



The Missing Guest

Energy Efficiency in the Multilateral Energy Arena

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► Key Takeaways

- Since the 1970s, energy efficiency has gained visibility as a low hanging fruit – its potential impact on critical issues such as climate change, energy security, or competitiveness is now widely acknowledged, even more so in times of higher energy prices.
- The benefits of energy efficiency are proven. To name only one example, a recent study has shown that, at the European level, without energy efficiency polices from 1990 to 2013, energy-use would have been 12% higher in 2013.
- However, progress on energy efficiency is too slow and putting the world at risk of not reaching the sustainable development and Paris-Agreement climate goals.
- One of the reasons may be that, unlike renewable energy, energy efficiency has no dedicated multilateral organization and remains fragmented. The topic is handled by many diverse initiatives, agencies, and projects, without any “one-stop-shop”, and is not immune to competing agendas.
- Strengthening the existing multilateral institutional setting on energy efficiency is paramount, starting with the recently established Energy Efficiency Hub, and focusing on result-oriented and inclusive activities in a selection of countries with a high impact potential.

Introduction

Over the past decades, energy efficiency (EE) has benefited from a growing recognition of its role in fighting climate change and promoting sustainable development. Contrary to some other climate-change-related topics, there is a consensus among countries and private actors on its benefits.¹ However, unlike IRENA for renewable energy sources, it is not properly represented in the multilateral arena and does not have a dedicated organization. This is extremely problematic as its rate of improvement is lagging the objectives of Sustainable Development Goal 7 (SDG7) and has even been declining since 2015; it improved by less than 1% in 2020, much less than in 2019 (1.6%) or 2018 (1.5%).² Fostering energy efficiency measures is much needed all around the world, primarily in G20 countries, which are the most important energy users and sometimes suffer from high energy intensity (such as Russia or Canada), but also in poorer economies (such as the Democratic Republic of Congo, Zimbabwe or Mozambique).³ Benefits are tremendous: a recent study has shown that, at the European level, without energy efficiency policies enacted between 1990 and 2013, energy-use would have been 12% higher in 2013.⁴

This briefing memo explores the emergence and institutionalization of energy efficiency in the global governance, related political struggles, and its perspectives.

The International Emergence of Energy Efficiency

EE first gained some traction after the oil crisis in the early 1970s. Western countries then realized their dependence on oil and therefore vulnerability to its supply, and the adoption

The IEA has been very active in the promotion of EE

of measures aiming at reducing the energy demand was put forward as a potential solution to the crisis. Member countries of the Organization for Development and Economic Co-operation (OECD) decided to establish the International Energy Agency (IEA), based in Paris. Since then, the IEA has imposed itself as one of the major actors in the field of international EE, not least in establishing an Energy Efficiency Directorate in 2015.

1. B. Görlach and U. Fuentes Hutfilter, *Options for Multilateral Initiatives to Close the Global 2030 Climate Ambition and Action Gap – Policy Field Energy Transition*, German Environment Agency, November 2020, available at: www.ecologic.eu.

2. IEA, *Energy Efficiency 2020*, 2020, available at: www.iea.org.

3. Different analysis document the potential of energy efficiency improvements in different countries – we are here referring to the IEA's map on energy intensity (www.iea.org). Other interesting analysis include ACEEE's International Energy Efficiency Scorecard, available at: www.aceee.org, and the World Bank's RISE, available at: <https://rise.worldbank.org>. The impact of these improvements should however be pondered with the total final use of the country: a country with low energy intensity but an important energy use may have more energy-saving potentials than a country with high energy intensity, but low energy use.

4. P. Bertoldi and R. Mosconi, "Do Energy Efficiency Policies Save Energy? A New Approach Based on Energy Policy Indicators (in the EU Member States)", *Energy Policy*, Vol. 139, April 2020.

The IEA has been very active in the promotion of EE. It has for instance highlighted the importance of the multiple benefits of EE, showing the positive impact of EE policies on a series of energy issues, including savings, security, access; but also, broader topics such as health and wellbeing, air quality, emission savings, household savings, asset values, productivity, public budgets, and economic benefits.⁵ By doing so, the IEA aimed to bring EE forward, from being the “hidden fuel” to the “first fuel”: the idea is to consider that an important part of energy demand can simply be addressed by reducing energy losses – making EE a fuel, that can power growth. To complement this view, the IEA started in 2013 to dedicate a “market report” (a flagship series of publications that normally addresses “traditional” fuels like oil or gas) to EE.⁶ Its training and capacity building activities also include EE and reach out to many non-member countries. Finally, the IEA also developed some Technology Collaboration Programmes dedicated to various sub-sectors of energy efficiency, with participation from Association countries like China.⁷

Meanwhile, EE benefited from its growing recognition as a key enabler for sustainable development. The Stockholm Conference on the Human Environment in 1972 officially recognized the harmful impact of energy on the environment. It was followed by a number

of high-level declarations on the need to decarbonize energy systems, without many consequences – typically, at the occasion of the World Climate Conference in 1979, at the launch of the Third United Nations (UN) Development Decade in 1980, the UN Conference on New and Renewable Sources of Energy in 1981, and in the Brundtland Commission’s report, *Our Common Future* (1987).

In 2002, the World Summit on Sustainable Development recognized

the importance of modern energy services for achieving the Millennium Development Goals. Finally, energy became part of the Sustainable Development Goals (SDG), and EE was included as target 7.3 that aims at “doubl(ing) the global rate of improvement in EE”.⁸ EE was also prominently featured at the UN High-Level Dialogue on Energy (HLDE) taking place in September 2021 and its preparatory work.⁹

Finally, the 2010 decade also saw the recognition of the key role of EE in climate change mitigation. Reports from the IEA, the Intergovernmental Panel on Climate Change (IPCC), and the United Nations (especially the *Emission Gap Report*) regularly highlight the mitigation potential of EE to reach the goals of the Paris Agreement. Typically, the IEA estimates that EE policies can achieve 40% of the emission reduction needed.¹⁰

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reduction needed

5. IEA, *The Multiple Benefits of Energy Efficiency. From “hidden fuel” to “first fuel”*, March 2019, available at: www.iea.org.

6. See for instance IEA, *Energy Efficiency 2020*, *op. cit.*

7. IEA, “Technology Collaboration”, available at: www.iea.org.

8. M. Luomi, « The Global Governance of Sustainable Energy: Access and Sustainable Transitions », *Brief #5*, International Institute for Sustainable Development, November 2020, available at: www.iisd.org.

9. See www.un.org.

10. IEA, *Energy Efficiency 2018*, October 2018, available at: www.iea.org. See also J. Rogelj, D. Shindell, K. Jiang *et al.*, “Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development”, In: *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable*

Meanwhile, since the UN Paris Climate Conference (Conference of Parties, COP21), the COPs dedicate a segment of their energy day to EE.

The importance of EE has also been recognized by the G20. In 2014, the Australian presidency focused the energy agenda on EE, with the creation and adoption of the G20 EE Action Plan (EEAP). This initiative was taken up by subsequent presidencies, especially China which established in 2016 an EE Leading Program, and by Germany that led the efforts toward the creation of a Climate and Energy Action Plan for Growth, aiming at promoting clean energy and aligning financial flows with the goals of the Paris Agreement.¹¹

An Institutional Gap Linked to International Rivalries and Insufficient Streamlining

However, despite the growing international recognition of EE, institutional settings are fragmented. First, while renewable energy has its own international agency (IRENA, established in 2009), there is no International EE Agency (IEEA or IEENA).

The idea of such an IEEA/IEENA has been put forward a few times by Western countries. The option was first advanced in 1991, in the context of the opening of countries from the Soviet Union and China, all having heavy industries with very poor energy performance. Howard Geller, by then Executive Director of the American Council for an Energy Efficient Economy (ACEEE), published a paper in the influential publication *Energy Policy* calling for the establishment of such an institution, with a focus on industrialized nations. He was envisioning three main roles for this organization: “1) strengthen EE efforts in industrialized countries; 2) help to build capacity for implementing EE improvements in developing and East European countries; 3) provide capital for large-scale EE investments in developing and East European nations.”¹² Thirty years after, a report

commissioned by the German Environment Agency also suggested the establishment of such an organization, this time named IEENA. The idea here is that EE is more widely accepted than other climate mitigation measures and deserves more promotion, visibility, continuity, and adequate resources. It would allow the engagement of a broader set of actors than the ones traditionally involved with multilateral climate organizations, and more specifically G20 countries like Saudi Arabia or Russia whose engagement in the climate and energy multilateral space has been so far very limited.¹³

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development, and efforts to eradicate poverty [Masson-Delmotte, V., P. Zhai, et al. (eds.)]. In Press, available at: www.ipcc.ch and UNEP, *Emission Gap Report 2020*, November 2020, available at: <https://newclimate.org>.

11. Australian Government, Department of Industry, Science, Energy and Resources, “Government Priorities: G20 Working Groups”, available at: www.energy.gov.au and G20, Energy Efficiency Leading Program, G20 China, 2016.

12. H. Geller, « Establishing an International Energy Efficiency Agency – A Response to the Threat of Global Climate Change », *Energy Policy*, Vol. 19, No. 7, September 1991, pp. 689-695.

13. B. Görlach and U. Fuentes Hutfilter, *Options for Multilateral Initiatives to Close the Global 2030 Climate Ambition and Action Gap – Policy Field Energy Transition*, op. cit.

An IEEA would indeed be seen as a true multilateral effort

An IEEA would indeed be seen as a true multilateral effort: like the IRENA, but unlike the IEA, whose membership remains limited to developed economies while a few other major emerging economies have been recently engaged as “association countries”.¹⁴ The closest body to a potential IEEA, the International Partnership for EE Cooperation (IPEEC), was established in May 2009 during the G8 summit taking place in L’Aquila (Italy). The organization had the benefit of bringing together a mix of IEA countries and emerging economies, such as Brazil, China, India, Mexico, Russia, later joined by South Africa and Argentina. In cooperation with the IEA and the Clean Energy Ministerial (CEM), IPEEC acted as a forum to exchange on EE good practices. One of the strengths of IPEEC was to provide a “neutral ground” where representatives from ministries of energy could have closed-door discussions (it was very important for non-IEA members to be fully part of the organization). Surprisingly, political tensions between countries would not prevent them from launching together new projects under IPEEC – emphasizing the important role of the organization to promote technical cooperation that would not directly be linked to politics.

Finally, IPEEC also coordinated the activities of task groups led by its members and focusing on specific issues (EE indicators, energy management, appliances, utilities, and others). As its activities developed, IPEEC became *de facto* an implementing body of G20 EE programs. It also co-hosted the G20 EE Finance Task Group (EEFTG) with the UNEP Finance Initiative.

However, IPEEC faced all types of issues. First of all, during its history, the organization suffered from several shortcomings: limited membership, lack of commitments of some members, lack of financial resources, rivalry with the IEA, restrictive mandate as compared to an organization such as IRENA, weak management...

IPEEC had been set up in 2009 for 10 years, and by the end of 2019, the organization was disbanded, and officially replaced by an “EE Hub”, hosted by the IEA, and that aims at promoting “global collaboration on energy efficiency”. Its members more or less overlap with those of IPEEC, except for the fact that the Hub expanded its membership to Denmark, Luxembourg, and Saudi Arabia, but at the time of its establishment, had lost India, Italy, Mexico, and South Africa.¹⁵

Other multilateral initiatives with a strong focus on EE emerged in the late 2000s. The Clean Energy Ministerial (CEM) was launched in 2009 by the United States and brings together energy ministers from big economies every year, while also leading a group of initiatives, some of them focusing on EE.¹⁶ The CEM used to work closely with IPEEC, the two forums co-hosting two initiatives on energy management (the Global Superior Energy

14. As of September 2021, these include Brazil, China, India, Indonesia, Morocco, Singapore, South Africa and Thailand – see www.iea.org.

15. IEA, “Energy Efficiency Hub: A Platform for Global Collaboration on Energy Efficiency”, available at: www.iea.org.

16. See www.cleanenergyministerial.org.

Performance partnership – GSEP) and appliances (Super Efficient Equipment and Appliance Deployment – SEAD).

Finally, Saudi Arabia also engaged in energy efficiency activities, through the establishment in 2013 of the King Abdullah Petroleum Studies and Research Center (KAPSARC) – a center combining work on fossil fuels and clean energy. Interestingly, when established, the center clearly looked in the direction of China, India, and the US. In addition to publications on these countries, it partnered with the China Sustainable Transportation Center, the Energy Research Institute of the National Reform and Development Commission, the Development Research Center, and the Institute of Economics and Technology from the China National Petroleum Corporation, and also TERI University in India. Meanwhile, Saudi Arabia also has its own Energy Efficiency Center, and had proposed to host the EE Hub, without success.¹⁷

A Key ODA Issue

In the 2000s, EE also became a key topic for official development assistance (ODA), with United Nations organizations and bilateral agencies developing their own energy-efficiency focus on regions uncovered by IPEEC, the CEM, or the IEA. The UN Environment Programme (UNEP) started promoting energy efficient lighting in the 2000s, the UN Development Programme launched various projects in its countries of activities – including Africa, UN Habitat, and the UN Industrial Development Organization respectively promoted EE in cities or buildings and industry, UN regional economic commission also focused on this topic, etc.

The same trend happened with development banks, from the World Bank to regional development banks. Typically, important initiatives were launched in Eastern Europe, Russia, Central Asia, and China, with a focus on the improvement of energy performance after the opening and reforms of these countries. The European Bank for Reconstruction and Development (EBRD), the World Bank (for instance through the establishment of its Energy Sector Management Assistant Program – ESMAP) and its International Finance Corp. (IFC) or, within the UN, the Economic Commission for Europe (ECE) developed many EE programs (see table below for some examples). The most common technical assistance projects on EE focus are shown in table below.

In addition, different initiatives cover specific sectoral or regional energy-efficiency areas. Regional Centers for Renewable Energy and EE to promote clean energy were created, with support from Austria and UNIDO. Eight of such centers are currently active, and two are under preparation.¹⁸ Finally, COP 21 saw the establishment of a partnership focusing on building efficiency, the Global Alliance Buildings and Construction (GABC), hosted by UNEP in Paris¹⁹.

17. See www.seec.gov.sa.

18. Global Network Regional sustainable Energy Centres, available at: www.gn-sec.net.

19. See <https://globalabc.org>.

In parallel, the EU is also mentioning energy efficiency in its Green Deal Diplomacy, insisting on issues such as affordable electricity and retrofitting housing programs, as well as zero-emission transport. Brussels intends to set up international “gold standards”.²⁰ EE is typically part of the Partnership signed between the EU and the African Union to promote sustainable energy transitions, with little results so far though²¹.

Examples of EE Technical Agreements

| Focus | Sectors covered | Examples |
|---|---------------------------|--|
| Development of EE Standards | Buildings (old and new) | Building Efficiency Accelerator (Johnson Controls, SEforALL, UNEP, WRI); ²² Programme for EE in Buildings – PEEB (AFD, GIZ and KfW) |
| | Vehicle fuel efficiency | Global Fuel Economy Initiative ²³ |
| | Appliances and lighting | Enlighthn and United for Efficiency ²⁴ |
| Capacity building | Mostly emerging economies | IPEEC WEACTION Task Group, the IEA EE in Emerging Economies’ program |
| Technical Assistance combined with credit lines | Finance | EBRD (for instance Morocco Sustainable Energy Financing Facility – MORSEFF ²⁵), but also IFC, AFD, or KfW. |

Sustainable Energy for All: Coordinating UN Initiatives and Engaging the Private Sector

As these initiatives developed in the 2000s, it became obvious that the EE, and more generally sustainable energy work needed further coordination within the multilateral system. UN Energy, an inter-agency mechanism to coordinate the energy-related work of 20 UN organizations was established in 2004. It was followed in 2014 by the establishment of a new organization, Sustainable Energy for All (SEforALL). The organization established a committee originally chaired by the then UN-Secretary General Ban-ki Moon and the president of the World Bank, Jim Kim.

20. Clean Economy Briefing Service, September 15, 2021.

21. M. Högl and G. Iacobuta, “AU-EU Partnership to Promote Sustainable Energy Transitions”, *Policy Briefing*, No. 209, South African Institute of International Affairs (SAIIA), September 2020.

22. See <http://buildingefficiencyaccelerator.org>.

23. See www.globalfuelconomy.org.

24. See <https://united4efficiency.org>.

25. See www.morseff.com.

The EE presence in multilateral governance remains fragile

EE became central to the work of SEforALL, notably through the establishment of a series of public-private partnerships, the so-called EE Accelerators. These were established by UN actors (UNEP, UNIDO); private companies (Accenture, Danfoss, Signify, Johnson Controls); industry associations (the International Copper Association, the FIA Foundation), and think tanks (the World Resources Institute). Most of these initiatives were launched during the UN Climate Summit in New York in September 2014.²⁶ These projects include work on standards for appliances or vehicle fuel efficiency, the promotion of district energy, and others. In addition and to support their work, Denmark established in 2013 a new center, the Copenhagen Center on Energy Efficiency (C2E2), hosted by a partnership between UNEP and the Denmark Technical University. C2E2 is playing the role of the SEforALL EE Hub and acting as a think-and-do tank, with some expertise on district energy systems. The accelerators were recently included in the Three-Percent Club, a partnership launched during the 2019 UN Climate Summit and that aims at further accelerating the improvement of EE, with the participation of SEforALL, the IEA, UNEP, WRI, and others.²⁷ Finally, SEforALL is also an important actor of the HLDE, promoting at this occasion Energy Compacts that consist in voluntary commitments from all types of stakeholders (public and private) to take specific actions that will advance progress toward the SDG7 targets.²⁸

Meanwhile, the Global Green Growth Initiative (GGGI) intended EE bureau in Denmark, but had to cancel this plan in 2014 due to a local political scandal.²⁹ At the end of the Obama mandate, in the United States (USA), the CEM also had to transition from its US host (the Department of Energy) to an international one (which turned out to be the IEA), which proved useful when Donald Trump was elected President. The SEforALL Accelerators also went through a time of uncertainties in 2016-2017, due to a leadership transition and some long hesitations of the then-new leadership vis-à-vis its EE activities.

Hence why the EE presence in multilateral governance remains fragile. Too often, initiatives have closed down, due to some leadership or other – often personal – issues. As mentioned, the only multilateral initiative focusing uniquely on EE, IPEEC, had to close down and was replaced by a so-called EE Hub. Its activities are still to be developed yet there is new impetus following a recent restructuring, strategic reorientation and new funding from Germany. However, this name creates confusion with the SEforALL Hub.

These fragilities can also be found in international non-governmental organizations. The history of the ClimateWorks Foundation is a good example: established in 2009, the organization used funds from other foundations (mostly the Hewlett and Packard foundations) to develop a “Best Practice Network”, consisting of a series of NGOs, each of them specialized in one sector, and working with regional foundations. The Network saw

26. SEforALL, “Global Energy Efficiency Accelerator Platform”, available at: www.seforall.org.

27. See <http://threepercentclub.org>.

28. See www.un.org.

29. S. Kim, “GGGI’s ‘Luxury Lars’ Spent Loads on Flights, Fancy Meals”, *Korean Joongan Daily*, October 23, 2013, available at: <https://koreajoongangdaily.joins.com>.

the creation of several new organizations: the European Climate Foundation (ECF – working on European projects), Global Buildings Performance Network (GBPN – for the building sector), the Institute for Industrial Productivity (IIP – for industry), the Shakti Foundation (for Indian projects), that started working together with a group of existing NGOs with already proven track record in the field: the China Sustainable Energy Program (for Chinese projects), CLASP (for appliances), the Energy Foundation (for American projects), the International Council on Clean Transportation (ICCT), the Institute for Transportation and Development (IDTP), the Regulatory Assistance Program (RAP, for power projects). However, in late 2011, the sudden departure of the founder, head of ClimateWorks, and brain behind the Best Practice Network, alongside his deputies, put the whole architecture at risk. This was followed by financial difficulties for most of the organizations mentioned, and the closure of offices. IIP, established in 2010, was also forced to cease activities and close down in 2016.

What Now?

As of 2021, the current international landscape of EE remains highly fragmented:

- The IEA (and its Energy Efficiency Hub) is de facto the reference when it comes to EE. As the Hub is being repowered, the following core issues need to be addressed:
 - IEA membership is limited, and only covers the most developed economies of the world. Despite the development of activities in other regions (for instance Africa), the organization lacks the legitimacy and experience of UN-type agencies and does not have an on-the-ground presence. The Hub is also open to non-IEA members but the question remains about how much ownership countries that are not full members would feel.
 - For many, its purpose is limited to being a think tank, though it has been trying over the past years to expand its activities toward implementation work, and could also do so in setting up goal oriented engagement groups in various EE sectors.
 - EE requires mobilizing cities, which so far have not been involved in IEA activities (which may change though following a report prepared for the Italian G20 presidency).³⁰ In a nutshell, the IEA has the technical capacities, but not the full political convening power and capacity to deliver on a large scale.
- Sector-focused initiatives are being developed. A good example is the cooling sector. Following the signature of the Kigali amendment to the Montreal Protocol on the phase-down of hydrofluorocarbons in 2016,³¹ new projects appeared, with the aim to promote cooling efficiency and access. These include the Clean Cooling Collaborative (formerly K-CEP) which was established in 2016. It is hosted by

30. IEA, “Empowering ‘Smart Cities’ toward Net Zero Emissions”, *Press release*, July 22, 2021, available at: www.iea.org.

31. UN Environment Program, “The Montreal Protocol on Substances that Deplete the Ozone Layer”, available at: <https://ozone.unep.org>.

The private sector is playing a growing role

ClimateWorks and brings together countries, companies, and other stakeholders to promote clean cooling and access to cooling.³²

- The private sector is playing a growing role. One of the main innovations of SEforALL was to bring private actors into project development. The IEA is trying to bring companies to its events, notably the Annual Global Conference on EE.³³ The Three-Percent Club is also a move in that direction. Importantly, national or regional industry associations or lobbying groups on EE with a private sector membership, are developing and gaining more and more visibility at international events: these include for the USA, the ACEEE, the Alliance to Save Energy; for Europe the European Council for an Energy Efficient Economy (ECEEE), the European Alliance to Save Energy; but also in India the Alliance for an Energy Efficient Economy (AEEE) and in China, the China Council for EE.

Would an IEEA significantly speed up the efforts needed to reach the goals of SDG7? Or should the IEA and its EE Hub be reinforced and encouraged to work with non-OECD members, the private sector and cities? In any case, it appears that there is a need to foster the international dimension of EE through political and institutional leadership, in order to:

- bring EE in the limelight of energy transitions – as conversion on this topic tend to focus on renewables, ignoring efficiency;³⁴
- increase its political profile and visibility, with a focus on concrete, operational results that match the challenges and needs of the various type of countries, sectors and stakeholders;
- ensure that in this important field, political rivalries among powers (such as the US and China), do not interfere;
- foster coordination and new synergies between all the (numerous) initiatives mentioned above, and last but definitely not least;
- support finance mobilization for energy efficiency projects.

For the EU, fostering existing initiatives like the IEA EE Hub, Sustainable Energy for All and UN-related programs (for instance the ones led by UNEP) but also work from NGOs like the European Climate Foundation, and ramping up bilateral partnerships on EE as part of the external dimension of the Green Deal, would be necessary and timely.

32. See www.cleancoolingcollaborative.org.

33. IEA, 6th Annual Global Conference on Energy Efficiency, March 30, 2021, available at: www.iea.org. As for the EE Hub, this name was also borrowed from an existing initiative, the Energy Efficiency Global Forum – a key yearly meeting. See <http://eeglobalforum.org>.

34. B. Görlach and U. Fuentes Hutfilter, *Options for Multilateral Initiatives to Close the Global 2030 Climate Ambition and Action Gap – Policy Field Energy Transition*, op. cit.

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