

The Halliburton logo is a large red downward-pointing triangle. The background of the slide is a collage of four images: an offshore oil rig in the blue ocean (top left), an aerial view of an onshore oil field in a green landscape (top right), and a 3D seismic scan of geological rock layers (bottom left).

HALLIBURTON

VII Seminario Estratégico - SPE Evaluación de las Perspectivas Energéticas de la Argentina

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Solving challenges.™

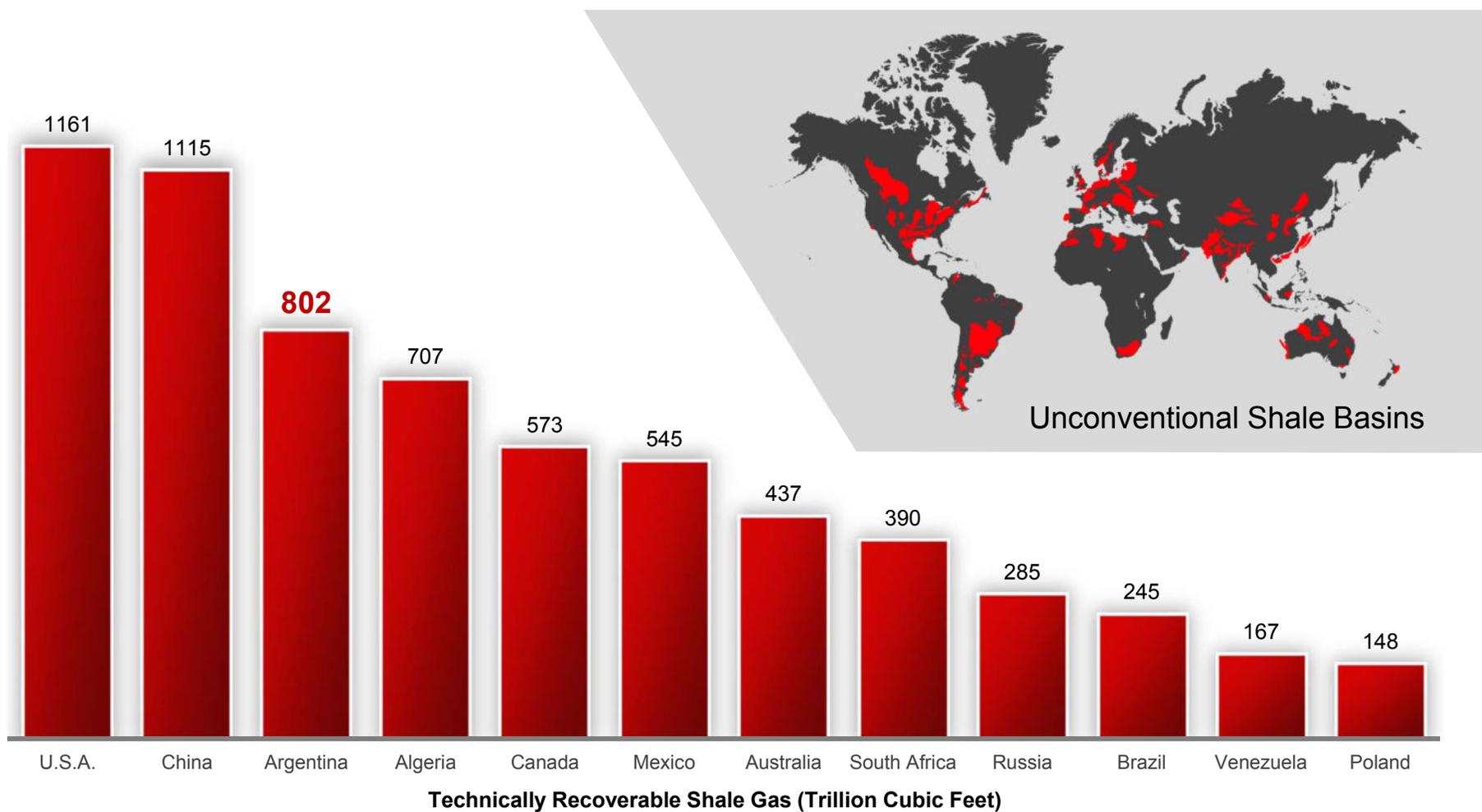


Agenda

- Unconventionals Compressing Discovery
 - Argentina Vs USA
- Mature Fields
- Argentina Oil & Gas Overview
 - Unconventional & Mature Fields
- Technology Overview
 - Strategic Focus for Oil & Gas Market
 - Present & Future
- Efficiencies
- Infraestructure
- Summary

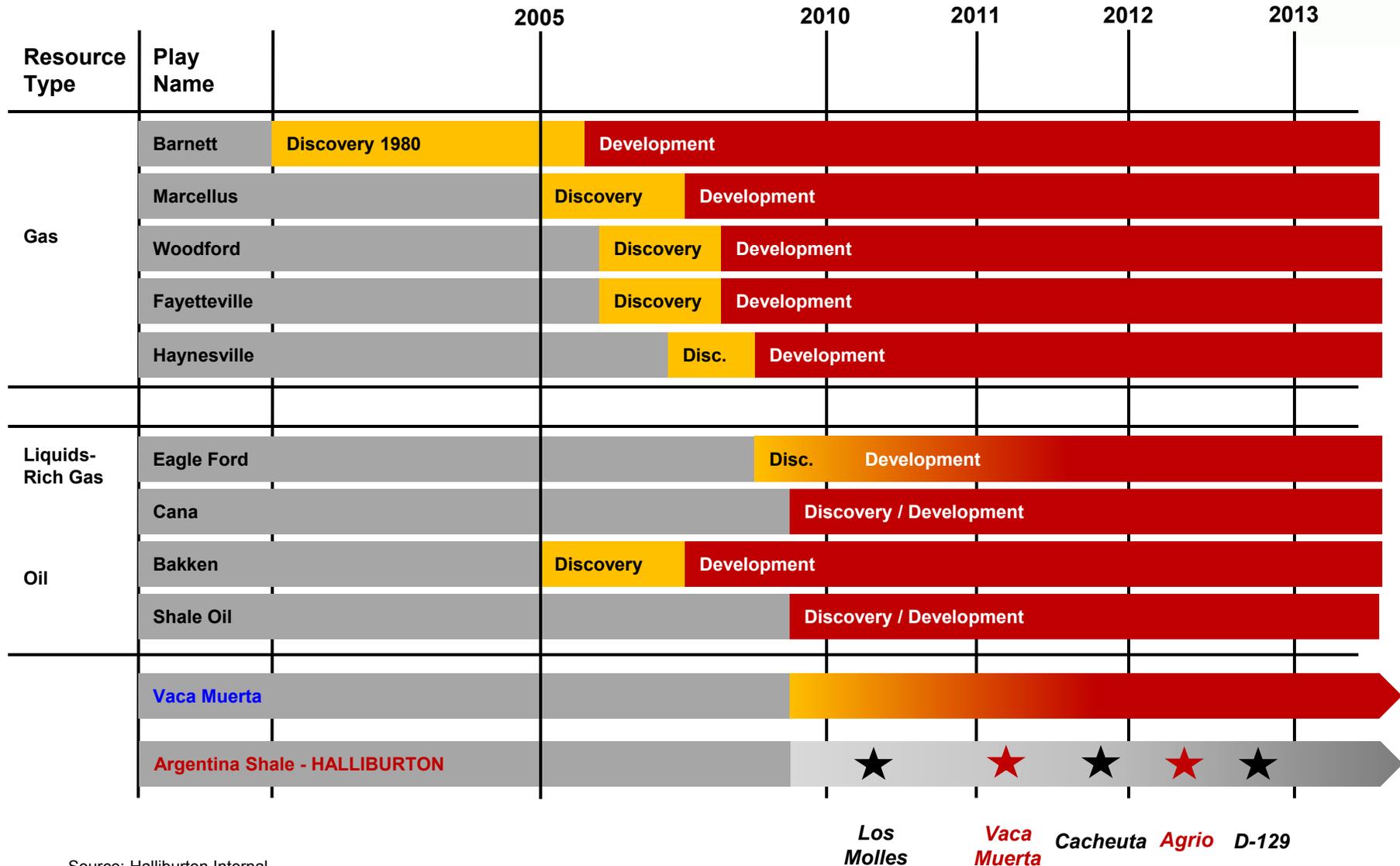


Unconventionals - shale: global potential



Source: ARI, Technically Recoverable Shale Oil and Shale Gas Resources: An Assessment of 137 Shale Formations in 41 Countries Outside the United States - June 2013

Unconventionals Compressing Discovery



Source: Halliburton Internal

Argentina Unconventional Operations



10 years ago - Conventional Wells



5 years ago Unconventional - Los Molles



Near Future



Today - Vaca Muerta

Mature fields



70%

Amount of worldwide oil & gas production from mature fields



35%

Average worldwide recovery factor for oil

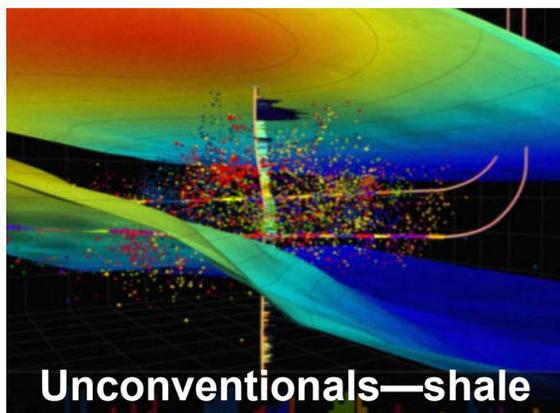


1%

Recovery factor increase needed for additional two-year global oil and gas supply



Technology - Strategic focus for Oil & Gas Market



- Subsurface Insight
- Customized Chemistry
- Surface Efficiency

- Immediate Impact Interventions
- Optimized Reservoir Management
- New Pay Zones



- Delivering the lowest cost per BOE
- Incrementing Barrels and Maximum Recovery



Mature Fields Technology & Knowledge - Today

Immediate Impact Interventions

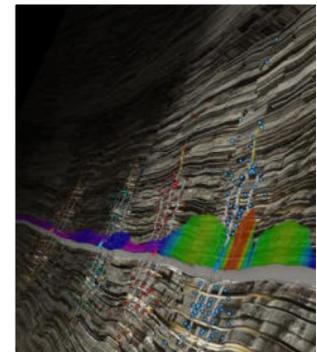
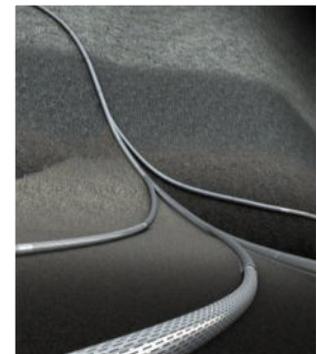
- Coiled-tubing systems
- Tailored Fluid Production Chemistry

Optimized Reservoir Management

- Fiber Optics
- Water Management
- Pinpoint Stimulation Techniques
- Refracturing – Biodegradable Diverter System
- Inflow Control Devices

New Pay Zones

- Reservoir Insight
 - Integrating reservoir understanding and combining the latest improvements in refracturing, microseismic, well configurations and production systems will optimally energize mature reservoirs.



Unconventionals Technology & Knowledge - Today

Subsurface Insight

- Seismic to Stimulation Workflow
- Reservoir & Production Monitoring
 - Fiber Optics & Microseismic

Surface Efficiency

- Rigless Operations
- Completion Systems
 - Sleeves Systems
 - Pinpoint Stimulation Techniques
 - Refracturing – Biodegradable Diverter System
- Water Management

Customized Chemistry

- Tailored Fluid Chemistry
- Water Treatment



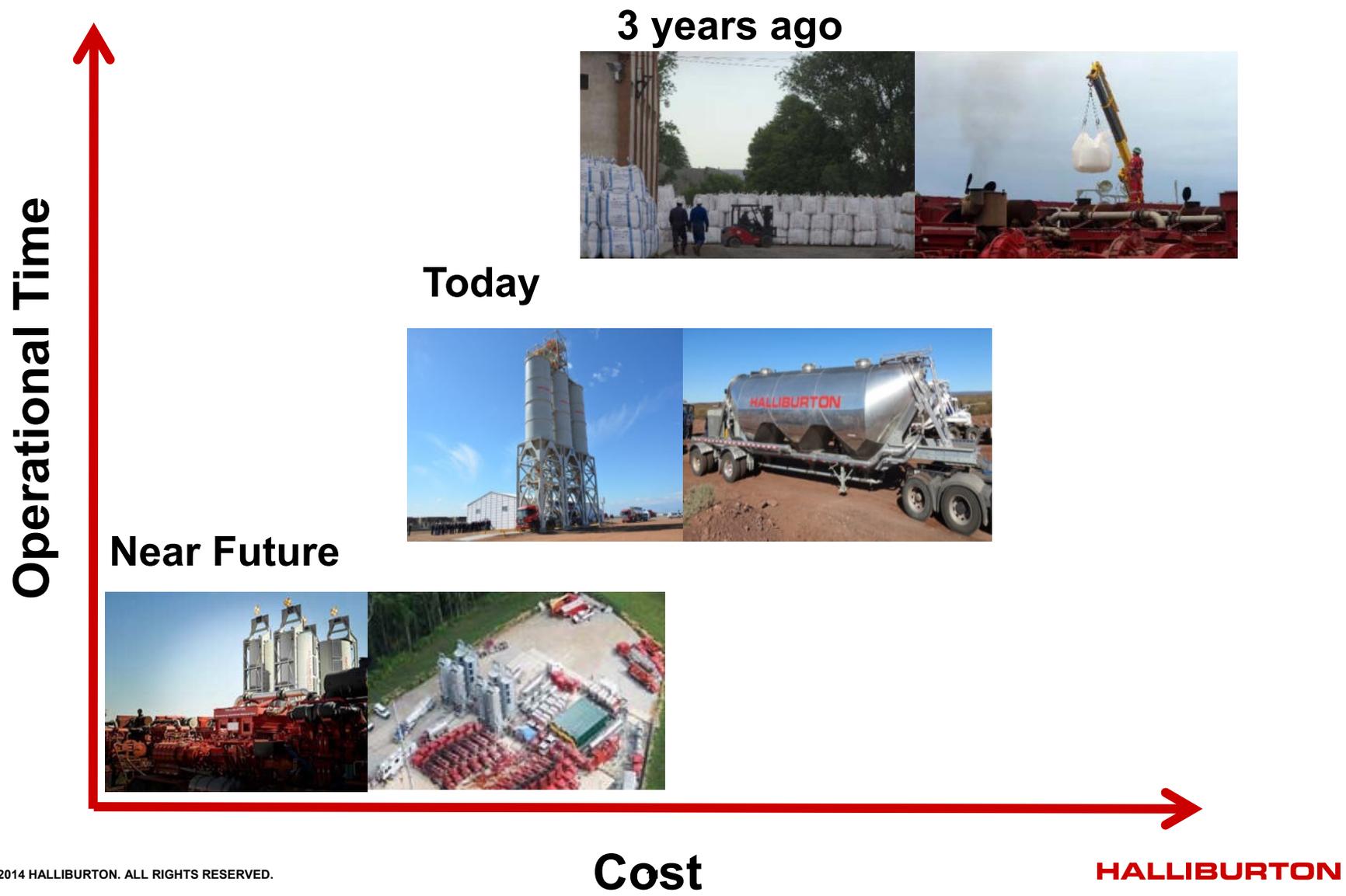
Frac of the Future – **A step change improvement**

- Minimizing environmental impact
- Reduce personnel on location
- Enhance fracture design
- Reduce pad footprint
- Improve reliability
- Increase safety



- Q-10 Pumping Units**
- Sand Castle Proppant Storage**
- Remote Operation Centers**
- Wellhead connection Unit**
- Dual fuel engines**

Efficiencies – Logistics Improvement



Infrastructure – A major need.

- Workforce education
- Railway network.
- Highway network
- Facilities
- Standarization
- Tecnology





Comentarios Finales

Desarrollo de las reservas.

- Compromiso
- Conocimiento y Tecnología Correcta

No Convencionales

- Mejora de productividad.
- Eficiencias.
- Escala.
- Tecnología

Infraestructura

La oportunidad mas mayor producir al Costo Mas Bajo por BOE

