



**PetroFed's suggestions on Role of Upstream
Regulator in India**

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Petroleum Federation of India

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1 Executive Summary

- To deliver on the Government of India's (GoI) vision to increase domestic exploration and production activities, it is important that India has a competitive climate for investment. A recent review of India's attractiveness in upstream oil and gas has highlighted the opportunity to improve functioning of India's current regulatory system for upstream oil & gas sector. Over the years, regulations around exploration & production (E&P) of Oil & Gas have been built up incrementally in response to increasing activity on the landscape.
- Presently, India's regulatory system is complex, involving multiple regulators (Central & State) with limited coordination as has been reported by various GoI constituted committees.
- E&P project owners in the current regulatory regime are required to submit separate applications to multiple regulatory bodies. This process is inefficient because it often involves duplication of information, increased costs, and uncertainty in the authorization process. Delays from any one regulator compound the length and complexity of the approvals, creating a complicated and repetitive process.
- Operating companies are complaining of long delays (in clearances and operational decision making), and the resultant cost and time overruns.
- The regulatory system for upstream oil and gas in India should be modern, efficient, performance-based and competitive, while maintaining India's strong commitment to environmental management, public safety and responsible resource development in the public interest.
- Regulator should possess the attributes of the good governance practices viz. effective, efficient, adaptable, predictable, fair and transparent
- Suggestions to improve the functioning of DGH are summarized below:
 - **Empowered regulator** : There is a need to have an empowered regulator for Oil & Gas sector with clear separation between the policy making entity (the Government) and policy implementing body (the Regulator). Distinct and clearly defined role for Resource Owner/Regulator/Policy maker which will lend significant credence to governance of the sector and will be a key enabler.

The role of MoP&NG and DGH is clearly defined and segregated both for regulation and contract management and the same is required to be followed in letter and spirit to avoid overstepping of the respective roles.

It is felt that the primary role of DGH should be resource management. It should ensure acceleration of exploration efforts in the country for both conventional as well as unconventional hydrocarbon resources. E&P data management and making it available to the bidders and operators is another important role of the DGH.

- **Single Window clearance:** It is both an interface (i.e. a single point of contact) and a process (i.e. navigation through the regulations system). DGH should act as the single point of contact for the operators and obtain all clearances viz. Environment, Forest, Defence, etc. and approvals on behalf of the E&P project owners. It provides a single contact person for all functional matters including information, applications, decisions, compliance, monitoring and enforcement;
 - **Improved workflow and process:** It has a portal (preferably electronic) for information management. This includes obtaining information about process rules, submitting an application, receiving a permit and providing information to support monitoring and compliance throughout the project lifecycle. It requires setting timelines both for individual stages in decision making and for overall clearance/approval process. This should be time bound and rule based. This should be supported by electronic approval tracking system. The information management in electronic mode could be implemented by the Ministry along with the National Informatics Centre (NIC).
 - **Autonomous and competent:** DGH should have adequate access to technical expertise, budget and permanent manpower. It must be independent and has an Appeals forum.
 - **Transparent:** The decisions should be published with reasons and there is opportunity to appeal decisions.
- The suggestion of ‘*single window concept*’ is supported by good governance practices followed internationally. The leading drivers of using a single regulator are to reduce the duplication, complexity, overlap, and unnecessary delays of the current regulatory regime without sacrificing the integrity of safety and environmental protection (discussed in detail in Section 3.2).

- The Regulator by design should be proactive in addressing the concern of the upstream industry, mainly in the area of ensuring appropriate approval for the start of implementation of the project.
- Necessary Act should be brought about to ensure that the Regulator is separate and distinct from the Government, vesting with it some of the powers and authorities mentioned above, with commensurate accountability and also defining responsibilities related to other regulators/departments, towards working together for implementation of the national policies, in a responsible and sustainable manner. The act itself should clearly mention the powers and appointment procedures for the Regulatory body.
- Government of India may consider making DGH the E&P Regulator which will also provide the legitimacy and force law for all the works currently DGH is carrying out.
- Role of regulator in Royalty-PLP based contracts
 - In royalty-PLP contracts, the role of upstream regulator should be confined to only reviewing of minimum work programme and checking the royalty / PLP being paid.
 - Additionally, regulator should be a facilitator for industry for obtaining clearances from central and state governments.
 - In the royalty-PLP regime, the operator spends his own money and there is no cost recovery. The operator in his own interest will ensure there is no extra expenses and use the best technology to optimise exploration and production. Hence, regulator should have no role in matters like choosing technology.
 - Rights of the Steering Committee for approval of annual budgets, approval of development plan and appointment of auditors should be not be regulated. Government should only monitor whether royalty-PLP payments were being made. This should be renamed as review committee.
- While making above -mentioned suggestions, select energy/oil & gas regulators functioning globally were considered which are as follows (discussed in detail in *Annexure 2 – Learning from international practice*):

- *Alberta Energy Regulator (AER):* AER is single energy regulator created vide Responsible Energy Development Act which was passed in December 2012. Under this Act, the new regulator operates at arm's length from the Government of Alberta.

The AER is authorized to make decisions on applications for energy (including Oil & Gas) development, monitoring for compliance assurance, decommissioning and all other aspects of energy resource activities (activities that must have an approval under one of the six provincial energy statutes). This authority extends to approvals under the public lands and environment statutes that relate to energy resource activities.

- *National Agency of Petroleum, Natural Gas and Biofuels, Brazil:* The Petroleum Law provides instituted the Agência Nacional do Petróleo (ANP) which has the responsibility for the rational exploitation of the nation's petroleum resources and maintaining a fertile and responsive business climate which protects and balances the interests of both the private and public sectors.
- *Norwegian Petroleum Directorate (NPD):* Ministry of Petroleum and Energy (MPE) is responsible for resource management and the sector as a whole. NPD is a governmental specialist directorate and administrative body to the MPE. NPD's main objective is to contribute to creating the greatest possible values for society from the oil and gas activities by means of prudent resource management based on safety, emergency preparedness and safeguarding of the external environment. In cooperation with other authorities, the NPD ensures comprehensive follow-up of the petroleum activities.
- *Department of Mines and Petroleum, Western Australia (DMP):* DMP is the Country's lead agency in attracting private investment in resources exploration and development. It also carries prime responsibility for regulating these extractive industries and dangerous goods in Western Australia, including the collection of royalties, and ensuring that safety, health and environmental standards are consistent with relevant State and Commonwealth legislation, regulations and policies.
- Other examples where Government is regulating the Exploration & Production sector and significant role played by National Oil Companies are Malaysia, Nigeria, China, Vietnam, Azerbaijan, Sonangol, Columbia, Russia, Kazakhstan, Venezuela, South Africa, Indonesia, etc.

2 Evaluation of existing upstream regulatory system

2.1 Background

- The main purpose of a legislative framework is to:
 - provide the basic context for the rules governing petroleum operations in the host country;
 - regulate them as they are carried out by domestic, foreign and international enterprises; and
 - define the principal administrative, economic, and fiscal guidelines for investment activity in the sector.
- Petroleum law is complemented by enabling regulations & guidelines and one or several variants of a model contract. The framework gives both the host country and oil companies/investors a clear legal and contractual context in which to negotiate mutually advantageous exploration and production arrangements that develop the hosts State's petroleum resources.
- The three essential elements of the framework viz. petroleum law & policy, regulations and model contracts are related to each other.
- Presently, the regulation of upstream sector in India is by the Government of India through the Ministry of Petroleum and Natural Gas (MoPNG) as provided under the Oilfields (Regulation and Development) Act, 1948 and the Petroleum & Natural Gas rules, 1959 and various other statutory provisions.
- The Directorate General of Hydrocarbons (DGH) was established in 1993 under the administrative control of MoPNG through Government of India Resolution. Objectives of DGH are to promote sound management of the oil and natural gas resources having a balanced regard for environment, safety, technological and economic aspects of the petroleum activity.
- DGH has been entrusted with several responsibilities like implementation of New Exploration Licensing Policy (NELP), matters concerning the Production Sharing Contracts for discovered fields and exploration blocks, promotion of investment in E&P Sector and monitoring of E&P activities including review of reservoir performance of producing fields.

In addition, DGH is also engaged in opening up of new unexplored areas for future exploration and development of non-conventional hydrocarbon energy sources like Coal Bed Methane (CBM) as also futuristic hydrocarbon energy resources like Gas Hydrates and Oil Shales.

- DGH, functioning under the administrative control of MoPNG, is providing technical advice to the MoPNG on exploration & exploitation of oil and gas.
- DGH is thus functioning as chief technical adviser to the government and not as a regulator for the upstream sector. As of now, the government is discharging the regulatory functions. Background, Objective and functions of DGH are listed in *Annexure 1*.
- MoPNG has developed a Strategic Plan for the period 2011 to 2017 and one of the core elements of the strategy is to increase domestic exploration and production activities
- MoPNG also recognizes that there are various extraneous factors which impinge on the achievement of the strategic tasks. Among other factors, one of the key factors is government clearance and enabling environment for licensing and resource extraction.
- It is felt that current regulatory system for upstream oil & gas sector must facilitate a higher degree of coordination, integration, planning and management than in past and must be organized to meet today's complex needs.
- In the above-mentioned background, PetroFed is seeking industry inputs on views and suggestions for improving the performance of the system through better alignment, reduced duplication and variability, simplified access to the system for project owners and the public, and streamlined decision-making process.

2.2 Scope Limitations

- The scope of this report is to develop views and suggestions for potential improvements in the functioning of existing regulatory system for upstream oil & gas sector in the background of issues and challenges that are impeding its effectiveness and efficiency as experienced by industry participants.
- This report does not cover the entire policy & regulatory lifecycle for upstream oil and gas which would have entailed the role of various Ministries, review of policies related to

environment, defence, forest resources, land, water, etc. in an integrated manner. Accordingly, this report does not cover the following:

- Review of policy issues currently faced by Exploration & Production (E&P) sector/stakeholders in India;
- Review of present fiscal, legal and regulatory framework;
- Detailed review of present system of managing workflows in administration and regulation of E&P activities; and
- Review of the current contractual regime.

2.3 Need for the Regulator

- There are distinctions amongst the roles of the resource owner (Sovereign), the policy maker, the regulator, besides the NOC's engaged in E&P activities. Typically, the world over, policy makers and policy implementers (Regulators) operate at arm's length and mostly the policy implementing body (the Regulator) is created due to the need to maintain such arm's length relationship. While the roles of the resource owner (Sovereign) and the policy maker could be played effectively by the Government, the policy implementation role will have to be played by the Regulator at all times.
- The responsibilities of the regulator are broadly threefold namely-
 - Firstly and primarily, implement the National Oil and Gas policy for prudent resource management of the Oil and gas resources of the country including setting up hydrocarbon regulations for broadening and accelerating the exploration efforts, facilitate transfer of appropriate technology and "best practices" in this sector, with due attention to environment and also bring about competition by development and encouragement of private sector participation. In other words, the regulator should ensure responsible and suitable exploitation of the resources.
 - Secondly, while the Government should be the policy maker, the Regulator should effectively play the role of a policy seeker/enabler and play the role of an influencer in bringing out new policies i.e. effectively playing the role of bridging the gap between the Industry and the Government by identifying and addressing their needs for the smooth implementation of all activities related to upstream development in the country.

- Thirdly, facilitate regulatory approvals by being the single point of contact to obtain all clearances related to environment, forest, defence, etc. for the smooth implementation of the E&P projects.

2.4 Need for improvement in existing regulatory function

- Upstream oil and gas development projects are characterised by large capital investments. Investment is determined by the balance (or perceived balance) between opportunity and risk, which are relative concepts, especially with respect to exploration activities. Opportunity involved in finding commercial quantities of oil and gas and the large capital investments required for undertaking exploration and production result in significant business risks. However, those risk and opportunities cannot always be measured with a degree of accuracy or meaningfully defined in absolute term;
- The key to understanding the upstream investment decision is the recognition that the search for and development of new hydrocarbons involves many types of opportunities and risks, ranging from geological, operational, political, financial, legal, regulatory, and the market. Generally, they are categorised into below-ground and aboveground metrics.
- The below-ground metrics include recoverable reserves, reservoir characteristics, geological potential, and development costs. The above-ground metrics are even more difficult to measure and sometimes even to define. These include degrees of economic and political openness of host countries, ease of entry into and operations in a particular country, commercial, contractual and regulatory regime in the development of a given country's hydrocarbon resources.
- It is not possible to change the geology of the country, but governments of host countries can change the above-ground metrics to render their natural endowment more attractive to investors. The government's efforts to improve the investment climate in the sector include setting up of regulatory environment and license terms that support the exploration process and reduce risks.
- Currently, multiple ministries and agencies have regulatory responsibilities for various aspects of upstream oil and gas development and at various points in the project lifecycle. Each ministry or agency operates independently with different requirements for information.

This introduces complication, repetition and duplication of effort to the system. It can, at times, result in different parts of the system working toward different goals.

- There are also multiple points of contact and interface processes in the current system. Existing regulatory agencies vary considerably in how they interact with project owners, including their application requirements, the provision and management of data and information and their capability to manage contact with project owners throughout the project lifecycle.
- A recent study commissioned by MoPNG while evaluating contractual regime highlighted the following:
 - *Long delays in clearances of blocks:* One of the major issues holding back expeditious E&P activities in awarded blocks is the delay in granting of clearances from various ministries such as Ministry of Defence, Ministry of Environment and Forests and State governments. These delays range from months to even years in several cases. According to reports, including media reports, up to 80 blocks (both onshore and offshore) have been affected due to non-availability of licenses from various agencies like Ministry of Environment and Forests and Ministry of Defence. These delays are costly, given the capital intensive nature of the business.
 - The uncertain timelines caused by these delays affects investment decisions made by operators, and often lead to significant cost and time overruns. Also, delays could result in the operator missing a deadline committed under the contract (leading to imposition of penalties), which triggers lengthy disputes with the government. There have been instances, albeit rare, where, international oil companies have relinquished their blocks and/or quit operations in India altogether.
 - *Administrative burden on the government:* The MoPNG and its technical arm, DGH, are expected to play the very important and time-intensive role of monitoring and administering PSCs. The increase in the headcount in the Ministry and DGH has not kept pace with the increasing number of E&P contracts. DGH continues to be staffed with personnel on a deputation basis, and has not been able to significantly strengthen its capacity and technical expertise. This has resulted in an enormous administrative burden on the government which is becoming increasingly difficult to manage.

- *Manual system for managing workflows in execution of PSCs:* The current system of scheduling management committee meetings, sharing the agenda and noting the minutes of meetings is manual and paper-based. In the past, there have been issues relating to alignment of calendars for scheduling the meetings, establishment of the date for approval of key decisions, timely signing of minutes of the meeting etc. In other cases, when incomplete or inadequate information is submitted along with the application, it unnecessarily increases the cost and administrative burden on the government and its agencies. These issues have been a source of conflicts in the past, and addressing them is very important for maintaining the sanctity of the contract.
- In addition, there is considerable variability in how data and information is acquired, shared and accessed across the numerous agencies. Many agencies have in-house subject matter specialists, databases, geo-spatial repositories and linkages to practitioner communities that are generally not shared or are inaccessible between agencies.
- The lack of consistency between the processes used by existing regulatory agencies contributes to the complexity of the current system. It results in reduced predictability and increased compliance costs for both industry and government. The lack of alignment and consistency among the numerous agencies has been resulting in inconsistent decisions and conditions for upstream oil and gas development activities. Even when common approaches are applied, there are often varying degrees of interpretation and discretion applied by the regulatory agencies in making decisions.
- There is an opportunity to better coordinate regulatory functions in the upstream oil and gas project lifecycle. Bringing consistency to processes would help reduce overlap and duplication. Simplifying the structure would clarify responsibilities and accountabilities for these functions.

2.5 Enablers in regulatory mechanism

- Upstream petroleum (oil and gas) projects inevitably pose complex multi-jurisdictional (Central & State), environmental, safety and other challenges that must be managed.
- As for any industry, regulation of upstream petroleum projects are designed and implemented to promote community wellbeing without imposing unnecessary burdens.

- Furthermore, it needs to be ensured that the regulator has independence, accountability, clear regulatory objectives and does not face unnecessary conflict of interest in order to achieve the following objectives:
 - Separate policy formulation and advice from regulatory administration;
 - Efficient and optimise recovery of hydrocarbons;
 - Ensure human health and safety;
 - Protect the natural environment; and
 - Effective dispute resolution mechanism.
- Regulator should possess attributes of the good governance practices viz. effective, efficient, adaptable, predictable, fair and transparent.

Effective

- The structure of Regulator will be effective if it supports:
 - achieving multiple outcomes stated by multiple policies
 - resolution of issues and support to decision making
 - harmonization of approach across ministries and jurisdictions

Efficient

- The structure of Regulator will be efficient if it:
 - optimizes the effort required by all parties (time, quality, cost)
 - reduces duplication of regulatory effort
 - coordinates and aligns decisions to reduce potential conflicts
 - expends effort relative to the risk of an activity or group of activities
 - supports the standardization and automation of business rules

Adaptable

- The structure of Regulator will be adaptable if it:
 - can accommodate change to the system without significant redesign
 - encourages and supports innovation within the regulatory system (e.g., process)

- enables knowledge generated in the regulatory system to inform the policy makers

Predictable

- The structure of Regulator will enable predictable decision making if:
 - parties understand the system and how it works
 - there is clear accountability for decisions
 - enables decisions to be commensurate with planning horizons (timing)

Fair

- The structure of Regulator will enable fair decision making if it:
 - enables a clear understanding of the rationale for a decision
 - enables procedural fairness

Transparent

- The structure of Regulator will enable transparent decision making if:
 - information about processes and content is available to all
 - it enables openness, communication, and accountability

2.6 Role of Upstream Regulator

- Typically, the role of Upstream Regulator is to perform following functions:

Contracting

- Administration of exploration permits, production and licenses;
- Administration of, and authority to, approve production, well construction and drilling;
- Receive, assess and rule on applications to carry out all construction and operations, impose requirements;
- Receive reports, make inspections, monitor compliance, impose penalties;
- Receive complaints, adjudicate between parties;

- Setting statutory timelines both for individual stages in decision making (with clear and transparent stop-the-clock provisions) and for overall timelines;
- Requiring agencies to report publicly on performance can provide further incentives for improving timeliness;
- Ensuring clear guidelines on information requirements and removing duplicated reporting requirements;
- Reviewing all the State petroleum regulations and, where necessary, assist States in revising them to be objective based and consistent with the Central Policy and Regulations; and
- Setting up of an electronic approval tracking system for individual regulatory areas and overall approval process.

Resource Management

- Clearly articulate the objectives of intervention and periodically assess benefits and costs. Ensure that the resource management policy is administered in a manner consistent with the overall objectives of the policy;
- Conduct environment strategic assessments early and according to timeframes;
- Enhance transparency of the Environmental Assessors and provide them the requisite support; and
- Provide appropriate recognition for compliance with international standards.

Establish transparent processes:

- the rules are public (regulations, standards);
- procedures are fair, all parties have a “right to be heard”;
- the decisions are published, with reasons;
- there is an opportunity to appeal decisions; and
- commercial secrets are protected.

Background, objectives and functions of DGH are listed in Annexure 1

3 Potential improvement in the functioning of Upstream Regulator

- The aim should be to institutionalize national regulatory authority to manage all regulatory approvals associated with upstream petroleum activities.
- The Regulator should follow a lead agency approach ('one-stop-shop'), approval of most, if not all, aspects of an application should rest with the Regulator. A lead agency should manage all approval and licensing processes and provide companies with information on compliance requirements. It should maintain control of the process and, in most cases, should simply consult with other relevant agencies, such as an environmental agency, rather than formally refer the application to a separate agency for assessment.
 - Reduce delays (particularly for environmental and other statutory approvals and processes) by setting statutory timelines, ensuring legislative objectives are clear, promoting clear guidelines on information requirements and introducing a 'lead agency' approach for approvals which helps in:
 - minimising multiple approvals or duplicate assessment requirements; and
 - minimising overlapping administration by multiple agencies, or having clear administrative arrangements where multiple agencies are involved.
 - Consolidate specialist expertise, efficiently using resources and enhancing the ability to retain specialist expertise. Adequate resourcing can reduce the potential that project approvals at peak times are at the expense of compliance monitoring;
- The lead agency approach could be implemented in different ways, depending on which structural option is desirable. Using the general model as a foundation and the levels of integration, three separate options analysed for regulatory functions improvement are listed below:
 - **One Submission:** One Submission system is to provide access to the system via a single window and then coordinate and align the review requirements and processes across the existing multiple regulatory agencies
 - **One Window:** The *One Window* regulatory option builds upon the direction established in the *One Submission* option. The *One Window* option extends alignment of regulatory agencies through all stages of the project lifecycle – application, review, response, and

post approval. This aims to address the challenges of multiple processes and requirements throughout the project lifecycle

- **Single Regulator:** The third potential regulatory option, *Single Regulator* combines all of the regulatory functions currently undertaken by the multiple regulatory agencies into a single autonomous delivery structure
- The progression from *One Submission* to *One Window* to *Single Regulator* corresponds with increased alignment and improved integration of regulatory functions throughout the regulatory lifecycle

3.1 One Submission

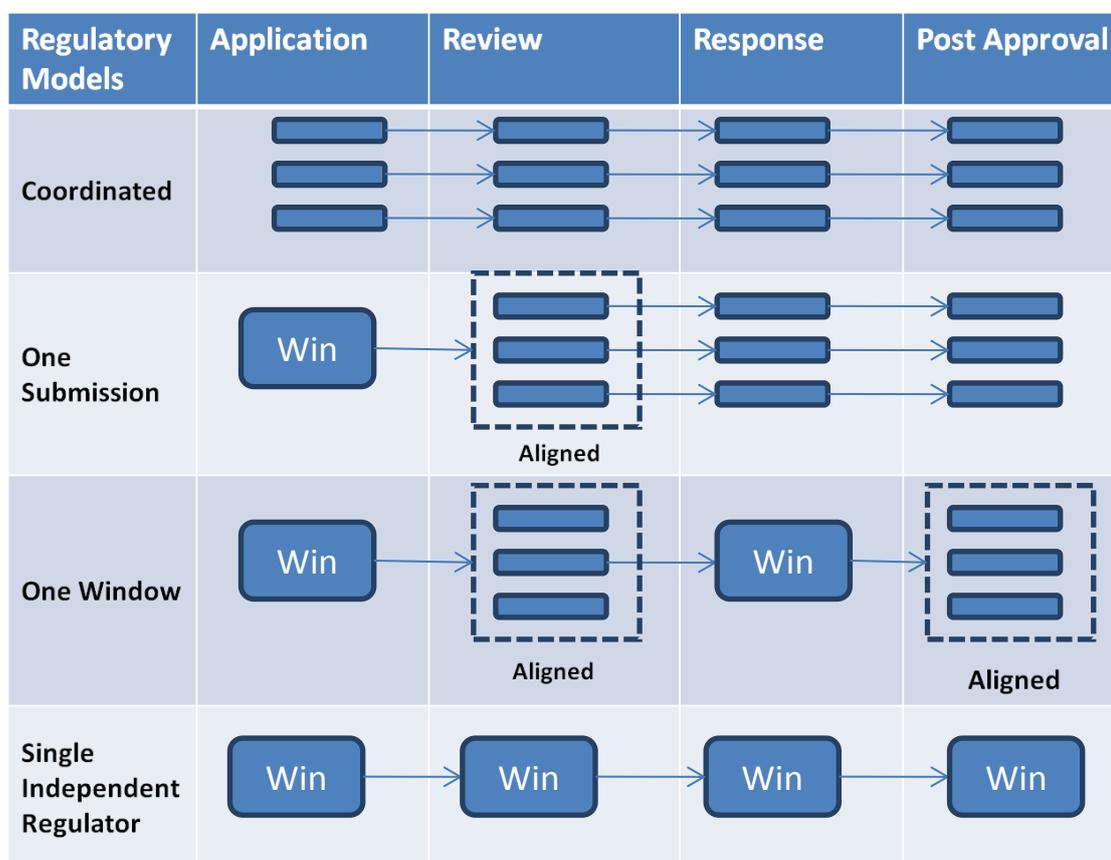
- One Submission system is to provide access to the system via a single window and then coordinate and align the review requirements and processes across the existing multiple regulatory agencies
- The *One Submission* alternative is proposed to address and alleviate the significant challenges associated with the application and review stages of a project, where project owners must adapt to multiple application processes and information requirements submitted to multiple agencies.
- One Submission proposes that applications are submitted through a single window, where project owners have a single entry point to multiple regulatory agencies. The window may be established as a separate entity from the regulatory agencies, or it may be incorporated into one of the existing multiple regulatory agencies.
- Further, this option suggests that regulatory agencies conduct a highly aligned review of applications received via the single window. Alignment in this component is internal to the multiple agencies and may be achieved through joint reviews, delegation of authority for certain types of projects, or some other mechanism. An aligned review of projects requires the integrated application information that results from a single window submission.
- Following an aligned review, each regulatory agency provides a separate response and undertakes post-approval activities independent of the other regulatory agencies. Coordination across regulatory agencies would benefit from alignment at the application and review stages, but there would be no explicit efforts to align decisions or post-approval activities.

3.2 One Window

- The *One Window* regulatory option builds upon the direction established in the *One Submission* option. The *One Window* option extends alignment of regulatory agencies through all stages of the project lifecycle – application, review, response, and post approval. This aims to address the challenges of multiple processes and requirements throughout the project lifecycle.
- *One Window* utilizes a single point of contact for all interactions between the project owners and the multiple regulatory agencies, although the administration of the window may differ at various stages of the regulatory process. This approach simplifies contact between the system and stakeholders at the application, response, and post approval stages.
- Strong alignment across the multiple regulatory agencies is conducted in the review stage and is carried forward to post approval activities. In this option, the alignment is contained in each agency with strong interdependency amongst agencies.

3.3 Single Regulator

- The third potential regulatory option, *Single Regulator* combines all of the regulatory functions currently undertaken by the multiple regulatory agencies into a single delivery structure
- This enhancement option is intended to address the challenges of multiple agencies and processes as well as consistency and alignment in regulatory decisions and post-approval activities.
- The *Single Regulator* option envisions a single entity having unified responsibility for the regulatory functions required to issue upstream oil or gas project approvals, and to monitor compliance with approvals.
- The progression from *One Submission* to *One Window* to *Single Regulator* corresponds with increased alignment and improved integration of regulatory functions throughout the project lifecycle



3.4 Comparative analysis of regulatory options with respect to attributes of good governance

One Submission	One Window	Single Regulator
Attribute of good governance: Effective		
<ul style="list-style-type: none"> Less effective because the ability to organize into “cross-functional units” is more difficult 	<ul style="list-style-type: none"> Increased alignment to include post approval including compliance and enforcement Decreased effectiveness because of the difficulty in organizing multiple regulatory agencies into “cross-functional units” 	<ul style="list-style-type: none"> Single regulator most able to harmonize as it has the whole service delivery picture Increased effectiveness resulting from the potential to organize into “cross-functional units”

One Submission	One Window	Single Regulator
Attribute of good governance: Efficient		
<ul style="list-style-type: none"> • Efficiency gains are limited to the application/review stage of a project lifecycle 	<ul style="list-style-type: none"> • Efficiency gains are realized throughout a project’s lifecycle • Alignment success is limited by the degree to which agencies are compelled to participate. 	<ul style="list-style-type: none"> • Large reductions in time and cost for industry to prepare applications and regulatory agencies to process applications • Significantly improved standardization and automation through use of a single agency
Attribute of good governance: Adaptable		
<ul style="list-style-type: none"> • The ability to adapt and innovate will be during application stage 	<ul style="list-style-type: none"> • Adaptation will be hampered by the infrastructure associated with multiple agencies (e.g. different information systems) 	<ul style="list-style-type: none"> • Highly adaptable because of only one organization (and its processes) are involved in the change.
Attribute of good governance: Predictable		
<ul style="list-style-type: none"> • Better clarity for industry and regulatory agencies limited to the application phase of a project’s lifecycle 	<ul style="list-style-type: none"> • Improved clarity and understanding for industry throughout project lifecycle because industry is dealing with a one window contact 	<ul style="list-style-type: none"> • Improved clarity and understanding for industry throughout project lifecycle because industry is dealing with one regulatory agency • Fixed application timing can be established throughout the system with single regulator
Attribute of good governance: Fair		
<ul style="list-style-type: none"> • No improvement in ability to communicate the rationale for a particular decision, because there are multiple decision-makers involved in any decision 	<ul style="list-style-type: none"> • Moderate improvement in ability to communicate the rationale for a particular decision, because multiple decision-makers have aligned their process and intents in advance of a decision 	<ul style="list-style-type: none"> • Large improvement in procedural fairness because there is one decision-maker

One Submission	One Window	Single Regulator
Attribute of good governance: Transparent		
<ul style="list-style-type: none"> Consistent information about front-end processes. 	<ul style="list-style-type: none"> Consistent information about all interfaces with regulators 	<ul style="list-style-type: none"> Consistent information about interfaces with single regulator

3.5 Suggestions to improve the functioning of DGH

Based on the above analysis, following are key recommendations to improve functioning of DGH:

- Empowered regulator** : There is a need to have an empowered regulator for Oil & Gas sector with clear separation between the policy making entity (the Government) and policy implementing body (the Regulator). Distinct and clearly defined role for Resource Owner/Regulator/Policy maker which will lend significant credence to governance of the sector and will be a key enabler.

The role of MoP&NG and DGH is clearly defined and segregated both for regulation and contract management and the same is required to be followed in letter and spirit to avoid overstepping of the respective roles.

It is felt that the primary role of DGH should be resource management. It should ensure acceleration of exploration efforts in the country for both conventional as well as unconventional hydrocarbon resources. E&P data management and making it available to the bidders and operators is another important role of the DGH. The expected role of DGH in each of these aspects in the background of its present functioning is discussed below:

- *Technical*: Presently, one of the primary roles of DGH is to advise the Government on technical and technological aspects. In order to fulfill its objective of reviewing the various technical proposals as well as appraisal/development plans, it often gets involved in the ambivalence of technical inputs. This not only creates enormous delays in decision making, many a times, there are inconsistencies in decision making between different operators. This is necessitated because of cost recovery

mechanism in the contracts and many of the recent PSC disputes with operators are testimony to that.

- It is felt that the technical overseeing is required to be bare minimum on the part of DGH in the day-to-day operation. It should rather ensure the compliance of international “best practices” and application of right technology. The day to day monitoring of petroleum operations may be entrusted to the National Oil Companies as practiced under Pre-NELP regime and in the E&P sector in other parts of the world.
- *Economic/Commercial:* Broadly, the role of DGH should be to ensure that the Government gets its share of profit petroleum or share of revenue as the case may be. For this to happen, the DGH should be strengthened with professionals who are trained properly on such matters. The role should be to broaden the economic base and ensure that industry meets standards for responsible and sustainable development.
- *Safety:* Oil Industry Safety Directorate (OISD) is a technical directorate under the Ministry of Petroleum and Natural Gas that formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the oil & gas industry in India. DGH needs to coordinate with OISD to facilitate the operators on safety issues. It should advise the Government on laying down safety norms and framing regulations on safety in operations as per its mandate.
- *Environment:* Presently, majority of the delays in exploration is due to delay in getting environmental clearances in time or not getting them at all. Once the rules are in place for ensuring environmental protection, such delays should be minimized. It may not be possible to bring all the environmental monitoring and regulations under the gambit of one regulator in India at present. It is suggested that DGH should have professionals deputed from the other relevant environmental protection agencies that would exclusively work for the E&P sector and guide the DGH as well as the operator.
- **Single Window clearance:** It is both an interface (i.e. a single point of contact) and a process (i.e. navigation through the regulations system). DGH should act as the single point

of contact for the operators and obtain all clearances viz. Environment, Forest, Defence, etc. and approvals on behalf of the E&P project owners. It provides a single contact person for all functional matters including information, applications, decisions, compliance, monitoring and enforcement

- As the single window method proposes alignment of various regulatory agencies through all stages of the project lifecycle that should be adopted as the preferred mode. Presently, under the current system, operators have to seek permissions from various agencies. The proposed Single Window method would expedite exploration activities in the country and save precious exploration time and resources and reduce the operator's cost burden. To begin with, single window mode cannot be adopted in country immediately, as there are too many agencies involved for granting various kinds of statutory clearances to the E&P operator. Alternately, to begin with, Government may obtain 'In-principle PEL' clearance from State Government and ensure non-encumbrance in the blocks prior to awarding of blocks to avoid delay in initiating exploration activities.
- It has been experienced on many occasions that the greater national objective becomes less important than local interests while granting a clearance. One of the factors that affect the operators most in India is the problem of acquiring land. Though the use of land is still not under one unified authority in our country, an attempt should be made to bring land use for energy purpose under one agency so that it can negotiate and fix the compensation. Therefore, there is an urgent need to bring the various state and local bodies on board. It is also suggested that the possibility of sharing of a percentage of royalty/some form of incentives could be one of the measures to be explored to encourage the land owners.
- **Improved workflow and process:** It has a portal (preferably electronic) for information management. This includes obtaining information about process rules, submitting an application, receiving a permit and providing information to support monitoring and compliance throughout the project lifecycle. It requires setting timelines both for individual stages in decision making and for overall clearance/approval process. This should be supported by electronic approval tracking system. The information management in

electronic mode could be implemented by the Ministry along with the National Informatics Centre (NIC).

- **Autonomous and competent:** DGH should have adequate access to technical expertise, budget and permanent manpower.
 - It may be noted that the mandate of DGH is more or less similar to any Technical arm/advisor established in various countries. Any agency draws its strength from its fair, transparent and consistent actions rather than autonomy. There is a need to streamline the role and functions of DGH as per its mandate and to excise the burden of monitoring of petroleum operations from Government to NOCs keeping the strategic importance of NOCs in nation building in line with international policies/practices.
 - Adequate technical expertise including requisite and competent manpower with professional integrity as well as experts on panel from reputed organizations from India and abroad are required to function as technical advisor to the Ministry, facilitator for the operators and for the purpose of co-ordination with other agencies.
 - Over the years, DGH has been seeking its technical, financial, legal, etc. manpower from various public sector enterprises. The work of DGH is multifaceted and requires talented and experienced manpower as per its specific requirement. The intricacies and nuances of contract management is one such area which requires personnel's acquainted with the objective of the Government & its policies, Production Sharing Contracts, Rules and Regulations of various regulatory authorities, good industry practices, etc.
 - The other disadvantage of deputation/tenure based arrangement is that even such manpower who has acquired knowledge and experience over a period of time gets replaced by a new lot periodically. It is suggested that the manpower needs to be trained regularly to discharge the functions of DGH.
- **Transparent:** The decisions should be published with reasons and there is opportunity to appeal decisions.
 - All the decisions need to be taken in a consistent, fair and transparent manner in accordance with the provisions of the contract, guidelines, Rules and

Regulations and Good International Petroleum Industry Practices (GIPIP). The decisions need to be published/posted on the website and should include detail reasons for accepting or rejecting a proposal for the sake of transparency. In case of disagreement between DGH and the Operator, provision for Appellate Authority must be made. There is a need to provide dispute resolution mechanism with an authority, which can arbitrate on issues of dispute.

- The regulator set up will have to be adequately empowered and resourced in terms of manpower and funds to effectively play its role. The regulator should have on its roll, adequate experienced manpower and present practice of deputation from the oil company should be done away with. Also, the set up should be embedded with specialist experts with adequate experience and exposure in related fields such an environment, forest and defence etc. besides the experts for other technical matters.
- Scope of activities of the regulator should end with coordinating as a single window for all clearances and approvals for smooth-start and implementation of the project. However, the role of compliance monitoring shall not vest with the regulator but will be that of multiple approval granting agencies such as environment, defence, State Government agencies etc.
- The Regulator by design should be proactive in addressing the concern of the upstream industry, mainly in the area of ensuring appropriate approval for the start of implementation of the project.
- Necessary Act should be brought about to ensure that the Regulator is separate and distinct from the Government, vesting with it some of the powers and authorities mentioned above, with commensurate accountability and also defining responsibilities related to other regulators/departments, towards working together for implementation of the national policies, in a responsible and sustainable manner. The act itself should clearly mention the powers and appointment procedures for the Regulatory body.
- Government of India may consider making DGH the E&P Regulator which will also provide the legitimacy and force law for all the works currently DGH is carrying out.
- Role of regulator in Royalty-PLP based contracts

- In royalty-PLP contracts, the role of upstream regulator should be confined to only reviewing of minimum work programme and checking the royalty / PLP being paid;
- Additionally, regulator should be a facilitator for industry for obtaining clearances from central and state governments;
- In the royalty-PLP regime, the operator spends his own money and there is no cost recovery. The operator in his own interest will ensure there is no extra expenses and use the best technology to optimise exploration and production. Hence, regulator should have no role in matters like choosing technology; and
- Rights of the Steering Committee for approval of annual budgets, approval of development plan and appointment of auditors should be not be regulated. Government should only monitor whether royalty-PLP payments were being made. This should be renamed as review committee.

4 Annexure 1 – Background, Objectives & Functions of DGH

Background, objectives and functions of DGH are listed below:

4.1 Background of DGH

- The Government of India, in the Ministry of Petroleum & Natural Gas have had under consideration the need to have an appropriate agency to regulate and oversee the upstream activities in the petroleum and natural gas sector and also advise the Government in these areas. The Dasgupta Committee, which has reviewed the management of the Bombay High reservoir, had recommended creation of an autonomous conservation board to oversee and review that oilfield development conforms to sound reservoir engineering practices in line with national interests. The Kaul Committee, which examined ONGC's organizational structure, also recommended the establishment of an independent regulatory body called the Directorate General of Hydrocarbons.
- The upstream petroleum sector has been largely a monopoly of public sector companies and that was being increasingly thrown open to private investment which invariably led to a number of new operating companies in the private and joint sectors entering the field. There was thus a need to establish an agency that could effectively supervise the activities of all these companies in the national interest taking all the above into consideration Government of India decided to set up a Directorate General of Hydrocarbons under the administrative control of the Ministry of Petroleum and Natural Gas.
- The Directorate General will be manned by such staff as the Ministry in consultation with the Director General decide and shall also be drawn from the oil industry on deputation/tenure basis. The Director General will be appointed by Government on tenure/deputation basis and drawn from the oil industry/Government. Remuneration to staff is as per the rules of concerned parent organization.
- Specialists from outside the oil companies, as considered necessary, may also be appointed as consultants/ advisers on contractual basis.
- The expenditure of the Directorate General will be fully funded by grants from the oil Industry Development Board.

- DGH functions through the following bodies / council:
 - *Administrative Council* - As per the Govt. of India order O-32012/1/95-ONG.III dated 02.02.2001, Administrative Council for DGH was set up to guide and take care of all administrative aspects of its functioning. The Administrative Council, in particular, takes decisions on various matters concerning establishment and budget, as also under takes periodic review of the functioning of DGH. The Chairman and Members of the Administrative Council are appointed by the GOI. The Administrative Council is headed by Chairman of the council.
 - *Advisory Council* - The Directorate General would have an Advisory Council, appointed by the Government of India comprising a Chairman and members, who will be eminent persons in the field of oil exploration and production. The Advisory Council will be serviced by the Directorate which will be headed by a Director General who will also be the Member Secretary to the Council.

Meeting of the above Councils are not open to the public.

4.2 Objectives & Functions of DGH

Objectives of DGH

- The objective of the Directorate General of Hydrocarbons is to promote sound management of the Indian petroleum and natural gas resources having a balanced regard for the environment, safety, technological and economic aspects of the petroleum activity.

Functions of DGH

- To provide technical advice to the Ministry of Petroleum and Natural Gas on issues relevant to the exploration and optimal exploitation of hydrocarbons in the country and on the strategy of taking up exploration and exploitation of oil and gas reserves abroad by the national oil companies;
- To review the exploration programmes of companies operating under Petroleum Exploration Licenses granted under the oil fields (Regulation and Development) Act

1948 and the Petroleum and Natural Gas Rules, 1959 with a view to advising Government on the adequacy of these programmes;

- To reassess the hydrocarbons reserves discovered and estimated by the operating companies in discussion with them;
- To advise the Government on the offering of acreage for exploration to companies as well as matters relating to relinquishment of acreage by companies;
- To review the development plans for commercial discoveries of hydrocarbon reserves proposed by the operating companies and advise Government on the adequacy of such plans and the exploration rates proposed and matters relating thereto;
- To review and audit concurrently, the management of petroleum reservoirs by operating companies and advise on any mid course correction required to ensure sound reservoir management practices in line with the optimal exploitation of reserves and the conservation of petroleum resources;
- To regulate the preservation, upkeep and storage of data and samples pertaining to petroleum exploration, drilling, production of reservoir etc. and to cause the preparation of data packages for acreage on offer to companies;
- To advise Government on the laying down of safety norms and framing regulations on safety in oil field operations, prescribe pollution control measures and assist in inspection and periodic safety audit;
- All other matters incidental thereto and such other functions are to be assigned by Government from time to time.
- Subsequently, in 2006 Government of India in exercise of the powers conferred under Section 8 of the Oil Fields (Regulation and Development) Act, 1948 (53 of 48 read with rule 32 of the Petroleum and Natural Gas Rules, 1959, designated Director General of Hydrocarbons as the authority or agency to exercise the powers and functions of the Central Government as under:
 - To monitor the upstream petroleum operations in India including coalbed methane and gas hydrates operations in accordance with the Act and the Rules;

- Review and monitor the exploration programme and development plans for commercial discoveries of hydrocarbon reserves proposed by licensee or lessee with a view to optimizing hydrocarbon recovery from a reservoir in accordance with generally accepted international petroleum industry practices;
 - Review the management of petroleum reservoirs by licensee or lessee and advise them on any action which may ensure proper management of the petroleum reservoirs including their conservation in accordance with generally accepted international petroleum industry practices;
 - To ask for and maintain in a readily retrievable form all geo-scientific data, reports and information from licensee or lessee and store and preserve data and samples pertaining to petroleum exploration, drilling, production and connected operations
 - Review the reserves discovered by the licensee or lessee in accordance with generally accepted international petroleum industry practices;
 - To lay down norms for declaration or announcement of discoveries by licensee or lessee;
 - To exercise the powers of the Central Government under the rules 24, 25, 26, 27 & 30 of the Petroleum and Natural Gas Rules, 1959; and
 - To monitor oil and gas production, royalty and any other charges, fees and levies, costing petroleum etc.
- In addition to above, DGH was also empowered to prepare detailed and transparent guidelines including timelines and accepted international petroleum industry practices in a consistent, fair and transparent manner with the approval of the Central Government.
 - The above powers are subject to the condition that the powers and functions shall be discharged by DGH in accordance and consistent with respective Production Sharing Contract / agreement signed by the Government. DGH also carries out half yearly review of the PEL acreages granted under nomination regime to the NOCs.

Source: Directorate General of Hydrocarbons and Industry input

5 **Annexure 2 - Learning from International Practice**

Following are select examples of upstream regulators established and functioning globally:

5.1 **Alberta Energy Regulator (AER)**

- Objective of AER is to ‘*Provide for the efficient, safe, orderly and environmentally responsible development of Alberta’s energy resources*’
- The AER is authorized to make decisions on applications for energy development, monitoring for compliance assurance, decommissioning of developments, and all other aspects of energy resource activities (activities that must have an approval under one of the six provincial energy statutes). This authority extends to approvals under the public lands and environment statutes that relate to energy resource activities.
- The AER regulates over 185,000 wells and 405,000 km of pipelines, 775 gas processing plants, nine oil sands mines, more than 50 thermal in situ and 200 primary/enhanced schemes, five bitumen upgraders, ten coal mines and four processing plants. The AER is responsible for managing Alberta's energy resources.
- The AER’s creation comes from the Government of Alberta-led Regulatory Enhancement Project. This project aims to ensure that Alberta’s resource policy development, public consultations, and regulation of energy development were efficient and competitive while effectively supporting public safety, environmental management, and resource conservation objectives – all while respecting the rights of landowners.
- From this process the government drafted the Responsible Energy Development Act (REDA), which was passed in December 2012. Under this Act, the new regulator operates at arm’s length from the Government of Alberta.

Governance Structure

- The AER’s governance structure is designed to achieve benefits of both strong corporate oversight and independent adjudication. The corporate, operational, and governance responsibilities have been separated from adjudicative functions (i.e., hearings on energy applications)
 - *Chair and Board of Directors* - The AER is headed by a chair, who leads a board of directors, all appointed by the Lieutenant Governor in Council and all part-time

directors of the AER. The chair and the board of directors are not involved in the AER's day-to-day operations and decisions. Rather, the directors set the general direction of the regulator's business affairs and are charged with approving regulatory change and setting performance expectations for the AER and its chief executive officer (CEO). In this way the AER's board operates as a truly "corporate-style" board.

- *Chief Executive Officer* - The current CEO was appointed by the Lieutenant Governor in Council upon the chair's recommendation; in the future, the board of directors will appoint the CEO, subject to ministerial approval. The CEO, who reports directly to the chair, oversees day-to-day operations, which include receiving and making decisions - and delegating decision making - on applications, monitoring and investigating energy resource activities for compliance, and closure of energy developments, including remediation and reclamation.
- *Hearing Commissioners* - Hearing commissioners represent another key part of the AER's structure. Reporting to a chief hearing commissioner, the commissioners are responsible for the AER's adjudicative functions, acting as the decision makers on major applications and conducting hearings. The commissioners are also involved in developing the organization's hearing procedures and rules. Hearing commissioners are independent adjudicators and their decisions are generally only overturned by the Court of Appeal of Alberta.
- *Code of Conduct and Ethics* - AER Board of Directors, Hearing Commissioners, and employees are bound by a code of conduct and ethics.

AER implementation

- Creating the AER is a complex undertaking that requires careful implementation. For this reason, the Government of Alberta is taking the time to ensure a well-managed transition using a three-phased approach.
 - *Phase 1*, which occurred in June 2013, involved the government proclaiming certain sections of the Responsible Energy Development Act (REDA), resulting in the launch of the AER and its new governance model.
 - *Phase 2* begins the transfer of additional responsibilities to the AER, beginning with public land and geophysical jurisdiction and the Private Surface Agreements Registry.

New rules and processes for public engagement and participation will be in effect as of November 30, 2013.

- *In Phase 3* all environmental and water jurisdictions under REDA will come into force and will be transferred to the AER. This phase represents the final step in creating a single regulator for upstream oil, oil sands, natural gas, and coal development in Alberta.

All phases will be completed by spring 2014.

The AER's funding

- The AER is 100 per cent funded by industry and is authorized to collect funds through an administrative fee levied on oil and gas wells, oil sands mines, and coal mines. The industry-funded model is commonly used by regulatory agencies from various sectors across North America.

Source: www.aer.ca

Role of AER

AER will perform following functions:

- Application, Review and Authorization of Energy Activities - The single regulator will serve as a single point of access. Project proponents will no longer need to initiate multiple applications with different regulatory bodies. They would be required to submit and access information about a proposed energy activity from a single regulator. The goal is to establish a consistent process involving one application, one review, and one decision. This will provide greater certainty and predictability for those involved in that process.
- Monitoring compliance
- Monitoring site conditions and effects on the environment
- Overseeing suspension, abandonment, and closure
- Remediation and reclamation
- Enforcement
- Hold inquiries under Public Inquiries Act

5.2 Brazil: National Agency of Petroleum, Natural Gas and Biofuels (ANP)

- In August 1997, the Brazilian Congress passed Law 9.478/97, known as the "Petroleum Law". This legislation, along with a 1995 Constitutional Amendment, provided the authorization and roadmap for sweeping changes within the Brazilian energy sector through a comprehensive program of market-oriented reforms. The Petroleum Law provided the legal framework for the opening up of Brazil's oil and gas sector to private sector involvement and investment in addition to instituting the Agência Nacional do Petróleo (the "ANP"), which has the responsibility for the rational exploitation of the nation's petroleum resources and maintaining a fertile and responsive business climate which protects and balances the interests of both the private and public sectors.
- The ANP is the entity which regulates the activities comprised by oil, gas and biofuels industries in Brazil. It is a federal autarchy connected to the Ministry of Mines and Energy, being responsible for the execution of the national policy for the petroleum, natural gas and biofuels energy sector. The agency has the duties of regulating (to establish rules by means of directives, instructions and resolutions); promoting bidding rounds and celebrating contracts with concessionaires, on behalf of Union; and enforcing the activities of the regulated industries, directly or by means of agreements with other public entities
- The ANP's objectives are threefold:
 - First, to broaden and accelerate the exploration effort within Brazil;
 - Second, to facilitate the transfer of appropriate technology and "best practice" to the sector; and
 - Third, to encourage the development of a robust and dynamic private sector, open to both foreign and domestic companies.
- The ANP aims at promoting the regulation, contracting, and inspection of the economic activities related to the petroleum industry, and shall:

- within the range of its attributions, implement the national oil and natural gas policy, as a part of the national energy policy, and with emphasis on the guarantee of the supply of products throughout the country and on the consumers' interest regarding to price, quality and availability of products;
- promote studies aiming at the delimitation of blocks, for the purpose of concession of the activities of exploration, development and production;
- regulate the execution of geological and geophysical surveys applied to oil exploration, and aiming at the collection of technical data for the commercialization, under a non-exclusive basis;
- elaborate the bidding announcements and promote the bidding for the concession of exploration, development and production activities, signing the relevant contracts and inspecting its execution;
- inspect, either directly or through agreements with entities of the States and the Federal District, the activities of the petroleum industry, as well as applying administrative and monetary penalties foreseen by Law, regulation or contract;
- prepare the processes with declarations of public usage, aiming at the expropriation and the institution of administrative easement of areas essential to oil exploration, development, and oil and natural gas production, etc.;
- enforce the good practices for the environment preservation;
- stimulate the research and the development of new technologies for exploration, etc.;
- organize and upkeep the information and technical data bank related to petroleum industry activities;
- consolidate annually the data on national oil and natural gas reserves provided by the companies, and be responsible for their disclosure;
- manage contracts.

Organisational Structure of ANP

- The ANP shall be directed by a collegiate board composed of one General Director and four Directors:
- The members of the board shall be appointed by the President of the Republic, after having their names approved by the Federal Senate, as per the Constitution of Brazil.
- The members of the board shall serve a mandate of four years and renewal of the appointment being permitted.

Funding of ANP

- The income of the ANP shall be derived from:
 - the amounts allocated in the General Budget of the Federal Government, special credits, transference, etc.;
 - the revenues derived from agreements or contracts signed with entities, organs or enterprises; and
 - the donations, legacies, subsidies, and other resources possibly thereto assigned.

Transparent decision making process

- The deciding process of the ANP shall obey principles of legality, impersonality, morality, and publicity.
- The deliberative sessions of the board of directors of the ANP, aiming at resolving disputes between economic agents, consumers, users of goods and services of the petroleum industry, shall be public, their electronic recording being permitted, and the acquisition of copies by the interested parties being guaranteed.
- The initiative of law projects or the alteration of administrative norms implying in a change of the rights of economic agents, consumers or users of goods and services of the petroleum industry, shall be preceded by a public audience, convoked and directed by the ANP.

- The by-laws of the ANP will establish the procedures to be adopted for the solution of conflicts among economic agents and consumers, emphasizing conciliation and arbitration.

Source: Extract from Law no 9478 of August 6, 1997 of Brazil

5.3 Norwegian Petroleum Directorate (NPD)

- The legal basis and regulatory framework for petroleum activities in Norway is conferred by the Petroleum Activities Act 1996 and the associated Petroleum Activities Regulations 1997. The Norwegian State controls petroleum activities, and no activity is permitted without the licences, approvals, consents and the Joint Operating Agreement which are required pursuant to the Petroleum Activities Act 1996.
- Ministry of Petroleum and Energy (MPE) is responsible for resource management and the sector as a whole. NPD is an administrative subordinate to the MPE. The NPD is headquartered in Stavanger and has an office in Harstad and has a staff of a little over 200. The NPD is an important advisory body to the MPE, and plays a major role in the management of resources.
- Norway is well known for an administrative system in which it assigns oil sector functions to three state-controlled institutions, each with its own distinct role. First, there is the commercial entity, NOC Statoil, which today carries out extensive oil operations both in Norway and abroad. Second, there is the policy-making body, the Ministry of Petroleum and Energy. The Ministry works with (and has at various points guided) the country's political leadership in setting goals for the sector, makes plans to achieve these goals, and oversees the crucial licensing process.
- Third, there is the regulatory and technical advisory agency, the Norwegian Petroleum Directorate (NPD), which compiles data on all hydrocarbon activities on the Norwegian Continental Shelf (NCS), collects fees from oil operators, advises the Ministry on technical matters, and sets hydrocarbon regulations related to resource management.

Key features of NPD

- The paramount objective of the Norwegian Petroleum Directorate is to contribute to creating the greatest possible values for society from the oil and gas activities by means of prudent resource management based on safety, emergency preparedness and safeguarding of the external environment.
- The NPD has a national responsibility for data from the Norwegian continental shelf. The NPD's data, overview and analyses constitute a crucial factual basis on which the activities are founded.
- The NPD shall be a driving force for realising the resource potential by emphasizing long-term solutions, upside opportunities, economies of scale and joint operations, as well as ensuring that time-critical resources are not lost.
- In cooperation with other authorities, the NPD is to ensure comprehensive follow-up of the petroleum activities.
- The NPD sets frameworks, stipulates regulations and makes decisions in areas where it has been delegated authority. The NPD is responsible for conducting metering audits and collecting fees from the petroleum industry.
- The primary functions of the NPD are to:
 - Exercise administrative and financial control to ensure that petroleum exploration and exploitation is carried out in accordance with prevailing legislation, regulations, guidelines, decisions and licensing terms
 - Ensure that petroleum exploration and exploitation is pursued in accordance with the guidelines laid down by the MPE.
 - Advise the MPE on issues relating to submarine natural resource exploration and exploitation
 - Issue regulations relating to resource management
 - Supervise the industry's compliance with regulations for resource management

- Perform resource assessments and maintain a resource inventory
 - Ensure that petroleum activities minimize discharges and emissions to the external environment
 - Manage and make available petroleum data and information
 - Audit fiscal metering systems
 - Ensure security of deliveries
 - Handle CO2 tax issues on behalf of the Ministry of Finance
 - Emphasize cost-effectiveness in exploration and production, cost-effectiveness in utilization of the infrastructure and coordination across production licenses
 - Support sister organizations in other petroleum producing countries through institutional cooperation or technical assistance.
- There are a number of key principles of the Norwegian Petroleum system:
 - To broaden and accelerate the exploration effort within Norway;
 - A stable, predictable, framework where the conditions of exploitation establish acceptable commercial incentives. The Norwegian State is aware of the fact that investors in the oil and gas business face prospectivity uncertainty (geology, price of petroleum in the world market, and technology). Uncertainty about terms and contractual stability should be minimized, whilst still maintaining a framework that is flexible and responsive to change;
 - Incentive based management that is facilitated and not hampered by administrative decisions. The basic philosophy is “letting a responsible industry do what they do best” for mutual benefit of both the State and the industry
 - The State sees transparent and predictable processes and decisions as the heart of petroleum policy, as transparency plays a key role in the working relationship between the government and the industry;

- Clarity and transparency concerning the roles of the State: This is a fundamental element of the Norwegian petroleum policy, since the Norwegian government sees that it is only through clarity of roles that efficient and effective resource management can occur;
- Through the licencing policy and contractual framework ,the Norwegian State aims to pool resources, capital, competence, research, plurality of ideas and internal checks and balances between the licencees and their relationship with the State;
- The state as resource owner acts as the administrative governmental body establishing policies, framework conditions and decisions relating to petroleum activities;

Source: Norwegian Petroleum Directorate

5.4 Department of Mines and Petroleum, Western Australia (DMP)

- DMP is the State's lead agency in attracting private investment in resources exploration and development.
- It also carries prime responsibility for regulating these extractive industries and dangerous goods in Western Australia, including the collection of royalties, and ensuring that safety, health and environmental standards are consistent with relevant State and Commonwealth legislation, regulations and policies.
- DMP facilitates the State's economic development by delivering services and solutions to enhance Western Australia's business environment and ensure continued growth.
- Through leadership, knowledge and a highly innovative workforce the department aims to provide services valued by its customers and industry and effectively and efficiently achieve the government's strategic outcomes for the State's economy.
- Targets include broadening the State's economic base, creating new jobs and ensuring that industry meets government standards for responsible and sustainable development. These targets are pursued through services that are focused on resource access and development approvals, policy and advice, development facilitation, brokering opportunities, information provision and financial assistance.

- DMP's customer base is in the resources, manufacturing, science and technology and service sectors. In addition, DMP provides the administrative framework for collecting mineral and petroleum royalties, a major source of State revenue.
- The Petroleum Division's responsibilities is to:
 - Encourage and facilitate responsible exploration, development and production of petroleum resources and other energy sources.
 - Administer and control petroleum exploration and production in accordance with the various Petroleum Acts and the directions pertaining to those Acts.
 - Administer and negotiate future act Native Title Act requirements for petroleum title applications under State legislation.
 - Engage with the petroleum industry on matters pertaining to Aboriginal cultural heritage and Reserve land issues.
 - Coordinate with State Departments and industry.
 - Make available areas for exploration and make recommendations on the grant, renewal or cancellation of permits and licences.
 - Evaluate all technical matters relating to drilling, formation evaluation, reservoir engineering, and production in accordance with good oilfield practice.
 - Advise on exploration evaluation and assess all permit and work applications.

Source: <http://www.dmp.wa.gov.au>

5.5 Petroleum Management Unit of Petronas, Malaysia

- Petronas is the national oil and gas company of Malaysia vested with the entire ownership and control of the petroleum resources in the country and is wholly-owned by the Government of Malaysia. As custodian of Malaysia's oil and gas resources, Petronas is entrusted with the responsibility to develop and add value to the nation's hydrocarbon resources. The Petroleum Management Unit of Petronas acts as resource owner and manager of Malaysia's domestic oil and gas assets. It manages the optimal exploitation of

hydrocarbon resources and enhances the prospectivity of domestic acreages to attract investment and protect the national interest.

5.6 Department of Petroleum Resources (DPR), Nigeria

- Department of Petroleum Resources, Nigeria is a technical arm of the Ministry of Petroleum Resources and has the statutory responsibility of ensuring compliance to Petroleum laws, regulations and guidelines with the following functions:
 - Supervising all Petroleum Industry operations being carried out under licences and leases in the country.
 - Monitoring the Petroleum Industry operations to ensure that are in line with national goals and aspirations including those relating to flare down and Domestic Gas Supply Obligations.
 - Ensuring that Health Safety & Environment regulations conform to national and international best oil field practice.
 - Maintaining records on petroleum industry operations, particularly on matters relating to petroleum reserves, production/exports, licences and leases.
 - Advising Government and relevant Government agencies on technical matters and public policies that may have impact on the administration and petroleum activities.
 - Processing industry applications for leases, licences and permits.

5.7 National Development and Reform Commission (NDRC), China

- The NDRC, a department of China's State Council is the primary policy making, planning, and regulatory authority of the energy sector while four other ministries oversees various components of the oil policy. The National Energy Administration (NEA) linked with NDRC acts as key energy regulator. The main functions of NEA, among other duties, are as under:
 - Approving new energy projects in China

- Setting domestic wholesale energy prices
- Implementing the central government's energy policies
- China's NOCs, CNPC and Sinopec are vertically integrated firms that own both upstream and downstream oil and gas assets. CNOOC Limited engages in oil and natural gas exploration, development and production activities in the offshore either independently or through production sharing contracts with foreign partners.

5.8 PetroVietnam (Vietnam Oil and Gas Group), Vietnam

- PetroVietnam is responsible to the Government of Vietnam for the general management of the petroleum operations.

5.9 Ministry of Industry and Energy, Azerbaijan

- Ministry of Industry and Energy is the regulator and SOCAR is the State oil company is responsible for management of all aspects of exploration of oil and gas fields in the country.

5.10 Sonangol, Angola

- Sonangol is the regulator and responsible for exploration, production, manufacturing, transportation and marketing of hydrocarbons in Angola. Sonangol Group participates in E&P activities through its subsidiary company (P&P) and has been authorised by the Government of Angola to hold 50% Participating Interest.

5.11 Agencia Nacional de Hidrocarburos (ANH), Columbia

- ANH is the regulator. Ecopetrol is NOC and enjoys special privileges and incentives.

5.12 Ministry of Natural Resources, Russia

- Ministry of Natural Resources is the regulator. Gazprom and Rosneft are the NOCs, which have special privileges and incentives.

5.13 Ministry of Oil and Gas, Kazakhstan

- Ministry of Oil & Gas is the regulator and KazMunaiGas (KMG EP) is the NOC which has the right of first refusal, preferential access rights, right to enter into direct negotiations with the government, without a competitive tender process for rights to any unlicensed oil and gas acreage in the country.

5.14 Ministry of the People's Power for Petroleum and Mining, Venezuela

- Ministry of People's Power for Petroleum & Mining is the regulator. The upstream activities are reserved for Venezuelan state through state owned enterprise PDVSA.

5.15 Petroleum Agency SA, South Africa

- Petroleum Agency SA is the regulator. PetroSA, the NOC has the back in option of 10%.

5.16 Ministry of Energy and Mineral Resources (MOEMR), Indonesia

- The earlier Regulator BPMIGAS has been abolished due to judicial review of the oil and gas law. Presently, the upstream Oil and Gas business is being regulated by Temporary Work Unit under the Ministry of Energy and Mineral Resources.