



# 2016 Activity Report

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## G20 Energy Efficiency Finance Task Group (EEFTG)

*Established in 2014 under G20 Energy Efficiency Action Plan  
Coordinated by International Partnership for Energy Efficiency Collaboration (IPEEC)*

**Published on  
10/13/2016**



This work is published at the direction of the International Partnership for Energy Efficiency Collaboration (IPEEC). It is intended to collate and feedback the detailed technical work of the G20 Energy Efficiency Finance Task Group, which was constituted as one of the six work streams under the G20's Energy Efficiency Action Plan in 2014 and reinforced through the 2016 Energy Efficiency Leading programme.

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Please cite this publication as: “The 2016 Activity Report of the G20 Energy Efficiency Finance Task Group” published at the direction of the International Partnership for Energy Efficiency Collaboration (IPEEC).

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## *Executive Summary*

The work of the G20's Energy Efficiency Finance Task Group ("EEFTG") continues to address the critical investment challenges facing G20 countries as they sustainably develop their energy systems in consonance with their commitments under the Paris Agreement. For G20 countries, energy efficiency and increasing energy productivity sit at the core of their ability to sustainably grow their economies in a resource and climate constrained world.

EEFTG's work identifies three compelling reasons for G20 countries to prioritise and up-scale energy efficiency investments:

- **ECONOMIC:** Energy Productivity sits at the base of economic prosperity: It lowers energy bills and can create "infrastructure programme-like" levels of employment and energy supply;
- **CLIMATE:** About half of the global pre-2035 greenhouse gas emission reductions needed to keep the planet on a 2-degree pathway can be delivered through energy efficiency. In fact, "energy efficiency first" not only makes economic sense but also cuts the cost of climate action by \$ 2.8 trillion;
- **DEVELOPMENT:** Energy efficiency is key to achieving the UN's 7<sup>th</sup> Sustainable Development Goal (SDG) to "ensure access to affordable, reliable, sustainable and modern energy for all". SE4ALL sees a \$430 billion investment gap in energy efficiency investments to deliver its objective of doubling the global rate of energy efficiency improvements needed to meet SDG 7.

In 2016, G20 Energy Ministers recognized the particular opportunity provided by voluntary collaboration in the upscaling of energy efficiency investment when they met in Beijing in June. EEFTG welcomed this strong endorsement of its work as well as the multiple references and highlighting of the critical and catalytic role of finance and investment in the G20 Energy Efficiency Leading Programme (EELP), also launched by G20 Energy Ministers when they met.

Building upon the framework created in 2015 by EEFTG's voluntary Energy Efficiency Investment Principles for G20 Participating Countries, the 2016 work plan focused on identifying best practices with its 14 country members to deliver policies that stimulate and support energy efficiency investments. In parallel, EEFTG worked with its partners, notably UNEP FI, to broaden and deepen the energy efficiency investment commitments from 117 banks and \$4 trillion of funds under management having endorsed specific Energy Efficiency Statements.

EEFTG engaged with some 1,200 energy efficiency experts, policy makers and influencers around the world through a series 18 activities including Technical Engagement Workshops (TEWs), webinars, group meetings and bilateral discussions in 2016. The opinions and inputs from these financial institutions, policy makers and energy efficiency market stakeholders, across multiple geographies and regions, have helped identify best practices, case studies and offered feedback and support to EEFTG, much of which is documented in this 2016 Activity Report.

Enhancing capital flows for energy efficiency investments remains a critical area for G20 collaboration and EEFTG continues to build the dialogue between policymakers and public and private finance providers. The improving understanding of what makes an "investment grade" policy framework for energy efficiency through the framework and application of the voluntary Energy Efficiency Investment Principles in G20 Participating Countries and the removal of barriers to investment by financial institutions remains key. EEFTG continues to elevate the profile and importance of energy efficiency investments and their economic, developmental and environmental benefits so that participating G20 countries can work together to resolve some of the technical impediments to allow more funds to flow and deliver greater benefits to all.

## *Foreword*

The Energy Efficiency Finance Task Group (EEFTG) was formed with the aim of enhancing capital flows for energy efficiency investments. The EEFTG provides G20 Governments with a forum for sharing best practices in policies and financial instruments through peer-to-peer workshops and direct engagement with members of the private and public finance community, industry and international organisations.

In 2016, EEFTG counted members from 14 participating economies, and was co-chaired by France and Mexico. EEFTG's technical work is coordinated by a Secretariat, appointed on 13<sup>th</sup> March 2015, composed of nominated experts selected by the co-chairs from their own teams, IPEEC (the overall coordinator of the G20 Energy Efficiency Action Plan) and named individuals recognised for their specific expertise and networks in the subject matter. The EEFTG currently counts among its members and supporters:

- **Fourteen G20 countries:** Australia, Argentina, Canada, China, European Union, France, Germany, India, Mexico, South Africa, South Korea, Russia, United States and United Kingdom;
- **Representatives from international organisations,** including: the Organisation for Economic Co-operation and Development (OECD), European Bank of Reconstruction and Development (EBRD), United Nations Environment Programme Finance Initiative (UNEP FI), Sustainable Energy for All (SE4All), World Bank, Latin American Energy Association (OLADE), International Energy Association (IEA), the Energy Charter, and the Clean Energy Solution Centre of the Clean Energy Ministerial (CEM).

Following the endorsement of EEFTG's voluntary Energy Efficiency Investment Principles for participating G20 countries by Energy Ministers in 2015, EEFTG's 2016 work plan focused on activities which build upon that framework and the energy efficiency investment commitments from 117 banks and over \$4 trillion of funds under management coordinated by EEFTG and its partners. Core technical engagement activities included: a global survey, technical engagement workshops, high-level engagements in the context of global conferences, educational webinars, bilateral dialogue with G20.ESWG country members and experts, coordination with IOs and one-on-one meetings with Financial Institutions and policymakers in various geographies.

This report provides the reader with a summary of these technical engagement activities as well as the provision of selected case studies that have emerged through this work.

Many thanks are due to all those who have worked hard to enable EEFTG to deliver against its own high expectations in 2016 and for creating such a strong platform for continued engagement through the renewed support of the G20 Energy Efficiency Leading Programme in 2017 and beyond.

Co-signed by EEFTG Co-Chairs:

**Sylvie Lemmet, Co-chair France**

Director for European & International Affairs

Directorate for European & Int. Affairs  
Ministry of Ecology Sustainable development & Energy  
Ministry of Housing, Territorial Equality & Rurality

**Santiago Creuheras, Co-chair Mexico**

Director General for Energy Efficiency and Sustainability  
Deputy Ministry for Planning and Energy Transition  
IPEEC Policy Committee Chairman  
Mexico's Ministry of Energy, SENER

## *Acknowledgements*

The work of the G20 Energy Efficiency Finance Task Group has been a collective effort with the fundamental support and committed engagement from its 14 country members (Australia, Argentina, Canada, China, European Union, France, Germany, India, Mexico, South Africa, South Korea, Russia, United States and UK) under the strong and dedicated leadership of its co-chairs France and Mexico.

As a key work stream under the G20 Energy Efficiency Action Plan (2014), and with renewed support from this year's G20 Energy Efficiency Leading programme (EELP), EEFTG has benefitted from the support of the highly committed and resourceful team at IPEEC, led by Benoît Lebot, with special mention of the IPEEC team members Ailin Huang and Arnaud Jouvin for their engagement with various aspects of the co-ordination, procedures and organisation of EEFTG throughout 2016.

The daily operation of EEFTG and its technical activities were managed, on behalf of the Co-chairs and the Steering Group, by a Secretariat formed of six key individuals selected for their specific technical input and relevant networks that they brought to EEFTG. The members of the EEFTG Secretariat are: Ms Rosario Vadillo (*Ministry of Energy, Mexico*); Ms Véronique Massenet (*Ministry of Ecology, Sustainable Development and Energy, France*); Ms Ailin Huang (*IPEEC*); Ms. Annie Degen and Ms. Sarah Challe (*UNEP FI*); and - in the role of rapporteur - Mr Peter Sweatman (*Climate Strategy & Partners*). EEFTG wishes to acknowledge all of their hard work and dedication to help deliver 2015's key outcomes. Special mention is reserved for Peter Sweatman, and the Climate Strategy team led by Mauricio Yrivarren, for their diligence to deliver timely and excellent drafting work and workshop moderation support throughout the year.

EEFTG estimates that around 1,200 energy efficiency experts, policy makers and influencers around the world were engaged in Technical Engagement Workshops (TEWs), webinars, group meetings or 1-on-1 discussions in the context of EEFTG's 2016 technical work. These experts represented the views and input from Financial Institutions, policy makers and energy efficiency market stakeholders across multiple geographies and regions. We wish to thank each and every one of those individuals and their institutions for the time they dedicated to EEFTG, for their attendance to EEFTG events and activities as well as for their invaluable inputs to our work.

Finally, EEFTG's work and activities benefitted from the crucial support and input from numerous collaborating organisations. These entities performed a variety of roles including content provision and review, expert support, convening and hosting EEFTG meetings, workshop coordination, identifying experts, resourcing and networking on EEFTG's behalf. In 2016, EEFTG particularly thanks:

Alliance to Save Energy, French Agency for Environment and Energy Management (ADEME), Bloomberg New Energy Finance (BNEF), China Quality Certification Centre (CQC), Clean Energy Ministerial/ Clean Energy Solution Center (CEM/ CESC), ClimateWorks Foundation, Climate Advisors, Energy Charter, Energy Efficiency Finance Institutions Group (EEFIG), Energy Foundation China, European Bank for Reconstruction and Development (EBRD), International Energy Agency (IEA), Institute for Energy Efficiency in Production (EEP) International Energy Forum (IEF), International Institute for Sustainable Development (IISD), International Partnership for Energy Efficiency Cooperation (IPEEC), National Development and Reform Commission (NDRC), Latin American Energy Association (OLADE), Organisation for Economic Cooperation and Development (OECD), Sustainable Energy For All (SE4All), United Nations Environment Programme (UNEP), UNEP Finance Initiative (UNEP FI), UNEP Inquiry, and the World Bank Group. A special acknowledgement goes to IISD China which has provided instrumental support to the development of a nourished engagement with Chinese financial institutions, in the context of the Chinese G20 Presidency.

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## *Acronyms and Abbreviations*

<b>ALP</b>	Australian Labor Party
<b>AUD</b>	Australian Dollar
<b>BANCOLDEX</b>	Colombian Foreign Trade Bank ( <i>Banco de Desarrollo Empresarial y Comercio Exterior</i> )
<b>BEEN-i</b>	Bavarian Energy Efficiency Network Initiative
<b>BEI&amp;Ms</b>	(South Korean) National Building Energy Information and Management System
<b>EnBW</b>	Energie Baden-Württemberg
<b>CA</b>	California
<b>CBD</b>	Commercial Building Disclosure
<b>CBRC</b>	China Banking Regulatory Commission
<b>CEFC</b>	(Australian) Clean Energy Finance Corporation
<b>CO<sub>2</sub></b>	Carbon Dioxide
<b>COAG</b>	Council of Australian Governments
<b>CONUEE</b>	(Mexican) National Commission for the Efficient Use of Energy ( <i>Comisión Nacional para el Uso Eficiente de la Energía</i> )
<b>COP21</b>	21 <sup>st</sup> Conference of the Parties
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EE</b>	Energy Efficiency
<b>EEFIG</b>	Energy Efficiency Financial Institutions Group
<b>EEFTG</b>	G20 Energy Efficiency Finance Task Group
<b>EELP</b>	G20 Energy Efficiency Leading programme
<b>EFSI</b>	European Fund for Strategic Investments
<b>EESL</b>	(Indian) Energy Efficiency Services Limited
<b>EHSGs</b>	Environmental, Health & Safety Guidelines
<b>EPC</b>	Energy Performance Certificate
<b>ESCO</b>	Energy Service Company
<b>ESF</b>	Environmental and Social Framework
<b>ESI</b>	Energy Savings Insurance
<b>ESIF</b>	European Structural and Investment Funds
<b>ESS 3</b>	Environmental and Social Standard #3

<b>ESWG</b>	G20 Energy Sustainability Working Group
<b>EU</b>	European Union
<b>FI</b>	Financial Institution
<b>FIRA</b>	(Mexican) Trust Funds for Rural Development ( <i>Fideicomisos Instituidos en Relación con la Agricultura</i> )
<b>FYP</b>	(Chinese) Five Year Plan
<b>GDP</b>	Gross Domestic Product
<b>GHG</b>	Greenhouse gas
<b>GWH</b>	Gigawatt Hour
<b>HVAC</b>	Heating, Ventilating/Ventilation, and Air Conditioning
<b>ICBC</b>	Industrial and Commercial Bank of China
<b>IDB</b>	Inter-American Investment Bank
<b>IEA</b>	International Energy Agency
<b>IFIs</b>	International Financial Institutions
<b>IGCC</b>	Investor Group on Climate Change
<b>IIGCC</b>	Institutional Investor Group on Climate Change
<b>IIWG</b>	G20 Investment and Infrastructure Working Group
<b>INCR</b>	Investor Network on Climate Risk
<b>INDC</b>	Intended Nationally Determined Contribution
<b>IOs</b>	International Organisations
<b>IPEEC</b>	International Partnership for Energy Efficiency Cooperation
<b>KAB</b>	Korea Appraisal Board
<b>KfW</b>	German Development Bank ( <i>Kreditanstalt für Wiederaufbau</i> )
<b>kWh</b>	Kilowatt Hour
<b>LDCs</b>	Local Distribution Companies
<b>LED</b>	Light Emitting Diode
<b>LICs</b>	Local Improvement Charges
<b>MDBs</b>	Multilateral Development Banks
<b>MOLIT</b>	(Korean) Ministry of Land, Infrastructure and Transportation
<b>MW</b>	Megawatt
<b>NAZCA</b>	Non-State Actor Zone for Climate Action



<b>NDRC</b>	(Chinese) National Development and Reform Commission
<b>NEPP</b>	National Energy Productivity Plan
<b>NMEEE</b>	(Indian) National Mission for Enhanced Energy Efficiency
<b>OBF</b>	On-Bill Finance
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>OLADE</b>	Latin American Energy Association ( <i>Organización Latinoamericana de Energía</i> )
<b>PACE</b>	Property-Assessed Clean Energy
<b>PAYS</b>	Pay As You Save
<b>PBoC</b>	Peoples’s Bank of China
<b>PJ</b>	Penta Joules
<b>PRI</b>	Principles for Responsible Investments
<b>R&amp;D</b>	Research and Development
<b>RICS</b>	Royal Institution of Chartered Surveyors
<b>SE4All</b>	Sustainable Energy for All
<b>SEFFs</b>	Sustainable Energy Financing Facilities
<b>SENER</b>	(Mexican) Ministry of Energy ( <i>Secretaría de Energía</i> )
<b>SHCP</b>	(Mexican) Ministry of Finance ( <i>Secretaría de Hacienda y Crédito Público</i> )
<b>SlovSEFF</b>	Slovenia Sustainable Energy Financing Facility
<b>SMEs</b>	Small and Medium Enterprises
<b>TEW</b>	Technical Engagement Workshop
<b>TurSEFF</b>	Turkey Sustainable Energy Financing Facility
<b>TWh</b>	Terawatt Hour(s)
<b>UNEP FI</b>	United Nations Environmental Programme Finance Initiative
<b>USD</b>	United States Dollar
<b>WG</b>	Working Group
<b>WHEEL</b>	Warehouse for Energy Efficiency Loans

## *Energy Efficiency Finance Task Group: Mandate and Approach*

In the 2014 Brisbane Summit, G20 leaders endorsed a France and Mexico co-chaired initiative, coordinated by IPEEC<sup>1</sup>, to enhance capital flows to energy efficiency investments as one of the six work streams forming the G20 Energy Efficiency Action Plan: Voluntary Collaboration on Energy Efficiency.

The G20 Energy Efficiency Action Plan proposed that participating countries work with IPEEC to create an Energy Efficiency Finance Task Group (EEFTG), supported by relevant international organisations and initiatives, to facilitate a high-level dialogue with representatives of the international finance community. EEFTG's G20 members are also requested to communicate with and draw on the work of the other G20 working groups (especially the Investment and Infrastructure Working Group (IIWG)) to ensure that the lessons learned on finance topics, by the IIWG and other G20 WGs, are included in EEFTG analysis where appropriate.

At the first meeting of the EEFTG Steering Group in 2015, comprised of EEFTG member countries, it was decided that EEFTG would be a multi-annual initiative in the context of the G20 Energy Efficiency Action Plan. The long-term goals of EEFTG are to contribute to best practice and capacity building by, inter alia, collecting and analysing case studies of successful energy efficiency investment and financing initiatives from both the demand side (asset owners and policymakers) and the supply side (banks and investors).

In 2015, EEFTG connected with 180 global experts to help draft and produce the *voluntary Energy Efficiency Investment Principles for G20 participating countries* that were recognised by G20 Energy Ministers in their historic first meeting in Istanbul in 2015. Furthermore, EEFTG and its partners, delivered energy efficiency investment commitments from over 100 banks and \$4 trillion of funds under management as a key input into the Paris-Lima Action Agenda of the COP21.

In 2016, with the support of collaborating organisations, EEFTG has begun to build on the platform of its energy efficiency investment policy framework and financial institutions' commitments. During the first six months of 2016, EEFTG connected with around 1,200 energy efficiency experts, policy makers and influencers around the world through a series of outreach and dissemination activities including: a global survey, technical engagement workshops, high-level engagements in the context of global conferences, educational webinars, bilateral dialogue with G20.ESWG country members and experts, coordination with IOs and one-on-one meetings with Financial Institutions (FIs) and policymakers in various geographies. These activities have helped EEFTG strengthen its knowledge on the relevance and implementation of the Principles across countries, as well as to disseminate its lessons learned and identify new case studies and best practices for future review and exchange.

Moving forwards, EEFTG's activities are strongly supported by the publication and G20 Leaders' endorsement of the G20 Energy Efficiency Leading Programme in their meeting in Hangzhou. This new programme highlights the cross cutting role of energy efficiency investments, and the critical need to increase them, and it reinforces the G20 Energy Efficiency Action Plan through its support for the extension of the mandate for IPEEC to continue to coordinate existing task groups (like EEFTG) as well as adding five more areas for development.

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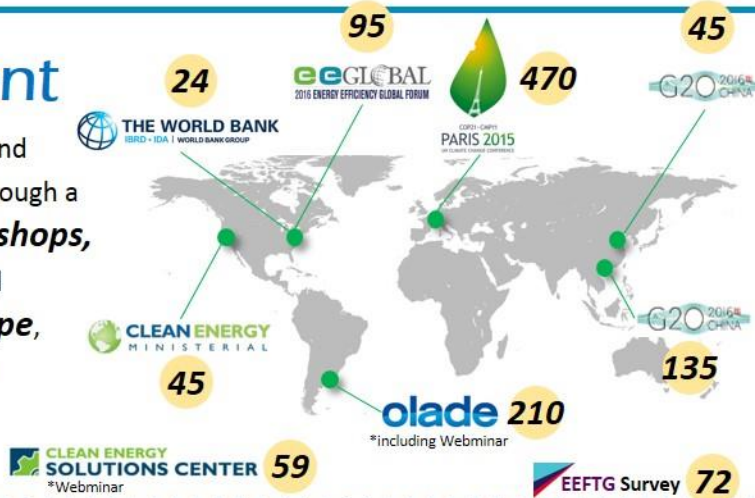
<sup>1</sup> *The International Partnership for Energy Efficiency Cooperation (IPEEC) is an autonomous international forum that provides global leadership on energy efficiency by facilitating government implementation of policies and programs to yield energy efficient gains. IPEEC has 16 country members and brings its collective, multi-annual experience from leading nine similar initiatives that assist its member countries to identify and share proven, innovative practices and data on energy efficiency and better inform decision makers.*

# Key Achievements and Highlights from EEFTG Activity in 2016

## Engagement

EEFTG engaged with around **1,200 individuals** through a programme of **18 workshops**, contributions to **G20** and related activities in **Europe, USA, China** and **Latin America**

\*Map in this section indicates events & number of participants



Expert survey for its member countries generating **140 specific ideas, instruments, approaches, mechanisms, practices** and a wide range of solutions shared by **72 experts**



## Engagement

**South Africa** became a member, EEFTG continues to maintain an open dialogue with **Italy, Turkey, Indonesia, Brazil, and Japan**

## Policy

**G20 Energy Ministerial Communique** made reference to the importance of **“upscaling energy efficiency investment”** and endorsed the critical **G20 Energy Efficiency Leading Programme (EELP)**



G20 Energy Efficiency Leading Programme

Launched campaign to engage with **Chinese banks** around the global **“Financial Institutions” Statement** which was endorsed by **China’s ICBC** –world’s largest bank- and 5 other Chinese banks.

**FI**

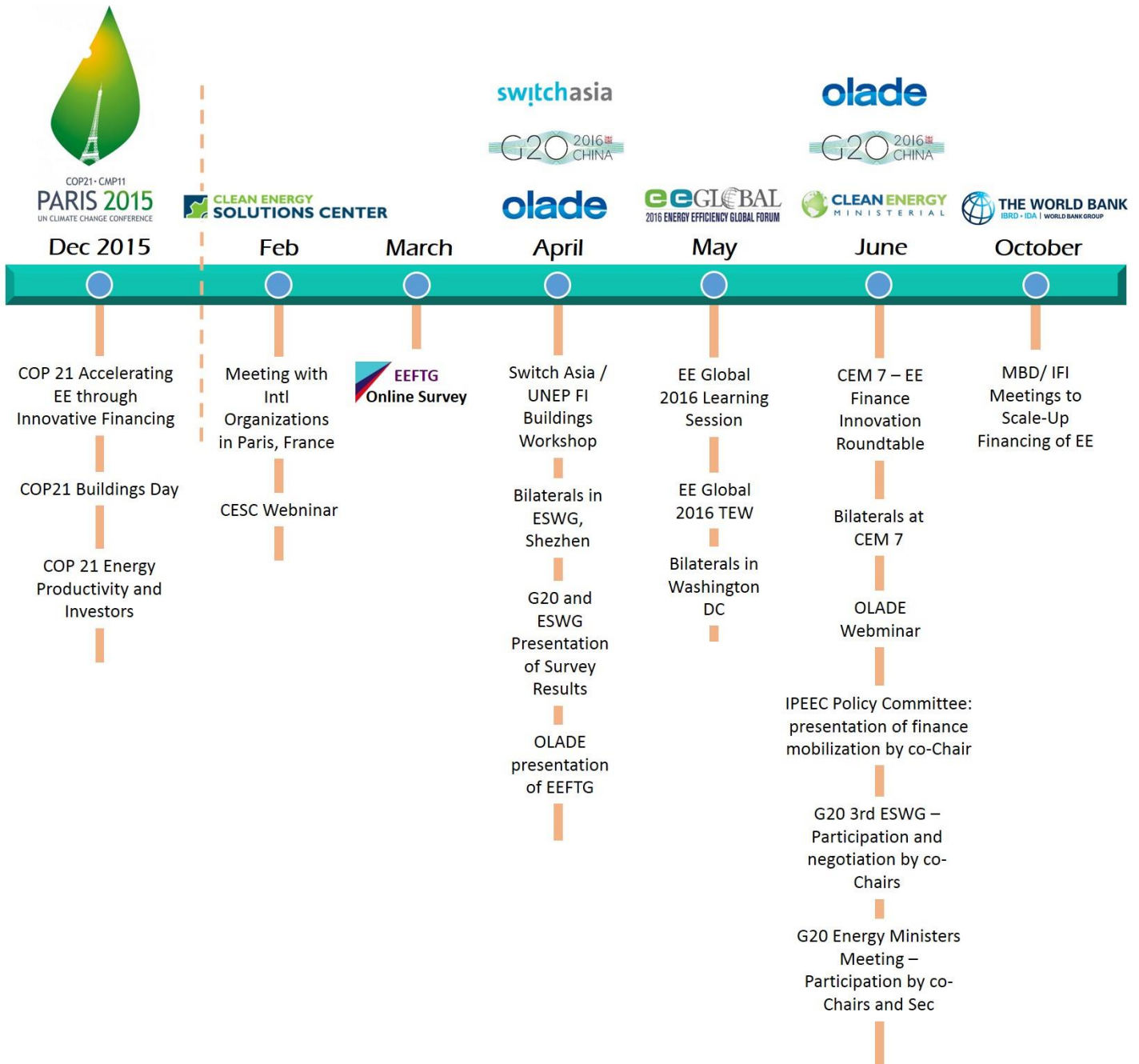


Continues to engage with investors managing over **\$4 trillion of funds** and a total of **117 banks** have signed the bank declaration to date.

Supported launch of an **Action framework for Sustainable Real Estate Investment** and the **Energy Productivity Index and Investor Guide**



# EEFTG Activity Timings 2015/2016:



# I. Policy Progress: Energy Efficiency Investment within the G20 Agenda

## a. Voluntary Energy Efficiency Investment Principles for G20 Participating Countries

Given the common interest among G20 countries to find ways to unblock and enhance capital flows to energy efficiency investments, in 2015 EEFTG developed and reached a consensus agreement on the voluntary Energy Efficiency Investment Principles for G20 Participating Countries. These voluntary Principles provide the key elements for the creation of a supportive policy environment for enhancing energy efficiency investments and they were formally welcomed in the historic, and first ever, G20 Energy Ministerial meeting in Istanbul in October 2015. EEFTG’s voluntary Principles were also appended as an attachment to the 2015’s Leaders’ Summit communique from Antalya.

Sharing a common understanding of the positive economic and societal benefits of public and private energy efficiency investments, we agree to collaborate and work together, on a voluntary basis , to:	
<b>1</b>	<i>Recognise the importance of energy efficiency considerations in all relevant decision making to significantly increase and strengthen energy efficiency investments in our economies in the context of a balanced progression of the three dimensions of sustainable development;.</i>
<b>2</b>	<i>Encourage energy efficiency investments and their positive impacts to be systematically considered alongside supply-side investments relating to our energy systems. This can be achieved through consideration of possible reforms relating to decision-making, planning, pricing and regulation of energy and infrastructure investments;.</i>
<b>3</b>	<p><i>Country-level review and consideration of measures and policies which will stimulate demand for energy efficiency investments, including the following:</i></p> <ul style="list-style-type: none"> <li>a. <i>The provision of clear regulatory and investment signals to encourage the uptake of energy efficiency investments within the development and upgrade cycles of our infrastructure, consistent with national development priorities and strategies;</i></li> <li>b. <i>Appropriate national and regional incentives and mechanisms that: stimulate improved energy management; support energy efficient investment choices; and improve awareness of the value of energy efficiency investments with key decision-makers;</i></li> <li>c. <i>Contribute to and facilitate national and, where appropriate, regional mechanisms that make the data needed for energy efficiency measures and investments easily accessible to market participants involved in the development of these investments considering in-country communication protocols and clear systems of labels and certificates;</i></li> <li>d. <i>Support for the appropriate development, packaging, aggregation, standardisation, bundling and provision of tailored financing for energy efficiency investments through multiple national, regional or local retail channels (such as utilities, financial institution branches, and other retail distribution networks), to deliver a change of scale for consumer and SME energy efficiency investing;</i></li> <li>e. <i>Review and identify policies at the national and local level that help to accelerate the replacement cycle for “worst in class” facilities and buildings with respect of their relative energy performance;</i></li> <li>f. <i>Build a pipeline of bankable and replicable energy efficiency projects.</i></li> </ul>
<b>4</b>	<p><i>Encourage collaboration to identify and explore how to unlock barriers preventing the supply of and access to finance for energy efficiency investments in local markets including:</i></p> <ul style="list-style-type: none"> <li>a. <i>Reviewing accounting and regulatory treatment for energy efficiency investments, where appropriate, to fairly reflect the net benefits and business risks of these investments;</i></li> <li>b. <i>Developing national and/ or regional standards and policies that will support energy efficiency investment processes in key market segments consistent with regional and national priorities and conditions;</i></li> <li>c. <i>Developing finance mechanisms, where relevant, that can enhance the creditworthiness of the repayment streams to energy efficiency investments, such as including these repayments within existing payment collection mechanisms;</i></li> <li>d. <i>Simplifying public support programmes, where relevant for energy efficiency, to enable their efficient combination with and mobilisation of private finance streams to maximise overall funding flows and delivered benefits;</i></li> <li>e. <i>Involving public financial institutions, where appropriate, to help formulate lending policies to prioritise and mobilise private capital toward energy efficiency investments in the respective countries.</i></li> </ul>
<b>5</b>	<i>Build greater internal energy efficiency investment awareness within public and private financial institutions, expand their use of tailored approaches to structure and facilitate energy efficiency investments, and develop their capacity through the pro-active sharing of good practice. This can be achieved through support for financial institutions which adopt their own systems based upon voluntary energy efficiency investment commitments. These would aim to appropriately govern their own internal decision-making processes, investments in, and interventions to mobilise greater investment in energy efficiency. ’</i>

Using these voluntary Principles as a guiding frame of reference, in 2016, EEFTG was able to channel its resources, through a global survey and specific expert workshops, to identify policy opportunities by sector and geography, as well as relevant case studies and instruments to illustrate best practices in each of the five core Principle areas. Notably in 2016, G20 Energy Ministers recognized the particular opportunity provided by voluntary collaboration in the upscaling of energy efficiency investment when they met in Beijing in June. Also in the same meeting, Ministers adopted the G20 Energy Efficiency Leading Programme (EELP) and agreed to take the lead in promoting energy efficiency.

EEFTG notes that adequate resourcing, finance and investment themes resonated within the EELP with multiple references underlining the critical nature of EEFTG’s work, including:

**EE Investment Context**



(p. 5, EELP): “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. According to the IEA, the potential size of global investment opportunities for energy efficiency was estimated at USD 310 billion in 2016, and is growing every year. Recognising this, more and more governments and financial institutions in the G20 have given energy efficiency finance a high priority. The volume of capital investment into energy efficiency has accelerated, investments have become increasingly incentivised, and a growing number of financial innovation measures have begun to develop in this area.”;

**Key Resourcing Pillar**



(p. 4 EELP): “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.”;

**Role of the G20 in EE Finance**



(p. 4 EELP): “... and given its important political weight, the G20 can take on an exemplary role in leading the world towards energy efficiency improvements and their financing”; and

**Long-term Aims**



(p. 9 EELP): “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, ...”;

In addition, the EELP contains a full review of the context, achievements and plans for EEFTG that capture and project the work in this key area of the G20 Programme:

### **G20 Energy Efficiency Leading Programme (EELP) Finance Focus**

**Key Area on Finance (p. 15-17 EELP):** “Energy efficiency requires enhanced finance to support its deployment across G20 economies at the national and local levels. The Energy Efficiency Finance Task Group (EEFTG), led by France and Mexico and counting 14 G20 members, aims to remove barriers, enhance policy support, and drive public and private sector action to drive greater capital flows towards energy efficiency in the G20.”

**EEFTG Long-term Goal:** “To achieve this, in the long-term, the EEFTG aspires to scale-up energy efficiency investments significantly, as investments must increase multiple times to meet the Sustainable Development Goal on energy. This will require participating G20 members to work together to:

1. Build robust, investment grade national policy and investment frameworks;
2. Identify and replicate best practices in finance among participating G20 members;
3. Optimise public resources to lever and scale-up private sector investments in participating G20 members; and
4. Facilitate the dialogue between participating G20 policymakers and the private and public sector finance community, industry and international organisations.”

**EEFTG Achievements:** “Since 2015, the EEFTG has increased the visibility of the issue of energy efficiency finance and encouraged greater action by the private and public sectors by:

1. Developing the Voluntary Energy Efficiency Investment Principles for G20 Participating Countries to address existing barriers in G20 countries and enhance capital flows to energy efficiency investments;
2. Contributing to the G20 Energy Efficiency Investor Statement endorsed by over USD 4 trillion of private sector institutional investors to fully embed energy efficiency into their investment processes;
3. Launching and promoting Financial Institutions Energy Efficiency Statements, supported by 106 banks from over 40 countries, to drive energy efficiency investments;
4. Leading consultative processes with participating G20 members, financial institutions, and private sector experts to identify the policy frameworks required for the implementation of the Voluntary Energy Efficiency Investment Principles for G20 Participating Countries; and
5. Publishing the conclusions of their research, with identified policy options and case studies to share experiences and best practices among G20 members.”

## ***b. Policy Progress Illustrated by Case Studies and EEFTG 2016 Global Survey Results***

In 2016, EEFTG was tasked to build and propose an implementation framework for the voluntary Energy Efficiency Investment Principles for G20 participating countries. As a first step, EEFTG engaged its country members in a global survey that was designed to identify areas of policy potential, by sector and by Principle. This survey received 72 responses with representation from EEFTG countries and various additional experts from EEFTG's IO partners and nominated institutions. The following section uses the results of the 2016 EEFTG global survey to highlight key findings that are illustrated with selected case studies, or examples, which have been expanded and researched by EEFTG secretariat through a combination of survey data, desk research, workshops and bilateral engagements.

Overall, the consensus conclusions emerging from the EEFTG 2016 global survey are:

### **Appropriate Framework**



Strong support for voluntary Energy Efficiency Investment Principles for G20 Participating Countries as appropriate framing for the G20 Energy Efficiency Finance challenge

### **Thorough Assessment**



Over 140 specific ideas, instruments, approaches, mechanisms, instruments, practices and a wide range of solutions were shared by 72 experts in the survey

### **Solid Platform for the Future**



Positive basis to inform EEFTG's engagement with policymakers and in working with Financial Institutions

### **EEFTG Engagement in 2016**



*Images courtesy of IPEEC, 2016*



## 1. The Importance of Energy Efficiency as a Horizontal and Cross-Cutting Economic and Developmental Priority

*“Recognise the importance of energy efficiency considerations in all relevant decision making to significantly increase and strengthen energy efficiency investments in our economies in the context of a balanced progression of the three dimensions of sustainable development.”*

Implementing a cross cutting energy efficiency policy at a national level requires a framework that promotes new approaches and values the multiple benefits. The 2016 EEFTG global survey indicates an opportunity to improve these approaches and a potential to promote energy efficiency investments across all sectors. EEFTG’s co-chairs Mexico and France have both entered an energy transition hailing nation-wide energy efficiency strategies, with clear and concise goals and regulation designed to promote and catalyse investments in energy efficiency. In addition, China and Australia have implemented national energy efficiency plans that are deeply embed in their national planning instruments and policies.

As a clear illustration of the economic and policy potential of energy efficiency in G20 nations, the EEFTG 2016 global survey provides the following sectoral insights:

	Large Energy Intensive Industries	Large Non-Energy Intensive Industries	SMEs	Commercial/ Public Buildings	Residential Buildings
What is the economic energy efficiency savings potential 2016-35 in each sector?	Above average <b>3.2</b>	Average 2.7	Above average <b>2.9</b>	Above average <b>3.2</b>	Above average <b>3.2</b>
How strongly does the current policy framework drive energy efficiency investments in each of these sectors?	Average 2.4	Below average <b>2.1</b>	Below average <b>2.0</b>	Below average <b>2.2</b>	Average 2.3
How would you describe the additional potential to stimulate energy efficiency investments in each sector through further policy support?	Above average <b>3.0</b>	Above average <b>2.8</b>	Above average <b>3.1</b>	Above average <b>3.2</b>	Above average <b>3.1</b>

Experts were asked to score the potential for energy efficiency deployment in different sectors from 1-4 where 1=“low”, 2=“below average”, 3=“above average” and 4=“high”. EEFTG notes that the economic potential for energy efficiency savings in all sectors is above average (a 2.5 score) with a focus on buildings and large energy intensive industries. In terms of the current policy framework, EEFTG’s survey suggests that there is strong potential for improvement in policies that address large non-energy intensive industries, SMEs and Commercial & Public buildings. However, EEFTG’s global survey sees above average additional potential to stimulate energy efficiency investments across all sectors.

Countries undergoing an extensive review of energy policy and the wholesale recognition and embracing of a national “Energy Transition” can seize this opportunity to fully imbed a new approach to energy efficiency through raising its profile, setting targets and introducing new multi-sectoral policies to create and promote energy savings. Both EEFTG’s co-chairs are undergoing such an energy transition: France having passed its Energy Transition Law in August 2015 and Mexico in December 2015.

## Case study: The Energy Transition in France

### The Energy Transition Act

As highlighted in the first principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*, high-level signaling on the importance of energy efficiency and its increased consideration in long-term national policies for sustainable economic growth is crucial to mobilize private capital for energy efficiency investments. France shows leadership in that domain with its adoption of the Energy Transition for Green Growth Act (the Energy Transition Act) in August 2015, a broad legislation to catalyze the transition to a sustainable energy model while stimulating growth and employment. Adopted a few months before the Paris Agreement and following three years of national consultations, the Act benefited from global momentum and civil society support.

The Energy Transition Act sets out strong objectives for the reduction of greenhouse gas reduction and the diversification of the energy mix by limiting nuclear energy and deploying renewables and energy efficiency. It is expected to allow the creation of 100,000 jobs. The ambition of this law sends a very positive signal on the commitment of France to the low-carbon economy which will enable increased investments in energy efficiency in the coming years. Its implementation will however be challenging due to the number and ambition of the new objectives, policy instruments and measures.

### Key objectives and measures

The Energy Transition Act establishes six major goals:

- Reduce GHG emissions by 40% by 2030 from 1990 levels
- Reduce final energy consumption by 50% in 2050 compared to 2012
- Reduce fossil fuel consumption by 30% by 2030 from 2012 levels
- Increase the share of renewable energy sources to 32% of the final energy consumption in 2030 and 40% of electricity production
- Halve the amount of landfilled waste by 2025
- Reduce the share of nuclear power in the energy mix to 50% by 2025



The law introduces a long-term National Low Carbon Strategy which will set sector and region-specific GHG emission reduction goals through five-year energy plans (PPEs). It also establishes clear targets on carbon prices which should reach €56/ton in 2020 and €100/ton in 2030.

### Highlights on advancing energy efficiency and its financing

Energy efficiency in the building sector: Largest energy consumer in France, buildings accounted for 44% of the energy consumption in 2012. Enhancing their energy efficiency through large scale retrofits is one of the top priorities of the law which requires that 500,000 dwellings are renovated by 2017 including 50% in the low-income segment and that major refurbishments of buildings systematically include insulation measures. It introduces a set of financial incentives to facilitate

energy renovations such as tax credit, zero interest eco-loans, third-party financing options and an energy transition guarantee fund.

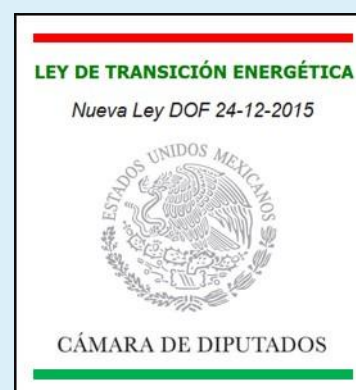
Green finance and responsible investment: In its Article 173, the law introduces new disclosure obligations on the integration of environmental, social, governance and climate considerations by listed companies and financial institutions. In particular, it requires institutional investors to report on their exposure to climate related risks including the greenhouse gas emissions associated with their portfolios and on their contribution to the international goal of limiting global warming. Applying from 2016, this article makes France a leader in green finance and facilitates the scaling-up of energy efficiency investments.

Like France, Mexico faces new energy challenges requiring a transition from a State and hydrocarbon dominated energy sector to a more modern and open market-based sector where energy efficiency and clean energy play a more significant role:

### **Case Study: Mexico's Energy Transition**

#### **Energy Transition Law**

Mexico's Energy Transition Law (*Ley de Transición Energética - LTE*) was approved in December 2015 and aims to modernize the country's energy mix, by setting up clean energy obligations and emissions reduction targets, as well as improving the efficiency of the power and transmission infrastructure. In consonance with the first principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*, the LTE recognizes the multiple cross-cutting benefits of energy efficiency and seeks to maximize its full potential across Mexico's public and private sectors as well as its citizenry.



Mexico's energy transition law furthers its efforts in energy efficiency as it strengthens the powers of the National Commission for the Efficient Use of Energy (CONUEE) in its roles for sanctioning and advising federal, state, and municipal bodies on their compliance for energy efficiency programs that rely on public funding. CONUEE is mandated by the law to draft and present a roadmap for energy efficiency for Mexico that is expected to be completed this year, building upon an 18-month collaboration engaging 400 stakeholders in seven working groups, one focused entirely on finance. Under the LTE the Ministry of Finance (SHCP), through the Ministry of Energy (SENER), is able to set up support mechanisms and fiscal or financial incentives to foster investments in energy efficiency and the integration of distributed generation systems.

#### **Key Objectives and Measures for Energy Efficiency in LTE**

- Reinforce and extend EE Mexican Official Standards (NOMs)
- Boost government resources at the federal, state, and municipal levels to facilitate the implementation of EE projects
- Increase the number of professionals with sound knowledge of EE processes and procedures
- Broaden the reach of information campaigns pertaining to the benefits of EE and the sustainable use of energy

- Support the financing of R&D for EE related projects

#### **Momentum, Fostering EE Financing in Mexico**

Experts estimate that the energy efficiency opportunity in Mexico in the next 15 years could absorb investments of US\$ 8.8-12.3 billion<sup>2</sup> over the next 15 years, a considerable increase over the US\$ 150 million spent in 2013-2014. However, there are some existing instruments which can deliver replicable and bankable pipelines of projects:

Fund for the Energy Transition and the Sustainable Use of Energy (FOTEASE): This fund promotes the use, development, and financing of renewables and energy efficiency. FOTEASE is responsible for financing programs regarding the implementation of EE measures in public lighting and the replacement of inefficient household appliances among others.

Trust Funds for Rural Development (FIRA): It provides credit and guarantees as well as training, technical assistance and technology-transfer support related to EE to Mexico's agribusiness sectors.

Eco-Credit for Business (Eco-Crédito Empresarial): This program provides credit to SMEs for the replacement of obsolete equipment with efficient one. Its purpose is to increase the productivity of SMEs by reducing their operational costs through energy savings and the effective use of energy.

Other EEFTG countries have made energy efficiency a pillar in their multi-year planning cycles such as China in its 13<sup>th</sup> 5 year plan governing the period 2016-2020. China's 13<sup>th</sup> 5 year plan contains an overall energy consumption cap as well as an energy intensity reduction target for 2020. In addition, China has a number of complimentary policies designed to stimulate energy efficiency and green investments such as its mandatory Green Credit Banking Guidelines.

#### **Case study: Highlights on key Chinese policies for energy efficiency and its financing**

##### **The 13<sup>th</sup> Five Year Plan for 2016-2020**

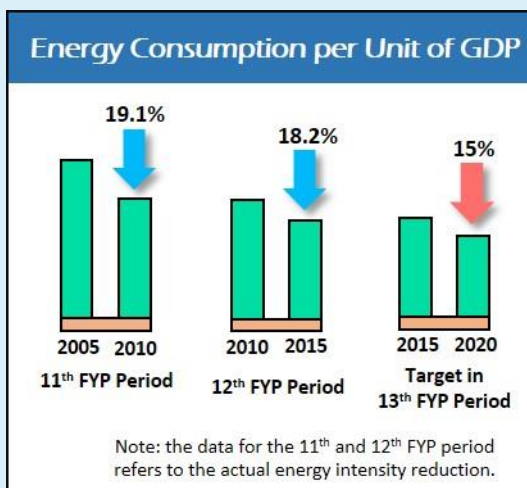
In March 2016, China adopted its 13<sup>th</sup> Five Year Plan (FYP) setting the trajectory and key priorities for the country's economic and social development in the next five years. Building on the last two FYPs, the 13<sup>th</sup> FYP sends a strong signal on the raising importance of energy and environmental considerations in China and its commitment to reach a peak in greenhouse gas emissions in 2030 or earlier, as stated by its INDC.

Energy efficiency has been a key measure for China to reduce its emissions of pollutants and increase air quality in the last decades and it continues to be a key pillar of the 13FYP's energy policy. The focus of efficiency goals has been mainly on heavy industry and the power sector but non-energy-intensive sectors like buildings and transports are increasingly targeted in the context of the country's growing urbanization. Significant improvements will also come from cutting overcapacity in steel and coal.

<sup>2</sup> IFC. (2012). *Estudio de Mercado del Financiamiento de Energías Sostenibles en México: Reporte Final*. Extraído de <http://www.ifc.org/wps/wcm/connect/d75f9c004cf49a3bafaceff81ee631cc/October+2012-Market+Study+of+SEF+in+Mexico-ES.pdf?MOD=AJPERES>

#### Key goals and measures:

- Reduce energy intensity (energy consumption per unit of GDP) by 15%
- Cap on total energy consumption at 5 billion tons of coal equivalent in 2020
- Cities to meet 'good' or 'excellent' air quality standards 80% of the time
- Increase the share of non-fossil fuels to 15% of the energy mix
- Scaling-up of the seven pilot emission trading programs into a single nationwide scheme
- Strengthen the green economy path and green the financial sector



#### A Green Financial System and Energy Efficiency Credit Guidelines

In 2012, the China Banking Regulatory Commission (CBRC) issued *Green Credit Guidelines* to encourage sustainable lending by Chinese banks. The guidelines are designed around three pillars encompassing green business opportunities, environmental risk management and environmental footprint. Banks are asked to consider the environmental performance of loan applicants when defining the interest rates and even to deny credit in case of serious environmental violations. This policy allowed for a significant expansion of green lending with the 21 major banks' joint green loan portfolio reaching one trillion dollars in 2014.

In 2015, CBRC and the National Development and Reform Commission (NDRC) formulated *Energy Efficiency Credit Guidelines* to stimulate banks' financing of energy efficiency, especially in the industry and transport sectors. These new guidelines provide practical information to build the capacity of banks on risk management and product innovation for energy efficiency. Building on these policies, China launched *Guidelines for Establishing the Green Financial System*<sup>3</sup> in August 2016. They represent the most comprehensive policy package globally to support green finance development.

#### Green Bonds' Guidelines and Catalogue

It is estimated that China needs between USD 330 and 460 billion per year of investment in green solutions and 80% is expected to come from the private sector with green bonds being a promising instrument.

In December 2015, the People's Bank of China (PBoC) released the *Green Financial Bond Guidelines*, making China the first country in the world to have official rules on green bond issuance. The guidelines are accompanied by an *Endorsed Project Catalogue* defining the type of projects eligible for green bonds along six key areas<sup>4</sup>, energy conservation being the first one. These government-backed documents have allowed for a boom of the green bond market as China became the largest country of issuance in 2016 with approximately USD 7.5 billion of labelled green bonds issued as of May 2016.

<sup>3</sup> UNEP. (2016). *UNEP News Centre: On eve of G20 Summit, China puts green finance centre stage*. Retrieved from <http://www.unep.org/newscentre/Default.aspx?DocumentID=27084&ArticleID=36254&l=en>

<sup>4</sup> The Endorsed Project Catalogue can be found here:

<http://greenfinance.org.cn/displaynews.php?cid=79&id=468>

“Energy Productivity” (output per unit of energy) became an important issue in Australia’s close-run 2016 election with the victorious Coalition having set a target to improve energy productivity by 40% between 2015 and 2030, supported by a National Energy Productivity Plan (NEPP). The Australian Labor Party (ALP) and Greens had pledged a higher target of doubling energy productivity by 2030. A recent report<sup>5</sup> suggests that improved energy productivity can deliver almost half of Australia’s current international greenhouse gas target making the development of the policy framework under the NEPP a key opportunity.

### Case Study: Australia’s Energy Productivity Based Approach

#### The National Energy Productivity Plan

Launched in December 2015, Australia’s National Energy Productivity<sup>6</sup> Plan (NEPP) builds on the Council of Australian Governments (COAG) Energy council energy efficiency work and provides a framework and economy-wide work plan to coordinate existing and new energy market policies, energy efficiency activities, and climate related policies over a 15 year horizon. In due course, the NEPP intends to remove market barriers to new technologies and services, and improve consumer information as well as decision making tools.

NEPP Timeline
<ul style="list-style-type: none"> <li>• NEPP commences December 2015 and continues through to 2030.</li> <li>• Initial measures in the work plan will continue to be developed in consultation with stakeholders during 2016.</li> <li>• The work plan and implementation of supporting measures will be continuously monitored by the COAG Energy Council, with measures updated over time to keep the NEPP on track.</li> <li>• The COAG Energy Council will deliver a NEPP progress report and review by 2020.</li> </ul>

In line with the first principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*, the NEPP underlines the importance of energy efficiency as a horizontal, cross-cutting economic and developmental priority. During 2011-12 Australia spent \$120 billion<sup>7</sup> on energy across its economy (equivalent to 8.2% of its GDP in that year). Experts agree that by improving energy efficiency by just 1% a year, Australia could significantly reduce its energy expenditures<sup>8</sup> and grow its economy by \$26 billion by 2030<sup>9</sup>.

#### Key objectives and measures

- Improving Australia’s energy productivity by 40% between 2015 and 2030
- Boost competitiveness creating investment and jobs
- Encourage more productive choices to help consumers manage energy costs and bills

<sup>5</sup> Federal Department of Environment recently released a very useful report by Energetics that undertook a ‘bottom-up’ analysis of the technical potential for abatement in Australia. See source below:

Energetics. (2016). *Modelling and analysis of Australia’s abatement opportunities: Report of the Department of the Environment*. Retrieved from [http://www.energetics.com.au/getattachment/insights/abatment-opportunities-Report-of-the-Department-of-the-Environment-\(1\)/20160506-Modelling-and-analysis-of-Australia-s-abatement-opportunities-Energetics-Report.pdf.aspx](http://www.energetics.com.au/getattachment/insights/abatment-opportunities-Report-of-the-Department-of-the-Environment-(1)/20160506-Modelling-and-analysis-of-Australia-s-abatement-opportunities-Energetics-Report.pdf.aspx)

<sup>6</sup> Energy productivity refers to the value obtained from investments in energy. In technical terms, it is a measure of the amount of economic output derived from each unit of energy consumed.

COAG Energy Council. (2015). *National Energy Productivity Plan 2015-2030*. Retrieved from <https://scer.govspace.gov.au/files/2015/12/National-Energy-Productivity-Plan-release-version-FINAL.pdf>

<sup>7</sup> ClimateWorks Australia. (2015). *Australia’s National Energy Productivity Plan is an Important Step Forward*. [Website]. Retrieved from <http://www.climateworksaustralia.org/story/insights/australias-national-energy-productivity-plan-important-step-forward>

<sup>8</sup> Ibid

<sup>9</sup> Climate Institute. (2013). *Boosting Australia’s Energy Productivity*. Retrieved from [http://www.climateinstitute.org.au/verve/\\_resources/TCI\\_BoostingAustraliasEnergyProductivity\\_July2013.pdf](http://www.climateinstitute.org.au/verve/_resources/TCI_BoostingAustraliasEnergyProductivity_July2013.pdf)

- Promote more productive energy services through innovation support, competitive modern markets and consumer protections
- Reduce carbon emissions by at least one quarter to meet Australia's 2030 international GHG reduction target

#### **Financing Mechanisms in Australia, Examples**

Westpac Energy Efficient Financing Program: Offers financing for energy efficiency related works for projects starting at AUD 15,000 for up to 10 years<sup>10</sup>. This program encompasses finance leases, commercial loans and hire purchase finance, with a 0.7% discount on finance for eligible projects<sup>11</sup>, and is available for a broad range of industries (health and age care, agribusiness, and education) and state and local governments.

CEFC Government Finance Program: With AUD 250 million<sup>12</sup> in funding available, this program targets investment opportunities that can significantly reduce the energy consumption of Australian councils by offering flexible fixed-rate long-term finance. Key program elements include<sup>13</sup>: Loans of at least AUD 10 million for a particular project or package of works, the ability for multiple councils to enter into joint financing agreements for approved projects, and a simple approval process with user friendly loan documentation.

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<sup>10</sup> CEFC. (2016). *Helping Business take control of Energy Costs and Emissions*. [Fact Sheet]. Retrieved from [http://www.cleanenergyfinancecorp.com.au/media/178179/cefcfactsheet\\_westpac-energy-efficient-financing-program.pdf](http://www.cleanenergyfinancecorp.com.au/media/178179/cefcfactsheet_westpac-energy-efficient-financing-program.pdf)

<sup>11</sup> Ibid

<sup>12</sup> CEFC. (2015). *CEFC creates \$250 million local Government Finance Program*. [Fact Sheet]. Retrieved from [http://www.cleanenergyfinancecorp.com.au/media/158207/cefc-factsheet\\_local-govt-finance-program\\_lr.pdf](http://www.cleanenergyfinancecorp.com.au/media/158207/cefc-factsheet_local-govt-finance-program_lr.pdf)

<sup>13</sup> Ibid

## 2. *Balanced Approach to Demand and Supply-side Measures*

*“Encourage energy efficiency investments and their positive impacts to be systematically considered alongside supply-side investments relating to our energy systems. This can be achieved through consideration of possible reforms relating to decision-making, planning, pricing and regulation of energy and infrastructure investments.”*

Energy efficiency opportunities are often recognized in public policy processes, however experts consider that it remains easier to raise finance for supply-side investments than demand-side, as these may not be properly reflected in the lower level planning instruments and regulation of energy markets. EEFTG members EU and Canada well illustrate the principle of “energy efficiency first”, cutting across diverse regions’ energy markets. Raising the profile of energy efficiency first in the energy planning processes results in the increased mobilisation of investments through tailored financial mechanisms and products and better strategic allocation of structural funds.

The systematic consideration of demand-side energy efficiency investments as a core driver of lower future energy consumption, energy infrastructure, energy imports and generation needs is taking root in EEFTG countries alongside the full appreciation of the description “first fuel” for energy efficiency. Having first coined the term “first fuel” in 2013, IEA noted that energy efficiency improvements and practices in its member countries had saved more energy, over the four decades to 2012, than their total final energy consumption from any other source<sup>14</sup>. Without energy efficiency improvements and investments since the 1970s, IEA hypothesises energy use in its member countries would have been 60% above actual levels. This wider application of Principle 2 is illustrated by the results of the 2016 EEFTG global survey:

	Long-term Energy Scenarios and Planning	Generation Capacity Planning and Transmission Infrastructures	Energy Markets	Infrastructure Investment Planning
How effectively are current investment plans/policies capturing the positive impacts/ multiple benefits of energy efficiency in this sector?	Average	Average	Average	Average
	2.4	2.3	2.3	2.3
How effectively are planners systematically considering energy efficiency investments (potentially through scenario planning) alongside (and in place of) supply-side energy investments?	Average	Below average	Below average	Below average
	2.4	2.2	2.2	2.2
How strong is the potential for greater public benefits to be delivered by scaling-up energy efficiency in each sector?	Above average	Above average	Above average	Above average
	3.2	3.2	3.3	3.3
How do you perceive the impact of simplicity and transaction cost of the finance supply on the energy efficiency demand?	Above average	Average	Average	Average
	2.9	2.7	2.7	2.6

Using the same (1-4) scoring method, experts note that on average current government investment plans and policies are capturing the positive impacts and multiple benefits of energy efficiency in all four survey areas. Notwithstanding this, experts note good opportunities to deliver greater public benefits through up-

<sup>14</sup> IEA. (2014). *Energy Efficiency Market Report 2014 Factsheet*. Retrieved from [http://www.iea.org/media/news/2014/press/EEMR14\\_Factsheet.pdf](http://www.iea.org/media/news/2014/press/EEMR14_Factsheet.pdf)



scaling energy efficiency with a particular focus on the systematic integration of energy efficiency investments in generation capacity planning and transmission infrastructure, energy markets and general infrastructure investment planning and scenario analysis.

The EEFTG survey was sensitive to the diversity and complexity of member country energy systems, noting that only 13% exhibited “strong competition” and around half could be described as having low or below average levels of domestic competition for energy supply. In addition, EEFTG’s survey also took levels of energy source diversification into account noting that most countries (55%) were only moderately diversified in terms of their energy mix, with 15% described as “low” and just 8% described as “highly diversified”.

In general, EEFTG experts felt that efficiency opportunities and benefits are often well recognized in public policy processes, but sometimes not adequately reflected in the lower level planning and behaviour of energy markets. While there are important regional variations in the degree of application of Principle 2, experts believe that transaction costs and simplicity are key to driving customer uptake of energy efficiency finance, together with providing key data and the ability to make fast customer decisions. In addition, indicative energy efficiency targets are seen as “sub-optimal” and more work could be done on providing consumers greater clarity on energy pricing.

Two highly regionalized and diverse EEFTG members (EU and Canada) well illustrate the principle of integration of energy efficiency across multiple aspects of their very diverse regions’ energy markets. In 2015, the EU launched Europe’s Energy Union strategy designed to making energy more secure, affordable and sustainable and put “energy efficiency first”. Directly prior to the awaited energy efficiency package this autumn, the EU published a State of the Energy Union indicating progress to date as outlined in the following case study:

**EU: Energy Efficiency First**

In February 2015, the European Commission adopted its “Framework Strategy for a Resilient Energy Union”<sup>15</sup>. Central to this strategy -and in line with the second principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*- is the “Energy Efficiency First” Principle. This calls for the consideration of the potential value of investing in efficiency across all EU decision-making regarding the further development of energy systems for housing, office space, industry and mobility.

EU's Energy Union 5 Pillars	
1	Supply security
2	A fully-integrated internal energy market
3	<b>Energy efficiency first</b>
4	Climate action – emissions
5	Research and innovation (climate)

Putting energy efficiency first highlights the importance of energy efficiency improvements –for their value-additions and cost effectiveness- placing them in the resource priority order ahead of investments in new power stations, electricity grids or gas pipelines, and fuel supplies and related infrastructure.

<sup>15</sup> European Commission. (2015). COM/2015/080 final. Retrieved from <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2015%3A80%3AFIN>

### **Key Actions Required & Outcomes**

European experts believe that energy efficiency remains an underutilized asset across Europe and that the multiple benefits of energy efficiency are yet to be fully and systematically assessed when Member States consider supply-side investment alternatives such as new power plants, gas contracts, lifetime extensions for nuclear plants, and upgrading electricity and gas networks.

Often demand-side options, such as energy efficiency investments, are more effective both economically and environmentally. Embedding the Energy Efficiency First principle across EU planning and strategic investing may require, for example, its adoption as a guiding principle for the allocation of EU funds (including EU technical assistance), for the granting of State aid approval, and in a review of how current accounting rules incentivize or disincentivize energy-efficiency investments<sup>16</sup>. Energy Efficiency First principle within the Energy Union should also support the following positive outcomes:

- Unlocking more private finance
- Boosting energy productivity and accelerating a return to growth
- Delivering an energy infrastructure that is in line with the Paris climate deal<sup>17</sup>
- Improving air quality
- Reducing fuel poverty
- Accelerating progress towards other Energy Union goals (energy security, innovation, decarbonisation and a competitive internal market).

### **EU Funding Instruments**

The European Structural and Investment Funds (ESIF) are contributing to deliver the objectives of the Energy Union. For the 2014-2020 period ESIF allocated € 45 billion<sup>18</sup> to support the shift to a low carbon economy amounts of which € 13.3 billion<sup>19</sup> is assigned to support energy efficiency in private and public buildings, and € 3.4 billion<sup>20</sup> to support energy efficiency in over 50,000 businesses (especially SMEs). These allocations should be used to mobilize private finance in conjunction with the newly launched European Fund for Strategic Investments (EFSI) that can provide guarantees and additional funding for Member States to upscale energy efficiency schemes.

While Canada has an energy intense economy, it has maintained significant policy attention on energy efficiency since the 1970s. However, in March 2016, First Ministers signed the Vancouver Declaration committing them to jointly develop a pan-Canadian framework on clean growth and climate change, which includes an agreement to foster investments in energy efficiency and to collaborate to advance work on energy efficiency under the Canadian Energy Strategy. Canada has maintained a strong focus on policies and tools at a national level which drive up the energy efficiency of devices and buildings and

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<sup>16</sup> ECF. (2016). *Efficiency First: A New Paradigm for the European Energy System*.

<sup>17</sup> The 2015 Paris Agreement will require the EU to rethink and recommit to a decarbonised energy system by 2050. Energy efficiency is crucial to meeting this goal and yet faces systematic and structural hurdles.

<sup>18</sup> European Commission. (2015). COM (2015) 574 final. Retrieved from: [https://ec.europa.eu/energy/sites/ener/files/documents/1\\_EEprogress\\_report.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/1_EEprogress_report.pdf)

<sup>19</sup> European Commission. (2015). *Contribution of the European Structural and Investment Funds to the 10 Commission Priorities: Energy Union and Climate*. [Presentation]. Retrieved from [http://ec.europa.eu/contracts\\_grants/pdf/esif/key-energy-union-climate\\_en.pdf](http://ec.europa.eu/contracts_grants/pdf/esif/key-energy-union-climate_en.pdf)

<sup>20</sup> Ibid

has worked with its regions to stimulate the integration of energy efficiency investments into energy markets using leading policies like Ontario’s “Conservation First Policy” for its utilities:

**Case Study: Canada’s Built Environment and the Opportunity to Foster EE Investments**

Canadian buildings account for 17% of the country’s total GHGs as a percentage of its total primary energy use. As the third largest emitting sector, experts agree that the expanded use of energy efficiency financing will be key to achieve considerable emissions reductions in a cost-effective manner.

While there are successful energy efficiency financing programs with an established track record, many have been implemented in recent years with mixed results, yet they show promise. If combined with other support mechanisms, these programs could be expanded to become an instrumental tool in providing home and building owners with a route to invest in energy efficiency retrofit improvements for their properties.

Supporting the expansion of EE Financing
<p><b>Federal, provincial and territorial governments can promote the following:</b></p> <ul style="list-style-type: none"> <li>• Maintaining flexibility in program delivery to respond to the diversity of experience across Canada</li> <li>• Complementing financing programs with other tools to address barriers</li> <li>• Following best practices in designing initiatives</li> <li>• Developing supporting tools to increase uptake such as improving investor confidence and lowering the cost of capital</li> </ul>

**Now is the Time to Invest in EE in Buildings**

- Regulatory momentum, ambitious goals set to achieve a low carbon economy
- Each year an additional portion of Canadian buildings require reinvestments to maintain or improve serviceability, thus offering an ideal opportunity to conduct EE works
- Need for economies of scale
- Competitive interest rates
- Predictable outcome from investment, such as savings and GHG reductions

**Innovative Financing Mechanisms, Selected Cases:**

Local Improvement Charges (LICs): Under these programs, homeowners finance their retrofits through the municipality and repay the loan through their property tax bill. A LIC acts a lien<sup>21</sup> of the property, thus reducing the risk of default on the loan which encourages uptake. The Halifax’s Solar City Program was the first to be implemented on a large-scale and combined good design attributes such as widespread awareness and a simple administration. As a result, over a 2 year period, about 400 solar hot water systems have been installed.

Utility on-bill financing: Over the past 14 years, utility Manitoba Hydro has provided over \$317 million in loans to support energy efficiency works of more than 75,000 of its customers using the Power Smart Pay As You Save (PAYS) on-bill financing mechanism. In Nova Scotia, over the past 4 years, 57,000 homeowners have taken part in the NS Power’s heat pump program. 13,000 of them have taken out loans that are paid back on their utility bills.

ESCO model: Canada’s Federal Buildings Initiative focuses on the energy efficiency upgrade of buildings owned by the Canadian Government and its agencies. As of September 2014, there have been over 80 retrofit projects, attracting \$312 million in private sector investments and

<sup>21</sup> A lien is a legal claim that someone or an entity has on a particular property of another person until a debt has been paid back. Sourced from: Merriam-Webster. (2016). [Website]. Retrieved from <http://www.merriam-webster.com/dictionary/lien>

generating over \$43 million in annual energy cost savings. These projects have resulted on average in energy savings of 15-20%.

Ontario's 2015-2020 Conservation First Framework: By placing, 'Conservation First' as the guiding principle of Ontario's energy planning and procurement processes, the goal of the framework is to obtain a reduction of 8.7 TWh of the province's electricity consumption by late 2020. This framework emphasizes the need for stakeholders to work together, particularly local distribution companies (LDCs), as these are assigned specific targets which they can pursue individually or working with other LDCs. Flexibility is a key element of the framework as LDCs are allowed to design their own program offerings and align conservation programs to local needs, giving customers more choices.

### **3. Country-led Measures and Policies to Stimulate Demand for Energy Efficiency Investments**

*"Country-level review and consideration of measures and policies which will stimulate demand for energy efficiency investments, including the following:*

- a. The provision of clear regulatory and investment signals to encourage the uptake of energy efficiency investments within the development and upgrade cycles of our infrastructure, consistent with national development priorities and strategies;*
- b. Appropriate national and regional incentives and mechanisms that: stimulate improved energy management; support energy efficient investment choices; and improve awareness of the value of energy efficiency investments with key decision-makers;*
- c. Contribute to and facilitate national and, where appropriate, regional mechanisms that make the data needed for energy efficiency measures and investments easily accessible to market participants involved in the development of these investments considering in-country communication protocols and clear systems of labels and certificates;*
- d. Support for the appropriate development, packaging, aggregation, standardisation, bundling and provision of tailored financing for energy efficiency investments through multiple national, regional or local retail channels (such as utilities, financial institution branches, and other retail distribution networks), to deliver a change of scale for consumer and SME energy efficiency investing;*
- e. Review and identify policies at the national and local level that help to accelerate the replacement cycle for "worst in class" facilities and buildings with respect of their relative energy performance;*
- f. Build a pipeline of bankable and replicable energy efficiency projects."*


In the EEFTG survey, experts identified specific regulatory and fiscal policies which stimulate consumer demand and scale up investments in energy efficiency. In parallel, experts believe that dissemination and exchange of expert knowledge regarding energy efficiency can simplify and facilitate decision making for energy efficiency investments. Korea and Germany are EEFTG members that exemplify structures that support energy efficiency investments through data transparency and knowledge networks respectively. South Korea's nationwide integrated database on the energy use of buildings and GEIs allows government officials and the general public to access key information regarding the benefits of energy efficiency thus catalysing consumer demand and new investments. Germany recognizes the importance of its SMEs within its economy and fosters the active collaboration of networks sharing their experiences regarding energy efficiency so that SMEs can make better investment decisions.

To up-scale energy efficiency investments, a majority of EEFTG's experts emphasize the stimulation of demand for energy efficiency investments as being the critical area requiring attention. A country-level

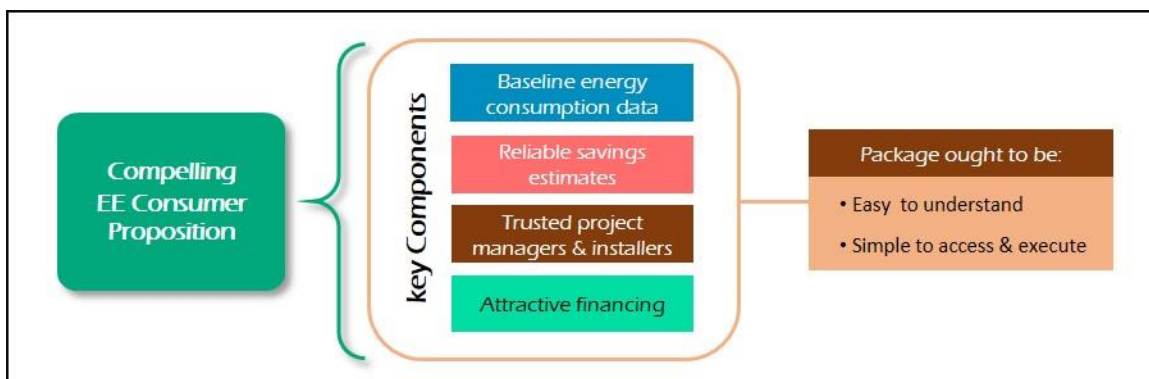
focus on the six kinds of policies and measures highlight in Principle 3 of EEFTG’s voluntary Energy Efficiency Investment Principles will surely stimulate the demand for these investments. However, to provide a sharper focus to EEFTG’s work on demand stimulation in 2016, experts were asked to score various policies, across various sectors, to identify a prioritized list of policies and measures for specific sectors:

**Ranked in order of EEFTG Survey “strength” were the following measures:**

1	Deliver a <b>change of scale</b> for energy efficiency investments in buildings and SMEs;
2	Build a <b>pipeline of bankable and replicable energy efficiency projects</b> in buildings and SMEs;
3	Provide more <b>data to make energy efficiency measures and investments easily accessible</b> to market participants in all sectors;
4	Good potential to <b>improve the regulatory and investments signals</b> to support energy efficiency investments in all sectors;
5	Good opportunity <b>for utilities and retail banks to be more involved</b> in the development, packaging, aggregation, standardization, bundling and provision of tailored financing for energy efficiency investments;
6	Above average need to <b>accelerate the replacements cycle for “worst in class” facilities</b> and buildings for relative energy performance in all sectors;
7	Solid potential for energy efficient investments to benefits from <b>clearer/improved systems of labels and certificates</b> ; and
8	Need to improve regulatory support for a <b>“guaranteed savings” or ESCO models</b> .



To deliver a change of scale for energy efficiency investments in buildings and SMEs, specific policies, measures and instruments are required that impact upon and work with the networks and entities that have the necessary disaggregated and heterogeneous customer relationships and communication channels, like utilities and retail banks. These consumer-facing entities have the existing retail channels required to market and deliver energy efficiency investments to SMEs and buildings owners and occupiers. To produce a compelling consumer proposition, and therefore a large number of bankable and replicable transactions, a number of key ingredients are required including: baseline energy consumption data, reliable savings estimates, trusted project managers and installers; attractive financing (low-cost with a term that matches the useful life of the measures installed) and to make the whole package easy to understand and simple to access and execute.



The first step on the road to consumer demand stimulation is the easy and transparent access to and availability of energy consumption data. Among EEFTG countries, South Korea developed the world's first nationwide integrated database on all buildings energy use and greenhouse gas emissions that provides strong insights into the provision of this critical data:

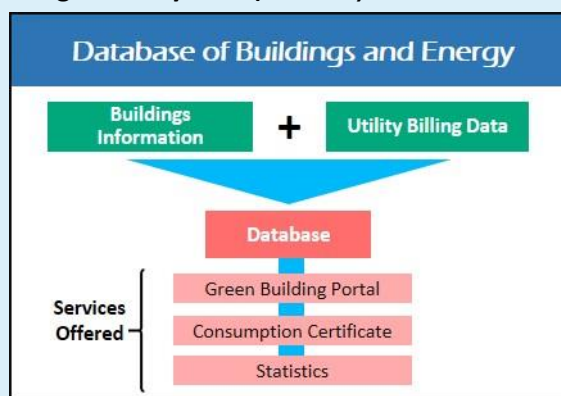
### Case study: Building Energy Information and Management System, South Korea

The building sector is one of the focus of EEFTG and an important barrier to the scaling up of investments in energy efficient building construction and retrofits was identified as the lack of reliable information and knowledge on buildings' actual energy performance. More data on real energy consumption of buildings and energy savings realized through well-defined energy efficiency measure can play a large role in convincing banks and investors to allocate larger amounts of capital for energy efficiency in real estate.

In South Korea, the building sector accounts for over 20% of the final energy consumption. Importing more than 90% of its energy and facing a continuously raising energy demand, the country has adopted ambitious targets and policies to increase energy efficiency in the building sector. In particular, South Korea developed the world's first nationwide integrated database on all buildings energy use and greenhouse gas emissions. Entitled the National Building Energy Information and Management System (BEI&Ms), this data platform aims to support energy consumption reduction efforts in the building sector.

### The National Building Energy Information and Management System (BEI&Ms)

BEI&Ms allows to manage and analyze building property data and various type of building energy consumption data like electricity, city gas and district heating as well as water and renewable energy consumption. It combines building information (location, building type, registration) and energy information updated monthly for all buildings which are assigned a unique identification number. The collection of data is based on utility billing data through the cooperation with 76 energy supply institutes.

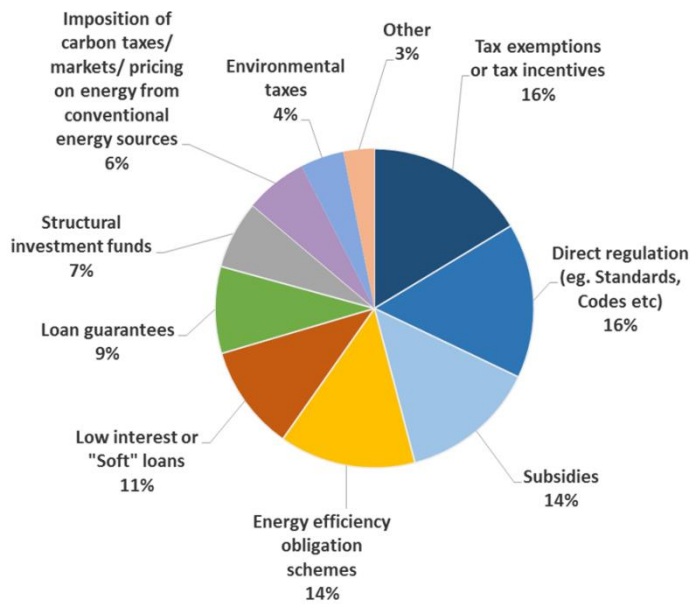


The program started in 2010 with a pilot database of one district of Seoul and was progressively expanded to cover the whole country. Initiated by the Ministry of Land, Infrastructure and Transportation (MOLIT), the Building Energy Management System is currently managed by the Korea Appraisal Board (KAB).

### Key benefits

- The energy information system allows for statistical analyses such as base lining, benchmarking and energy performance tracking for each building in the aim to improve their energy efficiency
- The system provides key information to promote green building policies and support decision-making on regulations and policies to building energy consumption levels
- The data is made available to households through a public web portal which allows to improve awareness and educate people on energy conservation in the aim to influence behaviors and stimulate demand for energy efficiency improvements
- It contributes to stimulate the green building market as a driving force of economic development.

To better understand the current status of policies designed to stimulate the demand for energy efficiency investments, EEFTG’s 2016 global survey asked experts to identify which of a series of policy-types are being used in G20 countries:



#### *Fiscal and Regulatory Policies*

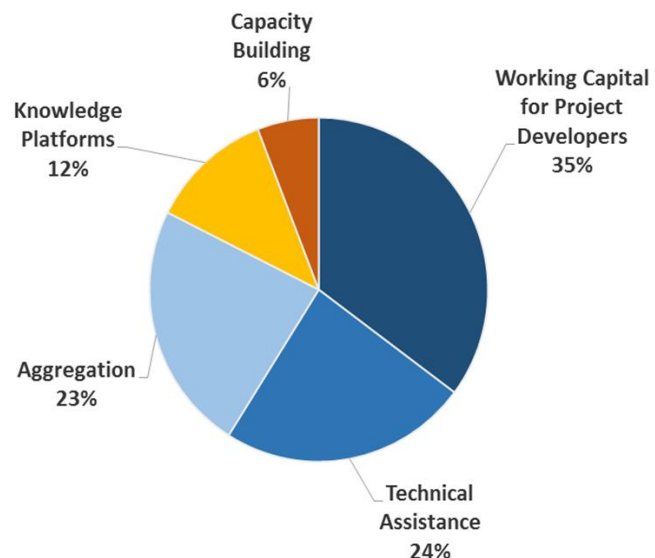
The results show that the most widely used policies to stimulate demand for energy efficiency investments are both fiscal (through tax incentives or exemptions) and through direct regulations (such as Minimum Energy Performance Standards or Buildings Codes).

#### *Subsidies, Guarantees and Soft Loans*

While subsidies have been widely used in the past, experts note that these are increasingly being replaced by alternative and more capital-efficient instruments, like guarantees and soft loans, that can be provided to ease the implementation of obligation schemes and other obligatory measures. It should be noted that few of these policies and measures are used in isolation and most G20 countries use at least four of them.

Furthermore, EEFTG country experts were asked to rank which, from a list of activities, would be the most helpful additional activities that could be initiated at country-level to support the development of bankable project pipelines of energy efficiency investments:

Interestingly, the 2016 global survey results confirmed IPEEC’s and expert opinions shared at EEFTG’s technical engagement workshops, that project developers need more working capital and technical assistance to increase the development resources dedicated to energy efficiency. In particular, support to help prepare and write solid and standardised business cases including multiple (non-energy) benefits were highlighted along with targeted energy efficiency information and technical assistance to those decision makers that make major buildings and facility renovation decisions making the finance decision easy. A greater focus on aggregation and transaction cost reduction was also recommended along, and to a lesser degree, with the creation of knowledge platforms and capacity building especially for connecting with insurance markets.



In May 2016, EEFTG member Germany’s Minister for Economy launched a broad offensive for improved energy efficiency. This “*Effizienzoffensive*” places efficiency first in Germany’s achievement of its ambitious climate protection goals and contains three pillars: promotion, consultation and

information. At its launch, Germany's Minister for Economy reminded people and energy policy makers that the cleanest and cheapest energy is that which is not even used. The German offensive also launches four new promotion programmes and is linked to a broad public campaign. In light of this, and Germany's successful existing retail focused finance programmes targeting buildings and SMEs through policy bank KfW's work with German retail banks, EEFTG chose to include this case study on Energy Efficiency Networks, a network mechanism that brings together companies to build capacity and stimulate energy efficiency improvements:

### Case Study: Germany's Energy Efficiency in SMEs, Collaboration between Networks

Small and medium-sized enterprises (SMEs) are the driving force of the German economy. They generate 60% of all jobs and are responsible for 56% of Germany's economic output<sup>22</sup>. The profitability of investment in energy efficiency in German SMEs can yield gains of 20 to 25%<sup>23</sup>, yet numerous SMEs will not undertake such investments as they lack expertise, have difficulties with the access to capital, or overestimate the payback periods of investing in efficiency. In order to counter these barriers, the German Federal Government and 21 business associations launched the Energy Efficiency Networks initiative in late 2014. This initiative aims to progress the sharing of experience between companies on potential savings and technologies on a voluntary basis, as this will enable company experts to plan and execute optimal investments in energy efficiency<sup>24</sup>.

#### Energy Efficiency Network, Components + Benefits:

- An energy efficiency network may be initiated by companies themselves, or by business associations, the chambers, utilities or municipalities.
- It consists of 8 to 15 companies.
- By working together within a network companies can reduce their energy consumption by 10 to 30%.
- Working with experts within the network allows companies to better assess results obtained from energy audits and implement specific measures in order to save energy.

#### Supporting the expansion of EE Financing

##### Federal, provincial and territorial governments can promote the following:

- Maintaining flexibility in program delivery to respond to the diversity of experience across Canada
- Complementing financing programs with other tools to address barriers
- Following best practices in designing initiatives
- Developing supporting tools to increase uptake such as improving investor confidence and lowering the cost of capital

Over the past decade Germany has managed to retrofit over 4 million apartments and over 2,900 non-residential buildings<sup>25</sup>. Central to these achievements stands its KfW development bank, which is the world's<sup>26</sup> largest financier of renewables as well as energy efficiency<sup>27</sup>. During 2015, KfW programmes for energy-efficient construction and retrofitting leveraged investments worth around 40 billion euros (22% more than in 2014). Also, these investments were used to retrofit

<sup>22</sup> Federal Ministry for Economic Affairs and Energy. (2015). "Future of the German Mittelstand" Action Programme. Retrieved from <https://www.bmwi.de/English/Redaktion/Pdf/future-of-the-german-mittelstand,property=pdf,bereich=bmwi2012,sprache=en,rwb=true.pdf>

<sup>23</sup> Ibid

<sup>24</sup> IEA. (2016). *Germany: National Action Plan on Energy Efficiency*. [Database]. Extracted from <http://www.iea.org/policiesandmeasures/pams/germany/name-146641-en.php>

<sup>25</sup> Federal Ministry for Economic Affairs and Energy. (2016). *Make your home energy efficient and save a great deal of money*. Retrieved from <https://www.bmwi-energiewende.de/EWD/Redaktion/EN/Newsletter/2016/03/Meldung/topthema.html>

<sup>26</sup> Source Bloomberg 2015

<sup>27</sup> KfW's investments in renewables and energy efficiency totaled EUR 160 billion during 2007-2014.



and build around 381,000 apartments, and about 800 non-residential buildings. As the majority of the works were awarded to local craft business, it is estimated that retrofits resulted in the creation of 300,000 jobs in SMEs and in the crafts sector. The timing of the launch of the Energy Efficiency Networks initiative appears to be optimal, as its members are gradually harnessing precise knowledge and technologies that coupled with KfW's financing can grow investments in energy efficiency exponentially, leading to greater economic activity and job creation.

**Selected Examples:**

Bavarian Energy Efficiency Network Initiative ('BEEN-i'): It brings together key business and industrial associations. Its goal is to connect the various energy efficiency networks that exist throughout Bavaria in order to promote the sharing of knowledge.

Energie Baden-Württemberg (EnBW): The agency responsible for energy efficiency in this federal state intends to improve the representation of SMEs in its regional business networks and assist them in the implementation of energy efficiency measures.

#### **4. *Unlocking Barriers Preventing the Supply of Finance for Energy Efficiency Investments***

*“Encourage collaboration to identify and explore how to unlock barriers preventing the supply of and access to finance for energy efficiency investments in local markets including:*

- a. Reviewing accounting and regulatory treatment for energy efficiency investments, where appropriate, to fairly reflect the net benefits and business risks of these investments;*
- b. Developing national and/ or regional standards and policies that will support energy efficiency investment processes in key market segments consistent with regional and national priorities and conditions;*
- c. Developing finance mechanisms, where relevant, that can enhance the creditworthiness of the repayment streams to energy efficiency investments, such as including these repayments within existing payment collection mechanisms;*
- d. Simplifying public support programmes, where relevant for energy efficiency, to enable their efficient combination with and mobilisation of private finance streams to maximise overall funding flows and delivered benefits;*
- e. Involving public financial institutions, where appropriate, to help formulate lending policies to prioritise and mobilise private capital toward energy efficiency investments in the respective countries.”*


There are tools and methods to overcome the multiple barriers which prevent the supply of increased energy efficiency investments. EEFTG members India and the US foster EE investment supply through innovative support mechanisms which combine state support (both facilitating legislation and indirect risk mitigation) and private sector finance. EEFTG highlights the super-ESCO EESL in India and both the WHEEL and PACE finance mechanisms in the USA.

The unlocking of barriers to the supply of financing for energy efficiency investments is indeed critical and also the area where the greatest input comes from financial institutions themselves, whom -working with EEFTG- have been able to provide insights into these barriers and ideas for their resolution. The type of policy actions that are highlight in Principle 4 of EEFTG's voluntary Energy Efficiency Investment Principles focus on ways to standardize approaches, enhance the creditworthiness of energy

efficiency repayment streams and identify ways to blend public and private resources in an increasingly efficient manner. Again, in EEFTG’s 2016 global survey, experts were asked to score various policies, across various sectors, to identify a prioritized list of finance supply-side policies and measures for specific sectors:

**Ranked in order of EEFTG Survey “strength” were the following measures:**

<b>1</b>	Strong need to <b>improve effectiveness of public support programmes presently mobilizing private finance streams</b> to supply energy efficiency investments with a focus on SMEs, residential buildings and large non-energy intensive industries.
<b>2</b>	Strong need to <b>mobilize more private capital through upgraded lending policies at public financial institutions</b> which prioritise energy efficiency investments especially in SMEs, residential buildings and large non-energy intensive industries.
<b>3</b>	Above average potential in all sectors to <b>simplify and improve public support programmes to optimize the mobilization of private finance streams</b> , funding flows and delivered benefits.
<b>4</b>	Need to <b>develop finance mechanisms which enhance the creditworthiness of repayment streams</b> to energy efficiency investments in SMEs and residential buildings.
<b>5</b>	Need to further <b>strengthen national or regional standards</b> that support energy efficiency investment processes in large industrial companies, SMEs and commercial/ public buildings.
<b>6</b>	Need to <b>align the current accounting and regulatory treatments with the net benefits</b> and business risks for energy efficiency investments in buildings and SMEs.



The first three of the prioritised finance supply-side policies relate to the structuring of public support and blending of public and private finance particularly when targeting SMEs, residential buildings and large non-energy intensive industries. One highly innovative public-private approach to resolving residential lighting solutions as well as public street lighting and energy efficiency in agriculture (fitting SME and non-energy intense industry categories) is India’s Energy Efficiency Services Limited (EESL) public ESCO model. While EESL is a public initiative, created by India’s Power Ministry as a joint venture between four public utilities, its LED and other SME and consumer technology finance packages are wholly funded with private money. To date, EESL’s pipeline of projects amounts to almost USD 2bn<sup>28</sup>.

### **Case Study: India’s Energy Efficiency Services Limited (EESL)**

The potential for energy efficiency improvements in India is tremendous with an overall market estimated at Rs. 74,000 crores (USD 11bn). However, a number of regulatory, financial and capacity barriers had left this potential largely untapped.

In 2009, Energy Efficiency Services Limited (EESL) was founded with the aim to develop and sustain energy efficiency markets in India through partnerships with public and private entities and supporting private sector investments. Created under the Ministry of Power as a joint venture between four public entities, EESL works as a public energy service company (ESCO), a consultancy

<sup>28</sup> Climate Bonds Initiative. (2016). *Green Infrastructure Investment Coalition, India Forum: EESL and energy efficiency, invitation to investor roundtable this Friday: First GHIC Report 'Green Finance in India' 30th June Launch*. Retrieved from <https://www.climatebonds.net/2016/05/green-infrastructure-investment-coalition-india-forum-eesl-and-energy-efficiency-invitation>

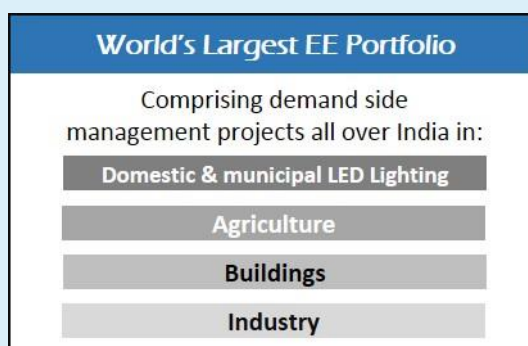
and a resource center. It leads the market-related components of the India's National Mission for Enhanced Energy Efficiency (NMEEE).

### Key achievements

- *Largest domestic efficient LED lighting program in India*: replacement of 150 million conventional bulbs with annual power savings of 11 billion kWh worth USD 702M<sup>29</sup>
- *Largest energy efficient LED street lighting project in India*: replacement of 750,000 street lights with an estimated annual energy savings of 98 million kWh and monetary savings of USD 6.4M

### Programs

Working as a public ESCO, EESL's programs are built on the concept of performance contracting where the energy efficiency project is financed, fully or in part, by the energy cost savings resulting from the improved energy efficiency. In the different areas where it operates, both in the public and private sectors, EESL works with energy efficiency technical suppliers and utilities to implement innovative business models allowing to deploy energy efficiency at scale.



- ***Domestic Efficient Lighting Program***: In this program, EESL procures large quantities of LED bulbs to harness economies of scale and distributes them at a lower price to households. Investments are recovered through an on-bill financing model where a portion of the energy cost savings incurred by the LED bulbs are transferred to EESL via the utility company. Started in 2013 as a pilot, this program was progressively scaled-up at the national level and allowed to drastically reduce the market price of LED bulbs in India.
- ***Municipalities street lighting program***: In this program, EESL enters in a tri-partite contract with a municipality and with the state to retrofit street lights. As in the domestic LED program, EESL recovers its investment through the local urban energy supplier. Using a similar model, EESL works with municipalities to deploy energy efficiency in public buildings and for other equipment.
- ***Agricultural Demand Side Management***: Benefiting from subsidized energy, Indian farmers have little incentives to save energy and tend to use inefficient pumps for irrigation. EESL aims to replace 20 million inefficient agricultural pumps-sets with free of cost energy efficient pump-sets with a 5 year guarantee covering all maintenance costs and a control panel. Energy savings are used to pay back investments via utilities.

<sup>29</sup> As of August 2016. The amounts of domestic and municipal LEDs installed and the incurred energy savings are updated in real time online on two dashboard here:

EESL. (2016). *Dashboard*. [Database]. Retrieved from [http://www.eeslindia.org/User\\_Panel/UserView.aspx?TypeID=1145](http://www.eeslindia.org/User_Panel/UserView.aspx?TypeID=1145)

## *Use of Public Funds and Legislation-led Initiatives*

In more developed capital markets, the supply-side finance focus for energy efficiency investments has focused more on the use of public funds and legislation-led initiatives to improve the creditworthiness of individual repayment streams (eg. PACE, CA's On-Bill Finance - OBF) and pools of residential energy efficiency loans (eg. WHEEL). The property-assessed clean energy (PACE) model allows local and state governments to fund the up-front cost of energy improvements on commercial and residential properties, which are paid back over time by the property owners as an addition to their property tax bill. Since the first PACE transaction in California in 2008, PACE financing has spread to 31 US States and in 2016, the U.S. Department of Energy released draft Best Practice Guidelines for Residential PACE Financing Programs to help stimulate residential PACE which has lagged the commercial PACE market to date.

### **Securitization**

Securitization has been used in multiple markets to increase the number of investors that can invest in a particular asset class, as well as to reduce borrowing costs by providing liquidity to banks involved in the primary origination of the loans. In 2015, the first ever securitization of residential energy efficiency loans took place in a public-private structure called WHEEL (a Warehouse for Energy Efficiency Loans). This highly innovative structure demonstrates that there is capital market appetite for bundled and pooled energy efficiency loans and paves the way for broader application both in the US and potentially within other G20 countries:

#### **Case Study: US' WHEEL Program, First Securitization of Unsecured Energy Efficiency Loans**

The Warehouse for Energy Efficiency Loans (WHEEL) is an innovative public-private finance supply-side collaboration between US energy and finance stakeholders<sup>30</sup>. WHEEL<sup>31</sup> offers low-cost, large-scale capital to utility sponsored loan programs for residential energy efficiency. Homeowners can borrow upwards of \$20,000 for a series of improvements including HVAC equipment, water heaters, roofing, insulation, windows and energy efficient appliances.

#### **The Mechanics of WHEEL**

- Step 1:** Participating programs commit funds to WHEEL
- Step 2:** Programs or third party originates and issues loans
- Step 3:** WHEEL purchases, aggregates loans across all participating programs and issues bond for sale to secondary market investors
- Step 4:** WHEEL repays investors and sponsors
- Step 5:** Sponsor recycles or reallocates funds

#### **First Securitization of residential Energy Efficiency Loans**

In June 2015, WHEEL securitized its first portfolio of unsecured residential energy efficiency loans originated in Pennsylvania, Kentucky and Ohio. The transaction was comprised of USD 12.58 million in securities (marketed as a "green bond") backed by almost USD 16 million in energy efficiency loans. It was a landmark transaction becoming the first ever securitization of residential energy efficiency loans to be placed into the international capital markets, creating a new genre for consumer credit securities. The success of the first WHEEL securitization caused the States of New York and Florida to join the programme soon after.

<sup>30</sup> Citi, Renew Financial, Pennsylvania Treasury, the National Association of State Energy Officials, Energy Programs Consortium, Florida, Kentucky, New York, Ohio, and Pennsylvania.

<sup>31</sup> Graph created assessing information from:

NASEO. (2016). *Warehouse for Energy Efficiency Loans (WHEEL)*. [Website]. Retrieved from [www.naseo.org/wheel](http://www.naseo.org/wheel)

### How Securitization can Unlock EE Finance Supply

In line with the fourth principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*, WHEEL unlocks the barriers that prevent the supply of finance for energy efficiency investments by providing better terms and availability of financing through a public-private collaboration with multiple stakeholders. The benefits of WHEEL-like securitization include:

1. **Liquidity:** WHEEL creates much needed secondary market liquidity by adding new investors to the asset class so that banks no longer need to hold the energy efficiency loans on their books, and thereby allowing them to increase the number of loans originated (and securitized) providing optimum capital usage and complying with bank regulations (maintaining associated capital coverage).
2. **Lower Cost of Capital:** In most cases, securitization results in a lower cost of capital (and therefore a lower interest rate for borrowers) due to the diversification benefit it provides to investors. Through securitization, investors can effectively diversify their risk by taking a small piece of many loans as opposed to a large piece of a lesser number of loans.
3. **Risk Tranching:** The securitization structure allows investors to pick the risk/reward profile of the security they purchase through “piece” or “tranche” selection. Senior tranches usually provide investors less yield with lower risk, while mezzanine and subordinate tranches provide greater yield with greater risk as they absorb the first losses that may result from the underlying assets if borrowers default. Risk tranching enables a key role for the public sector to address market failures without the need to mobilize large amounts of funding, which would be the case if subsidies were used instead.

Regular securitization of energy efficiency loans<sup>32</sup> will enable better risk assessment as it creates and records historical performance data for successive securities and loan pools. As more investors buy energy efficiency securitizations and with increased familiarity with the performance of this new asset class, there should be a commensurate decrease in the cost of capital for energy efficiency loan providers and originators, which in turn should mean lower costs to those borrowers willing to undertake energy efficiency works in their homes.

The WHEEL program can be replicated in other G20 countries as they have the key elements that would ensure its success such as: high home ownership rates, residential energy burdens<sup>33</sup> similar to or greater than those in the United States, established securitization markets, and government-sponsored energy efficiency rating systems for identifying appropriate home improvements to support.

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<sup>32</sup> The Property Assessed Clean Energy (PACE) program is another securitization-based energy finance model seeing success in the United States. As of August 2016, PACE has securitized over \$1 billion in residential energy loans backed by liens against the homes being improved.

<sup>33</sup> Average energy bills relative to incomes.

## II. Financial Institution Progress: The Development of Public and Private Sector Capacity and Commitments

*Principle 5 (EEFTG’s voluntary Energy Efficiency Investment Principles for G20 Participating Countries): “Build greater internal energy efficiency investment awareness within public and private financial institutions, expand their use of tailored approaches to structure and facilitate energy efficiency investments, and develop their capacity through the pro-active sharing of good practice. This can be achieved through support for financial institutions which adopt their own systems based upon voluntary energy efficiency investment commitments. These would aim to appropriately govern their own internal decision-making processes, investments in, and interventions to mobilise greater investment in energy efficiency.”*

EEFTG’s activities have a dual focus: While working with its 14 country members refining and supporting their policy approaches to up-scaling energy efficiency investments, EEFTG also works in parallel with public and private financial institutions both directly and through its partners (notably UNEP FI) to build greater internal energy efficiency investment awareness and seek voluntary energy efficiency investment commitments. In reference to Principle 5, 2016’s global EEFTG survey re-emphasizes both the potential for each sector to absorb more financial resources and the capacity for Financial Institutions to build additional capacity through the sharing of best practice:

	Large Energy Intensive Industries	Large Non-Energy Intensive Industries	SMEs	Commercial/ Public Buildings	Residential Buildings
How would you describe the potential for each sector to absorb extra financial resources for energy efficiency?	Above average <b>2.8</b>	Average 2.7	Above average <b>2.9</b>	Above average <b>3.0</b>	Above average <b>2.8</b>
How effective are public and private financial institutions in using tailored approaches to structure and facilitate energy efficiency investments in each sector?	Average 2.3	Below average <b>2.1</b>	Below average <b>1.7</b>	Below average <b>2.2</b>	Below average <b>1.9</b>
How strong is the potential to develop the capacity of FIs for energy efficiency investments through the pro-active sharing of good practice in each sector?	Above average <b>3.1</b>	Above average <b>2.8</b>	Above average <b>3.2</b>	Above average <b>3.1</b>	Above average <b>3.0</b>
How strong is the opportunity for public source finance and development banks to increase their technical assistance and project development funding?	Above average <b>2.8</b>	Average 2.6	Above average <b>2.9</b>	Above average <b>2.9</b>	Above average <b>2.8</b>

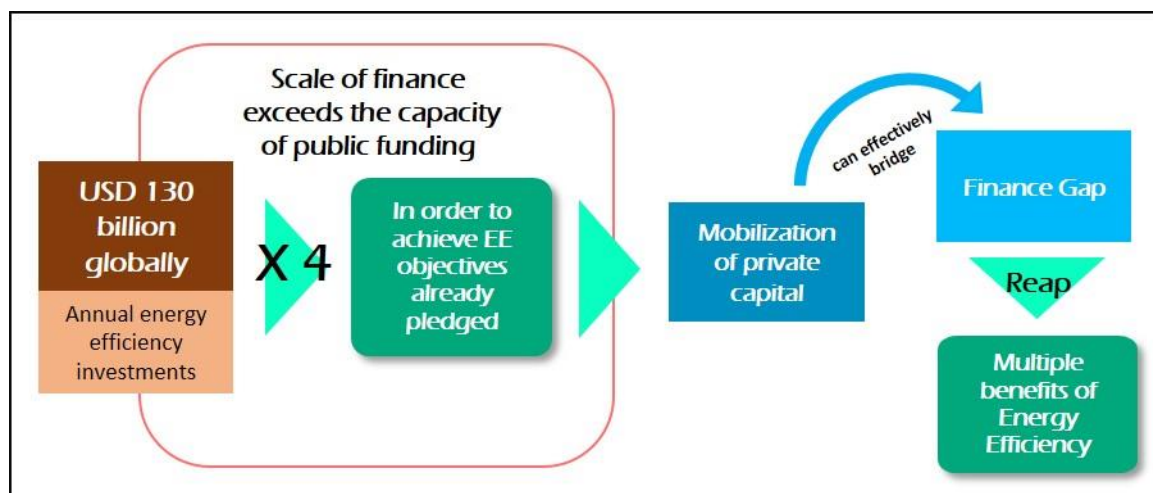
EEFTG notes the G20 Green Finance Study Group (GFSG)’s work and its definition of “Green finance” which can be understood as financing of investments that provide environmental benefits in the broader context of environmentally sustainable development. These environmental benefits include, for example, reductions in air, water and land pollution, reductions in greenhouse gas (GHG) emissions, improved energy efficiency while utilizing existing natural resources, as well as mitigation of and adaptation to climate change and their co-benefits. EEFTG’s linkage with GFSG was noted on page 8 of its synthesis

report<sup>34</sup> highlighted by the G20 Leaders' Summit 2016, as well as the EEFTG bank mobilization for energy efficiency described below. EEFTG notes that GFSG believes that just 5-10% of all bank lending would qualify as “green” and just 1% of bond markets. For this reason, EEFTG’s work with private and public sector financial institutions is especially prescient in 2016 and subsequent years.

Over the last 12 months, EEFTG has hit multiple milestones, researched innovative new case studies and delivered significant achievements working with both private and public institutions that are described in the following sections.

### *a. Private Sector (Banks and LT Investors)*

In parallel to its engagement in the G20 on promoting supportive policies to remove systemic barriers and enable a massive increase in energy efficiency investments, EEFTG maintained a dialogue with the private financial sector to support its activities of energy efficiency financing. Currently estimated by UN SE4ALL at USD 130 billion globally, annual energy efficiency investments must be multiplied by more than four times to achieve the efficiency objectives already pledged by major economies around the world. This scale of finance exceeds by far the capacity of public funding alone and the mobilization of private capital is crucial to bridge the existing gap and reap the multiple benefits of energy efficiency.



In the context of the Paris Agreement and increased awareness on the necessity to transition to a low-carbon path, banks and investors are increasingly considering the development of sustainable finance business lines. In addition to managing the environmental risks of their financing and divesting from the most harmful activities, financial institutions are looking to seize new business opportunities related with the green economy and energy efficiency appears as priority area combining economic and environmental gains.

EEFTG initiated its engagement with the financial sector in 2015 when it jointly launched two Energy Efficiency Finance Statements through which banks and investors could signal their interest and commitment to further integrate energy efficiency in their strategies and operations. The G20 Energy Efficiency Investors Statement highlights six key areas where institutional investors and asset managers can increase the efficiency of their portfolios, across asset classes. On the other hand, the Statement by Financial Institutions on Energy Efficiency is a declaration through which banks and leasing companies

<sup>34</sup> UNEP. (2016). *G20 Green Finance Synthesis Report*. Retrieved from [http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis\\_Report\\_Full\\_EN.pdf](http://unepinquiry.org/wp-content/uploads/2016/09/Synthesis_Report_Full_EN.pdf)

acknowledge the business opportunities of energy efficiency and commit to further integrating it in their operations. Building on an initial mobilization under the Turkish presidency, EEFTG continued to invite banks and investors, through its partner UNEP FI, to support the statements and scale-up their energy efficiency financing activities. Under the Chinese presidency, the mobilization of financial institutions has grown to a total of 117 banks and 40 investors jointly managing USD 4,000 billion of assets having endorsed the Statements, including China's, and the world's, largest commercial bank ICBC and five other Chinese financial institutions.

Unprecedented in its scale and nature, this mobilization of the financial sector is a major achievement both in terms of awareness raising and of increased visibility of the importance of energy efficiency investment among the financial and policy communities. It was promoted in various high-level policy forums to stress the need of adopting policies that would enable an acceleration of private energy efficiency investment. In particular, the Statements and their signatories were presented to country representatives and experts at several main events of the Climate Conference in Paris (Energy Day, Finance Day, and Buildings Day) and was highlighted on the COP 21 NAZCA<sup>35</sup> platform gathering commitments of non-state actors on addressing climate change. It was also promoted at the 2016 Clean Energy Ministerial gathering energy ministers and market leaders from 23 countries. The Chinese G20 Presidency allowed for a particular mobilization of Chinese financial institutions behind the Statement and the initiative was presented to G20 delegates in Beijing ahead of the G20 Ministerial in June.



### **G20 Energy Efficiency Investor Statement**

Developed within the EEFTG framework and jointly promoted by UNEP FI, the American network of investors for sustainability Ceres and the investors' initiative Principles for Responsible Investments (PRI), the G20 Energy Efficiency Investor Statement has been endorsed by 40 investors managing USD 4,000 billion of assets. Investing across all sectors of the economy, long-term investors can have a massive impact in enhancing energy efficiency of buildings, industry and SMEs by allocating capital to the most efficient assets and engaging with their investees to improve their energy efficiency. Owning and managing properties, real estate investors have a particular role to play in driving the development of sustainable and efficient real estate both through the construction of new efficient buildings and the retrofitting of existing ones.

<sup>35</sup> NAZCA. (2016). [Website]. Retrieved from <http://climateaction.unfccc.int/>



## G20 ENERGY EFFICIENCY INVESTOR STATEMENT

As our contribution to the work of the G20 Energy Efficiency Finance Task Group, as managers and investors, we share a common understanding of the positive economic and societal benefits of energy efficiency. In order to ensure that our activities promote and support energy efficiency, and in consideration of our fiduciary responsibility: We recognize the need to fully embed energy efficiency into our investment process.

We, the undersigned, undertake to:

1. Embed material energy efficiency considerations into the way in which we **evaluate** companies;
2. Include energy efficiency as an area of focus when we **engage** with companies;
3. Take into consideration energy efficiency performance, to the extent relevant to the proposal being considered, when we **vote** on shareholder proposals.
4. To the extent relevant, incorporate energy efficiency investment considerations when we **select** managers;
5. Assess our existing real estate assets and managers and **monitor and report on** their energy efficiency performance;
6. Seek appropriate opportunities to **increase energy efficiency investments** in our portfolios.



### Statement by Financial Institutions on Energy Efficiency

Initiated in partnership between the European Bank for Reconstruction and Development (EBRD) and UNEP FI, in support of EEFTG's work, this statement has been endorsed by 117 banks from more than 40 different countries on all continents. It gathers banks and leasing companies of very different nature, size and experience in energy efficiency coming together to express their commitment to scaling-up their energy efficiency finance activities. Beyond its large impact in raising awareness, this mobilization allows to form a community of committed financial institutions interested to learn and share experience on common challenges and best practices of energy efficiency financing. Due to the local and diffuse nature of energy efficiency, banks are on the front line to finance and aggregate energy efficiency projects which,

once bundled into larger volumes, can be refinanced by investors. Building on this mobilization, EEFTG intends to facilitate the exchange and dissemination of best practices among the signatories.

## STATEMENT BY FINANCIAL INSTITUTIONS ON ENERGY EFFICIENCY

We, the signatories of the Statement:

- Acknowledge that the financial sector is uniquely placed to channel finance to activities that promote energy efficiency
- Understand there are many unaddressed energy efficiency financing opportunities in our markets
- Are already providing finance to support our clients with energy efficiency investments
- Will actively contribute to scaling up energy efficiency financing
- Without taking on undue burden, are willing to work towards tracking our deployment of energy efficiency finance
- Recognise the need to further embed energy efficiency investment principles into the way in which we engage with our clients
- Have a special interest in guiding our clients towards best practice financing decisions, including on modernisation and competitiveness strategies that instil enhanced energy efficiency
- Are willing to work with institutional and public financiers seeking to deploy climate finance to our clients
- Welcome the opportunity to share our experiences and acquire knowledge of successful business strategies for integrating energy efficiency across our financing operations

ABN AMRO	BPS-SBERBank	Humo MDO	Şekerbank
ACBA - Credit Agricole Bank	BRAC Bank Limited	Huaxia Bank	Shinhan Bank
ACCESSBANK	BRD -Groupe Societe Generale	ICBC	Slovenska Sporitelna
Agjencioni Per Financim NE Kosove	CASA DE Economii SI Consemnatiuni	IDLC Finance Limited	Societe Generale Group
Agricultural Development Bank of China	CenterInvest Bank	Imon International	Societe Generale Banka Beograd
AKBank	CIBanco	Industrial Bank	State Export Import Bank of Ukraine
Ameriabank	Connecticut Green Bank	ING Group	Sudameris Bank
Armswissbank	Commercial International Bank (CIB Egypt)	KRK Kosovo	Sumitomo Mitsui Trust Holdings
ASN Bank	Credit Agricole	Kyrgyz Investment and Credit Bank	Tatra banka
Bai Tushum & Partners	Credit Coopératif	La Banque Postale	Triodos Bank
Banca Intesa Serbia	Credit Foncier	Megabank Public Joint Stock Company	TuranBank
Banamex	CREDO	Microinvest	Türkiye Ȳp Bankası
Banca Transilvania	Daegu Bank	Minsk Transit Bank	Türkiye Sinai Kalkinma Bankasi
Bancolumbia	Demir Kyrgyz International Bank	Mobiasbanca	UK Green Investment Bank
Bancompartir	Demirbank	Moldincombank	Ukrsibbank
Bank Eskhata	DenizBank	Moldova Agroindbank	Unibank
Bank Millennium	Desjardins Group	Mutualista Pichincha	Unicredit Bank Mostar
Bank of Georgia	Development Bank of the Philippines	National Bank of Egypt	Unicreditbank Serbia
Bank of India	Ecobank	Nationwide Building Society	Unicredit Bulbank
Bank of Jiangsu	Erste & Steiermarkische Bank	NLB Tutunska Banka Skopje	Unicredit Tiriac Banka
Bank of Valletta	Eurobank	NRW Bank	United Bulgarian Bank
Bank Republic	Findeter	Ohridska Banka Ohrid	Vakiflar Bankasi
Basisbank	Firststrand	OTP Bank Romania	VTB Georgia
BBVA	Garanti Bankasi	Pireaus Bank	VUB Slovakia
Belgazprombank	Garanti Leasing	Postbank—Eurobank	Xac Bank
Belvnesheconombank	Global Bank	Procredit Group	Yapȳ ve Kredi Bankasi
BMCE Bank of Africa	Halkbank Skopje	Raiffeisen Bank Aval	YES Bank
BNP Paribas	Hana Bank	Raiffeisen Bank Bosnia and Herzegovina	Zagrebacka Banka
Bpifrance	HSBC Bank Armenia	Raiffeisen Bank Romania	Zhujiang Financial Leasing
		SEF International Universal Credit Organization	

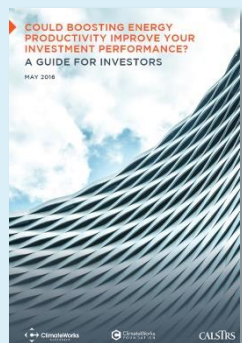
Also included in EEFTG's mandate for 2016 was the identification and promotion of tools that would support the banks and investors implement their commitments made in both of the above mobilizations. The results of this was EEFTG support to and input into a framework for real estate investors and a tool for investors to assess the energy efficiency activities of their portfolio companies:

## Launch of a tool to help investors integrate energy efficiency and ESG considerations in their real estate investments



The “Sustainable Real Estate Investment Action Framework” developed by UNEP FI and its global partners (IGCC, IIGCC, Ceres INCR, PRI and RICS) was launched in London in a dedicated event gathering over 120 people on February 8th. This tool builds on all relevant material published over the last five years to highlight clear actions for real estate investors to further integrate climate and ESG considerations, and in particular energy efficiency, in their investment process and hence improve their returns and better protect the future value of their investments. Further launching events have taken place in several key countries (US, Canada, Germany, Singapore, and Australia). More information [here](#)<sup>36</sup>.

## Promoting the Energy Productivity Index for Companies a tool to help investors increase the energy efficiency performance of their portfolios through engagement with companies



This tool developed, by ClimateWorks Australia in collaboration with CalSTRS and with UNEP FI on its steering committee, is a global energy efficiency benchmark for listed industrial companies to help investors identify companies for whom improving energy efficiency represents a material opportunity. It is accompanied by an investor guide for investors to engage with these companies on their energy management. The tool has been presented in series webinars in the United States, the European Union and Australia attended by close to 70 investors and interested parties. More information here and recorded webinar [here](#)<sup>37</sup>.

<sup>36</sup> UNEP FI. (2016). *Implementing the Paris Climate Agreement: An Action Framework*. [Sustainable Real Estate Investment Webpage]. Retrieved from <http://www.unepfi.org/work-streams/property/sustainablerei/>

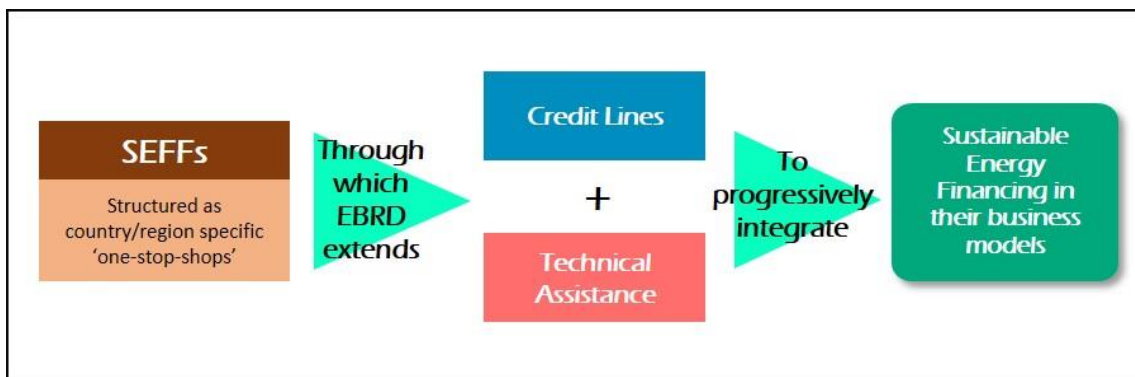
<sup>37</sup> ClimateWorks Australia. (2016). *Energy Productivity Index for Companies*. [Database]. Retrieved from <http://www.energyproductivity.net.au/>

## *b. Public Sector (MDBs and IFIs)*

EEFTG is focused on the public financial institutions, including the Multilateral Development Banks (MDBs) and International Financial Institutions (IFIs), to mobilize more energy efficiency capacity building, project development support, investments and “best in class” financial instruments that can leverage additional private sector finance and investments into energy efficiency. The leadership role of the MDB and IFI community in establishing best practice and using their global presence to trial and bring to scale supportive financial instruments that measure and deliver the multiple benefits of energy efficiency to their target economies is key. As such, in 2016, EEFTG has focused its work with public sector financial institutions in three main areas:

- 1 → Showcasing and Replication of energy efficiency investment models that leverage private retail bank partner networks for on-lending to their clients;
- 2 → Identification and highlight of new financial instruments designed to facilitate the replication and up-scale of energy efficiency investments;
- 3 → Identification of internal policies that help mainstream energy efficiency investing across all activities of the organization

In April 2016, EEFTG supported a UNEP FI Switch Asia<sup>38</sup> workshop on “Enhancing Capital Flows to Energy Efficiency Investments in China’s Building Sector” in Shenzhen, China. At this workshop, policy makers, financial institutions and real estate developers shared their knowledge, experience and best practices with the view of enhancing private financial flows towards energy efficiency. In particular, the workshop identified the benefits of technical assistance programs to promote energy efficiency investment with examples from the International Finance Corporation, the World Bank and the Asian Development Bank. Specifically highlighted was the European Development Bank for Reconstruction and Development’s Sustainable Energy Financing Facilities (SEFFs) that are active in 25 countries.



<sup>38</sup> Switch Asia. (2016). *National Policy-Industry Dialogue: Enhancing Capital Flows to Energy Efficiency Investments in China's Building Sector*. Retrieved from <http://www.switch-asia.eu/news/national-policy-industry-dialogue-enhancing-capital-flows-to-energy-efficiency-investments-in-china/>

### Case Study: EBRD, Building Knowledge and Confidence to Spur EE Investments

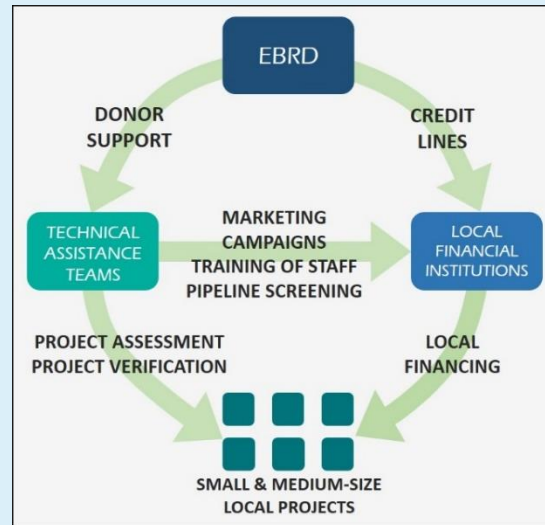
The European Reconstruction and Development Bank (EBRD) is at the forefront of efforts to channel resources from existing and emerging global climate finance funds to projects on the ground. Accounting for around 40% of the final energy consumption, the building sector is the largest energy consumer in the EBRD region. As a response, the EBRD has been active in mainstreaming sustainable energy financing in this sector.

In line with the fifth principle of the *Voluntary Energy Efficiency Investment Principles for G20 participating countries*, which calls for the development of FI capacity to expand their use of tailored approaches to structure and facilitate energy efficiency investments, the EBRD has been successful in assisting local commercial banks develop sustainable energy financing as a core business. Through Sustainable Energy Financing Facilities (SEFFs), the EBRD extends credit lines to local financial institutions for on-lending to small and medium-sized projects.

The SEFFs are tailored for each country/region as “one-stop-shops” which include key elements such as: credit lines for local financial institutions, and comprehensive technical assistance to enhance the FIs’ project origination and assessment capacity. In addition, the “one-stop-shops” provide concessional financing and grants to help overcome barriers (affordability, first-mover costs, early stage development of markets for advanced technologies, etc). In due course, FIs acquire expertise on how to properly assess the feasibility of energy efficiency projects and how to develop suitable financial products. Furthermore, clients gain access to a new line of financial products and learn how sustainable energy investments can improve productivity and increase profits.

#### SEFF Results and Impacts

- Present in 25 countries
- Over 100 partner financial institutions received credit lines and technical assistance
- Over 100,000 investments supported via the SEFFs
- Worth €3.9 billion
- Saving 15.5 TWh-equivalent each year
- Helping to avoid 6.1 million tonnes of CO<sub>2</sub> emissions annually (equivalent to the emissions of Georgia)



#### SEFF Activities, Selected Cases:

**TurSEFF:** The Turkey Sustainable Energy Financing Facility aims to accelerate the development of the local lending markets for energy efficiency and renewable energy projects. In a first phase, TurSEFF combined EBRD credit lines with concessional loans from the Clean Technology Fund, in order to overcome barriers related to perceived risks, banks’ first-time transaction costs and availability of long-term finance. As of the end of 2015, 700 EE projects have been executed for a total value of \$790 million, equivalent to 5 TWh of primary energy consumption savings and green energy generation.

**SlovSEFF:** This programme aims to decrease Slovakia’s energy intensity -following closure of the outdated Bohunice nuclear power plant- by targeting energy efficiency and renewable energy

sub-projects in the corporate and residential sectors. Its results are promising, as of early 2016. EE projects have been executed for a total value of \$257 million, equivalent to 5 TWh of primary energy consumption savings and green energy generation benefiting 86,000 residents.

In addition, the China workshop identified that the supply of finance for energy efficiency in buildings is hampered by mistrust and lack of knowledge. Experts suggested that insurance schemes and certification processes can minimize perceived risks and create a system of accountability to promote investment projects. One of the most innovative practices to advance energy efficiency is an insurance scheme called the Energy Savings Insurance (ESI) supported by the Inter-American Investment Bank (IDB). It ensures that a pre-agreed level of energy savings is reached after a set of determined energy efficiency measures is established. The insurance supports the performance guarantee offered by an energy service company (ESCO), allowing both clients and funders to increase mutual trust.

### **Case study: Energy Savings Insurance - Sharing risks between key actors to enable investments in energy efficient equipment**

The objective of the Energy Savings Insurance (ESI) risk mitigation mechanism, developed by the Inter-American Development Bank (IDB), is to support Small and Medium Enterprises (SMEs) in implementing energy saving measures, specifically the replacement of inefficient with efficient equipment<sup>39</sup>. It aims to create an enabling market environment and drive the demand and financing of private sector energy efficiency projects by addressing key barriers such as:

- Lack of trust between clients
- Technology providers and financial institutions
- Access to finance
- Lack of information on business opportunities.

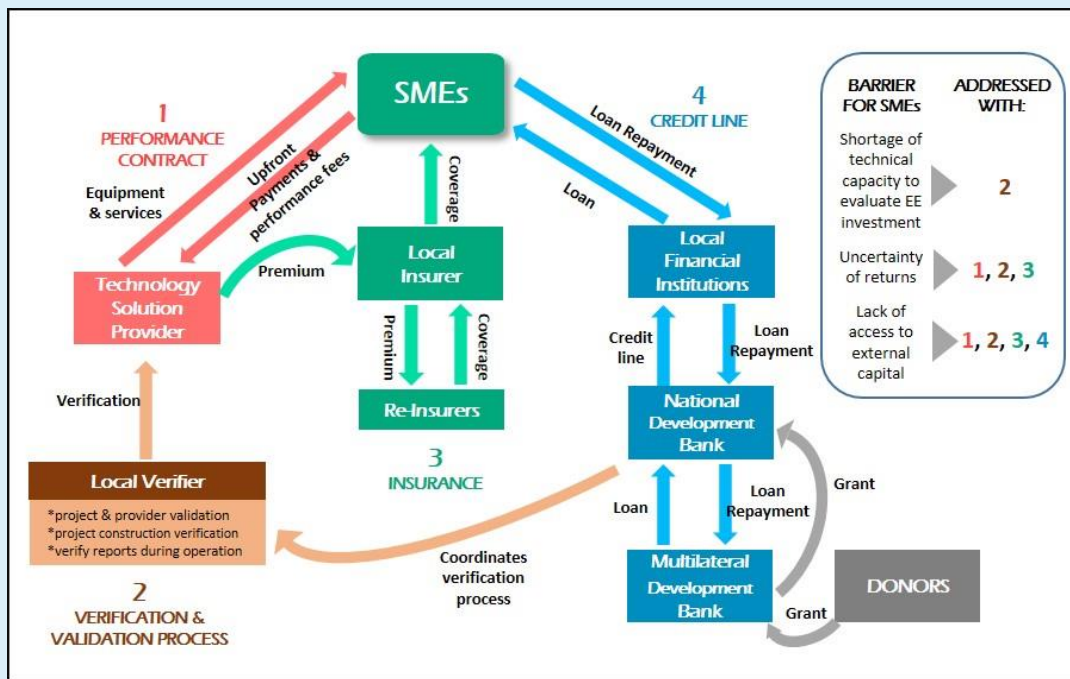
#### **ESI Instrument**

ESI is an innovative insurance product covering projected energy savings for specifically defined and verifiable energy efficiency measures. In the event that expected energy cost savings are not realized, the client would be compensated through an insurance product contracted by the technical solution provider.

Three key risk mitigating instruments address the financial and technical barriers to enhanced trust and development of an energy efficiency market:

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<sup>39</sup> For example efficient electrical motors, boilers, air conditioning, refrigeration chambers and cogeneration



Graph source: IDB, 2016

A standardized contract: Establishes responsibilities between the final client and the equipment provider, the guaranteed energy savings during a certain period of time and the MRV obligations. The energy saving guarantee is ensured by a 25% retention of the total project cost to be released only upon verification of contracted energy savings.

Validation and verification mechanism: A third party technical expert validator provides credibility about the project to the client, financial institutions, and insurance companies through both ex-ante and ex-post technical analyses.

An energy savings coverage instrument (surety/insurance): Ensures energy savings contract obligations in the event of default.

The program supported by concessional credit lines provided by National Development Banks (NDBs), the IDB and/or international climate finance to facilitate clients' investment, as well as technical assistance. Figure 1 below illustrates the relations between the program's actors.

### Current Status<sup>40</sup>

The ESI Program is being piloted in Colombia and Mexico with both countries having recently launched an ESI credit line. In Colombia, the program is coordinated with BANCOLDEX in the hotel, hospital and clinics sector. In Mexico, it is coordinated with FIRA and aims to mobilize investment of USD 25 million in the agro-industry sector. The program is also being developed in El Salvador and the ESI mechanism is currently replicated in Brazil, Peru and Mexico with five National Development Banks and agencies.

<sup>40</sup> For a detailed assessment on Colombia please see:

IDB. (2016). *CTF Energy Efficiency Financing Program for the Services Sector (CO-L1124) and Non-Reimbursable Technical Cooperation Mitigation of GHG Emissions through Energy Efficient Investments in Hotels and Clinics/Hospitals Sub-Sectors*. Retrieved from <http://idbdocs.iadb.org/wsdocs/getdocument.aspx?docnum=37952879>

International climate finance in the form of loan and grant resources from the Clean Technology Fund, the Green Climate Fund and bilateral donors such as the Danish Energy Agency plays a crucial role for the sustainable success of the program. The standardized instruments and processes which will be available for the market beyond donor support. According to the Global Innovation LAB for Climate Finance, replicating and scaling the ESI mechanisms in relevant developing countries around the world could drive USD 10-100 billion in investment and effectively mitigate 230 MtCO<sub>2</sub> by 2030.

EEFTG notes that IFIs which mainstream energy efficiency across all of their operations and have staff sensitized and incentivized to identify and market the benefits of energy efficiency to clients have been able to significantly grow their energy efficiency portfolio.

#### **Case Study: World Bank's New Safeguards**

A recent example of this mainstreaming can be seen in the new Environmental and Social Framework (ESF) approved by the World Bank's Board of Executive Directors in August 2016, specifically in Environmental and Social Standard #3 (ESS3) on "Resource Efficiency and Pollution Prevention and Management" which includes the following safeguards:

- **Resource Efficiency:** The Borrower will implement technically and financially feasible measures for improving efficient consumption of energy, water and raw materials, as well as other resources. Such measures will integrate the principles of cleaner production into product design and production processes to conserve raw materials, energy and water, as well as other resources. Where benchmarking data are available, the Borrower will make a comparison to establish the relative level of efficiency.
- **Energy Use:** The efficient use of energy is an important way in which the Borrower can contribute to sustainable development. When the project is a potentially significant user of energy, in addition to applying the resource efficiency requirements of this ESS, the Borrower will adopt measures specified in the EHSs to optimize energy usage, to the extent technically and financially feasible.

EEFTG looks forwards to engaging further with the MDB and IFI community in 2016-17 to extend this aspect of its mandate and help propagate best practices among them with the support of its 14 country members and IPEEC.



## *EEFTG 2016 Conclusions and Future Considerations*

2016 has been a cornerstone year in the evolution of the EEFTG mandate built from the G20 Energy Efficiency Action Plan and strengthened in 2016 through the G20 Leaders' endorsement of the G20 Energy Efficiency Leading Programme. During the year, EEFTG has completed a record number of activities reaching over 1,200 people, strengthened the voluntary Energy Efficiency Investment Principles for G20 Participating Countries, gained an additional member, deepened and broadened the Energy Efficiency Investment Platforms for public and private sector financial institutions and collaborated with G20 GFSG to underline the pivotal role of energy efficiency investments in the context of green finance.

In 2017, EEFTG plans further collaboration to enhance capital flows to energy efficiency through the following activities:

- 1 Working with participating G20 members to enhance national investment policy environments through the framework of the Voluntary Energy Efficiency Investment Principles;
- 2 Strengthening these Principles by gathering additional data, implementation experience and commitments, including through the support of the UNEP FI and its partners;
- 3 Broadening and deepening private sector engagement, including through the establishment of a Private Sector Energy Efficiency Investment Platform, and other work with long-term investors, banks and insurers with IO partner support;
- 4 Mobilising IFIs to support finance where most needed (e.g. capacity building), and to directly fund technical assistance for project development, finance intermediaries, and the aggregation of energy efficiency investments;
- 5 Engaging with participating G20 members in the framework of the Principles to support cooperation and communicate on the finance and investment aspects of the EELP;
- 6 Connecting and communicating with other international initiatives on energy efficiency finance to avoid redundancy, broaden reach and deepen commitment;
- 7 Encouraging participating G20 members to incentivise the development of a pipeline of energy efficiency projects and collaborating with partners to help support this activity;
- 8 Promoting policy frameworks and best practices in EEFTG participating countries including through Technical Engagement Workshops;
- 9 Promoting policy frameworks and best practices in EEFTG participating countries including through Technical Engagement Workshops;

10 Encouraging energy efficiency investments and their positive impacts to be systematically considered alongside supply-side investments relating to G20 countries energy systems;

11 Recognizing the importance of energy efficiency considerations in all relevant decision making to significantly increase and strengthen energy efficiency investments in G20 economies in the context of a balanced progression of the three dimensions of sustainable development;

12 Reinforcing of the policy framework in each G20 country to drive energy efficiency investments by sectors;

13 Increasing the effectiveness of public and private financial institutions in using tailored approaches to structure and facilitate energy efficiency investments in each sector of the economy.

To focus its resources and in close collaboration with its country members and IO partners, EEFTG will take the lead in developing a G20 Energy Efficiency Investment Toolkit of voluntary options to upscale energy efficiency investments in G20 economies in collaboration with the IEA and other international organizations. This toolkit will build on the G20 Energy Efficiency Action Plan as a key deliverable under the G20 EELP responding to the need to upscale energy efficiency investment highlight by G20 Ministers. The G20 Energy Efficiency Investment Toolkit will provide voluntary options for the G20 to take an integrated and sustainable approach towards enhancing capital flows to energy efficiency. All actions to be presented in the toolkit will be voluntary options for G20 countries to take up as they consider useful in the context of national circumstances and priorities.

G20 countries, based on their individual national circumstance, can upscale and enhance investments in energy efficiency significantly, and mutually benefit from sharing their good practices with each other. As a practical step towards this, there are a number of potential options on which G20 countries can focus their collaboration as key components of a G20 Energy Efficiency Investment Toolkit. In 2017, EEFTG can look to provide an assessment of energy efficiency investment needs by sector and region and an initial analysis of energy efficiency technologies and cost reduction potentials. Clearly, EEFTG will continue to support good practice exchanges on:

i Enabling national policy framework design and;

ii Implementation of the voluntary energy efficiency investment principles for G20 participating countries.

As core pieces of Private Sector Energy Efficiency Finance Platform and to build upon its 2016 achievements, EEFTG plans to survey and develop “best in class” instruments and approaches to encourage and increase energy efficiency investments among different types of private sector financial institutions (bank, asset manager and insurance company) and facilitate consensus building among public banks and development institutions around best instruments and approaches to up-scaling their energy efficiency activities.

## *Annex: EELP Excerpts on Finance*

### **G20 Energy Efficiency Leading Programme (EELP) Final 1-7-2016**

Pillar 4: of Key Pillars (Exec Summ page 3, Text box 1) “- Adequately Resourced: 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.”

(page 5 Section 1) “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. According to the IEA, the potential size of global investment opportunities for energy efficiency was estimated at USD 310 billion in 2012<sup>6</sup>, and is growing every year. Recognising this, more and more governments and financial institutions in the G20 have given energy efficiency finance a high priority. The volume of capital investment into energy efficiency has accelerated, investments have become increasingly incentivised, and a growing number of financial innovation measures have begun to develop in this area.”

(Page 9 – in Long-term Aims) “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.”

Energy efficiency, including energy conservation, is a long-term priority for G20, as it constitutes the optimum utilisation of energy resources. G20 members agree that increased collaboration on energy efficiency can drive economic activity and productivity, strengthen energy security and improve environmental outcomes. As consumers of over 80% of global energy, G20 members can play a significant role in access to energy by continuously improving their energy efficiency performance. Moreover, G20 members have accumulated a wealth of experience and have a demonstrated strength in developing energy efficiency programmes, channeling energy efficiency investments, and driving energy efficiency improvements.

The G20 Energy Efficiency Action Plan (EEAP) adopted in 2014 is a practical plan to strengthen voluntary energy efficiency collaboration in a flexible way. It allows countries to share knowledge, experiences and resources by choosing, on an opt-in basis, the activities that best reflect their domestic priorities and interests.

In recognition of this, G20 members adopt the G20 Energy Efficiency Leading Programme (EELP), which provides the basis for the comprehensive, flexible, and adequately-resourced long term framework necessary for strengthened G20 voluntary collaboration on energy efficiency (see Text box 1). It includes the G20 Voluntary Pillars for energy efficiency cooperation, which characterises international bilateral and multilateral cooperation on energy efficiency as beneficial, innovative, inclusive and sharing.

G20 members commit to significantly improving energy efficiency in the G20 by enhancing energy efficiency cooperation and encouraging G20 members to pursue energy efficiency through a variety of national programmes, policies and measures that reflect the socio-economic diversity within the G20.

Acknowledging that the work conducted by participating members under the 2014 EEAP constitutes the foundation for G20 collaborative action on energy efficiency, the EELP covers the existing activities under the EEAP on Vehicles, particularly heavy-duty vehicles, Networked Devices, Finance, Buildings, Industrial Processes (Industrial energy management), and Electricity Generation

The long-term perspective for each key area is outlined in the EELP, which enables participating G20 members to maximise the energy efficiency opportunities on offer and voluntarily contribute to the long-term progress of energy efficiency in the G20. All G20 members remain free to join or withdraw at any point from Task Groups depending on their own national circumstances, priorities and domestic developments. This flexibility implies that non-participating countries are not bound by the work of the task groups they are unable to join. The International Partnership for Energy Efficiency Cooperation (IPEEC) will continue to ensure overall coordination and fully support collaboration under the EELP. In this role, IPEEC will cooperate fully with other international organisations<sup>1</sup>. To support effective resourcing for the EELP, G20 members and other participating countries will aim to support and strengthen IPEEC through active participation in their selected areas of work, direct voluntary contributions to those areas of work (financial or in-kind) and, if they are IPEEC members, ongoing voluntary member contributions to IPEEC (financial or in-kind). In order to strengthen the global voice for energy efficiency, G20 members support IPEEC working with the IEA and other international organizations, including IEF, OPEC, OECD, APEC, BRICS, SE4ALL and C2E2, and with stakeholders, and G20 members will explore the feasibility of innovative collaborative arrangements for international cooperation on energy efficiency.

G20 members agree that the International Partnership for Energy Efficiency Cooperation (IPEEC) will be the key coordinating agency for the EELP. In this capacity, IPEEC will fully cooperate with international organizations including IEA, IEF, OPEC, OECD, APEC, BRICS, SE4ALL and C2E2, and others. In order to strengthen the global voice for energy efficiency, G20 members support IPEEC working with the IEA and other international organizations, including IEF, OPEC, OECD, APEC, BRICS, SE4ALL and C2E2, and with stakeholders, and G20 members will explore the feasibility of innovative collaborative arrangements for international cooperation on energy efficiency.

Recognizing the importance of adequate support to energy efficiency, G20 members agree that stable resources will be important to the effective implementation of the EELP, and encourage G20 members to provide the financial contributions necessary to its realisation. G20 members and other participating countries will aim to support and strengthen IPEEC through active participation in their selected areas of work, including through direct voluntary contributions to those areas of work (financial or in-kind).

## 2. G20 Voluntary Pillars for Energy Efficiency Cooperation

G20 members are encouraged to strengthen bilateral and multilateral cooperation on energy efficiency, as well as to share experiences on energy efficiency improvements with G20 members and non-G20 members, in order to play a leading role in improving energy efficiency in the long-term.

G20 members agree to improve energy efficiency cooperation on the basis of the following four voluntary pillars<sup>13</sup>:

- 1) Mutual beneficial: Enable mutual benefits through bilateral and multilateral cooperation between G20 members by utilising members' wealth of experiences.
- 2) Innovative: Encourage and support innovative energy-efficient technologies and practices through research and development, demonstration and dissemination; as well as developing open and effective energy efficiency programmes that encourage energy technology transfer.

3) Inclusive: Encourage countries at different stages of economic development, with different natural resource endowments and population densities, to implement energy efficiency improvements according to local conditions, and share developed corresponding energy efficiency aims and formulations of collaboration that are in accordance with their national development objectives.

4) Sharing: Encourage and strengthen the collection, dissemination and analysis of knowledge and information for G20 members to carry out energy efficiency improvements and to provide technical support.

#### 4.10 Key area 10: Energy Efficiency Knowledge Sharing Framework

Given the wealth of energy efficiency experience among G20 members, the G20 proposes a framework for a platform that facilitates knowledge sharing on energy efficiency policies, best practices and national experiences. The current proposal is to establish an Energy Efficiency Knowledge Sharing Framework under the International Energy Forum (IEF) for the G20. The proposed Energy Efficiency Knowledge Sharing Platform will be led by Saudi Arabia.

##### 4.10.1 Long-term perspective and pathway

The objective is to collect and disseminate policies, practices and measures, which will help G20 and other interested countries to improve energy efficiency.

This Framework would extend work already under way to establish an Asian Energy Efficiency Sharing Framework under the IEF, endorsed by Energy Ministers gathered at the 6th Asian Ministerial Energy Roundtable in Doha, Qatar, after a proposal from the Kingdom of Saudi Arabia and supported by Japan.

Energy efficiency matters to both energy producers and consumers. The Framework can showcase and amplify achievements in state of the art energy efficiency policies, technologies, and innovation on both the supply and demand sides, while serving as a platform to share experiences and information in respect of financing and implementation of energy efficiency gains.

##### 4.10.2 Planned work

In pursuit of the Frameworks objectives, the IEF will collaborate with other relevant International Organizations, including IPEEC, IEA and OPEC among others, and Agencies to give greater visibility to the energy efficiency policies of the G20 as well as other countries and contribute to strengthen their institutional capacity and international collaboration. The IEF has set a standard in inter-institutional cooperation under the Joint Organizations Data Initiative, where it works in concert with APEC, Eurostat, the GECF, IEA, OLADE, OPEC, and UNSD.

With the support of G20 and IEF member countries and international organisations and agencies, a first high-level meeting of the IEF Knowledge Sharing Framework on Energy Efficiency can take place in the first half of 2017.

This high-level meeting will set further priorities, mobilise resources and engage with potential partners, including public and private sector stakeholders of interested G20 and IEF countries.

### 3. G20 Long-Term Aim to Improve Energy Efficiency

In recent years, G20 members have formulated various energy efficiency programmes within their national economic and energy development strategies that clearly demonstrate the great importance they attach to energy efficiency.

G20 members agree to adhere to the Voluntary Pillars for Energy Efficiency Cooperation, which are "mutually beneficial, innovative, inclusive, and sharing".

G20 members commit to significantly improving energy efficiency in the G20 by improving energy efficiency cooperation and encouraging G20 members to develop active energy efficiency programmes, policies and measures based on each members own social and economic context.

The EEFTG understands that the synergy among stakeholders and the citizenry is central to further the inception and cement the presence of EE within national policies and in a global context, as the exchange of knowledge and experiences is instrumental to integrate the various action plans and strategies that allow for the establishment of EE roadmaps.

G20 members agree to the EELP, as a long-term energy efficiency programme, and in doing so, take a leading role in achieving sustainable energy efficiency growth during future G20 presidencies.

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.

The dynamic nature of the EELP allows each country to choose the best possible alternatives in terms of financing. In turn, diversifying EE portfolios ensures the optimal allocation of resources regarding types of technology, plant size, levels of activity and production.

G20 members are encouraged to develop voluntary national energy efficiency programmes, in line with each member's respective circumstances.

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