

U1L2A3 | Cost-Benefit Analysis

overview

In this activity you will work collaboratively to identify costs and benefits associated with production and consumption of oil. You will gain insight into the challenges presented by multifaceted global issues.

learning goal

- To understand that oil production and consumption are complex issues with many stakeholders; some winners and some losers.

success criteria

- Complete organizer and informally share findings with the class—each group must justify their overall concluding opinion as to whether Costs > Benefits or Costs < Benefits.

Inquiry Question

- What are the costs to society, environment and economy of our addiction to oil?

Read Huffington Post article ‘The True Cost of our Oil Addiction.’ Form a small group of 3–4 students and works collaboratively to identify costs and benefits associated with production and consumption. Record your answers in the below table.

Costs of Oil	Benefits of Oil

The True Cost of Our Oil Addiction

Richard Steiner (January 15, 2014)

The first step in recovering from any addiction is to tell the truth – admit the addiction, acknowledge its consequences. Yet this is something we still seem unwilling to do with our addiction to oil. Addicts would rather stay high than confront their addiction and commit to recovery.

The truth about oil is that while there are benefits – jobs, energy, government revenue – there are also enormous long-term risks, impacts, and costs. While government and industry extoll the benefits of oil, they remain unwilling to tell the truth about its costs.

Some costs are obvious. Oil spills, such as the 1989 Exxon Valdez in Alaska and the 2010 Deepwater Horizon in the Gulf of Mexico, are easily recognizable disasters that attract widespread public condemnation. Twenty-five years after the Alaska spill, the coastal ecosystem is still not fully recovered, and toxic oil remains in shoreline sediments. Many oil-producing areas of the world, such as the Niger Delta, the Caspian, and Siberia, have suffered decades of oil spills.

But the true cost of oil goes far beyond the obvious damage from spills. More gradual, less visible costs of oil include ecological habitat degradation from exploration, production, and pipelines; health costs from breathing air polluted with fossil fuel emissions; urban sprawl and traffic congestion around all major cities of the world; and seemingly endless wars fought to secure oil supplies, like Iraq and Sudan, costing thousands of lives and trillions of dollars.

Climate change from carbon emissions is incurring enormous present and future costs – storm damage, drought, wildfires, lost agricultural productivity, infrastructure damage, climate refugees, disease, forest decline, marine ecosystem collapse, species extinctions, and lost ecosystem services. Global climate change costs already exceed \$1 trillion a year, and will continue to rise.

And wherever it is produced, there is a "socio-political toxicity" of oil, a significant distortion of economic, social, and political systems. Rather than the prosperity promised, oil discoveries around the world often become more curse than blessing, causing social dysfunction, assimilation of indigenous cultures, runaway inflation, a decline in traditional exports, overconsumption, abuse of power, overextended government spending, and unsustainable growth. Former Venezuelan oil minister Juan Pablo Perez Alfonzo, a founder of OPEC and once a true believer in the promise of oil, thought differently after he saw the corruption, greed, waste, and debt it caused, then calling oil "the devil's excrement."

World oil use continues to rise, last year hitting a historic high of 91 million barrels a day, and still climbing. To date, the world has pumped and burned about 1 trillion barrels of oil, and there may be another trillion barrels of recoverable "conventional" oil left, with several trillion barrels in unconventional reserves such as tar sands and oil shale, like the huge Green River Formation in Colorado, Utah, and Wyoming.

But if we want anything resembling a sustainable future, we'll have to leave most of this oil buried right where it is, as the global climate cannot handle this much additional carbon. The carbon-pushers see billions of dollars just waiting to be produced, and are anxious to get to it. As with any addiction, when the easy stuff is gone and supplies tighten, addicts become desperate and willing to take more risk to secure the next fix, such as drilling in the Arctic and deep ocean basin.

While president George W. Bush stunned the world in his 2006 State of Union speech, stating that: "we have a serious problem, America is addicted to oil," his administration did little to wean us from the addiction. And despite candidate Obama's promise to end "the tyranny of oil," and that, if elected, "the rise of the oceans will begin to slow," as president, Obama sounds more of an oil enthusiast, recently boasting: "We're opening up more than 75 percent of our potential oil resources offshore. We've quadrupled the number of operating rigs to a record high. We've added enough new oil and gas pipeline to encircle the Earth, and then some." He is poised to approve the contentious Keystone XL pipeline from the Alberta tar sands, what climate scientists say may be "game over" in efforts to stabilize climate. The tyranny of oil continues, and seas continue to rise.

Oil-producing governments the world over – including the U.S. and states of Alaska, Louisiana, Texas, and North Dakota – are 'captured' and controlled by oil interests that dictate policies to limit regulation, lower taxation, and to favor production and demand for oil over development of low-carbon alternatives. The 2010 Supreme Court Citizens United ruling now allows oil companies to pour unlimited funds into oil-friendly candidates and issues, without public disclosure. Media is awash in ads keeping us hooked on the stuff. U.S. oil production has steadily increased since 2008, largely from oil shale, prompting calls from some to lift the export ban. Clearly, the drug pushers are running the show.

The International Monetary Fund reports that governments encourage our fossil fuel addiction with annual subsidies of some \$1.9 trillion, including \$480 billion per year in direct subsidies. Such subsidies artificially depress prices and encourage overconsumption; detract from government spending on health care, education, and social services; and keep alternative energy "uncompetitive." A 1998 study estimated that for every gallon of gasoline we bought at the pump, we were actually paying as much as \$14 a gallon in additional "hidden" costs. Yet, we continue to ignore these hidden costs, paying for some indirectly through income taxes, and deferring most to future generations. We are tricking ourselves into using cheap and easy oil as fast as we can pump it out of the ground.

And perhaps the most pernicious cost of oil is that it has fueled an unprecedented degradation of the global biosphere. With access to artificially "cheap and easy" oil over the past century, human population has quadrupled and resource consumption has increased many times more, now significantly exceeding Earth's carrying capacity. Without access to fossil carbon, humanity would almost certainly have evolved on a more sustainable trajectory. But by not accounting for its true cost, oil has allowed us to dig ourselves deeper into an unsustainable hole. The environmental debt we are accruing is far larger and more consequential than our national financial debt.

It's high time we kicked the habit, with better regulation and full costing of carbon. The full "social cost of carbon" has been estimated by the federal government at \$50 - \$100 per ton of CO₂, and with global emissions now exceeding 39 billion tons per year, this amounts to \$2 trillion - \$4 trillion annually. When we account for these very real costs, sustainable alternatives become competitive, and we make more rational choices.

In the U.S., oil consumption has declined slightly in recent years, due in large part to the high price of oil, increased availability of natural gas, and government-mandated increases in vehicle fuel efficiency. Governments need to accelerate this trend by shifting fossil fuel subsidies to sustainable low-carbon alternatives, reducing emissions through regulation, and instituting a carbon tax to help capture the long-term cost of carbon.

Sooner or later, we will get to the far side of our troubled oil addiction, as we will run out of the stuff. But the sooner we get there, the better chance we have at a sustainable future. Then, like most recovering addicts, we will wonder why we didn't get clean sooner.