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Role of Permitting in Air Quality Management and Best Practices Globally: Thoughts for China to Consider

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China
European Union
United States

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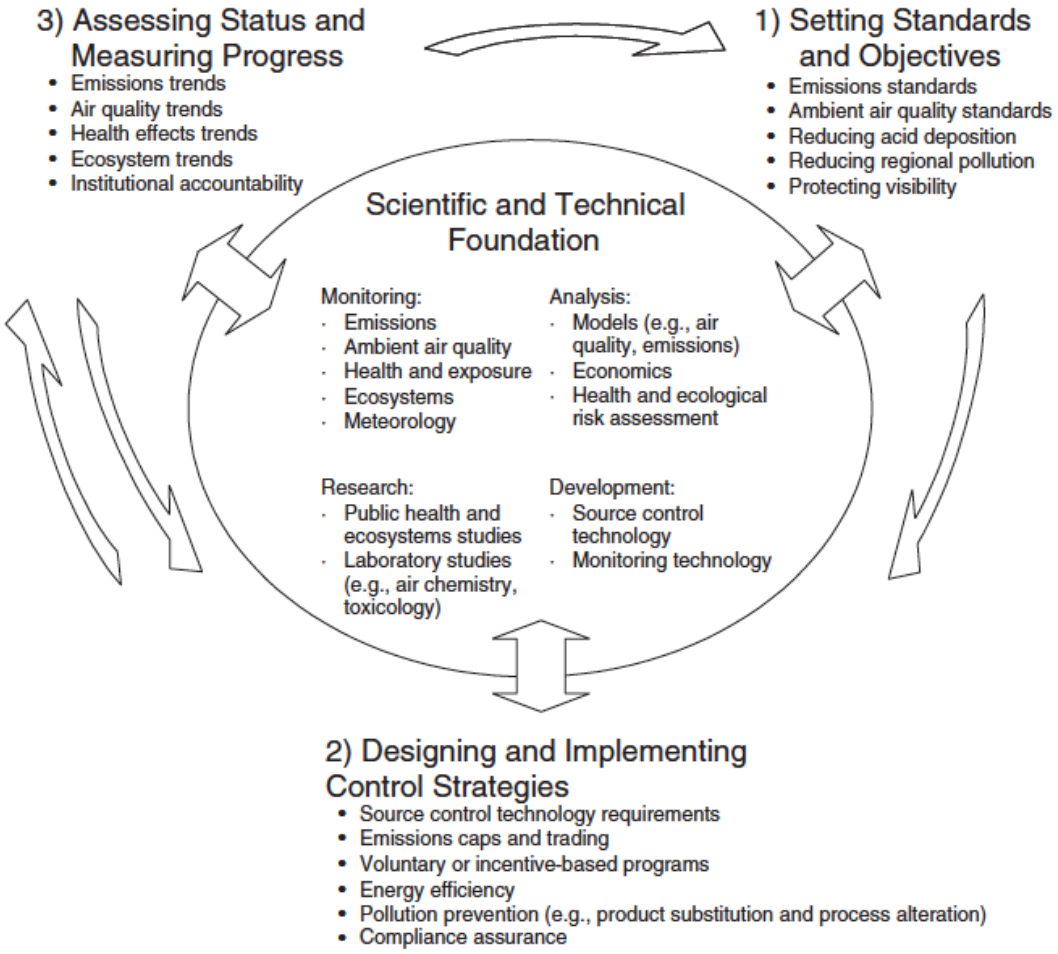
Introduction

- The Regulatory Assistance Project (RAP) is a global, non-profit team of energy experts, mostly veteran regulators, advising current regulators on the long-term economic and environmental sustainability of the power and natural gas sectors. (www.raponline.org)
  - *Non-advocacy; no interventions*

- Chris James is a Principal at RAP. His experience as an air quality regulator came as Air Director for the State of Connecticut and from US EPA Region 10 (Seattle).

Air Quality Management is Circular and Iterative

Permits are the glue that help air quality agencies meet their objectives



A Permit Is A License to Pollute

Every time you permit a new source, you are in effect “giving away” part of the environment.

Permits should require the best technologies to be used. Permits for enterprises in areas that exceed air quality standards should also require reductions to be made at the same time in the same area to ensure net air quality improvement

Types of Permits And Application: Source Specific

Modifications to existing points

Multiple emission points

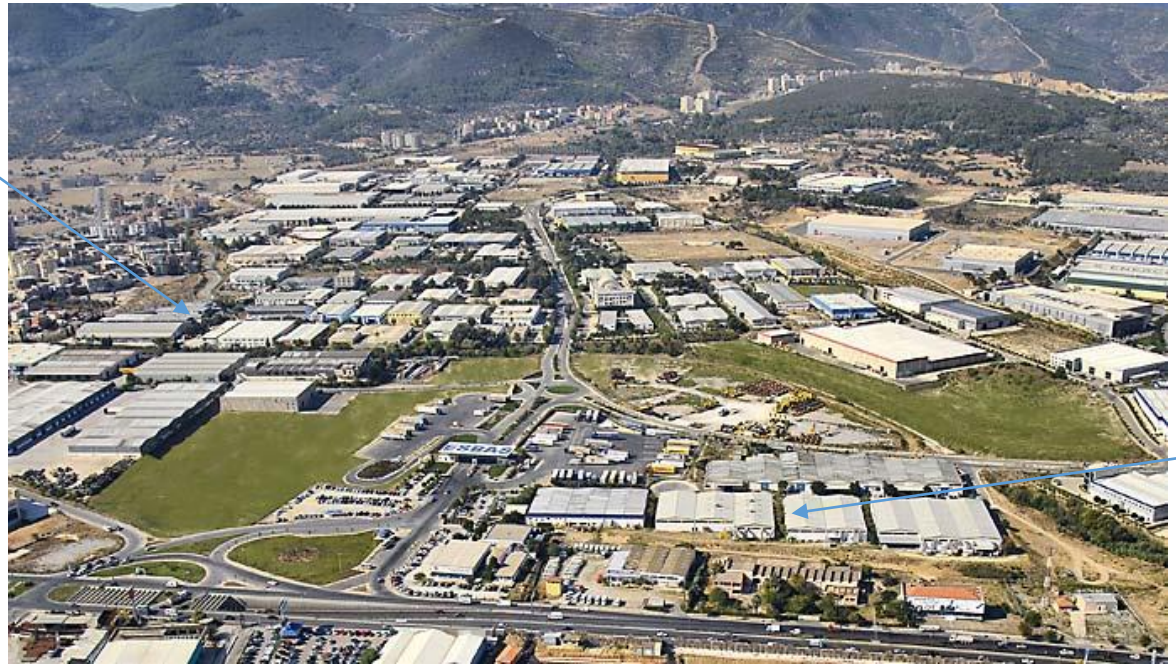
Single emission point

New construction

For the entire enterprise

Types of Permits and Application: General Permits

Many similar sources in one place



Like sources can be grouped, made subject to the same terms and conditions

Existing Chinese System

- Environmental Impact Assessment (EIA)
  - Establishes design and construction conditions
  - Implementation concerns: MEP has lodged actions against certain parties
- Emission Trading System pilots in several cities/provinces
  - Tradable permits for GHG, coal, SO2
- Pollution Discharge Fees
  - National and provincial (for pollutants not covered by national)
- Provinces/Cities
  - Some have operating permits, not universal
  - Examples of “one page” operating permits

Best Practices and Lessons: USA

- Best:
  - Technology forcing. Must use “best”
  - Emission standards universally apply
  - Robust transparent information permit clearinghouse helps state staff
  - Record keeping, reporting help to ensure continuous compliance
  - All applicable terms and conditions located in one document
  - Permits facilitate compliance and information disclosure
- Lessons
  - Point by point assessment: labor-intensive
  - Focus on “best” for new may keep older equipment operating longer

Best Practices and Lessons: EU

- Best:
  - Enterprise wide assessment
  - Sector-based standards cover all operations
  - Flexibility: range of "best" emission limits accommodates economics, age of equipment, availability of technology
  - Multi-pollutant and multi-media
- Lessons:
  - Oversight and guidance limited
  - Public participation requirements vary, can be opaque

Comparison of US vs. EU Permit Systems

Program Area	United States	European Union
Governance/ Law	Clean Air Act provides requirements for permitting. States are required to adopt an equivalent or more stringent program to receive federal approval to issue permits at state level.	Requirements included in law issued by European Commission. Member States must enact legislation to adopt provisions.
Scope	Covers specific air discharge point(s) at the enterprise	Covers all media (air, water, waste) plus noise, radiation, lifecycle closure procedures
Mechanics	Case-by-case review of each enterprise. Most stringent emissions limit must be imposed, unless economic, energy or environmental factors dictate otherwise. In states with unhealthy air quality, BACT equals LAER.	BREFs provide a range of emissions limits deemed acceptable to meet BAT for each process, fuel type and discharge.
Guidance	EPA RACT/BACT/LAER Clearinghouse is depository for individual permit decisions.	BREFs issued by the European Commission for each sector
Oversight	Each permit provides opportunity for public comment. EPA regional offices also review permits. EPA can issue and enforce its own federal permit if the state permit or the state permitting program are deficient. EPA performs independent inspections of enterprises, and also enforces state- and federally- issed permits.	Member States are encouraged to provide for public comment during the permitting process. Member States responsible for enforcement
Chief Advantages	BACT and LAER evolve over time along with technology. Clear lines of accountability between federal and state. BACT is the same for rich and poor states.	Enterprise-wide integrated approach to environmental management, which also includes provisions to improve energy efficiency.
Chief Disadvantages	Covers air only. Public comment limited to specific emission points. History of litigation.	Range of emission limits deemed acceptable for BAT can enable different requirements for the same process. Can encourage location or relocation of facilities based on Member State economics, placing richer states at competitive disadvantage.

Thoughts for China: Starting Points

- EIA process and pollution discharge fee system
  - Familiar to agencies and businesses
- ETS, energy and SO2 trading pilots
  - Foundations for credibility, information transparency, record keeping and reporting
- Inventory and source apportionment
  - Agencies know what industries contribute to pollution

Thoughts for China: A Permit System Helps to Achieve AQI Targets

- Focus on largest enterprises first (inventory link)
- Complete technology assessments to determine “best” controls
  - Include end of pipe and root of pipe processes
- Permit documents: “self-implementing”, clarity/certainty for enterprise, MEP/EPB and the public
- Consider general, or sector-based, permits for small sources
  - Permit by rule: all terms and conditions specified

Thoughts for China: Other Considerations

- Periodically reported emissions data
  - cross check against inventory
- Air quality monitors
  - short and long-term trends vs. requirements to reduce emissions
- Update air quality models
  - Based on inventory, air monitoring data, addition/subtraction of sources
- Staff expertise, training and professional development
  - Engineering/science discipline useful for staff responsible for permit review

Suggested Next Steps

- Assess feasibility of current systems (EIA, discharge fees)
- Assess existing regulations
- Evaluate ETS, energy, SO2 pilots
  - What can be adapted, learned from these?
  - What needs improvement?
- Evaluate capacity in EPBs
  - Where are leading agencies? How can their experience benefit others?

Conclusions

- Permits are an integral and effective component of any air quality plan
- Lessons from EU and US emphasize: start with the biggest sources first, consider administrative simplicity for small sources (general permit)
- Draw upon leading Chinese experience from EIA, ETS, local permitting

Thank You for Your Time and Attention

About RAP

The Regulatory Assistance Project (RAP) is a global, non-profit team of experts focused on the long-term economic and environmental sustainability of the power sector. RAP has deep expertise in regulatory and market policies to:

- Promote economic efficiency
- Protect the environment
- Ensure system reliability
- Allocate system benefits fairly among all consumers

Learn more about RAP at www.raponline.org

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