

A large red chevron shape pointing downwards, containing the word "HALLIBURTON" in white. The background of the slide is a collage of four images: an offshore oil rig in the ocean (left), an aerial view of an oil field in a green landscape (top right), and a 3D seismic interpretation of geological strata with wells (bottom left).

HALLIBURTON

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

Fernando Rearte

Halliburton Argentina Country Manager

June 16-17, 2015, Buenos Aires Argentina

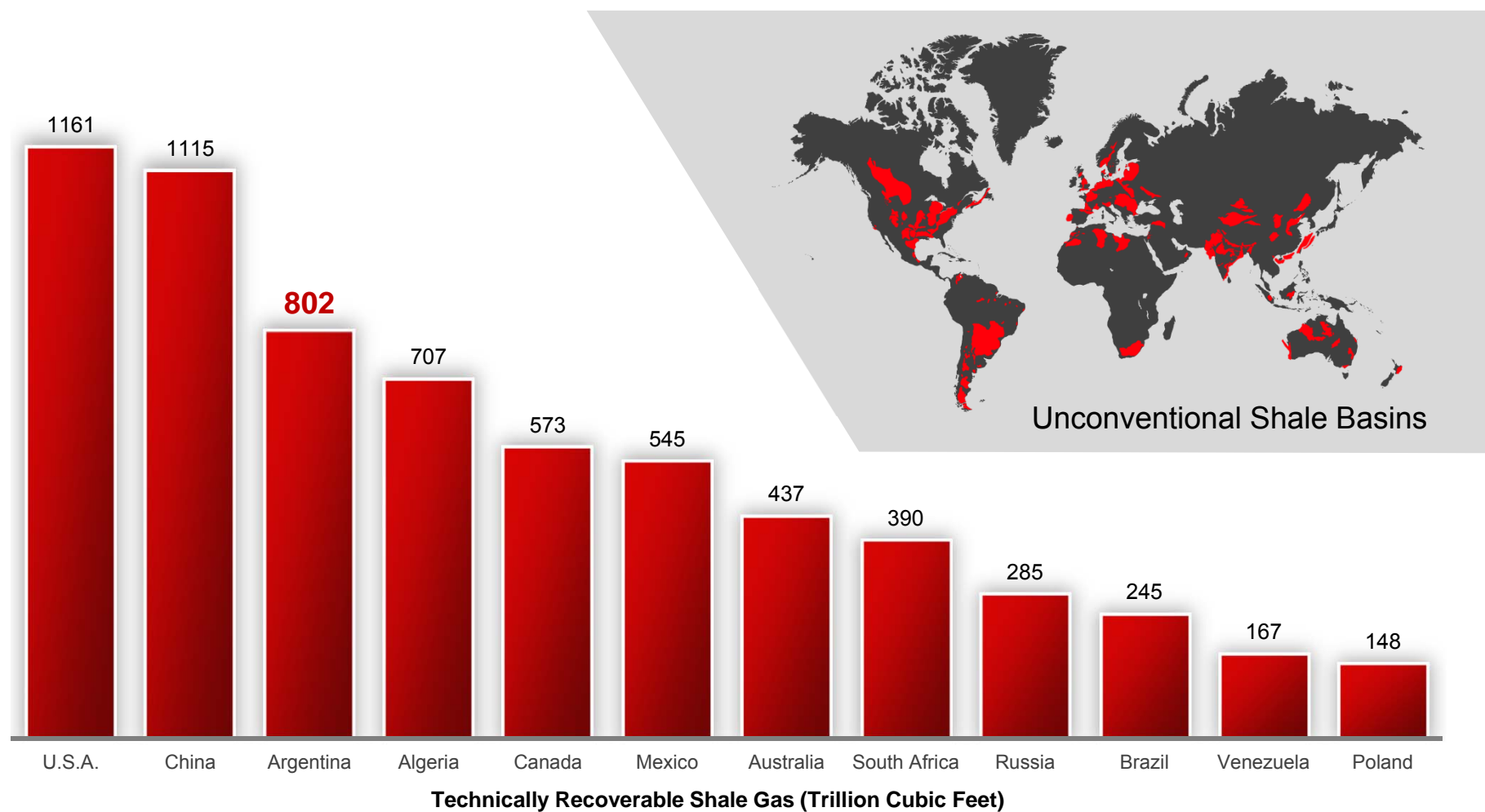
Solving challenges.™



Agenda

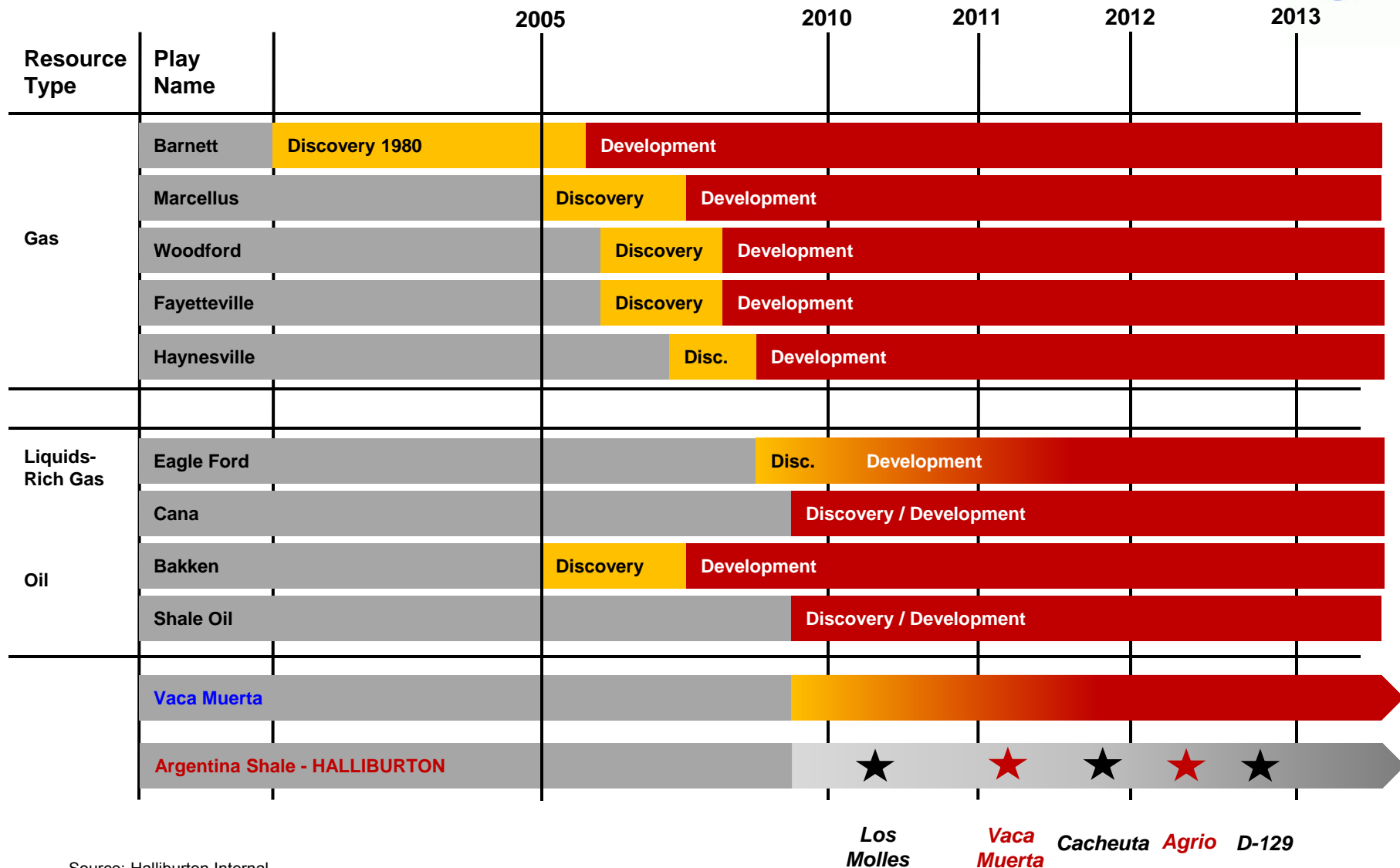
- Unconventionals Compressing Discovery
 - Argentina Vs USA
- Mature Fields
- Argentina Oil & Gas Overview
 - Unconventional & Mature Fields
- Technology Overview
 - Strategic Focus for Oil & Gas Market
 - Present & Future
- Efficiencies
- Infrastructure
- Summary

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

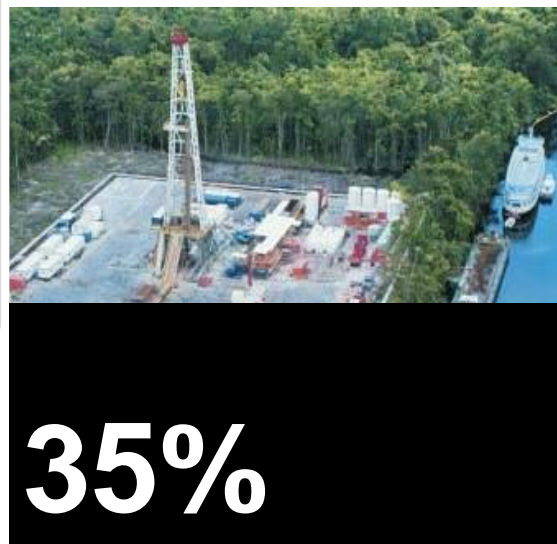


Today - Vaca Muerta

Mature fields



Amount of worldwide oil & gas production from mature fields

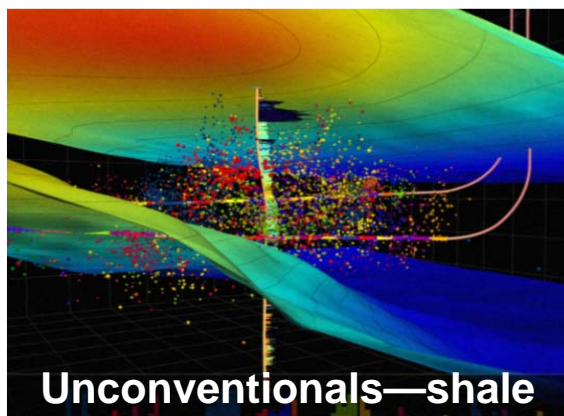


Average worldwide recovery factor for oil



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

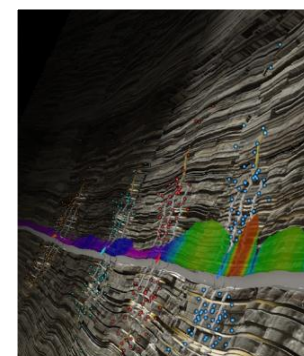
- Coiled-tubing systems
- Tailored Fluid Production Chemistry

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



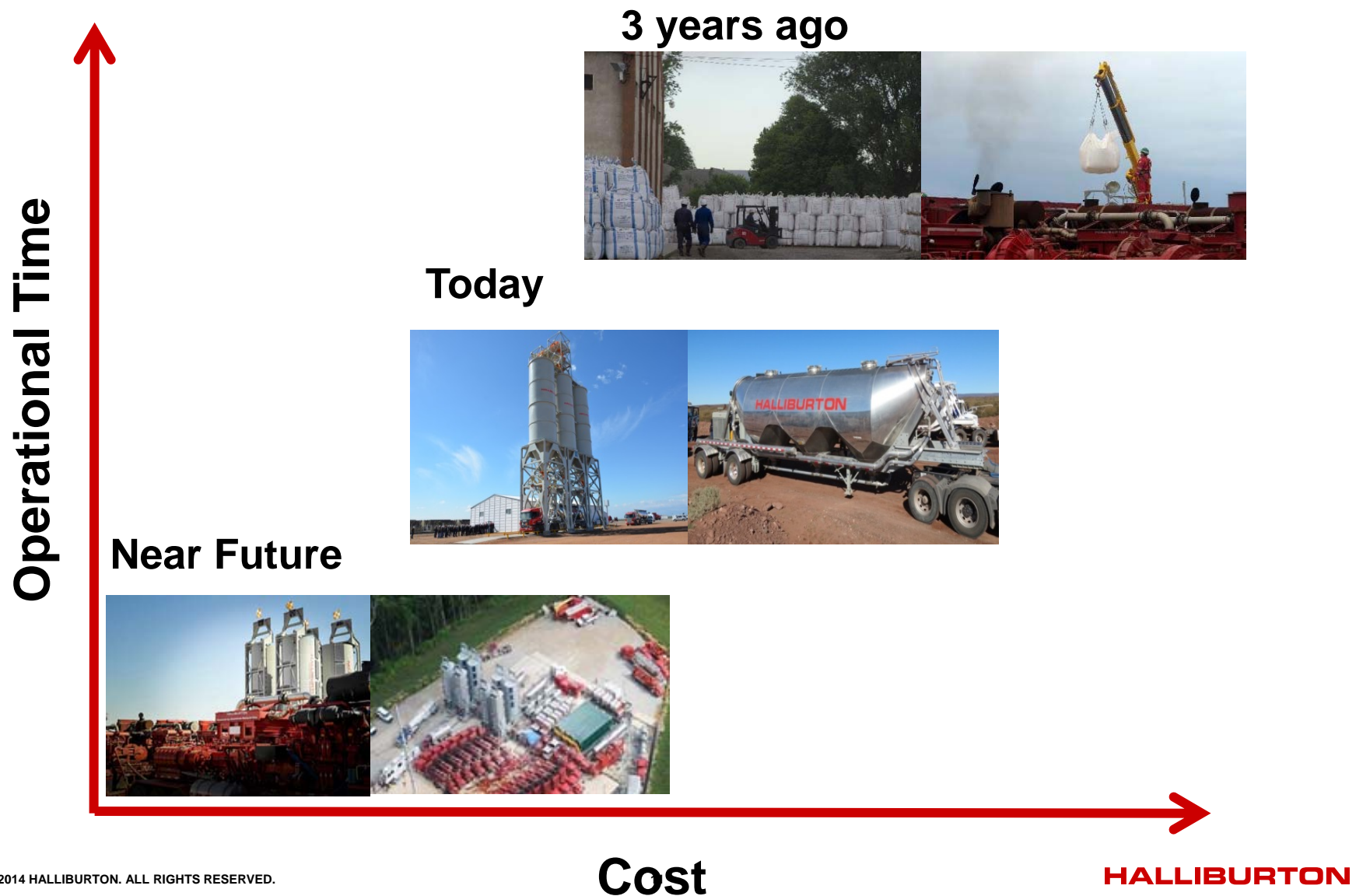
Frac of the Future – A step change improvement

- 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

