"It virtually eliminates the spill risk from bunker fuel because liquefied natural gas simply evaporates. It's non-toxic. It simply evaporates if in fact the unlikely spill happens," he said.

Ringel says the risk of environmental catastrophe is much lower with pipelines. He says the permitting process for the facility has been transparent. Anyone who wants to see the process online can go to the utility's project website.

A spokeswoman from office of Tacoma's City Attorney said the suit filed most recently has to do with an appeal of the shoreline permit and at this time, the city does not have a court date for the next level of the legal action. The city also wants to the public to see its frequently asked questions site about the project.

- Crosscut article regarding Tacoma LNG Facility risks

Source: http://crosscut.com/2016/06/company-fights-to-suppress-safety-risks-of-proposed-tacoma-natural-gas-terminal/

Monday 13, June 2016

Explosive claims drive fight over proposed LNG terminal

by Chetanya Robinson

*The Port of Tacoma. Credit: **Andrew Albertson***

In April, environmental activists helped cancel construction of the world's largest methanol refinery, which was proposed for the Port of Tacoma. Now they've set their sights on another fossil fuel facility proposed for this location: a refueling and storage station for liquified natural

gas (LNG). Their claim is the facility could one day explode and expose the surrounding area to fires or suffocating gas, potentially for miles.

These risks are the subject of a legal appeal filed last week, focused on suppressing documents that detail the project's potentially incendiary safety issues.

The documents were requested by John Carlton, a member of the opposition group calling itself RedLine Tacoma, and pertain to worst-case scenarios for the facility. This request was denied by project backers Puget Sound Energy (PSE) — a private energy holding company owned by Australian investors — which claimed these documents fell under Critical Energy Infrastructure Information (CEII). This meant they could not be released to the public, due to risks they could fall into the hands of terrorists who wish to attack the facility.
On May 13, a Pierce County judge rejected these arguments, ruling the documents would have to be released. This has not yet transpired, pending the resolution of an appeal from PSE, which was filed on June 8.

Tarika Powell, a senior researcher at Seattle-based think tank Sightline Institute, calls this "a groundbreaking case in terms of helping to define what is and isn't critical energy infrastructure."

Puget Sound Energy spokesperson Grant Ringel downplays their legal action, saying simply that "We believe federal law requires that we comply with the action that we took." Ringel also asserts that opponents are attempting to use inaccurate but shocking claims about risks to scare up more opposition.

In one case, Carlton admits this is true. In making his case for the release of documents, Carlton presented in court a map suggesting the fire and asphyxiation hazard zone from an explosion at the facility could encompass a three mile radius. The map, he admits, was only meant to be conjecture.
"It's more of a challenge than a statement of fact," he says.

Ringel puts it another way: "That information was flat wrong." The company released a map of their own, asserting that even in a worst case scenario, the facility would only affect a 550-foot area, strictly on the site of the facility, and not the surrounding three miles.

Liquified natural gas is not explosive, but if it warms up and reverts back to its gaseous form and mixes with the air in the right proportions — and these vapors find a spark or flame — it can catch fire. In opposing the new Tacoma facility, RedLine Tacoma cites a 2014 explosion at an LNG

facility in Plymouth, Washington, in which hundreds were evacuated from their homes, and five workers were injured.

People were told to evacuate to at least two miles away from the site of the explosion — an area closer to the three mile hazard zone proposed by Carlton than the 550 feet cited by PSE, Powell notes.

"We don't have clear information on what the hazard zone is," says Powell. But if an accident occurred, it's not clear how leaking gas could be contained within a fence, she says.

"In my opinion we need to be more concerned about the company running the facility than a terrorist threat," she says, citing other incidents at LNG facilities, and the fact that no LNG facility has yet been targeted in a terrorist attack.

Some past LNG-related accidents have been even more destructive than Plymouth. In 1944 in Cleveland, 130 people were killed when two liquid natural gas tanks exploded. Thirty people were killed and 70 injured when an LNG facility in Algeria exploded in 2004. PSE notes that in these cases, safety risks were not as well understood, the facilities were dealing with millions more gallons of LNG, and the accidents weren't a result of the facilities themselves.

Tacoma is just one of several West Coast cities that have seen liquified natural gas facilities proposed and fiercely contested by activists. This spring, two different LNG facilities planned for northern and southern Oregon were defeated. Unlike in Tacoma, it was fishing, fish habitat and landowner concerns that most concerned activists in these cases. Activists have also raised concerns about LNG plants in Rhode Island, British Columbia, New York State and Maryland.

The Northwest has become an attractive target for companies eager to reach fossil fuel markets in Asia. But efforts to build export facilities for coal and other fuels have met with effective environmentalist resistance. LNG can have an environmental impacts separate from its use as fuel, which is relatively low-emissions. According to Powell, these include unregulated leaks in the pipeline that can spew methane — a potent greenhouse gas — directly into the atmosphere, and the large amount of water needed to cool natural gas down into liquid form.

The proposed Tacoma facility would supply ships plying the West Coast with fuel, and store LNG to be sold later. It is currently undergoing a design and engineering review, having passed environmental review and a slew of other permits. If all goes to plan, it will be operational by early 2019. PSE has operated a smaller LNG facility in Gig Harbor for over a decade.
Carlton says he isn't opposed to the facility per se — he just thinks it's too dangerous in an area close to where people live.

"It is kind of NIMBY-ish," he admits. "But who wants eight million gallons of LNG in their backyard?"

❖ The Economist magazine – July 23, 2016 issue

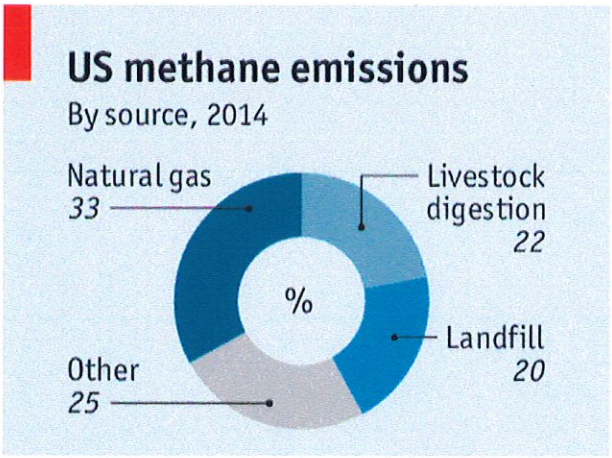
Source: https://www.economist.com/news/leaders/21702470-even-natural-gas-needs-clean-up-its-act-tunnel-vision

Methane leaks

Tunnel vision *Even natural gas needs to clean up its act*

Print edition | Leaders

Jul 21st 2016



CARBON DIOXIDE is the main greenhouse gas emitted by human activities. But it is not the only gas capable of causing great harm to people and the planet. That point was driven home by the emissions scandal that engulfed Volkswagen last year. Since the 1990s policymakers in Europe had backed diesel as a way to reduce carbon emissions, turning a blind eye to other ways in which the fuel might damage human health. The VW affair drew back the veil on this trade-off. The company's diesel engines did indeed deliver lower carbon emissions and better fuel economy, but at the cost of belching out noxious pollutants capable of shortening many lives.

A similar case of tunnel vision also exists in the energy industry. To its evangelists, natural gas helps satisfy demand for fossil fuels but causes less harm to the planet than coal and oil. Like diesel carmakers, natural-gas producers make reduction of carbon-dioxide emissions a big selling-point, but downplay the effects of other gases they emit. For the car industry, the problem is nitrogen oxides. For natural gas, it is methane, the fuel's main component.

Burning natural gas converts methane into carbon dioxide, but in lower quantities than in alternative fuels. It emits almost half as much carbon dioxide as coal, and almost a third less than petrol. The problem is that lots of methane escapes into the atmosphere without being burnt. And methane has its own effect on the climate. Although it stays in the atmosphere for far less time than carbon dioxide, which hangs around for centuries, it is about 25 times more potent as a cause of global warming (see article).

Methane emissions come from several sources—not least the digestive systems of livestock such as cows. But the latest figures show that the biggest chunk of annual methane emissions in America, around a third, can be traced to the natural-gas industry. An estimated 2.5% of the natural gas flowing through America's ageing energy infrastructure leaks out of wells, pipelines and storage tanks. Often it seeps discreetly into the air. Sometimes it leaves a more noticeable footprint—a 2015 blowout at the Aliso Canyon storage facility in Los Angeles produced the worst leak in American history.

Recognition of the problem is growing. This year America's Environmental Protection Agency (EPA) admitted that it had underestimated the extent of oil- and gas-related leakages, revising them up by almost a third and ramping up regulation. Recent use of infra-red cameras and airborne monitoring devices has shown where the worst problems lie in the natural-gas supply chain. Last month Mexico joined America and Canada in their commitment to cut methane emissions from oil and gas operations by 40-45% by 2025, compared with 2012.

The industry has been slower to acknowledge the problem. American oil companies are reluctant to provide the public with emission-reduction targets. They chafe against new EPA regulations, such as those requiring them to monitor leaks at compressor stations twice as often as in the past. Controlling methane leaks should not be that expensive; the less gas that escapes, the more the industry has to sell, after all. But the head of the Railroad Commission of Texas, which regulates oil in the state, calls them part of Barack Obama's "war against fossil fuels" and too costly for small producers to comply with.

If even American oilmen are so dismissive of the problem, it is hard to be hopeful for other places, like Russia, which have even creakier natural-gas networks. Few countries monitor methane emissions with the precision that they do carbon dioxide. Many developing countries have not reported energy-related methane emissions for at least a decade, so it is impossible to know whether conditions are getting better or worse. Without good data, it is hard to set targets for reduction.

Methane bane

Natural-gas advocates have decent reason to hope the fuel will be a bridge to a post-carbon future. Thanks to the shale-gas revolution, natural gas last year rivalled coal as the main source of electricity in

America. That brings immediate climate benefits. But the problem of methane leaks should not be downplayed. They do not just sully the climate. They sully the good name of natural gas.

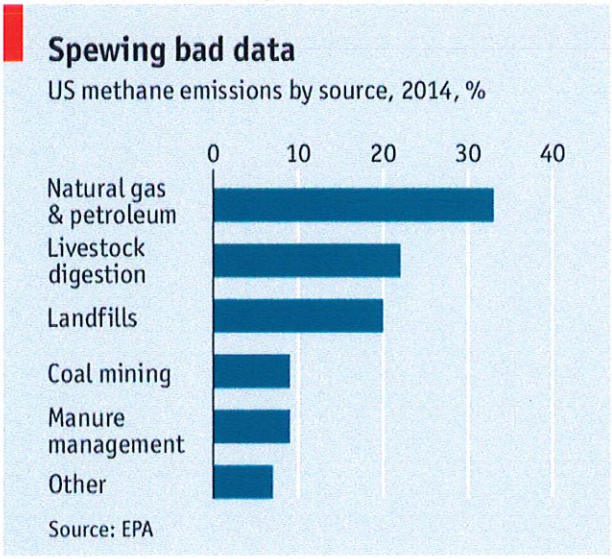
❖ The Economist magazine – July 23, 2016 issue

Source: https://www.economist.com/news/business/21702493-natural-gass-reputation-cleaner-fuel-coal-and-oil-risks-being-sullied-methane

Methane leaks

A dirty little secret

METHANE is invisible to the naked eye and does not make for good television. So when about 100,000 tonnes billowed out of a natural-gas system in Aliso Canyon, Los Angeles, over 112 days last winter (pictured in infra-red above), it drew relatively little media attention—even though it forced the evacuation of thousands of homes and the plume was big enough to be detectable from space. Compare that with coverage of the Deepwater Horizon oil spill in 2010, which was the top item of news for weeks in America, much of it focused on the environmental impact on the Gulf coast.



Unsurprisingly, many oil and gas companies would prefer methane leaks to remain out of the public eye, even though their industry now surpasses cow burps as a source of emissions (see chart). Methane is the predominant constituent of natural gas, a fuel that energy companies are embracing over oil and coal as a "bridge" to a post-carbon future and which has been given a new lease on life by America's shale revolution. When burned, it emits about half as much carbon dioxide as coal and far less sulphur, soot and other pollutants. But greenhouse gases insulate the Earth in different ways. Carbon dioxide stays in the atmosphere for more than 500 years; methane just for 12. But the latter is about 25 times more potent.

The American Petroleum Institute (API), a lobby group, says America is in "good shape" thanks to natural gas. As it has over time rivalled coal as the main source of power generation, it has helped lower emissions of the main source of global warming. The institute cites data showing that the amount of methane that leaks out of natural-gas wells and pipelines criss-crossing America has fallen over the past quarter of a century. "Let's not get unreasonably concerned about [methane], because the industry has been addressing it," says the API's Erik Milito.

Yet even environmentalists who acknowledge a preference for natural gas over coal believe methane leaks could be its fatal flaw. The Environmental Defence Fund (EDF), an American NGO that works with industry to reduce methane emissions, has in recent years deployed infra-red cameras along energy firms' pipelines and beside thousands of oil and gas wells, as well as airborne monitoring kit to gather data. The results suggest methane leaks are significantly higher than had been previously understood

EDF has found that a disproportionate amount of fugitive emissions from the oil and gas infrastructure comes from a few "super-emitting" sites. In rare cases, like Aliso Canyon, they can take months to plug. More often the culprits may be well-side storage tanks with faulty valves, which may be fixable just with a wrench, but while left unattended billow methane into the air.

Recently, the Environmental Protection Agency (EPA), an American regulator, has introduced its first regulations specifically aimed at capping methane emissions, acknowledging it has underestimated the problem. It has lifted its estimate of the amount of methane that leaked out of the natural-gas and oil supply chain in America in 2013 by about 30%—a massive revision. Steve Hamburg, EDF's chief scientist, says that still leaves out the "fat-tail" super-emissions. He reckons about 2-2.5% of the gas flowing through the American supply chain leaks out, in total.

Get much higher, and that would endanger the argument that natural gas is over all time periods cleaner than coal. And if natural gas emerges as a rival to petrol as a transport fuel, as European companies such as Royal Dutch Shell strongly hope, such levels would erode the net climate benefit altogether, Mr Hamburg says. "Switching from coal to gas is always advantageous to the climate over the long term, but the short-term benefits depend on minimising methane emissions," he says. He has experience of methane's effect at his cabin in the White Mountains of New Hampshire, where global warming means that trees now grow in places he would never have thought possible.

Oil and gas producers acknowledge it is in their interest to curb leaks; it gives them more natural gas to sell. They say they are stepping up monitoring efforts, and have increased the use of "green completions" at shale wells to capture methane emitted at the end of the fracking process, rather than flaring it at the well head. Big European companies appear to take the reputational risk seriously. "The industry realises it needs to get its act together," says one executive. BP, for instance, has designed a gas project in Oman that should be leak-free. Italy's ENI has set publicly available targets for cutting methane emissions.

Some state-owned oil giants, such as Saudi Aramco and Mexico's Pemex, have joined global efforts to reduce methane emissions. But many reckon firms in Russia, Angola and Nigeria would show up as big

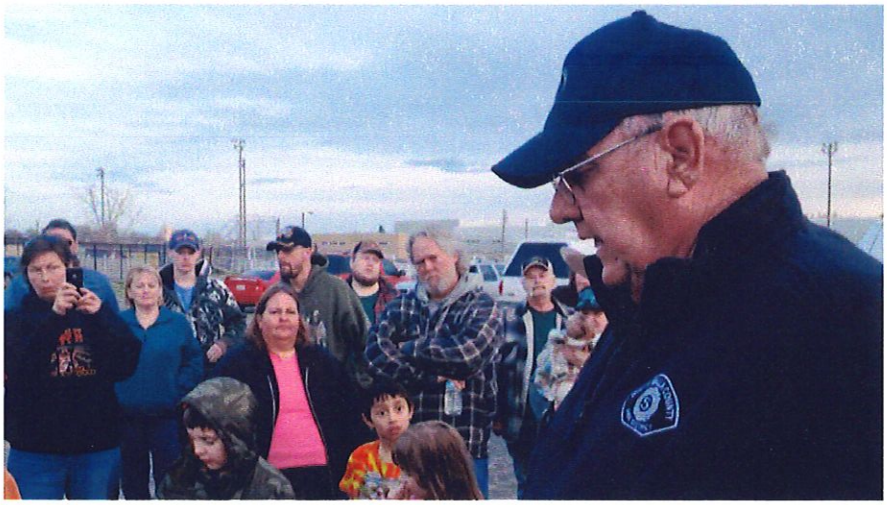
emitters if reliable data were collected. A report last year by the Rhodium Group, a research firm, said large producers such as Iraq, Angola and Libya had never reported methane-emissions numbers to the UN. Without good global data, it will be impossible to get the problem in hand.

- Plymouth Wa LNG explosion – the reality of a LNG spill is extremely dangerous:

Source: http://www.sightline.org/2016/02/08/how-industry-and-regulators-kept-public-in-the-dark-after-2014-lng-explosion-in-washington/

How Industry and Regulators Kept Public in the Dark After 2014 LNG Explosion in Washington

Lax industry oversight and incomplete reporting leave us with questions still today.



Duane VanBeek tells Plymouth residents that the evacuation zone had been reduced to one mile. by Courtney Flatt, Oregon Public Broadcasting (Used with permission.)

Author: Tarika Powell

On February 8, 2016 at 6:30 am

This article is part of the series Fracked Fuel & Petrochemical Projects in the Pacific Northwest