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Wrong Side of the Tracks: The Neglected Human Costs of Transporting Oil and Gas

LLOYD BURTON AND PAUL STRETESKY

Abstract

The connection between human rights and climate change is most evident when examining carbon dioxide emissions that result from burning fossil fuels (e.g., sea level rise and displaced coastal cultures). However, the transport of fossil fuels also has human rights implications for human rights and climate change. This research focuses on the health and safety risks inflicted on those residents who are adjacent to the railways that ship fossil fuels along the US-Canada transportation corridors. Applying sociological and jurisprudential perspectives, we review the environmental/climate justice literature as it pertains to industrial transport corridors, documenting the forms of heightened risk imposed on those living along these transportation paths. Next, we develop an illustrative case study of Canada's worst rail catastrophe. In so doing, we provide evidence of a decades-long failure of US and Canadian regulators to prevent such disasters. We interpret that disaster through a human rights case law suggesting that States have an affirmative duty to protect their citizens from foreseeable disasters. Based on this analysis, we propose specific rail safety regulatory reforms. We argue that if the US and Canadian governments implement these regulations as required under human rights law, they can more effectively honor their obligations to their citizens who are paying a high human cost for the material benefits associated with increased energy production.

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Introduction

THE MOST SOCIALLY and economically disadvantaged often suffer the gravest environmental impacts of climate change. Whether it be the sea-level-rise inundation of low-lying islands and coastal areas, or crop and herd failures occasioned by widening climate extremes, the most marginalized (often indigenous) peoples seem to bear the heaviest burden as global warming irreparably degrades the environments on which their livelihoods depend.¹

The term *climate justice* refers to application of traditional environmental justice concerns to the phenomenon of climate change.² Frequently cited examples of climate injustice often focus on the after-effects of burning fossil fuels to power global economies and civilizations. By contrast, this article examines the disproportionate risks inflicted on vulnerable populations when these fuels are transported from their extraction sites. The growing transportation of fossil fuel also means that there will be an increase in the number of potentially devastating derailments that will occur when moving fuel in unsafe tanker cars. As a result, we propose that the US and Canadian governments have human rights obligations to protect these vulnerable populations.

A growing danger

The energy appetites of the world's wealthiest nations accelerated after World War II, even as these same nations were becoming more concerned with the environmental impacts of extracting resources from their own lands and waters. The result was a rapid growth in the importation of petroleum from developing nations located in regions such as the Middle East, Central and South America, and Africa.³

As oil and gas production expands so too do environmental and cultural degradation, along with severe threats to the health of adjacent (often indigenous) human populations. Poor countries desper-

ate for economic development have accepted this despoliation (or least their leadership elites did) as the "price of progress."⁴ In some countries, oil and gas extraction have actually increased poverty and its effects, making armed conflict and human rights violations more likely.⁵ Thus, nations rich in oil and gas resources may become saddled with the 'negative externalities' created by the energy demands of the developed world.⁶

The growing energy appetites of developing nations such as China and India have driven energy demands higher. Moreover, political instability and anti-Western sentiment in energy-rich developing regions of the world has cast doubt on the reliability of future cheap foreign imports. As a result, there has been an increased emphasis on the domestic production of oil and gas in the United States and Canada—though the US has always been more dependent on oil imports from Canada and Latin America than from the Middle East.

Urged on by technological innovations such as hydraulic fracturing and directional drilling, oil and natural gas are now being extracted from deep shale formations that were previously inaccessible. Other "non-conventional" fossil fuels such as Canadian oil sands are also beginning to claim a greater share of the fossil fuel production portfolio. As a result, the renewed production of oil and gas in the United States and Canada represents an economic boom that is estimated to contribute hundreds of billions of dollars to the economies of both nations.⁷ As a result, the West is now paying more of the environmental health costs of fossil fuel production that used to be imposed mostly on the developing world. While the benefits to the global oil and gas industries are huge, and the plentitude of relatively cheap carbon-based fuels support North American economies, those living in the immediate vicinity of rail and pipeline corridors are experiencing steadily heightening risk for the sake of others' prosperity, as are communities neighboring fields from which these resources are being extracted.⁸

We begin by examining the plight of these people whose health and safety are being compromised. We suggest that this is a human rights-based issue because the health and safety of residents living near transportation corridors are being put at risk for the sake of a robust global fossil fuel industry and relatively low domestic energy prices. Second, we look at the failures of regulatory infrastructure in both the United States and Canada. To illustrate the potential for significant harm associated with increasing production, we demonstrate how inadequate US and Canadian regulatory oversight set the stage for the calamitous and deadly tank car train derailment in Lac Mégantic, Quebec in the summer of 2013.

Third, we compare the US and Canadian regulatory failures—regulatory regimes that take no account of human rights in the assignment of heightened risk to vulnerable populations—with the European Court of Human Rights’ assignment of moral culpability to governments that fail to protect their citizens from foreseeable disasters. We agree with other analysts that a “a human rights approach to environmental protection ... ensures that the natural world does not deteriorate to the point where internationally guaranteed rights such as the rights to life, health, property, a family and private life, culture, and safe drinking water are seriously impaired.”⁹ In making this assertion, we draw upon international human rights law that sets out health standards for every human being. For example, Article 25 of the Universal Declaration of Human Rights (UDHR) states, “everyone has the right to a standard of living adequate for the health and well-being.” Article 12 of the International Covenant on Economic, Social and Cultural Rights (ICESCR) declares that there is a “right of everyone to the enjoyment of the highest attainable standard of physical and mental health.” While the US has signed but not yet ratified the ICESCR, it is clear that international human rights law emphasizes that States must respect the right to health.

We conclude by pointing out that human rights are increasingly emphasized and applied in, for example, the European Union as a deciding principle in environmental health disputes. It is our hope

that health principles emphasized in the European Union and in international human rights law are also adopted in the US and Canada in the case of health risks associated with the transportation of oil and gas. As we suggest, the US and Canada appear to be much more interested in protecting the profitability of the freight rail industry than ensuring human rights as well as the health and safety of those living along its corridors. We illustrate the unjust, flawed logic they use to defend their continued indifference to the human cost of fossil fuels transport, and we recommend ways in which this particular form of environmental injustice can be effectively remedied.

In harm’s way

The transportation of non-conventional fossil fuels such as oil sands and shale oil can be a risky business, just as natural gas distribution always has been. As the production of crude continues to increase, so too has crude-by-rail transport. In the last five years alone, industry data show a 25-fold increase in the volume of US crude-by-rail, from 9,500 carloads in 2008 to 234,000 in 2012.¹⁰ There are several reasons for this sudden and huge expansion in crude-by-rail transport. One is that recently developed shale oil fields, such as the Bakken formation lying beneath the US states of North Dakota and Montana and the Canadian province of Saskatchewan, are not directly served by major pipeline systems. And a second reason is related to the first: some of the crude from newly developed, hydro-fractured formations such as the Bakken is so volatile and corrosive that pipeline companies refuse to ship it. Just a month before a rail-shipped load of Bakken crude exploded and destroyed downtown Lac Mégantic, the US Federal Energy Regulatory Commission (FERC) ruled in favor of pipeline companies’ refusal to ship the product because of its ultra-hazardous properties.¹¹

The climate justice movement focuses on the plight of traditionally disadvantaged groups as its principal cause for concern. In the environmental justice literature, the focus is also on social and economic disadvantage. Plenty of evidence exists to support this concern, including the 20-year legal

struggle of the indigenous and severely impoverished peoples of Ecuador's rural Oriente region to get American oil companies to take responsibility for having devastated their rainforest environment.¹²

However, a human rights-based perspective based on ICESCR and UDHR emphasizes that all people should have access to adequate health. Robert Bullard recently noted that "environmental justice is also now framed as a human rights issue" because it also promotes the right to health for everyone.¹³ We expand upon this environmental justice concern and argue a human rights-based approach suggests that any group of people exposed to heightened environmental risks is suffering environmental injustice.¹⁴ Environmental injustice resulting from the rail transportation of oil and gas is therefore not always a result of ethnic or socioeconomic disposition.¹⁵ Instead, risk follows transportation corridors that may transverse low-income communities in urban areas and affluent communities in non-urban areas.¹⁶

In highly industrialized urban centers in the US, low-income communities of color are indeed most at risk.¹⁷ In those instances, social structural forces tend to bring together social disadvantage and environmental harm. The situation is different in rural areas where socioeconomic status may not be related to risk. Historically, railroads brought economic prosperity to communities developed along rail lines. A town with a railway station was a magnet for social and economic activity.¹⁸ Thus, rural and suburban residents living near rail lines are now in higher-risk environments because the transport infrastructure has become considerably more dangerous. Such was the case in the lakeside resort town of Lac Mégantic, Quebec, in the summer of 2013, when a highly volatile crude-by-rail tank car train derailed, exploded into a firestorm, killed 47 people, and completely destroyed the center of the town. Lac Mégantic is a quiet, semi-rural lakeside resort town, not an industrial hub more accustomed to (and prepared for) such disasters.

Though not necessarily delineated by either material disadvantage or minority group status, unsuspecting residents in Lac Mégantic lost their lives

and homes because of failing and overworked infrastructure, unsafe operating procedures, and regulatory indifference. All over North America, such transport systems are being operated at the very limits of their design capacity and life expectancy, and for the most part regulators have been willing to let this happen—that is, right up to the point where a catastrophe exposes their failure to protect the public.

Public trust and regulatory infrastructure

Law's moral purpose and the administrative state

The UN specifically recognizes climate change as an issue for human rights. However, the transportation of oil and gas has not yet been included in climate change discussions about human rights.¹⁹ Nevertheless, under the guise of climate change there is a call for governments, corporations, and civil society organizations to push for the ratification of a treaty that would call for sustainable development that promotes human rights. For instance, at the 2012 Conference on Sustainable Development (Rio 20+ Conference) hosted by the UN, the Office of the High Commissioner for Human Rights Key Messages document states:

Member states must commit to ensure full coherence between efforts to advance the green economy, on the one hand, and their solemn human rights obligations on the other. They must recognize that all policies and measures adopted to advance sustainable development must be firmly grounded in, and respectful of, all internationally agreed human rights.²⁰

As previously noted, the US and Canada support a number of treaties that address the issue of health under human rights law. Unfortunately, the US has failed to ratify the ICESCR. Nevertheless, both the US and Canada are bound by UDHR. By ratifying these treaties, both the US and Canada have agreed to adopt mechanisms of protection. As noted below, these mechanisms have largely failed, and the regulation of oil and gas transportation does not appear

to be living up to the ideals of UDHR.

While Rio 20+ articulated lofty ideals, it stands in sharp contrast with the historical economic forces that were crucial to bringing these nation-states into being. The breakneck pace of industrialization in the US and Canada helped many industrialists amass great fortunes that were then reinvested in technological innovations that helped further production. But these industrialists also invested their wealth in corrupting governmental institutions to the extent that they became incapable of using the power of the state to protect citizens from the worst excesses of the industrial age.²¹

It took the Grange Movement in the upper mid-western US and the urban progressive movement in the US and Canada to implement needed government reforms in the late 19th and early 20th centuries, and to institute meaningful economic and public safety regulatory controls over industries run rampant. Since then, interstate (and later, international) railroad regulation has been contested ground. Generally speaking—and especially since deregulation in the 1980s, relatively lax federal regulation has partially or wholly pre-empted state and local government efforts to compel the railroads to operate more safely, and to provide local governments with better information on the hauling of dangerous cargo.²²

Disaster mitigation science and the failure of regulatory infrastructure

Both Canada and the US host two federal agencies with oversight responsibilities for rail safety: one advisory, and the other regulatory. On the advisory side, the US agency is the National Transportation Safety Board (NTSB); in Canada it is the Transportation Safety Board (TSB). The lead regulatory agency in terms of hazardous materials (hazmat) freight rail transport in the US is the Pipeline and Hazardous Materials Safety Administration (PHMSA) within the Department of Transportation; in Canada, it is Transport Canada (TC).

As in Canada, the US Congress created the NTSB as an investigatory agency to study the circumstances contributing to accidents in commercial conveyance such as airlines, pipelines, and rail.

The NTSB is also responsible for comparing these circumstances with previous similar events and recommending systemic changes. Congress and Parliament created these independent, evidence-based, nonpartisan advisory boards because the regulatory agencies to which the boards direct their recommendations (in the case of rail, PHMSA and TC) are subject to political pressure by the regulated industries, sometimes resulting in seriously compromised safety regulations.

When overly compromised, the result is agency capture: that is, the regulatory agency becomes captive to the political influence of the industries they were set up to regulate in the public interest.²³ When agency capture becomes severe enough, regulatory failure ensues. In deference to industry, the agency fails in its statutory responsibility to protect public health and safety. To illustrate this point, we analyze the actions of the US National Transportation Safety Board and the Pipeline and Hazardous Materials Safety Administration over the last two decades on the subject of transporting hazardous liquid fuels by rail. This examination reveals regulatory failure on the part of PHMSA, which—along with similar failures by Transport Canada, as documented by the Canadian Auditor General—set the stage for the tragedy at Lac Mégantic.

Recipe for Canada's worst rail disaster

In May 1991, the NTSB sent a report to the US Department of Transportation documenting its extensive research into dozens of tank car train derailments spilling toxic and hazardous substances into the environment.²⁴ The common denominator in all these cases was a particular model of railroad tank car—the DOT 111. This is a general-purpose, non-pressurized vehicle the railroads use to haul everything from cooking oil to flammable and explosive fuels. It makes up about 70% of the American tank car fleet, and nearly 80% of the Canadian fleet.

The NTSB research showed that when these cars derailed, they nearly always punctured and spilled their cargoes, owing to thin skins and fragile head shields, exposed valve fixtures likely to snap off in a wreck, and coupling devices that punctured oth-

er cars' head shields in a pile-up. Some critics have dubbed the DOT 111s the "Ford Pinto of the freight rail industry."²⁵ The NTSB recommended that DOT stop using these cars to haul hazardous liquids until they had been refitted and reinforced.²⁶ However, DOT declined to do so.

In 2009, nearly two decades after the NTSB recommendation, unmodified DOT 111s were still hauling flammable carbon-based liquid fuels; six more major derailment disasters involving breached, exploding, and burning DOT 111s had occurred; the NTSB has repeatedly warned of the dangers these cars pose when hauling hazardous liquids; and PHMSA had repeatedly refused to follow the NTSB's advice that these cars either be retrofitted or taken out of hazardous materials transport service.

In June 2009, a freight train owned by the Canadian National Railway Company (CN) and hauling DOT 111s filled with ethanol, derailed at a road crossing in Cherry Valley, Illinois. The cars punctured each other, leaked, and caught fire, killing one of many motorists stopped at the crossing and severely injuring several more.²⁷ In 2012, the NTSB issued its report on the Cherry Valley disaster, cataloguing the factors contributing to this tragedy. Topping the list was the failure of the DOT 111s carrying this flammable fuel to contain their cargo on derailment—the same message the NTSB had been sending to federal railway safety regulators since 1991.

But the report also cited other factors, such as (1) the train operators were not informed that the track ahead of them had been washed out by a flood, even though CN headquarters had this vital information; (2) emergency responders did not have timely and accurate information about the tank cars' contents (since PHMSA only requires train operators to have a hard copy of train contents in the cab of the lead locomotive, which in this case had driven into a washout); and (3) CN failed to work with county officials to abate flooding on its tracks.²⁸

Alarmed at PHMSA's continued refusal to heed NTSB's warnings, communities and citizens' groups along rail transport corridors in northern Illinois petitioned PHMSA to undertake a rule-making for the purpose of adopting the NTSB's recommenda-

tion. The agency took the petitions under advisement, along with others filed in opposition by industry. Another year went by. In July 2013, the sole engineer on a freight train owned by Montreal, Maine, and Atlantic Railroad parked for the night on a rise above the small resort town of Lac Mégantic, Quebec and left the train unattended. It included dozens of DOT 111 tank cars, labeled as carrying crude oil, which is normally neither explosive nor easily flammable. Later that night, the brakes gave way, and the driverless train rolled down into Lac Mégantic and derailed in the middle of town. The tank cars left the tracks, punctured each other, and exploded. Forty-seven people died, scores more were injured, and the fires took days to extinguish.²⁹ The railroad owners first blamed their own engineer, then local firemen who had put out a small fire on the train the day before, and then vandalism. Investigative reporting later uncovered the truth: everything that had gone wrong could be traced to failed government oversight.

On the Canadian side, TC allowed large freight trains carrying hazardous cargo to be operated by a single engineer, and to be left unattended overnight. They also did not require shippers to test and verify the volatility of hazardous liquids in unpressurized tank cars. The inherently unsafe tank cars on this train were carrying crude oil from North Dakota's Bakken formation, which was so flammable, explosive, and toxic that the pipeline companies had refused to ship it.

On the American side, PHMSA had still not taken action to disallow the transport of such dangerous cargo in unmodified DOT 111s. Had it done so, TC would have been compelled to follow suit, because of the intense and continuous interpenetration of the international boundary by US and Canadian company-owned freight-trains carrying US and Canadian-produced carbon-based fuels.

Two months after the Lac Mégantic tragedy, PHMSA announced a rule-making procedure in response to rail corridor community and industry petitions.³⁰ But in the text of its Announcement of Propose Rule Making, PHMSA all but declared its continuing deference to industry at the expense of public safety. Although NTSB research reports had

conclusively proven the great dangers of hauling flammable liquids in unmodified DOT 111s, PHMSA's announcement says that while there "may be safety benefits" attained by adopting the NTSB's recommendations, there will also be "regulatory burdens."³¹ As it raised the possibility of further regulation, PHMSA cast aspersions on NTSB's solid science, while at the same time fretting about industry compliance costs. In the end, the Lac Mégantic disaster represents a failure of Canada and the US to create and enforce important regulatory mechanisms that protect the health of citizens under human rights law.

Repairing regulatory failure

The Canadian government response to the regulatory failure precipitating the Lac Mégantic tragedy was in some ways swifter, more incisive, and far more self-critical than the American one. The Canadian Auditor General launched an immediate investigation, and in November 2013 issued a damning analysis of TC's failure to protect public and safety.³² According to the report, TC was so underfunded, so understaffed, and so peopled by employees unqualified to do their work that its fig-leaf defense of allowing industry to "self-regulate" was tantamount to surrendering the regulatory field. The need for action is now unavoidable.

The same is true of PHMSA. As of this writing, the comment period on its latest hazmat rail transport rulemaking has ended, and the agency is at a crossroads. As before, it may again retreat into inaction, fearful of imposing compliance costs on industry, forcing the railroads to keep hauling flammable liquids in unreinforced DOT 111s. The agency may also order unreinforced DOT 111s out of service for hazmat transport, as the rail industry is now urging. This step could re-instill in the American public some degree of faith in PHMSA's ability to protect them.

Until November 2013, the smart money in terms of regulatory handicapping was on PHMSA letting the unreinforced 111s stay in hazmat service, for fear of otherwise restricting the flow of dangerous Bakken crude to Canadian and US Atlantic coast refineries.

In the freight rail industry, the railroads do not own most of the rolling stock they transport. Neither the oil and gas companies nor the railroads have any particular interest in sinking their wealth into a 40-year infrastructure investment (the average life of a rail tank car), while the ongoing struggle between rail and pipeline transport of oil and gas in North America continues to play itself out. Most of the tank car fleet is owned by holding companies set up for just that purpose.³³

These holding companies are simply looking for rents on the space in their cars. And the contents of those cars—the tenants—are provided by the shippers. Producers contract with the shippers to find tank car space to haul their product from field to refinery. The shippers will load cargo (including the highly volatile Bakken crude) into any tank car allowed by federal regulators. US federal regulators continue to allow Bakken crude to be shipped in unreinforced DOT 111s.

These industry stakeholders continued to resist additional regulatory restrictions until a Bakken crude-laden train of DOT 111s derailed, exploded, and burst into flames in rural Alabama in November 2013; followed by yet another derailment disaster involving the same type of car and the same Bakken crude in North Dakota in December 2013. Finally, it then became clear to the public that hauling Bakken crude in DOT 111s was a literal recipe for disaster. The regional railroad responsible for the Lac Mégantic calamity had filed for bankruptcy within weeks of the incident: compliance with inadequate federal regulations would have been no defense against the negligence claims of survivors in wrongful death actions against the railroad in the Canadian courts.

PHMSA's excuse for not decommissioning unreinforced DOT 111s has been denied it, and by the very industry whose profits PHMSA had been trying to protect. As of the end of 2013, the only reason PHMSA had left for not taking these cars out of service was that it would slow the transport of high-hazard crude from production fields to coastal refineries, to feed global and domestic energy markets. PHMSA may also fear that the Office of Management and Budget would strike down tougher new regulations

anyway, using its application of cost-benefit analysis to value the death and dismemberment of rail corridor residents at a far lower level than industry costs to make their trains safer.

This leaves PHMSA at an historic crossroads. It can either continue to allow dangerously inadequate tank cars to ship dangerous cargo, or it can take a stand for the rights of the vulnerable populations living along these rail transport corridors, and restrict such shipments until they can be carried in tank cars equal to the dangers of the cargo they are hauling. The predicament that PHMSA and TC both find themselves in at this point is that they are fighting rear-guard actions. They have focused on individual, isolated contributors to catastrophic derailment disasters (volatile cargo, flimsy tank cars, operator misfeasance, and antiquated information systems), rather than the risk factors that create disaster-prone scenarios far greater in consequence than any single factor might suggest. They both have a history of ignoring the advice of their respective transportation safety boards, repeatedly declining to assertively regulate the rail transport industries to protect the health and safety of those adjacent to transport corridors.

Regulating as if human rights mattered

In US environmental laws, the question of cost in reducing environmental risk is handled in different ways. Some statutes allow risk reduction costs to be factored directly into decisions about whether or not to regulate. This is something the White House's Office of Management and Budget does anyway.³⁴ Others, such as the toxics provisions of the Clean Air and Clean Water Act, order the Environmental Protection Agency to protect public health with an "adequate margin of safety," irrespective of cost. The EPA is encouraged to determine the most cost-effective means of achieving this objective, but the issue of whether or not to regulate is not in question; public health and safety come first. This is in contrast with PHMSA and TC, which have refused to institute a regulatory ban on using unreinforced DOT 111 tank cars to haul flammable liquids because of what it would cost industry to make the cars safer.

PHMSA and TC's regulatory stance is reactive and single-cause oriented. For instance, PHMSA's September 2013 rulemaking announcement singles out tank car safety as a principal risk factor, along with inaccessible information about train contents. Yet calamitous rail disasters such as Lac Mégantic are triggered by a range of interacting risk factors. Sometimes, a large public accident revealing regulatory failure can lead to public pressure on Congress for new regulation.³⁵ All too often, however, these regulatory actions address only the specific causes of a particular catastrophe, without addressing systemic change. There is cause for concern that Canadian and US regulatory responses to the Lac Mégantic disaster will be the same: a post-hoc, piecemeal response to this tragedy that does little to preclude future such disasters.

Framing and blaming: Human rights and government responsibilities in Europe and North America

Five years after the end of World War II, and two years after the Universal Declaration of Human Rights was adopted, 47 European nation-states signed the European Convention of Human Rights to assure citizens of signatory countries that the treaty would protect their rights even if their home countries infringed on them. The European Court of Human Rights hears cases arising under the Convention.

In 2004, and again in 2008, the ECHR decided cases brought by aggrieved citizens against Turkey and Russia, respectively, for failure to protect them from catastrophic disasters caused by public infrastructure failures. In both cases, the Court found that government had an affirmative duty to prevent the reasonably foreseeable and thus preventable disasters that had befallen the plaintiffs.³⁶

These moral obligations of governments hearken back to Aristotle and Justinian. They also comport with the precautionary principle governing environmental risk decision-making in EU law. Paralleling Kant's categorical imperative, the principle calls for industry or government officials to show that significant changes to the built environment will not cause additional risk to public health and

safety, rather than citizens needing to prove that such changes will subject them to greater harm.

In working with European colleagues, both authors of this article have learned that—just as with any other archetypical framework for governmental decision making—its day to day application may not always be in accord with the ideal form of the structure. For instance, concept of proportionality may play a significant role in its implementation; that is, the burden of proof a proponent industry or government agency must carry in preventive risk analysis is proportional to both the probability and consequences of various forms of environmental harm.³⁷

There is nothing in either US or Canadian federal law alluding to a human right to a safe, clean environment. What one finds instead is a stark exercise in utilitarianism. In the United States, no federal regulation intended to better protect public health and safety will be put into effect unless the agency proposing it can prove to the Office of Management and Budget that its benefits will exceed its costs. And in the case of rail safety regulation, after the OMB affixes a dollar value to a human life, multiplies that by the probability of death and dismemberment occasioned by a derailment, and then compares that to industry compliance costs in building a new fleet of tank cars, rail corridor neighbors are likely to lose. Public health and safety is not the first concern in this formula; it is the last.³⁸

The political economy of energy demands at the global level drive health outcomes in particular locales, such as Lac Mégantic.³⁹ That is, the movement of energy occurs in a globalized environment where advances in extractive technologies are in constant tension with local human rights duties to protect and respect the right to health. Thus, the demand for cheap energy can result in threats not only to the most vulnerable populations, but also to all those in the vicinity of crumbling railway infrastructures that are badly mismanaged by governments and not sufficiently regulated. As a result, the types of disasters that occur in the movement of oil may result in disasters that constitute human rights violations. The utilitarian calculus used by US and Canadian

regulators will always and inevitably rank the dollar value of human lives lost in low-probability, high-consequence events like derailments lower than the industry costs of building safer infrastructure.

This regulatory approach is morally and legally flawed. It also violates principles of human rights laid out in the ICESCR and UDHR, and both countries should be held accountable. Thus, national legislators and regulators share moral culpability for failing to accord greater importance to the human rights of rail corridor residents than they do the profitability of the rail and fossil fuels industries. Congress and the Parliament are culpable for not unambiguously instructing their regulators to honor their citizens' human rights to a safe environment. Regulators are equally at fault for not using their limited to protect the rail corridor residents who—wrongly, as it turned out—trusted their government to protect them.

Righting the scales of environmental injustice

Lac Mégantic was a tragic and spectacular disaster, unique for the scope of its destruction and for the light cast on the regulatory failures that set the stage for this catastrophe. Other than that, it was simply the highest profile example of a very long list of similar disasters, and stretching into our future as well.⁴⁰ With the rapidly expanding volumes of carbon-based fuels now being transported by rail and pipeline to feed both domestic and global markets, it is not a question of whether there will be future such disasters, but of when, where, and how big they will be.

The dominant news media narrative (as well as that of government and industry) applied to catastrophic events such as Lac Mégantic is that they are abnormal, freakish, rare, and unforeseeable. The blame is almost always assigned first to causes like a feckless employee, failed equipment, or nefarious doings.⁴¹ As previously noted, this was the case in the Lac Mégantic derailment because the president of the railroad initially blamed his engineer for the

disaster. Only later was it revealed that—with regulatory approval—the engineer was operating sole engineer freight trains and leaving them unattended to cut labor costs. A month after the crash, the railroad filed for bankruptcy.

The alternative view, and the one we subscribe to, is that derailment disasters are an inevitable side effect of operating such complex, massive, intricately interconnected, and inherently dangerous transport systems. The task, therefore, is to model accident risks using systemic analysis that mirrors the complexity of the transport system, and then use the outputs to preventively regulate all potential contributory causes to future disasters. It is only by these means that government can meet its human rights obligations and the high duty of protective care for these vulnerable populations.⁴²

Principles of environmental justice require it, and in all likelihood only Congress and the Parliament can do it, only this time they need to provide the agencies with enough statutory authority and the funding to do a proper job of it. Somehow, a Kantian concern for the well-being of those most threatened by the explosive growth in North American oil and gas extraction and transport needs to find its way into new rail safety legislation. At least in American law and government, it will take a fairly explicit message from Congress for the DOT and OMB to get the message that they need to reorder their priorities. So far, the regulatory agencies entrusted with protecting these communities at risk have proven themselves unworthy of public trust.

Transport Canada may have sufficient regulatory discretion to factor human rights into rail safety regulatory reform of its own accord, or it may need a nudge from Parliament. But based on past performance, Americans have no reason to believe their freight rail regulators will do a better job of protecting their right to health and safety from rail disasters in the future than they have in the past. Their only hope seems to be for either the president or the Congress to declare that rail corridor residents have as much a right to a safe and healthy environment as the rest of their fellow citizens—and that this right should be no less assured in the US than in the rest of the ‘civilized’ world.

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