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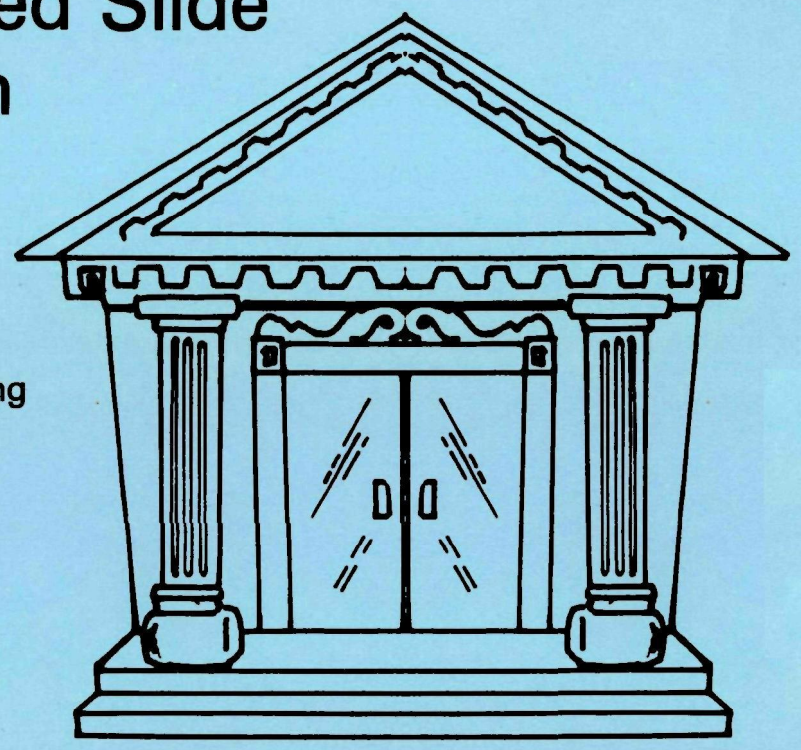
Emission Reduction Banking

An Annotated Slide Presentation



Achieving and Maintaining
Air Quality Standards
while Accommodating
Economic Development

EMISSION REDUCTION BANKING

- An Annotated Slide Presentation

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INTRODUCTION

Emission Reduction Banking is a regulatory reform initiated by the Environmental Protection Agency to promote cleaner air while allowing for economic growth. Banking gives a firm credit for reducing its emissions beyond the baseline level necessary to meet national air quality standards. This emission reduction credit (ERC) becomes an important asset to a firm and forms the basis for a banking program. A firm has the option of earning a profit on its investment in pollution control by selling its ERCs to another firm, or it can use these credits itself--in emission offsets, bubbles, or PSD applications.

By providing credit, banking gives firms an economic incentive to reduce their emissions below required levels and thus spurs technological innovation. In addition, banking minimizes the uncertainty and delay associated with obtaining offsets and therefore allows firms to plan for expansion. For state air agencies and communities, the availability of ERCs makes it easier to attract firms to locate in their area and helps to reduce the costs of achieving cleaner air.

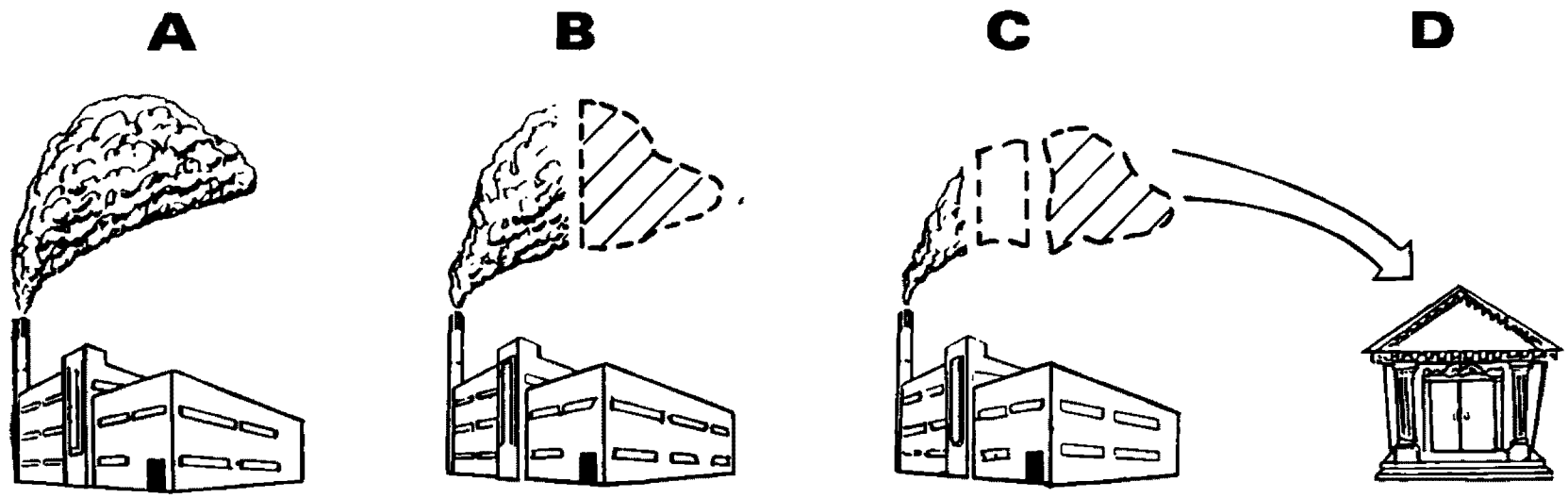
The following is an annotated version of a selection of the slides used in the Emission Reduction Banking and Trading Team's presentation. This selection describes banking and its advantages. It also outlines the steps involved in establishing a banking system, and gives examples of systems in operation.

WHAT IS BANKING?

Banking is a regulatory reform that aims to achieve clean air at the lowest cost. It provides an incentive for firms to reduce their emissions beyond the required level--an important incentive that is missing from our current regulatory program.

The Clean Air Act gives states the responsibility for designing plans to attain national ambient air quality standards. These state implementation plans, or SIPs, specify the degree to which each firm must reduce its emissions (Step B). If a firm in an area with a banking program reduces its emissions beyond the level established in the SIP (Step C), the surplus reduction can be banked, and the firm can receive an emission reduction credit (Step D).

WHAT IS BANKING ?



EXISTING EMISSIONS

EMISSION REDUCTION REQUIRED BY SIP

EMISSION REDUCTION EXCEEDING SIP REQUIREMENT

SURPLUS EMISSION REDUCTION DEPOSITED IN BANK FOR CREDIT

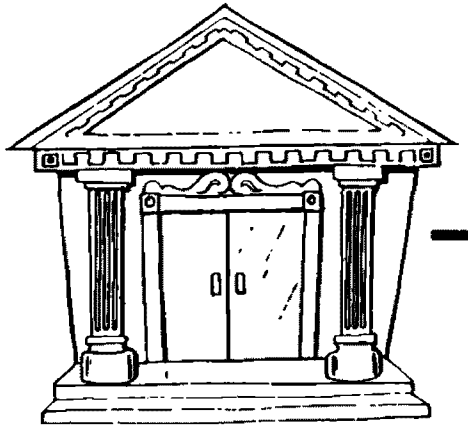
HOW CAN BANKING BE USED?

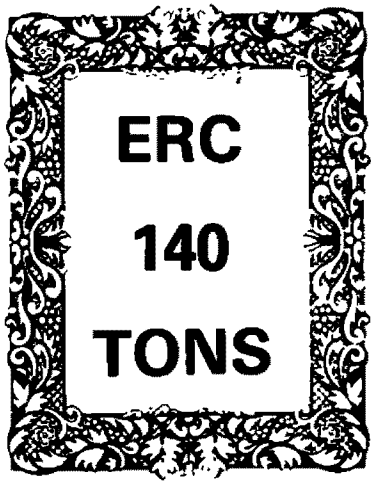
Emission reduction credits are valuable assets to firms, as they can be used to satisfy permit requirements for new and existing firms in:

- Emission Offsets Transactions,
- Bubble Applications, and
- PSD Permitting.

Firms can also sell or trade their ERCs to other firms for these permit requirements.

EMISSION REDUCTION CREDITS HAVE SEVERAL USES





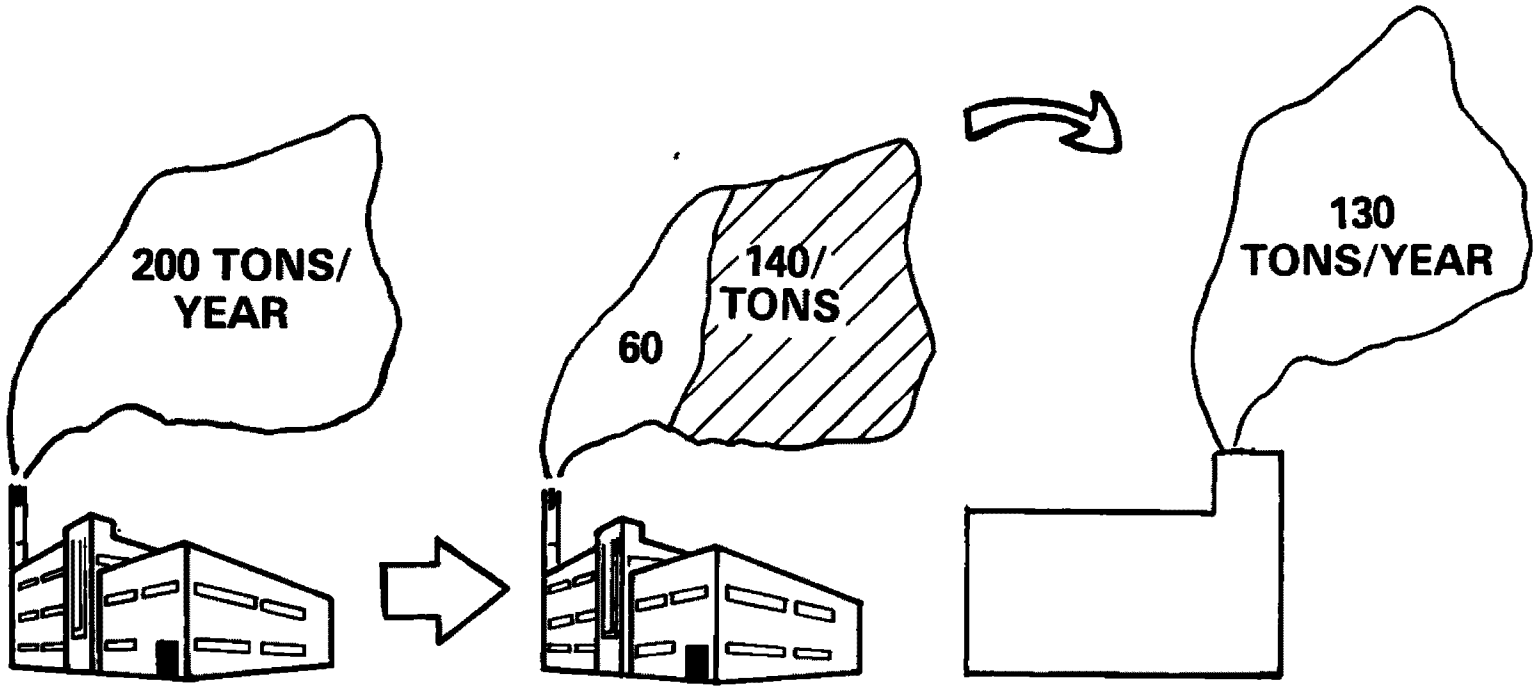
- **OFFSET TRANSACTIONS** FOR <u>NEW</u> OR <u>EXPANDING</u> SOURCES
- **BUBBLE APPLICATIONS** FOR <u>EXISTING</u> SOURCES
- **PSD PERMITTING** FOR <u>EXPANDING</u> SOURCES

Offset Policy

In an effort to meet air quality standards, the Clean Air Act of 1970 prohibited industrial growth in dirty, or "nonattainment," areas. This solution was straightforward but impractical. In 1976, EPA adopted an attractive alternative: the emission offset policy.

Under this policy, new sources desiring to locate in nonattainment areas, or existing sources planning to expand their facilities, must install the most advanced control technology possible and arrange for reductions in emissions from existing sources that more than "offset" their own emissions. This policy was incorporated into the 1977 amendments to the Clean Air Act and has been adopted by most states as a means of allowing industrial growth in nonattainment areas without compromising efforts to attain cleaner air.

NEW FIRMS NEED OFFSETS TO LOCATE IN NONATTAINMENT AREAS



EXISTING FIRM A IN COMPLIANCE (200 TONS/YEAR IS THE LEGAL LIMIT)

FIRM A REDUCES EMISSIONS TO CREATE AN OFFSET OF 140 TONS

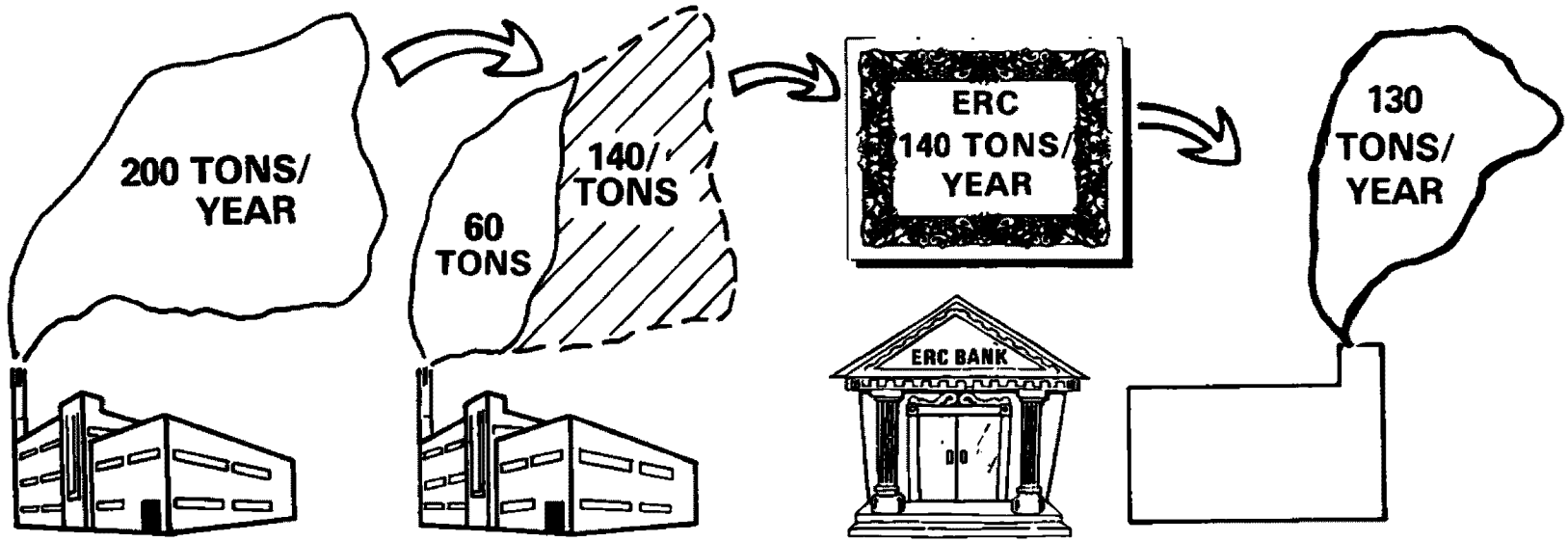
NEW FIRM B BUYS THE 140 TON OFFSET FROM FIRM A AND IS ALLOWED TO LOCATE

BEFORE OFFSET **AFTER OFFSET**

Emission Reduction Credits May Be Used as Offsets

Banking facilitates the offset program. Because the credits are created and banked before they are needed, both the buyer and the seller benefit. Sellers make the reductions when it is economically advantageous -- probably during retrofitting -- and sell them at a profit or use them later when they want to expand. Buyers benefit because they can simply check a locality's central registry of emission reduction credits to discover available offsets without having to contact all potential producers of emission reductions. As the regulatory agency has certified these credits, buyers know they will be acceptable for an offset transaction. Thus banking significantly reduces the delay and uncertainty frequently associated with securing offsets.

AVAILABLE ERCs ATTRACT NEW FIRMS



EXISTING FIRM A IN COMPLIANCE

FIRM A CREATES A SURPLUS EMISSION REDUCTION FOR $100/TON

FIRM A RECEIVES AN ERC FOR THE SURPLUS EMISSION REDUCTION

NEW FIRM B BUYS THE ERC FOR $150/TON

Bubble Policy

Promulgated in 1979, the bubble policy* is aimed at helping existing plants lower their costs of complying with the national ambient air quality standards. It gives plant managers the flexibility of selecting the lowest-cost mix of emission controls, as long as they met the facility-wide limit. They may relax controls at emission points with high control costs in exchange for placing additional controls on points with lower costs. It is as if a bubble were placed over the facility and a total emission limit were set. Once the mix of controls under the bubble is selected, each emission point is given an enforceable limit.

Firms are permitted to bubble within a facility or across facilities. Two different firms can even arrange to bubble between their facilities within a given area. All that is necessary is a demonstration that the surplus emission reduction is enforceable and the impact on air quality of the proposed change in the mix of controls is at least equivalent.

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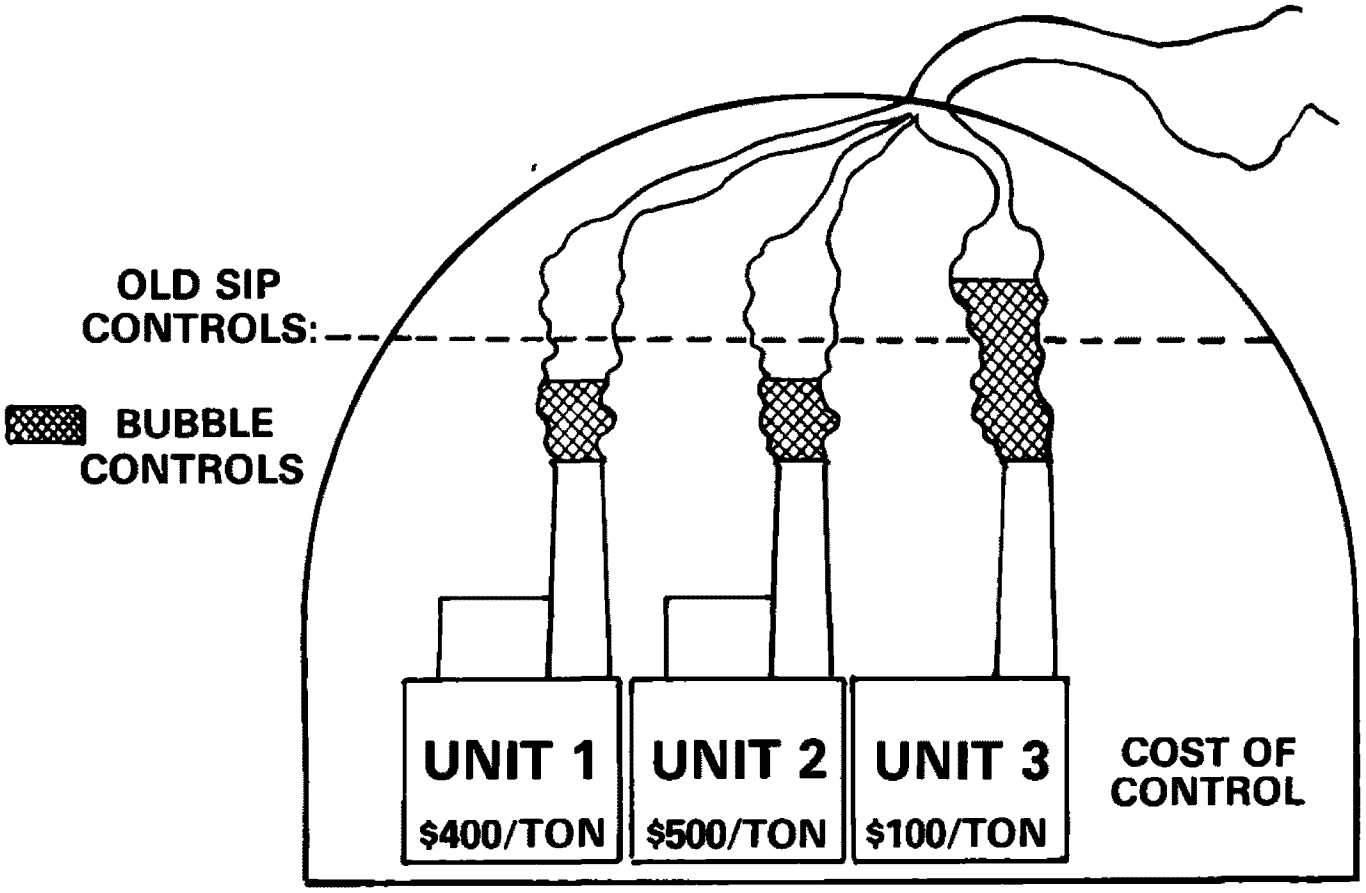
*Federal Register, vol. 44, no. 239 (December 11, 1979), pp. 71780-88.

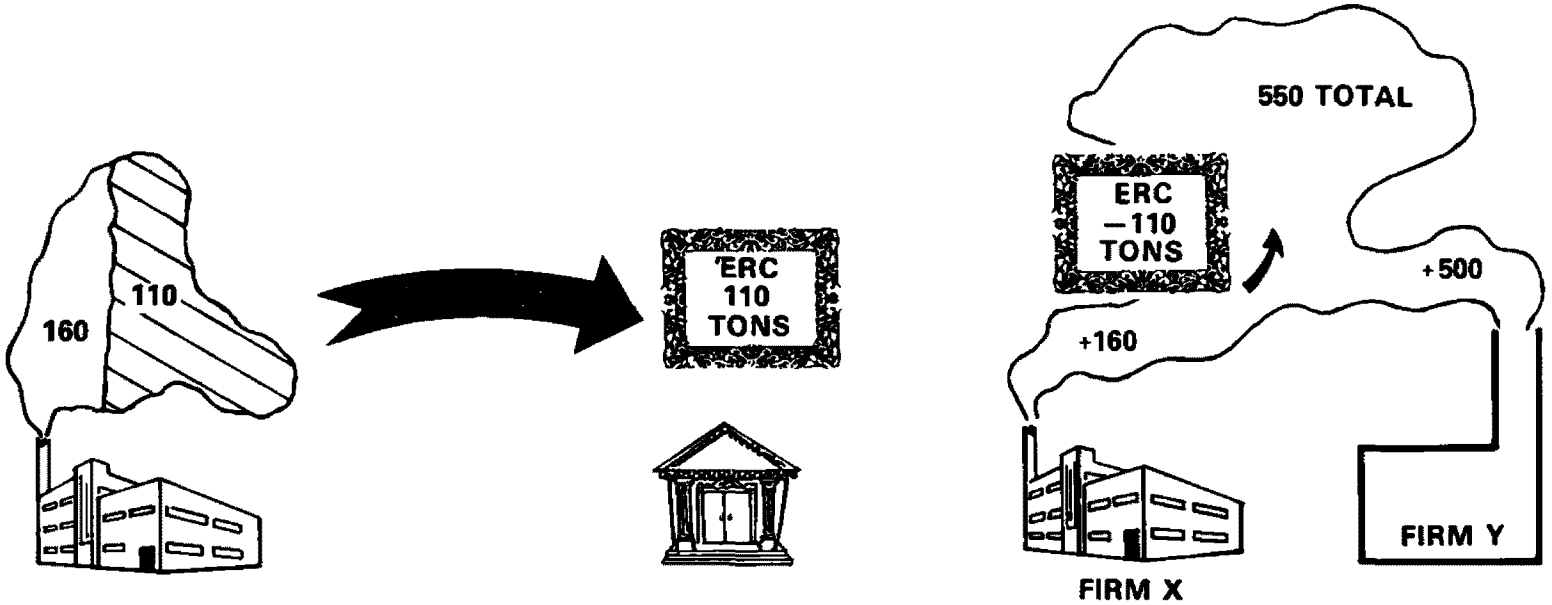
THE BUBBLE GIVES PLANT MANAGERS FLEXIBILITY IN SELECTING A LOW-COST MIX OF CONTROLS



Emission Reduction Credits May Be Used In a Bubble

Banking adds a time dimension to the bubble process. With banking, instead of simultaneously applying for approval of an emission reduction and a control relaxation, firms can make the reduction in advance and receive an ERC. With an ERC in reserve, firms gain greater flexibility in deciding when to bubble and have a standardized commodity to sell to other firms. Consider the following example. Firm X has received a 100 ton ERC for a surplus emission reduction. Firm Y is located down the road from Firm X. One of firm's Y's stacks goes out of compliance and emits 500 tons instead of the 400 tons prescribed in the permit. Firm Y faces major overhaul costs to bring the stack into compliance. Instead, it proposes a multiplant bubble with Firm X. Firm Y will pay Firm X to apply its ERC to the bubble limit.

BANKING FACILITATES A MULTIPLANT BUBBLE



FIRM X IS IN COMPLIANCE. IT CREATES A SURPLUS EMISSION REDUCTION OF 110 TONS.

FIRM X BANKS THE SURPLUS REDUCTION AND RECEIVES AN ERC FOR 110 TONS.

LATER, FIRM X FORMS A BUBBLE WITH FIRM Y. THE OVERALL LIMIT IS ESTABLISHED AT 550 TONS. RATHER THAN REDUCE ITS EMISSIONS TO 400 TONS, FIRM Y PAYS FIRM X TO APPLY ITS ERC TO THE BUBBLE.

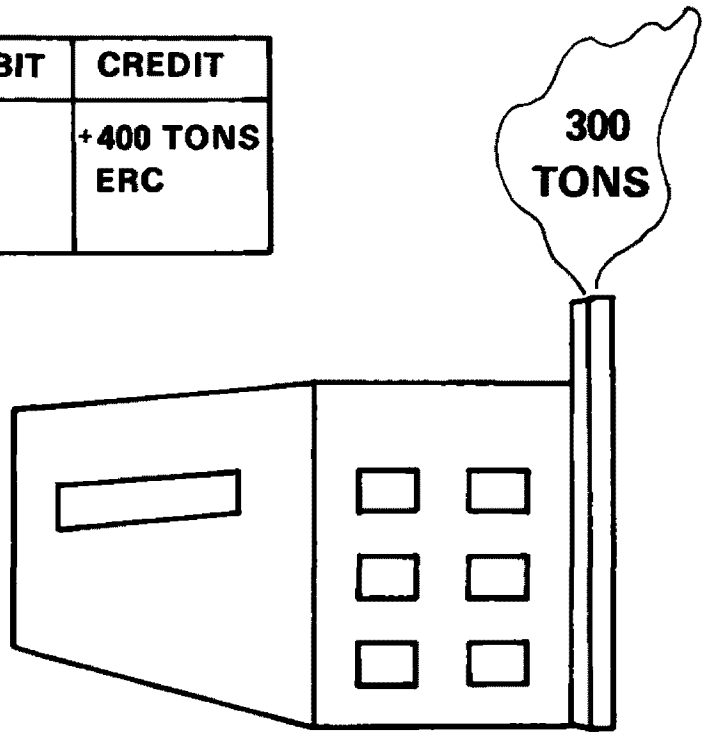
Emission Reduction Credits in PSD Applications

In addition to facilitating the offset and bubble policies, banking can be used in the existing Prevention of Significant Deterioration (PSD) Regulations. In PSD areas, sources planning modifications that involve net increases in emissions above de minimus levels are subject to review. However, firms may apply internally generated ERCs against emission increases, and if there is no resulting net increase in emissions, they are exempt from review.

Banked ERCs can also be used by firms as PSD offsets where the air quality increment for the area has previously been allocated.

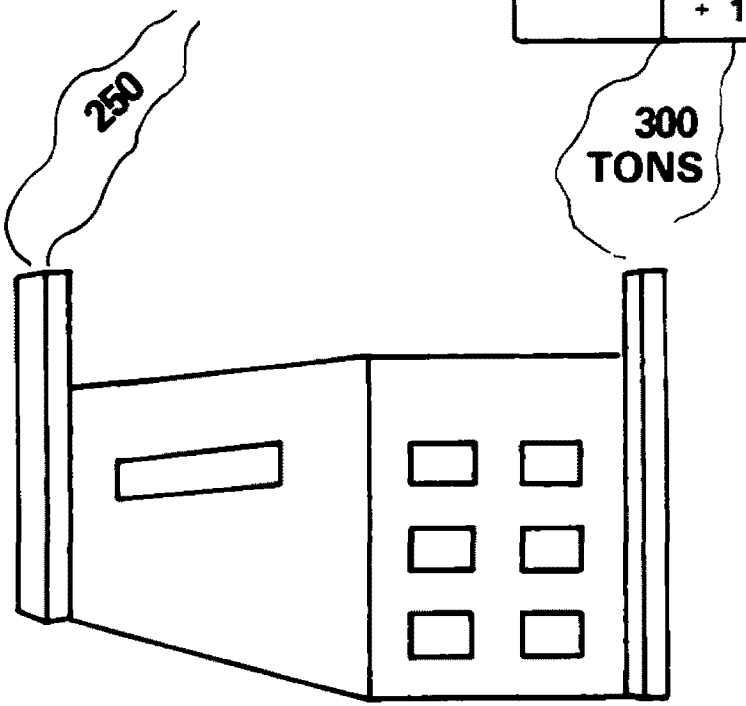
IN PSD AREAS ERCs CAN BE USED TO NET OUT OF NEW SOURCE REVIEW

DEBIT	CREDIT
	+400 TONS ERC



MAJOR SOURCE HAS BANKED AND RECEIVED A 400-TON ERC

DEBIT	CREDIT
	+ 400
- 250	
	+ 150



SOURCE APPLIES ERC AGAINST 250 TON PLANT MODIFICATION, THUS, THERE IS NO NET INCREASE IN EMISSIONS, AND REVIEW IS UNNECESSARY

WHAT ARE THE ADVANTAGES OF BANKING?

Banking provides advantages to all sectors -- industries, communities, and regulatory agencies.

Advantages to Industry

In general, banking helps industry save money by using the market system as a cost-efficient means of meeting ambient air quality standards. The opposite page shows specifically the ways to which banking saves industry money.

Banking Provides an Incentive to Create Surplus Emission Reductions

By giving firms credit, banking creates a financial incentive to reduce emissions beyond SIP requirements. Firms can sell ERCs at a profit or use them to reduce their own costs of control.

Banking Reduces Delay

With banking, the emission reduction credit is created and certified before it is needed. Thus, the user or buyer does not lose time securing and negotiating emission reductions or waiting for government approval -- time that is likely to mean high interest costs and contracts not met.

Banking Reduces Uncertainty

By legally protecting a firm's emission reductions, banking reduces the uncertainty of whether the air agency will approve proposed reductions. In the past, firms have had to abandon plans to locate in nonattainment areas for lack of acceptable offsets, losing potentially significant front-end investments.

BANKING OFFERS INDUSTRY MANY ADVANTAGES

PROVIDES AN INCENTIVE TO CREATE SURPLUS EMISSION REDUCTIONS

REDUCES TENSION BETWEEN THE NEEDS FOR INDUSTRIAL GROWTH AND CLEAN AIR

SAVES $

REDUCES DELAY

REDUCES UNCERTAINTY

ENCOURAGES TECHNOLOGICAL INNOVATION

REDUCES COSTS OF ADDITIONAL CONTROL

HELPS NEW AND EXISTING FIRMS LOCATE NECESSARY EMISSION REDUCTIONS

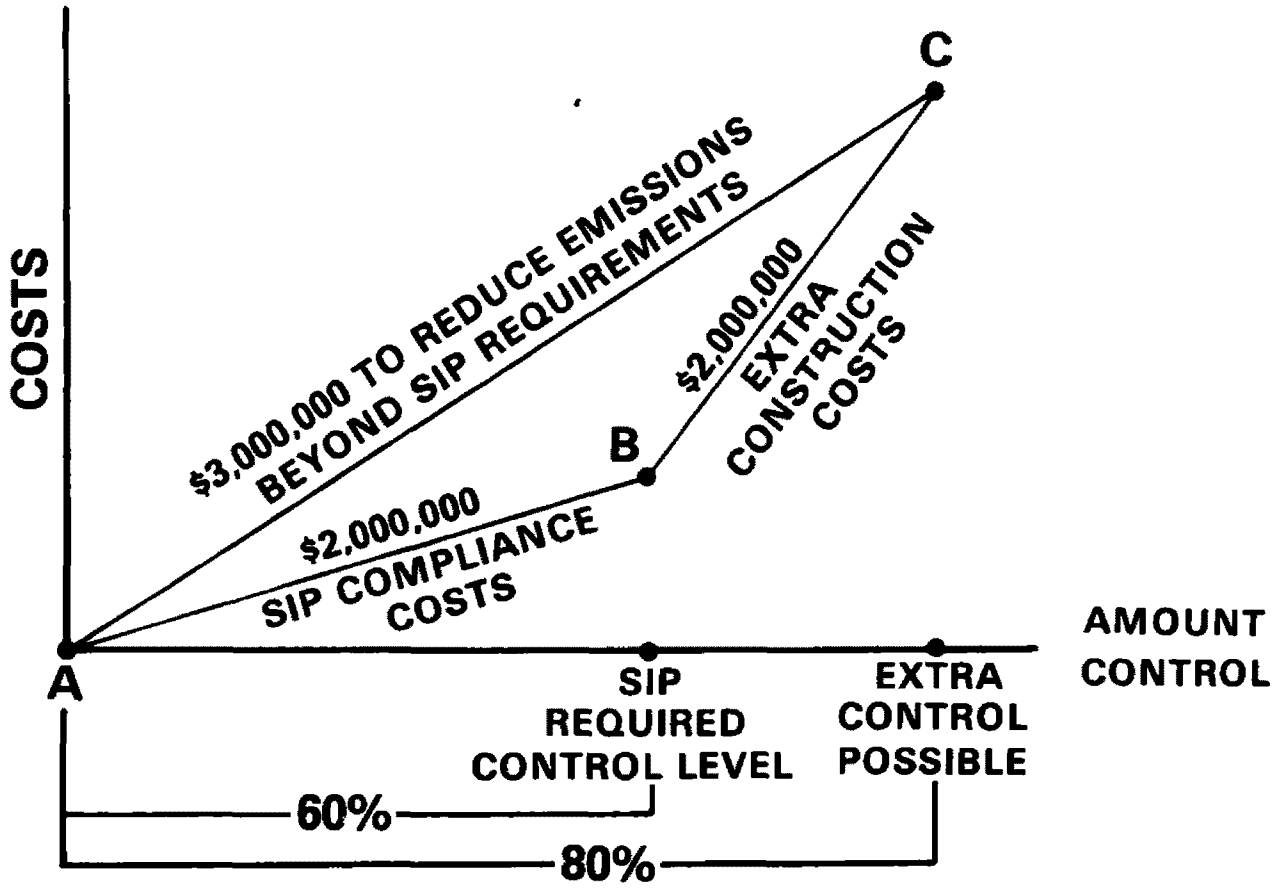
Banking Reduces Costs Of Additional Control

If a firm projects a future need for offsets either for its own growth or for sale to others, banking allows it to produce the reduction when it is most economical, for instance during retrofit to meet current regulations, and bank the credit for later use.

For example, suppose a firm spends $2,000,000 for equipment to reduce its emissions by 60 percent to attain the level required by the SIP (Point B). It is technically feasible for the firm to reduce its emissions 20 percent further (Point C), but it would not do so without banking becasue it would not receive credit for the surplus reduction.

With banking, however, the firm has the option to spend $3,000,000 to reduce its emissions by 80 percent (Point C). The firm banks the surplus reduction, (the difference between points B and C), and in the future when it needs a greater reduction to offset its own growth or to sell, it can apply its ERC and save the $1,000,000 it would have had to spend to re-retrofit (going from A to B to C).

BANKING ALLOWS FIRMS TO TAKE ADVANTAGE OF ECONOMIES OF SCALE IN INSTALLING ADDITIONAL CONTROLS



Banking Helps New and Existing Firms Locate Necessary Emission Reductions

In localities that have adopted banking systems, managers of firms projecting expansions or building new facilities can review the localities' registers of available emission reduction credits (Step 1) and negotiate a price (Steps 2 and 3) before making major investments. The firms are assured that the credits they purchase are available, and acceptable to the air agency.

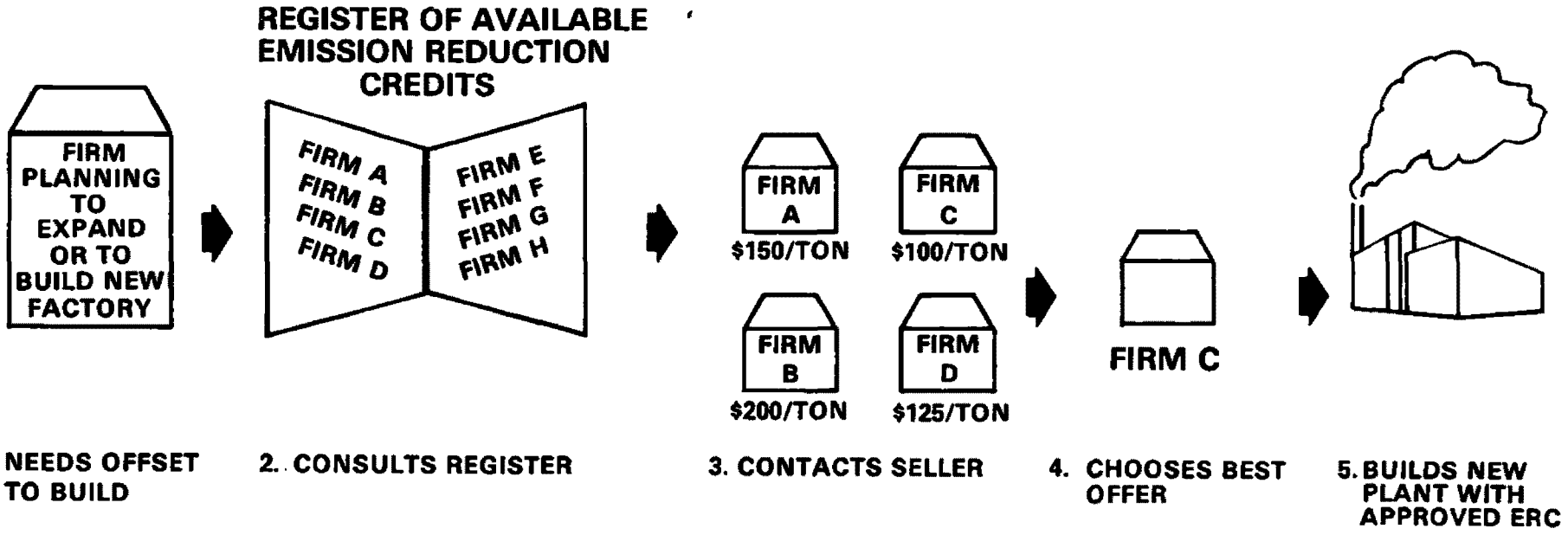
Banking Encourages Technological Innovation

The potential profit from creating surplus emission reductions will spur industry to develop creative new approaches to controlling pollution.

Banking Reduces Tension Between the Needs for Industrial Growth and Clean Air

As producing ERCs can be profitable, existing firms have an incentive to make surplus emission reductions available to new firms. Thus, growth occurs without deteriorating air quality.

BANKING MAKES LOCATING AND SECURING ERCs A SIMPLE OPERATION



Industry Should Consider Many Factors in Determining Whether to Create ERCs

Banking provides a mechanism for firms to evaluate investments in pollution control in the same manner in which they review other capital projects. The following factors will influence a firm's decision to invest in emission reduction credits:

Projected Future Expansion -- For firms planning to expand, banking guarantees the ability to grow without delay and uncertainty in obtaining offsets.

Need for Future Internal Controls -- For firms foreseeing more stringent SIP regulations, banking permits them to make cost-effective surplus reductions now, taking advantage of economies of scale and timing, and bank them for future use.

Expected Price of Emission Reduction Credits on the Market -- When firms weigh the expected market price of ERCs against the cost of producing them, they should bear in mind that ERCs will appreciate in value as offsets are necessary for expansion and will become a limited resource as growth continues.

Belief That Emission Reduction Credits Will Not Be Confiscated -- If there is uncertainty about a state implementation plan's ability to direct an area to attain the national standards, then firms should assess the risk of confiscation against the holding value of emission reduction credits. State banking rules should specify the procedure to be followed in the event of a nonattaining SIP.

MANY FACTORS INFLUENCE THE DECISION TO CREATE AN EMISSION REDUCTION CREDIT

PROJECTED FUTURE EXPANSION POSSIBILITIES	NEED FOR FUTURE INTERNAL CONTROLS	EXPECTED PRICE OF EMISSION REDUCTION CREDITS ON MARKET	BELIEF THAT EMISSION REDUCTION CREDITS WILL NOT BE CONFISCATED

Advantages to Communities

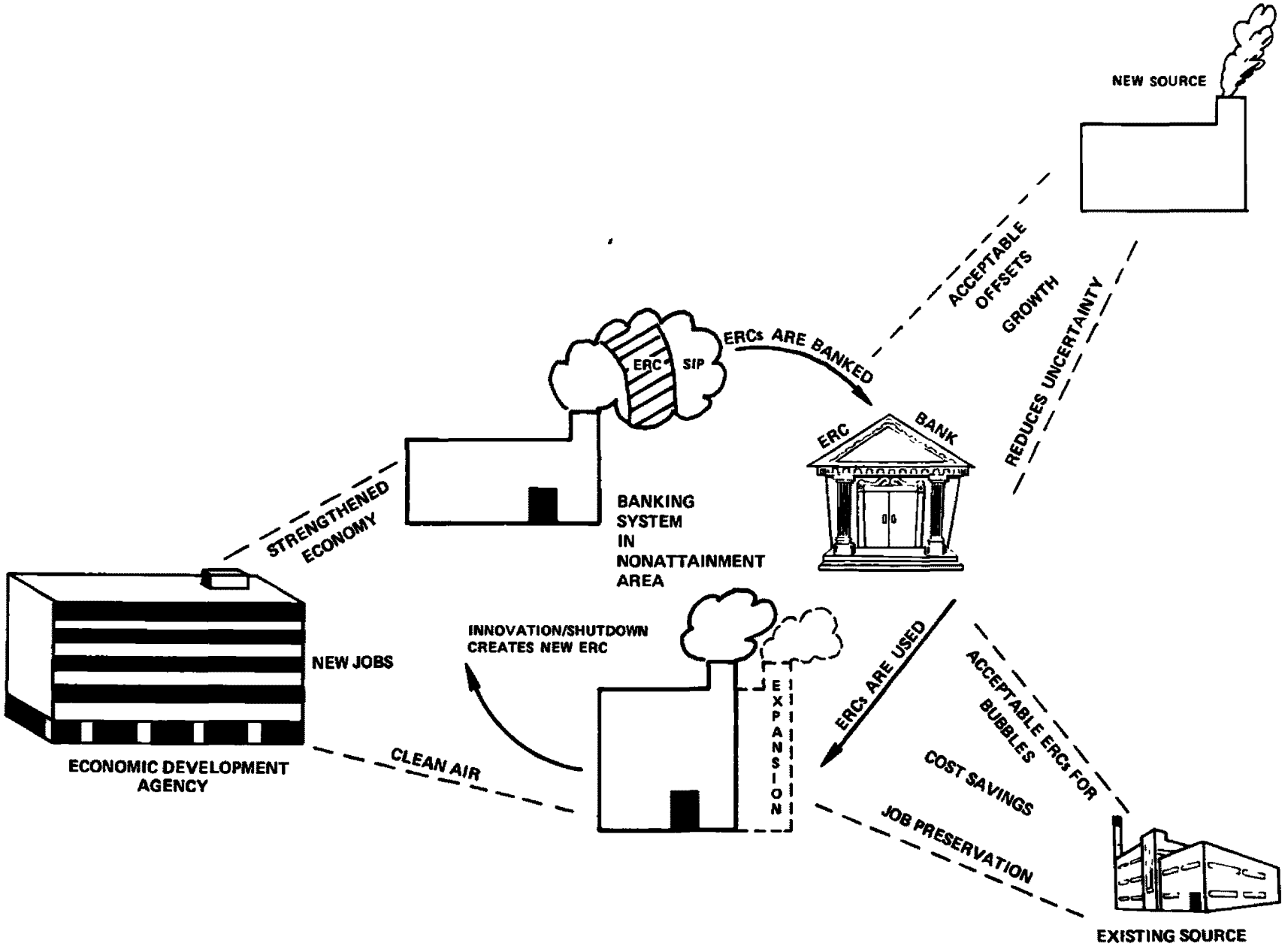
Emission Reduction Credits Stimulate Growth

Banking aids economic development agencies in their efforts to retain existing jobs and to attract new industry and jobs to their communities. The cost of emission reduction credits has become another factor of production--like the costs of land, labor, water, and raw materials--that firms will have to consider in making location decisions. Communities with banking have the advantage, as banking makes it easy for firms to assess the availability and costs of needed offsets.

A Emission Reduction Credits Facilitate Planning

With banking, communities and development agencies have a clearer idea of available air resources and can allocate them in the best way possible. For example, communities may buy emission reduction credits as part of their economic development program and use them to induce needed industry to locate in the area.

BANKING BENEFITS THE COMMUNITY



A Checklist for Communities to Determine Whether Banking Will Benefit Them

If communities answer yes to more than two items on the opposite checklist, then banking may be right for them. Considerable flexibility exists in designing a banking program. Communities should carefully assess the characteristics of their present air programs and economic development efforts and tailor their banking programs to their specific requirements.

In general, for older industrial cities with slow growth rates, the greatest advantage of banking is through use of emission reduction credits in the bubble. This approach aids firms to reduce their costs of control and prolongs the useful life of facilities without degrading air quality. Thus, it saves jobs for the community.

For high-growth areas, using emission reduction credits in the offset policy makes the community attractive to new firms. For those areas, banking facilitates growth without threatening air quality.

Most areas will want to adopt a banking program that incorporates both offsets and bubbles in order to aid both new and existing firms.

WILL BANKING BENEFIT YOUR COMMUNITY?

DOES YOUR COMMUNITY:

- ☐ HAVE A SIGNIFICANT NUMBER OF MEDIUM TO LARGE INDUSTRIAL FIRMS WITH FACILITIES OF VARYING AGES ?
- ☐ WANT TO PREVENT INDUSTRIAL FIRMS FROM CLOSING DOWN AND LEAVING THE AREA ?
- ☐ WISH TO ASSIST NEW FIRMS WANTING TO LOCATE IN THE AREA ?
- ☐ FEAR THAT EXISTING FIRMS ARE SELECTING ALTERNATIVE LOCATIONS FOR EXPANSION ?
- ☐ THINK IT MAY NOT ACHIEVE AMBIENT AIR QUALITY STANDARDS BY THE LEGISLATED DEADLINES ?
- ☐ WANT TO MODERNIZE THE INDUSTRIAL BASE BY ENCOURAGING MORE RAPID REPLACEMENT OF EXISTING FACILITIES ?

Advantages to Regulatory Agencies

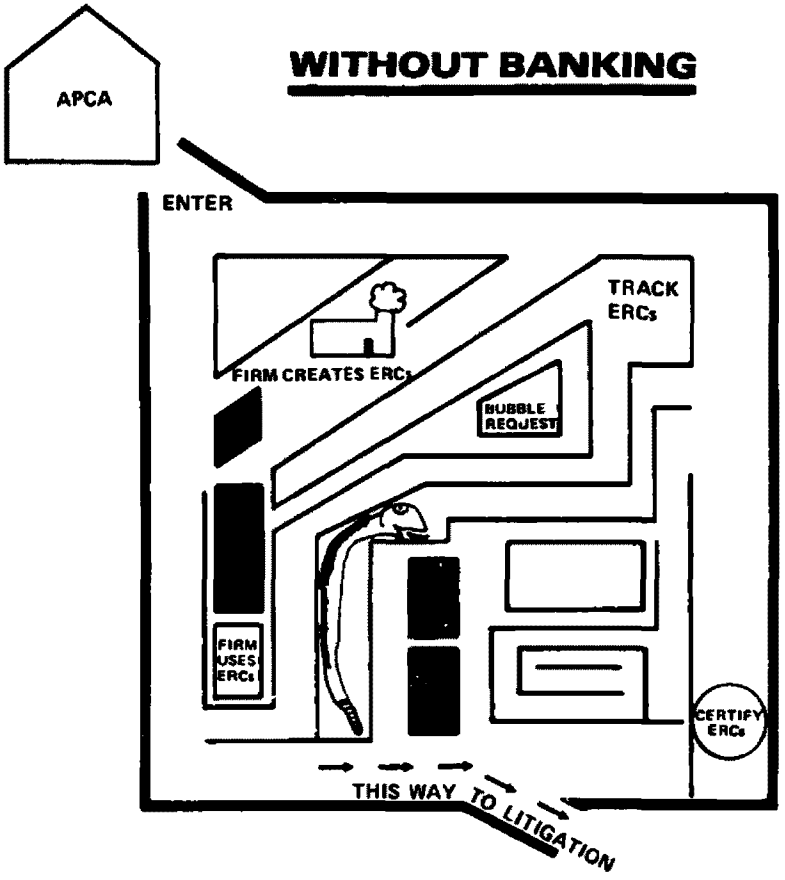
Banking Sets Standardized Procedures for Handling Offset and Bubble Requests

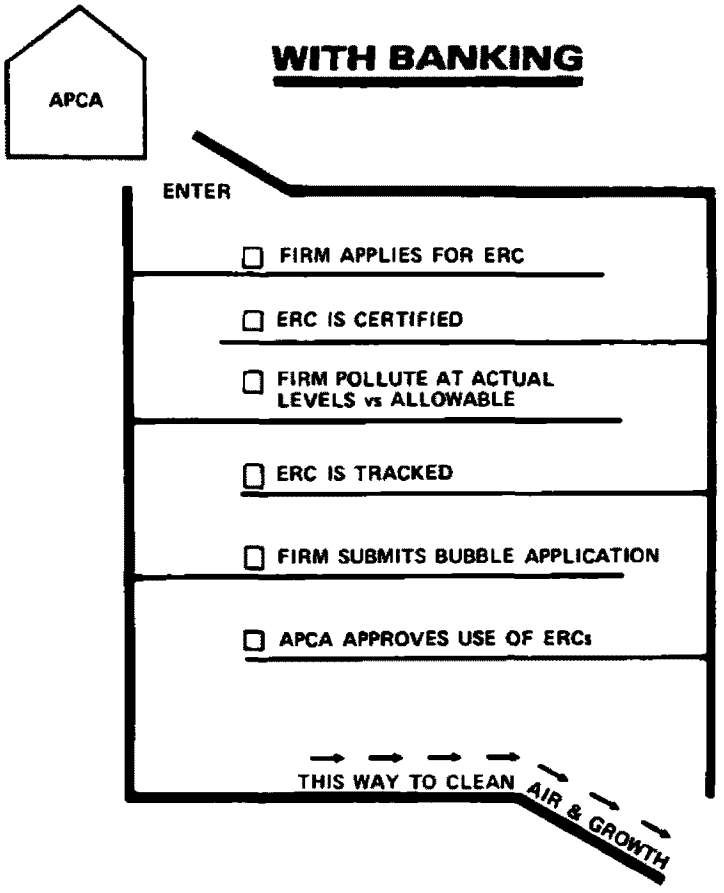
By establishing straightforward methodologies for tracking the creation, certification, and use of emission reduction credits, banking facilitates the work of regulatory agencies and decreases the potential for litigation.

Banking Encourages Sound Management Procedures

A banking program strengthens existing permitting procedures by requiring firms to commit themselves to emit at levels based on the actual level at which they are polluting, not at some theoretical allowable level that now exists in most states' permits.

ADVANTAGES TO REGULATORY AGENCIES





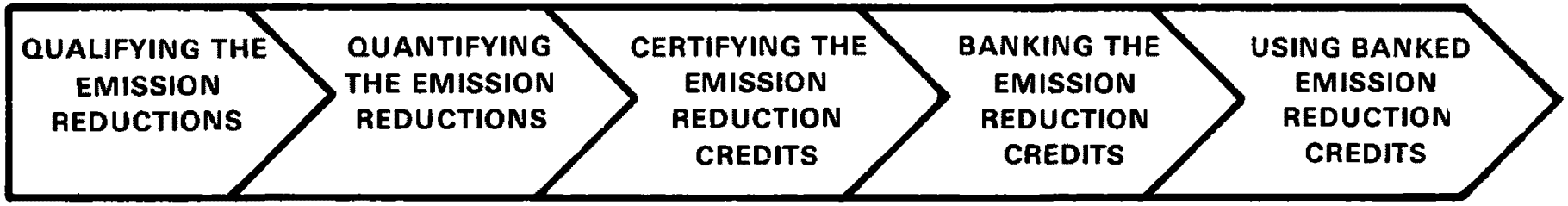
WHAT IS INVOLVED IN SETTING UP A BANKING PROGRAM?

A banking program requires that emission reduction credits be qualified, quantified, certified, banked, and used. These five steps produce a comprehensive system that regulates the use of emission reduction credits.

For each step, firms will have to make critical design choices. In selecting among the design options available for a banking program, communities must be careful to provide industry adequate certainty and incentives to participate in the program, without sacrificing progress toward meeting air quality goals.

In this section, we will review each step and describe some of the available design options. The proposed banking regulation and the banking manual will elaborate on these choices.

STEPS TO A BANKING SYSTEM



Qualifying the Emission Reductions

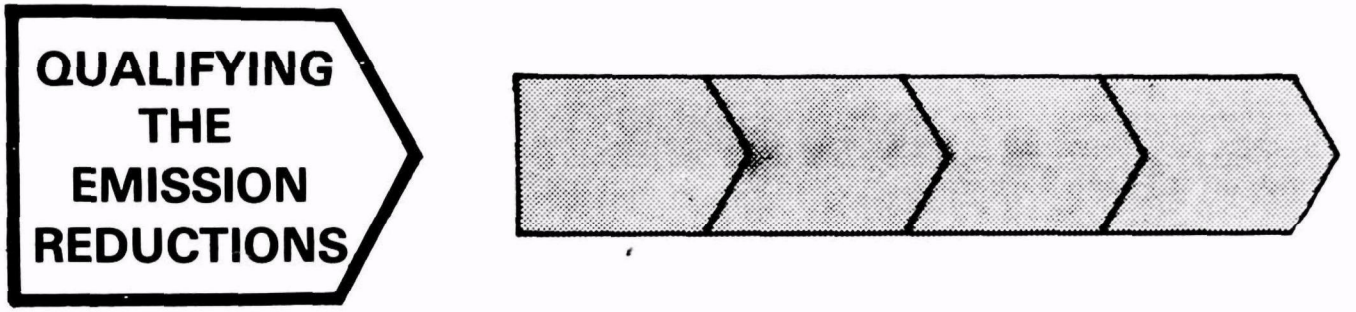
The first step in the banking process is for the air pollution control agency to determine what types of emission reductions qualify for credit. Potentially, any emission reduction made beyond the limit specified in an approved state implementation plan could qualify. In their banking rule, areas will establish criteria for acceptable emission reductions. Types of possible criteria include:

- size of source (e.g., only those with emissions above 10 tons/year),
- compliance status of source,
- method used to create emission reduction (e.g., new controls, shutdowns, or altering operating parameters or inputs), and
- sources for which additional control requirements are forthcoming.

Emission Reduction Must Be Real, Permanent, and Legally Enforceable in the SIP

To qualify for credit, emission reductions must be real. So-called paper reductions that have no relation to an incremental physical reduction are generally unacceptable. Emission reductions must also be permanent and not the result of a temporary cutback in output or a seasonal adjustment. Finally, they must be legally enforceable to ensure the integrity of the system and protect potential buyers of emission reduction credits.

THE FIRST COMPONENT



1. EMISSION REDUCTIONS MUST BE REAL, PERMANENT, AND LEGALLY ENFORCEABLE IN THE SIP.

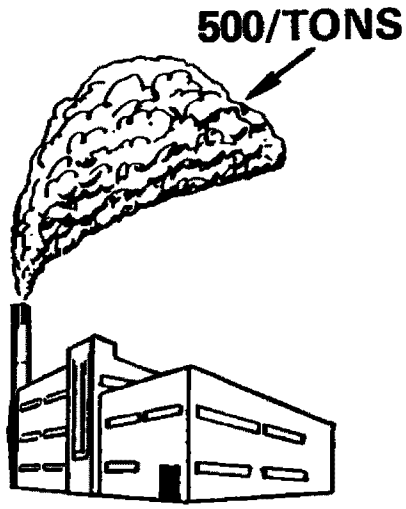
2. PAPER REDUCTIONS GENERALLY WILL NOT BE ELIGIBLE FOR CREDIT.

3. TO RECEIVE CREDIT, REDUCTIONS FROM SHUTDOWNS MUST NOT ALREADY BE COUNTED IN THE SIP.

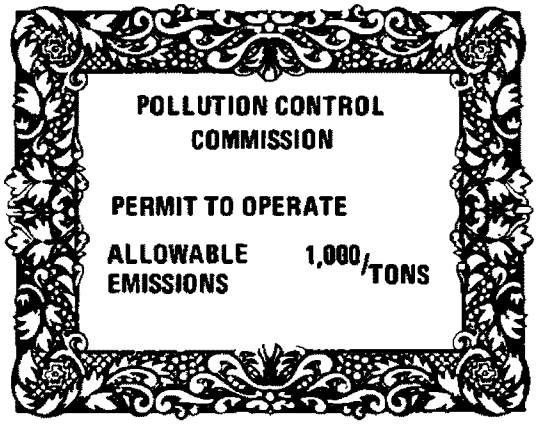
Paper Reductions Are Seldom Eligible for Credit

In most states, a source's permit allows it to emit at higher levels than it has historically operated. Firms may propose to change their permits to reflect their actual emissions instead of the allowable emissions level specified in their permit and demand credit for the difference. Because most attainment strategies are based on actual and not allowable levels of emissions, granting credit for those paper reductions will result in a violation of that area's demonstration of attainment. Only in those few areas where the SIP attainment strategy was based on all firms emitting at allowable levels may agencies decide to award credit for this type of emission reduction.

PAPER REDUCTIONS ARE SELDOM ELIGIBLE FOR CREDIT



AVERAGE ACTUAL EMISSIONS



PERMITTED ALLOWABLE EMISSIONS

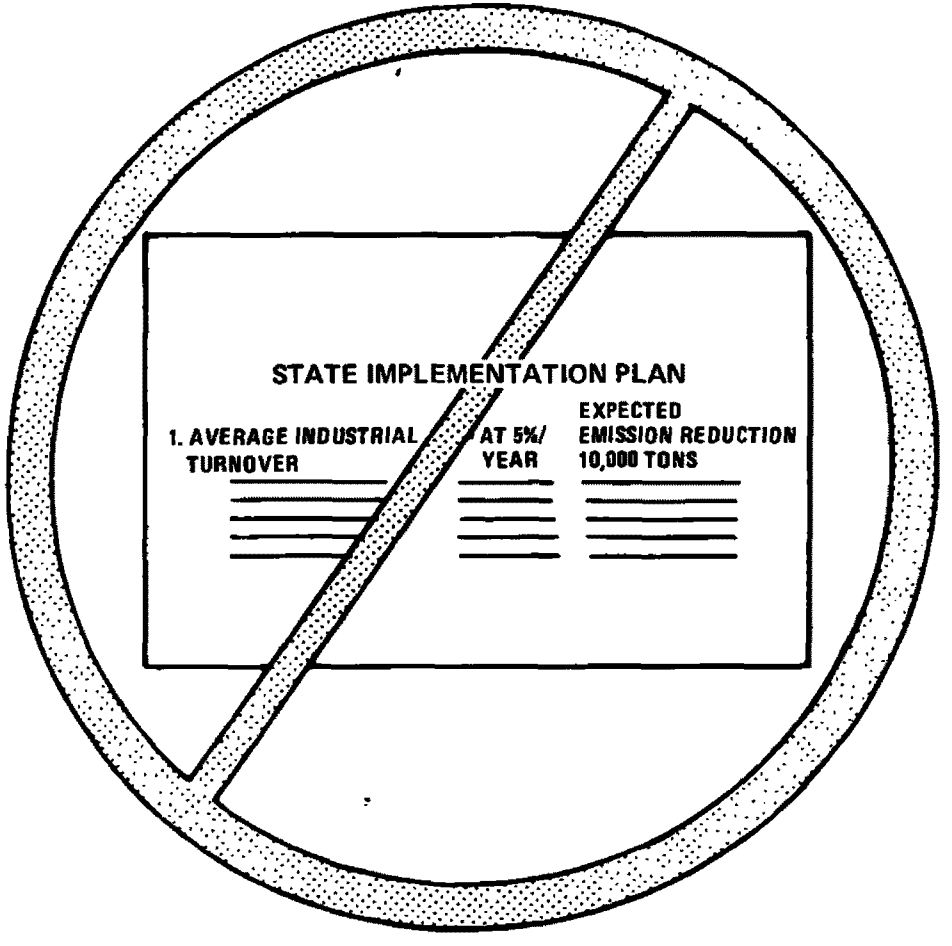
ALLOWABLE EMISSIONS	1,000
ACTUAL EMISSIONS	−500
PAPER REDUCTION	500

PAPER REDUCTION

Credit from Shutdowns Must Not Be Double Counted

Shutdowns are a likely source of emission reductions in most states. Before establishing a rule that allows firms to receive credit from shutdowns, agencies should affirm that credit from shutdowns has not already been accounted for in the SIP. For example, some demonstrations of attainment are designed to include an average industrial turnover. In these instances, to award credits for shutdowns would be double counting and may, therefore, jeopardize reasonable further progress toward attaining cleaner air.

CREDIT FROM SHUTDOWNS ARE ELIGIBLE ONLY IF THEY ARE NOT ALREADY IMPLICITLY COUNTED IN THE SIP



Quantifying the Emission Reduction

Before granting firms credit for emission reductions, control agencies must take two steps.

The Quantity of the Emission Reduction Must Be Verified

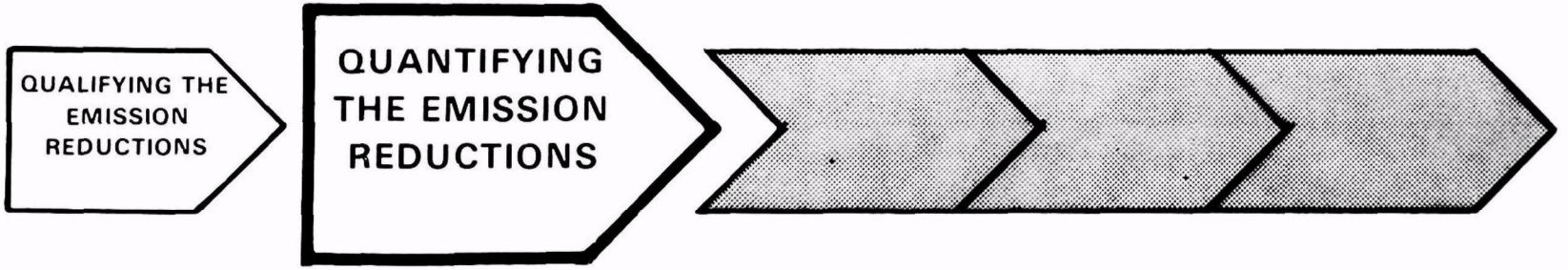
If verifying the emission reduction is impossible, it may not be banked. Air pollution control agencies must establish acceptable, consistent procedures to follow in calculating the emission reduction. They must define the initial baseline and confirm the magnitude and permanence of the reduction claimed. With clear guidance and procedures set forth, industry will be responsible for documenting reductions.

The Quantity of the Emission Reduction Must Be Made Legally Enforceable

To ensure enforceability, the control agency must

1. Change the operating permit. A firm is either operating under a permit or brought under a permit to participate in the banking program. The permit provides an administrative record that clearly identifies the source, quantity, and characteristics of emission reductions. The permit change has the effect of legally binding the source to emit at or below this new level.
2. Change the state implementation plan. Under provisions of the Clean Air Act, all major sources must comply with federally enforceable emission limits. This requirement is satisfied by the incorporation of source-specific emission limits or state operating permits in the state implementation plan issued under a SIP-approved banking program.

THE SECOND COMPONENT



1. THE QUANTITY OF THE EMISSION REDUCTION MUST BE VERIFIED

2. THE QUANTITY OF THE EMISSION REDUCTION MUST BE MADE LEGALLY ENFORCEABLE

Certifying the Emission Reductions

The third step of the banking system, certifying the emission reductions involves two steps: transforming the emission reductions into emission reduction credits and establishing a central registry to track the use and sale of these credits.

The Emission Reductions Must Be Transformed Into Emission Reduction Credits.

The distinction between an emission reduction and an emission reduction credit is critical. The emission reduction is a physical reduction in pollutant emissions. An emission reduction credit is an entitlement to a certain set of rights subject to ambient limitations that can be applied against future permit requirements for controlling pollution.

Control agencies will establish explicit rules for how much credit to award different types of emission reductions. Thus they can develop different "conversion ratios" that reflect valid public policy concerns and the uncertainty of methods of measurement. Alternatively, they can certify credits on a less than one-for-one basis (1) to accumulate publicly owned credits to use in accordance with public purposes or (2) to help stimulate reasonable further progress toward attaining cleaner air. Of course, a less than one-for-one conversion ratio would discourage the production of voluntary emission reductions.

Once the credit is defined by the air agency, the source will be issued an ERC certificate documenting its claim to this asset.

THE THIRD COMPONENT

1. THE EMISSION REDUCTION MUST BE TRANSFORMED INTO AN EMISSION REDUCTION CREDIT

2. A CENTRAL REGISTRY MUST BE ESTABLISHED TO TRACK THE USE AND SALE OF EMISSION REDUCTION CREDITS

The Emission Reduction Credit Legally Protects the Emission Reduction

Sources are always free under the law to control their emissions more than required. However, no legal status is attached to those reductions, and firms are not entitled to use the reduction, as its use may violate the SIP. When reductions are certified and converted into emission reduction credits, sources are legally bound to reduce their emissions. In exchange, sources receive an intangible though valuable asset--ERCs

While valuable, an ERC is not a "right to pollute." It entitles the owner to certain administrative privileges but does not circumvent the requirements for obtaining a valid emission permit for using the public air.

SPECIMEN CERTIFICATE OF EMISSION REDUCTION CREDIT

EMISSION REDUCTION CERTIFICATE # X X X X

LEGAL DESCRIPTION _____ CLASS TYPE I

POLLUTANT

- TYPE _____
- CHEMICAL ANALYSIS _____
- SIZE _____

EMISSIONS

- AMOUNT _____
- LOCATION OF RELEASE _____
  - LONGITUDE _____
  - LATITUDE _____
  - HEIGHT _____
- GAS FLOW _____

EQUIPMENT

- ADDED TO PRODUCE REDUCTION ☐
- CHANGE IN PROCESS ☐

LIMITATIONS USE _____

OWNERSHIP TRANSFER RECORDING

☐ ☐ ☐

A Central Register for Emission Reduction Credits Must Be Established

A central registry is necessary to track the use and sale of emission reduction credits. The registry should include a log of credits, cumulative tallies by pollutant, and cumulative tallies by owner and should be available for public use. Without such a registry, firms could sell the credits more than once, resulting in lawsuits and environmental degradation.

EMISSION REDUCTION CREDIT REGISTERS

ALLOW AIR POLLUTION CONTROL AGENCIES TO TRACK AND ACCOUNT FOR THE CERTIFICATION, BANKING, AND USE OF ERCs

Part 1: ERC Log

ERC REGISTRY LOG

80-1 CERTIFICATE NO. 80-1
ISSUED TO (OWNER)
SOURCE LOCATION (ADDRESS)
FOR (AMOUNT)
SOURCE CLASS
PERMIT REF.

80-2 CERTIFICATE NO. 80-2
ISSUED TO (OWNER)
SOURCE LOCATION (ADDRESS)
FOR (AMOUNT)
OF (POLLUTANT)
SOURCE CLASS
PERMIT REF.
CERTIFICATE REF.

Part 2: Banked ERCs By Pollutant

ERC REGISTRY:(POLLUTANT)

ENTRY NO.	AMOUNT	TOTAL
80 - 1	+1000 TONS	1000 TONS
80 - 9	+2200 TONS	3200 TONS
80 - 10	+520 TONS	3720 TONS
80 - 15	-900 TONS	2820 TONS
81 - 2	+300 TONS	3120 TONS
81 - 11	-520 TONS	2600 TONS

Part 3: Banked ERCs By Owner

ERC REGISTRY:(OWNER)

ENTRY NO.	POLLUTANT	AMOUNT
80 - 1	VOC	+1000 TONS
80 - 2	TSP	+817 TONS
80 - 10	VOC	+520 TONS
81 - 11	VOC	-520 TONS

Banking the Emission Reduction Credits

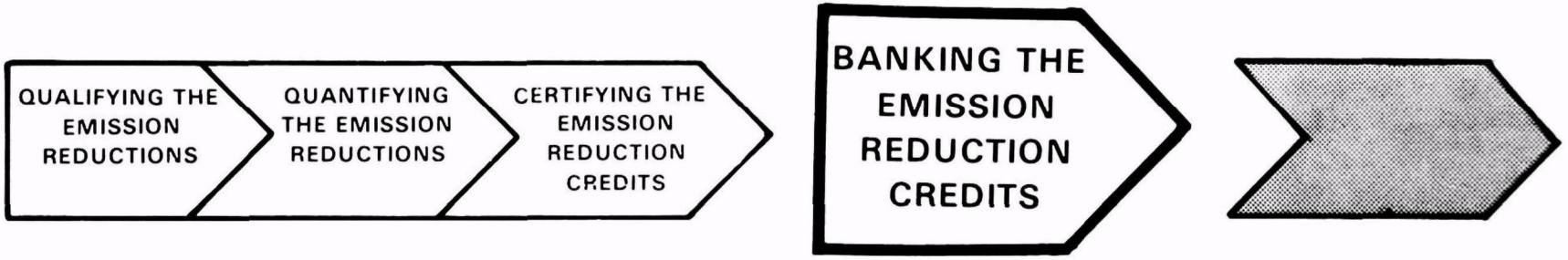
The fourth step of the banking system is the "banking" or storage phase. The emission reduction credits are banked until they are used -- that is, until they are converted into physical pollution allowances as part of bubble or new-source permits, at which time the credits no longer exist.

A Policy Must Be Established For Treating ERCs if the SIP Changes

One of the biggest concerns about banking is whether the emission reduction credits will be confiscated to correct a deficient attainment strategy in the state implementation plan.

There are various options short of confiscation, but it is important to underscore that emission reduction credits represent a right to use a set portion of air under prescribed conditions, not a permanent right to pollute. Thus, a banking rule must clearly state that the creation or use of ERCs cannot impede an area's efforts to reach attainment. The rule must include provisions specifying what actions affecting ERCs will be taken should additional controls be required to reach attainment.

THE FOURTH COMPONENT

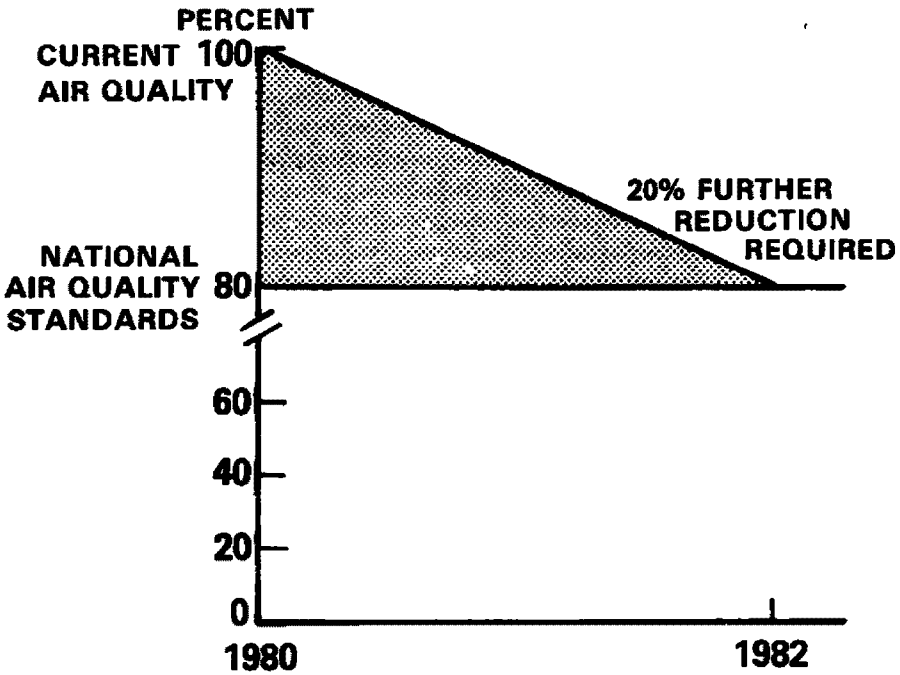


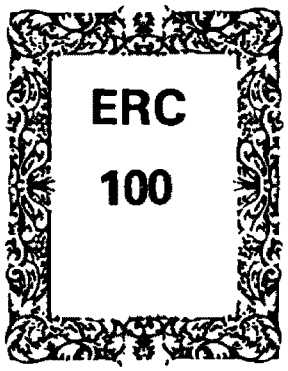
1. A POLICY MUST BE ESTABLISHED FOR TREATING ERCs IF THE SIP CHANGES

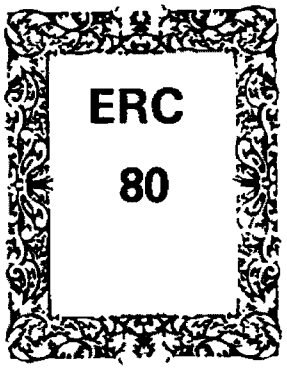
There are four options for treatment of emission reduction credits if the state SIP changes:

1. Forfeit the credits. Because emission reduction credits are not permanent rights to pollute, and because the public health must be protected, forfeiture is legally acceptable. However, few firms would voluntarily bank under these conditions.
2. Selective forfeiture. The state may issue regulations that require firms to implement a particular control measure which previously had been used to produce ERCs. Any firms that still had an account of ERCs that were produced from such measures could be required to cede those ERCs to the state as part of RFP. If a state does choose to lay claim to emission reductions that previously were unknown to the state and were only revealed due to the initiative of firms, firms will be reluctant to experiment with new control stategies.
3. Place a moratorium on the credits. For example, San Francisco's banking rule calls for a moratorium on the creation of emission reduction credits if reasonable further progress toward compliance with national air standards is jeopardized.
4. Discount the credits. A final option is to discount the emission reduction credits by the percentage needed to achieve attainment. For example, if a pollution control agency had to reduce emissions by 20 percent to reach ambient standards, then the tonnage value of the credits would be reduced by 20 percent. The Puget Sound Banking Program selected this strategy, which provides for equitable treatment of banked emission reductions and emissions still part of the inventory.

DISCOUNT ERCs IN PROPORTION TO THE NEEDED IMPROVEMENT IN AIR QUALITY







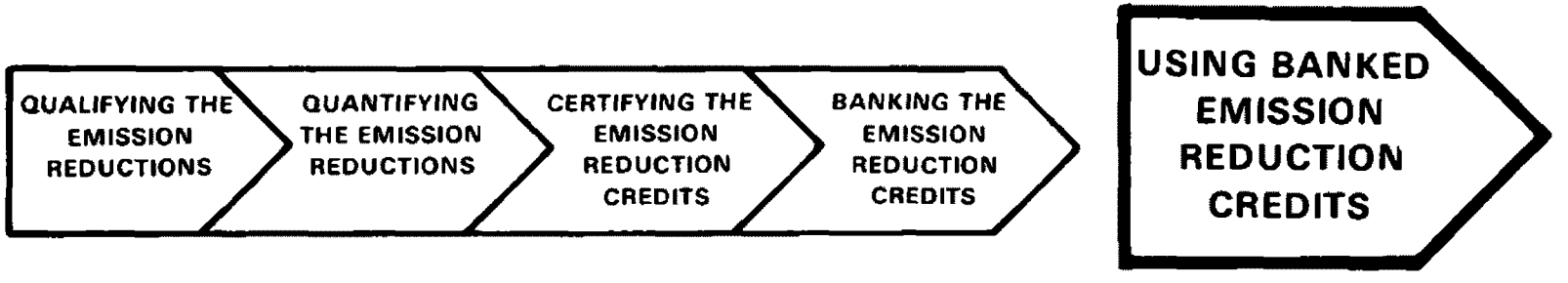
NORMAL VALUE OF ERCs IS REDUCED BY 20%

Using Banked Emission Reduction Credits

The fifth step in the banking system is using the ERCs. To permit the use of these credits in offsets, bubbles, or PSD applications, the air agency must:

1. review the proposed use to ensure it will not deteriorate the ambient air,
2. apply the credit to the permit to bind the source to the new emissions level,
3. alter the state implementation plan to make the reduction federally enforceable, and
4. delete the credit from the registry after it has been used.

THE FIFTH COMPONENT



HOW CAN TRADING ENHANCE THE BENEFITS OF BANKING?

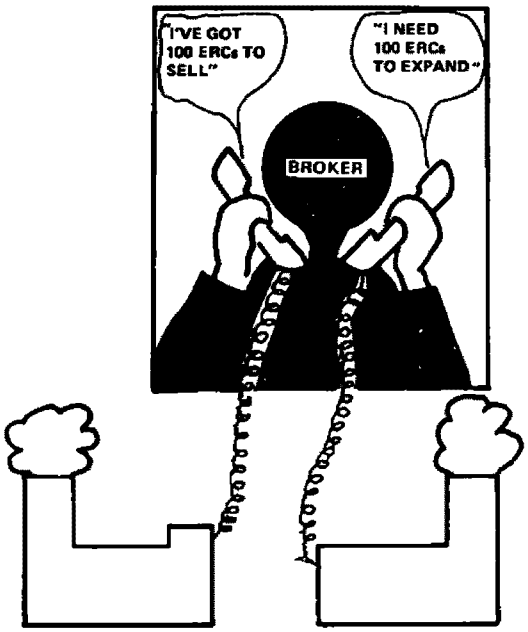
Areas may add a trading component to their banking system to reduce the costs of bringing buyers and sellers of ERCs together. A formal trading system establishes a definite and inexpensive means of arranging sales of emission reduction credits.

There are several alternative trading mechanisms:

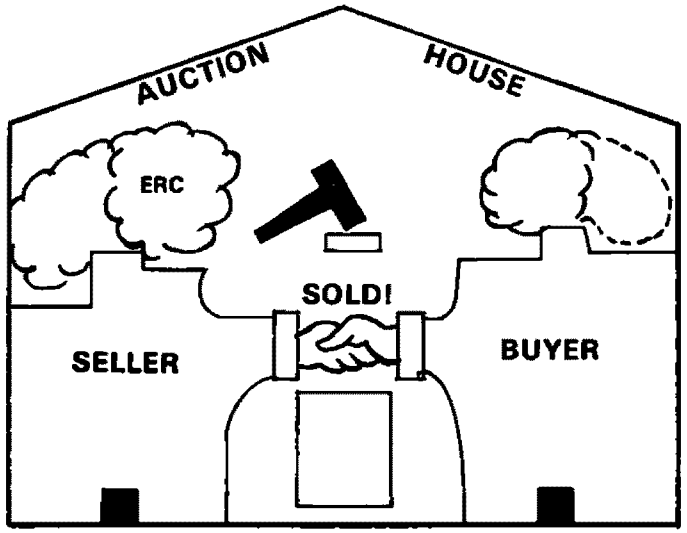
- a private trading system, in which a specific firm, either on its own or through a broker, seeks out and trades with another specific firm. Government involvement in this system is generally quite limited, apart from providing information and possibly acting as a broker.
- a public auction system, in which credits are sold periodically at auctions. Some organization is given the responsibility of accepting credits for sale, checking the eligibility of participants in the auction process, and conducting the auction.
- a central trading system, in which the Central Trading Association is solely responsible for buying and reselling emission reduction credits. This organization is responsible for negotiating purchase prices and setting sales prices, and will develop and maintain an inventory of emission reduction credits.

THREE ALTERNATIVE EMISSION REDUCTION TRADING MECHANISMS

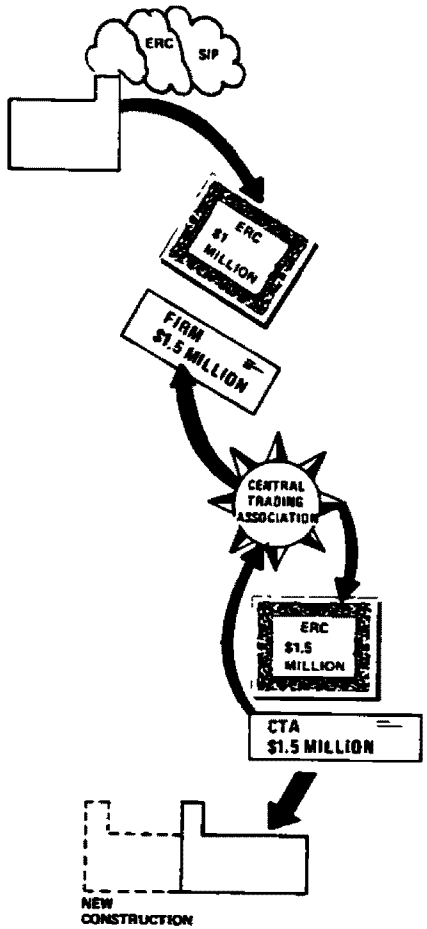
PRIVATE TRADING WITH BROKER



PUBLIC AUCTION



CENTRAL TRADING



Advantages of Markets in Emission Reduction Credits

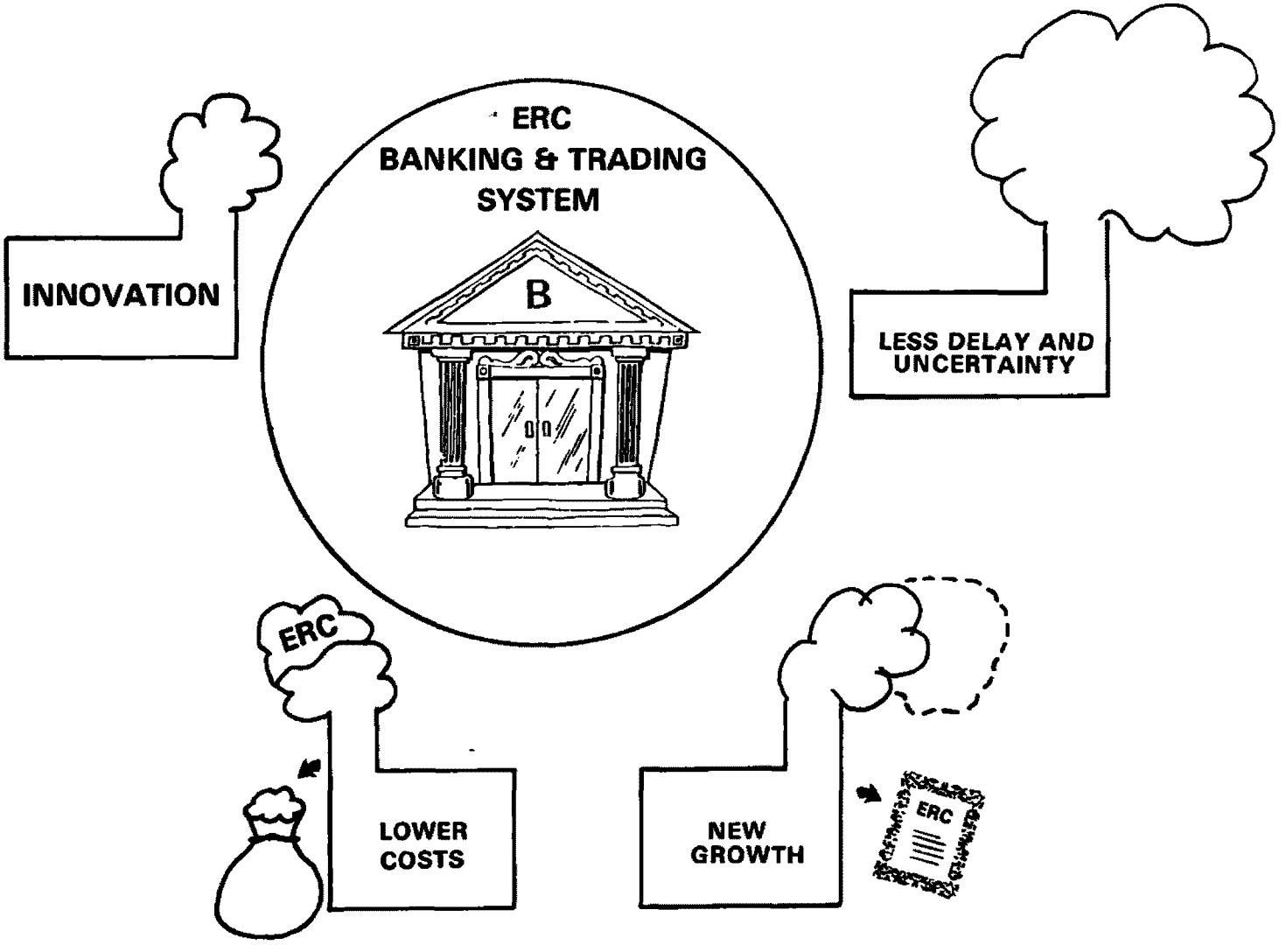
Trading gives firms a cost-efficient means of satisfying emission control requirements. By allowing firms to compare their internal control costs with the cost of purchasing emission reductions from other firms, the trading system lets them use the least costly means of achieving the necessary control.

Trading gives firms a mechanism for making a profit from creating emission reductions credits. A trading system supplies firms with a vehicle for selling ERCs. With trading a firm has the option to reduce emissions beyond the required amount and recoup control costs by selling the surplus ERCs. The trading system gives the firm a clear means for selling its credits rather than having to rely on the very costly process of independently finding another source that needs them.

Trading provides firms with a financial incentive for innovation. With a ready market established for ERCs, firms will find it in their interest to invest in innovative technology to create ERCs.

Trading can encourage replacement of unprofitable or marginal sources. In the absence of trading, an owner of a marginal or unprofitable source might be reluctant to close the source if there were no party immediately interested in purchasing the ERCs that would result from the shutdown. A formal trading system will provide either an immediate buyer or a mechanism to ease the burden of locating a buyer.

ADVANTAGES OF MARKETS IN EMISSION REDUCTION CREDITS



WHAT IS THE STATUS OF BANKING?

Areas That Have Adopted Banking Systems

Louisville (Kentucky), San Francisco (California), and the Puget Sound (Washington) lead the country in incorporating banking systems in their air pollution control programs.

Louisville, Kentucky

The Jefferson County Air Pollution Control District, which encompasses Louisville, adopted regulations on June 13, 1979, that established the first full-fledged banking system in the country. At this time, 20 deposits have been recorded in the district's banking ledger. The deposits have been made by six companies, which include B.F. Goodrich, General Electric, and the Ford Motor Company. Six withdrawals and one external offset trade have occurred to date.

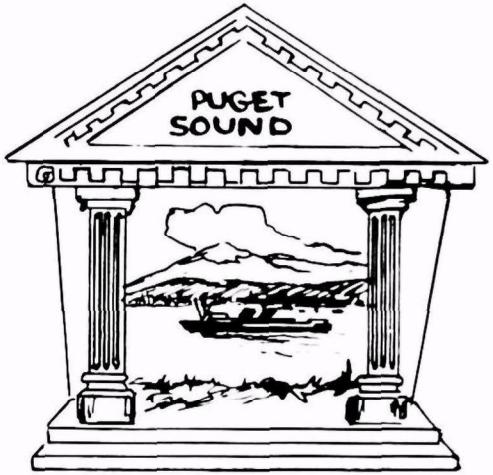
San Francisco, California

The Bay Area's banking system officially began operating in January 1980. Its development was the result of joint efforts by the area's air pollution control agency and interested industrial representatives. A series of workshops have been held to educate local business representatives on how the system functions and the first application for banking is currently being evaluated.

Puget Sound, Washington

Puget Sound adopted its banking rule on June 12, 1980, and its implementation is under way. Background materials explaining the features of the new rule and the rationale for why a firm should be interested in banking have been sent to industries and interested parties in the area. In the first months of operation, over 90 applications to bank were received.

AREAS THAT HAVE ADOPTED BANKING SYSTEMS

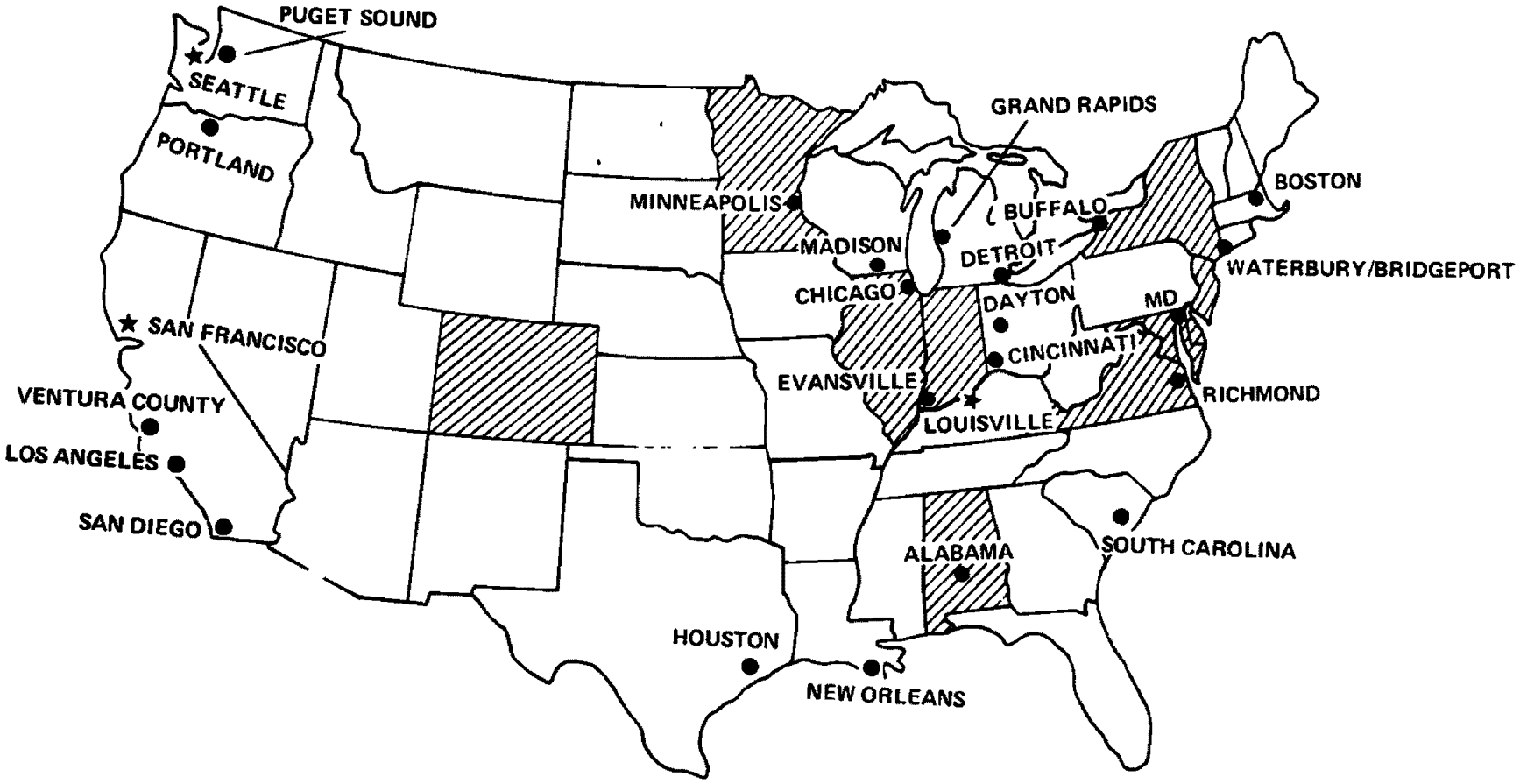


Areas Interested in Banking and Trading

During August 1980, EPA's Emission Reduction Banking and Trading Team reviewed ongoing activities in 24 areas that had expressed interest in banking. Among the team's findings are:

- in many areas, even in those without comprehensive rules, firms want to receive credit for their surplus emission reductions and are sending letters to their state air pollution control agencies in an effort to be awarded such credit.
- firms are finding the process of receiving credit very workable. Several have added to their pool of ERCs more than once.
- areas with only summary banking provisions in their present SIPs are devoting resources to developing comprehensive rules. These areas include COLORADO, NEW JERSEY, WISCONSIN, ALABAMA, and Ventura County (CALIFORNIA).
- areas whose SIPs do not contain provisions on banking also have expressed interest in developing comprehensive banking rules. These areas include: Boston, Portland, San Diego, Cincinnati, Dayton, Toledo, South Coast District (CALIFORNIA), MICHIGAN, VIRGINIA, and NEW YORK.

CITIES, REGIONS, AND STATES THAT HAVE EXPRESSED INTEREST IN BANKING



★ BANKING SYSTEMS ESTABLISHED

HOW CAN I START A BANKING PROGRAM?

Establishing a banking system is relatively simple and straightforward. You should first determine how banking can meet your firm's or community's specific needs. Then present your ideas to relevant groups in your area and enlist their support. You will want to include pollution control agencies, economic development groups, industry representatives, regional planning organizations, and environmentalists.

Banking offers communities and industry an attractive opportunity to reduce the costs of achieving our national environmental goals. By incorporating the banking program into ongoing regulatory efforts, these benefits can be realized. Members of the banking project have developed a technical assistance program to support the establishment of banking systems. Complete the order blank on the opposite page to receive more information.

EMISSION REDUCTION BANKING & TRADING ORDER BLANK

_____ Yes, I want to be on your mailing list

Name _____

Address _____

Phone _____ Occupation _____

_____ Please send me the following materials:

_____ AA001 Annotated Bibliography

_____ BA120 Economic Advantages Paper

_____ BA200 Banking and Trading Concept Paper

_____ BA600 Issues Paper on Shutdowns

_____ BA300 Model Banking Rule

_____ BA250 An Introduction to Emission Reduction Trading

_____ BG300 ERC Trading: Public Auction Design Manual

_____ BG400 ERC Trading: Central Trading Design Manual

_____ AH100 ERC Financing: Public Sources of Funding

_____ AH110 ERC Financing: Private Sources of Funding

Send to:

Emission Reduction Banking & Trading Project
U.S. Environmental Protection Agency (PM-220)
401 M Street, S.W.
Washington, D.C. 20460
(202) 287-0731

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