

An aerial photograph of a large-scale oil spill in the ocean. Several oil tankers are visible, with a massive, dark plume of oil trailing from one of them. The water is dark and choppy, and the sky is overcast.

# THE GREAT INVISIBLE

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DISCUSSION GUIDE



## KICK-OFF QUESTIONS

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- ▶ **What were some of the key take-home messages that you got from watching this movie?**
- ▶ **Or, what were some of the most poignant moments for you in this movie? Why?**

[Note: point of this question is to size up what people know about the issue, start the discussion going on the costs of oil, & give them a few minutes to process the movie.]

## DISCUSSION GUIDANCE

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Listen to what people have to say, could have someone write down what moved people the most, what their takeaways were. Use conversation to segue into discussion on the costs of oil.



# THE COST OF OUR DEPENDENCE ON OIL

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OVERVIEW & RISKS

# 1 **START WITH THE BASICS**

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What's the scope of our dependence on oil? Just how much oil do we consume in the United States?

The United States uses an average of 793 million gallons of oil per day, at a cost of \$2 billion dollars each day, making the U.S. the world's largest oil consumer by a wide margin - **U.S. demand is greater than the combined oil consumption of Japan, Russia, China, and India.**

The crude oil we use is a mixture of hydrocarbons that is extracted from underground reservoirs and processed into various transportation fuels, as well as petrochemical ingredients for consumer products such as plastics, pharmaceuticals, and cosmetics.

**Fully 71% of oil consumed in the U.S goes to the transportation sector** - automobiles, trucks, ships, trains, and planes.

## **KEY TAKEAWAY**

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**The majority of oil in our country is used in transportation;** the two biggest users are the cars we drive and freight trucks. We depend more on hidden oil than we realize.



An aerial view of a large offshore oil rig in the middle of the ocean. The rig is a complex of white and yellow metal structures, including a tall derrick and various platforms. The water is a dark, textured blue-grey.

# 2

## BIG PICTURE

What do you see as the biggest costs of our dependence on oil?

Prompts: What did the movie show?  
What didn't the movie show?

## **RISKS AND COSTS ASSOCIATED WITH OIL DEPENDENCE**

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Oil is the **largest single fuel source of greenhouse gas (GHG) emissions** in the U.S.; burning oil produces large amounts of carbon dioxide, methane, and other greenhouse gases that contribute to climate change.

Our dependence on oil ties us to the global market, which is highly volatile; wars, governmental changes and severe weather can all result in price spikes.

- ▶ **Oil price spikes undermine the economy; every economic recession during the past 40 years has coincided with a spike in global oil prices.**
- ▶ The average household spent \$2,912 on gasoline in 2012.

Oil dependence **weakens our national security** – leading to increased costs; a RAND Corporation study placed the ongoing cost to the U.S. military of mitigating the risk of supply disruptions in the global oil market at between \$67.5 billion and \$83 billion annually.

Oil **increases public health costs**. One half of all Americans live in areas that don't meet federal air quality standards; the main culprits are passenger vehicles and freight trucks, which emit ozone, particulate matter, and other smog forming emissions. This pollution leads to respiratory diseases like asthma and bronchitis, and increases cancer risk.

## **KEY TAKEAWAY**

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Our dependence on oil incurs significant costs and leads to increased risk of **climate change, energy price spikes, oil spills, national security concerns and serious air pollution problems**, not to mention the harmful impacts on oil workers (as seen in the movie) and on communities living near refineries.



## **CLIMATE CHANGE: COSTS OF OUR DEPENDENCE ON OIL**

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In November of 2014, a group of leading scientists from around the world, the UN Intergovernmental Panel on Climate Change, released a report saying **that we will face “severe, pervasive and irreversible impacts” unless we act now. The report confirmed that climate change is already contributing to intense drought, flooding, and heat waves;** and predicts that we will see increasingly severe impacts, including food shortages and armed conflict if we fail to reduce GHG pollution.

**GHG emissions from the U.S. transportation sector are greater than any other nation’s entire economy, with the exception of China and India.**

### **KEY TAKEAWAY**

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We need to act now to reduce power and transportation emissions, and avoid the worst impacts of climate change.

## HEALTH IMPACTS: COSTS OF OUR DEPENDENCE ON OIL

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Air pollution emitted by motor vehicles and oil refineries causes a wide range of cardiovascular, respiratory and other health impacts.

**The transportation sector is the largest source of air pollution in the U.S.**

**Air pollution from motor vehicles is linked to: premature death, cardiovascular harm (heart attacks, strokes, heart disease), asthma, chronic obstructive pulmonary disease, cancer and reproductive health problems.**

**Vehicle pollution** poses serious health effects and is linked to:  
**Cardiovascular harm**, such as heart attacks,

strokes, heart disease, and congestive heart failure.<sup>1</sup>

**Respiratory harm**, such as worsened **asthma**, worsened **Chronic Obstructive Pulmonary Disease (COPD)**, and inflammation.<sup>1</sup>

### **Asthma**

- ▶ An estimated 31.3 million U.S. residents are diagnosed with asthma.<sup>1</sup>
- ▶ Asthma is the most prevalent chronic disease among children in the U.S.<sup>2</sup> and is highest among children living in urban areas.<sup>3,4</sup>
- ▶ Children living near high traffic flows are likely to have more medical care visits per year,<sup>5</sup> and a higher prevalence of most respiratory symptoms.<sup>6</sup>
- ▶ Asthma in children has been associated with proximity to highways and truck traffic near residences and schools.<sup>7</sup>

<sup>1</sup> <http://www.cdc.gov/asthma/asthmaAAG.htm>

<sup>2</sup> Centers for Disease Control and Prevention. 2001. CDC's asthma prevention program. Available at <http://www.cdc.gov/nceh/asthma/factsheets/asthma.htm>

<sup>3</sup> Aligne C, Auinger P, Byrd RS, Weitzman M. Risk factors for pediatric asthma. Contributions of poverty, race, and urban residence. *Am J Respir Crit Care Med* 2000 Sep;162(3 Pt 1):873-7.

<sup>4</sup> Crain EF, Weiss KB, Bijur PE, Hersh M, Westbrook L, Stein RE. An estimate of the prevalence of asthma and wheezing among inner-city children. *Pediatrics* 1994 Sep;94(3):356-62

<sup>5</sup> English P, Neutra R, Scalf R, Sullivan M, Waller L, Zhu L. Examining associations between childhood asthma and traffic flow using a geographic information system. *Environmental Health Perspectives*. 1999 Sep;107(9):761-7.

<sup>6</sup> Oosterlee A, Drijver M, Lebret E, Brunekreef B. Chronic respiratory symptoms in children and adults living along streets with high traffic density. *Occupational & Environmental Medicine* 1996 Apr;53(4):241-7

<sup>7</sup> Brunekreef B, Janssen NA, de Hartog J, Harssema H, Knape M, van Vliet P. Air pollution from truck traffic and lung function in children living near motorways; *Epidemiology* 1997 May;8(3):298-303. See also: van Vliet, P. et al. Motor vehicle exhaust and chronic respiratory symptoms in children living near freeways. *Environ Res*. 1997;74(2):122-32.

## HEALTH IMPACTS: COSTS OF OUR DEPENDENCE ON OIL (CONT'D)

### **Chronic Obstructive Pulmonary Disease**

- ▶ COPD is the fourth leading cause of death in the U.S. and predicted to be the third leading cause of death for both males and females by 2020.<sup>8</sup>
- ▶ The CDC estimates that in the year 2000, COPD deaths reached 120,000, 725,000 hospitalizations, 1.5 million emergency room visits, and eight million additional cases of hospital outpatient or personal physician treatment. Approximately 10 million adults were diagnosed with COPD in 2000, but a national health study revealed that up to 24 million people in the U.S. are affected.<sup>9</sup>

### **Cancer**

### **Reproductive and Developmental Harm**

**Cognitive development;** recent studies have linked exposure to PAHs to ADHD<sup>10</sup>, and exposure



<sup>8</sup> US Department Of Health and Human Services. National Institutes of Health, National Heart, Lung, and Blood Institute. Chronic Obstructive Pulmonary Disease. NIH Publication No. 03-5229. March 2003. [http://www.nhlbi.nih.gov/health/public/lung/other/copd\\_fact.pdf](http://www.nhlbi.nih.gov/health/public/lung/other/copd_fact.pdf)

<sup>9</sup> CDC. Facts about Chronic Obstructive Pulmonary Disease (COPD). February 11, 2005. Available at <http://www.cdc.gov/nceh/airpollution/copd/copdfaq.htm>

<sup>10</sup> <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0111670>

<sup>11</sup> <http://www.nber.org/papers/w20648>



## HEALTH IMPACTS: COSTS OF OUR DEPENDENCE ON OIL (CONT'D)

to particulate matter and carbon monoxide to reduced cognitive performance.<sup>11</sup>

- ▶ Air concentrations of **potentially dangerous compounds and chemical mixtures** are frequently present **near oil and gas production sites**. In a study published in Environmental Health, it was found that levels of eight volatile chemicals exceeded federal guidelines under several operational circumstances. Benzene, formaldehyde, and hydrogen sulfide were the most common compounds to exceed acute and other health-based risk levels.<sup>12</sup>

## REFINERY POLLUTION

Oil refineries are the third largest stationary source of GHGs.

Refineries emit a wide variety of pollutants such as sulfur dioxide and oxides of nitrogen, carbon monoxide, particulate matter, and benzene, which can cause many adverse health effects, including cardio-respiratory problems, and cancer.

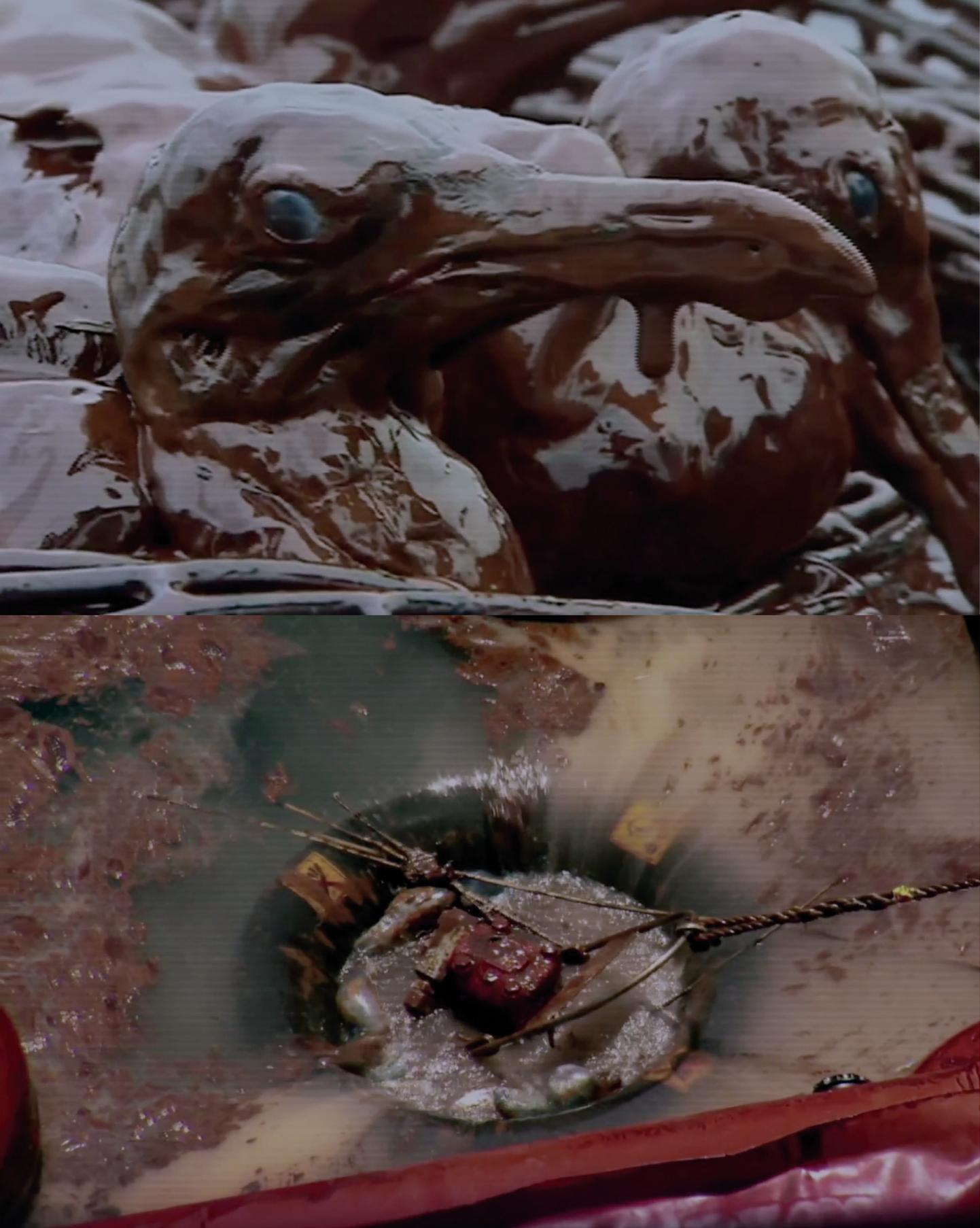
Half of the people with an increased cancer risk due to refinery pollution are people of color.<sup>13</sup>

Latinos, African Americans, and low-income people tend to reside closer to oil refineries and therefore face higher cancer rates compared to other groups.<sup>14</sup>

<sup>12</sup> <http://www.ehjournal.net/content/13/1/82/abstract>

<sup>13</sup> [http://www.epa.gov/ttn/atw/petrefine/PetroleumRefineries\\_demographic\\_analysis\\_MACT\\_actuals\\_1\\_6\\_2014.pdf](http://www.epa.gov/ttn/atw/petrefine/PetroleumRefineries_demographic_analysis_MACT_actuals_1_6_2014.pdf)

<sup>14</sup> <http://earthjustice.org/blog/2014-august/communities-near-oil-refineries-must-demand-cleaner-air>



## OIL SPILLS: COSTS OF OUR DEPENDENCE ON OIL

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In the past twenty-five years there have been over **two dozen major oil spills** in the US.<sup>15</sup>

Oil spills are extremely costly environmentally and economically; resulting in **cleanup costs, natural resource damages, and economic losses from harmed communities and individuals.**<sup>16</sup>

The 2010 BP oil spill, the biggest oil spill in U.S. history, consisted of 4.9 million barrels of oil, and cost BP over \$40 billion in fines, clean up costs, and settlements.<sup>17</sup> The spill was devastating to residents and the environment. It has long-term human health and economic impacts, killed more than 600,000 birds, and is still killing sea turtles and bottlenose dolphins, and contaminating seafood in fishing areas.<sup>18</sup>

<sup>15</sup> <http://www.usnews.com/news/blogs/data-mine/2014/03/25/us-racks-up-dozens-of-oil-spills-in-25-years-since-exxon-valdez>

<sup>16</sup> <http://fas.org/sgp/crs/misc/RL33705.pdf>

<sup>17</sup> <https://www.dosomething.org/facts/11-facts-about-bp-oil-spill>

<sup>18</sup> Solnit, Rebecca, "Bird by Bird," New York Times Magazine, December 7, 2014.

## OIL SPILLS: COSTS OF OUR DEPENDENCE ON OIL (CONT'D)

Analyzed federal data indicated that **railroad-related oil incidents are soaring**, with 112 oil spills reported from 2010 to 2012 compared to 10 in the previous three years.<sup>19</sup>

### RECENT PIPELINE OIL SPILLS

In October of 2014, Sunoco Logistics' Mid-Valley 1,000-mile pipeline released 189,000 gallons of crude oil into the Tete Bayou, located southwest of Mooringsport, Louisiana.<sup>20</sup>

On March 17, 2014 the same Sunoco Mid-Valley pipeline carrying oil from Texas to Michigan leaked an estimated 21,000 gallons of crude oil into a nature preserve located west of Cincinnati, Ohio.<sup>21,22</sup>

On September 29, 2013, a pipeline operated by Tesoro Logistics LP leaked approximately 865,200

gallons of crude oil into a North Dakota wheat field, making it the biggest leak in the Bakken shale since the drilling boom started in 2006.<sup>23,24</sup>

About 210,000 to 294,000 gallons of heavy crude oil originating from Canada was released from Exxon Mobil's Mayflower pipeline in March of 2013, which ruptured in a suburban neighborhood in Arkansas, forcing residents to evacuate.<sup>28</sup>

In July 2011, Exxon Mobil's Silvertip pipeline leaked 63,000 gallons of crude oil into the Yellowstone River.<sup>28</sup>

On July 25, 2010, a 41-year-old pipeline operated by Enbridge Inc. ruptured in Michigan and leaked 819,000 gallons of crude oil, of which 357,000 gallons ended up in the Kalamazoo River, setting the record for largest inland oil spill in U.S. history.<sup>28</sup>

<sup>19</sup> <http://online.wsj.com/articles/SB10001424127887323296504578396850749052848>

<sup>20</sup> <http://www.shreveporttimes.com/story/news/local/louisiana/2014/11/01/pipeline-breaks-cost-sunoco-millions/18340559/>

<sup>21</sup> [http://www.huffingtonpost.com/2014/03/24/ohio-oil-spill-pipeline\\_n\\_5022600.html](http://www.huffingtonpost.com/2014/03/24/ohio-oil-spill-pipeline_n_5022600.html)

<sup>22</sup> <http://greatparks.org/conservation/oak-glen-nature-preserve-oil-spill>

<sup>23</sup> <http://online.wsj.com/articles/SB10001424052702303382004579127604108354512>

<sup>24</sup> <http://www.reuters.com/article/2013/10/10/us-usa-pipeline-spills-factbox-idUSBRE9990XH20131010>

<sup>28</sup> <http://www.epa.gov/otaq/climate/documents/420f11032.pdf>

## OIL PRODUCTION IS A DANGEROUS INDUSTRY: COSTS OF OUR DEPENDENCE ON OIL

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### FATAL WORK INJURIES

A total of 138 workers in the oil and gas industry were killed on the job in 2012, an increase of 100 percent since 2009.<sup>25</sup>

Fatality rates among oil and gas workers are eight times higher than the all-industry rate of 3.2 deaths for every 100,000 workers.

According to a report by the Bureau of Labor Statistics, oil and gas extraction deaths hit the highest level in 2012 since the government began recording this type of data in 2003.

Safety and health hazards that may result in fatalities for oil and gas workers include vehicle accidents, explosions and fires, falls, confined spaces, and chemical exposures.<sup>26</sup>

### NONFATAL WORK INJURIES

An estimated 1,400 nonfatal injuries in oil and gas extraction occurred in 2011.<sup>27</sup>

Drilling oil and gas wells accounted for about 2,600 nonfatal injuries and illnesses.

### DISCUSSION QUESTIONS

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- ▶ Which costs associated with oil concern you the most?
- ▶ Do you think MOST Americans are aware/or think much about the costs of oil? Which costs do you think people are aware of?
- ▶ Do you think that more people would seek to reduce our dependency on oil if they were aware of the costs? How can we make more people aware?

<sup>25</sup> <http://www.npr.org/2013/12/27/250807226/on-the-job-deaths-spiking-as-oil-drilling-quickly-expands>

<sup>26</sup> <https://www.osha.gov/SLTC/oilgaswelldrilling/>

<sup>27</sup> Bureau of Labor Statistics (BLS), April 15, 2014. Fatality data are from the Census of Fatal Occupational Injuries. Nonfatal injury and illness data are from the Survey of Occupational Injuries and Illnesses.

# REDUCING OIL USE IN THE U.S.

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KEY STRATEGIES



## IMPROVING THE FUEL EFFICIENCY OF TRUCKS: A KEY STRATEGY FOR REDUCING OIL USE IN THE U.S.

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### TRUCKS ARE A MAJOR CONSUMER OF OIL

Transportation accounts for about 72% of our total domestic oil consumption; trucks are the second biggest source in the transportation sector.<sup>28</sup>

While heavy-duty vehicles (tractor-trailers, buses, and pickup trucks) make up only 7% of the traffic on the road, they account for more than a quarter of transportation fuel use.<sup>29</sup>

Heavy-duty trucks are the single **fastest growing source of global warming emissions**. Over half a billion tons of carbon pollution is produced by freight trucks annually; **emissions are projected to increase 40%** by 2040.

Tractor-trailer trucks only get an average of **six miles to the gallon** and burn more than

\$80,000 worth of fuel during their 120,000-mile travel each year.

**Existing and emerging cost-effective technologies can increase fuel efficiency by 40%** (compared to 2010 trucks) by 2025. These technologies include including improved aero-dynamics for tractors and trailers, automated manual transmissions, engine improvements and the use of waste-heat recovery, and the electrification of accessories.

### KEY TAKEAWAY

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Trucks are a major consumer of oil in this country and improving their fuel efficiency is one of the most tangible and effective ways for reducing our use of oil and GHG emissions.

### DISCUSSION QUESTIONS

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- ▶ Can you think of ways to reduce your carbon footprint as it relates to transportation and consumer goods, or ensure that shippers do so?
- ▶ What initiatives can you take to build awareness of these issues?

<sup>28</sup> <http://www.epa.gov/otaq/climate/documents/420f11032.pdf>

<sup>29</sup> [http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean\\_vehicles/Truck-Technology-Factsheet.pdf](http://www.ucsusa.org/sites/default/files/legacy/assets/documents/clean_vehicles/Truck-Technology-Factsheet.pdf)

IMPROVING THE FUEL EFFICIENCY  
OF TRUCKS: A KEY STRATEGY FOR  
REDUCING OIL USE IN THE U.S. (CONT'D)

**NEW FREIGHT TRUCK STANDARDS**

The EPA and NHTSA developed and enforced the first-ever fuel efficiency and greenhouse gas (GHG) emissions standards for medium and heavy-duty vehicles built between 2014 and 2018. These Phase 1 standards are projected to save \$50 billion in fuel costs, 22.3 billion gallons of oil, and 270 million metric tons of carbon pollution emissions during the lifetime span of vehicles manufactured under the rule.

Phase 2 of the standards, for 2018-2025, are currently being determined by the EPA and NHTSA and will be announced in June of 2015.

A Ceres and Environmental Defense Fund report demonstrates **the cost-effectiveness of stricter Phase 2 truck standards, which can potentially save billions of dollars in freight costs.**

The Ceres/EDF analysis compares the total cost of operating a tractor-trailer under current Phase 1 standards with one subject to tougher standards, assuming a target of 11 miles per gallon in 2025. Strong new standards would:

- ▶ Achieve fleet average net savings of \$0.21 per mile by 2040 (this translates to an annual savings potential of more than \$25 billion).
- ▶ Lower the per-mile cost of heavy truck operation by 3% in 2030 and 7% in 2040 (compared to baseline costs under current standards).
- ▶ U.S. households stand to save \$250 a year in lower priced goods under strong standards.<sup>30</sup>



<sup>30</sup> Cooper, Mark, "Paying The Freight: The Consumer Benefits of Increasing The Fuel Economy of Medium and Heavy Duty Trucks," Consumers Federation of America. February 2014

IMPROVING THE FUEL EFFICIENCY OF TRUCKS:  
A KEY STRATEGY FOR REDUCING OIL USE IN THE  
U.S. (CONT'D)

### WHAT YOU CAN DO

Contact decision makers at the EPA, NHTSA, and the White House as well as your representatives to push for the adoption of stringent Phase 2 truck standards.

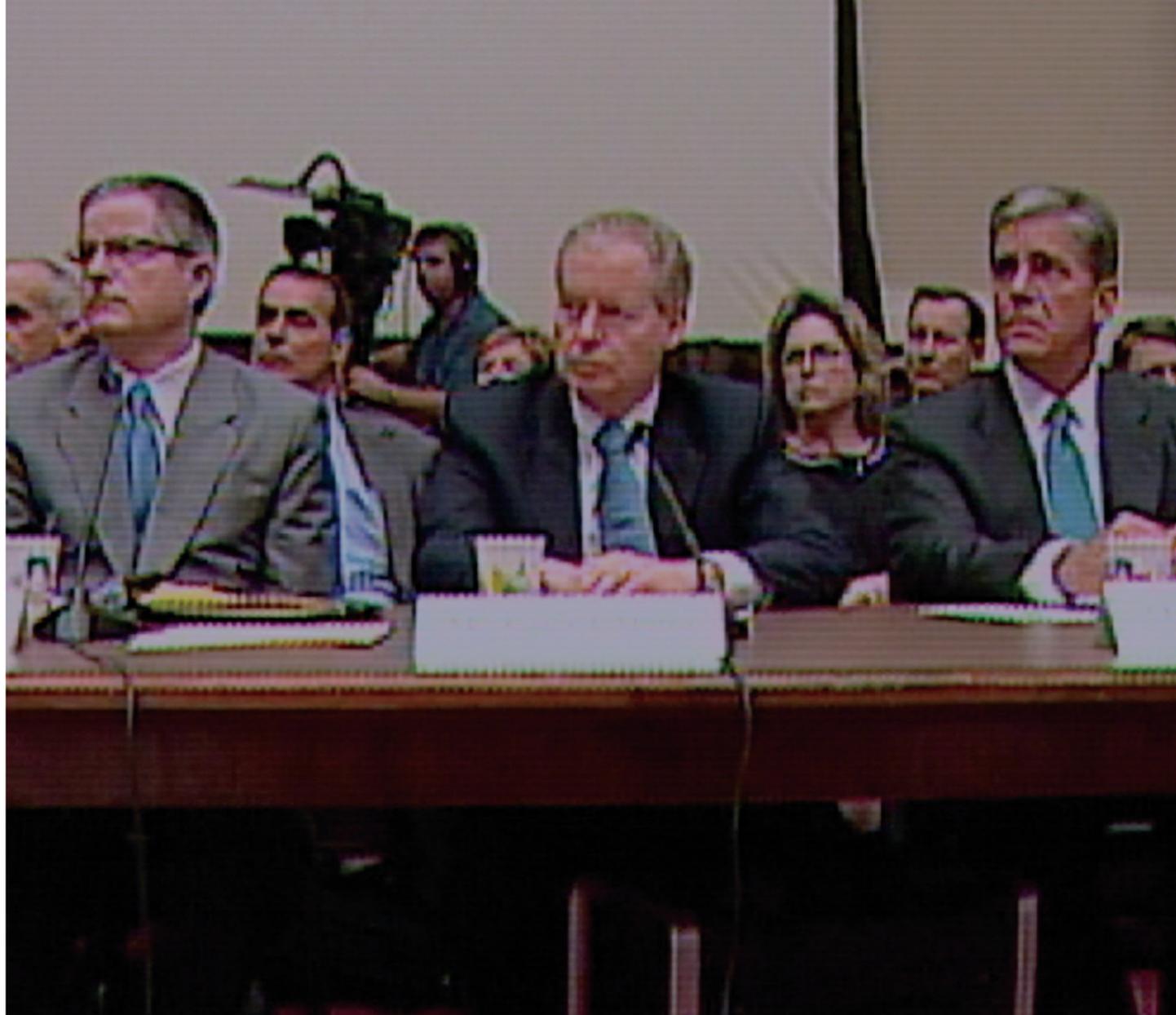
Act now! The standards are currently under development; proposed standards will be out June of 2015 and will be subject to public comment.

Let manufacturers of goods you buy, and companies that ship those goods, know that you want them to reduce their carbon emissions and support strong standards.

### KEY TAKEAWAY

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Regulations are being developed to increase the fuel efficiency of trucks, which is one of the most effective and tangible ways we can reduce oil consumption and GHG emissions in the U.S. **Supporting strong truck standards is one of the most important ways you can help reduce our dependence on oil.**



### DISCUSSION QUESTIONS

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- ▶ What do you think are the most important outcomes of adopting stronger truck standards?
- ▶ How can you support this effort? Can you think of ways to get others to support these standards?
- ▶ What are other ways we can reduce our dependence on oil?

## WAYS TO REDUCE OUR DEPENDENCE ON OIL

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**Increased domestic oil drilling will not reduce the risks associated with oil;** domestic oil still poses the same economic, public health and environmental risks and we will still be subject to global market prices. We need to **reduce our use of oil.**

**Reducing the use of oil leads to spending less on oil,** which benefits the economy; a 20% drop from the average price of oil in the past three years amounts to a \$1.1 trillion annual stimulus to the world economy.<sup>31</sup> **The only sure way to reduce our spending on oil is to use less of it, primarily in the transportation sector through more efficient vehicles, promoting alternative fuels and alternatives to vehicle travel.**

### PRESERVE CAR FUEL ECONOMY/GHG STANDARDS

Passenger vehicles are the biggest users of oil, in the transportation sector. **New fuel**



**economy/GHG standards announced in 2012 are most significant action on climate change in U.S. history.** The fuel economy standards will reduce U.S. oil consumption by 503 billion gallons, and cut GHG emissions from cars and light trucks in half by 2025 – a reduction of 6 billion metric tons. Moreover, consumers will save \$1.7 trillion at the gas pump, lowering the price of gas by \$1 per gallon by 2025.

However, **the mid term review of the standards in 2017 provides a chance to weaken those standards; it is critical that we preserve those standards.**

Let your representative and the White House know that you support retaining or strengthening the standards.

<sup>31</sup> <http://www.bloomberg.com/news/2014-10-29/why-oil-prices-went-down-so-fast.html>

## PROMOTE ALTERNATIVES TO OIL

Support policies promoting greater choice of fuels and cleaner fuels; Clean Fuel Standards (CFS) requires fuel providers to reduce the carbon content of their products by mixing low-carbon fuels into their supply or buying credits from utilities that provide low-carbon electricity to electric vehicles.

### CFS or Low Carbon Fuel Standards (LCFS)

- ▶ Significantly reduce emissions from transportation sector.
- ▶ Reduce the dependency of the transportation sector on oil and expand investment in cleaner fuels.
- ▶ Provide disincentive for use of high-carbon fuels and spur innovation in and growth of the clean fuels industry, creating a market where polluting fuels are costlier than cleaner fuels.



**INCREASE THE USE OF ADVANCED VEHICLES THAT USE ELECTRICITY (EVS) OR HYDROGEN (FUEL CELL VEHICLES)** allow us to reduce our use of oil:

- ▶ **EVs produce fewer GHG emissions than the average compact gas vehicle, and save consumers money:** EV owners can save \$750 to \$1,200 a year compared with operating an average new compact gas vehicle (27 mpg fueled with gasoline at \$3.50/gallon).<sup>32</sup>
- ▶ States are stepping in to support EVs; in May of 2014, eight states representing 1/4 of the U.S. car market released a collaborative Action Plan to develop infrastructure and coordinated policies to put 3.3 million zero-emission vehicles (ZEVs) on the road by 2025.<sup>33</sup>

**PROMOTE ALTERNATIVES TO CARS;** increase opportunities for biking, pedestrians and transit users.

<sup>32</sup> [http://www.ucsusa.org/clean\\_vehicles/smart-transportation-solutions/advanced-vehicle-technologies/electric-cars/emissions-and-charging-costs-electric-cars.html#.VISW3aTF-mA](http://www.ucsusa.org/clean_vehicles/smart-transportation-solutions/advanced-vehicle-technologies/electric-cars/emissions-and-charging-costs-electric-cars.html#.VISW3aTF-mA)

<sup>33</sup> [file:///Users/carolleerawn/Downloads/Multi-State%20ZEV%20Action%20Plan%20Press%20Release%2005-29-14%20\(1\).pdf](file:///Users/carolleerawn/Downloads/Multi-State%20ZEV%20Action%20Plan%20Press%20Release%2005-29-14%20(1).pdf)



## REDUCING OIL USE IN THE U.S.

### **OIL INDUSTRY RESISTANCE**

There are many examples of the oil industry's efforts to influence policymakers and thwart policies to hold the oil industry accountable, including the following:

- ▶ Last year, the oil and gas industry spent \$144.7 million, or more than \$396,000 per day, lobbying the U.S. Congress and federal agencies. The industry employed 763 lobbyists, nearly two for each member of the U.S. House of Representatives.<sup>34</sup>
- ▶ A recent NY Times story documented a secret alliance between some state attorney generals and the fossil fuel industry.

- ▶ A recent Bloomberg Businessweek article found that the Western States Petroleum Association (WSPA), the oil industry's lobbyist in the West, has funded several front groups, purporting to be grassroots groups, that are focused on derailing California's climate policies as well as similar policies in other Western states.<sup>35</sup>

### **WHAT YOU CAN DO**

#### **Passenger Vehicles**

- ▶ Support strong fuel economy/GHG standards for passenger vehicles by supporting the preservation of strong standards.
- ▶ Buy fuel-efficient cars; compare annual petroleum use of vehicles at <http://www.fueleconomy.gov/feg/findacar.shtml>.  
Minimize idling time.

<sup>34</sup> <http://www.opensecrets.org/lobby/indusclient.php?id=E01&year=2013>

<sup>35</sup> (Bloomberg Businessweek) Leaked: The Oil Lobby's Conspiracy to Kill Off California's Climate Law,

<http://www.businessweek.com/articles/2014-11-25/revealed-the-oil-lobbys-playbook-against-californias-climate-law>, Nov. 25, 2014

## IMPROVING THE FUEL EFFICIENCY OF TRUCKS: A KEY STRATEGY FOR REDUCING OIL USE IN THE U.S. (CONT'D)

### **Clean Fuels**

Support clean fuels policies like the LCFS in California, and Clean Fuels Standards in Oregon and Washington.

### **Use Your Car Less**

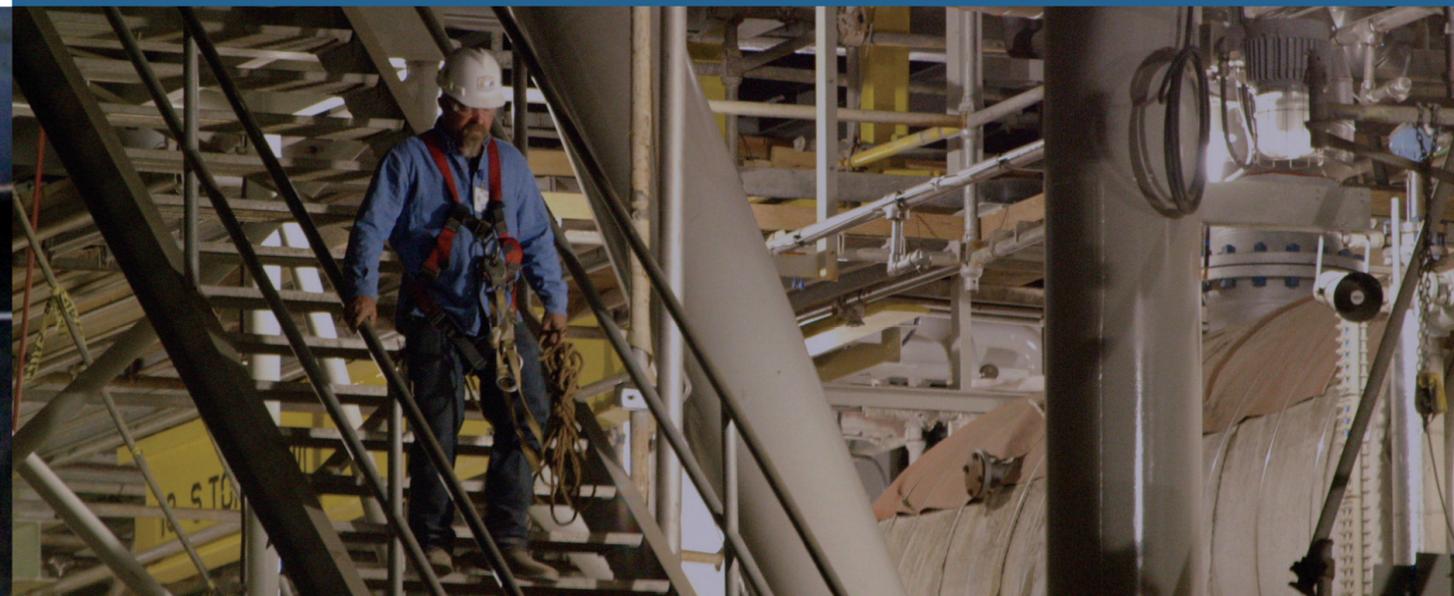
Alternatives like cycling and walking save money and are healthier for you. Every person who walks or bikes takes up less room on the street, reduces congestion, decreases parking demand, and decreases air pollution.

### **Make Your Voice Heard**

Let your representatives know that you care about climate change and supporting clean transportation policies such as strong vehicle and fuel standards, and alternatives to cars.

## DISCUSSION QUESTIONS

- ▶ Can you think of other methods of reducing oil dependency and/or GHG emissions that were not mentioned?
- ▶ How can you play a role in reducing our dependence on oil?
- ▶ What can we do individually and collectively to reduce our dependence on oil?
- ▶ What steps are you already taking to reduce your use of oil?
- ▶ What obstacles do you see to reducing our dependence on oil in the United States?
- ▶ How can you counteract the influence and power of the oil industry?



## CA POLICY SIDEBAR

California's Assembly Bill 32 (AB32) is a pioneering climate law that passed with bipartisan support in 2006, setting a statewide limit on carbon pollution.

California's greenhouse gas law, AB32, has multiple strategies for reducing carbon emissions and oil use – including promoting renewable alternatives, clean vehicles, and ensuring that oil industry pays for its pollution.

AB 32 has already delivered environmental, public health, and economic benefits – such as fueling clean-technology investments and stabilizing energy costs for consumers.

An ongoing analysis of reports filed with the California Secretary of State shows that the oil industry collectively spent over \$63 million lobbying California policymakers between January 1, 2009 and June 30, 2014.

The oil industry has attacked critical programs under AB 32, such as the low carbon fuel standard and the Cap and Trade Program, through extensive lobbying, funding of front groups, and efforts to spread misinformation about the law. Support the preservation and extension of AB32, including its Low Carbon Fuel Standard and Cap and Trade program.

## APPENDIX A: HEALTH EFFECTS ASSOCIATED WITH VEHICLE POLLUTION<sup>37</sup>

COMPOUND	HEALTH EFFECT
<b>Sulfur Dioxide (SO<sub>2</sub>) and Oxides of Nitrogen (NO<sub>2</sub>)</b>	Respiratory effects, airway inflammation in healthy people, and increased respiratory symptoms in asthmatics.
<b>Carbon Monoxide</b>	Harmful health effects associated with the reduction of oxygen delivery to the body's organs (heart and brain) and tissues.
<b>Particulate Matter (PM)</b>	Increased respiratory problems, such as irritation of the airways, coughing, difficulty breathing, and decreased lung function; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death

COMPOUND	ACUTE	CHRONIC
<b>Benzene</b>	Neurological effects; irritation of the eyes, skin, and respiratory tract.	Blood disorders (reduced number of red blood cells and aplastic anemia).

<sup>36</sup> <http://www.edf.org/transportation/reports/idling>

<sup>37</sup> <http://www.epa.gov/air/tribal/pdfs/presentationpetroleumrefineries14Dec11.pdf>

APPENDIX A: HEALTH EFFECTS ASSOCIATED WITH VEHICLE POLLUTION (CONT'D)

COMPOUND	ACUTE	CHRONIC
<b>1,3-Butadiene</b>	Irritation of eyes, throat, and respiratory tract.	Cardiovascular effects, leukemia, and cancer.
<b>Naphthalene</b>	Hemolytic anemia, damage to the liver, and neurological effects.	Cataracts, damage to the retina, and hemolytic anemia.
<b>Polycyclic Aromatic Hydrocarbons (PAH)</b>	Skin disorders, depression of the immune system.	Skin disorders (dermatitis, photosensitization), depression of the immune system, damage to respiratory tract, cataracts, and cancer.

COMPOUND	ACUTE	CHRONIC
<b>Volatile Organic Compounds (VOC)</b>	Combine with NO <sub>x</sub> in sunlight to create ozone.	Significantly reduce lung function and induce respiratory inflammation in healthy people during periods of moderate exercise, which as a result can cause chest pain, coughing, nausea, and pulmonary congestion.
<b>GHGs including: Methane (CH<sub>4</sub>), Carbon Dioxide (CO<sub>2</sub>), &amp; Nitrous Oxide (N<sub>2</sub>O)</b>	Compounds with high global warming potential contributing to climate change.	Increase in average temperatures, higher levels of ground-level ozone, increased drought, harm to water resources, ecosystems, and wildlife, health risk to sensitive populations.