



ESMAP-ASTAE Portfolio Review FY2015

MARCH 22, 2016



WORLD BANK GROUP
Energy & Extractives



Energy Sector Management Assistance Program

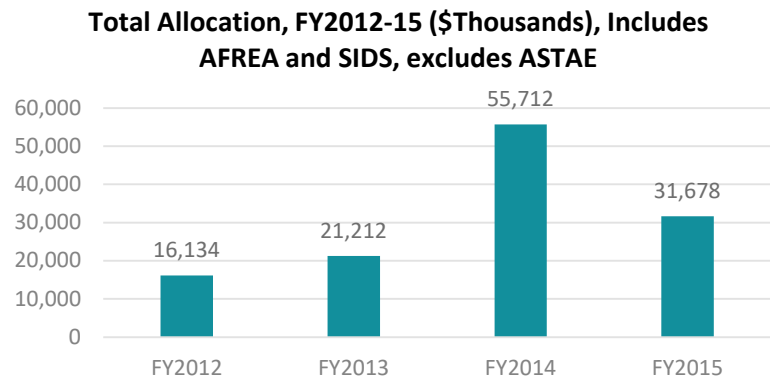
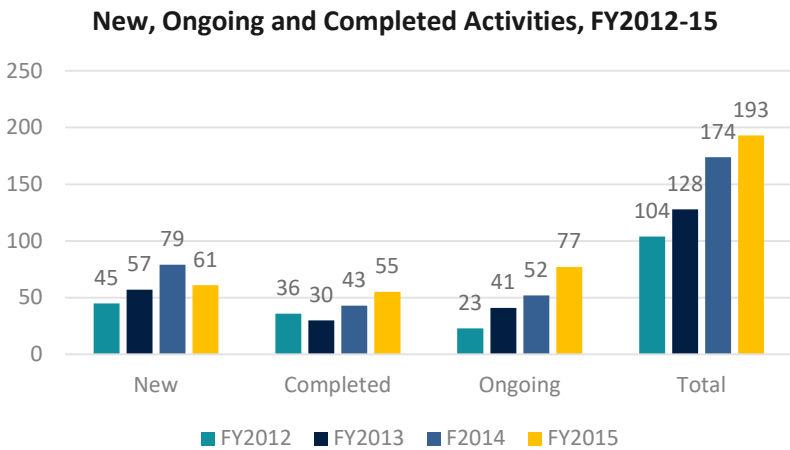
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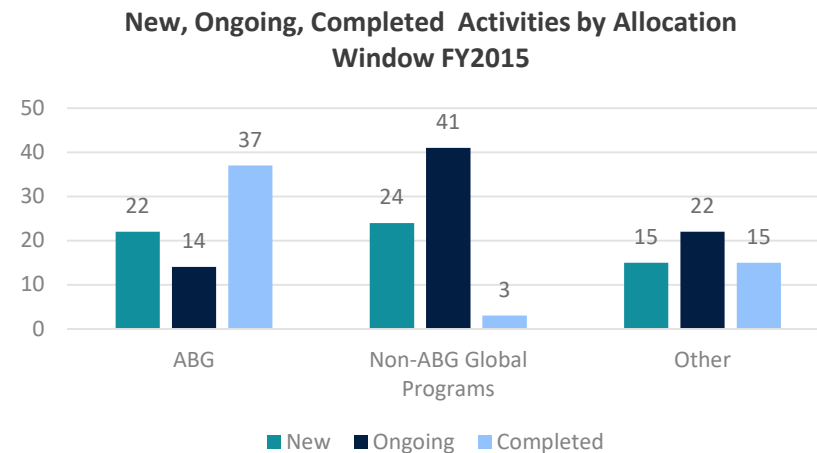
* Everything under ESMAP includes ASTAE, except when specified. ASTAE also reports their specific results under section 3.

ESMAP's Portfolio Overview (*)

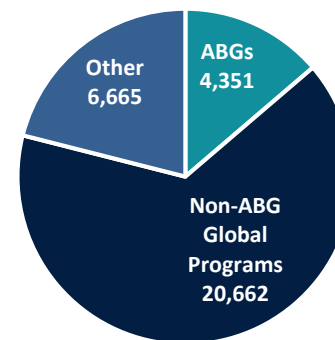
(i) Overview of ESMAP's Portfolio for FY2015



(ii) ESMAP's Portfolio by Window Allocation*



Total Allocation by Allocation Window, FY2015 (\$ Thousands), Includes AFREA and SIDS, excludes ASTAE



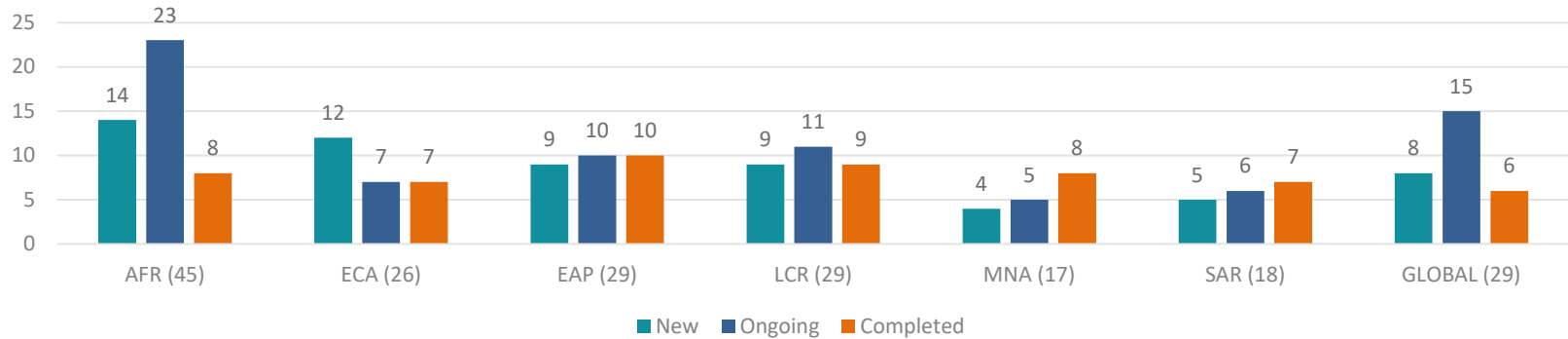
(*) ASTAE, project management & sustaining costs are excluded.

* "Other" refers to global or multi-country activities, as well as regional activities, which do not belong to the other two categories, including the Small Island Developing States (SIDS) DOCK Support Program.

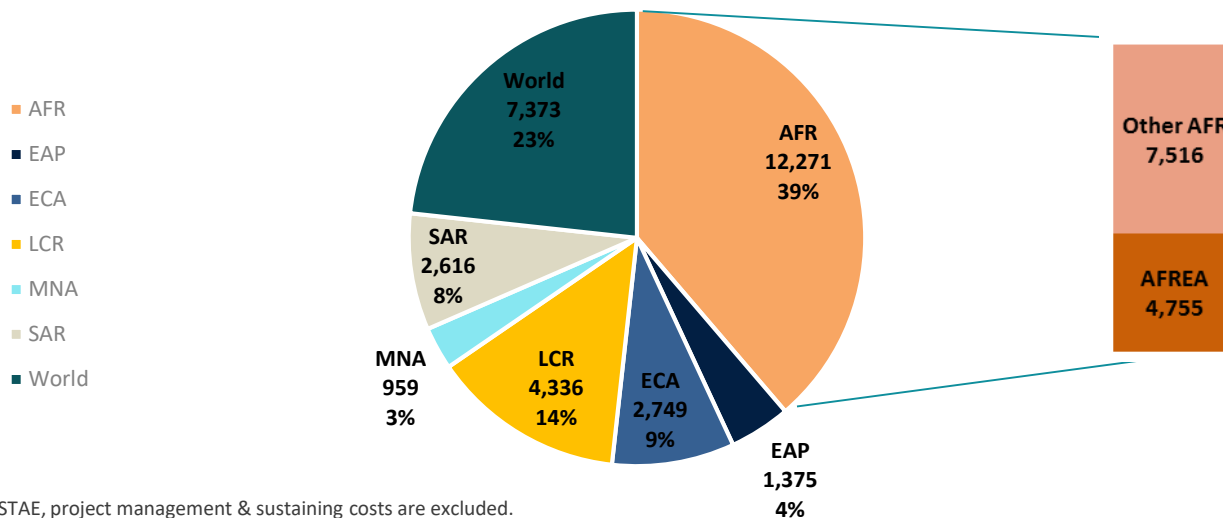
ESMAP's Portfolio, by Region & Focus Area (*)

(iii) ESMAP's Portfolio by Region

New, Ongoing, & Completed Activities by Region, FY2015, Includes AFREA and SIDS, excludes ASTAE



Breakdown of Total Allocation by Region, FY2015 (\$ Thousands), Includes AFREA and SIDS, excludes ASTAE

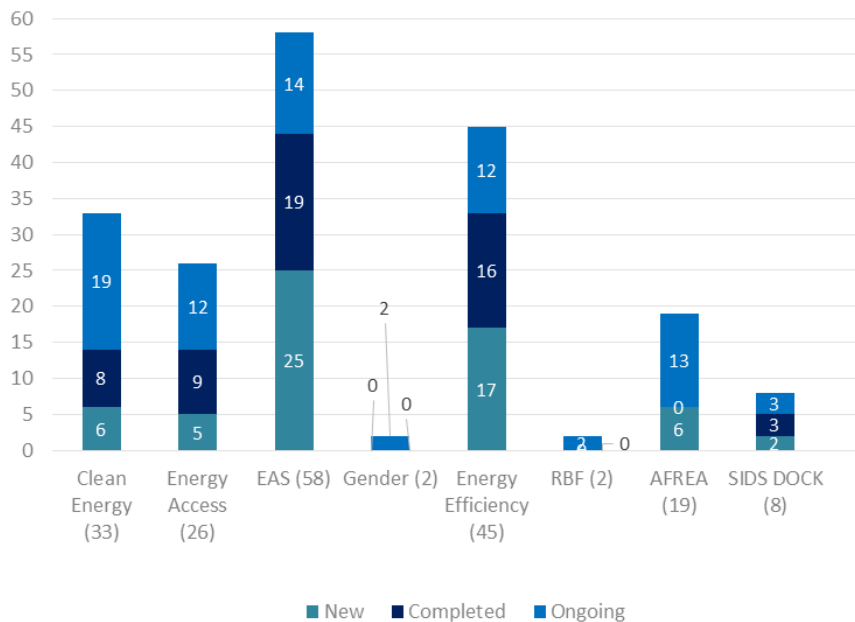


(*) ASTAE, project management & sustaining costs are excluded.

ESMAP's Portfolio, by Region & Focus Area (*)

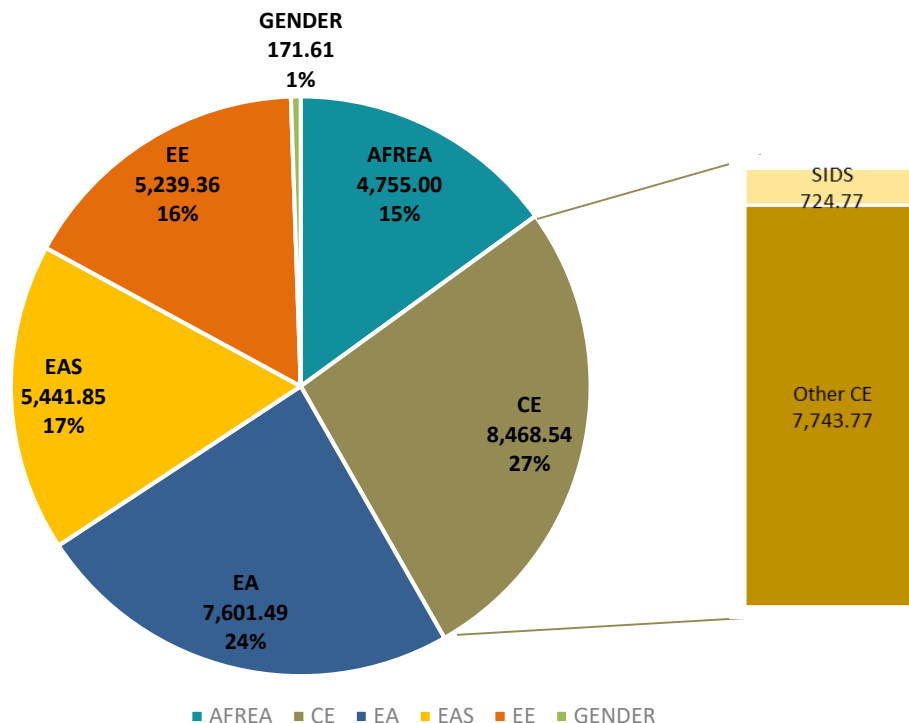
(iv) ESMAP's Portfolio by ESMAP Focus Area*

New, Ongoing, & Completed Activities by ESMAP Focus Area, FY2015



Breakdown of Total Allocation by Focus Area FY2015 (\$ Thousands)

Includes AFREA and SIDS, excludes ASTAE**



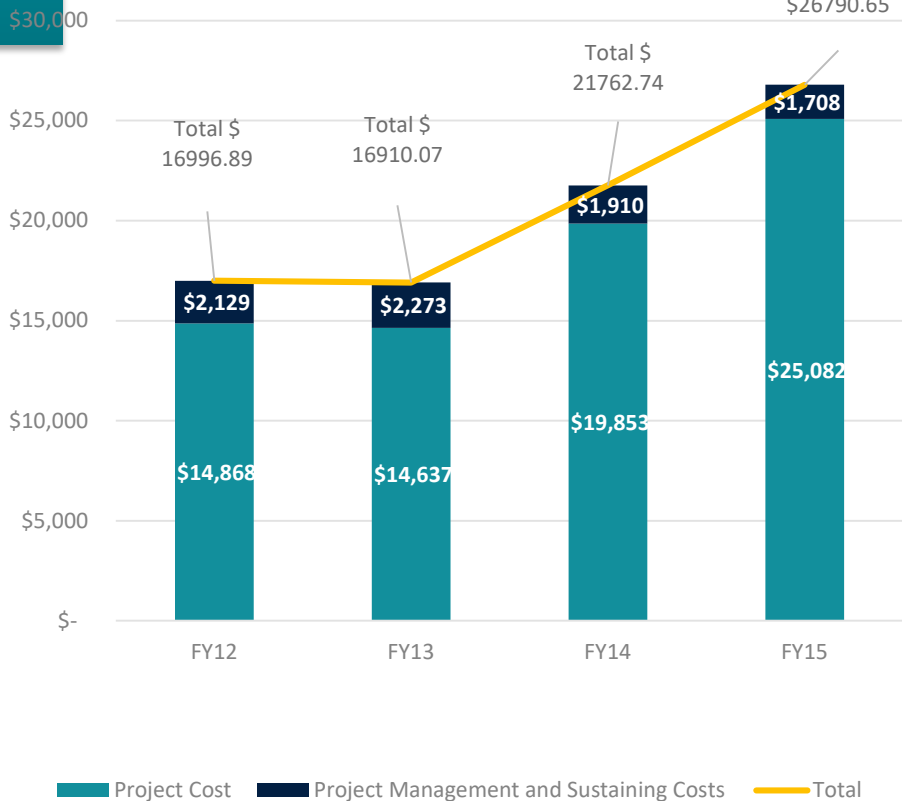
(*) ASTAE, project management & sustaining costs are excluded.

* The South Sudan Energy Sector Technical Assistance Project (P145581) is categorized under both Energy Access and AFREA. The FY15 Annual Report counts this activity under Energy Access, while the FY15 Portfolio Review counts it under AFREA, hence a slight discrepancy in the number of activities reported under Energy Access and AFREA.

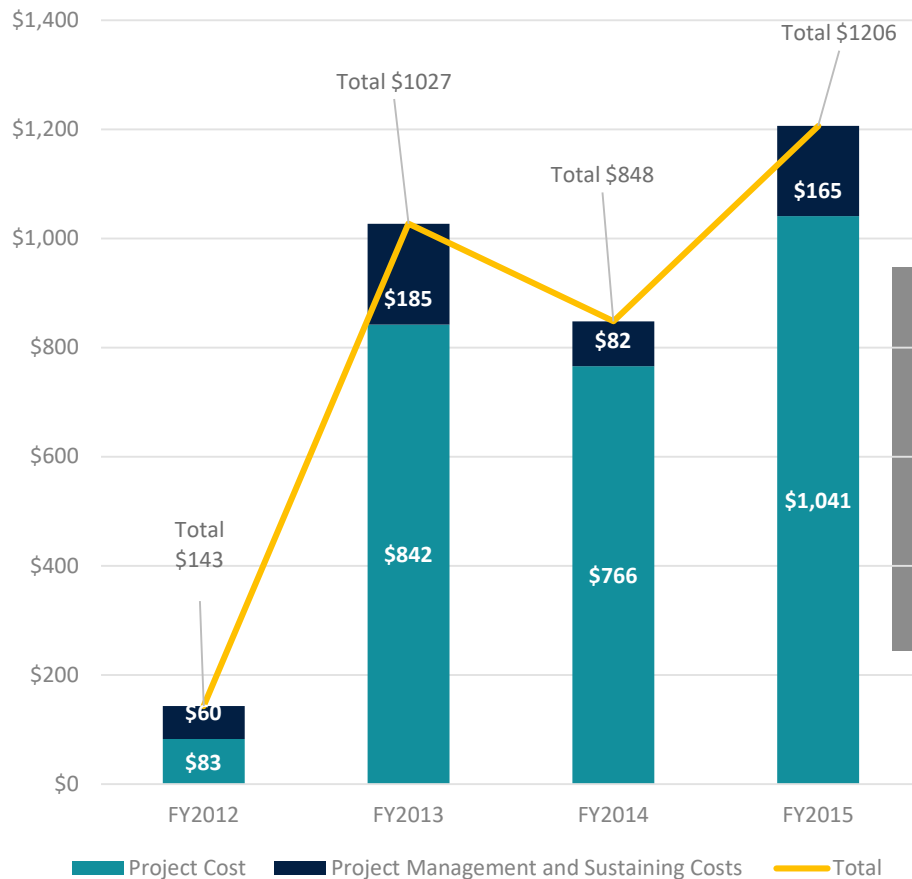
** The Gender slice includes only Gender tagged activities. The number does not reflect the actual allocation for Gender, which maybe higher as captured under other Focus Areas (e.g. AFREA).

ESMAP | Total Disbursements, FY2015*

**Total Disbursements for ESMAP
(inc. AFREA and excluding SIDS DOCK),
FY2012-15 (\$Thousands)**



Total Disbursements for SIDS Dock, FY2012-15 (\$Thousands)



*ASTAE is excluded.

And Project Costs refer to the disbursements made to the activities supported by ESMAP while Project Management and Sustaining Costs refer to program management, administration, and other centralized functions.

ESMAP | Disbursements, FY2015*

Table: ESMAP's Project Disbursements, by Focus Area & Region, FY2015 (US\$ Thousands)

	CLEAN ENERGY	ENERGY ACCESS	EAS	ENERGY EFFICIENCY	GENDER	OTHER GLOBAL PROGRAMS	AFREA	SIDS DOCK	TOTAL
Africa	2,205	1,457	395	353			4,563	539	9,512
Europe & Central Asia			1,414	811					2,225
East Asia	789	811	533	548				36	2,717
Latin America & Caribbean	581	738	282	509				465	2,575
Middle East & North Africa	5		366	43					414
South Asia	1,893	214	314	237	177				2,835
Global Programs	1,015	348	571	935		2,977			5,846
Total	6,488	3,568	3,875	3,669	177	2,977	4,563	1,040	26,124

Table: ESMAP's Project Disbursements, by Program & Region, FY2015 (US\$ Thousands)

	ANNUAL BLOCK GRANTS	TRANSPORT	WATER	SUSTAINABLE ENERGY FOR ALL (SE4ALL)	GLOBAL GEOTHERMAL DEVELOPMENT PLAN	RESULTS BASED FUNDING	RENEWABLE ENERGY RESOURCE MAPPING	ENERGY SUBSIDY REFORM FACILITY	CITY ENERGY EFFICIENCY TRANSFORMATION INITIATIVE	OTHER GLOBAL PROGRAMS	SIDS	AFREA	TOTAL
Africa	748			1,457			2,205				539	4,563	9,512
East Asia	793	153		527	54	262	468	201	223		36		2,717
Europe & Central Asia	844	108	50					978	245				2,225
Latin America & Caribbean	626	173	113	607	362			72	157		465		2,575
Middle East & North Africa	208		0.859					205					414
South Asia	777	215		68			1,775						2,835
Global Programs				249	640	99	375	571	935	2,977			5,846
TOTAL	3,996	649	164	2,908	1,056	361	4,823	2,027	1,560	2,977	1,040	4,563	26,124

* **Global Programs** include the activities implemented by the ESMAP unit and other departments that are not part of World Bank regions (e.g. gender and climate change), and those not categorized under the global programs listed in the above table. The activities include but not limited to the Gender Program, TRACE, META, Clean Energy Staff Training, the Urban Poor Program, and operational supports to regions.

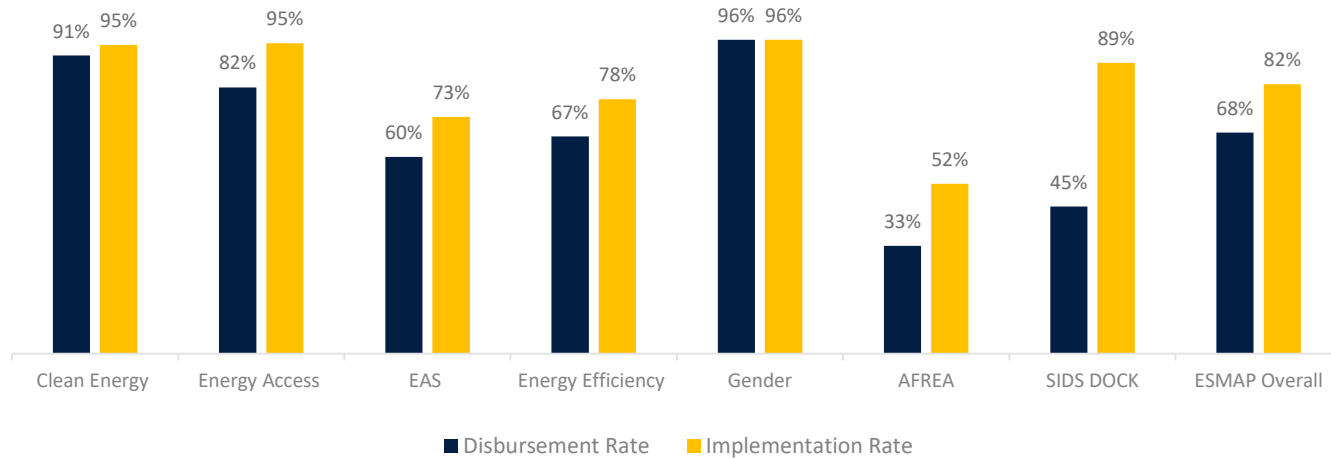
Global Units include the activities implemented by the units other than regional energy units, such as ESMAP and anchor units for specific sectors, including energy (e.g. urban and climate change). The activities also include operational support to regions.

Other Global Programs include programs implemented by ESMAP unit and other departments that are not part of World Bank Regions (e.g., Gender, Climate, etc.).

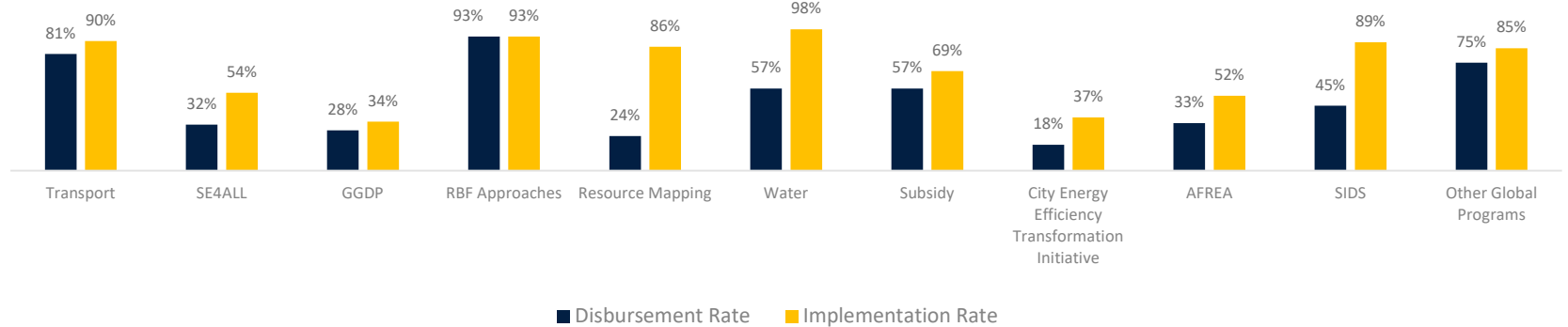
ASTAE and project management and sustaining costs are excluded.

ESMAP | Disbursement & Implementation Rates*

Disbursement and Implementation Rates, by Focus Area, FY2015



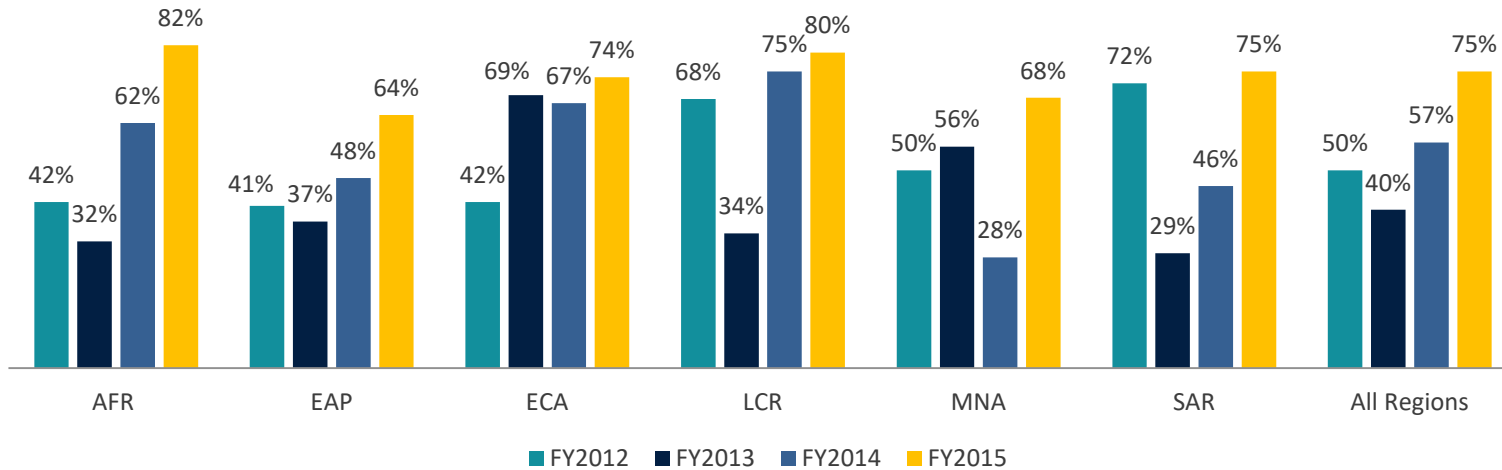
Disbursement and Implementation Rates by Program, FY2015



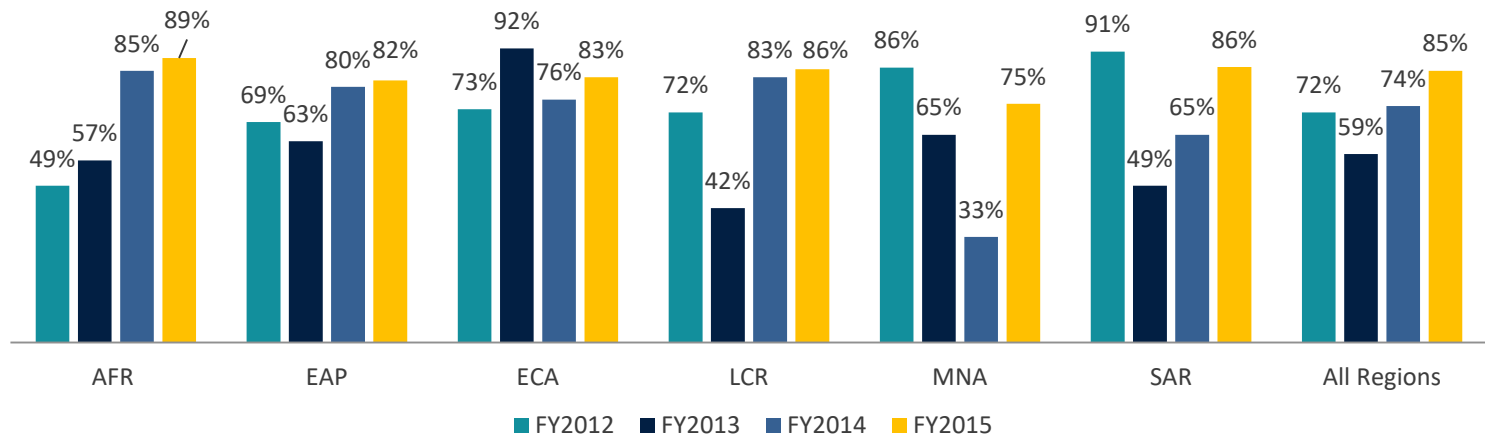
* For more information on programs included in this slide, please see PPT notes below.
ASTAE and project management and sustaining costs are excluded.

ESMAP | Disbursement & Implementation Rates*

Disbursement Rates for ABG by Region, FY2012-2015



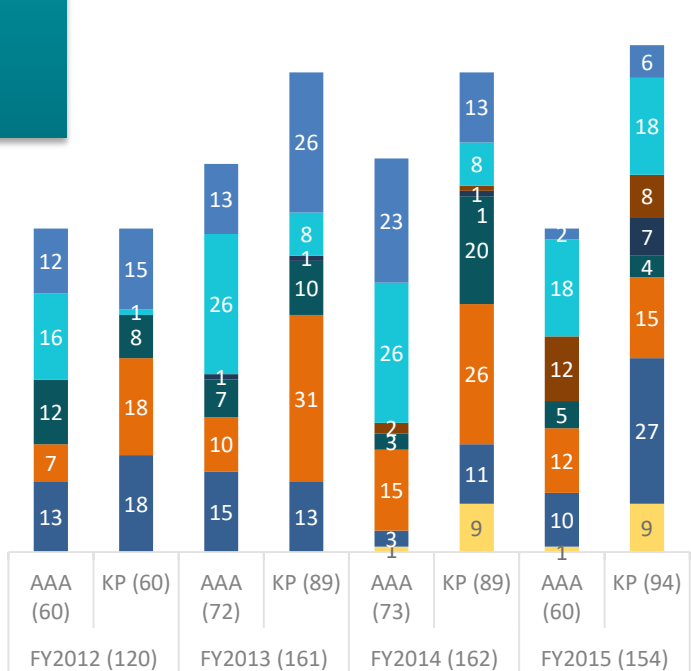
Implementation Rates for ABG by Region, FY2012-2015



* ASTAE and project management and sustaining costs are excluded.

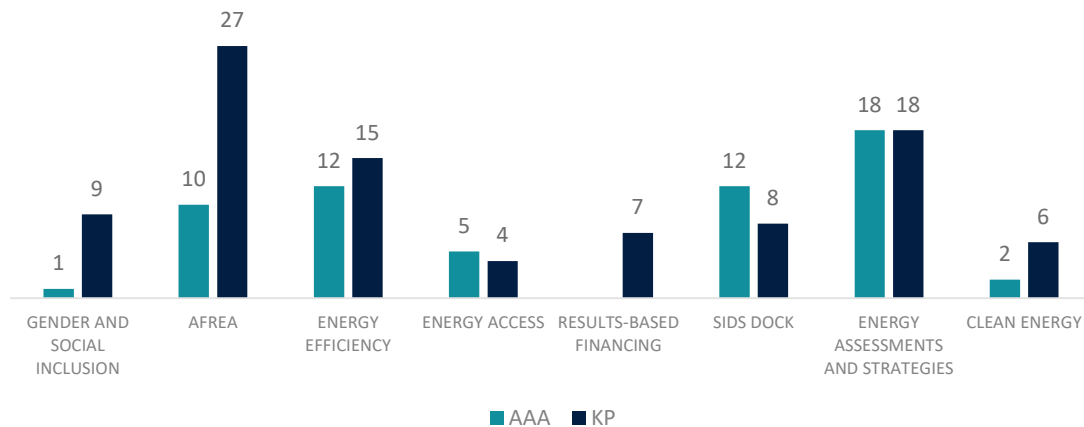
ESMAP | Outputs*

Number of Outputs, by type, FY2012-15

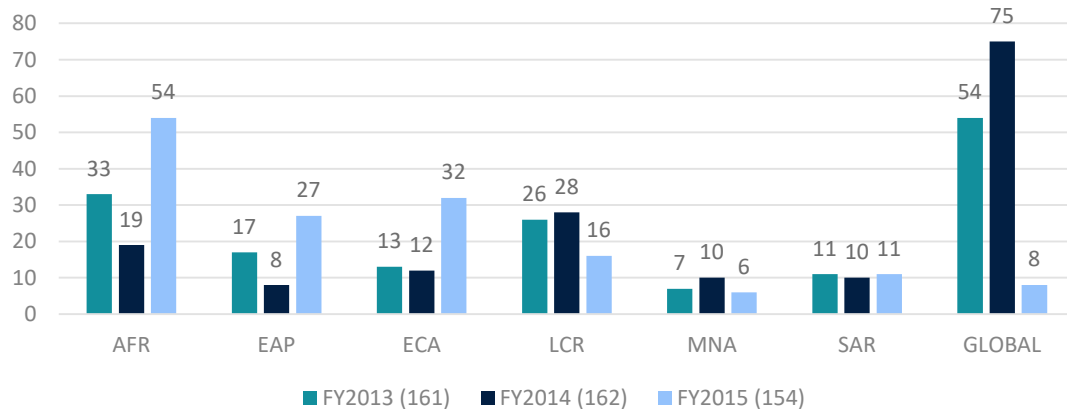


- CLEAN ENERGY
- ENERGY ASSESSMENTS AND STRATEGIES
- SIDS DOCK
- RESULTS-BASED FINANCING
- ENERGY ACCESS
- ENERGY EFFICIENCY
- AFREA
- GENDER AND SOCIAL INCLUSION

Number of Outputs, by ESMAP Focus Area, FY2015



Number of Outputs (AAA and KP), by Region, FY2015



* List of Outputs available in the Annex.

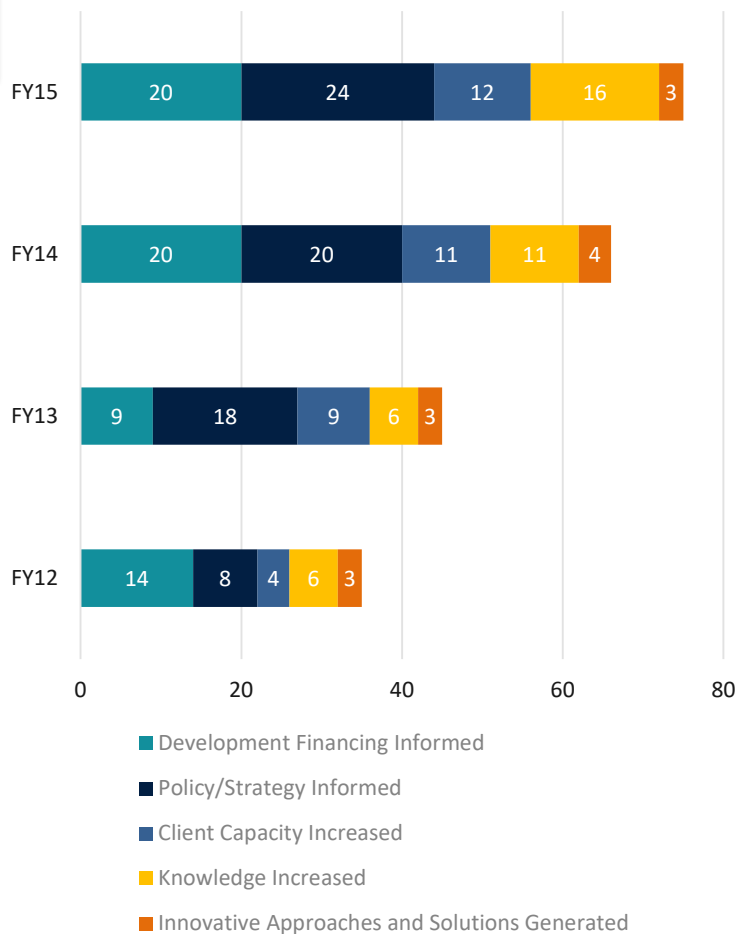
ESMAP | Outputs

Peer-Reviewed Research Pieces Published	Impact Stories Produced*	Academic Mentions of ESMAP Products
0	0	267 (a 36% increase in the total number compared to 196 reported in FY2014)

* In FY15, 0 impact stories were produced but 3 were in progress, and at least 4 are expected to be completed in FY16.

ESMAP | Outcomes, FY2015*

Outcomes, by Type, FY2012-15
(Including AFREA, ASTAE and SIDS DOCK)



* List of Outcomes available in the Annex.

Box 1 – WB / ESMAP Outcomes and Indicators

ESMAP has adopted the following outcomes and corresponding indicators developed and implemented by the World Bank under its AAA and KP.

Development Financing Informed

- Preparation of new operation informed
- Existing operations informed
- Mobilization of non-Bank resources informed
- Government expenditure informed

Policy/Strategy Informed

- Government policy / strategy informed
- Public debate stimulated / initiated
- Contributed to stakeholder involvement
- Development community / partner policy / strategy informed
- Bank country strategy (CAS / CPS) informed/influenced
- Bank sector strategy informed / influenced

Client Capacity Increased

- Design capacity strengthened
- Implementation capacity strengthened
- Monitoring & Evaluation capacity increased

Knowledge Increased / Deepened

- Facilitated exchange of best practice with clients
- Facilitated exchange of best practice with partners
- Disseminated best practices

Innovative Approaches and Solutions Generated

- New innovative approach fostered
- New innovative approach developed
- Client is able to adopt / harness new technologies, innovative ideas, know-how

ESMAP | Outcomes, FY2015*

Table: Number of Outcomes, by Type and Region, FY2015 (including AFREA, ASTAE and SIDS DOCK)

	Development Financing Informed	Policy/Strategy Informed	Client Capacity Increased	Knowledge Increased	Innovative Approaches and Solutions Generated	Total of Outcomes (%)
AFR	4	2	2	1	0	9 (12%)
EAP	4	15	4	8	2	33 (44%)
ECA	1	5	2	4	0	12 (16%)
LCR	2	1	0	2	0	5 (7%)
MNA	3	0	1	0	0	4 (5%)
SAR	2	1	2	0	1	6 (8%)
Global	4	0	1	1	0	6 (8%)
Total	20	24	12	16	3	75

Table: Number of Outcomes, by Type and ESMAP Focus Area, FY2015 (including AFREA, ASTAE and SIDS DOCK)

	Development Financing Informed	Policy/Strategy Informed	Client Capacity Increased	Knowledge Increased	Innovative Approaches and Solutions Generated	Total of Outcomes (%)
Clean Energy	4	5	0	3	1	13 (17%)
Energy Access	1	4	0	0	0	5 (7%)
EAS	7	10	7	7	2	33 (44%)
Energy Efficiency	4	3	4	6	0	17 (23%)
RBF	1	1	0	0	0	2 (3%)
AFREA	3	1	1	0	0	5 (7%)
Total	20	24	12	16	3	75

* List of Outcomes available in the Annex.

1. Development Financing Informed (20) (*)

Operation	Country / Region	Financing Source	Amount (US\$ Million)	Approval Date	Associated ESMAP Activity
Existing operations informed					
BR Espirito Santo Integrated Sustainable Water Management Project (P130682)	Brazil / LCR	IBRD	225	28-Mar-14	Energy Efficiency in Water and Wastewater Utilities in LAC (P146986)
PNG Energy Sector Development Project (P101578)	Papua New Guinea / EAP	IBRD (7.3) GEF (900k)	8.2	21-Feb-13	Papua New Guinea (PNG) Renewable Energy (RE) Resource Mapping and Geospatial Planning (P145864)
Upper Cisokan Pumped Storage Hydro-Electrical Power (1040 MW) Project (P112158)	Indonesia / EAP	IBRD	640	26-May-11	Local Benefit Sharing for Hydropower Projects in Indonesia (P149098)
KM-Electricity Sect. Recovery Proj (FY14) (P131659)	Comoros / AFR	IDA	5	6-Sep-13	Gender and Energy Program (P149119)
Household Natural Gas Connection Project (P146007)	Egypt / MNA	IBRD	500	24-Jul-14	Egypt Gas Regulator Capacity Building (P146007)
New operations informed					
Efficient & Sustainable City Bus Services (P132418)	India / SAR	GEF	9.2	9-Dec-14	India: Efficient & Sustainable City Bus Services - Capacity Building Program in Fuel Efficiency (P132418)
Lao PDR Health Governance and Nutrition Development Project (P151425)*	Lao People's Democratic Republic / EAP	IDA	26.4	23-Jun-15	Results-Based Funding for Energy Sector Development (P127532)
Energy Sector Development Policy Operation (P152440)	Kyrgyz Republic / ECA	IDA	24	29-Jan-15	Energy Subsidy Reform and Delivery: Safeguarding the Poor and Vulnerable (P154486); Tariff Setting Methodology (P146333)
Uganda Energy for Rural Transformation III (P133312)	Uganda / AFR	IDA (135M) GEF (8.2M)	143	5-Jun-15	Lighting Africa Expansion (P146987); Gender and Energy Program (P149119)
Geothermal Exploratory Drilling Project (P152039)	Armenia / ECA	CSCF-Strategic Climate Fund Grant	8.55	8-Jun-15	Geothermal Scale-up Investment Plan (P130625)
Total			1,589		

Note: World Bank approved lending in the energy and mining sector totaled about \$6.63 billion during FY2015

Source: www.worldbank.org

* This project was informed by both an ESMAP and ASTAE activity. (*) AFREA outcomes are included in the following slides and also separately reported in Section 3.

Some instances of mobilized non Bank resources:

(i) Egypt (P146007) – ESMAP financed training (\$140k) on Utility Strategy, Regulation and Energy Pricing for key members of the gas regulator that directly helped build Client Capacity in developing innovative price structures, create incentives for consumers and producers that was consistent with national (Egyptian) utility policy. This further influenced/informed the Household Natural Gas Connection Project (\$500m), which is complemented by approximately \$1 billion from the Egyptian government, the French Agency for Development (FRDE/AFD), ZBEN, and the European Neighborhood Instrument (ENI).

(ii) Papua New Guinea (P145864) – ESMAP financed RE mapping geospatial planning (tot \$1.9m) that informed this project. In addition \$1.05 m was contribute by the government of PNG complementing the WB financing.

(iii) Indonesia (P149098) – ASTAE financed preparation of economic analysis and feasibility studies (\$575k) which informed the Upper Cisokan Pumped Storage Hydro-Electrical Power Project (P112158) for \$640 m, which was complemented by \$160 m from the Government of Indonesia.

2. Policy / Strategy Informed (24)*

Associated ESMAP Activity	Country / Region	Policy / Strategy-Related Outcome
GOVERNMENT POLICY / STRATEGY INFORMED		
Equitization and Divestiture Strategy for the Vietnam Electricity's Generation Companies (P149628)	Vietnam/EAP	The study provided a recommended strategy which was adopted of by EVN and the Government of Vietnam through the Ministry of Industry and Trade. A high level Committee was established to develop KPIs for EVN's power generation, transmission and distribution businesses which will improve the basis for monitoring operational performance in relation to established goals. A task force has also been formed that is identifying opportunities to rehabilitate and upgrade existing thermal and hydropower generation assets as this will reduce new greenfield investment requirements.
Local Benefit Sharing for Hydropower Projects in Indonesia (P149098)	Indonesia/EAP	The project sought to Inform PLN and other developers of new hydropower projects on options of benefit sharing mechanism for application. Following a workshop on the benefits of a local benefit sharing program in hydropower projects, the government included in the TOR for the Poko Hydropower Project Study the consultants also take into consideration electrification of neighboring villages as part of a benefit sharing program. KfW when considering a new watershed management project with the Government, invited the team to provide options for a benefit sharing mechanism as well.
Tariff Setting Methodology (P146333)	Kyrgyz Republic/ECA	The government approved a multi-year tariff Policy in November 2014 and established a regulator with the task of developing a methodology, performance reporting, and monitoring framework.
PUBLIC DEBATE STIMULATED / INITIATED		
Strategic Communication for Improving Governance and Efficiency in the Power Sector (P151986)	South Asia	<i>Katiyabaaz</i> provided the medium to create awareness across a different section of society and media, resulting in stirring a debate on the important issue of electricity theft. The screenings were organized with support from local partners involving more than 100 participants from state governments, elected representatives, distribution companies (discoms), regulatory agencies, district administration, academic institutions, consumer groups, media and other key stakeholders each session. Over 200 articles were written about it in the press in leading newspapers and journals such as BBC, Wall Street Journal etc. The screenings resulted in sensitizing consumers and civil society groups about the reform process, and moreover about their rights and responsibilities. Further, the screening and the panel discussion helped sensitizing other stakeholders, such as utility, elected representatives, media, consumers, block and district administration officials and regulators regarding the needs and concerns of the consumers.
Papua New Guinea (PNG) Renewable Energy (RE) Resource Mapping and Geospatial Planning (P145864)	Papua New Guinea/EAP	This activity will increase the output and diversity of renewable electricity generation in Papua New Guinea by improving the awareness of the government and the private sector of the resource potential for biomass, small hydropower, solar and wind, and providing the Government with a spatial planning framework to guide commercial investment in the sector.
BANK SECTOR STRATEGY INFORMED / INFLUENCED		
Results-Based Funding for Energy Sector Development (P127532)	EAP	The study learned lessons from other sectors such as ICT and Transport to inform the development of results based approaches in the energy sector and provided guidance to support the introduction of Programs-for-Results & Results Based Financing instruments. Results-based approaches are being considered by teams in Indonesia, Lao, Morocco, and to a lesser degree in other countries. There is also active consideration being given under the new ESMAP initiative on clean cookstoves. There has been an effort to Integrate an activity to disseminate cookstoves in the Honduras Corredor Seco Food Security Project in collaboration with the LAC Agriculture and Rural Development Team and as a component in the Argentina Forestry Project. The team has also initiated engagement of a dialogue with the LAC Private Sector Development Team working on the Guatemala Enhancing Micro, Small, and Medium Enterprise Productivity Project and are in on-going discussions with the LAC Agriculture Rural Development Team for inclusion of additional cookstove components in other projects such as the LAC education program in Haiti.

* AFREA outcomes are included in the following slides and also separately reported in Section 3.
Additional information on the Outcomes available in the Annex.

3. Capacity Increased (12)*

Associated ESMAP Activity	Capacity-Related Outcome
DESIGN CAPACITY STRENGTHEN	
Energy Subsidy Reform and Delivery: Safeguarding the Poor and Vulnerable (P154486)	An internal online resource center on subsidy reforms was established and an online platform launched, to provide a forum for peer-to-peer learning and knowledge sharing among experts and government counterparts. The platform hosts online discussions, webinars and workshops, and also enables sharing of reports on energy subsidy reforms. Leading experts in various fields relating to energy subsidy reform such as Energy, Social Protection, Political communications, and Economics have been recruited to form a Panel of Experts that provide technical support to regional and country task teams on subsidy reform.
Egypt Gas Regulator Capacity Building (P146007)	This activity provided training at the Public Utility Research Center (PURC) at the University of Florida to complement a series of training programs provided by the European Union (EU) for the gas regulator staff in order to develop the skills needed to fulfill the regulatory agency objective.
Reforming the Minibuses in Surabaya (P146316)	Through workshops and a tailored report, this intervention enhanced the City Government of Surabaya's institutional capacity to plan, manage, and regulate the implementation of policies, strategies, and programs, and allowed the city's Government to make better informed policies by equipping the policy makers to conclude informed operating contracts with service providers, supported by the models and frameworks.
IMPLEMENTATION CAPACITY STRENGTHEN	
Turkey: Energy Efficiency Institutional Review (P146501)	The review provided options and recommendations for enhancing Turkey's institutional set-up to better formulate, implement, evaluate and refine policies and program interventions. This increased the capacity of MENR on global best practices with EE institutional set-ups enhanced, understanding of existing institutional deficiencies and remedial options improved.
Wholesaling Energy Efficiency in Water Utilities in the Danube Region (P128416)	A series of technical workshops in 4 countries, with follow-up by local consultants between workshops trained and supported the utilities in realizing energy audits and defining investment plans. The workshops were organized in close collaboration with national utility associations in order to build their capacity to replicate the approach in the country in the future.
LNG Import Options for West Africa (P147355)	The report and the accompanying workshops gave key decision makers access to expert technical opinion on the issues determining the feasibility of LNG import projects by providing a solid technical basis for evaluating the attractiveness and do-ability of LNG import projects in the three target countries (Ghana, Cote d'Ivoire, and Senegal).

* AFREA outcomes are included in the following slides and also separately reported in Section 3. Additional information on the Outcomes available in the Annex.

4. Knowledge Increased (16) & 5. Innovative Approaches Generated (3)*

Associated ESMAP Activity	Knowledge-Related Outcome
China-ASEAN Energy Efficiency South-South Knowledge Exchange	More than 30 participants of the government officials, bilateral and multilateral aid organizations, Energy Service Companies (ESCOs), financial institutions, and practitioners from China, Cambodia, India, Indonesia, Laos, Malaysia, Myanmar, Singapore, Thailand, and Vietnam gathered in China to share knowledge and exchange experience and lessons learned on energy efficiency policies, financing mechanisms, and business models of ESCOs. The workshop promoted South-South exchange of experience and lessons learned on energy efficiency policies, financing mechanisms, and ESCOs – not only showcased Chinese experience to other Asian countries, but also introduced good practices from other Asian countries such as India, Singapore, Thailand, and Vietnam to China.
Local Benefit Sharing for Hydropower Projects in Indonesia	A workshop on Benefit Sharing was held at PLN on September 15, 2014. The workshop included presentations by the WB team on benefit sharing concept, rationale, objectives and type of mechanisms and review of international benefit sharing case studies as well as practical experience by PLN and Indonesia Power on Corporate Social Responsibility (CSR) practices.
Philippines Electric Cooperative Regulatory Efficiency	A series of workshops were provided to stakeholders such as the Philippines Energy Regulatory Commission focused on various topics such as weighted average cost of capital, regulated asset base methodology, generation price benchmarking, and other issues.
Indonesia Capacity Strengthening and Risk Mitigation for Geothermal Development	During the recent workshop, discussions centered around such topics as how to mitigate resource risk with better data, successful resource risk mitigation mechanisms, and risk-sharing options and potential with private developers. Participants shared lessons learned and international best practices.
China: Fossil Fuel Subsidy Study	A series of workshops were conducted aimed at facilitating in-depth discussions about the methodologies for valuation and various reform strategies from around the world to reduce fossil fuel subsidies, as well as consultation on the progress made on the relevant studies being carried out by the ERI, which aim to explore policy directions on energy subsidy reforms; pricing, fiscal and taxation policies; and energy market improvements in China. Many stakeholders such as MoF, OECD, GSI, and NDRC benefited from the discussions and provided examples of the usefulness of the discussed methodologies in their own work.
Urumqi District Heating Pricing Technical Assistance	The municipality in China strengthened knowledge on designs of necessary tariff and social policy adjustments through consultations during the preparation of assessments.
Associated ESMAP Activity	Innovative Approach Outcome
Strategic Communication for Improving Governance and Efficiency in the Power Sector	This was a unique innovative effort by World Bank on strategic communication in South Asia with an objective of creating awareness and enhancing social dialogue on importance of power theft reduction, and ways to improve trust and credibility of reform process across stakeholders. Union Minister of Power Mr. Goyal referenced the film in TV interviews, UP Govt. made the movie tax free and mandatory viewing for all electricity sector employees.
Indonesia Capacity Strengthening and Risk Mitigation for Geothermal Development	A risk mitigation model was developed for geothermal exploration risks in Indonesia.

* AFREA outcomes are included in the following slides and also separately reported in Section 3.
Additional information on the Outcomes available in the Annex.

1 e Private Sector Financing Informed by ESMAP

World Bank Operation (Approval FY)	Region	Private Sector Financing (\$ million)	Associated ESMAP Activity (ESMAP Focus Area) *
Household Natural Gas Connection Project (P146007)(FY15)	MNA	326	Egypt Gas Regulator Capacity Building (P146007) (EASP)
GRAND TOTAL (operations/programs)		326	

* Egypt (P146007) – ESMAP financed training (\$140k) on Utility Strategy, Regulation and Energy Pricing for key members of the gas regulator that directly helped build Client Capacity in developing innovative price structures, create incentives for consumers and producers that was consistent with national (Egyptian) utility policy. This further influenced/informed the Household Natural Gas Connection Project (\$500m), which is complemented by approximately \$1 billion from the Egyptian government, the French Agency for Development (FRDE/AFD), ZBEN, and the European Neighborhood Instrument (ENI).

ESMAP Logframe Updates, FY2015

The table below indicates progress toward the lower level outcomes defined in the ESMAP program logframe as of the end of FY2015 or the second year of ESMAP's business plan period (see Annex 2 of the [ESMAP Business Plan, FY2014-16](#) for the logframe). The updates in the table are based on the outcomes observed during FY2015. The following numbers include AFREA (when specified) and SIDS DOCK.

LOWER LEVEL OUTCOMES			
OBJECTIVE	TOTAL (TARGET)	FY2014 UPDATES	FY2015 UPDATES
Development Financing Informed: Client countries provided with "just-in-time" technical assistance for pre-investment activities necessary to resolve program design issues and offer additional options.	90 of which: Please see Annex 2 of the ESMAP Business Plan, FY2014-16 for the logframe.	19 of which: <ul style="list-style-type: none"> • 10 existing and new World Bank operations informed by ESMAP (excluding AFREA): <ul style="list-style-type: none"> - GPOBA W3: Kenya Electricity (Kenya / \$5.15 million) - Improved Forested Landscape Management Project (Democratic Republic of Congo / \$36.9 million) - Vietnam Climate Change Development Policy Loan 3 (Vietnam / \$70 million) - Belarus Biomass District Heating Project (Belarus / \$90 million) - District Heating Energy Efficiency Project (Ukraine / \$382 million) - Second Rural Electrification Project (Peru / \$50 million) - MA-Support to ONE (Office National de l'Electricité) (Morocco / \$150 million) - ONEE Support Project (formerly, ONE Support Project) (Morocco / \$40.5 million) - Development Policy Loan 2 to Promote Inclusive Green Growth and Sustainable Development in Himachal Pradesh (India / \$100 million) - Accelerating Sustainable Private Investment in Renewable Energy Project (Maldives / \$27.684 million) • 3 new geothermal test drilling investment prepared and financed: <ul style="list-style-type: none"> - Djibouti Geothermal Power Generation Project (approved in June 5, 2013 and became effective in Jul 2, 2014) - Mexico CTF project by Inter-American Development Bank - Chile CTF Project by Inter-American Development Bank • 6 existing and new World Bank operations informed by AFREA: <ul style="list-style-type: none"> - Regional and Domestic Power Market Development Project (Democratic Republic of Congo / \$296.7 million) - Additional Financing for the Regional and Domestic Power Market Project (Democratic Republic of Congo / \$283 million) - Mali Rural Electrification Hybrid System Project (Mali / \$45.4 million) - Burkina Faso Electricity Sector Support Project (Burkina Faso / \$50 million) - Electricity Network Reinforcement and Expansion Project (ENREP) (Ethiopia / \$200 million) - Increased Access to Electricity (Zambia / \$37.5 million) 	10 of which: <ul style="list-style-type: none"> • 7 existing and new World Bank operations informed by ESMAP (excluding AFREA): <ul style="list-style-type: none"> - BR Espirito Santo Integrated Sustainable Water Management Project (Brazil/ \$225M) - Upper Cisokan Pumped Storage Hydro-Electrical Power (1040 MW) Project (Indonesia/ \$640M) - Household Natural Gas Connection Project (Egypt/ \$500M) <ul style="list-style-type: none"> ➢ Egypt mobilized financing from EU \$78.9 million, French Agency for Development (AFD) \$96 million, and the private sector \$326 to implement the Household Natural Gas Connection Project which is part of their SE4All investment prospectus to achieve universal access by 2030. - Lao PDR Health Governance and Nutrition Development Project (Lao People's Democratic Republic/ \$26.4M) - Energy Sector Development Policy Operation (Kyrgyz Republic/ \$24M) - PNG Energy Sector Development Project (Papua New Guinea/ \$8.4M) <ul style="list-style-type: none"> ➢ Resource mapping informs PNG Energy Sector Development Project in transmission and distribution, generation and access. - Efficient & Sustainable City Bus Services (India/ \$9.2M) • 1 new geothermal test drilling investment prepared and financed: Geothermal Exploratory Drilling Project (Armenia/ \$8.55) • 2 existing and new World bank operations informed by AFREA: <ul style="list-style-type: none"> - Uganda Energy for Rural Transformation III (Uganda/ \$135M) - KM-Electricity Sect. Recovery Proj (FY14)(Comoros/ \$5M)

ESMAP Logframe Updates, FY2015 (cont.)

LOWER LEVEL OUTCOMES			
OBJECTIVE	TOTAL (TARGET)	FY2014 UPDATES	FY2015 UPDATES
<p>Policy & Strategy Informed and Client Capacity Increased: Increased institutional capacity of ESMAP client countries to plan, manage, and regulate the implementation of policies, strategies, and programs that deliver clean, reliable, and affordable energy services required by their citizens for poverty reduction and environmentally sustainable economic growth.</p>	<p>150 of which: Please see Annex 2 of the FY2014-2016 ESMAP Business Plan for the logframe.</p>	<p>39 of which:</p> <ul style="list-style-type: none"> • Government policy/strategy informed outcomes were observed in 16 countries (ESMAP excluding AFREA): Armenia, Bosnia & Herzegovina, Brazil, China, Egypt, India, Indonesia, Kosovo, Kyrgyz Republic, Macedonia, Mexico, Morocco, Serbia, Tajikistan, Tunisia, and Turkey. • 8 countries use, adopt, and/or deploy ESMAP models and toolkits: TRACE (Mexico, Thailand, Columbia, Kenya, Ethiopia, Ghana), META (Morocco), and EFFECT/MACTool (Vietnam). • Government policy/strategy informed outcomes were observed in 8 countries (AFREA): Rwanda, Liberia, Burkina Faso, Mali, Democratic Republic of Congo, Ethiopia, Senegal, and South Sudan. • 7 governments initiate action through SE4All TA to establish enabling environment for private sector investments and a creditworthy power sector: Myanmar, Guatemala, Honduras, Nicaragua, Senegal, Liberia, and Guinea. 	<p>19 of which:</p> <ul style="list-style-type: none"> • 8 Government policy/strategy informed outcomes were observed in countries (ESMAP excluding AFREA): Vietnam, Indonesia, Myanmar, Tajikistan, Kyrgyz Republic, Moldova, Uzbekistan, Philippines • TRACE was used and/or deployed in Ukraine. • 2 countries institutions' capacity strengthened to incorporate risk in system planning: Panama and Belize • 2 countries adopt recommended approaches in their policies on electricity pricing and subsidies: Kyrgyz Republic and Tajikistan • Resource mapping is combined with spatial planning to produce 2 country policy frameworks to guide commercial investments: Pakistan and Laos PDR • 2 Government policy/strategy informed outcomes were observed in countries (AFREA): South Sudan and Nigeria • 2 countries with capacity to integrate gender in areas such as large infrastructure, energy efficiency, and power sector reform: Comoros and Uganda
<p>Knowledge Increased/Deepened and Innovative Approaches & Solutions Generated: ESMAP-supported research and analyses strengthen the sector's knowledge and evidence base to deliver improved clean energy access, energy efficiency, and generation in developing countries.</p>	<p>325 of which: Please see Annex 2 of the FY2014-2016 ESMAP Business Plan for the logframe.</p>	<p>205 of which:</p> <ul style="list-style-type: none"> • 3 peer-reviewed research articles published. • 196 academic references of ESMAP products/knowledge • 3 development partners utilize knowledge on geothermal financing modalities, project structuring, and management: Inter-American Development Bank, kfW, IFC • 3 organizations are collaborating with ESMAP in the RE Resource Center: GIZ, Reep, OPEN EI • Number of Outputs: 162 (73 AAA and 89 KP) • Number of Outcomes: 11 (Knowledge Increased) and 4 (Innovative Approaches) 	<p>281 of which:</p> <ul style="list-style-type: none"> • 267 Academic references of ESMAP products/knowledge • 14 Development partners utilize knowledge on geothermal financing modalities, project structuring, and management: Armenia R2E2 Fund, Power Africa, Climate Policy Initiative, French Development Agency, MWH Global, Icelandic International Development Agency (ICEIDA), DTU UNEP RISO, IRENA, Netherlands Enterprise Agency, Nordic Development Fund, BGR - German Federal Institute for Geosciences and Natural Resources, State Secretariat for Economic Affairs (SECO), Overseas Private Investment Corporation (OPIC), Department for International Development - UK • Number of Outputs: 154 (60 AAA and 94 KP) • Number of Outcomes: 16 (Knowledge Increased) and 3 (Innovative Approaches)

SIDS DOCK: Ongoing projects*

Project ID	Fund Name	Country	Grant Type	Grant Amount USD	Disbursements USD
P151979	Preparation & SPN of Cabo Verde Distributed Solar Energy Systems Project	Cabo Verde	BEA	70,000.00	492.74
P156500	Small Island Developing States (SIDS) - Geothermal Development in Dominica	Dominica	BEA	795,000.00	310,510.18
P101414	6O-ECERA Eastern Carib. Engy Reg Auth.	OECS Countries	BEA	1,200,000.00	502,789.72
P153404	Solar PV Demonstration Project in the OECS countries	OECS Countries	BEA	0.00	0.00
P152653	Pacific Islands Sustainable Energy Industry Development Project Implementation Support SIDS DOCK Grant	Pacific Islands	BEA	0.00	0.00
P149959	Geothermal Resource Development in Saint Lucia SIDS DOCK RETF	St. Lucia	REO + BEA	1,250,000.00	85,723.02
P144573	Energy Sector Development Project	Tuvalu	REB	2,100,000.00	0.00
P145311	Vanuatu Energy Sector Development Project	Vanuatu	REP	1,000,000.00	111,264.56
				6,415,000.00	1,010,780.22

SIDS DOCK: Project pipeline

Project ID	Fund Name	Country	Grant Type
P153404	PV demonstration Saint Lucia	OECS Countries	REP
P153404	PV demonstration Saint Vincent	OECS Countries	REP
P153404	PV demonstration Grenada	OECS Countries	REP
P151979	Cabo Verde Distributed Solar Energy Systems Project	Cabo Verde	REP

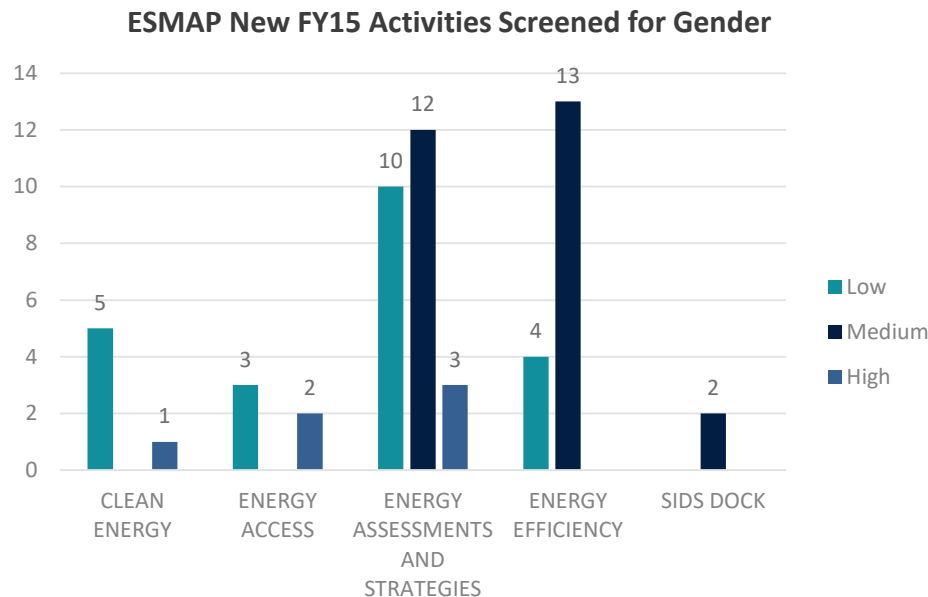
BEA	Bank Executed Project/activity support
REP	Stand-alone Recipient Executed Project
REO	Other Recipient-Executed
REB	Recipient-Executed IBRD/IDA Cofinancing

* Detailed information available in the Annual Report (Chapter 9 page 65), Annex 2 page 103 of the online version.

Social Inclusion and Gender Program

SCREENING ESMAP SUPPORTED ACTIVITIES FOR GENDER CONSIDERATIONS

As ESMAP continues to mainstream gender across its portfolio, teams can look towards the high/medium potential projects to learn lessons and understand what concrete measures were taken to transition the gender potential into gender action within their projects. ESMAP reviewers, together with gender/social experts as needed, reviewed Proposal Summary Forms and use the following criteria to rate the projects: **HIGH** – social/gender aspects are highly relevant and should be incorporated in the activity scope at the PCN stage; **MEDIUM** – there is some scope to consider social/gender aspects and the PCN should address the relevance of gender/social aspects; **LOW** – minimal opportunity to incorporate specific social/gender aspects. The data below does not include AFREA or ASTAE as they have their own targeted program on Gender and Energy.



Highlights of Gender and Energy Activities

- **Gender and Electricity Infrastructure Research** explored the gender-specific impacts of generation, transmission, and distribution projects. Country level data collection took place in **Morocco, Senegal and Nepal**. At the global level, the team interviewed power utilities to identify good practices on gender and identified examples in **France and Indonesia**. A webinar was hosted in September 2014 that focused on barriers for women in the energy workforce and STEM (Science, Technology, Energy and Mathematics) fields. These findings were presented during a Technical Workshop organized in June 2015. The report is forthcoming for FY2016.
- **AFREA Gender and Energy Program** | The first phase of the AFREA Gender and Energy Program was completed in 2014 with engagement across 6 countries: **Mali, Senegal, Benin, Kenya, Tanzania, and Zambia**. In FY2015, the program focused extensively on operational activities with World Bank energy teams and government clients in the above mentioned projects in addition to engagement in 7 new countries including **Cameroon, the Comoros, Liberia, Niger, Tanzania, The Gambia and Uganda**. This new country engagement is the product of a full Africa energy portfolio screening of over 100 projects by a gender “help desk” team which developed a screening template to evaluate country context, project details and relevant gender entry points. A LiveWire publication featured the work on Senegal’s Second Sustainable and Participatory Energy Management Project (PROGEDE II).
- **EAP developed a joint Gender and Energy TA program** between EAP energy and social development teams supported by ASTAE/ESMAP. The program is currently engaged in providing gender input to energy projects in **Vietnam** (EE baseline study and community/ethnic minority work in Hydro project); **Philippines** (gender capacity building with Electricity Cooperatives), **Solomon Islands** (Gender Action Plan for Hydro project), and **Indonesia** (clean cooking). Based on these inputs they are producing knowledge notes on gender links to hydro; and M&E.
- **Gender and Energy online training** | ESMAP, together with the World Bank Institute and the Gender CCSA launched the **gender and development e-learning course** with a specific emphasis on energy access, energy infrastructure, and energy policy.
- In ECA, as part of overall work on energy subsidy reform, a report was published – **Toward Gender-Informed Energy Subsidies Reforms: Findings from Qualitative Studies in Europe and Central Asia**.
- Gender-energy assessments were completed **for Nepal, India and Pakistan** in 2015. Teams found that prevalent structural and cultural barriers in the region meant that women are marginalized while also bearing the brunt of the energy burden.

Trends

ESMAP FY2015 Portfolio Size and Composition

1. Contributions:

- \$36 million in contributions
- Main contributors - United Kingdom (\$16.7 m), Denmark (\$8.4 m), and Netherlands (\$7 m)

2. Overall Size and Composition

- 193 total activities – a 11% increase from FY2014
- Of this, 61 new activities funded for \$31.7 million
 - A decrease from FY2014, but corresponds to the decreased allocation of \$32 (from \$56 m in FY2014)
 - Largest number of activities (24) under Non-ABG Global Programs with 65% (\$20.7 m) allocated

3. Regional Portfolio

- AFR has highest number of total activities (45), followed by ECA and LCR (29 each)
 - 14 new activities in AFR, 12 in ECA, 9 in EAP and LCR, and 8 new Global Programs
- Allocation – AFR received the largest allocation of \$12.3 m (39 %), followed by World (\$7.4m, 23%) and LCR (\$4.3 m, 14%)

4. Focus Areas

- Total number of new activities approved - 61
- Largest number of new activities approved – EAS (25), followed by Energy Efficiency (17)
- Clean Energy and Energy Access received the largest allocations – respectively \$8.5 m (27%) and \$7.6 m (24%), followed by EAS - \$5.4 m (17%), and EE at \$5.2 m (16%)

Trends

ESMAP FY2015 Disbursements and Implementation

1. Disbursements

- Disbursements continue to increase in the last three years
- \$26.8 million total disbursements (including Project Management and Sustaining costs, and excluding ASTAE and SIDS)
 - 94% (\$25.08 m) towards Project Costs and 6% (\$1.7 m) for Project Management and Sustaining costs
 - Slight decrease in Project Management and Sustaining Costs when compared to FY2014
- SIDS DOCK Disbursements are \$1.2 m (including Project Management and Sustaining costs)
 - \$1.04 m for Projects (87%) and \$0.16 m (13%) for Project Management and Sustaining Costs
- 24% of total disbursements were made under Clean Energy (\$ 6.5 m), while AFREA disbursed 17% (\$4.6 m), Energy Access at 13% (\$3.6 m) and EAS at 15% (\$3.9 m)
 - Highest disbursements for Global Programs are under Clean Energy (\$1 m) and Energy Efficiency (\$0.9 m)
- ABG Disbursements totaled to \$3.9 m
 - ECA accounted for majority of the total disbursement amount (\$0.8 m), followed by EAP, SAR and AFR

2. Disbursement and Implementation Rates

- Overall Disbursement and Implementation Rates – 68% and 82%, increase from FY2014 (28% and 50%)
 - Gender dominates the disbursement and implementation rate at 96%, a big increase from 55% and 64% in FY2014, followed by Clean Energy (91% disb. and 95% impl.) and Energy Access (82% disb. and 95% impl.).
 - RBF Approaches had the highest disbursement rate (93%) while Water programs had highest implementation rate (98%), among the Focus Areas
 - Disbursement rates for ABGs across all six regions is 75% - taking into account implementation rate of 85%
 - AFR and LCR has the highest disbursement rate (82% and 80%), closely followed by SAR (75%) and ECA (74%)
 - Implementation rates are highest for AFR (89%), followed by SAR and LCR (86%)

Trends

ESMAP Outputs

- A total of 154 outputs delivered in FY2015 – a slight decrease compared to FY2014 with 162 outputs
 - 94 Knowledge Products – highest in AFREA (28) and EAS (18)
 - 60 AAA – with top outputs in EAS (18), followed by SIDS DOCK and Energy Efficiency (12)
 - AFR and ECA had the largest number of outputs – 54 and 32 outputs
 - Compared to FY2014, the outputs for LCR, MNA and Global decreased

ESMAP Outcomes

- A total of **75** outcomes delivered in FY2015 – an increase compared to FY2014 with 66 outcomes
 - 20 Development financing informed – highest in EAS (7)
 - 24 Policy/strategy informed – highest in EAS (10)
 - 12 Client Capacity increased – highest in EAS (7)
 - 16 Knowledge Increased – highest in EAS (7)
 - 3 Innovative approaches & solutions generated – highest in EAS (2)
 - EAP had the largest number of outcomes – 33, followed by ECA (12) and AFR (9)
 - Compared to FY2014, the number of outcomes was lower in AFR and LAC; and higher in EAP, ECA and SAR.

Contents

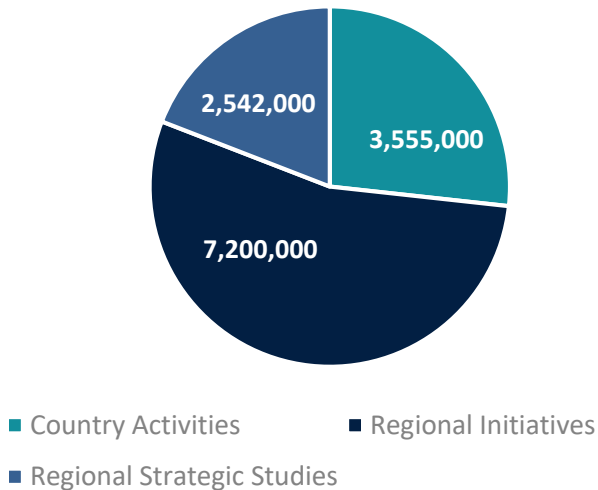
1. ESMAP
2. AFREA
 - a. Portfolio Overview
 - b. Outcomes
3. ASTAE

AFREA | Portfolio Overview

Allocation

- In FY 2015, the AFREA portfolio contained 19 activities. Thirteen of these were ongoing from previous FYs, (one was dropped from the initial fourteen approved activities -- the P4R study) and six new activities were initiated.
- Since the inception of AFREA, the total approved allocation as of June 2015 totaled \$13.3 million.

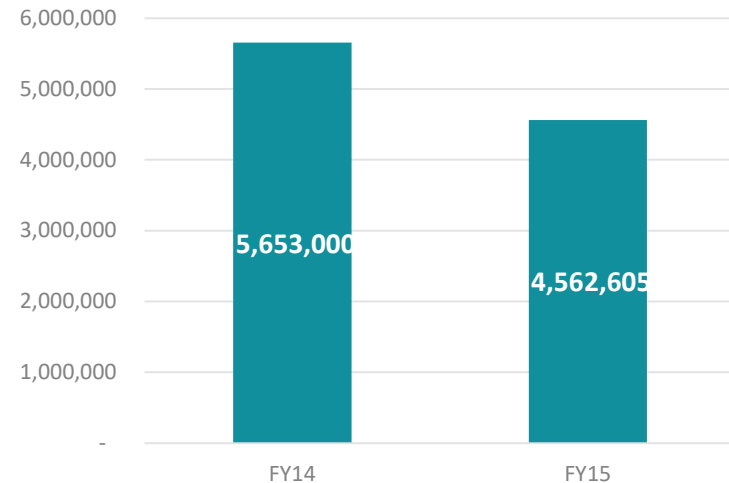
Total AFREA Allocations: \$13.3 million
(as of June 30th, 2015, since inception of AFREA II in 2014)



Disbursements

- By the end of FY2015, total disbursements for the AFREA Phase II activities reached \$4.5 million out of the total allocation of \$13.3 million, providing a disbursement rate of 34.3%
- FY15 had slightly lower disbursement than FY14 partly due to the fact that AFREA Phase I activities were closing out, and AFREA Phase II activities were just getting started

AFREA II Disbursements



Outputs

- AFREA was responsible for delivering 37 outputs during FY2015, of which 10 are classified as AAA and 27 as KP.

1. Development Financing Outcomes (3)*

One AFREA activity informed one or more components of two projects through its upstream engagement. The projects and the upstream AFREA activity influencing them are listed below.

COUNTRY	WBG OPERATIONS INFORMED	AFREA UPSTREAM ACTIVITY
Comoros	Comoros Electricity Sector Recovery Project (Comoros / \$5 million) (P131659)	Gender and Energy Program (P149119)
Uganda	Uganda Energy for Rural Transformation APL-3 (Uganda / \$135 million) (P133312)	Gender and Energy Program (P149119)

2. Policy/Strategy Outcomes (2) and Client Capacity Increased (1) *

Policy/Strategy Outcomes

The *South Sudan Energy Sector Technical Assistance* developed an Electricity Sector Strategy Note (ESSN) in consultations with government of South Sudan. The TA supported this exercise through data collection, analysis, and gathering feedback from government (<http://documents.worldbank.org/curated/en/2013/04/17731953/south-sudan-electricity-sector-strategy-note-essn>)

As part of the *Gender and Energy Program*, there have been multiple engagements during FY15 that resulted in policy/strategy outcomes specifically to stimulate/initiate public debate. Work included collaboration with the Malian Agency for the Development of Household Energy and Rural Electrification (AMADER) and the Tanzanian Rural Energy Agency (REA); In addition, consultations were held the with Rural Electrification Agency (ASER) on a gender action plan.

Client Capacity Increased

In FY 15 the AFREA *Gender and Energy Program* has increased institutional capacity of client countries to plan, manage, and regulate the implementation of energy policies, strategies, and programs that are gender informed. The focus was on strengthened capacity for gender mainstreaming in Rural Energy Agencies, Ministries and Utilities, the development of M&E work programs, collation gender sensitive M&E indicators for use in energy operations and the development and hosting of trainings and workshops.

* List of Outcomes available in the Annex.

Contents

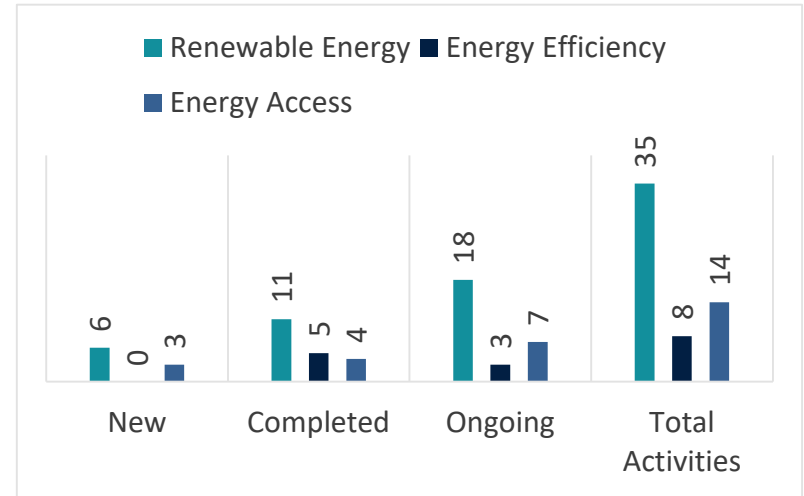
1. ESMAP
2. AFREA
3. ASTAE
 - a. Portfolio Overview
 - b. Disbursements & Implementation
 - c. Outputs
 - d. Results
 - e. Looking Forward

ASTAE | Portfolio Size & Composition

New, Completed, & Ongoing Projects, FY2012-15*

	FY2012	FY2013	FY2014	FY2015
New	12	14	19	9
Completed	1	0	8	11
Ongoing	0	12	20	28
Total Activities	13	26	47	48
Activities included IDA countries**	10	19	34	35
Activities included IDA Countries within Total Activities (%)	77%	73%	72%	73%

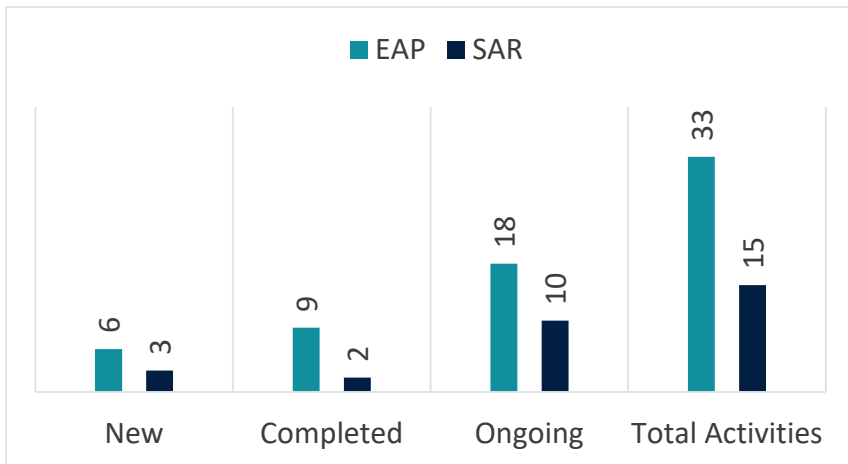
Number of New, Completed, & Ongoing Projects, by ASTAE Pillars, FY2012-15*



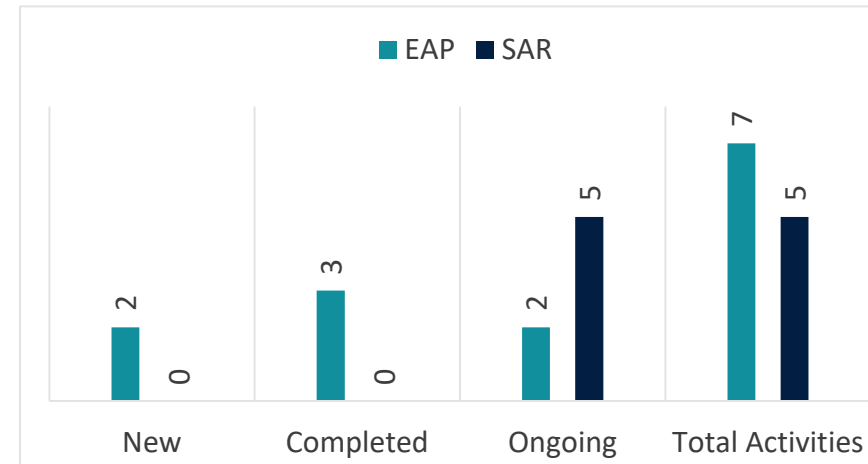
* ASTAE's portfolio in FY2015 consisted of 48 activities, excluding nine activities completed during FY2012-14.

** This includes blend countries (Vietnam, Mongolia, Pakistan, PNG), small islands economy exceptions, and all regional activities.

Number of New, Completed, & Ongoing Projects, by Region FY2015



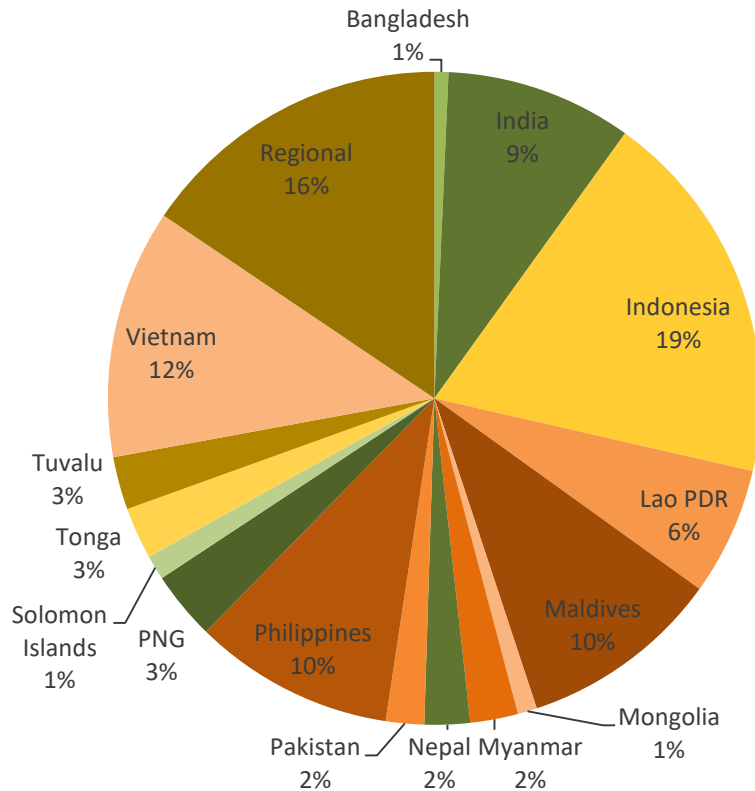
Number of New, Completed, & Ongoing Regional Activities FY2015



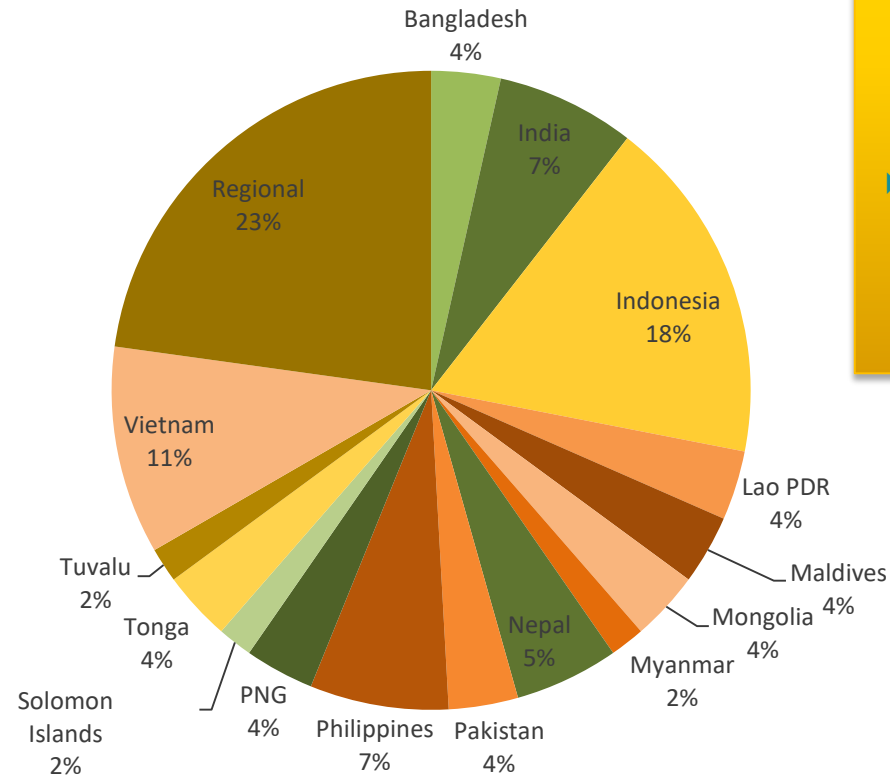
ASTAE | Portfolio Size & Composition

During FY2012-15, a total of \$21,141,810 was allocated to all 57 ASTAE-funded activities, including completed activities. Annual allocation has decreased gradually with \$5,630,043 for FY2015, \$5,891,298 for FY2014, \$5,530,048 for FY2013, and \$4,090,421 for FY2012.

Share of ASTAE Total Fund Allocation, by Country & Regional Activities, FY2012-15

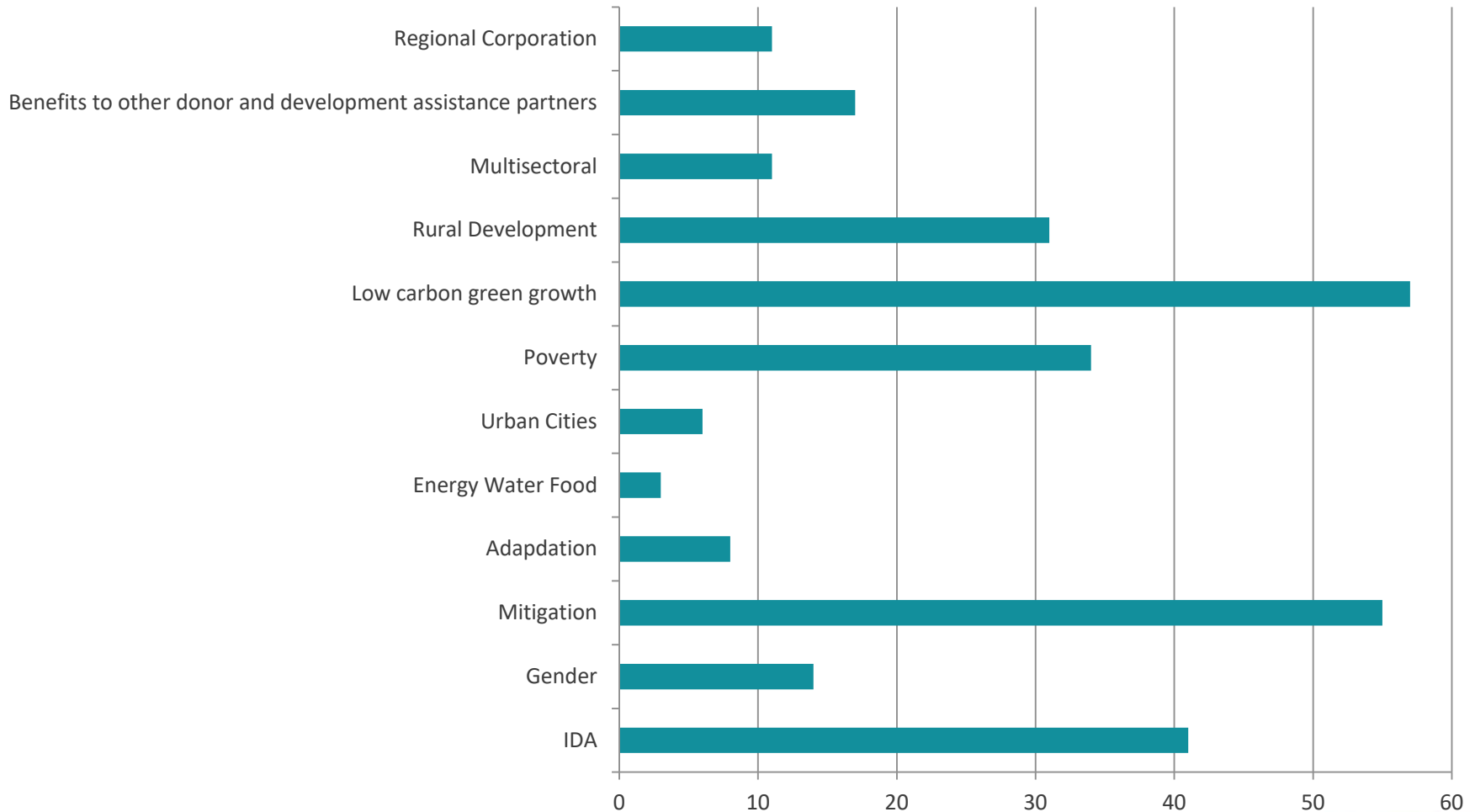


Share of ASTAE Total Activities, by Country & Regional Activities, FY2012-15



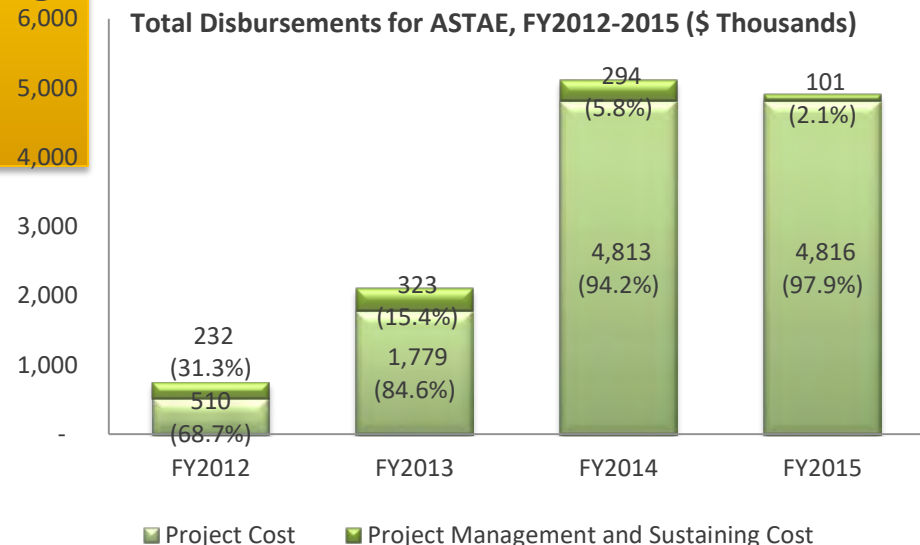
ASTAE | Portfolio Size & Composition

Allocated Activities, by Specific Themes of ASTAE Donors' Interests, FY2012-15



3 ASTAE | Disbursements & Implementation

Total Disbursements for ASTAE, FY2012-2015 (\$ Thousands)



ASTAE Disbursements, by Pillar & Region, FY2015 (\$ Thousands)

	EAP	SAR	Total
Renewable Energy	1,571	832.11	2,403 (50%)
Energy Efficiency	508.44	22.86	531 (11%)
Energy Access	1,722	159.13	1,881 (39%)
Total	3,802	1,014	4,816 (100%)

Most ASTAE activities include two or three pillars and thus the above table is based on the highest weight that each activity places on the pillars.

ASTAE Disbursements by Region in FY2015 (\$Thousands)

EAP	3,802 (79%)
SAR	1,014 (21%)
Total	4,816 (100%)

Breakdown of Disbursement - Energy Access Pillar & Regions (\$ Thousands)

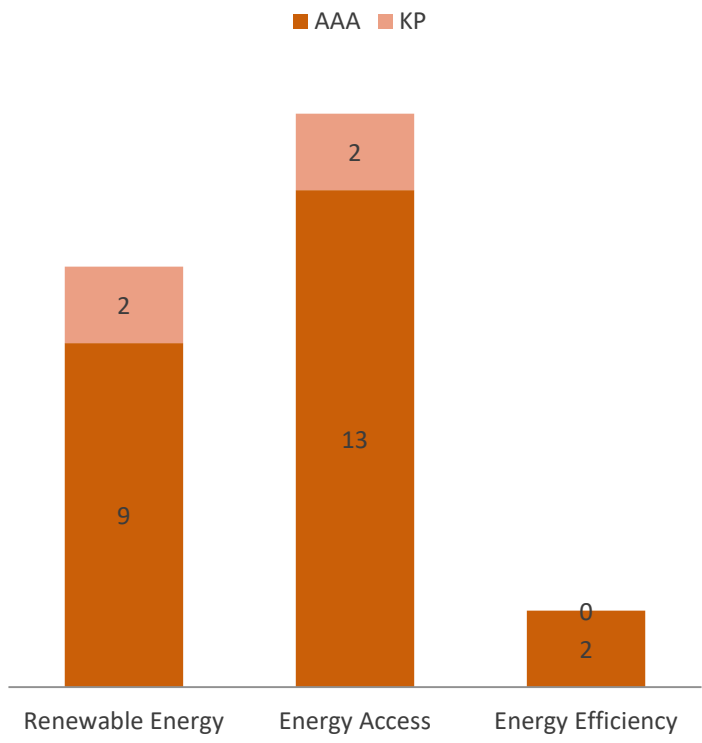
Energy Access	EAP	SAR	Total
Off Grid	928	102	1,031
On Grid	39.3	-	39
Both Grids	754	57	811
Total	1,722	159	1,881

The overall disbursement rate during FY2012-15 was 56% of funds allocated to the approved ASTAE financed activities under the current ASTAE Business Plan, compared to 47% during FY2012-14. The overall implementation rate, which includes total commitments as of June 30, 2015 for active projects under implementation, was about 75%. During FY2012-15, disbursement and implementation rates were higher in EAP with 66% and 83%, respectively, than SAR with the disbursement rate of 37% and implementation rate of 58%.

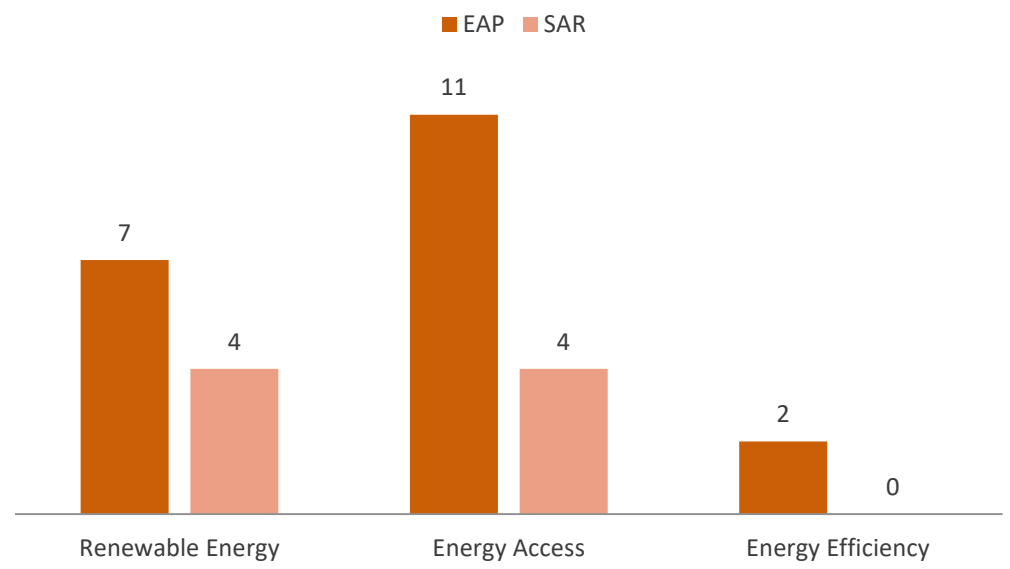
3 ASTAE | Outputs

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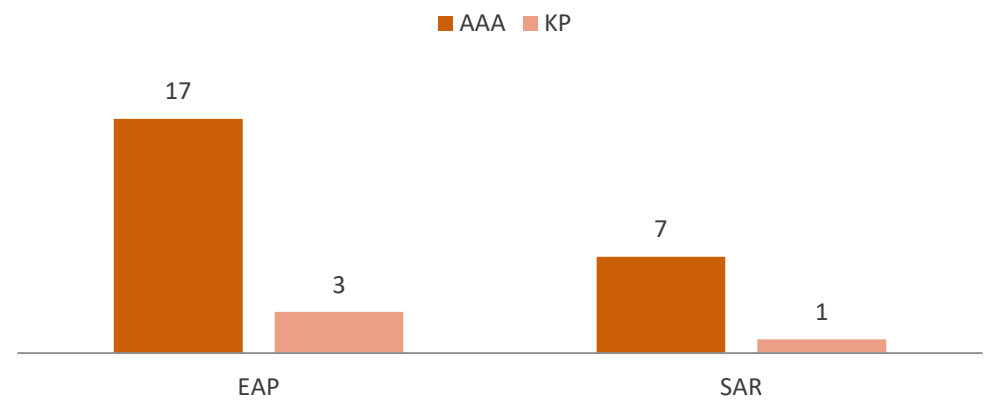
Number of Outputs by Type FY2015



Number of Outputs by Type and Region



Number of Outputs by Region FY2015



ASTAE | Outputs

COUNTRY/ REGION	TITLE
India	Power to India: The Challenge of Electricity Distribution. Directions in Development ASTAE co-financed
India	Power for All: Electricity Access Challenge in India ASTAE co-financed
India	Elite Capture: Residential Tariff Subsidies in India ASTAE co-financed
East Asia	Beijing, China - Clean stove initiative forum proceedings ASTAE co-financed
Indonesia	Social marketing plan for Indonesia clean stove initiative results based financing pilot program
Indonesia	Integrating a Gender Perspective in the Promotion and Assessment of Impacts of Clean Stoves From the Lab to the Field and Back
Indonesia	Understanding User Needs in Developing Clean Stove Technologies From the Lab to the Field and Back
Indonesia	East Asia and Pacific Integration of Social & Gender in Energy Projects in EAP From the Lab to the Field and Back
Nepal	Nepal - Scaling up electricity access through Mini and Micro Hydropower applications
Pacific Islands	Pacific Renewable Energy & Energy Efficiency Proceedings Nuku'alofa, Tonga 9-11 September 2014. Policy Making Workshop ASTAE co-financed

ASTAE | Outputs

Peer-Reviewed Research Pieces Published

Regional	Tracking Electrification in Vietnam Using Nighttime Lights (9 October 2014, Remote Sensing, 2014, 6(10), 9511-9529)
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Notable Outcomes

Country/Region	Outcomes	ASTAE activities
Papua New Guinea	Grid Code, November 5, 2014	Assessing the Key Elements for the Development of a Third Party Access Code for the Transmission and Distribution Networks in Papua New Guinea
Lao PDR	First National Cookstove Standards, June 10, 2015	Clean Stove Initiative Phase 2 (Bank executed part)
Vietnam	Memorandum of Understanding between the Da Nang City People's Committee and Philips Electronics Vietnam Ltd for the Pilot Project: Da Nang Light-Emitting Diodes, Street Lighting Retrofit, as part of Phase 3 of the SUEEP Program: "Energizing Green Growth of Da Nang City, Vietnam", July 4, 2015	Sustainable Urban Energy and Emissions Planning (SUEEP) – Phase 3: Energizing Green Growth of Da Nang City, Vietnam
Regional	Awarded a Knowbel Innovate Prize by the World Bank's Energy and Extractives Global Practice in April 2015	EAP-Clean Stoves Initiative Forum
Indonesia	Signing of a Memorandum of Understanding between the National Electricity Company Perusahaan Listrik Negara and the State Forestry Company Perhutani to collaborate on land management	Support to Integrated Catchment Program, Upper Cisokan Pumped Storage Project

3 d ASTAE | Results

Indicator 1 | Total World Bank Lending Catalyzed by ASTAE Activities

By providing advisory services and technical assistance, ASTAE informs the preparation, execution and evaluation of major World Bank energy projects. Five ASTAE-supported projects were approved in FY2015 by the World Bank's Board for a total of \$1,013 million.

Table: ASTAE-Supported IDA/IBRD/GEF Projects Approved by the World Bank's Board in FY2015

Country	Project Title	USD million
Lao PDR*	Lao PDR Health Governance and Nutrition Development Project (P151425)	26.40
Nepal	Kabeli-A Hydro Electric Project (P122406)	108.60
Nepal	Nepal: Grid Solar and Energy Efficiency (P146344)	138.00
Tuvalu	Energy Sector Development Project (P144573)	9.10
Vietnam	Transmission Efficiency Project (TEP) (P131558)	731.25
Total		1,013.35

*This project was informed by both an ESMAP and ASTAE activity.

ASTAE | Results

Table: ASTAE supported World Bank Lending and Grant Operations (IDA, IBRD, and GEF) approved by the Board during FY12-15

Country/Region	ASTAE Activity Title (same project code and weblink as in the World Bank Lending Title)	World Bank Lending Title (weblink in the title)	Total Project Cost (US\$ million)
China	Energy Efficiency Financing Promotion (FY09 and FY11)	China Energy Efficiency Financing III (P123239)	428
Mongolia	Heating in Poor, Peri-Urban Areas of Ulaanbaatar (ASTAE support FY08–09)	Ulaanbaatar Clean Air Project (P122320)	21.94
China	China Renewable Energy Scale-up Program (CRESP) Phase II and Shanghai Low-Carbon City Preparation (FY10-FY11); and Shanghai- Jade Green Electricity Scheme (FY03-FY05)	Green Energy Schemes for Low-carbon City in Shanghai (P127034)	256
Vietnam	Support for the Energy Efficiency Demand-Side Management Program (FY10–11)	Clean Production and Energy Efficiency (P116846)	4.15
Vietnam	Support for the Preparation of the Vietnam Renewable Energy Project (REDP) (FY08-11).	Vietnam Renewable Energy Development Project (carbon finance component) (P110477)	249.40
Indonesia	Building Innovation Capacity in Clean Energy in Indonesia	Research and Innovation in Science and Technology Project (P121842)	95.00
Indonesia	Geothermal Power Development Program II	Geothermal Clean Energy Investment Project (P113078)	581.65
Bangladesh	Household Energy in South Asia Region	Rural Electrification and Renewable Energy Development II (RERED II) Project (P131263)	386
Pakistan	Natural Gas Loss Reduction	Natural Gas Efficiency Project (P120589)	272
PNG	Assessing the Key Elements for the Development of a Third Party Access Code for the Transmission and Distribution Networks in Papua New Guinea	PNG Energy Sector Development Project (P101578)	9.25

ASTAE | Results

Table: ASTAE supported World Bank Lending and Grant Operations (IDA, IBRD, and GEF) approved by the Board during FY12-15 (continued from the previous slide)

Country/Region	ASTAE Activity Title (same project code and weblink as in the World Bank Lending Title)	World Bank Lending Title (weblink in the title)	Total Project Cost (US\$ million)
Nepal	Support to Sustainable Hydropower Development in Nepal	Kali Gandaki A Hydropower Plant Rehabilitation Project (KGAHPRP) (P132289)	30.37
Regional	Development of Private Sector Models for Off-Grid Electrification in South Asia (P145999) (this project code does not have external weblink)	Accelerating Sustainable Private Investment in Renewable Energy (ASPIRE) Project: Maldives (P145482)	27.68
Vietnam	Capacity Building Support to Vietnam Pumped Storage Power Program	Trung Son Hydropower Project (P084773)	411.72
Lao PDR	Strategic Advisory for the Lao Power Sector Reform	TA for Capacity Building in the Hydropower and Mining Sectors (P109736)	25.8
Indonesia	Support to Integrated Catchment Program for Upper Cisokan Pumped Storage Project	Upper Cisokan Pumped Storage Hydro-Electrical Power (1040 MW) Project (P112158)	800
China	China Renewable Energy Scale-up Program (CRESP) Phase II and Shanghai Low-Carbon City Preparation (FY10-FY11)	China Renewable Energy Scale-Up Program Phase II (P127033)	27.3
Lao PDR	Clean Stove Initiative Phase 2	Lao PDR Health Governance and Nutrition Development Project (P151425)	26.4
Nepal	Support to Sustainable Hydropower Development in Nepal	Kabeli-A Hydro Electric Project (P122406)	108.6
Nepal	Photovoltaic Technology Workshop in Kathmandu	Nepal: Grid Solar and Energy Efficiency (P146344)	138
Tuvalu	Preparation and early implementation support for the Tuvalu Energy Sector Development Project	Energy Sector Development Project (P144573)	9.1
Vietnam	Renewable Energy Integration and System Efficiency and Reliability Enhancement	Transmission Efficiency Project (TEP) (P131558)	731.25

ASTAE | Results

Indicator 2 | New Capacity and Increased Generation of Renewable Electricity. By supporting projects that directly facilitate investments, ASTAE activities lead to increased capacity and generation from renewable sources.

Table: Renewable Electricity Capacity Added, by Country (FY2012–15)

	Capacity (MW)	Title of the World Bank Project (weblink in the title)	Generation (GWh)	Title of the World Bank Project (weblink in the title)
Bangladesh	61	Rural Electrification and Renewable Energy Development II (RERED II) Project and Additional Financing (P131263, P150001)	-	
China	-		370	China Renewable Energy Scale-Up Program Phase II (P127033)
Indonesia	1,040	Upper Cisokan Pumped Storage Hydro-Electrical Power (1040 MW) Project (P112158)	1,208	Geothermal Clean Energy Investment Project (P113078)
Maldives	20	Accelerating Sustainable Private Investment in Renewable Energy (ASPIRE) Project: Maldives (P145482)	32.6	Accelerating Sustainable Private Investment in Renewable Energy (ASPIRE) Project: Maldives (P145482)
Nepal	206.6	Kali Gandaki A Hydropower Plant Rehabilitation Project (KGAHPRP) (P132289) Kabeli-A Hydro Electric Project (P122406) Nepal: Grid Solar and Energy Efficiency (P146344)	236.9	Kabeli-A Hydro Electric Project (P122406) Nepal: Grid Solar and Energy Efficiency (P146344)
Vietnam	43.5	Trung Son Hydropower Project (P084773)	1,019	Trung Son Hydropower Project (P084773)
Tuvalu	1.13	Energy Sector Development Project (P144573)	1.8	Energy Sector Development Project (P144573)
TOTAL	1,732 MW		2,868 GWh	41

ASTAE | Results

Indicator 3 | Electricity Savings Resulting from Efficiency Improvements. ASTAE helps embed energy efficiency measures into World Bank programs and assists governments in taking energy efficiency into account as part of the policy planning process.

Table: Cumulative Electricity Savings, by Country (FY2012-15)

	Capacity (MW equivalent saved)	Title of the World Bank Project (weblink in the title)	Generation (GWh saved)	Title of the World Bank Project (weblink in the title)
Bangladesh	0.02	Rural Electrification and Renewable Energy Development II (RERED II) Project and Additional Financing (P131263, P150001)	0.16	Rural Electrification and Renewable Energy Development II (RERED II) Project and Additional Financing (P131263, P150001)
China	-		0.0062	Energy Efficiency Financing III Project (P123239) Green Energy Schemes for Low-carbon City in Shanghai (P127034)
Pakistan	350	Natural Gas Efficiency Project (P120589)	2,820	Natural Gas Efficiency Project (P120589)
Tuvalu	0.985	Energy Sector Development Project (P144573)	0.12	Energy Sector Development Project (P144573)
Vietnam	0.966	Transmission Efficiency Project (TEP) (P131558)	7.79	Transmission Efficiency Project (TEP) (P131558)
Total	352		2,828	

ASTAE | Results

Indicator 4 | Households with Access to Modern Energy Services. This indicator reflects ASTAE's success in extending access to modern energy services by measuring the number of households reached. The indicator comprises three sub-indicators: (i) the number of households receiving new access to electricity, (ii) the number of households receiving improved electricity, and (iii) the number of households receiving improved access to efficient stoves for heating and cooking.

Table: Cumulative households access by Country (FY2012-15)

	New electricity access	Title of the World Bank Project (weblink in the title)	Improved electricity access	Title of the World Bank Project (weblink in the title)	Improved cooking and heating access	Title of the World Bank Project (weblink in the title)
Bangladesh	558,000	Rural Electrification and Renewable Energy Development II (RERED II) Project and Additional Financing (P131263, P150001)	-		1,020,000	Rural Electrification and Renewable Energy Development II (RERED II) Project and Additional Financing (P131263, P150001)
Maldives	-		150,000	Accelerating Sustainable Private Investment in Renewable Energy (ASPIRE) Project: Maldives (P145482)	-	
Mongolia	-		-		175,000	Ulaanbaatar Clean Air Project (P122320)
Nepal			163,000	Kabeli-A Hydro Electric Project (P122406)		
Total	558,000		313,000		1,195,000	

ASTAE | Results

Indicator 5 | Avoided Greenhouse Gas Emissions. This indicator estimates the quantity of CO₂ emissions that would be avoided over 20 years (the conventional lifespan of projects or equipment) through ASTAE-supported World Bank projects. It determines the CO₂ equivalent saved directly and indirectly through the replacement of conventional thermal power plants with renewable energy and realizing the potential energy savings.

Table: CO₂ Mitigated, by Country, FY2012–2015

Countries with ASTAE Activity that May Reduce GHG	CO ₂ Mitigated (million tons over 20 years)	Title of the World Bank Project (weblink in the title)
China	110.1	China Renewable Energy Scale-Up Program Phase II (P127033) Energy Efficiency Financing III Project (P123239) Green Energy Schemes for Low-carbon City in Shanghai (P127034)
Maldives	0.518	Accelerating Sustainable Private Investment in Renewable Energy (ASPIRE) Project: Maldives (P145482)
Pakistan	240.0	Natural Gas Efficiency Project (P120589)
Vietnam	25.64	Clean Production & Energy Efficiency Project (P116846) Trung Son Hydropower Project (P084773) Transmission Efficiency Project (TEP) (P131558)
Nepal	2.82	Kabeli-A Hydro Electric Project (P122406) Nepal: Grid Solar and Energy Efficiency (P146344)
Tuvalu	0.02	Energy Sector Development Project (P144573)
Total	379	

Indicator 6 | Countries Benefiting from ASTAE Support. This indicator ensures that ASTAE resources are used in a balanced manner across all ASTAE countries, providing equal funding opportunities to large countries and to smaller countries. ASTAE financed activities in 21 countries, which exceeded the target of 15 countries for the current ASTAE Business Plan, with five countries in SAR and 16 in EAP. This difference between EAP and SAR reflects the fact that EAP has more countries than SAR.

3 ASTAE | Looking Forward

Table: ASTAE Summary of Progress towards the FY2012-15 Business Plan Targets

Direct Indicators	Unit	Value Pledged	Value Achieved FY12-14	Value Achieved FY15	Value Achieved FY12-15	Progress (percent)
1. Total World Bank lending catalyzed by ASTAE activities						
Project and program lending	million US\$	3,200	4,218	1,013	5,232	163%
2. New capacity and increased generation of renewable electricity						
Renewable energy, capacity	MW	1,500	1,309	64	1,372	91%
Renewable energy, generation	GWh/year	3,000	2,630	239	2,868	96%
3. Electricity savings resulting from efficiency improvements						
Energy savings, capacity	MW equivalent	1,000	351	0.001	351	35%
Energy savings, generation	GWh/year	2,000	2,820	8.77	2,829	141%
4. Households with access to modern energy services						
Access to electricity (new)	households	2,000,000	558,000		558,000	28%
Access to electricity (improved)	households	1,000,000	150,000	163,000	313,000	31%
Improved stoves for heating (cooking and space)	households	5,000,000	1,195,000		1,195,000	24%
5. Avoided greenhouse gas emissions						
Direct CO ₂ avoided over 20 years	million tons	200	375	4	379	190%
6. Countries benefiting from ASTAE support						
Number of countries	Countries	15	12	21	21	140%

ASTAE | Pipeline, FY2016

Table: Proposed ASTAE-Supported Activities, FY2016

Proposed Activity	ASTAE ('000 \$)
Additional budget to support the implementation of the Indonesia CSI pilot project	130
Integrated Catchment Management (ICM) for the Matenggeng Pumped Storage Power Project	200
Continuation of the Lao PDR CSI activity	110
Additional funding request for developing joint IFC-IDA solar program specifications	80
Myanmar NEP impact evaluation study	250
Support to 24X7 Power For All Program in India	180
Supporting Environmentally and Socially Sustainable Hydropower Development in Bhutan	200
Pakistan: Renewable Energy Resource Mapping and Geospatial Planning	352