ISO/TC 301
Strategic Business Plan
EXECUTIVE SUMMARY

Energy savings are essential to meeting global greenhouse gas (GHG) emissions reduction goals and energy management is an unparalleled opportunity to enable organizations across all sectors to realize on-going energy consumption reductions.

Organizations are increasingly motivated to improve energy management due to a range of internal and external factors. Internal factors include cost minimization/profit maximization, the need for better data on financial and environmental performance, meeting sustainability targets or improving competitiveness. External factors include regulatory requirements, supply chain considerations, responsibility to shareholders, energy security and reliability, or financial incentives for energy or environmental improvement.

The work of ISO/TC 301 Energy management and energy savings provides a globally recognized standard of practice for managing energy over time and for calculating and reporting energy savings. A key deliverable, ISO 50001 unites, on a broad level, the concept and execution of energy management system (EnMS) standardization for a range of stakeholders, including, but not limited to: industry, buildings, energy efficiency organizations, standards authorities, energy service providers, government agencies, energy management practitioners, and conformance and energy auditing firms.

Energy management represents a shift in focus from the merits of individual projects to a more systematic, comprehensive, and strategic approach that can enable organizations to realize their full potential to achieve improved energy performance and energy savings over time. Evidence suggests that a significant proportion of cost-effective energy efficiency improvement potential is not realized. The difference between the actual level of energy efficiency and the higher level that would be cost-effective is often referred to as the ‘efficiency gap’.

The ISO/TC 301 portfolio of standards and supporting documents can help bridge this efficiency gap by providing a globally relevant framework for the systematic improvement of energy performance and consistent energy saving calculations. This would enhance economic development at the organizational, national, and global levels, and while greatly contributing to addressing urgent global concerns regarding emissions from the use of non-renewable energy sources and the associated climate change impact.

ISO/TC 301 has as its scope standardization in the field of energy management for organizations of all sizes and types, groups, networks, cities, countries and regions.

Energy management includes: establishing, implementing, and maintaining energy management systems; monitoring and measuring energy performance for continual improvement; identifying, quantifying, verifying, validating and reporting energy performance improvements; energy security; energy savings calculations; terminology, competency and conformity assessment in this field.
This standardization work aims to foster improved business performance and public policies to support energy management and energy savings, support robust financial evaluation of energy performance improvements or potential improvements, support more resilient and reliable energy access, and contribute positively to climate change mitigation, adaptation and other related environmental impacts.

Its mission is to promote sustainable, effective, and efficient energy use by developing and encouraging use of standards in the field of energy management, including transparent methodologies for energy savings.

The 54 participating and 12 observing countries in ISO/TC 301 actively seek to continually improve: utilization of TC members' resources; shared strong ownership of all ISO/TC 301 deliverables; coherence of the overall ISO/TC 301 standards portfolio; and continuity of TC members commitment. This is accomplished through internal processes designed to support work prioritization, facilitate member participation and external stakeholder input, and enhance efficiency of work development.

Through harmonization with other ISO management standards and liaisons with key organisations, ISO/TC 301 helps to disseminate energy management best practices internationally, promoting energy savings and the business, social and environmental benefits of improved energy performance.
1. INTRODUCTION

1.1 ISO technical committees and business planning

The extension of formal business planning to International Organization for Standardization (ISO) Technical Committees (ISO/TCs) is an important measure which forms part of a major review of business. The aim is to align the ISO work programme with expressed business environment needs and trends. This allows ISO/TCs to prioritize among different projects, to identify the benefits expected from the availability of International Standards, and to ensure adequate resources for projects throughout their development.

1.2 International standardization and the role of ISO

The foremost aim of international standardization is to facilitate the exchange of goods and services through the elimination of technical barriers to trade.

Three bodies are responsible for the planning, development and adoption of International Standards: ISO is responsible for all sectors excluding electrotechnical, which is the responsibility of IEC (International Electrotechnical Committee), and most of the Telecommunications Technologies, which are largely the responsibility of ITU (International Telecommunication Union).

ISO is a legal association, the members of which are the National Standards Bodies (NSBs) of some 164 countries (organizations representing social and economic interests at the international level), supported by a Central Secretariat based in Geneva, Switzerland.

The principal deliverable of ISO is the International Standard and associated guidance and technical documents.

An International Standard embodies the essential principles of global openness and transparency, consensus and technical coherence. These are safeguarded through its development in an ISO Technical Committee, representative of all interested parties, supported by a public comment phase (the ISO Technical Enquiry). ISO and its Technical Committees are also able to offer the ISO Technical Specification (ISO/TS), the ISO Publicly Available Specification (ISO/PAS) and the ISO Technical Report (ISO/TR) as solutions to market needs. These ISO deliverables represent lower levels of consensus and therefore do not have the same status as an International Standard.

ISO offers also the International Workshop Agreement (IWA) as a deliverable which aims to bridge the gap between the activities of consortia and the formal process of standardization represented by ISO and its national body. An important distinction is that the IWA is developed by ISO workshops and fora, comprising only participants with direct interest, and so it is not accorded the status of an International Standard.
2. BUSINESS ENVIRONMENT OF THE ISO/TC

2.1 Description of the Business Environment

The following political, economic, technical, regulatory, legal and social dynamics describe the business environment related to the scope of this ISO/TC. They may significantly influence how the relevant standards development processes are conducted and the content of the resulting standards:

Increasingly, organizations are establishing, maintaining or expanding their energy management approaches and seeking continual improvement. Organizations are motivated to improve energy management due to a range of internal and external factors. Internal factors include cost minimization/profit maximization objectives, the need for better data on financial and environmental performance, meeting sustainability targets or improving competitiveness. External factors include obligations such as regulatory requirements, supply chain considerations, responsibility to shareholders, energy security and reliability, or financial incentives for energy or environmental improvement.

Numerous programs are in existence or under development in different nations, regions, provinces/states, and metropolitan areas to promote better energy performance, often as part of broader sustainability initiatives. Organizations with operations that span different countries and regions benefit from international standards that allow consistent energy performance evaluation and concomitant management procedures worldwide.

ISO 50001 unites, on a broad level, the concept and execution of energy management system (EnMS) standardization for a range of stakeholders, including, but not limited to: industry, buildings, energy efficiency organizations, standards authorities, energy service providers, government agencies, energy management practitioners, and conformance and energy auditing firms.

Standardization in energy management and energy savings focuses on:
- Management commitment to business processes that will yield continual improvement in energy performance,
- Establishing a framework for planning, measuring, and monitoring energy performance based on available and improved future data,
- Sustaining energy performance improvements over time through operational control and related methods,
- Quantitative methods for evaluation that embrace the full range of energy performance improvement options, not limited to evaluations of individual projects or technologies,
- Harmonization of energy savings calculation methodologies, and
- Supporting external as well as internal transparency and confidence in reporting energy performance and energy savings through internal audits, conformity assessments, and other verification processes.

The ISO 50000 portfolio of standards and supporting documents can facilitate national and regional programs to improve energy performance by providing a globally recognized standard of practice for managing energy over time and calculating and reporting energy savings. This is needed because companies and other stakeholders increasingly face challenges in meeting their corporate and regulatory obligations pertaining to energy use and climate change. Energy management is a practical and effective response toward meeting these challenges.
Ongoing concern about energy security and sustainable development has significantly affected global practices in recent years as all energy stakeholders—energy consumers, energy suppliers, administrations and other interested parties—strive to achieve energy savings targets.

Improvement of energy performance is among the most effective ways to reduce greenhouse gas (GHG) emissions. The Intergovernmental Panel on Climate Change (IPCC) and the International Energy Agency (IEA) World Energy Outlook have consistently identified energy efficiency, which is included in the concept of energy performance, and the use of renewable energy as having the most significant potential to reduce energy use and greenhouse gas emissions.

Improved policies, both voluntary and mandatory, and measures for increasing energy savings and energy efficiency continue to emerge. Continued policy developments in this field reflect growing acceptance of the importance of such measures in reducing carbon dioxide emissions, minimising the cost of energy, enhancing energy security and addressing wider environmental concerns. Public policies in support of energy efficiency that are driven by energy savings, emission reductions, and/or financial targets are now common place. For example, the European Union (EU) Energy Package aims to reduce energy consumption by 27% to 2030 compared to 1990.

Despite the demonstrated cost-effectiveness of energy efficiency and the existence of market mechanisms to encourage implementation in some countries, evidence suggests that a significant proportion of energy efficiency improvement potential is not realized. The difference between the actual level of energy efficiency and the higher level that would be cost-effective is often referred to as the ‘efficiency gap’.

Some examples of mechanisms to address the ‘efficiency gap’ are:

- Energy service companies (ESCOs) that can aggregate energy savings from a number of individual households and companies;
- Energy-efficiency mortgages, and;
- Carbon trading (e.g. white certificates or emission permits).

In recent years, the international business community has seen:

- Increasing trading mechanisms for energy savings to stimulate the development and adoption of energy saving measures;
- Increasing government and community expectations relating to the energy performance of equipment;
- Increasing use of standards to better achieve energy saving and energy efficiency targets.
- Increasing emphasis on compliance with energy efficiency regulatory requirements, and;
- Measures enabling energy savings to be compared on a common basis across broad economic and political groupings.

The work of ISO/TC 301 has the potential to help bridge the efficiency gap as it provides a globally relevant framework for the systematic improvement of energy performance and consistent energy saving calculations.
2.2 **Quantitative Indicators of the Business Environment**

Energy savings represent an essential component of meeting climate goals, and energy management is an unparalleled opportunity to enable organizations across all sectors to realize on-going energy consumption reductions. This shift from a focus on the merits of individual projects to a more systematic, comprehensive, and strategic focus can enable organizations to realize their full potential to achieve improved energy performance over time. Accomplishing this goal would enhance economic development at the organizational, national, and global levels, and would contribute greatly to addressing urgent global concerns regarding emissions from the use of non-renewable energy sources and associated climate change impact. The IEA has characterized it as –

‘*The next decade is critical. If emissions do not peak by around 2020 and decline steadily thereafter, achieving the needed 50% reduction by 2050 will become much more costly. In fact, the opportunity may be lost completely. Attempting to regain a 50% reduction path at a later point in time would require much greater CO2 reductions, entailing much more drastic action on a shorter time scale and significantly higher costs than may be politically acceptable.*’

Energy efficiency improvement offers not only the largest potential for CO2 reductions; in most cases, it is significantly more cost effective than other strategies, and is complementary to the use of renewable energy sources.

Utilities and other efficiency program administrators have run efficiency programs for decades. However these programs have tended to focus on equipment and component design rather than facility or building-wide energy performance. Even programs that address whole facilities or buildings do not usually take into account savings from operations and maintenance, or other non-capital-asset-based improvements.

Implementation of an EnMS leads to more persistent energy performance improvements and strengthens the rationale for providing financial incentives for all elements of energy performance improvement, including those resulting from operational changes. ISO 50001 has demonstrated exceptionally strong standard sales both at the international and national level. In 2015, 11,985 ISO 50001 certifications were issued worldwide (compared to 6,765 certifications in 2014). Most certifications were issued in Germany, with 5931 followed by UK with 1464. The number of ISO 50001 certifications is available in the most recent ISO Survey.

ISO 50001 is serving as a foundation for other policies and programmes that allow both wider and faster acceptance of the standard and an increase in the rate of energy performance improvement to which organizations are willing to commit.

**Clean Energy Ministerial (CEM) Energy Management Working Group (EMWG):**

Building on years of input and engagement from ISO 50001 implementers from around the globe, the EMWG and its partners have distilled four “Key Principles” which define the value and need for international engagement to ensure mutual success in maximizing the value of ISO 50001 for business and the climate. These Key Principles are being advanced through

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1. IEA Energy Technologies Perspective 2011. Executive Summary. Paris, France
2. [https://www.iso.org/the-iso-survey.html](https://www.iso.org/the-iso-survey.html)
3. The key principles are: ISO 50001 provides a framework for measuring climate impacts; Qualified ISO 50001 professionals maximize global impacts; Robust ISO 50001 certification strategies support consistent global outcomes, and; International input strengthens the market relevance of the ISO 50000 portfolio
EMWG activities and its Energy Management Campaign. A total of 25 energy ministers, company leaders, and other key partners launched this Campaign at the seventh Clean Energy Ministerial (CEM7) in San Francisco in June 2016. Through the Energy Management Campaign, partners strive to achieve 50,001 global certifications to the ISO 50001 global energy management system standard by 2020.

The EMWG, with its 17 country members and partners such as the United Nations Industrial Development Organization (UNIDO), undertakes a number of activities to facilitate international cooperation to boost ISO 50001 outcomes. For example, current activities include Energy Professionals International (EPI) ISO 50001 Auditor Certification Program and an International Awards Program for ISO 50001 Leaders.

G20 Energy Efficiency Leading Programme:
In September 2016, G20 leaders adopted the G20 Energy Efficiency Leading Programme (the Leading Programme), which is the G20’s first long-term plan for energy efficiency. The Leading Programme provides the basis for a “comprehensive, flexible, and adequately-resourced” framework for strengthened voluntary collaboration on energy efficiency among G20 members and beyond. The Leading Programme expands G20 collaboration to include nine dedicated task groups that progress work on each of the G20’s priority areas for energy efficiency. This includes the EMWG, top ten best available technologies and best practices (TOP TENs), super-efficient equipment and appliance deployment (SEAD), district energy systems, energy end-use data and energy efficiency metrics, and knowledge-sharing.

There are three compelling reasons for G20 countries to prioritise and up-scale energy efficiency investments:

- **ECONOMIC**: Energy Productivity sits at the base of economic prosperity: It lowers energy bills and can create “infrastructure programme-like” levels of employment and energy supply;
- **CLIMATE**: About half of the global pre-2035 greenhouse gas emission reductions needed to keep the planet on a 2-degree Celsius pathway can be delivered through energy efficiency. In fact, “energy efficiency first” not only makes economic sense but also cuts the cost of climate action by $2.8 trillion, and;
- **DEVELOPMENT**: Energy efficiency is key to achieving the UN’s 72nd Sustainable Development Goal (SDG) to “ensure access to affordable, reliable, sustainable and modern energy for all”. SE4ALL⁴ sees a $430 billion investment gap in energy efficiency investments to deliver its objective of doubling the global rate of energy efficiency improvements needed to meet SDG.

Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. To address climate change, countries adopted the Paris Agreement at the COP21 in Paris on 12 December 2015. The Agreement entered into force less than a year later. In the agreement, all signatory countries agreed to work to limit global temperature rise to well below 2 degrees Celsius, and given the grave risks, to strive for 1.5 degrees Celsius.

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⁴ Sustainable Energy for All, [http://www.se4all.org/](http://www.se4all.org/)
Continued international engagement and collaboration in the field of Energy Management and Energy Savings are essential for the achievement of the SDGs, the success of the Paris Agreement as well as the G20 countries priorities.

3. BENEFITS EXPECTED FROM THE WORK OF THE ISO/TC 301

Energy is essential for undertaking economic activity and is both a significant component of operating costs for organizations, countries and regions, and, globally, the major driver of greenhouse gas emissions and some types of air pollution. ISO/TC301 develops and maintains standards that enable organizations around the world to manage their energy performance and determine energy savings in a systematic and consistent way. These activities improve the ability of organizations to adopt emerging energy technologies and practices that minimize lifetime costs. Improving energy management and better defining energy savings internationally reduces barriers to trade by improving competitiveness and confidence in energy management practices and outcomes. It further supports improved quality, harmonization and capacity building in energy efficiency services, allowing more countries and supply chains to benefit from global expertise and experience. In the process, standards and other deliverables developed by ISO/TC301 help to disseminate energy management best practices internationally, promoting energy savings and the business, social and environmental benefits of improved energy performance. Through harmonization with other ISO management standards and liaisons with key organisations, ISO/TC301 promotes both the use of related international standards and harmonization of national and regional standards.

4. REPRESENTATION AND PARTICIPATION IN THE ISO/TC 301

4.1 Membership

Countries/ISO member bodies that are P and O members of the ISO/TC 301 committee

4.2 Analysis of the participation

As of August 2017, there were 58 participating and 13 observing countries within ISO/TC 301, as noted in Figure 1 below:
ISO/TC 301 has received the benefit of the diversity of member country participation. Additionally, the ISO Committee on Developing Country Matters (ISO/DEVCO) sponsors developing countries that participate in the ISO/TC 301 meetings. This has been beneficial for all participants to better understand the issues and priorities of developing countries.

ISO/TC 301 also benefits from the participation of representatives from a range of stakeholder groups, including: industry, buildings, energy efficiency organizations, standards authorities, energy service providers, government agencies, energy management practitioners, and conformance and energy auditing firms.

ISO/TC 301 meets on an annual basis and efforts have been made by the committee leadership to vary the meeting locations. In addition, ISO/TC 301 on many occasions has held webinars to allow for increased member body participation and to lower the expenses of the delegates. Many times the same webinar is offered at different times to allow for as much participation as possible.

ISO/TC 301 has many liaisons who actively participate, including international organizations and representatives from other ISO TCs. These liaisons communicate the views and needs of a broader stakeholder community, including developing countries.

5. OBJECTIVES OF THE ISO/TC AND STRATEGIES FOR THEIR ACHIEVEMENT

5.1 Defined objectives of the ISO/TC

ISO/TC 301 has as its scope standardization in the field of energy management for organizations of all sizes and types, groups, networks, cities, countries and regions.

Energy management includes: establishing, implementing, and maintaining energy management systems; monitoring and measuring energy performance for continual improvement; identifying, quantifying, verifying, validating and reporting energy performance
improvements; energy security; energy savings calculations; terminology, competency and conformity assessment in this field.

This standardization work aims to foster improved business performance and public policies to support energy management and energy savings, support robust financial evaluation of energy performance improvements or potential improvements, support more resilient and reliable energy access, and contribute positively to climate change mitigation, adaptation and other related environmental impacts.

The objective of ISO/TC 301 is to develop standards and guidance in the field of energy management for improved energy performance and energy savings calculations. ISO/TC 301 standardization work and deliverables will be targeted to all sizes and types of organizations, groups, networks, cities, countries and regions.

Its mission is to promote sustainable, effective, and efficient energy use by developing and encouraging use of standards in the field of energy management, including transparent methodologies for energy savings.

5.2 Identified strategies to achieve the ISO/TC’s defined objectives

ISO/TC 242 Energy Management previously developed several standards in the 50000 series—including the core energy management system standard, ISO 50001. Many members of ISO/TC 242 were also members of ISO/TC 257 Evaluation of Energy Savings, a related TC that also produced several standards, including two that were joint projects with ISO/TC 242.

In February 2016, the resolution of the Technical Management Board (TMB) included a proposal for the consolidation of ISO/TC 242 Energy management and ISO/TC 257 Evaluation of energy savings into a new TC called ISO/TC 301 Energy Management and Energy Savings. The purpose of the merger was to ensure that ISO/TC 301 would be able to incorporate the work of ISO/TC 242 and ISO/TC 257, and at the same time be open for possible expansion into new areas of work related to energy management and energy savings.

ISO/TC 301 was formally established in June 2016 after the ISO TMB resolution was unanimously approved by the ISO/TC 242 and ISO/TC 257 Committee members. The current governance structure includes ANSI as Chair of ISO/TC 301 and SAC and ABNT as the Vice-Chairs. It was agreed to review the need for two Vice-Chairs after three years. The Chairman’s Advisory Group (CAG) was established with ANSI as its Chair, BSI and ABNT as co-secretaries, and with members including, the JPC2 leadership, each WG convenor, and up to ten P member NSB representatives rotating every two years.

ISO/TC 301 established an ad hoc group to draft its Strategic Business Plan (SBP) to develop a rigorous, transparent and equitable approach to reviewing current work and to provide appropriate criteria for prioritizing new work, including consideration of overlaps in standards or difficulties arising from participation levels. It also established a terminology task group to coordinate terms and definitions and a communication task group to develop communications. It agreed to build internal liaisons with ISO/IEC/JPC 2, ISO/TC 207/SC 1, ISO/TC 207/SC 7 and ISO/CASCO and Category A liaisons with Energy Management Working Group (EMWG), United Nations Industrial Development Organization (UNIDO), Efficiency Valuation
Organization (EVO), International Energy Agency (IEA) and Independent International Organization for Certification (IIOC), as well as a Category D liaison with Consumer International (CI).

To achieve its objectives, ISO/TC 301 has developed specific strategies that help guide its work program. With respect to energy management ISO/TC 301 work will:

- provide a sound basis for continual improvement;
- enable effective use and availability of data;
- support robust, ambitious and sustained outcomes;
- support uptake globally by all kinds of users;
- develop tools to support and facilitate implementation of energy management systems, and;
- support effective operational control to improve and maintain energy performance.

With respect to energy performance and energy savings ISO/TC 301 work will focus on developing standards that assist users to:

- effectively monitor and measure energy performance;
- use quality data and sound energy accounting practices;
- systematically identify and quantify energy performance improvements;
- apply standardized methods for calculating, measuring and verifying energy savings, and;
- support transparent and effective evaluation and reporting of energy performance improvements and energy savings.

ISO/TC 301 will provide support for robust conformity assessment schemes and the creation of a strong competency-based workforce for energy management, including for continual energy performance improvement and calculation of energy savings.

This potential work program for ISO/TC 301 has been grouped into four principal categories, which are described below. See Annex A for additional details:

1) Energy management system requirements, implementation and assessment
   a. EnMS requirements
   b. EnMS implementation
      i. General
      ii. Expanded implementation
      iii. Executive guides
      iv. Sector-specific implementation
      v. Competence of the EnMS practitioners
c. Conformity assessment of EnMS
   i. EnMS certification
   ii. Competence of ISO 50001 EnMS certification auditors

2) Metrics, data, measurement and calculations
   a. Energy performance metrics and energy savings calculations
      i. Energy performance indicators and baselines
      ii. Energy savings calculations
   b. Data management
      i. Sector specific data management
      ii. Energy measurement plan for organization
      iii. Energy performance data and interoperability

3) Verification, evaluation and reporting
   a. General
   b. Verification
      i. General
      ii. Competence/qualifications associated with EnMS M&V
      iii. Conformity assessment of M&V activities (liaison with CASCO - ISO 17029)
      iv. Sector specific guidance on organizational M&V (aligned with EnPI/EnB models)
   c. Program evaluation
   d. National and regional energy savings calculations
   e. National and regional reporting methodologies

4) Opportunities for improvement
   a. Energy services
   b. Energy auditing
i. General

ii. Sector-specific

c. Energy supply, networks and sources
   i. energy-conversion processes using combustion, such as fossil fuels (oil, gas and coal), wood-derived fuels or energy from waste
   ii. energy-conversion processes from nuclear energy
   iii. energy-conversion processes from renewable energy sources (e.g. solar, wind, geothermal and hydropower)
   iv. energy conversion processes from stored energy (batteries, compressed air, seasonal heat storage, etc.)
   v. cogeneration and heat recovery

d. Demand side management

e. Energy system optimization

f. Procurement and design for energy performance
   i. EnMS design processes for energy performance, reference IE 399 Energy Efficient Design Management
   ii. Procurement of services, products, equipment

g. Competence related to improvement opportunities

It is expected that ISO/TC 301 will follow the strategy developed to prioritize and manage future work illustrated in Figure 2 below.

Figure 2: Management of New Work Item Proposals
TC 301 will endeavor to process NWIPs as quickly as possible, with the following maximum timelines:

Steps 1 and 2: 2 weeks total
Step 3 - CAG assignment to WG or Ad Hoc: 4 weeks
Step 4: review completed within 6 weeks
Steps 5 and 6: recommendation within 4 weeks
Step 7: TC 301 balloted decision within 6 weeks

Refer to Annex B for ISO/TC 301 New Work Item Proposal (NWIP) – Principles Screening Checklist.

6. FACTORS AFFECTING COMPLETION AND IMPLEMENTATION OF THE ISO/TC WORK PROGRAMME

Development and successful uptake of international standards require TC members’ commitment and resources to be sustained over medium-to-long periods of time. However, during these periods of time, factors outside of TC members’ control, such as national or international policies or business priorities, may change and significantly affect members’ level of engagement in and contribution to the TC work programme.

When looking at factors that could have a negative impact on completion of ISO/TC 301’s work programme or business community acceptance and use of the standards developed by
the TC, aspects to be considered would include: TC members' resources; shared strong ownership of all ISO/TC 301 deliverables; coherence of overall ISO/TC 301 standards portfolio; and continuity of TC members commitment.

As of April 2017, ISO/TC 301 counted 13 working groups, most, if not all of them developing standards/guidance/deliverables in parallel. With the exception of few countries, this high number of working groups has prevented most TC members from actively participating in many working groups, imposing inevitable choices due to finite expert resources.

A consequence of the mismatch between work programmes’ ambitions and most TC members’ resources is a significant number of “WGs/projects” with participation from a fairly limited number of experts. This has the potential to translate into end deliverables that are perceived as not representative of the full diversity of contexts and expertise of ISO/TC 301 members. This, in turn, may result in a lack of ownership by many TC members and a lack of active promotion at a national level within their respective business communities or policy frameworks.

The parallel development of many standards when combined with insufficient expert resources is increasing the risk of inconsistencies between the final deliverables, with consequent potential negative impact on the end-user community’s perception.

In response to these issues, ISO/TC 301 determined that fewer working groups would provide a more streamlined and effective approach to managing the workload and supporting adequate availability of experts during critical periods of standard development. This new structure is described in the following section.
7. STRUCTURE, CURRENT PROJECTS AND PUBLICATIONS OF THE ISO/TC

7.1 Structure of Committee – ISO/TC 301

The structure of ISO/TC 301 has been optimized to reflect its objectives and key priorities, as well as its governance structure. It consists of four Working Groups (WG) that represent the principal categories of work described in Section 5. To ensure that the operations of the TC remain efficient and manageable, considerable efforts will be made to limit the TC structure to four WGs and to include all new work within the existing WGs. Any proposal to increase the number of WGs will need to be submitted formally to the ISO/TC 301 Secretariat for consideration and vote at an annual Plenary. The Committee structure is represented schematically in Figure 3.

Information on ISO online

The link below is to the TC’s page on ISO’s website: ISO TC 301 on ISO Online

Click on the tabs and links on this page to find the following information:
• About (Secretariat, Secretary, Chair, Date of creation, Scope, etc.)
• Contact details
• Structure (Subcommittees and working groups)

• Liaisons
• Meetings
• Tools
• Work programme (published standards and standards under development)
  
  • Publications to date
  
  • Current projects and timelines
  
Reference information

Glossary of terms and abbreviations used in ISO/TC Business Plans

General information on the principles of ISO's technical work
Annex A – ISO/TC 301 Principal Work Program Categories

1) Energy management system requirements, implementation and assessment (published work and work underway are in *italics*)

   a. EnMS requirements
      

   b. EnMS implementation
      
      i. General
         
         o *Publish update of ISO 50004:2014 Guidance for implementation, maintenance, and improvement of an energy management system*

      ii. Expanded implementation
         
         o Guidance for multiple organizations implementing a common (ISO 50001) EnMS
         
         o Supply chain

      iii. Executive guides (not necessarily standards)
         
         o Executive overview of ISO 50001;
         
         o Potential business drivers for adoption (include messaging that “energy is a manageable asset, not overhead”);
         
         o Culture change in energy management- what it is, how achieved
         
         o Communication guide on ISO 50001 for organizations
         
         o Implementation in Small and Medium Size Enterprises (SMEs)

      iv. Sector-specific implementation
         
         o Energy intensive industries – in liaison with appropriate TCs
         
         o Implementation in buildings
         
         o Implementation in transport
         
         o Implementation in sanitation
         
         o Implementation in oil and gas

      v. Competence of the EnMS practitioners (existing national and regional standards and competency requirements as reference )

   c. Conformity assessment of EnMS
      
      i. EnMS certification
         
         o *Publish update of ISO 50003:2014 Energy management systems-Requirements for bodies providing audit and certification of energy management systems* (to align with updates to 50001 and 17021)
ii. Competence of ISO 50001 EnMS certification auditors (reference international competency requirements e.g. EPI ISO 50001 Lead Auditor)

2) Metrics, data, measurement and calculations

a. Energy performance metrics and energy savings calculations

i. Energy performance indicators and baselines
   o Guidance on tailored EnPI and EnB models for industrial sectors, SMEs, groups, supply chains, or buildings

ii. Energy savings calculations
   o ISO 50047:2016 Determination of energy savings in organizations
   o Determination of energy savings in expanded EnMS implementation - groups, supply chains, municipalities
   o ISO 17741:2016 General technical rules for measurement, calculation and verification of energy savings of projects
   o Publish ISO 50044 Energy saving projects (EnSPs) – Guidelines for economic and financial evaluation

b. Data management

i. Sector specific data management
   o Publish ISO 50008 Building energy data management for energy performance—Guidance for a systemic data exchange approach
   o Industry energy data management for energy performance

ii. Energy measurement plan for organization

iii. Energy performance data and interoperability
   o Equipment
   o Systems
   o Processes

3) Verification, evaluation and reporting

a. General
   o Publish ISO 50046 General quantification methods for ex ante or expected energy savings

b. Verification

i. General
ISO/TC 301 Strategic business plan
Date: August 30, 2017
Version: Final

○ ISO 50015: 2014 Energy management systems—Measurement and verification of energy performance of organizations—General principles and guidance

ii. Competence/qualifications associated with of EnMS M&V
iii. Conformity assessment of M&V activities (liaison with CASCO - ISO 17029)
iv. Sector specific guidance on organizational M&V (aligned with EnPI/EnB models)

c. Program evaluation
   ○ Publish ISO 50021 Energy Savings Evaluators

d. National and regional energy savings calculations
   ○ ISO 17742: 2015 Energy Efficiency and Savings calculation for Countries, Regions and Cities
   ○ Publish ISO 50045 Technical guidelines for evaluation of energy savings of thermal power plants
   ○ Publish ISO 50049 Calculation methods for the analysis of energy efficiency and energy consumption variations at national level: relation to energy savings and other factors

e. National and regional reporting methodologies
   ○ ISO 17743:2016 Energy savings -- Definition of a methodological framework applicable to calculation and reporting on energy savings
   ○ Connection to GHG accounting practices

4) Opportunities for improvement

a. Energy services
   ○ Publish ISO 50007 Activities relating to energy services

b. Energy auditing
   i. General
      ○ ISO 50002:2014 Energy audits - Requirements with guidance for use
   
   ii. Sector-specific
      ○ Transport – for example AS/NZ 3598.3
      ○ Buildings – for example AS/NZS 3598.1
      ○ Industrial Processes- for example AS/NZS 3598.2

c. Energy supply, networks and sources
   i. energy-conversion processes using combustion, such as fossil fuels (oil, gas and coal), wood-derived fuels or energy from waste
   ii. energy-conversion processes from nuclear energy
   iii. energy-conversion processes from renewable energy sources (e.g. solar, wind, geothermal and hydropower)
iv. energy conversion processes from stored energy (batteries, compressed air, seasonal heat storage, etc.)
v. cogeneration and heat recovery

d. Demand side management

e. Energy system optimization

f. Procurement and design for energy performance
   i. EnMS design processes for energy performance, reference IS 399 Energy Efficient Design Management
   ii. Procurement of services, products, equipment
       o Guidance on energy performance procurement considerations- total lifetime analysis for energy performance, transitioning spare parts inventory, cost savings
       o Sample specifications and contracts

g. Competence related to improvement opportunities
   o Energy auditors
   o Energy efficiency service providers
   o Procurement
   o Design
Annex B - Principles Screening Checklist for ISO/TC 301 New Work Item Proposals

Prior to use of this checklist, the ISO/TC 301 Secretaries will check the NWIP application for completeness. The purpose of this checklist is to conduct more in-depth, topic-specific analysis for guiding ISO/TC 301 action concerning the proposed New Work Item.

NOTE: References to the ISO/IEC Directives, Part 1, consolidated ISO Supplement, 2014 → 2017 are placed in (parentheses). Blue text in the boxes represents instructions to proposers. Boxes will expand to fill.

1. **CONSISTENT WITH ISO/TC 301 SCOPE**

   A. Consistent with Business Plan

      i. **Scope (C.3.1)** - describe how the proposed work fits into the ISO/TC 301 **Scope**, using specific language from that section of the Business Plan

      ii. **Relationship to Business Plan objectives** (describe in detail)

   | Please identify the relevant objectives and explain the relationship of the proposal to the scope and objectives |
   | CAG Screening – Vice Chairs evaluate how well proposed work relates to scope and objectives |

   B. **Global relevance** (C.4.13.3, also Annex SL.6. Term used is “market relevance”)

      List the national/regional users, in which sectors, for which this work would provide value and why

   | Please list national/regional users/sectors and explain the value of the proposal to these users |

      NOTE: If of limited geographic relevance, the topic may or may not be suited for ISO work OR could be more suited to another type of ISO deliverable (ISO C.4.5)

   | CAG Screening – Vice Chairs evaluate global relevance and relationship to proposed product type |

   **Section 1 CAG Action – Based on Vice Chairs’ recommendations, does the proposal meet Business Plan (A) and Global Relevance (B) Criteria?**

   - If Yes, proceed with completion of Screening Checklist
   - If No, CAG returns proposal to proposer with comments

2. **SUPPORTS TC 301 BODY OF WORK**

   Please **check all that apply** and provide supporting information requested:

   - A. The proposed work fills gaps relating to management or measurement of organizational energy performance
Please describe in detail which gaps will be addressed by the proposed work, how they will be addressed, and why it is necessary to address them.

B. The proposed work fills gaps concerning the calculation, measurement and verification of energy savings

Please describe in detail
- which gaps will be addressed by the proposed work,
- how they will be addressed, and
- why it is necessary to address them.

Please address whether the technical aspects associated with the gap(s) are sufficiently mature for the proposed work.

C. The proposed work supports or complements elements of other TC 301 standards (2.3.4)

Please provide specific examples of the relationship with other ISO/TC 301 standards.

Section 2 CAG Screening – designated group (existing WG, Ad Hoc, or CAG) evaluates the extent to which the proposed work will address critical gaps and support or complement existing work.

3. MARKET NEED/IMPACTS
   A. How does the proposed work meet a market demand, or enable new markets? (C.1.1)

Please provide specifics as to the nature of the market demand, the “new” market, or the barrier to energy management that is being addressed.

B. What is the potential impact of the proposed work? (C.4.13.3)

Please describe in detail, the potential for:
- Energy savings, cost reductions
- Increased trade and jobs
- Relevance for sustainable development

Please describe the likelihood of uptake of standard – by which users, and how quickly, would it be adopted? (2.4.8)

C. What is the relevance of the proposed work for interested parties? (C.1.2)

Who are the interested parties and what is the relevance to them? How has each of the interested parties expressed interest? Please be as specific as possible. How will the proposed work provide value for users in the context of government policy or technical support for policy development? Please be as specific as possible. (Annex SO)
D. What is the urgency of work?

| What is the evidence of urgency? | Describe the consequences of postponement- please be specific |

Section 3 CAG Screening– designated group (existing WG, Ad Hoc, or CAG) evaluates the extent to which the proposed work will address critical and relevant market needs/impacts.

4. TC 301 PROCESS ISSUES

A. Is the topic mature enough to benefit from standardization?

<table>
<thead>
<tr>
<th>What is the evidence that the field has matured sufficiently for standardization?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Is there an existing National or Regional Standard or draft standard?</td>
</tr>
<tr>
<td>• Are there existing protocols or generally accepted technical practices?</td>
</tr>
<tr>
<td>• Is there a body of international experts on this topic?</td>
</tr>
</tbody>
</table>

Could another ISO product, see information at ISO deliverables, serve the need described in section 3 above?

If yes, which product type?
If no, describe is why a standard is needed?

B. Do adequate committee resources exist for proposed work? (C.1.2, C.4.12)

<table>
<thead>
<tr>
<th>List the resources to complete the work</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Participants (by country)</td>
</tr>
<tr>
<td>• Will the proposer provide required Convener resources?</td>
</tr>
<tr>
<td>• Does the proposer have the ability to host a WG meeting?</td>
</tr>
</tbody>
</table>

C. Relative priority to other ISO/TC 301 work—(see list of current TC 301 work provided)

| Please place the priority of this work relative to other ISO/TC 301 work and provide a rationale for the priority assessed |

Section 4 CAG Screening– designated group (existing WG, Ad Hoc, or CAG) evaluates the adequacy of resources and suitability of proposed product
Working Group/Ad Hoc Recommendation to CAG concerning proposed NWI on _____________ (date)

☐ Circulate for ballot
☐ Hold for future ballot until (date or milestone reached)
☐ Return to proposer for modifications or future development (include results of analysis)
☐ Do not proceed (provide rationale)

Overall CAG Recommendation to ISO/TC 301 concerning proposed NWI on _____________ (date)

☐ Circulate for ballot
☐ Hold for future ballot until (date or milestone reached)
☐ Return to proposer for modifications or future development (include results of analysis)
☐ Do not proceed (provide rationale)