



ngc
Vision

To be global leader in integrated energy business through sustainable growth, knowledge excellence and exemplary governance practices.



Corporate Presentation

Enhancing Energy Security of India

February 2013

1 Oil & gas industry global perspective

2 Energy pursuits: India's perspectives

3 ONGC: the Energy Anchor of India

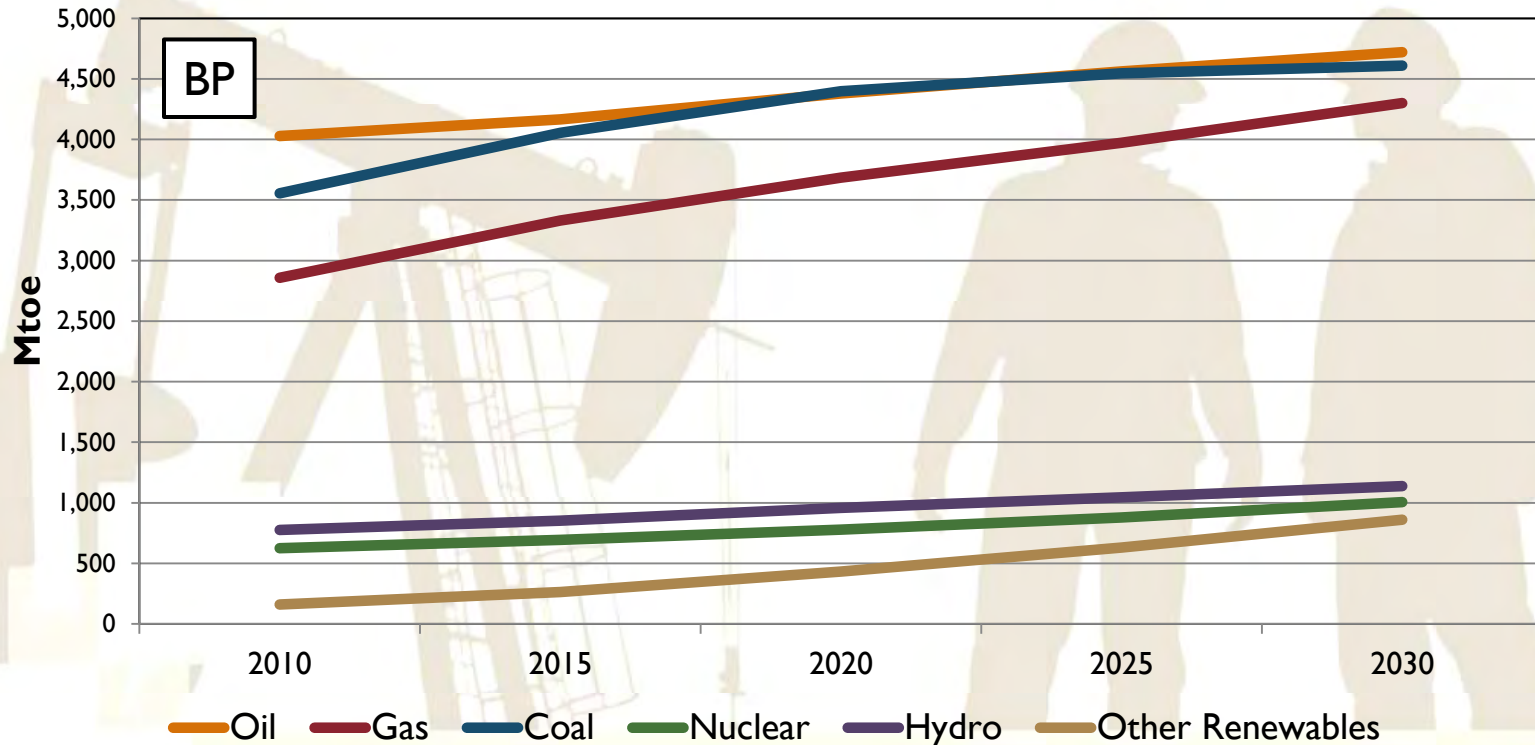
3a Plans – Medium-term

3b Long-term strategy

World fuel basket: BP

Fossil fuel to remain dominant fuel. Gas consumption to increase more than oil or coal.

Share of oil, gas and coal in global fuel basket to converge



▶ Oil & gas industry in unprecedented dynamism

1

Technology & innovation made possible to scale – inaccessible, hard to visualize, uneconomical frontiers and unconventional.

2

Frontiers become 'Hot Spots' – Deep & ultra deep waters, Arctic, unconventional

3

Existing assets get new life – sincere efforts to improve recovery factor – however, tertiary recovery still to take place.

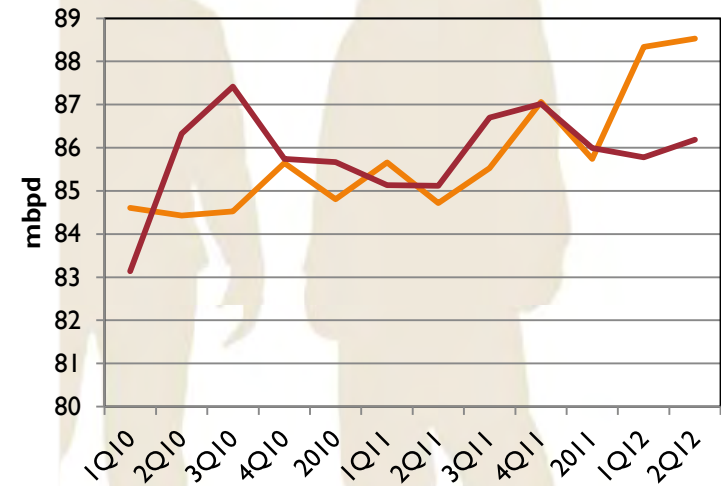
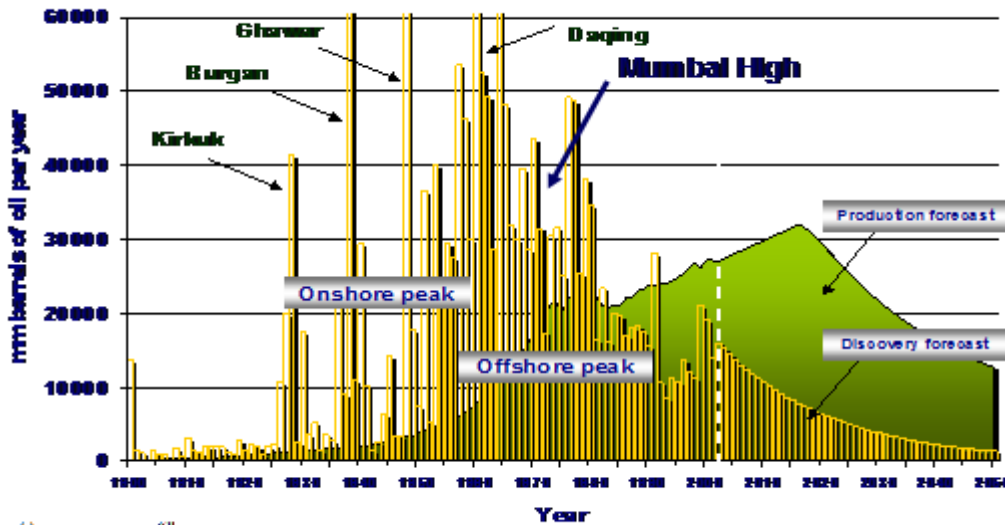
4

Unconventional, the game changers, imbalances the static of industry. We move forward but look back for consolidation.

5

Peak nosedives – industry pumping more. Much has already come – more to come.

- ▶ **Extra liquid coming from:** Unconventional sources – USA & Canada, OPEC countries cranked up production, Iraq rebuilding its capacity, Saudi Arabia till recently added ~ 1 mbpd.



— Liquids supply — Refinery intake

- 6 New gas discoveries brings complexities to market.
- 7 Oil market delinked from the fundamentals. Any and every reason influence market.
- 8 High oil price regime – accepted fact.
- 9 Resource nationalism gets momentum.

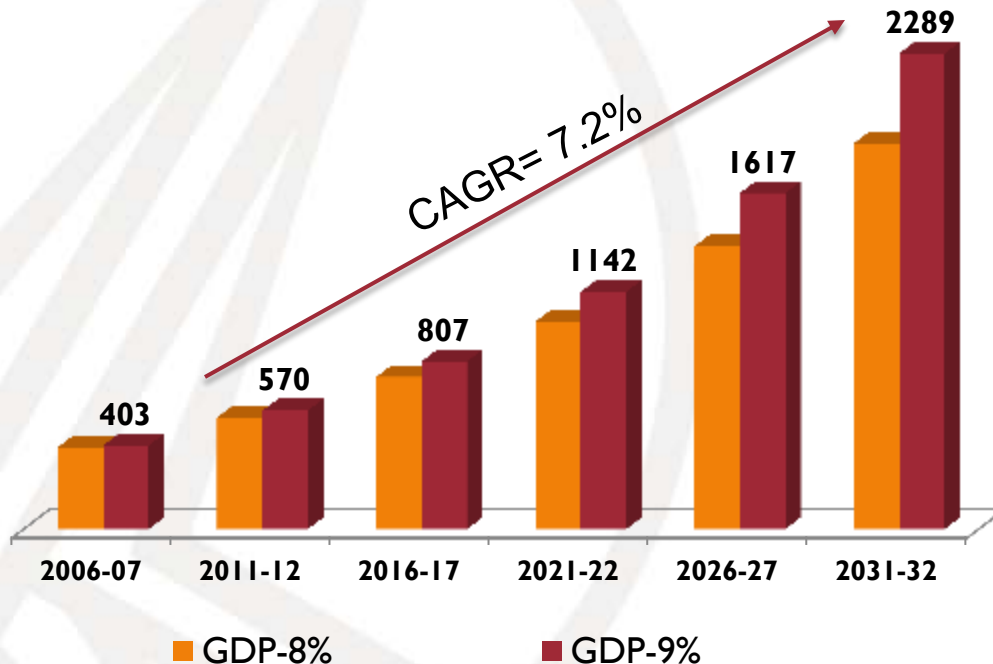


Energy pursuits: India's perspective



Energy: India's perspective

- ▶ With 17% of world population, India has just 0.35% of oil reserves & 0.6% of natural gas reserves
- ▶ **For 8% growth rate between 2011-12 to 2031-32**
 - ▶ Oil demand to increase from 166 million tonnes to 486 million tonnes
 - ▶ Gas requirement to rise from 44 Mtoe to 197 Mtoe
 - ▶ Primary energy demand growth to even top China



- Primary Energy growth rate (2007-30)
- China : CAGR 2.9%
 - USA : CAGR 0.1%
 - World : CAGR 1.5%



Energy: India's perspective

- ▶ The positive: technology & capital intensive exploration of unexplored sedimentary basins.
- ▶ 3.5 btoe in-place volume discovered in last 11 years with 380 hydrocarbon discoveries
- ▶ India the 5th largest importer of LNG after – Japan, South Korea, UK, & Spain; accounts for 5.5% of the total trade.
- ▶ LNG re-gasification capacity expected to be more than 50 MMTPA by 2016-17 with a supply of 198 mmscmd.
- ▶ India to have more than 31,000 Km of gas pipeline by 2017; 14,000 Km of pipeline infrastructure under implementation.



Energy: 12th Plan (2012-17)

Conventional

- ▶ Oil production 216 MMT; Gas production 187.12 BCM

Renewable

- ▶ Proposed addition of 29,800 MW renewable energy
 - ▶ Wind (1500 MW), Hydro (2,100 MW), Solar (10,000 MW) & Bio (2,700 MW)

India attractive destination for clean energy investment

India the 6th largest clean investment destination

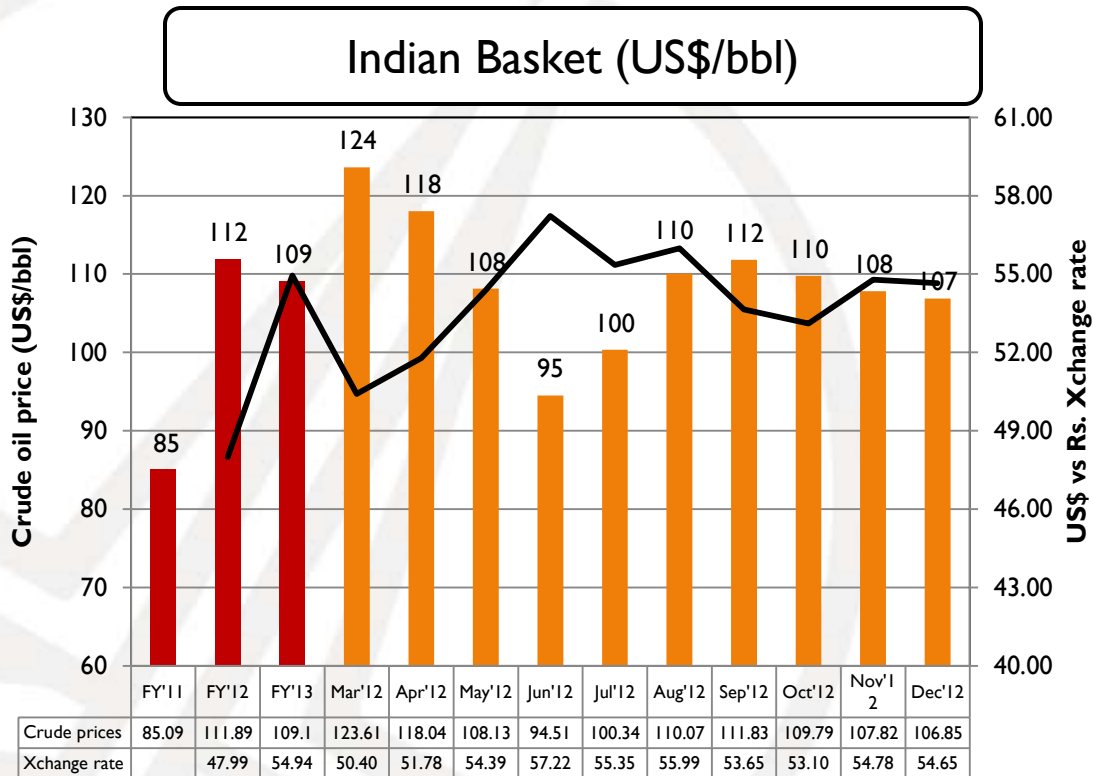
Attracted US\$ 10.2 billion of investment in 2011 for clean energy; 54% more than 2010

Wind attracted US\$ 4.6 billion of investment



Price volatility

- ▶ Crude oil price (Indian basket) to remain volatile. Double whammy – international price & unstable exchange range.



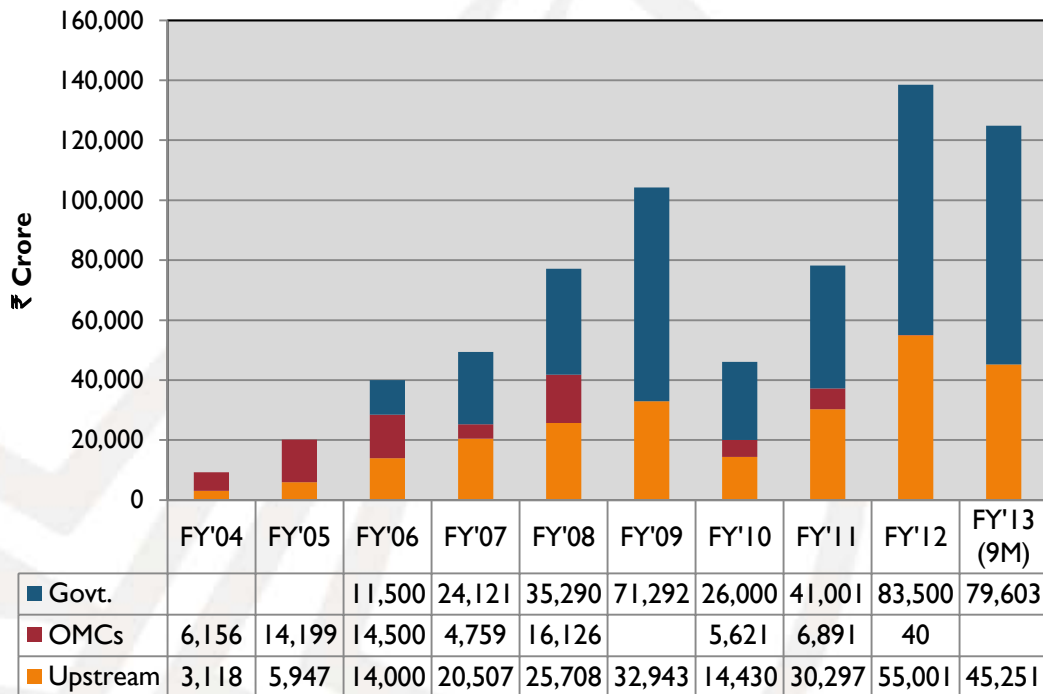
Despite that Govt. has been able to make available petroleum products at affordable cost



Investments under pressure

- ▶ Though Govt. shared 54% of the total subsidy; upstream companies like ONGC shared 30% of it; investment for new capacities under pressure.

Subsidy sharing FY'04 to FY'13



₹ Crore	ONGC
FY'04	2,690
FY'05	4,104
FY'06	11,958
FY'07	17,025
FY'08	22,000
FY'09	28,226
FY'10	11,554
FY'11	24,892
FY'12	44,466
FY'13 (9M)	37,108
Total	204,023

A transparent mechanism becomes imperative



What we need to do?



Huge potential

Huge exploration potential exists in India and converting these exploration potential into a producible proposition remains huge task and challenge.

Technology intensive exploration imperative; exploration to be incentivized



- ▶ Out of 26 Indian sedimentary basins only 7 are producing.
- ▶ Total prognosticated resource: 205 billion barrels of O+OEG,
 - ▶ 68 billion barrels has been established as in-place volume.
- ▶ Out of total 3.14 million sq. km sedimentary area, only
 - ▶ Wells explored: 22 %
 - ▶ Exploration initiated: 44%
 - ▶ Poorly explored: 12%
 - ▶ Unexplored: 22%



Huge potential

Unconventional also have huge potential. Enabling regulatory regime, incentives and cooperation can only make the way forward.

Potential Shale Gas basins



Estimated potential:

- Coal Bed Methane (CBM) > 450 tcf.
- Underground Coal Gasification (UCG) ~ 6,900 tcf of gas
- Gas hydrates ~ 142 bcm
- Shale gas > 65 tcf.

However, our engagement in tapping these unconventional resources is at very preliminary stages. We need to expedite our endeavours.

Integrations of endeavours – the mantra! Why not we have Integrated Energy Policy?

USGS estimates 63tcf of Shale gas resources in India



Renewable

Renewable energy the future; compliments sustainable development.



Renewable estimated potential:

Total potential: 89,760 MW.

- Wind power: 49,132 MW
- Small hydro-power: 15,385 MW
- Biomass: 17,538 MW
- Bagasse-based cogeneration in sugar mills: 5,000 MW

In addition,

- National Solar Mission: 20,000 MW
- Nuclear energy: 21,540 MW



The way forward

Huge investments; battery of advanced technologies; new partnerships; spreading of risks; economies of scale; efficiency & efficacy; talent pool, etc. – becomes imperative

Energy security and energy economics need to go hand-in-hand

Invest big in technology

Focus on energy efficiency improvement

Expedite efforts on renewable

“Localized” planning to improve energy availability

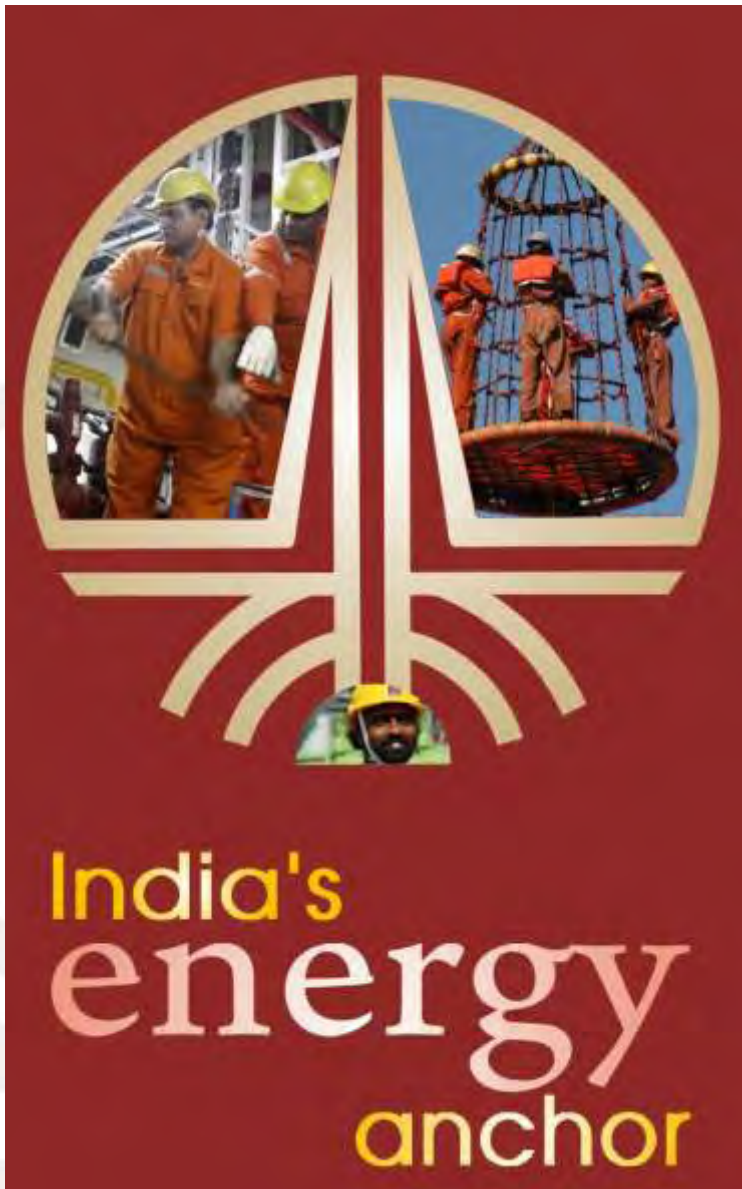
Creating Strategic Reserves

Renewed Diplomacy

Strengthening the Regulatory institutions

Redefining the role of the government





ONGC
committed for
Energy Security
of India

Exploration

- ▶ Conversion of nomination PEL to ML

Development/ re-development

- ▶ Development of 37 fields through 13 projects
- ▶ Rolling re-development of major fields

Unconventional & alternate

- ▶ CBM, UCG, Shale gas and alternates.

Integration

- ▶ Commissioning of on going projects – OPaL, OMPL, OTPC, SEZs

▶ Presently 13 projects under implementation to monetize 37 fields

G-1 & GS-15	G-1 & GS-15
C-Series	C-22, C-24, C-39-1, C-39-A
B-22 Cluster	B-22A, BS-13A, B-149A
B-46 Cluster	B-46, B-48, B-105, B-188
B-193 Cluster	B-193A, B-23AA, B-127A, B-178A, B-179A
North Tapti	North Tapti
D-1 (additional)	D-1
Cluster-7	B-192-1, B-192,5, B-192-8, WO-24
BHE & BH-35	BHE & BH-35
WO-16-Cluster	WO-5, WO-15, WO-16, B-119/121
SB-14 field	SB-14
B-127 Cluster	B-127, B-157, B-55-5
C-26 cluster	C-26, C-23, B-12-1

Monetizing > 280 mtoe reserves

Investment:
> Rs. 31,000 Crore

Production:
Oil : ~ 40 MMT
Gas : ~ 64 BCM

Starting from FY'13 all the fields to be on stream by 2014

Fields under development

KG offshore discoveries: G-1, G-2, G-4, Vashista, S-1 & G-4-6

KG-DWN-98/2 discoveries: appraisal on progress to be completed by Nov'13

Mahanadi discoveries: appraisal on progress to be completed by Dec'12

Daman offshore: development advanced by 4 years. Substantial gas potential.

ONGC first to establish **Shale gas** presence in India. Planning to explore Cambay, Cauvery, Bengal basins - alliance with ConocoPhillips

Operating 4 **CBM** blocks. Incidental production started in 2010. Planned investment Rs. 50,000 million. Production to increase to 6 mmscmd by 2010.

Beyond hydrocarbons:

- Kinetic hydro power generation
- Uranium exploration
- Geothermal energy
- Thermo-chemical reactor
- Offshore wind farm



ONGC Petro-additions Ltd. - world-class one of the biggest Petrochemical Plants in Asia (1.1 MMTPA ethylene Cracker & Polymer plant). ONGC equity (26%). Investment Rs. 21,396 Crore. Completion FY'14.



ONGC Mangalore Petrochemicals Ltd. - Aromatic Petrochemical Complex - Paraxylene (0.92 MMTPA) & Benzene (0.27 MMTPA). ONGC equity (46%). Investment Rs. 5,750 Crore. Completion Q4, FY'13.



ONGC Tripura Power Company Ltd. - 726.6 MW (2x363.3MW) gas based CCPP at Palatana in Tripura to monetize idle gas. ONGC equity (50%). Investment Rs. 3,429 Crore. Unit 1 synchronized on 22nd Oct'12. Power generation started.

Perspective Plan 2030



ngc

Seeking new horizons



.... blue print for brighter future

Aspirations

2

Fold production growth in E&P

3

Fold growth in Revenue & EBITDA

4

Fold growth in Market cap

5

Verticals for Non-E&P business

6

Fold growth in international E&P production



Shaping Moves

1. Grow overseas E&P to source 60 mmtoe/year of O+OEG by 2030
2. Secure alliance for new resource types
3. Unlock 450+ mmtoe from domestic YTF (yet-to-find) reserves
4. Accelerate 300-400 mmtoe of (re)-developments
5. Build non-E&P business to 30% of group revenue

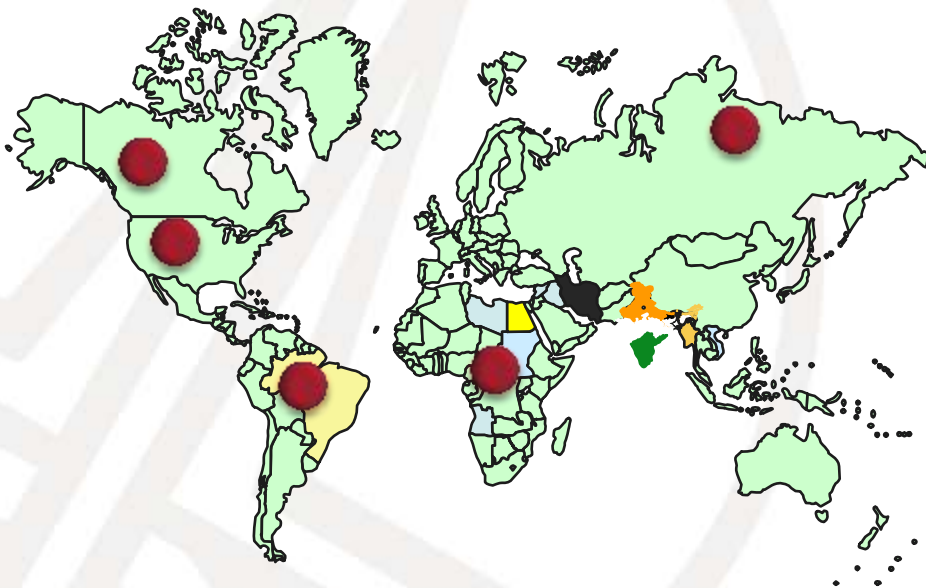


**ONGC
2030**

1. Sustained production growth 4-5%
2. > 130 mmtoe production in 2030 (50% international)
3. 1,300 mmtoe proved reserves
4. 6.5 GW alternate energy, 9 MMTPA LNG
5. Full downstream value capture in petrochemicals

Grow overseas E&P to source 60 mmtoe/year of O+OEG by 2030

4-5 Global activity hubs



All resource types of interest

- Conventional
- Shale oil/gas
- Heavy oil

LNG, mid-stream & other ventures also on target

- ▶ OVL's maiden venture in historic 'Azerbaijan'
- ▶ 2.7213% participating interest in the Azeri, Chirag and the deepwater portion of Guneshli fields (ACG)
- ▶ 2.36% interest in the Baku-Tbilisi-Ceyhan ('BTC') pipeline



ACG is the largest oil field in the Azerbaijan sector of the Caspian basin.

Average daily production ~ 700,000 bpd of crude oil



1,768-km BTC Pipeline: one of the main export routes for Caspian crude oil. Capacity: ~ 1.0 million bpd

OVL in Kazakhstan: signs agreement with ConocoPhillips for 8.40% Participating Interest (PI) in Kashagan Field,



Kashagan oilfield in western Kazakhstan

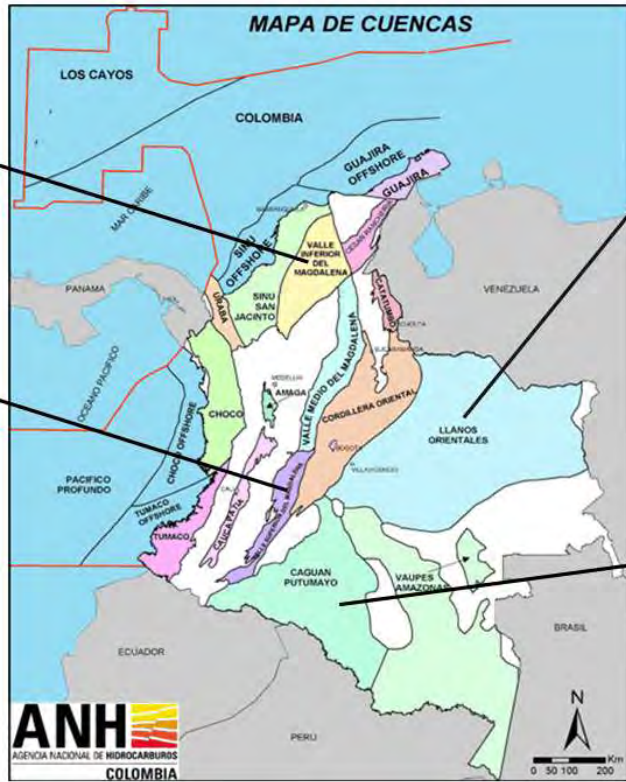
Investment: US\$ 5.5 billion

The world's largest development project

Annual production upside ~ 1 MMT for 25 years

Consortium: Eni, Total, Shell, ExxonMobil, OVL & KazMunaiGaz

OVL discovers oil in CPO-5 block in llanos basin of Colombia



- Los Llanos Basin**
- *Moriche*
- *CPO-5*

Kamal-IX well spudded on October 29, 2012 and drilled up to the target depth of 10,500 feet. The first of the two objects, in the interval 9643-9649 feet, produced oil varying in rate from 120 bopd to 300 bopd.

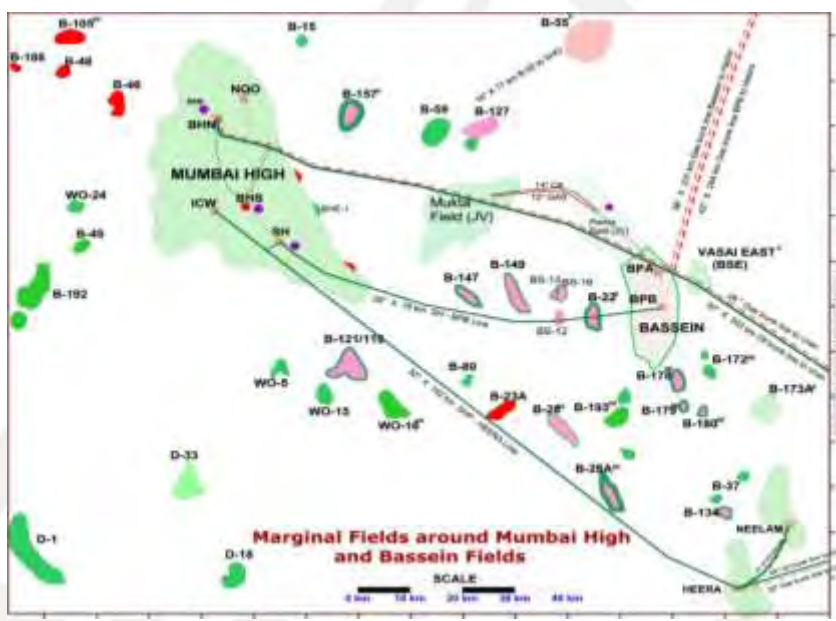
Unlock 450+ mmtoe from domestic YTF (yet-to-find) reserves

4 Centre of Deliveries (CoDs)



- Considerable potential remains in Indian basins.
- Exploration for new resource types.
- To bring together necessary expertise, ONGC is launching 4 CoDs
- Deepwater exploration with renewed thrust

Accelerate 300-400 mmtoe of (re)-developments



- Yet-to-develop discoveries & future redevelopment of existing fields to add more than 300 mmtoe of production by 2030.
- 10 fields identified for priority accelerated development.
- A rigorous stage gate process for project evaluation and monitoring.

Secure alliance for new resource types



MOU with CNPC on 18th June'12

Alliances

Alliance with Conoco Phillip in Mar'12 for Deepwater & Shale gas

MOU with CNPC for cooperation in hydrocarbon sector in June'12

MOU with Ecopetrol for jointly studying the fan-belt traps of Cachar Region in India & for cooperation in developing EOR/IOR technologies

Build non-E&P business to 30% of group revenue

ONGC to selectively invest in the non-E&P sector, leveraging integration benefits from its existing portfolio and its balance sheet for competitive advantage.

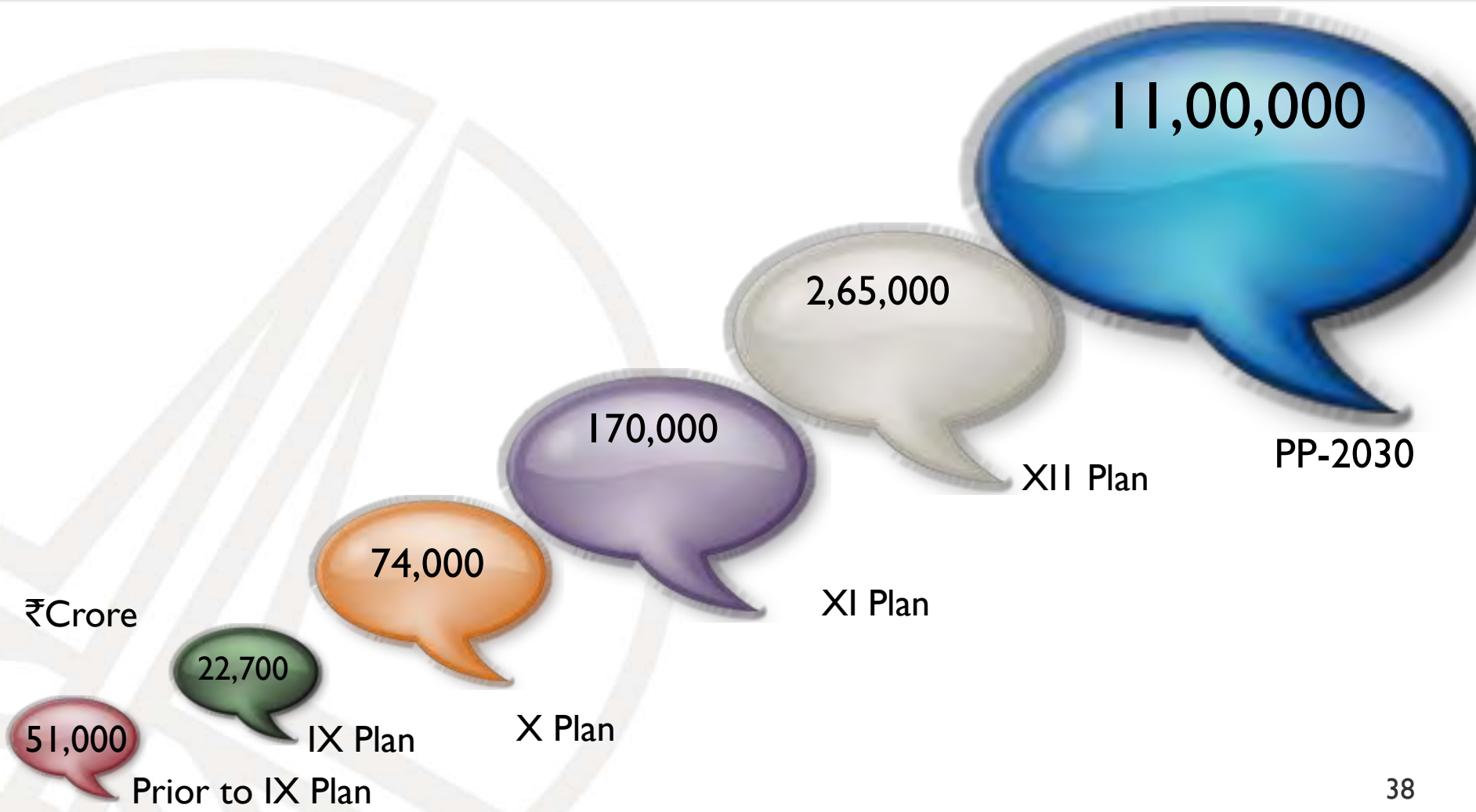
Investments will include:

- Further expansion in petrochemicals at MRPL
- LNG re-gasification,
- Commercialization of stranded gas
- Capacity in alternative energy – Solar, wind, Nuclear, etc.



1. Strengthen OVL processes & technical systems
2. Continued regulatory engagement on prices & policy
3. Strengthen staffing & capabilities in focus areas
4. Improve services delivery under new operating model
5. Align R&D with 2030 technology priorities

Investment > Rs. 11,00,000 Crore during 2013-2030





Thank you