

Managing the Implementation of the Oberlin College Environmental Policy

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Introduction

In August 2003 the Environmental Policy Advisory Committee (EPAC) completed work on the *Oberlin College Environmental Policy* (EP) after 2 years of study and discussion. EPAC consisted of 15 members, students, faculty, staff, alumni and the Oberlin community. A half year later the Oberlin College Board of Trustees approved the EP, but they made no financial provision for its implementation. Therefore, at this point in June 2005, the comprehensive policy remains a piece of paper.

The **Strategic Directions** section of *A Strategic Plan for Oberlin College* (March 5, 2005), item 6, *Move toward Environmental Sustainability*, states:

“It should abide by this commitment by continuing to work toward developing an environmentally sustainable campus. Justifications include the unprecedented environmental challenges our students will face in the future; the great importance attached by current and prospective students to efforts to achieve sustainability; the learning experiences afforded to students as a result of these efforts, and the continuing example Oberlin can set for other institutions, academic and otherwise.”

Students, faculty and staff have implemented a number of disconnected attempts at implementing the policy with things like improved recycling efforts and admonitions to save energy. In 2004, Oberlin College, inspired by the EP, also signed an agreement with Oberlin Municipal Light and Power Systems to purchase 13,000 megaWatt-hours/year of “green” electricity.

Nevertheless, there is no organized effort to manage the EP. The staff position for “a person with appropriate expertise” for EP implementation has not yet been filled, although funds have been set aside for a short-term junior staff position. A junior staff member would scarcely have the experience or influence necessary to carry out the extensive role envisioned in the EP.

As an alumna of Oberlin College, I am very concerned that the attempts to implement the EP have not been more successful. Therefore I am contributing towards this end with my understanding of environmental management, gleaned through studies and practice in Denmark in the 1990’s.

Environmental Management

Environmental management is a much-implemented method to ensure that an organization works continually toward improving its environmental impact on the world. There are a number of environmental management systems available, but most use the same principles of improvement management as quality management, best known as ISO 9001, in the form of the *ISO 14001 Standard for Environmental Management System*.¹

According to the Wikipedia article, "Environmental Management"²:

"Other **EM** systems (or **EMS**) tend to be based on this standard and to extend it in various ways:

- [Natural Step](#) focuses on basic [sustainability](#) criteria and helps focus [engineering](#) on reducing use of materials or energy use that is unsustainable in the long term
- [Natural Capitalism](#) advises using [accounting reform](#) and a general [biomimicry](#) and [industrial ecology](#) approach to do the same thing
- [US Environmental Protection Agency](#) has many further terms and standards that it defines as appropriate to large-scale EMS
- The [UN](#) and [World Bank](#) has encouraged adopting a "[natural capital](#)" measurement and management framework.
- The [European Union Eco-Management and Audit Scheme \(EMAS\)](#) (http://europa.eu.int/comm/environment/emas/index_en.htm)
- Other strategies exist that rely on making simple distinctions rather than building top-down management "systems" using [performance audits](#) and [full cost accounting](#). For instance, [Ecological Intelligent Design](#) divides products into [consumables](#), [service products](#) or durables and [unsaleables](#) - toxic products that no one should buy, or in many cases, do not realize they are buying. By eliminating the unsaleables from the [comprehensive outcome](#) of any purchase, better environmental management is achieved without "systems".

¹ ISO = International Organization for Standardization (<http://www.iso.org/iso/en/ISOOnline.frontpage>). ISO sets internationally accepted standards for everything from film to nuts and bolts to management systems (<http://www.iso.org/iso/en/iso9000-14000/index.html>). The American section is called the American National Standards Institute (ANSI: <http://www.ansi.org/>). The standards documents can be ordered online from either organization. There are usually inexpensive educational versions of the standards.

² Retrieved (as of today) from "http://en.wikipedia.org/wiki/Environmental_management" Most links are to Wikipedia articles.

ISO 14000 Environmental Management System Specifications

One of the best known systems used world-wide for environmental management are the ISO 14001 standards specification, which can lead to certification, used together with various other environmental standards in the 14000 series. These can be ordered and downloaded as PDF files from the organizations listed in the final section *Further Information, Purchasing standards as PDF*. Unfortunately, they are very expensive, but the required number of copies can be printed from the PDF.

The first 2 documents listed are essential and the third probably also. The others might be of interest to particular groups. For example, a course in life-cycle assessment could assess materials and products purchased by the college using some of the 14040 series standards.

ISO 14001:2004³ Environmental management systems -- Requirements with guidance for use

The main standard specifies the requirements for an environmental management system (EMS) to enable an organization to develop and implement a policy and objectives for improving its environmental impact. A fully implemented system can be audited by an external auditor and certified. A condition for certification is that the system has built-in procedures for “continual improvement,” in other words, a cyclical management system.

The EMS considers both legal and other requirements the College considers important (such as the *Oberlin College Environmental Policy*), as well as any other information about significant environmental aspects, but does not specify the particular environmental performance criteria that the College must meet. It provides a system that the College can use to identify and select the environmental issues that it believes it can control and influence.

ISO 14004:2004 General guidelines on principles, systems and supporting techniques

The guidelines provide more extensive help for implementing an ISO 14001 management system. In the following sections, the paragraphs of ISO 14004 outline how Oberlin might implement the EP.

ISO 14031:1999 Environmental assessment of sites and organizations (EASO)

I don't know this standard, but it sounds like it would be very relevant for a college.

ISO 14030 series: Performance evaluation

- **ISO 14031:1999** Environmental performance evaluation—Guidelines
- **ISO/TR 14032:1999** Examples of environmental performance evaluation (EPE)

ISO 14040 series: Life-cycle assessment (particularly useful for purchasing assessment)

- **ISO 14040:1997** Life cycle assessment—Principles and framework
- **ISO 14041:1998** Life cycle assessment—Goal and scope definition and inventory analysis

³ The 4-digit numbers after the colon indicate the year the standard was accepted or revised.

- **ISO 14042:2000** Life cycle assessment—Life cycle impact assessment
- **ISO 14043:2000** Life cycle assessment— Life cycle interpretation
- **ISO/TR 14047:2003** Life cycle impact assessment—Examples of application of ISO 14042
- **ISO/TR 14049:2000** Life cycle assessment— Examples of application of ISO 14041 to goal and scope definition and inventory analysis

ISO 14050:2002 Vocabulary

ISO/TR 14060 series for diverse applications

- **ISO/TR 14061:1998** Information to assist forestry organizations in the use of Environmental Management System standards ISO 14001 and ISO 14004
- **ISO/TR 14062:2002** Environmental management -- Integrating environmental aspects into product design and development

ISO 19000 series for Auditing

- **ISO 19011:2002** Guidelines for quality and/or environmental management systems auditing
- **ISO/IEC Guide 66:1999** General requirements for bodies operating assessment and certification/registration of environmental management systems (EMS)

The 5 major elements of an EMS

4.1 Commitment and Policy⁴

- 4.1.1 The Environmental Policy that has already been prepared is a hybrid of many phases of an environmental management system, invoking background information, a preliminary, but unsystematic initial environmental review, as well as policy and implementation suggestions. Following the steps outlined in the specification enables a systematic *review* of Oberlin's environmental impact, *prioritization* of areas Oberlin has control over, *planning* of the systematic implementation of Oberlin's environmental sustainability, *control* so that it remains sustainable, and *review* and *revision* at regular intervals, usually annually or biannually.
- 4.1.2 **Top management** (i.e. the Oberlin College Board of Trustees, the College President and the Faculty Council) must all commit to establishing the system before there can be any hope to carry it out. Even though others are doing most of the work involved in planning and implementing, management must believe in the educational, financial and environmental benefits the system will bring to Oberlin. Management can appoint a *Steering Group* to lead the environmental management process.
- 4.1.3 An initial comprehensive and systematic **environmental review** is the first task, used to determine where the College wants to and needs to prioritize its efforts. This could very effectively be done by groups of students and faculty assisted by staff. I can imagine College courses co-sponsored by different departments can carry out most of the tasks in the management system. For example, courses in environmental science/physics could review, then plan and implement, measure and audit energy issues, ES & biology for grounds issues, ES & chemistry for materials, ES & government or sociology could study legal compliancy and motivational issues, etc. A course in some aspect of environmental studies could possibly become a requirement for graduation, so that all students become involved in developing and implementing the system.
- 4.1.4 A general **environmental policy** is agreed upon with the top management group (i.e. the Board of Trustees, the College President and the Faculty Council) after consulting with the Steering Committee, and based on the environmental review. This "establishes an overall sense of direction and sets the principles of action"⁵. The policy expected here is much shorter than the existing Environmental Policy. Typical policies include statements about the following issues (as suggested in ISO 14004):
- the College's environmental/sustainability mission, vision, core values and beliefs
 - requirements of and communication with interested parties (i.e. stakeholders—the community, alumni, students, faculty, government, etc.)

⁴ Paragraph numbering refers to paragraphs in the ISO 14004 General Guidelines. The first paragraph in each section is a general introduction.

⁵ From *ISO 14004:1996*. (Note there is a newer 2004 version). Much of the following is paraphrased and adapted from the Guidelines and any quotes not otherwise attributed are from the corresponding section of the Guidelines.

- a commitment to continual improvement, meaning that the system works as a sort of spiral, such that all 5 elements are repeated at regular intervals
- prevention of pollution, without specifying specific measures or areas
- guiding principles, such as involving the entire Oberlin community, staff, faculty, students, alumni, in the system
- coordination with other College policies (e.g. the policies listed in *Strategic Plan for Oberlin College, March 5, 2005*)
- specific local or regional conditions, such as the fact that this is an educational institution, that the regional energy depends almost entirely on the most polluting source, coal, responsibilities to the community, etc.
- compliance with relevant environmental regulations, laws and other criteria to which the College subscribes. This could be everything from the environmental regulations that govern chemistry classes and the physical plant to commitments to Fair Trade and sustainability.

The Strategies listed in A Strategic Plan for Oberlin College⁶ provide a good start toward defining this Environmental Policy:

“Seek to reduce the rate at which the College contributes to the depletion and degradation of natural resources, to increase the use of renewable resources, and to consider other measures than can enhance the physical environment in which we live.

- To the extent practicable, develop and implement state-of-the-art standards for building design, construction, and performance, and for land use, consistent with the above goals of energy efficiency and prudent resource use.
- Work toward environmentally sound as well as aesthetically pleasing means of maintaining the physical plant, the landscape and their surroundings.
- Enhance and develop further opportunities for students and faculty to participate in the continuing “greening” of the campus and the wider community through promoting course work in various curricular areas, independent research projects and community service.”

⁶ A *Strategic Plan for Oberlin College*, page 10.

4.2 Planning how to fulfill the environmental policy

- 4.2.1 Involving everyone (faculty, students, staff and other stakeholders) in the planning process develops a greater feeling of ownership of the system by the members of the community. Environmental management should never be enforced top-down. Inspired from the top, it must always be developed bottom-up. Without the commitment and support from the top, and without involvement from below, no system can be successful.
- 4.2.2 **Identification of environmental aspects and evaluation of associated environmental impacts** should be carried out in cross-campus groups using the data collected in the environmental review. This could be the same groups that did the reviews, or different groups, to spread involvement.
- 4.2.3 **Legal and other requirements.** *ISO 14004* states “The organization should establish and maintain procedures to identify, have access to and understand all legal and other requirements to which it subscribes, directly attributable to the environmental aspects of its activities, products or services.” I picture this being the task of faculty and students of government or other social sciences, together with College staff.
- 4.2.4 **Internal performance criteria** are requirements that the College sets for itself, above and beyond legal requirements, such as a commitment to Fair Trade, organic produce, management responsibilities, a commitment to motivating the entire community, etc.
- 4.2.5 **Environmental objectives and targets** are the specific ways the College plans to fulfill the environmental policy. The identified environmental aspects and impacts are prioritized, and specific, *measurable* objectives are determined, including *quantified* targets to be reached within the specified time limit (1-2 years.) An **objective** could be to *reduce waste* and the **target** that the total landfill waste will be *reduced by 25%* from the level of the initial environmental review within this period. These objectives and targets should be planned by student/faculty groups and approved by management.
- 4.2.6 **Environmental management programs** “address schedules, resources and responsibilities for achieving the ... environmental objectives and targets.” Again in cross-campus groups, use brainstorming and other methods to determine exactly *what to do* to achieve the specified targets. The management program for each target could be very different from others, depending on the actors who directly impact the target. Each department and dorm could be responsible for working out how they will respond to reduce waste and energy, for example, while the College food service works with student/faculty groups to ensure the desired produce quality and composting or other disposal of wastes. The existing *Oberlin College Environmental Policy* contains a number of excellent suggestions for management programs, but they must be adopted and adapted individually by the specific groups.

4.3 Implementation

4.3.1 When the targets are determined and the management systems to attain the targets are planned, the College has to develop the *capabilities* and *support mechanisms* necessary to achieve the planned objectives and targets. When these are in place, the systems can start being implemented as they become ready, rather than waiting to implement everything at once. It would be good to organize some sort of kick-off celebration to publicize the beginning of the implementation period that so many people have been involved in.

4.3.2 **Ensuring capability.** This section of the guidelines lists a number of areas to work with to be able to fulfill the policy:

- **Resources – human, physical and financial:** This is where there could be particular need for finances to implement the system, providing training and materials to implement the system.
- **EMS alignment and integration** with the College’s existing management systems. Many organizations discover that careful management of their resources can actually reduce their financial impact once the system is running smoothly, thus providing more funds for other strategic areas.
- **Accountability and responsibility** should be *specified* and *motivated*. This includes management responsibilities as well as the accountability and responsibility of every single student, faculty and staff member, and even suppliers.
- **Environmental awareness and motivation** must be encouraged by top management and constantly brought to the community’s attention. The *Oberlin College Environmental Policy* has a number of suggestions for building awareness and motivation, but the actual methods should be worked out by students and faculty.
- **Knowledge, skills and training** should be provided where needed, as determined by the groups who have planned the specific goals and targets. The Guidelines suggest the following types of training:

Type of training	Audience	Purpose
Raising awareness of the strategic importance of environmental management	College Board of Trustees, President and Faculty Council	To gain commitment and alignment to the College’s environmental policy.
Raising general environmental awareness	All students, faculty and staff	To gain commitment to the environmental policy, objectives and targets of the College, and instill a sense of individual responsibility.
Skills enhancement	All with environmental responsibilities	To improve performance in specific areas of the College: dorms, classrooms, plant, grounds, purchasing, food service, etc.
Compliance	All whose actions can affect compliance	To ensure regulatory and internal requirements for training are met.

4.3.3 **Support Action** is a collection of reporting, control and preparedness methods. These are also determined by the groups who are working on particular areas together with management. The English Department could participate in this area with a course in technical writing, while the Computer Science Department could develop a web-based system for document management.

- **Communication and reporting** establishes processes to report internally (with posters in dorms, regular columns in the Review and Alumni Magazine) and externally to the Oberlin community, university partners, suppliers, etc.
- **EMS documentation:** procedures should be established to define, document and update appropriate data with relationship to the EMS. This is useful to be able to determine how well the system is working, and how close you are getting to the targets, as well as any problems there have been attaining these goals.
- **Operational control:** a series of procedures and controls to ensure that the policy, objects and targets are met. Procedures can be written, but they can also be well-labeled containers for waste, or even physical controls, such as systems to turn off lights when there is no movement in a room.
- **Emergency preparedness and response:** plans and procedures should be established in case something unexpected happens, to prevent accidental emissions to the air, water or land, etc.

4.4 Measurement and evaluation

- 4.4.1 Since the goals are measurable and the targets quantified, methods of measuring the performance have to be in place for monitoring, analysis and reporting purposes. The performance of each objective area is monitored, so that corrective action can be taken if it isn't moving as fast as planned. Or, conversely, if a target is reached more quickly than expected, a new planning and implementation cycle can be started to find a new target.
- 4.4.2 **Measuring and monitoring (ongoing performance)** procedures are set up before implementation, so that the actual performance can be monitored at regular intervals. The results can be posted on the Intranet or in local posters so that everyone has access to the data. Care should be taken to differentiate between *data* (numbers), *information* (relating the data to understandable context, for example, relating the numbers to benchmarks), and *knowledge* (putting the information to use, for example as motivation.)
- 4.4.3 **Corrective and preventative action** may be needed if monitoring shows that the performance is not going as expected. It is useful to have some plans for such action built into the management system.
- 4.4.4 **EMS records and information management.** All the records created through building the system (including the motivation for creating the system in a particular way) as well as monitoring data and reports must be stored and made available to interested parties through an information management system, which could be part of the College's Inter/Intranet. ISO 14004 lists the following types of records:
- "Legislative and regulatory requirements;
 - Permits;
 - Environmental aspects and their associated impacts;
 - Environmental training activity;
 - Inspection, calibration and maintenance activity;
 - Monitoring data;
 - Details of non-conformance incidents, complaints and follow-up action;
 - Product identification: composition and property data;
 - Supplier and contractor information;
 - Environmental audits and management reviews."
- 4.4.5 **Audits of the environmental management system** must be made at regular intervals. Usually, different areas are audited at different times, but preferably every one or two years, depending on the area to be audited. The calendar for the audits should be created by the steering group and maintained as part of the information management system. Certain members of the College community can be trained as internal auditors to organize and perform this function. These may be persons who have worked on the management system for a different area, so that both the auditor and the audited can learn from the experience.

4.5 Review and improvement

- 4.5.1 Even though the system will be designed and implemented by students and faculty, top management must keep tabs on the performance of the system. Therefore an EMS always includes regular management review of the system and a built-in method for continual improvement.
- 4.5.2 **Review of the environmental management system by top management.** The Coordinator and the Steering Committee prepare a yearly report based on the audits and other information for management. I have included links to some of these reports in the *Further Information* section at the end of this report.
- 4.5.3 **Continual improvement** is one of the major aspects of an EMS. The defined process is repeated regularly, using each year's audits as the initial review for a new cycle. If new areas are discovered that have not previously been a part of the EMS, a new initial review can be done to provide the basis for a management system for that area.

Recommendations

1. Create a **Steering Group** of Faculty members and student activists. Provide each member with copies of the *ISO 14001* standard, the *ISO 14004 Guidelines* and probably the *ISO 14031:1999 Environmental assessment of sites and organizations (EASO)* at a kick-off meeting, where I could possibly be involved. See **Further Reference** section for ordering information.
2. The Steering Group is instrumental in selecting an **Environmental Coordinator**, who will manage the daily activity of the EMS.
3. The Steering Group works with President Dye to create the new **Environmental Policy** according to the requirements of the ISO 14001.
4. The Steering Group plans a **series of academic courses** in different departments, which will be used to study environmental management from a particular impact area, *for example*:
 - **Physics**: energy
 - **Biology**: grounds, food service
 - **Art and environmental studies**: building design and remodeling
 - **Chemistry**: toxic and other wastes as well as purchasing
 - **Government**: legal issues
 - **Geology**: water
 - **Sociology**: motivation (4.3.2)
 - **English**: support action – environmental reporting (4.3.3, 4.4.3)
 - **Computer Science**: design a documentation management system (4.4.4)
 - **Foreign languages**: study of environmental management in other countries
5. The **courses carry out** the initial environmental review (4.1.3), planning (4.2), implementation (4.3) and monitoring (4.4).
6. A **kick-off event** is held in connection with the actual implementation of the planned system.
7. The Computer Science course develops a web-based Documentation Management system.
8. Each course performs an **audit** on another areas at the end of the school year (4.4.5).
9. The English course prepares a **draft annual environmental report**.
10. The Steering Group **reviews the report** with the President, Board and Faculty Council, who add their evaluation to the environmental report, which is published (4.5.2).
11. New classes in the next year **repeat the process**, refining the objectives and goals, to ensure continual improvement (4.5.3)

Further Information

Most of this information was found by searching for ISO 14001. This is just a small part of what is available online.

Online information about ISO 14001

ISO information about both Quality and Environmental Management systems:

<http://www.iso.org/iso/en/iso9000-14000/index.html>

The ISO 14000 Family of International Standards:

<http://www.iso.org/iso/en/prods-services/otherpubs/iso14000/index.html>

ISO Management Systems Magazine:

<http://www.iso.org/iso/en/iso9000-14000/ims/ims.html>

ISO 14000 Information Center: <http://www.iso14000.com/>

ISO 14000 Environmental Management Guide:

<http://www.iso14000-iso14001-environmental-management.com/> (you can order the entire 14000 series on CD from them, as well as a specially created toolkit with checklists and forms, etc.)

ISO 14000 Toolkit: <http://www.14000-toolkit.com/>

Implementing ISO 14001 around the world, article with reading list

<http://pubs.acs.org/hotartcl/chemtech/98/may/imp.html>

Environmental Management System Implementation Tool Kit for the Department of the Army Installations: <http://www.ndcee.ctc.com/EMIToolKit/>

The International Corporate Environmental Reporting Site:

<http://www.enviroreporting.com/>

Purchasing standards as PDF

From ISO:

<http://www.iso.org/iso/en/CatalogueListPage.CatalogueList?ICS1=13&ICS2=20&ICS3=10&scopelist=>

From ANSI:

<http://webstore.ansi.org/ansidocstore/default.asp>

Environmental Management Guide CD with all the 14000 standards:

<http://www.iso14000-iso14001-environmental-management.com/kit5.htm>

Accrediting organizations

Underwriters Laboratories, Inc:

<http://www.ul.com/services/iso14001.htm>

Den Norske Veritas (DNV):

<http://www.dnv.com/certification/managementsystems/environment/envirooverview.asp>

Organizations with EMS

- NC Zoo: <http://www.nczoo.org/conservationresearch/iso14001.cfm>
- Vestas Wind Systems: <http://www.vestas.com/uk/environment/2005/index.asp>
- BP: <http://www.bp.com/genericsection.do?categoryId=4445&contentId=7005392>
- Danfoss: <http://www.danfoss.com/AboutUs/FinancialInformation/>
- Grundfos: <http://www.grundfos.com/web/grfosweb.nsf> (Select "About us")
- Cherokee Fund: <http://www.cherokeefund.com/risk.html>
- Fuji Xerox: <http://www.fujixerox.co.jp/eng/ecology/>
- Weyerhaeuser: <http://www.weyerhaeuser.com/environment/>
- PG&E: http://www.pgecorp.com/corp_responsibility/reports/2003/env_ourenvironment.html
- UnoCal: <http://www.unocal.com/responsibility/>
- MuRata: <http://www.murata.com/env/>
- ATT: http://www.att.com/ehs/annual_reports/ehs_report/
- Volkswagen: <http://www.mobility-and-sustainability.com/>

Environmental Reports

- Vestas Wind Systems: http://www.vestas.com/uk/environment/2005/environmental_reporting/environmental_reporting.asp
- BP: <http://www.bp.com/downloadlisting.do?categoryId=666&contentId=2004066>
- Elsam: <http://elsam2004.webannualreport.com/default.asp?id=959>
- Grundfos: <http://www.grundfos.com/web/grfosweb.nsf> (Select "About us | Environmental management")
- Cherokee Fund: http://www.cherokeefund.com/pdfs/2004SustReport_web.pdf
- Weyerhaeuser: <http://www.weyerhaeuser.com/environment/sustainability/>
- PG&E: http://www.pgecorp.com/corp_responsibility/reports/2003/2003_CRR_Full.pdf
- UnoCal: http://www.unocal.com/responsibility/03cr_report/index.htm
- Casio: <http://world.casio.com/env/activity/report.html>
- Exel: <http://investor.exel.com/exelplc/csr/envrep>
- Volkswagen: http://www.mobility-and-sustainability.com/content/service_935.asp
- STMicroelectronics: <http://www.st.com/stonline/company/environm/report01/>
- Coca Cola: http://www.environmentalreport2003.coca-cola.com/home_highlights.html