

Choosing the Most Appropriate Environmental Management System for an Institution of Higher Education

Sara King

Primary Reader: Steve Baer

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Abstract

Institutions of higher learning are leading the way towards sustainability through both their innovative research and through the sustainable example they set. One tool that an institution can utilize to help them become more sustainable is an Environmental Management System. EMSes have been widely utilized in the corporate sector; but there is a definite cultural distinction between institutions of higher education and corporations. This capstone is written as a guide, based on extensive literature review, to facilitate the choice of the most appropriate choice of an EMS for institution of higher education. Three specific EMSes are evaluated as part of this project. ISO 14001 is a system widely utilized in the corporate sector, and the Osnabruck system from Germany as well as the South Carolina Sustainable Universities Initiative are two higher-ed specific systems. The guide then evaluates drivers towards sustainability. There are three tiers of drivers, which essentially are, “what prompts the organization to undertake environmental action,” (Clarke Kouri). The first tier of drivers accounts for issues of cost and compliance; the second generation of drivers takes other internal factors like students, faculty, and staff into consideration. The third tier of drivers takes into account external factors like community and public relations, as well as the institutional responsibility of knowledge. The capstone goes on to recommend that by evaluating and prioritizing these drivers an institution can choose the EMS that best fits their structure and goals. A decision tool accompanies this project to synthesize the drivers and their relationship to the specific EMSes evaluated. The capstone includes a successful and less successful case study of an EMS at a college or University, and proposes that further research is needed into the successful implementation of higher-ed EMSes.

Environmental Management System (EMS)

“There’s so much talk about the system. And so little understanding.”
-Robert Pirsig, Zen and the Art of Motorcycle Maintenance.

Very simply defined, “A system is an interconnected set of elements that is coherently organized in a way that achieves something,” (Meadows 11). A system contains three main parts: elements, interconnectedness, and a purpose. The structure of the environmental management systems evaluated by this project provide an interconnected framework for an organization to achieve their sustainability goals. All three EMSes move the organizations through the four steps of the basic management principal: plan-do-check-act (see figure1). The purpose of plan-do-check-act is to facilitate continual improvement in the progression of the management system.

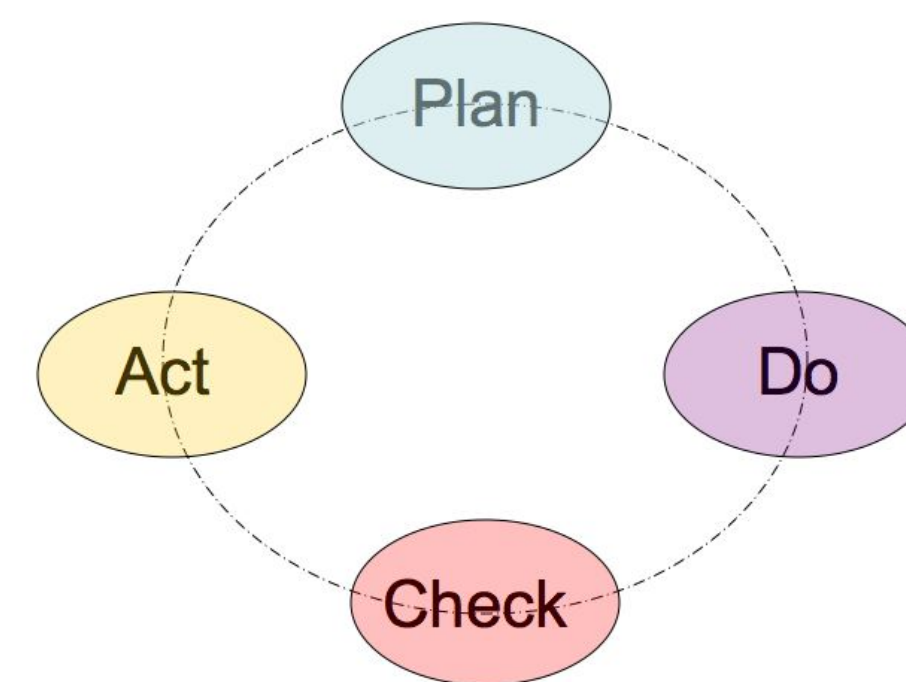


Figure 2: Management System Model (SE King)

Process for Choosing an Appropriate EMS

- Identify organization(s) interested in implementing an EMS as part of their sustainability efforts
- Identify all drivers towards sustainability
- Evaluate drivers and rank in priority order
- Choose system that is the best fit with drivers identified and will best help institution achieve sustainability goals

EMSes Evaluated as Part of Guide

ISO 14001

Developed by the International Standards Organization, who also developed quality control standards. ISO is used in commercial sector, but has been successfully applied in higher ed. A successful case study of this application is Gavle University in Switzerland. This system is internationally known and respected. This reputation best addresses the second and third generation drivers of internal and external populations, that demand accountability.

Osnabruck

Developed 5 years prior to ISO 14001, at Osnabruck University, Germany. This EMS is higher-ed specific and is very structured. There are ten building blocks of environmental management that provide detailed steps through the basic plan, do, check, act cycle. This EMS utilizes a Life Cycle Assessment to set very specific environmental performance goals. Osnabruck is best suited to address first generation drivers.

SC-SUI

This EMS was developed by three large institutions in South Carolina. It has a looser framework than either ISO 14001 or Osnabruck, that accommodates multiple campuses or institutions. The accountability component of the SC-SUI is a software that can be accessed by all participants. The software allows for the sharing of knowledge and information, thus addressing the third-generation driver for knowledge sharing and educational responsibility.

Drivers Towards Sustainability

Drivers are “what prompts the organization to undertake environmental action. Different drivers influence whether the organization undertakes the EMS, and the focus within the environmental management system. Unlike businesses, key drivers for a university are not due to external forces such as diligence or market influence; instead, drivers tend to be based around internally-driven responsibilities for the environment, health and safety” (Clarke & Kouri)

1st Generation Drivers

Compliance: This driver addresses compliance with both mandatory as well as voluntary regulations. Cost avoidance from penalties is a consideration.

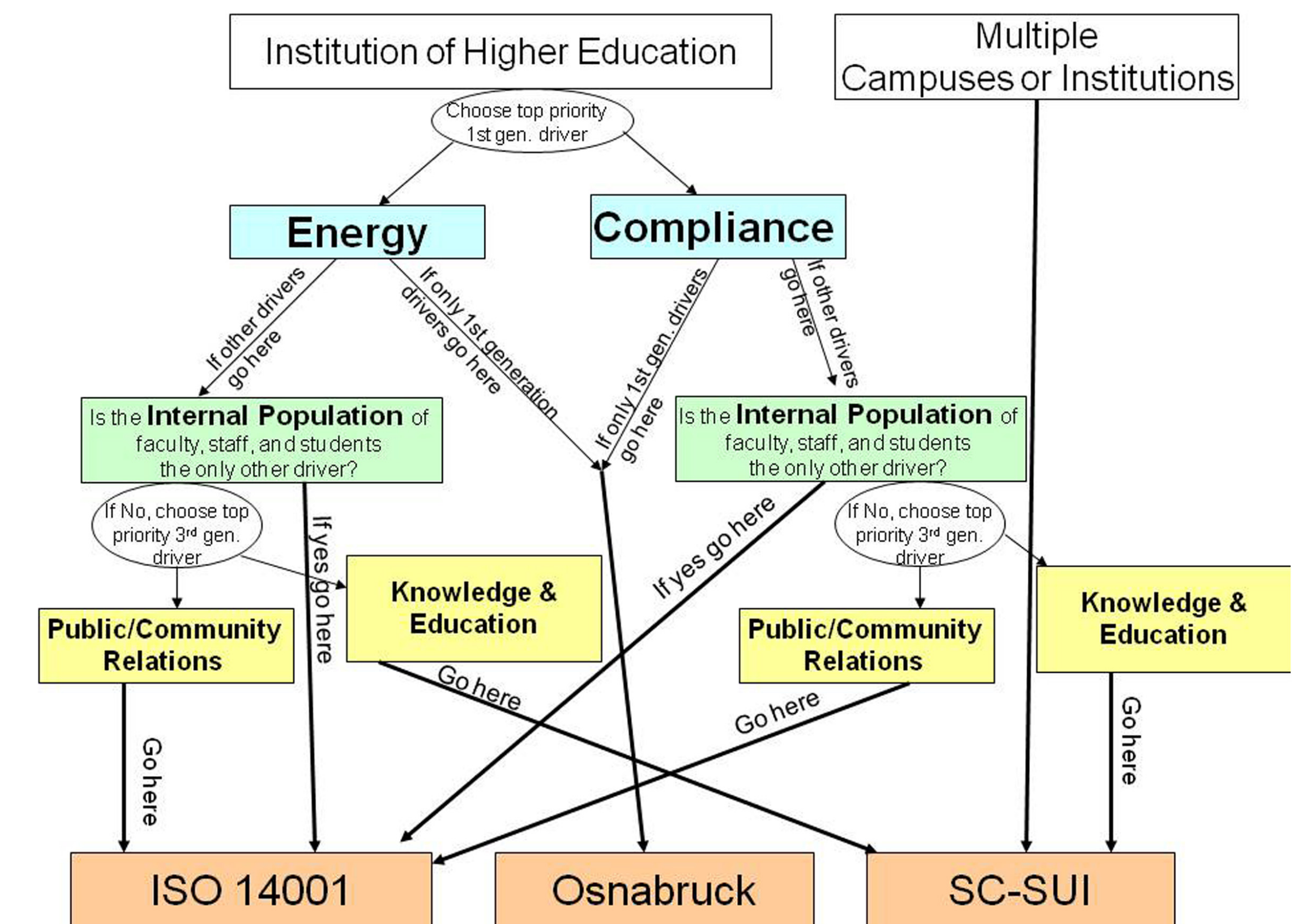
Energy: Energy concerns comprise both cost savings from energy not used, and carbon reduction concerns.

2nd Gen .Drivers

Internal Population: Addresses internal drivers of faculty, staff, and students both current and prospective. A strong environmental programs can result in happy employees and improved productivity. Universities’ reputation in regards to sustainability can be a strong leveraging point in retaining existing as well as attracting new students and faculty

3rd Generation Drivers

Community/Public Relations: Institutions of higher ed have a desire to maintain a strong environmental record in their communities and in the public opinion. **Knowledge/ Education:** With the primary mission of creating knowledge, most institutions of higher education also feel a responsibility to share the knowledge gained through their sustainability journey.



Legend

- 1st Generation Driver (light blue box)
- 2nd Generation Driver (light green box)
- 3rd Generation Driver (light yellow box)
- Best Fit EMS (orange box)
- Decision point (arrow with a dot)
- Final decision point (arrow)

Figure 2: Decision Tool: to be utilized in conjunction with guide, after evaluating and identifying institutional drivers (SE King)

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