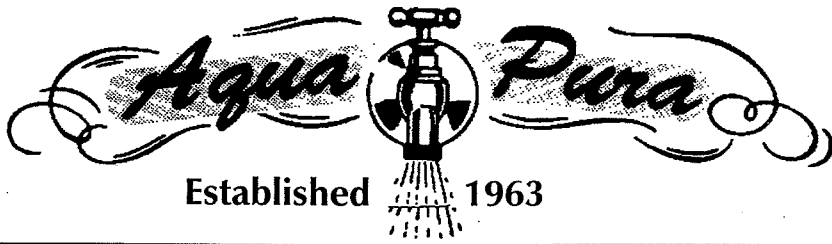


# THE AUSTRALIAN FLUORIDATION NEWS



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## FLUORIDE COMPOUNDS: Three of the Six Worst Air Pollutants

By John T. Webber

**Pollution of drinking water with fluorides by artificial fluoridation; pollution of the air with fluorine gases; the previous indiscriminate use of a range of fluorocarbon gases in refrigeration and propellants; and now carbon (and fluoride) trading, are closely linked.**

An example of the link between fluoride air pollution and fluoridation of water supplies is the enactment in 1968 of a Regulation under the 1963 NSW Clean Air Act, requiring removal of a high proportion of air-polluting fluoride gases from industrial sources, including from superphosphate production plants. Implementation of the regulation was timed to coincide with commencement of artificial fluoridation of drinking water supplies in Sydney.

Air-polluting fluoride fumes collected from smokestacks at the Kurri-Kurri superphosphate works north of Sydney were passed into water, turning the water into fluorosilicic acid. This acid was then transported to Sydney in rubber-lined tankers (the acid would eat through steel if in direct contact), and dumped into Sydney's Prospect Reservoir, the large holding reservoir from which Sydney's water supply is distributed.

**Too toxic in the air, yet the population is expected to believe it is OK to drink.**

### **"CARBON" TRADING - A License to Pollute**

In July 2008, the Australian Federal Government published a discussion paper, its Carbon Pollution Reduction Scheme *Green Paper*<sup>1</sup>, which invited public comment on its proposed strategy to reduce greenhouse gases. The final generalised strategy was published as a *White Paper*<sup>2</sup> in December 2008. Greenhouse gases are proposed to be reduced by 5% below concentrations existing in the atmosphere in 2000 by 2020, with a proposed commencement date for carbon trading in July 2010.

### **Background**

Fluorine and many of its compounds were increasingly used in industry during the 20th century, with possible adverse effects on human health of many of these toxic compounds often unknown or ignored by enthusiastic inventors.

An example of the blasé attitude of some scientists even to their own health is the inventor involved in the 1921 discovery of the knock-silencing properties of tetraethyl lead (TEL) as an additive to gasoline fuel for internal combustion engines. TEL also gave greater fuel economy and better acceleration of cars when added at a 1:300 ratio, lead to gasoline.

**The *modus operandi* of major toxic emissions producing industries have some remarkable similarities - whatever the product. The use of lead in petrol and chlorofluorocarbons (CFC's), and lack of concern for their harmful effects on employees and the general population is remarkably similar to the discovery and promotion of the addition of toxic fluoride compounds to public drinking water supplies. This includes involvement of a company with the same pedigree; lack of independent research; proceeding with sale of the products before completion of studies on possible adverse effects; ignoring adverse evidence and denigrating researchers who provided evidence showing harm.**

Lead in petrol, fluorocarbons and industrial fluoride air pollutants can all have both specific and more general adverse effects on the health of the population, without the additional burden of the daily consumption of another toxic substance artificially added to public drinking water supplies.

An understanding of the long history before lead in petrol and fluorocarbons were phased out reveals the influence of affected industries on government policies, similar to the influence on government policies of current proposals for so-called "carbon" trading.

A brief history of the discovery, promotion and eventual phasing-out of both lead in petrol and at least some fluorocarbons provides a valuable insight into current concerns on fluoride air pollution, carbon (and fluoride) trading and addition of toxic fluorides to water supplies, and why fluorides have earned the title "the protected pollutant".

## Lead

The inventor was Thomas Midgley Jr., who worked in the Inventions Department of General Motors. He received the Nichols Award for his work on anti-knock in early 1922.

Charles Kettering, another bright engineer with General Motors, who had previously invented the self-starter for cars, devised a marketing scheme that granted the new product an immediate identity. He named it "ethyl", to be dyed red, so that motorists could differentiate it from other fuels:

*To market ethyl, General Motors and the Standard Oil Company of New Jersey formed the Ethyl Corporation with Kettering as president and Midgley as vice president and general manager... Du Pont received the contract to provide the tetraethyl lead. The potential financial gain from manufacturing TEL was immense, for an estimated 60 million pounds of TEL would be required to treat the gasoline consumed each year in the United States alone.<sup>3</sup>*

Midgley suffered the symptoms of lead poisoning during his research. Writing to Wilder D. Bancroft, editor of the Journal of Physical Chemistry in early 1922 he stated:

*I find that my researches in lead have been retroactive and that I contain a pair of lead-lined lungs. Symptoms being almost identical to the . . . second stage of tuberculosis except in one detail, sub-normal temperature instead of abnormal temperature. I find myself 2½ degrees shy at times, and if not for my health, simply out of self-respect, I feel that I must overcome this slight error or I shall soon be classified as a cold-blooded reptile. The cure for said ailment is not only extremely simple but quite delightful. It means to pack up, climb a train and search for a suitable golf course in the state named Florida. . . . One of the boys at Du Pont having gone through exactly similar experience . . . he was 100 percent in health in five weeks...*

*Although he himself had been poisoned, Midgley believed the TEL was safe in the diluted form in which it was to be sold to the public. He had no experimental data to back up this opinion, but defended the theory when the surgeon general of the U.S. Public Health Service, Hugh Cumming, began making inquiries into the matter in late 1922.<sup>3</sup>*

## Deaths from Lead Poisoning

*Midgley was apparently not dissuaded from his sanguine appraisal of TEL's potential danger by a letter he received from a German chemist, Dr. E. Krause, shortly after ethyl went on sale in Dayton. Krause, who had worked with TEL in non automotive contexts, cautioned that several of his co-workers had died from what he believed to be organic lead poisoning. He informed Midgley, 'The compounds seem to possess, even in very reduced doses, malicious and creeping poisonous effects. . . . [However,] they do not produce the typical symptoms of lead poisoning . . . but a slow weakening and enfeebling of the whole body, which ultimately results in death.'*

*'I have used every possible means of precaution, Krause concluded. Nevertheless, I think that I have severely damaged my health.'<sup>3</sup>*

Midgley and Kettering later successfully defended ethyl against claims by early occupational health specialists that manufacture of the product was dangerous to workers and its

general distribution might harm the public.

In Australia, it was not for 80 years after its introduction, that lead in petrol was phased out.

## Chlorofluorocarbons - fluoride compounds (CFCs)

Early refrigerants were either toxic and/or flammable, so researchers, responding to demand, sought a safe refrigerant.

One of the early compounds invented was Freon, a chlorinated fluorocarbon (CFC), invented in 1928 and initially considered safe. The same brilliant inventors at General Motors who had invented and marketed ethyl made the discovery:

*The CFC story begins in Dayton, Ohio, a Mecca of early-twentieth-century technological endeavour, the Silicon Valley of its day, where in 1928 researchers responded to an urgent demand for a safe refrigerant. The refrigerants then in use were either toxic or flammable or both, ensuring that the iceman would remain a familiar figure in millions of American homes. A new and improved refrigerant, could improve the quality of life and be the cornerstone of a vast new industry...*

*The solution was chlorofluorocarbons, first synthesized by General Motors researcher Thomas Midgley, Jr., and his close friend Charles Kettering, the head of GM's Research Corporation. Midgley and Kettering were already two of America's most highly regarded industrial pioneers....*

*With Kettering's help, Midgley successfully defended ethyl against attacks waged by America's first occupational-health specialists, who claimed that the manufacture of the substance was dangerous to workers and that its distribution might harm the general public....*

*For Midgley and Kettering, it was unthinkable that a technological innovation with such obvious and useful applications as ethyl gas could be held up by such fears. Certainly there were problems to overcome with the introduction of any great invention, but as Kettering liked to remind people, 'the price of progress is trouble, and frankly I don't believe the price is too high.'<sup>3</sup>*

## Fluorides – Deadly Air Pollutants

It is not fully appreciated that a range of different air pollutants are included in the Australian Federal Government's proposed Carbon Trading Scheme. The glossary of the Green Paper states: "**Carbon is used in the report to generally refer to the six major greenhouse gases**".<sup>1</sup>

The six major greenhouse gases which are claimed to cause global warming and climate change as listed in the green paper are:

- Carbon dioxide (CO<sub>2</sub>)
- Methane (CH<sub>4</sub>)
- Nitrous Oxide (N<sub>2</sub>O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur Hexafluoride (SF<sub>6</sub>)

The Green Paper recognising the differences between these gases and consequential different effects in the atmosphere defines the term *Carbon dioxide equivalent (CO<sub>2</sub>-e)* as:

A standard measure that takes account of the different global warming potentials of greenhouse gases and expresses the cumulative effect in a common unit.<sup>1</sup>

## Fluorides added to Water – some of the Most Toxic Chemicals

Recognition of the obvious fact that in the atmosphere, different gases (including the three gases containing fluorine) have different effects on the atmosphere, highlights the failure by fluoridationists to admit that in water, different fluorides, having different relative toxicities, are also likely to have varying effects on consumers. Toxicity in water is influenced by a range of factors, including the proportion of other elements or compounds in the water, including the solubility of the compound or element.

Compound	Fluoride Content	Solubility at 25° C. per 100 cc.
	%	g
Sodium Fluoride	45.46	4.210
Calcium Fluoride	48.63	0.0017
Sodium Silicofluoride	60.57	0.759
Potassium Silicofluoride	51.70	0.176
Barium Silicofluoride	40.68	0.024
Cryolite	54.26	0.039
Synthetic Cryolite	52.50	0.063

**Table 1: Comparison of Solubility of some important inorganic Fluorides**

From **table 1** it can be seen that sodium fluoride and sodium silicofluoride, which are both used in artificial fluoridation of water supplies, are respectively about 2,470 times and 440 time more soluble than calcium fluoride, which occurs in a small proportion of naturally contaminated water sources which have passed over fluorite rock. Waters highly contaminated with fluorides (1 to 4 parts per million of fluorides and sometime more) are usually found in wells and normally also contain high concentrations of elements such as calcium, sodium, potassium and magnesium. The strong affinity of the fluoride ion for elements such as calcium means that when ingested by man, less fluoride is readily available for direct absorption by the body than when the highly soluble fluoride compounds used in fluoridation are added to low mineral content water supplies such as Melbourne and Sydney's. Fortunately such water supplies are relatively rare, particularly in Australia.

Toxicity	Compound	
<b>Extremely Toxic</b>	Gaseous Hydrogen Fluoride	HF
	Silicon Tetrafluoride	SiF <sub>4</sub>
	Solutions of hydrofluoric acid	HF
	Hydrofluosilicic acid	H <sub>2</sub> SiF <sub>6</sub>
<b>Very Toxic</b>	Easily soluble fluorides and fluosilicates:	
	Sodium fluoride	NaF
	Potassium fluoride	KF
	Ammonium fluoride	NH <sub>4</sub> F
	Sodium fluosilicate	Na <sub>2</sub> SiF <sub>6</sub>
	Potassium fluosilicate	K <sub>2</sub> SiF <sub>6</sub>
	Ammonium silicofluoride	(NH <sub>4</sub> ) <sub>2</sub> SiF <sub>6</sub>
<b>Moderately Toxic</b>	Almost insoluble fluoride compounds:	
	Cryolite	Na <sub>3</sub> AlF <sub>6</sub>
	Calcium fluoride	CaF <sub>2</sub>

**Table 2: Comparison of Toxicity of Inorganic Fluorides**

Tables 1 and 2 are from the classic study by Roholm<sup>4</sup>, as later published by Waldbott<sup>5</sup>.

The fluoride compounds used in artificial fluoridation of drinking water supplies such as hydrofluorosilicic acid and sodium fluoride are either extremely toxic or very toxic, as

shown in **table 2**. Calcium fluoride is also harmful when ingested, classed as moderately toxic.

Due to the greater toxicity of the very soluble compounds used in fluoridation compared to low soluble calcium fluoride, it can reasonably be expected that their adverse effects on the health of the population would be greater than on the small proportion of populations which have consumed fluoride-contaminated natural water supplies. It is on the study of such populations that the false principle of fluoridation is based.

Promoters of fluoridation claim that the fluoride ion in water has the same effect on the body, whether the fluoride is a toxic by-product of an industrial process or occurs naturally in a contaminated water supply. Yet if that were the case, then consumption of sodium fluoride and sodium chloride (common salt) would similarly have the same effect on health because they both contain sodium. Yet they don't. Consumption of a pinch of sodium fluoride in a glass of water can kill a healthy person; a pinch of salt will not.

## Atmospheric and Ground-Level air pollutants.

Campaigners attempting to reduce man's output of noxious gases due to their impact on the atmosphere and/or stratosphere include Al Gore, who refers very briefly to fluoride compounds in his book *An Inconvenient Truth*:

*Sulphur hexafluoride (SF<sub>6</sub>), PFCs and HFCs are all greenhouse gases that are produced exclusively by human activity....*

*HFCs are used as substitutes for CFCs – which were banned because their emissions in refrigeration systems and elsewhere were destroying the ozone layer. CFCs were also very potent greenhouse gases. PFCs and SF<sub>6</sub> are released into the atmosphere by industrial activities like aluminium smelting and semiconductor manufacturing, as well as the electricity grid.<sup>6</sup>*

Similarly, Tim Flannery in his book *The Weather Makers – The History & Future Impact of Climate Change*, refers to:

*The rarest of all greenhouse gases are members of the HFC and CFC families of chemicals.<sup>7</sup>*

He also notes that DuPont made most CFCs. However, like most politicians and commentators, both authors then refer virtually exclusively to carbon dioxide (CO<sub>2</sub>) as the greenhouse gas pollutant.

**Both the government in its *Green and White Papers* and campaigners concerned about climate change, concentrating on the atmosphere, appear to ignore the current serious impact on the health of populations near and downwind of industrial plants emitting noxious air-polluting gases, particularly fluorides.**

**The additional health burden of purposely adding a toxic fluoride compound to drinking water supplies is totally ignored.**

## Sources of Atmospheric Pollutants

Some air pollutants are emitted by nature, such as gases arising from organic decay and from volcanic eruptions. However concern during the last century is with pollutants produced by man.

Major sources of air pollution include from combustion, a major source being coal-fired electricity generating plants;

from road vehicles using petroleum and diesel fuels; from the petroleum industry during refining; from smelting, particularly aluminium, lead, zinc, iron ore and copper; from glass, ceramic and brick works and numerous other sources including phosphate fertilizer production, cement manufacture, and the chemical industry.

The *Green and White Papers* recognise that electricity plants and aluminium smelters, as well as transport, emit large amounts of pollutants.

An indication of the relative amounts of some atmospheric emissions from a coal-fired power plant has been provided by Waldbott in his publication *Health Effects of Environmental Pollutants*.

Element	Concentration (PPM)†	Amount Emitted (LB/Day)
Arsenic	1.4	2.4-39.8
Beryllium	0.3	0.045
Fluorine	48.0	241-1205
Lead	9.4	11.3-278.4
Mercury	0.07	3.2
Selenium	0.7	4.8-11.7

**Table 3: Atmospheric emissions of selected trace elements from a hypothetical 2000-megawatt power plant burning coal in Montana\* 8**

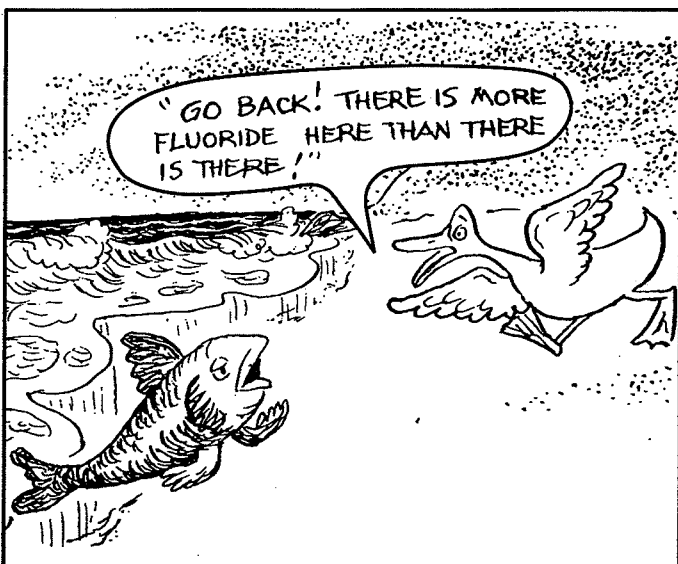
\* Modified from Swanson, V. E., and Huffman, C., Jr.: Composition and trace element content of coal, Northern Great Plains area, Denver, 1973, U. S. Geological Survey.

† Average of eight samples from the Rosebud coal seam, Colstrip, Mont.

Fluorine is the major pollutant, far exceeding emissions of other toxic elements such as lead and arsenic.

Many industrial plants emit substantial amounts of toxic elements, including fluorine. The relative amounts emitted depend on the composition of the particular coal during combustion. Atmospheric pollution from the plant depends on the extent and effectiveness of air pollution control equipment installed.

It is recognised in legislation that fluorides, even as a waste, are hazardous. For example, the *NSW Environmentally Hazardous Chemicals Act* of 1985 includes aluminium smelter wastes containing fluoride and/or cyanide with other wastes such as asbestos, pesticides, lead sludge from petroleum storage tanks and arsenical wastes declared chemical wastes and subject to control orders.<sup>9</sup>



## Sensitivity of plants to fluorides

In the past, as they were affected by polluted air, sensitive canaries were used in coal mines to warn miners of the presence of dangerous gases.

Similarly, unique damage to specific plants is an indicator of the presence of particular pollutants in the air.

As shown in **table 4**, fluoride air pollutants damage the leaves of sensitive plants at concentrations one hundred times lower than other air pollutants which are toxic to sensitive plants. Gladioli, tulips and pine trees are particularly sensitive to fluorides<sup>8</sup>.

Pollutant	Markings	Level PPM	Sensitive Indicator Plants
Sulphur di-oxide	White to brown, bleaching, blotching between veins	0.1 to 3.0	Pumpkins, Barley, Squash, Alfalfa, Cotton, Wheat, Apples
Chlorine	Bleaching, necrosis on margins and between veins, scattered spotting	About 1.5	Radishes, Alfalfa, Cucumbers, Peaches, Maple, Cosmos, Buckwheat
Oxidant smog	Silver or bronzelike on underside of leaf; banded pattern	0.2	Petunias, Lettuce, Oats, Pinto beans, Bluegrass
Ozone	Red-brown flecks	0.15	Tobacco, Tomatoes, Beans, Spinach, Potatoes
Ethylene	Withering and drying of flowers, growth retardation, loss of flower buds	0.01	Orchids, Carnations, Azaleas, Tomatoes, Cotton
Fluoride	Necrosis on tips and edges of leaves, sharply demarcated by dark brown-red band	0.0001	Gladioli, Tulips, Prunes, Apricots, Pine

**Table 4: The Most Significant Pollutants Toxic to Plants**

Note: Only part of Waldbott's Table has been reproduced.

Later research on sensitive grape varieties, initiated due to concerns with fluoride air pollution from existing and proposed aluminium smelters in wine growing regions of the NSW Hunter Valley, has shown that as little as 0.2 micrograms of hydrogen fluoride per cubic metre of air can damage the leaves of grape vines.<sup>10</sup>

Studies in several countries have shown that growth of plants is inhibited and sensitive flower cuttings damaged when artificially fluoridated water at the concentration of one part per million, as used for artificial fluoridation of drinking water supplies, is used.<sup>11</sup>

Damage caused by air pollutants has been recorded at substantial distances from the source of the pollution. This is hardly surprising, as air pollution from major volcanic eruptions has travelled around the globe; radiation fallout from testing of atomic bombs occurred around the world and smoke from the disastrous February 2009 Victorian bushfires was seen and smelt in Sydney, 700 kilometres to the north, a week later.

Aluminium and superphosphate plants can cause fluoride pollution over an extensive area. Vegetation collected 150 kilometres from an industrial plant contained from 6 to 15 parts per million fluorine; within a 30 kilometre radius from the source the same species showed from 30 to 1,400 ppm, with leaf scorching proportional to the concentration of fluorine.<sup>23</sup>

A nationwide air survey by the U.S. National Air Pollution Control Administration of over 7,700 measurements for fluoride ions in 24-hour samples of suspended particles yielded over 1 microgram per cubic metre in a small proportion of urban locations, compared to no detectable amounts of fluoride detected in 97% of rural areas.<sup>8</sup> Near heavy industry, the same author records that rainwater containing from 0.6 to 36 parts per million fluoride. Analysis of rainwater collected in Melbourne has shown up to 1 part per million fluoride.

The concentration of fluoride ion of over 1 microgram per cubic meter of air detected in urban areas is five times greater than the concentration of hydrogen fluoride shown to cause damage to the leaves of grape vines.<sup>10</sup>

## Damage Payments and Fines for Fluoride Air Pollution

Payouts by fluoride polluting companies for fluoride damage have been made for over a century, with the first extensive study implicating fluoride air pollution as the primary cause of many deaths being undertaken by Roholm in the 1930's.<sup>4</sup>

### Examples:

- **Freiburg, Germany:** Payment of 880,000 marks (about \$US 200,000) for current injuries from industrial poisoning and 644,000 marks for permanent relief – 1893.
- **Vancouver, Washington:** ALCOA fined for dumping fluorides into the Columbia River and contaminating grass and foliage “which resulted in injury and death of cattle” from fluoride pollution – 1950.
- **Idaho, USA:** W.S. Mead and wife, judgement in US Court of Appeal against Food Machinery and Chemical Corp. for \$57,295 and against J.R. Simplot Co. for \$4,246 for serious damage to trout farm and factory caused by solid and gaseous fluoride compounds – 1961.
- **The Dallas, Oregon, USA:** Fairview Farms received \$300,000 from the Harvey Aluminium Company's reduction plant because of damage to dairy herds, loss of foliage and milk supply and depreciation in land value. Orchardist W.L. Meyer and his wife also received \$485,000 for “wilful damage” to cherry, apricot and peach crops – 1961.
- **Garrison, Montana, USA:** School classes interrupted 35 times in first year of operation of the Rocky Mountains phosphate plant; residents complained of burning eyes, asthmatic symptoms and sore throats, which they associated with fumes from the plant. Ranchers observed that their cows suffered from mottled teeth, with legs so stiff and painful that they had to graze on their knees. Samples of nearby vegetation showed fluoride concentrations several times the usual average. Installation of pollution control equipment failed to solve the problem and the plant finally closed for unrelated reasons – 1964.
- **Portland, Oregon, USA:** Paul M. Martin and his wife, in a suit against Reynolds Metals, claimed that fumes from their aluminium reduction plant caused their illness. This was the first proven case in USA of injury to human health by fumes from an aluminium plant. Seven other aluminium, metal and chemical companies joined Reynolds Metals to seek, unsuccessfully, a reversal of the initial judgement in favour of the Martins. Final

settlement, after 13 years, was purchase of their ranch by the aluminium company -1968.

The above examples are documented by Waldbott.<sup>12</sup>

- **Missoula, Montana, USA:** Fluoride emissions from the Anaconda Aluminium Company damaged trees, foliage and animals of a 214,000 acre area, including the Glacier National Park. Scientists from the US Department of Agriculture reported, after a two-year study and follow-up, stated in their conclusions that fluoride was so difficult to control and so toxic that only a zero standard for hydrogen fluoride would protect man and the environment - 1971.<sup>13</sup>
- **Port Maitland, Ontario, Canada:** Within three years after ERCO, a phosphate reduction plant, commenced operations in 1961 calves were born with deformed heads; some were mongoloid; almost 1000 head of cattle were affected; crop losses were as high as 50%; some farmers could only limp; symptoms included watery eyes, swollen tongues and puffed-up glands. Thirty six cases of fluorosis were identified by Dr. Waldbott and Dr. V A Cecilioni. Fluoride levels in crops decreased from 900 parts per million (ppm) to 8.7 ppm during a plant shutdown. ERCO had to pay \$373,000 in lawsuits and fluoride emission controls and was later ordered to shut down during the growing season. The trade journal Dunlop Dimensions stated that ERCO made a nice profit by converting hydrogen fluoride into fluorosilicic acid and using Dunlop's rubber-lined tanks to truck it to cities for artificial fluoridation. ERCO built another fertilizer plant in St. John's Newfoundland, but had to pay \$300,000 compensation when they were caught dumping waste fluoride into the Placentia Bay, and red-tainted fish were washed up on the beach. Damage to livestock and lower crop yields were reported – 1973.<sup>13</sup>

## Illness from Air Pollution in WA.

Unlike other states, reports of fluoride air pollution and damage to health have been reported in the WA media, particularly in the *Western Australian*.

Aluminium refineries were established at Kwinana and Pinjarra, south of Perth, in the 1960's and early 1970's, before WA's first environmental laws in 1973, and are therefore legally exempt from WA's *Environmental Protection Act of 1983*.

- **Kwinana:** The ALCOA refinery shut down its controversial Kwinana liquor burner and oxalate kiln from 2002 to 2005 due to community concerns about its effect on health, but it was re-opened in May 2005 after being upgraded, which the company claimed reduced emissions by from 81% to 98%. A chronically ill former ALCOA refinery worker was finally awarded a total and permanent disability payout. Anna Breed, whose husband died of sinus cancer after working at Alcoa's refinery for 24 years, “is suing Alcoa over his death and so far has a legal bill of \$31,000”. The Alumina Widows and Workers Action Group is compiling details of former Kwinana refinery workers who have contracted cancer including 37 deaths not included in a previous study. Dr. Geoff Pain, a supporter of the group, said the latest study showed a 160 per cent increase in the rate of cancer detection “in the past six years of the study compared with the first 14 years”. The *Western Australian Sunday Times* headed its report ‘The curse of Kwinana.’<sup>14</sup>

- **Wagerup:** Due to air pollution complaints by residents, the Wagerup Alcoa alumina refinery, 120 kilometres south of Perth, bought most properties near the refinery, which are rented out.

**One of the conditions of leases is that tenants are gagged from complaining about noise, odour or pollution by a clause in their lease agreements.**

- **Yarloop:** At Yarloop, 2 km further south, serious toxic pollution and dust hazards from waste stockpiles at the plant, resulted in Alcoa commissioning a \$600,000 two-year Edith Cowan University study in 2002. Four years later, the *WA Sunday Times* stated that it understood "that the study leader, Dyann Ross, quit in frustration after Alcoa refused to release her report and recommendations to the public. Dr. Ross is subject to a confidentially agreement and would not comment, although it is understood the main recommendation was not to proceed with a proposed expansion at that time".<sup>15</sup>

The State Government never-the-less approved a massive expansion, in spite of a strong recommendation by the Government-appointed Wagerup Medical Practitioner's Forum against expansion.

Dr Andrew Harper, an occupational physician and member of the forum, stated that the expansion was "outrageously irresponsible". He stated: "We have learned in the experience of Wagerup that all the health problems which have arisen since 1996, both on the worksite and in the community, have occurred when the emission levels have been within normal limits.

"These so-called stringent standards are misleading and they are ineffective, as proven already".<sup>16</sup>

## Lobbyists for polluters and dentists

A major public concern is that government policies are disproportionately influenced and determined by lobbyists, not logic. Lobbyists are engaged by organizations and companies that can afford their services.

A Federal Government register of lobbyists includes, for the six largest, clients of major polluting firms and industries, such as:

Alcoa, Aluminium Corporation of China, BHP Billiton, Bluescope Steel, Chamber of Automotive Industries and National Generators Forum<sup>17</sup>.

Ironically, but perhaps not surprisingly, the lobbyist firm for air polluting companies including Alcoa and BHP Billiton, Gavin Anderson & Company, is also the lobbyist for an organization promoting pollution of water supplies with fluorides, the Australian Dental Association.

After release in December 2008 of the Government's White Paper, The Sydney Morning Herald reported: Lobby groups for some of the biggest emitters breathe a sigh of relief in response to the Government's watered-down plans to cut carbon emissions....<sup>18</sup>

The principle of "polluters pay" has been turned on its head by slick lobbying by these and other polluting industries.

**Fluoride air pollution and fluoridation of water supplies inextricably linked.**

When industrial plants which emit fluoride gases and particles are required to reduce the amount of fluoride emitted they will, if permitted, take the next cheapest route

and dump it in the water. It is in the interest of polluting companies to lobby for lax pollution standards and encourage Governments, Health Departments, and Medical and Dental Associations to promote pollution of public drinking water supplies with toxic fluoride wastes.

## SUBSIDISING THE WORST POLLUTERS

The release in December 2008 of the government's *White Paper* more clearly described its strategy of assistance to the worst polluters. In essence, the policy is to pay the largest subsidies, issue of free carbon credits, to the worst polluters. The more a company pollutes, the more it gets!

The general population will in effect be further subsidising the worst polluters. So taxpayers, particularly those living near highly polluting industries, in addition to being subject to industrial pollution, will now make financial contributions to those industries to assist them to continue to pollute! This is an absurd situation, paying subsidised polluters even more.

The *White Paper* reveals that the heaviest polluters, including aluminium refineries, iron and steel works, petrol and LNG refineries and cement works will receive free pollution permits for up to 90% of their emissions, with an addition \$2.9 billion handout in 2010-2011, increasing in subsequent years. The coal-fired power stations which cause the greatest pollution will get \$3.9 billion over the first five years.<sup>18</sup>

The Australia Institute has stated that if households reduce their emissions, big polluters will have an incentive to increase production (causing greater air pollution), as this would free up pollution permits for big polluting industries.<sup>19</sup>

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*"All that is modern is not good just as all that is old is neither all good nor all bad."*

Indira Gandhi, 1974

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## THE WORST AIR POLLUTING INDUSTRIES TO BE PAID TO POLLUTE!

The *Green Paper's Fact Sheet 9*, headed "Assistance for emission-intensive trade-exposed industries" justifies assistance to high-polluting industries which export some of their products:

*If constraints on emissions are introduced in Australia ahead of key competitors, firms conducting emission-intensive trade-exposed activities may face a loss in profitability. This is because these firms may be constrained in their ability to pass through the increases in the carbon cost because they are price-takers on world markets.<sup>1</sup>*

The *White Paper's* Executive Summary states:

*There is no limit to emissions from individual sources. Companies are free to emit at whatever level they choose, as long as they surrender an eligible compliance permit for every tonne of those emissions at the end of the compliance period....*

*Entities must monitor and report their emissions and report to the Government. Non-compliance will attract a penalty.<sup>2</sup>*

So companies notorious for causing major pollution and damage to crop, animal and human health, will be able to emit as much air pollution as they wish; then monitor



their own pollution and advise the government of any non-compliance!

The *White Paper* provides an *Example* from "A Company Perspective". The example is that if the cost of abatement (reduction of air pollution), is higher than the market price of a permit then: "If the company has permits, it would use them to emit. If it has none, it would buy them in the market so it could emit".

Provision of free pollution permits to the electricity generating sector, the "allocation factor": "...has been determined on a relatively generous basis". This generous handout will allocate free permits:

...delivering assistance of around \$3.9 billion to the most emission-intensive coal-fired generators based on an initial carbon credit of \$25 per tonne.

Under the heading "Assistance for Emissions Intensive Trade-exposed Industries" (industries which export, such as the aluminium and steel industries) the *White Paper* states:

Expanding firms will receive an increased allocation of permits.

Assistance will be provided:

...for 90% of emissions...for industries with the greatest emissions.

The *White Paper* advises that:

The Government cannot release detailed information on likely Emission Intensive Trade-exposed Industries because much of the data has been provided on a commercial-in-confidence basis.

Industries with the greatest emissions are defined as those emitting over 6,000 tonnes of CO<sub>2</sub> –e/\$million value added. This means in effect that billions of dollars worth of free carbon credits will be doled out by the government to the worst polluters based on their financial profit. The greater their profit and the more they pollute, the more they get!

## Profits ahead of Health

**Retaining the profitability of highly polluting companies is a major government consideration. Profitability of major polluters is a higher priority than health of the population or concern for the environment.**

According to Clive Hamilton in his book *Scorcher, The Dirty Politics of Climate Change*, the aluminium industry is one of the worst polluting industries:

To protect its interests, the industry organised a low-profile but highly – effective lobby group, the Australian Aluminium Council (AAC), ...The ACC exists almost solely to lobby against the introduction of measures to combat climate change...

As a key member of the Australian Industry Greenhouse Network, and thus the greenhouse mafia, the Aluminium Council has been at the forefront of industry claims that mandatory targets would cause severe economic damage to Australia...

In the late 1990s the aluminium-smelting industry accounted for 16 per cent of greenhouse gas emissions from the electricity sector and 5.5 per cent of Australia's total emissions. Australia has only six smelters, three large ones at Boyce Island, Tomago and Portland and three smaller ones at Kurri Kurri, Point Henry and Bell Bay...

Of their total aluminium output 79 per cent is

exported...worth around \$2.8 billion in the late 1990s. Overall, foreign-owned companies account for around 59 per cent of the output of the aluminium-smelting industry in Australia...

The general belief in the electricity industry is that smelters pay between 1.5 and 2.5 cents per kilowatt-hour for delivered electricity. This can be compared with the cost of around 5 or 6 cents paid by other large industrial users, and 12 cents or more paid by households...

Overall, the total financial subsidy to aluminium smelting in Australia is estimated to be \$410 million per annum...

The failure to pay for the cost of aluminium-smelting pollution amounts to an additional subsidy to the industry worth at least \$430 million per year...

**If the aluminium smelters carried through with their threat to shift out of Australia in response to the introduction of greenhouse gas abatement policies, their departure would result in a net economic benefit to Australia...**

Each and every one of the industry's employees could be paid \$70,000 to stay at home and there would still be funds left over.<sup>20</sup>

Clive Hamilton notes that in 2002, Meg McDonald, head of the Australian delegation to the Kyoto conference, joined Alcoa as general manager of corporate affairs in Australia.<sup>20</sup>

**As experienced around the world, it is far cheaper for polluting industries to buy-up land surrounding their plants than to install expensive air pollution control equipment. It is even cheaper to employ lobbyists to influence governments to have lax air and water pollution control standards. Even better, influence governments to grant them billions of dollars worth of free "carbon credits", in addition to providing super-cheap electricity in confidential deals, with unrestrained pollution.**

A further bonus to industries polluting the environment with fluoride wastes is when governments, as has occurred in Australia, mandate the addition of toxic waste fluoride compounds into domestic water supplies. When pollution of water supplies with fluorides is mandated by a government under the guise of improving children's teeth, any adverse effects of fluorides on the health of the population caused by industrial fluoride air pollution can be blamed on this government-endorsed policy.

## Research for Industrial Polluters

Dr Waldbott summarised the history of the Kettering Laboratories, noting that the majority of its budget was funded by industry.

The Kettering Laboratories were founded in 1930 by gifts of the Ethyl Corporation, General Motor's Frigidaire subsidiary, and the Dupont Company to investigate chemical hazards in American industrial operations. Dr Robert A. Kehoe, its first chief, one of the nation's leading industrial toxicologists, personified the close link between PHS and the industry since he was Medical Director of the Ethyl Corporation and a consultant of the Division of Occupational Medicine of the PHS, the Tennessee Valley Authority, and the Atomic Energy Commission. Kehoe and his colleagues at Kettering also played a key role in developing government standards to prevent lead poisoning in

industry. These standards have subsequently been criticised severely because they were far too lax...

Since 1931 a considerable portion of the Kettering Laboratory's facilities has been devoted to the study of fluoride, particularly the refrigerant gas Freon 12...

During the mid-20th century, the research that issued from the Kettering Laboratory dominated the medical literature on the toxicology of fluoride...

Its findings are made available to the professions and the public only upon approval of the industrial donor of the grant. Article 8 of one of the contract agreements between the Aluminium Company of America and the Laboratory specifies that the University of Cincinnati shall "disseminate for the public good any information obtained. However, before the issuance of public reports or scientific publications, the manuscripts thereof will be submitted to the Donor for criticism and suggestions. Confidential information obtained from the Donor shall not be published without permission of the said Donor"...

Kettering Institute scientist E.J. Largent, who subsequently became consultant for Reynolds Metal Company, has written a book entitled **Fluorosis: the Health Aspects of Fluorine Compounds**, which was expressly designed, as indicated on its jacket, to "aid industry in law suits arising from fluoride damage".<sup>12</sup> (Emphasis added).

dental decay, particularly for those people unable to afford treatment.

It appears that the second generation, (children of parents who have consumed both artificially fluoridated water and dental care products for most or all of their lives), may be even more susceptible to dental damage from fluorides than their parents.

Meanwhile, slick promoters of the failed concept of fluoridation continue their propaganda, pulling wool over the eyes of governments and a proportion of the population, instead of stopping artificial fluoridation of public drinking water supplies and promoting measures such as nutritious diets and decreased consumption of decay-causing products.<sup>24</sup>

**NOTE.** The policy of *The Australian Fluoridation News* is to provide readers with information dealing with and related to the fluoridation of public drinking water supplies, including the link between fluoride air pollution, "carbon" trading and water fluoridation revealed in the above article. *The Australian Fluoridation News* is aware that many subscribers may be concerned about climate change, however it is not the purpose of this article to comment on any influence on global warming or climate change due to air pollution.

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## New report highlights increased deterioration in dental health

A new wide-ranging interim report on health policies by *The Australian National Health and Hospital Reform Commission* is reported to recommend targeting:

...the widespread deterioration in dental health as a priority for revamped federal intervention. It is estimated 650,000 people who cannot afford dental care are in need of dental treatment.<sup>21</sup>

The report proposes to increase financed services and increase the use of new dental graduates, in addition to the existing dental scheme for teenagers. Professor John Spencer and Dr. Jane Harford, of Adelaide University, state in the report that:

**Primary school children's oral health "...has plateaued and then deteriorated by around 20 percent across the last 8-10 years"<sup>21</sup>.**

The 386 page interim report by the Commission, proposes a national dental care scheme called Denticare Australia costing up to \$5 billion annually, aimed to assist many poor people, 35% of the community, who could not access or afford proper dental care. Chairman of the Commission, Christine Bennetts said:

We have 650,000 people on public dental waiting lists, with an average waiting time of 24 months...

Children's oral health is deteriorating, although that is partly due to changes in lifestyle such as (greater consumption of) sugary drinks.<sup>22</sup>

The scheme, if approved by the Federal Government, would provide preventive and restorative dental treatment, including providing dentures, to all the population.

Fluoridation has failed dismally, with dentist calling continually for more dental care handouts after over 40 years of fluoridation which was claimed to prevent 90% of