

LOGISTICS IN PETROLEUM INDUSTRY: OVERVIEW AND CHALLENGES

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ABSTRACT:

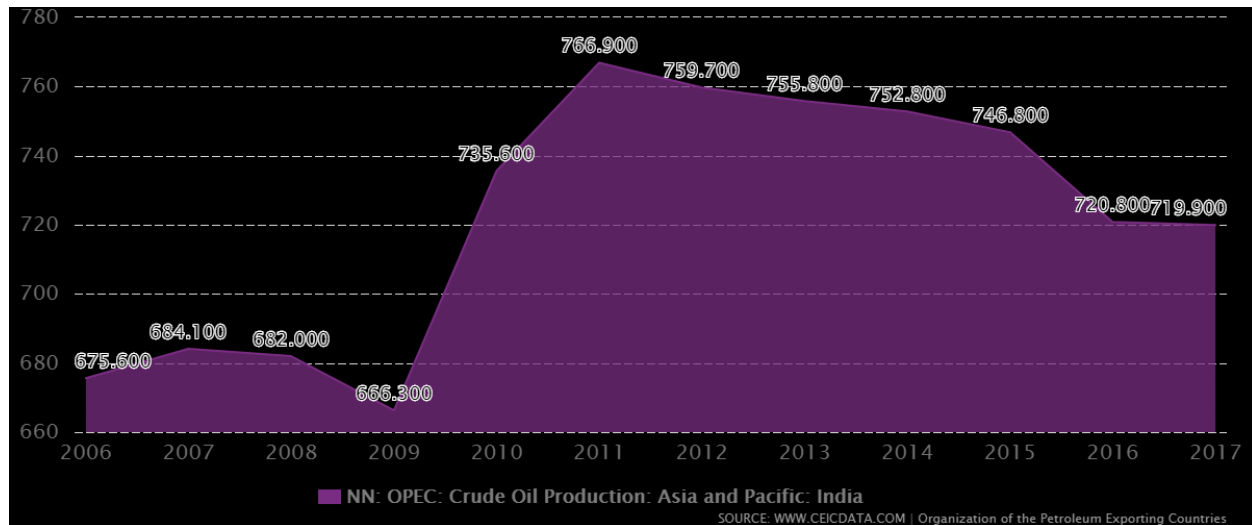
The supplying of crude product are a serious contribution to the input value of crude product excluding staple and taxes. The primary supplying of AN Oil selling Company (OMC) involves the group of finished product from plant gate to the cargo space depot. Pipelines, Railways, Shipping are used and the movement of product from storage depot to the trader or the consumer is in the logistics which is more complicated as the custody of product is transferred from OMC to the shipper and to the retailer before finally delivering to the consumer. "The method of designing, implementing and dominant the economical, well-organized flow and storage of raw materials, in-process inventory, complete merchandise and connected info from the purpose of origin to the point of consumption for the aim of orthodox to client requirements". "The procedure of planning, implementing &controlling the capable, cost-effective flow and storage space of raw materials, in-process record, finished goods and related information from the point of origin to the point of using up for the aim of orthodox to client requirements" The crude trade for any underdeveloped, developing and developed county is very critical and important. The various necessary perform of this trade is examination, extraction, refining, transporting and clearly selling of assorted crude product.

KEYWORDS: Petroleum oil refinery, Supply chain management, Location, Planning, Information systems, Operations, and Models.

INTRODUCTION

Petroleum Industry is marked by the huge spatial demand and provide gaps. The mother of all crude merchandise, the crude, happens in abundance within the areas wherever the demand isn't high, so is transported to huge distances where it is refined and converted to consumable products. The logistics cost becomes quite significant. India, being associate businessperson of regarding eightieth of its crude needs, does not have control over prices of raw materials. Duties and taxes are ruler functions and oil industry can do little to influence it. The other major expenses area unit operative and transportation expenses that area unit governable and have a large contribution to expenses within the oil business running on low margins. The Oil selling corporations (OMCs) area unit mistreatment numerous models for optimizing primary provision.

In the past secondary provision optimization has been secret to provides from the closest out there supply.



OBJECTIVES:

1. To explore the Role of Indian petroleum industry.
2. To study the challenges in logistics in the Indian Petroleum industry.
3. To study the advantages and disadvantages.
4. To analyze the social media challenges in petroleum industry.
5. To find the growth and evolution of petroleum industry.

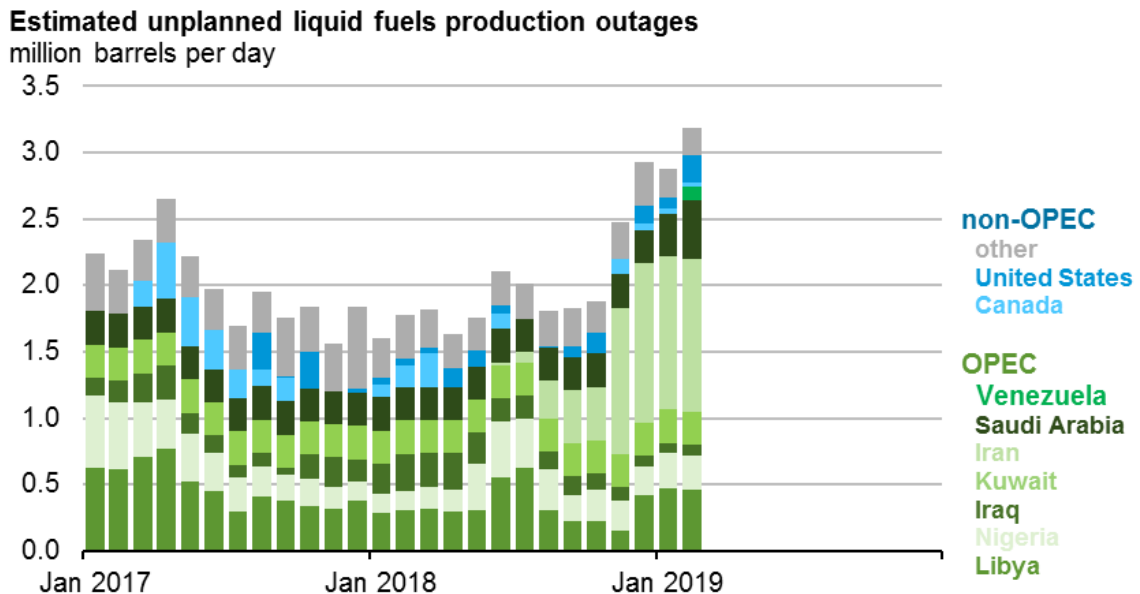
RESEARCH METHODOLOGY:

The paper is based on the secondary data and the information is relevant websites have been consulted in order to make the study an effective one.

ROLE OF LOGISTICS IN INDIAN PETROLEUM INDUSTRY:

Logistics is actually the walk property between the OMCs and therefore the distributor and is accomplished through road. The mode of transportation is flexible to the extent that the supplies can be made in the remotest parts of the country. However the tank trucks utilized in transportation square measure dedicated to the actual class of merchandise and can't be used for alternative merchandise. The secondary supply involve choice of storage depots for every market, choice of carriers, range of tank trucks, capacities of tank trucks to be narrowed and day to day planning and scheduling. OMCs make contractual planning with the transporters and retailers providing pay in the form of carrying bills and commissions respectively. The transport bills are paid on the basis of the measure of product delivered and distance travelled whereas the

dealer commission is on the quantity of the product sold. The contracts have detailed supplies to safeguard against malpractices like corruption, short delivery, tampering, route difference, non-delivery etc. by the carrier. The product changes hands from OMC to transporter to the distributor within the method. The role of secondary supply is to deliver the proper amount of the merchandise to the distributor at the proper time whereas maintaining the standard of the merchandise.



Source: Short-Term Energy Outlook, March 2019

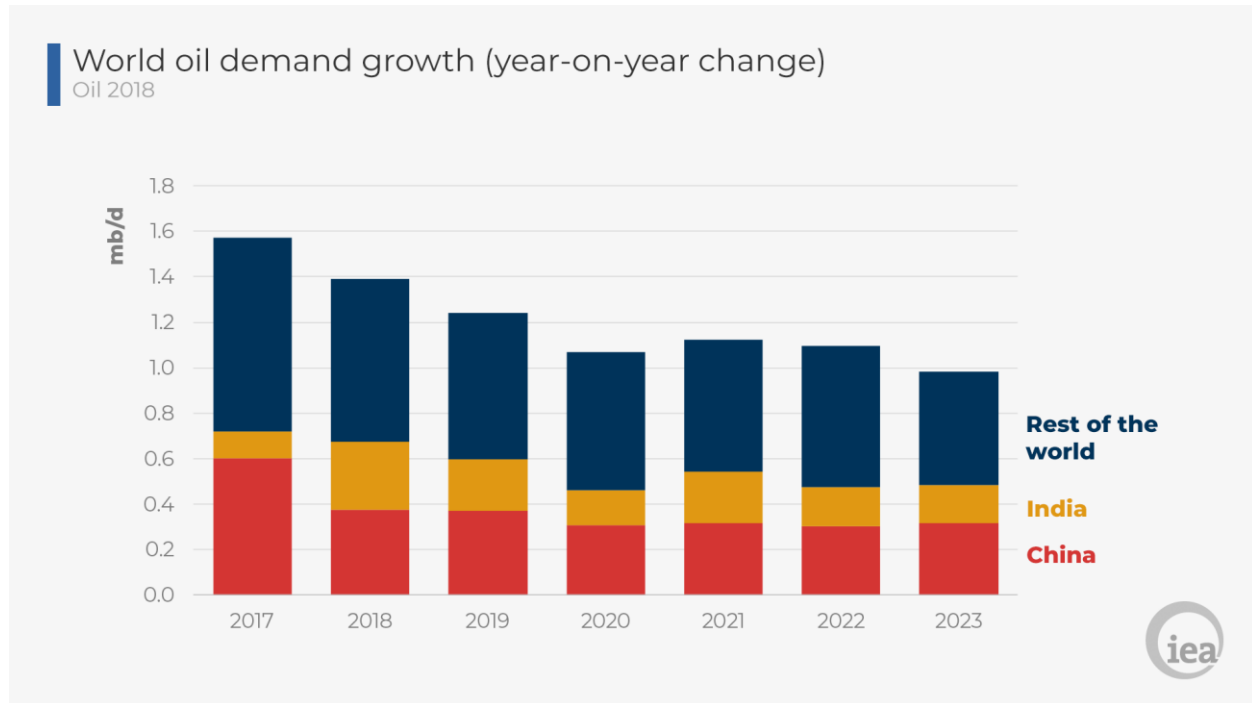


SOCIAL MEDIA CHALLENGES IN PETROLEUM INDUSTRY

Indian distribution infrastructure has been developed by public sector oil firms over the years, keeping the storage points as with reference to the markets as doable. This ensured dependableness and accessibility of product even just in case of input provide disruptions. Now that the inputs to storage depots is essentially through pipelines, hence reliable supplies are available resulting in reduced storage requirements. Even the distance to markets isn't the most criteria with the event of strong road network in Bharat. However, it is a challenge for Public Sector Oil Companies to re-align the markets and close the unviable location. The movement of MS and HSD from storage depots to the stores is thru tank trucks shrunken through public tenders once in 3 or 5 years. These contracts are depot specific and any large scale re-alignment of markets shall require an amendment to the contract conditions and lead to changes in business volume for the transporters.

There is wide variation within the heap size or the quantity of product indented at a time by the dealers. The low commerce dealers notice it tough to indent for full truck hundreds. The demand of HSD is seasonal in nature. As the tank trucks contracted at a depot are dedicated with the capacities of the tank trucks and fleet size determined based on average demand in previous

years, the variation in demand leads to operational constraints in peak season and idling of the fleet in the off season. The storage depots sell the merchandise to resellers when paying all taxes, including state specific VAT. Hence, every state is required to have its own storage space depot. Moreover the storage depot cannot provide the merchandise to connected states albeit it's nearer while not acquisition further tax. This leads to ineffective logistics where the product is travelling longer distances, even if a nearby deliver point is accessible in the next state.



BP has 94,000 followers on Twitter. It may not be the Oil and gas service with the foremost followers, but it does a great job in sharing news about its business online. Social media is only set to grow and therefore it presents a prime opportunity to any company in the Oil and Gas industry to spread the word and participate in online conversations. The point is that, in a world where information and choice are available at the touch of a button, whether b2b or b2c brand, it's no longer enough to simply follow the "old school" approach. Finally, there is no sure recipe for success when connecting with an audience through social media, specially within the Oil and Gas industry, but one thing is true: brands need to be interactive and timely, and most of all approachable – and that's the role of social media.

The Advantages and disadvantages of Petroleum

Petroleum can be extracted easily. Petroleum product has high density. It will be extracted at an occasional value. It can easily be transported. It's extremely obtainable with sensible infrastructure for transport and use. It has broad areas for application. It is a crucial element in

industries. It will power up the majority styles of vehicles. It can support constant power use. It is a powerful source of energy.

Disadvantages

Its resources are limited. It contributes to ecological pollution. It produces hazardous substances. It is a non-renewable form of energy. Its transportation can cause oil spills. It sustains growth of terrorism and violence.

Petroleum in India

The word 'petroleum' has been derived from two Latin words Petra and Oleum. Thus crude is oil obtained from rocks; significantly substance rocks of the world. Therefore, it is also called mineral oil. Technically speaking, crude is a burnable liquid that's composed of hydrocarbons that represent ninety to ninety five per cent of crude and therefore the remaining is mainly organic compounds containing oxygen, nitrogen, sulphur and traces of organo-metallic compounds. Crude consists of a mix of hydrocarbons—solid, liquid and volatilized. These embody compounds happiness to the paraffin series and conjointly some unsaturated hydrocarbons and little proportion happiness to the benzene cluster.

Utilization of Petroleum

Petroleum and crude merchandise square measure in the main used as motility. It is a compact and convenient liquid fuel that has revolutionized transportation ashore, within the air and on water. It can be easily elated from the producing areas to the intense areas with the help of tankers and more expediently, capably and cost-effectively by pipelines. It emits very little smoke and leaves no ash, (as is the case in coal utilization) and can be used up to the last drop. It provides the foremost vital lubricating agents and is employed as a vital staple for varied petro-chemical merchandise.

Origin and Occurrence of Petroleum

Petroleum has an organic origin and is found in substance basins, shallow depressions and within the seas (past and present). Most of the oil treasury in Republic of India square measure connected to anticlines and fault traps within the rock formations of tertiary times, concerning three million years ago. Some recent sediment, but Meg years conjointly show proof of early oil. Oil and fossil fuel originate from animal or material contained in petty marine sediments, like sands, silts and clays deposited during the periods when land and marine life was copious in

varied forms, especially the minor minute forms of flora and fauna. Conditions for oil formation were favorable especially in the lower and middle Tertiary period. Dense forests and ocean organisms flourished within the gulfs, estuaries, deltas and the land surrounding them during this period. The decomposition of organic matter within the substance rocks has crystal rectifier to the formation of oil.

Though oil is especially found in substance rocks, all substance rocks don't contain oil.

An oil reservoir must have three pre-requisite conditions:

- (i) Porosity so as to accommodate sufficiently large amounts of oil
- (ii) Permeability to release oil and/or gas when well has been drill
- (iii) The spongy sand beds sandstone, conglomerates of fissured sandstone containing oil should be capped by impermeable beds so that oil does not disperse by percolation in

SOCIAL MEDIA BENEFIT OIL AND GAS COMPANIES

1. VISIBILITY

People pay tons of your time on social media—for some, it's their primary supply for news and data regarding explicit corporations. Sharing content regarding your company puts your name ahead of current and potential customers. This, in turn, results in larger name recognition and additional thought as a future provider of their energy desires.

2. ENGAGEMENT

Social media creates and strengthens communities as a result of, in contrast to alternative channels, it encourages two-way conversations. In addition to sharing content, social media permits you to participate in discussions together with your networks, promote company and trade events, and invite followers to supply their queries and comments. Along the manner, your company builds trust and deeper relationships.

3. BRAND AWARENESS

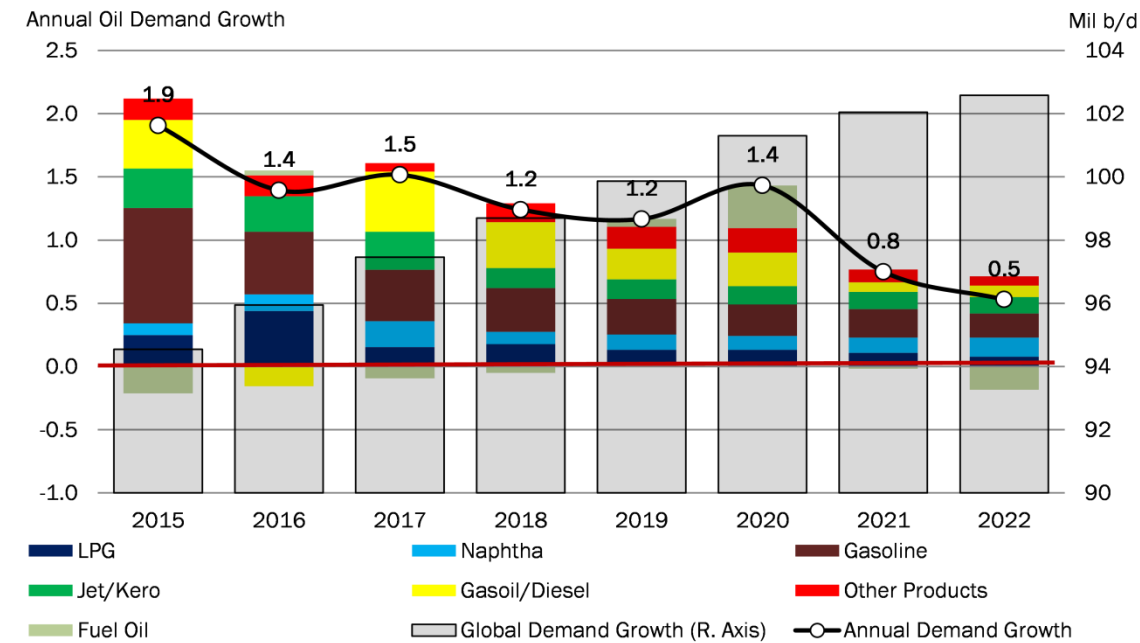
There's additional to your whole than simply your brand and tagline. There's also the way you speak to the public, your company's priorities, and the types of services you offer. Over time, social media provides the chance to point out shoppers and businesses however your company is

totally different from alternative oil and gas corporations. This is vital in any trade, however particularly one dealing in artifact product.

The next frontier for digital technologies in oil and gas

In response to recent technological advancements, oil executives should consider digital technologies with the potential to transform operations and create additional profits from existing capacity. Our analysis finds that the effective use of digital technologies within the oil and gas sector might scale back capital expenditures by up to twenty percent; it might cut in operation costs in upstream by three to five and by concerning that in downstream. Oil and gas corporations were pioneers of the primary digital age within the Nineteen Eighties and Nineties. Long before phrases like huge information, advanced analytics, and the Internet of Things became popular, oil executives were making use of 3-D seismic, linear program modeling of refineries, and advanced process control for operations. The use of such technologies unleashed new organic compound resources and delivered operational efficiencies across the worth chain.

Figure 1 – Global Oil Demand Growth by Product



Source: JBC Energy, McQuilling Services

Energy Efficiency and Emissions in the Petroleum Industry:

- Energy use in the petroleum industry
- Oil and gas production:
- Oil refining
- Energy efficiency opportunities in the petroleum industry

CURRENT TRENDS IN PETROLEUM INDUSTRY:

- ✓ Global industrial expansion resulting in increased petroleum demand
- ✓ Tight supplies of economically extractable oil
- ✓ Political instability and terrorism
- ✓ High per-barrel price that accelerates development of alternative energies
- ✓ Safety and the need to protect workers in “hostile” environments
- ✓ Speed required to establish a presence in new markets
- ✓ Need to spread infrastructure risk among competitors

8 MAJOR PROBLEMS OF PETROLEUM INDUSTRY IN INDIA

1. Shortage of Petroleum Crude
2. Dependence on Foreign Countries
3. Price Hike
4. Shortage of Oil Refining Capacity
5. Exploration of New Reserves
6. Technical Problems
7. Pollution
8. Lack of Market-determined Pricing System.

THE BENEFITS OF SOCIAL MEDIA FOR OIL AND GAS

Although loads of business uses social media to sell product, the oil and gas business needs to rely on however it uses social media during a completely different manner. You can use social media to make money but it is perhaps more powerful for the oil and gas industry as a means to connect, educate and engage with the world. This won't correlate to direct revenue however by victimization social media to enhance your business and community standing you'll realise larger business success.

Here square measure our key edges of victimization of social media in oil and gas.

THOUGHT LEADERSHIP

Educating each the business and therefore the public and you may see your organization's perception shift from that of vender or operator to thought leader. Facts, survey results, statistics and other insight will separate your organisation from others in the field and that perception of expertise is what will help you build new business and projects. Use these platforms to conjointly dispel myths and information close the business and build trust with the general public by championing the positive aspects of the oil and gas

BUILD AWARENESS

Press releases can often be boring! If you've got one thing you wish to shout concerning why not embellish those releases as a YouTube video or via Face book post. Post your press releases on your LinkedIn Company pages and everybody WHO follows your company can get a direct update. When it involves social media suppose however will every platform be wont to get your message across within the most attention-grabbing and helpful manner. If you post these reasonably update usually you may grow your followers, subscribers and likes. That is a captive audience and overzealous audience WHO has bought into your offerings and is raring to listen to additional – don't frustrate them!

PROMOTE GOOD NEWS

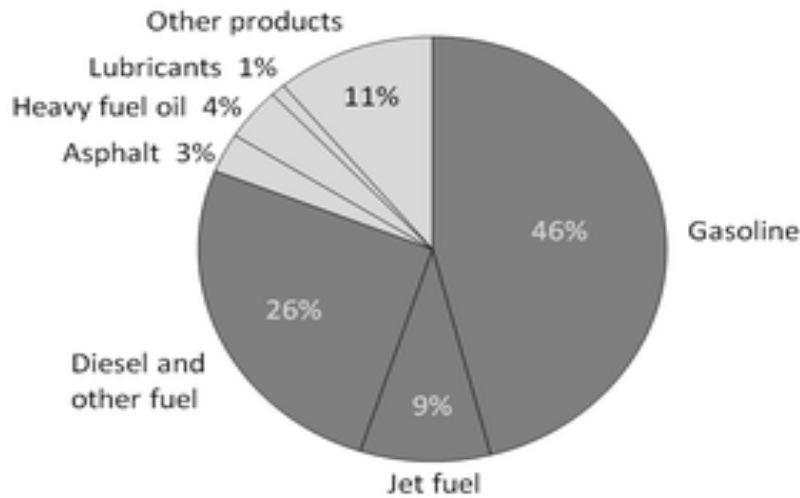
When you have excellent news, social media is that the ideal platform to share it. Interesting prices will quickly go infective agent and you'll post updates as oftentimes as you wish to. There are a lot of cheerleaders in the industry who will ant to share your good news. Highlight community initiatives, good results, scientific innovations and technological breakthroughs.

NAVIGATE BAD NEWS & BUILD IMAGE PERCEPTION

Social media is an essential tool to present your company as a transparent and responsible organization that is always taking the correct steps to resolve negative stations like oil spills or industrial accidents. The business usually contains a negative perception therefore use social media to spotlight the nice work you've got be doing still as your own company responsibility practices. Positive updates will facilitate build whole pictures and take away negative stigma. The public are going to be additional willing to simply accept a corporation that communicates in associate degree honest and fast fashion.

GROWTH AND EVOLUTION OF PETROLEUM INDUSTRY IN INDIA

The fossil fuel business is embrace the worldwide processes of extraction, exploration, refining, transporting (often by pipelines and oil tankers), and marketing petroleum products. The largest volume product of the business is gasoline (petrol) and oil. Petroleum (oil) is additionally the stuff for several chemical product, including solvents, pharmaceuticals, pesticides, fertilizers, and plastics. The origin of the Indian oil & gas business will be derived back to the late nineteenth century, when oil was first struck at Digboi in Assam in 1889. In view of the importance of the gas & oil sector for overall economic process, the Government of India announced in 1954 that petroleum would be the core sector industry.



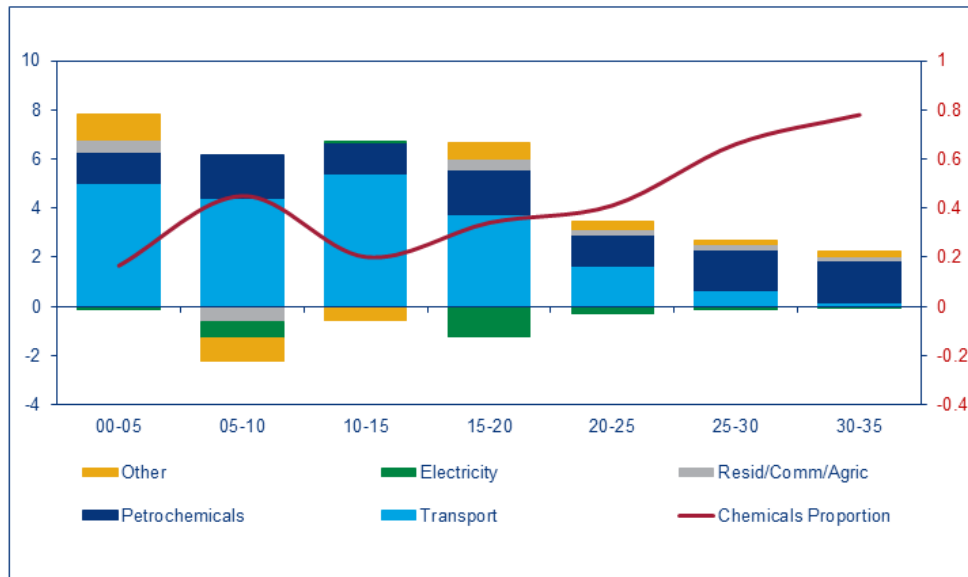
1954, fossil fuel exploration & production activity was controlled by the government-owned National Oil corporations (NOCs), namely Oil India Private Ltd (OIL) and Oil & Natural Gas Corporation (ONGC). India's refining capacity has quite trebled within the last thirteen years. Reliance Industry is the first refinery industry in Jamnagar in 1999, India has an installed capacity of around 193.5 million tap in April, 2011.

The growth is likely to continue with refining capacities expected to touch 255 million tap by 2012-13 and 302 million tap by 2017-18, with a slew of projects announced by both the private and public sector. Today, private sector accounts for 76.5 million tap (around 39.5 per cent) and public sector oil companies account for close to 117 million tpa (around 60.5 per cent).

FUTURE OF INDIAN PETROLEUM:

- Demand for fuel is growing in leaps and bounds
- Shifting focus to extra creation of olefin - ethylene, propylene, butadiene,
- Price and ease of use of crude oil and gas as feedstock would still be dangerous factors
- The demand of the end products would affect the demand of the intermediary products

Global crude oil demand growth



Source: IEA Energy Statistics, Local Statistics, Fcst: WoodMackenzie Product Market Service

CONCLUSION

The transporters and retail outlet dealers are main channel partners who consecutively take custody of product before handing it over to the consumer. Any improvement model needs to take their views into thought. The business, financial, innovation and learning perspectives need to be balanced, making optimizing a multi objective function. The development and adoption of flexible transportation models and re-alignment of markets shall go a long way in improving the secondary logistics of the downstream petroleum industry in India. The review has tried to marry dated and current literature on fossil fuel. the uses of fossil fuel, the 2 plausible theories on the origin and formation of fossil fuel; fossil fuel exploration and also the major petroleum manufacturing countries within the world, as well as the member states of the Organization of the Petroleum Exporting Countries, OPEC; the nature and composition of petroleum; petroleum processing and products; octane number or rating, the petrochemical industry; and petroleum and the environment.

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