Exploration & Production

Claudio Descalzi
industry main challenges

- **Finding resources**
  - Access to new material plays
  - Increasing complexity

- **Developing resources**
  - Harsher environments, more complex projects
  - Capacity constraints
  - Delayed project execution

- **Managing resources**
  - High decline rates
  - Increasing maintenance costs

- **Preserving resources**
  - Operational risk
  - Relationship with host countries
## eni strategy and positioning

<table>
<thead>
<tr>
<th>Industry challenges</th>
<th>eni positioning</th>
</tr>
</thead>
</table>
| Finding resources   | **Exceptional exploration success**  
|                     |   ▪ Strategic approach  
|                     |   ▪ Concentrated on material conventional plays |
| Developing resources| **Strong project pipeline**  
|                     |   ▪ Limited delays on some projects  
|                     |   ▪ Improving project delivery capacity |
| Managing resources  | **Industry-leading low decline rate**  
|                     |   ▪ Leading performance on reservoir management  
|                     |   ▪ Operational efficiency |
| Preserving resources| **Risk management and eni model**  
|                     |   ▪ Low-risk portfolio  
|                     |   ▪ eni model |
enI strategy and positioning

**Finding resources**

- Exceptional exploration success
  - Strategic approach
  - Concentrated on material conventional plays

**Developing resources**

- Strong project pipeline
  - Limited delays on some projects
  - Improving project delivery capacity

**Managing resources**

- Industry-leading low decline rate
  - Leading performance on reservoir management
  - Operational efficiency

**Preserving resources**

- Risk management and eni model
  - Low-risk portfolio
  - eni model
our approach: we have strengthened process and competences...

### Objectives

- Coverage of emerging basins and themes
- Materiality and cost-effectiveness
- Short time to market
- Investment in people and technologies

### Process

- Leverage on geological knowledge of core plays
- Long-term strategic studies of new basins
- Centralized control of opportunities ranking and selection
- 60% of investments on proven basins and near fields
- Specific process and function to accelerate appraisals
- Retain key knowledge owners
- Investment in specific R&D
... delivering increasingly strong results...

**Exploration performance**

- **Bboe**
  - > 6 Bboe

<table>
<thead>
<tr>
<th>Year</th>
<th>Per year</th>
<th>Cumulative</th>
<th>Cumulative production</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008-12*</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Average UEC 2008-12YTD: 1.3 $/boe**

**Main discoveries**

- **Core areas/fast time to market**
  - Egypt
  - West Africa
  - Pakistan
  - Italy
  - Indonesia

- **Emerging basins**
  - Norway - Barents
  - Ghana
  - Mozambique

*2012 discoveries reflect only those included in H1*
... and underpinning our exploration strategy

Main exploration targets

- GoM
- Angola offshore
- Pacific gas
- Egypt
- Tunisia
- Pakistan
- East Africa (Rovuma basin)
- Barents Sea (Norway and Russia)
- Gulf of Guinea transform margin
- Togo, Kenya
- West Africa pre-salt
- Unconventional

2012-2015 target: 1 Bboe of discoveries per year at 2 $/boe
key exploration plays 2012-2015

Luca Bertelli, EVP Exploration

enī’s portfolio – key exploration plays 2012-15

- Barents Sea – Mesozoic/Paleozoic
- Australia – Indonesia JPDA/Timor- Jurassic Play
- GoM – Plio/Miocene & Wilcox
- East Africa Tertiary Turbidites
- West Africa Post-salt
- Cretaceous Turbidites
- West Africa Pre-salt
- Tertiary play Niger Delta
- Cretaceous Libya
- ASIA – Plio Miocene Plays
- Clastic Play Nile Delta
- Unconventional
- Creta and Jurassic Western Desert

Eni’s portfolio – key exploration plays 2012-15
Barents Sea: emerging high-materiality basin

- **Norway**: with Statoil, leadership position in the area
  - 500 Mbbl recoverable in Skrugard and Havis, upside of 500 Mboe (100%)
  - 5 wells in 2013

- **Russia**: implementing strategic agreement with Rosneft
  - Strategic agreement signed in April 2012
  - Implementation agreements well under way
  - 2D-3D seismic acquisition in 2013-2014
  - Start of drilling in 2015
East Africa: leading player in an emerging province…

- Early mover advantage
- Innovative geological models
- Leadership in terms of discovered resources and net acreage
... leveraging on our geological knowledge of Rovuma Basin

- Tertiary turbiditic plays
- Mamba complex discovery
  - Gas in place estimate up to 70Tcf
- Unique characteristics:
  - Exceptional thickness (up to 500m)
  - Pressure communication and hydraulic continuity along large distances
  - Extremely productive wells
  - Rapid drilling and completion

Unprecedented size and characteristics
West Africa pre-salt: consolidating position in a new play

- Onshore and shallow waters
  - Congo – M’Boundi nearfield: 3 to 4 additional wells by end 2012
  - Congo – Marine XII: drilling in 2013
  - Angola – Cabinda: drilling to start in 2013
  - RDC: finalizing 2 prospects to be drilled

- Deepwater – Angola block 35
  - 3D seismic in progress
  - Drilling to start in 2014
Pacific gas: high materiality with short time to market

**Expansion in Pacific region**

- **Indonesia**
  - Expansion of the Jangkrik pliocene play
  - New acreage in successful play near existing LNG infrastructures

- **Australia**
  - Significant equity entry into potential LNG-style projects

- **China**
  - Expansion in the Deep Water Pearl River Mouth Basin

- **Vietnam**
  - New country with high prospectivity
a targeted unconventional portfolio

- Low unit costs
- Developed infrastructure
- Strong gas market
- Synergies with existing operations

**Shale gas in USA**
- Barnett shales ongoing operations

**Shale & tight gas in North Africa**
- Algeria/Tunisia - ongoing acquisition of geological information. Activities will start in 2013.

**Unconventional oil in Sub-Saharan Africa**
- Tar sands Congo: exploration in Tchikatanga and a mining pilot project in 2H 2012

**East Europe**
- Poland - three vertical wells drilled; started fracking campaign in 2H 2012
- Ukraine: finalized agreement for the exploration of 9 blocks in the Lviv Basin

**China shale gas**
- Negotiations to access shale gas blocks in Sichuan and Guangxi Basins

**Pakistan**
- Regional study completed. Shale gas prospective areas identified

**Indonesia Sanga Sanga CBM**
- Appraisal & pilot project, gas to Bontang LNG plant. In 2013 drilling of additional clusters.

~ 1 Bboe of prospective resources
## eni strategy and positioning

<table>
<thead>
<tr>
<th>Industry challenges</th>
<th>eni positioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding resources</td>
<td><strong>Exceptional exploration success</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Strategic approach</td>
</tr>
<tr>
<td></td>
<td>▪ Concentrated on material conventional plays</td>
</tr>
<tr>
<td>Developing resources</td>
<td><strong>Strong project pipeline</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Limited delays on some projects</td>
</tr>
<tr>
<td></td>
<td>▪ Improving project delivery capacity</td>
</tr>
<tr>
<td>Managing resources</td>
<td><strong>Industry-leading low decline rate</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Leading performance on reservoir management</td>
</tr>
<tr>
<td></td>
<td>▪ Operational efficiency</td>
</tr>
<tr>
<td>Preserving resources</td>
<td><strong>Risk management and eni model</strong></td>
</tr>
<tr>
<td></td>
<td>▪ Low-risk portfolio</td>
</tr>
<tr>
<td></td>
<td>▪ eni model</td>
</tr>
</tbody>
</table>
project delivery: industry challenges

Industry performance

~20%

Project execution performance

- Lack of flexibility in EPC turn-key models
- Extensive FEED review required after sanction
- Lack of performance during commissioning

Market capacity

- Capacity constraints in construction/shipyards
- Longer delivery time of critical equipment

* IPA 2011
**eni positioning: a robust and diversified portfolio**

**Overall portfolio of more than 120 projects over the next 10 years**

- **40 projects with 2P reserves >300 Mboe**

- **Limited impact from some project delays**

- **>1.3 Mboe/d of new production at 2022**
new initiatives to further strengthen our position

- **Project execution performance**
  - Insourcing of core competences
    - Improved quality and control of front-end engineering
    - Strengthened project execution skills and capability
  - New project management model
    - Strengthened project management capabilities
    - Reinforced monitoring on both operated and non-operated projects
  - Stronger construction & commissioning department
    - More effective supervision of project sites
    - Improved constructability and construction planning
  - Modularisation of major supplies
    - Long-term frame agreements

- **Market capacity**

**1,200 new hires in 4 years**
2012-2022: update on main hubs

7 major growth hubs
The backbone of our production and growth
North Africa: legacy area with development potential

- Equity production at 240 kboe/d in FY2012
- Successful restart of all fields following crisis
- Strong additional potential:
  - 4 exploration licenses (Area A, B, D, and Area 186 Kufra)
  - Accelerated development of discovered resources onshore and offshore
North Africa: legacy area with development potential

- Excellent track record on continuity of operations
- Successful near field exploration at Emry Deep:
  - 40 Mboe of oil (100%)
  - 12 kboe/d production (100%)
  - Well cost <6M$
  - Time to market 4 months
North Africa: legacy area with development potential

- MLE:
  - Wells delivered and central processing facility progress >98%
  - Export pipelines completed
  - Start up by the end of 2012

- CAFC:
  - Early gas start up by the end of 2012
West Africa: core growth area with major projects

- **Block 15/06 West Hub**
  - Progress 13%
  - Drilling and FPSO refurbishment ongoing
  - Start-up: 2H 2014
- **Block 15/06 East Hub**:
  - FID in 2013
West Africa: core growth area with major projects

- OPL 245: giant deepwater development of two oil discoveries (Etan and Zabazaba)
  - eni operator with 50% interest
  - Reserves: >500Mboe (100%)
  - Early production from Etan discovery with start-up within 2016
  - Early production peak: 40 kboed (100%)
West Africa: core growth area with major projects

- M’Boundi field production on budget at 44 kboe/d (100%)
- Reservoir stimulation projects ongoing
  - Water injection project functioning at 120 kbw/d; system capacity being upgraded to 200 kbw/d
  - Gas compression/injection project to be completed by year end
East Africa: the Mozambique development

- Gas in place: up to 70 TCF
- Fast track approach
  - Integrated development task force since early exploration phases
  - Performed engineering studies while progressing reservoir data collection
  - Flexible organization shaped for fast response to project evolution
Mozambique: marketing and gas monetization

- LNG marketing
  - Highly competitive breakeven price
  - Partnerships in the Far East for LNG export

- Regional gas monetization
  - Experience in domestic power generation
  - Ongoing studies for application of CNG

New model of global integrated gas hub
Africa: continuing long-term production growth

- Production growth ensured by a strong pipeline of projects
- Upside potential from further exploration
- Africa to underpin Eni long-term production growth

Building on a strong history and competitive position

* Libya adjusted for force majeur (180 kboe/d)
Kazakhstan and Far East

Massimo Mondazzi, EVP Central Asia, Far East & Pacific

Legacy super giants and presence in fast-growing regions
update on main hubs in Kazakhstan: Karachaganak and ...

- Huge potential
  - 1.3 Bboe produced up to end of 2011
  - Remaining 100% reserves estimated at about 5 Bboe
- World-class performances
  - Running costs well below the industry benchmarks
- Phased future development
Progress to start up at 99.8%
Commissioning and pre-start up activities ongoing
Tranche 1 onshore and A island expected to be handed over to production operator by December
Start-up expected before the contractual obligations
Equity capex up to 30 June 2012: \(~ 6.9 \text{ B$}\)
Far East: fast track appraisal of prospects

- Over 1.5bn boe of equity risked potential, mainly operated
- Growing expectations from existing and new licenses

Resource potential by country

- Vietnam: 17.0%
- Indonesia: 50.0%
- Australia: 33.0%

Rapid assessment

- Fast drilling program
- Estimated unit exploration cost below 1 $/boe

Timing of resource assessment

- Within 6 months: 17.0%
- Within 12 months: 31.0%
- Within 24 months: 40.0%
- Longer than 24 months: 12.0%
proven fast track development record: floating offshore...

- Kitan (Australia)
  - Start up in 3.5 years
  - Peak production (100%) >40 kbbl/d
  - >60% increase of 2P reserves
- Near fields to be appraised
...and conventional near field

- Pakistan
  - Material near field conventional opportunities (280 Mboe)
  - Average time to market: 6 months
  - Tight gas: additional short term opportunity
continuing our positive track record on future projects

- **Jangkrik (Indonesia)**
  - Commercial discoveries in 2011 and 2012
  - FID expected in 2013; start up in 2016
  - Peak production (100%): >80 kbbl/d
  - Access to high LNG prices
Far East: rapid production growth

- Production growth from existing discoveries ca. 10% a year
- Production growth including risked exploration potential ca. 17% a year

Updated production growth

* Risked exploration potential
* Mature exploration activity
* Existing production/discoveries
9 projects contributing 600 kboed to 2022 production
High-potential oil hub in OECD country

Goliat - execution update
- Progress 47%
- Drilling activities to start in October
- FPSO sailaway at year end 2013/1Q 2014
- Start up: 3Q 2014
- Contribution to 2015 equity production ca. 60 kboed
- Equity capex 2.9bn euro

>700 Mboe resources in Barents hub (100%)
Yamal Peninsula

- Giant arctic development with competitive cost position

- Samburgskoye – execution update
  - Start-up achieved ahead of schedule in April 2012
  - Contribution to 2015 production ~30 kboed
  - Equity capex 900m euro

- Urengoyskoye ph.1 - execution update
  - Drilling and processing plant early works started
  - Start-up expected in 3Q 2014
  - Contribution to 2015 production ~50 kboed
  - Equity capex 650m euro

- ~1.6 Bboe equity 2P reserves
Venezuela – Perla & Junin 5

- Conventional gas and heavy oil giant projects, with phased developments

- Execution update – Perla Phase 1
  - Progress 22%
  - Commerciality published and development plan approved in August
  - First gas expected by mid-2014
  - Equity 2015 production ~25 kboed
  - Equity capex ~400m euro

- Execution update – Junin 5 Phase 1
  - Drilling started
  - Main engineering contracts for facilities awarded
  - Phase 1 plateau (75 kboed) by 1Q 2015
  - Equity 2015 production ~30 kboed
  - Equity capex ~800m euro

- ~1.2 Bboe equity 2P reserves
### eni strategy and positioning

<table>
<thead>
<tr>
<th>Industry challenges</th>
<th>eni positioning</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Finding resources</strong></td>
<td><strong>Exceptional exploration success</strong></td>
</tr>
<tr>
<td></td>
<td>• Strategic approach</td>
</tr>
<tr>
<td></td>
<td>• Concentrated on material conventional plays</td>
</tr>
<tr>
<td><strong>Developing resources</strong></td>
<td><strong>Strong project pipeline</strong></td>
</tr>
<tr>
<td></td>
<td>• Limited delays on some projects</td>
</tr>
<tr>
<td></td>
<td>• Improving project delivery capacity</td>
</tr>
<tr>
<td><strong>Managing resources</strong></td>
<td><strong>Industry-leading low decline rate</strong></td>
</tr>
<tr>
<td></td>
<td>• Leading performance on reservoir management</td>
</tr>
<tr>
<td></td>
<td>• Operational efficiency</td>
</tr>
<tr>
<td><strong>Preserving resources</strong></td>
<td><strong>Risk management and eni model</strong></td>
</tr>
<tr>
<td></td>
<td>• Low-risk portfolio</td>
</tr>
<tr>
<td></td>
<td>• eni model</td>
</tr>
</tbody>
</table>
a dynamic field management approach...

- Strong central functions
  - Production and maintenance
  - Reservoir management

- Specific performance enhancement programs
  - Production checks
  - Well-bore reviews

4% average decline rate, 43% average recovery factor on oil fields
... and high operational efficiency

- Direct control of maintenance activities
  - Shutdown program review
  - KPI analysis for in-depth surveillance
- Detailed programs to minimize down-time
- Enhanced plant availability

![Bar chart for operated downtime](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Operated Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3.5%</td>
</tr>
<tr>
<td>2012</td>
<td>2.7%</td>
</tr>
</tbody>
</table>

![Bar chart for non-operated downtime](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Non-operated Downtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>8.8%</td>
</tr>
<tr>
<td>2012</td>
<td>9.5%</td>
</tr>
</tbody>
</table>

![Bar chart for shutdown optimization](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Shutdown Optimization</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 budget</td>
<td>63</td>
</tr>
<tr>
<td>2012 forecast</td>
<td>27</td>
</tr>
</tbody>
</table>
### eni strategy and positioning

<table>
<thead>
<tr>
<th>Industry challenges</th>
<th>eni positioning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finding resources</td>
<td>Exceptional exploration success</td>
</tr>
<tr>
<td></td>
<td>▪ Strategic approach</td>
</tr>
<tr>
<td></td>
<td>▪ Concentrated on material conventional plays</td>
</tr>
<tr>
<td>Developing resources</td>
<td>Strong project pipeline</td>
</tr>
<tr>
<td></td>
<td>▪ Limited delays on some projects</td>
</tr>
<tr>
<td></td>
<td>▪ Improving project delivery capacity</td>
</tr>
<tr>
<td>Managing resources</td>
<td>Industry-leading low decline rate</td>
</tr>
<tr>
<td></td>
<td>▪ Leading performance on reservoir management</td>
</tr>
<tr>
<td></td>
<td>▪ Operational efficiency</td>
</tr>
<tr>
<td>Preserving resources</td>
<td>Risk management and eni model</td>
</tr>
<tr>
<td></td>
<td>▪ Low-risk portfolio</td>
</tr>
<tr>
<td></td>
<td>▪ eni model</td>
</tr>
</tbody>
</table>
Balanced portfolio with little exposure to high risk projects
- 88% onshore or shallow water
- 12% deepwater exposure

Wells integrity
- Avg drilled wells per year
- Blow-out frequency (per thousand)

YTD August 2012
the six legs of the eni model

- Business & technology development
- Oil & gas integration
- Access to energy & infrastructure
- To be local
- Local development (agriculture, health, education)
- International partnership
exploration, development, optimization: a decade of growth...

Price scenario: 90$/bl 2012-13; 85$/bbl 2014-15; +2%/year afterwards

- Long term optionality
  - Kashagan FF
  - Mozambique FF
  - Russian Barents Sea
  - West Africa Pre-salt and transform margin
  - Unconventionals

Production growth

kboe/d

>3% adj

~3%

2011 2015 2022

Russia and Caspian
Sub-Saharan Africa
Latin America
Far East
Europe and North America
North Africa and ME
... through efficient, organic exploration and development
operating costs: continuing to lead the industry

**OPEX per barrel**
(USD/boe)

Focus on 2011

Focus on 2011

**XOM, CVX, COP, BP, RDS, TOT, eni. Company data and Wood Mackenzie**

* RDS n.a.
increased capital efficiency

E&P capital employed

- Under construction
- Capital in service
- ROACE on capital in service
- ROACE
Increased value per barrel

- Increased proportion of oil vs gas
- Higher production in lower tax rate areas
- Good capture ratio supported by strong contractual structure
## eni strategy and positioning

<table>
<thead>
<tr>
<th>Industry challenges</th>
<th>eni positioning</th>
</tr>
</thead>
</table>
| **Finding resources** | **Exceptional exploration success**  
  - Strategic approach  
  - Concentrated on material conventional plays |
| **Developing resources** | **Strong project pipeline**  
  - Limited delays on some projects  
  - Improving project delivery capacity |
| **Managing resources** | **Industry-leading low decline rate**  
  - Leading performance on reservoir management  
  - Operational efficiency |
| **Preserving resources** | **Risk management and eni model**  
  - Low-risk portfolio  
  - eni model |