

ANNEX A

SUMMARY OF THE CONSULTATIVE GROUP MEETING FOR ENERGY TRUST-FUNDED PROGRAMS

MARCH 31—APRIL 02, 2017

The Consultative Group (CG) meeting for the Energy Sector Management Assistance Program (ESMAP) was held at Washington, DC, during March 31 – April 02, 2017. This summary covers the discussions during the Open Sessions held on March 31 and April 01, 2017.

Mr. Riccardo Puliti, Senior Director for the Energy and Extractives Global Practice (EEX), welcomed the new donor (Rockefeller Foundation) to the CG; he also welcomed the two new members of the Technical Advisory Group (TAG)—Ms. Richenda Van Leeuwen and Mr. John Heath. Mr. Puliti thanked the donors who have confirmed pledges of resources to ESMAP and emphasized the shared objectives and opportunities between development partners and the work of ESMAP. His remarks stressed the importance of analytical and advisory work supported through ESMAP in helping shape the country policy dialogue and investments at the World Bank Group (WBG), and in improving the quality and performance of WBG-financed projects, thus, leveraging millions of ESMAP resources into billions of resources from the WBG and other financing sources.

The Open Sessions, chaired by Mr. Rohit Khanna, ESMAP Program Manager, included presentations and discussions of the TAG report and examples of ESMAP support in the major thematic and cross-cutting areas. Discussion highlights for each session are provided below.

Session 1: TAG Report

The TAG report was introduced by Ms. Tamara Babayan, TAG Member, and noted, in summary, that while adequate conditions are present for ESMAP to meet the objectives set out in the FY2017-20 Business Plan, there are risks associated with underfunding and uncertainty of allocations to the different programs. This risk could be mitigated to some extent through the addition of new donors and fundraising, though caution needs to be exercised to ensure that a larger group of donors does not reduce the effectiveness of ESMAP governance.

- **Integrated Energy Systems.** CG members expressed support for an integrated energy system approach proposed by TAG, particularly in middle-income countries.
- **IFC Collaboration.** There was concern that collaboration with IFC was not adequately highlighted in the TAG report, given areas of partnerships such as *Lighting Global and Excellence in Design for Greater Efficiencies* (EDGE).
- **Results Indicators.** CG members requested TAG to focus its reports on results at the outcome level. Suggestion from CG members that Asia Sustainable and Alternative Energy

Program (ASTAE) results indicators be applied to ESMAP activities, and was accepted by ESMAP management (see summary of Session 13).

- **Donor Coordination.** The TAG report's recommendation on the importance of donor coordination was well-received by the CG. However, several CC members opined that the TAG report's concern that financial resources are shifting from multilateral channels to bilateral channels is misplaced.
- **Theory of Change.** CG members appreciated the *ESMAP Theory of Change* document, though some remarked that the role of ESMAP is expressed quite modestly in the document.
- **Content of the TAG Report.** Several CG members remarked that the TAG report

should focus on more strategic advice to the CG in the context of a portfolio assessment, for example, with a stronger analysis of ESMAP's positioning in the Climate Agreement and Sustainable Development Goals (SDGs). TAG could also analyze the Annual Block Grants portfolio with a view to advising the CG on client demand and capacity. Some CG members also requested TAG to advise on the following points: multilateral engagements and how to improve coordination; linking energy transition work to national/regional and global policy development; and, benchmarking for ESMAP performance assessment.

Session 2: SEforALL Knowledge Hub

Ms. Vivien Foster, Global Lead, EEX, updated the CG on the different elements of Sustainable Energy for All (SEforALL) Knowledge Hub.

GLOBAL TRACKING FRAMEWORK (GTF)

- GTF provides a dashboard to measure progress towards the SEforALL 2030 objectives for the three SEFORALL pillars (energy access, energy efficiency, and renewable energy).
- New elements in 2017 include: coordinating with the United Nations (UN) to feed GTF results into UN Secretary General's annual progress report to the High-Level Political Forum; regional profiles in partnership with the UN Regional Economic Commissions to bring content and messages closer to policy makers; streamlined annual reporting; and introduction of a statistical model for measuring energy access.

REGULATORY INDICATORS FOR SUSTAINABLE ENERGY (RISE)

- RISE provides a set of indicators to compare national policy and regulatory frameworks for sustainable energy of 111 countries. The tool further provides all background regulations and documents.
- Africa generally scores poorly on energy access. Half of the countries with low energy access lack policies to encourage the adoption of off-grid solar power. In terms of energy efficiency, 7 out of 20 high impact countries still have some way to go in adopting the necessary regulations for energy efficiency improvements.

- RISE outreach and dissemination efforts were successful and included a large social media campaign, as well as traditional major media outlets.

MULTI-TIER FRAMEWORK (MTF)

- MTF provides a framework to measure household electricity access categorized in 5 tiers, rather than the traditional binary approach. The global energy access survey covers 15 countries.
- The first survey from Rwanda was completed.
- The SEAR will be launched in May 2017, at the Vienna Energy Forum. It is structured around a number of key questions (status, challenges, synergies, business models).
- Key messages include: (i) there is a need for stronger commitment from countries lagging in achieving the SEFORALL targets; (ii) decreasing costs of technologies are large opportunities; and (iii) innovative delivery mechanisms are required for scale-up and are being demonstrated particularly in the off-grid space.

STATE OF ENERGY ACCESS REPORT (SEAR)

The CG appreciated that ESMAP's SEFORALL Knowledge Hub produces accurate, comprehensive, and robust methodologies to inform investments and policies through data collection, analysis, and visualization. There was acknowledgement that RISE and GTF have attracted a lot of interest and are being widely cited and used. Discussion focused on the following issues:

- **Coordination with SEforALL and SREP.** ESMAP's partnership with SEforALL focuses on advocacy and communications including media work and forums. ESMAP and SEforALL keep each other informed about their activities. SEforALL also provided a small funding amount on a one-time basis to allow for participation of UN Regional Economic Commissions in GTF2017. Scaling-up Renewable Energy Program, Climate Investment Funds (SREP) is co-funding the MTF surveys in SREP countries
- **Non-alignment of SDG7 and SEforALL targets in GTF Report.** There is political sensitivity to global agencies reporting on SDG process, because the latter is country driven. Nonetheless, the UN draws on GTF to prepare the UN Secretary General's annual progress report to the High-Level Political Forum on the state of progress towards the SDGs.
- **Identifying High Impact Opportunities.** The team clarified that the main purpose of RISE is to identify hotspots and noted that RISE coverage will be extended with the next version to be released in 2018.
- **Data Lag.** The team acknowledged that it was impossible to narrow the data lag (the current report employs data from 2014) given the production cycle of the report.

Session 3: ESMAP Support to Kenya: Sector Reforms, Energy Access, and Renewable Energy

Ms. Sudeshna Banerjee, Lead Energy Specialist, EEX, made an introductory presentation of WBG and ESMAP support in the energy sector in Kenya that has been a long-term and holistic engagement concentrating on three key pillars: (i) **environmental sustainability**, focusing on increasing generation capacity with renewable energy, specifically geothermal and hydropower, and attracting private sector participation; an ESMAP-funded national geothermal strategy is under preparation; (ii) **social sustainability**, focusing on increased electrification through an urban poor program through last-mile grid intensification and, more recently, an off-grid program for connecting households in remote areas (mini grid and PV); ESMAP-funded geospatial planning, MTF survey, and power demand studies are instrumental in their design; and (iii) **financial sustainability**, focusing on support for cost-recovery tariffs, WBG guarantee program and better borrowing terms for the private sector; ESMAP-funded support for an implementation roadmap of an energy bill is underway.

ESMAP has played a key role in informing the activities in each of the key intervention pillars to increase the level of energy access and shift focus toward renewable energy in a sustainable way. Discussions centered on how the WBG is funding the energy sector in Kenya through a multi-faceted, comprehensive program that would not be possible without ESMAP support:

- **Green Growth.** Some CG members noted that it was still difficult to judge whether green growth has sufficient support in Kenya given that 1,000 MW of coal power plants are still in operation. The team emphasized that the Government of Kenya is committed to green energy and that geothermal is expected to provide the base load, and, along with hydropower become the dominant fuel.
- **ESMAP Focus on a Few Countries.** Some CG members, encouraged by the comprehensive approach in Kenya and Ukraine wondered whether ESMAP should focus on a few countries with more cross-cutting engagements. The team responded that focusing on a limited number of countries would mean losing the core feature of ESMAP—the flexibility to respond to demand and missing opportunities for impact in several countries from which knowledge could be disseminated globally. This topic came up again during the discussion on ESMAP support in Ukraine (see summary of Session 4).
- **Power Demand Forecasting.** The team noted that ESMAP is financing a power demand study, as it is important to understand the profile of demand projects since supply is outpacing demand currently. It was also noted that last-mile electrification has attracted almost \$1 billion in donor funding.

In summary, the CG appreciated the good example of Kenya of how ESMAP can be comprehensively utilized to address various energy challenges in a country through just-in-time assistance, planning tools and technical expertise, as well as policy influence in more than one thematic area, such as energy access (grid integration, off-grid solutions) and renewable energy. CG members noted the important lessons for slum electrification and access in peri-urban areas from the Kenya activity, and encouraged ESMAP to do more in this area in other countries.

Session 4: ESMAP Support to Ukraine: Sector Reforms and Energy Efficiency

Ms. Ani Balabanyan, Lead Energy Specialist, EEX, made an introductory presentation of ESMAP's comprehensive support to Ukraine: (i) the largest beneficiary of ESMAP Annual Block Grants (\$4.3 million over a 4-year period) in the World Bank's European and Central Asia (ECA) region; (ii) support was provided to enhance energy efficiency and reform electricity and gas markets, and reform energy tariffs and subsidies; (iii) the three major challenges for the Ukrainian energy sector are security of primary energy supply, high energy intensity, and fiscal drain on account of high energy subsidies; (iv) the WBG addresses those challenges by engagements in power, gas, energy efficiency (including city-level work on buildings and urban transport), district heating, and tariff and subsidy reform; (v) some of the remaining challenges are Naftogaz unbundling and establishment of wholesale and retail competition, containing fiscal cost of social protection schemes, revising subsidy settlement to ensure transparency, improving financial viability of district heating, and developing the legal framework for an energy efficiency fund; and (vi) ESMAP support allows comprehensive engagements in multiple sectors along with the ability to respond flexibly to client needs.

CG members appreciated the detailed presentation on ESMAP's support across the energy sector in Ukraine and a few suggested that ESMAP consider focusing on selected countries for comprehensive support. ESMAP management clarified that there are indeed a few countries—i.e., Kenya, Myanmar, Nigeria, and Ethiopia - where ESMAP supports comprehensive efforts. However, while some core countries represent an opportunity for comprehensive support across sectors and constitute good cases. ESMAP's strength is the flexibility to engage not only in those countries but also globally in a timely manner according to client demands. Furthermore, ESMAP could have significant impacts with a single initiative in a country. Other points that emerged during the discussion:

- **Social Protection.** The experience from Ukraine has shown that working with the social assistance ministry is crucial to designing adequate social protection responses. Similarly, consistent messaging is key to garner support for reforms.¹
- **Donor Coordination.** The Ukraine project team clarified that while there is no co-financing agreement with the European Commission in Ukraine, complementarity is ensured through the different support mechanisms and regular consultation as issues emerge. Donor coordination is well-developed and ensured through platforms on different sectors (e.g., gas, power, tariffs, etc.).

¹ Discussion also referred to the experience with reforms in Egypt where a share of the savings from subsidy reform were dedicated to social sectors/health/education, which helped in the messaging around subsidy reform.

Session 5: Energy and Gender Programs

Ms. Vanessa Lopes Janik, Operations Officer, ESMAP, updated the CG on work to mainstream gender into energy operations, covering the following elements: (i) building the evidence about the link between energy and gender and the importance of responding to gender concerns and gaps in energy projects; (ii) mainstreaming gender into ESMAP's projects through integrating gender in internal processes, gender technical input, and targeted actions and outputs including integrating gender in ESMAP's Energy Access Program (SEforALL Multi-Tier Framework (MTF) survey, Efficient, Clean Cooking and Heating (ECCH), Energy Access for Urban Poor, Green Mini Grids), Renewable Energy Program (Geothermal, VRE grid integration, RE resource mapping), Energy Efficiency Program and Energy Subsidy Reform Facility; and (iii) expanding the program from Africa and East Asia (AFREA and ASTAE, respectively) to all regions. Particular emphasis was given to the program's tools and publications, including the forthcoming analytical report on *Getting to Gender Equality in Energy Infrastructure*.

Several CG members made positive and supportive comments about the program, congratulated the team on their accomplishments, and welcomed its continuation and expansion to other regions. The team provided examples of the process, actions, and results of the technical assistance to projects for Senegal, Tanzania, and Ethiopia. The author of the *Getting to Gender Equality* report provided an overview of the methodology and findings.

A question was raised on how the team is managing the shift from a stand-alone gender program to one that cuts across all of ESMAP's work and, now, all World Bank regions. The team acknowledged the challenge of managing breadth versus depth, and noted emphasis has been placed on partnerships with social, gender and energy teams across the Bank in new activities. Efforts are also being made to ensure ownership from energy teams in terms of task management and cost sharing to help successfully mainstream gender into these programs.

Session 6: ASTAE and SIDS DOCK Support Programs

Asia Sustainable and Alternative Energy Program

Mr. Rohit Khanna, Program Manager, ESMAP, opened with a discussion of the future of ASTAE, noting that the ASTAE trust fund closes on June 30, 2017, but the intention under the current FY2017-20 business plan is for ASTAE to continue as a program with ESMAP funding. However, with the current level of resources pledged for ESMAP, it will be difficult to fund ASTAE at the same level

that was available for the business plan period FY2012-17 with resources provided by Netherlands, Sweden, and United Kingdom. The intention is to program \$12 million for the Asia Energy Transition initiative as a follow-up to ASTAE for the FY2017-20 business plan period from ESMAP resources. Detailed discussion of the way forward was deferred to the CG Closed Session (held on April 22, 20147).

During the discussion on ASTAE activities, the team clarified that in programming \$24 million in the last business plan cycle, half was directed to renewable energy, one-third for energy access, and about 15 percent for energy efficiency; all the resources are expected to be fully disbursed by June 2017. It is worth noting that the expected outcomes generated by ASTAE-funded activities have exceeded initial business plan targets. The team referred to examples of ASTAE-funded activities in Philippines (support for electricity cooperatives), Mongolia (scaling up renewable energy), and Indonesia (regulatory framework on geothermal) that have resulted in leveraging of ASTAE resources. Several CG members made positive references to ASTAE's results framework and suggested that a similar approach be considered for ESMAP.

SMALL ISLAND DEVELOPING STATES

Ms. Silvia Martinez Romero, Senior Energy Specialist, ESMAP, provided an update on the status of the SIDS DOCK portfolio and highlighted the impact of several projects. In Sao Tome and Principe, SIDS DOCK support has led to a \$29 million investment lending operation, while the geothermal exploration support to Dominica and Saint Lucia has led to the preparation of two lending operations of up to \$60 million. In Seychelles and Mauritius, the projects have had

significant impact on renewable energy targets, policies, and technical requirements.

The current pipeline contains 10 projects across the Pacific, Caribbean, and Africa. While disbursements have been slow, especially in the initial stages of each project, implementation speed is currently improving. To ensure full implementation of current projects as well as new projects to be funded from the second tranche of funding by Japan, ESMAP is requesting Denmark and Japan to extend the SIDS DOCK Support Program grant agreement closing date from June 2018 to December 2020.

A CG Member asked if ESMAP continues to collaborate with UNDP on implementation of activities and if the grant agreement extension would also include UNDP. The team clarified that ESMAP collaborated with UNDP on program coordination and donor reporting until UNDP closed their part of the program in the summer of 2016 but continues to coordinate with UNDP on any country-level activities. ESMAP management confirmed that the grant agreement extension will only concern ESMAP administered funds.

The CG members representing Denmark and Japan indicated that they will confirm the extension of the SIDS DOCK Support Program grant agreement as soon as possible.

Session 7: Energy Efficiency Thematic Area

Mr. Ivan Jaques, Senior Energy Specialist, ESMAP, made an introductory presentation, emphasizing how ESMAP-financing supports scaling-up energy efficiency in cities to change business-as-usual and to avoid locking in costly, polluting, and inefficient development through: (i) mobilizing the private sector and leveraging financing; (ii) promoting market transformation in building energy efficiency; (iii) catalyzing a strategic shift in client countries and WBG operations to mainstream energy efficiency in projects; and (iv) facilitating partnerships to harness knowledge, experience, and good practices.

In responding to queries from CG members, the team emphasized that ESMAP's work in energy efficiency is part of the Bank's energy engagement and closely linked to broader sector issues. In the current business plan, ESMAP seeks to enhance its focus on IDA countries. The discussion focused on the following topics:

- **Collaboration.** In response to a CG member query regarding collaboration, the team offered the following examples: (i) with the IFC to develop the EDGE program, to explore and facilitate linkage with World Bank IBRD/IDA operations, and to develop a pilot (with the urban and climate change practices of the World Bank) for exploring how auction mechanisms could finance building energy efficiency; and (ii) with the World Bank Water Global Practice to promote energy efficiency in water supply and sewerage.
- **Focus on Low-income Countries.** ESMAP is expanding its efforts, including through other World Bank Global Practices, in order to support IDA delivery, for example, by supporting integration of energy efficiency in a housing project in Cote d'Ivoire led by the World Bank's Social, Urban, Rural and Resilience (SURR) Global Practice, and working with the Water Global Practice on utility efficiency improvements.
- **Sector Reforms and Standards & Codes.** The team gave further details on how ESMAP energy efficiency interventions are embedded in the Bank's broader policy dialogue in the energy sector, including on pricing. The team identified examples such as the work in Panama to develop energy efficiency standards and codes for building and appliances.
- **Sustainable and Efficient Buildings.** There was also discussion on how ESMAP could support a triple-win through the integration of phase down of hydrofluorocarbons (HFCs - powerful greenhouse gases) targeted by the Kigali Amendment to the Montreal Protocol, with energy efficiency, especially in the case of measures related to space cooling and refrigeration, which are linked to ESMAP's work.

Session 8: Energy Access Thematic Area

An introductory presentation was made by Ms. Dana Rysankova, Senior Energy Specialist, ESMAP, covering the following main points: (i) international community is not on target to achieve global universal access in line with SEforALL targets unless we effectuate a rapid acceleration; (ii) such acceleration is possible, as exemplified by Kenya, with timely support from ESMAP, IDA, and other development financing partners; (iii) ESMAP has the right tools and experience to help with the acceleration through its programs on grid electrification, mini grids, and clean cooking and heating; (iv) *Lighting Africa* is a good example of how support can be used for mini grids and clean cooking and heating to reach the inflection point in market transformation; (v) challenges ahead include policy inertia towards change, underperforming utilities, and bridging the gap between cost of service and consumer affordability; and (vi) solutions to these challenges exist, but require consistent support, sharing of best practices, and continued innovation.

The CG acknowledged ESMAP's approach straddling the public and private sectors towards to accelerate energy access. Discussions were around the following topics:

- **Energy Access as a Public Good.** Responding to a CG member's query about whether access can be provided to the poorest households using a public good model, the ESMAP team emphasized that reaching universal access will require both scaling up private-based solutions (to reach households capable of paying for electricity) and public support solutions for poorer households and those living in remote areas. In this context, results-based financing mechanisms have proven useful in reaching underserved poorer populations.
- **Developing Local Capacities.** Building local capacities is an essential part of developing an electrification program. In particular, as the progress accelerates, it is essential to work simultaneously develop adequate capacity for both utilities and private providers to expand.
- **Geospatial Analysis.** ESMAP is working on improving geospatial least-cost electrification tools. In the past, the focus of these tools was to chart the least-cost electrification grid roll-out, with less attention to how mini grids and off-grid solutions could be integrated. Now, geospatial planning includes zooming in the off-grid areas on population clusters, to inform both government and the private sector. The least-cost planning algorithms are also being improved. The decision of which households should be grid or off-grid electrified should be based on expected loads (e.g., for smaller loads, off-grid technologies may be a more viable option). Finally, geothermal planning is used more as a dynamic tool that allows scenario planning, in order to, for example, take into account different realities on the ground (financial strength of utilities, generation capacity, etc.) and therefore develop alternative paths to achieve universal access through a combination of grid and off-grid solutions.

Session 9: Renewable Energy Thematic Area

Mr. Pierre Audinet, Senior Energy Economist, ESMAP, presented the objective, scope and challenges of the renewable energy activities which, since FY2014, have provided more than \$30 million in support to 40+ countries. As renewable energy costs are declining and investments are picking up across the globe, ESMAP provides support to organize, manage, and facilitate efficient renewable energy scale-up and avoid unplanned growth. ESMAP does this by: (i) creating consensus around key renewable energy issues; (ii) pushing boundaries to help countries on a renewable energy trajectory, for instance, through strategic planning and long-term engagements (e.g., in Vietnam, ESMAP has been engaged since 2010 through interventions to promote renewables that have resulted in several policy changes and planned investments in solar PV); (iii) leveraging public and private capital; and (iv) building partnerships to maximize impact. The renewable energy program is proposing to address key challenges for ESMAP to scale up support with the following measures: (i) meeting growing demand by implementing a programmatic and wholesale approach; (ii) building consensus to clarify the role of the public sector; and (iii) expanding partnerships to maximize impact of constrained resources.

CG Members strongly supported the strategic direction and scope of activities supported under the ESMAP renewable energy thematic area, with the discussion centered around the following topics:

- **Leveraging of Finance.** In response to queries from several CG members regarding financial leveraging to scale-up and meet SDG targets, the ESMAP team highlighted that ESMAP support for concentrated solar power (CSP) has leveraged more than \$2 billion for the 500+ MW Noor I-III CSP project in Morocco, while the Global Geothermal Development Program is expected to leverage more than \$1.5 billion in public and private capital. The team also noted that the challenges linked to variable renewable energy (VRE) integration will require significantly more concessional funding support while generating commercial financing for generation is somewhat easier. The CG encouraged all ESMAP programs to similarly focus on mobilizing investments.
- **Support for Wind, Hydropower, Biomass, and other Renewable Energy Technologies.** The ESMAP team clarified that while support for wind energy has not been a part of the ESMAP/WBG portfolio in recent years given private sector financing of the sector, it could be considered in the future, similar to ESMAP's approach to solar, with a primary focus on resource mapping,² development of auxiliary infrastructure (such as solar parks), and improvement of the broader regulatory framework. Apart from the resource mapping activities on small-hydropower and biomass, there are no dedicated global programs on hydropower and biomass in ESMAP and demand for support to these technologies is met through Annual Block Grants.
- **ESMAP Tools.** In response to CG queries regarding demand for ESMAP tools, the team noted that the Global Solar Atlas webpage, which was launched in January 2017, has generated more than 40,000 page views. ESMAP seeks to create additional interest in client countries and is focusing dissemination efforts on developers and public institutions. Going forward, ESMAP is shifting the focus of the solar mapping activities from modelling development to installation of measurement stations for which there is growing demand.³ In parallel, ESMAP is working to launch the Global Wind Atlas to complement the Global Solar Atlas.
- **Partnerships.** Several CG Members inquired about the collaboration with the IFC and other external stakeholders, such as SEforALL, IRENA, and the International Solar Alliance. The team described the close coordination with IFC on country-level activities under the WBG *Scaling Solar* initiative. For example, in those countries where the independent power producer (IPP)-based procurement of solar capacity is not feasible, ESMAP has the ability to support alternative approaches to the procurement of such capacity. With IRENA, there is close collaboration on mapping and on auction design capacity building. ESMAP hosts the Knowledge Hub under the SEforALL; further collaboration with

² In Ethiopia, a good example of such approaches, ESMAP has conducted wind mapping activities and the WB is now working with Denmark on wind development to increase bankability of wind projects through site measurements, preparation of standardized power purchase agreements (PPAs), and other regulatory support.

³ Analysis of the cost-benefit of measurement investments shows potential benefits of \$70 million when 1GW of installed capacity is informed by a publicly funded measurement campaign, at the cost of \$0.5-1million.

the SEforALL network to disseminate ESMAP knowledge products is under consideration. ESMAP stands ready to work with the International Solar Alliance (ISA) under the framework of the Memorandum of Understanding (MoU)⁴ signed between the World Bank and ISA in June 2016.

⁴ The MoU envisions strengthening cooperation in areas such as mobilization of financing for deployment of solar energy, technical assistance and knowledge transfer, and organization of selected events. ESMAP partnered with ISA in the launch of the Global Solar Atlas and has also set aside resources to finance a limited number of experts within ISA's envisioned Solar Policy and Investment Advisory Hub (SPIAH).

Session 10: Africa Grid Solar Program

The opening presentation by Mr. Pierre Audinet, Senior Energy Economist, ESMAP, conveyed: (i) the problem being addressed; (ii) the WBG approach; and (iii) the ESMAP technical assistance component. The Africa region is endowed with massive solar resources and need for energy access with regional variations in endowments and capacities: (i) the West African Power Pool with a weak grid and good resources; (ii) the East African Power Pool with better grids but poor resources; and (iii) the South African Power Pool with medium-quality grid connectivity and good resources. Therefore, a regional approach is being undertaken to remove some of the barriers, help integrate the regional market, and harmonize regulatory rules. Close collaboration with IFC is maintained with the IFC focusing on procuring generation, while the World Bank focuses on grid infrastructure.

ESMAP proposed to allocate a significant share of its Solar Support Program budget to this initiative. ESMAP support will also focus on the coordination between hydropower and solar, along with the required grid integration studies to pre-identify and address issues that may emerge from high penetration of renewables. Efforts are also underway to mobilize additional funds from the China Trust Fund and the Korean government.

Some CG members voiced concern whether it is the right time, place and packaging for large-scale solar projects in Africa. One of the concerns related to the integration of high shares of renewables in regions with weak grid infrastructure such as in Africa. The World Bank team clarified that addressing these constraints is one of the priorities of the Bank's program.

CG members also requested information on how the Program would collaborate with other initiatives and actors, such as American Renewable Energy Institute (AREI), IRENA's Africa Clean Energy Corridor, and the African Development Bank.

Session 11: Asia Energy Transition (Follow the Carbon)

The introductory presentation by Ranjit Lamech, Director EEX, covered the following main points: (i) the next five years are critical to accelerate energy transition and reduce climate change impact; (ii) the Energy Transition Asia (planned ESMAP budget of \$12 million) focuses on six countries—China, Indonesia, Vietnam, India, Pakistan, and Philippines in East and South Asia—to curb mitigation of 260 Gt CO₂ emissions from coal-fired power plants by scaling up renewable energy and energy efficiency in those countries; (iii) the project builds upon four pillars—concessional finance (GCF, GEF, etc.), technical assistance, partnership and outreach, and knowledge exchange; and (iv) for financing of the necessary investments the initiative pursues two levels of partnership—delivery of co-financing together with ADB and AIIB as well as domestic and international commercial financing.

There was broad support from the CG for the initiative and ESMAP's upstream role in helping deliver technical assistance. CG Members had the following suggestions regarding the initiative:

- **Climate Diplomacy.** Several CG members suggested that the climate diplomacy instruments of the donor countries (e.g., through the G20 process) could be deployed in coordination with the WBG’s Climate Leaders to help promote the initiative.
- **Domestic Policy Issues.** Local pollution issues could be the entry point for the dialogue on clean energy interventions. The proposed initiative should also be cognizant of the local tax regimes in the participating countries that could be antithetical to the energy transition agenda.
- **Hydropower Scale Up.** The World Bank’s Energy and Water Global Practices collaborate on employing donor resources that have been provided for hydropower scale up.

Session 12: Annual Block Grants for Energy Sector Governance, Markets, and Planning

Mr. Victor Loksha, Senior Energy Economist, ESMAP, introduced ESMAP support through Annual Block Grants (ABGs), making the following main points: (i) achieving the goals of SDG7 requires well-functioning power sectors; (ii) “cascade” approach to infrastructure finance puts commercial finance and sector reforms first; (iii) ESMAP approach in FY2017-20 is to support regions with ABGs⁵ in the areas of governance, planning, and markets, prioritizing utilities/energy sector reform, power system planning, and regional integration of infrastructure; (iv) between FY2014-16, 50 completed activities in 33 countries funded by \$9.8 million in ABGs informed \$1.5 billion of WBG operations; and (v) ABGs support private sector participation in the energy sector through mobilization of non-Bank resources for development finance and joint work with IFC.

A CG member suggested that ABG be retitled as “Regional Allocation for Policy and Planning Support (RAPPS),” to emphasize that the modality is more than just a provider of financial resources. In particular, TAG recommended that ESMAP develop new tools and approaches for utility reforms in the context of the Bank’s rethinking of power sector reforms and increasing penetration of variable renewable energy.

ESMAP management clarified that the ABG modality grants on average \$1 million per year per region and that the ESMAP business plan is flexible; there are possibilities of supplementing funds to ABGs with specific thematic programs, such as Gender or Hydropower. Finally, ESMAP will look into suggestion of a new label for the ABG modality.

Session 13: Presentation of New M&E Portal

The new M&E portal was introduced by Ms. Brenda Manuel, Senior Operations Officer, ESMAP. CG members welcomed the new Portal and made the following suggestions to strengthen the ESMAP M&E

⁵ For example, ABGs offer technical assistance to government bodies, regulators, or system operators on institutional/governance structures attractive to private sector, cutting-edge options for market design, power sector reform options, and lessons from experience.

system: (i) seek volunteers (TAG, some CG members) to test the new portal; (ii) ESMAP to adopt ASTAE indicators, with all the associated caveats; (iii) provide link or data on energy indicators from the [WBG Corporate Scorecards](#);⁶ (iv) review established indicators of ESMAP donors to determine whether they can be easily captured as part of M&E reporting; and (v) explore registering/publishing ESMAP data to the International Aid Transparency Initiative (IATI) Standard.⁷

It was also agreed that the reporting format agreed with the European Commission be considered for reporting on the thematic and cross-cutting programs. CG members were requested to review the European Commission's format and provide feedback to ESMAP management. One donor requested that the annual portfolio review be posted on the ESMAP website.

ESMAP's has developed a Risk Framework (shared with the CG at the meeting) to identify assumptions or risks to achieve outcomes. CG members were requested to provide their comments to ESMAP management.

Session 14: Energy Subsidy Reform

Ms. Sheoli Pargal, Lead Energy Economist, ESMAP, provided an update on the Energy Subsidy Reform Facility (ESRF), highlighting that energy subsidies are still large today (\$325 billion)—relative to those on renewables—despite the fall in oil prices globally. The persistence of energy subsidies leads to overuse of fossil fuels and undermines climate change mitigation; moreover, subsidies tend to be regressive. Energy subsidy reforms require a holistic approach to the issue, including appropriate diagnostics, such as political economy and poverty and social impact analyses. It is also key to address the root cause of power utility financial problems that necessitate subsidies in regions such as Africa. The ESRF represents a shift in the Bank's approach to energy subsidy reform by addressing the issue in a comprehensive manner and providing hands-on, customized, multi-year technical assistance to country teams, with due consideration of social and political sustainability. Discussions focused on the following issues:

⁶ The World Bank Group/World Bank Corporate Scorecards provide an overarching view of the results and performance indicators of the three World Bank Group institutions: The World Bank (WB), the International Finance Corporation (IFC), and the Multilateral Investment Guarantee Agency (MIGA). The Scorecards are published annually in the Fall with an update issued in the Spring.

⁷ The IATI Registry provides links to the data published by all registered organizations or programs using the IATI Standard.

- **Scope of ESRF Activities.** A CG member inquired about the scope and coverage of subsidies under the facility. A few CG members asked how subsidies are defined and measured, remarking on the need to understand how subsidies are calculated by other international organizations, as well. The team responded that the ESRF covers fuels, district heating, and power subsidies. A multifaceted Energy Subsidy Reform Assessment Framework (ESRAF) is being developed by the World Bank, which is expected to provide a consistent basis for diagnostic work by World Bank teams engaging in the measurement of energy subsidies and design/implementation of energy subsidy reform. It will be made publicly available for partners to use, as well.
 - **Continued Support and Absorptive Capacity.** A few CG members expressed interest in increasing their involvement on the energy subsidy reform issue but asked whether the budget allocated to ESRF can be absorbed. The team noted that there is significant demand from countries in different regions, that ESRF responds to demand, and that absorptive capacity is not a problem.
 - **Global Advocacy and Partnerships.** A CG member indicated that ESRF should play a larger role in global advocacy as the energy subsidy reform issue needs even more international attention. Another member inquired how ESRF coordinates with the Global Subsidies Initiative (GSI) and the Friends of Fossil Fuel Subsidy Reform (FFFSR)
- beyond the forthcoming FFFSR Spring Meetings side-event being organized by the World Bank through the Nordic Executive Director's office. They asked that the routine coordination between ESRF, IEA, and GSI that was in place earlier be reactivated. Donors expressed interest in being kept informed about bilateral activities connected to ESRF financing.
- **Energy Subsidy Reform and Climate Change.** A CG member noted that energy subsidy reform is an integral part of the global response to climate change. The pilot Energy Subsidy Reform - Energy Efficiency Swap supported by ESMAP in Ukraine is a good example of what can be done at the technical assistance level and further initiatives in this respect would be welcomed. A CG member inquired about ESRF's interaction with carbon pricing initiatives and associated peer exchanges. The ESMAP team confirmed that the World Bank's Macro-Fiscal Global Practice and Climate Change Cross-Cutting Solutions Area are engaged in these discussions.
 - **Specific Results and Country Briefs.** Several CG members welcomed the sample Country Brief for Ukraine that had been shared and requested that similar knowledge products be made available. All donors expressed interest in the reporting template that has been agreed with the European Commission. The team noted that ESRF is a young facility and while its support has helped in cases such as Ukraine and Egypt, it is still a bit early to report additional results.

In closing, it was agreed that the reporting format of the European Commission will be shared with all donors. Additional briefs on ESRF country engagements and outcomes will be shared as work progresses. Ways of strengthening cooperation with International Institute for Sustainable Development's Global Subsidies Initiative (IISD/GSI) and other partners will be examined going forward.

Session 15: Communications and Knowledge Management

COMMUNICATIONS

Ms. Nansia Constantinou, Communications Officer, ESMAP, presented the communications work during the last year: (i) outlining ESMAP's communication objectives and approaches; (ii) highlighting the main successes and deliverables; (iii) introducing ESMAP's new website; and (ii) setting forth proposals for simplifying content, including ESMAP's Annual Report.

Several CG members appreciated that ESMAP's communications team had accomplished a lot in one year, especially with the development of the new website. Discussions were around the following topics:

- **Social Media.** Several CG members noted that social media would help ESMAP's outreach and dissemination, remarking that such outreach must be targeted through identified regional or local channels. Acknowledging the usefulness of social media, the ESMAP team agreed to explore the feasibility of reopening ESMAP's own channels taking into consideration WBG guidelines. The TAG also raised a question about developing a mobile application (app) for ESMAP, an option that has not been explored yet.
- **Branding.** CG members emphasized their interests in further strengthening of the ESMAP brand, especially within the WBG and among partners. The team reassured the CG that ESMAP has been very focused on branding and will further enhance brand prominence when it serves best to do so. Examples are RISE and SEAR websites, which were developed based on the new ESMAP site design to align with ESMAP's image. In some instances, it makes more sense to leverage the WBG brand, placing ESMAP under this larger umbrella.
- **Annual Report.** The proposal for a leaner and more interactive Annual Report was supported by the CG. Some members noted that while the Annual Report provides a great snapshot of ESMAP's progress, information on specific topics and activities can still lack the granularity needed for donor-specific reporting to governments. A potential approach is to prepare a lean Annual Report and provide supplemental information, such as the program-level reports in the format agreed with the European Commission, Impact stories and country briefs, through links to the new website and M&E database. It was also noted that preparing a leaner report would free up resources to pursue additional communication efforts.

KNOWLEDGE MANAGEMENT

Mr. Ramesh Ramankutty, Lead Specialist, ESMAP, provided an update on the implementation of the ESMAP Knowledge Management (KM) work plan, emphasizing that elements of ESMAP KM were developed to straddle the M&E and Communications functions of ESMAP, and to connect seamlessly to the KM agendas of World Bank Energy Global Practice and World Bank Group. The work plan, was initiated with an audit of current KM work at ESMAP and an assessment of potential audiences,

undertaken in consultation with World Bank's Energy Global Practice KM and Global Solutions Leads. The Work Plan contains eight elements across four pillars:

- **People:** (i) Expert Connector—to facilitate internal and external stakeholders in connecting to ESMAP staff; and (ii) People Flow—to manage the in and out flow of ESMAP staff for operational effectiveness.
- **Products:** (i) Knowledge Menu—to create menu of knowledge products per audience/desired impact; and (ii) Energy Radar—to create a mechanism to monitor internal and external energy knowledge (i.e., demand, gaps, hot topics).
- **Processes:** (i) Knowledge Impact—to simplify and streamline knowledge dissemination for higher impact; and (ii) Answers Now—to design a simple process for embedding ESMAP in large Q&A initiatives.
- **Platforms:** (i) Online Knowledge Repository—to ensure ESMAP knowledge is stored and easy to find by key stakeholders; and (ii) Face-to-Face—to provide platform for personal interactions.

The alignment of responsibilities across ESMAP and EEX for activities under the eight elements is being finalized as a prelude to implementation during FY2017-18.

The CG requested that attention be also paid to outward-facing elements of KM so that external stakeholders also benefit from the work of ESMAP. Several CG members acknowledged the benefits of ESMAP staff members and/or WBG TTLs visiting their respective organizations during their travels through Europe to provide updates on ESMAP work; similar appreciation was expressed regarding invitations to WBG/ESMAP events in partner countries.

ESMAP Knowledge Forum. Several CG members supported the proposal from ESMAP management to hold an ESMAP Knowledge Forum in autumn 2017; a couple of CG members indicated their willingness to host the event and agreed to follow up after consultations with their respective organizations.

Annex B

Results and Targets Achieved for FY17-20 Business Plan

Thematic/Cross Cutting	Targets for FY2017-20 Business Plan	Results Achieved FY2017
	10 countries confirm using the results of ESMAP-supported energy sector assessments in policy decisions	2 out of 10 In Serbia, ESMAP-funded TA represents the first systematic assessment of the natural gas sector in Serbia and the first time the Government is committing to fact based decision making in the context of the financial stabilization of the national gas utility Srbijagas In Kenya, the completed tasks under ESMAP-supported TA have contributed to the institutional capacity to transition to a competitive wholesale market and enhanced ERC's capacity to undertake Regulatory Impact Assessment (RIA) on specific regulations.
ABGs for Governance, Markets and Planning	Preparation of 10 new investment and TA lending operations, 10 existing operations informed; Mobilization of private sector investment and other non-Bank resources facilitated in 10 countries	18 out of 20 18 new and existing lending operations informed 5 out of 10: mobilization of co-financing or other financiers
	Clients in 20 countries confirm enhanced institutional capacity to improve the performance of the power sector	5 out of 20 Jordan Energy Sector Assistance strengthened NEPCO's capacity in procurement procedures by conducting a review of NEPCO's current procurement practices Uzbekistan Power System Dispatch and Renewable Energy Integration helped build the institutional capacity in the Government and Uzbekenergo (UE) – the holding company that oversees the energy sector - for integrated power generation and transmission planning

Kenya: Implementation Roadmap of Energy Bill the transition to a competitive wholesale market

Moldova: Just-in-time Support to streamlining of District Heating regulatory methodologies and processes allowed updating existing power system models and provided hands-on HVDC training to Moldelectrica

Greater Mekong Sub-Region (GMS) Power Market Development Programmatic TA informed government policy and regulations in the power sector and improved compatibility of national regulatory frameworks in the GMS, reflecting international best practice.

Energy Access Efficient Clean Cooking & Heating	4 cooking heating country program operations or activities developed in the lending portfolio, of which 2 with an explicit approach for improved equity of male and female participation across the value chain.	0 out of 4 (Kenya project approved in July 2017 and Kyrgyzstan project approved in Oct. 2017 will be reported in FY18)
	2 countries or programs with new or with updated enabling and regulatory frameworks.	2 out of 2 The East African Community Customs Union approved reduction of import duty rate from 25% to 10% for appliance for solid fuel (Legal Notice No. EAC/32/2016). Hebei province of China adopted the updated stoves emission standard and testing protocol and the results-based incentive mechanism in its stove promotion program.
	4 enterprises that are “new entrants” in a specific country or market segment for clean cooking & heating	12 (exceeded the target) 8 new enterprises under the Indonesia project and 11 under the Uganda project
Energy Access Global Facility on Mini Grids	3 new World Bank operations informed	1 out of 3 Niger: Solar Electricity Access Project
	US\$50 million of concessional funds mobilized	US\$35M IDA Investments (Niger)
	5 countries supported for project identification and preparation	7 out of 5 Ghana, Haiti, Liberia, Kenya, Nepal + Niger, Nigeria
	5 countries provided with technical assistance for project implementation	3 out of 5 Mali, Myanmar, Tanzania

Energy Access Lighting Global	At least 8 WB projects with solar off-grid components supporting growth of sustainable markets, mobilizing private sector funding	4 out of 8 Lighting Africa-supported projects with sizeable off-grid components were approved in FY17 (Rwanda, Zambia, Niger)
Energy Access Urban Poor Electricity Access Program	2 new WB energy access projects supported	1 out of 2 Argentina Metropolitan Buenos Aires Urban Transformation Project
	2 projects with expanded scope of beneficiaries	--
	2 South-South exchanges conducted	1 out of 2 Kenya Electricity Expansion Project (P153179) brought together utility experts from Rio Light, EPM and Eskom.
Energy Access SE4ALL Technical Assistance	5 countries have been supported in the definition and implementation of energy sector wide approaches and tools	1 of 5 countries Kenya
	At least 4 existing geo-spatial plans improved	0 out of 4 Improved geospatial plan for Nigeria underway (greater focus on mini-grid and off-grid activities)
Energy Efficiency Energy Efficient Cities Project Preparation Facility	At least 8 WBG operations informed	4 out of 8 4 new operations informed by FY17 grants (Argentina, China, Tanzania, Vietnam)
	Support TA for ≥35 cities/regions/countries	19 out of 35 19 cities/regions/countries, including: Argentina (Buenos Aires), Kazakhstan (Almaty, Astana), Panama, Mongolia (Ulaanbaatar), China (Anshan, Fushun, Fuxin, Gaizhou, Metropolitan Shanghai, Shenyang), Ukraine (Chernihiv, Dnipro, Kamianets-Podilsky, Kherson, Kharkiv, Mykolaiv, Odessa, Ternopil)
	At least 5 buildings-related WBG operations include sustainable energy components	1 out of 5 Metropolitan Buenos Aires Urban Transformation Project
Energy Efficiency Efficient and Sustainable Buildings	Increased knowledge and capacity in at least 8 countries to assess and inform building-related planning, policies and investments	0 out of 8
	At least 7 country building-related policies/plans/strategies informed	2 out of 7 TA in Mongolia to enable the development of a

		Roadmap for Efficient Heating in Ulaanbaatar TA to assist two Kazakhstan cities (Astana and Almaty) to efficiently plan and implement EE investment programs in municipal sectors
Energy Subsidy Reform & Delivery TA Program	Policy and/or regulatory reforms on energy subsidies and pricing reforms applied by at least 3 client countries	2 out of 3 Serbia and Iraq
	Country diagnostics in 10 countries. Country demand for further TA and/or implementation of reform following 30% of diagnostic assessments.	0 out of 10 Energy Subsidy Reform Assessment Framework (ESRAF). Decision Meeting was held on June 29, 2017. Country pilots are being initiated in FY18. 3 additional regional studies covering country diagnostics had been prepared (9 countries)
	10 events produced per year; member participation on the platform of at least a third of government members, 300 members by the end of period, 3 significant known collaborations	8 out of 10 Energy Week showcase, 4 BBLs; 2 ESROC webinars; Spring Meetings event with FFFSR held in 2017 255 out of 300 ESROC members
	3 new World Bank operations informed	3 out of 3 Indonesia: Geothermal Energy Upstream Development Turkey Geothermal Development Project Chile Technical Assistance for Geothermal Development Project
Renewable Energy Global Geothermal Development Plan	New round of concessional funds mobilization	--
	Needs assessment in 3 countries	0 out of 3 Preliminary work on a needs assessment for data management in geothermal exploration projects
Renewable Energy Renewable Energy Resource Mapping	>5 external projects informed/supported Target of >\$15m in additional funding leveraged More than 12 countries apply innovative geospatial, GIS, open data and analytics to decision-making	4 out of 12 Indonesia, small hydro data helping to inform least-cost electrification Pakistan, solar data used to inform preparation of Pakistan Solar and Renewable Energy Program Vietnam, solar data incorporated into a geospatial planning exercise to develop a Solar Strategy Zambia, solar data (maps and measurements)

		used to inform preparation of Scaling Solar II
Renewable Energy Solar Technologies Technical Assistance Program	At least 7 new grid-connected solar investment projects financed by WBG and/or other donors and private sponsors	0 out of 7 Support to the preparation of Haiti's Renewable Energy for All Project (to be approved in October 2017)
	At least 8 country assessments, feasibility studies and project structuring completed	1 out of 8 A study to assess the effectiveness of using limited public financial resources in the form of grants, concessional loans and risk mitigation instruments to leverage private capital for the development of grid connected solar projects
Renewable Energy Variable Renewable Energy Grid Integration Support Program	At least 5 new World Bank operations informed	2 out of 5 Mongolia: Second Energy Sector Project India: Shared Infrastructure for Solar Parks
	At least 2 external projects informed/ supported	--
	At least 7 country planning strategies informed	2 out of 7: Sri Lanka: Capacity Building for Planning and VRE Grid Integration; India: Solar Parks – Grid Integration Study and Capacity Building
	At least 5 Country Policies informed	--
SEforALL Knowledge Hub	RISE 2017, RISE 2018, RISE 2020	RISE 2017: www.rise.esmap.org
	GTF 2017, GTF 2018, GTF 2019, GTF 2020	GTF 2017: www.gtf.esmap.org
	MTF 2018 and MTF 2020	--
	SEAR 2017 and SEAR 2019	www.esmap.org/sear

ANNEX C

COMPLETED, NEW, AND ONGOING ACTIVITIES, FY2017

Note: Activities may be receiving funding from multiple Thematic Areas.

EA = Energy Access

EE = Energy Efficiency

GPM = Governance, Planning,
& Markets

O = Other

RE = Renewable Energy

SR = Subsidy Reform

Table C.1| ESMAP Completed Activities, FY2017

COUNTRY/REGION	COMPLETED ACTIVITY	PRIORITY (if applicable)
ENERGY ACCESS		
AFR	AFREA II	Lighting Global
China	Clean Stoves Initiative in Supporting Hebei Pollution Prevention and Control Program	Efficient and Clean Cooking & Heating
Lao PDR	Background Analysis and Design of Health Impact Results-based Financing Mechanism for Clean Stove Initiative	Efficient and Clean Cooking & Heating
ENERGY EFFICIENCY		
Bangladesh	Open Accessibility Planning for Integrated and Inclusive Transport in Dhaka	Efficient City Services
Bangladesh	Energy Efficiency Improvement Program in Industries	Efficient City Services
China	Developing an Innovative Energy Efficiency Financing Mechanism in China	Efficient City Services
China	Green Logistics for Chinese Municipalities	Efficient City Services
China	Energy Saving Management Action Plan for Water and Wastewater Utilities in Guilin	Efficient City Services
EAP	Inclusive Green Growth for East Asia & Pacific Region Cities	Efficient City Services
EAP	Green Transport ICT	Efficient City Services
Global	Data Analytics for Intelligent Energy Systems	Efficient City Services
Global	Capacity Building	Efficient City Services
India	Efficient & Sustainable City Bus Services: Capacity Building Program in Fuel Efficiency	Efficient City Services
Kyrgyz Republic	Urban Development Project	Efficient City Services
Kyrgyz Republic	Efficiency Improvements of the District Heating System in the Kyrgyz Republic	Efficient City Services
LCR	Latin America & Caribbean Region Urban Energy Efficiency	Efficient City Services
LCR	Achieving Energy Efficient Transport in Cities in Latin America	Efficient City Services
Mexico	Municipal Energy Efficiency Project	Efficient City Services
Mexico	International Conference on Energy Efficiency in Cities ^{GPM}	Efficient City Services
South Asia	Scaling Up Energy Efficiency and DSM Business Line in South Asia	Efficient City Services
Tanzania	Dar es Salaam City Water and Sewerage Services Energy Efficiency Review	Efficient City Services
Tanzania	Cycle Mapping for Improved Urban Mobility	Efficient City Services
GOVERNANCE, PLANNING, & MARKETS		

AFR	AFREA II: New Models to Scale Up Power Generation Investments in Africa
AFR	AFREA II: Power and Agriculture in Sub-Saharan Africa
AFR	Uganda-DRC 220kV Interconnector
AFR	AFREA II: African Rural Electrification Concession
AFR	Cost Review of Transmission Development in Africa
AFR	Regional Study on the Performance of Distribution Utilities in Sub-Saharan Africa
Bangladesh	Analysis of Economy-wide Impact of Energy Sector Reforms in Bangladesh
Bangladesh	Policy and System Requirements for Scaling Up Power Trade in Bangladesh
Bosnia & Herzegovina	Power Sector Note
Brazil	Interface between Carbon and Energy Pricing Policy
China	Developing Low-Carbon Strategy for Shenzhen
ECA	Energy Efficiency Financing Option Papers for Kosovo, Turkey, and Georgia
ECA	Directions for the Energy Sector in the Western Balkans ^{SR}
Egypt, Arab Republic of	Gas Regulator Capacity Building
Gabon	AFREA II: Rural Electrification and Water Services Sustainability Mechanism
Global	Gender Equality and Development e-Course
Global	Gender and Large Energy Infrastructure
Global	Thirsty Energy: The Case of China
Indonesia	Indonesia-Philippines South-South Knowledge Exchange Event
Jordan	Energy Sector Assistance: NEPCO Restructuring, Procurement Review, LNG Capacity Building
Kyrgyz Republic	Improving Enabling Environment for Small Hydropower in Kyrgyzstan
LCR	Energizing Agriculture: Enhancing Efficiency in Agriculture in Latin America & Caribbean Region
LCR	Challenges and Opportunities in the Energy Sector
Lebanon	Assessment of the Legal and Administrative Barriers for the Development of the National Hydropower Market for Lebanon
Madagascar	Support for the Development of Small Hydropower IPP
Mali	AFREA II: Support to Energy Services Access
Mexico	Supporting a Low Carbon Economy
MNA	Benchmarking Electricity Utilities Performance in the Middle East & North Africa Region
Moldova	Power System Interconnection Analysis
Myanmar	Economic Cost of Natural Gas Study
Nigeria	AFREA II: Electrification Access Program Development
Nigeria	Unlocking Nigeria's Potential for Gas
South Sudan	South Sudan Energy Sector Technical Assistance Project
Tunisia	Strategic Development of Energy Sector in Tunisia, Phase II
Tunisia	Tunisia-Italy Electricity Transmission Interconnection Project
Turkey	Sustainability of Electricity Distribution Companies
Ukraine	Ukraine JIT: Advice to the Design of Energy Efficiency Fund
Uzbekistan	Impact of Energy Subsidies: Way Forward
Uzbekistan	Power Sector Planning Study

Vanuatu	Energy Sector Development Project
Vietnam	Equitization and Divestiture Strategy for the Vietnam's Electricity Generation Companies
Vietnam	Electricity Market Simulation Model of Vietnam
Vietnam	Roadmap for Natural Gas Market Development
West Bank & Gaza	Securing Energy for Development in West Bank & Gaza

RENEWABLE ENERGY

Guatemala	Guatemala Wind and Solar Integration Study	Integrating Variable Renewables
Indonesia	Renewable Energy Resource Mapping and Geospatial Planning: Indonesia	Resource Assessment & Mapping
LCR	Scaling Up Distributed Generation with Roof-top Solar PV	Integrating Variable Renewables
Lebanon	Wind Energy Resource Mapping: Lebanon	Resource Assessment & Mapping
Madagascar	Renewable Energy Resource Mapping and Geospatial Planning: Madagascar	Resource Assessment & Mapping
Malawi	Renewable Energy Resource Mapping and Geospatial Planning: Malawi	Resource Assessment & Mapping
Seychelles	Improving Electricity Planning	Integrating Variable Renewables
Sri Lanka	Capacity Building for Planning and Variable Renewable Energy Grid Integration	Integrating Variable Renewables

SUBSIDY REFORM

China	Urumqi District Heating Pricing Technical Assistance
China	Fossil Fuel Subsidy Study
Egypt, Arab Republic of	Subsidy Reforms TA from the Energy Subsidy Reform and Delivery Technical Assistance Facility, Phase II
Global	Enhancing Knowledge Sharing on Subsidy Reforms: Case Studies on Political Economy of Energy Subsidy Reform
Iraq	Energy Subsidies and Tariff Reform
LCR	Energy Subsidy Reform in Central America
Ukraine	Moving Forward Energy Tariffs Reforms
Western Balkans	Supporting Energy Subsidy Reform in Southeast Europe

Table C.2| ESMAP New Activities, FY2017

COUNTRY/REGION	NEW ACTIVITY	PRIORITY (if applicable)
ENERGY ACCESS		
AFR	Africa Clean Cooking Energy Solutions (ACCES), Phase II	Efficient and Clean Cooking & Heating
AFR	Increased Electricity Access Support (AGAT) ^{GPM}	Mini Grid Global Facility SE4ALL TA
Argentina	Metropolitan Buenos Aires: Efficient and Sustainable Urban Settlements ^{EE}	Energy for the Urban Poor Efficient & Sustainable Bldgs Efficient City Services
Armenia	Support to PSRC with Review of Investment Plans ^{GPM}	Energy for the Urban Poor
Colombia	Colombia: Energy Sector Engagement	Lighting Global SEforALL TA
Congo, Republic of	Power Sector Reform and Electricity Access Support ^{GPM, SR}	SEforALL TA
ECA	Clean and Efficient Heating in Kyrgyzstan and Tajikistan	Efficient and Clean Cooking & Heating
Kenya	Kenya Geospatial Plan ^{GPM, RE}	Mini Grid Global Facility Integrating Variable Renewables Resource Assessment & Mapping Solar Support Program
Moldova	Just-in-time Support to Streamlining of District Heating	Efficient and Clean Cooking & Heating

	Regulatory Methodologies and Processes ^{EE, GPM}	Energy for the Urban Poor Efficient City Services
Nepal	Project Preparation for Business Models for Private Sector-Led Mini-Grid Energy Access Project	Mini Grid Global Facility
Niger	PV Hybridization of Diesel-based Isolated Grids ^{GPM, RE}	Mini Grid Global Facility Solar Support Program
Niger	Support to Innovative Financing Mechanisms and Business Models to Increase Access through Solar Technologies	Lighting Global Mini Grid Global Facility
Ukraine	Technical Assistance for the Ukraine District Heating Energy Efficiency Project ^{EE}	Efficient and Clean Cooking & Heating Efficient & Sustainable Bldgs Efficient City Services

ENERGY EFFICIENCY

Albania	Project for Integrated Urban and Tourism Development	Efficient City Services
Brazil	BRAZEEC Project Preparation ^{RE}	Efficient & Sustainable Bldgs Efficient City Services Integrating Variable Renewables Solar Support Program
Central America	Towards an Effective Implementation of Energy Efficiency Initiatives in Panama	Efficient & Sustainable Bldgs Efficient City Services
China	Supporting Project Preparation of Shanghai Urbanization Financing and Innovation Project	Efficient City Services
China	Energy Saving Management Action Plan for Water Utilities in Liaoning	Efficient City Services
China	Supporting Implementation of New Urbanization Strategy in Chongqing	Efficient City Services
Cote d'Ivoire	Urban Density and Quality Buildings for an Energy Efficient Abidjan	Efficient & Sustainable Bldgs
ECA	Financing of Public Buildings in the Western Balkans ^{GPM}	Efficient & Sustainable Bldgs
ECA	Energy, Gender, and Social Inclusion in the ECA Region	Efficient City Services
Global	Scaling-Up Energy Efficiency Investments in Water Utilities	Efficient City Services
Global	Efficient and Sustainable Buildings	Efficient & Sustainable Bldgs
India	Strategic Options for Energy Efficiency Scale-Up ^{GMP}	Efficient & Sustainable Bldgs
Kazakhstan	Energy Efficiency Transformation in Astana and Almaty ^{GPM}	Efficient & Sustainable Bldgs Efficient City Services
Kyrgyz Republic	Energy Efficiency in Public Buildings in Kyrgyzstan	Efficient & Sustainable Bldgs
Mongolia	Ulaanbaatar Efficient Heating Project	Efficient & Sustainable Bldgs
Philippines	Improving Energy Efficiency in Public Buildings	Efficient & Sustainable Bldgs
Ukraine	Sustainable Urban Mobility for Odessa	Efficient City Services
Ukraine	District Heating Sector Transition ^{GPM}	Efficient City Services
Ukraine	Energy Efficiency Fund Development Technical Assistance	Efficient & Sustainable Bldgs
Vietnam	Energy Efficiency for Industrial Enterprises GCF Proposal	Efficient City Services

GOVERNANCE, MARKETS & PLANNING

Afghanistan	Energy Study	
AFR	Lighting Africa	
AFR	AFREA II: Gender and Energy Program	
AFR	Africa Energy Strategy	
AFR	Low Carbon Options for Small Power Systems in Sub-Saharan Africa ^{RE}	Integrating Variable Renewables
Albania	Power Exchange Implementation Support in Albania	
Algeria	Algeria Vision 2035: Energy Efficiency	
Brazil	Smartening the Grid to Fix Broken Utilities: Sharing the Experience of the Large Eletrobras Project	
Brazil	Revisiting Power and Gas Sector Reforms in Brazil ^{RE, SR}	Integrating Variable Renewables

Caribbean	Caribbean Energy Sector Strategic Support	
Congo, Democratic Republic of	Power Sector Report and Policy Dialogue	
EAP	East Asia & Pacific Region Gender and Energy Facility	
India	Support to 24x7 Scheme for Jharkhand ^{RE}	Integrating Variable Renewables
Indonesia	Development and Pilot of Solar Auction Roadmap Workshop ^{RE}	Solar Support Program
Iraq	Power Sector Planning and Operations Improvement	
Kosovo	District Heating Sector Assessment	
LCR	Energy Sector Policy Notes for LC6 Andean Countries	
LCR	Energy Markets: Challenges and Opportunities, Phase II ^{RE}	Integrating Variable Renewables
LCR	Latin America & Caribbean Region Energy and Gender Program	
Malawi	Energy Policy Review and Sector Engagement Strategy ^O	
MNA	Increasing Pan-Arab Regional Energy Trade	
Myanmar	Support for Implementation of the Sustainable Energy for All and National Electrification Program in Myanmar	
Papua New Guinea	National Policy on Benefit Sharing in Hydropower Projects	
São Tomé & Príncipe	Strengthening Energy Monitoring/Planning	
SAR	Analyzing the Benefits of Improving Generation Efficiency of Power Plants in Bangladesh and Pakistan	
Solomon Islands	Tina River Hydropower Development Project: Benefit Sharing and Technical Quality Assurance	
Uganda	AFREA II: Uganda Clean Cooking Supply Chain Expansion	
Ukraine	Market Assessment of Small Hydro Rehabilitation in Ukraine	
Ukraine	Advancing Energy Tariff and Subsidy Reform Implementation ^{SR}	
Uzbekistan	Power System Dispatch and Renewable Energy Integration ^{RE}	Integrating Variable Renewables

RENEWABLE ENERGY

AFR	Solar Resource Mapping: East Africa	Resource Assessment & Mapping
Armenia	Variable Renewable Energy Grid Integration Support	Solar Support Program
Bangladesh	Renewable Energy Resource Mapping: Bangladesh	Resource Assessment & Mapping
Cabo Verde	Distributed Renewable Energy	Integrating Variable Renewables
Ethiopia	Renewable Energy Resource Mapping	Resource Assessment & Mapping
Global	State of Electricity Access Report (SEAR) Dissemination	Integrating Variable Renewables
Global	Global Solar Atlas	Solar Support Program
Global	ESMAP Solar Support Program	Solar Support Program
Global	Global Wind Atlas	
Global	Effectiveness of Public Finance in Attracting Private Capital for Grid Connected Solar Projects	Solar Support Program
Haiti	Solar and Variable Renewable Energy Integration	Integrating Variable Renewables Solar Support Program
Lao PDR	Renewable Energy Resource Mapping: Lao PDR	Resource Assessment & Mapping
Mongolia	Renewable Energy Integration for Mongolia's Western Energy System	Integrating Variable Renewables
Serbia	Power System Study	Integrating Variable Renewables
Turkey	Geothermal Development Project (co-hosting of the 2 nd IGC Türkiye Geothermal Congress 2017) ^{GPM, RE}	Global Geothermal Development Solar Support Program
Vietnam	Scaling-Up Solar PV in Vietnam	Solar Support Program
Western Africa	Variable Renewable Integration in the West Africa Power Pool Grid	Integrating Variable Renewables

SEforALL

Global	Multi-Tier Framework Enterprise Survey	
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Global Sustainable Energy for All Global Tracking Framework, 2017

SUBSIDY REFORM

Belarus	Heat Tariff Reform and Social Impact Mitigation Study
Kyrgyz Republic	Energy Sector Reforms in Kyrgyz Republic
Myanmar	Support for Sustainable and Socially Inclusive Electricity Pricing and Reform
Nepal	Energy Tariff Reform in Nepal

Table C.3| ESMAP Ongoing Activities, FY2017

COUNTRY/REGION	NEW ACTIVITY	PRIORITY (if applicable)
ENERGY ACCESS		
AFR	AFREA II: Africa Electrification Initiative	Mini Grid Global Facility
Congo, Democratic Republic of	AFREA II: Scaling Up Electricity Access, DRC	Energy for the Urban Poor SE4ALL TA
Global	Global Facility for Promotion of Green Mini Grids	Mini Grid Global Facility
Global	Efficient, Clean Cooking and Heating (ECCH) Program	Efficient and Clean Cooking & Heating
Indonesia	Supervision and Preparation of Scale-Up of Indonesia Cook Stove Initiative Pilot	Efficient and Clean Cooking & Heating
Kyrgyz Republic	Kyrgyzstan Improving Efficiency of Individual Heating Solutions	Efficient and Clean Cooking & Heating
Lao People's Democratic Republic	Lao PDR Cook Stove Initiative	Efficient and Clean Cooking & Heating
LCR	Central America Clean Cooking Initiative	Efficient and Clean Cooking & Heating SE4ALL TA
Liberia	Liberia Renewable Energy Access Project	Mini Grid Global Facility
Mali	Rural Electrification Hybrid System: CEMG Initiative	Mini Grid Global Facility
SAR	Developing Improved Solutions for Cooking	SE4ALL TA
ENERGY EFFICIENCY		
Egypt, Arab Republic of	Towards Energy Efficiency Implementation in Cities in Egypt	Efficient City Services
Global	City Energy Efficiency Transformation Initiative: Low Carbon Growth for Cities through Energy Efficiency	Efficient City Services
Global	Exploring the Potential for the Application of Solar PV Pumping Technologies in the Water Supply Sector: Utility Energy Efficiency Business Model	Efficient City Services
Global	EDGE Green Building Market Transformation Program	Efficient & Sustainable Bldgs
Global	Capacity Building for Leaders in Energy Efficient Urban Transport Planning, Phase II	Efficient City Services
LCR	Energy Efficient Cities Program	Efficient City Services
Lebanon	Promoting Energy Efficiency in Bus Rapid Transit	Efficient City Services
Mexico	Sustainable Land Use for Energy Efficient Cities	Efficient City Services
Morocco	City Energy Efficiency ^{GPM}	Efficient City Services
Uzbekistan	Towards Energy Efficient Resilient Cities in Uzbekistan	Efficient City Services
GOVERNANCE, MARKETS & PLANNING		
AFR	AFREA II: Africa Electrification Initiative	
AFR	Increased Electricity Access Support Program	
AFR	Role of Subsidies: Financing Electricity Supply and Providing Affordable Access in Sub-Saharan Africa	
Africa	AFREA II: Africa Clean Cooking Energy Solutions (ACCES)	

Africa	AFREA II: Gender and Energy Program	
Belize	Energy Resilience for Climate Adapt	
Bolivia	International Workshop on Deploying New Solar Technologies in Isolated Rural Areas: Supporting their Adoption in the Latin America & Caribbean Region	
Botswana	Renewable Energy and Energy Efficiency Strategies	
China	Promotion of Power Sector Reform to Unlock Renewable Energy Development	
Cote d'Ivoire	Electricity Access Scale Up Program	
Ethiopia	Energy Sector Review and Strategy	
Global	Rethinking Power Sector Reform	
India	North East Region Assessment of Transmission & Distribution Projects Impact on Access to Electricity	
India	Support to Electricity Distribution System Strengthening and Modernization in Andhra Pradesh	
Indonesia	Support to the Integrated Catchment Management-informed project preparation of Matenggeng Pumped Storage Hydro-Electrical Project	
Indonesia	Local Benefit Sharing for Hydropower Projects in Indonesia	
Kenya	Implementation Roadmap of Energy Bill	
Mekong	Greater Mekong Sub-Region Power Market Development Programmatic Technical Assistance	
Myanmar	National Electrification Project: Inclusive Community Participation	
Nepal	Conflict Management and Prevention for Energy Projects	
Serbia	Serbia Natural Gas Sector Analysis ^{RE}	Global Geothermal Development
Somalia	AFREA II: Somalia Power Sector Development Master Plan	
Tuvalu	Energy Sector Development Project	
Ukraine	Facilitating Electricity and Gas Market Reforms in Ukraine	
Vietnam	Support the MOIT to Finalize the Design of Next Phase of the Vietnam National Energy Efficiency Program, 2016-20	

OTHER

Global	Capacity Building for Leaders in Energy Efficient Urban Transport Planning, Phase II	
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RENEWABLE ENERGY

Cabo Verde	Distributed Solar Energy Systems Project	Integrating Variable Renewables
Chile	Technical Assistance for Sustainable Geothermal Development in Chile	Global Geothermal Development
Djibouti	Geothermal Exploration Project	Global Geothermal Development
Ethiopia	Renewable Energy Resource Mapping and Geospatial Planning: Ethiopia	Resource Assessment & Mapping
Ethiopia	Energy Sector Review and Strategy	Integrating Variable Renewables
Fiji	Pre-Feasibility Study and Roadmap for Development Geothermal Power in the Republic of Fiji	Global Geothermal Development
Global	ESMAP Variable Renewable Energy Grid Integration Support Program	Integrating Variable Renewables
India	Solar Parks: Grid Integration Study and Capacity Building	Integrating Variable Renewables
Indonesia	Capacity Strengthening and Risk Mitigation for Geothermal Development	Global Geothermal Development
Kenya	Geothermal Strategy	Global Geothermal Development
LCR	Technical Assistance for Geothermal Project Preparation in Latin America & Caribbean Region	Global Geothermal Development
Maldives	Renewable Energy Resource Mapping and Geospatial Planning: Maldives	Resource Assessment & Mapping

Nepal	Renewable Energy Resource Mapping: Nepal	Resource Assessment & Mapping
Pacific Islands	Variable Renewable Energy Grid Integration for Pacific Islands Sustainable Energy Industry Development Project	Integrating Variable Renewables
Pakistan	Renewable Energy Resource Mapping and Geospatial Planning: Pakistan	Resource Assessment & Mapping
Papua New Guinea	Renewable Energy Resource Mapping and Geospatial Planning: Papua New Guinea	Resource Assessment & Mapping
Tanzania	Renewable Energy Resource Mapping and Geospatial Planning: Tanzania	Resource Assessment & Mapping
Vietnam	Renewable Energy Resource Mapping and Geospatial Planning: Vietnam	Resource Assessment & Mapping
Zambia	Renewable Energy Resource Mapping Initiative: Zambia	Resource Assessment & Mapping

SEforALL

Global	Global Rollout of Readiness for Investment in Sustainable Energy (RISE)
Global	Global Survey for Multi-Tier Energy Access Tracking

SUBSIDY REFORM

Algeria	Energy Subsidies and Price Reform in Algeria
Armenia	Improvement of Power-Tariff Setting and Addressing of Social Impacts of Tariff Increases
Azerbaijan	Poverty and Social Impacts of Improving Fiscal Sustainability and Quality of Power Distribution in Azerbaijan
Egypt, Arab Republic of	Programmatic Energy Reforms in Egypt
Ethiopia	Energy Sector Review and Strategy
Global	Energy Subsidy Reform Knowledge Events
Global	Energy Subsidy Reform Online Community
Global	Energy Subsidy Reform Assessment Framework (ESRAF)
Global	Energy Subsidy Reform Knowledge Products
Haiti	Distributional Analyses and Reform Options for Petroleum Price Reforms in Haiti, Phase II
Madagascar	Pump Fuel Price Subsidy Removal Technical Assistance
MNA	Support to Middle East & North Africa Countries Preparedness of Social Safety Nets for Subsidy Reform: Algeria, Djibouti, Jordan, Morocco, Tunisia, and Yemen
Ukraine	Advancing Energy Tariff and Subsidy Reforms
Vietnam	Electricity Vietnam Communications Strategy for Tariff Reform
Vietnam	Energy Subsidy Reform, Phase I

ANNEX D

PUBLICATIONS, FY2017

Table A4.1: ESMAP Publications, FY2017

ISBN, PUB. NO., OR ISBN	COUNTRY/REGION	TITLE	AUTHOR/TTL
Live Wire 2017/76	AFR	Increasing the Potential of Concessions to Expand Rural Electrification in Sub-Saharan Africa	Richard Hosier, Morgan Bazilian, and Tatia Lemondzhava
P149443 ESMAP Technical Report 010/16	AFR	Rural Electrification with the Shield Wire Scheme in Low-Income Countries: Design, Construction, and Operation	Francesco Iliceto (Consultant)
P149522	Belize	The Power System in the Eye of the Storm: The Call for Energy Resilience and Climate Adaptation in Belize	Migara Jayawardena, Borja Garcia Serna, and Jeusun Han
P156263	Bhutan	Managing Environmental and Social Impacts of Hydropower in Bhutan	Mats Johan Rikard Liden and Rohit Mittal
P154867	Egypt	Energy Efficiency and Rooftop Solar PV Opportunities: Report Summary	Pedzisayi Makumbe
P155434 ESMAP Country Brief	Egypt	Energy Subsidy Reform Facility Country Brief: Egypt	
P157135	Georgia	Europe And Central Asia: Energy Efficiency Financing Option Papers for Georgia ENGLISH Georgian	Jas Singh
P156771 ESMAP Technical Report 011/17	Global	Assessing and Measuring the Performance of Energy Efficiency Projects	Monali Ranade, Martina Bosi, Sara Mills-Knapp, Stephane De La Rue Du Can, and International Institute for Energy Conservation
	Global	Energy Storage Trends and Opportunities in Emerging Markets	ESMAP and IFC
P145157	Global	Enhancing Power Sector Resilience: Emerging Practices to Manage Weather and Geological Risks	Xiaoping Wang, Ray Brown, Guillaume Prudent-Richard, and Katrina O'Mara
978-1-4648-0838-8 WB Directions in Development	Global	Extending the Life of Reservoirs: Sustainable Sediment Management for Dams and Run-of-River Hydropower	George W. Annandale, Gregory L. Morris, and Pravin Karki
Live Wire 2017/74	Global	Increasing the Use of Liquefied Petroleum Gas in Cooking in Developing Countries	Richenda Van Leeuwen, Alex Evans, and Besnik Hyseni
Live Wire 2017/71	Global	Mobilizing Risk Capital to Unlock the Global Potential of Geothermal Power	Roberto La Rocca, Peter Johansen, Laura Berman, and Migara Jayawardena
P154461	Global	Regulatory Indicators for Sustainable Energy (RISE): A Global Scorecard for Policy Makers	Banerjee, Sudeshna Ghosh; Moreno, Francisco Alejandro; Sinton, Jonathan Edwards; Tanya Primiani, and Joonkyung Seong
P148200	Global	SEAR: Energy Access – Building Resilience in Acute and Protracted Crises	Andreas Thulstrup and Indira Joshi
P148200	Global	SEAR: Energy Access – Food and Agriculture	Oliver Dubois, Alessandro Flammini, Ana Kojakovic, Irini Maltsooglou, Manas Puri, and Luis Rincon
P148200	Global	SEAR: Energy Access & Electricity Planning	Mark Idwal Howells, Hans Holger Rogner, Dimitris Mentis, Dimitris, and Oliver Broad

P148200	Global	SEAR: Energy Access & Gender – Getting the Right Balance	Soma Dutta, Annemarije Kooijman, and Elizabeth W. Cecelski
P148200	Global	SEAR: Energy Access and the Energy-Water Nexus	Diego Juan Rodriguez, Anna Delgado, and Antonia Averill Sohns
P148200	Global	SEAR: Energy Efficiency – A Key enabler for Energy Access	Matt Jordan, Jenny Corry, and Ivan Jaques
P148200	Global	SEAR: Modern Energy Access & Health	Jem Porcaro, Sumi Mehta, Matthew Shupler, Sarah Kissel, Michaela Pfeiffer, Carlos Francisco C. Dora, and Heather Adair-Rohani
P148200	Global	SEAR: Results-Based Financing a Promising New Tool for Energy Access	Marco Hüls, Marcel Raats, Josh Sebastian, Martijn Veen, and John Ward
P148200	Global	SEAR: The Climate Change-Energy Access Nexus	Sameer Akbar and Gary Kleinman
P148200	Global	SEAR: The Power of Human Capital – Multi-Level Capacity Building for Energy Access	Emanuela Colombo, Lorenzo Mattarolo, Politecnico di Milano, Stefano Bologna, and Diego Masera
P148200	Global	State of Electricity Access Report (SEAR) Report Overview	
978-1-4648-1084-8	Global	Sustainable Energy for All Global Tracking Framework (GTF): Progress toward Sustainable Energy	
P155434 ESMAP Country Brief	Haiti	Energy Subsidy Reform Facility Country Brief: Haiti	
P147807	India	Communication Research on Energy Efficiency in India: Communication Needs Assessment and Stakeholder Mapping	Heather B. Worley, Ashok Sarkar, Padmanaban Mukhi, Padu S. Neha, Amit Kumar, Jayakrishnan Nair, and Soni Manish
P147807	India	India’s State-Level Energy Efficiency Implementation Readiness	Ashok Sarkar, Naha Mukhi, Padu S. Padmanaban, Amit Kumar, Kulbhushan Kumar, Manoj Bansal, Shyamasis Das, Shuboday Ganta, and Anurag Verma
	India	Utility Scale DSM Opportunities and Business Models in India	Ashok Sarkar, Neha Mukhi, Padu Padmanaban, Amit Kumar, Kulbhushan Kumar, Manoj Bansal, and Shuboday Ganta
P145273	Indonesia	Small Hydropower Mapping and Improved Geospatial Electrification Planning Indonesia Small Hydro Resource Mapping in Indonesia: GIS Database - User Manual Solar Resource and Photovoltaic Potential of Indonesia	Oliver Knight
P145350	Madagascar	Small Hydro Resource Mapping: Prefeasibility Study, Phase 2 – Mahatsara ENGLISH French Small Hydro Resource Mapping: Prefeasibility Study - Fanovana English French Small Hydro Resource Mapping: Hydrological Resource Report, Phase 2 – Ground-based Data Collection English French Small Hydro Resource Mapping: Hydropower Atlas (final report) ENGLISH FRENCH Small Hydro Resource Mapping: Small Hydro Mapping Report, Phase 3 – Production of a	Oliver Knight

		Validated Resource Atlas ENGLISH FRENCH	
P146018	Maldives	Solar Resource Mapping: Annual Solar Resources Report	Oliver Knight
P161130	Myanmar	Solar Resource and Photovoltaic Power Potential of Myanmar	Oliver Knight
P146140	Pakistan	Biomass Resource Mapping: Implementation Report Biomass Resource Mapping: Biomass Atlas (final report) Solar Resource Mapping: Maintenance Visit Report, Tier2 – Meteorological Station, University of Engineering & Technology, Lahore Solar Resource Mapping: Final Model Validation Report Solar Resource Mapping: Installation Report, Tier 2 – Meteorological Station, University of Engineering & Technology, Lahore Solar Resource Mapping: Maintenance Visit Report, Tier 2 - Hyderabad Solar Resource Mapping: Maintenance Visit Report, Tier 1 - Quaid-E-Azam Solar Park, Punjab Solar Resource Mapping: Maintenance Visit Report, Tier1 – Meteorological Station, Quaid-E-Azam Solar Park, Punjab Solar Resource Mapping: Maintenance Visit Report, Tier1 – Meteorological Station, Quaid-E-Azam Solar Park, Punjab Solar Resource Mapping: Maintenance Visit Report, Tier2 – University of Engineering & Technology, Peshawar Wind Resource Mapping: Maintenance Visit Report - All Sites Wind Resource Mapping: Implementation Plan, Phase 2	Oliver Knight
P145287	Tanzania	Small Hydro Resource Mapping: Site Visit Report - List of Most Promising Sites Wind Resource Mapping: Close Out Report	Oliver Knight
P148147	Tunisia	Natural Gas: State of Play, Challenges, Prospects and Options By 2030 FRENCH	Anas Benbarka and Moez Cherif
P146501	Turkey	Europe and Central Asia: Energy Efficiency Financing Option Papers for Turkey	Jas Singh and Dilip Limaye
P157135	Turkey	Options for Financing Energy Efficiency in Public Buildings in Turkey ENGLISH TURKISH	Jas Singh, Dilip R. Limaye, Joseph Melitauri, Rhedon Begolli, Yasemin Örucü, Aditya Alexander Lukas, Selma Zahirovic, and Dardan Velija
P155872	Turkey	Turkey: Towards Improving the Service Quality of Electricity Distribution Companies ENGLISH TURKISH	Ayse Yasemin Orucu, Pedro Antmann, and Ayse Yasemin Orucu
P155434	Ukraine	Energy Subsidy Reform Facility Country Brief: Ukraine	
ESMAP Country Brief			
P152135	Uzbekistan	Uzbekistan: Scaling Up Energy Efficiency in Buildings: Short-to-Medium-Term Priorities and Recommended Action ENGLISH Russian	Feng Liu and Robert Wilfred Tromop
EAP Gender Brief	Vietnam	Results of Collaboration for Social Inclusion in the Trung Son Hydro Power Project, Vietnam	Helle Buchhave

P145513	Vietnam	Solar Resource Mapping: Site Selection Solar Resource Mapping: Implementation Plan Biomass Resource Mapping: Implementation Plan Biomass Resource Mapping: Training Workshop Report	Oliver Knight
P157348	West Bank and Gaza	Securing Energy for Development in West Bank and Gaza Report Summary Annexes	Sara Badie, Vivien Foster, Samuel Kwesi Ewuah Ogua, and Roger Coma Cunill
P145271	Zambia	Solar Resource Mapping: Site Installation Reports	Oliver Knight