

## Common terminology for energy efficiency

by Jean-Jacques Marchais,  
member, ISO Strategic Advisory  
Group on Energy

**E**nergy efficiency has moved to the top of the global political agenda. This is illustrated by the decisions made at the 2009 G-8 summit in L'Aquila, Italy, and by the plethora of international climate change meetings culminating in the United Nations Climate Change Conference in Copenhagen, Denmark, in December 2009.

There are good reasons for this high-level focus: climate change mitigation, energy security and sustainable economic development, all depend on making the best possible use of every available energy source. At the same time, diversification of energy supply through development of renewables and promotion of low-carbon sources will be critical, both in deployment of existing technologies and in research and development on new ones.

Deployment of more efficient energy solutions involves many actors coming from a variety of organizations – including government, industry, solution providers, energy-intensive businesses, consumers, non-governmental organizations and standardization bodies – and from virtually all economic sectors. It is inevitable that the objectives of these disparate interests will vary and sometimes conflict.

This makes it essential that we arrive at agreed definitions of common terminology if we are to have meaningful discussions and common action toward regulations, standards, good practice, technologies and incentives.

### Global transverse issues

ISO and the International Electrotechnical Commission (IEC) have recently created a joint ISO/IEC project committee (ISO/IEC PC 2), following a new work item proposal from France. The move is the result of substantial standardization activity on the subject, among them the recently published European Standard EN 16001, *Energy management systems*.

Developing such a standard is a substantial challenge, as an extensive scope must be organized and covered consistently. Both horizontal global transverse issues and more specific, vertical sector-based issues will need to be addressed in a rapidly evolving environment characterized by tremendous leaps in innovation.

Global transverse issues include:

- *Energy efficiency action planning and reporting at global and national levels:* The European Union has set a target of a 20% energy efficiency improvement by 2020. Member states shall report progress (EU Directive 2006/32)
- *Energy efficiency action planning and reporting at entity level (business or organization):* A steadily growing number of industries, businesses and entities have enacted energy efficiency targets and reporting requirements. Energy management systems and associated standards have been implemented



- *Energy efficiency services development*: Clear, common terms are vital for maintaining the confidence of clients and aligning market players. Measurement and verification is a critical issue
- *Alignment of terms and definitions between stakeholders*: Including regulators, standards writers and standard users (clients and suppliers of energy efficiency solutions and services).

## The terminology roadmap

Global concepts and terms such as energy efficiency (and services), energy management and energy performance need to be agreed upon.

Vertical issues are more specific, sector-based topics. However, because all types of energy in all sectors will be covered, consistency between sectors, and sector-specific approaches are important.

Calculation methods and terminology will contribute to a roadmap with a lifespan of 10 to 30 years, requiring careful consideration of stakes and the implementation agenda:

- Process industries have long experience in energy management
- Existing buildings are critical for results over the next 10 years
- Generation efficiency and carbon sequestration and storage will give longer-term results
- Biofuels and electrical vehicles are essential for progress in the transportation sector.

Technology aspects will be important; for example, while buildings are traditionally only consumers of energy, structures of the future will be active players in energy management as producers as well as consumers.

Technology allows active energy efficiency according to user activity and external conditions:

- Decentralized renewable energy sources need to be connected and managed with the electrical grid
- Monitoring, automation and control open new energy management possibilities
- ICT and connectivity can now help optimize building energy behaviour

- Integration of building facilities such as security, energy efficiency and productivity will dramatically affect overall environmental performance
- Electric vehicles will interface with buildings
- Electricity storage technologies are emerging.

## Learning from experience

The working group launched by the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC) Sector Forum Energy Management has delivered a technical report on the subject. This experience can be summarized as follows:

### *Consider actual context*

- High visibility and pressure on regulators and political agendas
- Inflation of communication by all stakeholders
- Energy efficiency implementation is the real challenge.

### *Keep all stakeholders in mind while giving priority to implementers*

- Compromise is essential
- Keep it simple
- Standards are key tools to accelerate implementation.

### *Do not jump to terms and definitions without consensus on concepts*

- The recommendations in ISO 704, *Terminology work – Principles and methods*, are valuable
- Consensus on concepts will facilitate future work on terms and definitions
- Initial time investments on concepts improve efficiency.

### *Concentrate first on core and transverse; more specific terms can be handled in sectors*

- Core and transverse issues are the priority to ensure consistency
- Sectors have specific needs requiring specific competencies and experts.

The availability of common terms on energy efficiency and renewable energy sources will foster dialogue between all stakeholders; it will support understanding of regulatory, technical and contractual texts on energy efficiency and renewable energy sources. Specifically, it will promote actions on:

- Elaboration of local and regional regulations
- Standards writing and coordination between various technical committees
- Standards understanding and application by users
- Clarification of relations between providers and clients regarding procurement, contracts and services.

The joint ISO/IEC PC 2 will soon begin this challenging work. Involvement of many countries will be a key to ensuring international consensus. ■

## About the author



**Jean-Jacques Marchais** is a graduate engineer from the Polytechnic Institute of Grenoble, France. He has worked for Schneider Electric since

1981, and is currently in the Corporate Strategy and Innovation Division in charge of energy efficiency regulations and standardization. Mr. Marchais is a member of the joint European Committee for Standardization – European Committee for Electrotechnical Standardization Sector Forum Energy Management (SFEM) and Convenor of the SFEM working group on energy efficiency and energy management terminology. He is also a member of the International Electrotechnical Commission Strategic Group 1 and of the ISO Strategic Advisory Group on Energy.