

Emission Market Opportunities for Federal Energy Projects

Certain federal agency energy efficiency and renewable energy (EERE) projects may be able to take financial advantage of existing and emerging emissions markets, improving project cost effectiveness. Federal agencies are encouraged to consider emissions market opportunities when developing new energy projects.

The steps described below will assist federal agencies in incorporating emissions market opportunities in their energy projects. The Federal Energy Management Program (FEMP) can provide assistance throughout the process.

Step 1 – Evaluate potential emissions market opportunities

There are two main types of emissions markets in the United States: emission reduction credits (ERCs), and cap and trade. (See reverse). Emissions market opportunities should be explored at the beginning of the project process by the appropriate party: agency site staff, energy service company (ESCO), and/or utility. Factors to consider in this evaluation include local emissions market opportunities, estimated emissions value resulting from the project, and market price volatility. Projects that reduce on-site emissions have been the best federal-sector opportunities identified to date. It may be advisable to hire a consultant for complicated markets and/or where significant revenues are likely. Proceed to Step 2a only if the emissions market opportunity is deemed favorable.

Step 2a – Incorporate potential emissions costs/revenues into project proposals and cost effectiveness calculations.

If a project is utilizing the Utility Energy Service Contracts (UESC) or Energy Savings Performance Contracts (ESPC) contracting vehicles, the potential emissions reductions and revenues should be incorporated into their initial proposal. The feasibility study or Detailed Energy Survey, as well as the final proposal, should address:

- Potential revenues, based on assessment of market prices.
- Transaction costs (application preparation, baseline determination, measurement and verification, etc.).

Step 2b – Financial benefit incorporated into contract negotiations

An important consideration is how the agency will retain the financial benefit and how to deal with the risk of potential

emissions price fluctuations. For UESC and ESPC projects, these issues must be addressed in the contract. See Step 4 for more information.

Step 3 – Apply for emissions allowances

An application for emissions allowances can be submitted after energy project final acceptance. Rules and application requirements will vary depending on the emissions market. Measurement and verification of actual emissions reductions will likely be required. Aggregation with other sites may be necessary to meet minimum emissions reduction requirements and/or due to emissions broker minimum trade requirements.

Step 4 – Sell emissions allowances and receive the financial benefit

Federal agencies are generally required to return any revenues to the Treasury. However, they may want to determine a method to retain emissions revenues, giving the site an incentive to complete the administrative work required. A variety of methods can be considered:

- An agency-specific authority can be used to retain revenues. For example, a DOD pilot program — initially authorized by the FY98 National Defense Authorization Act, Pub. L. 105-85 — allowed DOD sites to retain emissions revenues, until it expired in September 2003.
- A private party such as the building owner, utility, or ESCO could apply for, and sell, the allowances on behalf of the federal site and then pass on the savings through an existing contractual relationship (credit on a utility bill, UESC/ESPC contract, etc). The private party will likely retain a small fee for the service. The Naval Facilities Engineering Command-Southwest Division (SWDIV) Energy Team incorporated the ERC market value into their \$16 million UESC Cogeneration Upgrade project at the Naval Medical Center San Diego. The ERC value (estimated at \$1 million to \$1.5 million) was incorporated as part of the salvage value of the equipment removed. For more information, contact David B. Deiranieh at 619-532-3308, david.deiranieh@navy.mil.
- The emissions broker could use the emissions sale revenues to buy Renewable Energy Certificates on behalf of the site.
- The site could retain the emissions allowances/credits for use at other federal sites.

For more information

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Additional background

http://www.nrel.gov/environment/air_quality_ir.html

<http://www.nrel.gov/femp>

http://www.eere.energy.gov/femp/newsevents/fempfocus_article.cfm/news_id=7470

Cap-and-Trade Emissions Markets

Cap-and-trade programs set an emission cap, and then allocate a corresponding number of tradable emissions "allowances" to emission sources. Sources that reduce their emissions below their allocation can sell allowances to those sources that emit more than their allotment.

The primary current opportunity is the NOx Budget Trading Program that was established to address summer ozone pollution in the eastern United States.

Certain states have included energy efficiency and renewable energy set-aside provisions (see table), which will make some of these projects eligible for NOx allowances. The NOx allowance market price is currently about \$3,000/ton or 0.2¢/kWh.

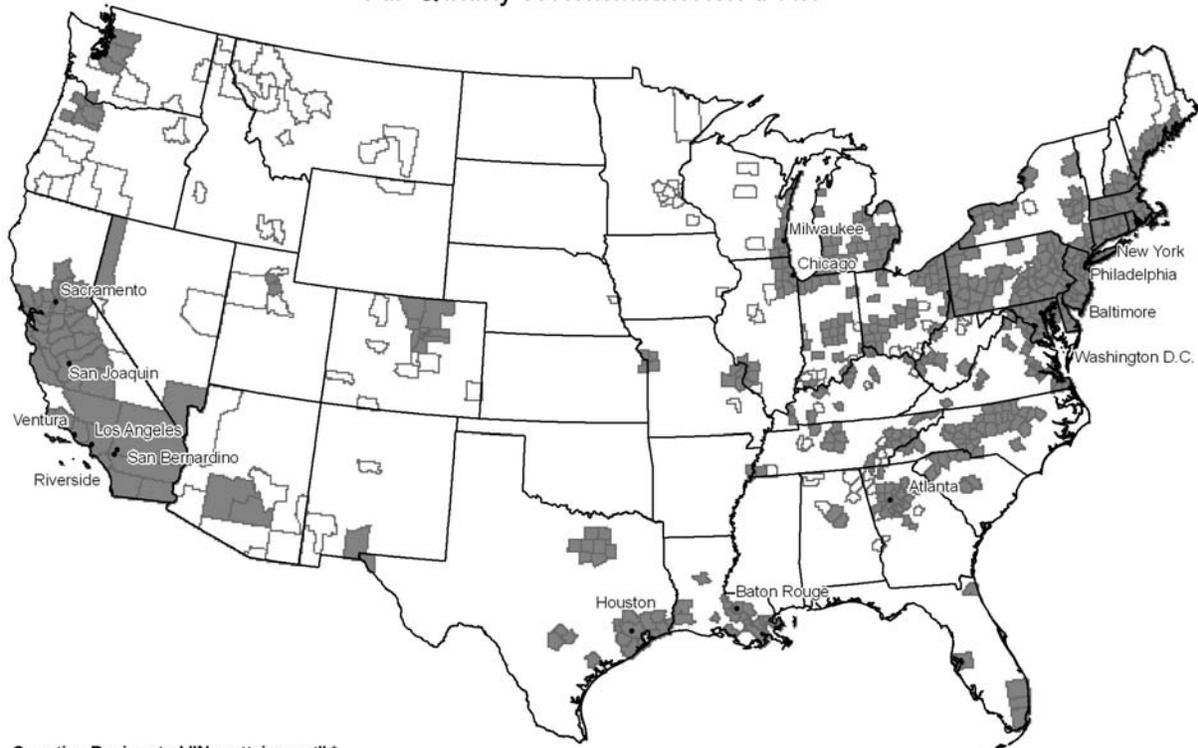
<http://www.epa.gov/airmarkets/fednox/index.html>

http://www.nrel.gov/environment/air_quality_ir_federal.html

<http://www.epa.gov/airmarkets/capandtrade/nox.pdf>

NOx EERE Set-Aside Programs		
State	Effective Year	Set-Aside Percentage
IN	2004	2
MA	2003	5
MD	2003	3
NH	1999 2010	8.5 12
NJ	2003	5
NY	2003	3
OH	2006	1

Air Quality Nonattainment Areas



Counties Designated "Nonattainment" *

- Ozone
- All other pollutants

* Source: EPA, Green Book 2004 <http://www.epa.gov/oar/oaqps/greenbk>



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Emission Reduction Credit Markets

The EPA uses six "criteria pollutants" as indicators of air quality, and has established for each of them a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards (NAAQS). Areas that exceed the NAAQS standards are designated "nonattainment areas" (see map above). There are emission reduction credit (ERC) programs for major new or expanding emissions sources in a limited number of these "nonattainment areas." These sources may be required to "offset" their projected new emissions, either internally or by procuring ERCs from sources that have eliminated or reduced emissions. ERC transactions are usually administered at the state or local levels, with each jurisdictional authority setting its own rules regarding issues such as project eligibility, application requirements, and inter-district trading. Federal agency staff will need to work with the local air quality authority to facilitate the process. Federal facilities with on-site generation air permits are the most likely candidates for participation. <http://www.epa.gov/oar/oaqps/greenbk/>

Sample State ERC Information for Texas and California

<http://www.tnrc.state.tx.us/permitting/airperm/banking/ercreg.htm>

<http://www.arb.ca.gov/capcoa/roster.htm>

<http://www.arb.ca.gov/nsr/erco/erco.htm>

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