

# A 21<sup>st</sup> Century Clean Air Act

*Re-Writing the U.S.  
Clean Air Act*



The Clean Air Act  
Reauthorization  
of 2017

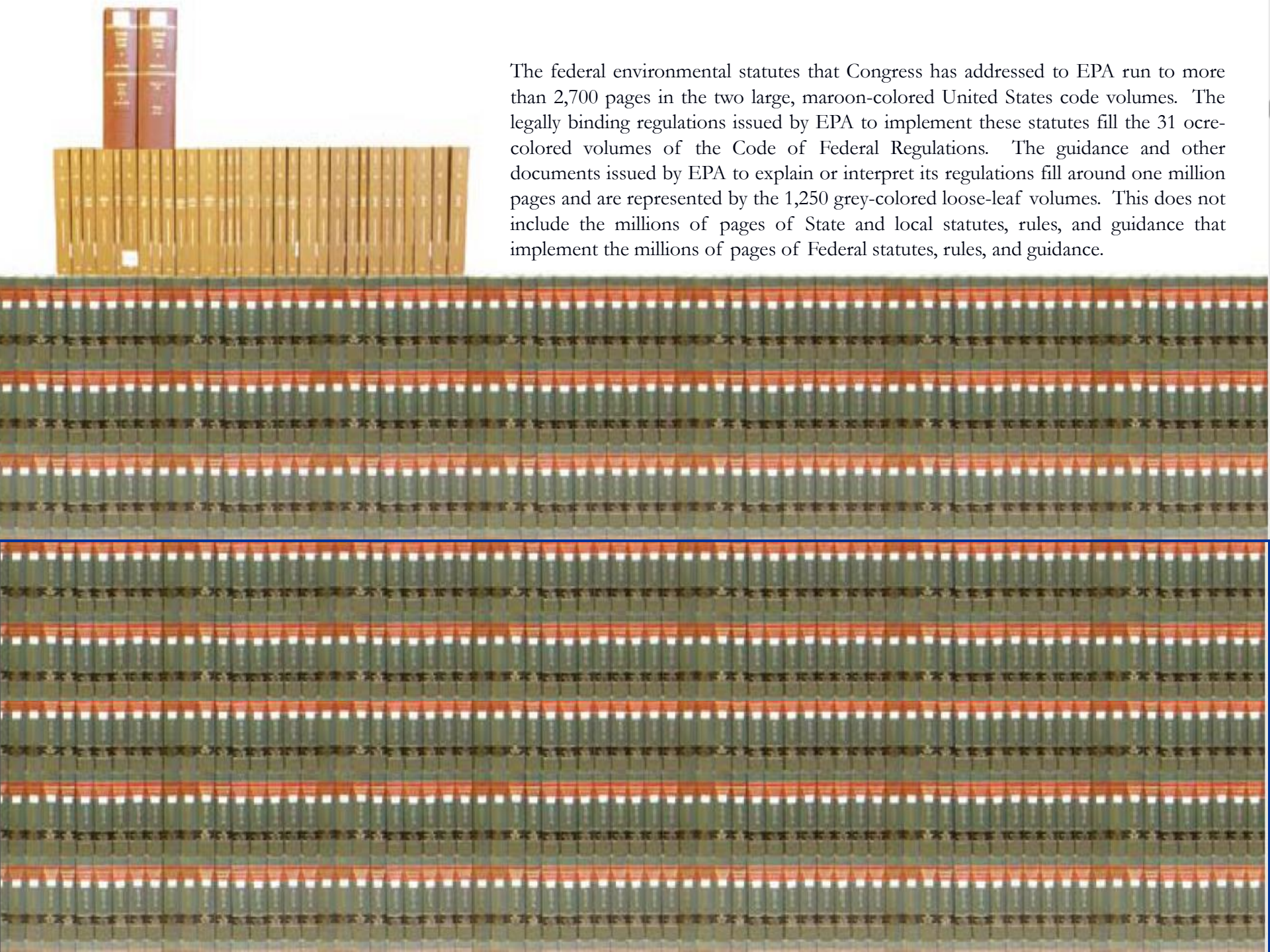
# ■ Why update the Clean Air Act?

- System getting huge
- System getting more complex
- Dollars to manage going down
- Work going up
- System relying ultimately on States to achieve attainment—yet the authority of States to achieve attainment is decreasing
- Single pollutant-by-pollutant approach no longer efficient and effective in a world of multi-pollutant concerns
- New emissions measurement technologies are beginning to antiquate the current system that largely had to be built around emissions estimating techniques

**Why the need  
for 21<sup>st</sup> century  
Clean Air Act?**

**The Clean Air Act  
is too big and  
complicated.**

The federal environmental statutes that Congress has addressed to EPA run to more than 2,700 pages in the two large, maroon-colored United States code volumes. The legally binding regulations issued by EPA to implement these statutes fill the 31 ocre-colored volumes of the Code of Federal Regulations. The guidance and other documents issued by EPA to explain or interpret its regulations fill around one million pages and are represented by the 1,250 grey-colored loose-leaf volumes. This does not include the millions of pages of State and local statutes, rules, and guidance that implement the millions of pages of Federal statutes, rules, and guidance.





---“I hate that each sector has 17 to 20 rules that govern each piece of equipment and you've got to be a neuroscientist to figure it out”. ---Gina McCarthy, U.S. EPA Administrator (2009-2016)

# Most Complicated Law in Human History

\*Clean Air Act and its attendant regulations are almost 2x more complicated than the U.S. Tax Code

## “Measuring the Complexity of the Law: The United States Code”

[Daniel Martin Katz](#)

Illinois Tech - Chicago Kent College of Law

[Michael James Bommarito II](#)

Bommarito Consulting, LLC

August 1, 2013

22 *Artificial Intelligence and Law* 337 (2014)

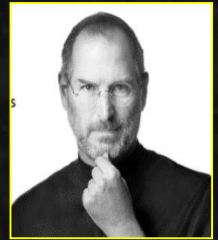
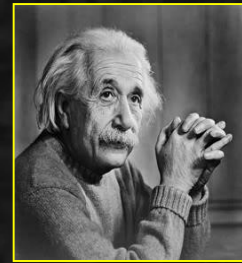
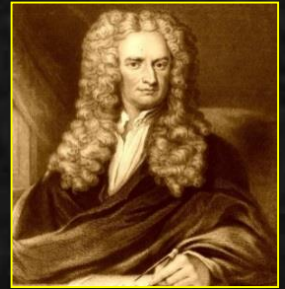


*Table 12: Normalized Ranking from Most to Least Complex*

Title	NetFlowRank	TokenRank	EntropyRank	DepthRank	CompositeScore	CompositeRank
42	2	8	2	10	5.5	1
26	7	2	29	1	9.75	2
5	1	21	23	2	11.75	3
49	25	11	9	5	12.5	4
31	4	17	18	12	12.75	5

# How would these people approach the complexity of the Clean Air Act?

- “The definition of genius is taking the complex and making it simple.” ---**Einstein**
- “Truth is ever to be found in the simplicity, and not in the multiplicity and confusion of things.” ---**Isaac Newton**
- “That's been one of my mantras - focus and simplicity. Simple can be harder than complex: You have to work hard to get your thinking clean to make it simple. But it's worth it in the end because once you get there, you can move mountains.” ---**Steve Jobs**
- “In building a statue, a sculptor doesn't keep adding clay to his subject. Actually, he keeps chiselling away at the inessentials until the truth of its creation is revealed without obstructions.”---**Bruce Lee**
- “All the great things are simple.” --- **Winston Churchill**



**The Clean Air Act  
is antiquated.**

A black and white photograph of President Richard Nixon sitting at a desk, signing a document. He is wearing a suit and a patterned tie. Two men in suits stand behind him, clapping. The man on the left is wearing glasses. In the background, there is a large framed painting of a battle scene. The text "The structure of the Clean Air Act is over 45 years old." is overlaid in large yellow font across the center of the image.

The structure of the  
Clean Air Act is over 45  
years old.

\*It's been over 25 years since the last update

# **The Clean Air Act still assumes, like it did back in 1970, that air pollution is primarily a local problem**

---“Each State shall have the primary responsibility for assuring air quality within the entire geographic area comprising such state by submitting an implementation plan for such State which will specify the manner in which national primary and secondary ambient air quality standards will be achieved and maintained . . .” (Clean Air Act, Section 107(a))

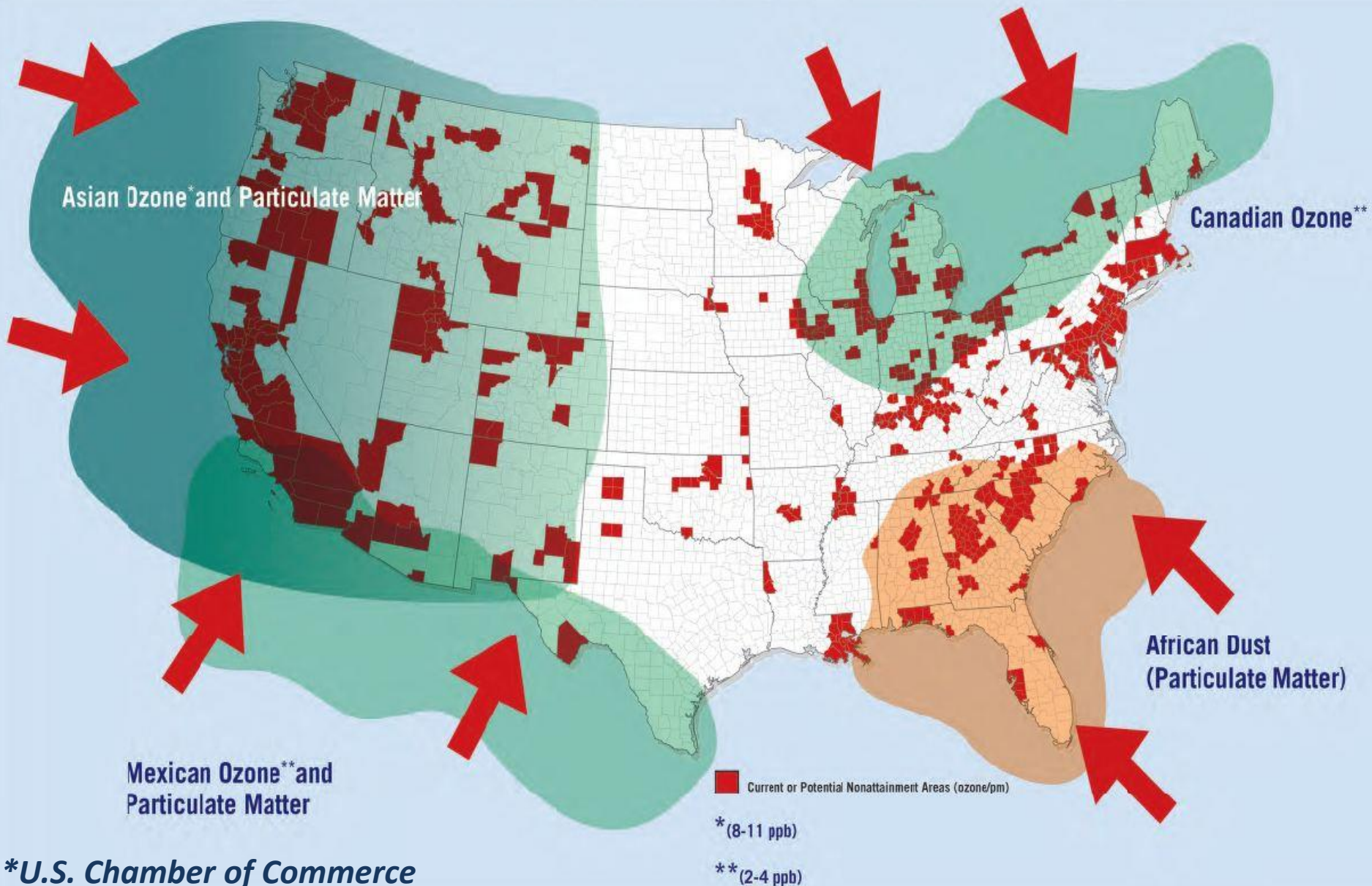
**The world has changed since 1970.**

**It’s become a “small multi-pollutant world after all.”**





# Impact of Foreign Air Pollutants



States ultimately responsible for controlling all air pollution above their State under the Clean Air Act--even though most of the pollution is now outside their control (ex. Houston)

70 PPB NAAQS

~12%

State Controlled

Federally  
Preempted Mobile

~30%



Background  
Pollution



~58%



100%

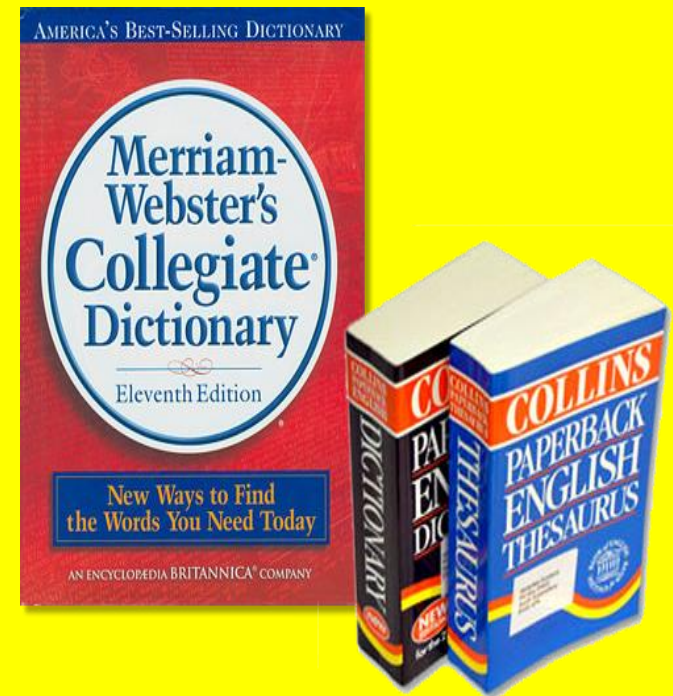
States  
Responsible  
for 100%!

(42 USC §7407)

Even State controlled sources are still significantly controlled by the Federal government via rollout of Federal programs and initiatives (ex. NSPS, MACT, GHG initiatives, CSAPR, NSR)

# The resulting definition of a “State Implementation Plan”:

“**SIP**”: (n.) A State air plan that generally tells the Federal government what the Federal government is doing so the Federal government can tell the States they have properly told the Federal government what the Federal government is doing.



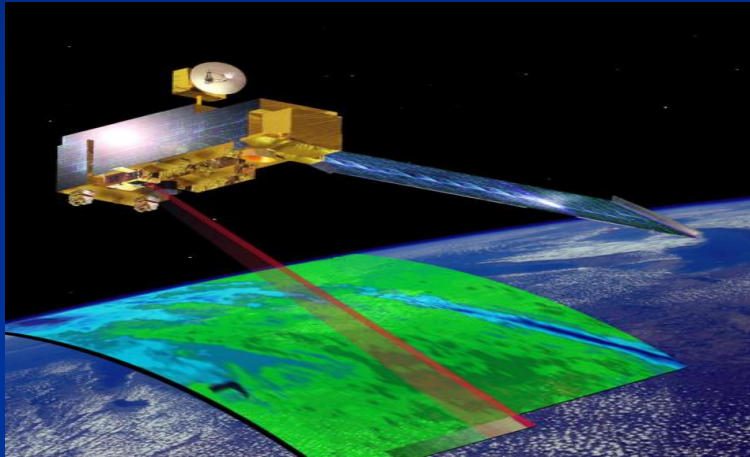
# National Academy of Sciences said this about the SIP process:

-----“The SIP process now mandates extensive amounts of local, state, and federal agency time and resources in a legalistic, and often frustrating, proposal and review process, which focuses primarily on compliance with intermediate process steps. This process probably discourages innovation and experimentation at the state and local levels; overtaxes the limited financial and human resources available to the nation’s AQM system at the state, local, and federal levels; and draws attention and resources away from the more germane issue of ensuring progress toward the goal of meeting the NAAQS.”

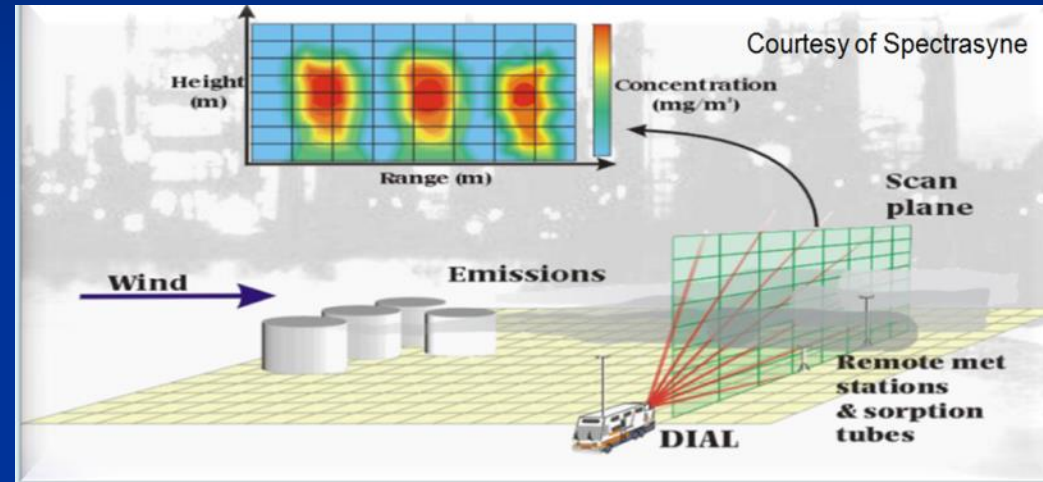
--- National Research Council (“Air Quality Management in the United States”, 2004)

# Technology has advanced since 1970 that would allow for a more simplified and transparent approach to air quality management

Satellite Monitoring



DIAL System



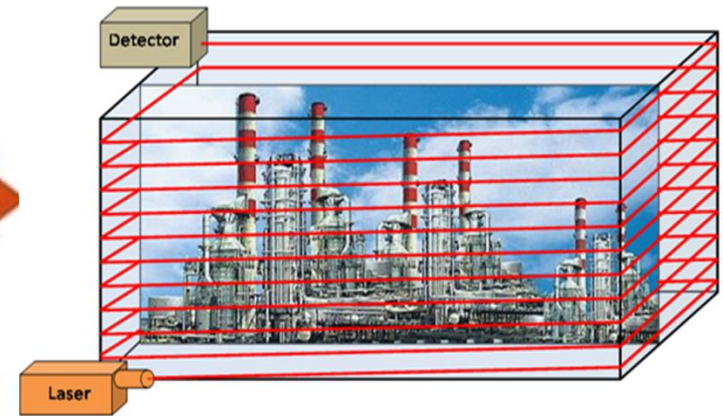
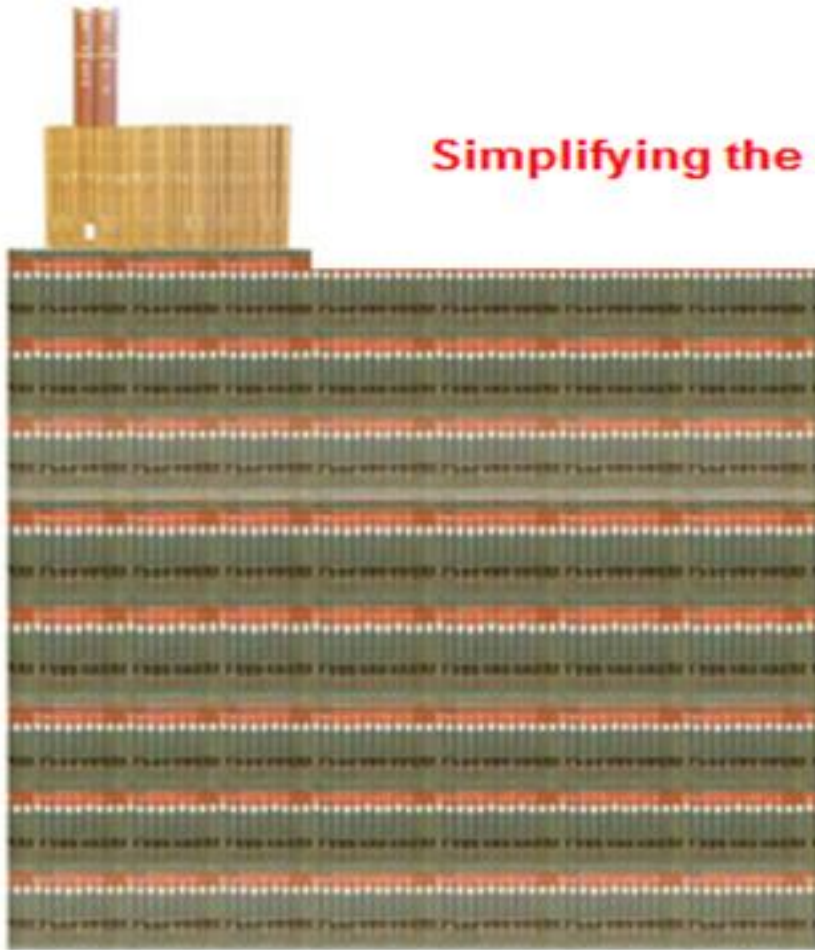
Fence-line Monitoring



SOF System




## Simplifying the Air Quality Regulatory System



*“Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius -- and a lot of courage -- to move in the opposite direction.”*

*-----E.F Schumacher*



A company could do whatever it wanted  
whenever it wanted within its facility so long as  
the limits established by the monitoring/remote  
sensing bubble were not exceeded

Imagine seeing this webpage as an environmental manager, regulatory agency, or a citizen instead of sifting through millions of pages of regulatory materials to determine if you or someone else is in compliance?

**Hourly Emissions from Company ABC's Facility You are Monitoring Today**

pollutant	Amount Emitted (Green)	Amount Available to Emit (Red)
NOx	4.2	2.5
Mercury	2.5	4.5
PM2.5	3.5	1.8
Lead	4.5	3.0

Legend:  
■ Amount Available to Emit (Red)  
■ Amount Emitted (Green)

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- G37 Journey \$369/month 10k year - 39 month

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# How would these people address the antiquity of the Clean Air Act?

- ❖ "I cannot say whether things will get better if we change; what I can say is they must change if they are to get better." -- Georg C. Lichtenberg
- ❖ "All conservatism is based upon the idea that if you leave things alone you leave them as they are. But you do not. If you leave a thing alone you leave it to a torrent of change." - G. K. Chesterton
- ❖ "The dogmas of the quiet past are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise with the occasion. As our case is new, so we must think anew and act anew." - Abraham Lincoln
- ❖ "If you have always done it that way, it is probably wrong." - Charles Kettering
- ❖ "I am not an advocate for frequent changes in laws and constitutions, but laws and institutions must go hand in hand with the progress of the human mind. As that becomes more developed, more enlightened, as new discoveries are made, new truths discovered and manners and opinions change, with the change of circumstances, institutions must advance also to keep pace with the times. We might as well require a man to wear still the coat which fitted him when a boy as civilized society to remain ever under the regimen of their barbarous ancestors." -- Thomas Jefferson

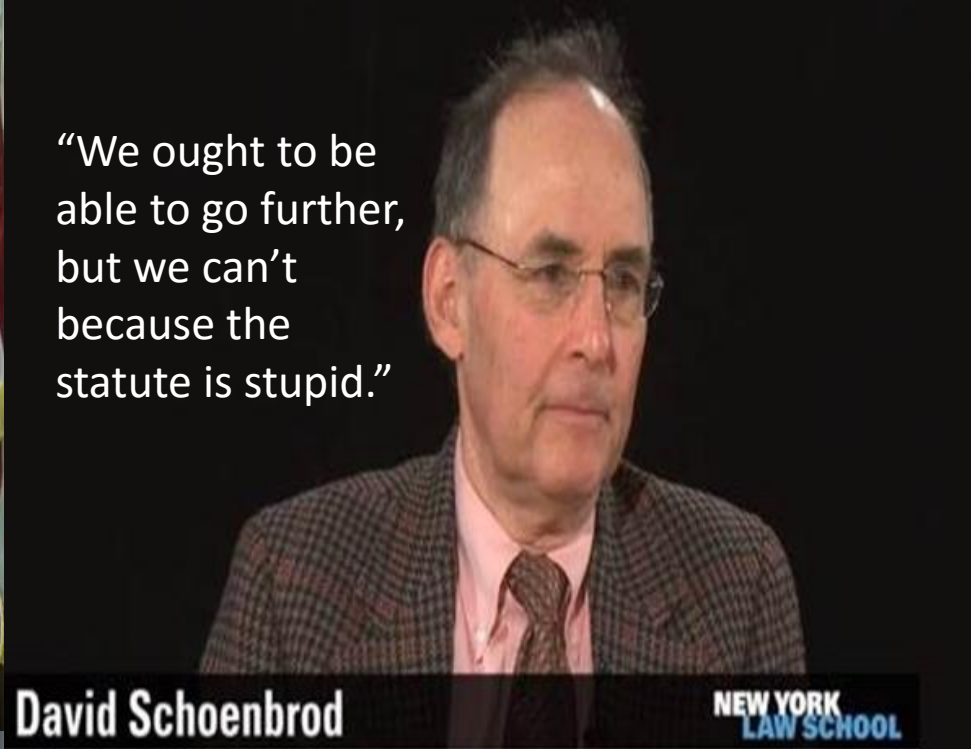
**Supporters of a  
21<sup>st</sup> Century  
Clean Air Act**



---"Our environmental laws badly need re-thinking."

WILLIAM RUCKELSHAUS

FIRST ADMINISTRATOR OF THE EPA



"We ought to be able to go further, but we can't because the statute is stupid."

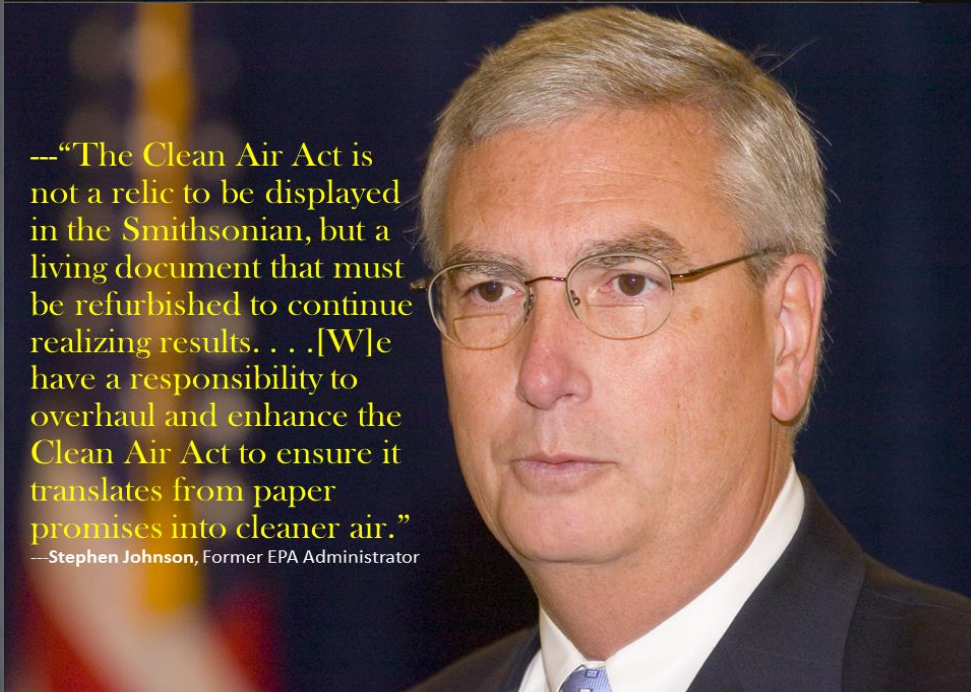
David Schoenbrod

NEW YORK LAW SCHOOL



---"[We need] a more robust statutory framework to enable the country to achieve further environmental progress, which at the moment is stalled and needs to be rekindled."

—William K. Reilly, Administrator, U.S. Environmental Protection Agency, 1989-93



---"The Clean Air Act is not a relic to be displayed in the Smithsonian, but a living document that must be refurbished to continue realizing results. . . . [W]e have a responsibility to overhaul and enhance the Clean Air Act to ensure it translates from paper promises into cleaner air."

—Stephen Johnson, Former EPA Administrator

"There is a better way to clean the air but unfortunately we've become so dug into this statute that was created 45 years ago . . . this doesn't really work anymore for the way the world works today."

MR. HOLMSTEAD

"Many of us believe that the Clean Air Act needs to be changed."

MR. WHITFIELD  
CANTON  
KENTUCKY  
Energy And Commerce  
House Commerce

"[O]ur environmental laws are not achieving their important goals."

Fred Krupp, Environmental Defense Fund

"Congress needs to determine the scope of the Clean Air Act . . ."

William Kovacs

Senior VP Environment, Technology, & Regulatory Affairs, U.S. Chamber of Commerce



"The old environmental laws and approaches have run their course, and we urgently need an intensive period of environmental law reform. —

James Gustave Speth, Yale University, Author of Red Sky at Morning: America and the Crisis of the Global Environment

---"We implore members of Congress from both sides of the aisle to work together toward a more modern federal air regulatory system."

---"It is time for Congress to take a serious look at modernizing the Clean Air Act."



NATIONAL ASSOCIATION OF  
Manufacturers



"The Clean Air Act (CAA), now 40 years old, is in serious need of reform on multiple levels." —

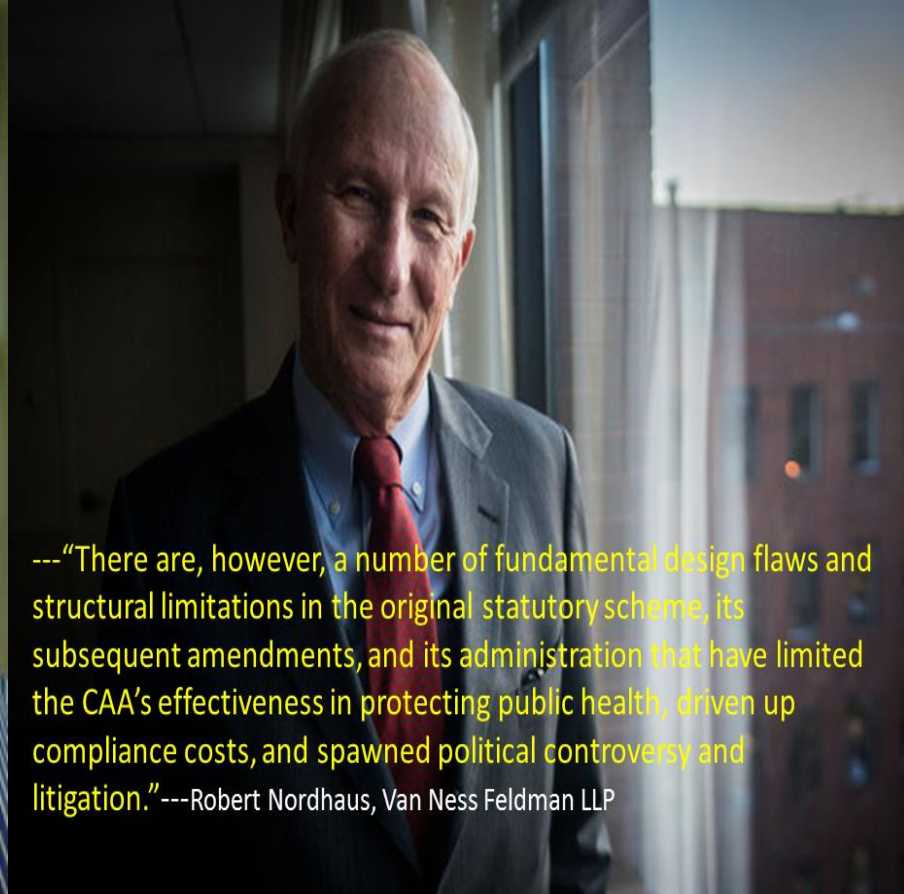
Kathleen Hartnett White, Texas Public Policy Foundation and Former Chair of the Texas Commission on Environmental Quality



"We can improve [the Clean Air Act]"



---“The heart of the Clean Air Act’s approach to conventional pollutants is a top-down command approach that was adopted thirty-eight years ago and is now obsolete. It is time to update the law on the basis of experience in order to improve health protection, save on costs, and prompt technological innovation,” ---Richard Stewart, NYU Professor, advisor, trustee of the Environmental Defense Fund, and former EPA Assistant Attorney General



---“There are, however, a number of fundamental design flaws and structural limitations in the original statutory scheme, its subsequent amendments, and its administration that have limited the CAA’s effectiveness in protecting public health, driven up compliance costs, and spawned political controversy and litigation.” ---Robert Nordhaus, Van Ness Feldman LLP



"Environmental policy is in urgent need of new ideas to rejuvenate aging and gridlocked frameworks." ---Gary Marchant, Arizona State University



---"I think that there's merit in having Congress consider what would be the appropriate amendments to the Clean Air Act." ---Cal Dooley, president and CEO of the American Chemistry Council

**What would a  
21<sup>st</sup> century  
Clean Air Act  
look like?**

# A 21<sup>st</sup> Century Clean Air Act

**PSD Program**

**Title V Program**

**NNSR Program**

**NSPS Program**

**MACT Program**

**Regional Haze Program**

**Acid Rain Program**

**CAIR/CSAPR Program**

**SIP requirements**



Multi-Pollutant Market-Based  
System Based on Real-Time  
Source Monitoring

Approximately 50 to 75% of Clean Air Act  
regulations would no longer be needed.



# The Best Way to Protect Nature? . . . Emulate Nature.

- ❖ “Nature operates in the shortest way possible.” — **Aristotle**
- ❖ “Nature is pleased with simplicity. And nature is no dummy.” — **Isaac Newton**
- ❖ “Nature does not multiply things unnecessarily; that she makes use of the easiest and simplest means for producing her effects; that she does nothing in vain, and the like”. — **Galileo**

**\*The Clean Air Act should mimic nature in its simplicity to the greatest extent possible in order to maximize the Act's potential.**

# The Clean Air Act Reauthorization of 2017

## Summary



- 1) Removes the need for approximately 50-75% of the former Clean Air Act;
- 2) Creates a comprehensive multi-pollutant approach to addressing air quality and climate change concerns;
- 3) Realigns responsibility and authority under the Act to increase the efficiency and effectiveness of International, Federal, State, and Local control efforts; and
- 4) Modernizes and simplifies the Act to make it more transparent and easier to implement and enforce.

Click "[here](#)" for draft text of the new 21<sup>st</sup> Century Clean Air Act

# Example Pages from “The Clean Air Act Reauthorization of 2017”

\*Full text available at  
www.cleanairreform.org

Current Act says  
States and Locals  
primarily  
responsible for  
air pollution  
improvement

New Act says  
States, Locals,  
Federal, and  
International  
jointly responsible  
for air pollution  
improvement

## DRAFT

### TITLE 42 - THE PUBLIC HEALTH AND WELFARE

### CHAPTER 85 - AIR POLLUTION PREVENTION AND CONTROL

### SUBCHAPTER I - PROGRAMS AND ACTIVITIES

### CHAPTER 85—AIR POLLUTION PREVENTION AND CONTROL

### SUBCHAPTER I—PROGRAMS AND ACTIVITIES

### Part A—Air Quality and Emission Limitations

#### Amendments

#### § 7401. Congressional findings and declaration of purpose

##### (a) Findings

The Congress finds—

(1) that the predominant part of the Nation's population is located in its rapidly expanding metropolitan and other urban areas, which generally cross the boundary lines of local jurisdictions and often extend into two or more States;

(2) that pollution from other countries is impacting air quality in the United States and must be addressed at the international and national level;

(3) that the growth in the amount and complexity of air pollution brought about by urbanization, industrial development, and the increasing use of motor vehicles both here and abroad; has resulted in mounting dangers to the public health and welfare, including injury to agricultural crops and livestock, damage to and the deterioration of property, and hazards to air and ground transportation;

(4) that air pollution prevention in the United States (that is, the reduction or elimination, through any measures, of the amount of pollutants produced or created at the source) and air pollution control at its source is the primary-joint responsibility of Federal, States and local governments; and

(5) that Federal financial assistance and leadership is essential for the development of cooperative International

Federal, State, regional, and local programs to prevent and control air pollution.

##### (b) Declaration

# Example Pages from “The Clean Air Act Reauthorization of 2017”

\*Full text available at  
www.cleanairreform.org

Insertion of  
the NMMS  
which  
simplifies  
much of the  
Clean Air Act

Approximately  
50-75% of the  
current Act  
would no longer  
be needed

<p><b>§ 7405A. National Multi-pollutant Market-based System (NMMS):</b></p>	<p>Owner Formatted: Indent: Left: 0.5", Space After: Auto</p>
<p><b>(a) Purpose:</b></p>	<p>Owner Formatted: Font: 11 pt, Not Bold</p>
<p><u>The primary means for pursuing domestic air quality improvements shall be the newly established National Multi-pollutant Market-based System (NMMS). The NMMS is a multi-pollutant program that includes traditional NAAQS pollutants, greenhouse gases, visibility pollutants, toxics, and any other pollutants which may reasonably be anticipated to endanger public health or welfare. The NMMS shall establish continual comprehensive reductions in emissions.</u></p>	<p>Owner Formatted: Font: 10 pt, Bold</p>
<p><b>(b) Emissions Reduction Schedule</b></p>	<p>Owner Formatted: Numbered + Level: 1 + Numbering Style: a, b, c, ... + Start at: 1 + Alignment: Left + Aligned at: 0.5" + Indent at: 0.75"</p>
<p><b>(1) The NMMS sets an initial Emission Reduction Schedule for reductions which is intended to lower national emissions below current levels. [An attachment will be created that shows the emission reduction schedule for each pollutant for each emissions sector]</b></p>	<p>Owner Formatted: Font:</p>
<p><b>(2) The NMMS requires a review every [# of years] by the EPA and a development of a new Emissions Reduction Schedule which further lowers national emissions. The Emissions Reduction Schedule is then submitted to Congress for approval. If Congress does not approve the Emissions Reduction Schedule as submitted within 12 months of the required NMMS review time, or approve an alternative within this 12 months, the Emissions Reduction Schedule submitted by EPA will become automatically effective.</b></p>	<p>Owner Formatted: Indent: Left: 0.5"</p>
<p><b>(3) Along with the Emissions Reduction Schedule, EPA shall also submit to Congress recommendations on the Multi-pollutant International Emissions Management Plan (MIEMP).</b></p>	<p>Owner Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.5" + Indent at: 0.75"</p>
<p><b>(4) Each emissions sector shall be assigned a certain percentage of the Emissions Reduction Schedule that each sector must meet:</b></p>	<p>Owner Formatted: Indent: Left: 0.5"</p>
<p><b>a. For larger stationary sources, such sources are directly subject to the NMMS and are required to demonstrate compliance via real-time facility-wide direct source monitoring.</b></p>	<p>Owner Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.5" + Indent at: 0.75"</p>
<p><b>b. The NMMS for mobile sources is implement under Title II of the Act.</b></p>	<p>Owner Formatted: Numbered + Level: 1 + Numbering Style: 1, 2, 3, ... + Start at: 1 + Alignment: Left + Aligned at: 0.5" + Indent at: 0.75"</p>
<p><b>c. The NMMS for smaller stationary sources is implemented via the National Performance Standards.</b></p>	<p>Owner Formatted: Font:</p>
<p><b>(5) States shall be responsible for enforcing the NMMS. States shall also be responsible for addressing any hotspot and immediate fence-line concerns.</b></p>	<p>Owner Formatted: Indent: Left: 0.5"</p>
<p><b>(6) EPA shall actively involve States in preparing the NMMS and establishing the Emissions Reduction Schedule.</b></p>	<p>Owner Formatted: List Paragraph, Left, No bullets or numbering, Pattern: Clear</p>
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# Multi-Pollutant Market-Based System

(Ex. Tax-Based System)

## Tax

VOC = \$2.00/lbs.

NO<sub>x</sub> = \$1.50/lbs.

CO<sub>2</sub> = \$0.02/lbs.

SO<sub>2</sub> = \$0.50/lbs.

NH<sub>3</sub> = \$0.15/lbs.



## Ex. Installing SCR on Boiler

- Reduced 5,000 lbs NO<sub>x</sub>
- Reduced 2,000 lbs SO<sub>2</sub>
- Increased 100 lbs NH<sub>3</sub> (ammonia slip)
- Increased 500 lbs CO<sub>2</sub> (requires more energy)

Taxes Avoided: \$8,475

## Ex. Installing Solar

- Reduced 100 lbs NO<sub>x</sub>
- Reduced 5 lbs VOC
- Reduced 10 lbs NH<sub>3</sub>
- Reduced 5,000 lbs CO<sub>2</sub>

Taxes Avoided: \$261.50

## Ex. Installing CCS

- Reduced 10,000 lbs CO<sub>2</sub>

Taxes Avoided:  
\$200.00

# Why a Multi-Pollutant Market-Based System?

- Multiple pollutants of concern
  - Ex. ozone, climate change, particulate matter
- Problems interrelated
  - Pollutants forming and interacting in the atmosphere with each other
- Solutions interrelated
  - Certain solutions only address one pollutant while other solutions address multiple pollutants
  - Not all single-pollutant solutions reduce other pollutants (ex. CCS reduces CO<sub>2</sub>, but not NO<sub>x</sub> and VOC)
  - Single-pollutant solutions can sometimes increase other pollutants (ex. SCR decreases NO<sub>x</sub> and SO<sub>2</sub>, but increases NH<sub>3</sub> and CO<sub>2</sub>).
- Simpler
  - A multi-pollutant system simpler than 5 single-pollutant systems
  - Multi-pollutant system could tie into international agreements to reduce pollutants other than CO<sub>2</sub> impacting the U.S.
- Allows market, industry, and citizens to determine the best approach to achieving the target
- Environmental and economic synergies to be realized in a multi-pollutant system

# Example Pages from “The Clean Air Act Reauthorization of 2017”

\*Full text available at  
[www.cleanairreform.org](http://www.cleanairreform.org)

“Red-lines”  
much of the  
old Act which  
will no longer  
be necessary

“Out of intense  
complexities, intense  
simplicities emerge.”

----Winston Churchill

## ~~§ 7410. State implementation plans for national primary and secondary ambient air quality standards~~

### ~~(a) Adoption of plan by State; submission to Administrator; content of plan; revision; new sources; indirect source review program; supplemental or intermittent control systems~~

~~(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Administrator (either as a part of a plan submitted under the preceding sentence or separately) within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national ambient air quality secondary standard (or revision thereof), a plan which provides for implementation, maintenance, and enforcement of such secondary standard in each air quality control region (or portion thereof) within such State. Unless a separate public hearing is provided, each State shall consider its plan implementing such secondary standard at the hearing required by the first sentence of this paragraph.~~

~~(2) Each implementation plan submitted by a State under this chapter shall be adopted by the State after reasonable notice and public hearing. Each such plan shall—~~

~~(A) include enforceable emission limitations and other control measures, means, or techniques (including economic incentives such as fees, marketable permits, and auctions of emissions rights), as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of this chapter;~~

~~(B) provide for establishment and operation of appropriate devices, methods, systems, and procedures necessary to—~~

~~(i) monitor, compile, and analyze data on ambient air quality, and~~

~~(ii) upon request, make such data available to the Administrator;~~

~~(C) include a program to provide for the enforcement of the measures described in subparagraph (A), and regulation of the modification and construction of any stationary source within the areas covered by the plan as necessary to assure that national ambient air quality standards are achieved, including a permit program as required in parts C and D of this subchapter;~~

~~(D) contain adequate provisions—~~

~~(i) prohibiting, consistent with the provisions of this subchapter, any source or other type of emissions activity within the State from emitting any air pollutant in amounts which will—~~

~~(I) contribute significantly to nonattainment in, or interfere with maintenance by, any other State with respect to any such national primary or secondary ambient air quality standard, or~~

~~(II) interfere with measures required to be included in the applicable implementation plan~~

# A 21<sup>st</sup> Century Clean Air Act



The Clean Air Act  
Reauthorization  
of 2017

We can make it happen.