

To some, drilling for oil and gas in the Coastal Plain of the Arctic National Wildlife Refuge (Coastal Plain) promises abundant, cheap energy that would displace oil imports, lower domestic gas prices, boost employment, and raise revenue to bring down the deficit. These promises, however, are based on outdated information and rosey assumptions about how much oil the Coastal Plain may hold, the price the oil may fetch, and the speed with which oil and gas could be found, extracted, and brought to market. Given the enormous risk to ecosystems and human welfare that such oil exploration and development would impose, it is essential that promised benefits be closely, carefully, and critically examined.

**Estimates of Undiscovered Oil are a Weak Basis for Policy.** *Potential* oil deposits under the Coastal Plain are unproven reserves, meaning there is no guarantee that oil is there and could one day be produced and sold. Ultimately, the only oil that matters is *economically* recoverable oil—that portion of *technically* recoverable oil which can be produced for less than the price of oil in the market—contingent on its discovery.<sup>2</sup> The U.S. Geological Survey (USGS) in 1998 estimated that there is a 50% chance that the Coastal Plain holds 10.4 billion barrels (BBO) of technically recoverable oil, a 95% chance that it holds up to 5.9 BBO, and a 5% chance that as much as 15.2 BBO are present.<sup>3</sup> Economically recoverable oil would be fraction of these volumes. Given the wide range of these estimates (not to mention the fact that they have not been updated in 20 years), Congress should be cautious about relying on oil from the Coastal plain to solve America’s energy, budgetary, or broader economic problems.

**Arctic Refuge Production would have Little Impact on U.S. and Global Oil Supply or on U.S. Oil Imports.** Previous assessments suggest that during its peak year of production, the Coastal Plain could bring 700,000 barrels of oil a day to market.<sup>4</sup> Globally, any added supply from the Arctic Refuge could be offset by a small reduction from OPEC.<sup>5</sup> Domestically, the argument that Arctic Refuge oil would displace oil imports is not well substantiated: additional oil shipped from Port of Valdez would go primarily to west coast foreign markets. This would initially reduce the flow of tight oil from the Northern Midwest—but only to a limited extent.<sup>6</sup> After that, additional Arctic Refuge oil would go into storage rather than further displacing imports. Even if each barrel pumped from the Coastal Plain meant one less barrel imported, imports, as a portion of all U.S. oil consumption would fall by only 4% to 48%, and that is at the projected peak of Coastal Plain production.<sup>7</sup> Meanwhile, unconventional oil production and advances in energy efficiency are the big reasons for reductions in U.S. oil imports in the past decade. Energy conservation displaces 25 times more crude oil imports than oil taken from the Arctic National Wildlife Refuge ever could.<sup>8</sup>

**Arctic Refuge Oil would have Virtually Zero Effect on Energy Prices.** The effect on national oil prices would be brief and minimal at best, largely because prices are determined in the global market in which non-OPEC producers act as price-takers rather than price-makers. According to both the EIA<sup>9</sup> and USGS,<sup>10</sup> the earliest commercial production could begin is 7 to 10 years after Congressional approval. Once production begins, any impact on prices at the pump would likely

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<sup>1</sup> Prepared by Carolyn Alkire, Ph.D. and Anna Perry. The full report will be available at [keylogeconomics.com](http://keylogeconomics.com)

<sup>2</sup> Energy Information Administration (2014, July 17). Oil and natural gas resource categories reflect varying degrees of certainty.

<sup>3</sup> Attanasi, E., & Freeman, P. (2009). *Economics of Undiscovered Oil and Gas in the North Slope of Alaska: Economic Update and Synthesis* (Open-File Report No. 2009–1112) (p. 59). U.S. Geological Survey, U.S. Department of the Interior.

<sup>4</sup> Energy Information Administration. (2008). *Analysis of Crude Oil Production in the Arctic National Wildlife Refuge* (Service Report).

<sup>5</sup> Behar, A., & Ritz, R. A. (2016). *OPEC vs US shale oil: Analyzing the shift to a market-share strategy* (Working Paper No. WP/16/131) (p. 36). International Monetary Fund.

<sup>6</sup> DeRosa, S., & Flanagan, T. (2017). *Impact of Expanded North Slope of Alaska Crude Oil Production on Crude Oil Flows in the Contiguous United States* (No. SAND2017–5475R). Sandia National Laboratories.

<sup>7</sup> Fineberg, R. (2011). *The Reduced Oil Imports Report: Recent Conservation Gains Outperform Arctic Refuge Region Oil Potential Between 2012 and 2030 by a Twenty-Five to One (25:1) Ratio*. Ester Alaska.

<sup>8</sup> Fineberg, R. (2011), op cit.

<sup>9</sup> Energy Information Administration, (2008), op.cit.

<sup>10</sup> Attanasi, E., & Freeman, P. (2009). op cit.

only be felt during a single peak production year approximately 10 years later.<sup>11</sup> At best, consumers could save 1% on gas 15 years after Congressional approval.<sup>12, 13</sup>

**Jobs Potentially Associated with Coastal Plain Oil Drilling have been Overestimated.** Changes in employment associated with potential oil production in the Arctic National Wildlife Refuge depend on factors including the phase of development, the number of wells and rigs, specific geographic location, and the type of project.<sup>14</sup> Previous employment estimates of these changes vary widely and sit atop a house of cards, the foundation of which is out-of-date assessments of oil volume and oil prices nearly twice what they are today. While it is certain that extracting oil from the Coastal Plain would support some employment, the gains would be temporary and may simply represent a shift of jobs from other regions. Newer data and better models of *net* changes in economic well-being—that is, those that consider potential loss of traditional and current economic use of the Arctic Refuge—are needed.

**Any Fiscal Benefits would be Slow in Coming.** Various U.S. government, industry, and other entities have estimated the time lag between Congressional approval of oil and gas development in the Arctic Refuge and actual production; estimates range from 7 to 20 years.<sup>15, 16, 17</sup> If approval were to be granted in 2018, development and production could occur between 2025 and 2030 based on U.S. Department of Energy phasing.<sup>18</sup> In this scenario, the first payments to the U.S. Treasury would begin in 2022 for leases, and in 2030 for royalties from production, assuming no delays. Under other plausible government and industry scenarios, production might not commence until 10 years later, or by 2040.

**Opening the Refuge can Increase the Deficit.** How much revenue the federal government receives will depend on the number of acres leased, the price per acre leased, and the distribution of revenue between the U.S. Treasury and the state of Alaska.<sup>19</sup> Currently, the Trump Administration claims \$1-1.8 billion could be raised by lease sales alone in the next ten years.<sup>20</sup> The Center for American Progress, meanwhile, finds no more than \$37.5 million in federal revenue could be raised from leases over the same period, or just 2% of the Administration's estimate.<sup>21</sup> Because the White House and Congress are counting on high estimated revenues to fund expenditures, including proposed tax cuts, any shortfall relative to those expectations will increase the deficit.

**Oil and Gas Exploration in the Arctic is Inherently Challenging and, therefore, Expensive.** The climate, geography, and isolation of the Arctic present challenges to oil and gas exploration and development. The North Slope of Alaska is remote and sparsely populated with only one road connecting it with the rest of the state. These factors contribute to Arctic development being more expensive, riskier, and lengthier than comparable deposits found elsewhere in the world.<sup>22</sup> In addition to requiring larger investments than comparable projects elsewhere, the long lead-times required for Arctic projects add risk because economic conditions can change significantly between the time exploration leases are secured and when production begins.

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<sup>11</sup> Energy Information Administration, (2008), op.cit.

<sup>12</sup> Ibid.

<sup>13</sup> Hahn, R. W., & Passell, P. (2008). *The Economics of Allowing More Domestic Oil Drilling*.

<sup>14</sup> Wood Mackenzie. (2011, September 7). *U.S. Supply Forecast and Potential Jobs and Economic Impacts (2012-2030)*.

<sup>15</sup> Thomas, C., North, W., Doughty, T., & Hite, D. (2009). *Alaska North Slope Oil and Gas: A Promising Future or an Area in Decline?* (Addendum Report No. 2009-1385). Department of Energy, National Energy Technology Laboratory.

<sup>16</sup> Arctic Power. (2001). ANWR Information Brief: Employment.

<sup>17</sup> Attanasi, E., & Freeman, P. (2009). op cit.

<sup>18</sup> Thomas, C., North, W., Doughty, T., & Hite, D. (2009), op cit.

<sup>19</sup> Alaska Oil and Gas Competitive Review Board. (2015). *Alaska's Oil and Gas Competitiveness Report 2015*.

<sup>20</sup> House Budget Committee. (2017). *Building A Better America* (Resolution).

<sup>21</sup> Lee-Ashley, M., & Rowland, J. (2017, October 10). Arctic National Wildlife Refuge 101.

<sup>22</sup> Budzik, P. (2009). *Arctic Oil and Natural Gas Potential*. U.S. Energy Information Administration Office of Integrated Analysis and Forecasting.