



Future Exploration Activities

Business Partners Meet

Grand Hyatt, Mumbai, 20th July, Mumbai



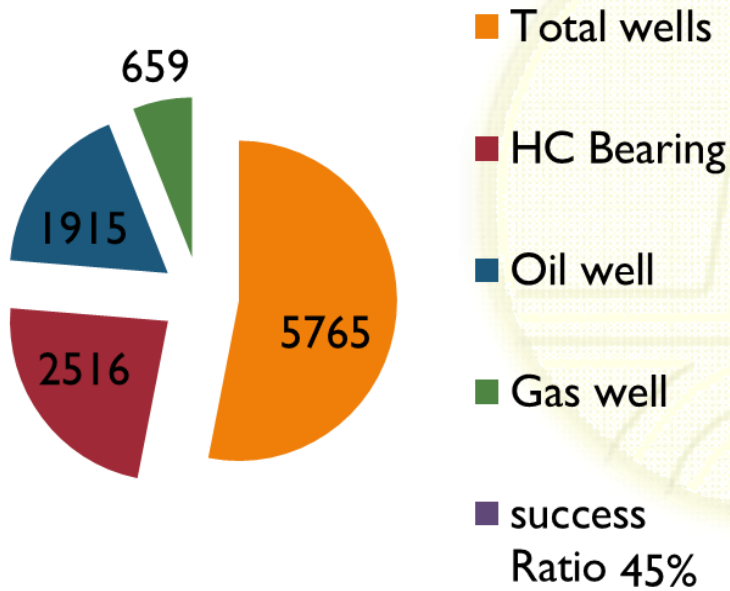
Presentation Schedule

- Status of Exploration
- Monetization
- XII Plan – Perspective Plan 2030
- Challenges
- Services Presently Outsourced
- Scope of Work
- Issues with Suppliers/Service Providers
- Expectations from Vendors

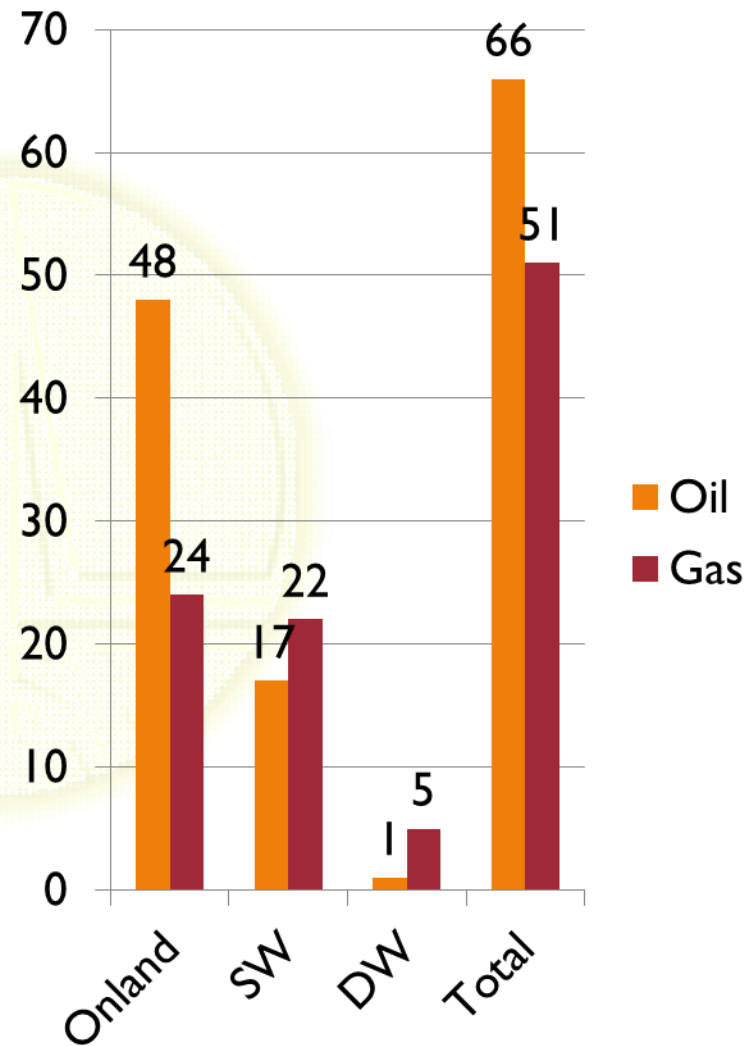


STATUS OF EXPLORATION (AS ON 01.04.2013)

Exploratory Drilling



Discoveries during 2008-13





Monetizing Marginal Fields



Status of Marginal Fields

Total Marginal Fields : 165
Western Offshore : 58
Eastern Offshore : 21
Onshore : 86

Sl.No	Category	Number of fields	IIP (MMt) O+OEG	Ultimate (MMt) O+OEG
1	Fields on production	60+4*	552.92	151.89
2	Scheme under implementation	23	268.65	83.88
3	FR under preparation scheme	2	3.51	1.56
4	Under Service contracts (YTM)	7	3.23	1.86
5	Under monetization	8	10.73	4.72
6	Identified for outsourcing	26	81.70	14.66
7	Under exploration/delineation	21	241.12	13.79
8	Hub Development	13	215.11	63.64
9	Surrendered	1		
	Total	165		

* Fields under service contract on production

Offshore Marginal Fields/Cluster - Under Monetization

Field/	No of	HC type	Peak oil	Peak gas	∑Oil+Cond	∑Gas	Life
	Fields		bopd	MMm3/d	MMt	BCM	Years
D-I	1	Oil	36059	1.37	13.96	0.54	20
C-Series	6	gas	10290	3.19	4.90	15.14	15
B-22 Cluster	4	Oil + Gas	14900	4.52	3.59	6.50	10
North Tapti	1	gas	-	2.00	-	4.12	10
B-193 Cluster	8	Oil + Gas	30000	1.52	6.32	5.12	15
B-46 Cluster	4	gas	2893	1.64	1.30	5.27	13
Cluster 7	2	Oil + Gas	21913	1.57	9.73	4.52	16
WO Cluster	4	Oil + Gas	18178	2.36	2.83	8.58	12
BHE	1	Oil	2500	0.10	0.45		8
G-I & GS-15	2	Oil	9300	2.62	0.98	5.92	15
B-127 Cluster	3	Oil + Gas	11700	0.954	1.835	2.049	10
SB-14	Prospect	Oil + Gas	1205*	0.500	0.15	0.664	5

* Condensate Rate

Total fields: 86

Category	A&AA	Western On land	KG	Cauvery	Total
Under Production	17	12	10	5	44
Under monetisation	3	-	2	3	8
Under Service Contract	-	3	6	-	9
Identified for outsourcing	-	7	6	-	13
Feasibility study in progress	1	1	-	-	2
Under delineation	7	-	2	1	10
Total	28	23	26	9	86



XII PLAN & PERSPECTIVE PLAN 2030

XII Plan Input – 2D Seismic Data Acquisition



Area	2012-13 (Actual)	2013-14 (RE)	2014-15 (BE)	2015-16*	2016-17*
Onland	667	340	1168	0	50
Shallow Water	0	855	0	1000	1000
Deep Water	3041	0	0	0	0
Total Offshore	3041	855	0	1000	1000
Total ONGC	3708	1195	1168	1000	1050

* XII Plan Projections

In Line KM

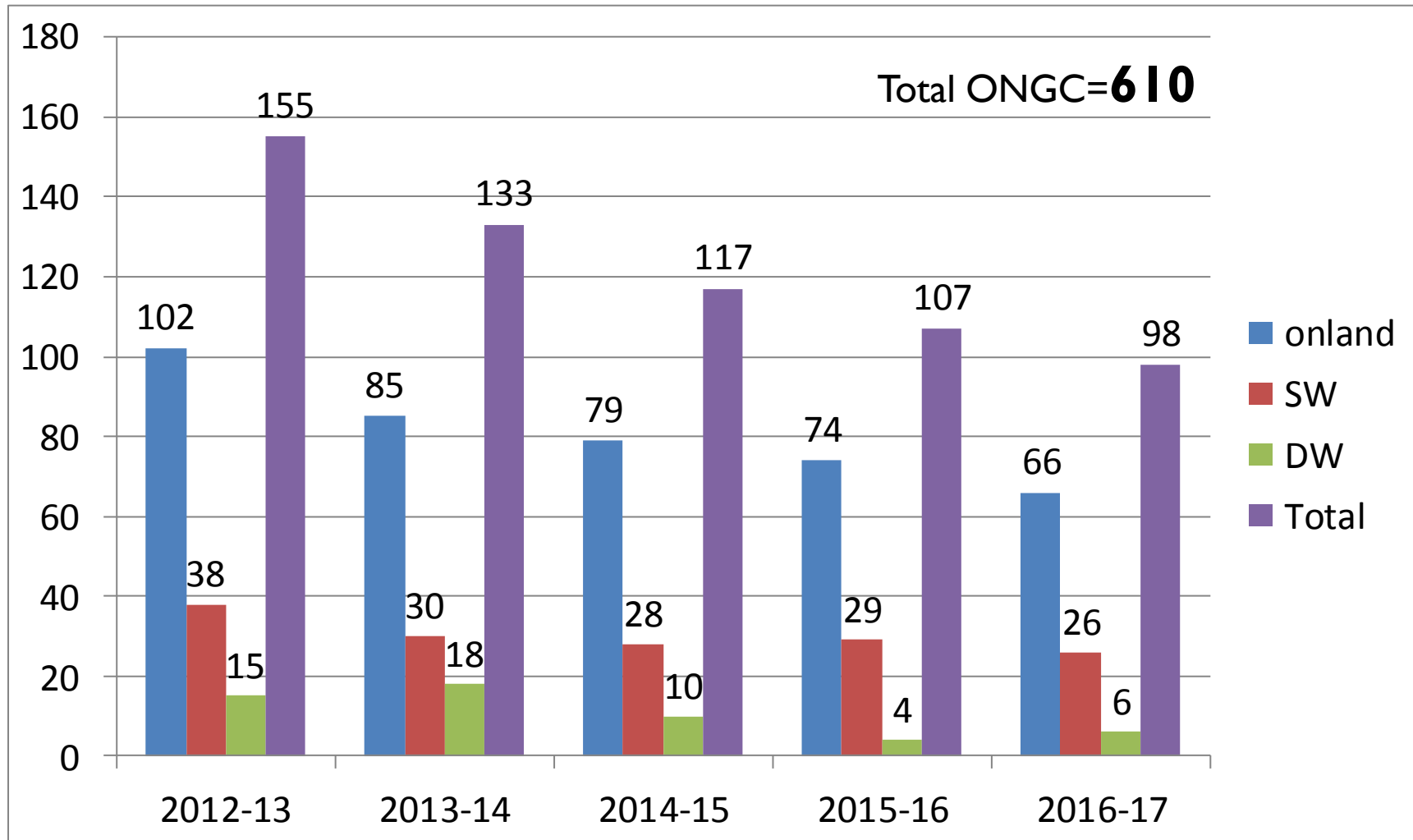
XII Plan Input – 3D Seismic Data Acquisition

Area	2012-13 (Actual)	2013-14 (RE)	2014-15 (BE)	2015-16*	2016-17*
Onland	1399	1369	1072	940	660
Shallow Water	0	8549	14382	2200	1500
Deep Water	10004	2862	0	0	0
Total Offshore	10004	11411	14382	2200	1500
Total ONGC	11403	12780	15454	3140	2160

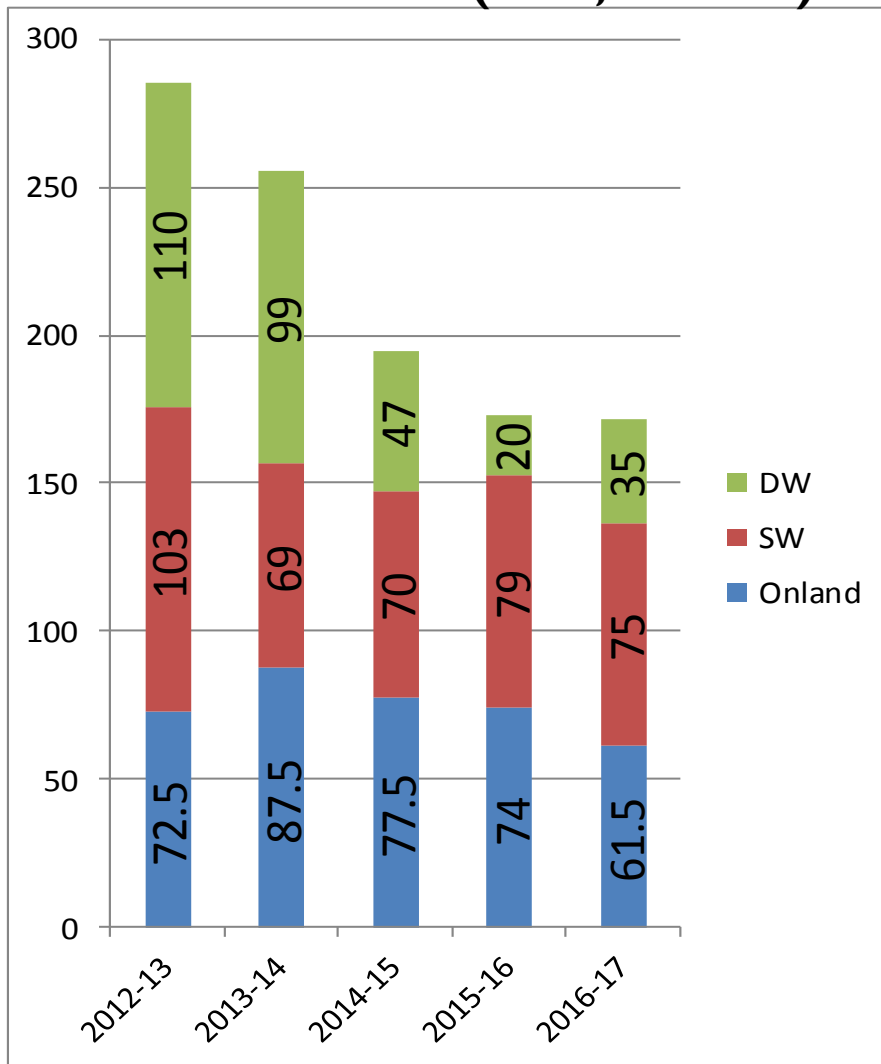
* XII Plan Projections

In SQ KM

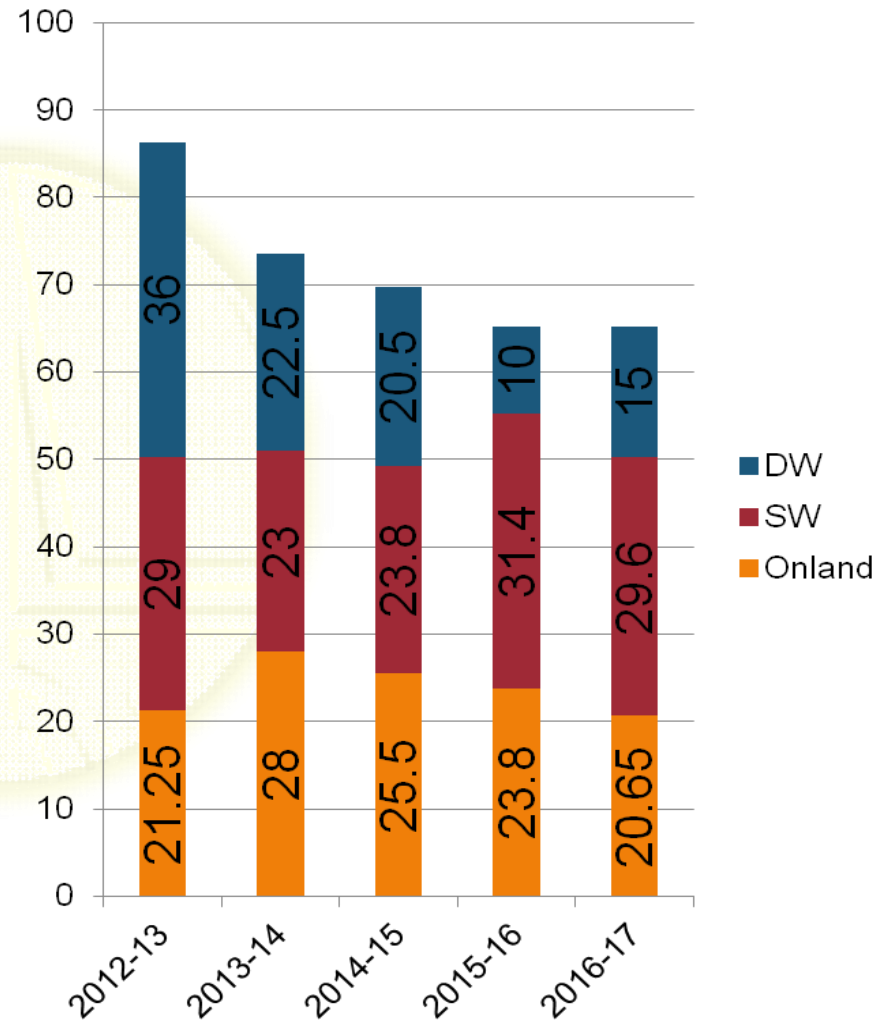
XII PLAN INPUT – Exploratory Drilling



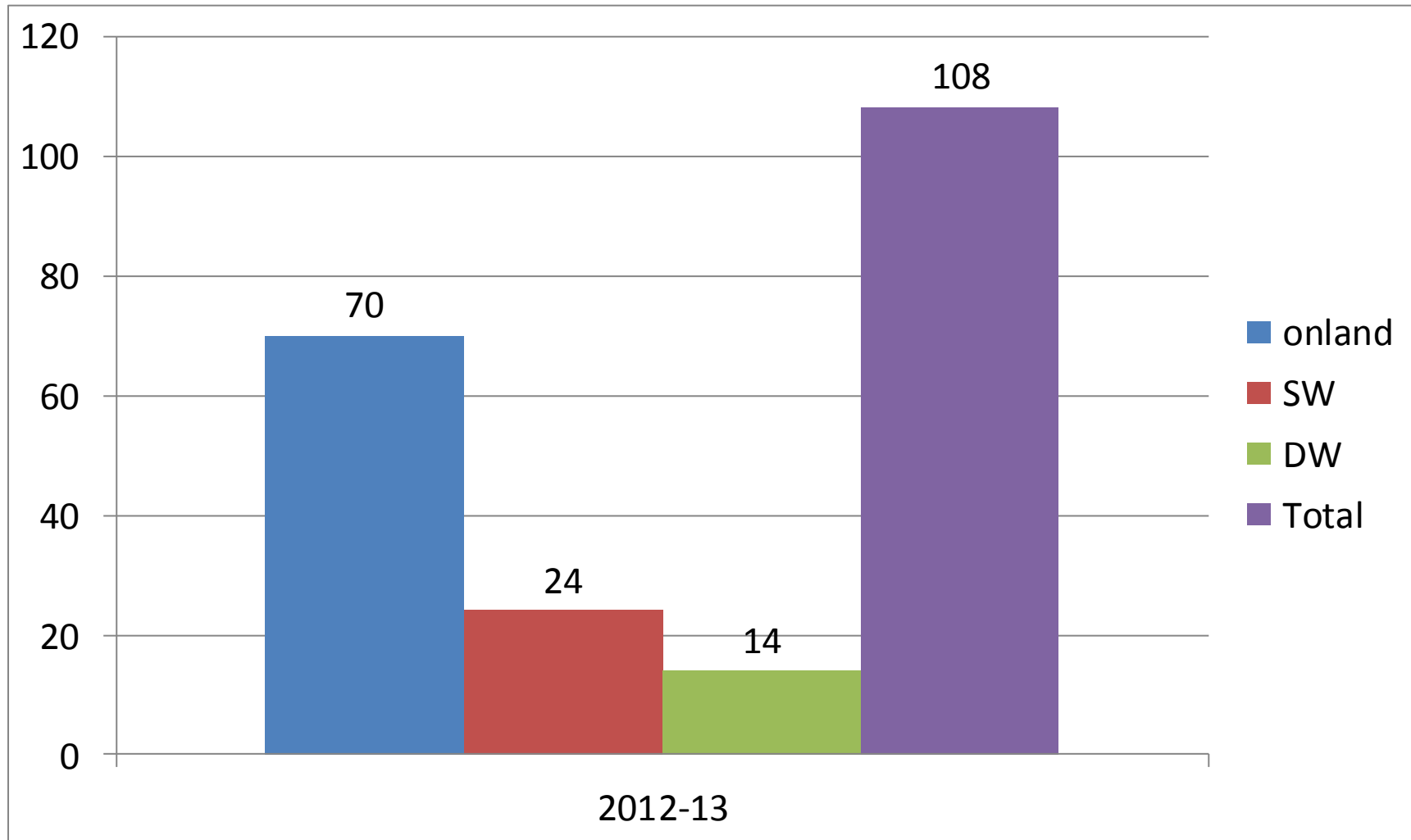
IOIP Accretion (MMt, O+OEG)



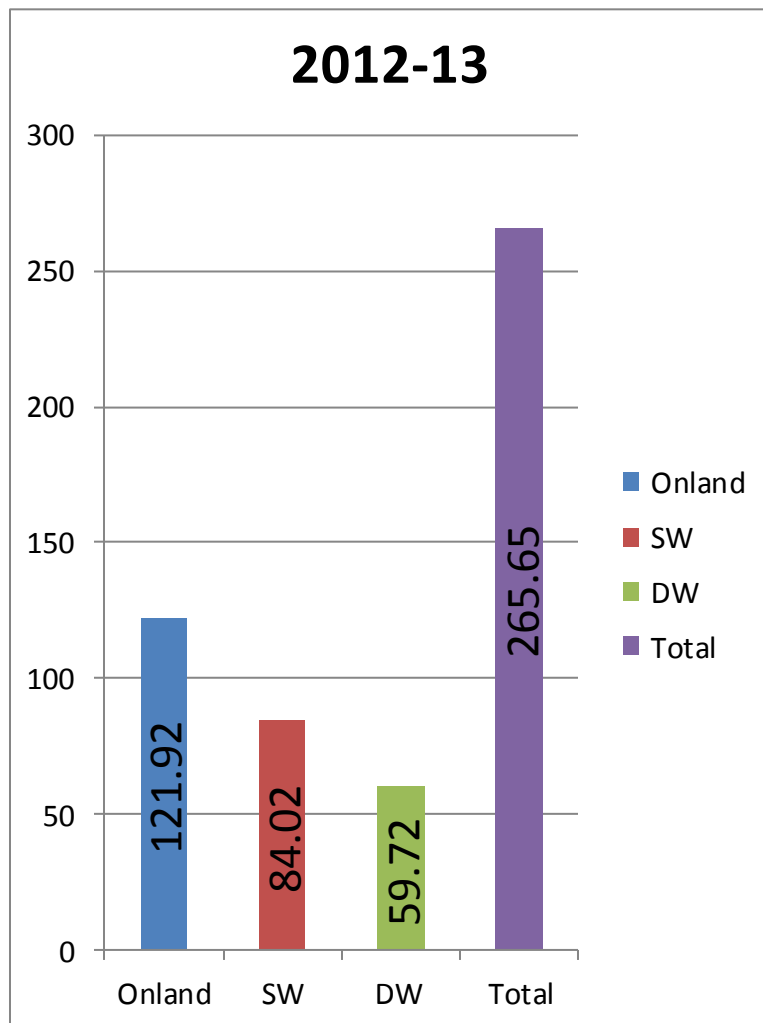
Ultimate Accretion (MMt, O+OEG)



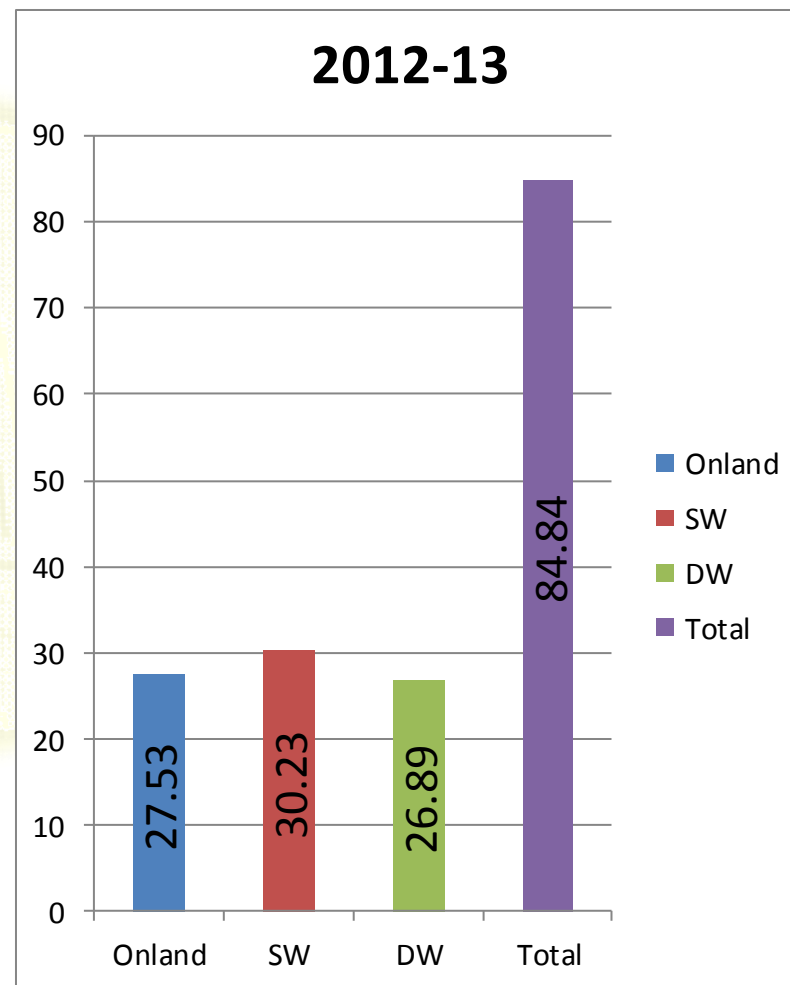
XII Plan First Year (2012-13) –Expl Drilling



IOIP Accretion (MMt, O+OEG)

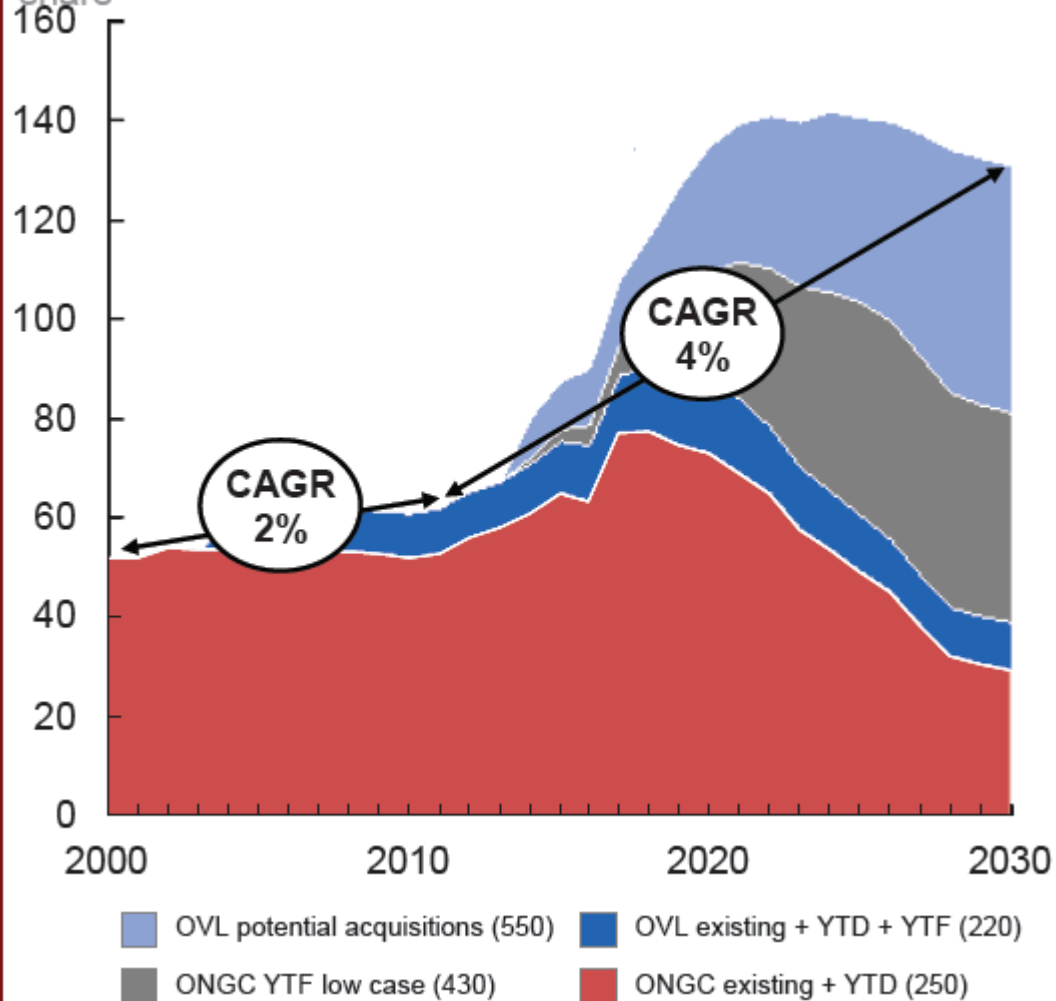


Ultimate Accretion (MMt, O+OEG)



ONGC production history and projection (base)

MMTOE/year O+OEG including JV share



- ▶ ONGC contributes nearly 1/4th of countries Oil & Gas demand at present.
- ▶ Oil & Gas demand at 3 %/yr. growth to reach at 400 MMtOE by 2030.
- ▶ For relevance & leadership of industry, 4 to 5% production growth required.
- ▶ “Perspective Plan - 2030”, is the envisaged path ONGC would take to achieve this growth .

- ▶ **‘Perspective Plan – 2030’** is the growth engine for ONGC for about next 18 years in quest for 4 - 5 % production growth.
- ▶ While striving for this, ONGC will
 - ▶ maintain focus on core E&P business,
 - ▶ diversify into unconventional resources and strategically expand to renewable and downstream,
 - ▶ strengthen capabilities in focus areas and
 - ▶ will forge partnerships in new areas like Shale Gas, HP-HT, CBM, Basement Oil, Deep-water, heavy oil etc.

▶ **Six Prioritised Plays**

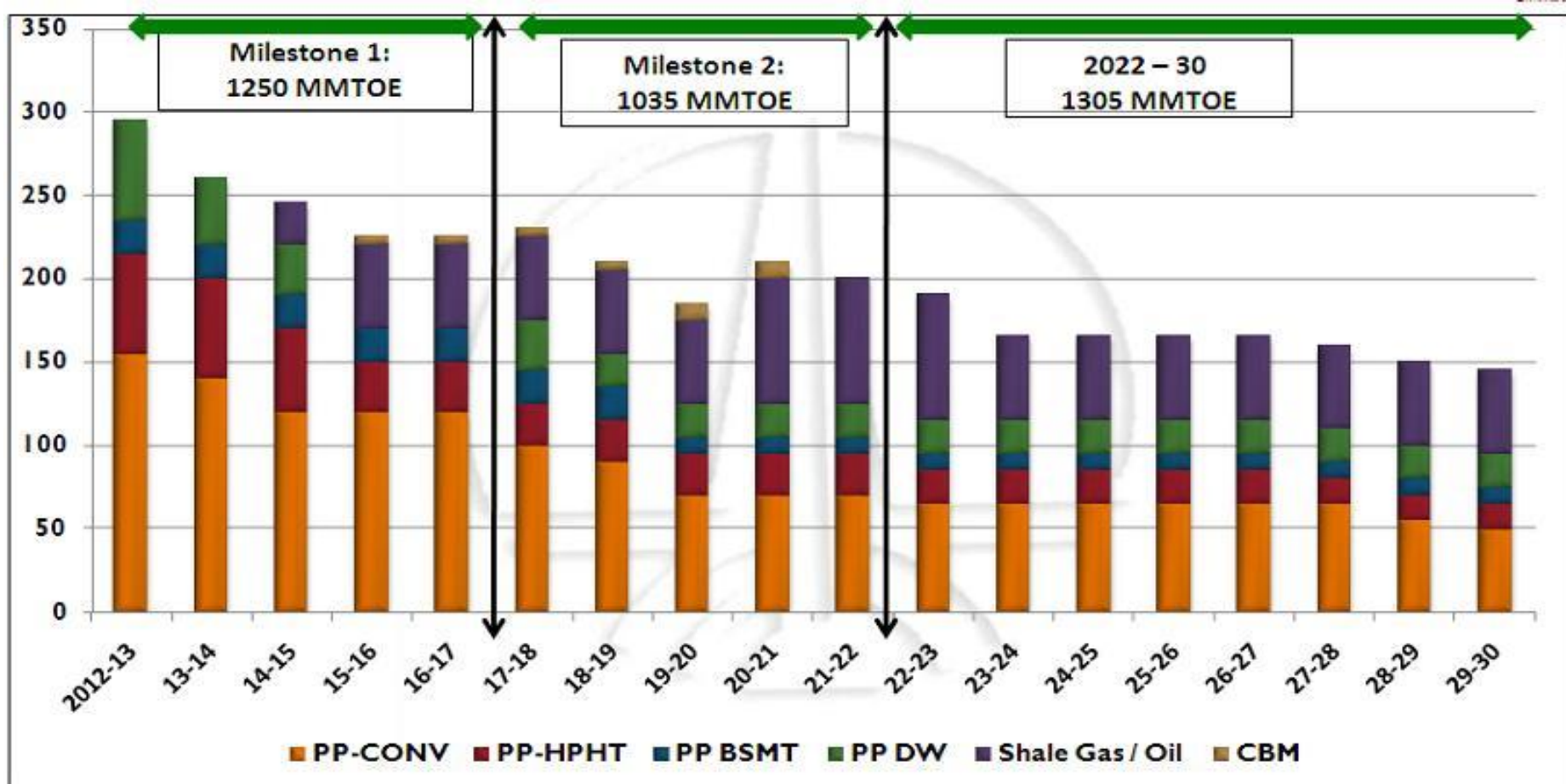
1. **Conventional plays in onshore & shallow offshore**
2. **HP-HT/Tight/Deeper plays**
3. **Basement play**
4. **Deepwater play in KG**
5. **Shale gas**
6. **CBM**



- ▶ **Two unconventional hydrocarbon plays** (CBM and Shale Gas) are envisaged to accrete more than 800 MMtOE of inplace hydrocarbons.
- ▶ To realise production from this resource would require very strong technology drive.
- ▶ Strategic partnership for both these plays will provide the opportunity to build skills in various fields particularly hydrofracturing & geo-mechanics.
- ▶ These acquired skills would help greatly in HP-HT/tight plays and basement plays too.

The Milestones

- ▶ From these six priority plays ONGC would strive to achieve
 - ▶ Milestone-1 (2012 - 2017) 1250 MMtOE,
 - ▶ **Milestone-2 (2017 - 2022) 1035 MMtOE and**
 - ▶ Milestone - 3 (2022 - 2030) another 1305 MMtOE



Milestone 1: 2012-17: 1250 MMT; Milestone 2: 2017-22: 1035 MMT; 2022-30: 1305 MMT;



Challenges



- ▶ Seismic Imaging in Fold Belt areas
- ▶ Sub-Basalt Imaging
- ▶ Imaging of thin reservoirs
- ▶ Long Offset Processing & Interpretation
- ▶ Longer drift & horizontal drilling
- ▶ Exploration in HP/HT reservoirs
- ▶ Basement Exploration
- ▶ Exploration of CBM, Shale Gas

Risk Mitigation Possible With Adoption of Latest Technologies in :

- ▶ ***Exploration and Exploitation of HPHT & Tight Reservoirs***
- ▶ ***Exploration and Exploitation of Basement Oil***
- ▶ ***Exploration and Exploitation of Shale gas/oil & Basin Centered Gas***
- ▶ ***De-risking of Deep Water Prospects***
- ▶ ***Monetizing isolated & Deep Water Discoveries***
- ▶ ***Improving Recovery Factor of Mature fields***
- ▶ ***Development of CBM Acreages***

Cooperation of vendors/service providers solicited to maintain and accelerate the trend of Exploration/Exploitation success, with adoption of advanced technologies and services and developing expertise with collaborative approach.

- ▶ Procurement of new seismic survey vessel for reduced turn around time.
Process underway
- ▶ Long offset 2D data for imaging below basalt in Kerala-Konkan and Kutch offshore. This has been done with limited success.
- ▶ Streamer mode survey in ultra shallow water area (9m and above) wherever feasible to reduce acquisition time and save cost.
- ▶ Acquisition of Sea Bed Node (SBN) seismic data & Special processing for sub basalt imaging
- ▶ Faster monetization of marginal pools. Already underway.
- ▶ Acquire services of Domain experts in critical areas (Thin reservoirs, Basement exploration, HPHT Reservoirs)

GEOPHYSICAL SERVICES

▶ **Seismic Data Acquisition**

- ▶ *2D - Land, Marine, OBC and Transition zone*
- ▶ *3D - Land, Marine, OBC*
- ▶ *3D - 3C*
- ▶ *SBN mode*

▶ **Seismic Data Processing**

- ▶ *Special Processing Techniques – PSTM / PSDM, AVO, Inversion*
- ▶ *AMC for Hardware & Software*

▶ **Seismic Data Interpretation**

- ▶ *Special Interpretation projects for prospect evaluation by domain experts for second opinion*

- ▶ **Logging Services**
 - ▶ Wire line logging -Perforation-TCP/DST, Well Shuttle Service, LWD Services & MLU Services
- ▶ **Geochemical Surveys**
- ▶ **AMC services for H/W and SW (GEOPIC, IRS, KDMIPE, Basins etc)**
- ▶ **Consultancy and Work Association**
 - ▶ Petroleum System Modeling of various sedimentary basins
 - ▶ Structural Modeling
 - ▶ Shale Gas Consultancy
- ▶ **Specialized & focused training**
 - ▶ Development of Exploration Action Learning Plan
- ▶ **Soil Coring, Geo-Mechanical Surveys, Services for CBM Project**
- ▶ **Equipment & services related to Geo-microbial & Geo-tectonic studies (INBIGS)**

▶ Requirement of Seismic Surveys: 2D & 3D

- ▶ *Volume based survey – Land and Marine*
- ▶ *Broadband Seismic*
- ▶ *OBC & Transition zone surveys (need based)*
- ▶ *Multi Azimuth and wide Azimuth surveys (need based)*
- ▶ *3D-3C, 3D-4C & 4D*
- ▶ *Carpet 3D in west of Mumbai High*

▶ Induction of proven Technologies (need based)

- ▶ *Seismic : High Density single sensor surveys, Multi-Component, 4C- 4D, 4D, EM Pulse Seismic Source, Passive Seismic*
- ▶ *Non – seismic methods : CSEM, MTEM, AEM, Airborne GM and HRM*
- ▶ *Processing of long offset and multi-component data*
- ▶ *Processing of MAZ and WAZ data*
- ▶ *Full corporatization of interpretation S/W*

- ▶ **Procurement of Logging Units and Tools for onshore areas:**
 - ▶ 9 Units (5 Open Hole + 4 Cased Hole-Production Logging Units) are on order for onshore locations in Western, Eastern and Southern sector. Units are likely to be commissioned in Dec 2013.
 - ▶ Repair & Maintenance Contract on life cycle basis (10 years) is also awarded to OEM along with the procurement.
- ▶ **Procurement of Perforation material for onshore/ offshore:**
 - ▶ Ongoing tender for perforation material is under evaluation stage.
 - ▶ Next tender for procurement of perforation material for 2014-15 is likely to be floated in August / September 2013.
- ▶ **Procurement of Logging Cables for onshore:**
 - ▶ Tender for procurement of logging cables (12 drums) for 2013-14 is likely to be floated shortly.

- **Procurement of Logging Crane Mast:**
 - ▶ Tender for procurement of Crane Type Mast for rigless logging jobs in Ahmedabad Asset is likely to be floated shortly.
- **Procurement of Cased Hole logging Tools (Bridge Plug Setting Tool & Slim Hole GR) for onshore:**
 - ▶ Tender likely to be floated shortly.
- **Procurement of GPS Tracking System for Logging/ Explosives Vehicles in onshore:**
 - ▶ Tender likely to be floated shortly.
- **Procurement of Spares from OEM/OES:**
 - ▶ Regular Tenders under process for procurement of Spares from OEM/OES for onshore/ offshore locations.
- **Regular procurement of Consumables for Mumbai Logging base is done on yearly basis.**

- ▶ **Hiring of Wire line Logging, Perforation, TCP-DST and Wells Shuttle Services for other segments:**
 - ▶ Running Contracts (54 Logging Units, 12 TCP-DST Containers & 2 Sets of Well Shuttle) are valid up to 15th June 2016.
- ▶ **Hiring of Mud Logging Units(for onshore/ offshore):**
 - ▶ Running contracts of 56 MLUs are valid up to October 2017.
- ▶ **Hiring of Wire line Logging, Perforation and TCP-DST Services for Onland (Western Onshore & Frontier Basin):**
 - ▶ Tender for services (3 units along with tools for 30 months) floated on 16th July 2013. Tender sale open upto 5th August 2013 and tender submission is scheduled for 21st August 2013.
- ▶ **Hiring of LWD/MWD Services for Onshore & Offshore:**
 - ▶ Tender for hiring LWD/MWD services (17 units along with tools for 3 years) likely to be floated in July / August 2013. Existing contract valid up to 20th December 2013.

- ▶ Timely mobilization of seismic vessels
- ▶ Delay in supplying proprietary stores and spare items
- ▶ Acceptance of ONGC's standard terms & conditions for service contracts specifically in the clauses like arbitration, jurisdiction law, patent indemnity, interpretation liability and other related techno-commercial and legal
- ▶ Monopolistic attitude in PAC & nomination cases
- ▶ Limited no. of reputed suppliers of logging equipment and service providers are available at the international level. This limits the competition.
- ▶ All the reputed logging vendors are not having all the services/ technology. Vendors do not sell full or some of the technologies.

- ▶ Long Lead time for PAC/OEM supply.
- ▶ Equipment are procured on ten years life cycle basis. ONGC needs commitment of support i.e. supply of spares and replacement/additional tools from vendors at reasonable prices. ONGC is facing difficulty in this respect.
- ▶ Support for providing stores and spare items
- ▶ Rates quoted for proprietary items
- ▶ Acceptance of provisions of Integrity Pact
- ▶ Assistance in formulation of corporate policy with particular emphasis on exploration domain activities.
- ▶ Transfer of expertise and technical know how developed by the business partners while providing services to ONGC and also joint development agreement where ever applicable.

- ▶ **Cooperation/Collaboration in Addressing the E&P Challenges**
- ▶ **Building Long Term Partnership**
- ▶ **Balance of Commitment and Competition**
- ▶ **Negotiating for a Win-Win Agreement**
- ▶ **Coming Together on Value**
- ▶ **Compliance Of Quality Parameters**
- ▶ **Adherence To Timelines**

Thank You



Let's Achieve Together