



2023 Annual Report

Energy Efficiency Hub

The Energy Efficiency Hub is a government-to-government platform for global collaboration on energy efficiency.

HUB MEMBERS

Argentina

Australia

Brazil

Canada

People's Republic of China

Denmark

European Commission

France

Germany

Japan

Korea

Luxembourg

Russian Federation

Saudi Arabia

United Kingdom

United States

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Abbreviations and acronyms

ENERGY EFFICIENCY HUB TASK GROUPS

DWG	Digitalisation Working Group
EEB	Energy Efficiency in Buildings
EMAK	Energy Management Action Network
SEAD	Super-efficient Equipment and Appliance Deployment
TOP TENS	Top Ten Energy Efficiency Best Available Technologies and Best Practices

TASK GROUP OPERATING AGENTS AND COORDINATORS

CQC	China Quality Certification Centre – TOP TENS
dena	German Energy Agency (Deutsche Energie-Agentur) – EEB
ECCJ	Energy Conservation Center Japan – EMAK
IEA	International Energy Agency – SEAD

OTHER ORGANISATIONS AND TERMS

3DEN	Digital Demand-Driven Electricity Networks
4E	Energy Efficient End-Use Equipment
ABC	Alliance for Buildings and Construction
ACE	ASEAN Centre for Energy
APEC	Asia-Pacific Economic Cooperation
CEM	Clean Energy Ministerial
EBC	Energy in Buildings and Communities
EDF	Electricité de France
EEIT	Office of Energy Efficiency and Inclusive Transitions (IEA)
EEWP	Energy Efficiency Working Party (IEA)
EGEEC	Expert Group on Energy Efficiency and Conservation
NDCs	Nationally Determined Contributions
OECD	Organisation for Economic Co-operation and Development
SEA	Swedish Energy Agency
TCP	Technology Collaboration Programme (IEA)
TEPCO	Tokyo Electric Power Company
UNEP	United Nations Environment Programme

Message from the Hub Chair

When elected as Chair of the Energy Efficiency Hub in June 2023, I brought with me more than five years' experience advising on and implementing Australian policies to improve energy efficiency and energy security. Over that time, I have seen a shift in recognition of the importance of energy efficiency and a realisation that benefits go well beyond contributions to carbon neutrality. Policymakers increasingly understand the direct financial benefits for energy consumers as well as the health and productivity impacts driven by policies to improve energy efficiency and energy security, including by reducing the size of the investment task required to transition to renewable energy.

This shift to a heightened emphasis on energy efficiency became evident in the COP28 Stocktake. Participating countries collectively acknowledged the imperative to double the global rate of energy efficiency improvements by 2030, revitalising global commitment to this critical cause.

Aligned with the worldwide focus on demand-side policies, Hub Members have led and engaged in an exciting and insightful array of discussions over the past year. Topics ranged from energy-saving campaigns, energy efficiency in data centres, energy labelling and minimum standards for buildings, and strategic approaches to electrification and grid flexibility. I am constantly struck by the shared challenges and the willingness of policymakers and private sector leaders across the Hub membership to openly discuss the long-standing or more novel solutions being implemented at home.

In addition to the curated discussions delivered through workshops and Task Groups, all Members have had the chance to benefit from the support the Hub provides for bilateral exchanges between Member countries. This is a testament to the collaborative spirit that underpins the Hub.

This year's Annual Report showcases the Hub's endeavours in identifying and disseminating best practices while reinforcing energy efficiency as the 'first fuel'. The specific examples and cases you will find in the report highlight the tangible impact of these efforts.

As Member countries and other stakeholders advance policies to encourage the adoption of energy efficiency and meet global and domestic targets, I am certain the Hub's value will continue to grow. Momentum continues to build as the Hub matures.

I commend the activities of the Hub to you and thank the Members for their support and commitment in what was a powerful and outcomes-driven year.

PENNY SIRALT

Branch Head of Home Ratings and Disclosure

Australian Department of Climate Change, Energy, the Environment and Water



The Hub in 2023

THE YEAR IN A NUTSHELL

The newly established [Energy Efficiency in Buildings \(EEB\) Task Group](#) began activity, first taking up short-term policy actions in response to the energy crisis, then shifting focus to deep energy retrofit models.

Two all-day [Energy Management Action Network \(EMAK\) workshops](#), one each in [Singapore](#) and [Paris](#), brought together around 200 participants from governments and the private sector. Speakers shared perspectives on net zero buildings and demand-side policies for industry and buildings.

[Super-efficient Equipment and Appliances Deployment \(SEAD\) held side-events at COP28 and Clean Energy Ministerial \(CEM\) meetings.](#) One event at COP28 promoted deployment of super-efficient cooling appliances, and [another](#) focused on the role of product energy standards in the National Determined Contributions (NDCs) of sub-Saharan African countries.

[The Top Ten Energy Efficiency Best-Available Technologies and Practices \(TOP TENs\) Task Group](#) anticipates launching its third round of national and international lists of top technologies and practices in 2024. China is considering 150 technologies and 161 practices, from fields including industry, transport, buildings, and public services, for inclusion on its third TOP TENs list.

The Hub held a [Special Event](#) at the [International Energy Agency \(IEA\) 8th Annual Global Conference on Energy Efficiency](#) in June 2023, featuring Australia, Canada, European Commission, and France, and attracting more than 4 000 viewers on line.

[Five Policy Exchange Workshops](#) were organised on industry, transport, buildings, behaviour change, and data centres, bringing together over 100 attendees from all [16 Hub Members](#).

[A joint IEA and Energy Efficiency Hub webinar](#) on data centres and energy efficiency featured a public-private sector exchange with Amazon Web Services, the Green Web Foundation, Environmental Resource Management, Australia, Ireland, Luxembourg, and the IEA.

[Four Steering Committee meetings were held](#), featuring Task Group reports, policy updates from Members, and overviews on global developments in energy efficiency policy from the IEA.

The Hub was named as a key platform for international collaboration in the [G20 Energy Transition Ministers' Meeting Outcome Document and Chair's Summary](#) and in the [G7 Climate, Energy and Environment Ministers' Communiqué](#).



2023 EVENTS

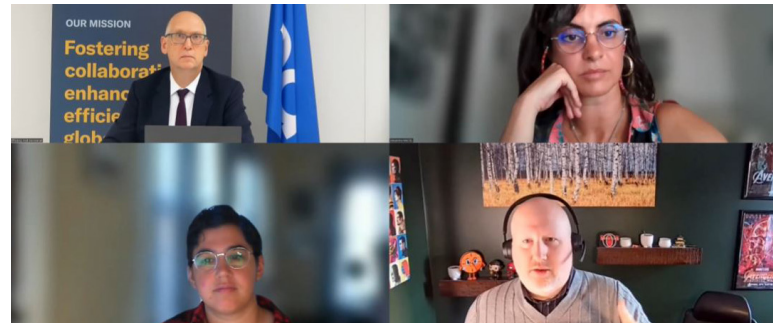
7 FEB	9th Steering Committee meeting	online
9 FEB	EMAK 11 Workshop: Transitions toward Net Zero Energy Building	Singapore and online
15 MAR	60th Meeting of the Asia-Pacific Economic Cooperation (APEC) Expert Group on Energy Efficiency & Conservation (EGEEC): Hub update	Hong Kong and online
20 MAR	CEM Senior Officials' Meeting: Importance of Super-efficient Appliances for Cooling & Heating (SEAD side-event)	Rio de Janeiro
10 MAY	10th Steering Committee meeting	online
6 JUN	IEA 8th Annual Global Conference on Energy Efficiency: Exchanging Lessons from the Energy Crisis in Accelerating Efficiency (Hub special event)	Paris
13 JUL	China Energy Conservation Promotion Week: Hub presentations	Beijing and online
20 JUL	14th Clean Energy Ministerial/8th Mission Innovation meeting: Large Scale Deployment of Super-efficient Appliances for Cooling (SEAD side event)	Goa, India
27 SEP	11th Steering Committee meeting	online
11 OCT	Government and Industry Exchange on Data Centres and Energy Efficiency (Joint IEA and Energy Efficiency Hub Webinar)	Paris and online
18 OCT	61st Meeting of the APEC EGEEC: Hub update	Manila and online
2 DEC	COP28: Reflecting Product Energy Efficiency in Sub-Saharan African Countries' Nationally Determined Contributions (SEAD side event)	Dubai
2 DEC	COP28: Large Scale Deployment of Super-efficient Appliances for Cooling and Doubling of Efficiency Progress (SEAD side event)	Dubai
13 DEC	EMAK 12 Workshop: Evolution of Energy Efficiency Policies into Demand-Side Energy Policies	Paris and online
14 DEC	12th Steering Committee meeting	online

THE HUB'S REACH IN 2023

- Attracted a total audience of almost 6 000 for external events
- Brought together more than 300 participants at 14 closed Hub meetings and events
- Generated over 39 000 impressions on social media
- Received over 5 300 website visitors from 116 countries
- Posted 20 videos from Hub events.

A global community of practice for governments

The Energy Efficiency Hub was established in 2019 as a voluntary collaboration among governments to broaden global dialogue on strengthening deployment of energy efficiency. The 16 current Members are Argentina, Australia, Brazil, Canada, China, Denmark, European Commission, France, Germany, Japan, Korea, Luxembourg, Russia, Saudi Arabia, United Kingdom, and United States. They are served by a Secretariat hosted by the IEA in Paris.



Hub Members have strong energy efficiency agendas. Membership in the Hub offers them informal work processes, lively exchanges, and opportunities for dialogue among officials with wide ranges of experience who might not otherwise meet. Hub discussions are topical and apolitical, with a focus on what works in practice.



In 2023, the Hub continued to broaden exchanges on practical experience in policy design and implementation, including both emerging good practice and examples of what has been less successful. Members from different parts of the world learn from each other and identify new ways to improve their pathways towards common objectives, taking advantage of their different stages in designing and carrying out policies.



Enhancing collaboration between Members and the International Energy Agency and other international organisations is a pillar of the Hub's work. The Hub also strives to provide greater visibility for substantive outputs from its Task Groups. In 2023, the Hub strengthened its outreach to other countries that may be interested in joining the Hub.

Helping each other find solutions

The Hub takes on issues important to its Members through thematic Task Groups. These are Member-led standing bodies in which any Member may participate. They coordinate their activities with relevant international organisations and private sector stakeholders. Most Members belong to several Task Groups. The five current Task Groups are:



DWG

[Digitalisation Working Group](#)

Informs and advances the digitalisation of energy-efficient technologies



SEAD

[Super-efficient Equipment and Appliances Deployment](#)

A collaboration among governments to promote the manufacture, purchase, and use of super-efficient appliances, lighting, and equipment worldwide



EEB

[Energy Efficiency in Buildings](#)

A platform to exchange information and practices in selected policy areas



EMAK

[Energy Management Action Network](#)

Facilitates public-private exchanges on systems for raising energy efficiency in industry and buildings



TOP TENs

[Top Ten Energy Efficiency Best-Available Technologies and Practices](#)

Prepares lists of both best available energy efficiency technologies and best practices that governments can promote

The Hub complements the work of its Task Groups by bringing Members together for online Policy Exchange Workshops on current issues. In 2023, workshops addressed topics including encouraging changes in consumer behaviour, raising efficiency at less energy-intensive industrial firms, deploying heat pumps, and rolling out smart meters to enable demand-side measures. Members nominate officials with responsibilities in the topic areas to present and engage in discussion, addressing each other's practical concerns while building their community of practice.



The Hub is an amazing opportunity to be able to discuss the difficulties and successes that we have in our energy efficiency policies. I think the Hub is a powerful environment that allows us and all countries to design and to implement national energy efficiency policies that are based on international feedback.”

Angélique Lequai, Project Manager, Ministry of Ecological Transition, France

Casting a wide net for insights

The Hub's broad membership, with countries from all quarters of the globe, allows it to convene officials who might not have opportunities to meet otherwise. The Hub's Chair, informed by the range of Members' interests and needs, provides strong strategic direction and encourages a free flow of experience among them.

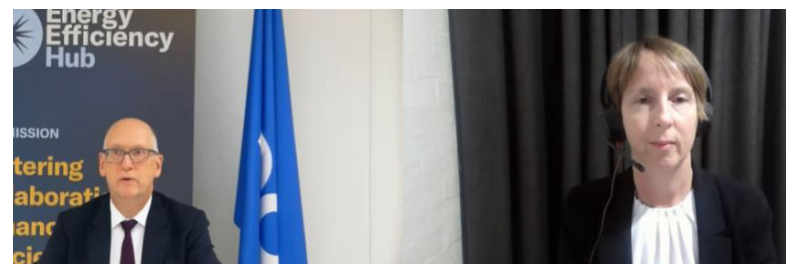
The Hub's Member-driven processes enable exchanges to focus on topics of greatest relevance to the day-to-day work of officials responsible for developing and carrying out national energy efficiency policies.

For instance, one of the Policy Exchange Workshops in 2023 concerned behaviour change—a topic high on the agenda for many Members. Argentina, China, and France exchanged best practices regarding energy-saving campaigns, revealing shared challenges in citizen engagement. Canada, Denmark, European Commission, Russia, and the United States joined in to listen.

Another workshop, focused on industrial heat pumps, saw a lively exchange among Australia, Canada, China, Japan, and the United States. Discussion showed that countries seek flexible technological solutions, strengthening standards to accelerate the deployment of heat pumps to promote decarbonisation and electrification.

Luxembourg initiated an exchange in 2023 on energy efficiency of data centres to better inform its policies in this area. Luxembourg was joined by Australia and Ireland in sharing their experiences during a Policy Exchange Workshop in September. Ireland, which joined the session as an observer, expects data centres to account for nearly one-third of the country's energy use before the end of the decade. The session raised issues common to Members, including regulation, benchmarking, and rating schemes for data centres' energy consumption. This workshop was followed soon after by a [public webinar](#) jointly organised with the IEA team.

Saudi Arabia played a key role in SEAD events in 2023. Together with the European Commission, Saudi Arabia co-led the SEAD side-event at the CEM 14 Senior Officials' Meeting at Rio de Janeiro. Additionally, one side-event at COP28 was held at the Pavilion of the Kingdom of Saudi Arabia in December and brought together stakeholders from the United Nations Environment Programme (UNEP), Ghana, Indonesia, and the United Kingdom.



The Energy Efficiency Hub has the power to bring together countries which otherwise don't have an institutional dialogue."

Tudor Constantinescu, Principal Adviser, Director General for Energy, European Commission

Collaborating with international organisations

Hosting by the IEA enables the Hub Secretariat to cost-effectively serve Members, who also benefit from the IEA's unmatched analytic capabilities. In parallel, this collaboration provides IEA teams with new evidence and perspectives to inform and expand their work.

The Secretariat and its Members participate in the IEA Energy Efficiency Working Party (EEWP) semi-annual meetings, while the IEA in turn is represented at Hub Steering Committee meetings. IEA experts provide scene-setting presentations at all Policy Exchange Workshops.

The Hub and the [IEA](#) held a [Joint Webinar on Data Centres and Energy Efficiency](#), featuring speakers from government and industry.

The Secretariat advised on relevant portions of IEA reports, including [Energy Efficiency 2023](#), the [Breakthrough Agenda Report 2023](#), and numerous shorter publications and commentaries. The Secretariat also channelled requests from the IEA to Members to review publications.

The Secretariat works alongside the IEA Office of Energy Efficiency and Inclusive Transitions to ensure complementarity of their respective activities.

In 2023, the [EEB Task Group](#) coordinated its work with the [IEA Energy in Buildings and Communities \(EBC\) Technology Collaboration Programme \(TCP\)](#), which carries out research and development to

advance near-zero energy and carbon emissions in the built environment. Germany recently introduced the EEB Task Group at the Executive Committee meeting of the EBC TCP in November 2022, laying fertile ground for future exchanges on the recent work related to deep retrofit models.

[The Global Alliance for Buildings and Construction \(Global ABC\)](#) presented at two EEB events, highlighting its work on the Buildings Breakthrough and relevant publications. Subsequently, the Secretariat joined Global ABC's Buildings Breakthrough Session at their Annual Assembly. The Hub Secretariat regularly coordinates with UNEP on Global ABC as well as on opportunities for joint communications.

[SEAD](#) remains in close coordination with the [IEA Technology Collaboration Programme on Energy Efficient End-Use Equipment \(4E\)](#). A document was produced to better articulate the complementary roles of SEAD and 4E, intended to strengthen governments' understanding of the similarities and differences in approaches to raise the efficiency of end-use appliances, lighting, and equipment. The Secretariat contributed to IEA updates for the 4E TCP bi-annual Executive Committee meetings.

The Secretariat regularly provides updates to the [APEC Expert Group on Energy Efficiency and Conservation \(EGEEC\)](#) on the work of Task Groups and Hub events.



Being based at the IEA will enable the Hub to cooperate effectively with IEA experts and the other key initiatives and activities we host, including the Clean Energy Ministerial. The launch of the Hub is a clear and encouraging signal that momentum is building behind greater energy efficiency action worldwide.”

Dr Fatih Birol, Executive Director, IEA

Sharing lessons from Members

The Hub holds and participates in selected public events, often in collaboration with the IEA, to raise awareness of Task Group activities and to spotlight lessons emerging from Members' experience. In 2023, the Hub held or featured in the following events:



FEBRUARY





EMAK's 11th workshop, [Transitions toward Net Zero Energy Building](#), featured remarks from the ASEAN Centre for Energy (ACE), Australia, Canada, China, Germany, Japan, Malaysia, and Singapore. Discussions highlighted challenges and opportunities in the transition to net zero energy buildings. Participants discussed effective policies and necessary technologies to scale up the transition to net zero buildings.

MARCH



SEAD hosted a [side-event at the CEM Senior Officials' Meeting in Rio de Janeiro](#) on the Importance of Super-Efficient Appliances for Cooling & Heating. Opening remarks were given by Mary Burce Warlick, Deputy Executive Director of the International Energy Agency. The event featured presentations from Brazil, European Commission, Japan, and Saudi Arabia, with closing remarks by Jonathan Sinton, Head of the Secretariat.


JUNE



The Hub hosted a well-attended **[Special Event at the IEA 8th Annual Global Conference on Energy Efficiency](#)**. Australia, Canada, European Commission, and France shared lessons on addressing the energy crisis through efficiency policies. Brian Motherway, Head of the IEA Office of Energy Efficiency and Inclusive Transitions, offered a scene-setting presentation. Discussions highlighted the importance of learning from each other when responding to the energy crisis. Based on its success, and having attracted over 4 000 viewers online, Hub Members plan to hold another such event at the next Global Conference in Nairobi. Livestream video is available on the [Hub website](#).

JULY

The Hub gave presentations at the **China Energy Conservation Promotion Week**. The European Commission provided a pre-recorded presentation on the state of heat pump deployment in Europe during the panel on Energy Efficiency and Carbon Reduction of Heat Pumps, and the Secretariat delivered remarks on line.



SEAD's presentation **[Large Scale Deployment of Super-Efficiency Appliances for Cooling was part of the 14th Clean Energy Ministerial and 8th Mission Innovation meeting \(CEM14/MI-8\)](#)**. The discussion featured speakers from the European Commission, United Kingdom, United States, India, ClimateWorks, and CLASP, moderated by Cornelia Schenk, IEA. Opening remarks were delivered by Paula Pinho, Director of the Directorate General Energy in the European Commission, and Abhay Bakre, Director General of India's Bureau of Energy Efficiency. Livestream video is available on the [Hub website](#).

**OCTOBER**

The Hub collaborated with the [IEA 3DEN Initiative](#) on a [Joint Webinar on Energy Efficiency and Data Centres](#), attracting over 200 participants from 51 countries. The workshop brought together governments and the private sector to exchange on improving energy efficiency and curbing emission from data centres. Speakers from Amazon Web Services, The Green Web Foundation, and Environmental Resource Management were joined by Australia, Ireland, Luxembourg, and the IEA. Livestream video is available on the [Hub website](#).

**DECEMBER**

A SEAD side-event on Large Scale Deployment of Super-Efficiency Appliances for Cooling and Doubling of Efficiency Progress was held at the Saudi Arabia Pavilion at COP28. The event featured case studies highlighting the immense benefits of large scale deployment of super-efficient cooling appliances. The event also featured two roundtables that assessed the impact of policies and discussed progress toward the Call to Action goals. Nasser Al-Ghamdi, Director General of the Saudi Energy Efficiency Center, was joined on stage by speakers from the Ghana Energy Commission, United Kingdom, CLASP, and the International Copper Association.

Another **SEAD event at COP28, [Reflecting Product Energy Efficiency in Sub-Saharan African Countries' Nationally Determined Contributions \(NDCs\)](#)**, raised awareness about the opportunities and benefits of incorporating product energy efficiency targets and policies into the NDCs of sub-Saharan African countries. The event was co-organised together with UNIDO and the Swedish Energy Agency (SEA). Speakers from Ghana, Kenya, South Africa, CLASP, SACREE, UNIDO, and the IEA showcased ambitious regionally-harmonized lighting and cooling products. Livestream video is available on line.



EMAK held its 12th workshop in Paris, France. The workshop addressed strategic approaches to electrification, fuel switching, grid flexibility, digitalisation, and disclosure of energy and climate related information. This workshop brought together policy makers from ACE, Australia, Brazil, Canada, European Commission, and Japan, and private sector leaders from Oracle, Shiseido, Electricité de France (EDF), Tokyo Electric Power Company (TEPCO), and others, to discuss demand-side energy policies and approaches for the industrial and buildings sectors. Opening and concluding remarks were delivered by Japan and the IEA.

The Secretariat provides updates on Hub activities and events at the biannual meetings of the [APEC Expert Group on Energy Efficiency & Conservation](#).



Our policy analysts and technical experts have benefited immensely from being part of discussion and forums through the Energy Efficiency Hub on issues like industrial heat pumps, digitalisation, building efficiency, and industrial energy efficiency.”

Abla Hanna, former Director, Office of Energy Efficiency, Natural Resources Canada

TASK GROUPS

Energy Management Action Network

Lead: Japan

Members: Argentina, Australia, Brazil, Canada, China, Germany, Russia

Operating Agent: [Energy Conservation Center Japan](#)



[EMAK](#) facilitates forums to share policies and best practices for energy management systems and energy efficiency in industry and building sectors. The Task Group was established in 2009 and has since been led by Japan. It supports Hub Members to share good practices developed by Members with each other and with emerging economies. EMAK has held 12 annual workshops on energy management systems and energy efficiency since its inception.

In 2023, EMAK focused on topics relevant to its Members: net zero energy buildings and demand-side policies.

EMAK 11 Toward Net Zero Building

 Singapore

[EMAK's first event](#) in 2023 was held in Singapore in February. Singapore was chosen to host the workshop because of its strong interest in energy-efficient buildings exemplified by the case studies that demonstrate applying energy-saving standards and benchmarks for building design and operations.

ACE, Australia, Canada, China, Germany, Japan, Malaysia, and Singapore shared lessons from their experience developing and implementing policies that could realistically contribute to sector-wide transformation of building energy use.

The workshop provided:

- best practices to improve energy efficiency in buildings, including a step-by-step approach to constructing net zero energy based on ISO/TS 23764:2021;
- a space to discuss common challenges in implementing energy efficiency policies in the building sector, overcoming barriers and achieving pragmatic targets toward the pathway to net zero energy buildings; and
- a networking opportunity to participants from the public and private sector.

Excellent examples of energy-efficient buildings from China, Germany, Japan, Malaysia, and Singapore were presented, confirming the importance of using digital technologies to capture a holistic view of energy consumption. In addition, participants discussed the necessity for optimal application and operation of technologies, including maintenance, in achieving highly energy-efficient buildings.



Participants discussed key technologies on both supply and demand sides, all of which require the development of human resources to be appropriately combined and integrated. The workshop highlighted policies related to building energy efficiency and conservation, and speakers discussed common challenges in implementation and potential strategies for overcoming them. The workshop also addressed best practices for energy-efficient buildings, including staged approaches to implementing net zero. The [workshop summary](#) provided a comprehensive outline of the event and key discussion topics.

TOTAL PARTICIPANTS IN PERSON AND ON LINE: OVER 100

EMAK 12 Evolution of Energy Efficiency Policies into Demand-side Energy Policies

 Paris, France

[EMAK's second event](#) took place in Paris in December 2023. The workshop brought together policy makers and private sector leaders in Paris to address strategic approaches to electrification, fuel switching, grid flexibility, digitalisation, and disclosure of energy and climate related information. Officials from ACE, Australia, Brazil, Canada, European Commission, and Japan, as well as companies including Oracle, Shiseido, EDF, Saint-Gobain, Ricoh, Daikin, Heat Pump & Thermal Storage Technology Center of Japan, and TEPCO, came together to discuss demand-side policies.

The dual goal of achieving decarbonisation and energy security requires a strong focus on energy efficiency policies and development towards demand-side energy policies, considering energy efficiency is the 'first fuel'. Governments have recognised the critical role of energy efficiency since the global environmental movement and oil crisis of the 1970s. The more recent energy crisis in 2022 underscored the importance of demand-side policies, and of solutions to achieve carbon neutrality and energy security and to alleviate the impact of high prices on consumers and businesses.

Participants discussed demand-side energy policies and approaches for the industrial and buildings sectors, including electrification, heat pump deployment, smart meter rollout, demand response, and grid flexibility. Presentations are available on [the Hub website](#).

TOTAL PARTICIPANTS IN PERSON AND ON LINE: OVER 70



TASK GROUPS

Top Ten Energy Efficiency Best Available Technologies and Best Practices Task Group

Lead: China

Members: Brazil, Germany, Japan, Korea, Russia

Operating Agent: [China Quality Certification Centre](#)

[TOP TENs](#) evaluates energy-efficient technologies and best practices and produces lists of those that are the most outstanding. The lists include top-rated energy-efficient technologies and practices coming from key energy-consuming sectors and can be promoted by governments. The Top Ten Energy Efficiency Best Available Technologies and Best Practices Task Group aims to stimulate uptake of energy efficiency in key energy-consuming sectors.

TOP TENs has published several lists of best available technologies and best practices featuring cutting-edge approaches and case studies. Best practices cover key energy-consuming sectors and include case studies such as university-wide efforts to build smart campuses, the application of passive house technology, energy management award programmes, and more.

The work of TOP TENs is intended to inform policy makers and stakeholders in industry, buildings, transportation, and public service.



In 2023, ministries and provincial governments in China worked with companies and organisations to prepare applications, more than 300 of which are now being evaluated. A total of 150 technologies and 161 practices, from fields including industry, transport, buildings, and public services, are being considered for inclusion on China's third TOP TENs list. The list will be announced by the Task Group in 2024.

The other Hub participants are engaged in their selection processes in parallel, and the Task Group anticipates launching its third round of national and international lists of top technologies and practices in 2024.

TOP TENs representatives attended several events, including the IEA 8th Annual Global Conference on Energy Efficiency (June 2023), the 11th Sino-German Forum on Economic and Technological Cooperation (June 2023), and the Energy Consumption Revolution Subforum (Sep 2023). Representatives covered subjects including technology transfer, capacity building, focuses on the industrial sector and energy-efficient technology promotion, and international cooperation.

TASK GROUPS

Digitalisation Working Group

Lead: United States

Members: Australia, Brazil, Canada, Denmark, European Commission, France, Germany, Japan, Russia

[DWG](#) informs and advances the digitalisation of energy-efficient technologies. The Task Group serves as a platform for Hub Members to coordinate, learn about each other's experiences with digitalisation, and work jointly to understand key gaps and priority areas to upscale the use of digital technologies.

The Digitalisation Working Group was active in 2022, releasing the following reports:

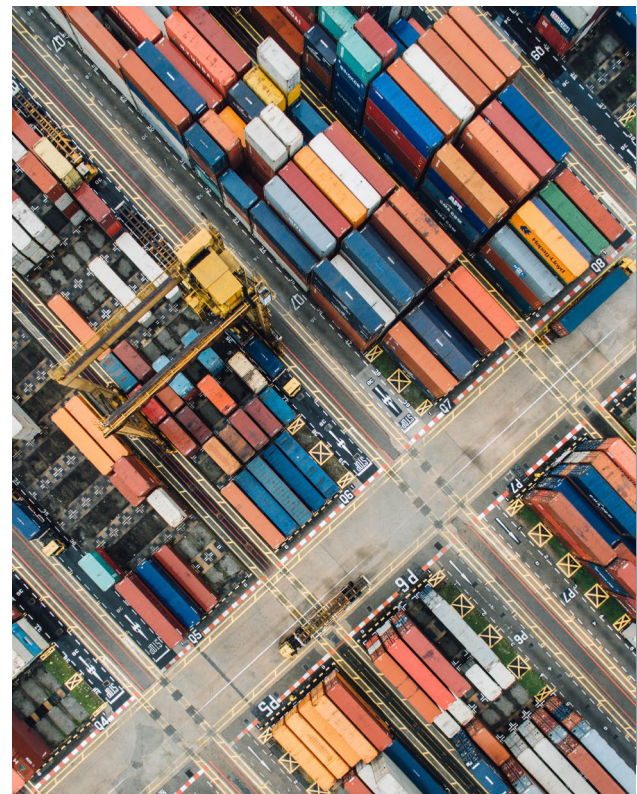
[The Digital Working Group's First Report, 'Digitalisation for the Energy Efficiency of Buildings Operations'](#) assesses challenges, opportunities, successes, and lessons from national policies to accelerate digitalisation of building energy systems.

[The Roadmap on Digitalisation for Energy Efficiency in Buildings](#) identifies near-term, medium-term, and long-term approaches to addressing these barriers. It is meant as a guide for policymakers and other stakeholders to design programs that promote digital technologies to improve energy efficiency in buildings.

['Building Efficiency and Digitalization: Industry Stakeholder Perspectives'](#) is an article presenting insights from a diverse set of industry leaders. It delves deeper into challenges and opportunities related to emerging technologies and enabling practices and programs.

Members reported that the publications provided valuable insight and were used throughout 2023. They reported using DWG outputs to inform strategic development, raise awareness, and provide reference points for their internal discussions on energy demand response regulation.

Since the launch of the DWG, Australia, Brazil, Denmark, France, Germany, Japan, Russia, and the United States have played active roles in developing and promoting the Task Group, contributing to the work of policy makers and industry stakeholders from different energy-consuming sectors.



TASK GROUPS

Super-efficient Equipment & Appliances Deployment

Leads: European Commission, India, Sweden, United Kingdom

Energy Efficiency Hub Members: Argentina, Australia, Brazil, Canada, China, Denmark, Germany, Japan, Korea, Russia, Saudi Arabia, United States

Non-Hub Task Group members: Chile, Colombia, Ghana, Indonesia, Mexico, Nigeria, Panama, South Africa, Türkiye

Coordinator: [IEA](#)

[SEAD](#) brings governments together to advance global market transformation for energy-efficient products. SEAD is both a Task Group of the Hub and an initiative of the [Clean Energy Ministerial \(CEM\)](#). SEAD's 25 participating governments collaborate to accelerate and strengthen the design and implementation of appliance energy efficiency policies and related measures.

SEAD's Product Efficiency Call to Action aims to double the efficiency of four key products by 2030. Signatories of the Call to Action are Australia, Brazil, Chile, Colombia, Denmark, Germany, Ghana, India, Indonesia, Japan, Korea, Nigeria, Panama, Sweden, and the United Kingdom.

In 2023, SEAD welcomed the United States to re-join the initiative. It also actively supported the development of the Energy Efficiency Appliance Policy online training and three successful training events in Indonesia, India, and Paris, with participation from over 400 policymakers. Three technical webinars were conducted, including "Motor Efficiency in Mining: Current Challenges and New Opportunities", with representation from Australia, Canada, and South Africa. The initiative facilitated more than 10 policy exchanges, engaging in-depth discussions with Call to Action signatories to identify challenges and potential areas for improvement, shaping the upcoming work plan.



In addition to offering policy advice and knowledge sharing to SEAD members, the Task Group organised various events. This included a SEAD side-event at the [CEM Senior Officials' Meeting](#) on the [Importance of Super-efficient Appliances for Cooling & Heating](#), a SEAD side-event at [CEM/MI](#) on the [Large Scale Deployment of Super-efficient Appliances for Cooling](#), and two side-events at COP28. SEAD also finalised and published the Appliance online training.

SEAD achieves its objectives through sharing knowledge, generating research and policy support, and driving increased ambition and action. In addition to supporting SEAD Members through policy advice and knowledge sharing, the Task Group organised the following events in 2023:

DATE	EVENT	LOCATION
20 Mar	CEM Senior Officials' Meeting: Importance of Super-efficient Appliances for Cooling & Heating (SEAD side-event)	Rio de Janeiro, Brazil
20 Jul	14th Clean Energy Ministerial and the 8th Mission Innovation (CEM-14/MI-8): Large Scale Deployment of Super-efficient Appliances for Cooling (SEAD side-event)	Goa, India
2 Dec	COP28: Reflecting Product Energy Efficiency in Sub-Saharan African Countries' Nationally Determined Contributions (SEAD side-event coordinated with UNIDO and the Swedish Energy Agency)	Dubai, United Arab Emirates
2 Dec	COP28: Large Scale Deployment of Super-efficient Appliances for Cooling and Doubling of Efficiency Progress (SEAD side-event)	Dubai, United Arab Emirates



TASK GROUPS

Energy Efficiency in Buildings Task Group

Leads: European Commission, Germany

Members: Argentina, Brazil, China, Korea, Saudi Arabia

Operating Agent: [German Energy Agency \(dena\)](#)

[EEB](#) promotes policy best practices and fosters synergies with existing bodies working in the field. EEB was established in late 2022 to scale up best practices on energy efficiency in buildings and to foster even closer cooperation with international partners.

The Task Group intends to focus initially on three topics:

- Short-term actions
- Deep retrofit models
- Life cycle perspective

In 2023, the Task Group activities included:

- developing an internal document offering a summary of exchanges that took place among Argentina, Brazil, China, the European Commission, Germany, Korea, and Saudi Arabia;
- organising and holding four Task Group meetings in February, April, June, and November;
- joining the [Energy in Buildings and Communities TCP](#) Executive Committee meeting; and
- participating in the [Global Alliance for Buildings and Construction](#) General Assembly meeting alongside the Secretariat.

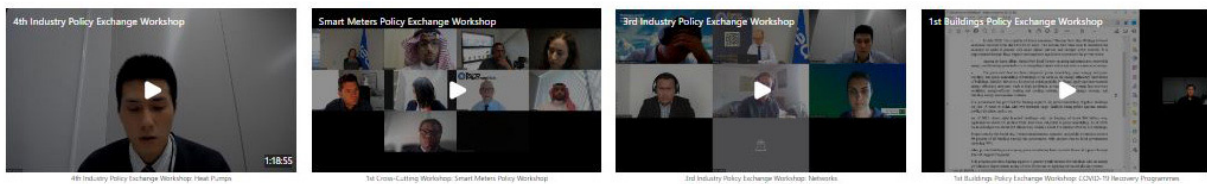
The results of the work on short-term actions showed that a number of policies supporting demand-side efficiency have been put in place by governments, despite variance in regional contexts. Governments have also established awareness campaigns and financial incentives meant to support consumers and industries. While the energy crisis has influenced energy policy discussions, especially in Europe, building-related policies continue to be driven by longer-term goals that are shared across regions. During discussions among Members, it was evident that all can benefit from continued exchange and sharing of best practice.

EEB began work on the second focus area for the Task Group - deep retrofit models - in 2023. The initial step involved gathering definitions for the concept of 'deep retrofit' used in various contexts by Task Group members. Several workshops, planned for the first quarter of 2024, aim to highlight effective renovation models and provide best practice examples for simplifying and accelerating the complex renovation process.

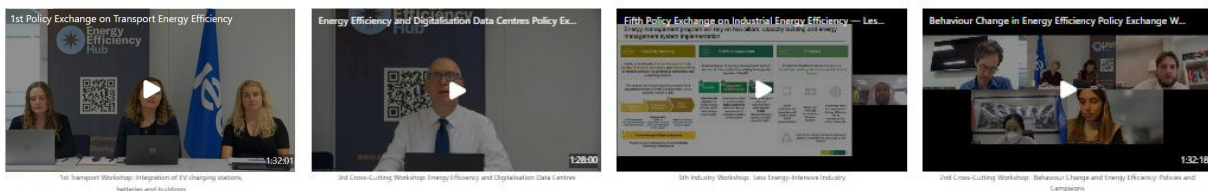


Exchanging policy lessons in Member workshops

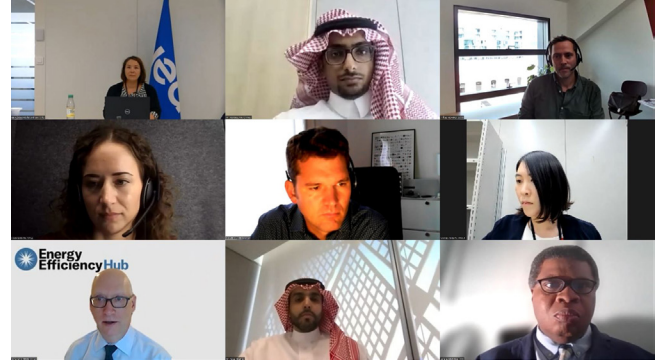
To complement the work of the Task Groups, the Hub brings Members together in online Policy Exchange Workshops on topics of current interest to them. The sessions feature overviews of national policies and discussions among officials responsible for policy making and implementation, with scene-setting presentations from IEA experts. Members exchange on topics related to energy efficiency in buildings, industry, and transport in closed 90-minute sessions organised by the Secretariat.



All Hub Members have joined these sessions, either as participants or speakers. In 2023, over half of the Hub Membership presented on topics such as heat pumps, energy efficiency networks, less energy-intensive industry, behaviour change, and digitalisation. Members appreciate this opportunity to exchange in nimble fashion while fostering the growth of their community of practice and laying the groundwork for bilateral conversations among them.



In 2023, five Policy Exchange Workshops were held online. Each session was followed by a detailed summary circulated internally for Hub Members.



TOPIC	DATE	SPEAKERS	GUEST SPEAKERS	MEMBERS PARTICIPATED
Behaviour Change	19 Apr 2023	Argentina, China, France	IEA and Users TCP	Argentina, Brazil, Canada, China, Denmark, European Commission, France, Russia, United States
Data Centres	18 Sep 2023	Australia, Ireland, Luxembourg	IEA and external expert	Australia, Canada, China, European Commission, France, Luxembourg, United Kingdom,
Less Energy-intensive Industry II	24 May 2023	Australia, Canada, Saudi Arabia, United States	IEA	Argentina, Australia, Brazil, Canada, China, European Commission, France, Japan, Korea, Russia, Saudi Arabia, United States
Energy Performance Standards and Labels	16 Nov 2023	Brazil, Canada, France, United States	IEA and Hub Chair (Australia)	Argentina, Australia, Brazil, Canada, European Commission, France, Japan, Saudi Arabia, United Kingdom, United States
Integration of EVs, Batteries, and Buildings	27 Jun 2023	France, Luxembourg, United States	IEA	Australia, France, Japan, Luxembourg, Russia, United States



It's such a fantastic opportunity to be able to hear what other people are doing, to be able to interact informally, and learn from other countries, other members of the Hub, about what's working from them, what challenges they're facing, and how we can all accelerate energy efficiency action together."

Clare McLaughlin, Division Head, Department of Climate Change, Energy, the Environment and Water, Australia

Communications

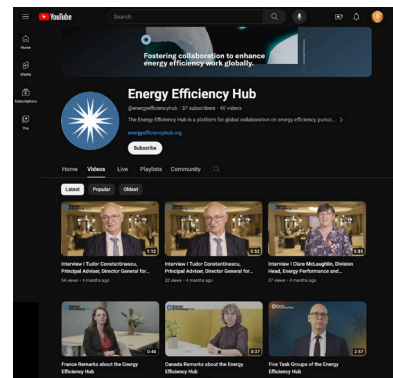
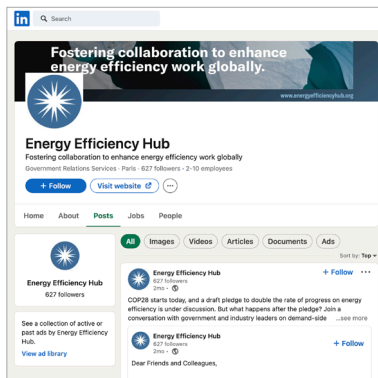
The Hub uses a variety of communication tools and activities to keep Members mutually informed and to build public awareness of Hub activities and accomplishments. The Secretariat reviews and revises its communications plan annually and regularly updates the Hub’s external and internal communications platforms.

In 2023, the Hub continued to prioritise internal communications while also taking steps to broaden the Hub’s reach to a variety of audiences.

The current, expanded [website](#) was launched in October 2022 and showcases all public information and resources pertaining to Hub activities. It features a separate page for each Task Group.

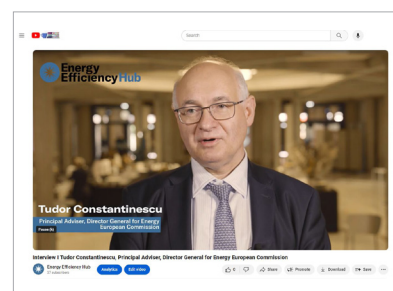
HUB WEBSITE TRAFFIC IN 2023

- Visitors: over 5 300
- Countries with the most traffic: United States, France, United Kingdom, Australia, Canada



A Members’ Portal facilitates Member-to-Member collaboration. Members used it actively in 2023, taking advantage of it to access diverse documents, videos, and other resources.

The Hub’s primary activity on social media in 2023 was promotion of its public events. The Hub utilises three social-media platforms: [LinkedIn](#), [YouTube](#), and [X](#) (formerly Twitter). Engagement on these platforms ensures online visibility through raising awareness of events, as well as diffusion of materials, reports, and videos.



Hub governance and operations

Hub Members oversee and direct the Hub through a Steering Committee, composed of one representative from each Member.

The Chair is appointed by the Steering Committee to set direction for the Hub and guide its substantive work. In 2023, the Hub was Chaired by Australia.

Vice Chairs are appointed by the Steering Committee to advise and support the Chair between Steering Committee meetings. For the majority of 2023, five Members served as Vice Chairs: Canada, China, European Commission, Korea, and the United States. At the 12th Steering Committee meeting in December, three Vice Chairs were appointed to continue their roles: China, European Commission, and the United States.

A small Secretariat serves the Members and benefits from strong engagement and synergies with the IEA, where it is hosted.

Funds for Hub operations are provided by its Members on a voluntary basis.

Governments interested in joining the Hub are invited to direct inquiries to secretariat@energyefficiencyhub.org.

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