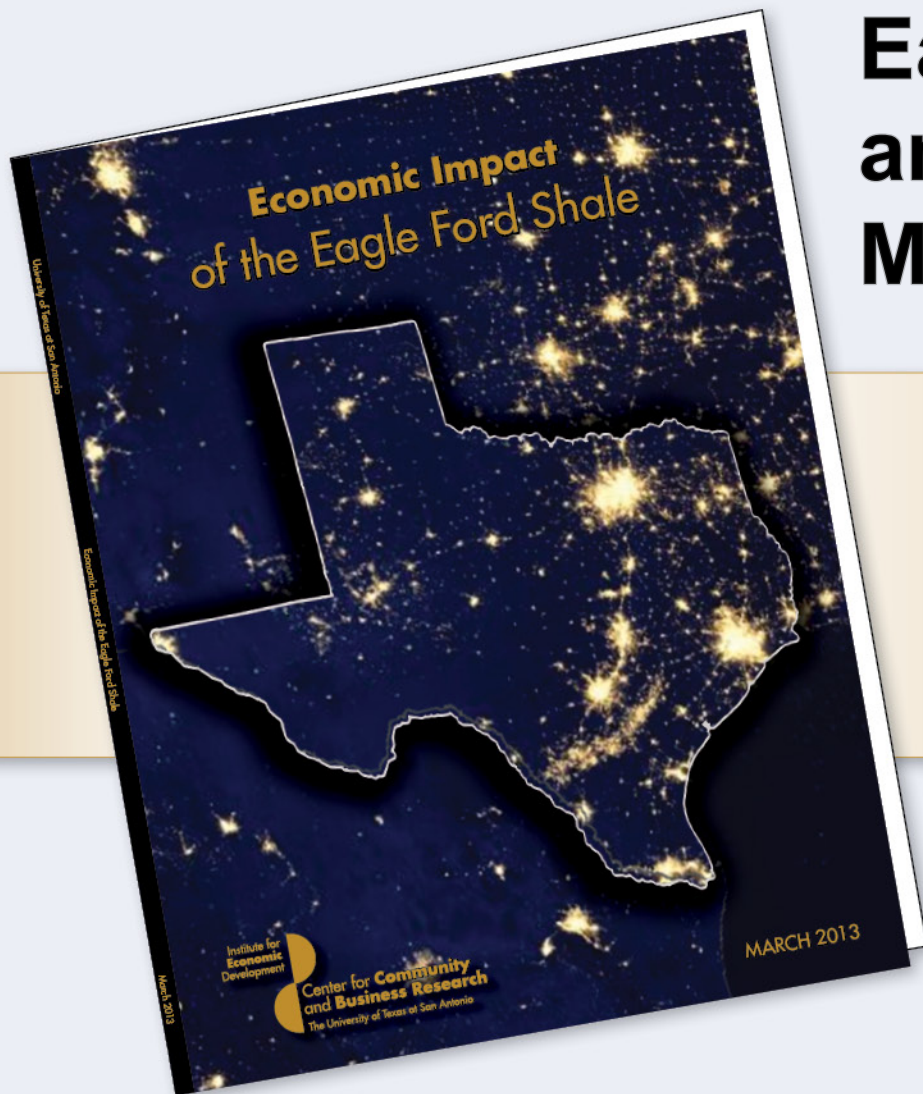


2012 FINDINGS

Economic Impact of the Eagle Ford Shale and Implications for Mexico



Principal Investigator: Thomas Tunstall, Ph.D.

Lead Investigator: Javier Oyakawa, M.A., M.Sc.

Researchers: Sherylynn Roberts, Ph.D., Hisham Eid, Ricardo Abalos, Ting Wang, Emiliano Calderon and Karla Melara.

The authors would like to thank research assistants Karina Juarez, Shayne Calhoun, Sylvana Bortol, Rayza Perales, Storm Wald, Emmanuel Tomes, Feihua Teng, Paola Conti and Angélique De Oliveira.

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University of Texas at San Antonio Institute for Economic Development

- Eagle Ford Shale Community Development Program (14 Counties in South Texas)
- Small Business Development Centers - SBDC (79 Counties in South Texas)
- Rural Business Program (79 Counties in South Texas)
- Procurement Technical Assistance Center (Texas)
- Veteran's Assistance Center (Texas)
- Southwest Trade Adjustment Assistance Center (TX, OK, LA)
- SBDC National Information Clearinghouse (National)
- Minority Business Center (National)
- **Community and Business Research (National, Int'l)**
- International Trade Center (Mexico, Central/South America, Caribbean, North Africa)

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UTSA - Emerging Tier 1 University

- **California: 9 Tier 1 Universities**
(Population 38 Million)
- **New York: 7 Tier 1 Universities**
(Population 19 Million)
- **Texas: Only 3 Tier 1 Universities**
(Population 26 Million)

2012 FINDINGS

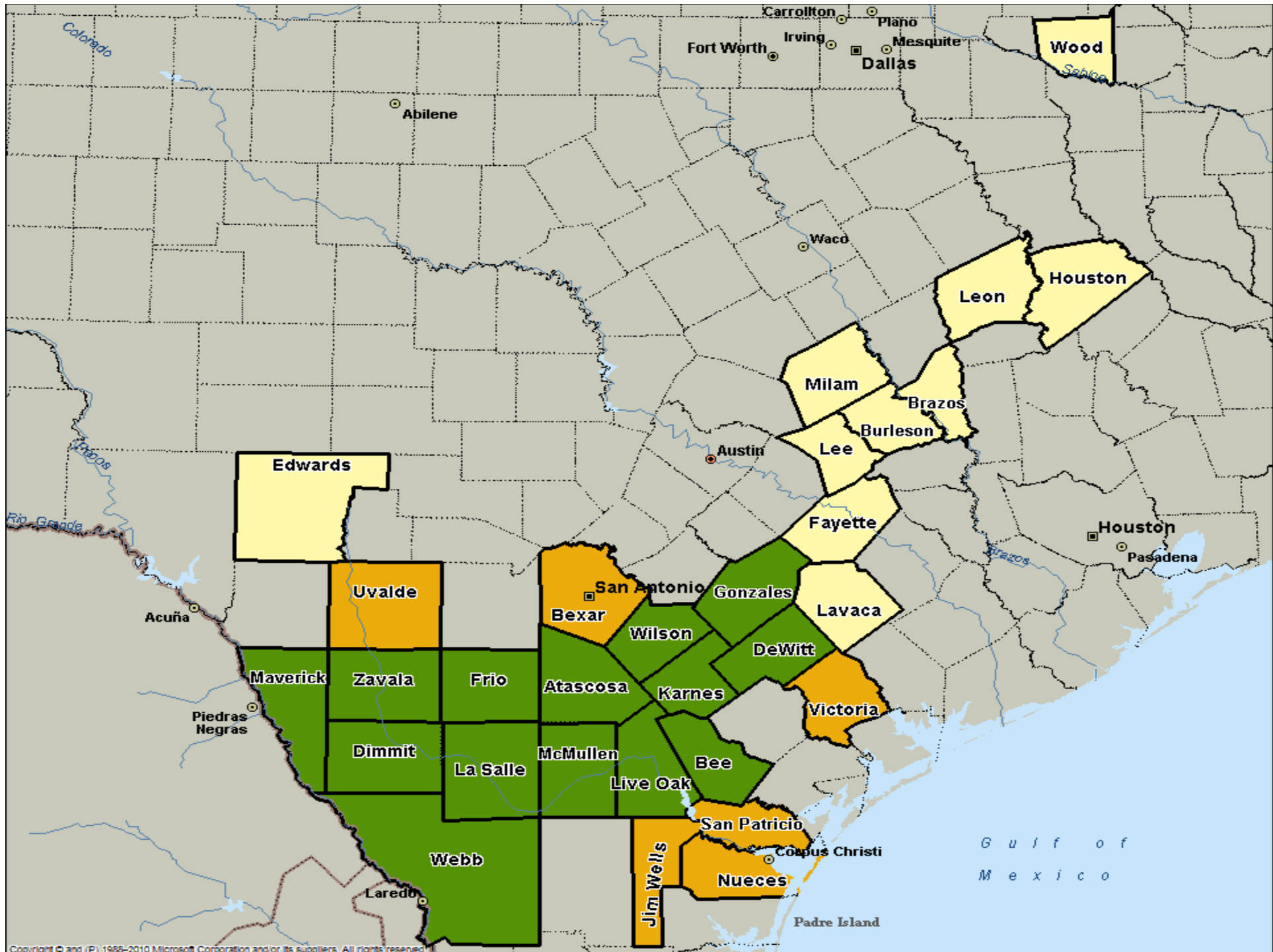


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UTSA Eagle Ford Shale Reports

- Preliminary Economic Impact (Feb 2011)
- Economic Impact Baseline Report (May 2012)
- Workforce Analysis (October 2012)
- Updated Economic Impact - March 26, 2013
Release at the State Capitol
- Next Release on September 23

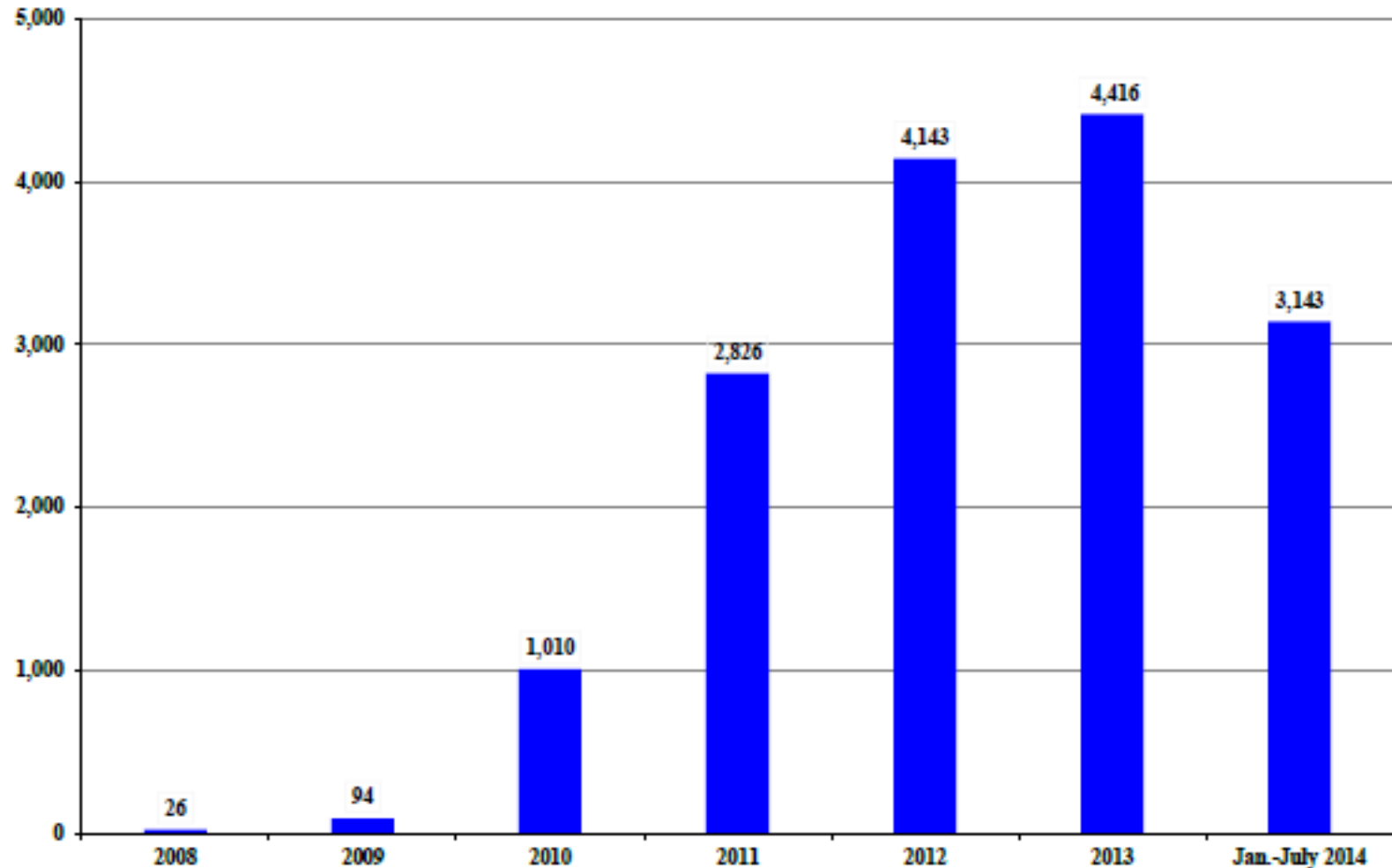
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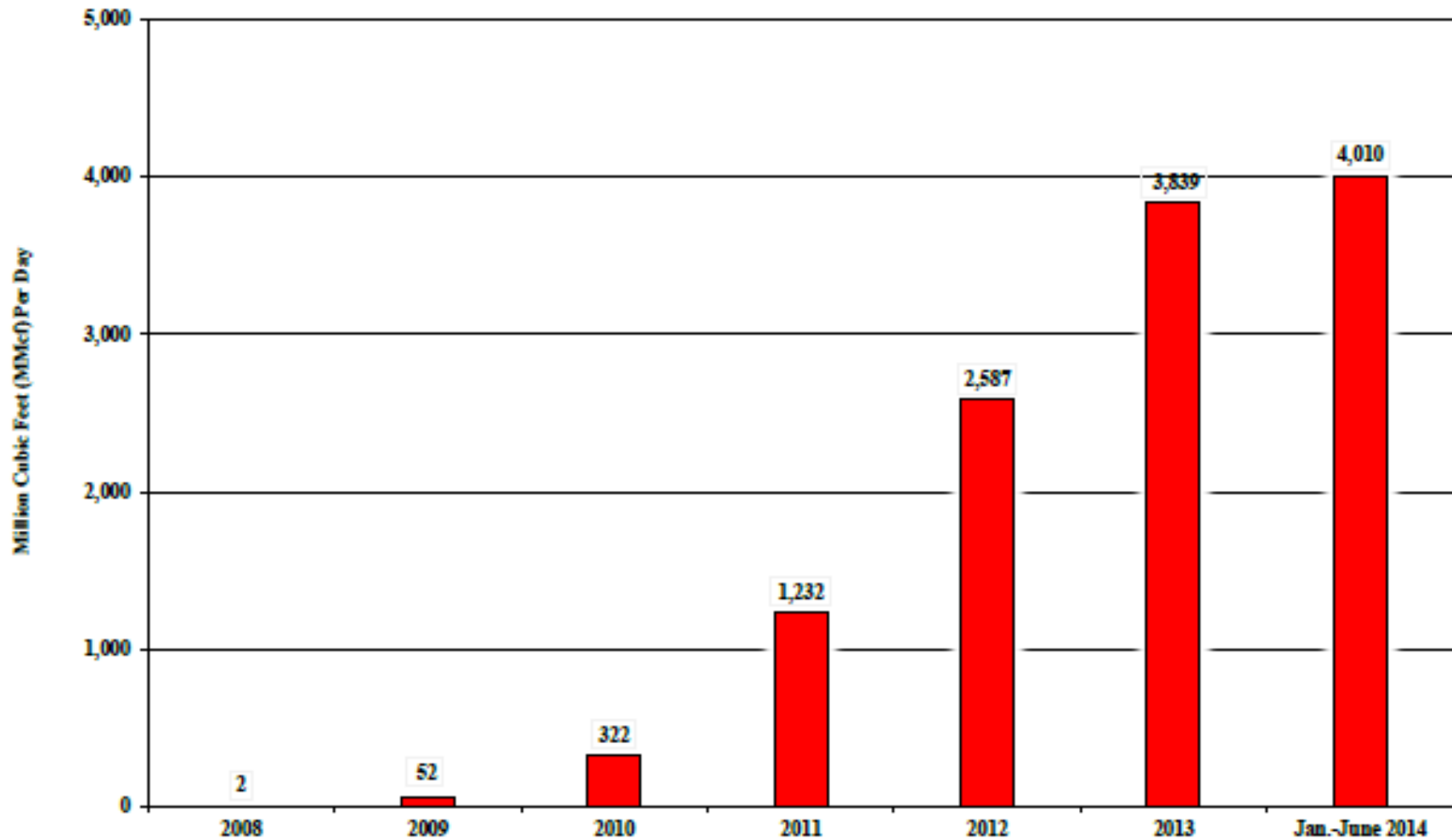
Texas Eagle Ford Shale Drilling Permits Issued 2008 through July 2014



08/04/2014

Source: Texas Railroad Commission DrillingPermitQuery(Includes New Drill & ReEnter Permits)

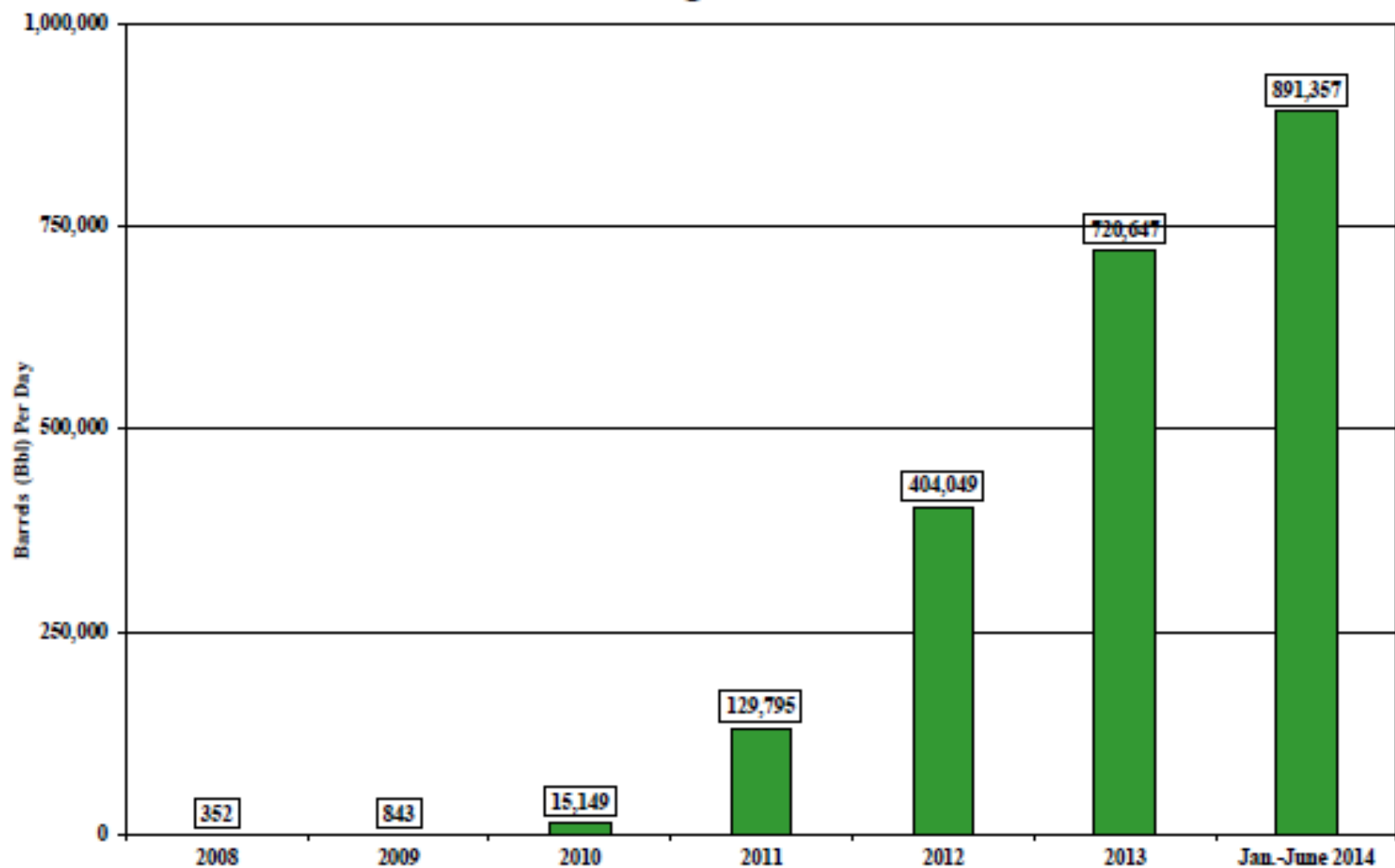
Texas Eagle Ford Shale Total Natural Gas Production 2008 through June 2014



08/19/2014

Source: Railroad Commission of Texas Production Data Query System (PDQ)

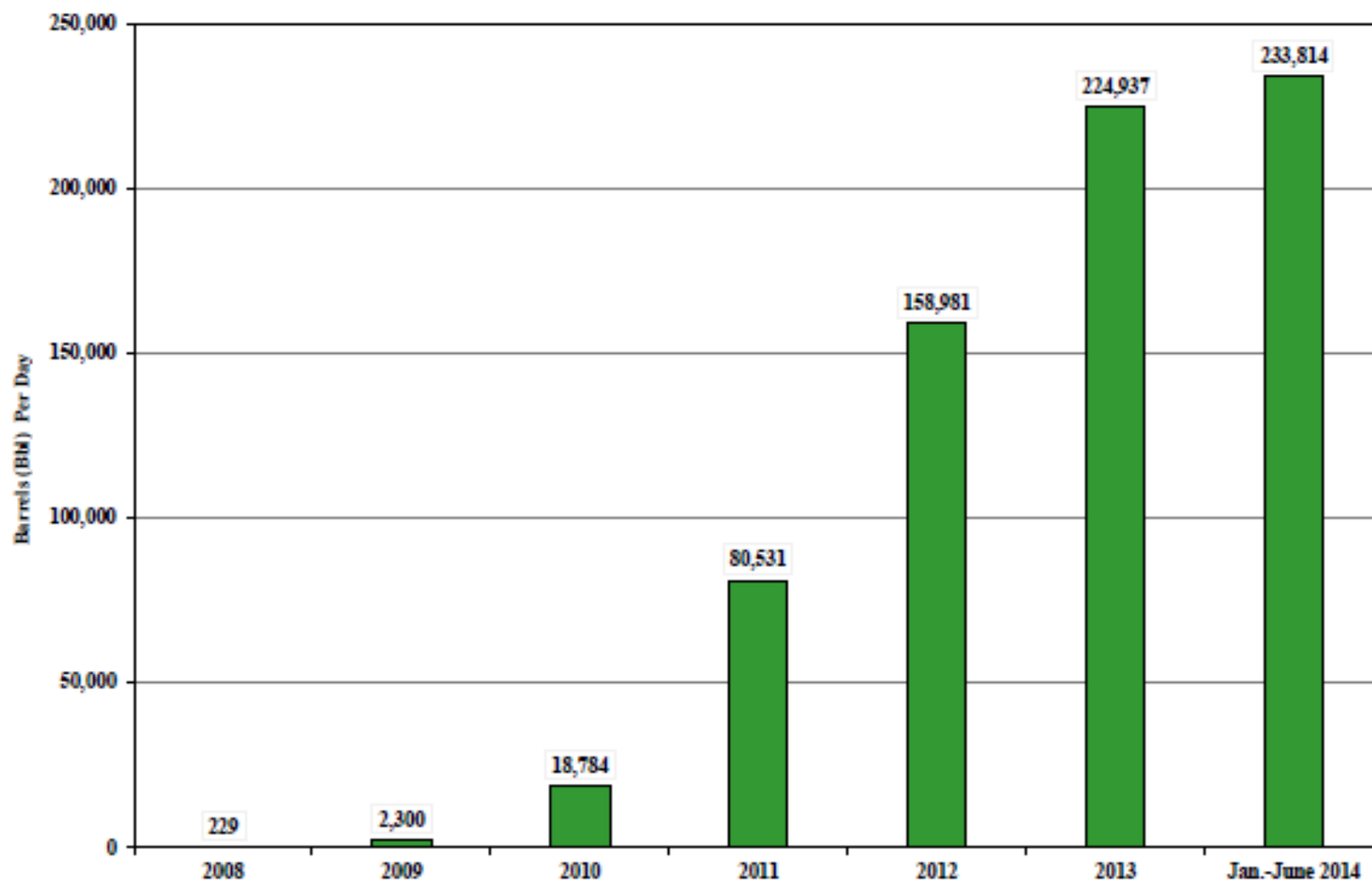
Texas Eagle Ford Shale Oil Production 2008 through June 2014



08/19/2014

Source: Railroad Commission of Texas Production Data Query System (PDQ)

Texas Eagle Ford Shale Condensate Production 2008 through June 2014



08/19/2014

Source: Railroad Commission of Texas Production Data Query System (PDQ)

Total Economic Output Impact in 2012 (20-County Study Region)

- Over \$61 billion in economic output (up from \$25B in 2011)
- Over 116,000 full-time jobs supported (up from 47,097 in 2011)
- Nearly \$4.7 billion in salaries and benefits paid to workers (up from \$3.1B in 2011)
- Over \$28 billion in gross regional product (up from \$12.63B in 2011)
- Over \$1.2 billion in state revenues (up from \$358 million in 2011)
- Over \$1 billion in local government revenues (up from \$257 million in 2011)

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Moderate Scenario Estimated Combined Impacts for 2022 (20-County Area)

- More than \$89 billion in total economic output
- 127,919 full-time jobs supported
- \$6.5 billion in salaries and benefits paid
- \$42.0 billion in gross regional product
- \$2.2 billion in state revenues
- \$2.1 billion in local government revenues

2012 FINDINGS

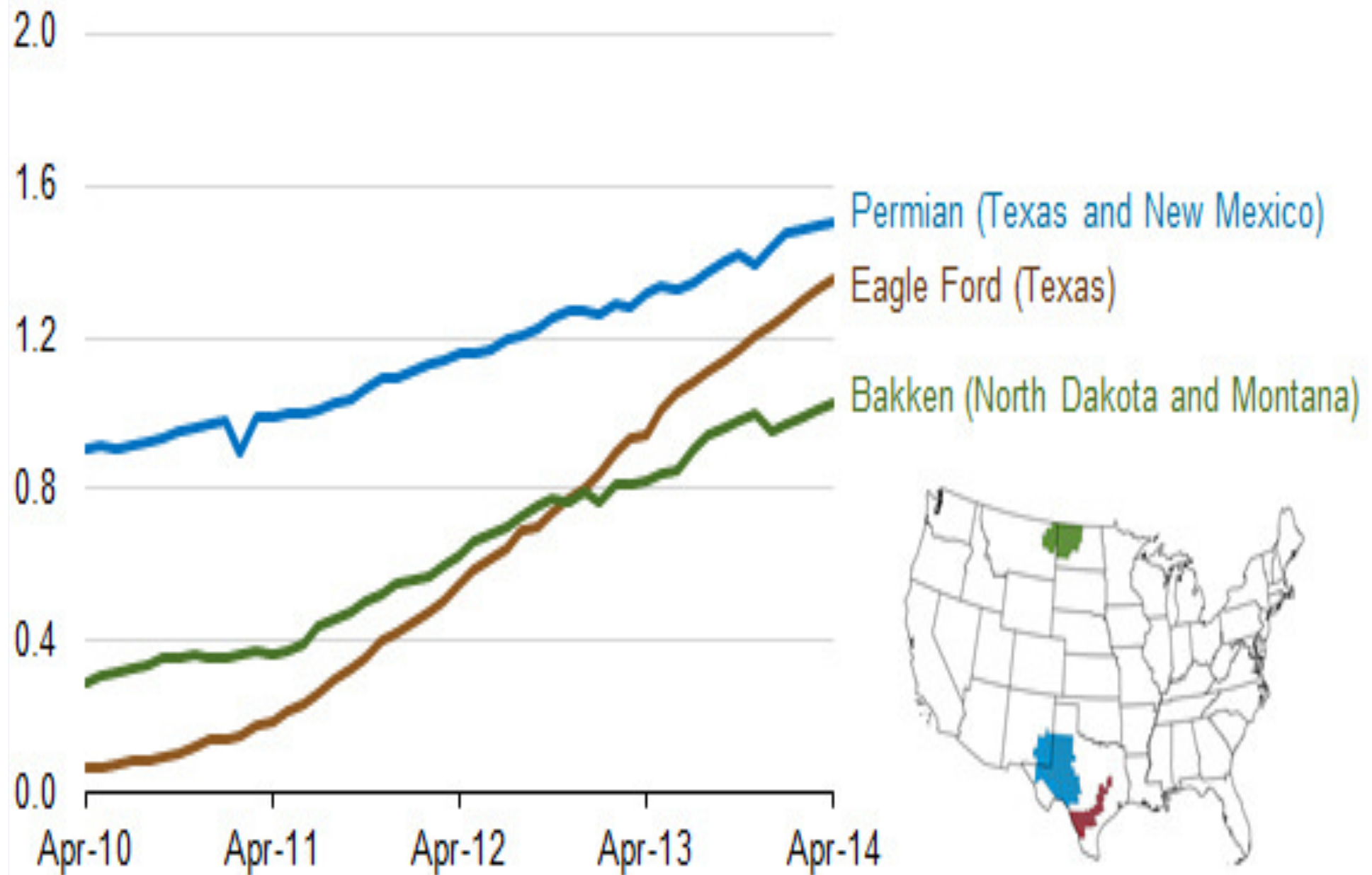


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Crude oil production at select formations (April 2010-April 2014)

million barrels per day



Heading to the Coast

New pipelines will bring more of the Midwest and West Texas oil boom to Gulf Coast refineries.



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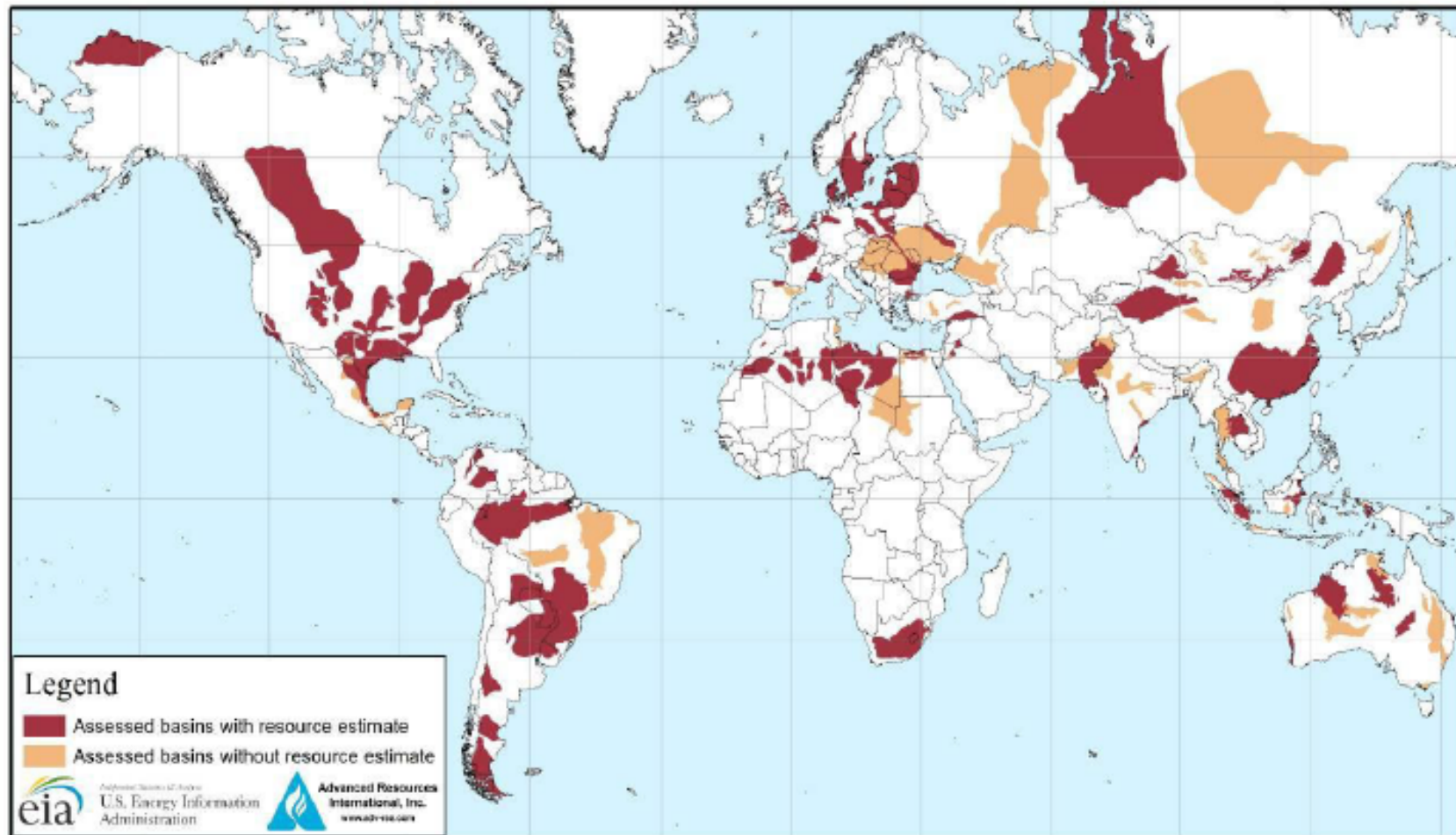
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Source: the companies
The Wall Street Journal

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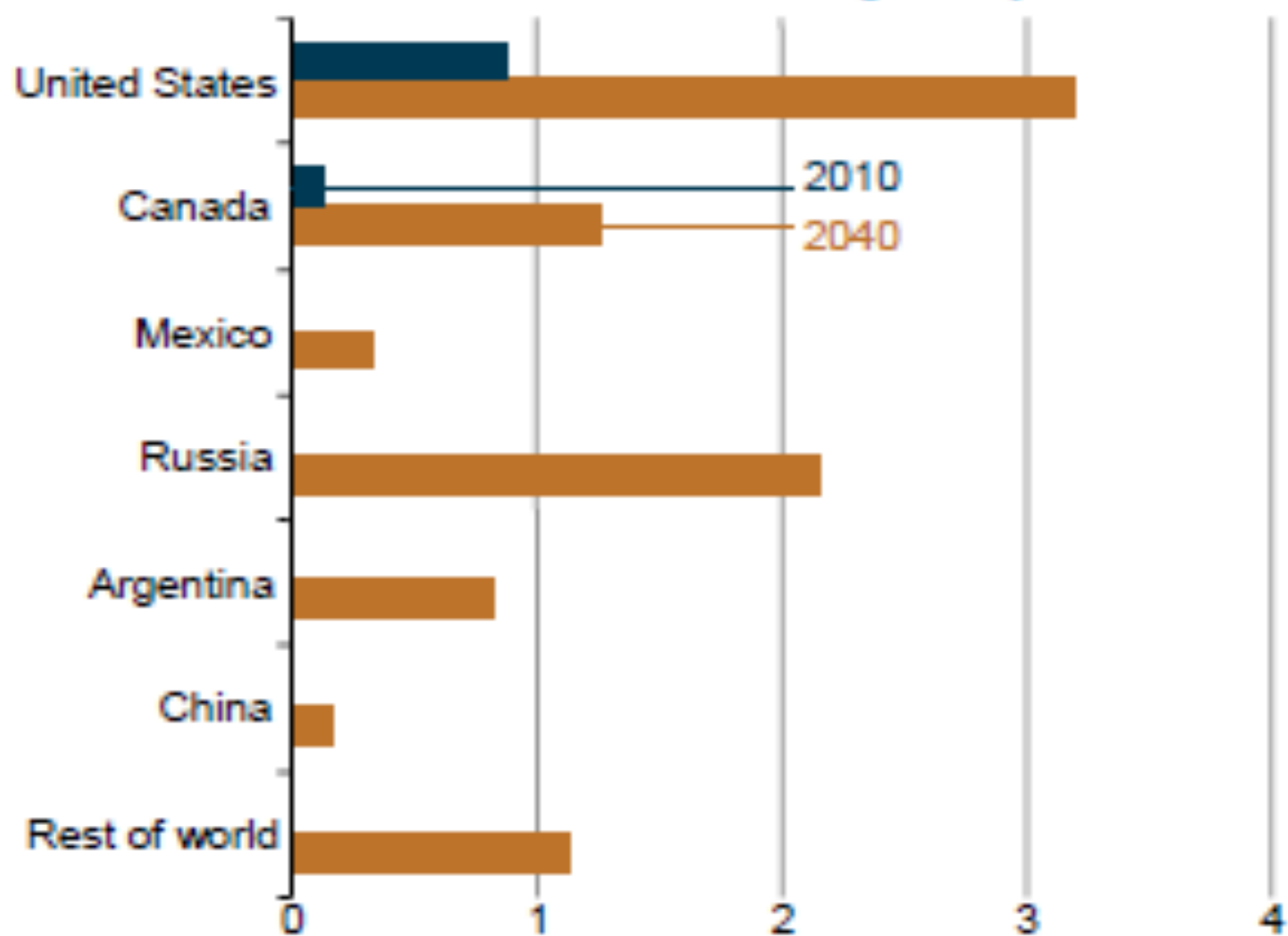
Shale oil and gas have the potential to dramatically alter world energy markets

map of basins with assessed shale oil and gas formations, as of May 2013



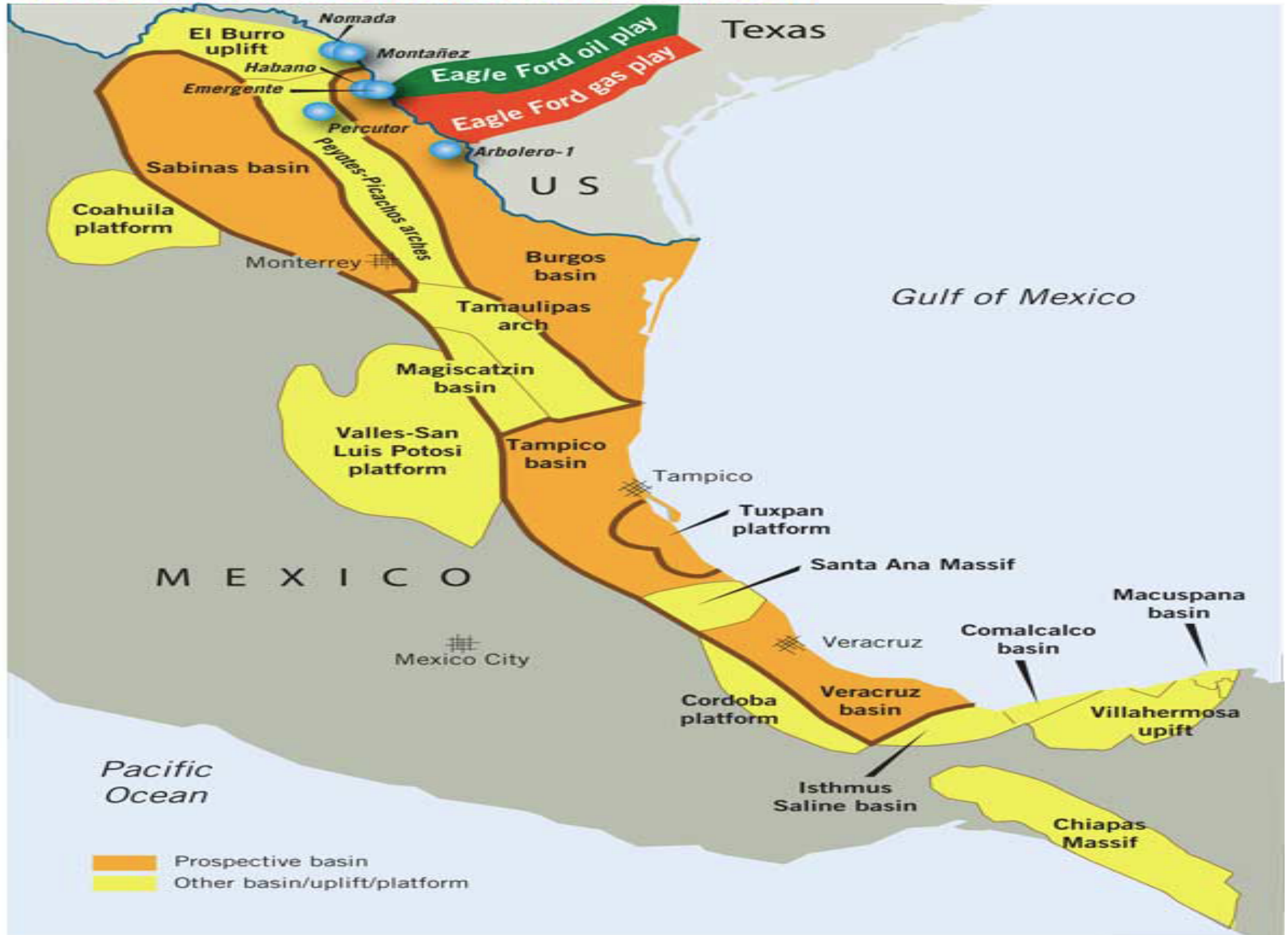
Source: United States: EIA and USGS; Other basins: ARI

Figure 2. World tight oil production in the Reference case, 2010 and 2040 (million barrels per day)





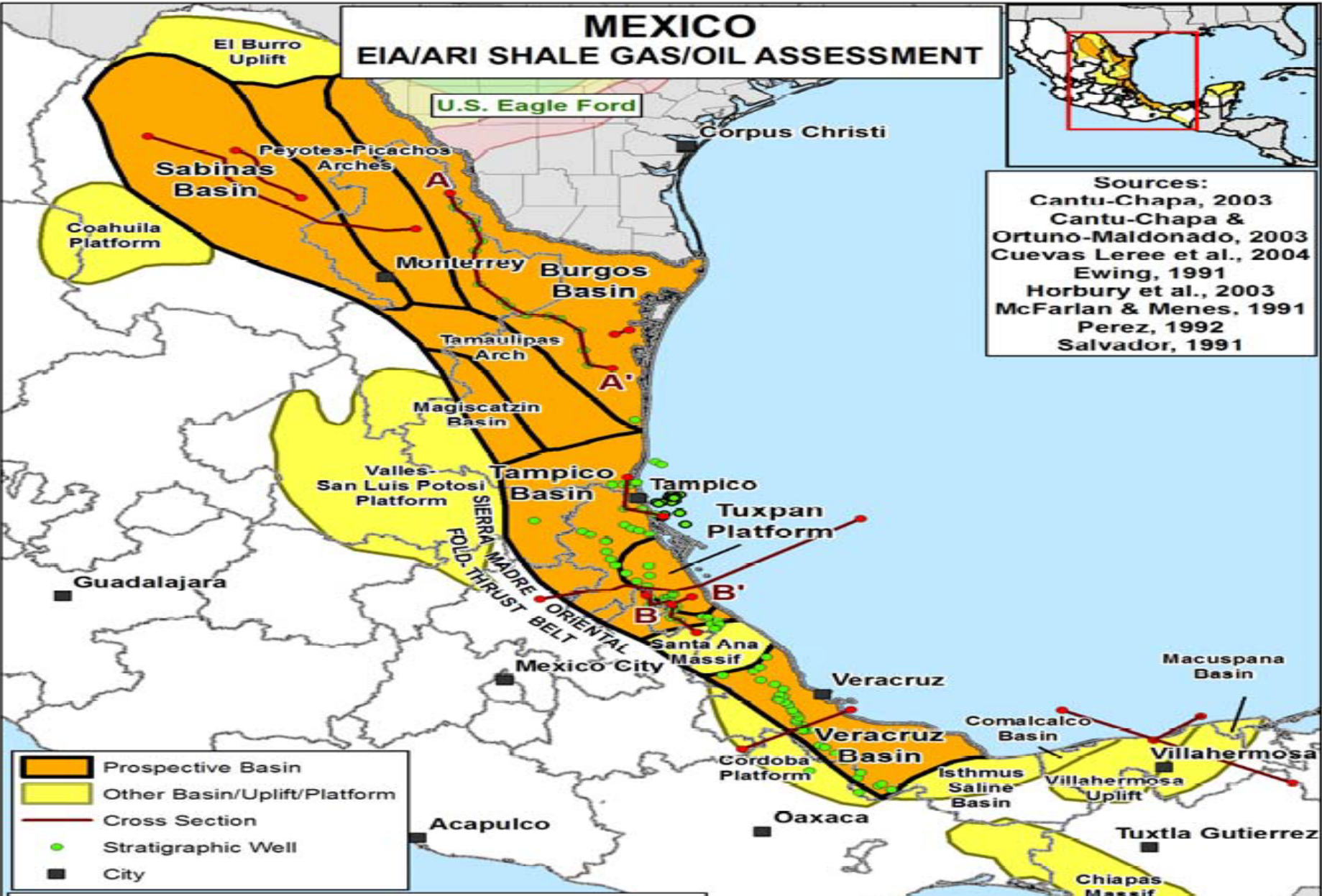
PROSPECTIVE SHALE BASINS OF EASTERN MEXICO



MEXICO EIA/ARI SHALE GAS/OIL ASSESSMENT

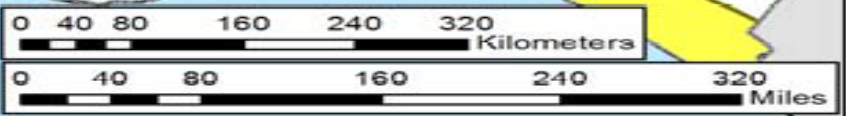


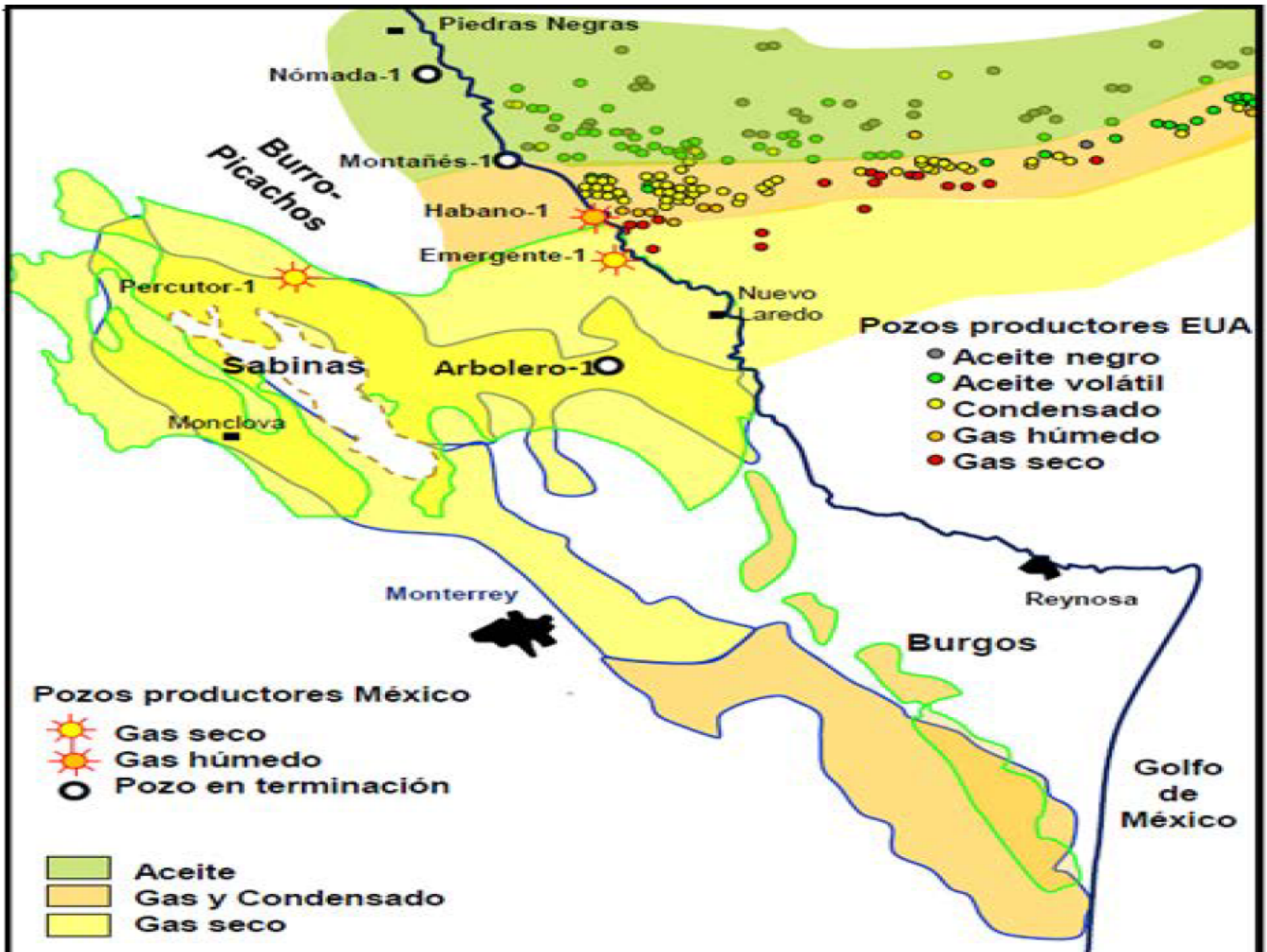
Sources:
 Cantu-Chapa, 2003
 Cantu-Chapa &
 Ortuno-Maldonado, 2003
 Cuevas Leree et al., 2004
 Ewing, 1991
 Horbury et al., 2003
 McFarlan & Menes, 1991
 Perez, 1992
 Salvador, 1991



- Prospective Basin
- Other Basin/Uplift/Platform
- Cross Section
- Stratigraphic Well
- City


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 Scott Stevens sstevens@adv-res.com
 Keith Moodhe kmoodhe@adv-res.com





Implications of Mexican Energy Reform

- New exploration, drilling and operational economic impact
- Related midstream development (pipeline and storage) impact
- Results of rulemaking process
- Infrastructure issues
- Security issues
- Workforce needs
- Landowner issues
- Doing business with PEMEX

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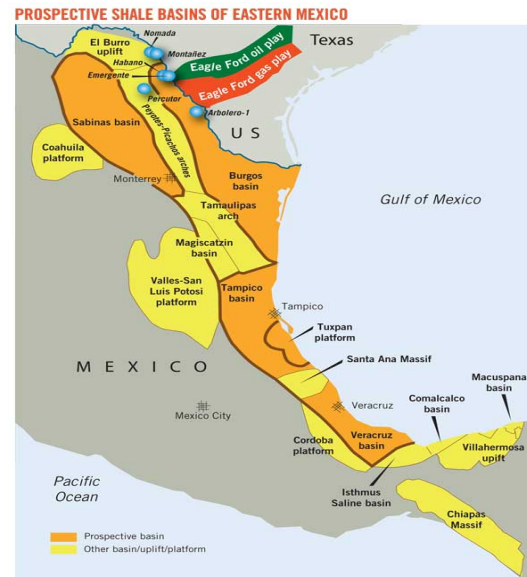


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Scope of Mexico Study

Economic Impact Study About the Opening of the Energy Sector in Mexico in the Northern States of Mexico, Including Legal Analysis of the Reform and a Guide on How to do Business in the Energy Sector in Mexico



COMITE BINACIONAL DE ENERGIA
BI-NATIONAL ENERGY COMMITTEE



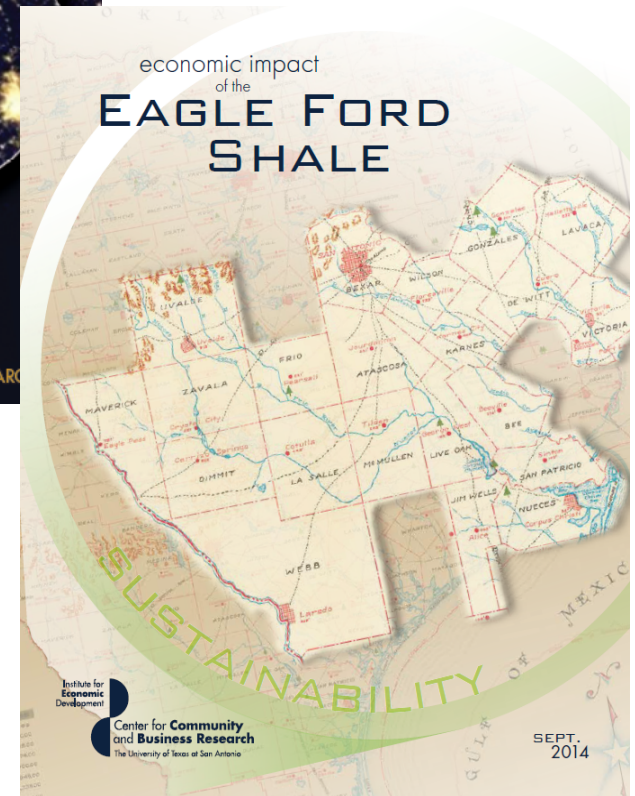
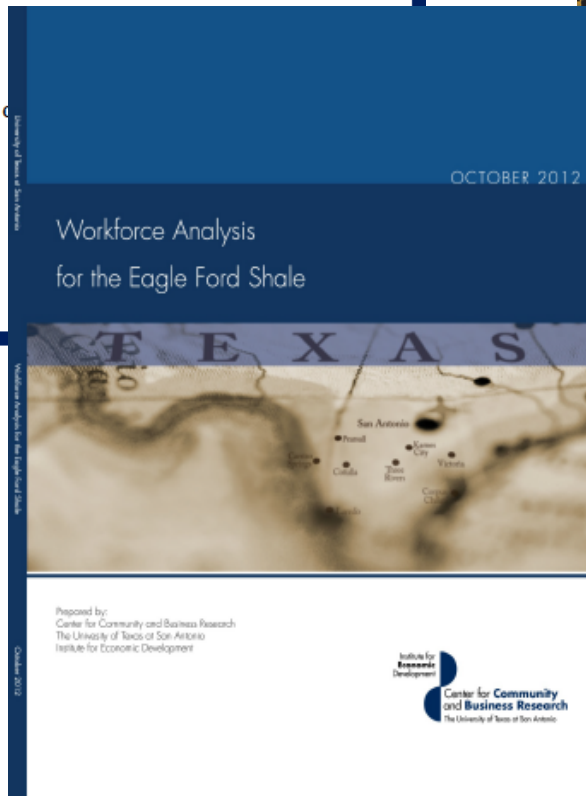
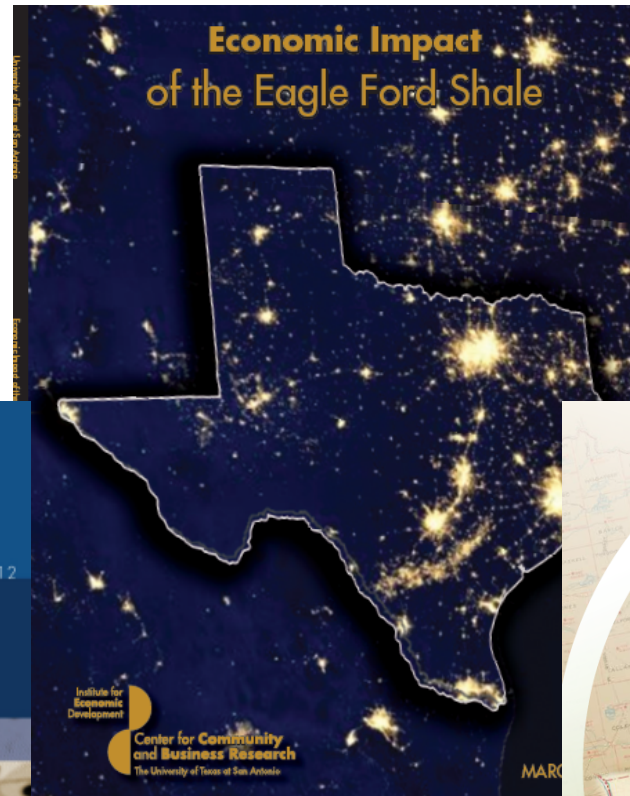
ECONOMIC IMPACT
STUDY

ONLINE PLATFORM
CONNECT B2B WITHIN
ENERGY SECTOR IN
MEXICO AND TEXAS

LEGAL ANALYSIS

BUSINESS ROADMAP
ON HOW TO DO
BUSINESS IN THE
ENERGY SECTOR

Previous Experience in Texas



GEOGRAPHICAL SCOPE OF THE STUDY

GEOLOGICAL
PROVINCES OF
Sabinas

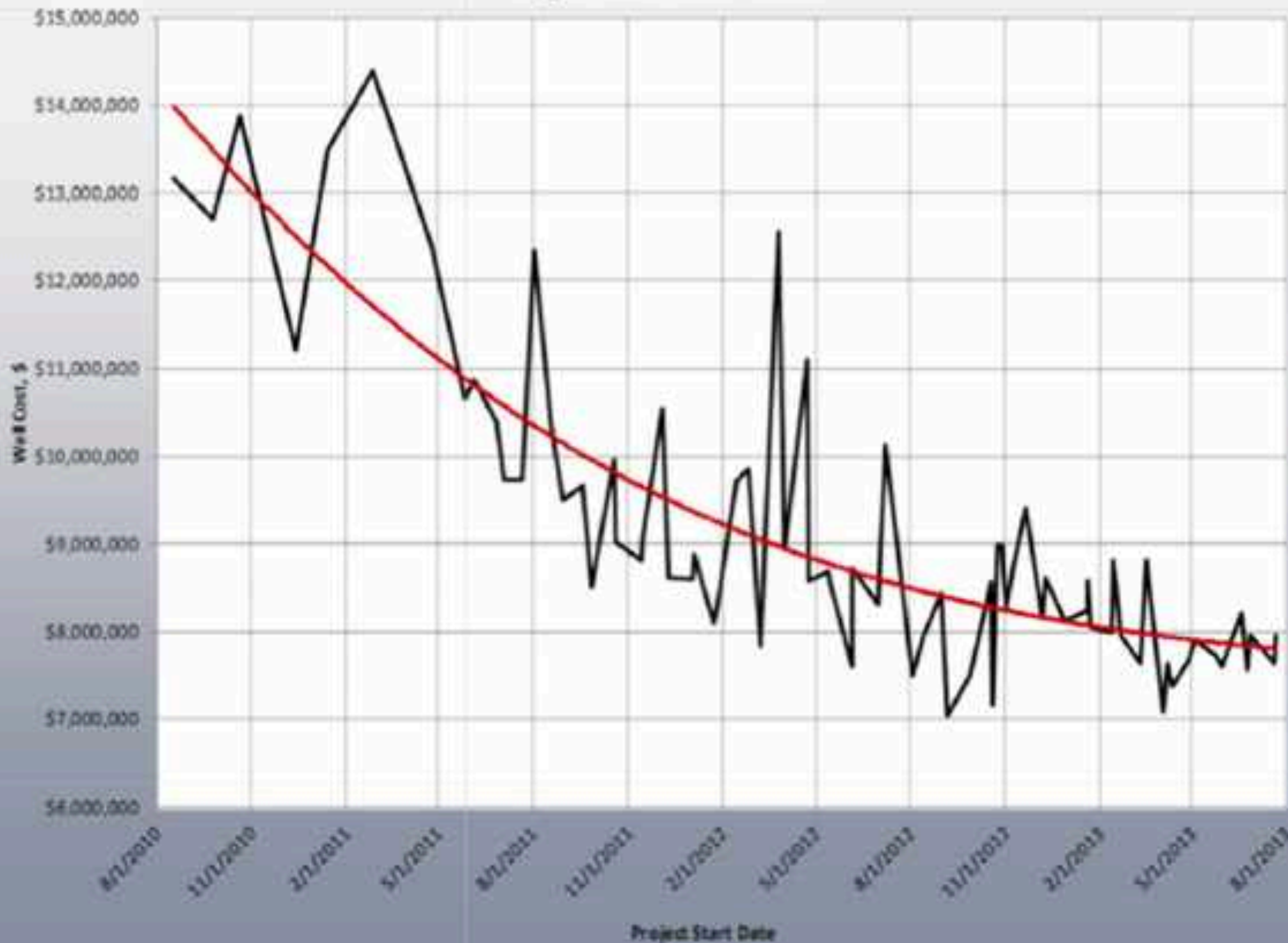
Tampico-Misantla
Burgos
Burro Picachos
Veracruz

STATES OF

COAHUILA
NUEVO LEON
SAN LUIS POTOSI
TAMAULIPAS
VERACRUZ







Eagle Ford Well Costs



EOG Resources

Big Fields Get Bigger

Maximizing NPV of the Eagle Ford

	April 2010	Feb 2012	Feb 2013	Feb 2014
				
Wells/Section (Unit)	5	10	10 - 16	16
Spacing Acres/Well	130 Acres	65 Acres	40-65 Acres	≈40 Acres
Est. Reserves/Well, NAR	320 MBoe	450 MBoe	400 MBoe	450 MBoe
Est. Reserves/640 Acres	1.6 MMBoe	4.5 MMBoe	6.4 MMBoe	7.2 MMBoe
CWC/Well	\$5.25 MM	\$6 MM	\$6 MM	\$5.5 MM
Direct ATROR*/Well	80%	130%	100%	100%+
NPV10/640 Acres	\$23 MM	\$69 MM	\$98 MM	\$114 MM
Total Net Potential Resource	0.9 BnBoe	1.6 BnBoe	2.2 BnBoe	3.2 BnBoe

* See reconciliation schedule.

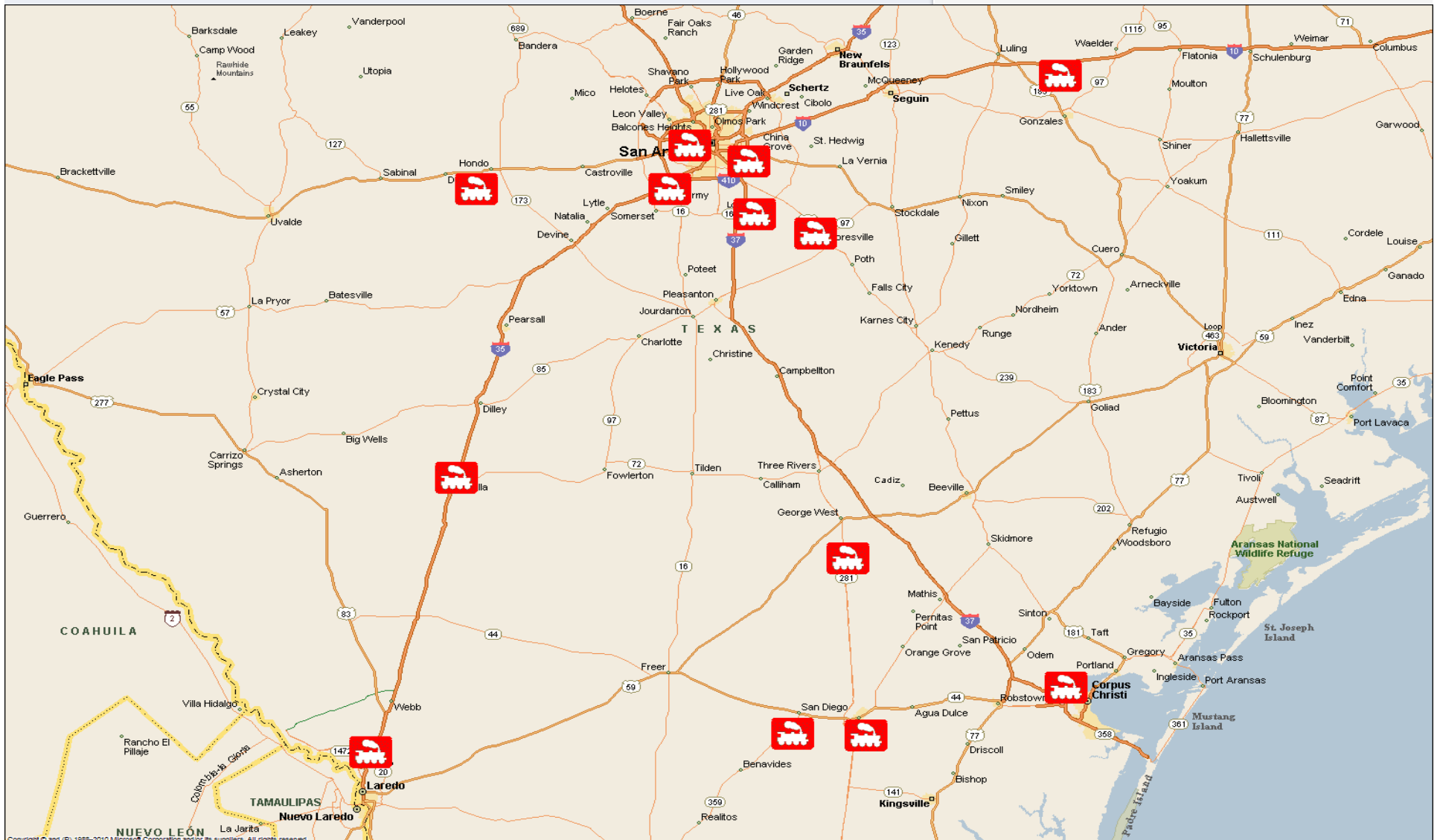


eog resources

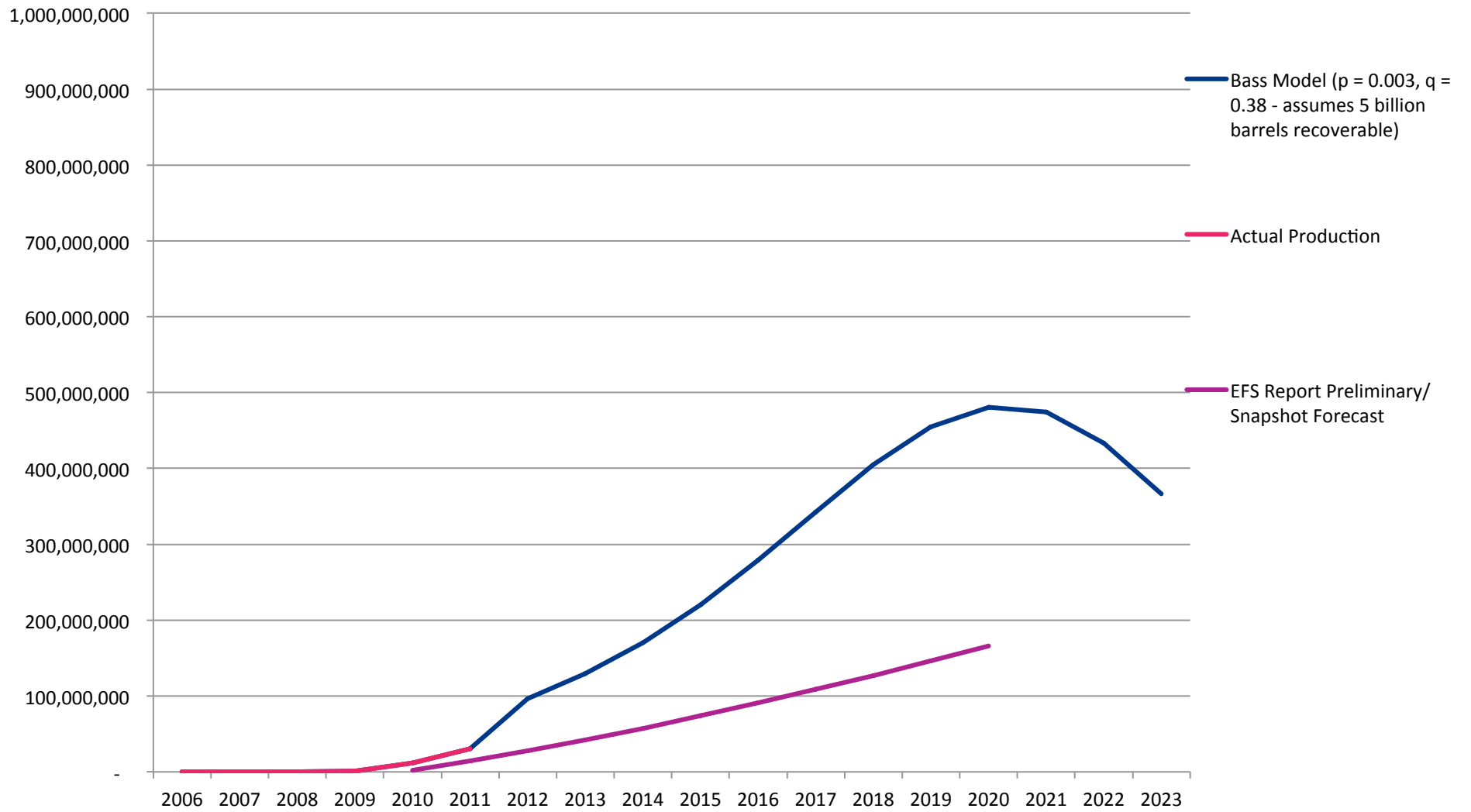
EOG_0214 v2-21

New and Expanded Rail Projects in the Eagle Ford

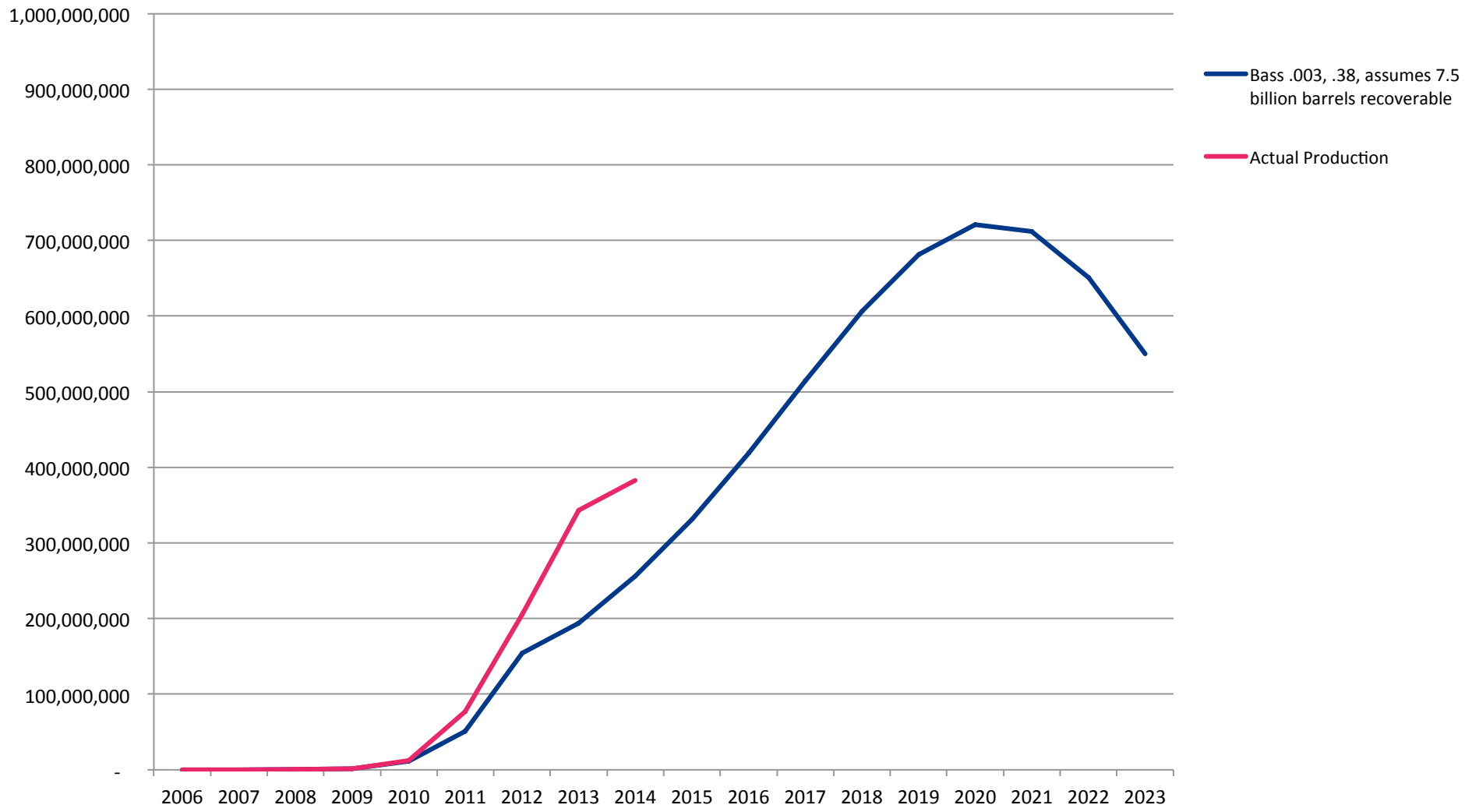
Rail can move one ton 500 miles on one gallon of fuel



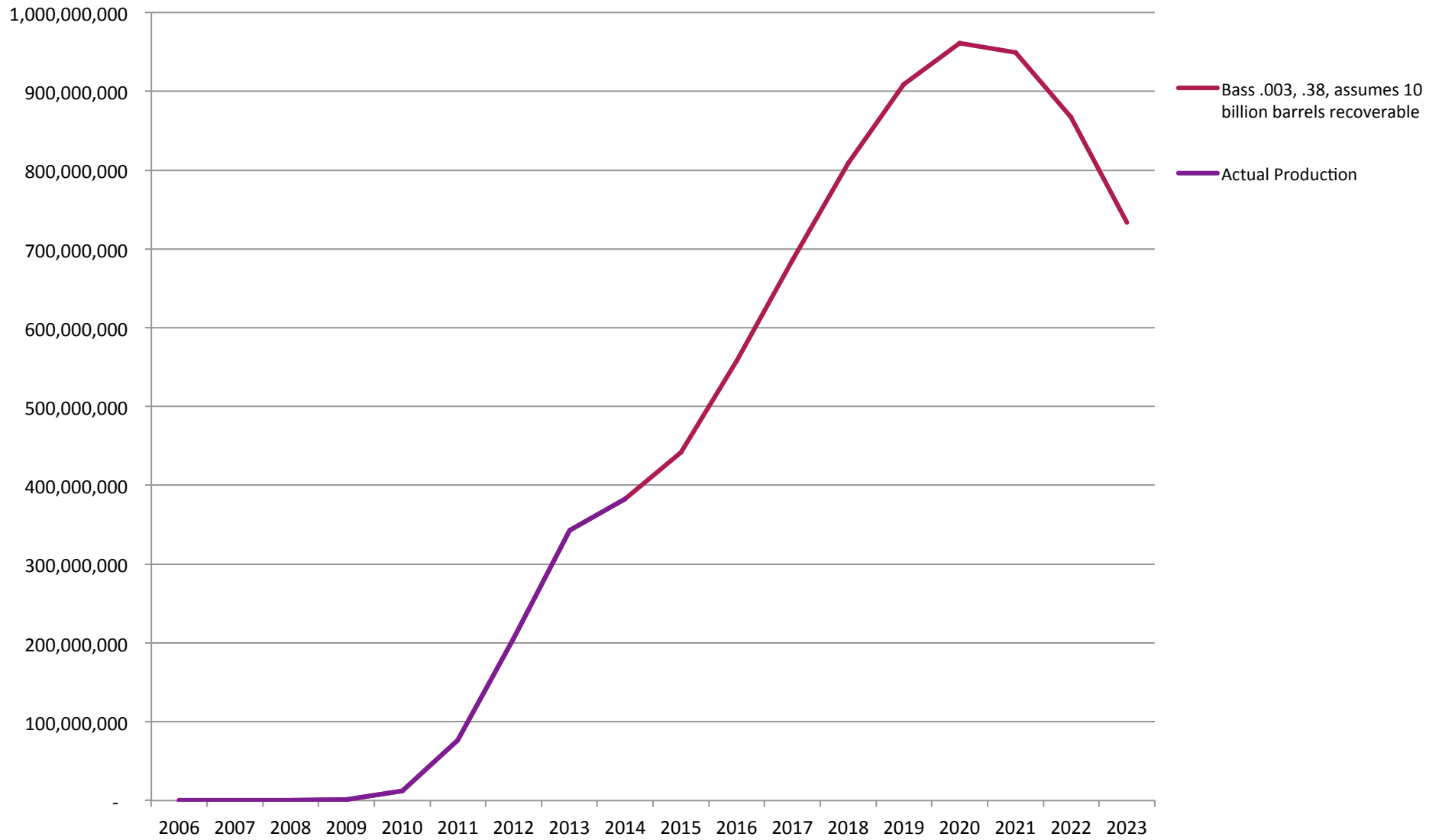
Eagle Ford Oil and Gas Production (2012)



Eagle Ford Oil and Gas Production (2013)



Eagle Ford Oil and Gas Production (2014)



Community Implications for Mexico Energy Reform: Sustainable Infrastructure for Landowners

- **Better Roadways**
- **Improved Medical Facilities**
- **Broadband Networks**
- **More Housing Options**
- **Adequate Water and Power Supply, Improved Waste Management**
- **Better Quality K-12 and Vocational Education**
- **Improved Aesthetics, Elimination of Blight, Land Recycling**
(Bulldozing Derelict Houses, Cleaning Up Junkyards; Renovation and/or Repurposing of Historical Buildings)
- **Branding: Identity, Gateways**
- **Livability: Public Amenities that Improve the Desirability of the Community and Quality of Life** (Lakes, Parks, Hike/Bike Trails, Walk-able Neighborhoods)

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Thank you!

Eagle Ford Shale and Implications for Mexico

**Thomas Tunstall, Ph.D., Javier Oyakawa, M.A., M.Sc., Sheryllynn Roberts, Ph.D.,
Hisham Eid, Ricardo Abalos, Ting Wang, Emiliano Calderon and Karla Melara.**

Research Assistants Karina Juarez, Shayne Calhoun, Sylvana Bortol, Rayza Perales, Storm Wald, Emmanuel Tomes, Feihua Teng, Paola Conti and Angélique De Oliveira. Special assistance was also provided by Carter Keairns and Alan Dutton.

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