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ATTN: Ms. Margo Goodhand, Managing Editor

Dear Ms. Goodhand and Ms. Coombs,

Thank you very much for running Michelle Stirling's op-ed earlier this month. I very much appreciate it.

We see in Monday, Oct 19, 2015 Edmonton Journal letters that Mr. Gagne thinks Friends of Science Society's view should not even be covered in the press. We are pleased that the Edmonton Journal supports democratic debate – offering readers our views…and those of Mr. Gagne.

May we point you to the following item published in the Edmonton Journal Oct. 8, 2015, which we believe shows how important it is to have an 'evidence watchdog' like Friends of Science Society? It appears that your reporter, Sheila Pratt, has unfortunately misunderstood and misinterpreted a recent Environment Canada report, and erroneously reported this to the public through the Edmonton Journal – again, wrongly demonizing coal-fired power plants.

Our people have gone through and compiled a list of the errors and they are quite significant. Please see the attached review of:

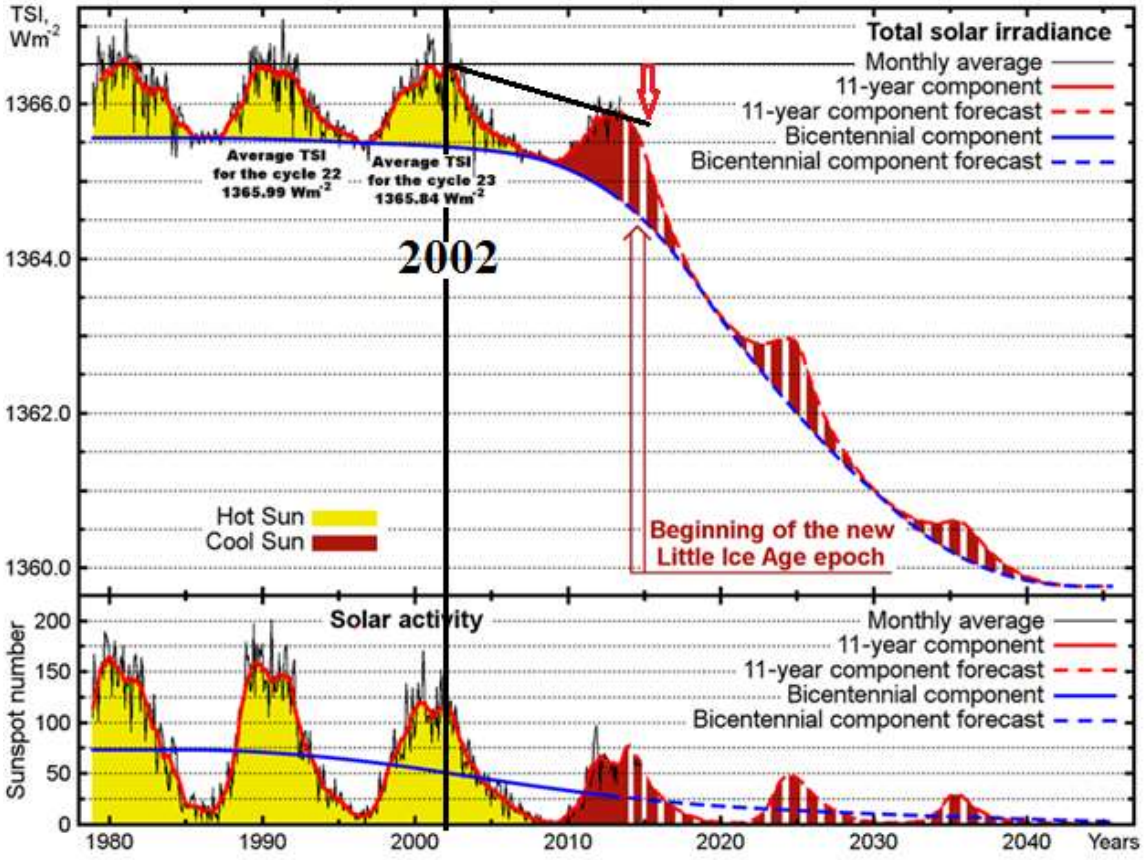
Hot spots depict how coal plants contribute to Edmonton pollution in new Environment Canada images, Oct. 8, 2015

http://edmontonjournal.com/news/local-news/hot-spots-depict-how-coal-plants-contribute-to-edmonton-pollution-in-new-environment-canada-images

As you may be aware from Ms. Stirling's earlier materials, we are funded by our individual members. Our interest in the coal issue is simply that, as scientists who examine evidence and facts, **we are disturbed at the level of distorted reporting about a valuable resource/industry that provides Albertans with <u>affordable power.</u>**

In 2013, we brought Dr. Benny Peiser from England to talk about the heat-or-eat poverty crisis in the UK and EU, caused in large part by phasing out coal and going into costly renewables like wind and solar. http://www.friendsofscience.org/index.php?id=653 We brought him here so that we could learn from their mistakes. Britain is considering rolling black-outs to cope with a lack of capacity on the grid, or paying industrial operators to shut down during peak consumer times (the subsidy will fall upon taxpayers).

In our scientific view of solar cycles, many solar physicists are predicting imminent cooling, possibly drastic cooling. We do not have a crystal ball, but based on previous patterns of the sun, similar to current ones, cooling is likely. Alberta will need all the affordable fossil fuels for power, light and heat, that it can get if that is the case. The following is from Habibullov Abdussamatov's work. He is the solar physicist in charge of Russia's Astrometric project on the International Space Stations and head of the Space research laboratory at the Pulkovo Observatory.
http://scienceandpublicpolicy.org/images/stories/papers/originals/grand_minimum.pdf



It is our view that Albertans should be properly informed on these matters. In our opinion, the Edmonton Journal should publish a full and complete retraction of the “Hot spots…” story of Oct. 8, 2015 and set the record straight on this issue. Please feel free to use any of the following research materials or cross check them yourself online. There is additional information from Environment Canada included.

In light of these discrepancies in public reporting on coal-fired power plant emissions and climate science, we respectfully request that The Edmonton Journal review our report “Burning Questions.”
http://www.friendsofscience.org/assets/documents/FoS_BurningQuestions_Health_Coal_Wildfires_Jan2015.pdf

We have attached a rebuttal article on the matter of the Environment Canada monitoring report.

Sincerely,

Warren Blair
President

Errors and Misrepresentations in:

Hot spots depict how coal plants contribute to Edmonton pollution in new Environment Canada images, Oct. 8, 2015 – *Edmonton Journal*

http://edmontonjournal.com/news/local-news/hot-spots-depict-how-coal-plants-contribute-to-edmonton-pollution-in-new-environment-canada-images

1) There are significant misrepresentations of the information presented in the original Joint Oil Sands Monitoring conference, from which this information is taken.

2) The Edmonton Journal headline appears to say that coal-fired power plants are 'hot spots' in **new** Environment Canada images. In fact the small image shown in the paper, referencing coal-fired power plants, is from 2005. Therefore this is an old 2005 image from Environment Canada, not a new one.

States that this is a 2005 image – that is not new, it is from 10 years ago.

"To those who say there is no impact, this confirms there is a contribution from the power plants, along with vehicle pollution and Refinery Row," said Read.

Satellite NO_2 Monitoring over the Oil Sands Region (video)

Research by Environment Canada scientists presented to the Alberta Environmental Monitoring, Evaluation and Reporting Agency (Supplied)

In winter 2030, particulate matter in the city exceeded federal air quality standards and the province is now required to take action to reduce those levels.

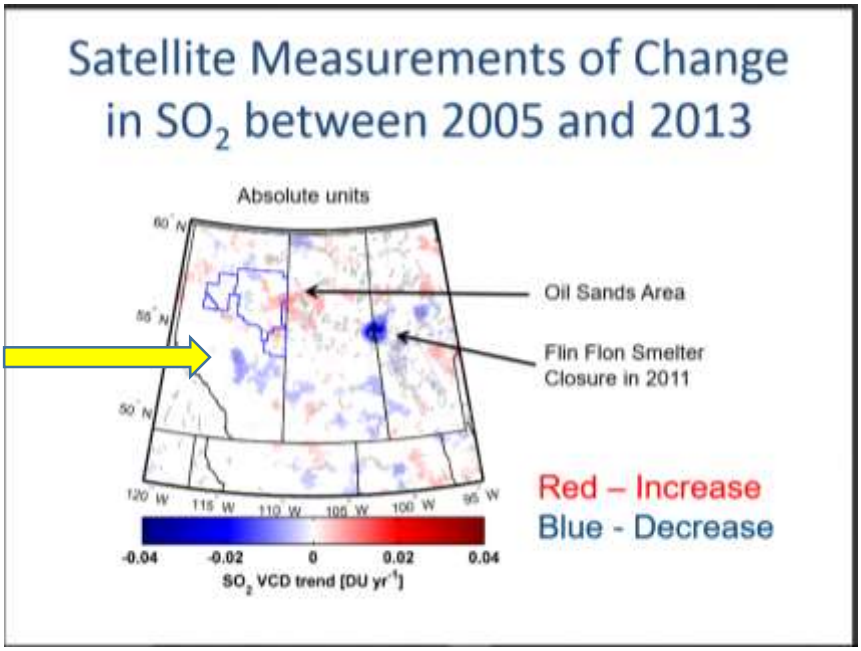
The federal government has now set new standards, specifying even lower levels of particulate matter, while the city's levels continue to increase from industrial sources added to the region, Read said.

While shuttering coal plants is one way to reduce the nitrogen dioxide, the strategy has to look at all sources together "and figure out what action should be taken to reduce pollution overall," said Read.

The research was done under the Joint Oilsands Monitoring initiative and presented to AEMERA last winter, said Bob Myrick, director of air evaluation and reporting at AEMERA.

Within the Joint Oil Sands Monitoring explanatory video by Heather Morrison of Environment Canada, she presents the following image. http://aemera.org/oil-sands-symposium-program/8-3-high-resolution-air-quality-modelling-in-the-oil-sands/

Coal-fired power plants are in a fairly dark blue. They have REDUCED SO2 emissions over 8 years from 2005.

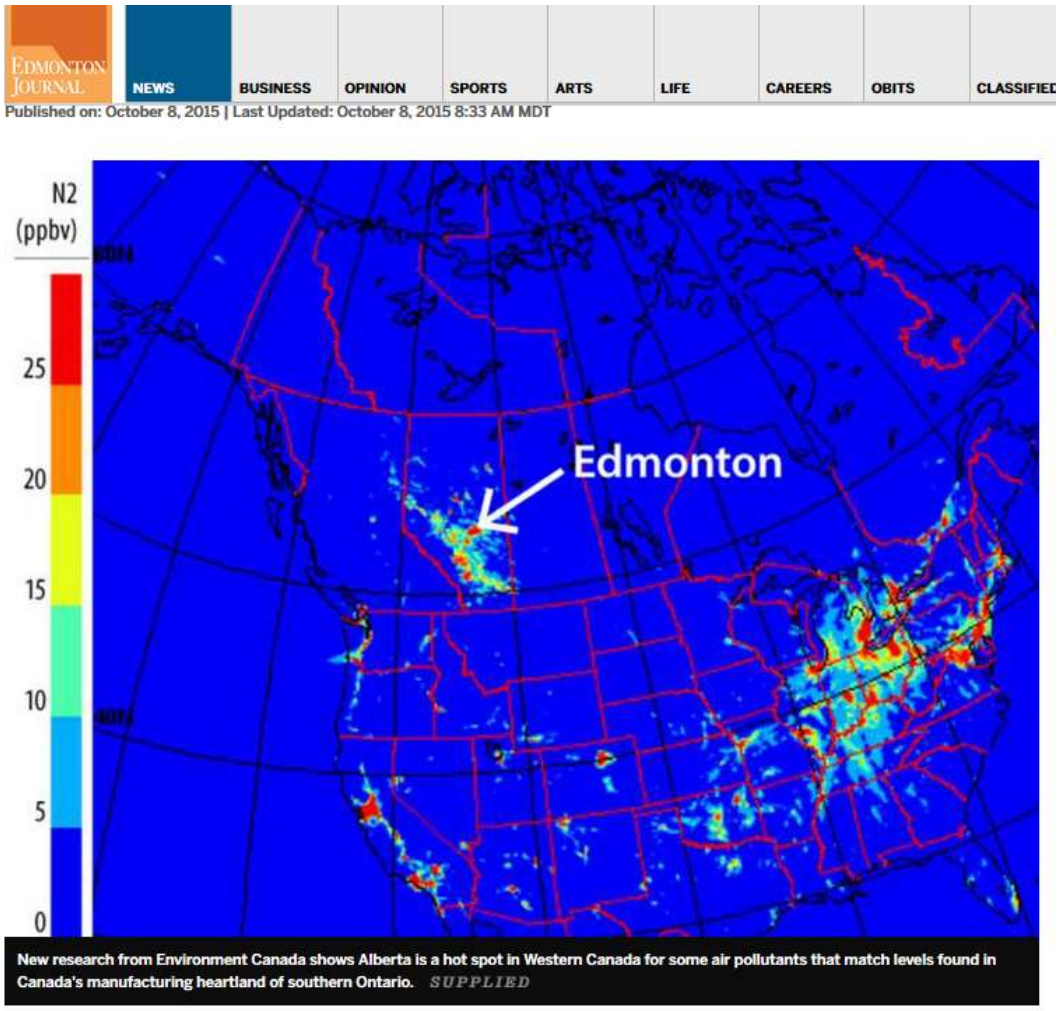


3) Ms. Morrison of Environment Canada states at 4:09 in the video that there has been a *decrease* in sulfur dioxide concentrations from the coal-fired power plants *"which aligns very nicely with the mitigation that has happened over that time period…"* and that this image shows in blue where there has been a decrease to 2013.

4) The Edmonton Journal ran a headline wrongly demonizing coal-fired power plants when the topic of this study is oil sands monitoring; some other large emitters show up peripherally in images or as ground level reference points but they were not the focus of this study.

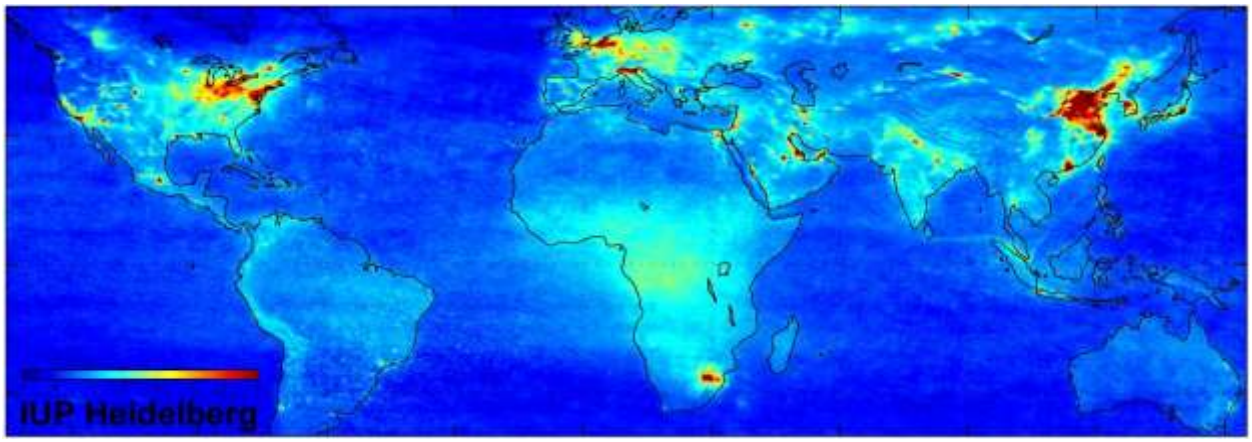
5) Furthermore, the study is evaluating a model, a computer simulation, vis a vis forecasting abilities related to landscape, emissions and weather conditions, with the model specifically applied in the oil sands operations area. This is NOT a report or study on output of emissions in all areas of the province.

6) Likewise, the use of the main image shown below is also misrepresented by the Edmonton Journal's text beneath the image. Journal reporter, Sheila Pratt, has the cutline: "New research from Environment Canada shows Alberta is a hot spot in Western Canada for some air pollutants that match levels found in Canada's manufacturing heartland of southern Ontario."



7) At 8:59 in the video clip, Heather Morrison of Environment Canada says "what you can see is the measurements are sparse across the landscape and look **disproportionately large** because **they had to make the dots big enough that you can see them."**

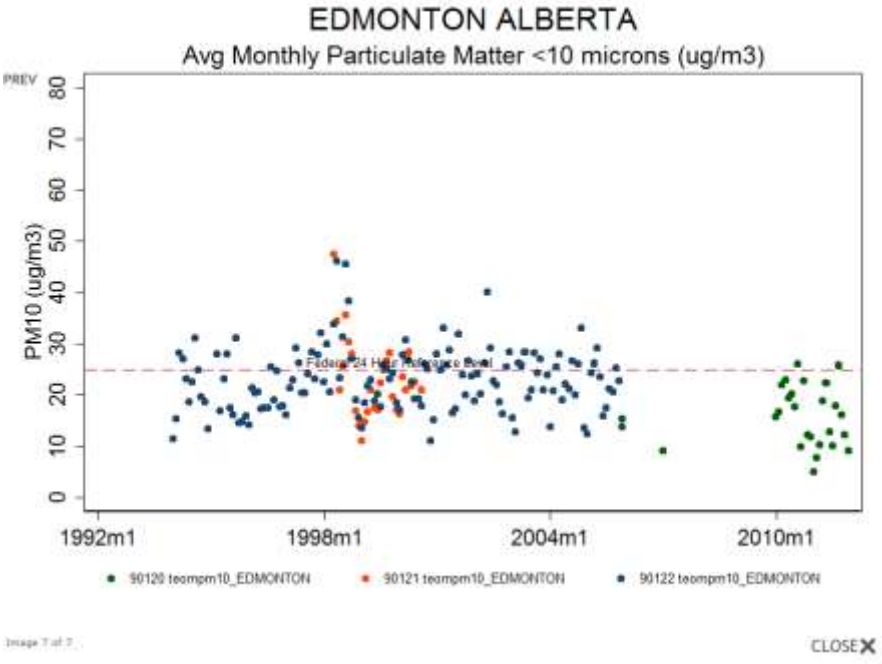
8) Here is a map of NO2 emissions worldwide from the ESA satellite from 2004. Alberta does not have anywhere near the concentrations of pollutants that eastern Canada has – the model being used in the Joint Oil Sands Monitoring study is a very high resolution on a 2.5 km grid, which is, as we understand it from Ms. Morrison's discussion, a new, model on a new finer matrix. Thus, comparatively low levels of **simulated emissions** appear larger than life as they rise and disperse.



Global air pollution map produced by Envisat's SCIAMACHY

http://www.esa.int/Our_Activities/Observing_the_Earth/Envisat/Global_air_pollution_map_produced_by_Envisat_s_SCIAMACHY

9) Here are the federal and provincial graphs of average monthly emissions for the city of Edmonton for the past 10 to 30 years (depending on records) from federal and provincial data sources. Air quality has consistently **improved** – emissions have significantly dropped for most industries and in most areas of the nation. Please look at Edmonton's data.



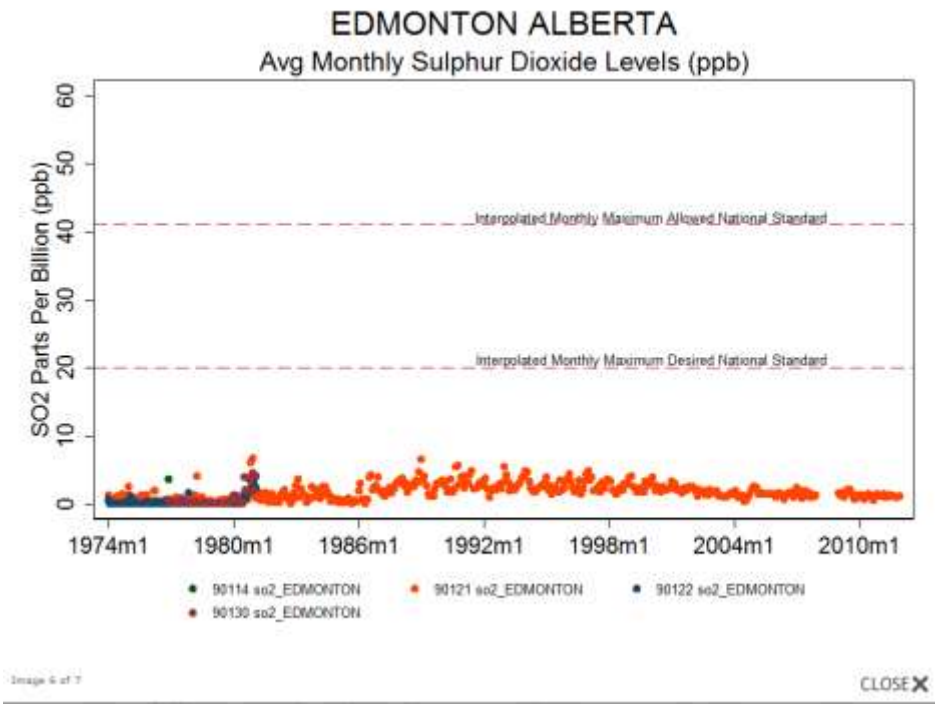


Image 6 of 7

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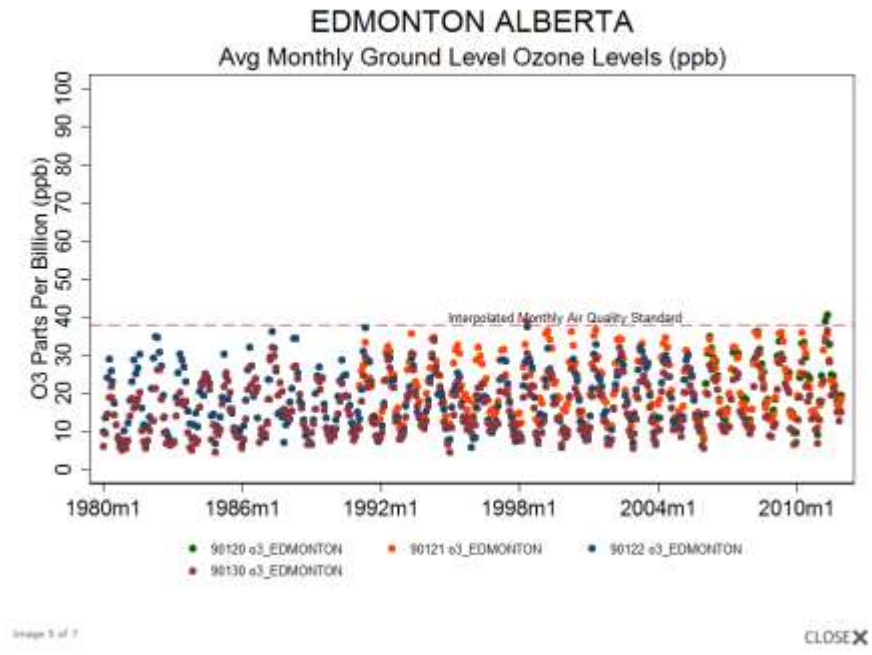

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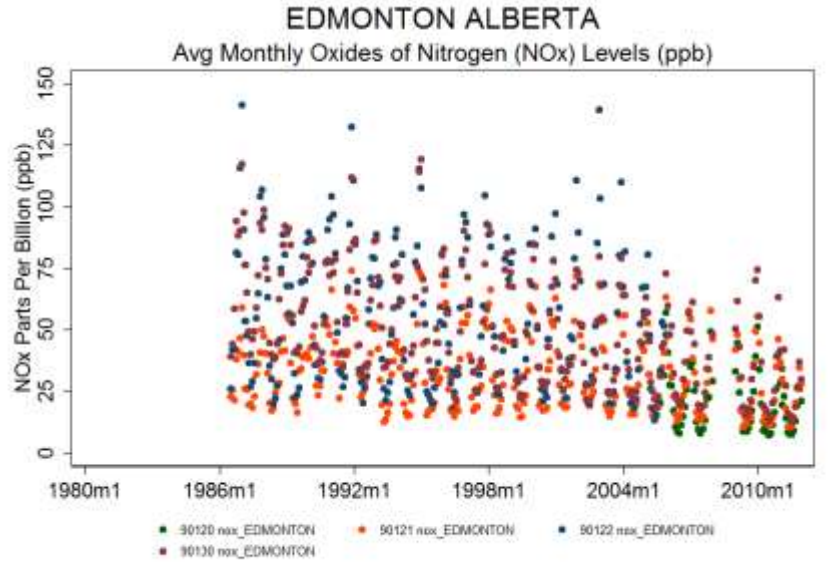

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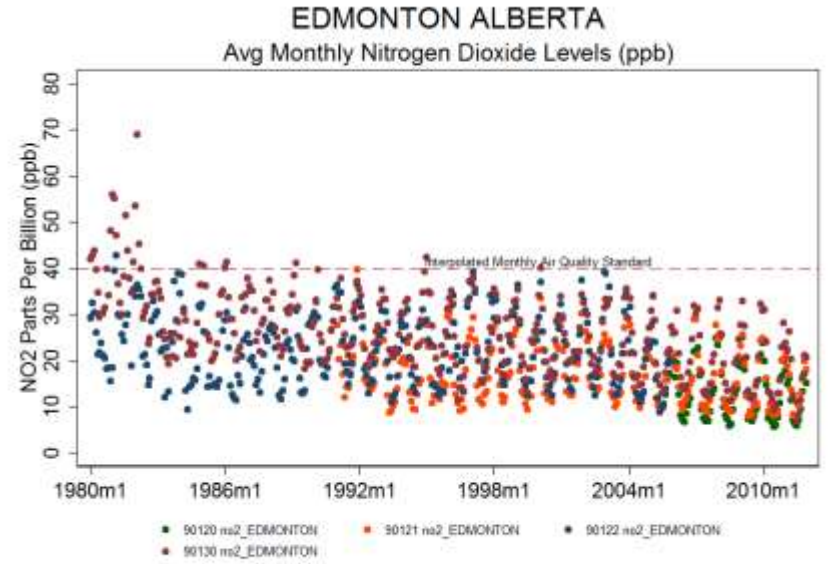

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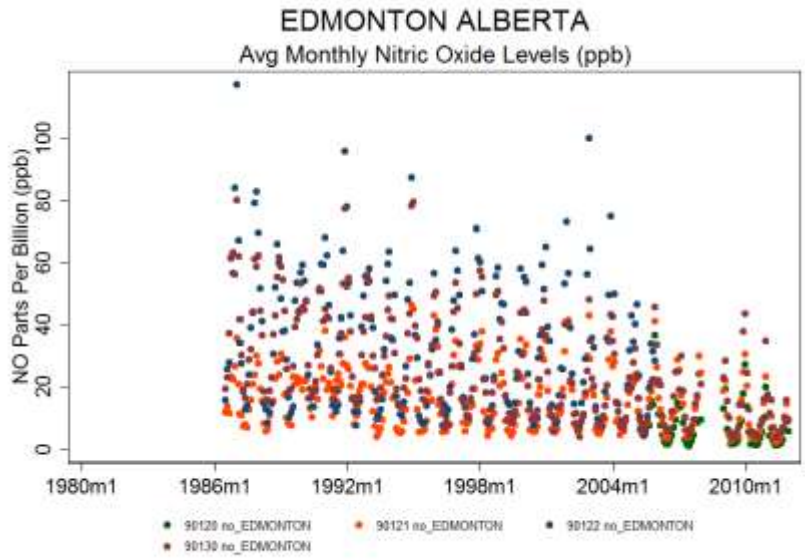

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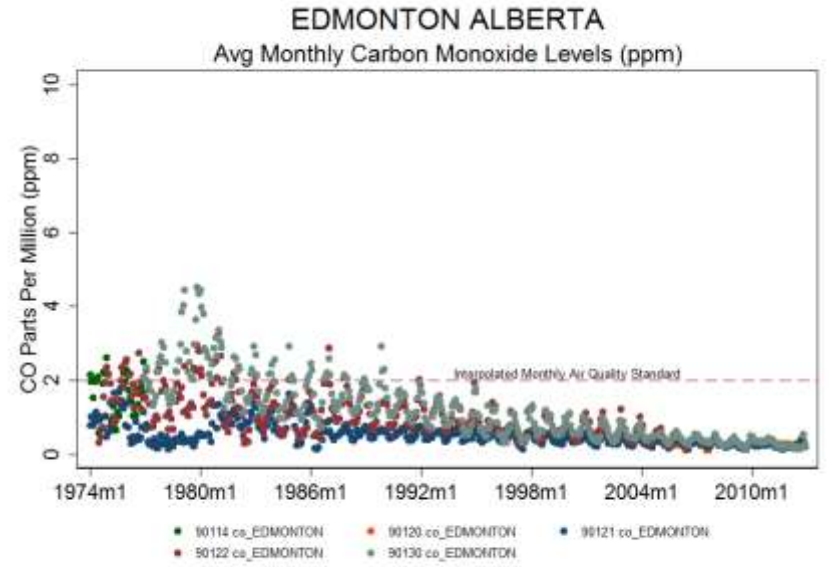

Image 1 of 7

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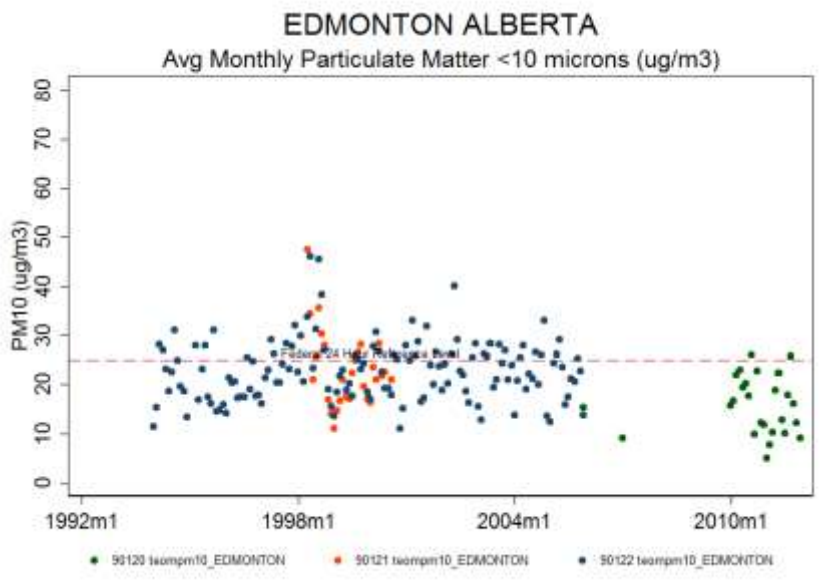

10) Likewise the claim – twice – by Pembina representative Andrew Read – is not supported by evidence.

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*Though some companies dispute the plants as a source of pollution in the Edmonton area, **the data suggests pollutants do have an impact on the city,** says Andrew Read, an analyst with the Pembina Institute, a clean energy think-tank. …*

"To those who say there is no impact, this confirms there is a contribution from the power plants, along with vehicle pollution and Refinery Row," said Read.

"the data suggests pollutants do have an impact on the city, " … This study is modelling the oil sands. The model was created by flying an airplane over the oil sands and matching satellite GEM=MACH data on the oil sands emissions **–** this is not a study about Edmonton or coal-fired power plants. It is only because of the high-resolution and small grid that these minute aerosols are apparent. The purpose was to watch the flow patterns and plot new locations for monitors, or evaluate if existing locations are suitable for gathering relevant emissions information.

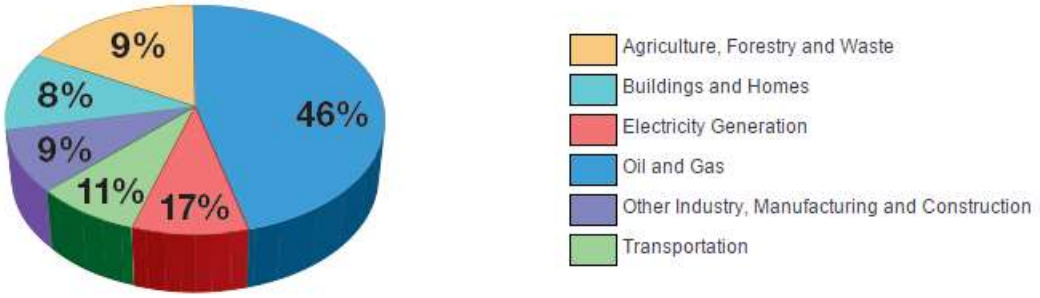
It is doubtful anyone would say there is NO contribution to air quality from coal-fired power plant emissions, but most asthma-respiratory issues are related to ground level air quality – this study relates **to aerial dispersion of oil sands emissions**.

11) Mr. Read reported says: "While shuttering coal plants is one way to reduce the nitrogen dioxide, the strategy has to look at all sources together "and figure out what action should be taken to reduce pollution overall," said Read."

Let us look at the sectors that emit GHGs in Alberta. Shutting coal fired power plants would move to natural gas, which also has similar emissions.

Sources of Emissions

Over half the emissions in Alberta are the result of industrial, manufacturing and construction activity, as well as from producing the electricity we consume in our homes, communities and businesses. The remainder comes from heating our homes and businesses, transportation and from agriculture, forestry and municipal waste.



Emissions Growth

Alberta's emissions have increased 15 per cent from 2005. Alberta's greenhouse gas emissions are projected to continue to rise from most emissions sources from now to 2030.

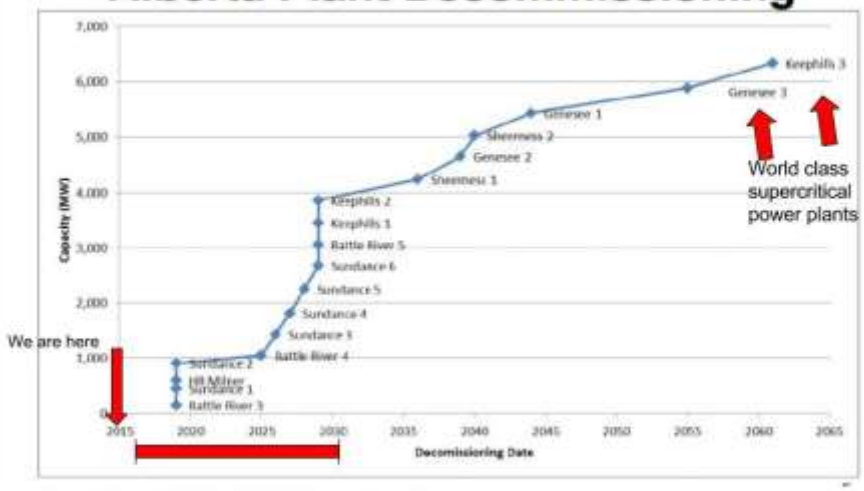
Thinking like Pembina Institute's Andrew Read one might conclude that Albertans will have to stop living in buildings, thus reducing 46% of GHGs.

12) There is an existing coal phase-out schedule, set by federal legislation. Most of the older plants will soon be phased-out on their own. Evan Bahry of the Independent Power Producers' Society of Alberta has said that to replace current coal supply, it would require eight natural gas plants, similar to that of the new Shepard Energy Centre in Calgary, at a cost of $1.4 Billion each or about $11 Billion in total. From a previous interview, he reported that he doubts it would be possible to gather such capital or build that many plants in such a short space of time (a 10 year phase-out is proposed by the anti-coal advocates). Please feel free to confirm with Mr. Bahry independently.

13) Is it good value for Albertans' money to pay $11 billion (plus compensation) to close coal fired power plants 10 to 15 years early, when it would cost us nothing to wait? Based on our review of the evidence, there would be little or **no proportionate benefit to environment or health.**

CANADIAN CLEAN POWER COALITION

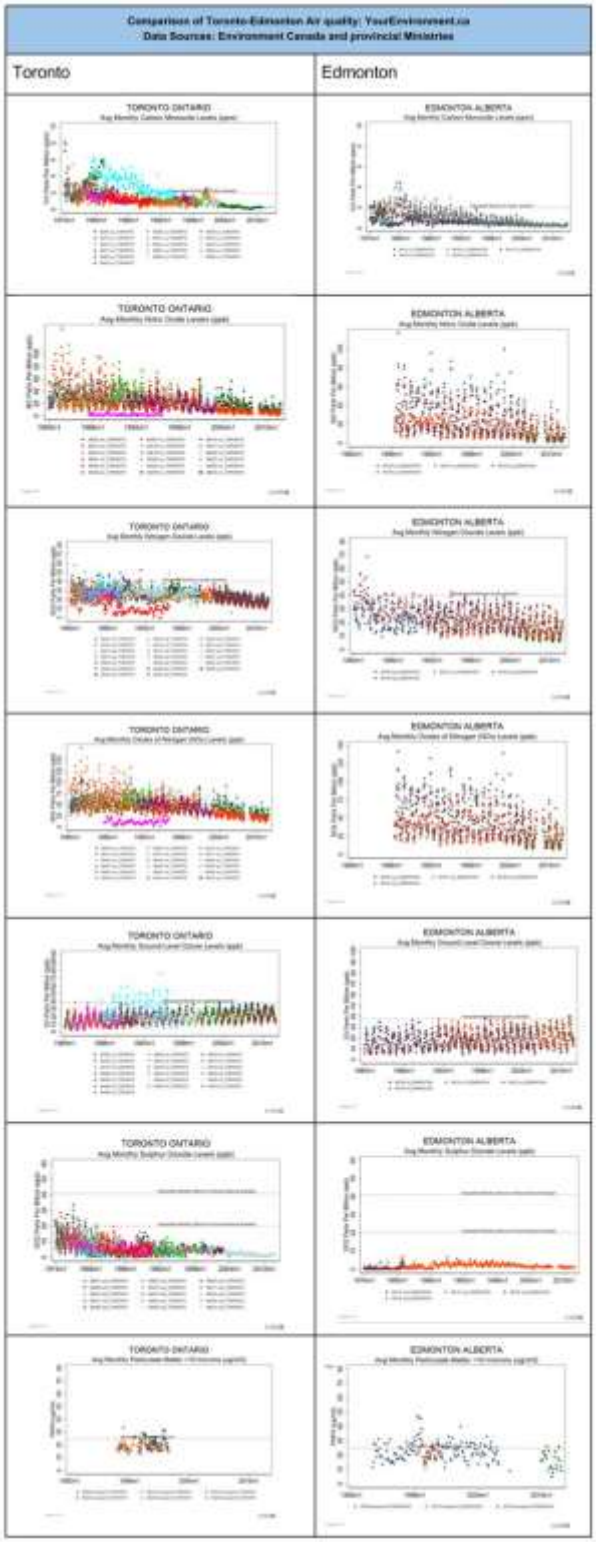
Alberta Plant Decommissioning



Early phase-out of coal-fired power plants would cost Alberta >$11 BN (to transition to nat. gas) + hundreds of millions or billions to compensate coal owners, shareholders, employees, who have agreed to the the federal retirement schedule above.

What is the message to investors when Alberta tries changing Ottawa's word?

14) Regarding the claim that Alberta's air quality is like that of Toronto's, here below is what a side-by-side comparison to Toronto air looks like. It does not seem like the reporter did a fact check on this matter. (Source: YourEnvironment.ca – uses federal and provincial data sources)



15) During the dates and timeframe referred to in the video clip of Heather Morrison from Environment Canada, our people went to the CASA Data warehouse (http://casadata.org/) to see if the images the Journal printed were portraying anything out of the ordinary. For the day of Feb. 17, 2015 which was randomly selected by

Heather Morrison (as she states in the video) there were no exceedances of NO2 from any station.

Number Of Times Alberta Ambient Air Quality

Parameter	Nitrogen Dioxide	
Averaging Period	1-Hour	Annual
Objective	0.159 ppm	0.024 ppm
Station		
Anzac	0	0
Battle River North Ambient Trailer	0	0
Battle River South Ambient Trailer	0	0
Beaverlodge	0	0
Bertha Ganter - Fort McKay	0	0
Breton	0	0
Bruderheim	0	0
Calgary Central 2	0	0
Calgary Northwest	0	0
Calgary Southeast	0	0
Caroline	0	0
Carrot Creek	0	0
Clairmont-Portable	0	0
CNRL Horizon	0	0
Cold Lake South	0	0
Crescent Heights	0	0
Didsbury West	0	0
Edmonton Central	0	0
Edmonton East	0	0
Edmonton South	0	0
Edson	0	0

Parameter	Nitrogen Dioxide	
Averaging Period	1-Hour	Annual
Objective	0.159 ppm	0.024 ppm
Station		
Elk Island	0	0
Elk Point Airport (Portable)	0	0
Everdell	0	0
Ferrier Acres	0	0
Firebag	0	0
Fort Chipewyan (WBEA)	0	0
Fort McKay South (Syncrude UE1)	0	0
Fort McMurray-Athabasca Valley	0	0
Fort McMurray-Patricia McInnes	0	0
Fort Saskatchewan-92 St and 96 Ave	0	0
Genesee	0	0
Grande Prairie (Henry Pirker)	0	0
Hinton	0	0
James River	0	0
James River East	0	0
Lamont County	0	0
Lancaster	0	0
Lethbridge	0	0
Maskwa	0	0
Meadows	0	0
Millennium Mine	0	0
Olds South	0	0
Ponoka	0	0

Parameter	Nitrogen Dioxide	
Averaging Period	1-Hour	Annual
Objective	0.159 ppm	0.024 ppm
Station		
Portable Taber	0	0
Power	0	0
Range Road 220	0	0
Red Deer - Riverside	0	0
Redwater Industrial	0	0
Rimbey Townsite	0	0
Rocky Mountain House North	0	0
Ross Creek	0	0
Scotford (Temporary)	0	0
Shell Muskeg River	0	0
ST. LINA	0	0
Steeper	0	0
Sylvan Lake East	0	0
Tomahawk	0	0
Violet Grove	0	0
Wagner2	0	0
Wapasu	0	0
Woodcroft	0	0

n/a - Data was not collected.
*There is no 1-hour objective for PM2.5.
A 1-hour guideline of 80 ug/m3 is based on the statistical equivalent of the Canada Wide Sta
This guideline is not used for compliance purposes.

Calculation of hourly, multiple hour averages, or multiple day averages is based on
The collection period starts at 12:01 AM MST.

We then checked to see about NO2 exceedances this year.

Number of Times Alberta Ambient Air Quality Objectives were exceeded in 2015

Nitrogen Dioxide Exceedances 2015

Averaging Period	1-Hour	Annual
Objective	0.159 ppm	0.024 ppm
Station		
Airpointer 1	0	0
Anzac	0	0
Ardrossan	0	0
Battle River North Ambient Trailer	0	0
Battle River South Ambient Trailer	0	0
Beaverlodge	0	0
Bertha Ganter - Fort McKay	0	0
Breton	0	0
Bruderheim	0	0
Calgary Central 2	0	0
Calgary Central-Inglewood	0	0
Calgary Northwest	0	0
Calgary Southeast	0	0
Caroline	0	0
Carrot Creek	0	0
Clairmont-Portable	0	0
CNRL Horizon	0	0
Cold Lake South	0	0
Conklin Lookout	0	0
Crescent Heights	0	0
Didsbury West	0	0
Eagle Hills South	0	0
Edmonton Central	0	0
Edmonton East	0	0
Edmonton South	0	0
Edson	0	0
Elk Island	0	0
Elk Point Airport (Portable)	0	0
Everdell	0	0
Ferrier Acres	0	0
Firebag	0	0
Fort Chipewyan (WBEA)	0	0
Fort McKay South (Syncrude UE1)	0	0
Fort McMurray-Athabasca Valley	0	0

Averaging Period	1-Hour	Annual
Objective	0.159 ppm	0.024 ppm
Station		
Fort McMurray-Patricia McInnes	0	0
Fort Saskatchewan-92 St and 96 Ave	0	0
Genesee	0	0
Gold Bar	0	0
Grande Prairie (Henry Pirker)	0	0
Hinton	0	0
James River	0	0
James River East	0	0
Lamont County	0	0
Lancaster	0	0
Lethbridge	0	0
Maskwa	0	0
Meadows	0	0
Millennium Mine	0	0
Olds South	0	0
Ponoka	0	0
Portable Taber	0	0
Power	0	0
Range Road 220	0	0
Red Deer - Riverside	0	0
Redwater Industrial	0	0
Rimbey Townsite	0	0
Rimbey-Simpson	0	0
Rocky Mountain House North	0	0
Ross Creek	0	0
Scotford (Temporary)	0	0
Shell Muskeg River	0	0
Sherwood Park (New)	0	0
ST. LINA	0	0
Steeper	0	0
Sundre Northeast	0	0
Sylvan Lake East	0	0
Tomahawk	0	0
Violet Grove	0	0
Wagner2	0	0
Wapasu	0	0
Woodcroft	0	0

Today() is: 11/10/2015

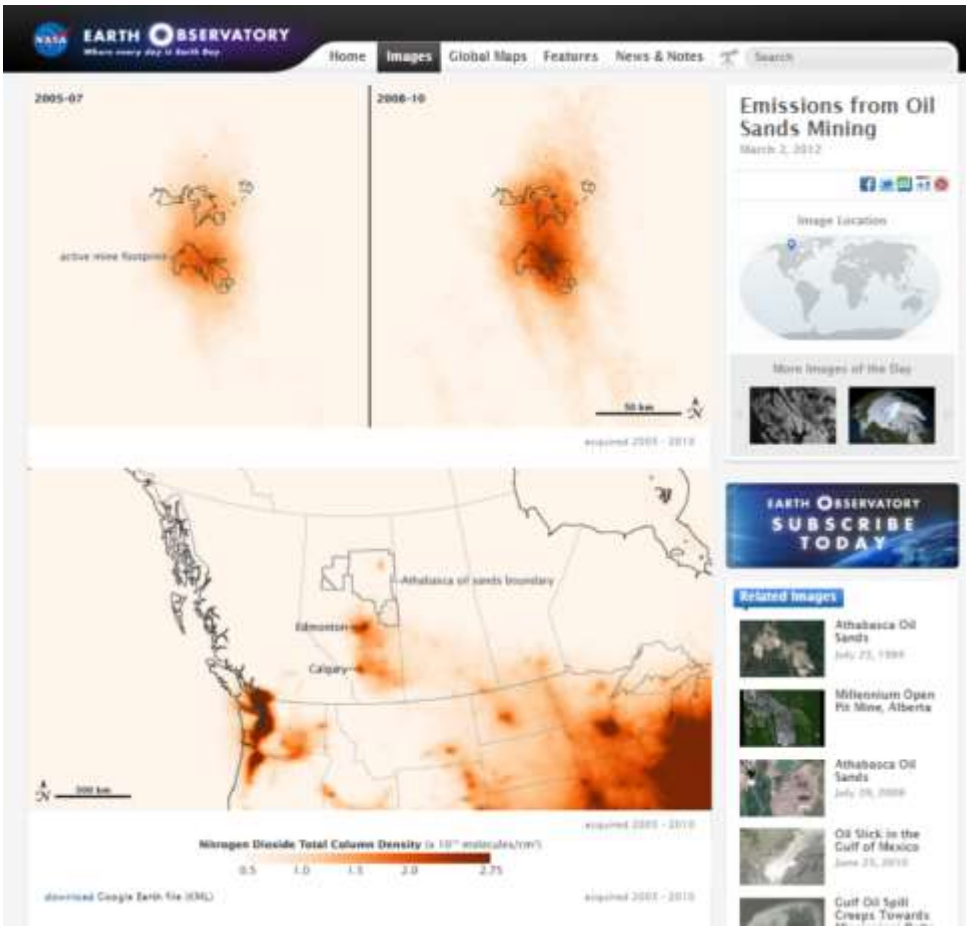
n/a - Data was not collected.

*There is no 1-hour objective for PM2.5.

16) So, despite the images giving an uninformed viewer a sense that Alberta is being inundated with terrible pollution, the exact opposite is true.

17) Based on this evidence, one must consider that some reporters at the Edmonton Journal appear to accept everything that the Pembina Institute tells them or that CAPE – the Cdn Association of Physicians for the Environment – are telling them, without checking the facts with other sources.

18) As recently reported in the US, the Sierra Club has reportedly been acting as a proxy for renewables investors in a campaign to demonize coal, one could consider the possibility that Pembina Institute or CAPE might have a secondary agenda – such as pushing renewable energy, carbon taxes or cap and trade .http://www.washingtontimes.com/news/2015/jul/20/drew-johnson-sierra-club-has-become-front-group-do/?page=all



http://earthobservatory.nasa.gov/IOTD/view.php?id=77283&src=ve

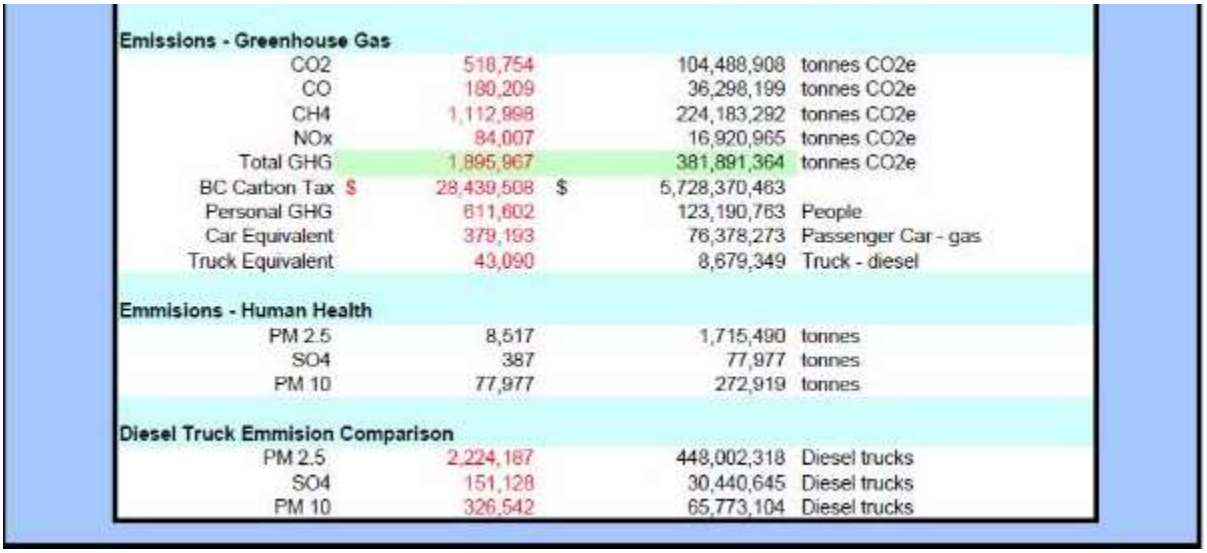
19) Finally, above, these 2010 NASA images above on Alberta and the oil sands – compared between a 2005 and 2008 image at the top – that do show increased

emissions, set in context of North America below (images acquired from 2005-2010) show that oil sands emissions are about the same as a medium sized city or power plant – and you can see how other areas of North America are polluted.
If Edmonton's coal-fired power plants were such a pollution risk, why would they not show up as a massive blob of dark brick red colors of Vancouver and the mid-west/industrialized east of the US and Canada?

20) The conclusion of the above evidence shows that Alberta does have excellent air quality, despite significant industrial activity**,** and based on the visible pattern in the NASA image above, it seems clear that **transportation** is a major contributing factor to air pollution.

21) Related videos to the oil sands monitoring story that show the dispersion of various emissions should also not surprise anyone. Here is a satellite video of wildfire smoke from Siberia coming to North America. https://youtu.be/JzHXmrYd2tI

22) Below on page 24 is a full comparison chart showing the relative quantities of output of pollutants from wildfires in Alberta in 2011 – the Slave Lake fire in red and the total annual output in black. Please note the equivalencies. This demonstrates that the anti-coal-fired power plant claims are disproportionate and exaggerated. While the human race should continue to better manage pollution, when it comes to Mother Nature, nothing beats her for generating GHGs, PM2.5 and PM10, heat, toxic VOCs, Polycyclic Aromatic Hydrocarbons and explosive turbulence, which is something you will never get from a coal-fired power plant.



Emissions - Greenhouse Gas				
CO2	518,754		104,488,908	tonnes CO2e
CO	180,209		36,298,199	tonnes CO2e
CH4	1,112,998		224,183,292	tonnes CO2e
NOx	84,007		16,920,965	tonnes CO2e
Total GHG	1,895,967		381,891,364	tonnes CO2e
BC Carbon Tax	$ 28,439,508	$	5,728,370,463	
Personal GHG	611,602		123,190,763	People
Car Equivalent	379,193		76,378,273	Passenger Car - gas
Truck Equivalent	43,090		8,679,349	Truck - diesel
Emmisions - Human Health				
PM 2.5	8,517		1,715,490	tonnes
SO4	387		77,977	tonnes
PM 10	77,977		272,919	tonnes
Diesel Truck Emmision Comparison				
PM 2.5	2,224,187		448,002,318	Diesel trucks
SO4	151,128		30,440,645	Diesel trucks
PM 10	326,542		65,773,104	Diesel trucks

About Modelling Studies and Simulations

We also consulted with a data management / analysis professional (who is also an ecologist) who wrote:

The reporter should have asked the question: So what? Is this bad? Does it reflect reality? What good does it do? How does it compare to other jurisdictions (I noted chunks of California and the entire Eastern NA region were far worse).

It is a model, therefore a logical construct. Outputs from models are not data, though they are often treated as such by media. The *real life empirical data* that we reviewed – also from EC - shows a decrease over time regardless of increased population / activity. It might be useful for predicting behavior of emissions plumes, but if they are within safe limits, who cares?

2006 Alberta population = 3.256 million
2014 Alberta population = 4.120 million
http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo26j-eng.htm
http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/demo02a-eng.htm

So, if SOx and NOx emissions are at about the same levels in 2014 as they were in 2006 that means in real terms a reduction of just over 26% per capita. That is a lot like what industry has been saying (assuming there is a direct correlation between GHG and SOx/NOx:

http://www.oilsandstoday.ca/topics/ghgemissions/Pages/default.aspx

The *model* appears to be parameterized on actual observations, but with no level of confidence / error margins disclosed.

The *model* shows a pattern of dispersion that is interesting, but meaningless without proper context (i.e. air quality in Alberta is consistently above minimum AQHI levels)

The *observed* numbers from Environment Canada validate that oil sands / electric generation industry in Alberta has been steadily decreasing emissions. (See graphs in Appendix)

The *observed* data show air quality improving from 2006 to 2014.

The *observed* data show a few AQHI spikes and as implied, seem to be correlated with winter atmospheric inversions.

He also comments that ozone is the only factor in Environment Canada information that shows a slight uptick – and adds this:

All show reductions in *polluting* emissions (leaving CO2 out) over time even as the population and industry has increased over the same period. The exception is ozone which is related to population and difficult to influence.

As per the EPA:

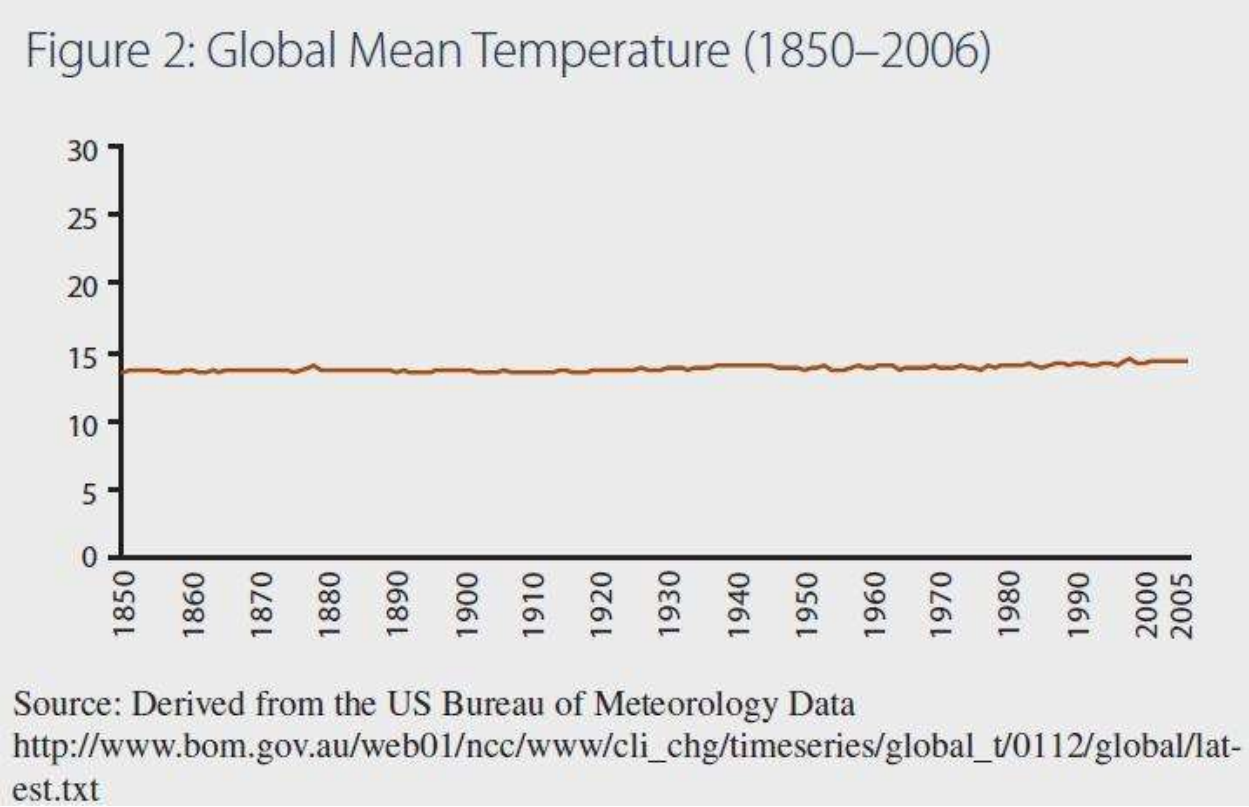
"Ground-level ozone (the primary constituent of smog) is the most complex, difficult to control, and pervasive of the six principal air pollutants. Unlike other pollutants, ozone is not emitted directly into the air by specific sources. Ozone is created by sunlight acting on

NOx and VOC in the air. There are thousands of types of sources of these gases. Some of the common sources include gasoline vapors, chemical solvents, combustion products of fuels, and consumer products."

http://www3.epa.gov/airtrends/aqtrnd95/o3.html

He also added:

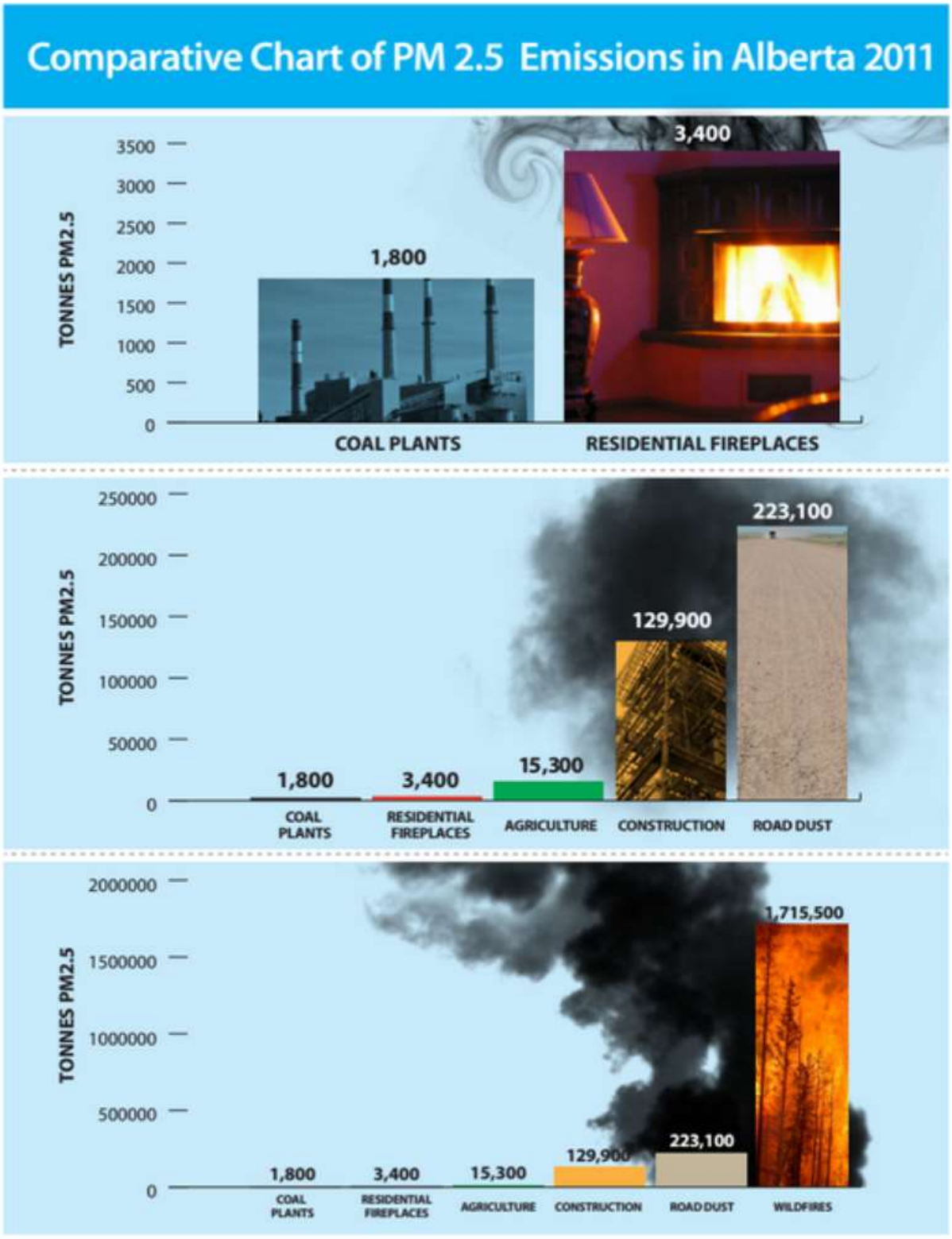
Lastly, I would note that **sulfur and nitrogen deposition are natural and necessary for a healthy ecosystem.** The question is whether the anthropogenic additions are harmful. Just because there are some increases (modelled in red) does not necessarily indicate a problem. Similar to the global temperature since 1900 – if you round up the data on a graph to 1.0 C instead of the usually reported .01 C, the trend is flat.



As you see below, Mother Nature puts out a huge amount of sulfur and nitrogen, compared to that of human industry. The following is based on a low estimate of forest and ground cover burned in the Salve Lake Fire of 2011, and the total for Alberta wildfires in 2011.

Alberta

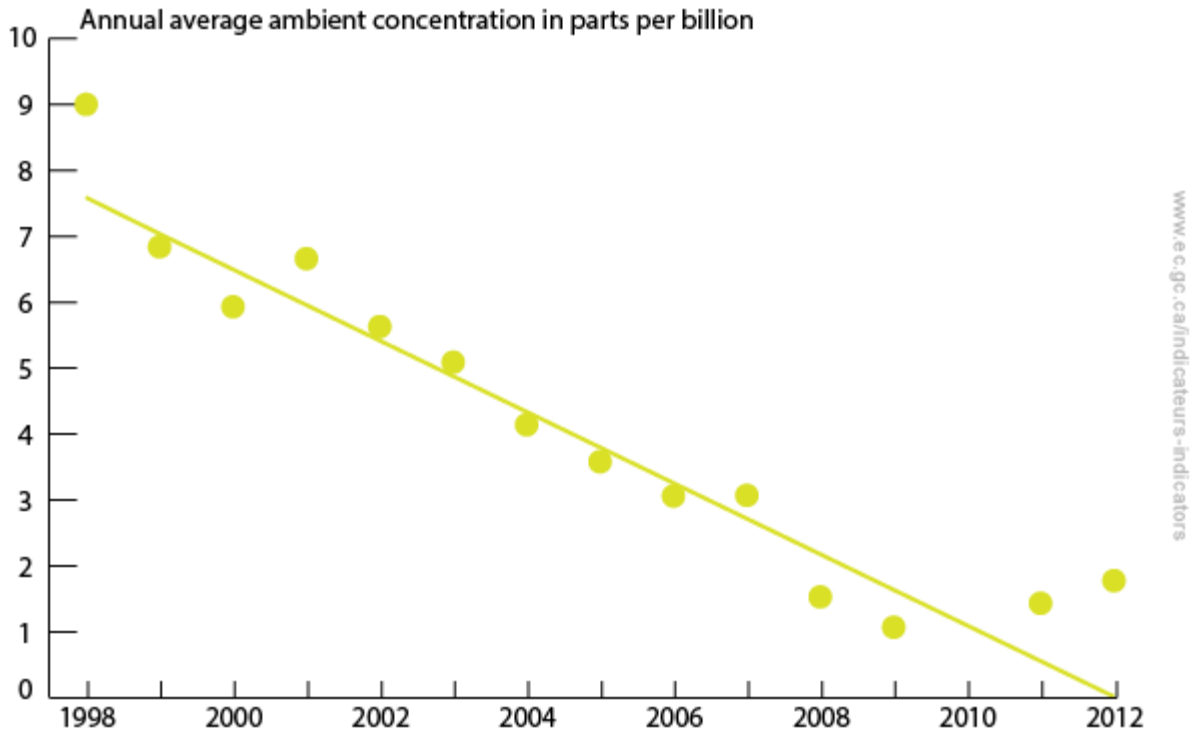
	Slave Lake - 2011		2011	Notes
Total 2011				
Fires *	1		1150	
Cost *				
Ha *	4,700		946,688	
$/ ha				
Silviculture Requirement				
ha	2,350		473,344	THFLB
Seedlings	2,820,000		568,012,800	
Cost	$ 3,384,000	$	681,615,360	
Timber Values Lost				
Volume destroyed	1,410,000		284,006,400	m³
Stumpage loss	$ 705,000	$	142,003,200	
Biomass Consumption				
Gross	967,824		194,941,993	BDT
Net	193,565		38,988,399	BDT
Energy Release				
Heat - Gross	2,903,472		584,825,979	GJ
Heat - Net	2,467,951		497,102,082	GJ
Heat - value	$ 27,147,463	$	5,468,122,903	
Homes heated	22,436		4,519,110	Home heating needs per year
Electric - Gross	807,165,216		162,581,622,129	kWhr
Electric - Net	201,791,304		40,645,405,532	kWhr
Electric - value	$ 14,125,391	$	2,845,178,387	
Homes electrical	11,057		2,227,146	Home electrical needs per year
Explosion equivalence	0.59		118.81	Mt TNT
Emissions - Greenhouse Gas				
CO2	518,754		104,488,908	tonnes CO2e
CO	180,209		36,298,199	tonnes CO2e
CH4	1,112,998		224,183,292	tonnes CO2e
NOx	84,007		16,920,965	tonnes CO2e
Total GHG	1,895,967		381,891,364	tonnes CO2e
BC Carbon Tax	$ 28,439,508	$	5,728,370,463	
Personal GHG	611,602		123,190,763	People
Car Equivalent	379,193		76,378,273	Passenger Car - gas
Truck Equivalent	43,090		8,679,349	Truck - diesel
Emmisions - Human Health				
PM 2.5	8,517		1,715,490	tonnes
SO4	387		77,977	tonnes
PM 10	77,977		272,919	tonnes
Diesel Truck Emmision Comparison				
PM 2.5	2,224,187		448,002,318	Diesel trucks
SO4	151,128		30,440,645	Diesel trucks
PM 10	326,542		65,773,104	Diesel trucks


Comparative Chart of PM 2.5 Emissions in Alberta 2011
TONNES PM2.5
3500
3000
2500
2000
1500
1000
500
0
1,800
3,400
COAL PLANTS
RESIDENTIAL FIREPLACES
TONNES PM2.5
250000
200000
150000
100000
50000
0
1,800
3,400
15,300
129,900
223,100
COAL PLANTS
RESIDENTIAL FIREPLACES
AGRICULTURE
CONSTRUCTION
ROAD DUST
TONNES PM2.5
2000000
1500000
1000000
500000
0
1,800
3,400
15,300
129,900
223,100
1,715,500
COAL PLANTS
RESIDENTIAL FIREPLACES
AGRICULTURE
CONSTRUCTION
ROAD DUST
WILDFIRES

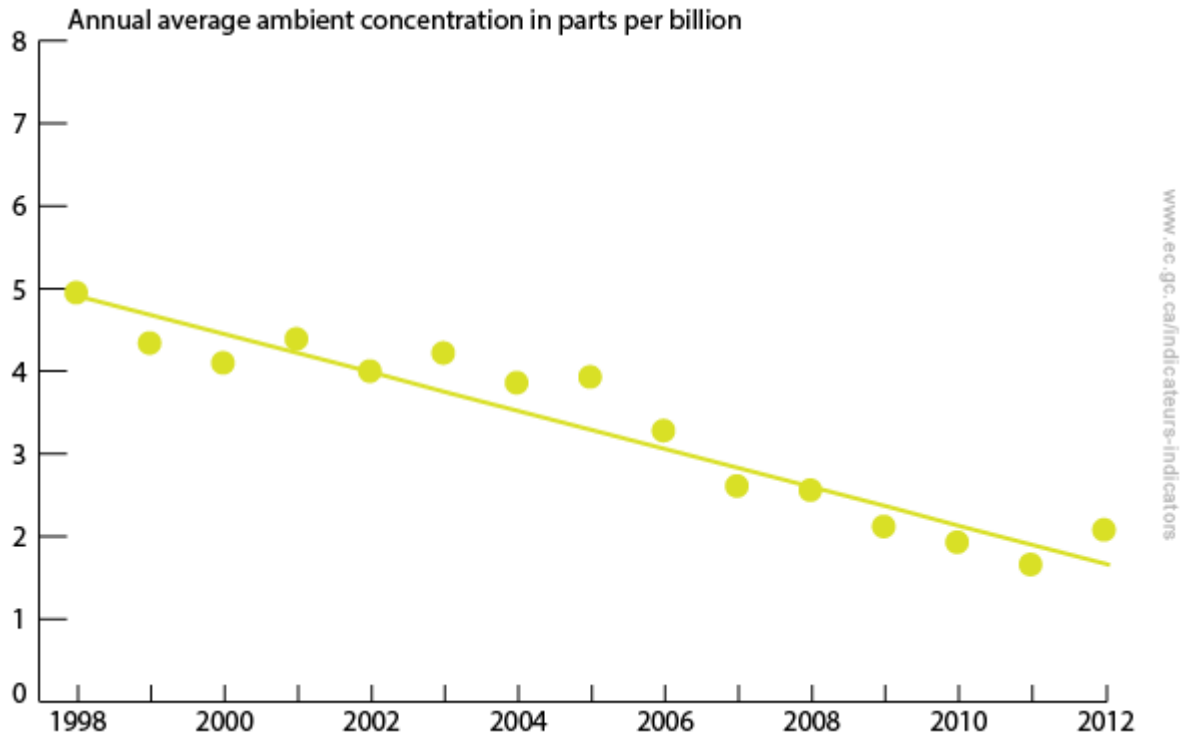
ENVIRONMENT CANADA DATA:

Sulfur dioxide concentrations.

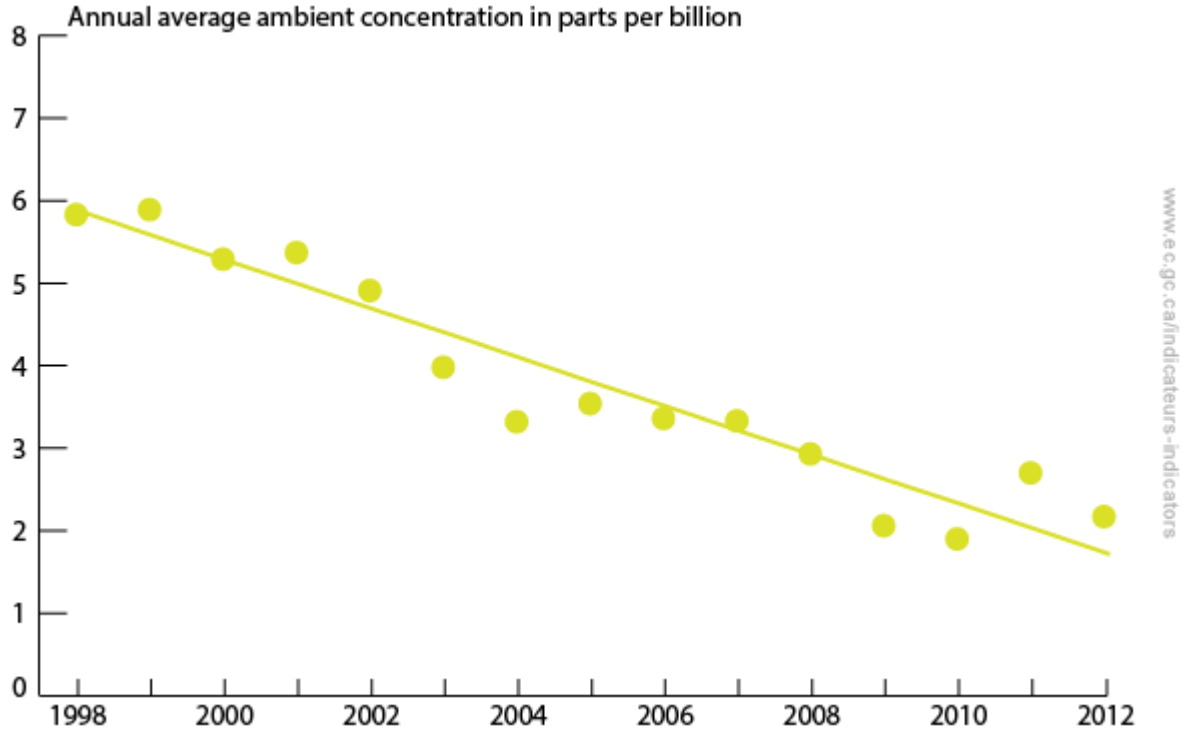
https://www.ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=307CCE5B-1



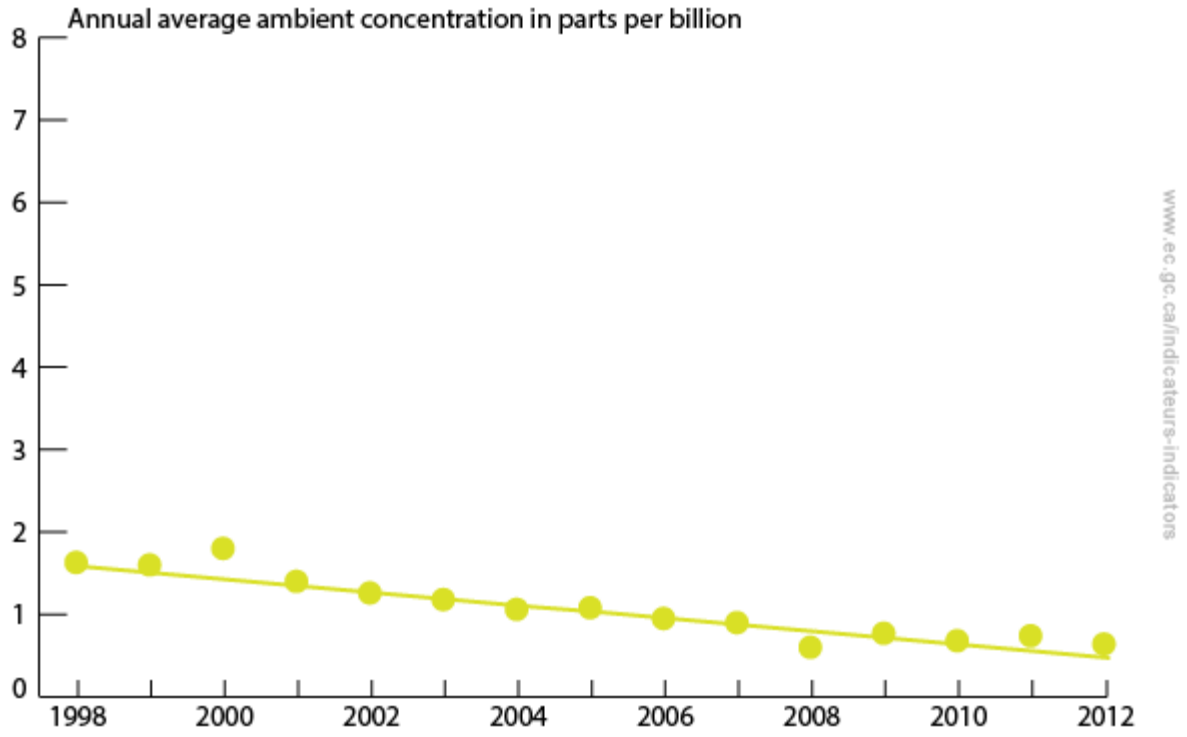
Atlantic



Southern Quebec



Southern Ontario



Prairies and Northern Ontario

The line chart shows the average concentration of sulphur dioxide in the air in the Prairies and northern Ontario from 1998 to 2012. In 2012, the annual average concentration of sulphur dioxide in outdoor air was 0.6 parts per billion, or 14 percent lower than in 2011. A declining trend was detected from 1998 to 2012, representing a decrease of 68 percent (or an average decrease of 4.8 percent per year) over that period.

Based on the foregoing information, the story: "**Hot spots depict how coal plants contribute to Edmonton pollution in new Environment Canada images," Oct. 8, 2015** should be retracted and a corrected story published.