

The US Shale Oil/Gas Revolution: An Historic Opportunity to Advance American Society*

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Recent technical advances in unconventional or "tight" shale oil and gas extraction¹ are reviewed in light of the dramatic rise in US oil and gas production volumes over the last 5 years.

This unprecedented increase in energy production and reserves additions has catapulted the USD into the world leadership position. Using petrophysical analysis and other data, estimates of recoverable US oil reserves are now on the order of 1 Trillion barrels, equal to one-half of the original global conventional oil endowment, or the total volume of oil produced on our planet over the last 100 years.

The strategic significance and geopolitical implications of this remarkable achievement cannot be overstated². The geological foundations of these energy reserves rest on the development of an extensive Palaeozoic foreland basin along the SE Margin of North America during the formation of the Pangea super-continent, followed by an even greater Mesozoic foreland basin along the western convergent margin from Alaska to Mexico during Pangean break-up and associated creation of the Atlantic Ocean³. No other continent is so favoured with respect to the accumulation of multiple organic-rich shale intervals, source rock deposits, and related mature petroleum systems.

Now the effective and efficient management of these strategic energy reserves must reside with the responsible governmental organizations, which alone can establish policies and regulations to ensure that these vital national resources are not squandered, or adversely impact domestic as well as global environments⁴.

The learnings from Norway, a small nation of 5 million people, and their ability to create the world's largest sovereign wealth fund of c. 1 Trillion dollars over the last 20 years⁵ on a volume only 5% of current estimated US reserve base, is advocated for the repayment of the 20 Trillion dollar US national debt over the coming decades.

The repayment period could then be followed by the creation of a US wealth fund to advance health, education, infrastructure, scientific research, and environmental stewardship on historic global scales.

* <https://www.researchgate.net/project/The-US-Shale-Oil-Gas-Revolution-An-Historic-Opportunity-for-America>

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