

Air Quality Permitting: *An Increasingly Limited Tool for a Sustainable Future*

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Sustainability Defined

- ▶ Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two key concepts:
 - the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and
 - the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs
 - *Our Common Future*, Report of the World Commission

Sustainability's Implications

- ▶ Sustainability Requires:
 - Existing levels of air pollution control must be maintained;
 - Greenhouse gas (“GHG”) emissions, which accentuate climate change, should be controlled and reduced;
 - Emissions of other pollutants should be reduced; and
 - All of this should occur in a resource, energy, and cost-effective fashion.
- ▶ Traditionally: Achieved by controlling and permitting more and more sources of air pollution.
- ▶ Question: Have we reached the point of diminishing return in using permits in this fashion?

History of Air Quality Permitting

- ▶ Pre-1970, mostly state/local programs
- ▶ Clean Air Act of 1970 established Federal role
 - EPA sets National Ambient Air Quality Standards
 - State and local governments develop State Implementation Plans (SIPs) to achieve
 - Preconstruction review (now called New Source Review), but undefined and local discretion, used as a tool
 - Usually, but not always, a permit for construction or modification of a source
- ▶ *Sierra Club v. Ruckelshaus* (1972)
 - Courts ruled in lawsuit that NSR must prevent “significant deterioration” of air quality in clean air areas.
 - EPA adopts first more detailed rules
- ▶ Clean Air Act Amendments of 1977
 - Congress codifies *Sierra Club* for 100/250 ton/year sources and toughens “poor air” area permit requirements

History of Air Quality Permitting

- ▶ Clean Air Act Amendments of 1990
 - Congress adopts “Title V” operating permit program requiring operating permits for “major sources”:
 - 100 tons/year criteria pollutants
 - 10 tons/year of any hazardous air pollutant (HAP)
 - 25 tons/year of any combination of HAPs
- ▶ Comprehensive Air Quality Act of 1992
 - Arizona adopts federal programs
 - Arizona moves to “unitary” air permit scheme

Air Permitting Today

- ▶ Federal Program
 - NSR Permits for construction, modification and/or reconstruction of a source
 - PSD, major NSR, minor NSR, construction permits, etc.
 - Title V Operating Permits for operation of a major source
- ▶ Arizona Program
 - Unitary Air Quality Permit that covers both federal NSR permitting and Operating permit requirements, but also reaches smaller sources.

Air Permitting Today

Table 1. Common Arizona Air Permitting Thresholds, by Agency

	ADEQ		MCAQD		PDEQ		PCAQCD		EPA
	Class I	Class II	TV	Non-TV	Class I	Class II/III	Class I	Class II/III	TV
CO	100	100	100	5.5 ppd	100	100	100	1	100
NO_x	100	40	100	5.5 ppd	100	40	100	1	100
SO₂	100	40	100	5.5 ppd	100	40	100	1	100
VOC	100	40	100	3 ppd	100	40	100	1	100
PM	100	25	100	5.5 ppd	100	25	100	1	---
PM₁₀	100	15	100	3 ppd	100	15	100	1	100
PM_{2.5}	100	10	100	3 ppd	100	10	100	1	100
Lead	5	0.6	5	3 ppd	5	0.6	5	1	5
Single HAP	10	10	10	5.5 ppd	10	10	10	1	10
All HAPs	25	25	25	---	25	25	25	1	25

All values in tons/year unless noted as pounds per day (ppd); TV = Title V permit

Air Permitting Today

Table 2. Approximate Number of Permittees, by Agency

Agency	Class I/Title V	Class II/III/Non-TV	General Permits
ADEQ	49	192	542
MCAQD	33	1570	≈2400
PDEQ	16	II: 125 + III: 175	Not Available
PCAQCD	17	365	Not Available
US EPA Region 9	No Response	Not Applicable	Not Applicable
TOTAL	115	2427	>2942

Challenges to Permit Model

- ▶ The historic, permit-centric model of air quality regulation faces unprecedented challenges to achieve a sustainable future:
 - Diminishing Returns
 - Climate Change
 - Expansion Pressure
 - Structural Rigidities, Free Riding and Activists
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Diminishing Returns

- ▶ Problem:
 - We need to achieve additional reductions.
- ▶ Historical Solution:
 - Focus on “large, dirty sources”
- ▶ Increasing Reality:
 - Not much to give. Example:
 - Source originally emitted 200 tons/year
 - Subjected to 85% control under SIP RACT
 - $200 \times (1 - 0.85) = 30$ tons/year = 170 ton/year reduction
 - Now demand further 90%
 - $30 \times (1 - 0.90) = 3$ tons/year = 27 ton/year reduction
 - 6 sources required to achieve same level of reduction ($6 \times 27 = 162$ tons/year)

Climate Change

- ▶ Carbon Dioxide (CO₂) emissions endemic to almost all small sources
 - Very small sources (0.49 mmBtu/year) become “major sources” at 100 tons/year
- ▶ EPA estimates (Tailoring Rule):
 - Increase Title V sources from 15,000 to 6.1 million
 - Increase PSD actions from 300/year to 40,000/year
 - These are factors of 400:1 and 130:1 respectively
- ▶ EPA’s Tailoring Rule raises thresholds to 75,000 tons/year for PSD and 100,000 tons/year for Title V (approximately)
 - Reduces Title V to around 100,000
 - Reduces PSD to around 20,000/year

Climate Change

- ▶ Arizona impacts (assume 1 / 10th of National)
 - Pre-Tailoring Rule:
 - 4600 Title V sources (up from 115)
 - 300 PSD actions (up from 4-5)
 - Post-Tailoring Rule:
 - Possibly 750 title V sources (up from 115)
 - Possibly 50-100 PSD actions (up from 4-5)

Program Expansion

- Pressures include:
 - New NAAQS and SIP emission reductions needs
 - New NSPS and NESHAPs with no thresholds
 - EPA pressure to lower minor NSR thresholds

Table 3. Analysis of Sources Affected by Different Minor NSR Thresholds

Total Number of Sources	664					
Pollutant	CO	NO _x	Pb	PM ₁₀	SO ₂	VOC
Total Emissions (tpy)	1698.83	3569.33	0.03	1923.56	339.66	3898.92
Number of Sources	340	342	11	11	339	576
Minor NSR Threshold at ½ Exist	50	20	0.3	7.5	20	20
Emissions regulated	592.15	2797.49	0	1528.73	75.37	2337.87
Number of new sources regulated	7	26	0	64	2	51
Minor NSR Threshold at ¼ Exist	25	10	0.3	5	10	10
Emissions regulated	965.88	3056.99	0	1619.94	246.48	2958.95
Number of new sources regulated	17	45	0	84.22	14	95

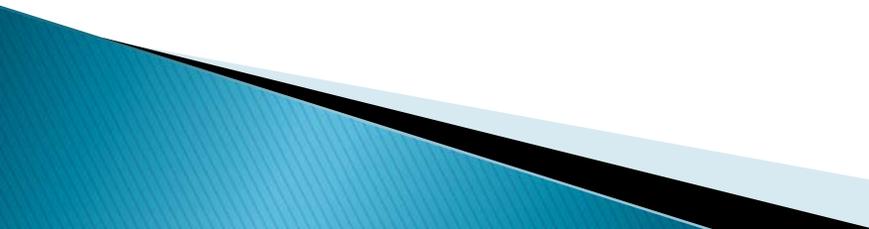
Structural Rigidities, Free Riding and Activism

- ▶ Clean Air Act is old and poorly written for today's legal and political culture.
 - Rigid, prescriptive statute (NAAQS, NESHAPs, SIPs)
 - Broad terminology – definition of “air pollutant”
 - Excessive use of “any”
- ▶ As a result, air quality program is largely under activist control, which creates “free riding” problems:
 - Low barriers to lawsuits, high rewards for winning, and perceived political roadblocks and no consequences for losing
 - Activists
 - Typically single or narrowly focused interest groups
 - NIMBY
 - Focus on narrow issues that they can “win”

Structural Rigidities, Free Riding, and Activism

- ▶ Problems aided and abetted by judiciary
 - “Conservative” judiciary applies statute without consideration of legislative intent
 - “Liberal” judiciary applies “remedially”
 - Neither defers to policy considerations nor considers broader impacts on society
- ▶ Results: Dysfunction
 - Supreme Court: *Massachusetts* pollutants
 - Circuit Courts: *Sierra Club* line of cases
- ▶ Permit Implications:
 - Huge (100s of pages), unwriteable, unsustainable

Toward a Sustainable Future

- ▶ Does permitting have a future?
 - Yes!
 - Important for large, complex facilities to answer questions on how laws and regulations apply
 - ▶ Can permitting be expanded indefinitely?
 - No!
 - Permits are costly to taxpayers and economy
 - Costs become relatively greater the smaller the source
 - Benefits decline the smaller the source
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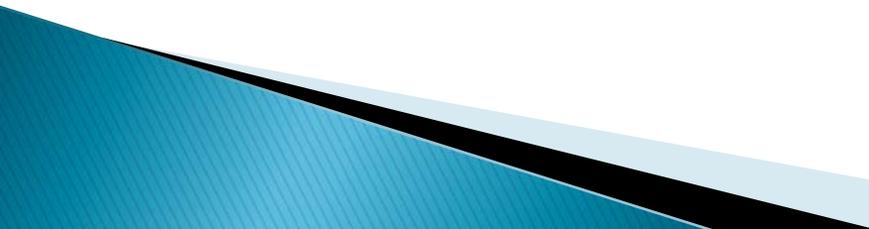
Toward a Sustainable Future

1. Value of permits is declining as sources get smaller
 2. Knowledge is ever increasing and we must move to an iterative process
 - In regulations
 - In permits
 3. Iterative rules and permits must be balanced against regulatory certainty
 - Uncertainty diminishes investment in better ways
 - Planning thresholds should be realistic: 15 years?
 - Reduce case-by-case and limit modification review
 - Cost of delay will be outweighed by better equipment and periodic re-review
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Toward a Sustainable Future

4. Rulemaking is preferred to adjudication because it is (1) transparent; (2) allows for better science; and (3) creates less uncertainty than retroactive adjudication
5. Permitting should be limited to sources sufficiently large that cost < benefits
 - 25 tons/year is good general threshold, HAPs lower (say 5 tons/year)
 - Smaller sources, say down to 5 tons/year and HAPs 1 ton/year) should be registered and allowed to use simple controls.
 - Smaller should be addressed by alternative controls

Toward a Sustainable Future

6. Permit alternatives, particularly for GHG regulation, should be found:
 - Energy efficiency in building codes
 - Greater transportation controls
 - General permits and prohibitory rules for small sources; all of the above subject to periodic, iterative adjustment
 7. Greater technical and public input into rulemaking:
 - Formal independent advisory committees, like EPA's Science Advisory Committee, and stakeholder groups, to comment on rules, possibly permits
 - Proposed and final rules and permits on internet
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Toward a Sustainable Future

8. If greater technical and public review, then judicial role should be reduced:
 - Full rights to challenge missed schedule
 - Full rights to challenge rules, but deference to agency and advisory committee if agree, none if disagree
 - Limited rights to challenge permits
 - Deferential judicial review to technical questions
 - Rulemaking petitions → political question
 - Consideration of cost shifting to losing party if permit stayed:
 - Industry loses, pays activist/agency costs
 - Agency loses, pays industry/activist costs
 - Activist loses, pays agency/industry cost and statutory interest on value of delayed investment to industry

Toward a Sustainable Future

9. The Clean Air Act and its implementing regulations need overhauled:
 - Iterative process should be explicitly adopted
 - Realistic time frames for iteration should be adopted (e.g., 10 years for NAAQS, 15 years for technology rules, etc.)
 - Realistic mandates and definitions that reflect the evolution of science, consider uncertainty, and allow for exercise of appropriate discretion
 - Technical panels established with findings binding on courts absent clear error
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Conclusion

▶ Will this be easy?

- No—much of the change must come from Washington, DC, not West Washington in Phoenix
- Powerful interests—industry groups, environmental activists, lawyers and judges will oppose
- Politics at the presidential, congressional, gubernatorial and legislative level will become more important
- More swings from electoral cycles

▶ Benefits!

- Return policy to representative bodies
- Change as a result of science and elections rather than interest group litigation and judicial fiat
- Lower cost to society = more resources for future
- Steadier progress toward a Sustainable Future