

Natural Gas : Fueling the Future

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India's energy vision and critical transformation goal



Shri Narendra Modi
Hon'ble Prime Minister of India

India's Energy Map will have 7 key drivers...



Making India a gas-based economy, increasing share of natural gas to 15% from existing 6.3% by 2030



Cleaner use of **fossil fuels** particularly petroleum and coal



Greater reliance on domestic sources to drive **bio-fuels**



Achieving the **renewables target** of 450 GW by **2030**



Increasing contribution of electricity to **de-carbonize mobility**



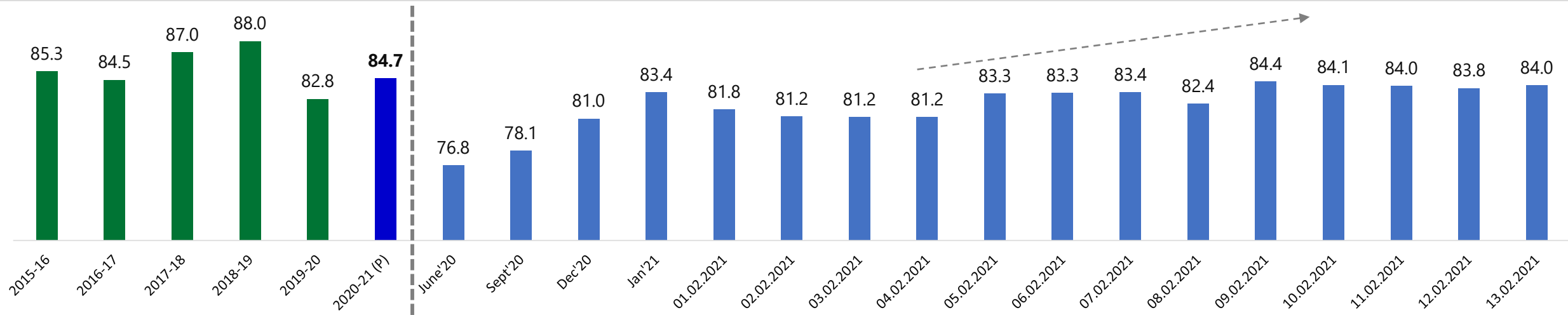
Moving into the **emerging fuels** including hydrogen



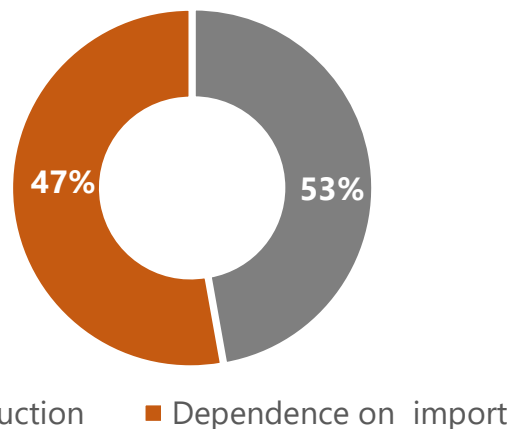
Digital innovation across all the energy systems

India's natural gas production and imports

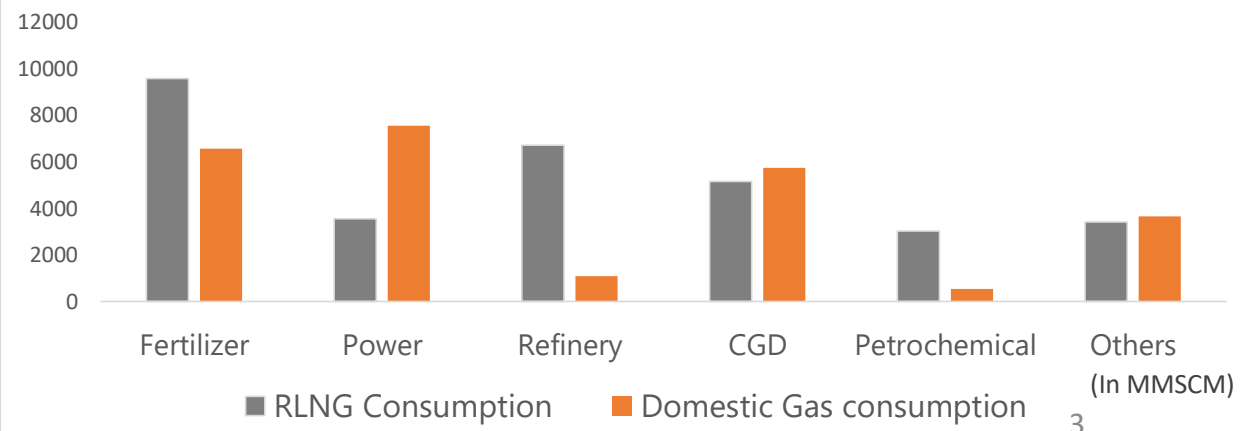
Natural Gas Production in India (2015-2021)



Natural Gas Consumption (FY 2019-20)



Sectoral consumption of Natural Gas (FY 2019-20)

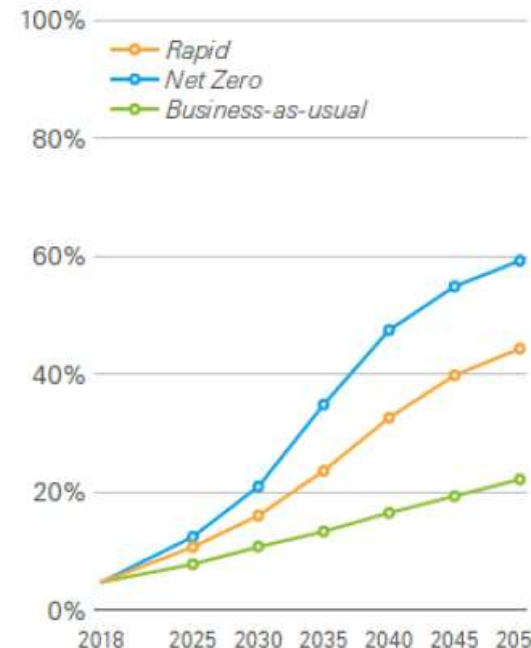


The world of new energy: shift towards low carbon energy sources

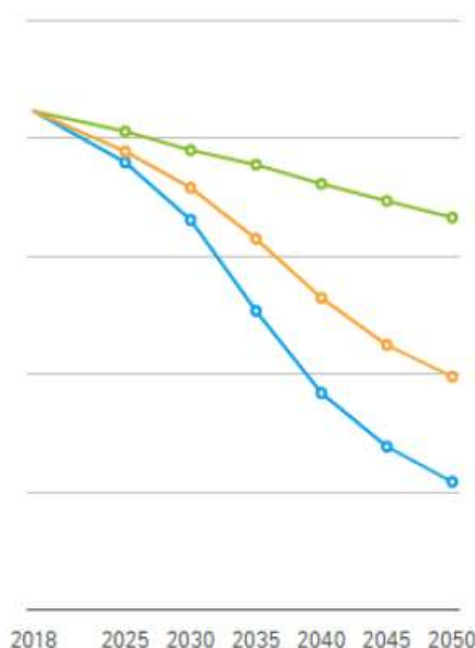
- Even as oil & gas demand is set to fail in absolute terms in most scenarios, India's reality could be at variance
- India's large imports makes domestic oil & gas accretion an imperative

Shares of primary energy

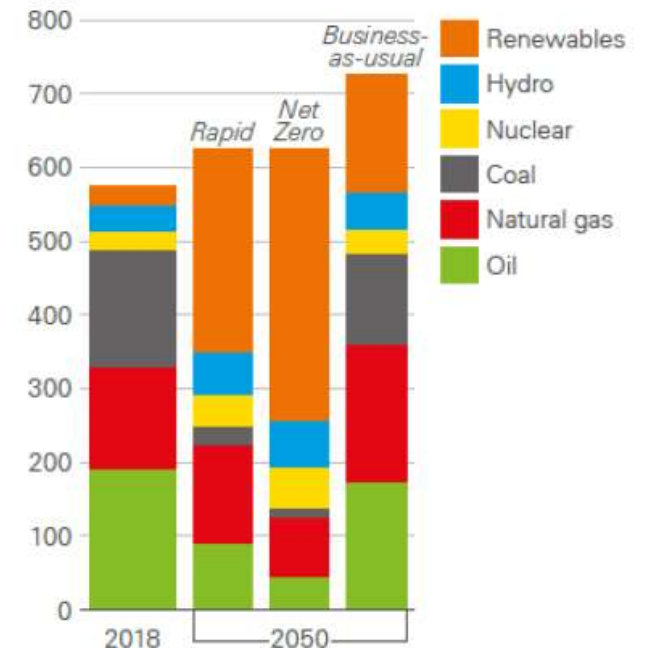
Renewables



Hydrocarbons



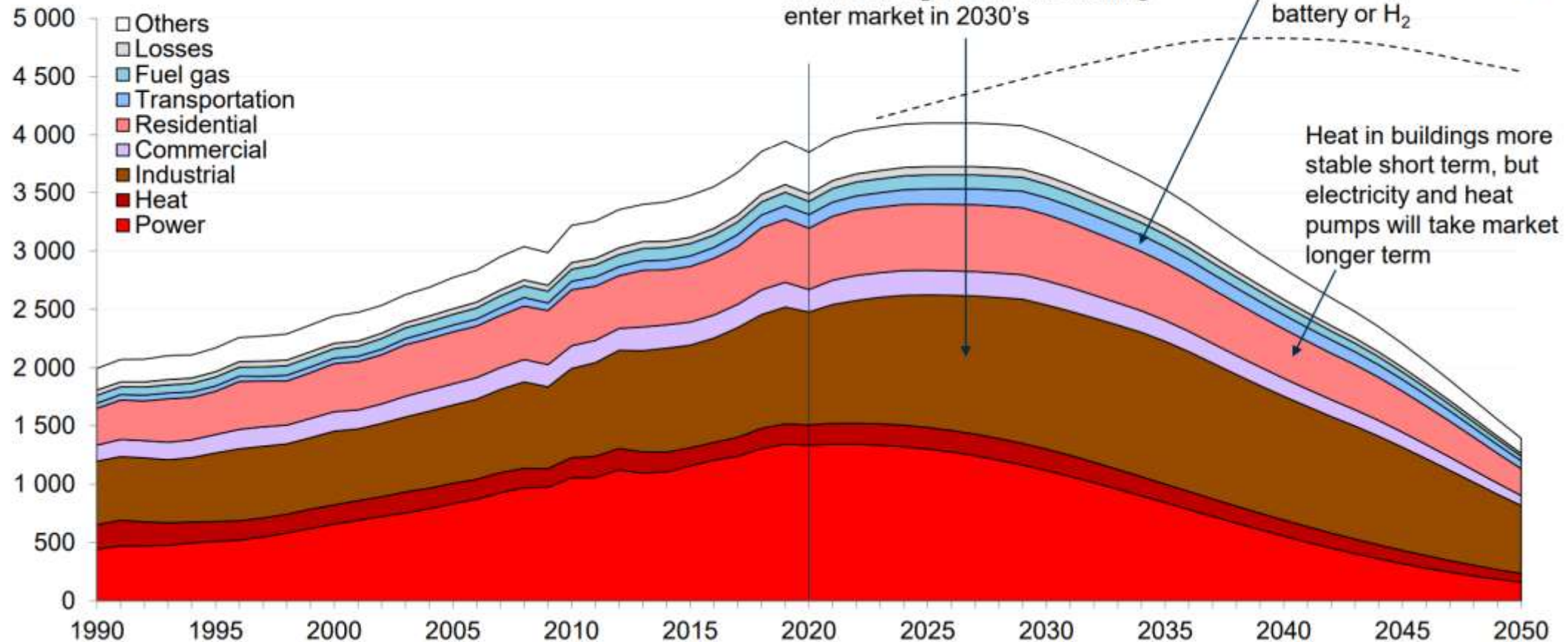
Primary energy consumption by source EJ



Global gas production on the rise and will continue to contribute significantly

Global Gas Consumption

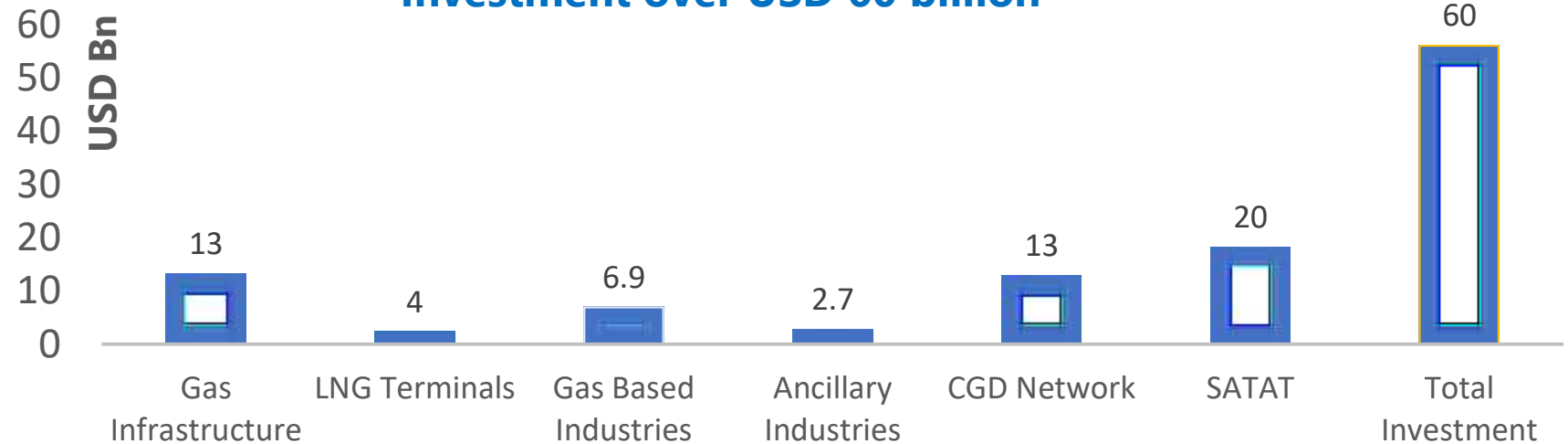
Bcm



Huge investment lined up for ushering into a gas-based economy

- 1 Gas grid Infrastructure**
USD 13 billion
- 2 LNG Terminals**
USD 4 billion
- 3 CGD Networks**
USD 13 billion
- 4 SATAT**
USD 20 billion
- 5 Gas based & Ancillary Industry**
USD 10 billion

Investment over USD 60 billion



Gas based economy aligned with 'Energy Vision of India'

Enabling policy/regulatory framework to compliment investments

Market development

- E-bidding platform
- Gas Trading Exchange/ Regulations

Ongoing efforts:

- Rationalization of tariff of gas
- TSO for Open Access

Government as part of its ambition to move towards gas-based economy launched various proactive and transformative changes in the policy and regulatory regime

Key recent reforms

Natural Gas Sector Reform

- Government approved '**New Domestic Natural Gas Pricing Guidelines**' in 2014 based on the prices across major international hubs.
- The prices of natural gas are revised after every six months, benefitting both consumers and producers.
- **In October 2020**, Government facilitated **e-auction of domestically produced gas**
- Govt. launched **Gas Trading Exchange** for imported gas in June 2020

Production Enhancing Scheme

- In **February 2019**, Government approved 'Exploration and Licensing Policy for Enhancing Domestic Exploration and Production of Oil and Gas', which includes **Production Enhancement Scheme for Nomination fields with more functional freedom to NOCs for collaboration and private sector participation.**

Enhanced Recovery Policy

- **Launched in 2018** to incentivize implementation of Enhanced Recovery Methods
- **IR incentives on reaching a set benchmark**
- **Fiscal incentive** for Enhanced Oil Recovery, Enhanced Gas Recovery, Improved Oil and Gas recovery and **Unconventional HC production methods**

Exemption from seeking Environmental Clearance

- **In January 2020**, Govt. exempted O&G firms, looking to conduct exploratory drilling, from seeking an environmental
- **The amendment has moved exploration from Category A to Category B2** which will now require approvals only from the states concerned, will not require an EIA

Substantial progress made under Open Acreage Licencing Programme (OALP)

Committed investment of **2.4 Billion USD** from **1,56,579 sq. km.** acreages awarded under five OALP Bid Rounds

Committed Work Programme (CWP) at the time of bidding

2D Seismic

30,000 LKM

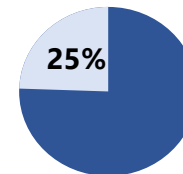
3D Seismic

45,000 SKM

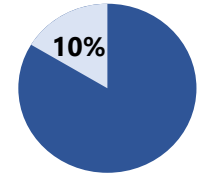
Exploratory wells

380

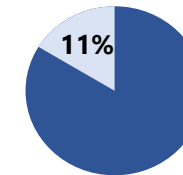
Progress made against CWP



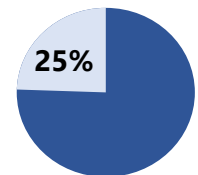
25% 2D seismic completed in onland



10% 2D seismic completed in Offshore



11% 3D seismic completed in onland



25% 3D seismic completed in Offshore

Fast paced monetization of Discovered Small Fields (DSF)

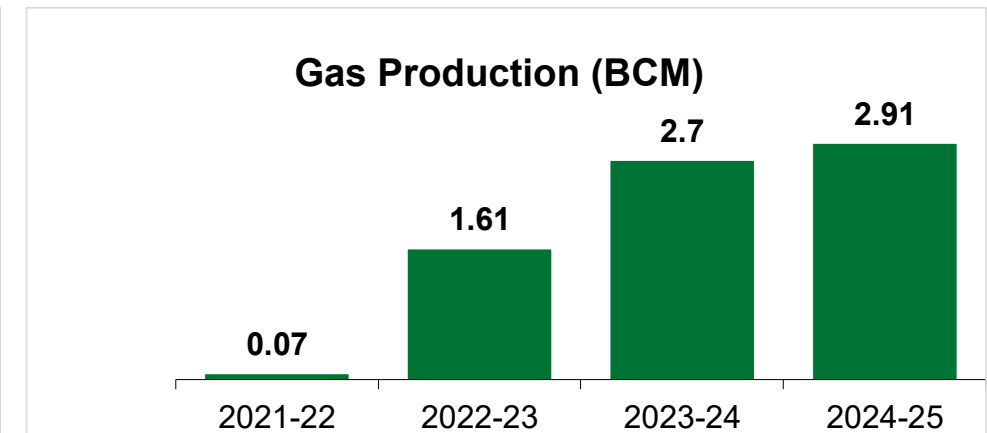
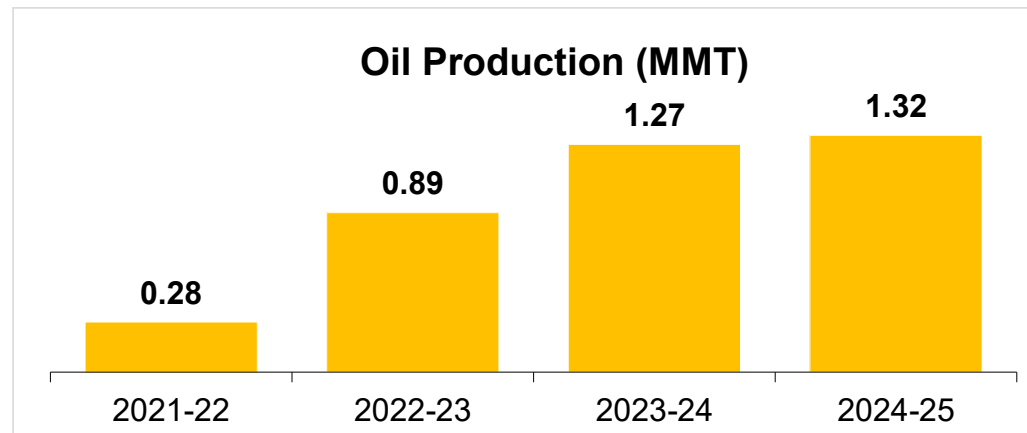
54 Contract Areas with hydrocarbon in place of **161 MMTOE** awarded under DSF Bid Round I & II

Anticipated investment of ~**1.76 Billion USD**

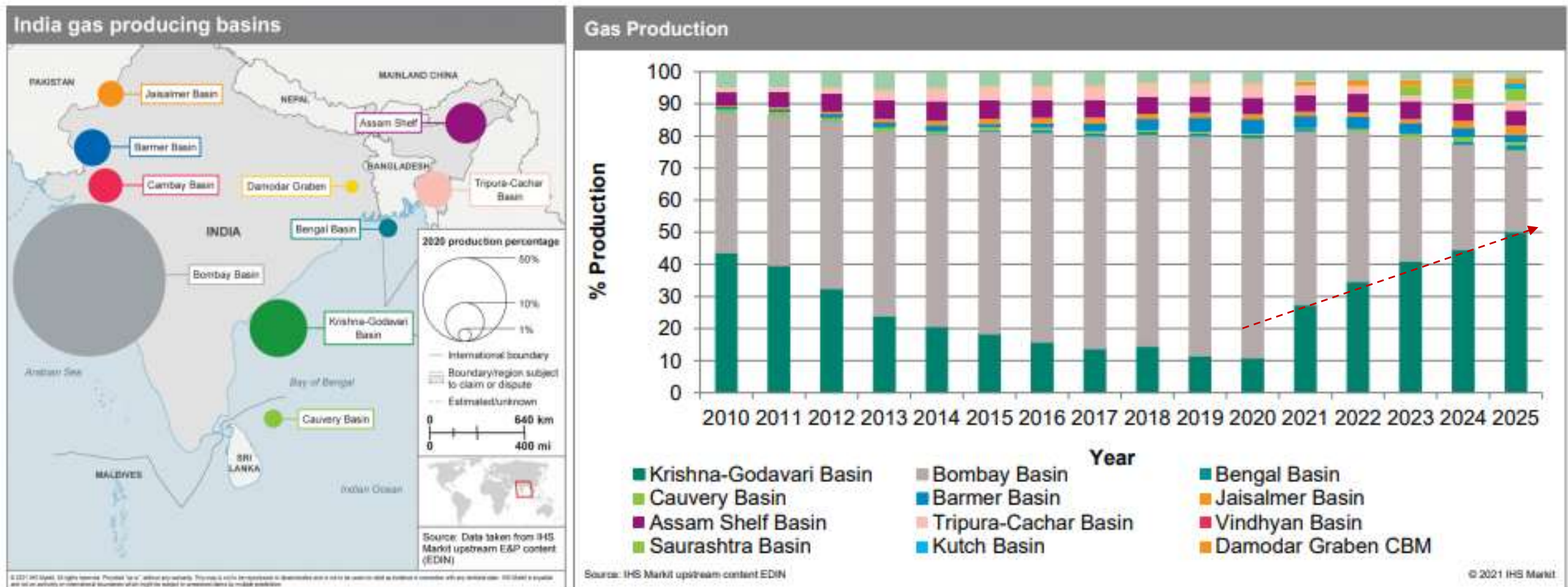
Status of Progress

DSF Rounds	Contracts	PML Granted	FDPs
DSF-I (2017)	30	24	15
DSF-II (2019)	24	18	13
Total	54	42	28

Anticipated Production from DSF



Krishna Godavari emerging as a marquee basin as per natural gas production outlook



The KG Basin is envisaged to contribute ~50% to total gas production In India as compared to 10% in 2020

Favorable policy, fiscal, administrative ecosystem making India a promising investment destination



Ever increasing energy demand

12%
Share in global energy demand to almost double by 2050 from 6% in 2018

~338%
Increase in Natural Gas consumption by 2050

~100%
increase in oil consumption by 2050



Hydrocarbon Potential

41,880
MMTOE –
Total Prognosticated
Hydrocarbons

29,792 MMTOE
Undiscovered
Prospective Resources

12,088 MMTOE
Discovered
Hydrocarbons



Favorable Policies

- Multiple modes of entry such as OALP, DSF, Farm-in & farm out, PEC
- Fiscal incentives under different policies
- Encouraging EoDB through Alternate dispute resolution mechanism, ECC, Self certification of processes under Contract management
- Environmental clearance waived off for exploration activities



Government Incentives

100%
Foreign Direct Investment (FDI) allowed

On early commercial production, existing royalty rates be reduced by **10%, 20% and 30%** for Category I, II and III basins respectively

For Category II and III basins, Award of acreages is based on Work Programme

India is steadily moving forward with the goal of reducing its carbon footprint by 30-35%

India signed the **Paris Climate Agreement** in 2016 for cutting down greenhouse gas emissions to combat global warming

As a part of the agreement India pledged to **reduce the emission intensity of GDP by 33-35% from 2005 levels by 2030**

India is the only country among the G20 nations which is on track to achieve targets under the Paris Agreement

**“NATURAL GAS IS THE
FUTURE, IT IS HERE.” – BILL
RICHARDSON**

THANK YOU

