

# G20 Energy Efficiency Investment Toolkit

*Summary for Policy Makers*

## G20 Energy Efficiency Finance Task Group (EEFTG)

Established in 2014 under the G20 Energy Efficiency Action Plan  
Coordinated by the International Partnership for Energy Efficiency Collaboration (IPEEC)  
and with 15 participating G20 countries



The G20 Energy Efficiency Investment Toolkit is the product of the collaborative work of 15 participating country members of the G20's Energy Efficiency Finance Task Group, co-chaired and coordinated by France and Mexico. This toolkit is published under the content direction of the International Energy Agency (IEA); the International Partnership for Energy Efficiency Collaboration (IPEEC); and the UN Environment Finance Initiative (UNEP FI). It provides a voluntary framework and tools for G20 countries to enhance capital flows for energy efficiency investments in their economies. This toolkit is the culmination of three years of detailed technical work of the G20's Energy Efficiency Finance Task Group, with its participating countries, as constituted under the G20's Energy Efficiency Action Plan in 2014 and reinforced through the 2016 Energy Efficiency Leading Programme.

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## Executive Summary

The G20 represents 84% of the world's total economic output, more than 80% of primary energy consumption and 80% of greenhouse gas (GHG) emissions. G20 countries recognise that both energy efficiency and increased energy productivity are critical to boost sustainable economic growth in an increasingly resource constrained planet. Energy efficiency investments deliver multiple private and public benefits and can be scaled-up significantly to decarbonise economies and deliver these multiple national economic benefits and the goals of the Paris Agreement in the most cost-effective way.

This G20 Energy Efficiency Investment Toolkit (the "Toolkit") represents the culmination of three years of collaborative work, by participating countries, international organisations (IOs), financial institutions and country experts, to enhance capital flows for energy efficiency investments as compiled and supported by the G20 Energy Efficiency Finance Task Group ("EEFTG"). Launched by the G20 Energy Efficiency Action Plan in 2014, the EEFTG delivered the core policy component of this Toolkit (the *Voluntary Energy Efficiency Investment Principles*) as welcomed by G20 Energy Ministers in 2015. Since then EEFTG and its collaborators have rallied 122 banks, more than USD 4 trillion of institutional investors, leading public financial institutions and insurance companies in support of G20 countries' ambitions to redouble their efforts and scale-up energy efficiency investments as articulated in the G20's Energy Efficiency Leading Programme endorsed by G20 Leaders in 2016 and creating the platform for this Toolkit.

Greater collaboration is essential to addressing the G20 energy efficiency investment challenge, which transcends individual domains and sectors - be they policy, regulatory, public or private. It requires unprecedented levels of coordination and collaboration to identify and unlock the benefits resulting from a significant scale up of energy efficiency investment. Financing flows are global, and the multiple benefits through increasing and prioritising energy efficiency investment will accrue nationally and locally, making countries stronger, more resilient and more energy-secure. Financial and technology innovation and up-take will also accelerate through the greater awareness and promotion of "best in class" instruments and approaches. This is because leadership and successful business models that flourish in one jurisdiction can, through the global nature of finance, be shared and copied in other countries, despite the specificity of national contexts.

Throughout its chapters, this Toolkit offers a new perspective on the challenge of scaling-up energy efficiency investments by defining and separating "core" energy efficiency investments (those stand-alone projects where the delivery of energy savings is the lead driver) and "integral" energy efficiency investments (where overall asset performance is the lead driver, yet multiple benefits -including improved energy performance- are delivered by an incremental "embedded" investment). The Toolkit also provides insights into national policy developments, showcasing good practices, as well as insights into policy tracking databases, using the *Voluntary Energy Efficiency Investment Principles* as a frame for their comparison. Finally, the Toolkit reveals how public and private sector financial institutions are tackling the energy efficiency investment challenge, through their commitments, approaches, tools and by sharing the areas that they identify for further joint development.

No single stakeholder group can deliver the scale up of G20 energy efficiency investment required on its own. This Toolkit therefore provides a collaborative architecture through which G20 policy makers can engage in a structured dialogue with investment providers and jointly develop and deliver the targeted economic, social and environmental benefits that G20 Leaders seek together, in their national interests and for the benefits of the global community. The value to G20 policymakers of this Toolkit, and its collaborative architecture, is greater than the sum of its parts - precisely because of the network effect created by convening and connecting the multiple stakeholders responsible for its components, and uniting them in the pursuit of a shared objective with benefits for all.

## G20 Energy Efficiency Investment Toolkit

Energy efficiency is a long-term priority for the G20 Leadership from the world's 20 leading economies is critical to double the global rate of improvement in energy efficiency<sup>1</sup> and to better understand and help fill the annual energy efficiency investment gap. Increased G20 collaboration on energy efficiency can drive economic activity, growth and productivity gains, strengthen energy security and improve environmental outcomes. Moreover, since its founding the G20 has offered a strong platform for members to share their accumulated experiences and good practices to accelerate energy efficiency improvements globally.

In July 2016 in Beijing, China, G20 Energy Ministers welcomed the G20 Energy Efficiency Leading Programme (EELP), the G20's first long-term framework for energy efficiency. The EELP builds on the success of the G20 Energy Efficiency Action Plan endorsed by G20 Leaders in November 2014.

### G20 EELP calls for enhanced capital flows into energy efficiency investments

- As the world's major economies, the economically attractive opportunity to invest in energy efficiency creates market demand for finance in G20 members that requires enhanced capital flows into energy efficiency investments.
- Like all programmes, energy efficiency needs to be adequately resourced by dedicated human, institutional and financial resources, to allow its deployment at all levels of national and local economies. Support is needed to: i) create an enabling national policy environment; and ii) generate direct investments by public and/or private stakeholders into energy efficiency solutions, systems and technologies.
- G20 members will work to significantly improve energy-efficient technologies and equipment coverage, as well as effectively work to enhance capacity building and the policy and regulatory environment for energy efficiency investments, taking into account different national realities, capabilities and levels of development within countries, and respecting national policies and priorities.

In September 2016, G20 Leaders encouraged members to significantly improve energy efficiency, based on their specific needs and national circumstances, and G20 Energy Ministers recognised the particular opportunity provided by voluntary collaboration to scale-up energy efficiency investment, since financing institutions within the G20 represent the majority of the global financial system. This heightened interest in increasing the rate of deployment of energy efficiency can enhance productivity, improve energy security and enable low carbon growth. While this will require new core energy efficiency policies, it also requires a review of existing energy architecture to better integrate energy efficiency considerations and a market transformation that supports and facilitates energy efficiency investments and expands financing toward energy efficiency-backed products.

The structure of this Toolkit was presented for comments to the G20 Energy Sustainability Working Group (ESWG) in Berlin and G20 countries were subsequently offered an opportunity to review and comment on its contents. Drafting was coordinated by the EEFTG and co-delivered by the International Energy Agency (IEA), United Nations Environment Programme - Finance Initiative (UNEP FI) and IPEEC with direct inputs and comments from other IOs and other G20 work streams, where relevant. The voluntary options presented in this Toolkit comprise tools, actions and case studies, that together present an integrated and sustainable approach towards enhancing capital flows to energy efficiency, and can be taken up by G20 countries voluntarily and in accordance with their national circumstances and priorities and is divided to four sections:

1 One of the three pillars defined by SEforAll to deliver UN SDG #7, SEforALL. (2015). SEforALL provides "strong global framework" for energy SDG – Ban Ki-moon. Retrieved from [http://www.se4all.org/2015\\_09\\_17\\_se4all-provides-strong-global-framework-for-energy-sdg-ban-ki-moon](http://www.se4all.org/2015_09_17_se4all-provides-strong-global-framework-for-energy-sdg-ban-ki-moon)  
SEforALL. (2015). Our Value Added. Retrieved from [http://www.se4all.org/our-vision\\_our-value-added](http://www.se4all.org/our-vision_our-value-added)

## 1 An assessment of current energy efficiency investment by sector and region

- Global investment in energy efficiency was estimated to be USD 221 billion in 2015, an annual increase of 6%, with over half of this investment occurring in the buildings sector.
- Section 1 of the Toolkit considers energy intensity improvement trends and geographical contexts to frame incremental energy efficiency investment needs and make the case for additional attention from G20 policy makers and markets.

## 2 Showcase of good practice exchanges on (i) enabling national policy framework design and (ii) implementation of the voluntary Energy Efficiency Investment Principles for G20 participating countries

- An enabling national policy framework is critical to mobilise and effectively channel finance to energy efficiency investments. The *Voluntary Energy Efficiency Investment Principles* (VEEIP) for G20 participating countries offer a guiding framework for designing and implementing policies that stimulate both the demand for and supply of energy efficiency investments and finance.
- Section 2 of the Toolkit identifies gaps and bottlenecks for energy efficiency investment growth, and provides relevant experiences and case studies to address these through an extensive review of existing policies and policy databases through the lens of the VEEIP.

## 3 Report on “best in class” instruments and approaches to encourage and increase energy efficiency investments among different types of private sector financial institutions (banks, long-term investors and insurance companies)

- Private sector banks, long-term investors and insurance companies are gradually making energy efficiency investments a focus area. This is demonstrated by the energy efficiency declarations and commitments made by 122 banks from 42 countries and the managers of more than USD 4 trillion of long-term investment funds, and the collaboration under the Principles for Sustainable Insurance (PSI). Insurance companies also have a unique facilitating role through targeted energy efficiency insurance products and services improving the risk profiles of investments.
- Section 3 of the Toolkit presents existing financial instruments and approaches that can be applied by different types of private financial institutions to scale up affordable energy efficiency financing across different sectors and regions. The financial instruments and approaches selected have been identified as “best in class” based on results from a survey of banks and the work of UNEP FI, Principles for Responsible Investment (PRI), the Global Investor Coalition (GIC) and PSI.

## 4 Facilitate consensus building among public banks and development institutions around “best in class” instruments and approaches to scaling-up their energy efficiency activities

- International financial institutions, public banks and multilateral development banks are principals in the promotion of energy efficiency finance best practices, energy efficiency investments and new instruments that can crowd-in other sources and help fill the energy efficiency investment gap.
- Section 4 of the Toolkit presents a joint G20 statement endorsed by leading public financial institutions identifying key areas and collaborative activities that they will undertake to scale up energy efficiency. These include the deployment of technical and project development assistance, alongside targeted energy efficiency credit lines, as well as opportunities to lever retail distribution channels and build capacity and investment activities among local partner financial institutions, taking into consideration countries’ national circumstances and priorities.

## Summary for Policy Makers

The G20 Energy Efficiency Investment Toolkit frames the critical challenge of scaling-up energy efficiency investments in a way that is helpful to policy makers by sorting and simplifying these otherwise complex issues into insights and actionable voluntary options for policy makers drawing on the experiences of private and public financial institutions. This G20 Toolkit recognises that joint actions are required from multiple stakeholders (policy makers, regulators, banks, long-term investors, insurance companies and public financial institutions). The Toolkit also recognises that to deliver multiple benefits of energy efficiency to G20 economies, energy efficiency investment needs to increase (independent of source), and energy efficiency financing is a mechanism (means to an end) that, if adequately deployed, can rapidly accelerate the growth of energy efficient business models and therefore enable the scaling-up of energy efficiency investments in buildings, transport and industry where hosts do not have easy access to the necessary investment capital.

A pattern that emerges independently in each section of this Toolkit is the division of investments and policies into three clusters: “core”, “integrated” and “inefficient” (or hidden). Energy efficiency is “core” to certain pure energy efficiency investors, ESCOs, specific energy efficiency standards, programmes or policies, targeted bank lending facilities and energy savings insurance products. Yet energy efficiency is also “integrated” and embedded in green real estate, sustainable investments, green and climate policies, investor ESG or SRI commitments and bank safeguard procedures. However, there are large clusters of on-going incremental investments and policy arenas where energy efficiency is not a primary consideration, but which have implications for energy efficiency outcomes: For example the lock-in of “inefficiency” through non-compliant buildings, plant and vehicles, energy price subsidies, finance instruments and asset designs which do not consider energy performance.

While there is no precise indicator of current trends across multiple sectors in multiple countries, “core” energy efficiency investments appear to represent “single digit” percentages of total investments (e.g. ESCO markets are just 10% of total energy efficiency investments, nearly zero-energy buildings a small % of total global building investment), whereas incremental energy efficiency investment is integrated or embedded in around 30% of assets (depending on region and sector). However, by far the largest proportion of assets (60%) are either inefficient or do not visibly consider energy efficiency. This provides a strong potential to deliver improved economic, social and environmental outcomes.

This Toolkit uniquely draws together learnings from multiple stakeholders engaged in energy efficiency investment, financing and policy-making to provide a single framework of reference for G20 policy makers and market participants to help deliver the multiple benefits available through the scaling-up of energy efficiency investments. In broad terms, the results from “core” energy efficiency policies and investments provide the necessary evidence and tools for countries to strengthen their energy efficiency policy framework and to mainstream “integrated” and “inefficient” segments, and for financial institutions to accelerate the mainstream integration of explicit energy efficiency criteria through a combination of standards, regulations, tools and requirements. The evidence from “core” energy efficiency policies and investments also offers a strong economic rationale to extend policy compliance and implementation resources to ensure that the majority of global infrastructure and asset investments are energy efficient.

Each section of this Toolkit provides insights and analysis from the best available data on energy efficiency investments and policies. Through this analysis, the Toolkit identifies common threads, best practices and delivery tools for G20 policy makers and financial institutions. A selection of over 30 best-practice case studies is provided in a separate annex to this Toolkit.

**Conclusion:** The collaborative framework provided by this G20 Energy Efficiency Investment Toolkit offers the right flexible and voluntary architecture to continue the joint development and sharing of G20 energy efficiency policy, investment and financing tools and best practices to enhance capital flows to and scale-up energy efficiency investments. Work in the framework of this Toolkit will strengthen G20 collaboration and provide periodic updates for country input and review.

## G20 Energy Efficiency Investment Trends

The USD 221 billion global market of identifiable energy efficiency investments are focused in large G20 economies which have a combination of the necessary policies, income levels, institutional support and market sizes to stimulate and foster them. The U.S., E.U. and China represented nearly 70% of global (core and integrated) incremental investments in energy efficiency in 2015.

In the EU, the buildings sector accounted for over 80% of total efficiency investments (with over 90% in Germany, UK and France). In the U.S., buildings represented over two-thirds of energy efficiency investments and in Japan energy efficiency investments in buildings was over half of the total; yet in India, buildings represented just 19% of total investment, with 34% in China, and 15% in the rest of the world. Emerging economies had a larger share of efficiency investment in industry and transport sectors, with China, for instance, accounting for over 40% of global energy efficiency investment in light-duty vehicles (LDVs).

The largest source of “core” energy efficiency investments is the market for energy performance contracts (EPCs) which totalled USD 24 billion in 2015<sup>2</sup>. EPCs, however, accounted for just 10% of the larger “integrated” energy efficiency investment market which, depending on the sector and region, is ca. 30% or less of total identifiable asset investments.

While the global energy intensity improvement of 1.8% in 2015 was three times greater than the decadal annual average of 0.6%, between 2003 and 2013, G20 energy intensity improvement must accelerate significantly. The IEA notes the need for it to further increase to 2.6% immediately and continue improvement at this rate until 2030, which is broadly in line with SEforAll’s call to double the rate of global energy efficiency improvement. This implies a considerable increase in energy efficiency investments which, at a time of limited public investment capacity, requires a historic mobilisation of capital from public and private sector financial institutions. An enabling policy framework, which seeks to embed energy efficiency across multiple investment segments, is crucial to achieving this.

However, absolute incremental investment levels can follow a similar path as total investments in renewables, where steep declines in the cost of renewables technologies have led to decreasing investment levels per MWh but greater deployment

of total renewables capacity. As energy efficiency supply chains adjust, technological improvement will accelerate and economies of scale will reduce costs, lowering the cost of delivery of energy savings and incremental investment needs. This is an effect that is already being observed in some key product categories, such as LEDs, and was driven by enabling policies which integrate support for energy efficiency investments across target sectors.

Most investments in energy efficiency occur without using specialised energy efficiency financing mechanisms, such as the self-financing of efficient air conditioners, energy renovations, industrial retrofits or electric vehicles, and cannot be measured by observing energy efficiency finance flows. This also means that current energy efficiency investment is supported by the existing sources of finance available to investors. Yet, where energy efficiency alternatives are only attractive when observed over the asset’s lifetime, new tailored low-cost finance mechanisms, supportive policies and business models which make them visible and accessible to asset owners, are critical to enable these owners to make the energy efficient choice over the “cheap” one.

Split incentives, poorly understood performance risks and the disaggregated scale of most energy efficiency investments hamper demand for these investments within the limits of conventional financing mechanisms. New technologies mechanisms that reduce transaction costs, like smart metering, on-bill finance, energy savings insurance and cost reductions in the underlying energy efficient technologies can help overcome these barriers.

The fast growing debt market for green bonds provides a useful example: While in 2015, green bonds financed just USD 8.2 billion of energy efficiency investments (less than 5% of the total energy efficiency market), banks were able to have significantly improved access to this new source of finance if they more aggressively identified and tagged the green characteristics of the assets on their balance sheets. Regulations which support the greater visibility of bank assets’ energy performance will help financial institutions to prioritise this internal identification and subsequently grow the market for green bonds in a virtuous circle, delivering greater energy efficiency investment to private and public investors.

**Investment Trends Conclusions:** G20 energy intensity improvement must accelerate significantly in coming years and an enabling policy framework, which embeds energy efficiency across multiple investment segments is crucial to achieving this. As energy efficiency supply chains adjust, technological improvement will accelerate and economies of scale will reduce costs and new data, smart meters and business models with tailored finance can reduce transaction costs and aggregation. Regulations which support the greater visibility of bank assets’ energy performance will help financial institutions to prioritise energy efficiency investments.

## G20 Energy Efficiency Investment Policies

In 2015, the *Voluntary Energy Efficiency Investment Principles* (“Principles”) were developed based upon the experiences of G20 Participating Countries and welcomed by G20 Energy Ministers. These Principles provide a robust framework through which to assess G20 policy progress to scale-up energy efficiency investments, evidenced through the results of the 2016 EEFTG global expert survey. The degree of implementation of the Principles was assessed through this survey and through analysis of eight policy databases containing in aggregate 10,000 global policy records.

While the coverage of the policy types included in the Principles is reasonably high - between 40-80%- it is surprising to see that none of the eight global policy databases has 100% coverage of the Principles, nor is it straightforward to sort the 10,000 policies which are recorded into the five policy categories identified in the Principles as supporting energy efficiency investments. This suggests that energy efficiency investment and finance, as a cross-cutting category, was not considered in the design of the current database tools available to policy makers to track policy developments in this area.

In terms of relative policy intensity of energy policies that support energy efficiency investments, EEFTG was able to map just 55 (3%) of core policies against the Principles for G20 nations in the IEA’s Policies and Measures (PAMS) database<sup>2</sup>. This number would be 280 (or 80% higher) if EEFTG could identify a policy for each of the sub-Principles and every G20 nation in the vEEIP in PAMS, indicating plenty of opportunity for progress on both implementation and PAMS. This analysis, while imperfect, is also supported by the findings of the expert survey which indicates that there are areas for policy improvement identified by the Principles.

EEFTG work identifies key G20 policy gaps that correspond to Principles 2 (systematic balance of demand-side with supply-side policies), 3d and 3f (aggregation, standardisation and bundling support, and investment pipeline development assistance, respectively), 4a and 4e (accounting and regulatory treatment for EEI and blending public finance to lever private sector finance for EEI, respectively) and Principle 5 (building awareness and the use of voluntary targets within financial institutions).

**Conclusion for policy makers:** Continued implementation work on the Voluntary Energy Efficiency Investment Principles is recommended, with a focus on the areas highlighted through the “gap analysis” in this Toolkit. Countries can consider jointly developing further tools by Principle in these areas in annual revisions of this Toolkit. At the same time, the proven engagement mechanisms and bilateral approaches, led by EEFTG and its IO partners, can be reinforced and focus on the areas and tools highlighted by the G20 energy efficiency investment policy analysis. Finally, global policy databases are important tools for countries to take stock of and track progress. Improving data quality and search functions on existing policy databases would enhance G20 nations’ abilities to track and report progress on the G20 Energy Efficiency Investment challenge.

<sup>2</sup> PAMS is one of the oldest policy databases (launched in 1999) and covers c. 2,000 energy efficiency policies in 117 countries with extensive coverage of G20 countries.  
IEA. (2017). Policies & Measures Databases. [Website]. Retrieved from <https://www.iea.org/policiesandmeasures/>

## Private Sector Contributions: Role of Private Sector Banks

Energy efficiency is not a defined financial asset class but is present in all manner of assets and across all forms of investment that use, transform or have embedded energy. This fundamental, “integrated” nature of energy efficiency, as seen from a financial perspective, means that “core” energy efficiency investment remains a niche market (small percentage of portfolios and business). However, incremental energy efficiency investments are (or should be) integral to large proportions of corporate investments, retail banking loans, public and private real assets (e.g. infrastructure), real estate and industrial investments.

Private sector banks have a collective balance sheet sized at well over USD 110 trillion, with long-term institutional investors managing USD 70 trillion and insurance companies (as the largest subset of institutional investors) around USD 31 trillion. To engage with as many and diverse a set of private sector financial institutions as possible, EEFTG has levered its relationships with formal networks<sup>3</sup> and has developed commitment tools that, to date, 122 private banks and more than USD 4 trillion of institutional investors are using to embed energy efficiency considerations more deeply in their activities, in support and implementation of Principle 5 of the Voluntary Energy Efficiency Investment Principles.

In 2016, 818 companies (35% of the 2,300 global companies reporting to CDP) reported having undertaken an average of 2.9 energy efficiency projects each. In addition, 89 major companies that spend USD 2.7 trillion with over 2,500 suppliers saved USD 12.4 billion, of which half resulted from energy efficiency actions.

Yet evidence suggests that most companies are still focused on energy efficiency investments with a payback period of 3 years or less. This conclusion is echoed across all G20 countries, including Europe, the U.S., China, India, South Africa and Mexico. Economic returns do not seem to be a barrier for energy efficiency investments, so the Toolkit explores how financial institutions can play a role to unlock and improve energy productivity and the visibility of their assets’ energy performance.

EEFTG surveyed the leading banks making commitments to scale up energy efficiency to better understand their approaches. These banks start with a specific policy, strategy or target for the financing of energy efficiency -either standalone or as part of a larger sustainability or climate strategy. Nearly all of these banks (84%) indicated that energy efficiency finance has strong business potential and they identified the key drivers of energy efficiency business growth as including: energy prices, an anticipation of carbon taxes, public incentives, awareness, and the greater availability of technologies and professionals. Most of the banks active in energy efficiency finance focus on real estate and consumer and corporate lending, with two-thirds having at least one dedicated energy efficiency finance line or service. However, just one third of these banks take into account energy savings in credit terms and a similar proportion, or less, track the energy performance of their assets by category (real estate, industry, etc.).

**Bank Conclusions for policy makers:** The lessons of the “core” 122 banks – which represent less than one percent of all banks- committed to scaling-up energy efficiency activities can be enhanced and promoted to encourage the wider integration of energy efficiency into mainstream bank financing activities. Visibility of asset energy performance is key theme among core banks, as is having a bank-wide energy efficiency policy. The real estate and consumer and corporate lending departments should find ways to integrate the multiple economic benefits of energy efficiency for their customers into their regular finance products, thereby stimulating demand and enhancing their customers’ creditworthiness and resilience to energy shocks. Finally, banks can increase their use of “green tagging” as a mechanism to better track and report on the energy and environmental performance of their assets, also giving them expanded access to new financing markets (like green bonds) and enabling greater levels of transparency and disclosure.

3 UN Environment Finance Initiative (UNEP FI), the Principles for Responsible Investment (PRI), CDP, Investor Network on Climate Risk (INCR), Institutional Investors Group on Climate Change (IIGCC), Investor Group on Climate Change (IGCC) and UNEP FI Principles for Sustainable Insurance Initiative (PSI Initiative)

## Private Sector Contributions: Institutional Investor Insights

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Institutional investors can help scale-up energy efficiency investments in buildings, industry and SMEs by allocating long-term capital to the most efficient listed and private assets, and by directly engaging with their corporate investees to improve their energy efficiency. Leading institutional investors, managing over USD 4 trillion, share a common understanding of the positive economic and social benefits of energy efficiency and recognise the need to fully embed energy efficiency into their investment processes. This “core” group of 40 investors (representing around 5% of the sector by assets) are integrating energy efficiency considerations across their investments in different asset classes.

One of the main obstacles in assessing the effectiveness of institutional investors in capturing energy efficiency opportunities is finding out how energy efficiency information is integrated into investment practices and investment vehicles implicitly or directly. 60% of the 1,061 PRI reporting investors in 2016 considered climate change to be a long-term risk to investments. Energy efficiency is only implicitly integrated into such activities. One third of the managers reporting “optional indicators” for environmental and social themes to PRI referenced “green buildings” and “clean energy”, while just 15% referred directly to energy efficiency.

To improve institutional investor transparency, the PRI announced that it will align the PRI Reporting Framework with the final FSB Task Force Recommendations.

The task force targets disclosure to allow users to understand better the links between energy externalities and financial performance, thereby enabling improvement in the efficiency of their capital allocation. The task force identifies energy efficiency as a key opportunity for investors and a key component of its resource efficiency category.

Institutional investors have also started to embed energy efficiency considerations into their company assessments and corporate engagements, the better to raise the profile and visibility of energy efficiency. This Toolkit highlights the energy productivity tools and analysis that help reveal “best in class” company performers and uncover missed opportunities for improved profitability around which they can engage as shareholders. Investor-led collaborative corporate engagement activities are effective tools that can scale up energy efficiency investments. As real estate investors have a particular role to play in driving energy efficient real estate, UN Environment Finance Initiative, ASBEC and other partners have developed specific tools offering simple frameworks for capturing energy efficiency opportunities into each stage of real estate investment processes, accompanied by detailed case studies of investors implementing each step.

**Institutional Investor Conclusions for policy makers:** There needs to be better explicit measurement and reporting of energy productivity as it remains embedded in broader themes. More work is therefore required to make energy efficiency explicit and visible within investor and company disclosures. The FSB Task Force Recommendations provide an opportunity to scale up the existing voluntary work developed by the investment industry. G20 policy makers can continue to highlight these voluntary best practices, support and strengthen the visibility of energy efficiency investments in investor disclosure work and support those investors making commitments to scale-up energy efficiency investments. A consistent and appropriate regulatory framework for real estate and industry, through building codes, standards and mandatory certification schemes, would broaden coverage to a wider range of smaller investors in the heterogeneous investment industry.

## Private Sector Contributions: Role of Insurance in De-risking Energy Efficiency

Insurance companies have a unique perspective, both as institutional investors managing USD 31 trillion of assets and as insurers of the uncertainties and risks relating to extreme weather events and climate adaptation. Insurance products and services can help remove technical uncertainties that can allow banks and non-specialist investors to focus on credit, process and corporate risks. Insurers can help increase energy efficiency investments through improved risk profiles of the underlying projects, through products like energy savings insurance, and also improve the understanding of these risks, through the need for more robust data and greater trust in the market for energy efficiency solutions. The high data intensity requirements for insurance products creates a requirement to augment the evidence base showing that projected energy savings will materialise and to reduce transaction costs.

Energy efficiency investments are often hampered by the uncertainty associated with risks in terms of the assets installed, the revenues resulting from the project, and the energy savings generated. In scaling-up energy efficiency investments, all these risks need to be addressed and better understood. The transfer of risks to insurance companies can lower the cost of carrying this risk and – by improving the risk profile of the project – lower the cost of capital. Energy savings insurance of this nature can enable business models for SMEs with limited balance sheets and abilities to write guarantees, even though the quality of their project work may be high.

**Insurance Conclusions for Policy makers:** Through engagement in the production of this G20 Toolkit, PSI members were given the opportunity to better understand the opportunities for energy efficiency insurance and their potential role in scaling-up energy efficiency investments. The growing awareness and integration of climate-related risks and opportunities by insurance companies can be strengthened by conducive legislative incentives, such as equipment, vehicle and building standards. Subsequent iterations of this Toolkit can encourage insurance companies and platforms, PSI and SIF, to develop a joint G20 insurance commitment to bring visibility to sector leaders and best practices.

## Role of Public Finance in supporting the scale up of G20 Energy Efficiency Investments

Public financial institutions have had a leading role in promoting and scaling up energy efficiency investments, with a focus on: showcasing and replicating energy efficiency investment models that lever the partner networks of private retail banks for on-lending to their clients; the identification and implementation of new financial instruments designed to facilitate the replication and scale up of energy efficiency investments; and the identification of internal policies and safeguards that help mainstream energy efficiency investment across all activities of the organisations.

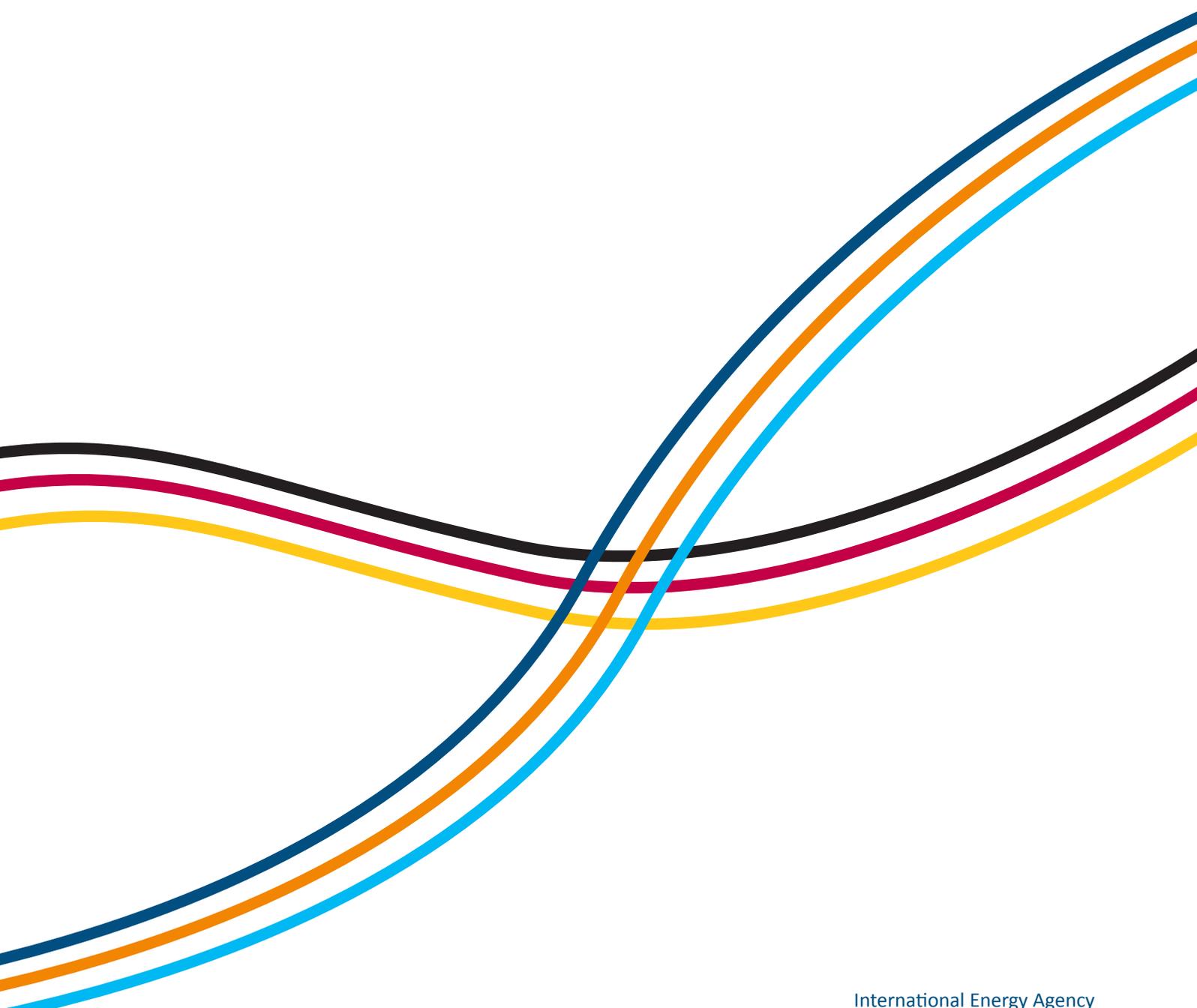
From 2012-2014, six leading public financial institutions invested over USD 7 billion in “core” energy efficiency investments representing 14% of their energy portfolios and 3% of their total investment portfolios, an amount equal to around half their investments in renewable energy. Working with these six and convening another ten public financial providers and stakeholders, EEFTG facilitated a public finance working group designed to identify and build consensus around the role of public finance in scaling-up energy efficiency investments. Public financial institutions do not have the additional amounts of capital required to fill the G20 energy efficiency investment gap, but they do have the patience and human capital to help develop the instruments and approaches required to lever more private capital and support policy makers in creating the regulatory frameworks which deliver the scale-up of energy efficiency investments required.

The public finance working group identified the seven key pillars of a joint G20 energy efficiency statement endorsed by many of its members. This statement provides a basis for continued engagement and joint development for G20 members with public financial institutions working in their geographies or at their behest. Four of the key areas identified for joint development with G20 countries are developed in greater detail in the Toolkit:

1. Increasing direct financing support of policy frameworks which require and promote energy efficiency and drive a life-cycle cost optimal approach to the procurement of new public infrastructure and buildings;
2. Working with stakeholders to increase the amount, availability and simplicity of technical and project development assistance facilities to lever own and partners’ investments;
3. Increasing on-lending activities with retail distribution networks, through partner commercial banks and other retail facing channels, to support aggregation of individual energy efficiency investments and lever on-bill finance and new repayment channels where available; and
4. Ensuring energy efficiency’s central role in the future of mobility, smart cities, energy grids and infrastructure.

**Public Finance Conclusions for policy makers:** Public financial institutions are working together to build a common understanding of the multiple benefits of energy efficiency and to share best practices in a more structured manner through this Toolkit. G20 countries can work to increase the amount, availability and accessibility of Technical and Project Development Assistance facilities to lever their investments and embrace a life-cycle cost optimal approach to the procurement of new public infrastructure and buildings. Countries can lever the experience of public financial institutions to strengthen policy frameworks for energy efficiency and facilitate aggregation mechanisms and ensure energy efficiency’s central role in the future of mobility, smart cities, energy grids, industry and infrastructure.

		Integrated	Core	
Market	 <b>USD trillions</b>	<b>USD 221 bn</b>	<b>ESCOs (USD 24 bn); "Self-financed"</b>	
Policy	 2000+ policies	Energy subsidies; Inefficient markets; Supply-led planning.	Energy Transition; National Renovation Strategies; Vehicle Fleet Standards; Transparent Energy Planning.	"EE First"; Mandatory targets/ standards; NZEBs; EE Obligation schemes; National EE Action Plans.
				
Private Sector	<b>Banks</b>  \$110tr	Finance undertaken without explicit consideration of energy "externalities" or cost effective energy improvements.	Green tagging; Green buildings lending; green lending; climate lending; Equator principles.	EE mortgages; Building renovation loan; EE credits/loans; EE tagging.
	<b>Investors</b>  \$70tr	Finance undertaken without explicit consideration of energy "externalities" or cost effective energy improvements.	Green tagging and company disclosure; Collaborative shareholder activism; Green funds; Sustainable real estate funds.	EE funds; Energy Productivity Indexes; Own real estate EE renovation; EE tagging.
	<b>Insurers</b>  \$31tr	Product and services without explicit consideration of energy "externalities".	Green buildings insurance; Climate mitigation insurance and investments; Add- on coverage; Technical assistance, advisory services.	Energy saving insurance; energy performance guarantee; EE advisory services.
	<b>Public finance</b>  \$176 + bn	Finance undertaken without explicit consideration of energy "externalities" or cost effective energy improvements.	Resource Efficiency; Safeguards; ESG & Climate Commitments.	Direct EE Lending; EE Policy lending; EE targets; Technical assistance.
		<b>\$33 bn</b>	<b>\$7 bn</b>	



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