



Challenges for Developing Countries Engineering Workforce Growth: Expansion of the Mexican Oil and Gas Industry and Training for Engineers

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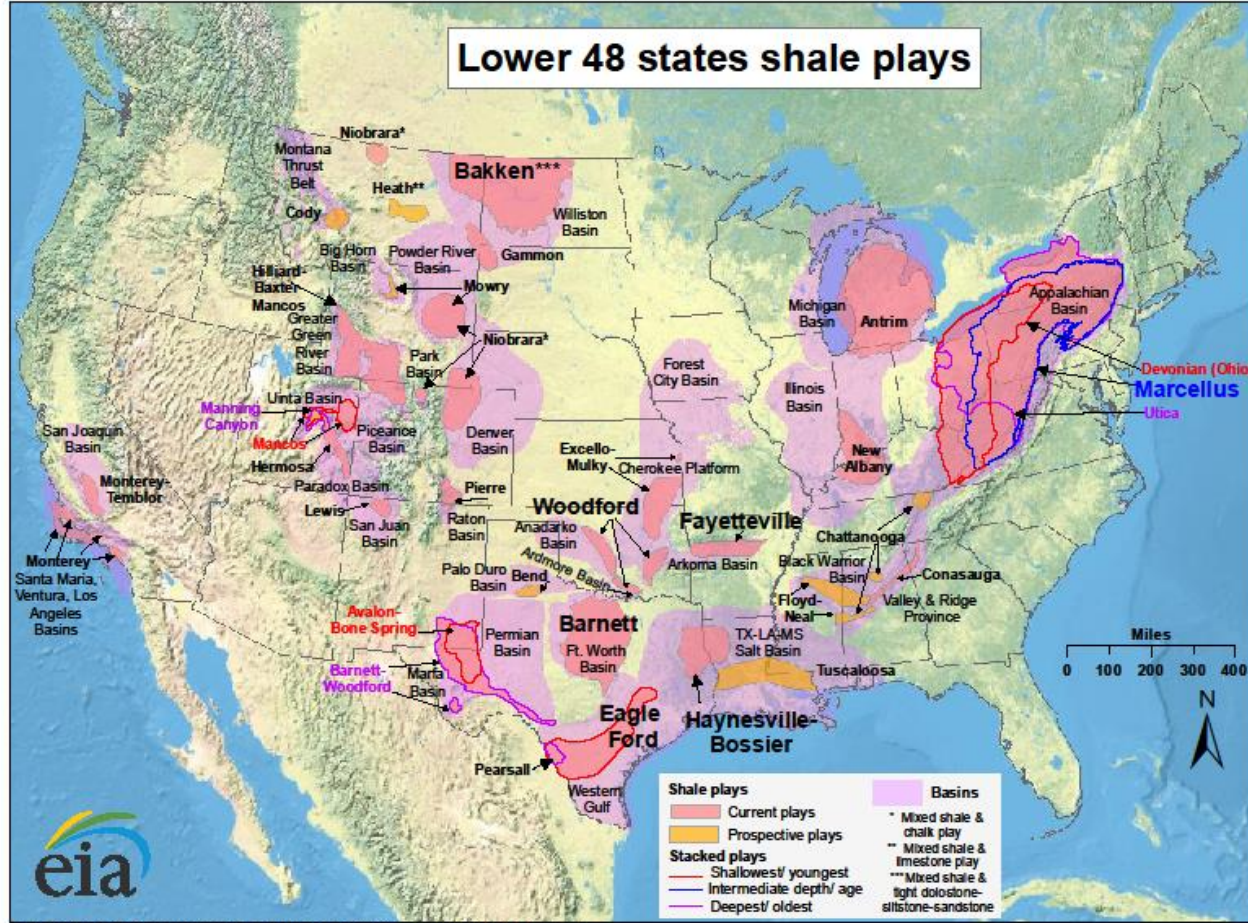
Department of Environmental Engineering

New reserves for the future

- ❖ Deep water - > 5,000 feet (1,500 m) of water depth
- ❖ Unconventional onshore – shale gas
- ❖ Both development scenarios require high tech and are costly
- ❖ The Mexican government (President Peña Nieto) and Petróleos Mexicanos (Pemex) opened the door to private investment in December 2013 for the first time since 1938

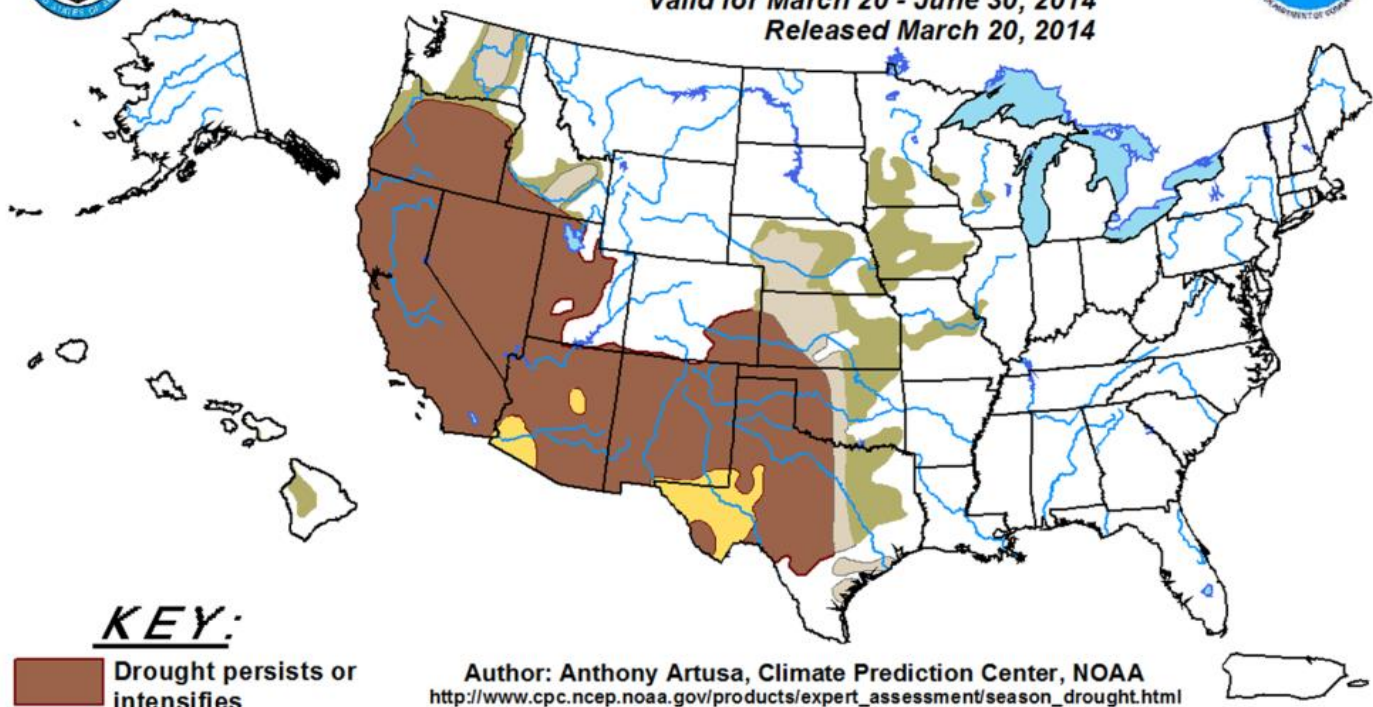
The future

- ❖ President Peña Nieto's new plan is for the long established Pemex to, in effect, cease to be a governmental agency and function more like a for-profit private venture
- ❖ However, the company is overstaffed with unskilled workers whose jobs are guaranteed for life and understaffed with engineers and skilled labor, according to Marcelo Mereles, a former Pemex Director
- ❖ Developing and training this new skilled workforce of engineers and technologists for the planned Mexican oil and gas industry expansion will need resource commitments from policymakers and educators at all levels









U.S. Seasonal Drought Outlook
Drought Tendency During the Valid Period
Valid for March 20 - June 30, 2014
Released March 20, 2014



KEY:

-  Drought persists or intensifies
-  Drought remains but improves
-  Drought removal likely
-  Drought development likely

Author: Anthony Artusa, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/season_drought.html

Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor. NOTE: The tan area areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain. The Green areas imply drought removal by the end of the period (D0 or none)

A modern engineering workforce is needed in Mexico

- ❖ This could be a 'game changing' opportunity
- ❖ New engineering and technology workforce will need
 - ❖ High quality faculty and managers
 - ❖ Some guarantee of life time employment
 - ❖ Competitive salaries
 - ❖ Career path in management and technology for new hires
 - ❖ Personal security requirements

Acknowledgments

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