
Organization for Air Pollution Control

The best organizational pattern for an air pollution control agency is that which most effectively and efficiently performs all its functions. There are many functions a control agency or industrial organization could conceivably perform. The desired budget and staff for the agency or organization are determined by listing the costs of performing all desired functions. The actual functions performed by the agency or organization are determined by limitations on staff, facilities, and services imposed by its budget.

I. FUNCTIONS

The most elementary function of an air pollution control agency is its *control* function, which breaks down into two subsidiary functions: *enforcement* of the jurisdiction's air pollution control laws, ordinances, and regulations and *evaluation* of the effectiveness of existing regulations and regulatory practices and the need for new ones.

The enforcement function may be subdivided in several ways, one of which is control of *new sources* and *existing sources*. New-source control can involve all or some of the following functions:

1. *Registration* of new sources.
2. *Filing* of applicants' plans, specifications, air quality monitoring data, and mathematical model predictions.
3. *Review* of applicant's plans, specifications, air quality monitoring data, and mathematical model predictions for compliance with emission and air quality limitations.
4. *Issuance* of certificates of approval for construction.
5. *Inspection* of construction.
6. *Testing* of installation.
7. *Issuance* of certificates of approval for operation.
8. *Receipt* of required fees for the foregoing services.
9. *Appeal* and *variance* hearings and actions.
10. *Prosecution* of violations.

Control of existing sources can involve all or some of the following functions:

1. Visible emission *inspection*.
2. Complaint *investigation*.
3. Periodic and special industrial category or geographic area *inspections*.
4. *Bookkeeping* of offsets and offset trades.
5. Fuel and fuel dealer *inspection and testing*.
6. *Testing* of installations.
7. *Renewal* of certificates of operation.
8. *Receipt* of required fees for the foregoing services.
9. Appeal and variance *hearings and actions*.
10. *Prosecution* of violations.

Note that items 6–10 of the preceding two lists are the same.

The evaluation function may be subdivided into *retrospective evaluation* of existing regulations and practices and *prospective planning* for new ones. Retrospective evaluation involves the following functions:

1. *Air quality monitoring* and surveillance.
2. *Emission inventory* and monitoring.
3. *Statistical analysis* of air quality and emission data and of agency activities.
4. *Analytic evaluation*.
5. *Recommendation* of required regulations and regulatory practices.

Prospective planning involves the following activities:

1. *Prediction* of future trends.
2. *Mathematical modeling*.
3. *Analytical evaluation*.
4. *Recommendation* of required regulations and regulatory practices.

Meteorological services are closely related to both retrospective evaluation and prospective planning. The last two items on the preceding two lists are the same.

Functions such as those already noted require extensive technical and administrative support. The *technical* support functions required include the following:

1. *Technical* information services—libraries, technical publications, etc.
2. *Training* services—technical.
3. *Laboratory* services—analytical instrumentation, etc.
4. *Computer* services.
5. *Field* support—equipment calibration.
6. *Shop* services.

An agency requires, either within its own organization or readily available from other organizations, provision of the following *administrative* support functions:

1. *Personnel*.
2. *Procurement*.
3. *Budget*—finance and accounting.
4. *Information technology* (IT).
5. *General* services—secretarial, clerical, reproduction, mail, telecommunications, building maintenance, etc.

Since an air pollution control agency must maintain its *extramural* relationships, the following functions must be provided:

1. *Public relations* and information.
2. *Public education*.
3. *Liaison* with other agencies.
4. *Publication* distribution (including website updates and management).

An agency needs *legal* services for prosecution of violations, appeal and variance hearings, and the drafting of regulations. In most public and private organizations, these services are provided by lawyers based in organizational entities outside the agency. However, organizationally, it is preferable that the legal function be provided within the agency.

One category that has been excluded from all of the preceding lists is research and development (R & D). R & D is not a necessary function for an air pollution control agency at the state, provincial, regional, or municipal level. It is usually sufficient if the national agency, e.g. the US. Environmental Protection Agency, maintains an R & D program that addresses the nation's needs and encourages each industry to undertake the R & D required to solve its particular problems. National agencies tend to give highest priority to problems common to a number of areas in the country. However, where major problems of a state, province, region, or municipality are unique to its locality and not likely to have high national priority, the area may have to undertake

the required R & D. In such instances, the State universities, especially the land grant colleges, are an excellent resource.

It is apparent that some of the functions listed overlap. An example is the overlap of the laboratory function in technical support and the testing and air quality monitoring functions in control. It is because of such overlaps that different organizational structures arise. Many of the functions listed for a control agency are not required in an industrial air pollution control organization. A control agency must emphasize its enforcement function, sometimes at the expense of its evaluation function. The converse is the case for an industrial organization. Also, in an industrial organization, the technical and administrative support, legal, and R & D functions are likely to be supplied by the parent organization.

II. ORGANIZATION

In the foregoing section functions were grouped into categories. The most logical way to organize an air pollution control or industrial organization is along these categorical lines (Figs 29.1 and 29.2), deleting from the organizational structure those functions and categories with which the agency or organization is presently not concerned. When budget and staff are small, one person is required to cover all the agency's or organization's activities in more than one function and, in very small agencies or organizations, in more than one category.

Agencies and organizations which cover a large geographic area must decide to what extent they will either centralize or decentralize functions and categories. Centralization consolidates the agency's or organization's technical expertise, facilitating the resolution of technical matters particularly in relation to large or complex sources. Decentralization facilitates the agency's ability to deal with a larger number of smaller sources. The ultimate decentralization is delegation of certain of an agency's functions to lesser jurisdictions. This can lead to a three-tiered structure, with certain functions fully centralized, certain ones delegated, and certain ones decentralized to regional offices or laboratories.

In an industrial organization the choice is between centralization in corporate or company headquarters and decentralization to the operating organizations or individual plants. The usual organization is a combination of headquarters centralization and company decentralization.

A major organizational consideration is where to place an air pollution control agency in the hierarchy of government. As state, provincial, and municipal governmental structure evolved during the nineteenth century, smoke abatement became a function of the departments concerned with buildings and with boilers. In the twentieth century, until the 1960s, air pollution control shifted strongly to national, state, provincial, and municipal health agencies. However, since the mid-1960s there has been an increasing

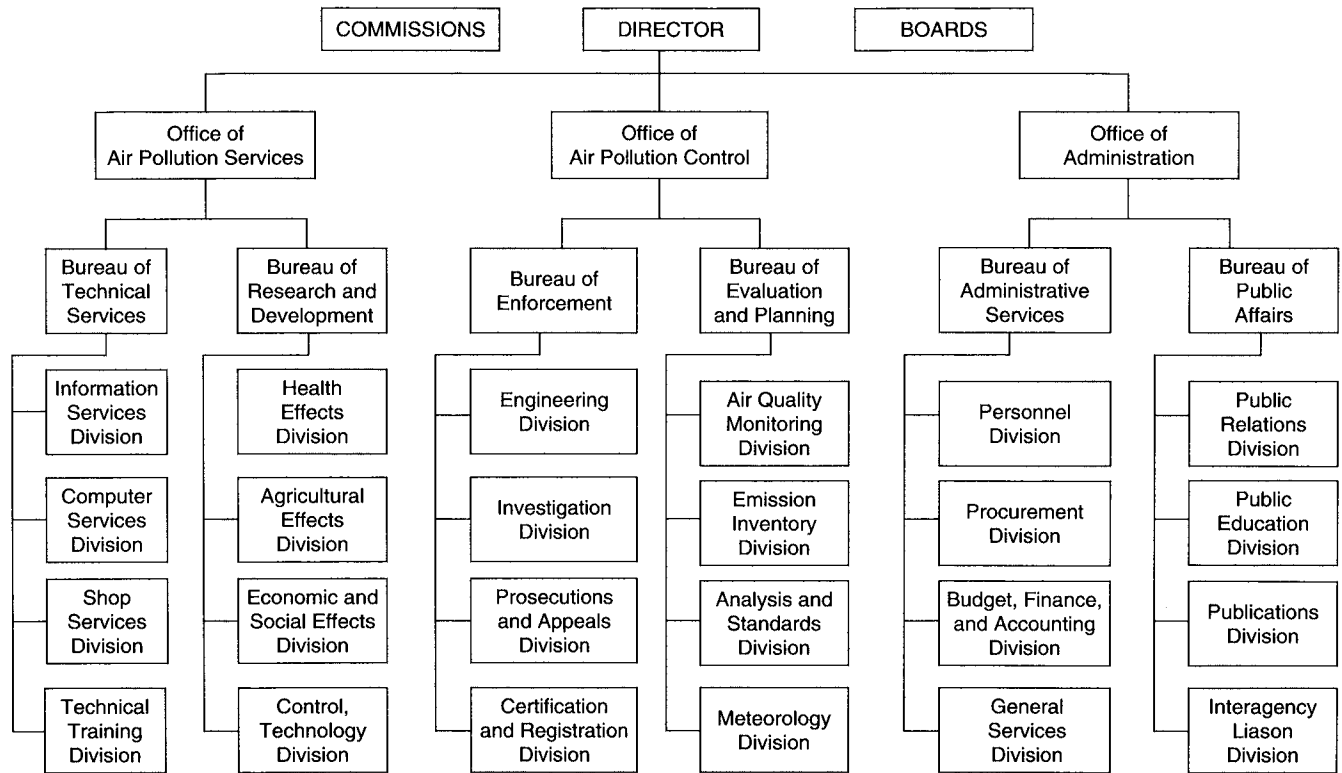


Fig. 29.1. Organization plan which encompasses all functions likely to be required of a governmental air pollution control agency.

tendency to locate air pollution control in agencies concerned with natural resources and the environment.

III. FINANCE

A. Fines and Fees

Governmental air pollution control agencies are primarily tax supported. Most agencies charge fees for certain services, such as plan filing, certificate issuance, inspection, and tests. In some agencies, these fees provide a substantial fraction of the agency's budget. In general, this is not a desirable situation because when the continuity of employment of an agency's staff depends on the amount of fees collected, there is an understandable tendency to concentrate on fee-producing activities and resist their deemphasis. This makes it difficult for an agency to change direction with changes in program priorities. Even when these fees go into the general treasury, rather than being retained by the agency, such collection gives some leverage to the agency in its budget request and has the same effect as it would if the fees were retained by the agency.

In most jurisdictions, violators of air pollution control laws and regulations are subject to fines. In the past, it has been considered good administrative practice for these fines to go into the general treasury in order to discourage imposition of fines as a means of supporting the agency's program, which might result if the agency retained the fines. Collection of fines could become an end in itself if the continued employment of the agency staff were dependent on it. Moreover, as in the case of fees, an agency can use its fine collection to give it leverage in budget allocation.

There has been extensive recent rethinking of the role of fees and fines as means of influencing industrial decision-making with regard to investment in pollution control equipment and pollution-free processes. In their new roles, fees and fines take the form of tax write-offs and credits for pollution control investment; taxes on the sulfur and lead content of fuels; continuing fines based on the pollution emission rate; and effluent fees on the same basis. Tax write-offs and credits tend to be resisted by treasury officials because they diminish tax income. Air pollution control agencies tend to look with favor on such write-offs and credits because they result in air pollution control with minimal effort on the part of their staffs and with minimal effect on their budget.

One problem with fuel taxes, continuing fines, and effluent fees is how to use the funds collected most effectively. Among the ideas which have been developed are to use the funds as the basis for loans or subsidies for air pollution control installations by industrial or domestic sources and for financing air pollution control agency needs of jurisdictions subsidiary to those which collect and administer the fines or fees. By ensuring that the continuity of employment of agency personnel is divorced from the fine and fee setting, collection, and administrative process, it is argued that the use of fines and fees can be a constructive rather than a stultifying process.

There is a discussion in Chapter 9, Section IV, of financial incentives to supplement or replace regulations.

B. Budget

An agency's budget consists of the following categories:

Personnel

- Salaries

- Fringe benefits

- Consultant fees

Space, furniture, and office equipment

- Acquisition or rental

- Operation

- Maintenance

Technical and laboratory and other related, capitalized equipment

- Acquisition or rental

- Operation

- Maintenance (including maintenance agreements and contracts)

Transportation equipment

- Acquisition

- Operation

- Maintenance

Travel and sustenance

Supplies and expendables

Reproduction services

Communication services

Contractual services

Other—miscellaneous

The principal precaution is to avoid allocating too high a percentage of an agency's budget to the personnel category. When this happens, the ability of the agency staff to perform its functions is unduly restricted.

An industrial organization must decide whether to charge off air pollution control costs as a corporate charge, so that the plant manager does not include them in the accounts; or the reverse, so that the plant manager must show a profit for the plant as a cost center, after including costs of air pollution control.

IV. ADVISORY GROUPS

It is common practice, at least in the United States, for air pollution control agencies to be associated with nonsalaried groups who meet from time to time in capacities ranging from official to advisory. The members of such groups may be paid fees or expenses for their days of service, or they may contribute their time and expenses without cost to the agency. The members

may be appointed by elected officials, legislative bodies, department heads, program directors, or directors of program categories. They may have to be sworn into office, and the records of their meetings are usually official documents, even if they are informal.

In general, when such bodies are official, laws or ordinances set a statutory base for their creation. This base may be as specific as the statutory requirement that a specified group be appointed in a particular manner with specified duties and authorities, or as broad as a general statutory statement that advisory groups may be created, without enumerating any details of their creation or duties. Such groups may provide their own secretariat and have their own budget authority, or be completely dependent on the agency for services and costs.

The highest levels of such groups are commissions or boards, which can promulgate standards and regulations, establish policy, issue variances, and award funds. The next highest level consists of the hearings or appeals boards, which can issue variances but which neither promulgate standards or regulations nor set policy. Next in rank are the boards, panels, or committees which formally recommend standards or regulations but do not have authority to promulgate them. Next in line are formally organized groups which review requests for funds and make recommendations but lack final award authority. These groups are particularly prevalent in federal programs, such as that of the United States, where large amounts of money are awarded as grants, fellowships, or contracts. These review groups tend to be specialized, e.g. a group of cardiologists to review requests for funds to do cardiovascular research. Although such groups do not have final award authority, the award process tends to follow their recommendations, thereby making their real authority greater than their statutory authority.

At the lowest level are groups that review program content and make recommendations. The impact of groups in this category depends on whether their reports and recommendations are or are not published and the ground rules for determining whether or not they shall be published. If the groups are creations of the agency whose programs they review and the decision on whether or not to publish rests with the agency, minimal impact can be expected. Where review groups are relatively independent of the agency whose programs they review and have their own authority and means for publication, maximum impact can be expected. An example of the latter is the statutory requirement in Section 202 of the US Clean Air Act Amendments of 1977 that automobile exhaust standards be reviewed by the National Academy of Sciences.

SUGGESTED READING

1993 *Government Agencies Directory*, Section 4, Directory and Resource Book. Air and Waste Management Association, Pittsburgh, 1993.

Jones, C. O., *Clean Air*. University of Pittsburgh Press, Pittsburgh, 1975.

- Kokoszka, L. C., and Flood, J. W., *Environmental Management Handbook*. Marcel Decker, New York, 1989.
- Mallette, F., Minutes of the Proceedings, *Institution of Mechanical Engineers (GB)*, N68 (2), 595–625 (1954).
- Marsh, A., *Smoke: The Problem of Coal and the Atmosphere*. Faber and Faber, London, 1947.
- Portney, P. R. (ed.), *Public Policies for Environmental Protection*. Resources for the Future, Washington, DC, 1990.

QUESTIONS

1. How is the air pollution control agency in your state or province organized? Where is its principal office? Who is its head?
2. Is there a local air pollution control agency in your city, county, or region? How is it organized? Where is its principal office? Who is its head?
3. Draw an organization chart for a governmental air pollution control organization which is limited by budget to 10 professional persons.
4. Write a job specification for the chief of the Bureau of Enforcement in Fig. 25.1.
5. Discuss the relative roles of the staff of an air pollution control agency, its advisory board, and its chief executives in the development and promulgation of air quality and emission standards.
6. Discuss the alternatives mentioned in last paragraph of Section III, (B) regarding allocation of costs of air pollution control in an industrial organization.
7. How does a governmental air pollution control agency or an industrial air pollution control organization organize to ensure that its registration of new sources does not miss significant new sources?
8. Draw an organizational chart for an air pollution organization with a number of plants limited by budget to three professional persons.
9. How does the job market for air pollution control personnel respond to changes in regulatory requirements and to the state of the economy?