NATIONAL WILDLIFE FEDERATION

INSPIRING AMERICANS TO PROTECT WILDLIFE FOR OUR CHILDREN'S FUTURE.

Fact Sheet

CONFRONTING GLOBAL WARMING

The 17% Contradiction:

Tar Sands and U.S. Emissions Reductions

In the United States a considerable conflict is emerging between significant "lock in" of new infrastructure dedicated to the development and use of tar sands derived fuels and recent efforts to reduce greenhouse gas emissions from the transportation sector. At the nexus of this conflict sits the U.S. Department of State (State Department) which has been delegated both the authority to approve construction of this new tar sands infrastructure and to represent the U.S. in international climate negotiations, including the country's pledge to reduce its global warming pollution.

At the 2009 Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) in Copenhagen, Denmark, the U.S. negotiated the Copenhagen Accord.[1] Although the Accord is a political agreement that is voluntary in nature, as part of this agreement the U.S. has pledged to reduce its greenhouse gas emissions by 17% from 2005 levels by 2020.[2] Unfortunately, the U.S. Congress' failure to pass comprehensive climate and energy legislation has created uncertainty throughout the world as to whether the U.S. will be able to meet its Copenhagen pledges and has raised doubts as to the ability of the U.S. to formalize those pledged reductions through COP decisions in Cancun.

Nonetheless, the U.S. continues to stand by its 17% pledge in the UNFCCC negotiations. In a recent speech Todd Stern, Special Envoy for Climate Change, reiterated this commitment stating:

> *President Obama is not backing away from the target we put forward in Copenhagen last year, and there are any number of ways to get there, using both legislative and regulatory tools. In his recent Rolling Stone[3] interview, the President made clear that he remains fully committed to taking concerted action on energy and climate.*[4]

This position has been repeated by the U.S. in other international venues including at the September meeting of the Major Economies Forum.[5] Continued affirmation of this pledge will not yield movement toward an international climate agreement, or build a new level of trust in the U.S. role in the negotiations, if the U.S. is also taking steps to significantly increase its greenhouse gas emissions at home. While the U.S. has taken steps forward in tackling its greenhouse gas emissions through the use of existing legal authorities, the State Department is poised to approve a new international pipeline – the Keystone XL pipeline. Approval of the new pipeline would lock the country into expanded high-carbon fuel infrastructure dependent on the development of Canada's tar sands and mark the third such pipeline approval since 2008. If fully utilized, this new infrastructure for tar sands crude oil would support an additional 69 MMtCO2e emissions each year – an amount that wipes out some of the significant emissions reductions initiated in the U.S. car and truck sector.

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One Step Forward: U.S. Action to Reduce Global Warming Pollution from Vehicles

Using authority from Congress, as confirmed by the U.S. Supreme Court, the U.S. is taking significant new steps to reduce its greenhouse gas emissions.[6] Earlier this year, a World Resources Institute analysis determined that by using existing laws, such as the Clean Air Act, these steps start to put the country on the path to meeting its Copenhagen commitment to reduce emissions to 17% below 2005 levels by 2020.[7]

The most prominent step is the Environmental Protection Agency's (EPA) use of the law to reduce emissions from the U.S. automobiles and trucks sector.[8] In March 2010, the U.S. finalized greenhouse gas tailpipe standards for new cars that are manufactured from 2012 thru 2016. The standards will reduce U.S. greenhouse gas emissions by 960 MMtCO2e and reduce U.S. light duty vehicle emissions approximately 21% by 2030 over what they would be absent the regulations.[9] A second round of automobile standards intended to address vehicles made from 2017 thru 2025 has already been initiated. The initial notice of these new standards outlines different paths to achieve global warming pollution reductions ranging from 3% to 6% per year across the light-duty vehicle fleet. By 2030, EPA projects the new standards would reduce U.S. emissions an additional 465 MMtCO2e per year.[10]

In October, the automobile standards were followed up by the first-ever proposed emission standards for medium and heavy duty trucks. The new standards would cut greenhouse gas emissions from medium and large trucks from 7 to 20% by 2018. The standards applicable to trucks produced between 2014 and 2018 would cut global warming pollution by 250 MMtCO2e over the life of the vehicles.[11]

One Step Back: A New Tar Sands Addiction

While the U.S. initiates greenhouse gas reductions in the transportation sector, the country's growing appetite for oil derived from Canadian tar sands threatens to undo much of these gains.

Canadian tar sands are composed of clay, sand, water, and bitumen – a heavy, black, viscous oil that can be mined and processed. Extracted bitumen is then refined into oil and other petroleum products. Unlike conventional crude oil, bitumen cannot be pumped from the ground in its natural state. Instead, deposits are mined using energy-intensive extraction techniques to separate the bitumen from the sand, clay and water. Surface tar sand deposits can be recovered by open pit mining techniques, using large hydraulic and electrically powered shovels to dig up tar sands and transport them for extraction using a hot water separation process. Compressed air and steam injection methods are used to extract deep tar sand deposits, and those methods require large quantities of water and energy for heating and pumping. Overall, about two tons of tar sands are required to produce one barrel of oil.

Both mining and processing of tar sands cause significant environmental impacts, including emissions of greenhouse gases, destruction of wildlife habitat, and impacts to air and water quality. Tar sands development is significantly more energy intensive than conventional oil and gas development. It takes three to five times the amount of energy to extract and upgrade a barrel of crude from tar sands as compared to conventional sources. The greenhouse gas emissions from tar sands oil production are three times greater than emissions from low-sulfur, light crude oils.[12]

One Step Back cont'd

In addition, tar sands extraction operations require large quantities of water – thirty-five gallons of water for every one gallon of oil – seriously threatening surface flow in local streams, adversely impacting habitat for migratory fish and other species dependant on local water resources. The water used in tar sands processing is discharged into toxic sludge pits so large that they are visible from space. Thousands of migratory waterfowl die in these toxic pits each year.

The petroleum industry is proposing thousands of additional miles of pipeline across the U.S. and Canada creating an enormous web of pollution and destruction.
(Map from Canadian Association of Petroleum Producers, 2009)

The State Department is currently in the process of approving tar sands as a major source for U.S. oil and transportation fuel needs. In particular, the State Department is the lead U.S. agency "designated and empowered to receive all applications for Presidential permits . . . for the construction, operation, maintenance, at the borders of the United States, of facilities for the exportation or importation of petroleum, petroleum products, coal, or other fuels to or from a foreign country."[13] As such, the State Department is the lead U.S. agency deciding whether the Keystone XL tar sands pipeline will be granted a permit and allowed to be built.

The Keystone XL pipeline will supply U.S. refineries with heavy tar sands crude. Keystone XL would cut through America's heartland, running nearly 2,000 miles from Alberta, Canada, down to Port Arthur, Texas, where the tar sands will be refined into transportation fuels. The proposed pipeline will traverse rivers and carve across prairies, will flow on top of vital aquifers, and threaten farmers, ranchers, and wildlife should it leak or break.

A 2007 U.S. Geological Survey report found that the type of oil extracted from Canadian tar sands contains eleven times more sulfur, six times more nitrogen, eleven times more nickel, and five times more lead than conventional oil.[14] Refining tar sands crude transported through the pipeline will result in higher emissions of harmful air pollutants such as sulfur dioxide, hydrogen sulfide, sulfuric acid mist, and nitrogen oxides, as well as toxic metals such as lead and nickel compounds.

The increased pollution will affect human health. According to the EPA, these pollutants may cause an increase in premature death; cancer; permanent lung damage; reproductive, neurological, developmental, respiratory, and immunological problems; cardiovascular and central nervous system disorders; bio-mutations; respiratory illness, including bronchitis and pneumonia; and aggravation of heart conditions and asthma. [15]

Moreover, EPA also recognizes that the environmental damage caused by these pollutants includes acid rain; concentration of toxic chemicals up the food chain; creation of ground-level ozone and smog; visible impairments that migrate to sensitive areas such as national parks; and depletion of soil nutrients.

Refining oil transported by the Keystone XL project will produce more greenhouse gases, such as carbon dioxide, than refining conventional crude oil because the tar sands crude requires more energy to refine. The requisite additional energy is most likely to come from sources, such as coal-fired power plants, that emit large quantities of greenhouse gases. This will add to harmful emissions emanating from the refineries themselves.

One Step Back cont'd

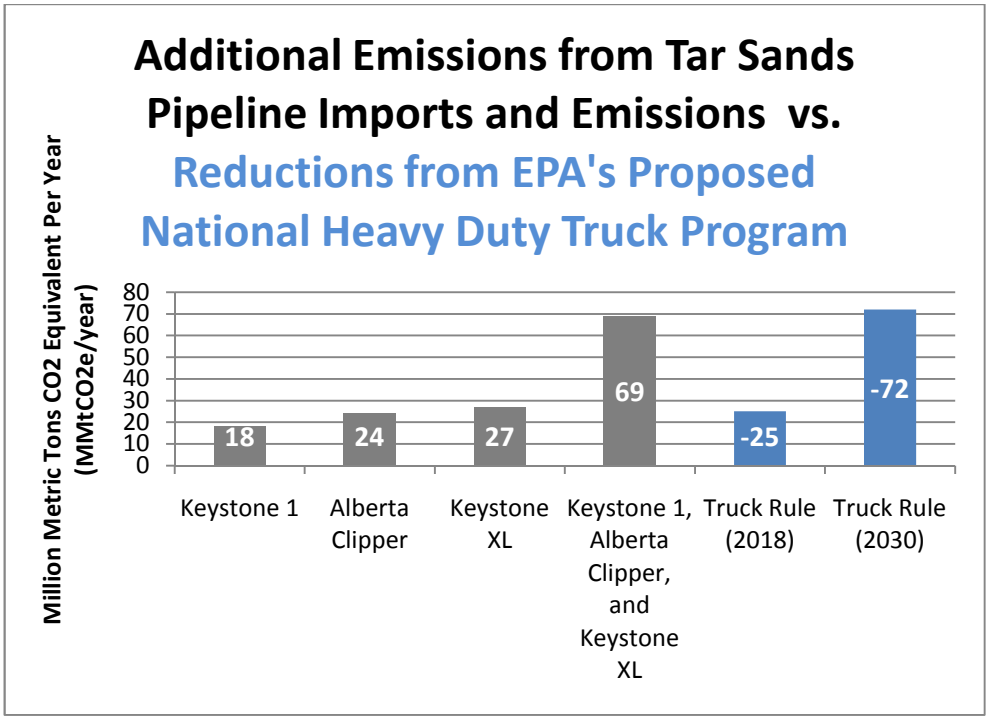
Keystone XL is the permanent opening of Pandora's Box. The tar sands industry aims to create an extensive web of pipelines to deliver increasing amounts of Canadian tar sands oil to refineries in the United States and international markets. The Canadian company Enbridge's Alberta Clipper pipeline, running from the U.S.—Canadian border in North Dakota across Minnesota to Wisconsin has already been completed. TransCanada's Keystone 1 pipeline that runs from Alberta to Illinois and on to Oklahoma was approved in 2008. Approval and building the Keystone XL pipeline will further institutionalize demand for a product that the U.S. does not need and will do so at the expense of new, clean renewable fuels. And it calls into question whether the U.S. can satisfy its pledge to reduce its greenhouse gas emissions by 17% by 2020 when it is expanding dependence on dirty fossil fuels such as tar sands.

Tar Sands "Lock-In" Could Reverse Recent U.S. Emissions Reductions

The additional emissions from the Keystone XL tar sands oil would quickly dwarf the short-term greenhouse gas reductions expected from the EPA's proposed medium and light duty truck rule – a sector responsible for 6% of total U.S. greenhouse gas emissions.[16] The EPA estimates that in 2018 the new truck rule will reduce greenhouse gas emissions by 25 MMtCO2e annually.[17] In comparison, the agency's analysis of the carbon impacts of tar sands oil that the Keystone XL would deliver found that the project would increase annual emissions by 27 MMtCO2e.[18] As a result, if the Keystone XL pipeline is approved, the U.S. will be moving simultaneously to reduce the direct emissions from its vehicle sector only to wipe out much of those gains by locking the country into the use of higher carbon fuels in those same vehicles. The long-term goals of the truck rules are also put into jeopardy by Keystone XL. EPA estimates that the new medium and heavy duty truck program would reduce greenhouse gas emissions by nearly 250 MMtCO2e over the life of the new vehicles sold during 2014 to 2018.[19] Assuming a 10-year life for these vehicles, the total additional emissions from Keystone XL over this same period (2014 to 2028) would be 405 MMtCO2e[20] and far exceed the truck rules' emissions reductions.

Even by 2030, when the new rules will have more significantly turned over the existing U.S. truck fleet, the added global warming pollution caused by locking into the pipeline would amount to more than one third of the annual emissions reductions estimated to be achieved by the truck rules - reductions of 72 MMtCO2e per year by 2030.[21] While the carbon impact of Keystone XL suggests that locking into tar sands oil infrastructure runs completely counter to the United States' internationally pledged greenhouse gas reductions goals, this is only part of the picture. The State Department has already approved two dedicated tar sands pipelines since 2008 that have the capacity to import well over 2 million barrels of tar sands oil a day. On March 17, 2008, the State Department granted a Presidential permit for the construction of the Keystone 1 pipeline[22] that will add an additional annual emissions load of 18 MMtCO2e per year over conventional oil production.[23] And on August 21, 2009, the State Department signed a Presidential permit approving the Alberta Clipper pipeline which adds additional emissions of 24 MMtCO2e per year.[24]

Tar Sands Could Reverse Recent U.S. Emissions Reductions cont'd



All combined the three pipelines – Keystone 1, Alberta Clipper, and the pending Keystone XL - are set to lock the U.S into 69 MMtCO2e additional emissions per year. This would result in an emissions increase that is almost triple the greenhouse gas emissions reductions in 2018 of the proposed truck rule and would almost wipe out the annual emission gains from the truck rule by 2030.

Keystone XL Decision & Cancun

While the U.S. enters the Cancun negotiations insisting it will meet its 17% target for 2020, the State Department has already indicated it is poised to approve the Keystone XL pipeline. In late October of this year, Secretary of State Hilary Clinton responded to a question about Keystone XL stating that the Department was "inclined" to approve the pipeline.[25] Currently, the State Department is in the process of responding to comments from other U.S. government agencies, such as the EPA, that found the State Department's environmental assessment of the project lacking important information, including a full discussion of the pipeline's greenhouse gas emissions impacts.[26]

Clearly, the State Department's pending decision on the Keystone XL's Presidential permit represents an opportunity for the U.S. to align its domestic policy with its negotiating position and repeated pledge of 17% reductions by 2020. The State Department can deny the permit, point to its domestic reductions on vehicles and trucks, and build trust as it negotiates toward an international agreement or, it can approve the Keystone XL pipeline and make recent U.S. actions to reduce emissions amount to little real progress on tackling the climate crisis.

For more information visit the following websites:

NWF Tar Sands page – www.nwf.org/tarsands
NWF International/Cancun page – www.nwf.org/cancun
NWF Clean Air Act page – www.nwf.org/cleanairact

Endnotes:

[1] UNFCCC Copenhagen Accord: http://unfccc.int/home/items/5262.php.
[2] US submission to Copenhagen Accord: http://unfccc.int/files/meetings/application/pdf/unitedstatescphaccord_app.1.pdf
[3] Jann S. Werner "Obama in Command: The Rolling Stone Interview" Sept 28, 2010
http://www.rollingstone.com/politics/news/17390/209395?RS_show_page=4
(President Obama states: Understand, though, that even in the absence of legislation, we took steps over the past two years that have made a significant difference. I will give you one example, and this is an example where sometimes I think the progressive community just pockets whatever we do, takes it for granted, and then asks, "Well, why didn't you get this done?" We instituted the first increase in fuel-efficiency standards in this country in 30 years. It used to be that California would have some very rigorous rule, and then other states would have much weaker ones. Now we've got one rule. Not only that, it used to be that trucks weren't covered, and there were all kinds of loopholes — that's how SUVs were out there getting eight miles a gallon. Now everybody's regulated — not only cars, but trucks. We did this with the agreement of the auto industry, which had never agreed to it before, we did it with the auto workers, who had never agreed to it before. We are taking the equivalent of millions of cars off the road, when it comes to the amount of greenhouse gases that are produced. Is it enough? Absolutely not. The progress that we're making on renewable energy, the progress that we're making on retrofitting buildings and making sure that we are reducing electricity use — all those things, cumulatively, if we stay on it over the next several years, will allow us to meet the target that I set, which would be around a 17 percent reduction in our greenhouse gases.)
[4] Todd Stern October 2010 remarks: http://www.state.gov/g/oes/rls/remarks/2010/149429.htm
[5] Todd Stern Remarks at Major Economies Forum: http://www.state.gov/g/oes/rls/remarks/2010/147784.htm
(Stern: there are a number of tools that are in the kit, if you will. There's action already that the EPA has taken over the course of the past year. There's other actions that can be taken. There's -- you know, we're at the beginning of a 10 year period between 2010 and 2020. I don't have any doubts that there's going to be legislation of some kind that will be meaningful. I can't say exactly when, and I can't say exactly what the shape of it's going to be. So I think that we will, in the context of Cancun, will reaffirm – we've actually already done that -- the commitment to our Copenhagen submission. But you know, only in a different kind of broader sense rather than real specific details what the elements of the package will be.)
[6] World Resources Institute Fact Sheet: http://www.wri.org/stories/2010/09/fact-sheet-us-climate-action-2009-2010
[7] World Resources Institute Analysis: http://www.wri.org/publication/reducing-ghg-emissions-using-existing-federal-authorities-and-state-action
[8] NWF Clean Air Act & Vehicles Fact Sheet: http://www.nwf.org/Global-Warming/Policy-Solutions/Climate-and-Energy/Stop-Dirty-Energy/~/media/PDFs/Global%20Warming/Policy-Solutions/CAA_Vehicles_Fact_Sheet.ashx
[9] EPA light vehicles rule: http://epa.gov/otaq/climate/regulations/420f10014.htm
[10] Go60MPG.org report: http://docs.nrdc.org/energy/files/ene_10092301a.pdf
[11] EPA medium and heavy duty vehicles rule: http://epa.gov/otaq/climate/regulations/420f10901.htm
[12] WWF report: http://assets.panda.org/downloads/unconventional_oil_final_lowres.pdf
[13] Executive Order 13337, 69 Fed. Reg. 25299 (2004).
[14] USGS 2007 Report: http://pubs.usgs.gov/of/2007/1084/OF2007-1084v1.pdf
[15] EPA Health Effects Notebook for Hazardous Air Pollutants: http://www.epa.gov/airtoxics/hlthef/hapindex.html
[16] EPA Draft Regulatory Impact Analysis, Chapter 5: http://www.epa.gov/otaq/climate/regulations/420d10901.pdf
[17] EPA and NHTSA, Greenhouse Gas Emission Standards and Fuel-Efficiency for Medium and Heavy Duty Engines and Vehicles, http://epa.gov/otaq/climate/regulations/hd-preamble-regs.pdf at 272 (Table VI-7).
[18] Assumes operation at its maximum capacity of 900,000 barrels per day; Cover letter for the comments submitted by EPA to the State Department on the Draft Environmental Impact Statement for the Keystone XL Pipeline Project, Page 2. http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement
[19] EPA and NHTSA Propose First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles: Regulatory Announcement. http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement
[20] 15 years times 27 MMT equals 405 MMT
[21] EPA and NHTSA Propose First-Ever Program to Reduce Greenhouse Gas Emissions and Improve Fuel Efficiency of Medium- and Heavy-Duty Vehicles: Regulatory Announcement. http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement
[22] U.S. Department of State, Keystone Pipeline: www.keystonepipeline.state.gov
[23] Calculated using the greenhouse gas formula from the EPA's comments on the Draft Environmental Impact Statement for the Keystone XL pipeline: http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement.
Formula: pipeline capacity bpd * (181 kgCO2e/bbl – 99 kgCO2e/bbl) * 365. Pipeline capacities for the Keystone and Alberta Clipper pipelines (590,000 bpd and 800,000 bpd, respectively) were obtained from the Canadian Association of Petroleum Producer's 2010 Crude Oil Forecast: http://www.capp.ca/forecast/Pages/default.aspx#rGcdf1qnIquQ
[24] U.S. Department of State, Alberta Clipper: www.albertaclipper.state.gov. Figure calculated using the greenhouse gas formula for the Keystone XL pipeline (above).
[25] NWF Secretary of State Clinton interview: http://blog.nwf.org/wildlifepromise/2010/10/dirty-fuels-pipeline-toast-not-so-fast/
[26] U.S. EPA comments on Keystone XL DEIS: http://yosemite.epa.gov/oeca/webeis.nsf/%28PDFView%29/20100126/$file/20100126.PDF?OpenElement