

The background of the slide is a photograph of an oil pumpjack (jack-o'-lantern) in silhouette against a dramatic sky at sunset or sunrise. The sun is low on the horizon, creating a bright glow and casting long, wispy clouds. The pumpjack's long arm is extended upwards and to the right. The overall color palette is dominated by deep blues, greys, and the warm yellows and oranges of the setting or rising sun.

**PLATA ENERGY**  
OIL & GAS CONSULTANTS

# Advanced Energy Recovery & Reservoir Optimization Practice

*Unlocking recovery*  
*Multiplying value*

Houston | Seattle | México | Quito | Bogotá | Caracas | Buenos Aires | Rio de Janeiro | Madrid



# Why Advanced Energy Recovery Matters



## Under-Optimized Fields

Most Mature Fields remain under-optimized



## Conventional Reservoir Dominance

Conventional Reservoirs Still dominate production



## NPV Upside

Recovery factor improvement creates disproportionate NPV Upside



## Latin American Opportunities

Mature Latin American basins create exceptional opportunities



## Strategic Advanced Recovery

Advanced Recovery is increasingly strategic in a capital disciplined world

*Unlocking Hidden Value from Mature Reservoirs Through Advanced Recovery Expertise*

# Value Creation Through Reservoir Optimization

Increase recovery factor

Improve sweep efficiency

Extend plateau production

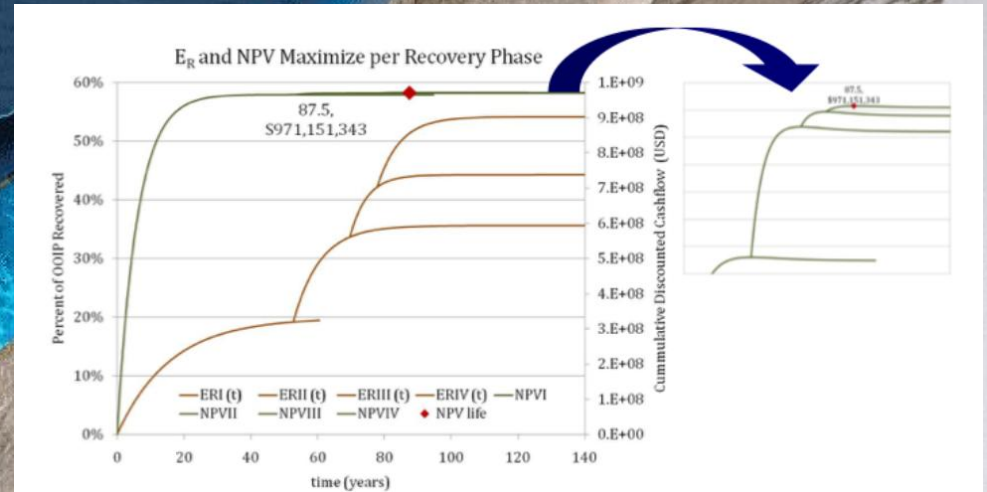
Reduce decline rates

Better infrastructure utilization

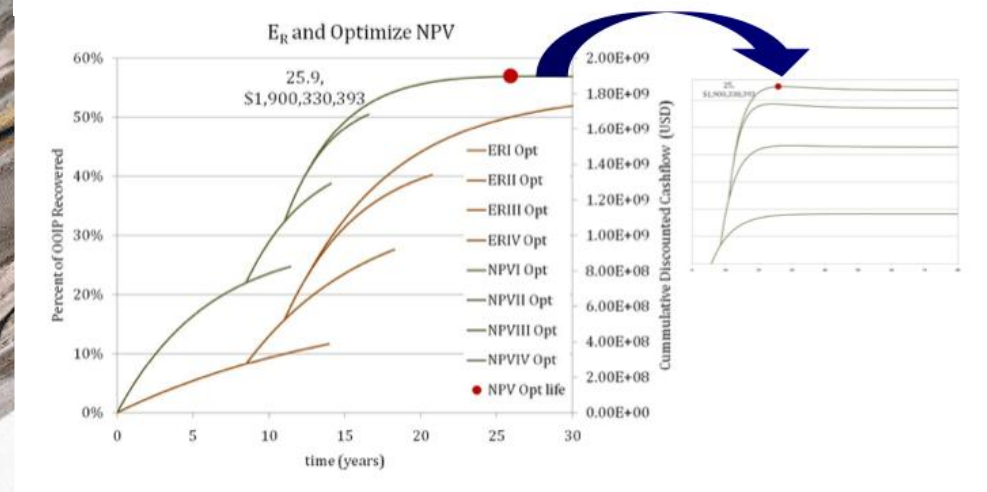
Lower unit operating cost over time

**Early Integrated Optimization:  
Up to 2X NPV**

## Myopic (step by step) optimization



## Early Integrated Optimization: up to 2X NPV



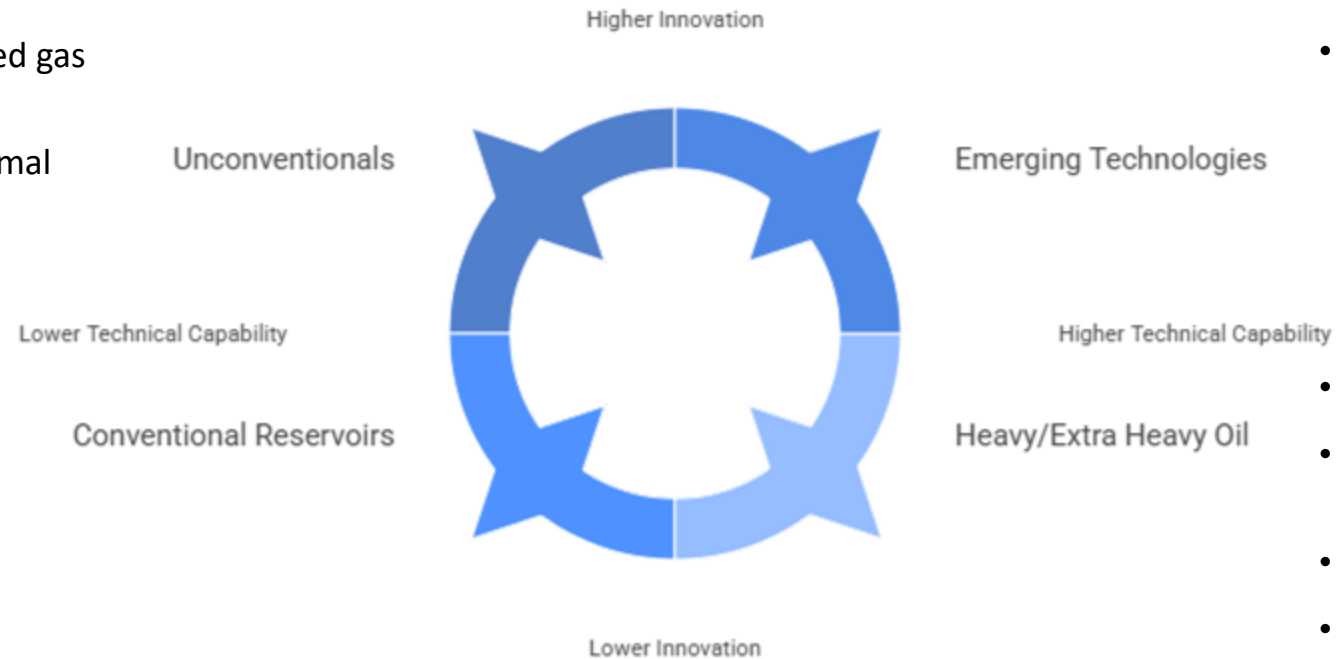
Source: A Life Cycle Optimization Approach to Hydrocarbon Recovery

Larry W. Lake & Cristina Parra Sanchez Dissertation Thesis – UT Austin

# Integrated Technical Capabilities Customized for Every Reservoir System

- Huff-&-Puff gas injection
- Ethane injection
- Thermal methods
- Surfactant-enhanced gas injection
- Enhanced Geothermal Systems (EGS)

- CO2 injection
- Gas injection
- Polymer flooding
- Surfactants
- Foam mobility control



- Hybrid thermal-chemical methods
- In-situ thermal conversion
- Integrated geothermal concepts
- Advanced Energy Recovery analytics

- Steamflood
- Steam Assisted Gravity Drainage (SAGD)
- Cyclic Steam Injection
- In Situ Combustion (ISC)
- Cold Heavy Oil Production with Sand (CHOPS)

# Shale EOR Technology Innovation

*Advanced Recovery for Unconventional Reservoirs*

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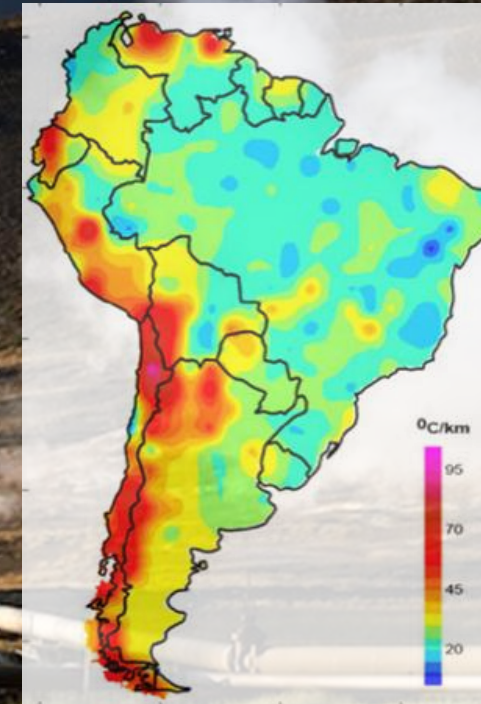
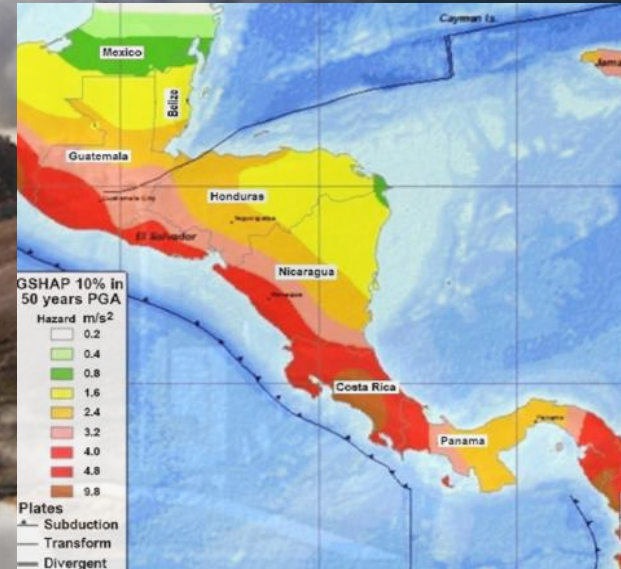
## **US patents supporting advanced recovery applications**

- Proprietary and patented approaches for shale recovery enhancement
  - Expertise in gas injection and thermal recovery concepts
  - Integration of analytics, reservoir engineering, and operational execution
  - Focus on maximizing recovery from unconventional assets
  - **Cyclic Gas Injection with Surfactants** – U.S. Patent No. 11,834,942
  - **Cyclic Injection of Y-grade** – covered by U.S. Patent No. 11,795,371
  - **Enhanced Geothermal Systems** on depleted shale wells
- 



# Beyond EOR: Hydrogeothermal & Enhanced Geothermal Systems (EGS)

Broader/Total technical potential (including enhanced systems): Up to 50–70 GW, as referenced in IDB



Latin America has ~1.7 GW installed = a small fraction of its potential

- Mexico leads (~0.96–1 GW)
- Significant contributions from Central America (Costa Rica, El Salvador, etc.)
- Very limited development in South America (e.g., Chile ~48 MW)

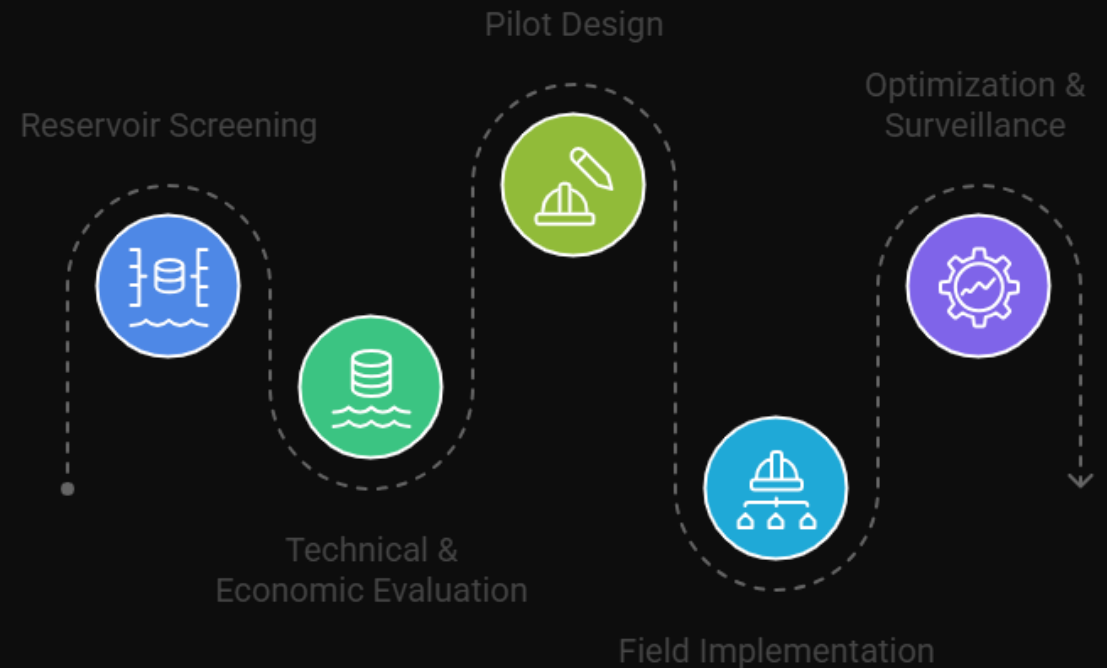
Energy Resource  
Evaluation | Project  
Development Services

# From Screening to Field Implementation

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## Supporting capabilities:

- Reservoir simulation
  - Production engineering
  - Facilities integration
  - Economics & NPV optimization
  - Digital analytics
  - Operational support
- 



# Flexible Advisory Model Engagement Models Scaled to Client Needs

## 1. Executive Assessment Sessions

- One-week high-impact technical reviews
- Investment decision support
- EOR opportunity identification
- Recovery optimization workshops
- Strategic technical advisory

Executive  
Assessment  
Sessions



Full-Scale  
Development  
Support



Fast-Track Reservoir  
Screening



## 3. Full-Scale Development Support

- Reservoir simulation
- Pilot planning and implementation
- Facilities integration
- Surveillance and optimization
- Field-wide deployment support

## 2. Fast-Track Reservoir Screening

- Analytical and empirical methods
- Rapid candidate ranking
- Preliminary economics
- Pilot prioritization
- Data-driven opportunity framing

# Global Expertise Applied to the Americas

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- US & Canada with large HC accumulations ready for Advanced Energy Recovery
  - Venezuela heavy oil (largest in the world)
  - Colombia thermal recovery
  - Vaca Muerta unconventional opportunity
  - Mexico, Brazil with large CO<sub>2</sub> Injection potential
  - Mature conventional assets across Latin America (Peru, Ecuador)
  - Brownfield optimization across the continent
  - Infrastructure-constrained operating environments
  - Geothermal Enhanced Systems throughout
- 



## Advanced Energy Recovery Team

*World-Class EOR+ Advisory  
Focused on Maximizing Client  
Value*



**Larry W. Lake**

Austin, Texas  
Chemical Engineering / PhD

Recognized globally as one of the foremost experts in Enhanced Oil Recovery (EOR), Dr. Lake combines decades of academic leadership with direct industry impact in advanced recovery technologies. Professor at The University of Texas at Austin, member of the U.S. National Academy of Engineering, recipient of the SPE/DOE IOR Pioneer Award, and author of foundational EOR textbooks and more than 150 technical papers, he provides world-class technical advisory to complex reservoir recovery challenges



**Ivan E. Terez**

Houston, Texas  
Petroleum Engineering / PhD Geosciences / MBA

Recognized for his expertise in Enhanced Oil Recovery (EOR), unconventional resources, and advanced geothermal systems, Dr. Terez combines deep technical knowledge with broad international upstream experience. Ivan has held technical and advisory leadership roles at Chevron, Eni, and Casa Exploration LP across Latin America, the Gulf of Mexico, the North Sea, Kazakhstan, Ukraine, Russia, and Indonesia. He provides world-class technical advisory in advanced recovery technologies, unconventional development, and emerging geothermal applications.

# Advanced Energy Recovery Team

*World-Class EOR+ Advisory  
Focused on Maximizing Client  
Value*



**Dr. Kenneth Kibodeaux**  
Houston, Texas  
Petroleum Engineering / PhD

Recognized for his expertise in Enhanced Oil Recovery (EOR), unconventional reservoirs, and advanced recovery technologies, Dr. Kibodeaux combines deep technical knowledge with decades of international industry experience. Dr. Kibodeaux has held technology development and deployment leadership roles at Texaco, Shell, and Saudi Aramco, with global advisory experience spanning North America, Latin America, the Middle East, and Asia. He provides world-class technical advisory for complex reservoir recovery and unconventional developments.



**Dr. Myriam Juritz**  
Seattle, Washington  
Chem. Eng. / Doctor of Petroleum Engineering / Management Consulting

Recognized for her expertise in reservoir engineering, integrated reservoir management, and Enhanced Oil Recovery (EOR), Dr. Juritz combines deep technical capability with broad international management consulting experience. An independent petroleum and management consultant and former lecturer at Texas A&M University, she has advised leading energy and consulting organizations including Accenture, Oliver Wyman, Arthur D. Little, and INTEC Engineering. She provides world-class technical and strategic advisory for complex reservoir and organizational performance challenges.



**Dr. Aura Araque-Martinez**  
Houston, Texas  
Reservoir Engineering and EOR Capability / PhD

Recognized for her expertise in reservoir engineering, chemical EOR, and advanced recovery technologies, Dr. Araque-Martinez brings more than 30 years of international technical experience across conventional and unconventional reservoirs. Her work includes reservoir simulation, miscible gas injection, thermal recovery, CO<sub>2</sub> storage, and water chemistry flow modeling. Holder of a PhD in Petroleum Engineering from The University of Texas at Austin, she provides world-class technical advisory for complex reservoir recovery challenges.

Broad suite of value-chain services, from seismic to renewables to data analytics to M&A

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