North-East Region: Prominent Energy Hub
My vision for India’s energy future has 4 pillars – Energy access, Energy efficiency, Energy sustainability and Energy security.

- Shri Narendra Modi, Hon’ble Prime Minister
India: A Growing Large Economy With Strong Fundamentals

- **FDI Inflow**
  USD 319 billion (5 yrs)

- **Forex Reserve**
  USD 641 billion

- **Commodity Export**
  42% increase (from 2010 to 2018)

- **6th largest economy**
  3rd largest by PPP

- **Youngest Workforce**
  >62% population

- **3rd Largest Start-Up Base**
  50,000+ Start-Ups

- **Ranked 63 in EODB 2020**
  Jump of 79 ranks in last 5 years

An expanding economy, population, urbanisation and industrialisation mean that India sees the largest increase in energy demand of any country to 2040

-IEA Energy Outlook 2021
India Will Drive The Future Incremental Global Energy demand

Global industry experts are enthused on India’s role in defining global energy landscape...

- “India 2nd biggest driver of global energy consumption in 2019: BP Statistical Review
  The Economic Times, 2020

- “India will lead global recovery in Energy demand”
  IEA, October 2020

- “India to emerge as the leading energy consumer over the long term. India to account for 16 per cent of the global economy by 2045”
  World Oil Outlook, OPEC, 2020

Source: BP Energy Outlook 2020 Rapid Transition Scenario
A Slew of Transformative Initiatives in last 6 years

2014
- Marketing & Pricing Freedom for gas production from difficult fields
- National Seismic Program
- Hydrocarbon Resource Re-assessment
- National Seismic Program
- Launch of Hydrocarbon Exploration & Licensing Policy (HELP)

2015
- Discovered Small Field Policy

2016
- Launch of Hydrocarbon Resource Re-assessment
- Launch of National Data Repository (NDR) and OALP Bid Round

2017
- Marketing & Pricing Freedom for CBM
- Enhanced Recovery Policy

2018
- Streamlining working of PSC Policy
- Setting up Alternate Dispute Resolution Committee
- Production Enhancement Contract
- Self Certification of PSC Contract Management

2019

2020
Geoscientific Data Initiatives


49.1% increase in Hydrocarbon resource estimate as compared to 1995

National Data Repository

Centralised repository of geoscientific data

2.325 Million LKM 2D data populated*

0.788 Million SKM 3D data populated*

National Seismic Programme

Launched to conduct assessment of unapprised areas

~43,952 LKM *

data acquired and progressively being uploaded on NDR

Other forward looking changes

- No go areas in Andaman basin being released for E&P activities
- Govt. initiated **pre clearing of blocks with different agencies** such as Defence and Environment
- Govt. taking measures to expedite PEL grant
Govt. conducted Hydrocarbon Resource Reassessment in 2017, resulted in increase in Hydrocarbon resource estimates by **49.1%** (as compared to 1995 Study)

About **70% of undiscovered in-place under yet-to-find** category (~230 billion barrels of oil equivalent)

Out of total sedimentary basinal area of **3.36 million Sq. Km, ~47% is under explored**
# National Data Repository and National Seismic Programme

**National Data Repository (NDR): Centralised repository of geoscientific data of Indian basins**

<table>
<thead>
<tr>
<th>Key features</th>
<th>G&amp;G Data available</th>
<th>Users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ease of Access</td>
<td>2D Seismic Data: 2.812 Million LKM</td>
<td>251+ Companies</td>
</tr>
<tr>
<td>Integrated with GIS browser</td>
<td>3D Seismic Data: 0.933 Million SKM</td>
<td></td>
</tr>
<tr>
<td>Virtual Data Room</td>
<td>Seismic Reports: 15,507 nos.</td>
<td></td>
</tr>
<tr>
<td>Seamless Data Exchange</td>
<td>Well and log data: 20,114 nos.</td>
<td>760+ Users</td>
</tr>
<tr>
<td>Cutting Edge Technology</td>
<td>Well Reports: 41,422 nos.</td>
<td></td>
</tr>
<tr>
<td>High Quality Data</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**National Seismic Programme (NSP)**

Launched to conduct assessment of unapprised areas for potential O&G reserves.

As on January 2020, ~43,952 LKM data acquired and is progressively being uploaded on NDR.
Secondary Data Center (SDC) of NDR at Bhubaneswar

Disaster Recovery and Business continuity Centre of NDR

- World-class infrastructure
- Safe and Secure Storage of valuable E&P data
- Strategically located at Bhubaneshwar, Odisha
- 60 TB PDC data in continuous sync with SDC
**HELP - A Paradigm Shift in India’s E&P Space**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Acreage Licensing</td>
<td>Full Marketing and Pricing Freedom for sale of Hydrocarbons</td>
</tr>
<tr>
<td>Reduced Royalty in Offshore Exploration</td>
<td>Concessional Royalty for Early Production</td>
</tr>
<tr>
<td>Graded Royalties for different block types</td>
<td>Reduced Royalty in Offshore Exploration</td>
</tr>
<tr>
<td>Round the year EoI submission</td>
<td>Continuous exploration permitted during contract period</td>
</tr>
<tr>
<td>Up to 100% FDI allowed</td>
<td>No revenue share bids in Category II and III Basins</td>
</tr>
<tr>
<td>Incentive mechanism for originators through OALP</td>
<td>No carried interest by NOCs</td>
</tr>
<tr>
<td>Self-certification being implemented</td>
<td>Low regulatory burden</td>
</tr>
</tbody>
</table>

**Single license for Conventional & Unconventional hydrocarbons**

**Transparent bidding model**

**Low regulatory burden**

**No carried interest by NOCs**

**Reduced Royalty in Offshore Exploration**

**Concessional Royalty for Early Production**

**Up to 100% FDI allowed**

**No revenue share bids in Category II and III Basins**

**Continuous exploration permitted during contract period**

**No carried interest by NOCs**

**Self-certification being implemented**

**Incentive mechanism for originators through OALP**

**Low regulatory burden**
OALP Journey

Launch of OALP
July 2017

- Launch: Jan 2018
- Bid Closing: May 2018
- Award of Blocks: Oct 2018

- Number of blocks awarded:
  - OALP I: 55
  - OALP II: 14
  - OALP III: 18
  - OALP IV: 7
  - OALP V: 11

- 105 blocks awarded

Launch: Jan/Feb 2019
Bid Closing: May 2019
Award of Blocks: July 2019

- Area awarded (Sq. Km.):
  - OALP I: 59,282
  - OALP II: 29,233
  - OALP III: 29,765
  - OALP IV: 18,510
  - OALP V: 19,789

- 1,56,579 Sq. Km. awarded

Launch: Aug 2019
Bid Closing: Oct 2019
Award of Blocks: Jan 2020

- Segregation of blocks:
  - Onland: 83
  - Shallow Water: 18
  - Deep/Ultra-deep Water: 4

Launch: Jan 2020
Bid Closing: March 2020
Award of Blocks: Nov 2020

- Launch of OALP
  - July 2017

- OALP I, OALP II, OALP III, OALP IV, OALP V
Blocks on offer under OALP Bid round VI

- 21 OALP blocks
- 11 Basins covered
- ~35,500 sq.km on offer

Bidding window for OALP Round VI is open till 6th October 2021
**Discovered Small Fields (DSF) Policy**

Estimated Revenue to be generated from DSF I and DSF II is ~ USD 8 Billion

<table>
<thead>
<tr>
<th><strong>Number of Contract Areas awarded</strong></th>
<th><strong>Area Covered (in sq. km)</strong></th>
<th><strong>In place Hydrocarbon (MMT) (O&amp;OEG)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>DSF I</td>
<td>30</td>
<td>1500</td>
</tr>
<tr>
<td>Off shore</td>
<td></td>
<td>DSF I</td>
</tr>
<tr>
<td>On land</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>DSF II</td>
<td>23</td>
<td>3000</td>
</tr>
<tr>
<td>Off shore</td>
<td></td>
<td>DSF II</td>
</tr>
<tr>
<td>On land</td>
<td>9</td>
<td>09</td>
</tr>
</tbody>
</table>

**Success Story So far (2016-2018)**

- No technical qualification criteria
- Revenue sharing contract model with low regulatory burden
- No minimum biddable work program
- Ready access to the entire E&P data through National Data Repository (NDR)
- 100% participation allowed from foreign companies/joint ventures
- Discovered fields offered in commercially producing & proven basins
- Sharing of Common Facilities

**Key Features**

- 53 blocks awarded
- 4500 Sq. km. awarded
- ~235 MMT In place Hydrocarbon reserves
Blocks on offer under DSF Bid round-III

32 contract areas with 75 Discoveries with Hydrocarbon Resource Potential of 232 MMTOE
Special CBM Bid Round-2021

15 Coal Bed Methane (CBM) Blocks across four basins in 6 states

Prognosticated Resources
~700 BCM

- All Blocks on offer in Category-III basin i.e. no revenue sharing until windfall gain.
- Single License for Conventional & Un-conventional Hydrocarbon
- Full Marketing and Pricing Freedom for Gas produced.
- Exploration allowed during entire contract period.
- No overlap with existing/proposed Coal Blocks/Mines and Forest land.
- 100% participation from foreign companies/Joint ventures.
- Gas Pipeline infrastructure through GAIL Pradhan Mantri Urja Ganga Pipeline
Policy to incentivize implementation of Enhanced Recovery Methods

50% waiver on cess for oil, 75% waiver on royalty for gas

<table>
<thead>
<tr>
<th>Policy Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR incentives on reaching a set benchmark</td>
</tr>
<tr>
<td>Applicable across all contractual regimes and nomination acreages</td>
</tr>
<tr>
<td>Fiscal incentives available for 120 months from date of commencement of incremental production*</td>
</tr>
<tr>
<td>Sunset Clause Policy effective for 10 years from date of notification</td>
</tr>
</tbody>
</table>

Policy includes provision for fiscal incentives for Enhanced Oil Recovery (EOR), Enhanced Gas Recovery (EGR), Improved Oil and Gas Recovery (IOR/IGR) and Unconventional Hydrocarbon Production methods

*In case of unconventional hydrocarbon fiscal incentive shall be applicable on entire production
North Eastern Region: Prominent Energy Hub

North-East Natural Gas Pipeline Grid (NEGG)- 1656 Kms

CGD sales of 2.2 MMSCMD

Refining Capacity of 7 MMTPA

BCPL Petrochemical Plant with capacity of 280,000 Tonnes Per Annum of Polymer Production

No. of E&P Companies - 21

Contributing 13% of country’s crude oil production

Contributing 16% of country’s natural gas production
North Eastern Region: Oil and Gas Resource Potential

Two Sedimentary Basins- Assam Shelf and Assam- Arakan Fold Belt (Total Basin Area- 1,36,825 sq. kms)

- Undiscovered: 5.6 BTOE
- Reserve: 0.3 BTOE
- In-place: 7.6 BTOE
- Discovered: 2.0 BTOE
- Recoverable: 0.7 BTOE
- Produced: 0.4 BTOE

Oil is not there until we find it
E&P Activities Planned under OALP in North East Region

Total 26 blocks awarded under OALP I, III and V
Total Area Awarded- 19836 sq. Kms

- Arunachal Pradesh: 1,664 sq. Kms (8% of total)
- Assam: 15,065 sq. Kms (76% of total)
- Mizoram: 3 sq. Kms (0% of total)
- Nagaland: 2,574 sq. Kms (13% of total)
- Tripura: 531 sq. Kms (3% of total)

Companies operating under OALP rounds- HOEC, OIL, ONGC, Vedanta

- 2D seismic data acquisition- 4455 LKM
- 3D seismic data acquisition- 5215 SKM
- No. of exploratory wells- 75
- No. of core analysis- 72

Total committed investment- 495 MMUSD
E&P Activities Planned under DSF in North East Region

15 DSF Contract Areas
(9 in Round I and 6 in Round II)

9 viable FDPs being implemented
(5 in Round I and 4 in Round II)

Planned Investment of USD 110 Mn

Anticipated cumulative production of 2.5 MMT Oil and 3.8 BCM gas

<table>
<thead>
<tr>
<th>#</th>
<th>Contract Area</th>
<th>DSF Round</th>
<th>Oil Peak Production (TPD)</th>
<th>Gas Peak Production (MMSCMD)</th>
<th>Production Commencement Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>1</td>
<td>Barasilla</td>
<td>I</td>
<td>30</td>
<td>0.003</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>2</td>
<td>Hazarigaon</td>
<td>II</td>
<td>-</td>
<td>0.1</td>
<td>FY 2021-22 (Q3)</td>
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<tr>
<td>3</td>
<td>Laxmijan</td>
<td>I</td>
<td>42</td>
<td>-</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>4</td>
<td>Disajian</td>
<td>II</td>
<td>176</td>
<td>-</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>5</td>
<td>Charaideo</td>
<td>I</td>
<td>100</td>
<td>0.05</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>6</td>
<td>Duarmara</td>
<td>I</td>
<td>105</td>
<td>0.3</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>7</td>
<td>Dipling</td>
<td>I</td>
<td>187</td>
<td>0.04</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>8</td>
<td>Umatara</td>
<td>II</td>
<td>194</td>
<td>-</td>
<td>FY 2022-23 (Q1)</td>
</tr>
<tr>
<td>Tripura</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Tulamara</td>
<td>II</td>
<td>-</td>
<td>0.4</td>
<td>FY 2022-23 (Q4)</td>
</tr>
</tbody>
</table>

DSF-III is under progress: 03 no. of contract areas with 612 sq kms having potential of 0.86 MMTOE
Key Information Touch Points

Ministry of Petroleum and Natural Gas
Website: http://petroleum.nic.in/
Contact us: https://mopng.gov.in/en/about-us/phone-directory

Directorate General of Hydrocarbons
Website: http://dghindia.gov.in/
Contact us: http://dghindia.gov.in/contact_english.php

Hydrocarbon Exploration and Licensing Policy
OALP Bid Rounds
Website: http://online.dghindia.org/oalp/
Facilitation Desk
Email: Facilitationoal@dghindia.gov.in

National Data Repository
Website: https://www.ndrdgh.gov.in/NDR/
Email: indr@dghindia.gov.in

For DSF and CBM bid rounds, Data is available on cloud.

DSF Bid Rounds
Website: http://online.dghindia.org/dsf3
Facilitation Desk
Email: Facilitationdsf@dghindia.gov.in
A new E&P Paradigm

Driving investments into one of the World's fastest growing economies

Ministry of Petroleum & Natural Gas
Government of India