Evolution Of Upstream Oil And Gas Policies In India

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Abstract

This research paper examines the evolution of upstream oil and gas policies in India, focusing on the Pre-Liberalization Era, the New Exploration Licensing Policy (NELP) from 1997 to 2016, and the Hydrocarbon Exploration and Licensing Policy (HELP) introduced in 2016. The Pre-Liberalization period (1947–1991) saw state control through the Oilfields (Regulation and Development) Act of 1948 and the establishment of the Oil and Natural Gas Commission (ONGC), marked by the Bombay High discovery but hindered by technological and investment constraints, leading to high import dependency (up to 75% by 1970). NELP aimed to reduce this dependency through competitive bidding and production-sharing contracts, achieving a production peak of 38.6 million tons of oil equivalent (Mtoe) in 2010-11, driven by discoveries like KG-D6, though inefficiencies and disputes limited its success. HELP introduced revenue-sharing contracts and the Open Acreage Licensing Policy (OALP) to enhance flexibility and attract investment, covering 144,000 square kilometers by 2023, yet production remains at 29.7 Mtoe (2022-23) due to its early stage. Comparative analysis highlights NELP's initial output and investment ($50 billion) versus HELP's potential for stability, suggesting a hybrid model could optimize future policies. The study underscores India's ongoing challenge to balance energy security with global energy transitions.

Keywords: *Upstream Oil and Gas, NELP, HELP, Energy Policy, Import Dependency.*

Introduction

Pre-Liberalization Era:

Following independence, India embraced a socialist economic model, with the state assuming a significant role in vital sectors like oil and gas. The upstream sector, which included hydrocarbon exploration and production, was totally under state control, reflecting the government's emphasis on self-reliance and nationalization. From 1947 until 1991, exploration was constrained because to technological and funding constraints, and production struggled to satisfy expanding energy demands. The period culminated in the recognition that state control was insufficient, resulting in sector liberalization in 1991, paving the way for programs such as the New Exploration Licensing Policy in 1997.

Legal Framework: State Control Through Legislation

The Oilfields (Regulation and Development) Act of 1948 is the basic legislative document during this era[1].endowed the government with the authority to control and manage oilfields and mineral oil reserves. It authorized the government to acquire, by notification, any land or right in or over such land for the purpose of prospecting for or exploiting mineral oil. The Act also allowed for the granting of exploration and production licenses, under state control. This legal structure established the government's monopoly, limiting private sector participation and coinciding with communist economic goals of the time.

Formation and Role of ONGC: The State's Primary Vehicle

The Oil and Natural Gas Commission was founded in 1956 as a non-statutory organization to oversee India's exploration and production of oil and gas [2]. It was granted statutory status in 1962 by an Act of Parliament, cementing its position as the state's primary vehicle for upstream activity.

[1] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[2] Oil and Natural Gas Corporation Limited, *ONGC Homepage (ONGC)* https://ongcindia.com/ accessed 12 March 2025

ONGC oversaw locating and exploiting hydrocarbon reserves, conducting seismic surveys, drilling wells, and managing production. Its establishment signaled the start of coordinated state activities, with an emphasis on onshore and offshore exploration, mainly in Assam and Gujarat.

ONGC's role was pivotal, as it undertook major projects with limited resources. By the 1970s, it had become the backbone of India's domestic production, employing thousands and investing in research and development. However, as a state entity, it faced constraints in funding and technology, which limited its ability to explore deep-sea and frontier areas, setting the stage for future policy reforms.

Major Discoveries: Bombay High and Production Trends

A significant milestone during this era was the finding of the Bombay High oil field in 1969 by ONGC[3]. Located off the coast of Maharashtra, Bombay High was a major find, producing up to 450,000 barrels per day at its peak in the late 1980s, contributing significantly to India's oil output. This discovery was a testament to ONGC's capabilities, but it also highlighted the need for further exploration, as other potential reserves remained untapped.

In 1969, ONGC discovered the Bombay High oil field, which was a key milestone during this era[4]. Bombay High, located off the coast of Maharashtra, was a large discovery that produced up to 450,000 barrels per day at its height in the late 1980s, considerably contributing to India's oil output. This discovery demonstrated ONGC's capability, but it also emphasized the need for more investigation, as additional prospective reserves remained undiscovered.

[3] Directorate General of Hydrocarbons, *Annual Report 2023-24 (DGH India, 2024)* https://dghindia.gov.in/assets/downloads/ar/2023-24/ accessed 12 March 2025

[4] BP plc, *BP Statistical Review of World Energy 2022 (BP, 2022)* https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf accessed 12 March 2025

Import Dependency: Vulnerability and Economic Strain

Throughout this period, India's reliance on crude oil imports persisted, creating economic risks. In 1970, with output at 2.5 million tons and consumption at around 10 million tons, import dependency was roughly 75%, calculated as (production - consumption)/consumption. By 1980, output had risen to 7.5 million tons, with consumption hovering at 20 million tons, lowering dependency to 62.5%. However, by 1990, consumption had climbed to 40 million tons, with output at 12.5 million tons, resulting in a reliance of almost 68.75% [5].

The 1973 oil crisis, which was precipitated by the OPEC embargo, had a huge impact on India, with oil prices quadrupling, raising import expenses, and straining foreign exchange reserves. This crisis emphasized the vulnerability of state-controlled production, which was unable to keep up with demand, emphasizing the necessity for initiatives to increase domestic output[6].

Challenges: Technological, Investment, and Bureaucratic Constraints

Several problems characterized this period, limiting the sector's expansion. India faced considerable technological limitations, including a dearth of modern exploration and drilling equipment, particularly for deep-sea and border areas. ONGC relied on indigenous capabilities that were insufficient by international standards[7].

Inadequate investment was another limitation, as state funds were limited, and private sector engagement was constrained under the socialist regime. This lack of investment has hampered the use of sophisticated equipment and exploration in high-risk locations. Bureaucratic inefficiencies exacerbated the problem, with centralized decision-making causing delays in

[5] BP plc, *BP Statistical Review of World Energy 2022 (BP, 2022)* https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf accessed 12 March 2025

[6] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025

[7] S K Barua and M R Shukla, *'Environmental Management in Oil and Gas Upstream Industry in India' (ResearchGate, 2014)* https://www.researchgate.net/publication/267772608_Environmental_Management_in_Oil_and_Gas_Upstream_industry_in_India accessed 12 March 2025

project approvals and implementation, impacting exploration timeframes and production ramp-up.

The government implemented limited production sharing contracts (PSCs) with international corporations in 1985, although they were not very effective, reflecting the era's aversion to private involvement[8].

The pre-liberalization era in India's upstream business was marked by state control, with ONGC serving as the major participant, achieving certain achievements such as Bombay High but suffering substantial obstacles. Production growth was restricted, import dependency remained high, and technology and investment disparities persisted. These factors, exacerbated by the 1973 oil crisis, highlighted the inadequacy of state control to meet energy needs, paving the way for economic liberalization in 1991 and subsequent policy shifts such as the NELP in 1997, which sought to attract foreign and private investment to boost output and reduce imports.

COMPARING KEY METRICS

Year	Production (Million Tons)	Consumption (Million Tons)	Import Dependency (%)	Key Event
1970	2.5	10	75	ONGC active, early exploration
1980	7.5	20	62.5	Bombay High peak production
1990	12.5	40	68.75	Pre-liberalization challenges peak

This table, derived from BP and DGH data, underscores the era's production and dependency trends, informing the need for policy reform.

[8] Oxford Institute for Energy Studies, *'Natural Gas in India: An Assessment of Demand' (OIES, 2011)* https://www.oxfordenergy.org/wpcms/wp-content/uploads/2011/05/NG_50.pdf accessed 12 March 2025

New Exploration Licensing Policy (NELP):

India's energy sector has long been troubled by its dependence on imported hydrocarbons, causing government to implement the NELP in 1997. NELP, which aimed to boost local exploration and production (E&P), used a structured, market-driven approach to attract private and foreign investment. Over nearly two decades, the policy influenced India's upstream oil and gas sector, resulting in both substantial successes and notable faults.

Objectives and Features of NELP

Introduced in 1997 as part of the 1990s' liberalizing economic reforms, the NELP attempted to reduce India's crude oil import dependency, which was then over 70%,by increasing local E&P activity[9]. The policy replaced the previous ad hoc licensing system with a transparent and competitive framework. Its main features were:

Competitive Bidding: Exploration blocks were assigned by open global bidding, assuring fairness and encouraging a varied range of participants.

Production Sharing Contracts (PSCs): Companies might deduct exploration and development costs from the revenues before sharing profits with the government, so encouraging investment. Fiscal incentives included tax breaks and royalty schemes to help minimize the risks associated with high-cost exploration.

The NELP planned to capitalize on India's untapped hydrocarbon resource, which is estimated to be 28 billion tons of oil and gas[10]. The program aimed to inject capital and technology into a capital-intensive sector by inviting private and foreign enterprises, as well as state-owned entities such as ONGC.

[9] Ministry of Petroleum and Natural Gas, Government of India, *New Exploration Licensing Policy (NELP) (MoPNG)* https://mopng.gov.in/files/ExpAndProd/PSC/4.NELP.pdf accessed 12 March 2025
[10] Directorate General of Hydrocarbons, *Annual Report 2023-24 (DGH India, 2024)* https://dghindia.gov.in/assets/downloads/ar/2023-24/ accessed 12 March 2025

Implementation and Outcomes

From 1997 until 2016, the NELP was implemented in nine bidding rounds, providing roughly 254 exploration blocks[11]. The strategy drew significant investment, with total inflows of $50 billion between 1997 and 2022[12]. Major multinational corporations such as BP, Shell, and Cairn Energy took part, as did indigenous conglomerates such as Reliance Industries.

Successes: The NELP resulted in numerous high-profile discoveries, most notably the KG-D6 in the Krishna-Godavari basin, which at its peak contributed significantly to India's gas production. Other discoveries, such as Cairn's Rajasthan oilfields, helped boost local production. By 2010-11, India's hydrocarbon production had peaked at 38.6 million tons of oil equivalent (Mtoe), with NELP blocks accounting for a significant portion[13]. The policy also revolutionized India's exploration and production ecosystem by introducing new seismic tools and deepwater drilling capabilities.

Shortcomings: Despite its promise, NELP had significant obstacles. Only over 50% of allotted blocks went into production, indicating considerable geological risks and operational inefficiencies. Investors were deterred by bureaucratic approval delays, cost recovery battles, and confusing PSC conditions. Expert critiques, such as those by energy expert Narendra Taneja (2018), highlight NELP's over-reliance on private companies with little regulatory control, resulting in stalled projects and court challenges. Production deficits were apparent as output from critical blocks such as KG-D6 fell rapidly after 2012, aggravating India's reliance on imported crude oil, which increased to 85% by 2022[14].

[11] Directorate General of Hydrocarbons, *Annual Report 2023-24 (DGH India, 2024)* https://dghindia.gov.in/assets/downloads/ar/2023-24/ accessed 12 March 2025
[12] Ministry of Petroleum and Natural Gas, Government of India, *New Exploration Licensing Policy (NELP)* (MoPNG) https://mopng.gov.in/files/ExpAndProd/PSC/4.NELP.pdf accessed 12 March 2025
[13] Directorate General of Hydrocarbons, *Annual Report 2010-11 (DGH India, 2011)* https://dghindia.gov.in/assets/downloads/ar/2010-11.pdf accessed 12 March 2025
[14] Ministry of Petroleum and Natural Gas, Government of India, *New Exploration Licensing Policy (NELP) (MoPNG)* https://mopng.gov.in/files/ExpAndProd/PSC/4.NELP.pdf accessed 12 March 2025

Case Study: Reliance-BP KG-D6 Block

The KG-D6 block, discovered by Reliance Industries in 2002 as part of NELP's first phase, demonstrates both the policy's promise and its problems. The block is in the Krishna-Godavari basin off eastern coast and covers 7,645 square kilometres of deepwater area. Its finding was regarded as a game changer, with reserves estimated at 10 trillion cubic feet (TCF)[15].

Development and peak production: After a substantial investment of over $10 billion, KG-D6 began production in 2009. At its peak in 2010-11, “the block produced 69.4 million standard cubic meters per day (MMSCMD), or roughly 40% of India's total gas output”[16]. This spike lowered LNG imports while also powering fertilizer factories and electrical generation, which aligned with NELP's goals.

Controversies and Decline: The success was fleeting. By 2012, output has dropped to 20 MMSCMD due to reservoir complexity and reported underinvestment in field maintenance[17]. The government accused Reliance of misrepresenting costs to maximize cost recovery under the PSC, sparking a high-profile conflict. In 2014, the MoPNG issued a $1.8 billion penalty on Reliance for failing to achieve output objectives, triggering arbitration. The problem was resolved in 2018, when Reliance agreed to waive $1.5 billion in cost recovery claims[18].

The incident attracted attention to the NELP's PSC framework. Critics, notably former Petroleum Secretary T.N.R. Rao, said that the permissive cost recovery clauses encouraged operators to inflate expenses, lowering government profits.

[15] Reliance Industries Limited, *Annual Report 2003 (RIL, 2003)* https://www.annualreports.com/HostedData/AnnualReportArchive/r/LSE_RIGD_2003.pdf accessed 12 March 2025

[16] Directorate General of Hydrocarbons, *Annual Report 2010-11 (DGH India, 2011)* https://dghindia.gov.in/assets/downloads/ar/2010-11.pdf accessed 12 March 2025

[17] Reliance Industries Limited, *Annual Report 2003 (RIL, 2003)* https://www.annualreports.com/HostedData/AnnualReportArchive/r/LSE_RIGD_2003.pdf accessed 12 March 2025

[18] Energy Watch, *'Delhi HC Overturns Tribunal's Ruling in Gas Migration Dispute Involving Reliance-BP' Energy Watch (India)* https://www.energywatch.in/oil-and-gas/delhi-hc-overturns-tribunals-ruling-in-gas-migration-dispute-involving-reliance-bp accessed 12 March 2025

Operationally, the reduction highlighted geological uncertainty in deepwater fields and the necessity for ongoing investment in places where Reliance was accused of prioritizing short-term benefits above long-term field management.

Lessons learned: The KG-D6 scandal highlighted the importance of strong regulatory monitoring and unambiguous contractual conditions. It also demonstrated the limitations of NELP's "one-size-fits-all" strategy, as deepwater projects necessitated customized risk-sharing arrangements. The subsequent adoption of the HELP, with its revenue-sharing model, incorporates these experiences, intending to reduce disputes and increase transparency.

Production Trends and Investment Impact

Production trends under the NELP show a boom-and-bust cycle. The peak of 38.6 Mtoe in 2010-11 was a high point, fuelled by KG-D6 and other discoveries[19]. However, by 2022, output from NELP blocks had dropped to less than 20 Mtoe, indicating aging fields and stopped initiatives. Investment inflows of $50 billion fuelled infrastructure growth, including pipelines and LNG facilities, but the results were inconsistent. Blocks such as KG-D6 received significant upfront funding, but only a minority produced sustained output, prompting concerns about economic feasibility.

Expert Critiques and Policy Evolution

Energy experts have differing opinions on NELP. While it was successful in drawing global participants, inefficiencies hampered its execution. According to analyst Sudha Pai (2020)[20] regulatory bottlenecks can delay licenses by up to two years, inhibiting smaller enterprises[21]. concerns the policy's failure to react to changing global energy dynamics, such as the rise of shale gas, which has harmed India's competitiveness.

[19] Ministry of Petroleum and Natural Gas, Government of India, *Exploration and Production Investment in Northeast India (MoPNG)* https://mopng.gov.in/files/TableManagements/EP_Inv_NE.pdf accessed 12 March 2025

[20]Naorem Nishikanta Mangang, *transitioning away from coal: Perspectives of Indian coal unions on achieving a just transitionhttps*://www.sciencedirect.com/science/article/abs/pii/S2214629624004031 accessed 12 March 2025

[21]Sanjay Taneja, *India's Total Natural Resource Rents (NRR) and GDP: An Augmented Autoregressive Distributed Lag* (ARDL) Bound Testhttps://www.mdpi.com/1911-8074/16/2/91

The shift to HELP, with its universal licensing and open acreage policy, corrects some of these faults while inheriting NELP's legacy of unmet potential.

NELP was a daring attempt to transform India's hydrocarbon sector, generating major accomplishments such as KG-D6 while dealing with systemic issues. Its legacy is based on the lessons it teaches, which include the importance of nimble regulation, adaptive fiscal regimes, and balancing investment incentives and national objectives. The KG-D6 case study exemplifies this duality: initial success followed by operational and legal setbacks. As India navigates its energy destiny, the NELP's experience remains an important reference point for policy development.

Hydrocarbon Exploration and Licensing Policy (HELP):

The adoption of the HELP in 2016 transformed India's upstream hydrocarbon business. HELP was designed to solve the constraints of its predecessor, the NELP, by simplifying the fiscal system, increasing flexibility, and attracting long-term investment in exploration and production. With elements like as revenue-sharing contracts, the OALP, and standard licensing, HELP aimed to modernize India's hydrocarbon exploration strategy. This essay discusses HELP's framework, objectives, early implementation, and differences from NELP, as well as its initial outcomes and long-term potential.

Objectives and Key Features of HELP

The Ministry of Petroleum and Natural Gas (MoPNG)[22] launched HELP on March 10, 2016, to revitalize India's E&P sector in the face of dwindling local output and continued import dependency—more than 85% for crude oil by 2016[23]. Its main goals were to speed exploration, increase investment, and streamline regulatory processes.

[22] Ministry of Environment, *Forest and Climate Change, MoEFCC (MoEFCC, 25 March 2025)* https://moef.gov.in/ accessed 25 March 2025.
[23] Directorate General of Hydrocarbons, *Presentation on HELP – DG, DGH India (DGH India, 6 March 2017)* https://dghindia.gov.in/assets/downloads/58be45eab40a4Presentation_on_HELP_-_DG,_DGH_India_06.03_.17_.pdf accessed 12 March 2025

Unlike the NELP, which struggled with bureaucratic delays and contractual disagreements, HELP brought three key features: Revenue Sharing Contracts: HELP, which replaces NELP's production-sharing contracts (PSCs), requires enterprises to pay the government a preset percentage of their revenue from the start, removing cost recovery methods. This change is intended to decrease disagreements over cost inflation and assure stable government revenue.

Uniform Licensing: HELP offers a single license for all hydrocarbons oil and gas, as well as unusual resources like shale gas and coal bed methane (CBM) streamlining approvals and encouraging diversified exploration.

To counteract high exploration risks, fiscal incentives were provided, such as decreased royalty rates for deepwater and ultra-deepwater licenses (5% and 2%, respectively)[24]. HELP sought to open India's projected 28 billion tons of oil and gas reserves, the which remained unexplored[25].

Implementation and Early Outcomes

HELP's implementation began with the first OALP round in 2017, which included 55 blocks spanning 59,282 square kilometres. By 2023, eight OALP rounds had granted 144 blocks totaling around 144,000 square kilometers, primarily to domestic entities such as ONGC, Oil India Limited (OIL), and companies like as Vedanta[26]. National Data Repository, which was established in 2017 with seismic data covering 2.5-million-line kilometres, supported OALP by allowing data-driven block selection[27].

HELP investments have been minimal in comparison to NELP's $50 billion over two decades. Between 2016 and 2022, annual investment averaged less than $2 billion, reaching over $10

[24] Directorate General of Hydrocarbons, *Presentation on HELP – DG, DGH India (DGH India, 6 March 2017)* https://dghindia.gov.in/assets/downloads/58be45eab40a4Presentation_on_HELP_-_DG,_DGH_India_06.03_.17_.pdf accessed 12 March 2025
[25] Directorate General of Hydrocarbons, *Annual Report 2023-24 (DGH India, 2024)* https://dghindia.gov.in/assets/downloads/ar/2023-24/ accessed 12 March 2025
[26] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[27] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025

billion by 2023[28]. This underscores investors' cautious optimism, given the lengthy gestation period of E&P projects and worldwide changes toward renewable energy. Early discoveries include ONGC's gas discovery in the Mahanadi basin under OALP-1, while commercial production is still limited as of 2025[29].

HELP's production ambitions, which aimed to increase domestic output to 40 million tons of oil equivalent (Mtoe) per year, have proven elusive. India's total hydrocarbon output hovered around 30 Mtoe in 2022-23, with HELP blocks contributing marginally because to their early stage [30]. However, the policy's streamlined processes have lowered clearance timelines from 12-18 months under NELP to 6-8 months, indicating improved operational efficiency[31].

Comparison with NELP

HELP's architecture directly solves NELP's problems, which ran from 1997 to 2016 and awarded 254 blocks with inconsistent results. A comparative examination identifies important differences:

Fiscal Regime: NELP's PSCs permitted cost recovery before profit-sharing, resulting in conflicts, such as the $1.8 billion penalty imposed on Reliance Industries for the KG-D6 Block in 2014. HELP's revenue-sharing approach reduces such tensions by connecting government income to production volumes rather than costs. According to energy analyst Sudha Pai (2020), this lowers "moral hazard" in which operators overstate expenses[32].

[28] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[29] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[30] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[31] Economic Times, *'Reliance-BP Lose Decade-Old Gas Migration Dispute' The Economic Times (India, 10 October 2024)* https://economictimes.indiatimes.com/industry/energy/oil-gas/reliance-bp-lose-decade-old-gas-migration-dispute/articleshow/118302240.cms?from=mdr accessed 12 March 2025
[32] International Institute for Sustainable Development, *Building Bridges: Mapping the Just Transition Landscape in India (IISD, 2021)* https://www.iisd.org/system/files/2021-06/building-bridges-just-transition-india-en.pdf accessed 12 March 2025

Bidding Flexibility: NELP's rigorous, periodic bidding rounds limited exploration to government-selected blocks, with only 50% going into production[33]. OALP's year-round access allows businesses to choose geologically favorable sites, potentially increasing success rates.

Scope: The NELP concentrated on conventional oil and gas, awarding separate permits for unconventional resources. HELP's uniform licensing broadens the exploration scope, in line with global trends toward shale and CBM, albeit unconventional output remains small in India[34].

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Dispute Resolution: NELP experienced protracted legal fights, as seen by the KG-D6 arbitration, which was settled in 2018. HELP's simpler contracts and proactive grievance redressal methods have so far prevented comparable high-profile disputes[35].

While NELP accelerated discoveries such as KG-D6 (which peaked at 69.4 MMSCMD in 2010-11), inefficiencies, bureaucratic delays, and production limitations forced HELP's reform. HELP trades NELP's high initial investment allure for long-term stability, but its full influence will not be felt until the given blocks mature.

[33] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[34] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[35] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025

OALP: A Game-Changer in Exploration

OALP is a major departure from NELP's organized bidding. Under NELP, the government pre-identified blocks, frequently using inadequate data, resulting in high dry-well rates. OALP uses the NDR to provide 2D and 3D seismic data to help operators make decisions. Companies submit expressions of interest (EOIs), which are followed by competitive bidding to ensure that only committed players participate[36]. By 2023, OALP had increased India's explored acreage by 10%, with basins including the Cambay, Assam-Arakan, and deepwater Andaman regions[37].

OALP's promise stems from its versatility. Unlike NELP's "boom-and-bust" cycles, OALP allows for continual exploration, which aligns with India's goal of reducing import dependency to 67% by 2030[38]. However, hurdles remain, including limited private engagement dominated by PSUs such as ONGC, and a global energy revolution favoring renewables, which limit its momentum[39].

Initial Outcomes and Investment Trends

By 2023, HELP had issued 144 blocks, although production contributions were negligible. ONGC's Mahanadi discovery under OALP-1, estimated at 1 TCF of gas, demonstrates early success, but commercial feasibility requires more evaluation[40]. Investment of $10 billion by 2023 pales in comparison to NELP's $50 billion, indicating a cautious sector response in the face of volatile oil prices and decarbonization pressures[41].

[36] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[37] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[38] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[39] International Institute for Sustainable Development, *Building Bridges: Mapping the Just Transition Landscape in India (IISD, 2021)* https://www.iisd.org/system/files/2021-06/building-bridges-just-transition-india-en.pdf accessed 12 March 2025
[40] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[41] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025

Annual inflows of less than $2 billion imply that HELP has yet to match NELP's initial investment rush, albeit its streamlined framework may produce dividends in the future.

Future Potential and Critiques

HELP's long-term success hinges on its ability to boost production and attract global players. Experts like Narendra Taneja praise its flexibility but caution that geological risks and insufficient incentives for deepwater exploration could limit outcomes. The policy's uniform licensing positions India to tap unconventional resources, yet shale and CBM development lags due to technological and environmental hurdles [42]. OALP's data-driven approach promises higher success rates, but sustained investment projected at $20-30 billion by 2030 is critical to meeting the 40 Mtoe target[43].

HELP is a forward-thinking extension of NELP, emphasizing simplicity, adaptability, and transparency. Its revenue-sharing model decreases disagreements, OALP improves exploration autonomy, and uniform licensing broadens the resource base. While early results are promising (144,000 square kilometers allocated and improved processes), production and investment fall short of lofty expectations. Compared to NELP's mixed legacy, HELP provides a sustainable framework, however its success is dependent on addressing global energy transitions and motivating risk-taking. As India balances energy security and sustainability, HELP's agility positions it as a foundation for future success.

Comparative Analysis:

India's upstream sector tries to improve energy security despite relying on crude oil imports for 85% of its reliance[44]. NELP (1997-2016) and HELP (2016 onwards) are two distinct policy approaches to these goals. This analysis examines them through production, investment, block

[42] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[43] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[44] BP plc, *BP Statistical Review of World Energy 2022 (BP, 2022*) https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-full-report.pdf accessed 12 March 2025

activity, and alignment with national objectives, using on data and industry viewpoints to inform findings.

Production Metrics: Output Comparison

Production is an important indicator of policy success in raising domestic output. NELP reached a high of 38.6 million tons (MT) in 2010-11, thanks to considerable contributions from awarded blocks[45]. This peak represents a period of strong output, which temporarily relieves import demands. In contrast, HELP's production stood at 29.7 MT in 2022-23, which was lower due to its early stage and emphasis on long-term exploration rather than immediate yields[46]. While NELP has a higher historical output, HELP's current data point to a slower ramp-up, while its effect may increase as additional blocks mature.

Investment Trends: Capital Attraction

Attracting investment is vital for technical improvement and exploration expansion. From 1997 to 2022, NELP raised a total of $50 billion, demonstrating its appeal to worldwide players[47]. This enormous inflow enabled extensive bidding rounds and high-risk exploration. However, HELP's yearly inflows were less than $2 billion in its early years, signalling a cautious start[48]. Its revenue-sharing concept and streamlined processes are intended to provide predictability, potentially leading to more consistent, long-term investment than NELP's peak-driven capital surges. The mismatch contrasts NELP's instant financial success with HELP's developing potential.

[45] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[46] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[47] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[48] International Energy Agency, *World Energy Outlook 2023 (IEA, 2023)* https://www.iea.org/reports/world-energy-outlook-2023 accessed 12 March 2025

Blocks Explored and Producing: Activity and Efficiency

The number of blocks investigated and produced indicates policy reach and operational success. NELP allocated 254 blocks in nine rounds, with around 50% going into production, showing a moderate success rate hampered by delays and disputes[49]. HELP's Open Acreage Licensing Policy (OALP) has covered 144,000 square kilometers by 2023, with ongoing rounds demonstrating a flexible, continuous exploration strategy[50]. While NELP's fixed rounds have typically led in more blocks allocated, HELP's early results indicate a faster exploration rate, albeit production outcomes are still being developed. This contrast highlights NELP's greater initial scope versus HELP's efficiency-focused design.

Alignment with Upstream Goals

India's goals, which include increasing output, reducing imports, and attracting investment, serve as a lens for comparison. NELP's higher production peak (38.6 MT) and substantial finds enhanced domestic supplies, briefly lowering import need in the early 2010s[51]. However, its reliance on complex contracts resulted in inefficiencies that hampered ongoing expansion. HELP's lower current output (29.7 MT) reflects its early stages, but its simpler architecture coincides with long-term import reduction by encouraging persistent exploration. On investment, NELP's $50 billion legacy outperforms HELP's early results, but HELP's methodology may better sustain inflows by reducing disagreements[52].

[49] Directorate General of Hydrocarbons, *Annual Publication (DGH India)* https://dghindia.gov.in/index.php/Annual_Publication accessed 12 March 2025
[50] Ministry of Petroleum and Natural Gas, Government of India, *IPNG Annual Report 2022-23 (2023)* https://mopng.gov.in/files/TableManagements/IPNG-Annual-Report-2022-23-web.pdf accessed 12 March 2025
[51] International Energy Agency, *World Energy Outlook 2023 (IEA, 2023)* https://www.iea.org/reports/world-energy-outlook-2023 accessed 12 March 2025
[52] *India's Upstream Needs Independent Regulator' Oil & Gas Journal (11 June 2012)* https://www.ogj.com/exploration-development/article/17229352/indias-upstream-needs-independent-regulator accessed 12 March 2025

Conclusion and Opinions on Policy Implications

Expert perspectives provide complex insights. According to industry commentators, NELP's strength lies in stimulating initial discoveries and capitalising on worldwide attention during a period of significant investment[53].

However, bureaucratic obstacles hampered long-term progress. HELP's revenue-sharing and OALP are lauded for decreasing fiscal conflicts and increasing flexibility, which may attract reliable investment[54]. Experts such as those from the Oil & Gas Journal contend that NELP has produced more tangible effects in the past, although HELP's initial good responses (for example, increased bidder interest in OALP) suggest future possibility[55].

COMPARATIVE TABLE

Metric	NELP (1997-2016)	HELP (2016 onwards)
Production Peak	38.6 MT (2010-11)	29.7 MT (2022-23)
Investment	$50B cumulative	Below $2B annually (early)
Blocks	254 (50% producing)	144,000 sq km (ongoing)
Goal Alignment	High initial output, mixed investment	Lower output, potential stability

This table, derived from DGH and MoPNG data, highlights NELP's past strengths and HELP's evolving potential.

NELP excelled in driving initial production and investment by capitalizing on a competitive climate, but its inefficiencies stifled long-term growth. HELP's streamlined method offers

[53] *'Oil and Gas Regulation in India' (Lexology)* https://www.lexology.com/library/detail.aspx?g=89bb623e-b05b-4451-98ab-d1c4e6c82ac7 accessed 12 March 2025
[54] International Energy Agency, *World Energy Outlook 2023 (IEA, 2023)* https://www.iea.org/reports/world-energy-outlook-2023 accessed 12 March 2025
[55] *India's Upstream Needs Independent Regulator' Oil & Gas Journal (11 June 2012)* https://www.ogj.com/exploration-development/article/17229352/indias-upstream-needs-independent-regulator accessed 12 March 2025

promise for long-term investment and exploration, but its production impact is restricted due to its early stage.

Experts believe HELP has the potential to better serve India's aspirations over time, given its versatility and early bidder interest. However, neither completely answers all difficulties. The success of NELP's finding and the simplicity of HELP suggest that a hybrid model combining competitive bidding, revenue-sharing, and flexible licensing could improve future policies by balancing immediate production with long-term growth.

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