

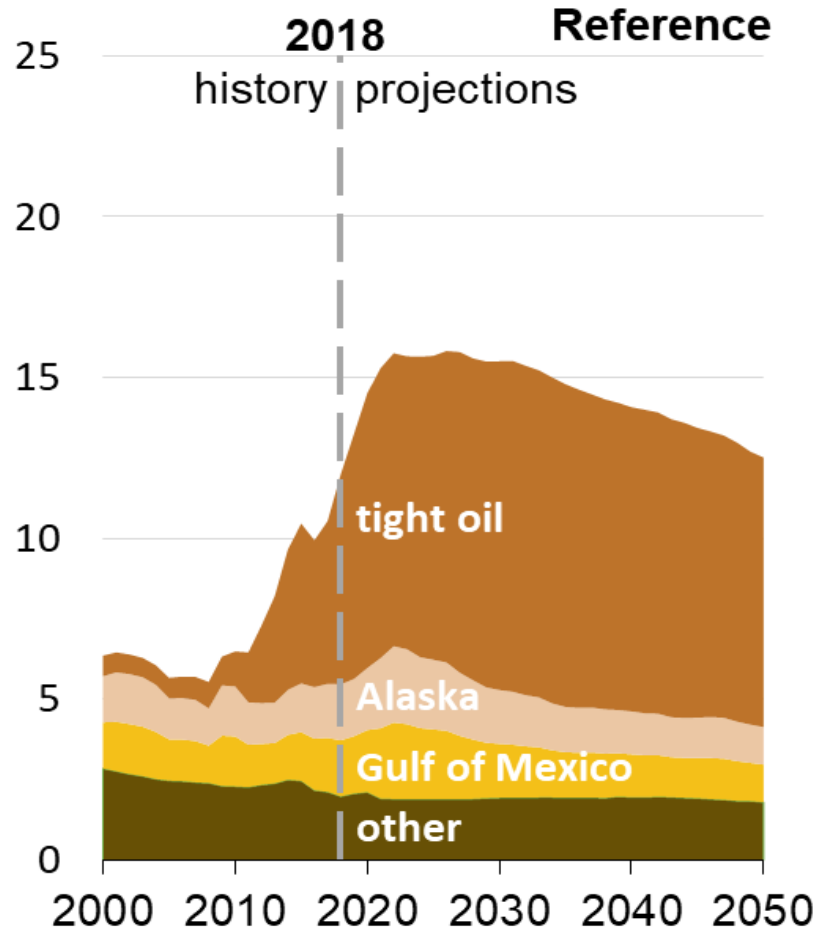
Subsurface Frontiers Initiative



**Sustainable Exploration, Development
and Production of Tight Oil and Gas**

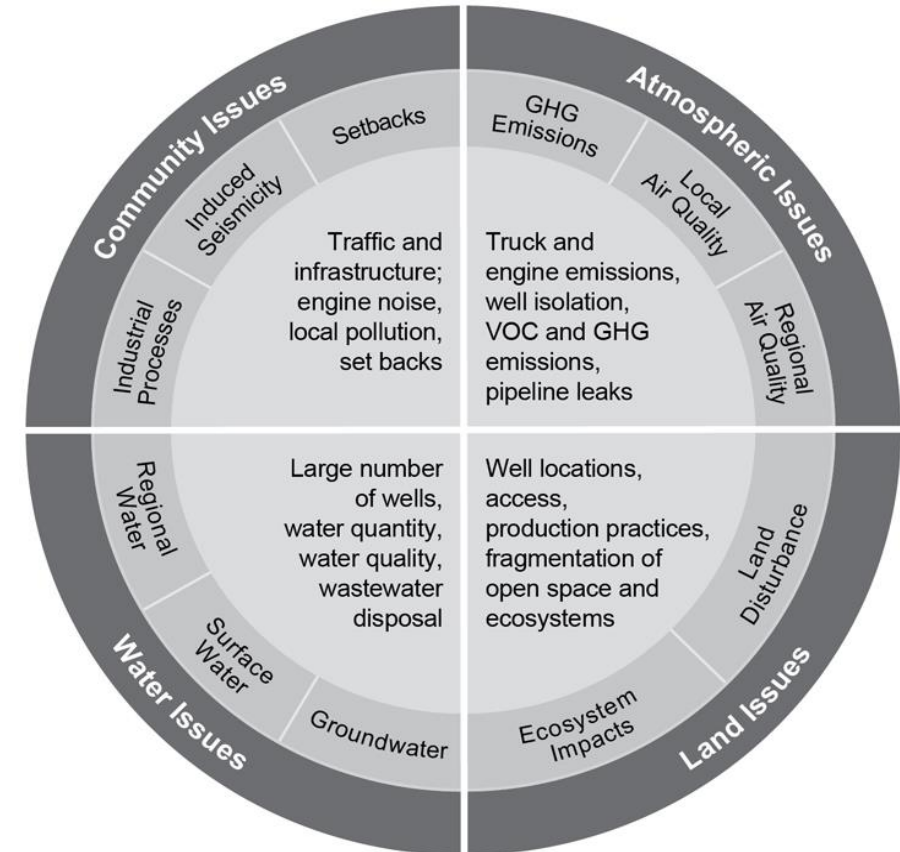
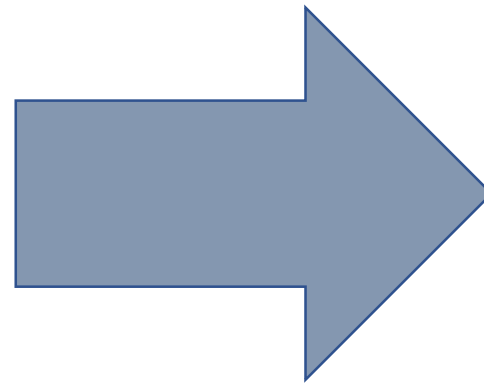
US Production Projections

Crude oil production
million barrels per day



Source: US Energy Information Agency
Annual Energy Outlook 2019

Risk Factors



Zoback and Arent, 2014, The Bridge

“The rise in US production of tight oil and shale gas since 2010 is the largest parallel increase in oil and gas output in history”

International Energy Agency, World Energy Outlook, 2018