Emerging environmental markets can make mine land reforestation an even more economically attractive reclamation option

Ecological assets are tradable credits that reflect the economic value that public or private sector stakeholders have assigned to an environmental "service." For example, a power company concerned about future carbon dioxide (CO_2) regulations may be willing to "lease" a forest's ability to remove carbon from the atmosphere, or a manufacturing company required to protect an endangered species may wish to purchase the forest's value as a habitat.

For those faced with the challenge of reclaiming abandoned mine lands (Title IV) or active mine lands (Title V), the emerging ecological asset markets may provide new economic incentives to reforest or pursue other environmentally sound reclamation techniques, such as stream and wetland restoration.

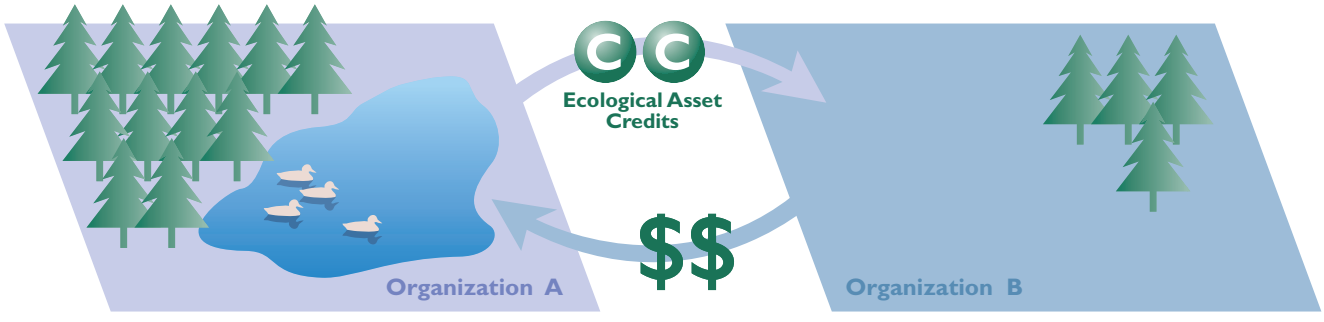
Ecological assets that can be created through the reclamation of mined lands include carbon sequestration credits, wetlands and stream restoration credits, watershed pollution reduction credits, endangered species habitat conservation credits, and potentially other types.

What are environmental markets?

The concept of applying markets to environmental protection emerged as an alterative to traditional "command and control" regulations. Over the past 30-40 years, command and control regulations have significantly improved environmental protection and clean up. However, many public and private sector experts believe that augmenting command and control rules with market-based approaches can improve the efficiency of environmental controls and accelerate environmental gains.

Environmental markets refer to the markets in which participating organizations and individuals buy and sell ecological assets. Typically, these ecological assets have been certified by one or more regulatory agencies, and they may be applied toward compliance with one or more environmental regulations.

Establishing multiple ecological assets (e.g., stored carbon in vegetation, water bodies, and rare or endangered species habitat) on reclaimed mine land can bring aesthetic value along with many other environmental, economic, and social benefits.



Environmental markets allow organizations to protect the environment in the most cost-effective manner. Graphic provided by EPRI.

How do environmental markets work?

One of the most effective market-based approaches to environmental control is the "cap and trade" concept. In this approach, regulators set a maximum limit (i.e., a "cap") for emissions of a particular pollutant in a given geographical area. This area can be local, regional, national, or even global—depending on the scope of the environmental challenge. Within the cap and trade zone, organizations with especially clean operations or those that establish mitigation projects designed to offset environmental impacts can register pollution or mitigation credits. Organizations holding these credits can then sell them to other organizations requiring extra help to achieve regulatory compliance.

What is the status of environmental markets today?

The cap and trade concept was incorporated into federal environmental policy through the passage of The Clean Air Amendments of 1990. Since then, successful trading systems have been established for sulfur dioxide and other air pollutants. These programs have enabled industry to achieve overall environmental goals at a lower cost than would have been possible under a traditional regulatory framework.

Today, a wide variety of organizations—including regulatory agencies, environmental organizations, industry groups, and brokerage firms—are investigating ways to apply the cap and trade concept to other environmental issues, creating a wide range of tradable environmental credits.

How can landowners and mine operators participate in ecological asset markets?

Many surface coal mines (particularly in the Appalachian region) were originally forests. By restoring mine lands to their original state or, in some cases, creating new ecological features—such as a wetland or species habitat that never existed before—landowners and mine operators can develop tradable ecological assets.

Office of Surface Mining / U.S. Department of Energy / National Energy Technology Laboratory.
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