

CASE STUDY

INSTITUTE FOR ENERGY MANAGEMENT PROFESSIONALS CERTIFICATIONS

This case study was developed by Workcred and its Credentialing Body Advisory Council in consultation with Bill Meffert and Frank Faulk of the Institute for Energy Management Professionals.

EXECUTIVE SUMMARY

Seeing the need for qualified individuals to consult, audit, and verify energy management practices and energy performance, the International Standard Organization (ISO) 50001:2018, *Energy management systems – Requirements with guidance for use* standard was developed. To meet this need and qualify individuals in the United States, the U.S. Department of Energy (DOE) sought a certification body to develop the schemes and objective competencies for a professional certification program in energy management. In response, the Enterprise Innovation Institute at the Georgia Institute of Technology proposed the launch of a Georgia Tech research center – the Institute for Energy Management Professionals (IEnMP) – to become the certification body.

Through various phases of business development, funding, and other challenges, the Institute for Energy Management Professionals developed and maintained three certification programs, until 2020 when their operation was taken over by the Association of Energy Engineers (ASSE). ASSE currently offers the following certifications:

- » **Certified Practitioner in Energy Management Systems (CP EnMS):** a consultant with competency to assist organizations to implement ISO 50001:2018 and become certified;
- » **Energy Professionals International (EPI) ISO 50001 Lead Auditor:** auditor who verifies conformance to ISO 50001:2018; and
- » **Superior Energy Performance Verifier (SEP PV):** assessor who verifies energy performance improvement within the U.S. Department of Energy's *SEP 50001 Program Measurement and Verification Protocol: 2019*.

THE NEED

An ISO global standard, ISO 50001, was created in 2012 by the energy experts around the world to increase energy performance through energy management best practices. It was officially recognized by DOE and adopted by the American National Standards Institute (ANSI). DOE wanted to work with current private-sector structures to implement programs to ensure the robust implementation of the standard for better energy management and sustained energy savings. In order to implement the standard, qualified individuals were needed to consult, audit, and verify energy management practices and energy performance. Even though professionals existed to audit and certify other management system standards, ISO 50001 presented new challenges in which expertise in management systems needed to be integrated with proficiency in implementing and evaluating energy performance.

An energy management system (EnMS) integrates energy management into existing business systems, enabling organizations to better manage their energy and implement and sustain achieved savings. Companies use an EnMS to establish the policies and procedures to systematically track, analyze, and improve energy performance efficiency. DOE developed the Superior Energy Performance® (SEPTM) for independent, third parties to audit and certify industrial facilities that implement an energy management system that meets the ISO 50001 standard and achieves energy performance improvement based on DOE's SEP 50001 Program Measurement and Verification Protocol. Seeing the need for certified individuals in the United States, DOE began to look for an appropriate agency to create personnel certification programs for three types of practitioners: consultant, auditor, and performance verifier.



COLLABORATION PARTNERS AND PROCESS

DOE determined that unique professional abilities and skill sets were needed to assist organizations to become certified, and proposed three distinct credentials – CP EnMS, SEP Lead Auditor (later to become EPI ISO 50001 Lead Auditor), and SEP PV. DOE provided funding for the development of a professional certification body to develop the schemes to address these three roles and offer objective examinations to test the competencies of these practitioners.

In response to this federally-funded initiative, the Enterprise Innovation Institute (EI²) at the Georgia Institute of Technology proposed the launch of a Georgia Tech (GT) research center, the IEnMP, to become the certification body. As an independently-funded research center, IEnMP was given a level of autonomy that ensured its independence in decision making that allowed it to be impartial, avoid conflicts of interest with other GT units, and provided it time to incubate until it was ready to be independent, though a GT faculty member and DOE sponsor representative were required to provide oversight during the initial startup phase (three to five years). The IEnMP was accredited by the ANSI National Accreditation Board (ANAB) under ISO/IEC 17024:2012, *Conformity assessment – General requirements for bodies operating certification of persons* for all three programs from 2013 to 2016, and will be re-accredited in 2023. All three certifications were expected to reach 1,000 to 1,500 based on the adoption of ISO 50001 projections. In addition, the SEP program is also developing a global initiative that has interest from at least 10 other countries.

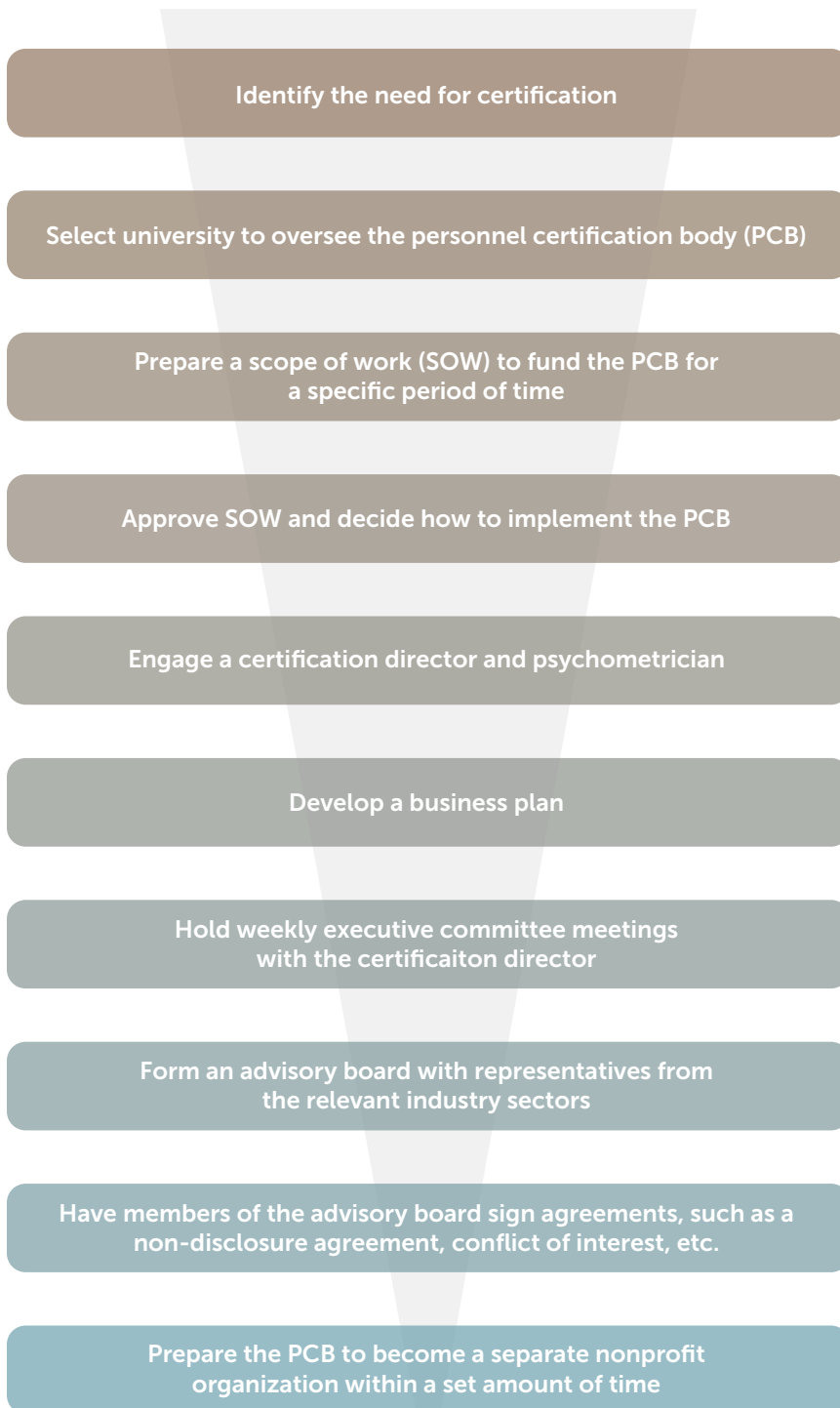
IEnMP was initially funded through a contract with the Lawrence Berkeley National Laboratory (LBNL) and GT at the level of \$250,000 per year beginning in 2011. This funding was expected to continue for the next three to five years at a declining rate, which would be just enough to cover the efforts needed to build the organization and get it accredited. Candidates seeking one of the offered certifications were required to pay fees to take the examinations, and also to maintain the certifications. IEnMP was expected to become self-sustaining through the income received from these fees and by providing ongoing membership services, including the continuing education needed to maintain the certifications.

The organization was quite lean and staffed with a part time certification director and an operations manager, and minimal administrative, financial, and legal services provided by GT. Other functions needed, such as psychometric services and exam delivery, were provided by a third party. Besides its operating staff, IEnMP created a volunteer advisory board made up of relevant representatives from industry, commercial building managers, other personnel certification organizations, and energy efficiency organizations, as well as from DOE and GT, who make up the executive committee of

AS AN INDEPENDENTLY-FUNDED RESEARCH CENTER, IENMP WAS GIVEN A LEVEL OF AUTONOMY THAT ENSURED ITS INDEPENDENCE IN DECISION MAKING THAT ALLOWED IT TO BE IMPARTIAL, AVOID CONFLICTS OF INTEREST WITH OTHER GT UNITS, AND PROVIDED IT TIME TO INCUBATE UNTIL IT WAS READY TO BE INDEPENDENT...

the advisory board to ensure the interests of both institutions are followed. In addition, Bill Meffert, group manager at GT, became the center director and sat on the executive committee to ensure that GT's contract obligations with LBNL are fulfilled. Other voluntary groups known as scheme committees were established and consist of technical experts who oversee the development of the certification's schemes, exam development, and revisions.

PROCESS TO CREATE THE IENMP



IEnMP focuses on exam delivery and certification of personnel, a very nontraditional type of research center. The IEnMP "members" will be those personnel who have achieved certification and those voluntary stakeholders who will have no stake in the intellectual property of this center. The intellectual property developed will reside with the center and eventually its nonprofit entity. IEnMP's intellectual property is entailed in its exam content and is protected by nondisclosure agreements with the experts that constitute its different voluntary boards and committees.

In 2018, the IEnMP was spun off from GT as a fully-independent, nonprofit organization incorporated in Washington, DC.

The graphic to the left illustrates the specific process used to create the IEnMP.

CHALLENGES

The transition of IEnMP to an independent certification body was always the intent for DOE, as DOE has been very committed to the success of IEnMP during this entire process; it is considered an integral part of the DOE SEP program. DOE needs to have IEnMP firmly established in order to provide the professional resources needed to ensure the long-term success of the DOE SEP program here in the United States. It was anticipated that by year five IEnMP would be established as a standalone, nonprofit organization, supported by the fees generated from the certifications and member services.

In Europe and other countries such as China, ISO 50001 has seen significant adoption as these countries view an EnMS as an important mechanism for achieving carbon reductions, and many of these countries provide significant incentives for implementation of ISO 50001. However, similar incentives did not materialize in the U.S. and market conditions for ISO 50001 did not meet expectations in the US.

At this time, GT's contract with LBNL was terminated and IEnMP contracted directly with DOE for continued support. The GT staff that were previously supported by the contract were now independent contractors managing the certification programs for IEnMP. Due to this, the IEnMP board of directors initiated a search for another organization that would be interested in taking over the certification programs. In 2020, negotiations with the Association of Energy Engineers (AEE) began, and in 2021 led to the transfer of intellectual property and assets to AEE. As a world-wide leader in professional certification programs for energy engineers, with two accredited certifications itself, AEE was a natural fit for the IEnMP/SEP certifications.

LESSONS LEARNED AND KEY TAKEAWAYS

Several important lessons were learned. First, finding a home to build IEnMP that would allow for independent growth and development was very important. The university setting and the flexibility to set up an independent research center to house IEnMP was shown to be a very successful mechanism. There were some legal and contractual hurdles that arose, but the infrastructure of a research university was able to overcome them.

Second, since the certification programs developed by DOE and IEnMP were tied to requirements of international standards, such as ISO 50001 and ISO 50003 (which specifies requirements for competence, consistency, and impartiality in the auditing and certification of ISO 50001 energy management systems for bodies providing these services), the certifications and therefore the certified professionals' tasks will change as a result of changes to the standards. Any such change can lead to complicated updates for revising the job task analysis and the credential scheme. These external requirements can become a burden for a program that is in the development stage and trying to keep up with stakeholder needs. The ramifications of changes to certification requirements needs to be fully understood; the certification programs could have been developed as a certificate program, which may have provided more flexibility.

Third, a substantial amount of time, effort, and knowledge was needed for IENMP to become an independent, accredited, personnel certification body under ISO 17024. This standard is comprehensive and covers the establishment of a professional certification body, including its business practices. Using outside expertise of psychometricians knowledgeable in ISO 17024 was invaluable. Also, spinning off IEnMP as an incorporated, nonprofit organization required significant legal work – this cost should not be underestimated. And finally, the IEnMP certifications require specialized knowledge and skills that are not normally associated with the more general education requirements of degree programs. These certifications are associated with very specific job requirements and should have specific training programs for them.

