

Agricultural Community Environmental Management Systems
Community XL Proposal

Submitted to the U.S. EPA

Jointly, By

The Institute for Environmental Research and Education, and
Henning, Metz, Hartford & Associates, Inc.

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Introduction

The Institute for Environmental Research and Education (IERE) is a 501(c)3 corporation whose mission is to support fact-based environmental decision-making. In support of that mission, IERE has four program areas: environmental management, environmental research, adult environmental education, and support to developing countries. IERE has offices in Iowa and in Washington State.

Henning, Metz, Hartford & Associates, Inc. (HMH) is a for-profit engineering firm located in Fargo, North Dakota, with extensive experience in designing, operating, and building agribusiness facilities, and in marketing agricultural products.

Although HMH and IERE are partnering for the purpose of this XL project, the two organizations have no long-term ties. In fact, HMH contacted IERE to request that the Institute act as a third-party environmental watchdog on their operations.

The scope of this Agricultural Community EMS XL project is the States of EPA Region VII: Missouri, Kansas, Nebraska and Iowa. The intent is to develop an infrastructure for community based oversight and regular disclosure of environmental performance by businesses located in agricultural areas.

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Summary of Project

Elements of the Project

This project involves the development of a community-based EMS, which is an ISO 14001-plus approach, linked to the permitting, building and operation of community-based livestock-processing plants. Both the environmental costs and the economic benefits will reside in the communities, and will be overseen by the communities, thus leading to sustainable agriculture systems.

The facility

HMH & Associates has designed environmentally oriented livestock processing facilities, and has marketed them to livestock producers associations. As part of their package, HMH & Associates provides management services in a fashion analogous to franchising. As of this writing, at least one of these organizations has made a commitment to move ahead in northern Missouri.

The projected facilities are approximately one-tenth the size of normal facilities, thus leading to more manageable environmental impacts. They are to be owned by farmer cooperatives, thus returning the profits on sales of the products to the farmers. Livestock is fed to the facilities on a just-in-time approach, thus eliminating centralized feedlots, and the environmental impacts associated with transport of livestock. Many of the elements of the facility have been designed to be more environmentally friendly than normal operations. For example, animal wastes will be composted rather than disposed of in the local POTW. Water consumption per animal will be less than in standard facilities. Steam boilers will run on natural gas or propane rather than on coal or petroleum, thus greatly reducing the potential for air emissions.

The Community EMS Program

Most important of all, the facility will be adhering to an ISO 14001-plus approach which includes not only conformance to the ISO standard (which includes a commitment of compliance and to continuous improvement), but also requires regular disclosure of performance, oversight by trained community verifiers, and a life-cycle approach to environmental management.

The community based EMS is a three-phase certification of environmental performance:

- Phase I or Basic: conformance to ISO 14000, compliance to all applicable regulations and annual performance disclosure with verification
- Phase II or Mature: all the above, plus performance based on life-cycle indicators and a vendor management system
- Phase III or Leadership: As above, with a full LCA (Life Cycle Assessment) that compares the facility performance to the industry average.

Community Environmental Councils are trained by IERE to understand the elements of ISO 14000, the three-phase community EMS certification and the elements of Life Cycle Assessment. Companies participating in the program get a leveled certification through IERE, and their annual environmental performance record and level of certification are available through the internet. Further, IERE coordinates the various community councils, sharing best practices among them.

Superior Environmental Performance and Pollution Prevention

Currently, we anticipate the following elements of superior environmental performance to be inherent to such facilities:

- Elimination of feed lots and the concomitant water issues
- Elimination of long-distance transport of animals, with the impacts from rail and truck transport (fossil fuel consumption, emissions of VOC's NO_x, SO_x, CO₂, particulate matter and biohazards)
- Reduction of emissions from boilers through the use of natural gas or propane fuel

The table below points out some of the benefits we expect to obtain. Note that these are only preliminary estimates. The actual numbers will depend on the specific design details of the various plants. Standard plant performance noted below is based on the experience of HMM engineers in the design and operation of meat packing facilities. The baseline against which actual performance will be measured should be developed during the course of the XL negotiations, and ideally should reflect the US average performance for meat packing facilities.

Environmental Aspect	Standard Plant Performance	Projected Community Plant Performance
Water Consumption	110-150 gal/hog	65 gal/hog
Distance animals travel to slaughter	100-500 miles	Less than 60 miles
Energy Capacity Required	1-2 kW/head	0.5 kW/head
Time animal kept onsite	days	12 hours

Over the long term, we anticipate other superior environmental performance to be derived from the community EMS approach. While all of these are speculative, we anticipate evaluating the potential for any and all of the following, as facilities move through the three phases of community-based certification.

- Reduction or elimination of the use of pesticides and antibiotics
- Elimination of open lagoons on farms
- More environmentally efficient transport of meat products to markets
- The use of solar, wind and geothermal power sources
- Tight cycling of nutrients through composting or other means to reduce the requirement for imported fertilizer
- Return of marginal agricultural lands to natural habitat

Flexibility

In return for the designed-in improved performance as well as a commitment to continued performance, IERE and HMM & Associates are requesting permitting flexibility in the form of expedited, “cookie cutter” permitting of facilities all across Region VII. Specifically, we would

like to see a permitting process that can be completed within three months from submittal to final permitting. To accomplish that we wish to work with EPA and the States to identify environmental and engineering thresholds for permitting so that all potential facilities designs are within safe margins for environmental impacts and compliance issues. Alternatively, we wish to identify the measurable elements of sensitive environments that would indicate an inappropriate site for such facilities.

IERE and HMM are not requesting that any element of permitting or compliance assurance be eliminated, especially including any requirements for public participation in permitting particular facilities. The states have a strong role to play as the source of permits for the proposed facilities, and EPA's role will be to facilitate the states working together to develop their individual permitting processes to accomplish the goal of full permitting of facilities in the three month time interval. While EPA is not the permitting body, its oversight of all environmental permitting in the region, through the delegation process, gives it the authority and status to influence the relevant permitting bodies towards expediting permitting through the XL process.

The outcome of the project should be a single package or a set of state specific packages for farming cooperatives (typically called producer organizations) wishing to install a community based meat processing plant. The package should contain the criteria for permitting such a facility (both engineering and environmental criteria). In addition, the project should provide state-specific permitting packages for the relevant regulatory bodies, with check lists and model permits.

There are important financial effects of providing expedited permitting. If we assume a cost of capital of 6 percent, then reducing permitting from 18 months to three months saves the investors over \$500,000 for each facility. No where in the economy is the issue of the time value of money more important than in the agricultural sector. Farmers cannot afford to pay the equivalent of half a million dollars when they are suffering as they are now.

Note however, that the development of an expedited permitting package can be a learning experience for all the regulatory bodies involved in the XL Project. The lessons learned can be applied in other sectors, and can contribute materially to the economic health of the region.

Stakeholder Involvement

This project goes beyond standard XL stakeholder models to develop a stakeholder infrastructure, which continues to exist in the affected communities. Although this project is oriented towards livestock processing plants, the community boards will have the resources locally, and within IERE, to provide oversight and certification of performance for all other businesses interested in participating in this ISO 14000-plus program.

Of course, during the XL negotiation process we will be soliciting the input of non-community stakeholders, such as national NGO's, through direct contact and appropriate publication.

Transferability

This project is oriented towards permitting in Region VII. We anticipate that the first site will be put in place in northern Missouri, but that other facilities will soon be put in place in the other states of the region. Such a community approach to environmental management can be applied in any community, not only in the USA, but also in other countries. In fact, through a loose affiliation of environmental NGO's involved in the ISO 14000 process, just such an approach as already been taken in communities in Michigan, in Russia and in China.

Feasibility

The most important elements necessary to make this project go are already in place: commitment by a farmers cooperative to accept the community based EMS in investing in a livestock processing facility, and the fact that no substantive flexibility, only administrative flexibility is requested. The major driver for the feasibility of the project is that farmers cooperatives retain a much larger share of the profits of their labors, and thus can afford to invest in more environmentally preferable practices. Further, the farmers have a financial incentive to be more environmentally friendly, because having their product certified as being an environmentally preferable provides a marketing advantage both nationally and internationally.

As noted above, this program depends on community environmental councils, which are free to, and encouraged to bring other companies into this community EMS approach to monitoring environmental performance.

Evaluation, Monitoring and Accountability

The permitting approach requested does not waive any regulatory requirement, but only requests administrative relief. The community environmental council will have the major oversight of the facilities performance in the long term. This oversight will rely on annual disclosure from the participating facilities, and on semi-annual review by trained community verifiers.

Any compliance and enforcement can take place using the formats already in place in the relevant statutes and regulations. The existence of a substantive non-compliance will result in the de-certification of the facility from the community based EMS system. We therefore wish the relevant regulatory bodies to work closely with local EMS councils.

Shifting of Risk

Risk will not shift but will decrease under this program. Many of the elements of the design of these facilities have been put in place for the protection of workers and the food supply. For example, all animals are washed before slaughter, and there is a reverse air flow within the facility to assure that air flows from cleaner towards the dirtier portions of the facility. This leads

to greater food safety, and minimizes biohazards for workers. Slow line speeds lead to 100% inspection of carcasses, and also minimize the potential for repetitive motion injuries among workers.

Schedule

We would like to hold tightly to the lower end of the Office of Reinvention's schedule for the development of XL projects, as noted in the table below, derived from the Agency's proposed schedule. This document falls into the second phase of the project. We hope to have the XL project completed in 180 days, thus appearing before the planting season in the Midwest.

Table 1 Project Schedule

Phase	Projected Date	# of Days	Description
Pre-Proposal	Complete	20-30	Informal discussions between EPA, States, and potential sponsors
Proposal Development	Complete	50-75	EPA and the relevant States help the sponsor develop proposal concepts into complete proposal package
EPA & State Proposal Review	30 September-10 November 1999	40-60	States and EPA decide whether the project is acceptable for developing a Final Project Agreement (FPA).
Final Project Agreement Development Federal Register Notice to solicit comments, with the appropriate legal mechanism, where necessary (such as a permit or site specific rule)	10 November-10 February	90-180	EPA, the sponsor, the State(s), and the stakeholders work to develop the Final Project Agreement (FPA).
Total:		200-345	