

Subsea Market Review



Subsea 2011
February 9 – 10, 2011



Quest Offshore



Presentation Summary

- Quest Offshore
- Recent activity and trends
- Forecast activity
- Contractor's perspective



**Data Contained Herein (Unless Otherwise Noted)
Is Based on On-stream Year**

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The Mission

To provide market expertise, strategic analysis, marketing communication and consultancy services to the deepwater oil and gas markets globally

Capabilities

A dedicated team of sector specialists that focus on qualitative and quantitative data to identify global market opportunities for deepwater technologies

Coverage

Worldwide deepwater basins - Exploration through SURF and Marine installation segments



Product Portfolio

Overall Scope:

- Tracking 800 exploration prospects – 150 currently active
- Following over 2,500 deepwater projects – almost half are forecast projects
- Drilling
- Subsea Production Equipment
- Umbilicals
- Risers
- Flowlines
- Subsea Processing & Power
- Marine Construction Vessels
- Floating Production Systems
- Global Shipyard Capacity
- Regional Reports
 - GoM
 - Brazil
 - Asia Pacific
- Weekly and Monthly Journals
- Conferences
- Promotion opportunities
 - Exhibitions, wall maps, atlases



Our Clients

- Contractors
 - Drilling
 - Down-hole services, completions, chemicals, ROV
 - Engineering
 - Conceptual design, FEED, detailed engineering
 - Flow assurance
 - Operations and Maintenance
 - Life-of-field extension
 - Installation contractors
 - Pipelay & SURF, heavy lift,
 - Services contractors
 - Diving, ROV
 - Survey
- FPSO Operators
- Manufacturers
 - Subsea trees
 - Controls
 - Pumps
 - Pipelines and coatings
 - Umbilicals
 - Cables
- Operators
- Financial services, banking and insurance
- Classification bodies



Why focus on subsea?

Maturing

Subsea Widely Accepted Application; Has Become More Reliable

Enabler

Subsea Technology Can Unlock Reserve Potential & Max. Production

Economics

Subsea is Often Efficient, Faster & Cheaper Alternative, Improving NPV

Future

Long-distance Tie-backs, Compression, Boosting, Pumping, Separation

Opportunity

For Increased Utilization and Continued Technological Innovation



Recent Activity

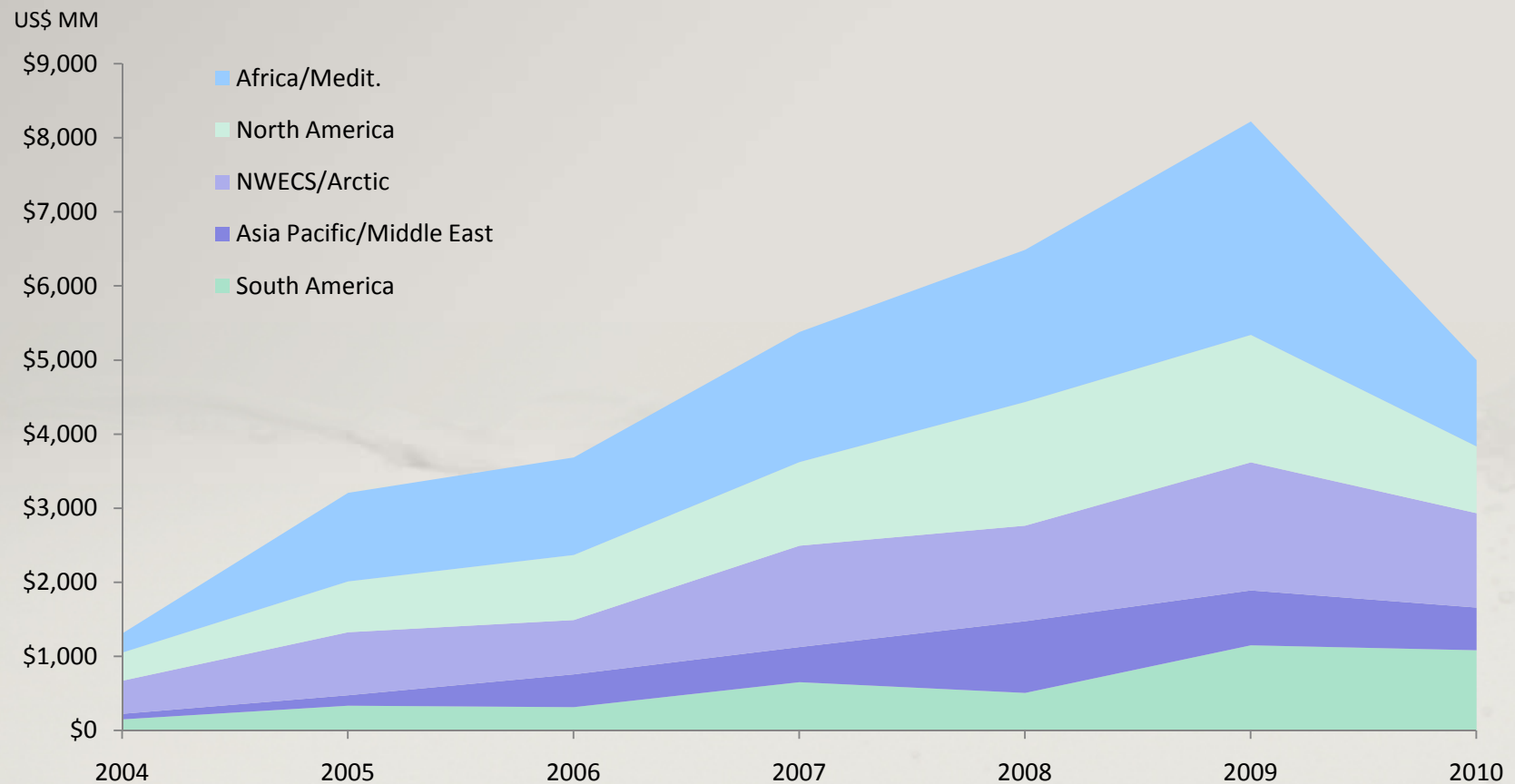
Oil Price vs Expenditure on Subsea Developments





Recent Activity

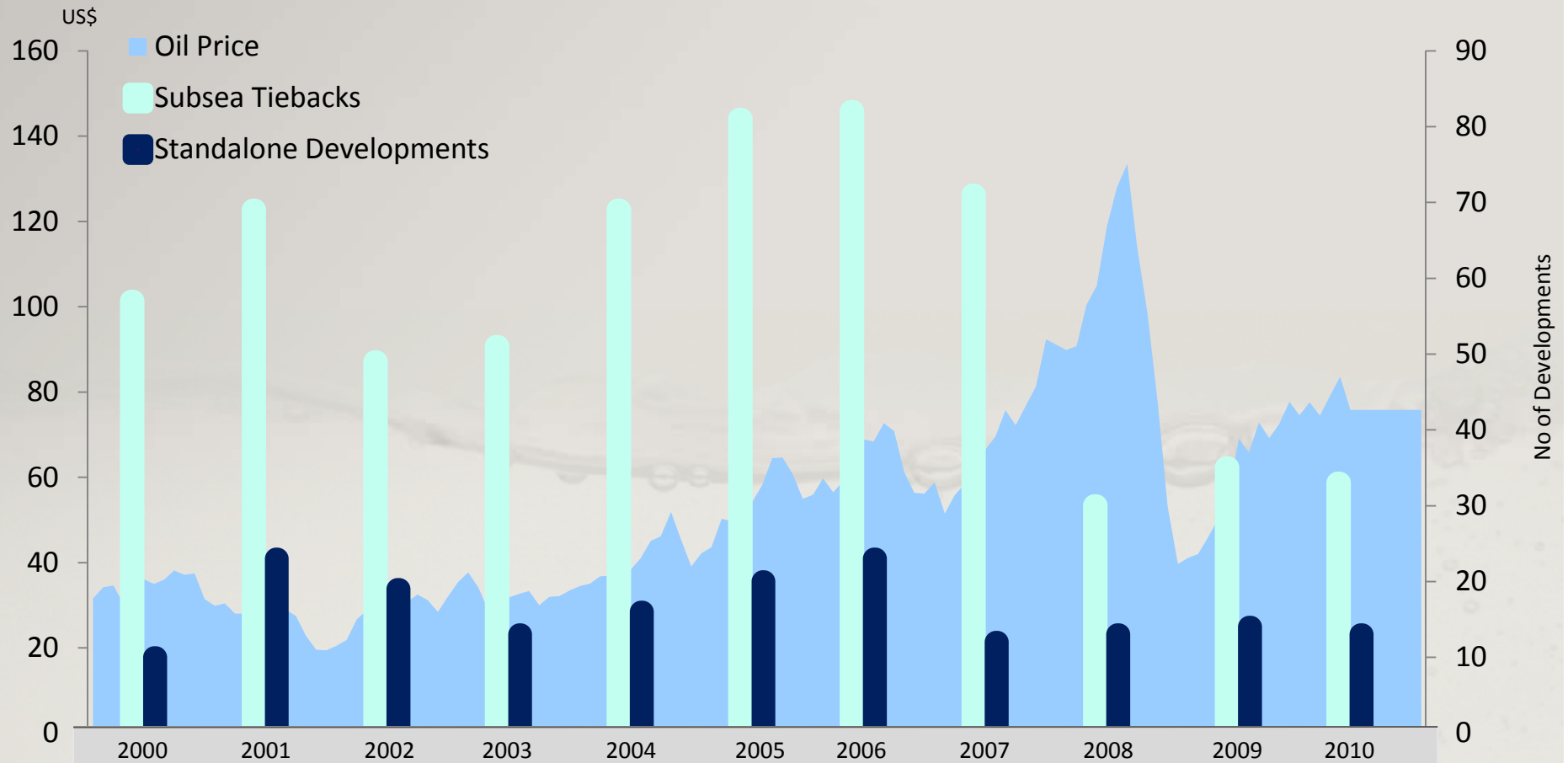
Expenditure by Region





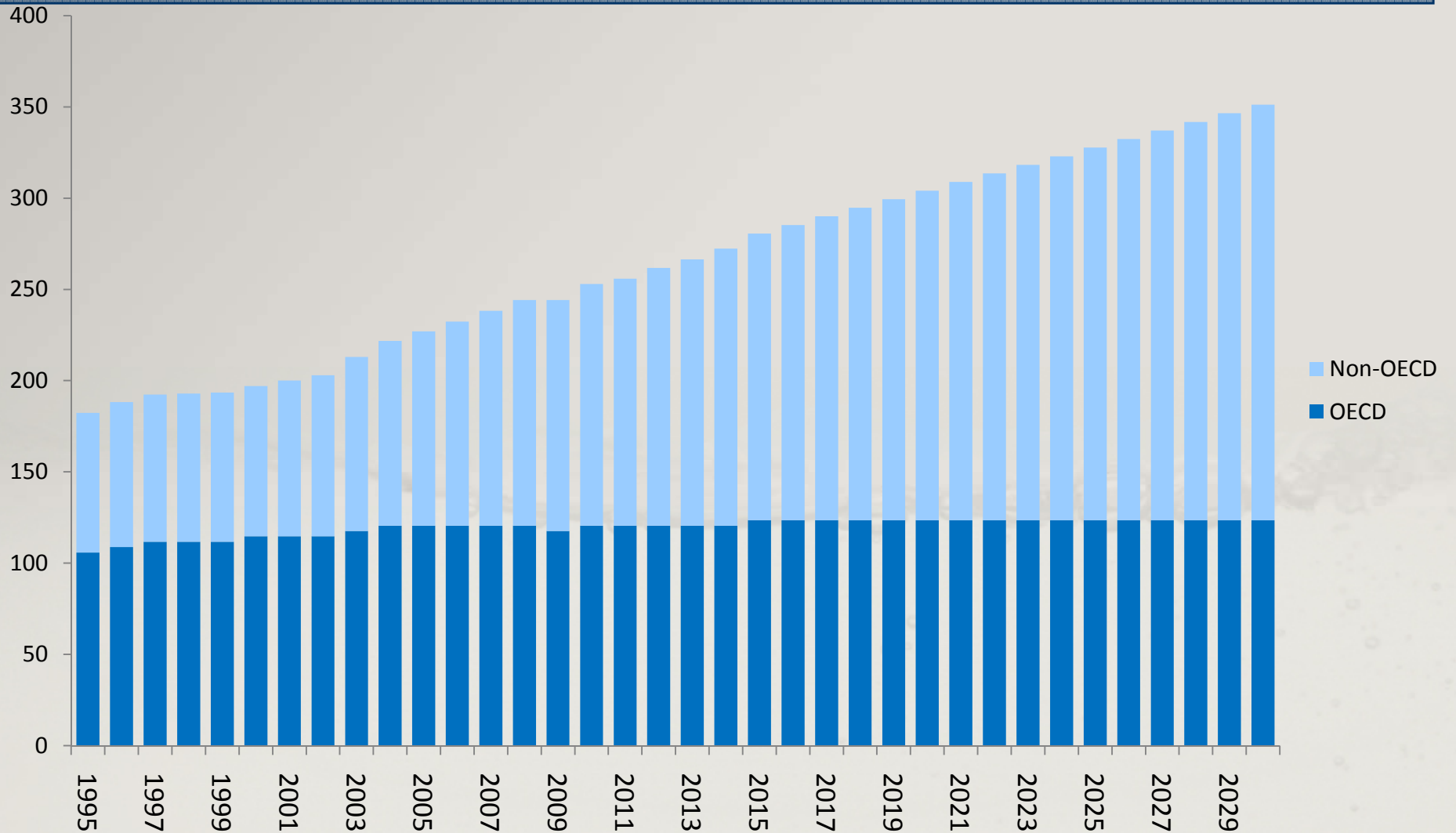
Recent Activity

Oil Price vs Development Type





Energy Consumption (mboe/d)

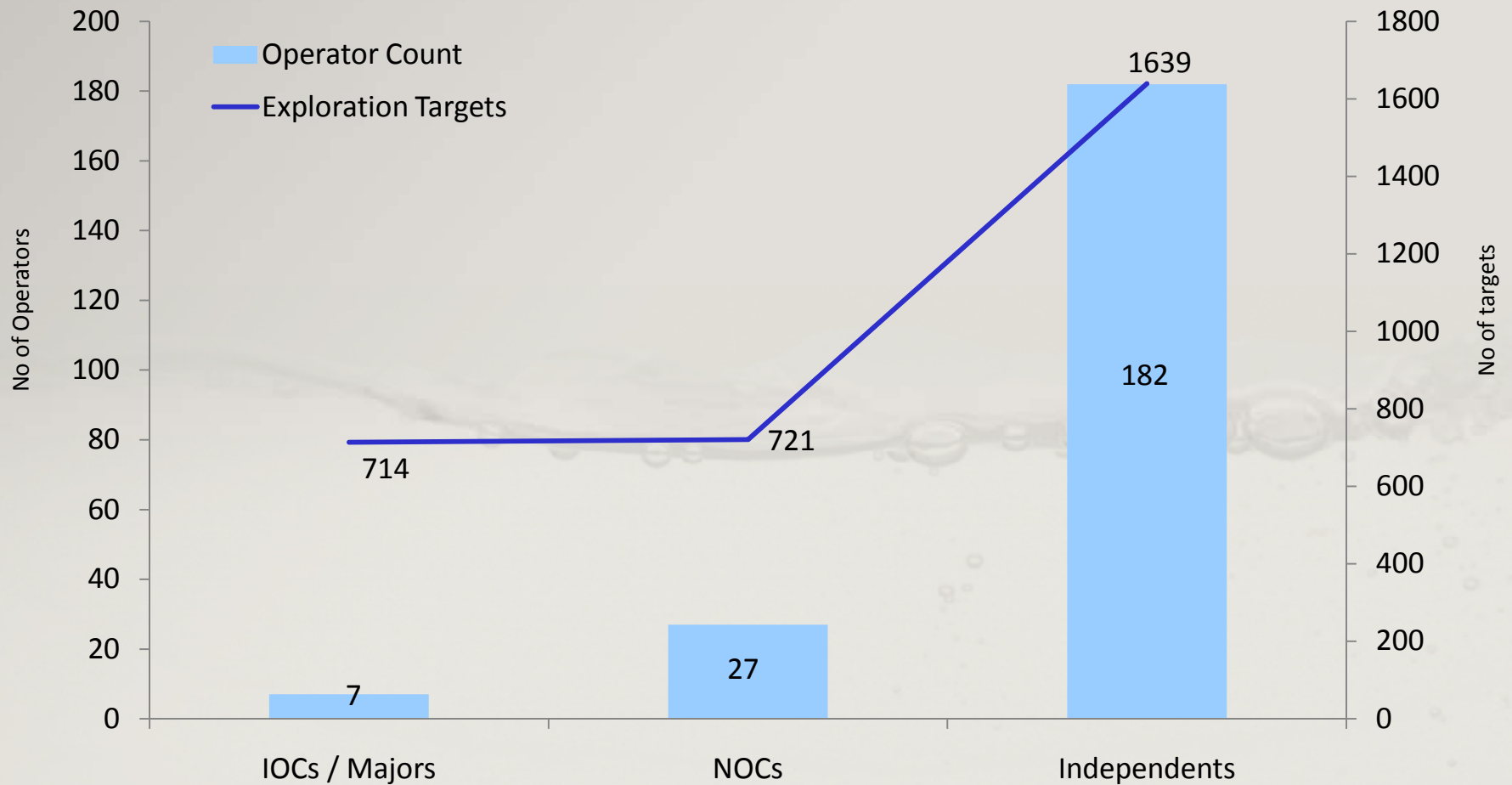


Source: IEA World Energy Outlook 2009



Operator Activity

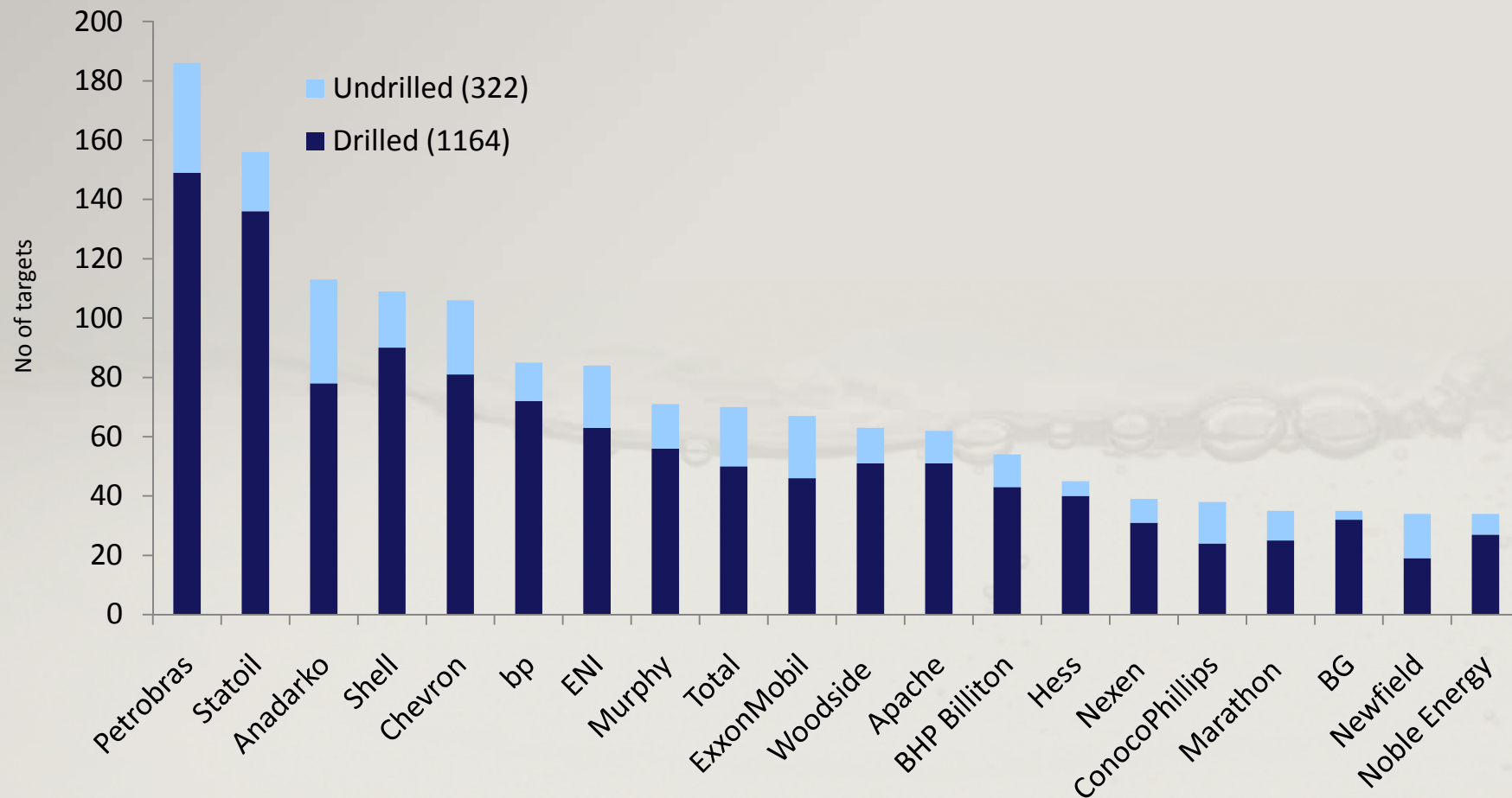
Exploration by Operator Category (2004 ~ 2013+)





Operator Activity

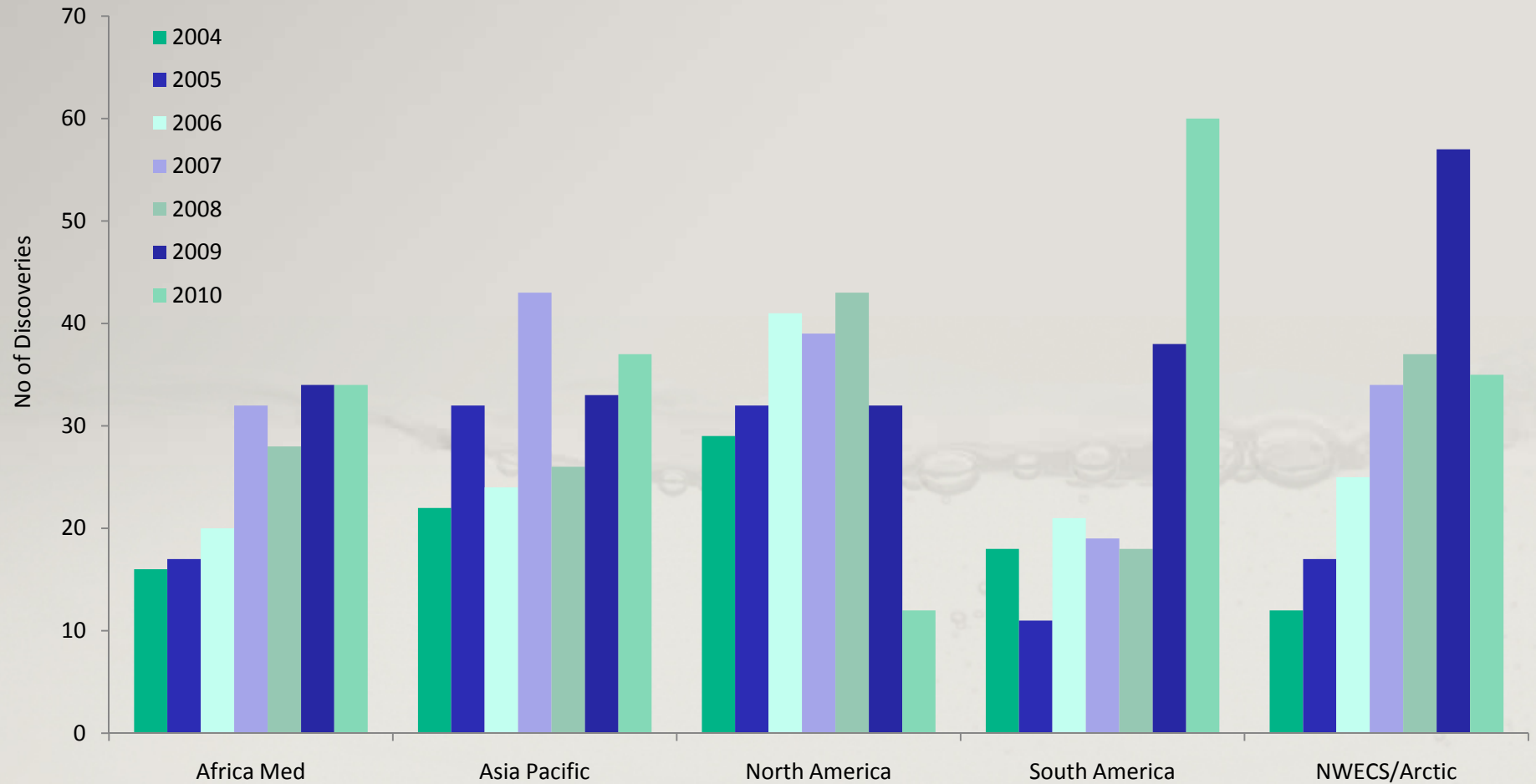
20 Most Active Operators





Operator Activity

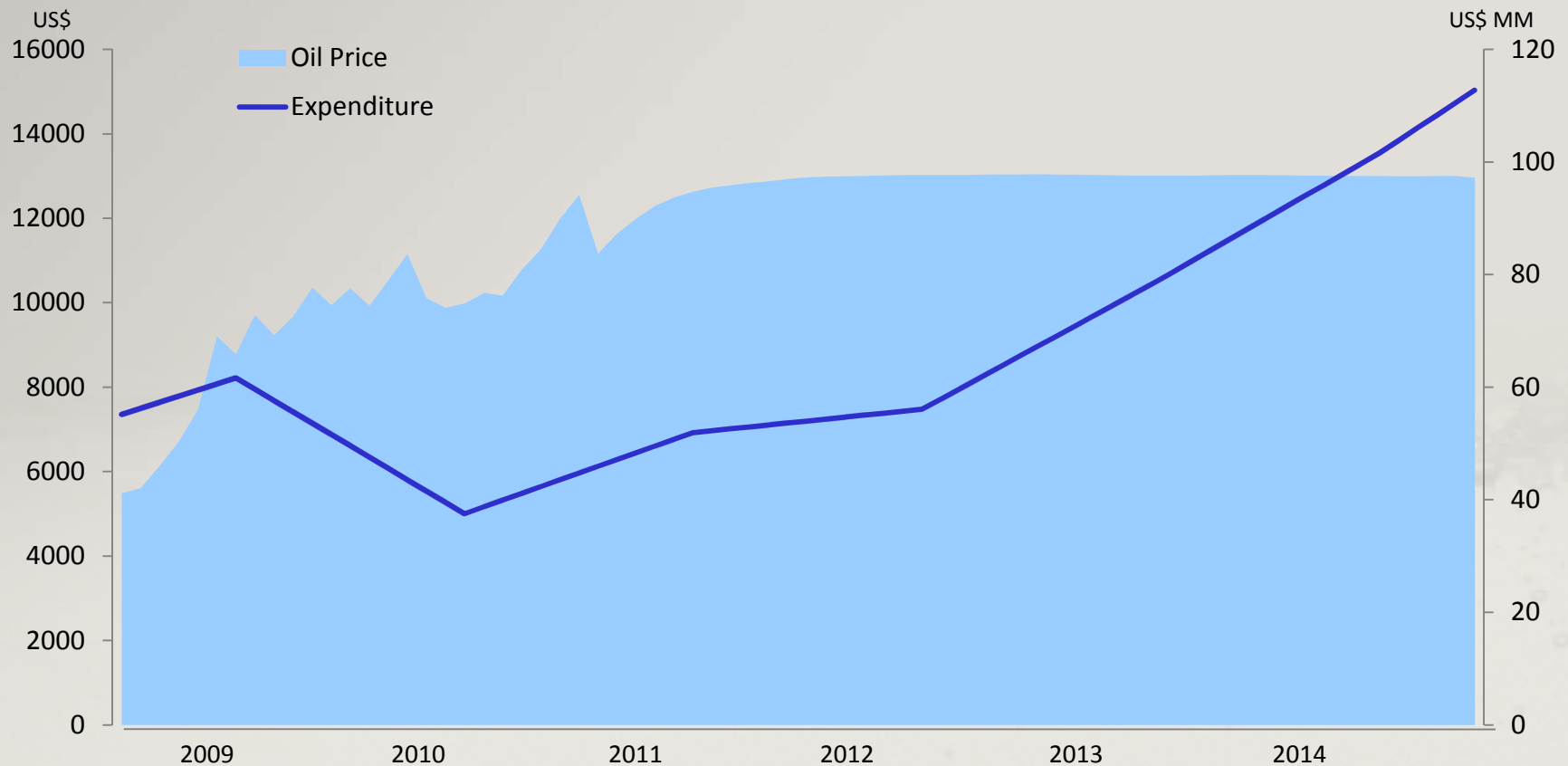
Discoveries by Region





Forecast Activity

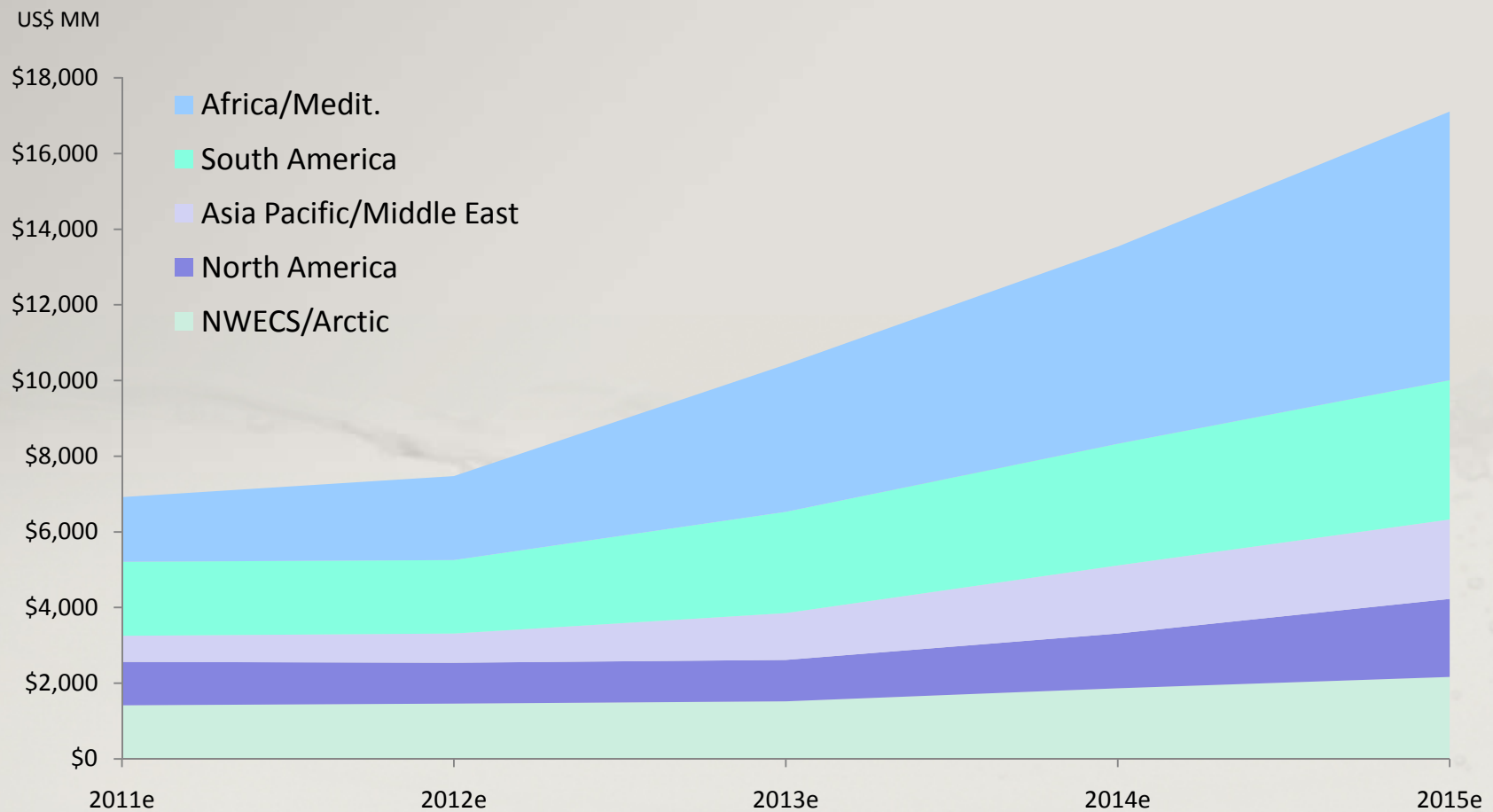
Forecast Oil Price vs Subsea Capex





Forecast Activity

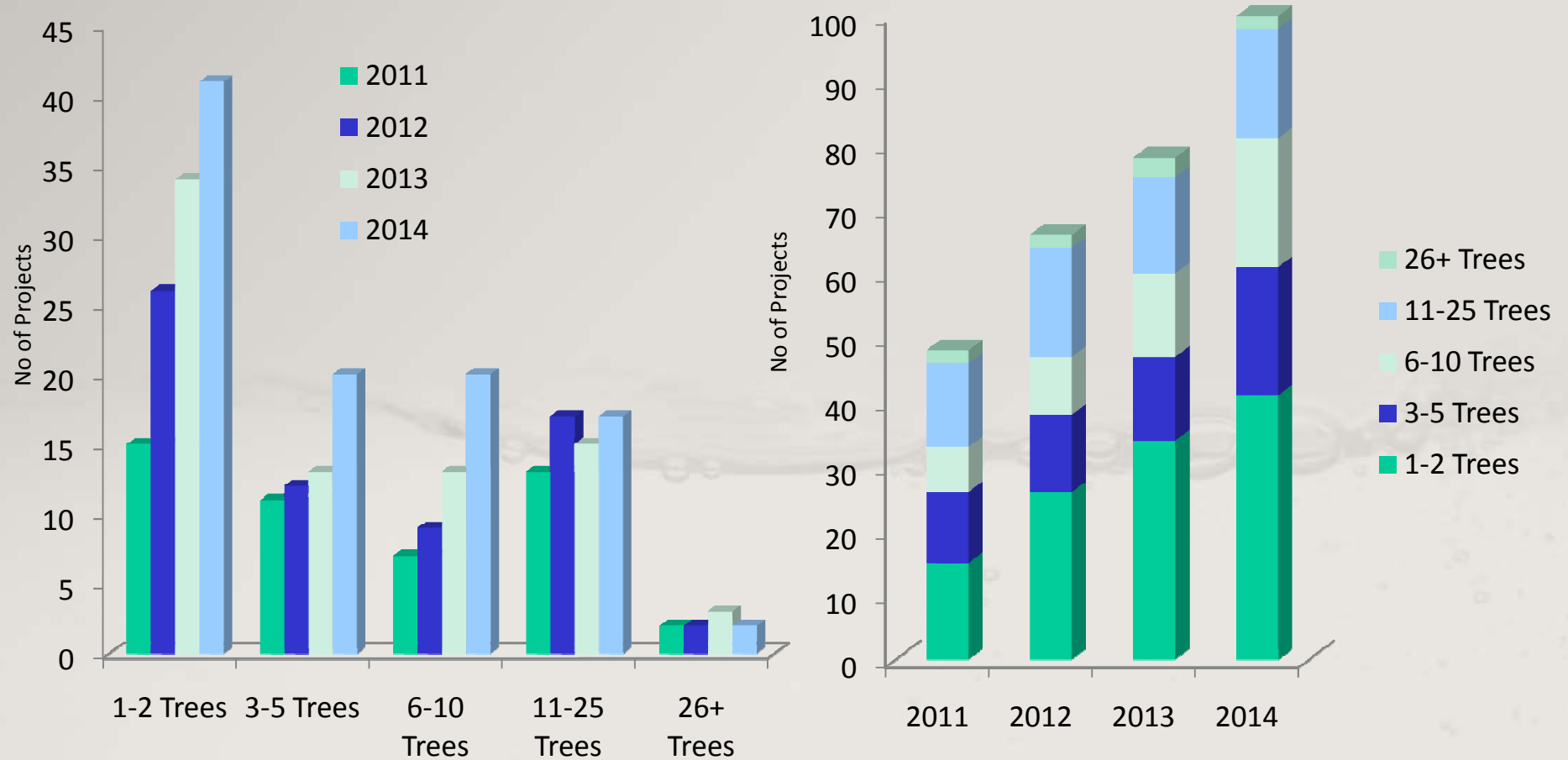
Forecast Subsea Capex by Region





Forecast Activity

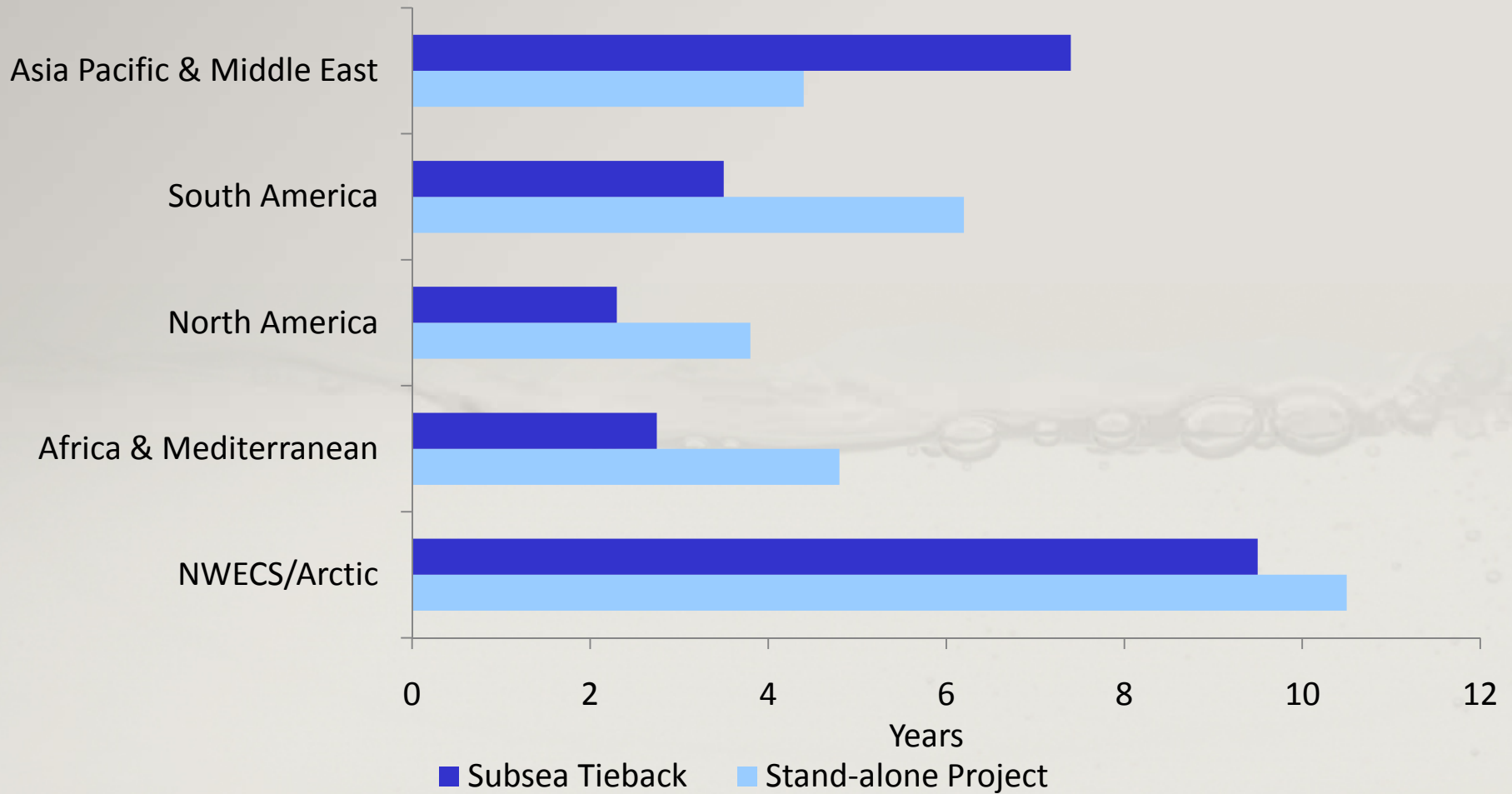
Forecast projects by tree count





Forecast Activity

Average Number of Years Between Discovery and Sanction





Contractors' Perspective

Capabilities and limitations

- Pipelay
 - Method
 - Line-pipe or reeled
 - Max. Pipe diameter
 - Water depth
 - Location of assets and support
- Geotechnical investigations
 - Sampling
 - Drilling
 - Water depth
 - Location of assets and support
- Survey
 - Sensors
 - Towed, autonomous, ROV-deployed
 - Combined with geotechnical
 - Water depth
 - Location of assets and support
- Diving
 - Mechanical tie-ins
 - IRM
 - Water depth
 - Location of assets and support



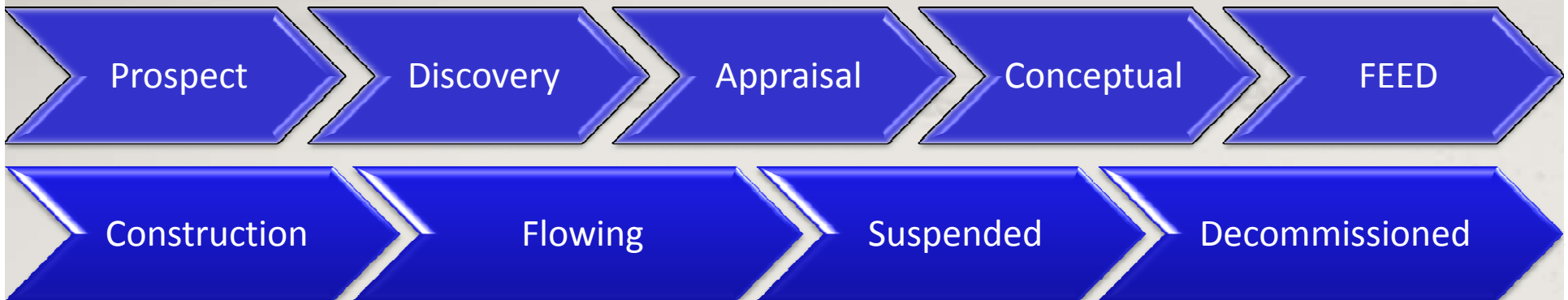
Contractors' Perspective

At which stage of the development can I participate?

Typical Operators' Field Development Process



Quest Project Status





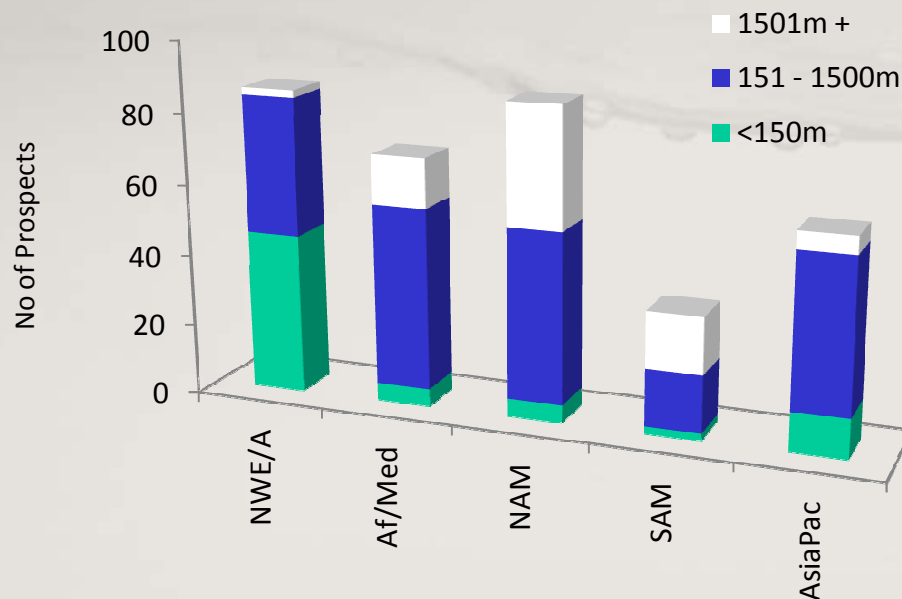
Contractors' Perspective

Prospects, Discoveries and Appraisals

- Filter data
- Search Criteria
 - Water depth
 - Geographic Location

Opportunities
Rig site surveys
Geotechnical investigation
Drilling services
Rig positioning
ROV support
Engineering (Conceptual)

Look-ahead
Engineering (FEED)



- Long look-ahead
- 1/3rd of prospects expected to be developed after 2016



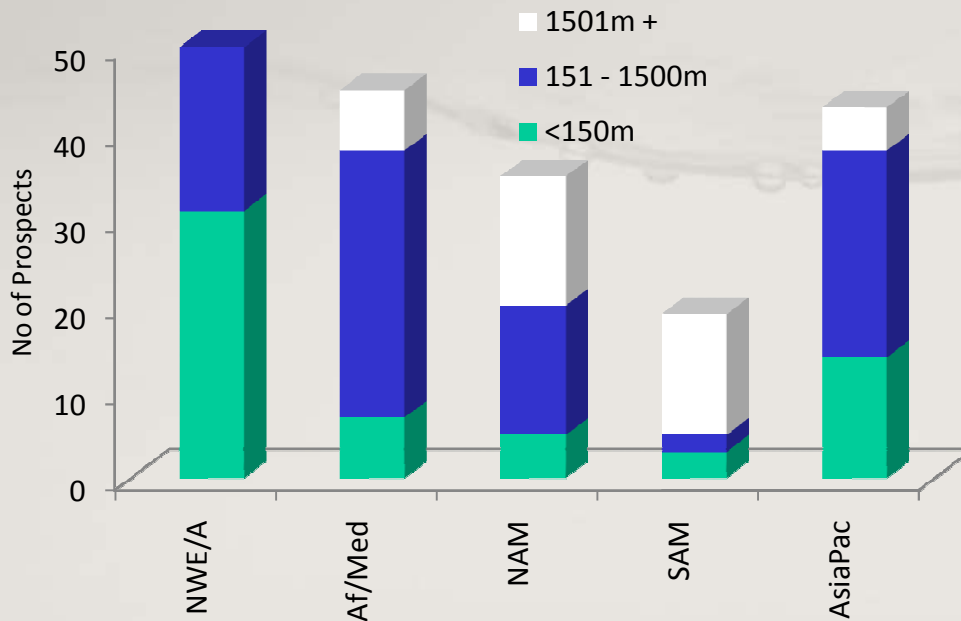
Contractors' Perspective

Concept, FEED

- Filter data
- Search Criteria
 - Water depth
 - Geographic Location

Opportunities
Engineering (FEED)
Survey
Geotech
SPU
FPSO
Construction

Look-ahead
Diver tie-ins
Survey
Pre-commissioning



- Time-line shortening as projects firm up
- Less than 10% will be developed after 2016

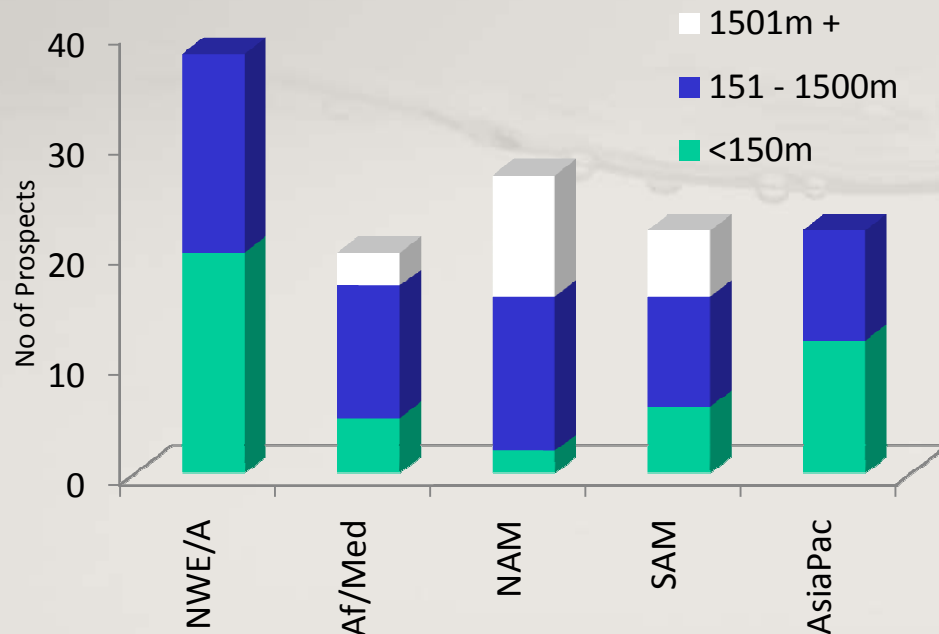


Contractors' Perspective

Pending / Construction

- Filter data
- Search Criteria
 - Water depth
 - Geographic Location

Opportunities
Installation
FPSO
Construction Support
Diver tie-ins
Survey
Pre-commissioning



- These projects almost certain to go ahead
- Only one is scheduled for post 2016



Contractors' Perspective

Other indicators

- Subsea trees
 - Leading industry indicator
 - Long-lead item
 - Size of the development
- Same can apply to:
 - FPSOs
 - Pipe
 - Umbilicals
 - Other SPU components



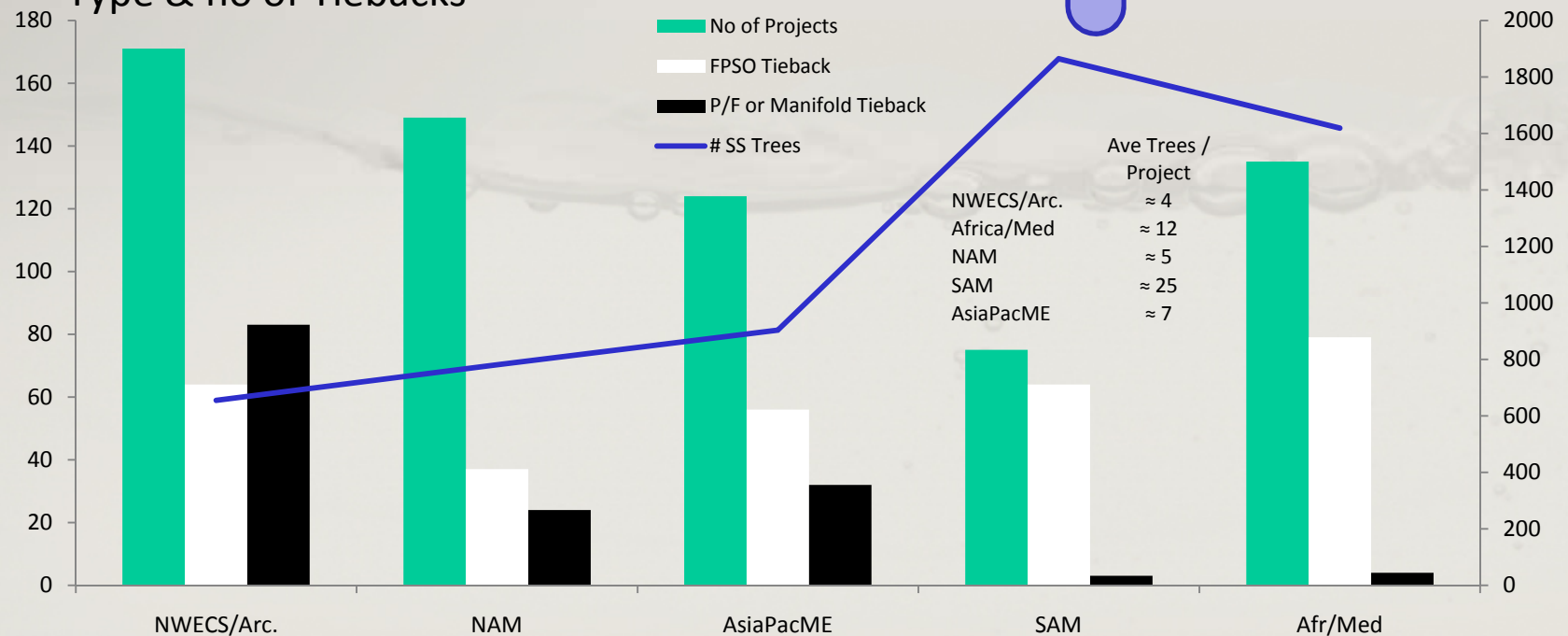
Contractors' Perspective

All prospects

- Filter data
- Search Criteria
 - No of Projects
 - No of Subsea Trees
 - Type & no of Tiebacks

Opportunities

- Survey & Positioning
- SPS
- Subsea installation
- Trees-on-wire
- ROV intervention
- Diver tie-ins
- Diverless tie-ins



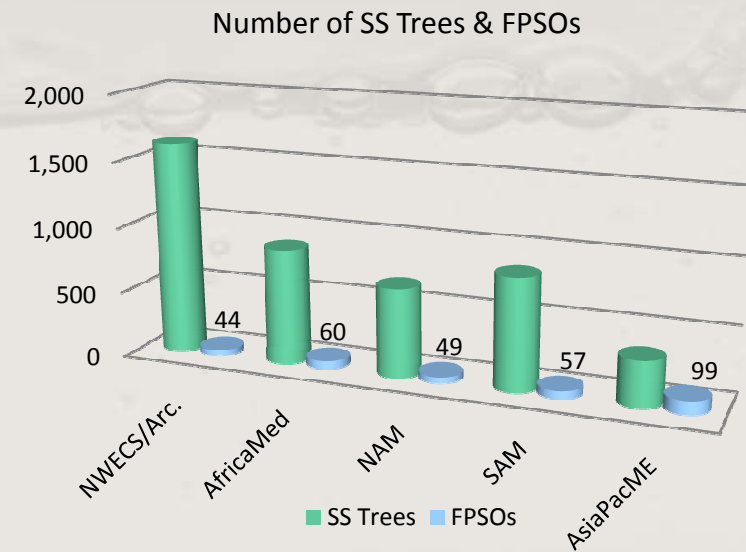
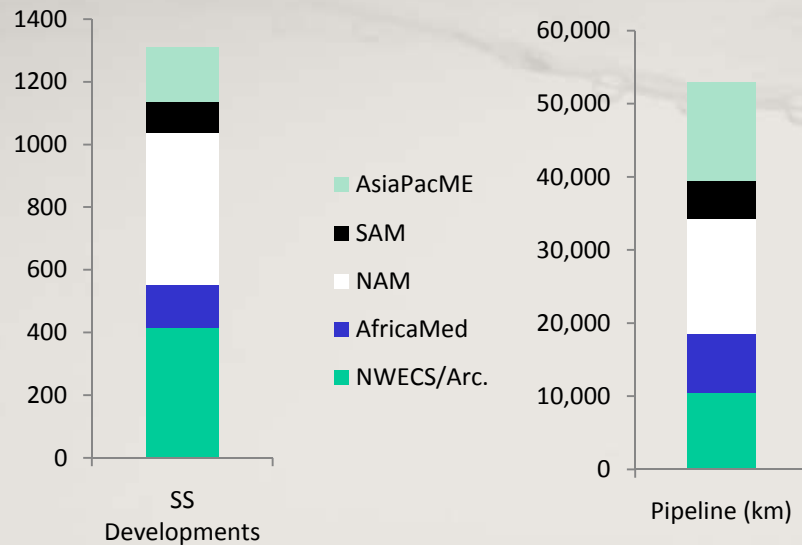


Contractors' Perspective

Operating Developments

- Filter data
- Search Criteria
 - Operating fields
 - Water depth and geographic location
 - Pipeline length, no of SS trees and FPSOs

Opportunities
IRM
Well maintenance





Contractors' Perspective

Market Study – Light installation / diving contactor, Asia-Pacific region

- Target
 - Short, small diameter subsea tiebacks
- Search Criteria
 - Water depth (120m), Reeled pipe (max 8" od, 20km length)
- Outputs
 - 9 prospects in Australia, Cambodia, China, Indonesia and Vietnam
 - Installation dates range from 2012 to 2016
 - 3 tie-backs to platforms
 - 6 tie-backs to FPSOs including one new build
 - Prospective clients:
 - Apache, Chevron, CNOOC, Husky Oil, Premier Oil (2), PTTEP, Santos (2) and Woodside Petroleum
- Widen the search
 - 250m wd
 - Two more prospects in Australia



Contractors' Perspective

Market Study – ROV / ROVSV contractor, Nigeria

- Target
 - Subsea inspection
- Criteria
 - Operating fields, subsea production
- Outputs
 - Operators of subsea fields
 - 7 (Addax, Afren, Chevron, Eni, ExxonMobil, Shell, Total)
 - Water Depth Range
 - Operating fields -1460m (Chevron, Agbami)
 - Prospects – 2,479 (Shell, Bobo)
 - Pipelines
 - Export lines – 1,980km (including 6 landfalls)
 - Infield Lines – 361km
 - Subsea Equipment
 - Subsea Trees – 174
 - Manifolds – 30
 - Floating Production & Storage
 - Offshore/deepwater – 9
 - Inshore/terminals - 9

Shell, Bonga

Water Depth - 1200m

Export lines – 94km

Infield Lines – 71km

Umbilicals -71km

Subsea Trees – 46

Manifolds – 5

FPSO – 1

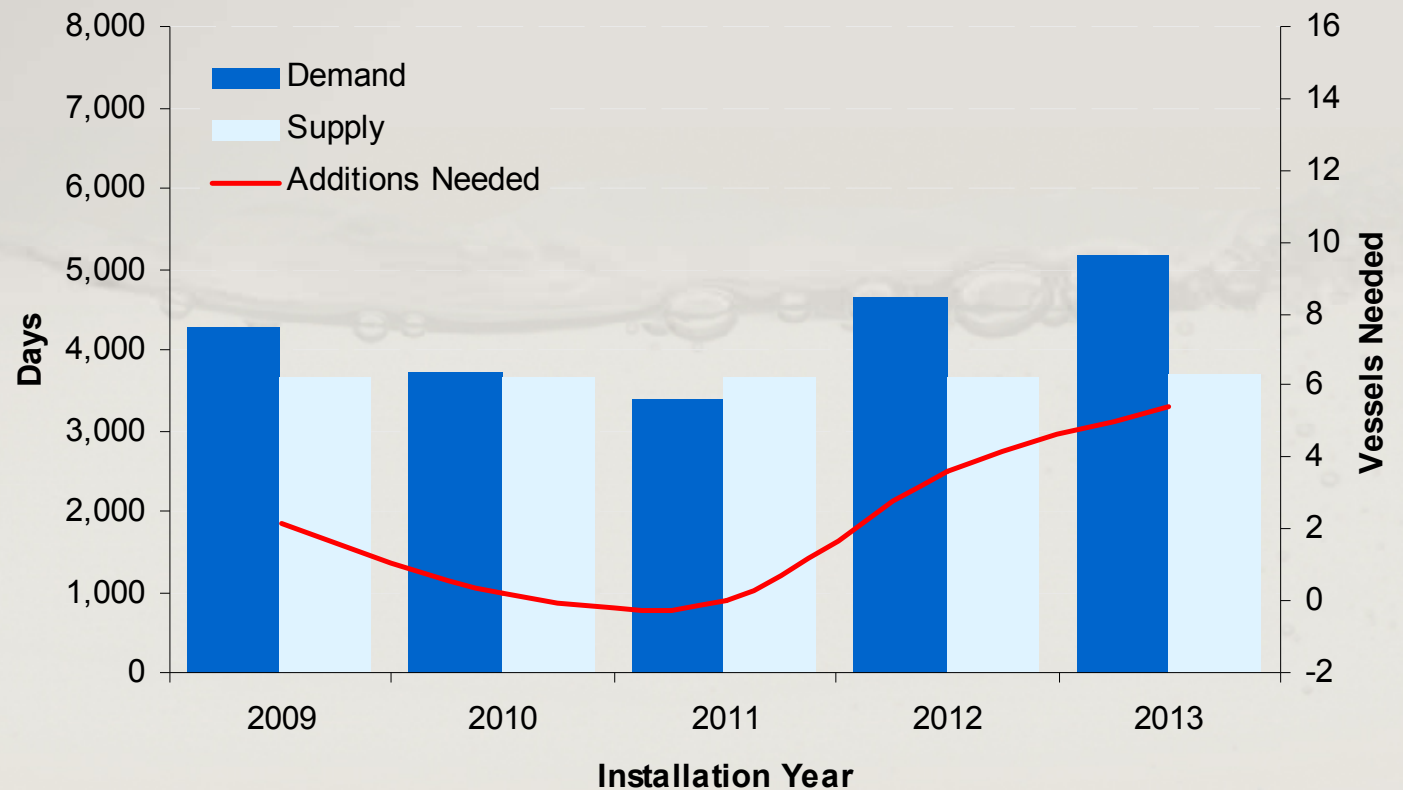
Risers - 15



Contractors' Perspective

Demand for light construction vessels

- Vessels for umbilical, module, spool and jumper installation
- Potential short-fall based on current fleet size
- Expected to be made up by new-builds being delivered to global fleet

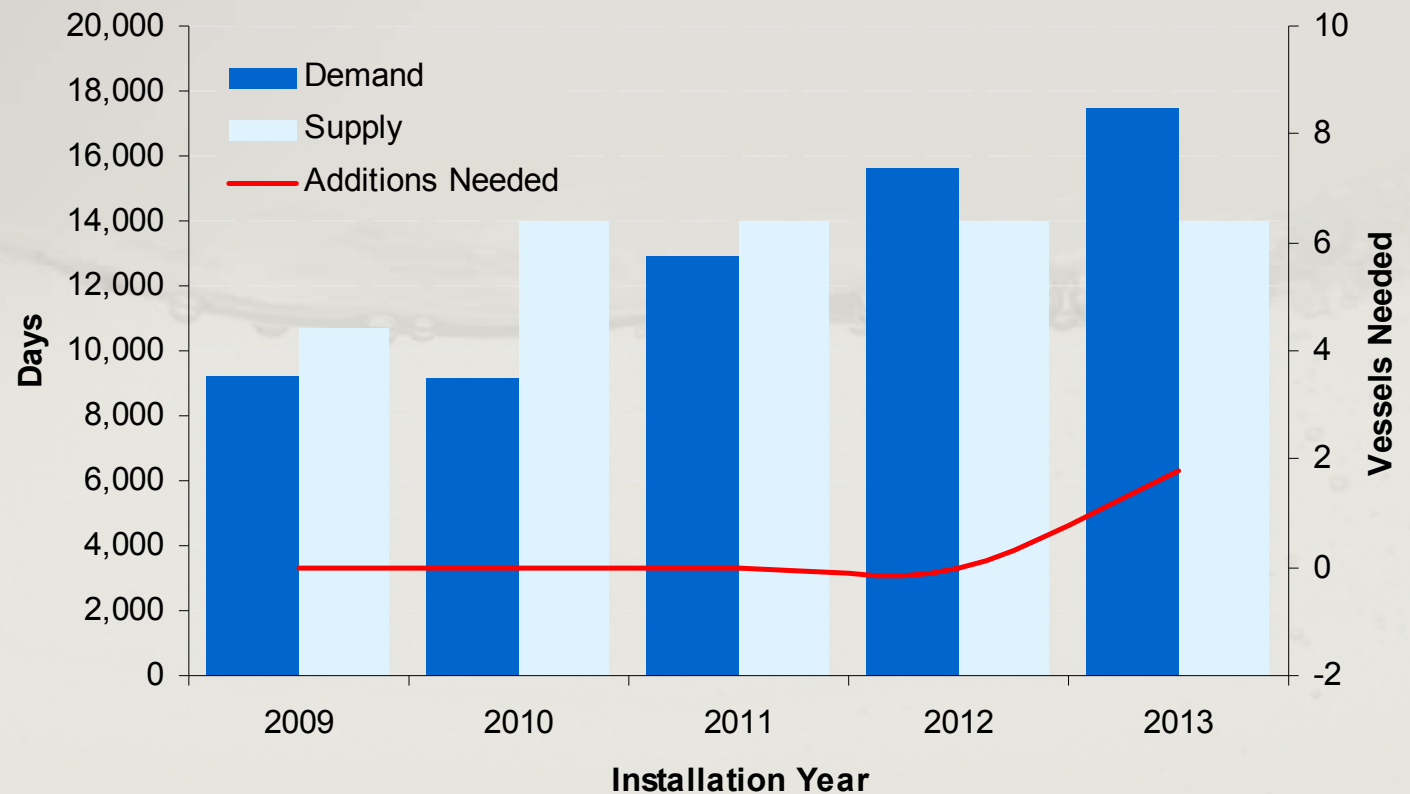




Supply & Demand

Demand for heavy construction vessels

- Vessels for flow-line, export line and riser installation
- Potential short-fall based on current fleet size
- Expected to be made up by new-builds being delivered to global fleet

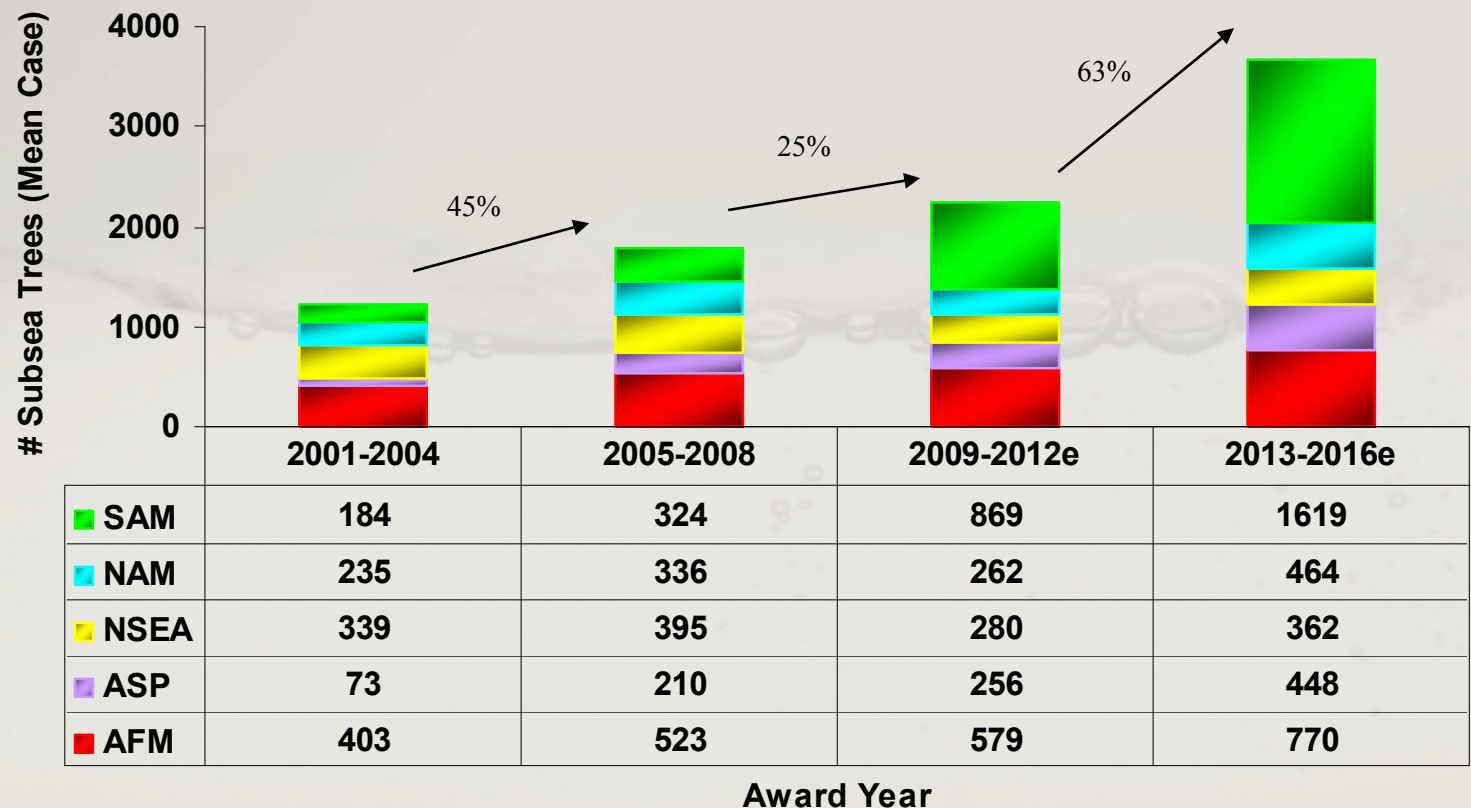




Contractors' Perspective

Demand for subsea trees

- Mean case indicates production capacity will be fully utilised by 2014
- High case indicates that production capacity will be exceeded
- Possible scenario: Supply of subsea trees cannot meet future demand



•2009-2016e Awards = Mean Case



Summary

Market Assessment

- Segment
 - Geographic location, water depth, etc
 - Scope of work - Survey, construction support, IRM etc.
 - Capabilities and limitations – e.g. water depth limits
- Identify prospects
 - Client
 - Size and value
 - Schedule
 - Specific location
 - Forecast, Prioritise and Target
- Become informed and able to approach customer with a solution for his requirements
- Analyse capacity to meet future demand



Thank You

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Save the date...

28-30
March 2011

MCE **D**eepwater **D**evelopment 2011

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