How companies benefit from active participation

Case studies
Introduction

This document is a compilation of case studies from different companies illustrating the value they have gained from their involvement in the IEC.

These success stories on the benefits of participating in IEC activities illustrate the many advantages organizations can gain by being involved and how, in turn, these assets can help them stay ahead of their competitors.

I would like to thank the IEC Young Professionals for their contribution to the development of these case studies.

Frans Vreeswijk
General Secretary and CEO
Verdant Power

by Jonathan Colby, Director of Technology Performance

Development of International Standards

Verdant Power was among the first participants in the marine energy sector. As such, the company experienced early on an absence of resources and discussion on industry best practices as well as a lack of uniform definitions of essential parameters for system performance and other areas. This scenario allowed varying claims on system performance to be made, making comparisons of different marine energy technologies very difficult.

While Verdant Power felt it utilized rigorous in-house methods and practices to operate and measure its own technology, there was no generally accepted standard against which to measure its efforts, nor those of its competitors.

Through participation in the IEC, particularly in IEC TC 114: Marine energy – Wave, tidal and other water current converters, and in the publication of IEC Technical Specification (TS) 62600-200, Verdant Power has been able to put forth its insight and experience towards the development of a common language and consensus-based Technical Specifications for the marine energy industry.

Verdant Power has also been able to collaborate with other leaders, in marine and other energy sectors, to share best practices, market challenges and opportunities, developing relationships that continue to advance the industry today.

While significant work continues, a number of critical Technical Specifications have now been published by IEC TC 114. These TS harmonize methodologies to assess the available resource and power performance of marine energy devices, which has greatly assisted in the advancement of Verdant Power’s efforts. Further work on a TS for the design of marine energy converters will continue to increase market confidence in the reliability and survivability of marine energy systems, and thus further support commercial success for Verdant Power and other developers.

Finally, the ongoing transition of publications to International Standard from Technical Specification under IEC TC 114 will add further market confidence as updates will be based on feedback from the in situ application of these documents. An International Standard is especially critical given the global potential for marine energy and the development and operation of devices around the world.
Another crucial challenge for the marine energy industry is the lack of an international Conformity Assessment system to provide transportable, 3rd party verification of compliance to the emerging International Standards and Technical Specifications for marine energy technologies. Without such a system, Verdant Power and other developers must rely on Certification Bodies and Test Laboratories in separate markets to provide individual verifications. If they even exist for an emerging industry like marine energy, these certifications and reports are likely valid only to the specific issuing body and not accepted across countries and markets. This gap has thus led to inefficiencies and increased costs for testing and certification and decreased confidence in the verification of overall system performance, ultimately adding difficulty in securing financing for marine energy technologies and projects.

Through the IEC, Verdant Power and other stakeholders are working to address this situation. Efforts by IEC TC 114, including the six existing Technical Specifications (one additional vote pending), have led to the first published documents of critical importance for the tidal energy industry in this regard.

Additionally, as part of the new IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications (IECRE), the creation of the Marine Energy Operational Management Committee (ME-OMC) provides the platform required to develop the necessary Marine Energy Certification Schemes.

These deliverables are critical pieces in the ongoing development of an IEC Conformity Assessment System for Renewable Energy equipment, including marine energy suppliers.

The ME-OMC, on which Verdant Power’s Jonathan Colby serves as Chair, is currently developing the rules for such products as Test Reports, Conformity Statements, and Component, Prototype, Type and Project Certificates.

These deliverables are critical pieces in the ongoing development of an IEC Conformity Assessment System for Renewable Energy equipment, including marine energy, which will provide the necessary framework to ensure that testing and certification done to IEC International Standards and Technical Specifications will be mutually recognized and transportable. The new IECRE System will lower the cost of testing and certification. It will ultimately reduce the perceived risk in the marine energy industry, improving the ability of Verdant Power and other developers to obtain necessary financing and bring their technologies and projects to the commercial market.

About Verdant Power

Founded in 2000 and headquartered in New York, US, Verdant Power is a global leader in the marine energy sector. Through its Roosevelt Island Tidal Energy (RITE) Project in New York City’s East River and other initiatives worldwide, Verdant Power has developed industry-leading capabilities in the areas of marine energy systems design and operations; hydrodynamic modeling and analysis; river and tidal resource assessment; and regulatory compliance.
One product accepted by all markets

Global standardization and participation in the IEC is one important reason why Schneider Electric was able to grow significantly and successfully in the electrical installation market and make electricity usage much safer for people. Prior to the existence of global Standards, each market had a different set of requirements.

To grow its market share, Schneider Electric had to design, construct, and test a different product for each market it wished to capture. This was an expensive and time consuming process. Different designs, equipment, test procedures, processes, and sometimes different skillsets were required, producing a lot of overhead to manage it properly. When it decided to participate in the IEC, Schneider Electric was able to produce one product which was accepted by any country. This led to huge savings that could be re-invested into research and development to improve their products.

Quick evolution of the market through IEC

Although these benefits applied to products across Schneider’s portfolio, it led to the quick evolution of the electrical installation market. In the mid-70s, miniature circuit breakers (MCBs) were properly standardized and this enabled a great increase in the protection of installations and goods.

A decade later, in the mid-80s, residual current devices (RCDs) became much safer with the help of the standardization process, which enhanced the protection of people against electrical shocks. In the mid-90s, surge protection against lightning was standardized, followed in the mid-2000s by Energy Efficiency and home control, making electrical-related products much safer for the end-user. Today, Schneider Electric is producing Arc Fault Detection Devices (AFDDs) for protection against electrical fires – yet another step in the evolution of the electrical installation market. This evolution since the mid-70s until today has enabled improved installation methods and increased people’s safety.

Increased safety for people

As illustrated in the graphic below we can see that there has been a significant improvement in the decrease of electrical related accidents since 1975, from around 2,800 accidents per year to around 800 in 2005 in France for example.

This is mainly due to the different stages of evolution of the electrical installation market illustrated above. Schneider Electric affirms that participating in the standardization process such as IEC Technical Committee (TC) 23: Electrical accessories, IEC TC 64: Electrical installations and protection against electric shock, and furthermore the implementation of conformity assessments processes complying with IEC Conformity Assessment (CA) Schemes has been a fundamental component in achieving this increased safety for people.

Challenges for the future

Jean-Pascal Tricoire, President and CEO of Schneider Electric, tells us that the total energy consumption will double between now and 2050, and electrical consumption will double from now until 2030. The urgency about preserving the climate means we’ve got to halve CO₂ emissions in the next 40 years. That means we’ve got to improve the energy intensity of everything we do by a factor of four. Schneider Electric considers that the IEC has a very important role to play in this evolution of business. Schneider has always considered that being part of a very professional industry, with heavy responsibilities for people and assets, has brought them to establish together the safety, reliability and efficiency standards which are needed. This is why the company has...
always been active in every part of the IEC. Schneider also believes in a global world, in an industry which is global, an industry of the planet, and the IEC is the best place to be driving the standards for the future.

To hear more about Schneider electric’s challenges for the future and the role of the IEC in this process visit www.iec.ch/globalvisions/schneiderelectric/.

**Market evolution thanks to standardization**

Since 1975 there has been an important growth trend of the different elements of the electrical installation market, mentioned above, which has greatly served Schneider Electric and the market in general. (See figure below)

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**About Schneider Electric**

Schneider Electric is the global specialist in energy management and automation. Schneider Electric develops technologies and solutions to manage energy and process in ways that are safe, reliable, efficient and sustainable. The Group invests in research and development in order to sustain innovation and differentiation, with a strong commitment to sustainable development.

Schneider Electric provides connected technologies that will reshape industries, transform cities and enrich lives. The company’s revenue is estimated at around EUR 25 billion per annum and the company employs more than 167,000 employees.

> www.schneider-electric.com/ww/en
Mabe

by Pablo Moreno Cadena, Corporate Affairs Director

Better and faster design process

Mabe is one of the largest household appliances manufacturers in Latin America, with presence in more than 70 countries. As part of the company’s mission, Mabe seeks to improve consumers’ lives through the development of practical solutions. It is therefore essential for them to be aware of the development of new Standards, but more importantly to participate in the IEC through their National Committee.

Participation in the IEC enables Mabe to be part of the process of defining technical requirements. This guarantees the company a quicker market access by enhancing and speeding-up the design process. The use of a common technical language through IEC International Standards allows Mabe to standardize the production of their household appliances.

This enables the company to offer products to consumers in different regions which are closer to the conditions and reality of their local usage. In addition, participating in IEC increases the company’s knowledge regarding the technological and regulatory trends, which can lead to product innovation and strengthening of their business model.

Responding to customer needs

As an example, some years ago, the IEC International Standard for performance of washing machines used to consider only test methods and requirements for horizontal axis washers, while the major washing habit of Latin American households was to use top-load appliances.

Mabe’s participation in the IEC, through IEC Technical Committee (TC) 61: Safety of household and similar electrical appliances, especially the IEC 60335-1 Standard; and through IEC TC 59: Performance of household and similar electrical appliances, specifically the IEC 60456 Standard; helped the company achieve test methods and specifications for top-load appliances. Now they can offer their customers products tested under an International Standard that reflects the conditions of the region. Mabe states that this has also increased the competitiveness between manufacturers and is good for the overall market health. It helps the market to be more dynamic and pushes manufacturers to better respond to customer needs.

Increasing opportunities in new markets

Mabe is facing day-to-day opportunities in new markets, where compliance with International Standards is needed as a basis for safety, Energy Efficiency and environmental aspects. The use of IEC International Standards increases their competitiveness as they are more easily able to standardize platforms and get approvals for selling their products in different regions of the world.

About Mabe

Mabe is a Mexican-owned, Mexican-based global company which designs, produces and distributes appliances worldwide. Mabe’s history began in 1946 when it was first incorporated in Mexico City and was initially dedicated to manufacturing kitchen furniture.

Since then, it has transformed and grown into one of the largest household appliances manufacturers in Latin America. Its product range includes cooking appliances, cooling, washing and air conditioning. Revenue is estimated at over USD 4 billion per annum and the company has approximately 21,000 employees.

> www.mabeinternational.com
Response to new technology

Faced with the gradual, global phase-out of incandescent lamps, Lutron immediately committed to adapt its solutions to the evolving market. Light-emitting diode (LED) lighting emerged as the preferred replacement; but LED lamps have unique electrical properties which means control devices traditionally used for incandescent lights are not appropriate for LED light control. Customers were faced with new challenges of compatibility and performance issues. While Lutron quickly updated many of its products to work with the various LED lamps, the company also realized that the availability of a new standard for dimming LED lights would make product development easier, product selection less confusing and less risky to the customer, and ultimately result in operational savings across the board.

Reduce operational costs, accelerate product development

In order to sell lighting control systems globally and to ensure the end customer is satisfied with their performance, LED lamps and dimmers will need to meet new specifications. A new IEC International technical Standard on dimmable LED lighting is still under development. When it is complete the new Standard will help reduce the amount of required compatibility testing for lighting control and lamp companies alike, reducing costs and accelerating product development for many.

Lutron leading the charge

The challenge with developing new Standards for LED technology is that the affected products, lamps and dimmers are currently covered by two different groups within the IEC:
- IEC TC 34: Lamps and related equipment
- IEC SC 23B: Plugs, socket-outlets and switches
As a result, two joint ad-hoc groups were created:
- JAHG 16, responsible for making direct edits to the relevant Standards within the groups
- JAHG 17, responsible for creating the technical recommendations needed to form the solution.
Lutron served as convenor of JAHG 17. Successful collaboration between the two groups enabled them to reach a consensus for technical recommendations regarding the interface between LED lamps and LED dimmers. JAHG 17 was also able to build on the groundwork of an existing standard, SSL-7A, previously released by NEMA (an organization of US electrical manufacturers).

New technology to reduce greenhouse gas emissions

Developing a Standard to ensure compatibility between LED light sources and controls will help ensure that end users are satisfied with the technology. Satisfied customers are the key to encouraging the mass adoption of LED lighting, reducing energy usage and greenhouse gas emissions.

IEC: a vital tool for the future

Lutron cites this example to show how the IEC can and must stay relevant in a world of constant technological change. It is also a great example of how existing IEC structure can foster collaboration between committees that historically focus on independent, stand-alone products, but now have to work together as an interdependent system. As products and systems become more complex and inter-related, Lutron believes that such collaboration is the only way to stay ahead of new market realities.

Staying competitive means reacting quickly

Participation in the IEC provides many benefits. First, Lutron has the opportunity to have direct input into the development of new Standards that influence the design and operation of its products. Ongoing participation raises the company’s profile and reputation, giving Lutron increased credibility to hold leadership positions. IEC participation allows Lutron to

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Stay up to date and get ahead

It is important for Statnett to stay up to date with the development of standards concerning its different areas of interest. Technical, commercial and regulatory changes relevant to Statnett’s technological solutions and products are of great importance to the business.

Participation in IEC processes gives Statnett access to the arenas where the different interests of its business are discussed and where changes in the technical requirements are decided.

Through its participation in IEC technical committees, Statnett has the opportunity to communicate and address its needs and concerns with other utilities and suppliers.

At times where developments have been both desirable and appropriate, Statnett has immediately applied some of the changes discussed in IEC technical committees to its own specifications, even before the formal revision of the IEC Standard has been published. This approach has been used across several areas, most recently in regards to developments in power transformers in the IEC 60076 Standard.

Communication requirements

Like other transmission service operators, Statnett is always looking for cost-effective technological solutions. Quality, maintainability and reliability are also key factors that are considered for all purchases and technology adoptions. At times, Statnett has distinct needs that are specific to its network. Through its participation in IEC technical committees, Statnett has the opportunity to communicate and address its needs and concerns with other utilities and suppliers.

This provides the opportunity to influence the development of the related Standards. This forum also enables Statnett to track when its needs are not covered by International Standards, and address these needs directly.

About Statnett SF

Statnett is the transmission system operator in the Norwegian energy system and operates about 11,000 km of high-voltage power lines and 150 stations throughout Norway. Operations are monitored by one national control centre and three regional centres. Statnett is also responsible for the connections to Sweden, Finland, Russia, Denmark and the Netherlands. Statnett is a state enterprise, established under an Act relating to state-owned enterprises, and is owned by the Norwegian state through the Ministry of Petroleum and Energy.

> www.statnett.no/en
Cost savings and increased efficiency

As a successful major manufacturer of electronics, Vestel Group has been a participant in IEC Conformity Assessment (CA) for a long time. However, until recently it was not active in Standards development, and so found itself being reactive to new Standards. Thus, designs had to be retrofitted and projects were delayed.

Vestel quickly recognized the need to be at the forefront of Standards, in particular as part of the development process, so it began participating in IEC Young Professionals Programme in 2011. Vestel felt that the programme was a great launch pad for its young engineers to get some exposure in the world of IEC International Standards while simultaneously gaining a better understanding of how its participation in IEC Standards development can propel its global competitiveness.

Not long after Vestel began its involvement in IEC Young Professionals Programme, it started participating in IEC TC 108: Safety of electronic equipment within the field of audio/video, information technology and communication technology, and is now an active contributor. This enables the company to sit at the table where the rules for its business are being set rather than being subjected to its competitor’s rulings.

Vestel can therefore respond proactively to changes in Standards, saving the company thousands of dollars per year.

Company reputation

Vestel’s customers demand high quality and reliable products. With Vestel’s participation in the development of IEC Standards, its customers are always assured that its designs and construction are in accordance with International Standards.

About Vestel

Vestel Group is comprised of 29 companies operating in the fields of manufacturing, software and technology development, marketing, and distribution in consumer electronics, household appliances, multimedia communication, light-emitting diode (LED) lighting and defence industries. It has a turnover of EUR 5 billion.

Vestel is among the largest original equipment manufacturers (OEMs) and original design manufacturers (ODMs) in the world. It exports its products to 152 countries and accounts for 85% of the total television and 29% of the white goods exports in Turkey. With more than 13,000 employees, 1,050 sales points, 350 after sales centres and thousands of employees working at Vestel suppliers, Vestel creates an income source for 30,000 people.

Vestel has a large budget allocated for research and development (R&D) activities and a team of 1,100 engineers work to bring new technologies and innovative products to the market. The company is one of just three Turkish companies listed amongst the world’s 1,000 largest corporate R&D spenders.

> www.vestel.com
Improved asset management and quality control

Faced with sanctions in its home country of South Africa, Eskom had been procuring transformers from a variety of suppliers with no firm requirements on parameters such as those relating to impedance values and regulation range.

This process compromised the efficient use and management of transformers, leading to consequences such as shortened life span or premature failure.

As transformers are the most expensive asset on the electricity grid, such consequences are very costly to a utility. In the absence of standardized requirements, the quality of units procured was also not well benchmarked, leaving Eskom exposed or reliant on only a few suppliers.

The adoption of IEC Standards has helped streamline the quality inspection process when transformers are delivered to Eskom.

Using International Standard IEC 60076, Power transformers, and associated Standards, Eskom was able to establish standardized requirements for its transformers. This has provided suppliers from all around the globe with the opportunity to bid on common requirements. It gives Eskom the opportunity of assessing products rapidly and ranking them on common ground.

Opening new supply markets and competitive advantage

As a result, new supply markets have opened up for Eskom, giving it the competitive advantage of having many suppliers who can guarantee that their products meet IEC Standards.

By using transformers that conform to IEC Standards, Eskom has also improved its asset management practice, because it is now possible to interchange these transformers across the entire network. For example, when one transformer fails, it can be quickly replaced with another one, without the need for a design engineer to carry out a formal study to ensure the replaced transformer fits within the parameters of the network.

Better streamlining of the quality inspection process

The adoption of IEC Standards has also helped streamline the quality inspection process when transformers are delivered to Eskom. This has saved thousands of dollars in wasted human resources and errors.

About Eskom

Eskom is a South African company established in 1923 as the Electricity Supply Commission and converted into a public limited liability company in 2002. It is currently wholly owned by the government.

About 95% of the electricity used in South Africa and 45% of the electricity used in Africa is generated by Eskom. It also provides energy directly to approximately 45% of all South African end users. Eskom has a maximum self-generated net capacity of 41 194 MW, which makes it one of the top 20 utilities in the world by generation capacity.

> [www.eskom.co.za](http://www.eskom.co.za)
Motivation for using IEC standards

Consumer-owned Unison Networks Ltd is committed to optimizing costs without increasing operational risks or compromising reliability. When setting specifications for the purchase of equipment and electrical components for its network, Unison had previously adhered to British Standards, before moving to IEC International Standards. Unison has found the IEC Standards support compliance with New Zealand safety and reliability regulations, which are important given that our employees are exposed to significant safety risks when working with high voltages.

In 2009 Unison embarked on a Smart Network Initiative. As an early adopter of the Smart Network in New Zealand, a significant amount of work was done to trial new technologies and designs that would suit our network architecture.

Early adoption also meant that we had to develop novel solutions in-house, especially for emerging areas in the power sector such as “Big Data”. Unison formed a dedicated team called Asset Intelligence (AI) to develop algorithms that automatically convert data from our Smart Network into information used to support business decisions, such as network operations, planning and asset replacements.

IEC Standards became the best starting point for speeding up development work. As Unison’s network assets have always been compliant with IEC Standards, it was easy to develop algorithms using the same theoretical foundations.

IEC Standards for algorithm development

The incorporation of IEC Standards into development work has enabled Unison to observe some key benefits. We can have certainty that our algorithms will be applicable and relevant to assets installed in the network, even if the installations were made many years ago, because the assets purchased had specifications conforming to IEC Standards.

Conformance to IEC Standards guarantees the algorithms used won’t cause issues relating to safety or reliability. The Standards most useful to the AI team are those for major asset classes; transformers, cables and overhead lines. For example, the use of loading guide IEC 60076-7 allowed us to develop dynamic rating algorithms for transformers.

Saving on development costs

Leveraging established theoretical findings identified by IEC Standards has allowed Unison to eliminate duplicate efforts spent reinventing the wheel, therefore increasing development speed. This reduces the lead time to algorithm implementation, and saves development costs.

One example is that IEC Standards provide references to top research discoveries in a relevant technical niche area. This provides Unison with an excellent starting point for research, and makes it easier for a new researcher to perform a good literature review in the early stages, saving time and money.

Leveling-out the playing field

As a medium-sized distribution business, Unison is not in a position to invest heavily in new technology and innovation. Many smart technologies have been developed for bigger transmission network companies or generators, making them too expensive for wider implementation in distribution networks. However, developing algorithms internally has allowed Unison to achieve development at a reasonable cost. There is no need to purchase expensive technology with embedded intelligence to achieve the functions we require. IEC Standards have helped to level the playing field, providing a medium company like Unison with the opportunity to build internal development capabilities, yet maintain service delivery at a reasonable price.
New commercial opportunities

Using IEC Standards as the foundation for the algorithms also creates a commercial opportunity, allowing Unison to sell algorithms to other local or international companies which are also using the Standards. The development capability has also helped support Unison's vision to deliver world-class network and energy solutions, enhancing our reputation through the recognition of the AI team’s work, which has been accepted and published by local and international media.

About Unison Networks Ltd

Unison Networks Ltd owns the electricity distribution network in Hawke’s Bay, Taupo and Rotorua in New Zealand, supplying over 110,000 customers. It is owned by the Hawke’s Bay Power Consumers’ Trust.

> www.unison.co.nz

National Grid Saudi Arabia

by Khalid Saad Saeed AlMutairi, Transmission Engineer

Benefits of IEC participation

Early in its existence, National Grid Saudi Arabia was unsure about the technical requirements relating to its assets, including circuit breakers and gas insulated systems. It was using different industrial standards simultaneously. The company did not know who to turn to or where to look for the information it needed. This led it to adopt unnecessary requirements, thereby wasting precious time and money.

National Grid Saudi Arabia then decided to adopt and use IEC Standards of IEC Subcommittee (SC) 17A: Switching devices, and IEC SC 17C: Assemblies for high-voltage switchgear and controlgear. This helped in establishing guidelines for the technical requirements of its assets and the company decided to start using IEC Standards extensively.

Reduced costs and better operational safety

The adoption of IEC Standards is producing tangible benefits. There have been improvements in product purchasing while reducing costs and increasing operational safety. IEC Standards that have helped form part of National Grid Saudi Arabia’s solutions include IEC 62271, High-voltage switchgear and controlgear.

By using IEC Standards, National Grid Saudi Arabia has improved its relationship with its suppliers. Rather than individuals without the specific knowledge misinterpreting technical requirements, leading to unnecessary requirements being implemented, the improved relationship with suppliers produces collaborative efforts in setting up some guidelines for proper technical requirements. Ambiguities have been eliminated by contacting the relevant IEC Subcommittees and getting clarification from them.

About National Grid Saudi Arabia

The National Grid Saudi Arabia is a limited liability company owned by the Saudi Electricity Company. It was established in 2012 to operate, control and maintain the transmission grid in the Kingdom of Saudi Arabia.

> www.se.com.sa/en-us
At the forefront of new developments

Participating in IEC International Standards development has enabled REfficient to remain at the forefront of the recycling space. This activity allows REfficient to keep its customers abreast of the most up to date developments in recycling, giving them a strategic advantage.

A number of REfficient’s customers also want to have a better understanding of what some companies are doing environmentally to improve their products before they themselves commit to a purchase.

Through REfficient’s established IEC networks, they have been able to reach out to the appropriate person within the business and obtain the necessary information, which provides REfficient with a competitive advantage.

Improved brand reputation

Before becoming active in IEC activity, and because it was a young organization, REfficient was suffering from limited brand and industry recognition.

REfficient’s participation in IEC Technical Committee (TC) 111: Environmental standardization for electrical and electronic products and systems, has helped alleviate this issue as it has gradually been introduced to a global network of entities.

Many of REfficient’s employees are also experiencing a sense of extra pride in working for the business, as it has become recognized for its participation in and invaluable contributions to Standards development.

About REfficient

REfficient is a Canadian serviced-based business that helps companies be efficient with their resources, by buying, selling and recycling surplus assets. Its double-blind platform and shipping system hides the identities of buyers and sellers, thereby reducing the risk to both businesses.

Typically sellers have equipment that is surplus, redundant or obsolete and they engage REfficient to promote their products and find buyers. Once buyers are found, REfficient will organize logistics and the financial transactions. Types of businesses that have benefited from association with REfficient include telecommunications companies, contractors, resellers, government agencies, educational institutions, utilities and non-profit organizations.

It is estimated that these organizations are realizing savings typically amounting to 20-50% of products bought from traditional sources and sometimes upwards of 90%. Currently REfficient has customers in 14 countries.

> www.refficient.com
Increasing the bottom line

For Energex, the main benefit of our involvement in standardization is the opportunity to work with other stakeholders towards the development of relevant standards for our network, that achieve an acceptable balance between cost and quality for users of electricity.

Often when utilities are not part of the standards decision making process, they are left to work with a less than optimal standard and have to introduce other processes and measures to mitigate risks – this essentially impacts their bottom line. When, like Energex, they operate in a regulated business environment, this means that the costs are eventually passed onto consumers.

Standards are essential for establishing good industry practice, providing simplification and driving efficiencies to reduce costs. With important public awareness and Australian Energy Regulator (AER) surveillance of the industry, engineers today and into the future need to utilize any aids they have to help them keep costs down and maximize the life of the network assets.

Being proactive means cost savings

Energex is keeping a close watch on the development of International Standard IEC 61850, Communication networks and systems for power utility automation. Advantages of the Standard include reduced field wiring, the ability to innovate by integrating new products and implementing new protection and control methodologies.

The Standard also helps to support automation across substation, supplier and customer boundaries by carrying the relevant signals between IP-based networks. IEC 61850 also facilitates the ability to integrate and streamline design, construction, testing, fault finding and post-incident investigations.

Keeping up-to-date with Standards development allows Energex to proactively develop integration steps that align with the industry vision of IEC 61850 standardization. This will prove far more cost effective than taking a reactive approach.

About Energex

Energex Ltd is a government-owned corporation and provides distribution services to almost 1.4 million domestic and business connections, delivering electricity to a population base of around 3.2 million people located in south-east Queensland, Australia. Its asset base is worth approximately AUD 12 billion.

> www.energex.com.au
Learn industry best practices

Dynamic Systems Analysis (DSA) helps others solve complex ocean engineering problems across different industries, using its engineering software to design systems such as offshore moorings, remotely operated vehicles, fish farms or launch and recovery systems. International Standards giving recommended practices for methods and formulas that quantify the forces resulting from wind, current, and wave effects are utilized.

By following these recommendations, DSA ensures that its customers are using industry-accepted methods, which significantly reduces research and development (R&D) costs. They also cut down on the need for other investigations to determine the best or most practical methods for studying and evaluating particular problems.

There are many lessons to be learnt and shared across the industries in which DSA works (aquaculture, oceanography, marine renewables, oil and gas, and defence); being involved in International Standards work is a great tool for facilitating this.

Find market intelligence in new industries

International Standards relevant to this industry sector are written over a long period of time by a group of experts who have significant experience in the field of offshore dynamics and analysis. These experts set recommended practices, minimum acceptable analysis requirements and safety factors in the International Standards they help to develop. These Standards represent a distillation of their experience and knowledge, benefitting those newer to this field. It also enables them to take advantage of and help ensure the safety and reliability of equipment operating in the harsh ocean environment.

“The trick with a new industry like marine renewables is that there’s limited experience and, to date, not so much standards development,” notes Ryan Nicoll, DSA Director of Engineering.

Participation in IEC Technical Committee (TC) 114: Marine energy – Wave, tidal and other water current converters, has allowed DSA’s engineers to learn from the perspective and experience of other international experts while contributing the lessons they themselves have learnt – and building new Standards. This process results in a level of learning, interaction and networking that is very important. It complements more traditional activities such as attending engineering conferences.

Being involved in the IEC also provides important professional development for DSA’s engineers and builds the company profile internationally. By keeping a finger on the pulse of Standards development processes, DSA is ensuring its software products will help future clients in understanding and meeting new Standards for mooring as well as in general design for marine renewables and related industries.

About Dynamic Systems Analysis

Dynamic Systems Analysis (DSA) provides numerical modelling services and software to reduce the risk of its clients in the defence, marine, offshore and subsea industries. DSA uses its expertise to create engineering analysis software that tackles tough ocean engineering problems. DSA has offices in Canada and works with partners around the globe.

> http://dsa-ltd.ca
Motivation for participation in IEC

The main issue faced by Black & White Engineering Solutions (BWES) has been a lack of awareness of how Australian standards may change in the future and how these changes will affect both BWES services and its client base. BWES clients are predominantly in the small appliances industry.

To perform well in a global marketplace, it is important to understand how international markets function, including their regulations and standards.

Better service to clients

Participation in IEC has enhanced BWES understanding of the Australian standards harmonization process to IEC International Standards. This has enabled BWES to constantly improve and introduce new services to its clients.

The IEC resources that have been useful to BWES are the Standards related to IEC Technical Committee (TC) 61: Safety of household and similar electrical appliances, especially the IEC 60335 series covering this topic explicitly; IEC TC 61 Working Group (WG) 33: Portable fan heaters; and IEC TC 61 Advisory Group (AG) 28: Chairman’s Advisory Group.

Increased services, scope and staff development

In the past, BWES has felt that its limited knowledge of IEC Standards and processes has restricted the scope of its services. By participating in IEC Standards development activities, BWES has broadened its knowledge of IEC processes and Standards and at the same time, has improved staff development.

For companies to perform well in a global marketplace, it is important to gain an understanding of how international markets function, including their regulations and standards.

About Black & White Engineering Solutions

Black & White Engineering Solutions Pty Ltd is a consultancy firm that provides technical support to businesses requiring compliance and engineering assistance. These services are provided to a range of clients in the appliance and electrical equipment industries. BWES is based in Sydney, Australia. Since its establishment in 2000, it has developed long lasting relationships with Australian and international brand name companies and has been active in the Hong Kong and Chinese markets.

> www.bwes.com.au

Lutron

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react quickly and continue to positively influence new Standards while they are being developed. In today’s competitive and fast-moving marketplace this can be an advantage.

About Lutron

Lutron Electronics is a family owned company with headquarters in Coopersburg, Pennsylvania, USA and regional offices worldwide. In the late 1950s, the company’s founder, Joel Spira, invented the solid state dimmer using a thyristor, which generated less heat, used less energy than the rheostat that it replaced and it could fit into a standard wall box. This provided people with the ability to vary the intensity of lights in their homes – something that they would never previously have dreamt of doing. Lutron holds over 2,700 worldwide patents and has greatly expanded its range of products – from two to 15,000. The company has advanced the technology of lighting control while maintaining a market-leading position by focusing on exceptional quality and design. Lutron has also led innovations in window shade technology for the control of daylight as well as in wired and wireless systems for integrating the control of daylight and electric light.

> www.lutron.com
Pursuit for exceptional performance

As one of the world’s most reliable electricity grids, SP PowerGrid works relentlessly towards providing efficient, reliable and quality energy in Singapore.

To meet Singapore’s increasing demand for power, SP PowerGrid invests heavily in network infrastructure and engineering talent. While condition monitoring technologies help to ensure the health of systems, adherence to processes and standards is equally crucial for the company to perform at its optimal level. To this end, SP PowerGrid adopts the IEC International Standards, which provides a structured manner of defining technical specifications and clear tolerance limits for procured equipment and materials. Evidently, adoption of the Standards has brought immediate improvement in the quality of network equipment.

IEC Standards have proven useful in pointing SP PowerGrid towards defined benchmarks for equipment and materials. With clear parameters being set, it promotes a more level procurement field, admitting more suppliers to work towards the same scope of equipment and services required. The company can also procure with peace of mind, understanding that quality can be expected.

Peter Leong, Managing Director of SP PowerGrid and President of the Singapore IEC National Committee, said, “By adopting IEC Standards and Conformity Assessment Systems in our technical specifications, SP PowerGrid could tap on an international pool of equipment suppliers that offer products with consistent quality and qualified manufacturing processes.”

About SP PowerGrid

SP PowerGrid is a member of Singapore Power Group, which manages Singapore’s electricity and gas transmission and distribution networks. It uses cutting-edge technology to deliver highly reliable and efficient energy supply to industrial, commercial and residential customers. SP PowerGrid is the management company of SP PowerAssets Ltd and PowerGas Ltd. International industry indices rate the SP PowerGrid electricity network in Singapore as one of the world’s best. A benchmark study in 2014 spanning 25 large cities shows that Singapore has the fewest and shortest electricity outages of cities worldwide.

> www.singaporepower.com.sg
Increased product demand

Associated Battery Manufacturers Ltd (ABM) has seen its market share increase significantly, especially beyond its national borders, as a result of its involvement in IEC standardization and Conformity Assessment (CA) work. It has given customers more confidence and assurance surrounding the quality, reliability and safety of its products, which has enabled ABM to compete effectively within its local and international markets. Through ABM’s active involvement in IEC International Standards development and conformance, it has also been able to reposition its brand, moving from being a mid-class manufacturer to a world class manufacturer.

“The product quality, operational safety and interoperability have greatly improved. The company has been able to be more innovative and has greatly cut the cost of production by being informed early of any major quality issues affecting the products as per the Standards. This has greatly increased the demand for our products and services both locally and internationally,” says Ms Dorothy Omamo, ABM quality and customer care manager.

Define the rules of the game

The involvement in IEC Standards work has afforded ABM the opportunity to influence the domestic and international requirements. Being proactive allows companies to stay ahead of their competitors and this can represent the difference between success and failure. ABM has also established networking opportunities with other industry players (competitors, customers, agencies, authorities, etc.) in the field of low voltage manufacturing devices. This has enabled ABM to better serve its customers.

Reduction in operational costs

Participation in the national mirror committee of IEC Technical Committee (TC) 21: Secondary cells and batteries, and adoption of the associated IEC Standards have resulted in major cost savings for ABM. The company now uses IEC Standards for internal testing, significantly improving its product quality, operational safety and interoperability. ABM has also seen a reduction in operational costs, as product non-conformance is recognized as early as possible and well before products leave the premises. These cost savings have been redirected to research and development efforts within the business, enabling ABM to be a more innovative player within its industry.

Looking ahead

Moving forward, ABM will have an increased interest in IEC TC 82: Solar photovoltaic energy systems, and in IECRE, the IEC System for Certification to Standards Relating to Equipment for Use in Renewable Energy Applications. These both have great importance for ABM as all the elements in the photovoltaic system are highly relevant to the company’s operations and products.

About Associated Battery Manufacturers Ltd

Associated Battery Manufacturers Ltd is a privately-owned company located in Nairobi, Kenya. It was established in 1963 to assemble batteries from imported components. The manufacturing process has now developed into a fully integrated system which combines a lead production plant/smelter and a battery manufacturing facility that has a capacity to assemble over 80,000 battery units a month.

ABM supplies lead and lead alloys, battery components and batteries to the local market and throughout the Common Market for Eastern and Southern Africa (COMESA) region. With its vision of “Energy solutions – for all!”, the company is committed to the continuous assessment of technical developments and innovations in the international battery market.

https://chlorideexide.com