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**IMPLICATIONS FOR ADVANCED SKILL  
DEVELOPMENT: A STRATEGIC PETROLEUM  
RESERVE**

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# Implications for Advanced Skill Development: A Strategic Petroleum Reserve

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**Abstract – Oil and gas companies have lost many of their employees to their competitors. A shortage of labor skills has emerged in the oil and gas industry. As a consequence of this shortage retaining top performance employees is becoming a major concern for many oil and gas companies. Retention cannot be achieved without motivation. This study of what motivates employees in the oil and gas industry. A premium Indian based Oil Company as a case study is investigated. Results show the implications for advanced skill development. This study concludes that although money is important in a competitive market environment; however non-monetary factors also play a major role in motivating oil and gas employees than monetary factors.**

**Keywords: Motivation, Challenge, Oil and Gas Industry, Companies, Employees, Performance, India, Empowerment, Market, etc.**

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## 1. INTRODUCTION

The Society of Petroleum Engineers (SPE) usually reflects the most challenging issues that face the oil and gas industry in their meetings and conferences. Couple of years back, a shortage of labor skills was not even an issue to be discussed in the SPE meetings and conferences, however this issue has emerged in the oil and gas industry and retaining top performance employees is becoming a major concern for many oil and gas companies (Tealdi, Bruni, 2005). Recently most of SPE conferences have in their agenda discussions on the shortage of labor skills which really reflect the magnitude and the size of this issue. Motivation comes from the word move and action. Retention cannot be achieved without motivation; in order to retain an employee he needs to be motivated. A key ingredient in to both performance and retention is motivation (Asim, 2013). A key insight regarding motivation that many managers in the oil and gas companies misses is that motivation comes from self and within. Motivation is not about forcing people to do something; it is about creating the environment where employees will be motivated (Maduka, & Okafor, 2014). Many managers in the oil and gas companies when asked what motivates their employees and how to retain them always answer with confidence money, money and money as the only retention factor. It is because of this limited view that many companies are having high turnover rates. Money is necessary but it is not sufficient to retain an employee.

## 2. REVIEW OF LITERATURE:

An oil company needs to do more than increasing salary, in addition it has more options that are non-monetary and are very effective in order to retain and motivate employees. To show these factors and options this paper addresses the question - what motivates employees in the oil and gas industry? Before addressing this question it is important to point out reasons of why oil and gas industry is facing this problem. In other words, why motivation is becoming a challenging issue now and what are the recent changes in the oil and gas industry that precipitated motivation to become a challenge? This is discussed in more detail for the Indian market.

The Indian economy showed indications of recuperation in a speculative worldwide financial condition amid 2015-16. The development rate of Gross Domestic Product (GDP) at steady (2011-12) costs is evaluated to have expanded by 7.6% in 2015-16 as against 7.2% in 2014-15. Development rate of Gross Value Added at steady essential costs for "Assembling" division and 'Mining and quarrying' were 9.3% and 7.4% opposite the development of 5.5% and 10.8% separately in 2014-15. The restoration in development of the modern division and decrease in global costs of unrefined petroleum prompted to a help in utilization. Interest for petroleum items expanded by 10.86% amid April-March, 2015-16 over a similar period a year ago. Given the restricted residential accessibility of raw

petroleum and characteristic gas, the nation is constrained to import more than 75% of its local prerequisite. I.1 Crude Oil and Natural Gas Production: The unrefined petroleum generation amid the year 2015-16 is at 36.950 Million Metric Tons (MMT) as against creation of 37.461 MMT in 2014-15, demonstrating a diminishing of 1.36%. Deficit of generation in Mumbai resource was because of characteristic decrease of develop fields and not as much as imagined creation from new and negligible fields. Creation was additionally influenced because of different reasons, including bury alia deferred/less pick up from a portion of the fields (Ahmedabad resource), control shutdown because of tornado (Ahmedabad and Mehsana resource), less air infusion (Mehsana resource), increment in water cut (Mehsana and Cambay resource) and conclusion of wells for apparatus less employments (Assam resource). Decrease underway from Upper Assam Basin and drawn out and visit bandhs/bar additionally influenced unrefined generation in North East. Condensate receipt was influenced because of re-directing of South Bassein Hazira Trunkline and time slack in standardization of creation after Bassein Platforms An and B and shutdown for doing re-development exercises. Common Gas creation amid the year 2015-16 is at 32.249 Billion Cubic Meters (BCM) which is 4.18 % lower than generation of 33.657 BCM in 2014-15. This was chiefly because of regular decrease in a portion of the fields, underperformance of wells, conclusion of wells for upkeep exercises, spontaneous shutdown of GAIL gas line and less off-take by the purchasers. An aggregate of 7 wells in D1 and D3 and 2 wells in MA field stopped to stream in 2015-16 because of water/sand entrance issues. Generation from residual Wells of KG-D6 likewise declined quickly. Government has taken a few strategy activities and changes in the hydrocarbon division which incorporate, entomb alia, new Hydrocarbon Exploration and Licensing Policy (HELP), Discovered Small Field Policy, advertising and estimating flexibility for new gas creation from Deepwater, Ultra Deepwater and High Pressure-High Temperature regions, augmentation of Production Sharing Contracts for little and medium size fields, connecting the straightforward new gas evaluating recipe to the worldwide market, early adaptation of hydrocarbon revelations, approach on testing prerequisites for disclosures piece, reassessing the hydrocarbon potential in India's sedimentary bowl, assessing around 1.5 million square kilometers unapprised bowls and setting up of National Data archive.

#### External Factors:

The obvious question is why now? In order to understand why motivation is becoming an issue in the oil and gas companies in India, there is a need to understand the recent changes in this industry. A critical analysis shows that there are many external factors that lead to this issue, first, few years back there used to be only one large oil company which is the national Oil Company (Manzoor, 2012). There was no competition in the market, however with the new

government initiative to increase production, now there are many local and international oil and gas companies and a number of related industries entering the Indian market. As the level of competition increased, employees started leaving national companies and even Government employment to these new companies. It is important to indicate that national companies have restrictions on salary increases and cannot compete easily with private and international companies. Second, the increased number of local and international oil companies entering the Indian market, meant that shortage of labor skills in the Indian market became more critical. This phenomenon is not only excluded to the Indian market but it is a worldwide phenomenon. Third, the cost of hiring an Indian with an experience of 10 years is approximately half of that recruiting an expatriate; this increased the demand for the Indian in the local market. All these factors combined have led many employees leaving their employers and hence the issue of motivation and retention has emerged. In order to know what kind of strategy a company should adopt there is a need to know what really motivate employees in the oil and gas companies.

#### Motivation of Oil and Gas industry Employees:

The purpose of this study is to check the impact of employee motivation on organizational performance in oil and gas sector. This research was conducted on different level of management in oil and gas sector of India. It is concluded that by examining the work performance and recognizing employs' performance and motivating them by giving proper rewards, the employees get satisfied and thus their level of output increases and enhances the performance of the organization. The study recommends that organizations should make motivation as a habit to achieve improved performance.

### 3. IMPLICATIONS FOR ADVANCED SKILL DEVELOPMENT IN THE OIL AND GAS INDUSTRY

- Enterprises in the business have for quite some time been focused on preparing their workforces: they spend the cash that is required and many are reassessing and methodically enhancing their ways to deal with cutting edge ability improvement. There are, be that as it may, two indicates that need be tended to by the business on the off chance that it is to keep up its notoriety for a world-class creation workforce notwithstanding a fixing work advertise. Firstly, it must guarantee that supporting learning is altogether disguised by administrators and, furthermore, that there is far reaching participation in the advancement of driving edge aptitudes.

• **Underpinning learning**

One shortcoming in the business' dependence on specialists adapting such a great amount through involvement—which the laborers themselves perceive—is their absence of a careful comprehension of the substance and physical procedures which the liquid blends are experiencing as they move concealed through the establishment. This, by definition, is something they can't watch. The imaginable reason for the Longford blast was that administrators did not make a difference learning about fragile break to the circumstance confronting them. In any case, fault for the mishap was not ascribed to these administrators but rather to organization arrangements and practices that permitted this "obliviousness" to decide the result.

Ingraining the applicable logical and specialized supporting learning with the goal that it stays dynamic, open and helpful will require keen instructional plan and conveyance.

• **Cooperation in the advancement of driving edge abilities**

A noteworthy element of oil and gas makers is the degree to which every considers itself to be uncommon—as not quite the same as (and as a rule over) the standard. Two components are in charge of this recognition: the group of stars of qualities of every hydrocarbon field implies that no two offices will be precisely similar or require the very same propelled ability sets; and there are huge contrasts in the authoritative societies, structures and web of unions which give every organization it's without a doubt uncommon ethos.

This review has uncovered that, from an abilities advancement perspective, these apparent contrasts are to a great extent illusionary. The creators found that specialists' move focuses, their formative pathways, even changes in the ways ventures have tended to (and are as of now re-tending to) how best to meet expertise advancement needs, are practically indistinguishable. A similar picture rises independent of the extent of the association or whether staff were specifically utilized or sub-contracted.

There is a honest to goodness, if moderately late, enthusiasm among undertakings in acting as an industry to address issues in ability improvement. This change is credited to various elements:

- The improvement of Training Package PMA02 has built up a uniform arrangement of abilities which the business all in all composed and modify and of which it is exceptionally steady. In this manner, endeavours appear to move in a similar heading as far as abilities. They need to grow more multi-skilling, more testament III

and IV level abilities, and more accentuation on supervisory and interpersonal aptitude.

- The foundation of the security case administration in Australia confers oil and gas associations to progressing and nitty gritty assessments of wellbeing and crisis administration ability. Involvement in the business recommends that, where associations are liable to indistinguishable direction, they will probably give joint preparing. This is done, for instance, with victory avoidance where laborers must be frequently recertified to a solitary standard.
- As the business stands up to an overall lack of gifted administrators and controllers, the acknowledgment that the organizations will be similarly subject to expertise emergencies turns out to be more self-evident. This has prompted to an all-inclusive way to deal with building up an apprenticeship plot for process administrators.
- Enterprises in the business are as of now pondering the harmony between the preparation that is particular to their undertaking—in fact, socially and financially—and what should be possible together. To a pariah, the verifiable business position of putting the adjust right around 100% in favour of 'particular and mystery' appears to be misguided. It might be that a lot of preparing should be possible more cost-viably on a more communitarian premise.
- It is additionally the case that, by pooling assets and experience, the gauge and nature of preparing accessible for the business from Australian suppliers could be lifted. Such an agreeable stand could connect the sectoral isolates which still exist between VET in Schools preparing, specialized and facilitate instruction (TAFE) and enlisted preparing associations, and college. One of the especially honourable elements of the business is the way that, once a man is acknowledged into the business, the instructive area from which the individual developed blurs into inconsequentiality.

**Implications for skill development in other industries**

- Two key components of cutting edge expertise advancement that have been seen in this review are probably going to be

pertinent, sometime, in a scope of different ventures.

- Importance of representative's disposition and inclination

Where occupations require the individual to show activity, tackle issues and decide, a capability alone is regularly inadequate to figure out if a candidate will fit in and function admirably. How a man feels about the function—whether they consider it important, whether they are quick to take in more, to be tested—are noteworthy components that more bosses are considering.

Thusly, bosses will need to comprehend the degree to which fitness and state of mind are 'guaranteed' in the individual, and the degree to which they can be formed to fit the business' desires. In the oil and gas industry there are now individuals who, on a basic level, are met all requirements to join the business and are excited to enter however who are not getting work on account of the judgements made about demeanor, specifically.

- **The interest for competency evaluation that meets legitimate guidelines of verification**

Various ventures, similar to hydrocarbons, work in an administrative or authoritative system that sets principles for their proceeded with operation. These incorporate development, mining, aviation, wellbeing, group care, sustenance and utilities. In each, essentially being prepared is no sufficiently longer; people in the working environment must show they can apply learning and abilities to the standard required. On the off chance that it can't be demonstrated (to a legitimate standard) that the association has capable specialists, punishments can be extreme. Loss of licenses, fines, expanded protection premiums, more prominent controls by controllers are all potential results.

- The general pattern saw in this review is that associations in businesses subject to conditions like the oil and gas industry will confront new difficulties in building up the aptitudes of their workforce. Specifically, appraisals must be more careful, employment details and choice criteria must be reinforced, and more practical linkages between occupation profiles and competency measures presented.

#### 4. EXPLORATION AND PRODUCTION:

According to the Oil & Gas Journal (OGJ), India held nearly 5.7 billion barrels of proved oil reserves at the end of 2015. (Oil & Gas Journal (2015). The country's offshore reserves have grown over the past several years, while onshore reserves have fallen. Offshore reserves made up slightly more than half of the country's recoverable reserves as of April 2015. Most recoverable reserves are found in the western part of

India, particularly the Western offshore area near Bombay and the onshore area in Gujarat. The Assam-Arakan basin in the northeastern part of the country is also an important oil-producing region and contains more than 22% of the country's reserves (Government of India, 2015). India remains underexplored as a result of insufficient investment in more technically challenging deepwater reserves and a challenging regulatory environment.

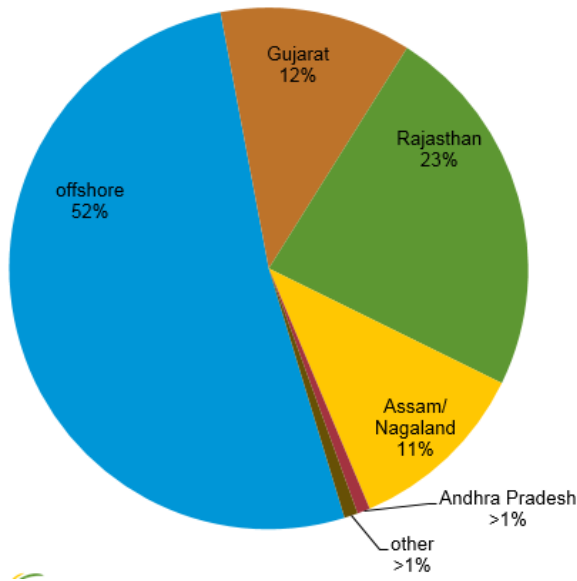
Historically, ONGC dominated the upstream oil sector and relied on production from the Mumbai High field and its associated satellite fields in the western offshore area. India's total petroleum and other liquids production, including crude oil and condensates, natural gas liquids, biofuels, and refinery gains, has gradually increased during the past 15 years, growing at an average of 2% each year through 2015. Total petroleum and other liquids production has hovered around 1.0 million b/d since 2011. In 2015, about 75% of total production consists of crude oil and lease condensates, and the remainder is from natural gas liquids, biofuels, and refinery gains. Slightly more than half of the crude oil production stems from offshore fields, although this share has dropped in the past several years as production from the large, aging Mumbai High field has declined. The onshore Gujarat and Assam-Arakan basins contain mature fields also experiencing production declines. Several redevelopment projects, enhanced oil recovery efforts, and marginal field development projects in these basins are underway, and ONGC has plans to raise production from the Mumbai High field by 2030 through enhanced oil recovery methods. Production from Mumbai High field has already edged up while onshore production declined in 2015 (Oil and Natural Gas Corporation Limited, 2015).

Indian and foreign companies have invested in more frontier developments and marginal fields to help offset production declines from mature basins. In recent years, major discoveries in the Barmer basin in Rajasthan and in the offshore Krishna-Godavari basin hold some potential to diversify the country's production. Cairn India brought online Mangala, the largest onshore field in India and part of the Rajasthan block in northwestern India, in 2009, with a production capacity of 150,000 b/d. (Bloomberg, 2013). The Rajasthan fields, including Mangala, produced 177,000 b/d in 2015, (Bloomberg, 2016) and the Indian government raised the block's production capacity to 300,000 b/d.

However, a production increase depends on the outcome of negotiations between Cairn India and the government over the contract terms and cost-sharing structure of a license renewal due by 2020 (India's Ministry of Petroleum and Natural Gas)

Despite Cairn's successful drilling in Rajasthan, foreign investment in India has waned in recent years, both because of increased competition from

domestic Indian companies and India's complex exploration and production laws. (Reuters, 2014). Also, the low international oil price environment since late 2014 has negatively affected profits of the international oil companies, causing some to curtail capital expenditures in 2016. Cairn plans to cut capital expenses by about 75% from an originally proposed \$1.2 billion to \$300 million in fiscal year 2016 (April to March) (International Energy Agency, 2012). However, both ONGC and OIL India are attempting to take advantage of the lower production and service costs and meet goals to increase domestic production in the next few years. (News base Asian Oil, 2015).



India crude oil production by region, 2015

## 5. A STRATEGIC PETROLEUM RESERVE:

India's high dependency on crude oil imports makes the country susceptible to external forces such as supply disruptions and international prices. To shield India from global oil supply disruptions and to reduce its overall crude oil import levels in the longer term, the Indian government decided to set up strategic storage of 39 million barrels of crude oil at three locations (Visakhapatnam, Mangalore, and Padur) as part of its first phase of strategic petroleum reserves development. The Indian Strategic Petroleum Reserves Limited (ISPRL), a special-purpose legal entity owned by the Oil Industry Development Board, would manage the proposed facilities, which are expected to be completed in 2016. The Visakhapatnam facility came online in June 2015 and began filling its facilities. (FACTS Global Energy, 2015). The government unveiled plans to increase reserves to cover 90 days' worth of imports and add another 91 million barrels to the state's strategic crude oil capacity in a second phase by 2020.

Natural gas: Natural gas mainly serves as a substitute for coal for electricity generation and as an alternative for liquefied petroleum gas (LPG) and other petroleum products in the fertilizer and other sectors. India was self-sufficient in natural gas until 2004, when it began to import liquefied natural gas (LNG) from Qatar. Because it has not been able to create sufficient natural gas infrastructure on a national level or to produce adequate domestic natural gas to meet domestic demand, India increasingly relies on imported LNG. India was the world's fourth-largest LNG importer in 2015, following Japan, South Korea, and China, and the country consumed nearly 7% of the global trade. Natural gas consumption grew at an annual rate of 6% from 2000 and 2014, although supply disruptions starting in 2011 resulted in declining consumption. Natural gas consumption in India was tied closely to domestic production until imports became available in 2004. In 2014, India consumed 1.8 trillion cubic feet (TCF) of natural gas. LNG imports accounted for about 37% of 2014 demand and are expected to account for an increasing portion of demand at least in the next several years. Higher LNG imports will depend on the pace of expansion in regasification terminal capacity and pipeline infrastructure connecting natural gas supplies to markets that currently lack access. The government's recently revised natural gas pricing system that provides a premium for production from India's more technically-challenging fields acts as an economic incentive for producers to invest upstream and raise domestic output. India's demand will rely on both LNG imports and production to supply the country's growing fuel needs. Most of the natural gas demand in 2014 came from the power sector (23%), the fertilizer industry (32%), and the replacement of LPG for cooking oil and other uses in the residential sector (14%), according to India's MOPNG. (Saeed, 2013). The government has labeled these as priority sectors for receiving new natural gas supplies. The fertilizer sector, which is highly price-sensitive, has been able to maintain low fuel costs by using natural gas. (Saleem, *et. al.*, 2010). The recent unexpected dry natural gas production declines since 2011 have forced electric generators to seek fuel alternatives, primarily coal, and this sector has seen the largest decline in natural gas use. (Dobre, 2013). The government is promoting the use of natural gas in the residential sector as an alternative to LPG and biomass as cooking fuels.

## CONCLUSION:

The purpose of this study was to analyze the implications for advanced skill development: a strategic petroleum reserve. The overall result showed the implications for advanced skill development. In the oil and gas sector motivation plays positive impact on employee performance. Performance of the employees indicated significant relationship with the reward and recognition. The

more the employees are motive to tasks accomplishment higher will the organizational performance and success.

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