposed by the Government are approved by Congress, there is a possibility that the structure of the gas industry, at least at the production, supply and transmission stages, may not change rapidly. If all contractual and shareholding arrangements necessary to the implementation of the Brazil-Bolivia pipeline are firmed up between PETROBRAS and other agents before the Constitution has been amended and new legislation has been enacted, contract provisions and shareholding structures may de facto prevent the introduction of competition for a long time to come. Thus, attention is urgently required on preparation of regulations which, while furthering investments in the sector, do not eliminate subsequent flexibility to accommodate new agents and promote efficiency.

16. In summary, the following strategy is suggested: (a) as soon as possible, forming a long term vision of the sector structure and the role of competition; (b) designing regulations accordingly and in such a way that the transition to such a structure cannot be hampered by adverse provisions in concession contracts; and (c) carefully establishing transition arrangements in which the duration of restrictive privileges (which may be temporarily required to attract funding) is clearly spelled out in regulations and reflected in all concession contracts and licenses.

(b) Gas Law versus Concession Law

17. A frequently asked question is why a specific law (Gas Act) is required since the rules applicable to the granting of public service concessions are already spelled out in the recently issued Concession Law.

18. The Concession Law:

- spells out that all concessions for public services, whether awarded by the Federal Union, States or Municipalities must be awarded under a competitive bidding process;
- sets out the rights and obligations of users in general terms;
- establishes that tariffs and revision clauses (to preserve economic and financial equilibrium) will be fixed according to the proposal of the winning bidder and set out in the contract;
- prohibits exclusivity except when justified by technical and economic considerations;
- spells out contents of bidding documents and of contracts;
- establishes the rights of the conceeding authority with respect to monitoring, enforcement, cancellation and extinction; and
19. While the law covers well all aspects of concession award procedures and conditions and contracts, it needs to be supplemented in each sector by specific regulations aimed at:

- ensuring consistency of all contracts with respect to duration, the granting of exclusive rights (in particular rights of certain users to by-pass), obligations of providing access to transmission and distribution networks on a non-discriminatory basis; structural rules (cross-ownership limitations); forms of consumer representation; obligations to serve and expand; basis for establishing tariffs and revision clauses (formulas, frequency); acceptance of oversight of relevant regulator; arbitration rules; all so that concession contracts in the sector are consistent with the desired industry structure and role of competition.

- enacting technical standards and environmental and safety regulations applicable to all contracts; and appointing a regulator or regulators to exercise the rights of the conceding authority (ies), monitor compliance with contracts, laws and regulations, and impose sanctions.

(c) **Competition versus Incentives to Investors**

20. The question which is often raised in the Brazilian context is whether excessive opening up to competition at this time will not discourage the large investments in gas transmission and distribution networks which are required to bring out a large increase in gas use and meet commitments under the contract with Bolivia. Investors are keen to minimize their risks in such an undeveloped market by promoting arrangements whereby the opportunities of others by-passing the network or (when the network owners are also selling the gas) contracting gas supply directly are limited. Thus, the question arises whether limitations to open access to the transmission network by producers and users and to possibilities of by-passing distribution networks are justified to promote investments in transmission and distribution networks. A similar question is raised regarding the necessary degree of vertical integration which should be allowed to secure markets.

**Open Access**

21. In the current Brazilian monopolistic structure, where PETROBRAS is the only allowed trader, open access is not theoretically possible. Also, as the only party currently mandated by law to import and trade gas, PETROBRAS has entered into a 20-year contract with YPFB for the supply of 8 million cubic meters per day of natural gas during the first year of the contract, increasing to 16 million cubic meters per day in the eighth year of the contract, on a take or pay basis (95% of contractual volume on an annual basis, with 80% minimum on a monthly basis). PETROBRAS is understandably eager to enter into a number of take-or-pay contracts with local distribution companies or large users to parallel its own obligations under its contract with YPFB and is concerned that local distribution companies (LDCs) and large users may subsequently be able to contract their supplies directly. Currently, it is the only authorized importer and trader, but if the Constitution is amended as proposed by the Government, the Government could theoretically decide to award trading licenses to others, including Bolivian producers (a particularly interesting idea for ENRON, which is in joint venture with YPFB for the development of Bolivian gas reserves, and wishes to establish a power plant in Sao Paulo state, based on gas
from Bolivia). This would clearly jeopardize the viability of the YPFB/PETROBRAS contract.

22. One solution would be to re-negotiate the contract with YPFB to allow gas to be contracted by others than PETROBRAS (as long as the overall volume commitments are met). This would be the optimal solution, because contracts would be tailored (in particular with respect to take or pay levels and price formulae) to the specific needs of each LDC or large user. If this is not possible, however, the government might give PETROBRAS an exclusive trading license up to the 16 million cubic meters which have been contracted from Bolivia (contracts between PETROBRAS and LDCs could include "no self-displacement" clauses, i.e., a commitment by the buyer not to purchase incremental gas supplies before it has nominated its full contractual entitlement—this type of clause is widely used in the industry). It would, however, be free to award trade licenses to others as soon as this contracted volume has been reached—this would help develop the upstream potential of the pipeline, which is designed to carry up to 30 million cubic meters of gas per day. Also, to minimize risks of mismatch between supply and demand under the PETROBRAS/YPFB contract, the following rules could be introduced: (a) to mitigate rigidities introduced by the high levels of take-or-pay commitments, LDCs could be allowed to trade gas surpluses or deficits among themselves (this would require both freedom to trade and open access to re-direct gas flows, making secondary gas markets possible; and (b) large gas users and LDCs could be parties to all negotiations for contract revisions so that prices and conditions of supply (not necessarily all in a take-or-pay modality), are suited to their needs and allow them to face competition more flexibly.

Finally, should no change be made to PETROBRAS's trade monopoly, contractual limitations could be introduced in the gas supply contracts between PETROBRAS and its clients, for instance assigning PETROBRAS a passive role in tri-partite negotiations of gas contracts above take or pay volumes, or in secondary trade negotiations among users, and requiring PETROBRAS to provide open access as necessary. However, effective enforcement of such restrictions would be difficult and may require that they be incorporated in a law and overseen by the regulator.

23. As is being proposed for Indonesia, one way to make possible the transition to a more competitive structure would be for the Federal Government to issue trading licenses of a duration different from the duration of the concessions for the transmission network (say, eight years initially for the PETROBRAS license under the contract with Bolivia). These licenses would then be renewed after expiration of their terms, but without the restrictions on competition incorporated in the previous licenses.

24. As currently proposed, the transmission pipeline would be owned and operated as an independent operation involved in gas transportation only, operating on the basis of transportation contracts with LDCs and large users. Although the intention is currently that PETROBRAS will own 51% of the shares of the Brazil portion of the pipeline, the shareholder agreement has not been finalized and this could change if Constitutional amendments allow private ownership of transmission concessions. The investment risk of the transmission company in all cases is that LDCs and large users may be unable to pay for gas transport contracted under take or pay obligations, thus decreasing transported volumes. This risk is mitigated in both cases by firm capacity reservation contracts and whatever additional security the transporter may be able to obtain (such as escrow accounts on LDC revenues or other forms of securities). Open access may only be to the benefit of the transmission company: although it may be redundant as long as the maximum uptake volumes under the YPFB/PETROBRAS contract have not been met, it will facilitate later expansion beyond these levels. Thus, it is suggested that the law should allow open access, subject to the granting of trade licenses by the regulator or the Government.
25. At that point, with PETROBRAS as a majority owner of the pipeline, there is of course a danger that the transmission company may discriminate against third parties requesting access, if these supplies are threatening PETROBRAS's own gas markets (from Bolivia as well as domestic gas). One way to restrict the way PETROBRAS can exercise its gas transmission monopoly would be to introduce limitations into the shareholders' agreement of the new transmission company. For instance, the shareholders' agreement of the transmission company could assign veto powers to the minority shareholders for decisions concerning allocation of transport capacity and price discrimination. However, the validity of such provisions would likely require legal support otherwise PETROBRAS might challenge its terms in Court on grounds of unconstitutionality.

By-passes

26. In an undeveloped market, LDCs may be discouraged to invest if: (a) gas users have a right to connect directly to the gas transmission network after LDCs have already invested in networks to serve them; (b) if there is open access to the transmission and distribution networks, gas users may decide to buy gas directly from producers or the transmission company after LDCs have entered into rigid take or pay contracts with PETROBRAS.

27. In a situation where there is competition in gas supplies and trade, where the transmission company is not permitted to buy and sell gas, where contracts for gas supplies are freely negotiated between parties and incorporate the required flexibility, where all services are "unbundled" and priced accordingly, and where LDCs are not forced to cross-subsidize, risks of LDCs being unfairly by-passed are substantially lower than in a situation characterized by limited competition, partial or total vertical integration, obligation to supply uneconomical clients without explicit budgetary compensation (thus forcing LDCs to cross-subsidize), which presents much larger opportunities for discriminatory practices and abuse of monopoly power. In the first case, LDCs can base their investment decisions on considerations of economic viability alone and on the strength of freely negotiated contracts between parties, and the case for introducing limitations to the right of by-pass is weak. In the second case, however, investors in distribution networks will naturally aim at protecting themselves against risks of abuse of market power on the part of the trader/transmitter which may "cream-out" the good customers through unfair discrimination in prices or supply conditions. LDCs in this case will insist on territorial exclusivity, gas supply monopolies or prohibition of by-passes and open access, or direct control of upstream activities, as a condition of investing, particularly if their competitiveness is affected by obligations to supply unprofitable customers without appropriate budgetary compensation. They will also protect themselves by incorporating "most favored nations" type of provisions in supply contracts, but are unlikely to rely on this alone (as enforcement would depend on the strength of the regulator or arbitrator).

28. In the current institutional set up and even in a transition period towards a more competitive structure, there may be a case for restricting by-passes (except for very large users) until the LDC has been established and has recovered at least part of its investment (say ten years). But in all cases, very large users (requiring high pressure gas and able to take up gas directly from the high pressure network, such as power plants) should be allowed at any time to by-pass distribution companies and contract directly from the transmission company.

29. With respect to exclusivity, the Concession Law specifies that concessions cannot be exclusive, except in case of technical and economical unviability, as justified in bidding documents. It would be very important for the "Gas Law" to further specify under what conditions an investment would be considered unviable as this wording is ambiguous. If it is determined that exclusivity is not possible under
most circumstances, then it will become very
important to resolve issues of market structure to
motivate private interest in distribution
(prohibition of vertical integration, separation of
trading from transmission operations, operation
of the transmission network on an open access
basis to eliminate possibilities of abuse of market
power by a dominant party involved in various
stages of the gas chain) and to eliminate any
obligation to serve unprofitable customers from
concession contracts.

Participation of PETROBRAS in Distribution

30. It has been mentioned that
PETROBRAS, through BR, its oil product
distribution subsidiary, has been active in taking
(or attempting to take) strong minority
participation in LDCs throughout the country. It
is very important that this trend be stopped and
eventually reversed, since PETROBRAS’
participation in distribution is incompatible with
its role as monopoly trader and transmitter: first,
because dangers of discrimination against
companies in which it does not participate would
be too high (and these threats in turn are most
likely to lead to heavy regulatory interventions in
bulk supply price controls, which is not
desirable); second, because control of
distribution would eliminate the only form of
competitive tension in the current system which
would encourage PETROBRAS to price gas
delivery competitively (independently-owned
LDCs will at least put pressure on PETROBRAS
in that respect), and, third, because it could lead
to manipulation of the oil to gas competition,
particularly if PETROBRAS retains its
monopoly over oil refining, and if oil product
distribution continues to account for a significant
portion of BR’s business. Thus, it is
recommended that PETROBRAS participation in
distribution be prohibited if the current
institutional framework does not change. If it
does change, it is suggested that it should be
limited to minority participation, decreasing
overtime, and that the regulator should have the
power of ordering divestitures of distribution
activities in cases of discriminatory behaviour.

(d) Pricing Issues

31. The principles of pricing of transmission
and distribution services (unbundling of transport
and commodity prices, price caps, pricing
transmission according to distance, volume, time
of day or year, interruptibility, transparent and
non-discriminatory price schedules etc.) are well
covered in the recent Green Cover report¹ and
will not be repeated here. This section,
elaborates further on circumstances under which
the regulator should intervene in pricing of gas as
a commodity.

32. As argued in the report, there should be
no intervention in setting gas producer prices,
which are set by contract for imported gas (with
YPFB), by PETROBRAS for domestic gas
(sufficient competition exists there from Bolivian
gas) and, when open access becomes reality, by
direct negotiations between producers and users.
With respect to gas bulk supply prices, i.e.
prices at which PETROBRAS as a trader sells or
resells gas to LDCs or large users, it is proposed
that the following principles should apply:

As long as PETROBRAS has no interest in
distribution, bulk supply prices could be
deregulated, even if PETROBRAS controls
transmission and trading activities. This is
because pressure to sell gas contracted from
Bolivia will be sufficient to ensure that
PETROBRAS prices gas very competitively with
other substitute fuels in order to develop the
market. If necessary, the government should aim
at appropriating part of the rent on domestic gas
sales through appropriate taxation of profit².

¹ Natural Gas Pricing and Regulation- LA1EI- March
10, 1994

² While bulk supply prices may not need regulation, it is
important that tariff transports be regulated and non-
discriminatory (except on the basis of distance, location
and volume), particularly if the transmission pipeline is
merchant (i.e. sells gas as well as provides transport
services)
This, however, pre-supposes: (a) that PETROBRAS manages its oil and gas businesses at arms-length and through separate companies; (b) that alternative fuel prices reflect market forces; and (c) as already said, that PETROBRAS does not participate in distribution \(^3\). If, however, PETROBRAS retains interests in distribution companies (even minority ones) and continues to control all gas supplies, there are risks of discrimination in prices and supply conditions in favor of the companies in which it participates, either in order to force such participation on them, or simply to maximize returns. The law could therefore foresee the possibility for the regulator to intervene in price setting in such cases (including, but not necessarily limited to, requesting publication of price schedules, as in Britain, or enforcing ‘most favored nation’-type clauses to other LDCs) and in allocation rules in case of shortages. Because of distortions that such intervention may cause, however, it would be preferable instead to require the complete withdrawal of PETROBRAS from distribution as long as it remains dominant in production, trade and transmission.

33. With respect to pricing of competing products, the report made the point that rational gas development will not be possible without adequate pricing of competing products, including oil products and power. With respect to oil products, historically, prices have been set by the government at levels which have been often below their market value (as an instrument of inflation control). Although they have increased in the past two years to levels closer to their opportunity value, gas sector development will not take place if uncertainties continue to exist with respect to future government pricing policies. Thus, it is very important that pricing principles for fuel oil and other oil products (in line with their market value) be clear and adhered-to. Prices could be liberalized if oil product production and foreign trade are de-

\(^3\) because of chances of manipulation of bulk prices to favor distribution companies in which it participates as a shareholder.

monopolized and third parties have access to PETROBRAS shipping, storage and pipeline infrastructure (either under specified access terms, or, more simply, by requiring PETROBRAS to lease out a portion of its oil products transport facilities). If the Constitution and the law are not modified and PETROBRAS retains a monopoly over refining, foreign trade and maritime and pipeline transport of oil products, an alternative might be for the Government to set prices of oil products to equate border prices. It should be clear, however, that this measure by itself may not necessarily ensure adequate supplies of these products, unless the Government also intervenes in the establishment of import and export requirements and fuel product allocation decisions, a function difficult to fulfill.

E. Scope and Type of Regulations under Various Options

(a) Scope

34. The regulatory framework will vary significantly in its scope and form depending on the scope of Constitutional change. The scope and type of major regulations under the various options are summarized in attachment 1. General typical coverage of regulations is summarized in attachment

35. Possible options include:

(a) The Constitution (which grants monopoly to the Union) and Law 2004 are amended to allow the Union to exercise some of the gas monopolies through concessions with the private sector, but the Government chooses to maintain PETROBRAS as a dominant, vertically integrated actor in
production, supply and transmission;

(b) the Constitution is changed, eliminating all monopolies over production, import, trade, transmission and distribution of gas and oil products, and the Government decides to award licenses and concessions to the Private Sector for gas trade and all new transmission and production.

36. The core of regulations which will be required in all cases consist of:

- preparation and issuing of a Gas Law specifying the rights and obligations of PETROBRAS, distributors, and customers, and establishing a Regulator;

- separation of gas production, transport, and trade activities (rules of separate business and asset accounting and reporting and arm's-length transactions by separate companies or separate subsidiaries of PETROBRAS);

- obligations to serve and standards of service in transmission and distribution activities;

- technical standards;

- environmental and safety standards;

- Tariff principle and formulas for transmission and distribution activities; frequency of reviews;

- power, oil product and gas pricing principles and authority-- reform of oil product pricing will be required in all cases to eliminate current distortions in oil to gas competition. Reform of power prices (ex-generation plant) in line with long run marginal costs will also be required because power generation is viewed as an essential use of gas, particularly in the early years of pipeline operations.

- consumer representation, recourse and appeals process;

- establishment of regulators (state, federal) independent from policy makers and controllers of state-owned enterprises in the sector.

37. However, the scope and content of a number of other critical regulations will vary according to the scope of Constitutional and legal changes. These are:

- regulating prices of bulk gas supplies (if PETROBRAS participates in distribution);

- controlling allocations of gas supplies among customers and to PETROBRAS's own operations;

- controlling use of PETROBRAS oil product import and transport infrastructure;

- access;

- by-passes;

- concession awards and supervision; and

- restrictions on industry structure (degree of vertical integration and allowable degree of cross-ownership between the various stages).
(b) Form of regulation

38. If the Constitution is not modified or is modified but with restrictions preserving de facto the monopoly of PETROBRAS and existing state-owned LDCs, regulations would need to be spelled out in more detail in a law to dictate the way in which PETROBRAS and state LDCs should exercise their monopoly powers, so that minority investors and consumers are protected against arbitrary exercise of monopoly power and changes in government policies. In particular, PETROBRAS and the government could have specific legal obligations with respect to: (i) pricing principles; (ii) access and by-passes; (iii) involvement in distribution; (iv) standards of service; (v) consumer's rights; (vi) respect of regulator's decisions. The details in which this law would specify PETROBRAS obligations would also depend on the independence and powers of the regulator: the more vertically integrated the monopoly and the less independent the regulator, the more extensively the law should define the rules by which both the Government and PETROBRAS must abide.

39. Regulations may be issued in the form of a law, decrees or ministerial resolutions or resolutions of the regulator. The most important rules governing the long term development of the industry (i.e those included in the first item of the previous paragraph) should be incorporated in a law. This is necessary in order to provide the long term stability which investors need to commit the substantial resources needed to develop networks. In particular, private investors in the Brazil-Bolivia pipeline are unlikely to participate unless a law guarantees that prices of gas, competing fuels and transmission and distribution services are not manipulated by the Government to fulfill other objectives.

40. Other regulations of a technical nature (technical standards, environmental and safety, sanctions, etc..) may be issued by decree. If there is an independent regulator, he should be consulted but it is preferable that they should be issued by a separate authority.

(c) Roles of federal and state governments

41. The federal as well as state governments will be involved in designing and enforcing regulations. The general principles might be to allocate to the federal government the regulation of activities which remain its monopoly. If all monopolies are eliminated, the Union should nevertheless regulate all activities which cut across state or international borders (such as transmission pipelines, imports and export licenses), and to issuing of laws and norms which are necessary to allocate responsibilities and spell out rules which all concessions must observe to ensure efficiency and protect the public. One may suggest that the federal government be in charge of: (a) preparing and enacting the basic gas law, which sets responsibilities and basic rules ensuring consistency across the network--cross-ownership, access rules, principles of pricing and tariff setting, general mechanisms for consumer protection, etc... (b) regulating interstate transmission pipelines and all other remaining activities which are the monopoly of the federal union; (c) resolving disputes involving agents in different states (for instance, between a producer and a distributor located in different states); (d) enacting environmental and safety norms and technical standards that all have to meet to maintain system integrity and good functioning; (e) awarding and monitoring all federal concessions in the sector (cross international and state borders). States would be responsible for awarding distribution concessions (in accordance with the Concession Law) and monitoring compliance with concession contract terms and federal and state regulations for distribution activities in their territories.

42. At state-level, states which contemplate the formation of private LDCs, or several LDCs, including a mix of public and private operators, would need to establish a regulatory agency to supervise compliance with concession contracts.
and federal and state laws and regulations applicable to the sector (this authority should not be the same as the authority controlling the management of the state-owned LDC if any). Since it takes time to build the necessary regulatory expertise and institutions, it is rather urgent for the states first to formulate a policy strategy with respect to concessioning (number of concessions, obligations to serve, cross-subsidies, etc.), and the formation of regulatory agencies (public service commissions). The federal regulator could provide advice to them on these matters.

F. Regulatory Bodies

43. Several bodies need to be involved in regulating the gas sector:

(a) a federal regulator for pipeline transport and cross-border disputes, plus gas production, import, bulk trade, and for oil products pricing and transport if these activities remain the monopoly of the Union.

(b) state-level regulators for distribution (while distribution should be regulated locally, many standards to be enforced should be defined nationally) as well as all other activities on their territory which are not the monopoly of the Union, unless states decide to delegate this function to the federal regulator (at least while they are establishing their own regulatory capabilities);

(c) the Ministry of Energy and Mines for award of federal concessions; state secretaries of energy for award of distribution concessions;

(d) the Ministry of Finance for taxation and royalties;

(e) other relevant entities involved in definition of environmental and safety regulations and standards;

(f) the anti-monopoly authority; and

(f) the Courts.

44. An important criteria in establishing regulators is to ensure that there are no conflicts of interest between their different functions. In particular, the federal regulator needs to be independent from the policy-maker (government ministries), especially when the monopolist also responds to that same ministry. If monopolies are eliminated, it is also preferable that the authority approving the award of concessions should not be the regulator (even though the regulator may give its opinion on who should be the winner).

Government Versus Independent Regulator

45. In a situation where the sector is dominated by a vertically integrated public monopoly, the question arises whether the establishment of an independent regulator is necessary when the Government’s supervising ministry may instruct the monopoly to perform according to prevailing regulations directly by exercising management control. Protection of consumers (in this case the only focus of separate regulations) and possibly of minority shareholders is therefore ensured by direct government intervention supported by a law and a set of regulations to guide the Government and the monopoly’s actions.

46. However, while this may be correct in theory, in practice, such an option has the following inconvenient: (a) the supervising ministry may be constantly faced with conflicts
of interest between its role as owner (seeking profitability of controlled enterprises), policy maker (seeking to further political objectives not necessarily in line with the interests of parties it seeks to protect), and regulator (seeking an appropriate balance between the monopoly, its partners and consumers); (b) in Brazil, while PETROBRAS remains dominant in the upstream stages of the gas industry, the sector already includes a set of independent agents which are not controlled by the Federal Government (distribution companies at state levels, presently owned and operated by state governments but likely to include private concessionaires in the future; and a future separate transmission company with minority private partners to build and operate the Brazil-Bolivia Pipeline), but whose interests already need to be balanced by a regulatory authority seen as impartial and capable of providing arbitration. Thus, on balance, it would still be desirable to establish a federal regulator independent from the authorities which have so far supervised PETROBRAS as a state-owned entity, established energy policies, and set prices with macroeconomic and other objectives in mind, and assign this regulator sufficient powers and independence so that it may remain unaffected by considerations other than the protection of investors and consumers fair interests.

Role of the Courts and the Antimonopoly Commission

47. It is important to clarify that the Courts and the Antimonopoly Commission should complement and provide a balance to the regulator, but that in most cases they should not be expected to substitute for him in the first instance. It should always be possible to appeal the decisions of the regulators in court, but the regulator should be the first judge of conflicts between parties subject to regulations and laws applicable to the sector (otherwise the Court system, which is vastly overloaded in Brazil and has limited competence in regulatory matters may not be able to respond in a timely manner). Also, the regulator should have power to investigate and impose sanctions in cases of abuse of market power without having to refer the matter to the antimonopoly commission (although the latter may always decide to go further by, say, ordering divestitures). On the question of powers to order a more competitive market structure by forcing divestitures, and whether this should be the responsibility of the regulator jointly with the antimonopoly commission, further review of the antimonopoly legislation in Brazil and the effectiveness and independence of the antimonopoly commission is required before a recommendation is made. However, experience in Britain has shown that reliance on the antimonopoly commission to order divestitures has occasioned lengthy delays and, while such reliance may be reasonable in a market structure conducive to competition, it may be too cumbersome in countries which, similar to Britain and Brazil, have to effectively regulate vertically integrated monopolies.

June 16, 1995
### Major Regulatory Options

<table>
<thead>
<tr>
<th>Scope of Regulation</th>
<th>No Change</th>
<th>Change in Law 2004¹ - Pipeline and gas trade may be private (under concession)</th>
<th>Change in Constitution and Law 2004: Elimination of:</th>
<th>Distribution Monopolies</th>
<th>&amp; of Gas Transmission</th>
<th>&amp; of Gas Trade</th>
<th>&amp; of Oil Production/Exploration</th>
<th>&amp; of Oil Products Trade</th>
<th>&amp; of Oil Products Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Comments</strong></td>
<td>PETROBRAS' dominant position on the market is reinforced.</td>
<td>Would allow quick expansion of distribution networks through privatization and the award of concessions to private distributors</td>
<td>Gas transmission pipelines may be regulated public or private concessions operating solely as transporters</td>
<td>Gas trade monopoly of PETROBRAS remains as for previous options, with consequent restrictions on open access</td>
<td>Gas transmission pipelines may be regulated public or private concessions operating solely as transporters</td>
<td>Some competition in gas supplies would be introduced between PETROBRAS and importers, and LDC's and large users, would be able to contract supplies by direct negotiations. Would require open access of transmission network. Would permit deregulation of bulk supply prices.</td>
<td>Would increase potential for new gas discovery and exploitation under concessions/l cases, and increase competition among local gas suppliers.</td>
<td>Would permit price deregulation of oil products, but still require regulations for access to PETROBRAS oil product import and transport infrastructure.</td>
<td>Would permit effective gas-oil competition, price deregulation, and regulation limited to natural monopoly stages of the industry.</td>
</tr>
<tr>
<td></td>
<td>Heavy regulator's workload to prevent abuse of monopoly power, likely when gas transporter is also gas trader</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Risks of contractual provisions limiting PETROBRAS monopoly being challenged in Court, unless a law is passed clarifying way in which Union monopolies are to be exercised by PETROBRAS.</td>
<td></td>
<td>Gas transmission pipelines may be regulated public or private concessions operating solely as transporters</td>
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<tr>
<td></td>
<td>In the absence of trade freedom for oil products, chances of distortions in oil-gas competition remain high, unless PETROBRAS becomes a &quot;passive&quot; monopolist by law and leases out part of its terminal/pipeline transport infrastructure to an independent operator.</td>
<td></td>
<td>Gas transmission pipelines may be regulated public or private concessions operating solely as transporters</td>
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<td>Would permit effective gas-oil competition, price deregulation, and regulation limited to natural monopoly stages of the industry.</td>
</tr>
<tr>
<td><strong>Industry Ownership</strong></td>
<td>All public</td>
<td>Trade and transmission may be private (under concession). Distribution remains public</td>
<td>transmission stages may be public or private, operating as regulated concessions</td>
<td>transmission and distribution may be public or private concessions</td>
<td>transmission and distribution may be public or private concessions</td>
<td>all stages except production may be public or private</td>
<td>all stages of the gas business may be public or private</td>
<td>private agents may freely import oil products</td>
<td>private importers of oil products may use PETROBRAS oil product pipeline infrastructure on an open access basis.</td>
</tr>
<tr>
<td><strong>Industry Structure</strong></td>
<td>Gas and Oil businesses and gas production, transport and</td>
<td>Same as previous case. Transmission activities of</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
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<td></td>
<td>Gas and Oil businesses and gas production, transport and</td>
<td>Same as previous case</td>
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</tr>
<tr>
<td>Scope of Regulation</td>
<td>No Change</td>
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<td>Change in Constitution and Law 2004: Elimination of:</td>
<td></td>
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<tr>
<td></td>
<td>trade activities are assigned to separate subsidiaries, with arms-length transactions between them, and separate reporting to regulator according to set of predetermined rules.</td>
<td>PETROBRAS and oil terminal/pipelines assigned to independently-managed subsidiary, or leased out to independent operator</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly, to be exercised as specified by law.</td>
<td>Allowed, under licenses</td>
<td>Same as Previous Case</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly, to be exercised as specified by law.</td>
<td>Controlling interest not allowed</td>
<td>Same as Previous Case</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>Not allowed</td>
<td>Allowed</td>
<td>Allowed</td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly, to be exercised as specified by law.</td>
<td>Same as previous case</td>
<td>Not allowed</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly, to be exercised through tri-partite negotiations for imported gas in which customers and producers participate, and other restrictions imposed by law.</td>
<td>Same as previous case</td>
<td>Not allowed</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly</td>
<td>Same as previous case</td>
<td>Not allowed</td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly</td>
<td>Not allowed</td>
<td>Not allowed</td>
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</tr>
<tr>
<td></td>
<td>PETROBRAS monopoly, to be exercised as specified by law.</td>
<td>Distributors may purchase</td>
<td>Distributors</td>
<td></td>
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</tr>
</tbody>
</table>

1. PETROBRAS and oil terminal/pipelines assigned to independently-managed subsidiary, or leased out to independent operator.
## Scope of Regulation

<table>
<thead>
<tr>
<th>Scope of Regulation</th>
<th>PETROBRAS monopoly or not to be allowed</th>
<th>Same as previous case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>PETROBRAS monopoly</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Transmission</td>
<td>PETROBRAS monopoly</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Distribution</td>
<td>PETROBRAS monopoly</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Trading Participation</td>
<td>PETROBRAS monopoly or not to be allowed</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Pricing</td>
<td>separate gas from transmission margin costs</td>
<td>Same as previous case</td>
</tr>
<tr>
<td></td>
<td>gas supply</td>
<td>Same as previous case</td>
</tr>
</tbody>
</table>

## Change in Law 2004

<table>
<thead>
<tr>
<th>Change in Law 2004</th>
<th>Pipeline and gas trade may be private (under concession)</th>
</tr>
</thead>
<tbody>
<tr>
<td>directly from producers/importers or traders, under trade licenses. They would also be licensed to sell gas on the secondary gas market.</td>
<td>Same as previous case</td>
</tr>
</tbody>
</table>

## Distribution Monopolies

<table>
<thead>
<tr>
<th>Distribution</th>
<th>Monopolies</th>
<th>Same as previous case</th>
</tr>
</thead>
<tbody>
<tr>
<td>free to buy sell gas</td>
<td>Same as previous case</td>
<td></td>
</tr>
</tbody>
</table>

## Pricing

<table>
<thead>
<tr>
<th>Pricing</th>
<th>Gas Commodity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>bulk supply</td>
</tr>
</tbody>
</table>

## Prices

<table>
<thead>
<tr>
<th>Prices</th>
<th>Same as previous case</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>same as previous case</td>
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</tbody>
</table>

## Change in Constitution and Law 2004

<table>
<thead>
<tr>
<th>Change in Constitution and Law 2004</th>
<th>Elimination of</th>
</tr>
</thead>
<tbody>
<tr>
<td>free to buy sell gas</td>
<td>Same as previous case</td>
</tr>
</tbody>
</table>

## Prices

<table>
<thead>
<tr>
<th>Prices</th>
<th>Same as previous case</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>same as previous case</td>
</tr>
</tbody>
</table>

## Additional Notes

- Selling prices subject to regulatory approval if by-pass facilities are involved in the distribution of gas.
<table>
<thead>
<tr>
<th>Scope of Regulation</th>
<th>No Change</th>
<th>Change in Law 2004 1.</th>
<th>Change in Constitution and Law 2004: Elimination of:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Distribution Monopolies</td>
<td>&amp; of Gas Transmission</td>
</tr>
<tr>
<td>Gas Transport (Transmission)</td>
<td>Distribution. Gas price schedules (by categories of contract customers and contract types, together with options) except PETROBRAS (from Bolivia or its own network) should be published and not allow price discrimination. Selling prices left to negotiations if PETROBRAS is not participating in distribution.</td>
<td>Price Cap- published tariff structure and discounts approved by regulator; tariff discrimination among same category of users not allowed.</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Gas Distribution</td>
<td>Rate of Return or price cap. No geographical uniformity unless oil product prices remain uniform. Two-part tariff including a capacity charge and a usage charge, also differentiating for interruptible versus uninterruptible. Similar tariff principles also applied to existing PETROBRAS gas network.</td>
<td>Two-part (binomial) tariff for gas, reflecting capacity and customer related costs (monthly charge) and commodity charge. Tariffs for large users with options to bypass set by negotiations.</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Oil Products</td>
<td>Ex-refinery prices regulated to equal border prices; geographical uniformity eliminated.</td>
<td>Same as before, unless trade is licensed and terminaling/pipeline transport made available to importers, in which case prices may be freed.</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Electricity Prices</td>
<td>Ex-generation tariffs reflecting long-run marginal costs</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Access Regulations</td>
<td>Open Access to legally and contractually allowed (with PETROBRAS)</td>
<td>Required by law</td>
<td>Required by law</td>
</tr>
<tr>
<td>Scope of Regulation</td>
<td>No Change</td>
<td>Change in Law 2004</td>
<td>Distribution Monopolies</td>
</tr>
<tr>
<td>---------------------</td>
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</tr>
<tr>
<td>Transmission</td>
<td>as passive agent for volumes beyond take-or-pay contract with Bolivia, and for volumes traded between LDCs (secondary gas markets)</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>By-pass of Distributors</td>
<td>Allowed for very large users only in transition period of, say, ten years. Allowed subsequently for all industrial users</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Taxation</td>
<td>all operations subject to corporate tax</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td></td>
<td>Government may tax rent of PETROBRAS from domestic production through royalty</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Regulatory Agency- Federal level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appointment/Accountability</td>
<td>independent from policy making body, commissioners to be approved by Congress, not removable unless for criminal wrongdoing</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Tenure</td>
<td>fixed term</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Functions</td>
<td>As established by law: enforcement of Gas Law, prevention of abuses, conflict resolution, enforcement of standards, safety and environmental regulations, approval of transmission tariffs and gas and oil product prices</td>
<td>Same as previous case, except for approval of oil product prices if these are free. Approval/award of concessions/trade licenses, supervision of concessions</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Funding</td>
<td>fee per ton of throughput on gas sold</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Regulatory Agencies, State-level</td>
<td>functions limited to regulation of distribution activities within</td>
<td>Same as previous case</td>
<td>Same as previous case</td>
</tr>
<tr>
<td>Scope of Regulation</td>
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<td></td>
<td></td>
<td>Distribution Monopolies &amp; of Gas Transmission &amp; of Gas Trade &amp; of Gas Production /Exploration &amp; of Oil Products Trade &amp; of Oil Products Transport</td>
<td></td>
</tr>
<tr>
<td>state.</td>
<td></td>
<td>same as previous case same as previous case same as previous case same as previous case same as previous case</td>
<td></td>
</tr>
<tr>
<td><strong>Concession Award</strong></td>
<td></td>
<td>same as previous case same as previous case same as previous case same as previous case same as previous case</td>
<td></td>
</tr>
<tr>
<td>- Agency</td>
<td>Not applicable</td>
<td>federal and state governments</td>
<td>As defined in Concession Law. Public bidding necessary</td>
</tr>
<tr>
<td>- Selection Process</td>
<td>Not applicable</td>
<td>to be defined by law</td>
<td>to be defined by law</td>
</tr>
<tr>
<td>- Duration</td>
<td>Not applicable</td>
<td>to be defined by law</td>
<td>to be defined by law</td>
</tr>
<tr>
<td>- Re-bidding</td>
<td>Not applicable</td>
<td>Yes (as specified in Concession Law)</td>
<td>Yes (as defined in Concession Law)</td>
</tr>
</tbody>
</table>

1. While the Union would retain its Constitutional Monopolies, it may choose to exercise them through concessions to others than PETROBRAS.
Regulatory Framework - Natural Gas Sector

Summary

Scope of Regulations

- Ownership
- Structure (degree of vertical and horizontal integration)
- Concession Award
- Standard Terms of Concessions
- Allocation of gas
- Access
- Pricing (gas, competing oil products and power)
- Conduct (Standards of Service, Obligations to Serve, Abuse of Monopoly)
- Environmental and Safety
- Taxation and Royalties

Types of Regulations

- Constitution
- Laws (Hydrocarbon Law, "Gas Act", Concessions)
- Executive Decrees or Resolutions
- Regulator's Decisions
- Consumers' Representation and appeal processes

Regulators

- Numbers (Federal and State-level)
- Types:
  * Ministries
  * Independent Regulators
- Functions
  * as regulator
  * as adviser
- Appointment
- Reporting relationships
- Funding
- Rights to Appeal Regulator's decision in Court
- Rights to refer to antimonopoly commission
Typical Contents of regulations

Hydrocarbon Law

- Property of resources
- Licensing of acreage, granting of mineral rights
- Freedom to produce and trade oil and gas
- Pricing rules for oil and gas
  -- Concession award process (exploration, production)
- Royalties
- Foreign Ownership
- Designation of Regulator and Functions

Gas Law

- Assigns rights to produce, transport, trade and distribute gas
- Defines role of Government sector ministries: policy formulation, award, negotiation, signature of concession contracts; issuing environmental and safety and other norms
- Creates the Regulator for public services (pipeline transport and distribution networks) and defines its accountability and reporting relationships
- Defines rules for appointment: e.g. Commissioners appointed by the President, subject to Senate (Congress confirmation); five-year terms; not removable, except on grounds of misconduct; exclusions
- Defines functions of the regulator:
  * to promote compliance with and enforce the law and its regulations
  * to assure security of supplies
  * rules on traffic issues
  * to ensure financial viability of licensees
  * to authorize applications for rights of way
  * to authorize network expansions, reviews development plans (size, design, timing), issues permits for pipeline construction
  * to review/recommend proposed license awards
  * to terminate concessions in case of non compliance
  * to license gas traders
  * to promote competition (where feasible)
  * to order divestitures/ disposal of shares if industry stucture not favorable to competition (particularly important if pipeline ownership defined before constitutional/legal change)
  * to define conditions for by-passes
  * to protect consumers: investigate and rule on cases of abuse of monopoly power, anticompetitive behavior and discrimination,
including unjust cross-subsidization (including of non regulated activities)
* to supervise concession agreements for transmission/distribution (Bolivia) according to their terms, check compliance with service, maintenance and investment obligations stipulated under concession contracts
* to supervise compliance with license conditions
* to promote resale of gas
* to approve, publish and verify tariffs
* to apply sanctions (fines, power to lower RoR or price cap to punish low service quality, right to order cessation of activity...)
* to propose regulations, set service standards and enforce them
* to define procedures for handling complaints and appeals
* to refer to anti-trust authority
* to define reporting requirements
* to collect and publish information
* to inspect and audit, power to investigate
* to define relevant elements in tariff formulas (such as rates of increases) and monitor compliance
* to review supply contracts
* to establish detailed procedures for adjudication of capacity
* to review/approve detailed access terms and dispatch procedures
* to advise the Government on all sector-related matters
* to review and provide recommendations on EIAs

- **Funding and Budget:**
  * creation of fee
  * budget limitation rules

- Creates Consumers' Council, defines funding, membership and functions,

- Defines rights of all parties to complain and appeal regulators decisions in Court or the Anti-monopoly authority

- Defines supply obligations of traders, transmitters and distributors;

- Defines principles of allocation of transport capacity: obligation to provide service on a non-discriminatory basis (connect all applicants with signed long term contracts on a first come-first serve basis; prohibits discrimination in prices, notice periods, nomination of quantities, prioritization in case of temporary restrictions in capacity)

- Defines public service obligations of distributors (e.g: obligation to connect all customers using less than a certain volume, within x distance from main); or: obligation to supply on a non-interruptible basis all customers requesting supply within its geographical area, who can be supplied technically and economically...)

- Territorial exclusivity of distributors
- Rights of distributors to disconnect

- Defines tariff principles and periodicity of revisions to these principles (free, RoR, price caps ...):
  * tariff must be just and reasonable
  * gas, as commodity (if relevant): contractual.
  * transmission- to reflect marginal costs: firm service (fixed charge reflecting capital and or expansion long-run marginal costs needed to supply peak usage customers-- or capacity reservation fee, and usage charge reflecting short run marginal operating costs and storage costs) and interruptible service (usage charge only, since these customers use existing capacity off-peak). Tariff should also be distance-based.
  * distribution
  * there should be no unjust discrimination in tariff and service: tolls for services provided under similar circumstances and conditions must be the same for all customers
  * price discrimination subject to regulator's approval
  * obligation to publish tariffs and tariff structure

- Basic rules for concession award:
  * responsible entity
  * exclusions
  * principles of award (competitive bidding)
  * duration
  * principles of duration
  * revocation
  * prohibition of ownership in other stages, of mergers (Bolivia: transmitter must only transport, and cannot buy and sell gas-Argentina: same, plus:distributors can only have 20% stake in transmission)
  * territorial exclusivity (by-passes)

- Principles of open access or common carriage obligations of transmission companies: obligations to provide access to unused capacity, right of regulator to order capacity increases if transporter denies access on grounds of lack of capacity

- Defines rights and obligations of customers, and customers'representation

- Defines acceptability of obligations to serve (for distribution and transmission) and cross subsidies and principle of compensation

- rights of large users to by-pass distribution companies, and terms

- industry structure: allowable degree of cross-ownership of different stages (vertical and horizontal integration); prohibitions of vertical
integrations between trading and transmission, and between transmission and distribution,

- expropriation, rights of way, and indemnities

- Transitory Provisions

Contents of Regulations (may be issued or approved by the regulator or by government decree)

- Technical norms: gas purity, pressure, calorific content, uniformity
- Safety norms for pipeline installations and construction, gas fittings, gas appliances, gas meters
- Environmental norms for design, construction, operation and abandonment of pipelines and their installations, criteria for environmental impact assessments (with respect to routing, design, protection of natural habitats, etc...), procedures for review (hearings...)
- Standards of service: speed of connections, handling of consumer complaints, reliability of gas supplies
- Standards of Service: connection, disconnection, notice periods, metering, billing
- procedures for answering complaints and appeals
- Information requirements (contents of tariff schedule and details of calculations, standard contract or service agreement for each type of service)
- Accounting standards (in particular: asset valuation)
- Contents of standard contracts
- access and dispatch procedures
- tariff formulas, consistent with principles established by law, to be incorporated in concession bidding documents.