



NOVEMBER 2012

ESMAP PORTFOLIO REVIEW, FY2009-12



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ABBREVIATIONS AND ACRONYMS

AAA	Analytical Advisory Activities	SIL	Specific investment loan
ABG	Annual Block Grant	SME	Small-medium enterprise
AEI	Africa Electrification Initiative	SREP	Scaling-Up Renewable Energy Program
AFR	Africa (WB Region)	TA	Technical assistance
AFREA	Africa Renewable Energy Access Program	ToU	Time of use
BB	Bank budget	TRACE	Tool for Rapid Assessment of City Energy
BEIA	Biomass Energy Initiative for Africa	TTL	Task team Leaders
CE	Clean Energy	UNFCCC	United Nations Framework Convention on Climate Change
CFL	Compact fluorescent lamp	UNDP	United Nations Development Programme
CSP	Concentrated solar power	WBG	World Bank Group
CTF	Clean Technology Fund		
EA	Energy Access		
EAP	East Asia and Pacific (WB Region)		
EASP	Energy Assessments and Strategies Program		
ECA	Europe and Central Asia (WB Region)		
EE	Energy Efficiency		
EECI	Energy Efficient Cities Initiative		
EFFECT	Energy Forecasting Framework & Emissions Consensus Tool		
FIP	Forest Investment Program		
GEF	Global Environment Facility		
GFR	Grant Funding Request		
GHG	Greenhouse gas		
GIS	Geographical Information System		
GPOBA	Global Partnership for Output-Based Aid		
GRM	Grant Reporting Monitoring		
GWh	Gigawatt hour		
HEAT	Hands-on Energy Adaptation Toolkit		
HTG	“How to” Guide		
IBRD	International Bank for Reconstruction and Development		
IDA	International Development Association		
ICR	Implementation Completion Report		
IEG	Independent Evaluation Group		
IFC	International Financial Corporation		
INFRA	Infrastructure Recovery and Assets Platform		
JICA	Japan International Cooperation Agency		
KSF	Knowledge Exchange Forum		
LCR	Latin America and Caribbean (WB Region)		
MACTool	Marginal Abatement Cost Tool		
MNA	Middle East and North Africa (WB Region)		
MW	Megawatt		
M&E	Monitoring and evaluation		
PCN/PAD	Project Concept Note / Project Appraisal Document		
PSF	Proposal Summary Form		
POL	Policy Note		
PPA	Power Purchase Agreement		
PPIAF	Public Private Infrastructure Advisory Facility		
REA	Rural Energy Agency		
SAR	South Asia (WB Region)		
SE4ALL	Sustainable Energy for All		
SEG	World Bank Department of Sustainable Energy		
SSA	Sub Saharan Africa		
SARESS	South Asia Regional Energy Study Series		

All monetary units in US\$, unless otherwise indicated.

I. OBJECTIVES AND APPROACH

As ESMAP reaches the final year of its 2008-13 Business Plan, the program has placed an increased focus on results to its work program. A comprehensive Portfolio Monitoring and Evaluation (M&E) system has been put into place since 2010 to assess the effectiveness of ESMAP in enabling delivery of services to its clients. It has devoted more effort to defining robust results indicators at the outset of activities, and to monitoring and capturing the results once activities are complete. In addition, ESMAP has undertaken efforts to incorporate gender dimensions in its M&E system.

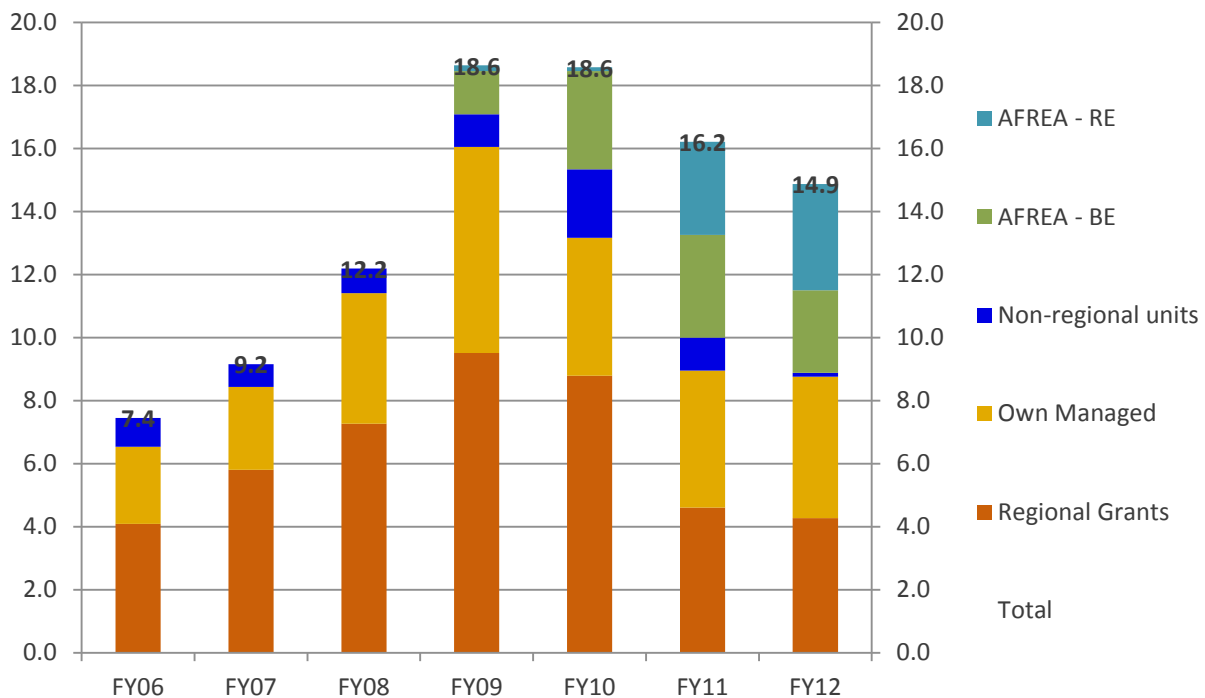
The annual Portfolio Review is part of ESMAP's M&E system and presents the results and outcomes of ESMAP activities. The Portfolio Review is structured as follows: (i) an overview of the composition and trends of ESMAP's portfolio; (ii) an analysis of the results and outcomes of activities implemented during the Business Plan period; (iii) an assessment of the gender baseline of ESMAP activities; and (iv) lessons learned and strategic implications of the Portfolio Review.

This portfolio review uses the methodology and approach of previous Portfolio Reviews with slight modifications. In recognition of the "upstream" nature of the vast majority of ESMAP activities, the Portfolio Review continues to use the World Bank's classification of outcomes and indicators for Analytical Advisory Activities (AAA): (i) development finance informed; (ii) policy/strategy informed; (iii) client capacity increased; (iv) knowledge increased; and (v) innovative approaches and solutions generated. However, in a departure from previous years and reflecting comments received during the 2012 ESMAP Consultative Group meetings, the Portfolio Review also draws out the key messages, lessons learned, and strategic implications. A detailed description of the methodology, including data sources and limitations of the Portfolio Review can be found in Annex 1.

II. PORTFOLIO CHARACTERISTICS AND TRENDS

There was an increase in ESMAP’s scale of assistance in this Business Plan period (Figure 1). ESMAP disbursements have averaged \$17.1 million per year over FY09-12 compared with disbursements of \$9.6 million per year in the FY06-08 ESMAP Business Plan¹. This is mainly due to the disbursements under the Africa Renewable Energy Access (AFREA) program², which account for slightly more than half of the increase in average annual disbursements. The rest of the increase is almost equally divided among grants to the World Bank’s regional units, non-regional units, and ESMAP’s own-managed program. At the same time, there has been a declining trend in disbursements since FY2010 due to the drawdown of relatively large one-off grants allocated to the World Bank’s Environment unit for climate change activities and regional units for low carbon studies in FY09-10.

Figure 1 | Annual Disbursements (\$ millions)



Note: RE - Recipient executed; BE - Bank executed

The Africa region received the largest amount of ESMAP assistance, accounting for almost a third of all ESMAP disbursements during FY2009-12 (Figure 2). This is more than twice the proportion of disbursements during the FY06-08 period. This mainly reflects disbursements under AFREA program that constitute four fifths of ESMAP’s assistance to the Africa region. ESMAP’s own managed program accounts for a fifth of the total disbursements. Disbursements of non-regional units constitute 13% of

¹ Excluding program management and administration costs

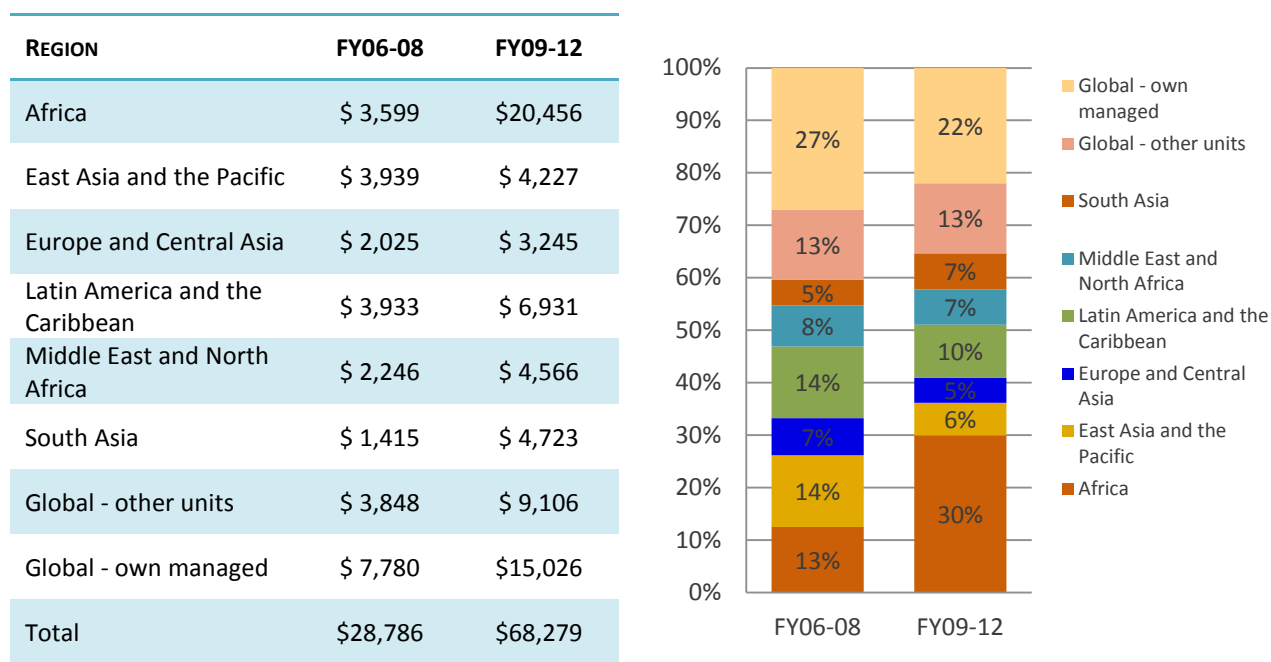
² The AFREA program was initiated in FY09 to increase the flow of assistance to Africa for renewable energy and access

the total disbursements, with the World Bank’s Environment unit accounting for half of these disbursements.

Each of the other regional units disbursed between 5% and 10% of the total FY09-12 disbursements.

WB Regional units, excluding Africa, together account for slightly over a third of all ESMAP disbursements in this Business Plan. The variation in the proportion of disbursements of regions, other than Africa, is mainly due to their differing rates of utilization of ESMAP allocations. While regional units, other than Africa receive roughly the same amount of ESMAP allocation each year, Latin America and Caribbean, Middle East and North Africa, and South Asia regions have utilized more of these allocations than Europe and Central Asia and East Asia and Pacific (for more detail on this refer to discussion on disbursement rates on page 9).

Figure 2 | ESMAP Disbursements, by Region (\$ 000 and Percent)

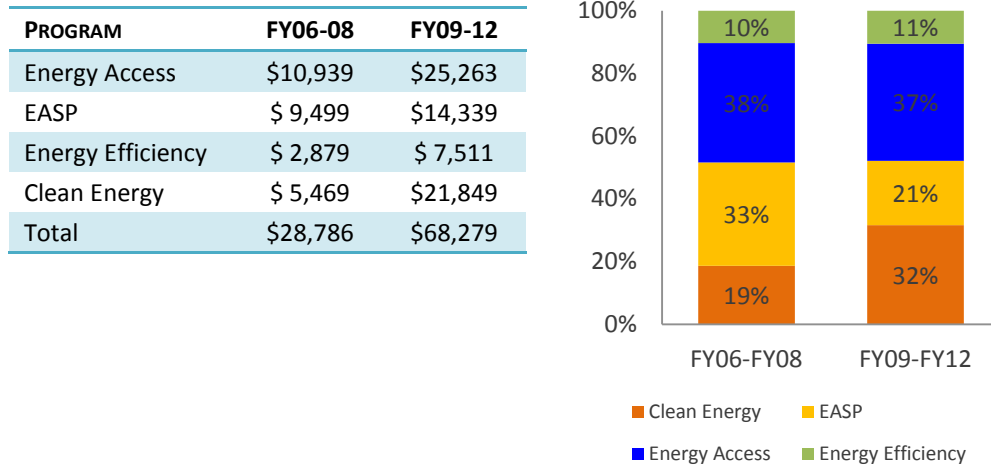


Source: ESMAP Portfolio Review 2013

The Energy Access program accounts for the largest proportion of ESMAP assistance while the Clean Energy³ program showed the greatest increase (Figure 3). Energy Access activities constitute two-fifths of the total disbursements during FY09-12, which is about the same level as the previous Business Plan. Clean Energy activities have received about one third of the assistance, which is an increase from the previous business plan. The proportion of disbursements attributable to the Energy Assessment and Strategy Program (EASP) has declined from the previous business plan while Energy Efficiency program has been maintained at a similar level.

³ ESMAP’s clean energy program includes activities under renewable energy and low carbon themes.

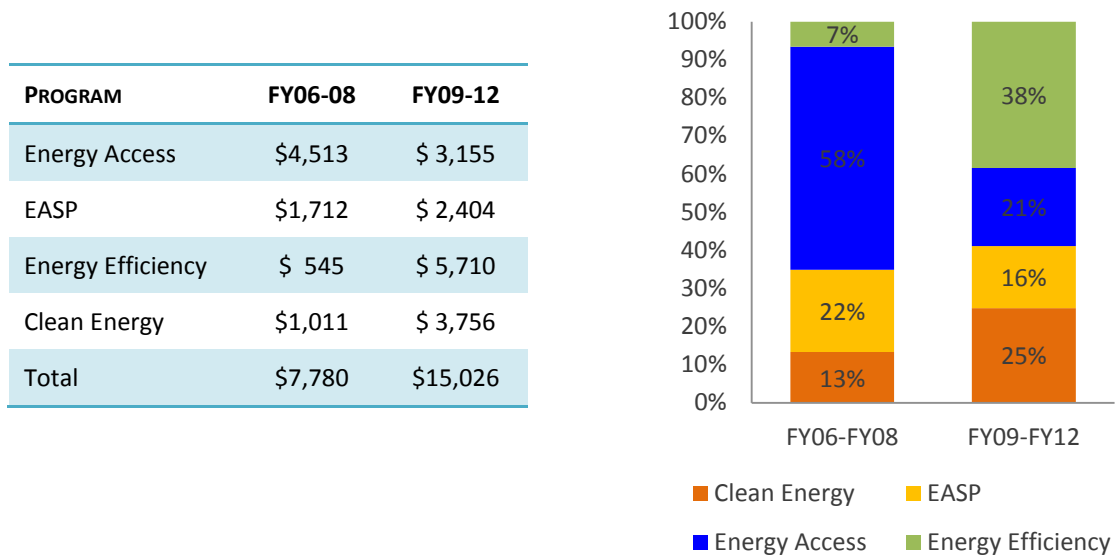
Figure 3 | Total Disbursement by Program Area (\$ 000 and Percent)



Source: ESMAP Portfolio Review 2013

Clean Energy and Energy Efficiency programs have increased as a share of ESMAP’s own-managed portfolio (Figure 4). Together they now constitute two-thirds of ESMAP’s own-managed disbursements during the FY09-12 period. This increase in the share of Clean Energy and Energy Efficiency reflects efforts made by ESMAP to strengthen its team in areas such as energy efficiency in cities and renewable energy. By contrast, the share of Energy Access disbursements remained low until ESMAP rebuilt its team in this area midway through the business plan period.

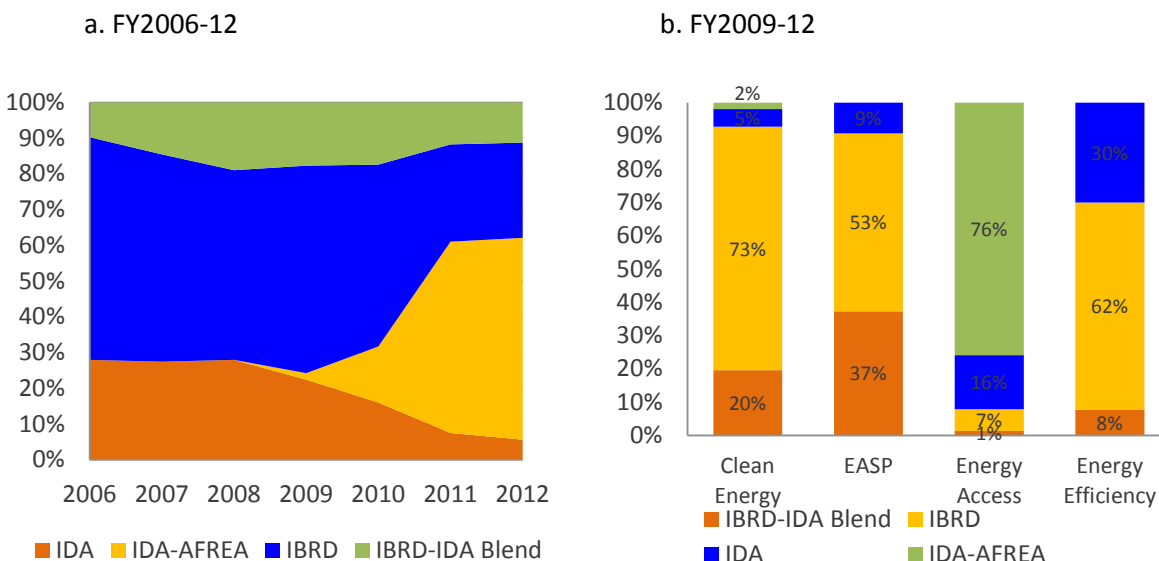
Figure 4 | Own-Managed Disbursements (\$ 000 and %)



The share of ESMAP assistance going to International Development Association (IDA) countries has risen in this Business Plan (Figure 5a). They now account for about half of all ESMAP assistance that is focused on individual countries. The AFREA program has been instrumental in making this happen. Consequently, the share of assistance going to International Bank for Reconstruction and Development (IBRD) and IBRD-IDA Blend countries has declined, although they still constitute a large proportion of the

activities implemented under the Annual Block Grants (ABGs) to regional units. IDA countries are most strongly represented in the energy access portfolio, while IBRD and IBRD-IDA Blend countries dominate the clean energy and EASP portfolios (Figure 5b).

Figure 5 | Share of ESMAP Assistance, by World Bank Group Lending Category of Countries



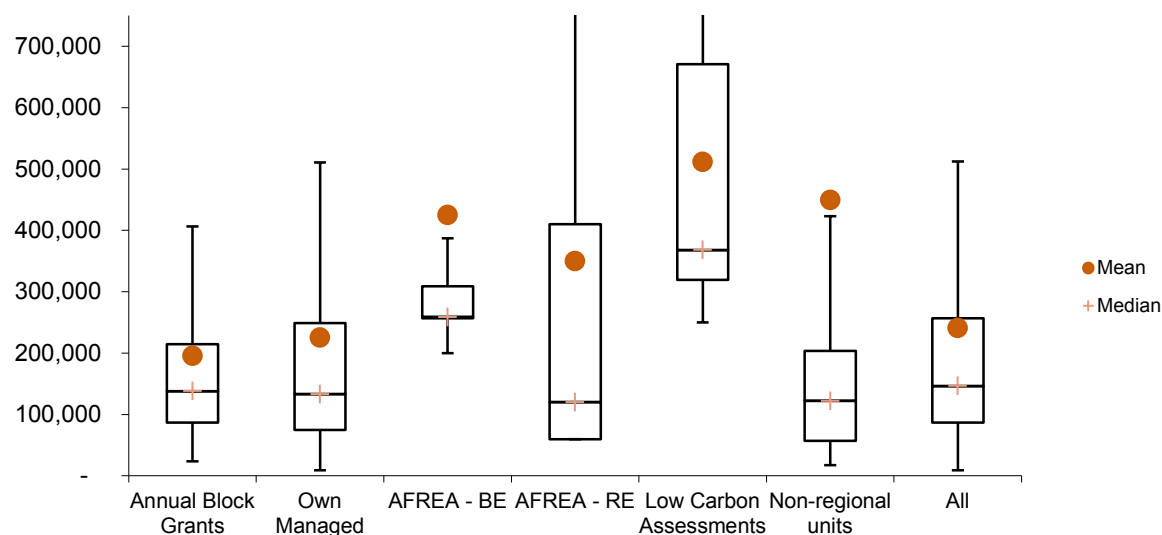
Source: ESMAP Portfolio Review 2013

The average ESMAP contribution to completed activities in this Business Plan is about \$240,000 while the median contribution is \$146,000 (Figure 6). However, this masks significant variation in costs by types and size of activities. ESMAP contributions to low carbon assessments (\$511,407), activities implemented by non-regional units (\$449,691), and recipient-executed AFREA activities (\$349,916) are higher than the mean while contributions to ABGs (\$195,642) and own-managed activities (\$225,107) are lower than the mean. Program-wise, ESMAP’s contributions are higher for Energy Access (\$308, 000) and Clean Energy activities (\$294,000) than EASP (208,000) and Energy Efficiency (\$148,000) activities.

A number of factors are responsible for variation in costs of ESMAP activities. A Cost Assessment Study⁴ carried out by ESMAP in 2011 suggests activities that (i) cover a whole region or a number of countries; (ii) involve significant in-country consultations and dissemination; (iii) require substantial new data collection and analysis; (iii) cover a number of topics or subsectors; and (iv) involve implementation of pilots fall at the top end of the cost spectrum. By contrast, activities that are (i) undertaken in a small country; (ii) based on desk-based analysis of existing data and documentation; (iii) undertaken primarily with local consulting inputs and/or bank staff time; and (iv) leveraging efforts/resources of another related project fall at the low end of the cost spectrum.

⁴ A Cost Assessment Study carried out by ESMAP, covering activities implemented between FY2005 and FY2010, indicates that the average cost of ESMAP activities (including contribution from other sources) is \$266,000, with a median of \$197,000.

Figure 6 | Box Plot of ESMAP Contributions to Activities (\$)*



	ABGs	OWN MANAGED	AFREA - BE	AFREA - RE	LOW CARBON ASSESSMENTS	NON- REGIONAL UNITS	ALL
Minimum	\$23,869	\$9,249	\$200,000	\$59,663	\$250,000	\$17,267	\$9,249
Median	\$137,970	\$132,937	\$258,632	\$120,000	\$367,892	\$122,134	\$146,282
Maximum	\$1,484,544	\$936,343	\$1,100,000	\$1,100,000	\$1,054,721	\$4,525,197	\$4,525,197
Mean	\$195,642	\$225,107	\$424,900	\$349,916	\$511,407	\$449,691	\$240,855
# of Activities	\$130	\$36	\$5	\$4	\$8	\$14	\$196

* In a box plot, the box contains the middle 50% of the data. The outer edges of the box indicate the 75th and 25th percentile. The line in the box indicates the median of value of the data while the dot indicates the mean value. The ends of the vertical lines indicate the maximum or minimum values, unless outliers are present in which case the whiskers extend to a maximum of 1.5 times the inter-quartile range.

Source: ESMAP Portfolio Review 2013

There is some evidence to indicate that ESMAP’s portfolio performance has improved in this Business Plan. The disbursement rate⁵ of the ABG allocations improved to 60% during FY2009-2012 from 47% during FY2006-08. Middle East and North Africa is the best performing region in this Business Plan, followed by Latin America and Caribbean, South Asia, East Asia and Pacific, Africa, and Europe and Central Asia (Table 1).

⁵ The disbursement rate is defined as the amount of available funds disbursed in a given period.

Table 1 | Annual Block Grant Portfolio Performance Indicators, by Region

	FY06-08	FY09-12		FY06-08	FY09-12		FY06-08	FY09-12	
	DISBURSEMENT RATIO		RANK	ESMAP DISBURSEMENTS (\$ MILLION)		RANK	BANK BUDGET DISBURSEMENTS (\$ MILLION)		RANK
Africa	43%	50%	5	\$ 2.8	\$ 2.7	6	\$1.6	\$ 1.9	3
East Asia and Pacific	50%	57%	4	\$ 2.8	\$ 3.4	4	\$1.2	\$ 1.3	5
Europe and Central Asia	53%	47%	6	\$ 2.0	\$ 3.1	5	\$0.5	\$ 2.4	2
Latin America	48%	67%	2	\$ 3.0	\$ 4.7	2	\$1.3	\$ 1.4	4
Middle East and North Africa	53%	72%	1	\$ 2.2	\$ 4.8	1	\$1.5	\$ 3.0	1
South Asia	32%	66%	3	\$ 1.2	\$ 4.3	3	\$0.4	\$ 1.3	5
Total	46%	60%		\$14.0	\$22.9		\$7.6	\$11.3	

Source: ESMAP Portfolio Review 2013

ESMAP activities leveraged \$17.4 million⁶ in Bank budget (BB) funding over the first four years of the Business Plan or about a quarter of the total ESMAP disbursement in this period (Table 1). This translates into BB funding of \$65,000 per ESMAP activity and is an increase from the \$55,000 per activity in the previous Business Plan. The Middle East and North Africa unit is the strongest performer in this regard followed by Europe and Central Asia, Africa, Latin America and Caribbean, East Asia and Pacific, and South Asia.

⁶ This includes BB contribution from non-regional activities while Table 1 only covers BB contribution to ABG activities.

III. RESULTS AND OUTCOMES

This section presents the results and outcomes of ESMAP activities implemented in the current Business Plan. This year's Portfolio Review builds on the data on results and outcomes compiled in the 2011 and 2012 ESMAP Portfolio Reviews. Overall, 271 ESMAP activities—196 completed and 75 ongoing—implemented between FY2009 and FY2012⁷ are covered (see Annex 2 for list of activities covered in the review). The vast majority of the outcomes are for completed projects, although results and outcomes of ongoing activities are also assessed. An assessment of the status of outcomes for each of the 271 activities implemented in the Business Plan can be found in Annex 3.

A. ESMAP RESULTS SCORECARD

The FY2013 Portfolio Review finds evidence for the following additional results and outcomes of completed ESMAP activities since last year's analysis: (i) 10 lending projects totaling \$1.0 billion informed; (ii) 8 policies and strategies informed⁸; (iii) capacity of 4 client country institutions increased; (iv) 6 instances of knowledge increased; and (v) 3 innovative approaches and solutions generated for clients (Table 2). This takes the total for the FY09-12 period to (i) 70 lending projects totaling \$12.5 billion informed (see Table 5 for a selected list and Annex 4 for a full list of lending projects informed by ESMAP activities); (ii) 59 policies and strategies informed (see Table 5 for a selected list and Annex 5 for a full list of policies/strategies informed by ESMAP activities); (iii) capacity of 25 client country institutions increased; (iv) 24 instances of increased knowledge; and (v) 17 innovative approaches and solutions generated.

In addition, the following outcomes are observed for the 75 ongoing activities in ESMAP's portfolio as of June 30 2012: (i) 17 lending projects totaling \$1.4 billion informed; (ii) 3 policies and strategies informed; (iii) capacity of 6 client country institutions increased; (iv) 1 instance of knowledge increased; and (v) 3 innovative approaches and solutions generated for clients.

ESMAP's "client capacity increased" outcomes are concentrated in low-income countries while a larger proportion of "informed lending" outcomes are in middle-income countries (Table 3). Regions with large proportion of middle-income countries, such as Europe and Central Asia, Latin America and Caribbean, and Middle East and North Africa, lead in "informed lending" outcomes whereas regions with a greater share of low-income countries, such as Africa and South Asia, are ahead in "client capacity increased" outcomes.

⁷ Activities initiated during the Business Plan that were (i) dropped, (ii) merged with other activities, (iii) created to disseminate outputs of other products; or (iv) created for program and management administration functions were not reviewed for outcomes.

⁸ This includes both client country and World Bank strategies.

Table 2 | Number, Allocation, and Outcomes of ESMAP Activities Implemented between FY2009-12

	CUMULATIVE OUTCOMES OF COMPLETED ACTIVITIES AS OF END FY2011	CUMULATIVE OUTCOMES OF COMPLETED ACTIVITIES AS OF END FY2012	CUMULATIVE OUTCOMES OF ONGOING ACTIVITIES AS OF END FY2012
# of activities	149	196	75
Total Development Financing Informed (\$ million)	\$11,452	\$12,465	\$1,446
# of Lending Projects Influenced	60	70	17
# of Development Financing Informed Outcomes	51	65	15
# of Policy/Strategy Informed Outcomes	51	59	3
# of Client Capacity Increased Outcomes	21	25	6
# of Knowledge Increased Outcomes	18	24	1
# of Innovative Approaches & Solutions Generated Outcomes	14	17	3
Total # of Outcomes	155	190	28

Source: ESMAP Portfolio Review 2013

Program wise, EASP activities have the most number of “informed lending” and “informed policies/strategies” outcomes, while Clean Energy activities have the greatest number of “knowledge increased” outcomes. Overall, Energy Efficiency activities have the most outcomes relative to number of activities followed by Energy Access, Clean Energy, and EASP.

Table 3 | Number, Allocation, and Cumulative Outcomes of ESMAP Activities Completed between FY2009-12, by Program

	CLEAN ENERGY	EASP	ENERGY ACCESS	ENERGY EFFICIENCY	GRAND TOTAL
# of completed activities	53	69	39	35	19
Value of Allocation (\$ million)	\$15.6	\$14.4	\$12.3	\$5.2	\$47.5
Total Development Financing Influenced (\$ million)	\$3,449	\$6,904	\$441	\$1,671	\$12,465
# of Development Financing Informed Outcomes	13	23	11	18	65
# of Policy/Strategy Informed Outcomes	15	21	14	9	59
# of Client Capacity Increased Outcomes	7	8	7	8	25
# of Knowledge Increased Outcomes	13	4	3	4	24
# of Innovative Approaches & Solutions Generated Outcomes	3	5	4	5	17
Total	51	61	39	39	190

Source: ESMAP Portfolio Review 2013

Regional activities have a greater proportion of the “informed lending” and “informed policy/strategy” outcomes while non-regional activities have a larger share of the “knowledge increased” and “innovative approaches and solutions generated” outcomes (Figure 9). This, in most cases, reflects the

objectives of these activities. Regional activities are generally more focused on informing country policy dialogue and lending operations while non-regional activities are more focused on increasing global knowledge and generating innovative approaches and solutions.

Table 4 | Number, Allocation, and Cumulative Outcomes of ESMAP Activities Completed between FY2009-12, by Region

	AFR	EAP	ECA	LCR	MNA	SAR	Global	Grand Total
# of completed activities	27	27	21	27	26	17	51	196
Value of Allocation (\$ million)	\$9.1	\$4.8	\$3.4	\$7.3	\$3.6	\$4.0	\$15.2	\$47.4
Total Development Financing Influenced (\$ million)	\$1,066	\$1,678	\$3,509	\$2,256	\$1,997	\$827	\$1,132	\$12,465
# of Development Financing Informed Outcomes	8	14	8	7	10	7	11	65
# of Policy/Strategy Informed Outcomes	8	5	9	12	8	5	12	59
# of Client Capacity Increased Outcomes	6	7	2	4		5	1	25
# of Knowledge Increased Outcomes	1		2	5		3	13	24
# of Innovative Approaches & Solutions Generated Outcomes	5	1	1	1	1	2	6	17
Total	28	27	22	29	19	22	43	190

Source: ESMAP Portfolio Review 2013

Table 5 | Selected List of Lending Projects and Policies/Strategies Informed, by ESMAP Activities*

POLICIES/STRATEGIES	LENDING PROJECTS
<ul style="list-style-type: none"> Ethiopia's Duty Waiver for Off-grid Lighting Products Mozambique's Policy and Strategy for Bio-fuels Philippines' Renewable Energy Legislation Montenegro's Renewable Energy Legislation South Africa's Long-Term Mitigation Scenario Poland's Low Carbon Strategy Brazil's National Climate Change Plan Vietnam's Gas Master Plan Egypt's Energy Pricing Reform Plan Lebanon's Policy Paper for the Electricity Sector Syria's Electricity Legislation Philippines' Transmission Regulations Afghanistan's National Energy Efficiency Policy 	<ul style="list-style-type: none"> Southern African Power Market Project Africa Regional and Domestic Power Market Development Project West Africa Power Pool (WAPP) Project Kenya Electricity Expansion Project Egypt Ain Sokhna Power India Coal-Fired Generation Rehabilitation Vietnam Power Sector Reform DPO Cambodia-Rural Electrification and Transmission Project Lao Rural Electrification Program Peru First Rural Electrification Program South Africa Eskom Renewables Support Project Indonesia Climate Change DPO Mexico Low Carbon Development DPO

* See Annex 4 and 5 for the full list of 87 lending projects and 62 policies/strategies informed by ESMAP activities.

Source: ESMAP Portfolio Review 2013, KEY FINDINGS

1| ESMAP is playing an important role in facilitating the scale up of the World Bank’s low carbon energy lending.

ESMAP activities are facilitating the “greening” of World Bank’s energy lending. The Portfolio Review finds evidence to directly link ESMAP activities to at least 40% of Bank’s low carbon energy lending over FY09-12 (Figure 7). The recent increase in World Bank’s low carbon lending,⁹ including a tripling of the lending for renewable energy and doubling of the lending for energy efficiency, was underpinned by AAA from ESMAP.¹⁰ In response to the growing demand from the Bank’s regions, ESMAP increased its portfolio of clean energy and energy efficiency activities and helped facilitate this scale up. Examples of some large lending operations informed by ESMAP activities include Mexico Framework for Green Growth Development Policy Loan, Morocco: Ouarzazate Concentrated Solar Power Project (see Box 1 for more details) and South Africa Eskom Renewable Support Project.

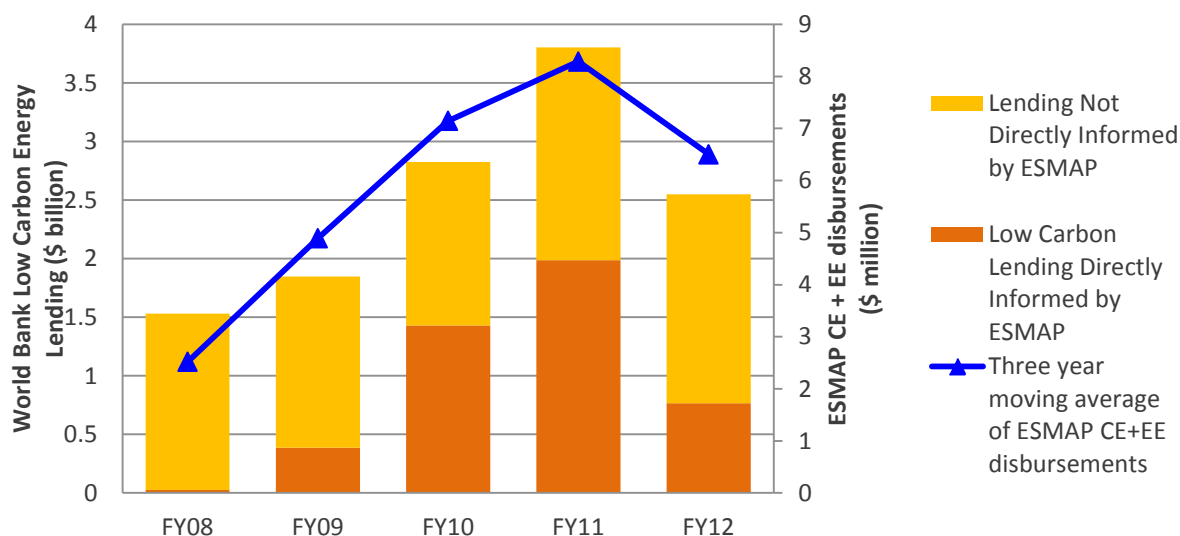
Box 1 | Concentrated Solar Power Scale-Up in Middle East and North Africa

ESMAP has supported international efforts to scale up concentrated solar power (CSP) in the Middle East and North Africa region through analytical work, including a study on the potential impact of this scale up on job creation and knowledge-sharing, including support to regional conferences to share case studies and lessons learned. The culmination of this work came in November 2011, when the World Bank approved \$297 million in loans to help finance Morocco’s Ouarzazate Concentrated Solar Power Plant Project, a 500 MW complex that will be one of the largest CSP installations in the world. The project is a key step in Morocco’s plan to deploy 2,000 MW of solar generation capacity by 2020.

⁹ The average annual World Bank low carbon energy lending has increased to \$2.7 billion over the FY2009-12 period compared to \$1.1 billion over the FY2006-08 period. This includes a tripling of World Bank lending for renewable energy and doubling of the lending for energy efficiency. The share of low carbon lending in the Bank’s overall energy lending has increased to 41% from 33% in the same time.

¹⁰ This masks a slight decline in low carbon lending from FY2011 to FY2012.

Figure 7 | Share of World Bank Low Carbon Energy Lending Informed by ESMAP and ESMAP Clean Energy (CE) and Energy Efficiency (EE) Disbursements



Source: ESMAP Portfolio Review 2013

Low carbon studies were particularly influential in facilitating this scale up. Low carbon studies¹¹ in Brazil, China, India, Indonesia, Mexico, Poland, and South Africa informed the preparation of at least \$2.6 billion of World Bank lending and 6 policies and strategies (Table 6). In Mexico, the low carbon study informed new and ongoing low carbon investments and programs, including investments in sustainable transport, energy efficiency, and land-use management. In South Africa, the study helped prepare the Long-Term Mitigation Strategy for South Africa, which targets 44% reduction in emissions by 2025 and provides the analytical underpinnings for Concentrated Solar Power (CSP) and wind investments under the Eskom Renewable Support project, as well as a \$500 million Clean Technology Fund (CTF) investment program.¹²

A complementary factor underpinning low carbon lending operations is ESMAP’s suite of tools and guidebooks. World Bank operational teams are using tools and guidebooks, such as Energy Forecasting Framework and Emissions Consensus Tool (EFFECT), Tool for Rapid Assessment of City Energy (TRACE), Marginal Abatement Cost (MAC) Tool, Public Procurement of Energy Efficient Products Guidebook, Compact Fluorescent Lighting (CFL) Toolkit, and Geothermal Handbook to design lending projects and inform policy dialogue in client countries. ESMAP’s CFL toolkit, for instance, was used to inform the efforts of World Bank lending projects to distribute hundreds of millions of CFL bulbs in Ethiopia, Rwanda, Bangladesh, and Mexico. These tools are also being picked up by other development partners, such as the Asian Development Bank (see Box 2).

¹¹ Three more low carbon studies in Morocco, Nigeria, and Vietnam are under implementation.

¹² South Africa’s Long-Term Mitigation Scenarios provide mitigation strategies aimed at allowing emissions to grow in the short term, but at a reduced rate, plateau by 2030, and decline gradually thereafter. The wind and CSP projects under the ESKOM Renewable Support Project and CTF are being developed primarily to help deliver on South Africa’s commitment to follow mitigation strategies set out in the Long-Term Mitigation Scenarios.

Table 6 | Number, Allocation, and Outcomes of ESMAP Activities Completed between FY2009-12, by Area of Focus

AREA	# OF COMPLETED ACTIVITIES	VALUE OF ALLOCATION (\$ M)	TOTAL LENDING INFLUENCE (\$ M)	# OF DEVELOPMENT FINANCING INFORMED OUTCOMES	# OF POLICY/ STRATEGY INFORMED OUTCOMES	# OF CLIENT CAPACITY INCREASED OUTCOMES	# OF KNOWLEDGE INCREASED OUTCOMES	# OF INNOVATIVE APPROACHES & SOLUTIONS GENERATED OUTCOMES	TOTAL
Tools/ Guidebooks	13	\$3.2	\$ 412	6	2	1	2	3	14
Low Carbon Assessments	8	\$4.1	\$2,621	5	6	5		1	17

Source: ESMAP Portfolio Review 2013

Box 2 | Vietnam Low Carbon Development Technical Assistance

ESMAP is helping the Government of Vietnam assess low carbon development options and implement its Green Growth strategy. ESMAP’s work in Vietnam draws on its experience undertaking low carbon studies in nine other countries. In particular, ESMAP is (i) prioritizing stakeholder engagement and consensus-building; (ii) building a multi-disciplinary team for the study with Government of Vietnam; and (iii) helping carry out a series of trainings on low carbon development tools to establish capacity in Vietnam.

There is significant demand for ESMAP’s global experience and its suite of low carbon tools in Vietnam. For instance, the Asian Development Bank, in coordination with Vietnam’s Ministry of Industry and Trade, is using the Energy Forecasting Framework and Emissions Consensus Tool (EFFECT) for its work in Vietnam. The Asian Development Bank is also using EFFECT in Malaysia, Thailand, Philippines, and Indonesia under its regional technical assistance (TA) to build Greenhouse Gas Modeling capacity in the Asia and Pacific region.

There continues to be a strong rationale for ESMAP’s involvement in low carbon activities. Although low carbon activities often span a number of sectors and themes, including climate change, the Portfolio Review suggests that ESMAP is well positioned to carry out these activities because of (i) the predominant importance of energy in low carbon activities, (ii) the ability of the World Bank regional energy units and ESMAP to engage with relevant economic and sector ministries, such as energy, planning, and finance, which typically have more convening power than environment ministries; and (iii) ESMAP’s expertise in undertaking cross-sector outreach and coordination.

2| **Energy Access pilots, as well as pre-investment activities in rural electrification, are helping build the foundation for scale up of investment operations in Africa, including under the proposed Sustainable Energy for All (SE4ALL) initiative.**

Pilots and special programs on gender, household energy, renewable energy, and lighting are allowing client countries to test modalities with potential for scale up in Africa. The Biomass Energy Initiative for Africa (BEIA) under AFREA is testing promising household energy options with potential to be incorporated in the World Bank lending operations, such as improved cook stoves, modernized charcoal, social bio-fuels, and bioelectricity, in Kenya, Tanzania, Uganda, South Africa, Gambia, Ethiopia, Benin,

and Rwanda. The Gender and Energy Program is applying a gender-sensitive approach to energy project design and policy dialogue in Benin, Kenya, Mali, Senegal, and Tanzania (Box 3). The Lighting Africa program is testing modalities to help speed up the adoption of clean off-grid lighting technologies (Box 4).

Although these pilots are at different stages of implementation, they have already informed \$755 million in World Bank lending and 6 policies and strategies in client countries. BEIA pilots in Gambia and Ethiopia, for instance, have leveraged resources from USAID to scale up efforts to disseminate locally manufactured stoves and Nordic Climate Fund to pilot other micro plants distilling ethanol for cooking, respectively. Likewise, the Gender and Energy program has contributed to the gender-sensitive design of the Senegal Second Sustainable and Participatory Energy Management Project and the Mali Household Energy and Universal Access Project. The Lighting Africa program has delivered access to off-grid lighting to more than 4 million people as of June 2012.

Box 3 | Mainstreaming Gender in Energy Projects in Africa

ESMAP through its Africa Renewable Energy Access Program (AFREA) is supporting the mainstreaming of gender into energy operations by providing World Bank energy teams and governments just-in-time technical assistance targeted at developing project components, activities, and actions that can be integrated into existing and future operations and programs. In FY2012, Rural Energy Agencies (REAs) in particular were helped to integrate gender considerations into their work through research, training, and technical support.

The Tanzanian and Malienne REAs have embraced Gender Mainstreaming in particular by shifting priorities internally to reflect gender concerns more fully in everything they do. In both, management appreciated that doing so was another way of securing their organizations' acceptance in the communities they serve. In Mali, a gender focal point has been appointed at the national REA and a full gender and energy needs assessment has taken place. Tanzania this year confirmed the creation of a new Gender Focal Unit (GFU), and Technical and Capacity Building Unit within its REA to advance work in this area. This work, plus current work taking place in Senegal, Benin, and Kenya, is being used to produce toolkits and case studies to support the World Bank's mainstreaming of gender in future projects.

Box 4 | Lighting Africa

Lighting Africa is a joint IFC and World Bank program that is supported by ESMAP. Lighting Africa works to develop commercial markets for clean, affordable off-grid lighting products in Sub-Saharan Africa. Under the program, ESMAP has provided support for the development of quality assurance methods and testing of products, organization of the two global off-grid lighting conferences in Ghana and Kenya, testing of new business models through supporting Lighting Africa development market place, and, most recently, the expansion of the Lighting Africa approaches developed in Kenya and Ghana to new countries, including Tanzania, Ethiopia, DRC, Nigeria, Senegal, and Liberia.

Lighting Africa has already made important contributions to the development and growth of the market for quality portable off-grid lighting. In a relatively short timeframe, the program has helped expand Africans' access to lower cost renewable alternatives to fossil fuel-based lighting technologies. As of June 30 2012, 4 million Africans have gained access to quality, portable off-grid lighting, from a base of nearly zero at the program launch.

ESMAP has helped establish enabling conditions for rural electrification in at least five African countries in this Business Plan period. ESMAP activities piloted the use of Geographic Information System (GIS)-based lowest cost spatial planning to develop energy access scale-up plans in Rwanda and Kenya. Subsequently, the Governments of Rwanda and Kenya received funding pledges of \$228 million and \$1.5 billion, respectively, to implement these plans from international donors. Similarly, ESMAP activities provided inputs for setting up rural electrification funds in Cameroon, preparing power purchase agreements to facilitate rural electrification in Tanzania, and promoting off-grid electrification schemes managed by local private energy service companies in Mali. As a means to support rural electrification efforts across the continent, AFREA's Africa Electrification Initiative (AEI) is facilitating the sharing of practical information on ground-level implementation issues among more than 200 Sub-Saharan Africa electrification practitioners from energy ministries, REAs, utilities, and regulatory entities.

3| **ESMAP activities have helped shape the strategic direction of the World Bank, most notably in household energy.**

The Bank's growing support for household energy was informed by ESMAP studies. In proportion to the challenge, the Bank's involvement in household energy was extremely limited over the last decade. Less than 5% of World Bank's total energy lending went to this sector. Two ESMAP studies¹³ helped bring attention to this issue and also provided suggestions on ways to increase the Bank's involvement in this area. ESMAP continues to support the Bank's scale-up plans in this sector through assistance for the preparation of the World Bank's household energy strategy and work program in South Asia, as well as the design of the Clean Cooking Initiatives in Africa and East Asia.

¹³ In particular, two ESMAP studies "*Household Energy Access for Cooking and Heating: Lessons Learned and Way Forward*" and "*Modernizing Energy Services for the Poor: A World Bank Investment Review – Fiscal 2000–08*" served as the basis for Bank's discussions on household energy.

ESMAP studies also informed the energy strategy and work program of five out of the six World Bank regional energy units—Africa, South Asia, East Asia and Pacific, Latin America and Caribbean, and Middle East and North Africa. In South Asia, two ESMAP funded activities – South Asia Regional Energy Study Series (SARESS) and India Power Sector Diagnostics Review – that have carried out an assessment of the sector issues in the region provided inputs to the regional sector strategy and work program. In East Asia and Pacific, an ESMAP co-funded study *Winds of Change*¹⁴ is serving as the World Bank’s energy strategy for the region. In Middle East and North Africa, a series of ESMAP studies underpin the Bank’s strategy on regional energy integration in the region.

A major study on *Economics of Adaptation to Climate Change*,¹⁵ funded by ESMAP, informed the IDA-16 replenishment process, and the World Bank’s thinking and approach on climate-resilient development. The study is also being used by the World Bank to help decision makers design strategies for adaptation¹⁶ in countries such as Bangladesh, Mozambique, Vietnam, and Ghana, amongst others. The global estimate of adaptation costs developed by the study has informed international negotiations on adaptation finance through a number of different forums, including the High-Level Advisory Group on Climate Change Financing and the Green Climate Fund.

4| ESMAP has made substantial contributions in important areas such as energy efficiency in cities, regional energy trade and integration, and electricity markets, and transmission planning.

Energy Efficiency in Cities emerged as an area of comparative advantage for ESMAP in this Business Plan. ESMAP generated knowledge products on topics such as building codes, public procurement of energy services, and energy efficient lighting; informed four policy and strategy decisions and World Bank lending projects of \$760 million in China, Vietnam, Mexico, Ukraine, and Poland (Table 6; see Box 5 for list of important lending projects). ESMAP’s TRACE was deployed in 14 cities to help planners quickly identify sectors for improvement (Box 6). ESMAP is now increasingly regarded as the “go to” place for advice and resources on this topic in the Bank and the wider energy practice.

¹⁴ Wang, Xiaodong; Berrah, Nouredine; Lamech, Ranjit; Mathur, Subodh; Maweni, Joel; Vinuya, Ferdinand; Li, Shawna Fei. 2010. *Winds of change : East Asia's sustainable energy future*. Asia Sustainable and Alternative Energy Program (ASTAE). Washington, DC: World Bank. <http://documents.worldbank.org/curated/en/2010/04/12147881/winds-change-east-asias-sustainable-energy-future>

¹⁵ This study was implemented by the Environment Unit of the World Bank.

¹⁶ The background reports prepared as part of the study have led to 18 academic publications and working papers. Since its completion, this study has also informed the preparation of lending projects in Mozambique and Vietnam worth \$290 million, and government strategies and programs in Bangladesh and Ghana. The Bangladeshi government identified a program of investments in accordance with the recommendations of the study for development under the pilot program for climate resilience.

Box 5 | ESMAP's EE Cities Project Support Facility

Since its launch in October 2008, ESMAP's EECI has provided technical support in the design, preparation, and supervision of urban energy efficiency components in the Bank's investment operations. Some notable examples include:

- Mexico : ESMAP helped develop an equipment supply and distribution contract to provide efficient light bulbs to urban residential households, under the Efficient Lighting and Appliances Project (P106424, FY2011, \$70 M), jointly financed by the CTF, GEF, and WB.
- Tianjin (China): ESMAP helped design and prepare the green building component of the Sino-Singapore Tianjin Eco-City Project (P098915, FY2011, \$6.2 M).

Box 6 | Tool for Rapid Assessment City Energy (TRACE)

ESMAP has helped planners in 14 cities in Asia, Eastern Europe, and Latin America make informed decisions about their energy efficiency options by implementing TRACE, a decision-support tool developed by ESMAP and designed to help cities quickly identify sectors for improvement. Recommendations have ranged from improved land use and transport planning and traffic demand management in Da Nang, Vietnam, to methane capture from landfills and wastewater management in Cebu, Philippines, to improved public procurement and lighting in Surabaya, Indonesia. The most recent city to implement TRACE is Belo Horizonte, Brazil.

ESMAP activities informed regional energy trade and integration efforts, particularly in Africa.

Assessments of regional energy trade and integration opportunities were carried out in West Africa, Southern Africa, Mashreq and Maghreb regions in the Middle East, Uzbekistan-Afghanistan-Pakistan in Central and South Asia, and Greater Mekong Sub-region in East Asia. These activities informed the preparation of \$1.6 billion of World Bank lending and 4 institutional and policy decisions on regional energy integration. The influence was particularly notable in Africa where more than \$500 million of Bank lending was informed, including the West Africa Power Pool (WAPP), Cote d'Ivoire, Liberia, Sierra Leone and Guinea (CLSG) transmission interconnection project, and Southern African Power Market Project.

ESMAP helped establish enabling conditions for electricity markets and well-functioning transmission systems in client countries.

ESMAP activities, amongst others, provided advice on optimal power market structure, prepared organizational transformation plans for a transmission utility in India, helped the Turkish government establish the framework for a competitive electricity market, and helped lay out policy principles for efficiently developing transmission for renewable energy. These activities informed the design of at least \$2.5 billion in World Bank lending and 4 institutional and policy decisions undertaken by ESMAP clients.

Table 7 | Number, Allocation, and Outcomes of ESMAP Activities Completed between FY2009-12, by Area of Focus

AREA	# OF COMPLETED ACTIVITIES	VALUE OF ALLOCATION (\$ M)	TOTAL LENDING INFLUENCE (\$ M)	# OF DEVELOPMENT FINANCING INFORMED OUTCOMES	# OF POLICY/ STRATEGY INFORMED OUTCOMES	# OF CLIENT CAPACITY INCREASED OUTCOMES	# OF KNOWLEDGE INCREASED OUTCOMES	# OF INNOVATIVE APPROACHES & SOLUTIONS GENERATED OUTCOMES	TOTAL
Energy Efficiency in Cities	20	3.4	760	13	4	1	3	2	23
Regional Electricity Trade and Integration	12	3.0	1,597	4	4	2			10
Electricity Market and Planning	12	2.6	2,470	3	3	3	2	4	15

Source: ESMAP Portfolio Review 2013

5| Justintime assistance is emerging as a new model of delivery for ESMAP activities and offers promise for its cost effectiveness and flexibility.

The Justintime assistance model consists of preparing demand-driven, short pieces that are relevant to the ongoing client dialogue instead of in depth assessments. This model has a lighter processing burden in the Bank, costs less per paper or study, has quicker turnaround times, and offers greater flexibility for responding to client requests. Under this model, the South Asia Regional Energy Study Series (SARESS) prepared 18 papers at a cost of just \$44,000 per paper over a 2-year period at the request of client countries. These papers responded to a large number of client requests and covered topics such as skill gaps in the power sector in India, least cost options for the Bangladesh energy sector, review of financial restructuring plan of Nepal Electricity Authority, amongst others. Several SARESS outputs were extremely well received by Governments in the region. The paper on Rural Feeder Segregation requested by the Indian Ministry of Power which assesses the utilities that have attempted feeder segregation, for instance, informed the Government’s policy decisions in this area and is likely to lead to request for a World Bank lending project.

Other activities, such as the Central America Programmatic Energy Study and AFREA Gender and Energy Technical Assistance (TA), are also using this model. While it is still too early to make judgment on the effectiveness of the model, it offers a low-cost and speedy option for responding to requests from clients.

6| ESMAP activities were highly effective at carrying out exchange of knowledge between different regions, including South-South exchange.

ESMAP achieved significant success in cross-fertilizing ideas and transferring tools, good practices, and lessons between different regions in this Business Plan. Training materials prepared by ESMAP received positive feedback from clients for internalizing good practices and lessons from across the world. The exchange of knowledge among regions is most apparent in the case of low carbon studies and Energy Efficient Cities Initiative (EECI) activities. EFFECT and MacTool were developed as part of the low carbon studies in India and Brazil, respectively, but have since been used in a number of other countries such as

Vietnam, Poland, Mexico, and Nigeria. TRACE has benchmarking data on energy efficiency in 6 municipal sectors from 93 cities and has been applied in 15 cities (see Box 5).

In addition, ESMAP is also facilitating knowledge exchange on a large number of other energy topics, such as regional energy trade and integration, adaptation, rural electrification, power market structure, managing oil price volatility (see Box 7), building codes, green trucks, and public procurement of energy efficiency services. Overall, the Portfolio Review finds evidence that ESMAP facilitated exchange of best practices with clients and partners in 24 instances.

Box 7 | Bringing Latin America's Lessons to the Pacific on Managing Oil Price Volatility

Pacific island states are some of the most vulnerable countries in the world to oil price shocks. One of the authors of a recent ESMAP-supported report on managing oil price volatility that distills the best practices from the experience of countries in Central America and the Caribbean region in responding to high oil prices traveled to the Pacific to share the findings and recommendations of the study with officials from island states. This included a regional workshop with representatives from a number of Pacific states in Suva, Fiji, on June 17-23, 2012, and a follow-up advisory meeting with officials in Tonga. Options for managing the risks of high oil prices discussed with government include: exploring available renewable power generation options, increasing investments in energy efficiency both on the supply and demand sides, and using financial hedging instruments to mitigate risk.

7| A significant number of activities have not yet demonstrated results.

One in four completed activities covered in the review so far have no observed results and outcomes (Tables 8 and 9). In about two-fifths of these cases, activities have only just been completed and it is too early to determine results while in another third there is insufficient information to make a determination of results and outcomes (Figure 8). In about 15% of these activities, a lack of follow up action, resulting from isolation from the Bank's energy sector lending and policy dialogue, is seen to have contributed to the lack of results and outcomes. Implementation issues such as poor performance by consultants, delay in completion of reports, or country conditions, are the contributing factor in the remaining 10% of activities without outcomes.

Country energy sector vulnerability assessments that were undertaken to help client countries assess the impact of the global financial crisis on the power sector have had mixed results. While the assessments informed the identification of lending operations in Vietnam, Egypt, and Jamaica, no results or outcomes were observed in 15 other countries where the assessments were carried out. The findings of these assessments also appear not to have been used by either the World Bank or client countries as a critical element of crisis response.

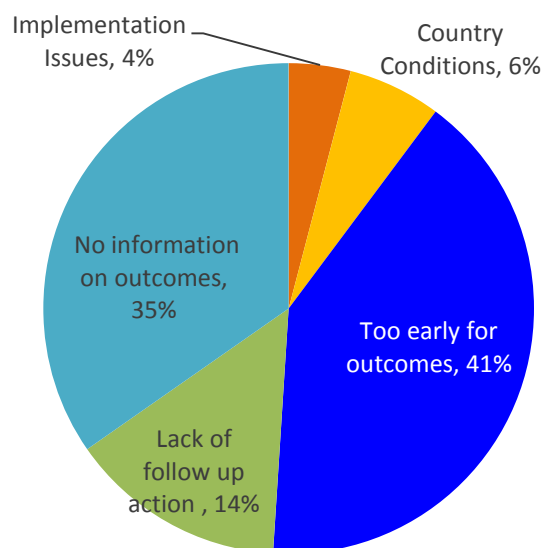
Table 8 | Outcomes of ESMAP Activities Completed between FY2009-12, by Region

REGION	# OF ACTIVITIES WITH NO OBSERVABLE OUTCOMES TO DATE	# OF ACTIVITIES WITH MULTIPLE OUTCOMES
AFR	5	7
EAP	6	4
ECA	5	5
LCR	5	5
MNA	11	4
OTH	16	7
SAR	3	6
Total	51	38

Table 9 | Outcomes of ESMAP Activities Completed between FY2009-12, by Theme

THEME	# OF ACTIVITIES WITH NO OBSERVABLE OUTCOMES TO DATE	# OF ACTIVITIES WITH MULTIPLE OUTCOMES
Clean Energy	16	9
EASP	21	11
Energy Access	6	7
Energy Efficiency	8	11
Total	51	38

Figure 8 | Breakdown of Reasons for Lack of Results and Outcomes



Source: ESMAP Portfolio Review 2013

IV. MAINSTREAMING GENDER INTO THE PORTFOLIO

A gender review of ESMAP's portfolio carried out by ESMAP in FY2009¹⁷ stated that: "Attention to gender in ESMAP's operations and publications is sporadic, concentrated in specific sub-sectors and present essentially only when addressing gender-specific differences is the core objective of the task. Corporate reports and business plans make extensive references to gender and women's issues, suggesting that there is disconnect between stated policies and intentions and realization in practice" (Seck & Blackden, 2008). This can be taken as a broad baseline assessment for where ESMAP was in FY2009. Against this baseline, this section will report on the progress achieved in incorporating gender dimensions in ESMAP activities. Box 8 highlights the links between gender and energy.

Box 8 | Understanding Gender Considerations in the Energy Sector

At the center of a gender-informed understanding of the energy sector is the fact that the roles and responsibilities of men and women in their households and communities differ, and, where this is so, their uses of energy, and the benefits they derive from energy services or the costs they incur from the absence of such services, also differ. Considering and assessing these different needs and impacts within energy projects and policies can lead to improved project design and greater development impact.

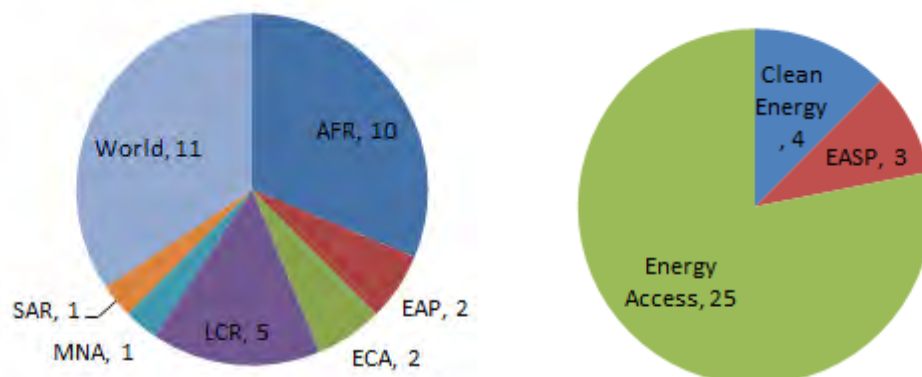
ESMAP's 2008-13 Business Plan made consideration of gender issues more systematic through a focused program under Energy Access and the regional AFREA Gender and Energy Program. Following a consultative gender and energy workshop in 2008, ESMAP developed a focus on gender and energy in its 2008-13 Strategic Business Plan, with two targeted programs: (i) a global program and (ii) a regional \$1.2 million TA program in Africa on gender and energy together with the AFREA, which was approved in 2010. ESMAP also provided funding to activities in Oil, Gas and Mining sectors, which supported the development of a program on Gender, Youth and Extractive Industries. In the five pilot countries in the Africa region (Senegal, Mali, Kenya, Tanzania, Benin), a programmatic approach was developed to assess gender differences in energy programs and help energy teams and governments develop and implement a gender action plan. These lessons have helped develop a more systematic, and less sporadic, approach to integrating gender into energy programs.

Overall, approximately one in nine activities implemented in this Business Plan has gender considerations or components, the vast majority of them are either Global activities or in Africa. Of the total portfolio of 271 activities, the review concluded that 32 activities had gender considerations or components. Of these 32 activities, 11 were Global, 10 from Africa, 5 from Latin America and the Caribbean, 2 from East Asia and Pacific, 2 from Europe and Central Asia, 1 from Middle East and North

¹⁷ In FY2009, a gender analysis of ESMAP's portfolio was conducted as part of the Gender and Energy Activity (P109952) that organized a two-day horizon scanning and planning workshop for the World Bank Energy practice.

Africa, and 1 from South Asia (Figure 9). The complete list of activities with gender consideration or components can be found in Annex 6.

Figure 9 | ESMAP Activities that are Gender Informed, by Region and Theme



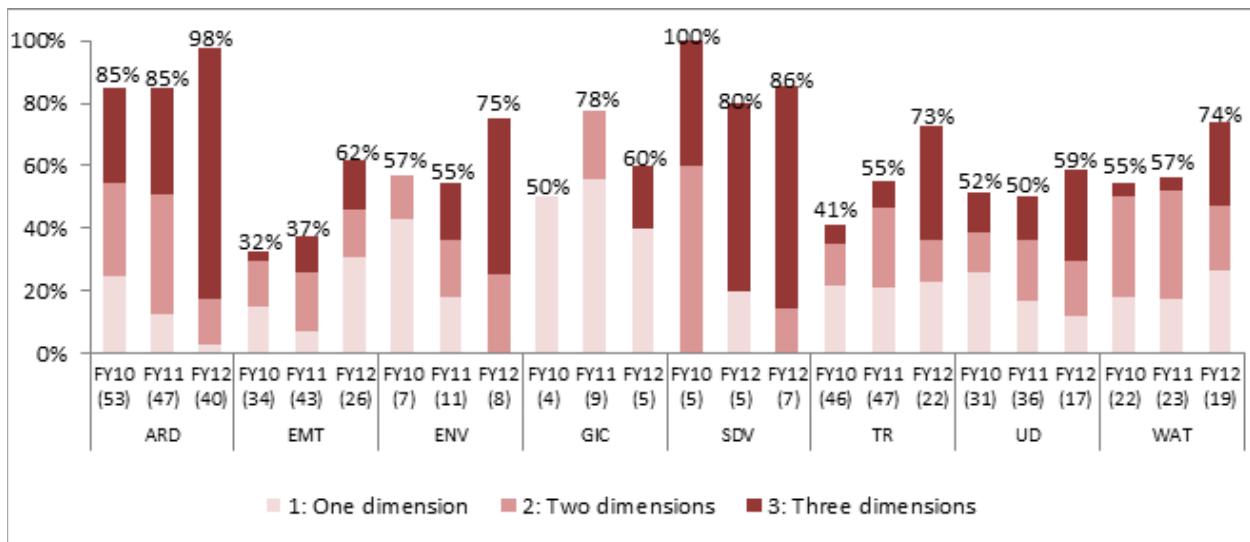
Gender continues to be mostly concentrated in Energy Access activities, particularly rural electrification. Of these 32 projects with gender considerations (Figure 9), the majority were Energy Access (25), with some Clean Energy activities (4) and EASP (3) while no such activities were found under the Energy Efficiency theme. This is in a large part due to the Gender and Energy program falling under the Energy Access theme but it also reflects the body of knowledge on the topic—Energy Access activities often focus on community-level interventions and household level needs, which in turn can more easily integrate the concerns of women and men. This further supports the fact that gender activities will be found in projects that address social, community, or household needs.

A third of activities with gender considerations or components have informed development financing and project design. Of the 32 activities identified with a gender lens, 12 have achieved observable outcomes; 19 are new and ongoing activities with no outcomes observed yet, and 1 completed activity with no notable results thus far. The projects with notable results that informed development financing and project design were found within the AFREA Gender and Energy program. In Mali, the findings of the gender assessment on the Malian Rural Energy Agency were used in the Climate Investment Funds Scaling up Renewable Energy Program Investment Plan and the subsequent action plan was used to develop a local partnership with UN Women (P116908). In Senegal, due to an ESMAP/AFREA gender impact assessment of the Sustainable and Participatory Energy Management Project (PROGEDE) I, gender was included in the project development objective of PROGEDE II with targeted activities such as inclusion of women in profitable charcoal value chain from which they were largely excluded from before this intervention. The list of gender informed activities with development impact can be found in Annex 7.

Since the 2009 review, ESMAP has led the work on gender within the energy sector and the Bank's energy teams have recently begun increasingly integrating gender issues across a broader range of the energy portfolio. Beyond the projects that have received direct support through ESMAP/AFREA targeted gender and energy programs, gender has not surfaced in much of the Bank's energy lending portfolio.

However, the World Bank has made gender a corporate priority following the release of the *World Development Report 2012 on Gender and Development*. The World Bank corporate scorecard now requires that at least 55 percent of all World Bank lending operations and 60 percent of IDA operations to be gender informed. However, the energy sector as a whole has been highlighted as a “lagging sector” for gender mainstreaming in Bank-wide corporate reviews, along with urban development (Figure 10). Furthermore, several activities, such as fuel recommendations, hydropower plans, SMEs, and cook stoves projects, mention the gender and social dimension in initial write ups and introductions, but do not deepen the analysis throughout the document, making it difficult to track specific indicators and actions on gender.

Figure 10 | Share and Depth of Gender Mainstreaming in World Bank Sustainable Development Sectors Operations (FY2010-12)



Note: There are three dimensions of gender-informed design in operations: (i) analysis: includes analysis and/or consultation on gender related issues; (ii) actions: expected to narrow gender disparities, including through specific actions to address the distinct needs of women/girl (men/boys) and/or to have positive impact(s) on gender equality/components; (iii) M&E: includes mechanisms to monitor gender impact and facilitate gender disaggregated analysis.

ARD: Agriculture and Rural Development; EMT: Energy and Mining; ENV: Environment; SDV: Social Development; TR: Transport; UD: Urban Development; WAT:Water

Source: Corporate SDN Gender Briefing, 2012

V. LESSONS AND STRATEGIC IMPLICATIONS

This results scorecard for ESMAP in the first four years of the Business Plan suggests important achievements in a number of areas, particularly in the scale up the World Bank's low carbon energy lending, support to municipalities in adopting energy efficiency measures, and implementation of energy access pilots in Africa. ESMAP was also influential in shaping the strategic direction of the World Bank, most notably in household energy. While it is still very early to draw conclusions on many areas of ESMAP involvement, the review is able to point to some initial lessons and strategic implications for ESMAP.

- 1 | AFREA has been instrumental in increasing the flow of ESMAP assistance to IDA countries in Africa. However, ESMAP assistance through ABGs in regions other than Africa is weighed heavily towards IBRD-IDA Blend and IBRD countries. Since both the strongest rationale and the greatest need for ESMAP assistance is in IDA countries, ESMAP should, in consultation with regional units, explore ways to increase assistance to these countries.
- 2 | The share of ESMAP's own-managed assistance going to focus areas in Clean Energy and Energy Efficiency has increased in this Business Plan, largely at the expense of EASP activities, covering topics such as power system planning, sector governance, power markets, etc. Since EASP activities underpin much of the policy dialogue and investments in the energy sector, ESMAP should explore ways to rebalance its own-managed portfolio towards EASP.
- 3 | The Portfolio Review could find no observable outcomes for about one-quarter of completed ESMAP activities. While an initial assessment of the reasons for lack of outcome was carried out in the Portfolio Review, ESMAP should also carry out an in-depth assessment of activities without outcomes to improve activity selection and design.
- 4 | The disbursement rate of ESMAP ABGs to the regional units has improved in this Business Plan but still remains low. Moreover, there is a significant variation in the disbursement rates of different regions with regions, such as Middle East and North America and Latin America and Caribbean consistently outperforming regions such as Africa and Europe and Central Asia. While some generic reasons for low ABG disbursement rates are well known, ESMAP should undertake a detailed review of issues constraining ABG disbursements to regions and, based on that, take necessary corrective measures.
- 5 | The Portfolio Review finds that ESMAP is able to have the most impact in its own-managed program when it devotes a critical mass of resources to a particular area. This enables it to mobilize technical and financial resources for clients, remain engaged in that area, and follow up on the recommendations of initial analytical work. The impact is particularly high when ESMAP is able to build synergies with World Bank operations. By contrast, one-off studies and activities tend not to have as many outcomes.
- 6 | Activities undertaken by ESMAP and non-regional units have not had as many "development financing informed" and "policy/strategy informed" outcomes as regional units. This is a reflection of the objectives of non-regional activities, which are generally focused on achieving increases in knowledge and innovation. To improve the operational and policy relevance of non-

regional activities, ESMAP should more explicitly build in operational elements in the design of non-regional activities.

- 7 | The Portfolio Review suggests that while attention to gender dimensions in ESMAP activities has improved in this Business Plan, it still continues to be concentrated only in energy access activities and in Africa. ESMAP should make a strong push to mainstream gender in all its activities by screening all activity concept notes for gender considerations and explore ways to transfer lessons from gender pilots in Africa to other regions and sectors. It should also build on the efforts undertaken in this Portfolio Review to annually track the gender-related results and outcomes of its activities.
- 8 | While M&E has improved significantly in this Business Plan, there continues to be room for improvement. In particular, ESMAP must continue to build on the recent improvements in the quality of Grant Fund Request and Grant Reporting and Monitoring reports of ESMAP activities to ensure that data on baseline and target values of outcomes is accurately entered and monitored. Once such data is available, it will be possible to measure actual outcomes against baseline and target values. Likewise, ESMAP should develop better ways to track the outcomes of its publications and knowledge products by, for instance, tracking citations, as well as develop anecdotal impact stories to capture the medium- and long-term impacts of its activities.

ANNEX 1 | METHODOLOGY AND DATA SOURCES

This portfolio review takes stock of the results and outcomes of ESMAP projects and activities approved and implemented since fiscal year 2009 (July 2008) under four major themes, namely: *Energy Assessments and Strategy Program (EASP)*, *Energy Access (EA)*, *Energy Efficiency (EE)*, and *Clean Energy (CE)*. For this purpose, a three step multilayered approach was followed:

Step 1 – Research and Data Collection: First, an inventory was undertaken of ESMAP activities that were implemented since fiscal year 2009, with a view to developing a comprehensive picture of the services delivered by ESMAP through its knowledge and technical services and a detailed review of activities’ status, theme, country/regional breakdown, and outputs and key deliverables. For this purpose, ESMAP conducted a desk review of key project documentation from identification and approval until completion and dissemination. The following key documents were reviewed:

- Proposal Summary Form (PSF)
- Project Concept Document (PCN)
- Decision Review Meeting package
- Grant Funding Request (GFR)
- Activity Initiation Summary (AIS) / Activity Completion Summary (ACS)
- General project documentation (i.e. office reports, aide memoires, workshop proceedings, minutes and miscellaneous correspondence, general financial data)
- Activity Outputs & Deliverables (sector assessments, studies, best practice toolkits, dissemination seminars and workshops, training and other forms of advisory and analytical assistance).
- Grant Reporting Monitoring (GRM)

These documents were accessed through World Bank information systems and selected databases including SAP, WBDocs, Operations Portal, Business Warehouse, Image Bank, Trust Funds systems, and ESMAP publications database and website.

Step 2 – Assessment of Results and Outcomes Achieved: The assessment then focused on an ex-ante analysis of completed activities – before the ESMAP activity was carried out or implemented – evaluating the World Bank lending portfolio, knowledge and capacity of clients, as well as the regulatory, policy, and institutional framework in the energy sector for each one of the countries supported by ESMAP to establish a baseline to conduct the assessment. Using the baseline as a benchmark for comparison, an ex-post assessment was then conducted on five high-level outcomes¹⁸ defined under the ESMAP M&E framework: (i) Development Finance Informed (ii) Policy / Strategy Informed (iii) Client Capacity Increased (iv) Knowledge Increased and (v) Innovative Approaches & Solutions Generated. The achievement of each outcome (or outcomes) for each completed project or activity is assessed and measured based on a set of indicators developed for each outcome.

¹⁸ Adopted from the results framework of the World Bank for Economic Sector Work (ESW) and Technical Assistance (TA) implemented during FY2012.

Step 3 – Triangulation: Finally, the findings of the desk review were triangulated with information from other sources including direct feedback from the Task Team Leaders (TTLs) of the activities, Country Assistance Strategies (CAS), Country Partnership Strategies (CPS), World Bank’s Independent Evaluation Group (IEG) reports, selected websites from ministries, agencies, and organizations from client countries governments.

KEY CONSIDERATIONS AND LIMITATIONS OF THIS PORTFOLIO REVIEW

- The assessment was conducted for ESMAP activities approved since fiscal year 2009 through fiscal year 2012 under the four major themes (EASP, Energy Access, Energy Efficiency, and Clean Energy). Activities from previous fiscal years but finalized during early fiscal 2009 were not considered under the review.
- For the purpose of this review, primarily completed activities under each of the portfolios were considered. A substantial portion of activities are still ongoing, and therefore it would be premature to assess their outcomes. It should be noted however, that in some particular cases, certain ongoing activities were included, as they have already started to demonstrate some results.
- The review assessed ESMAP’s influence and informing role, *direct and indirect*, on the World Bank Group’s lending operations and strategy on the energy sector. In most cases, although there is evidence of ESMAP activities informing Bank lending operations, it was not possible to segregate the specific loan amount directly linked to an ESMAP project from the full loan amount.
- For the purpose of this review, *World Bank Group lending* refers to contributions from sources of IBRD, IDA, IFC, GEF, and financing from Climate Investment Funds (CIF) including CTF, FIP and SREP. Influenced investments, lending or contributions from external partners or donors are listed but not included on the total amount of lending informed or influenced. In addition, amounts of lending operations currently in pipeline and expected to be approved during FY2012 and FY2013 are noted but *not included* on the total influenced lending amount.
- Given the complex set of factors that affect outcomes, attribution to specific ESMAP activities is often difficult. In many cases however, a direct link between ESMAP interventions and subsequent downstream activities is more evident.
- There was limited availability of adequate baseline data in many of the projects assessed. In such cases baseline values were determined based on review of status/country data before the ESMAP intervention. The use of appropriate baseline data is critical for performance assessment. Although most interventions plan to collect baseline data for results monitoring and possible impact evaluation, often such data are not collected.
- No country surveys or visits were undertaken for any of the activities evaluated. Research and analysis were conducted solely based on the sources of information listed above.
- The assessment focuses only on tracking the results and outcomes directly influenced by ESMAP activities. Since ESMAP activities also have substantial indirect impacts, the results and outcomes compiled in this report are likely to under-report the overall influence of ESMAP activities. Also, given the upstream nature of these activities, the report does not cover impact assessment considering the longer time frame required for its proper tracking and measurement.

ANNEX 2 | RESULTS AND OUTCOMES TABLES OF ESMAP ACTIVITIES

A2.1. ENERGY ASSESSMENTS AND STRATEGY PROGRAMS

A2.1.1. Africa Region

ESMAP ACTIVITY: Energy Sector Master Plan (P107067)	
COUNTRY: Djibouti FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
Outcome: Policy/strategy informed	Indicator: Government policy/strategy informed
As recommended by ESMAP's Energy Sector Master Plan activity, the government improved electricity billing and metering systems and has started to charge industrial customers for reactive power since July 2009.	

ESMAP ACTIVITY: INDICATIVE GENERATION & TRANSMISSION EXPANSION (P099315)			
COUNTRY: SOUTHERN AFRICA FISCAL YEAR: 2006-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF EXISTING OPERATIONS INFORMED	
This ESMAP study has helped prepare a least cost expansion plan for generation and transmission infrastructure associated with Southern Africa Power Pool. The World Bank has funded several investments associated with SAPP.			
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Southern African Power Market Project -APL1</i>	<i>P105654</i>	<i>2009</i>	<i>\$180M WB loan</i>
<i>Regional and Domestic Power Market Development Project</i>	<i>P097201</i>	<i>2007</i>	<i>\$196M WB loan</i>
<i>Mozambique - Malawi Transmission Interconnection Project - APL2</i>	<i>P084404</i>	<i>2008</i>	<i>\$45M WB loan</i>

ESMAP ACTIVITY: SUB-SAHARAN AFRICA (SSA) REFINERY STUDY (P110294)	
COUNTRY: REGIONAL FISCAL YEAR: 2008-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: CONTRIBUTED TO STAKEHOLDER INVOLVEMENT
The ESMAP SSA refinery study helped produce coherent projections of petroleum products consumption for all SSA countries, determined the costs of incremental air pollution in SSA cities, and established the relationship between health benefits and fuel/vehicles regulatory policies. The Africa Refiners Association (ARA), at its annual meeting, endorsed the study results and is committed to pursue actions to obtain the required financing for the economically proven projects and to press governments to upgrade fuel specifications.	

ESMAP ACTIVITY: WAPP Broadband Program Assessment (P114643)	
COUNTRY: Regional FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
Outcome: Policy/strategy informed	Indicator: Government policy/strategy informed
This activity has provided input for the preparation of the West Africa Regional Communications Program by West Africa Power Pool (WAPP) Secretariat and Economic Community Of West African States (ECOWAS) Commission. The communications program leverages existing infrastructure such as transmission lines to improve connectivity in the region.	

ESMAP ACTIVITY: REGULATING ELECTRICITY TRADING IN SADC (P111483)	
COUNTRY: REGIONAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY STRENGTHENED
ESMAP's activity helped prepare guidelines for national regulators and regional and national political authorities in Southern African Development Community aimed at promoting efficient, large-scale power transactions of firms. These guidelines were formally adopted by the Regional Electricity Regulatory Association (RERA) of Southern Africa.	

ESMAP ACTIVITY: INSTITUTIONAL FRAMEWORK DEVELOPMENT AND CAPACITY BUILDING (P109447)			
COUNTRY: REGIONAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED		
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED		
The activity ensured progress in identifying and defining of the West Africa Power Pool (WAPP) Cote d' Ivoire, Liberia, Sierra Leone and Guinea (CLSG) transmission interconnection project. The activity also helped define key institutional features of the Special purpose Company (SPC), which will be responsible for the WAPP CSLG transmission Interconnector. The WAPP APL4 (Phase 1) CSLG project was approved in May 2012.			
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>WAPP APL4 (Phase 1) CSLG</i>	<i>P113266</i>	<i>2012</i>	<i>\$176M WB loan</i>

A2.1.2. East Asia and Pacific Region

ESMAP ACTIVITY: GENERATION, PRICING, TRADING AND DISPATCH (P106041)	
COUNTRY: CHINA FISCAL YEAR: 2008-2008 STATUS: COMPLETED	
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED
ESMAP Generation Pricing, Trading and Dispatch activity helped undertake a pilot in Shangdong province in China using modern optimal dispatch software to demonstrate cost savings that would result from a change to least cost dispatching of the power plants. As part of the activity, new financial incentive mechanisms were designed to share the benefits and ensure that no parties are worse off, with the aim to create a win-win outcome. With the intention of mainstreaming it, the government has extended the pilot to five more provinces.	

ESMAP ACTIVITY:			
<ul style="list-style-type: none"> ▪ GAS SECTOR DEVELOPMENT FRAMEWORK (P111444) ▪ Gas Master Plan (P082155) 			
COUNTRY: VIETNAM FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED		
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED		
ESMAP supported the preparation of the Gas Master Plan for Vietnam through a series of activities (Gas Sector Development Framework, Gas Master Plan). Approval of a Gas Master Plan by the government is one of the triggers for this loan.			
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Poverty Reduction Strategy Credit 9 for Vietnam</i>	<i>P111182</i>	<i>2010</i>	<i>\$150M WB loan</i>
<i>Poverty Reduction Strategy Credit 10 for Vietnam</i>	<i>P111183</i>	<i>2012</i>	<i>\$150M WB loan</i>

ESMAP ACTIVITY: CLUSTER-INFRA POLICY/REGULATION REFORM (P113836)			
COUNTRY: VIETNAM FISCAL YEAR: 2010-2012 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>This activity has helped develop a power sector reference document that is supporting the Bank's overall policy dialogue in the energy sector and market reform. The report puts together characteristics, conditions findings and recommendations for Vietnam power sector, consistent with Vietnam's National Strategy for Energy Development. The analysis and findings of the report on energy sector and market reform have helped inform the policy conditions of Vietnam Second Power Sector Development Policy Operation.</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Vietnam Second Power Sector DPL</i>		<i>P124174</i>	<i>2013</i>
		Amount (US\$)	<i>\$100M WB loan</i>

ESMAP ACTIVITY: VIETNAM FINANCIAL IMPACT ASSESSMENT 2 (P119344)			
COUNTRY: VIETNAM FISCAL YEAR: 2010-2011 STATUS: COMPLETED			
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED	
<p>The activity helped prepare and provided hands on training on a transmission financial model and database for Vietnam's Transmission Company (NPT). The practical results and numbers from the assessment and sensitivity analysis from the application of the model were discussed with the regulator, EVN and NPT, creating awareness on impact of different factors (e.g. foreign currency exposure, tariff regulations, etc) on Transmission Plans. This facilitated agreement on the action plan and completion and approval of the transmission regulations.</p>			

ESMAP ACTIVITY: IMPACT OF CREDIT CRISIS ON ENERGY SECTOR (P115088)			
COUNTRY: VIETNAM/INDONESIA/PHILIPPINES FISCAL YEAR: 2009-2009 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>This loan is a direct result of a series of assessments undertaken by ESMAP in Vietnam to assess the impacts of the financial crisis on the power sector. These assessments identified the investment gaps in transmission and distribution sector, which is being covered by this loan.</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Vietnam Transmission & Distribution 2-Add Fin</i>		<i>P114875</i>	<i>2011</i>
		Amount (US\$)	<i>\$180M WB loan</i>

ESMAP ACTIVITY: PHILIPPINES POWER SECTOR STRATEGY ADVICE (P123636)			
COUNTRY: PHILIPPINES FISCAL YEAR: 2012- STATUS: ONGOING			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>This activity is helping provide advice to the Government of the Philippines in several areas of critical importance to power sector development, namely: 1) prospects for new generation investment; 2) trends in power sector equipment, EPC services, and financing costs; and 3) renewable energy policy and regulatory implementation. The preparation of the IBRD/CTF financed Philippines Renewable Energy Development (PhRED) project is benefiting</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Philippines Renewable Energy Development Project</i>		<i>P118994</i>	<i>2013</i>
		Amount (US\$)	<i>\$140M WB loan</i>
<p>from the work undertaken on renewable energy policy and regulatory implementation.</p>			

ESMAP ACTIVITY: GREATER MEKONG SUB-REGION POWER TRADE: POLICY SUPPORT (P114377)	
COUNTRY: MEKONG SUB-REGION FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY STRENGTHENED
<p>The ESMAP activity has prepared a report describing and comparing international experience, drawing conclusions and lessons relevant to power trade in the Greater Mekong Sub region (GMS) and the countries involved. The study is being used by participating countries to support actions aimed at taking GMS power trade market to the next phase, in particular by informing institutional structures and implementation strategy for advancing power trade in the region.</p>	

ESMAP ACTIVITY: REGIONAL ENERGY STUDY (P103315)	
COUNTRY: REGIONAL FISCAL YEAR: 2007-2011 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED
<p>The ESMAP study outlines a strategic vision of a sustainable energy future in East Asia, and presents a menu of options is serving as World Bank's energy strategy for the region. The recommendations of the study were endorsed by the regional management and the study is serving as the EAP regional energy business strategy.</p>	

A2.1.3. Europe and Central Asia Region

ESMAP ACTIVITY: ELECTRICITY SUPPLY RELIABILITY (P116748)									
COUNTRY: ARMENIA FISCAL YEAR: 2011-2012 STATUS: COMPLETED									
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED								
<p>The ESMAP activity supported the design of a cost-reflective tariff system in Armenia, which was incorporate into a lending operation. In doing so, the activity will help generate more resources for the power sector and improve the reliability of the power system in Armenia.</p>									
<table border="1"> <thead> <tr> <th><i>WB Lending Operation Informed</i></th> <th><i>Project ID</i></th> <th><i>Approval FY</i></th> <th><i>Amount (US\$)</i></th> </tr> </thead> <tbody> <tr> <td><i>Electricity Supply Reliability Project</i></td> <td><i>P116748</i></td> <td><i>2011</i></td> <td><i>\$39 M WB loan</i></td> </tr> </tbody> </table>		<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>	<i>Electricity Supply Reliability Project</i>	<i>P116748</i>	<i>2011</i>	<i>\$39 M WB loan</i>
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>						
<i>Electricity Supply Reliability Project</i>	<i>P116748</i>	<i>2011</i>	<i>\$39 M WB loan</i>						

ESMAP ACTIVITY: SMART METERING (P110874)	
COUNTRY: HUNGARY FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The study provided a foundation for the Government of Hungary to formulate its smart metering policy by taking into accounts both international best practice and local conditions. The feedback received from Hungarian Energy Office (HEO) (including detailed next steps for smart metering implementation) upon activity completion, confirms that measures suggested by the ESMAP will be adopted.</p>	

ESMAP ACTIVITY: PPP OPTIONS FOR ELECTRICITY GENERATION (P112552)	
COUNTRY: MONTENEGRO FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The activity helped assess the legal, institutional and regulatory framework for private participation in power generation, investigate Public Private Partnership (PPP) options for future power generation capacity, and recommended changes on the current framework and on suitable options for PPP in Montenegro. The findings of the TA were extremely well received by the Government and have helped inform the Government's renewable energy policy and draft energy legislation.</p>	
<p>ESMAP ACTIVITY:</p> <ul style="list-style-type: none"> ▪ SUPPORTING ELECTRIC MARKET OPERATIONS (P105103) ▪ CAPACITY BUILDING FOR ELECTRICITY MARKETS (P114534) <p>COUNTRY: TURKEY FISCAL YEAR: 2007-2012 STATUS: COMPLETED</p>	

OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED

Through a series of activities, ESMAP supported technical advice and training for the development and implementation of power market reforms. These activities helped introduce supply security legislation and regulations, and provided the basis for government to take supply security measures in a manner consistent with the market framework, including launching of hourly metering and settlement and day ahead electricity market. ESMAP organized training for TEIAS staff working in various departments, which helped improve their knowledge on the operation of capacity mechanisms and capacity auctions. ESMAP also helped establish suitable capacity certificate schemes and competitive auction mechanism. The two measures together are intended to assist in mitigating the risks of supply shortage and to help to ensure that sufficient new capacity is available. These reforms facilitated a scale up of World Bank energy lending to Turkey in recent years.

<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Programmatic Electricity Sector DPL</i>	<i>P110643</i>	<i>2009</i>	<i>\$720M WB loan</i>
<i>ECSEE APL#6</i>	<i>P110841</i>	<i>2011</i>	<i>\$200M WB loan</i>
<i>ESES DPL2</i>	<i>P117651</i>	<i>2010</i>	<i>\$350M WB loan</i>

ESMAP ACTIVITY: THERMAL POWER PLANT REHABILITATION (P105332)	
COUNTRY: UKRAINE FISCAL YEAR: 2008-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
The ESMAP study analyzed the barriers affecting implementation of Thermal Power Plants rehabilitation, assessed of the need for rehabilitation of Thermal Power Plants in Ukraine, and recommended steps that the Government should take to formulate a strategy to address the needs of the Thermal Power Plants. This study served as an input in the formulation of government's strategy for addressing the rehabilitation needs of thermal power plants in Ukraine.	

ESMAP ACTIVITY: BELARUS AND UKRAINE DISTRICT HEATING (P112754)			
COUNTRY: UKRAINE FISCAL YEAR: 2011-2012 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED		
This ESMAP activity is conducting an in-depth analysis of the binding constraints to municipal creditworthiness for energy efficiency investments and to identify viable financial options, such as the promotion of Energy Service Company (ESCO) models. This assessment directly informed efforts of the <i>Ukraine Energy Efficiency Project</i> to improve energy efficiency in industrial and commercial companies, municipalities, municipal sector enterprises and Energy Service Companies by facilitating sustainable financial intermediation for the financing of energy efficiency investments.			
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Ukraine Energy Efficiency Project</i>	<i>P096586</i>	<i>2011</i>	<i>\$200M WB loan</i>

ESMAP ACTIVITY: SOUTH EAST EUROPE WHOLESAL MARKET OPENING (P112423)			
COUNTRY: SOUTH EAST EUROPE FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
<p>The ESMAP activity developed a decentralized regional energy market design, which is to be implemented with national control and regional cooperation. The study recommendations are being used as input for making decisions on future regional market design by governments participating in the market. The Bank has approved a \$1 billion Adaptable Program Loan for undertaking investments associated with energy markets in the region.</p>			
WB Lending Operation Informed		Project ID	Approval FY
Energy Community of South East Europe Adaptable Program Loan		NA	2006
		Amount (US\$)	\$1000M WB loan

A2.1.4. Latin America and Caribbean Region

ESMAP ACTIVITY: NATURAL GAS STUDY (P111012)			
COUNTRY: PERU FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
<p>Based on stakeholder consultations, the ESMAP study assessed Peru's natural gas sector and made recommendations on regulatory measures, planning and consumer/sector demand. The government has started to implement policy adjustments supported by the findings of the study.</p>			

ESMAP ACTIVITY: IMPACT OF CREDIT CRISIS ON ENERGY IN LAC (P118014)			
COUNTRY: REGIONAL FISCAL YEAR: 2010-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>The loan was prepared in parallel to the ESMAP activity, <i>Assessing the Impact of Recent Credit Constraints on Energy Sector Investment Requirements in Latin America</i>. Consultations undertaken with the Jamaican government during ESMAP activity helped identify energy investments to be funded through this loan.</p>			
WB Lending Operation Informed		Project ID	Approval FY
JM Energy Investments and TA		P112780	FY11
		Amount (US\$)	\$15M WB loan

ESMAP ACTIVITY: PROGRAMMATIC ENERGY STUDY (P110201)			
COUNTRY: REGIONAL FISCAL YEAR: 2009-2012 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED	
<p>Based on this ESMAP study, a Bank Strategy for Central America Power Sector has been proposed comprising of five thematic pillars: Renewable Energy, Energy Efficiency, Integration, Institutional and Regulatory Strengthening, Energy Access.</p>			

ESMAP ACTIVITY: ENERGY ENVIRONMENT AND POPULATION – PHASE II (P113882)			
COUNTRY: REGIONAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: CONTRIBUTED TO STAKEHOLDER INVOLVEMENT	
<p>The activity has helped carry out consultations between governments, companies and indigenous peoples to facilitate the development of the region's hydrocarbon potential in a way compatible with the sustainable development of the Amazon. Two comparative studies as well as the consultations rounds in Colombia and Peru requested by Coordinator of Indigenous Organizations of the Amazon River Basin (COICA) COICA have been completed. The approach used by the activity has been recognized by its participants as a model to be followed by the national dialogues between the industry, governments and indigenous peoples.</p>			

ESMAP ACTIVITY: PROGRAMMATIC APPROACH IN SUPPORT OF THE POWER SECTOR IN CENTRAL AMERICA (P122936)	
COUNTRY: REGIONAL FISCAL YEAR: 2011- STATUS: ONGOING	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
Based on the work undertaken as part of the ESMAP activity, all ministers from Central American countries signed a declaration to encourage greater development and use of renewable energy and implementation of plans and programs for the efficient and rational use of energy in May 2010.	

ESMAP ACTIVITY: 'IMPACT OF HIGH AND VOLATILE OIL PRICES (P119291)	
COUNTRY: REGIONAL FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
ESMAP ACTIVITY: 'IMPACT OF HIGH AND VOLATILE OIL PRICES (P128535)	
COUNTRY: REGIONAL FISCAL YEAR: 2012-2012 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS

A2.1.5. Middle East and North Africa Region

ESMAP ACTIVITY: ENERGY PRICING STRATEGY (P107068)													
COUNTRY: EGYPT FISCAL YEAR: 2009-2009 STATUS: COMPLETED													
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED												
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED												
The ESMAP study prepared a plan for reforming energy prices and subsidies within a 5-year timeframe while taking into account the social and economic impact of the reforms. The government has started implementing some of these recommendations to make electricity and natural gas pricing more reflective of the costs. The work undertaken to prepare the pricing strategy helped inform the policy dialogue during the preparation of these two investment projects													
<table border="1"> <thead> <tr> <th><i>WB Lending Operation Informed</i></th> <th><i>Project ID</i></th> <th><i>Approval FY</i></th> <th><i>Amount (US\$)</i></th> </tr> </thead> <tbody> <tr> <td><i>Ain Sokhna Power</i></td> <td><i>P100047</i></td> <td><i>2009</i></td> <td><i>\$600M WB loan</i></td> </tr> <tr> <td><i>Giza North Power Project</i></td> <td><i>P116194</i></td> <td><i>2010</i></td> <td><i>\$600M WB Loan</i></td> </tr> </tbody> </table>		<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>	<i>Ain Sokhna Power</i>	<i>P100047</i>	<i>2009</i>	<i>\$600M WB loan</i>	<i>Giza North Power Project</i>	<i>P116194</i>	<i>2010</i>	<i>\$600M WB Loan</i>
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>										
<i>Ain Sokhna Power</i>	<i>P100047</i>	<i>2009</i>	<i>\$600M WB loan</i>										
<i>Giza North Power Project</i>	<i>P116194</i>	<i>2010</i>	<i>\$600M WB Loan</i>										

ESMAP ACTIVITY: DESIGN OF LOAD MANAGEMENT PROGRAM (P104888)									
COUNTRY: EGYPT FISCAL YEAR: 2007-2009 STATUS: COMPLETED									
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED								
The ESMAP activity helped design a load management program to reduce demand during peak periods, building on the work already undertaken by Egyptian Electricity Holding Company in this area. The Ain Sokhna Power loan helped implement the time of use tariff design designed by the ESMAP Activity.									
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<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>						
<i>Ain Sokhna Power</i>	<i>P100047</i>	<i>2009</i>	<i>\$600M WB loan</i>						

ESMAP ACTIVITY: ENERGY SECTOR (P110853)	
COUNTRY: JORDAN FISCAL YEAR: 2009-2012 STATUS: COMPLETED	
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED
The ESMAP activity supported the completion of a study on the potential application of smart grid technologies to the Jordan transmission grid. The findings of the study recommend the implementation of a Demand Response system based on smart metering for direct consumers. This recommendation is now being taken forward through	

an activity funded by the Korean Trust Fund on ICT for Development. The KTF funded activity will support the development of a detailed feasibility study, technical design, and a capacity-building program for Jordan that will address the need for a smart grid regulatory framework and national standards and will enable the deployment of a targeted Demand Response pilot project. The Jordanian electricity transmission company NEPCO distributes electricity to large industrial consumers responsible for roughly 12 percent of national consumption; the pilot project will focus on these industrial consumers.

ESMAP ACTIVITY: ENERGY SUPPLY STRATEGY (P108120)			
COUNTRY: MOROCCO FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
The ESMAP activity helped investigate how new programs and financial resources including the Clean Technology Fund (CTF), could foster a greater development of low carbon options to support Morocco's energy supply strategy (2025-2030). The study identified CSP as one of the low carbon options to be proposed for funding by the CTF, setting the stage for the preparation of this loan.			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Morocco Ouarzazate Concentrated Solar Power</i>	<i>P122028</i>	<i>2012</i>	<i>\$297 M WB loan</i>

ESMAP ACTIVITY: STRUCTURING NEW ENERGY AGENCY (P104087)			
COUNTRY: MOROCCO FISCAL YEAR: 2007-2009 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF EXISTING OPERATIONS INFORMED	
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
On the basis of the recommendations made under this activity, the Government of Morocco was able to transform the <i>Centre de Recherches sur les Energies Renouvelables</i> (CDER) into an energy agency that would better serve the needs of Morocco vis-a-vis the development of Renewable Energy (RE) and progress towards Energy Efficiency (EE). Approval of a law for setting up new energy agency is a tranche release condition for the loan.			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Morocco-Energy Sector DPL</i>	<i>P099618</i>	<i>2007</i>	<i>\$100M WB loan</i>

ESMAP ACTIVITY: ELECTRICITY SECTOR STRATEGY (P110581)			
COUNTRY: SYRIA FISCAL YEAR: 2008-2011 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
The new electricity law approved by the government has been influenced by the sector strategy note prepared under this ESMAP activity. As suggested by the ESMAP study, the new law prioritizes renewable energy and energy efficiency and encourages private investment in the sector.			

ESMAP ACTIVITY: REVIEW OF ENERGY MANAGEMENT POLICY (P104800)			
COUNTRY: TUNISIA FISCAL YEAR: 2007-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
The activity provided advice to the government on limiting the country's vulnerability to international energy markets, and reducing the burden on the country's finance due to higher oil prices. The Bank loan noted below implemented one of the suggested financing mechanisms recommended by the ESMAP study.			
WB Lending Operation Informed		Project ID	Approval FY
<i>Tunisia Energy Efficiency and Renewable Energy Investment Project</i>		<i>P104266</i>	<i>2009</i>
			Amount (US\$)
			<i>\$55M WB loan</i>

ESMAP ACTIVITY: MAGHREB ENERGY MARKET STUDY (P106446)			
COUNTRY: REGIONAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED	
The activity helped facilitate the development of a Maghreb energy market, by leveraging the Bank experience in the development of regional energy markets, through the organization of a workshop and preparation of reports. This study helped prepare the World Bank's work program for regional integration of energy markets in Middle East and North Africa. Workshops undertaken under this activity helped facilitate discussions and forge consensus on CSP development options.			
WB Lending Operation Informed		Project ID	Approval FY
<i>Tunisia -Concentrated Solar Power</i>		<i>P122029</i>	<i>2013 (in pipeline)</i>
			Amount (US\$)
			<i>\$35 M WB loan</i>

ESMAP ACTIVITY: ASSESSING ENERGY SECTOR CREDIT CONSTRAINTS (P116206)			
COUNTRY: REGIONAL FISCAL YEAR: 2009-2011 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
This loan was identified based on the assessment carried out by ESMAP to estimate the impact of the financial crisis in Egypt and Jordan and to identify investment shortfalls in the power sector. This project was flagged by the Egyptian government as requiring priority financing from the World Bank. Two additional loans, also influenced by ESMAP are currently being proposed: <i>Egypt Dairut Independent Power Project and Jordon Fujeij Wind IPP.</i>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Egypt - Helwan South Power Project</i>		<i>P117407</i>	<i>2013</i>
			Amount (US\$)
			<i>\$537M WB loan</i>

A2.1.6. South Asia Region

ESMAP ACTIVITY: POWER SECTOR STOCKTAKING (P122931)			
COUNTRY: INDIA FISCAL YEAR: 2011- STATUS: ONGOING			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED	
The activity is helping carry out a comprehensive diagnostic of India's power sector covering access levels and challenges in improving levels of access to power; the financial and operational performance of the sector and implications of recent developments for financing necessary investments in the sector; the experience with PPP in power across generation, transmission and distribution; and, corporate governance in power sector utilities. The assessment will help underpin the Bank's sector strategy in India.			
The background paper on energy access prepared as part of the activity, which provides recommendations on policies for increasing energy access in India, has been used as an input for the preparation of the country's 12th five year plan.			

ESMAP ACTIVITY: ORGANIZATIONAL TRANSFORMATION AND PUBLIC PRIVATE PARTNERSHIPS IN MSETCL (P111243)				
COUNTRY: INDIA FISCAL YEAR: 2009-2010 STATUS: COMPLETED				
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED		
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED		
<p>The ESMAP activity helped improve the institutional capacity in Maharashtra State Electricity Transmission Corporation Limited to effectively implement its proposed investment plan to bridge high demand-supply gap in power in the state of Maharashtra, effectively maintain assets and enhance competition (through transmission open access) in the state. Under the activity, several meetings, workshops and field visits were conducted for dissemination of proposed changes and to obtain feedback the changes, which resulted in better design and implementation. The activity has helped facilitate fast-track transmission infrastructure development and improved business processes/organizational structures of the MSETCL. The ESMAP activity served as a springboard for IFC's loan to MSETCL.</p>				
WB Lending Operation Informed		Project ID	Approval FY	Amount (US\$)
<i>IFC Loan for MSETCL</i>		<i>NA</i>	<i>2009</i>	<i>\$200M IFC loan</i>

ESMAP ACTIVITY:				
<ul style="list-style-type: none"> ▪ BEST PRACTICE IN ENERGY EFFICIENCY IMPROVEMENT IN COAL FIRED GENERATION (P105191) ▪ REGULATORY AND PLANNING REQUIREMENT FOR REHABILITATION OF COAL FIRED GENERATION (P105194) 				
COUNTRY: INDIA FISCAL YEAR: 2008-2010 STATUS: COMPLETED				
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED		
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED		
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED		
<p>These two activities provided inputs for the preparation of a government action plan for rehabilitation of thermal power plants. Regulatory commissions expect that state utilities/project sponsors will request that one or a combination of the options developed under the ESMAP study are assessed for use when they make application for investment and tariff approval for future rehabilitation investment. These activities have also assisted in transferring international best practices in this area to India through a study and through experts' site visits and seminars & workshops. The ESMAP study has also helped identify the regulatory and planning requirements for rehabilitation of coal-fired generation plants and shared it with the Forum of Regulators. By helping demonstrate mechanisms for adopting energy efficient rehabilitation and operating/maintenance practices at coal-fired generation units in India, these activities facilitated the preparation of two World Bank loans for the rehabilitation of coal-fired plants in India.</p>				
WB Lending Operation Informed		Project ID	Approval FY	Amount (US\$)
<i>Coal-Fired Generation Rehabilitation</i>		<i>P100531</i>	<i>2009</i>	<i>\$180M WB loan</i>
<i>Coal-Fired Generation Rehabilitation II</i>		<i>P100101</i>	<i>2009</i>	<i>\$45.4M WB loan</i>

ESMAP ACTIVITY: SUPPORT TO STRATEGIC ENERGY SECTOR DEVELOPMENT (P122960)			
COUNTRY: NEPAL FISCAL YEAR: 2011-2012 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>The ESMAP activity helped raise awareness of complex energy sector issues and achieve a greater appreciation of energy sector development issues and priorities among sector decision-makers and specialists as well as the public at large. The Kabeli Transmission Project benefited from these efforts by ensuring greater buy in from stakeholders for the project.</p>			
WB Lending Operation Informed		Project ID	Approval FY
Kabeli Transmission Project		P112893	2011
		Amount (US\$)	\$38M WB loan

ESMAP ACTIVITY: ENVIRONMENTALLY SUSTAINABLE POWER DEVELOPMENT (P111245)			
COUNTRY: SRI LANKA FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: DESIGN CAPACITY STRENGTHENED	
OUTCOME: KNOWLEDGE INCREASED		INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS	
<p>The methodology developed in this report was used by the Government of Sri Lanka for preparing long term power sector investment plan of the country. As part of the activity, a stakeholder workshop was conducted in November 2009 and the analytical tools used in this report were presented at a technical workshop for Ceylon Electricity Board (CEB) staff in January 2010. These workshops were opportunities for all stakeholders to provide inputs and comments, as well as a forum for learning.</p>			

ESMAP ACTIVITY: ENERGY SECTOR VULNERABILITY ASSESSMENT (P120587)			
COUNTRY: REGIONAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED	
<p>The ESMAP activity provided important insights into the power sector financing situation in Bangladesh, Pakistan, and India. The activity has served to underpin the Bank's country dialogue and sector strategies in these countries, in terms of where they need to focus in terms of moving along the curve of attracting large scale investments from partners, including the private sector.</p>			

ESMAP ACTIVITY: SOUTH ASIA REGULATION ENERGY STUDY SERIES (P122369)			
COUNTRY: REGIONAL FISCAL YEAR: 2011-2012 STATUS: COMPLETED			
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED		INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED	
<p>This effort has helped deliver a series of 18 focused analytical pieces, examining a specific group of relevant questions for the World Bank's policy dialogue with client countries. The work has had clear operational links and has helped enrich the Bank's dialogue with client governments. The various papers have also helped underpin the sectoral contribution to Country Assistance Strategies of the World Bank and in general to inform the SAR electricity program. The paper on Rural Feeder Segregation was requested by the Ministry of Power in India for an assessment of utilities that have attempted feeder segregation. Rural feeder segregation involves separation of agricultural (non-paying) connections and other rural non-farm connections. The paper has been through a number of iterations based on comments received from client counterparts in Ministry of Power and in the States. The paper has been extremely well received by Govt of India and has led to high level policy dialogue as well as the request to share findings with various additional States. It is likely to lead to a request for a project. A survey of rural consumers in three states was also carried out under SARESS as a companion piece to the Rural Feeder Segregation work (not at the request of Gol but as a SARESS team initiative) to better understand the impact of rural feeder segregation on the customer side, where it has been tried in the last few years, and to assess from the customer end whether (a) non-farm consumers are actually receiving better power supply than before segregation and (b) what they are doing with the power, i.e. using it only for lighting or also for productive uses.</p>			

A2.1.7. Global

ESMAP Activity: PRIVATE AND PUBLIC SECTOR ROLES (P120423)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED
<p>The analysis and assessment of the experience and outcomes of different approaches and models of ownership and financing of the power sector undertaken as part of this ESMAP study helped inform preparation of World Bank's Energy Strategy (approval of WB Energy Strategy still pending).</p>	

ESMAP Activity: ELECTRICITY TRANSMISSION PLANNING (P118729)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS
<p>Under this ESMAP activity, policy principles for efficiently developing transmission for renewable energy developed under the activity were shared with five client countries - Philippines, Mozambique, South Africa, Saudi Arabia, and Morocco - at their request. Recommendations from this activity on transmission systems for renewable energy have been used to operationalize specific transmission regulations in Philippines.</p>	

ESMAP Activity: NOCs CASE STUDIES (P109169)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The paper prepared as part of this activity was used as input to design the role and organization of a new national oil company for the Government of Uganda.</p>	

ESMAP Activity: POWER SECTOR MARKET STRUCTURE (P113129)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: DISSEMINATED BEST PRACTICES
<p>Policy recommendation and lessons learned on the optimal power market structure were shared with energy practitioners and stakeholders at the World Forum on Energy Regulation; the activity was recognized as a major contribution both in terms of data collection and analysis.</p>	

ESMAP Activity: P127532/P127530	RBF for Energy Sector Development
COUNTRY: GLOBAL FISCAL YEAR: 2012- STATUS: ONGOING	
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH FOSTERED
<p>As part of this work program, ESMAP hosted a conference in May 2012 to share lessons from the use of results-based approaches in other sectors such as water and sanitation, health, roads, and information and communication technology (ICT). A panel of energy practitioners reflected on the reasons behind the slow adoption of these approaches in the energy sector, focusing on key challenges and opportunities in the move towards testing out, and subsequently scaling up, results-based approaches. The event was primarily attended by World Bank staff but also included a number of external participants, including representatives from ESMAP donor and client countries and civil society organizations.</p> <p>Work on integrating result based approaches in lending projects (including Climate Investment Fund projects) in countries such as Honduras, Tanzania, and Indonesia has also been initiated. But this work is still in early stages of development and results or outcomes are evident at this moment.</p>	

A2.1.8. EASP Activities with Limited or Unobserved Results

ESMAP Activity: OIL SUPPLY LOGISTICS AND SECURITY FOR SMALL OIL-IMPORTING AFRICAN COUNTRIES (P099257)
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COUNTRY / REGION: AFRICA | **FISCAL YEAR:** 2006-2009 | **STATUS:** COMPLETED

The activity report provided a quality analysis of the state of the downstream petroleum sectors in Rwanda, Uganda and Kenya, and made useful recommendations to improve oil facilities and supply logistics. However, the delay in completing report compromised the relevance of the report, as oil prices fell and additional oil was discovered in client countries.

ESMAP ACTIVITY: SUB SAHARAN AFRICA PETROLEUM EFFICIENCY STUDY (P109700)

COUNTRY / REGION: AFRICA | **FISCAL YEAR:** 2008-2010 | **STATUS:** COMPLETED

A study that provides options for optimizing the existing petroleum products supply policies, including taxation and pricing policies, and the imports and storage infrastructure across a selection of countries in Sub-Saharan Africa has been prepared. However, there is no observable evidence that any of the recommendations of the study have been adopted by governments.

ESMAP ACTIVITY: IMPACT OF FINANCIAL CRISIS ON POWER SECTOR (P118724)

COUNTRY / REGION: EUROPE AND CENTRAL ASIA | **FISCAL YEAR:** 2010-2011 | **STATUS:** COMPLETED

The activity helped assess the impact of the financial crisis on the power sector in the Europe and Central Asia region and to identify specific investment and policy measures to respond to the crisis. The study was developed through close consultations with the World Bank energy teams of the target countries to reflect their sectoral knowledge and to provide useful input to their work in the target countries. The preparation of the study also involved engagement with key stakeholders of the target countries (government officials, sector experts, financiers). So far, there is no observable evidence to indicate that the activity informed specific policy or investment actions of either the Government or the World Bank that were taken in response to the crisis.

ESMAP ACTIVITY: UAP-ES ASSESSMENT (P122927)

COUNTRY / REGION: UZBEKISTAN / ECA | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

The activity helped carry out a high level initial assessment of Uzbekistan's ability to contribute to meeting the growing electricity needs of Afghanistan and Pakistan through an Interconnection project, and to assess as well the technical, economic and financial viability of such a project. As of yet, no financing has been mobilized for project implementation.

ESMAP ACTIVITY: ELECTRICITY PRICING AND POWER SECTOR REFORM (P106901)

COUNTRY / REGION: IRAN / MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2008-2009 | **STATUS:** COMPLETED

The main objective of the activity -- to assist Government of Iran in its effort to advance the power sector reform program, especially in the areas of electricity pricing and subsidies, electricity market restructuring and regulation, investment planning, and private sector participation -- has not been fully achieved as the Bank team could not follow up on the final report and its recommendations due to an embargo on Bank mission travel to Iran since June 2009. Thus, the Bank team has no information to what extent the Iranian counterparts implemented the measures suggested in the report, which was shared with the Government of Iran.

ESMAP ACTIVITY: SUPPORT TO DEVELOP STRATEGY FOR THE GOVERNMENT'S PUBLIC TRANSPORT SUB-SECTOR (P110209)

COUNTRY / REGION: WEST BANK AND GAZA / MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2009-2010 | **STATUS:** COMPLETED

There has only been a modest improvement in the capacity of the officials at the Ministry of Transport. Adoption of new government policy based on the study is also unlikely in the near term and will require substantial efforts and more time to achieve. However, there is significant interest in funding the recommendations of the ESMAP study from other development partners such as USAID, GTZ and AFD.

ESMAP ACTIVITY: MAGHREB VULNERABILITY ASSESSMENT (P116216)

COUNTRY / REGION: MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2009-2010 | **STATUS:** COMPLETED

The activity helped assess the impact of the financial crisis on the power sector in the Middle East and North Africa region and to identify specific investment and policy measures to respond to the crisis. There is no observable evidence to indicate that the activity informed specific policy or investment actions of either the Government or the World Bank that were taken in response to the crisis.

ESMAP ACTIVITY: ENERGY INTEGRATION STUDY (P113903)

COUNTRY / REGION: MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2009-2011 | **STATUS:** COMPLETED

A comprehensive report on the potential of regional energy (gas and electricity) integration in the Mashreq region (Egypt, Jordan, Palestine Authority, Iraq, Syria and Lebanon) and neighboring countries was completed in June 2010. The Study carried out a country-by-country analysis of the power and gas sector demand and supply picture in order to assess opportunities for regional energy integration in the Mashreq and neighboring countries. The Study identified specific interconnection projects that could be developed in the Mashreq region to increase the potential of electricity and gas trade and hence the security and diversity of energy supply in the region. The Bank study team is continuing discussions and dialogue with the governments and utilities in the Mashreq region for advancing the development of the cross-border interconnection projects identified in the Study and prospect of their financing by International Financing Institutions.

ESMAP ACTIVITY: ELECTRICITY TRADE & INTERCONNECTION (P111861)

COUNTRY / REGION: MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2009-2010 | **STATUS:** COMPLETED

This activity helped prepare a report that explores the potential for electricity trade and interconnection between Yemen and countries of the Gulf Cooperation Council (GCC). The completion of this study is the first among the ongoing regional energy integration studies in MENA. In coordination with other MENA teams (Mashreq and Maghreb) who work on these studies, the study team will utilize the findings of this study to contribute in formulating the overall picture of potential regional energy integration opportunities in MENA.

ESMAP ACTIVITY: GEA BACKGROUND ENERGY PAPERS (P110342)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2008-2009 | **STATUS:** COMPLETED

This activity could not achieve its objective because of unsatisfactory consultant performance. ESMAP terminated the consultant's contract mid-way after the quality of the outputs was not found to be satisfactory.

ESMAP ACTIVITY: REGIONAL POWER TRADE STUDY (P108579)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2008-2011 | **STATUS:** COMPLETED

The objective of this activity was to collect the experiences and lessons from the half-a-dozen most advanced regional electricity projects and help facilitate and accelerate the preparation of regional electricity system integration projects. While the outputs of the TA have been well received by stakeholders, there is no evidence to indicate that the activity has helped facilitate the preparation additional electricity system integration projects.

ESMAP ACTIVITY: DIAGNOSTIC OF ECONOMIC CRISIS TO INFRASTRUCTURE (P119796)

COUNTRY / REGION: MONGOLIA/ EAST ASIA | **FISCAL YEAR:** 2010-2010 | **STATUS:** COMPLETED

The activity helped assess the impact of the financial crisis on the power sector in Mongolia and to identify specific investment and policy measures to respond to the crisis. There is no observable evidence to indicate that the activity informed specific policy or investment actions of either the Government or the World Bank that were taken in response to the crisis.

ESMAP ACTIVITY: DEVELOPING A REGULATORY FRAMEWORK (P123047)

COUNTRY / REGION: MALDIVES / SAR | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

The activity helped develop a regulatory framework that lays out the overall regulatory architecture and policy principles for certain key elements such as licensing, investment approvals, compliance monitoring, and energy efficiency for the Government and the Maldives Energy Authority (MEA). The Ministry of Housing and Environment

as well as the President's Offices have endorsed the findings and recommendations of the proposal. However, there is no observable evidence yet to indicate that the framework has been adopted by the government.

ESMAP ACTIVITY: FLAGSHIP ELECTRICITY TECH. OPTIONS ASSESSMENT (P121518)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

The activity has helped develop a user-modifiable and internet-based model to allow comparative assessment of the economic costs of thermal and renewable electricity generation options, as well as power storage called Model for Electricity Technology Assessment (META). Hands on training on using the model was provided to Bank staff and external audiences in June 2012. The model is currently being used by Bank staff in Latin America and Caribbean and Africa units of the Bank. In addition, private sector firms such as General Electric have also expressed interest in learning more about the tool.

ESMAP ACTIVITY: MANAGING THE IMPACT OF HIGH AND VOLATILE OIL PRICES (P119291)

COUNTRY: REGIONAL/LAC | **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED

INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED

A study that (i) analyzes the economic effects of higher and volatile prices on oil-importing countries, with emphasis on the power sector, using evidence from Latin America and the Caribbean (ii) proposes a menu of complementary options that can be applied over multiple time frames and (iii) attempts to quantify some macroeconomic and microeconomic benefits that could accrue from implementing such options has been prepared. However, there is not observable evidence to indicate that the findings of the study have been used in any setting.

ESMAP ACTIVITY: FUEL PRICE RISK & POWER SYSTEMS PLANNING (P110522)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2008-2009 | **STATUS:** COMPLETED

This ESMAP activity has prepared improved power utility planning methods for developing more robust and diverse energy generation mixes in developing country utilities that minimize risk-adjusted supply costs. However, there is no observable evidence of these methods having been used by client countries.

ESMAP ACTIVITY: ELECTRICITY SECURITY (P114009)

COUNTRY: REGIONAL | **FISCAL YEAR:** 2009-2010 | **STATUS:** COMPLETED

This ESMAP activity supported an extensive effort to gather information on the electricity sector and development of a more complete database for the electricity sector in the region. This comprehensive database will enable detailed and complete analysis of the electricity sector in the region. However, there is no observable evidence to indicate that this database has been used by client countries.

ESMAP ACTIVITY: ENERGY PROCUREMENT & AUCTIONS (P112430)

COUNTRY: REGIONAL | **FISCAL YEAR:** 2009-2011 | **STATUS:** COMPLETED

Based on a review of international best practices, this ESMAP activity has assessed the benefits, challenges and pitfalls related to the implementation of different types of energy auctions, including issues pertaining to: (i) auction design, (ii) auction process and (iii) choice of auction over other procurement and contracting mechanisms. However, there is no observable evidence to indicate that this study has been used by client countries.

ESMAP ACTIVITY: 5M-AWI ELECTRICITY NETWORKS INTEGRATION (P122363)

COUNTRY / REGION: MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

The activity helped prepare a study that covers the twenty two Arab countries and focuses on the institutional and regulatory aspects of cross-border trade and electricity market integration between these countries, as well as with potential neighboring markets. While the activity substantially complete, it is still too early to determine results.

A2.1.9. Ongoing EASP Activities

ESMAP ACTIVITY: REGIONAL ENERGY SECTOR NOTE / (P122951)
COUNTRY / REGION: CAUCASUS / EUROPE AND CENTRAL ASIA FISCAL YEAR: 2011- STATUS: ONGOING
This activity will form part of a larger regional stock taking exercise in the energy sector of the Southern Caucasus and will contribute towards updating sector notes of the countries in the region, including an in depth assessment Azerbaijan's energy sector.

ESMAP ACTIVITY: BULGARIA GAS SECTOR STUDY (P118225)
COUNTRY / REGION: EUROPE AND CENTRAL ASIA FISCAL YEAR: 2012- STATUS: ONGOING
The activity has helped prepare a report that defines the least cost short and medium term measures that the Government of Bulgaria (GoB) can implement to meet gas supply requirements seen in the context of gas supply disruptions and the increasingly important role of regional gas transit and trade. The study also assesses the commercial implications of such measures.

ESMAP ACTIVITY: CAIRO CONGESTION STUDY (P121712)
COUNTRY/ REGION: EGYPT / MNA FISCAL YEAR: 2011- STATUS: ONGOING
The study is helping assess the baseline for current congestion in Greater Cairo Metropolitan Area, based on which policy recommendations and an action plan to reduce traffic congestion will be prepared.

ESMAP ACTIVITY: : LUHRI HYDRO ELECTRIC PROJECT (P102843)
COUNTRY/REGION: INDIA / SOUTH ASIA FISCAL YEAR: 2011- STATUS: ONGOING
The activity, which supports the lending operation of the same name, will help to understand the involvement and performance of the private sector in hydropower development in India and evaluate the challenges constraining the private sector to increasingly take on the challenge of the sustainable development of the country's hydropower potential. The ESMAP financed study will contribute to Government of Himachal Pradesh's understanding of the approaches being followed by other Indian States and internationally in attracting investment into hydropower development; and assist the State Government in refining their private sector participation strategy in hydropower.

ESMAP ACTIVITY: POWER SUPPLY OPTIONS STUDY (P128881)
COUNTRY: TAJIKISTAN FISCAL YEAR: 2012 - STATUS: ONGOING
The activity is helping undertake an assessment to present to the Government of Tajikistan various options for (i) meeting power demand and alleviating winter power shortages in the short term (within 5 years) and (ii) meeting long term demand growth while taking advantage of export opportunities over the long term (next 30 years).The assessment will cover a range of power supply options, including hydropower projects of all sizes, thermal generation, alternative energy sources, rehabilitation of existing generation assets, and energy efficiency. Comparison and prioritization of options will be accomplished by considering a range of criteria, such as economic cost, energy security, and water management.

ESMAP ACTIVITY: P129287 Armenia Power Sector Tariff Study
COUNTRY: ARMENIA FISCAL YEAR: 2012- STATUS: ONGOING
The activity aims to assess the levels of the current electricity tariffs in terms of cost-recovery and recommend optimal tariff structure in order to ensure efficient use of electricity. The results of the study will provide detailed estimates of tariff impacts of various investment scenarios in new generation capacity. The study will also provide analysis of possible improvements in tariff structure to conserve energy - a key objective of the National Program on Energy Efficiency and Renewable Energy.

ESMAP ACTIVITY: P129510 PE TA for Energy Planning
COUNTRY: PERU FISCAL YEAR: 2012- STATUS: ONGOING

This TA is helping the Ministry of Energy and Mines (MEM) design and make operational a planning unit for the energy sector and support its initial activities. The assistance would help to provide knowledge on the energy planning models using other countries such as Brazil and Colombia, and help to adapt specific aspects of these models to the Peruvian context. This is the first attempt to introduce sector-wide integrated planning since the reform in the early 1990s, and echoes the experience of countries such as Brazil and Colombia that have such planning units. It would require defining the objective, functions, structure and personnel requirements of such a unit, and analyzing the necessary changes to MEM's present organization.

ESMAP ACTIVITY: P129821 TN-Strategic Energy Vision TA

COUNTRY: TUNISIA | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

The activity is helping the Government of Tunisia (GoT) prepare an energy strategy that would contribute to the key objectives of energy security, environmental sustainability, economic growth and job creation. The activity will help the GoT revisit its energy mix strategy, in order to set the country on a low carbon path, without endangering economic growth and while contributing to job creation. In particular emphasis will be placed on the implications of the energy strategy on employment and on positioning the energy sector as an engine of sustainable, equitable and competitive growth.

ESMAP ACTIVITY: P128995 International Experience with Private Sector Participation and Open Access in Power Grids

COUNTRY: GLOBAL | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

The key objective of the study is to advise WBG staff and country clients on options for implementation of private sector participation and open access in transmission and distribution, drawing on best practice examples and lessons gained from international experience while taking into account specific country needs and circumstances.

ESMAP ACTIVITY: P128157 1W: Synchronization of Mashreq, TR & EU

COUNTRY: MENA | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

The successful synchronizing Turkey power grid with Continental Europe offers an opportunity for Mashreq countries to synchronize with the European Network for Transmission System Operators for Electricity (ENTSO-E). In this context, this study will help (1) to evaluate the status quo of the right country EIJLLPST interconnection and the potential for realizing the mutual benefits from synchronization with ENTSO-E, and (2) to assess the technical and investment requirements to synchronize the power grids of Mashreq countries with Turkey and ENTSO-E Synchronous Area. This activity is one of a series of ESMAP activities assessing the prospects for regional energy integration in Maghrib and Mashreq regions.

A2.2. ENERGY EFFICIENCY

A2.2.1. Africa Region

ESMAP ACTIVITY: LEDS LIGHTS QUICK SCREENING METHODOLOGY (P113599)

COUNTRY: REGIONAL | **FISCAL YEAR:** 2009-2010 **STATUS:** COMPLETED

OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED

INDICATORS:

- NEW INNOVATIVE APPROACHED DEVELOPED
- CLIENT IS ABLE TO ADOPT NEW TECHNOLOGIES, INNOVATIVE IDEAS, OR KNOW-HOW

This activity, supported under the Lighting Africa program, helped develop a new low-cost testing methodology of high quality white Light Emitting Diode (LED) products that can provide efficient, clean and cost-effective lighting in off-grid facilities. The methodology has been used for testing over 30 products and is considered now one of the most accepted methodologies for testing small off-grid lighting products for developing countries.

The new testing off-grid lighting testing methodology developed has been made publicly available through the Lighting Africa website. The program is now transferring the methodology to laboratories throughout Sub-Saharan Africa. The testing capacity already exists in three laboratories and is under development in a fourth. Building

capacity in local labs helps ensure sustainability of the results.

A2.2.2. East Asia and Pacific Region

ESMAP ACTIVITY: CHINA ENERGY INTENSITY REDUCTION STRATEGY (P099544)			
COUNTRY: CHINA FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
This ESMAP activity targeted the review of key energy efficiency policies, regulations and standards, and proposed strategies to the Government of China on how to streamline the institutional framework and update related policies and regulations in line with changing national and international economic environments. The activity produced three separate policy notes targeting three specific outcomes:			
OUTCOME: POLICY STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY INFORMED	
The <i>first policy note</i> conducted a re-evaluation of China's renewable energy targets, growth paths, and related policy issues, taking into account full-cost pricing. The study created a new stand-alone model to optimize across various renewable energy options in a growing energy sector with full-cost pricing (i.e., incorporating both financial and environmental costs). The note helped the Government's refine its renewable energy development targets in its formulation of the newly announced 12th Five Year plan.			
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: DESIGN CAPACITY STRENGTHENED	
The <i>second policy note</i> made an analysis of coal and emissions savings when power dispatch across a province-wide grid is managed to maximize efficiency rather than minimize costs. The study made a strong contribution to the client's ability to independently analyze the impact of the Dispatch for Energy Saving and Emission Reduction in Power Generation as it scaled up the five initial pilot efforts (three of which were analyzed in this policy note).			
OUTCOME: DEVELOPING FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	
The <i>third policy note</i> conducted an evaluation of energy efficiency investment potential related to phasing out inefficient cement plants, including social safety net issues related to job layoffs. The note, which was done based on the Shandong Province, directly informed the preparation of the Shandong Energy Efficiency Project, which finances industrial energy efficiency, including the cement sector.			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Shandong Energy Efficiency</i>	<i>P114069</i>	<i>FY2011</i>	<i>\$150 M WB loan</i>

ESMAP ACTIVITY: SURVEY AND KNOWLEDGE SHARING ON ENERGY CONSERVATION IN CHINA'S PROVINCES (P111927)			
COUNTRY: CHINA FISCAL YEAR: 2009-2009 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	

The ESMAP study surveyed China's provincial EE programs and summarized lessons learned for provinces to improve design and implementation of future programs. Following up and drawing upon the ESMAP report, additional resources from the Australian Agency for International Development (AusAID) and World Bank were mobilized for the in-depth study "Accelerating Energy Conservation in China's Provinces" (June 2010).

Together, these efforts paved the way for a new support platform for provincial-level energy conservation programs through three lending operations: A GEF grant of \$13 million for the *Provincial Energy Efficiency Scale-Up Project* to support new innovations and capacity building in Shanxi, Shandong and Jiangxi Provinces; and a \$150 million World Bank loan for the *Shandong Province Energy Efficiency Project*¹⁹, to support improvement of energy efficiency in selected enterprises in the Shandong Province, particularly through financial leasing arrangements, and increased use of biomass for power and heat generation.

There is also a proposed *Shanxi Province Energy Efficiency (P113787)* Bank loan of about \$300 million to support demonstrating good energy efficiency practice in the key energy transformation process and industrial energy consumption processes. The project is scheduled for Bank approval for October 2012 (FY2013).

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>GEF - Provincial Energy Efficiency Scale-up Program</i>	<i>P114182</i>	<i>2011</i>	<i>\$13.4 M (GEF)</i>
<i>Shandong Province Energy Efficiency</i>	<i>P114069</i>	<i>2011</i>	<i>\$150 M WB loan</i>

ESMAP ACTIVITY: GOVERNMENT FACILITIES ENERGY EFFICIENCY (P123066)

COUNTRY / REGION: CHINA / EAST ASIA AND PACIFIC | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: NEW OPERATIONS INFORMED

The activity has helped review policies and initiatives and provided international experience and initial recommendations to improve the energy efficiency of existing public buildings belonging to central, provincial, and municipal government agencies, including office buildings, schools, universities and hospitals. The AAA has already yielded some direct operational support as the Beijing municipality is currently considering school and hospital energy conservation components in the proposed CN: Beijing Energy Efficiency and Emission Reduction Demo (P125022) project.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Beijing EE and Emission Reduction Demo</i>	<i>P125022</i>	<i>Pipeline</i>	<i>TBD</i>

ESMAP ACTIVITY: VN-HCMC GREEN TRANSPORT (P131211)

COUNTRY / REGION: VIETNAM | **FISCAL YEAR:** 2012 – | **STATUS:** ONGOING

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: NEW OPERATIONS INFORMED

The ESMAP study is helping carry out i) assessment of the energy efficiency status of the current bus services (including bus routes planning and bus operations) and identify critical areas for improvement; (ii) identification of cost-effective options for improving energy efficiency of the bus services, learning from international good practices; and (iii) development of an implementation plan for preferable options, through consultation with bus operators, relevant government agencies, and other key stakeholders. The ESMAP study is closely linked to the Bank's Ho Chi Minh City Green Transport project and is helping develop options that will be implemented under the project.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>VN-HCMC GREEN TRANSPORT</i>	<i>P126507</i>	<i>Pipeline (FY14)</i>	<i>\$152.3M</i>

¹⁹ ESMAP activity P09954 - China Energy Intensity Strategy (P099544) also influenced this lending operation.

ESMAP ACTIVITY: RESILIENT CITIES: DECISION SUPPORT TOOLS FOR CLIMATE AND DISASTER RISK REDUCTION IN EAST ASIAN CITIES (P121572)	
COUNTRY: REGIONAL FISCAL YEAR: 2011-2011 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: MOBILIZATION OF NON-BANK RESOURCES INFORMED
<p>This activity, partially funded by ESMAP, helped to develop tools for identifying and operationalizing disaster risk mitigation and climate adaptation measures at the city level. Under the activity, two key outputs were delivered: i) Workbook on Developing Local Resilience Action Plans and ii) A multi-hazard City Risk Index. As part of refining the methodology for the index, three city pilots were undertaken and completed in the cities of Ningbo, Manila, and Bangkok. This has immediately led to interest and downstream work in Manila for the design of a barangay-level (neighborhood) risk index that can function as a damage assessment tool, an emergency response tool and a land-use planning and investment decision support mechanism. Funding of about US\$ 450,000 has been secured from AusAID to support this initiative.</p>	

A2.2.3. Europe and Central Asia Region

ESMAP ACTIVITY: DISTRICT HEATING AND ELECTRICITY RESTRUCTURING (P113570)	
COUNTRY: MOLDOVA FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The ESMAP activity informed Moldova's regulatory framework for district heating. As a result of the implementation of the recommendations of the policy note, the energy regulator (ANRE) has full tariff setting authority for District Heating tariffs in the capital city of Chisinau. Key results included:</p> <ol style="list-style-type: none"> 1. The GoM agreed to the need for reforms and issued a law on December 2009 to transfer full district heating tariff setting authority to the independent energy regulator ANRE, 2. In January 2010, the regulator increased the heating tariffs for the 2009/2010 heating season by 30%. It is estimated that the current tariff covers all cash costs, 3. The Bank energy team took a leading role in the DH sector policy dialogue between the GoM and the country's developing partners. The Bank team provided the sector expert support in the IMF Stand-by-Arrangement. 	

ESMAP ACTIVITY: CHISINAU ENERGY SUPPLY IMPROVEMENT (P123396)	
COUNTRY / REGION: MOLDOVA / EUROPE AND CENTRAL ASIA FISCAL YEAR: 2011-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: MOBILIZATION OF NON-BANK RESOURCES INFORMED
<p>This activity is the second phase of the ESMAP-funded project <i>Moldova - District Heating Restructuring (P113570)</i> which led to a Policy Note outlining actions to reform the DH sector to financial sustainability. Phase II provided the analysis of policy options and recommendation on corporate restructuring plan for the district heating company Termcom and Combined Heat and Power plants (CHPs). The Government took a cabinet decision in November 2011 to follow the action plan recommended in the consultant report - integration of Termocom and 2 CHPs. The cabinet decision was followed by a Memorandum of Understanding among all stakeholders to proceed with the decision, signed in January 2012. The government's commitment to implementing the TA's recommendations has also helped mobilize funding from other institutions. Sweden has committed EUR 2 million and EU EUR 2.7 million for related agencies such as Ministry of Economy, ANRE, and Energy Efficiency Agency.</p>	

ESMAP ACTIVITY: FACILITATING SME EE FINANCING 130578	
COUNTRY / REGION: TURKEY FISCAL YEAR: 2012-2012 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: NEW OPERATIONS INFORMED
<p>The activity has helped carry out i) bank portfolio market assessments, in order to determine key subsectors and technical product lines for replicable EE investments; and (ii) developed an energy calculator as a tool which banks could use to do quick assessments of financial viability of the EE retrofits. These outputs are helping inform the design of the proposed Turkey SME Energy Efficiency Project includes a US\$300 million loan to three financial</p>	

institutions (FIs). The tools developed under the ESMAP TA will be used by participating Banks for determining determine key subsectors and technical product lines for replicable EE investments and for determining the financial viability of the EE retrofits

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Turkey SME Energy Efficiency Project</i>	<i>P132189</i>	<i>Pipeline (FY13)</i>	<i>\$300 M</i>

ESMAP ACTIVITY: UA-MUNICIPAL ENERGY EFFICIENCY FINANCING (P129900)

COUNTRY / REGION: UKRAINE | **FISCAL YEAR:** 2012 - | **STATUS:** ONGOING

OUTCOME: DEVELOPMENT FINANCING INFORMED | **INDICATOR:** EXISTING OPERATIONS INFORMED

The activity aims to facilitate financing of energy efficiency investments by municipalities, municipal utilities and energy service companies with funding from international financial institutions (IFIs) and commercial banks. Towards this, the activity is helping identify and address legal and regulatory obstacles to municipal energy efficiency finance in Ukraine and build government capacity by developing and applying commercial and IFI financing models to municipal energy efficiency projects that can be scaled up. The Bank's Energy Efficiency Project is directly financing eligible sub-projects in the industrial and municipal sector and providing subsidiary loans to other participating banks (PBs).

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>UA - ENERGY EFFICIENCY Project</i>	<i>P096586</i>	<i>FY11</i>	<i>\$200 M</i>

ESMAP ACTIVITY: ENERGY EFFICIENCY STRATEGY FOR INDUSTRIAL SECTOR (P122464)

COUNTRY / REGION: UZBEKISTAN / EUROPE AND CENTRAL ASIA | **FISCAL YEAR:** 2011- | **STATUS:** ONGOING

OUTCOME: DEVELOPMENT FINANCING INFORMED | **INDICATOR:** EXISTING OPERATIONS INFORMED

The TA is helping the Ministry of Economy, which is responsible for energy efficiency in Uzbekistan, to develop an energy efficiency strategy and policy to target energy efficiency savings in the manufacturing sector. The TA will also help carry out a training program to increase capacity among energy professionals and institutions to identify and prepare EE projects. The TA is being implemented in close coordination with the Bank's Uzbekistan Energy Efficiency Facility for Industrial Enterprises Project (UZEEF) and supports its objectives.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>ENERGY EFF - INDUST ENTERPRISES</i>	<i>P118737</i>	<i>FY10</i>	<i>\$25 million</i>

A2.2.4. Latin America and Caribbean

ESMAP ACTIVITY: SUPPORT FOR DEVELOPMENT OF NATIONAL ENERGY EFFICIENCY PROGRAM (P112532)

COUNTRY: CHILE | **FISCAL YEAR:** 2009-2011 | **STATUS:** COMPLETED

OUTCOME: CLIENT CAPACITY INCREASED | **INDICATOR:** IMPLEMENTATION CAPACITY STRENGTHENED

In response to the Chilean Government's request, ESMAP provided this technical assistance to assess energy efficiency at municipal level and build capacity of both national and municipal institutions in implementing energy efficiency programs. Based on the findings of the assessment conducted, an interactive website for e-learning in energy efficiency was set up (and remains operational) and training was delivered to 11 municipal agents²⁰. The activity provided specific material specially designed for training and strengthening capacities in municipal agents in the Chilean context. The major earthquake that affected Chile in early 2010 had an impact on the project as other issues and needs emerged for the municipalities (e.g. housing, water availability) and Energy Efficiency lost relevance. However, the activity allowed Chilean authorities to better understand energy consumption at municipal level, the type of issues faced by Municipalities when it comes to energy use and the resources they have to deal with such issues.

²⁰ Only 11 of the 30 enabled municipal agents took the training through E-learning platform due to, to some extent, the earthquake that affected Chile in early 2010.

A2.2.5. Middle East and North Africa Region

ESMAP ACTIVITY : SUPPORT TO IMPLEMENTATION OF ELECTRICITY SECTOR (P113858)	
COUNTRY: LEBANON FISCAL YEAR: 2011 -2012 STATUS: COMPLETED	
OUTCOMES: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/ STRATEGY INFORMED
<p>The ESMAP activity comprised two separated assessments for Lebanon’s energy sector. The first assessment determined the availability of LNG supply to Lebanon from LNG markets and assessed supply risks associated with these markets highlighting the potential development of LNG as an alternate supply of natural gas for Lebanon. The second one assessed the government’s current Energy Efficiency initiatives and proposed an Energy Efficiency action plan aimed at a short to medium term increase in the benefits that can be derived from Energy Efficiency measures that can be pursued by Ministry of Energy and Water in the current political environment.</p> <p>Based on the recommendations made by the two assessments (LNG and EE) the government included plans for LNG re-gasification development in its Policy Paper for the Electricity Sector (June 2010), and is now undertaking additional study into the size, location and financing arrangements for LNG facilities and supply contracts for Lebanon. The government has also included Energy Efficiency programs in the above policy paper and is now setting aside budgetary allocations to implement a number of energy efficiency programs including roll-out of solar water heaters, and introduction of thermal building standards.</p>	

ESMAP ACTIVITY: TRANSPORT AND CLIMATE CHANGE PROJECT (P101264)			
COUNTRY: MOROCCO FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK COUNTRY STRATEGY (CPS/CAS)		
OUTCOME: DEVELOPING FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATION INFORMED		
<p>The ESMAP activity helped prepare an overview of energy use in the road transport sector, assess efficiency of use, and identify main issues and recommend actions to be taken by government. It also reviewed issues of adaptation to climate change in the transport sector with preparation of recommendations for priority measures to be taken. ESMAP support through the Transport and Climate Change project has prepared the ground for a new Bank strategy for Morocco’s transport sector. The study assessed of the current state of the sector and identified options to improve vehicle efficiency and reduce GHG emissions. Examples include improvements in the performance and quality of public transport; transport demand management measures; traffic management and the promotion of non-motorized modes of transport (e.g. walking and cycling). The Bank’s new Country Partnership Strategy (FY10-13) provides support to Morocco to improve the efficiency of urban transport in the country’s large cities.</p> <p>The activity provided analytical inputs to the <i>Urban Transport Development Policy Loan</i> (DPL) (US\$ 137 million) approved in March 2011. The most important were the following:</p> <ul style="list-style-type: none"> • Systematically carrying out vulnerability assessments of major transport infrastructure to take account of changes in the conditions under which they operate in case of major rain and flooding and design remedial measures. • Review construction norms and standards to adapt them to new weather patterns. • Develop a specific institutional capability for adaptation within the Ministry of Transport. <p>The loan was aimed at (a) reducing transport costs and improves the mobility of people and goods; (b) improving the quality and efficiency of urban transport services; and (c) mitigating greenhouse gas emissions.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Morocco- Urban Transport Development Policy Loan</i>	<i>P115659</i>	<i>2011</i>	<i>\$137 M WB loan</i>

ESMAP ACTIVITY : INSTITUTIONAL FRAMEWORK FOR ENERGY EFFICIENCY PROGRAM IMPLEMENTATION (P114431)	
COUNTRY: YEMEN FISCAL YEAR: 2009-2009 STATUS: COMPLETED	
OUTCOMES: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The ESMAP activity developed a three-year DSM/EE action plan in June 2009, which helped the government to lay the foundation for a sustainable program and build implementation capacity. The report outlined the institutional structures for an effective implementation of DSM/EE measures in Yemen; the proposed structure was a DSM/EE authority under the Ministry of Electricity and Energy with a steering committee of key stakeholders to develop policy and monitor impact of programs initiated by the proposed authority.</p> <p>Based on the findings and recommendations, the Government developed and approved in June 2009 the national strategy for RE & EE which sets out the broad strategy to achieve specific targets to achieve it (15% increase of EE in the power sector by 2025).</p>	

A2.2.6. South Asia Region

ESMAP ACTIVITY: ENERGY EFFICIENCY AND CLEANER TECHNOLOGY IN BRICK MAKING IN BANGLADESH (P111240)			
COUNTRY: BANGLADESH FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: NEW OPERATIONS INFORMED		
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED		
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED/FOSTERED		
<p>This ESMAP study estimated the private and social profitability of selected brick technologies and to provide concrete recommendations for their adoption in Bangladesh. Under the activity, ESMAP partially financed the demonstration projects comprising (i) introducing internal fuel in the green bricks, (ii) introducing semi-mechanized brick making which allow use of internal fuel, (iii) adopting better operating practices in the firing, (iv) improvements in existing designs and (v) introducing alternative technologies such as the Vertical Shaft Brick Kiln (VSBK).</p> <p>The activity informed the brick components of the <i>Clean Air Sustainable Environment (CASE) Project</i> financed by the IDA (P098151, \$62 M). Furthermore, the Asian Development Bank (ABD) has approached the World Bank seeking more technical support on preparation of a new lending project for the brick sector of Bangladesh and possible collaboration with both the Bank and UNDP on the Brick Technology and Information Center in Bangladesh.</p> <p>Partially through the ESMAP study, Bangladesh's Department of Environment (DOE) is now well informed of the huge potential benefit that carbon credits can bring in when switching to cleaner technologies. DOE has already agreed with the World Bank to prepare a potential Carbon Finance project linked with the new energy-efficient kilns to be piloted under CASE to help the entrepreneurs to reap the carbon benefit.</p> <p>Key policy recommendations in the study are being taken into consideration by the Government of Bangladesh to incorporate into the country's new regulatory framework, which includes the establishment of a <i>Brick Information and Technology Center</i> (for which the tender has just recently been launched).</p> <p>In addition, the ESMAP-funded study analyzed the development of the brick industry in China. Through this example, concrete recommendations were made to introduce hollow bricks and alternative raw brick materials in 5 HHK and 2 tunnel kilns (funded by CASE).</p> <p>This ESMAP study piloted an innovative energy-efficient, clean technology called <i>Vertical Shaft Brick Kiln (VSBK)</i> for the brick sector in Bangladesh. After successful implementation of the pilot of the study and the demonstration of its environmental and financial benefits, the demand of the new technology has exponentially increased. A recent dissemination workshop of the study in Dhaka (September 2011) attracted attention from the national media, several multilateral development organizations and international agencies. Thanks to the lessons learnt during this pilot, there are currently 7 more VSBK being installed in Bangladesh (through the CASE project).</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Clean Air Sustainable Environment (CASE) Project</i>	<i>P098151</i>	<i>2010</i>	<i>\$62 M (IDA)</i>

ESMAP ACTIVITY: SUPPORT FOR THE DEVELOPMENT OF A LARGE-SCALE EE LIGHTING PROGRAM (P111246)			
COUNTRY: PAKISTAN FISCAL YEAR: 2008-2011 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF EXISTING OPERATION INFORMED	
<p>This ESMAP activity was developed in response to an urgent request to assist the Government and the Pakistan Electric Power Company (PEPCO) in helping develop a detailed design and an implementation plan for a large-scale EE residential lighting (primarily CFLs based) program. The ESMAP activity provided the basis and directly informed the energy efficiency component of the <i>Electricity Distribution and Transmission Improvement Program Project</i>, a \$267M Adaptation Policy Loan (APL) for Pakistan approved in late June 2008. The energy efficiency component on the loan was added at the request of the government prior to negotiations. The Bank agreed to include this new component to proactively respond to the government's request given that such investment is a high priority in view of the deterioration in the power demand supply balance.</p> <p>Key objectives of the loan included inter alia, (i) the replacement of incandescent bulbs with compact fluorescent lamps (CFLs) at customer premises, (ii) the provision of low-tension capacitors to selected industrial and tube-well customers, and (iii) the provision of pre-paid metering, automatic meter reading and remote metering systems for selected residential and commercial customers.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Electricity Distribution and Transmission Improvement Program Project</i>	<i>P095982</i>	<i>FY2008</i>	<i>\$267M WB loan</i>

ESMAP ACTIVITY: STUDY ON ENERGY SAVINGS OPPORTUNITIES IN LARGE BUILDINGS (P111239)			
COUNTRY / REGION: AFGHANISTAN FISCAL YEAR: 2008-2010 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: EXISTING OPERATIONS INFORMED	
<p>The ESMAP activity produced a report identifying energy savings opportunities in large buildings and provided recommendations on implementing effective EE measures in the existing buildings. The final report, together with energy audits of a sample of buildings and a management plan for audit instruments, were submitted to the Ministry of Energy and Water (MEW).</p> <p>Building on the TA, the Bank team is continuing the engagement with the counterpart to take forward the conclusions of the report, including leading discussions on the development of national EE policies and programs. Several of the activity recommendations have been implemented through Bank's Afghanistan Power System Development Projects I and II. The MEW has created an energy efficiency cell and started developing a work program. Work on a MEW Energy Efficiency Strategy has started and an energy efficiency advisory Committee has been set up. An Efficient Lighting Initiatives, for Government buildings is to be implemented in the next 12 months, The Energy Audit Instruments prepared under the TA have been used in preparation of USAID's Afghanistan Clean Energy Report.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Afghanistan Power System Development Project</i>	<i>P111943</i>	<i>FY2009</i>	<i>\$35M WB loan</i>

A2.2.7. Global

ESMAP ACTIVITY: MAINSTREAMING BUILDING ENERGY EFFICIENCY CODES IN DEVELOPING COUNTRIES (P114056)			
COUNTRY: GLOBAL FISCAL YEAR: 2009 – 2011 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATORS: PREPARATION OF NEW OPERATION INFORMED	
<p>The analytical work, conducted under ESMAP's EECl, developed a Methodology for Programmatic Approach to Building Energy Efficiency Code Compliance in Cities of Developing Countries. The study developed a Methodology for Programmatic Approach to BEECs in Cities of Developing Countries.</p> <p>The recent <i>GEF Tianjin Eco-city Project</i> has incorporated lessons learned from this work in its project design document. The report also informed the task team of the <i>Poland Energy Efficiency Development Policy Loan Project</i> about the status of the Energy Performance of Buildings Directive of the European Union for their engagement with the client. The project was approved in June 2011 and included support for development of tighter building energy codes. Currently, EECl is collaborating with WB regions, IFC and the International Energy Agency (IEA) on mainstreaming building EE codes.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>GEF Tianjin Eco-city Project</i>	<i>P098915</i>	<i>FY2011</i>	<i>\$6 M (GEF)</i>
<i>Poland - Energy Efficiency Development Policy Loan</i>	<i>P115426</i>	<i>FY2011</i>	<i>\$114 M WB loan</i>

ESMAP ACTIVITY : ENERGY EFFICIENT CITIES PRACTITIONERS WORKSHOP (P114245)	
COUNTRY: GLOBAL FISCAL YEAR: 2009-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED
<p>In October 2008 and based on the feedback from the workshop's roundtable of energy efficient practitioners along with discussions with World Bank urban staff and several potential global partners, ESMAP launched the five-year Energy Efficient Cities Initiative (EECI) to promote energy-efficient programs and planning among cities in developing countries. The workshop was co-hosted with the World Bank's Urban Anchor, where client cities and potential partners shared examples of their energy efficiency activities, and of what work was still needed.</p> <p>The 5-year EECl plan was developed and presented in December 2008 at the ICLEI Local Government Climate Session side event at COP-14 in Poznan, Poland with the objective to help mainstream and scale-up sustainable energy actions (such as EE) and climate change mitigation considerations in the urban context. Since implementation, a comprehensive program has been successfully developed to include upstream, operational and evaluation support while disseminating tools, experiences, and results to city clients and other interested organizations.</p>	

ESMAP ACTIVITY: ENERGY EFFICIENCY FOR WATER AND SANITATION UTILITIES (P125354)	
COUNTRY: GLOBAL FISCAL YEAR: 2011 – 2012 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED
<p>This ESMAP activity discusses the main issues, options, approaches, cost and benefits of energy use and efficiency for network-based water supply and wastewater treatment in urban areas. It provides a simple operational framework to help strategic decision-making on how to best invest resources over the range of options, supplemented with guidance on successful models to implement such strategies.</p> <p>This note is expected to provide World Bank urban and energy operational staff with the basic information and useful guidance for engaging client countries on managing energy costs and improving EE in wastewater utilities. ESMAP, through EECl, is currently supporting the preparation of <i>OSE Response to Climate Change Project (P118064) for Uruguay</i>, which, among other things, supports the development and implementation of a comprehensive energy management program for Uruguay's national water and wastewater utility. The project is scheduled for Board approval in July 2012 (FY2013).</p>	

ESMAP ACTIVITY: OPERATIONAL TOOLKIT FOR ENERGY EFFICIENCY LIGHTING (CFL TOOLKIT) (P114361)															
COUNTRY: GLOBAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED															
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED		INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED/FOSTERED													
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: EXISTING OPERATIONS INFORMED													
<p>ESMAP developed the operational toolkit for EE lighting (CFL Toolkit) to help practitioners benefit from experiences in designing and implementing large-scale, residential compact fluorescent lamp (CFL) programs around the world. The toolkit shares the critical operational documents of CFL-based EE lighting programs (e.g., cost-benefit analysis, Terms of Reference and bidding documents), in a user-friendly web-based format. Two recent lending operations have been informed by the CFL Toolkit:</p>															
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<p>Furthermore, the CFL Toolkit has been used by external partners, such as the UK Department for International Development (DFID) in helping design CFL programs in Malawi. The United Nations Environment Programme (UNEP) has also referred to the Toolkit under their en.lighten initiative announced in Cancun, Mexico in 2010. <u>Note:</u> The project was one of the recipients of the <i>2011 Sustainable Development Network (SDN) VPU Team Awards</i> because of its transformational impact in implementing large scale energy efficient lighting programs in several countries around the world by the Bank and by other partners leading to quick and significant energy efficiency gains, changed consumers' behavior, and reduction in GHG emissions.</p>															

ESMAP ACTIVITY : TOOL FOR RAPID ASSESSMENT OF CITY ENERGY (TRACE) (P115793)			
COUNTRY: GLOBAL FISCAL YEAR: 2009 – 2011 STATUS: COMPLETED			
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED		INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED/FOSTERED	
<p>The city energy diagnostic tool, Tool for Rapid Assessment of City Energy (TRACE, previously named Rapid Assessment Framework) was developed to help cities quickly assess their EE performance, determine underperforming sectors and identify measures the city can take to make improvements and reduce energy cost. TRACE offers better-informed energy efficiency solutions that help reduce escalating energy costs for basic services. As a part of the capacity building exercise, ESMAP provided training for local authorities on how the tool works and what it delivers. TRACE was developed during two phases:</p> <ul style="list-style-type: none"> Phase I of the project (Design, development and field testing of the beta version of the tool) was completed in September 2010. A field testing of the tool was conducted in Quezon City, Philippines and a final report was prepared based on TRACE results and its field validation. Phase II of the project included a pilot testing of the beta version of the tool and its upgrade in the city of Gaziantep, Turkey (November 2010 - March 2011). <p>TRACE has been implemented in 14 cities in 13 different countries and has had substantial success. For instance in Turkey, TRACE informed the creation of the Sustainable Cities pillar in the US\$4.45 billion, 2012-2015 Country Partnership Strategy. In Indonesia, the WB used TRACE to conduct city-level case studies. Findings from the case studies are being used to create Energy and Emissions Sustainability Plan (EESP) Guidelines which will be distributed throughout the entire East Asia and the Pacific region. In Macedonia, TRACE has fed into the broader Green Growth Agenda, and is helping inform bank-financed Municipal Infrastructure Investment Project. In Georgia, TRACE results are contributing to the development of the Georgia's Municipal Development Fund, where a third generation of the fund will consider using a sustainable cities investment framework.</p>			

ESMAP ACTIVITY: ENERGY EFFICIENT CITIES SMALL GRANTS (QUEZON CITY) (P115770)			
COUNTRY: PHILIPPINES / EAST ASIA AND PACIFIC FISCAL YEAR: 2009 -2011 STATUS: COMPLETED			
Under the EE Cities Small Grants, EECI has provided direct technical support to help selected cities identify			

opportunities for EE improvements. This assistance has been offered to complement the Cities Alliance's grants for preparing city development strategies, as part of EECI's partnership with the Cities Alliance²¹. In this context, grants are provided to cities to finance the implementation of EE pilots in municipal service sectors - water/wastewater, power/heating, housing, city lighting, buildings and transport. To this date, grants have been awarded to the cities of Quezon in Philippines and Zarqa in Jordan.

The first technical support, completed in Quezon City, the Philippines in 2010, has enabled city officials to develop an energy efficient buildings program as well as guidance to draft the implementing rules and regulations (IRR) for the Green Building Ordinance that Quezon City had enacted.

OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
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Following the completion of this activity, Quezon City has incorporated the recommendations within their 5-year investment plan and established a city energy efficiency task force to coordinate the implementation of the recommendations from this activity. Further, the City has engaged qualified consultants to carry out complementary preparatory activities, including (i) an investment grade energy audit of Quezon City Hall's Main Building and two public hospitals, (ii) training on energy efficiency project design and implementation, and (iii) training on GB ordinance enforcement.

The technical assistance has increased the city's staff capacity. City staff participated in several walk-through energy audits/transport surveys with the consultants in order to get hands-on training on how to identify and assess energy efficiency opportunities. City officials also participated in the stakeholder consultations, which provided an example of how to engage with the private sector, and worked closely with the consultant on developing their plans.

OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS
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The activity contributed to substantial knowledge transfer. For Quezon City, the international GB program review provided City staff and other in-country stakeholders (city officials, building owners and managers, private sector construction and finance firms, the Philippines Green Building Council, etc.) with the various approaches that different countries have taken to promote green buildings, lessons learned, incentive mechanisms, results.

ESMAP ACTIVITY: ENERGY EFFICIENCY GOOD PRACTICE DATABASE (P115771) (ONGOING)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2009-2012 | **STATUS:** COMPLETED

OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS AND PARTNERS / DISSEMINATE BEST PRACTICES
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In October 2009, EECI developed and launched a database with good practice energy efficiency case studies from cities around the world and across six urban sectors (transport, buildings, water and waste water, public lighting, solid waste, and power and heat). The *Good Practice Database*, now with 15 case studies developed by ESMAP and 6 from Eco2, provides detailed documentation on successfully-implemented practices in cities, for other cities facing similar challenges and circumstances in promoting EE. The case studies provide a full story of what the cities did, why they took action, implementation arrangements, cost and benefits, financing, innovations, results and lessons learned.

The case studies have been disseminated to city authorities through ESMAP-funded technical assistance, workshops, conferences, analytical work, and other learning events, as well as Bank regional operations staff and a broader audience through ESMAP's website. These outreach efforts have led to increased knowledge of Bank staff, energy practitioners and communities on a range of policy and program options along with implementation details and an objective assessment of results.

Note: A separate component of the project, the Good Practice Awards, an initiative to invite cities to compete for a in recognition of cities' endeavors in promoting EE, was launched in January 2010 with a call for proposals. However, due to low demand and limited response this component was subsequently dropped.

²¹The Cities Alliance (<http://www.citiesalliance.org/ca/>) is a global coalition of cities and their development partners committed to scaling up successful approaches to poverty reduction.

ESMAP ACTIVITY: SMART METERS (P118728)																															
COUNTRY: GLOBAL FISCAL YEAR: 2010 -2010 STATUS: COMPLETED																															
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED		INDICATOR: NEW INNOVATIVE APPROACHED DEVELOPED/FOSTERED																													
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED																													
<p>This ESMAP study illustrates the applicability and options for applying Advanced Metering Infrastructure (AMI) technology to a variety of customer management issues commonly found in public service utilities, in particular in electricity distribution companies. The tool is aimed at Bank operational staff and energy practitioners in client countries by providing updated information on application of AMI technology in electricity distribution as a tool to improve performance of companies, promote energy efficiency and implement social safety nets in client countries.</p> <p>The approach described in the report is explicitly reflected in the design of the advanced metering infrastructure (AMI) components of several Bank projects, most notably the <i>Brazil - Electrobras Distribution Rehabilitation Project</i>, <i>India - Haryana Power System Improvement Project</i> and the <i>Honduras - Power Sector Efficiency Enhancement Project (PROMEF)</i>.</p>																															
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<p>Besides, the Bank provided technical assistance in the design and implementation of the <i>AMI PRISMA Project</i> in the electricity distribution companies in the Dominican Republic. The project fully follows the approach described in this knowledge product. The initial phase of the project was completed in December 2011, with very positive results in terms of loss reduction which allowed investments to be paid back in a shorter period of time.</p>																															

ESMAP ACTIVITY: TRANSPORT & CLIMATE CHANGE (P113671)											
COUNTRY: GLOBAL FISCAL YEAR: 2009 – 2009 STATUS: COMPLETED											
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: NEW OPERATIONS INFORMED									
<p>The project provided input to the Bank’s Transport Sector report 'Transport and Climate Change Flagship Study' with emphasis on how to pursue innovative ideas for action addressing urban transport in the context of improving fuel efficiency using an analytical approach. The activity also supported the preparation of a guidance note “Transit Bus Operational and Maintenance Practices to Maximize Fuel Economy.”</p> <p>The overall framework of the guidance note is being used to guide the preparation the Bank’s proposed Ho Chi Minh City Green Transport project in Vietnam. In particular, the project team plans to use guidance provided in the note for improving fuel efficiency of the BRT line that will be established in Ho Chi Minh City as part of the project.</p>											
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ESMAP ACTIVITY: ENERGY EFFICIENCY CITIES PROJECT SUPPORT FACILITY (P120479) (ONGOING)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2010 – 2012 | **STATUS:** COMPLETED

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED

Since its launch in October 2008, ESMAP's EECI has promoted lending for energy efficiency in the urban sector in a number of countries. Under its **EE Cities Project Support Facility**, EECI has provided technical support in the design, preparation, and supervision of urban energy efficiency components in the Bank's investment operations. To date, EECI has supported municipal EE components for nine urban investment lending projects of the World Bank:

- **Macedonia** - EECI has contributed to leveraging Global Environment Facility funding to improve energy use in municipal buildings, primary schools, and kindergartens in Skopje, Macedonia. EECI assisted the *Global Environment Facility (GEF) Sustainable Energy Project (P089656, restructured in 2010, \$3.2 M)* team to supervise the implementation of the energy efficiency activities.
- **Mexico** - EECI helped develop an equipment supply and distribution contract to provide efficient light bulbs to urban residential households, under the *Efficient Lighting and Appliances Project (P106424, FY2011, \$70 M)* jointly financed by the Clean Technology Fund (CTF), GEF and WB.
- **Ningbo (China)**: EECI assisted in the design and preparation of the *Ningbo New Countryside Development Project (P109956, FY2010, \$0.6 M)*, a program that includes implementing an energy-efficient pilot in a rural township and strengthening the city's implementation capacities.
- **Tianjin (China)**: EECI helped design and prepare the green building component *the Sino-Singapore Tianjin Eco-City Project (P098915, FY2011, \$6.2 M)*.
- **West Bank**: EECI helped develop a municipal EE retrofit pilot in West Bank, under the *Municipal Development Program Phase I (P111741, FY2010, \$0.7 M)*
- **Armenia**: EECI also assisted the World Bank's Europe and Central Asia energy unit to prepare a public sector energy efficiency retrofit program in support of the proposed *Electricity Supply Reliability and Energy Efficiency Project* in Armenia (approved in March 2012, \$1.8 M (GEF), with \$8.3 million in local co-financing). The EE component, aimed at reducing existing information, regulatory and financial barriers that hamper the wide penetration of EE investments in public buildings and the commercial and residential sectors, was dropped at appraisal due to funding gaps for the transmission line component of the project.

EECI is also supporting two key projects currently under preparation which are expected to go the Board for approval during FY2012/FY2013:

1. **Shanghai (China)**: EECI is helping a Bank team to design a project that would finance commercial building EE retrofit (proposed \$100 M IBRD, FY2013).
2. **Ukraine**: EECI has supported the design and preparation of the municipal energy efficiency component of the *Ukraine Energy Efficiency (P096586)*. EECI also provided technical assistance to carry out a municipal energy efficiency market study covering two cities and sector-wide issues. A CTF loan of about \$50 M in support of municipal energy efficiency EE investments is currently pending.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Macedonia - Global Environment Facility (GEF) Sustainable Energy Project</i>	<i>P089656</i>	<i>FY2010</i>	<i>\$3.2 M WB loan</i>
<i>Mexico - Efficient Lighting and Appliances Project</i>	<i>P106424</i>	<i>FY2011</i>	<i>\$70 M WB loan</i>
<i>China - Ningbo New Countryside Development Project</i>	<i>P109956</i>	<i>FY2010</i>	<i>\$0.6 M WB loan</i>
<i>China - Sino-Singapore Tianjin Eco-City Project</i>	<i>P098915</i>	<i>FY2011</i>	<i>\$6.2 M WB loan</i>
<i>West Bank - Municipal Development Program Phase I</i>	<i>P111741</i>	<i>FY2010</i>	<i>\$0.7 M WB loan</i>

ESMAP ACTIVITY: PUBLIC PROCUREMENT OF ENERGY EFFICIENCY (P112187)			
REGION / COUNTRY: GLOBAL FISCAL YEAR: 2008-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	
<p>In 2010 ESMAP published the analytical report <i>Public Procurement of Energy Efficiency Services: Lessons from International Experience</i> offering specific solutions to address institutional, regulatory, financial and technical barriers to procuring EE services in the public sector. The publication targets policy makers and public sector practitioners and looks at a largely untapped energy efficiency market in developing countries – the public sector. It examines factors that affect the achievement of large-scale savings in this sector, such as insufficient incentives to lower energy costs, rigid budgeting and procurement procedures, and limited access to financing. Although this analytical work directly informed the GEF - Armenia Electricity Supply Reliability and Energy Efficiency Project approved in March 2012 (P116680, \$1.82 M (GEF), with \$8.3 million in local co-financing). The EE component of the loan, aimed at reducing existing information, regulatory and financial barriers that hamper the wide penetration of EE investments in public buildings and the commercial and residential sectors, was dropped at appraisal due to funding gaps for the transmission line component of the project. The concepts developed under this analytical work are also currently being developed/replicated in China, Serbia, Macedonia, and Kazakhstan.</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>GEF - Armenia Electricity Supply Reliability and Energy Efficiency Project</i>		<i>P116680</i>	<i>FY2012</i>
		Amount (US\$)	<i>\$1.82 M (GEF) loan</i>

ESMAP ACTIVITY: P127039 PUBLIC PROCUREMENT OF ENERGY EFFICIENT			
COUNTRY / REGION: GLOBAL FISCAL YEAR: 2012-2012 STATUS: COMPLETED			
OUTCOME: KNOWLEDGE INCREASED		INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS	
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: NEW OPERATIONS INFORMED	
<p>This report assesses global experience with energy efficiency purchasing, or EEP, as a tool to help governments improve the efficiency of their facilities and public services. The report is based on ten country and city case studies as well as numerous expert interviews. In June 2012, a two-day workshop convened practitioners from a variety of countries and backgrounds to discuss issues related to government purchasing programs for energy efficient products. About 25-30 professionals attended the event to share their country's experiences, challenges and lessons. This study as well other ESMAP Energy Sector Management Assistance Program (ESMAP) work on energy efficiency in the public sector helped inform the preparation of the Armenia Energy Efficiency Project, which will be financing energy efficiency investments in social and other public facilities in Armenia.</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Armenia Energy Efficiency Project</i>		<i>P116680</i>	<i>FY12</i>
		Amount (US\$)	<i>\$1.8 M</i>

A2.2.8. Energy Efficiency Activities with Limited or Unobservable Results

ESMAP ACTIVITY: ENERGY EFFICIENT STUDY (P121254)			
COUNTRY / REGION: EGYPT / MIDDLE EAST AND NORTH AFRICA FISCAL YEAR: 2010 -2010 STATUS: COMPLETED			
<p>The activity enhanced understanding by the Egyptian policy makers of the international experience and best practices in promoting energy efficiency, and helped identify key barriers to energy efficiency improvement in Egypt and the actions required to promote and sustain energy efficiency in Egypt. It increased understanding by the Bank of the energy efficiency market and environment in Egypt and better positioned to mainstreamed energy efficiency work into the Bank's overall country energy assistance strategy and program. An ongoing follow up activity requested by the government, <i>Energy Efficiency Study Phase II (P124688)</i>, also, supported by ESMAP, aims to support GoE to address the key issues and barriers identified in the Phase I and will help create a more clearly defined and effective institutional, regulatory, policy and financing environment to support and sustain</p>			

improvements in energy efficiency in Egypt. No direct outcomes have been identified at this point.

ESMAP ACTIVITY: ENERGY EFFICIENCY STRATEGY (PHASE 2) (P124688)

COUNTRY / REGION: EGYPT / MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2011 | **STATUS:** COMPLETED

Building on a phase 1 activity, this activity has helped carry out a detailed assessment of the institutional, regulatory and implementation framework for Energy Efficiency in Egypt as well as identify EE investment programs which could be implemented in the short to medium term. The report presents a roadmap for EE defining the key components of an effective institutional framework and the supporting regulatory, legislative and financing pillars necessary for sustainability. The findings of the TA will be presented to the Supreme Energy Council (SEC) through the Energy Efficiency Unit. Based on the inputs from the SEC, a more detailed program will be prepared for implementation. No direct outcomes can identified at this point.

ESMAP ACTIVITY: EECI SMALL GRANTS (ZARQA) (P122924)

COUNTRY / REGION: JORDAN / MIDDLE EAST AND NORTH AFRICA | **FISCAL YEAR:** 2009 -2011 | **STATUS:** COMPLETED

Under the EE Cities Small Grants, EECI has provided direct technical support to help selected cities identify opportunities for EE improvements. This assistance has been offered to complement the Cities Alliance's grants for preparing city development strategies, as part of EECI's partnership with the Cities Alliance. In this context, grants are provided to cities to finance the implementation of EE pilots in municipal service sectors - water/wastewater, power/heating, housing, city lighting, buildings and transport. To this date, grants have been awarded to the cities of Quezon in Philippines and Zarqa in Jordan.

The second grant under the *EECI Small Grant* project is assisting the Municipality of Zarqa in Jordan to develop energy efficient mobility plan for the city's downtown area. The study has been recently completed and drawing conclusions on specific results is still premature. However, the activity helped to increase client capacity for the Ministry of Municipal Affairs and Zarqa transport department for the joint *urban mobility plan* prepared with the Zarqa city staff.

ESMAP ACTIVITY : VIETNAM FUEL EFFICIENCY, TRADE FACILITATION AND GHG REDUCTIONS PROJECT (P119287)

COUNTRY: VIETNAM/ EAST ASIA AND PACIFIC | **FISCAL YEAR:** 2010-2011 | **STATUS:** COMPLETED

This first phase of the project, funded by ESMAP, identified policy and physical constraints related to the increased use of the waterways for freight movements by land and by coastal shipping (type of good, quantities, trip sources and origins, containerization extent, shipping cost). It also identified infrastructure deficiencies and institutional impediments to more intensive use of coastal shipping and propose areas for improvement in both infrastructure and policy that would lead to lowering shipping cost. A second phase and ongoing Phase 2 of the projects (financed by the Trade Facilitation Facility) is expected to lead to substantial policy recommendations and reforms and potentially lead to a Bank lending operation. No direct outcomes have been identified at this point.

ESMAP ACTIVITY : ENERGY EFFICIENCY COUNTRY PERFORMANCE INDICATORS (P119866)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2010 – 2011 | **STATUS:** COMPLETED

This ESMAP activity completed a global review of the use of indicators for national energy efficiency performance assessment. The activity, carried out in response to a request from the World Bank Independent Evaluation Group (IEG)'s, included a review of the methodology used and preparation of several country case studies in which EE indicators were used for national and sector EE performance assessment. As part of study, ESMAP and the Energy Unit of the World Bank co-hosted an International Roundtable on EE Performance Indicators in June 2010 that was attended by international organizations - IEA, UNIDO, UNDESA, IADB, and WB, key research institutes - ADEME (France) and Lawrence Berkeley National Laboratory (USA), and major developing economies - China, India, Mexico, South Africa, Turkey, and Vietnam..

Based on the discussions from the Roundtable, a communications note was prepared and circulated with a set of actionable recommendations to Bank management to improve EE indicators and enhance the collaboration between the Bank country operations and IEA on future Bank country EE assessment studies. Despite the progress in achieving consensus among international agencies, key stakeholders and EE practitioners about the importance of developing and using robust methodology and well defined indicators for national EE assessment, a measurable outcome is yet to be identified for this activity.

ESMAP ACTIVITY: EECl/URBAN MOBILITY STRATEGIES (P119918)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2010 | **STATUS:** COMPLETED

This activity developed a Guidance Note providing detailed and practical recommendations on how city bus operations managers and their technical staff can plan and implement Operations and Maintenance (O&M) practices to their fleets without significant capital investments. By implementing such recommendations, municipal officials and bus operators can increase the efficiency and fuel economy of their bus systems and reduce their cities' energy consumption, congestion and pollution. A validation of the recommended actions in the guidance note was carried out through field testing conducted in three cities in southern India (Hyderabad, Vijayawada and Mysore) leading to valuable conclusions and feedback received from the senior managers of bus corporations. The validation exercise was recently completed and it is still premature to measure direct results – however, the recommended approach has a great potential and could be implemented without significant changes in operating structures, capital investment or upfront preparation.

ESMAP ACTIVITY:

- ENERGY EFFICIENCY IN WATER UTILITIES (P120480) (AFRICA)
- IBNET ENERGY M & T PILOT (P120481)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

EECI, in collaboration with the Africa unit of WB's Water and Sanitation Program (WSP), carried out a pilot to implement energy management system at Lusaka Water and Sewerage Company (LWSC). EECl worked with a LWSC team and developed concrete recommendations in implementing energy monitoring and targeting (M&T) and in non-revenue water reduction. A policy note, summarizing the lessons learned from the pilot, was developed providing practical information to facilitate energy M&T implementation among water and sewerage utilities (WSUs) in developing countries. EECl, WSP and the Bank's Water Anchor have proposed to produce a Primer on EE for WSUs as a broader and expanded effort to help engage client countries on the subject matter and to inform Bank operational teams about good practices and empirical lessons for developing new projects. Although there has been growing interest and increased engagement from client countries, there is no evidence yet that they have implemented energy monitoring and targeting (M&T) on existing water and sewerage utilities.

ESMAP ACTIVITY: ANALYSIS OF COST OF DELIVERING DEMAND SIDE ENERGY EFFICIENCY ACTIVITIES (P119998)

COUNTRY / REGION: GLOBAL | **FISCAL YEAR:** 2011 -2012 | **STATUS:** COMPLETED

The activity has helped develop a conceptual framework for assessing the transaction costs and its components associated with demand side energy efficiency projects, which will enhance the understanding of these costs. As part of activity, an illustrative assessment was conducted of the first order range of delivery costs for selected demand side energy efficiency programs/technologies. No direct outcomes have been identified at this point.

ESMAP ACTIVITY : HEAT REGULATION PHASE II (P116044) (ONGOING)

COUNTRY / REGION: CHINA / EAST ASIA AND PACIFIC | **FISCAL YEAR:** 2009- | **STATUS:** COMPLETED

This *TA* helped the government prepare the draft of a national Heat Regulation. The legal document is expected to be prepared by MOHURD in the Government's coming Five Year Plan (2011-2015). The project team has provided advisory support to MOHURD on enhancing the institutional model for DH regulation. The recommendations were presented, discussed and well received during a workshop in Beijing in April 2010, attended by Deputy Directors General from MOHURD. The project team is expected to provide comments on the Policy Paper prepared by MOHURD consultants for drafting the Regulation. Follow up support could be provided through the ongoing GEF Heat Reform and Building Energy Efficiency Project which includes support for policy development in district heating sector reform. It is still too early to determine results for this activity.

A2.2.9. Ongoing Energy Efficiency Activities

ESMAP ACTIVITY: ENERGY EFFICIENCY DEVELOPMENT IN SSA CITIES (P129252)	
COUNTRY / REGION: AFRICA FISCAL YEAR: 2012 - STATUS: ONGOING	
Countries in Sub-Saharan Africa lack financing, knowledge, and capacity for undertaking Energy Efficiency measures. In this context, the activity aims to build capacity among municipal officials, for undertaking action to promote the adoption of EE measures. The technical assistance includes (i) estimating the baseline energy demand and supply, (ii) identifying priority sectors for achieving measurable improvements, (iii) developing an action plan, and (iv) scoping a number of pre-feasibility studies to lay the ground for implementation. The activity will concentrate on few pilot cities in the Africa region that are interested in engaging in sustainable energy through energy efficiency.	

ESMAP ACTIVITY: ENERGY EFFICIENCY INITIATIVES TOWARDS LOW CARBON TRANSPORT (P123713)	
COUNTRY / REGION: BRAZIL / LATIN AMERICA AND CARIBBEAN FISCAL YEAR: 2011- STATUS: ONGOING	
The activity has helped develop a “Green Freight Transport” report that presents range of policies and specific strategies for vehicles technologies and fleet modernization with a particular focus on (i) energy efficient freight and logistics sector and (ii) energy efficiency in the urban transport sector.	

ESMAP ACTIVITY: P127138 CAPACITY BUILDING FOR EE URBAN TRANSPORT	
COUNTRY / REGION: GLOBAL FISCAL YEAR: 2012 - STATUS: ONGOING	
The activity is helping develop a diagnostic tool for planners to use in the identification and analysis of urban transport problems.	

ESMAP ACTIVITY: P127534 MAKING CITIES MORE ENERGY EFFICIENT	
COUNTRY / REGION: GLOBAL FISCAL YEAR: 2012 - STATUS: ONGOING	
The activity is helping prepare a set of practical guidance notes (GNs) to help city authorities develop and implement municipal EE programs across key urban sectors.	

A2.3. CLEAN ENERGY

A2.3.1. Africa Region

ESMAP ACTIVITY: MOZAMBIQUE MODERN BIOFUELS ASSESSMENT (P101999)	
COUNTRY: MOZAMBIQUE FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATION INFORMED
<p>This ESMAP activity was in response to a request from the Government of Mozambique (GoM) to provide technical assistance to assess the feasibility of producing and marketing modern biofuels as alternative renewable fuels for transport, industry, power generation, and households. The activity involved a technical, economic, social, and environmental assessment – including the design of a draft national biofuels program and implementation strategy. The study has served as the main input to the preparation of the GoM policy on biofuels in 2009. Prior to this activity, there was no specific legislation on biofuels despite the very attractive opportunity to develop a vibrant biofuels sector in the country. In March 2009, GoM adopted a National Policy and Strategy for biofuels that establishes regulatory guidelines for both the public and private sector to better participate in the biofuels industry. The government also created the National Biofuel Council, a body that will coordinate, supervise and evaluate the policy and strategy, focusing on production of ethanol and biodiesel.</p> <p>The activity also informed the Energy Development and Access Project, a World Bank lending project of US\$49.7 million which included a sub-component that, among others, will introduce stationary and mobile energy services using locally produced biofuels (Direct Vegetable Oil – DVO and/or Biodiesel) in villages. This subcomponent has US\$3.2 million funding from IDA.</p>	
WB Lending Operation Informed	Project ID Approval FY Total Financing (US\$)

Energy Development and Access Project	P108444,	FY2010	\$3.2 M (IDA)
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ESMAP ACTIVITY: LOW CARBON GROWTH (P108461)			
COUNTRY: SOUTH AFRICA FISCAL YEAR: 2008-2011 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
<p>This ESMAP activity supported the Government’s Long Term Mitigation Scenario, the Renewable Energy Market Transformation (REMT) project, and the South African Cities Network (SACN) program. The study identified mitigation priorities as: industrial energy efficiency, renewable energy, nuclear energy, modal shift through improved public transportation, and improved vehicle efficiency and focused on building capacity for energy efficiency and demand-side management solutions. These outputs informed to the preparation of the Eskom Support project as well as to the development of the Clean Technology Fund (CTF) investments of USD 500 million. ESMAP provided support to South Africa to review their draft Long Term Mitigation Strategy (LTMS) which facilitated dialogue and discussion ahead of the LTMS results being delivered to Cabinet. The LTMS was subsequently adopted in 2009. ESMAP further provided policy advice on a power rationing program to manage the power crisis in 2008 and guidance on the design of a Standard Offer Program to encourage demand side management, both supporting the Government of South Africa with implementation of energy efficiency goals in its Long-Term Mitigation Scenario (LTMS).</p> <p>To facilitate the implementation of the Long-Term Mitigation Scenario developed by the Government of South Africa in 2006. South Africa’s study funded an international peer review of the Long-Term Mitigation Scenario.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total financing (US\$)
South Africa Eskom Renewables Support Project	P122329	FY2012	\$250 M (CTF) plus \$260 M (IBRD)

ESMAP ACTIVITY: ROAD TO DURBAN – ENERGY MINISTERS EVENT (AAA) (P126747)			
COUNTRY: REGIONAL FISCAL YEAR: 2011-2012 STATUS: COMPLETED			
OUTCOME: KNOWLEDGE INCREASED		INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS	
<p>Knowledge materials were prepared to assist Ministers of Energy in African countries to contribute to climate change negotiations by emphasizing priorities related to energy access and their link to climate change financial instruments. The reports were finalized and disseminated to high level officials and development partners at the COP/MOP climate conference in Durban in December 2011. There has also been follow-up interest by the Government of South Africa for support going forward in climate and energy access leading up to Rio+20.</p>			

A2.3.2. East Asia and Pacific Region

ESMAP ACTIVITY: URBAN TRANSPORT CLIMATE CHANGE STUDY (P110557)			
COUNTRY: CHINA FISCAL YEAR: 2008-2009 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	
<p>The purpose of this initiative was to support the development of the urban rail sector in China. This was a joint product developed with the Institute for Comprehensive Transport under National Development & Reform Commission (NDRC). ESMAP supported policy and analytical advice to the government on orienting urban transport on to a low-carbon path. Activities included (i) Guangzhou truck pilot; (ii) Beijing support for rapid bus commuting; (iii) Urban rail study. The rail study resulted in a new lending project (Kunming Urban Rail Project – IBRD 300m) and the Guangzhou truck pilot resulted in the Guangzhou Truck technology GEF (US\$5 million).</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total financing (US\$)
Kunming Urban Rail Project	P117656	2011	\$300 M (IBRD)
Guangdong Green Freight Demost. Project	P119654	2011	\$5 M (GEF)

ESMAP ACTIVITY: EVALUATION OF THE INCENTIVES MECHANISMS FOR WIND POWER (P123227)

COUNTRY: CHINA FISCAL YEAR: 2011-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>In line with China's announcement of its plans to reduce the energy intensity of its GDP, ESMAP funded the development of policy notes to review the major policies adopted by Chinese agencies and provide technical and policy advice on their effectiveness. The ESMAP policy note <i>Evaluating the Government's Renewable Energy Targets</i> has been finalized and accepted by the various counterpart institutions in China. As a follow-up to the Government plan to scale up renewable energy (10% by 2010 and 15% by 2020 from its current level of about 8%), the policy note re-evaluates the RE development targets considering the latest changes in the energy sector, and provides policy recommendations to the Government on developing optimal targets for scaling up renewable energy. In doing this, a model for evaluating the RE targets at the provincial and national levels was developed, with the description of methodology, findings and recommendations for setting the RE targets.</p> <p>The recommendations of the policy note regarding priority development of hydropower and improving the performance of wind power have been included in the 12th Five-Year-Plan (2011-2015). The recommendations on promoting trade and developing green electricity schemes may be included in the revised long-term RE plan.</p>	

ESMAP ACTIVITY: INDONESIA LOW CARBON GROWTH STRATEGY (P108804)			
COUNTRY: INDONESIA FISCAL YEAR: 2010-2011 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED		
<p>The Indonesia Low Carbon Growth study identified that assistance was needed in integrating climate change issues into national development planning and budgeting and to develop approaches to reduce emissions from manufacturing, as well as identifying price adjustments for electricity and fossil fuels. There are now a series of Climate Change Development Policy Loans under implementation in Indonesia designed to support the Indonesian government in its efforts to adopt a lower carbon, more climate-resilient growth path. The first policy loan focuses on (i) addressing the need to mitigate Indonesia's greenhouse gas emissions; (ii) enhancing adaptation and resiliency efforts in key sectors; and (iii) strengthening the institutions and policies needed for a successful climate change response. The Climate Change DPL marks the first in a planned series of four annual loans of similar value, with the DPL2 already in the pipeline (P123135). Indonesia's <i>Low Carbon Growth Strategy</i> also highlighted geothermal development as a key development priority and a vital part of its low carbon pathway and in FY2012, the Gol developed the Geothermal Clean Energy Investment Project.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total financing (US\$)
Indonesia Climate Change Development Policy Loan	P120313	2010	\$200 M WB loan
Geothermal Clean Energy Investment Project	P113078	2012	\$175 M WB loan \$125 M CTF

ESMAP ACTIVITY: GEOTHERMAL DIARIES: THE JOURNEY OF DEVELOPING THE ULUBELU AND LAHEHDONG FIELDS (P115745)			
COUNTRY: INDONESIA FISCAL YEAR: 2011- STATUS: ONGOING			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATION INFORMED		
<p>The objective of the ESMAP-funded activity is to draw on experiences from the preparation of the Ulubelu and Lahendong geothermal projects in Indonesia to inform good practices for geothermal development around the world. This will be achieved by focusing on lessons learned during the preparation of the project, highlighting the most important issues that emerged, and presenting analytical work that was carried out and novel approaches applied to address these issues in order to meet industry standards and improve PGE's practices. This work will feed into ongoing World Bank engagement of supporting the Government of Indonesia in preparing to tap its vast geothermal resources to fuel a growing economy and address environmental concerns such as the Geothermal Clean Energy Investment Project which aims to increase power generation from renewable geothermal resources and reduce local and global environmental impacts.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total financing (US\$)
Geothermal Clean Energy Investment Project	P113078	2012	\$175 M WB loan \$125 M CTF

ESMAP ACTIVITY: RENEWABLE DEVELOPMENT AND MARKET REFORM (P112371)	
COUNTRY: PHILIPPINES FISCAL YEAR: 2009-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY INCREASED
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATION INFORMED
<p>The ESMAP-funded TA to the Philippines has provided policy support to the Government to develop an implementation framework for the RE Law passed in October 2008. In parallel, it has helped establish an institutional framework and mechanisms to carry out these mandates. ESMAP support has also included capacity building for the Energy Regulation Commission on feed-in tariff pricing / avoided costs to determine prices for renewables and recovery through regulated tariffs. Through the activity, the Department of Energy of the Philippines recently determined a Feed-in Tariff level for new RE generation, and critical cost recovery options have also been designed.</p> <p>As part of the ESMAP activity, a workshop in Manila (“International Experience on Renewable Energy Development Technical Workshop”, April 2010) informed Philippine RE policymakers and other practitioners of various country experiences and innovative solutions. It helped stakeholders share international experience in a number of specific areas, including support mechanisms for the development of RE markets and challenges in the integration of RE in transmission system development and operation.</p> <p>The TA informed a \$250 million CTF loan for Philippines to improve efficiency in distribution and support renewable investment.</p>	
WB Lending Operation Informed	WB’s total financing (US\$)
<i>Clean Technology Fund</i>	\$250 M (CTF)

ESMAP ACTIVITY: CAPACITY BUILDING FOR RENEWABLE ENERGY (P119220)	
COUNTRY: REGIONAL FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY INCREASED
<p>The objectives of this activity were (i) to build local capacity in East Asia for renewable electricity analysis and assessment using the RETScreen Clean Energy Project Analysis Software (RETScreen); and (ii) identify local renewable energy practitioners in selected countries.</p> <p>The training activity expanded local capacity to assess renewable projects through learning to use a free analysis tool and its database. The participants were drilled in 5 case studies, with 2 extra assignments in some countries. The workshops were attended in total by 96 participants in the 4 countries, including 47% professors/lecturers, students and specialists from academe and research institutions; 26% from government agencies involved in power planning, energy policy design and analysis, energy sector regulation, rural electrification and RE policy implementation; and the remaining 27% from power companies, financial institutions and non-government organizations [NGOs].</p> <p>Prior to the workshops, almost all (95%) of the participants were not aware, or had very little knowledge, of RETScreen and 72% were not even aware that there are free-of-charge software for assessing RE technologies. From results of survey, more than half of the participants mentioned that they would use the software for assessing investment projects and doing project development work, including due diligence exercises. About a third would use RETScreen for RE policy design and analysis. Five percent of the participants would use the software for general research and development work, and for RE market studies. Seventeen percent mentioned that they would disseminate and provide further training in RETScreen.</p>	

A2.3.3. Europe and Central Asia Region

ESMAP ACTIVITY: REGULATION OF RENEWABLE ENERGY (P107982)	
COUNTRY: BULGARIA FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>ESMAP provided this technical assistance to the Bulgarian State Energy and Water Regulatory Commission (SEWRC) when it needed to be strengthened to meet the challenging EU targets for renewable energy. Evidence of substantial impact from this TA can be found in the concrete measures taken by the Government to improve the regulatory framework. Specifically:</p> <ol style="list-style-type: none"> 1. amendments to RE law have been developed by SEWRC for feed-in tariffs designed to ensure a sufficiently attractive return and secure cash flow to the investor for the life of the project; 2. procedures for RE developers to access the transmission system have been clarified and streamlined; 3. renewable energy guarantees of origin (REGOs) have been issued by SEWRC since 01.01.2009 and amendments have been introduced to make the REGOs transferrable; 4. work has been initiated on the provisions in the RE law on heating and cooling; 5. structural changes to SEWRC are envisaged in the new Energy Act as per the report's recommendations; and 6. the guidance of the report on the communication strategy is being actively used. <p>A series of capacity building activities were undertaken, including stakeholder workshops which helped the country to improve and amend the regulatory framework for RE, including amendments to RE law for feed-in tariffs; procedures for RE developers to access the transmission system have been clarified and streamlined; issuing of renewable energy guarantees of origin (REGOs); development of provisions in the RE law on heating and cooling</p>	

ESMAP ACTIVITY: LOW CARBON GROWTH STUDY (P114517)	
COUNTRY: POLAND FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY STRENGTHENED
<p>This low carbon assessment has had direct policy impacts in the country. This has been supported by an enhanced dialogue on energy and low-carbon issues – particularly the energy efficiency agenda – mainly with Poland's Ministry of Economy. The study has opened up opportunities for Bank representatives to engage in Poland's Energy Round Table, a series of high-level discussions organized by a Warsaw-based think tank, demosEuropa, on Poland's low carbon strategy and linked to Poland's EU Presidency in the second half of 2011. A USD 1 billion Energy Efficiency DPL is under preparation.</p> <p>The macroeconomic models developed and used in the Poland low carbon study will be maintained by the Ministry of Economy, in cooperation with specialists from other agencies, as a tool for policy analysis; strengthening capacity in the Polish public administration. The DGSE model, developed within the project by a Warsaw-based think tank, is one of the few models of this type, applicable for energy and climate policy analysis in the world, and will be used in further studies related to energy efficiency in Poland.</p> <p>Additional applications of the suite of models developed with the support of ESMAP are already underway in Poland. There is interest in similar work being initiated with other clients in ECA.</p>	

ESMAP ACTIVITY: REGULATION OF RENEWABLE ENERGY (P090657)	
COUNTRY: SLOVAK REPUBLIC FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The ESMAP activity provided support to the Slovak Regulatory Office for Network Industries (RONI) to carry out key tasks needed to complete the basic legislative and regulatory framework for renewable energy sources (RES) while providing investors with adequate information about the regulatory environment, including transparent and predictable tariff-setting and offtake arrangements. The key tasks included: (i) development of procedures and methodology for pricing of electricity produced from renewable energy sources (RES); (ii) design of specific support schemes for increased RES utilization; (iii) establishment of accurate and reliable system of issuing guarantees of origin for RES-based electricity; and (iv) training regulatory staff in best practice RES regulation.</p> <p>Following the ESMAP activity, a Renewable Energy Act was passed in June 2007 in the country, which includes: broadly defined regulatory provisions for the promotion of RES utilization, such as mandatory connection of RES-</p>	

based electricity generators into the national grid, mandatory off-take obligation of RES-based electricity, heat for the national electricity company (NEK) and the regional electricity distribution companies at preferential prices, issuance of guarantees of origin and exchangeable green certificates for electricity and heat generated from RES, and, adoption of “preferential tariffs” for electricity generated from RES.

ESMAP ACTIVITY: CLIMATE CHANGE – ENERGY VULNERABILITY (P113712)	
REGION/COUNTRY: ECA/UZBEKISTAN FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The project will: (i) screen the energy sector in select ECA countries to identify and prioritize hazards and vulnerabilities to projected climate scenarios (2030-50); (ii) identify options for adaptation to reduce overall vulnerability; (iii) to the extent possible look at the costs and benefits of adaptation options. The screening exercise will be conducted jointly with key energy sector stakeholders (Government, public and private sector participants in the energy sector). While the assessment will be subjective it has the advantages of providing a transparent and semi-empirical analysis of options. Initially one country in each of two sub-regions - SEE and South Caucasus - will be targeted and country selection will be based on the outcome of the regional study on Managing Uncertainty. The Uzbekistan study helped inform a screening tool on energy vulnerability (Hands on Energy Adaptation) and provided country level examples for knowledge exchange.</p>	

ESMAP ACTIVITY: RENEWABLE ENERGY LEGAL AND REGULATORY FRAMEWORK HARMONIZATION WITH THE EU (P108023)	
REGION/COUNTRY: ECA/BELARUS FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The objective of this activity was to advise the Government of Belarus on harmonization of the Belarus legal and regulatory frameworks, as well as technical standards and requirements, regarding renewable energy and that of the European Union. The implementation of the grant was very timely because the Government was preparing the renewable energy (RE) legislation simultaneously with the ESMAP grant financed study. Many advices of the study were considered during the preparation of the RE law and the secondary legislation. The Bank is currently implementing another related ESMAP financed grant: Biomass-based District Heating. This study is utilizing the results of the previous work and will advise the Government in optimizing biomass fuelled heating plants in three selected towns in Belarus. The study results have been partly utilized in the RE legislation of Belarus and will be further taken into consideration in the RE regulations and secondary laws. During the study information from a number of example EU countries were presented to the Government (Energy efficiency Department) and their knowledge on RE legislation in different EU countries was remarkable improved.</p>	

ESMAP ACTIVITY: CLIMATE FRIENDLY ENERGY EFFICIENCY POLICIES ACROSS SOUTH EAST EUROPE BY MEANS OF LEARNING AND CAPACITY BUILDING PROGRAM (P115996)	
REGION/COUNTRY: ECA/REGIONAL FISCAL YEAR: 2011-2011 STATUS: COMPLETED	
OUTCOME: INNOVATIVE APPROACHES AND SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The primary goal of the proposed program is to "help develop and/or scale up of climate-friendly energy efficiency policies across South East Europe by means of a comprehensive learning and capacity building program for stakeholder groups in different energy efficient sectors". This goal translates into the following sub-objectives: i) identify gaps in capacity and knowledge among different stakeholders, which are hindering promotion of energy efficiency policies and programs; ii) develop and deliver appropriate learning packages that directly address the identified gaps; iii) partner with regional/national organizations to develop them into regional hubs, which can sustain the learning programs beyond the duration of the proposed program. This activity provides direct input into a e-learning course on climate change that was developed jointly by ESMAP and the World Bank Institute (WBI)'s Climate Change Practice team focused on the public procurement of energy efficient services. This course provides a virtual classroom with easy access to cutting-edge information, discussion fora and peer-to-peer learning with practitioners from around the world.</p>	

A2.3.4. Latin America and Caribbean Region

ESMAP ACTIVITY: CAPACITY BUILDING IN RENEWABLE ENERGY FOR IMPLEMENTING AGENCIES IN LAC (P115422)	
COUNTRY: REGIONAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>In Bolivia, the technical assistance was delivered to the Vice Ministry of Electricity and Alternative Energies, within the Ministry of Energy and Hydrocarbons. The TA focused on two main activities: a pilot project for Pico PV systems (small systems ranging from 20-50Wp); and small Size PV (50-500Wp): Solar Home Systems (SHS) component of the Decentralized Infrastructure for Rural Transformation (IDTR) Project and upcoming GPOBA project.</p> <p>The results of the Pico Photovoltaic (PV) pilot activity have proved the potential of Pico PV products by defining a model for the dissemination of the small solar lanterns. The Solar Home Systems TA has helped strengthen the implementation of the SHS component of the IDTR project and design the modalities for the installation of 7,000 SHS under the GPOBA project.</p> <p>In Peru, the technical assistance was delivered to a number of Ministries and Government agencies: the Ministry of Energy and Mines (MEM), the electricity regulator OSINERGMIN, the Directorate of Competitive Funds (DFC), and the distribution companies in Peru. The technical assistance TA has contributed to the mainstreaming of PV as a rural off-grid electrification option in areas where this is the least-cost option and improved the capacity of the agencies involved to prepare, fund, and supervise rural electrification projects using PV systems.</p>	

ESMAP ACTIVITY: LOW CARBON COUNTRY CASE STUDY (P105702)	
COUNTRY: BRAZIL FISCAL YEAR: 2007-2010 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATION INFORMED
<p>As a recent development of the study, the dialogue on low-carbon growth with the Brazilian Government is now being brought to the next stage through the Partnership for Market Readiness (PMR). The PMR, a World Bank initiative launched at Cancún and that Brazil has decided to join, brings together non-Annex 1 and Annex 1 countries, including Mexico, Chile, Colombia, Costa Rica, China, India, Turkey, Morocco, US, Japan, Norway and the European Union to share experience on domestic instruments that could facilitate the achievements of emissions reductions targets. As a result, a new Bank grant on the market instruments for the Brazilian Climate Change policy is being prepared for Brazil under the PMR, of which the Ministry of Finance will be the main counterpart.</p>	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>The Brazil low carbon study significantly “fuelled” an on-going and growing national debate on climate change, including a national consultative debate that laid out the implementation of the national climate change plan and law that contains voluntary commitments presented by Brazil to the international community in Copenhagen and again in Cancún.</p>	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY STRENGTHENED
<p>The Brazil low carbon study has supported many, frequent and substantial interactions and capacity building across the government and public agencies– Sao Paulo State Waste Management Agency (CETESB) is using the methodology developed for the waste sector and the Brazilian Agricultural Research Corporation (EMBRAPA) is using the methodology developed for land use and land-use change. There is improved information sharing across sectors and within the public sphere, stronger linkages between technical research groups and corresponding government ministries and agencies. More than 15 technical reports and four synthesis reports have been commissioned with the involvement of more than 30 recognized Brazilian experts. Government and public agencies are using the study’s detailed sector reports as reference materials for their work and policy engagement. There are ongoing opportunities to share and discuss recommendations and build awareness and capacity with both federal and local governments (in particular São Paulo State and São Paulo city), with public agencies (e.g. EMBRAPA, EPE, CETESB), and with private sector organizations (such as industry federations) through the joint dissemination of sectoral reports on low carbon planning.</p> <p>In the course of the study, climate change gained a higher political status; the Ministry of Finance established a climate change unit and started assuming a stronger role both nationally and internationally. Various workshops were conducted during the study to foster ownership by the Government of Brazil (GoB) and its agencies and to maximize targeting and relevance of the assessment as an input to national decision processes. In addition, a series of international presentations were made, including at the international Conferences of the Parties for the</p>	

UNFCCC negotiations (COP15 and COP16).	
OUTCOME: INNOVATIVE APPROACHES & SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED
<p>With the support of ESMAP, MACTool was produced, which builds upon the prototype of the model developed under the Brazil and Mexico Low Carbon Country Case studies and discussions with World Bank Department of Research and the office of the LAC Chief Economist. MACTool was developed to bring to the public domain a free, user-friendly, open-code tool aimed at enabling countries to build and master their own Marginal Abatement Cost (MAC) curves, and is an economic instrument to compare low-carbon options as has been popularized by Mc Kinsey at the global level. It is now available to the Brazilian government and to several Bank teams developing new low-carbon scenarios: Colombia, Uruguay, Vietnam, Macedonia, and others.</p> <p>New approaches are potentially being considered based on the conclusions of this study such as an innovative calculation tool for land use and land use change, which was specifically created for the Brazil Low-carbon Study, but which can be adapted for other countries (including deforestation).</p>	

ESMAP ACTIVITY: ALTERNATIVE ENERGY AND BIOENERGY (P107158)	
COUNTRY: COLOMBIA FISCAL YEAR: 2009-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>This activity aimed to provide advice to the Government of Colombia on the potential of alternative energy, by examining the economic dimensions of African palm oil production and the conversion of palm oil to biodiesel in Colombia, based on case study analyses undertaken in the Central and Eastern Zones. While this study does not provide definitive answers to the environmental and social implications of expanding palm oil and biodiesel production, key issues for the GoC to consider would appear to be:</p> <ol style="list-style-type: none"> 1. the adoption of environmental criteria for palm production (such as voluntary certification systems), 2. Environmental and social criteria, such as approval of sustainability plans, to qualify for public support programs for palm and biodiesel, and 3. Additional analysis of land acquisition issues related to palm expansion to ensure land tenure rights of current and past tenants. Based on these case studies, the World Bank would not recommend an expansion of the biodiesel program in Colombia. This conclusion stems primarily from the economic analysis, however there are other environmental and social risks associated with biodiesel and palm oil projects that should be further examined before making a decision on expansion. There are signs that the Government may as a result of the study reduce its high target to a more realistic target for biodiesel production in Colombia. 	

ESMAP ACTIVITY: IDENTIFICATION OF POLICY OPTIONS FOR RENEWABLE ENERGY SOURCES (P108945)	
COUNTRY: COLOMBIA FISCAL YEAR: 2008-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>ESMAP's assistance to Colombia has aimed at assessing and addressing barriers to the market entry of wind energy in the country's power sector. It has been established that the single most effective policy instrument to promote wind power in Colombia is the granting of access to reliability payments, recognizing the firm energy and complementarity offered by wind. Following the advice from the ESMAP report, the Government has initiated the process to introduce the required changes in the existing regulation and it appears likely that the next bid for power additions will be done under the new regulatory framework for renewable energy. Secondly, the Government has acknowledged the gap in availability of wind resource data and is examining ways to address the problem.</p>	

ESMAP ACTIVITY: LOW CARBON DEVELOPMENT STUDY (P108304)			
COUNTRY: MEXICO FISCAL YEAR: 2008-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED EXISTING OPERATIONS INFORMED	
<p>The study evaluates the potential for GHG reduction in Mexico over the coming decades and evaluates low carbon interventions across key emission sectors that form the basis for a low carbon scenario to the year 2030. The study results provided the rationale for undertaking new and ongoing low carbon investments and programs in Mexico by the Government and MDBs, including in sustainable transport, energy efficiency, and land-use management. It informed the preparation of the \$1.5 billion Green Growth Development Policy Loan (DPL) of 2009, that supported among other things a new renewable energy and energy efficiency law, the Investment Plan for the CTF program in Mexico in the areas of clean energy and sustainable transport, and the \$400 million Low-Carbon DPL in 2010 that supported policies and regulations for energy efficiency, renewable energy, urban housing, efficient vehicles, and community forestry. In addition to the DPLs, the study has influenced the design of activities under the CTF and GEF grant for energy efficiency.</p>			
WB Lending Operation Informed	Project ID	Approval FY	WB's Total Financing (US\$)
Mexico Framework for Green Growth Development Policy Loan	P115608	2010	\$1,500M
Low Carbon Development Policy Loan	P121800	2011	\$400 M
Mexico Efficient Lighting and Appliance	P106424	2011	\$251M
GEF Wind Umbrella Project III	P080104	2007	\$17,1M
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED	
<p>The results and findings of the Mexico low carbon study have directly contributed to Mexico's climate change program (Programa especial de cambio climatico) adopted in August 2009. The study continues to be used in Mexico and abroad as an example of a low-carbon study with a focus on near-term actions for policies and investments.</p>			
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED	
<p>Support in Mexico has enhanced the capacity of the Government by: i) complementing the Government's own work on UNFCCC National Communications; ii) contributing to methodologies and tools for future mitigation actions (e.g. national appropriate mitigation actions (NAMAs); iii) Providing additional impetus for domestic mitigation programs such as bus rapid transit, residential energy efficiency, wind power development, forest management; and associated sector reforms.</p>			

ESMAP ACTIVITY: RENEWABLE ENERGY ASSISTANCE PROGRAM (P117870)			
COUNTRY: MEXICO FISCAL YEAR: 2010-2012 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>Mexico's Renewable Energy Technical Assistance Program (still ongoing) is helping the GOM authorities with technical assistance, just-in time advice, and the support of high level experts, to promote and implement an effective Renewable Energy Strategy. The project informed the Mexico low carbon DPL by proposing work on rules for renewable energy auctions for small power producers. The ESMAP TA program also provided support to the Government of Mexico in the definition of an administration agreement with the Ministry of Finance and the preparation of terms of reference and draft contracts related to the implementation of renewable energy activities for the GEF Wind Umbrella Project III (La Venta III).</p>			
WB Lending Operation Informed	Project ID	Approval FY	WB's total financing (US\$)
GEF Wind Umbrella Project III (La Venta III)	P080104	2007	\$17.1 M
Low Carbon Development Policy Loan	P121800	2010	\$400 M

ESMAP ACTIVITY: PROMOTING MINI-HYDRO POTENTIAL (P118293)	
COUNTRY: MEXICO FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS
<p>The ESMAP study built upon existing knowledge and available studies to fund pre-feasibility studies and environmental assessments of a select few pilot minihydro project sites which have already been identified as having good hydrological potential in Mexico. A workshop was held on November 18, 2009 in Mexico and aimed at sharing best practices and international experiences with the Mexican authorities. The workshop was attended by (i) members of Mexico’s Ministry of Energy, (ii) the Energy Regulatory Commission, (iii) The Power Utility CFE, (iv) the Environment and Natural Resources Ministry and (v) the National Water Commission. The study provided the government with the technical data needed to assess the feasibility of developing mini hydro in Mexico.</p>	

ESMAP ACTIVITY: OVERCOMING BARRIERS TO HYDROPOWER INVESTMENTS IN PERU (P10969)					
COUNTRY: PERU FISCAL YEAR: 2008-2011 STATUS: COMPLETED					
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATION INFORMED				
<p>With the assistance of the ESMAP SME project, enabling conditions have been established and pilot projects are in the pipeline for distribution companies over 2010-2012 to make approximately 10,000 PV based connections, with SME commercial support. These are the first PV projects in Peru to be implemented in a sustainable way by the distribution companies, using financing available under the World Bank assisted Rural Electrification Project.</p>					
<table border="1"> <thead> <tr> <th>WB Lending Operation Informed</th> <th>WB’s Total Financing (US\$)</th> </tr> </thead> <tbody> <tr> <td>Rural Electrification Project (P090116)</td> <td>\$50 M</td> </tr> </tbody> </table>		WB Lending Operation Informed	WB’s Total Financing (US\$)	Rural Electrification Project (P090116)	\$50 M
WB Lending Operation Informed	WB’s Total Financing (US\$)				
Rural Electrification Project (P090116)	\$50 M				
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS				
<p>This ESMAP report was completed and widely disseminated to government officials and over 60 participants in workshops on the topic. The Government of Peru has increased knowledge on technical, economic and social viability of mid-scale hydropower development, as well as of the need to improve social and environmental safeguard practices, especially in the context of more politicized social environment in Peru.</p>					

ESMAP ACTIVITY: SMALL HYDROPOWER (P103422)	
COUNTRY: PERU FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>This ESMAP activity supported the government of Peru in developing additional indigenous supply of electricity from small to medium scale hydropower. The activity identified that the fundamental constraint to developing Peru’s hydro potential has been the low tariff faced by hydro generators, which is a consequence of the subsidies to natural gas. The ESMAP report recommended a remunerative and predictable tariff as the main ingredient to unlocking the small hydro potential in Peru. Following up on this, the Government has now decided to provide small hydro projects less than 20 MW with a premium on the tariff under a proposed new Renewable Energy Decree. This TA has helped set conditions for the first auction for renewable energy resources which was conducted in February 2010. Twenty-six projects with a total RE capacity of 411 MW, including 161 MW hydro, were awarded through this auction.</p>	

ESMAP ACTIVITY: ASSESSMENT OF CLIMATE IMPACT ON PERU’S HYDROLOGY (P110305)	
COUNTRY: PERU FISCAL YEAR: 2008-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: DISSEMINATED BEST PRACTICES
<p>This ESMAP supported study developed a methodology to allow planners and policy makers to better plan for adaptation measures to address the climate change impacts on the power and water supply sectors in Peru. The methodology assessed the hydrological impacts caused by climate change on mountain hydrology in the Andes. The report has been finalized and disseminated and the methodology developed is seen as having wide application in the region and this will be monitored, pursued.</p>	

A2.3.5. Middle East and North Africa Region

ESMAP ACTIVITY: COMMERCIAL WIND DEVELOPMENT FRAMEWORK (P110330)			
COUNTRY: EGYPT FISCAL YEAR: 2009-2009 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>In 2008, ESMAP supported the Government of Egypt's 5-year program to build 2,500 MW of commercial wind farms to be tendered as Build Own and Operate (BOO) / Independent Power Production (IPP) projects. The activity sought to foster the creation of a sustainable wind power generation market in Egypt based on commercial principles and private sector participation, through the removal of market barriers to the implementation of technically and economically feasible projects. The activity resulted in three key deliverables: a wind development plan, review of the legal framework, and draft bidding documents for wind project tendering. The activity informed the Egypt Wind Power Development Project for the development of the transmission infrastructure needed the first 250 MW BOO wind project. The activity has also helped secure the financing from the Clean Technology Fund for wind power development.</p>			
WB Lending Operation Informed	Project ID	Approval FY	WB's Total Financing (US\$)
Egypt Wind Power Development Project	P113416	2010	IBRD 70 million and CTF 150 million

ESMAP ACTIVITY: LOW CARBON TRANSPORT STRATEGY – MOROCCO (P114161)			
COUNTRY: MOROCCO FISCAL YEAR: 2009-2010 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATION INFORMED	
<p>ESMAP support through the Transport and Climate Change project has prepared the ground for a new Bank strategy for Morocco's transport sector. The study assessed of the current state of the sector and identified options to improve vehicle efficiency and reduce GHG emissions. Examples include improvements in the performance and quality of public transport; transport demand management measures; traffic management and the promotion of non-motorized modes of transport (e.g. walking and cycling). The Bank's new Country Partnership Strategy (FY10-13) provides support to Morocco to improve the efficiency of urban transport in the country's large cities. A series of DPLs are planned to: (a) reduce transport costs and improve the mobility of people and goods; (b) improve the quality and efficiency of urban transport services; and (c) mitigate greenhouse gas emissions. Transport projects include an Urban Transport Development Policy Loan (DPL) (USD 136.7 million) that supports implementation of institutional, regulatory and financial reforms and a DPL (USD 100 million) for Phase 2 of Urban transport Development is also planned for March 2013 to support continuation of reforms of the Urban Transport Sector including environmental and social aspects, and measures to reduce transport CO₂ emissions.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total Financing (US\$)
Urban Transport Sector Development Policy Loan	P115659	2011	\$136,7 M

ESMAP ACTIVITY: 5M-REGIONAL SOLAR POWER INITIATIVE (P113684)			
COUNTRY: REGIONAL FISCAL YEAR: 2009-2012 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED	
<p>The activity has enabled extensive consultations and capacity building activities in Algeria, Egypt, Jordan, Morocco, and Tunisia. The following activities have been initiated: (i) assessment of the global technology status including the thermal storage and desalination issues; (ii) economic analyses and site selection methodology; (iii) studies on local manufacturing opportunities; (iv) assessment of transmission capacity requirements; and (v) dispatch optimization assessment for integration of CSP. By undertaking these activities, ESMAP helped the countries in the region leverage resources for the feasibility and investment phases of CSP projects in Morocco, Egypt and Tunisia.</p>			
WB Lending Operation Informed	Project ID	Approval FY	WB's Total Financing (US\$)
Morocco: Ouarzazate Concentrated Solar Power	P122028	2012	IBRD \$200 million and CTF \$97 million
<i>In Pipeline</i>			
Egypt: Kom Ombo Solar Power	P120191	2012	IBRD \$170 million loan
Tunisia-STEG Concentrated Solar Power	P122029	2012	IBRD \$35 million loan CTF \$36 million

A2.3.6. South Asia Region

ESMAP ACTIVITY: LOW CARBON GROWTH (P101555)	
COUNTRY: INDIA FISCAL YEAR: 2007-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY/STRATEGY INFORMED
<p>One of the major policy impacts of the study was to bridge the dialogue and knowledge gap between national and international policy-makers. To Indian policy-makers, the key message was that policies are broadly in the right directions and focused attention is required on creating and enhancing conditions for successful implementation. This would require investment in regional transmission, and hydropower. To international policy-makers, the challenges are daunting and India would need more help and time than normally assumed. As a consequence, the policy drive to develop renewables, and in particular solar technology, would require substantial funding and technology transfer to be sustainable.</p>	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: DESIGN CAPACITY STRENGTHENED
<p>The Bank collaborated with the Government of India through its Planning Commission and other sector specialists to develop a low carbon development model, EFFECT (Energy Forecast Framework and Emission Consensus Tool) that is used planning tool to analyze key sectors of the economy and assess the impact of policy choices on greenhouse gas emission levels. This collaboration has created a platform for the Government to build consensus on development goals and mitigation options and has enabled future refinement of the model, assumptions and updates to the analysis to reflect the country's reality.</p>	

ESMAP ACTIVITY: PRIVATE RENEWABLE POWER GENERATION STUDY (P099006)	
COUNTRY: SRI LANKA FISCAL YEAR: 2006-2010 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS
<p>ESMAP supported a study on "Environmental Issues in the Power Sector" in Sri Lanka which focused on identifying (i) Environmental consequences of power sector in general, with particular focus on coal based power generation; (ii) Strategies for mitigating adverse environmental impacts; and (iii) Development of a Regulatory Framework for Environmental Management for the power sector in Sri Lanka.</p> <p>A Stakeholder Workshop was organized in Sri Lanka on March 6-7 2009 with the key objectives to: disseminate the findings of the study on Sri Lanka: Private Sector, Small-scale, Grid-connected Renewable Power Generation--A Review of the Past Decade; and to facilitate a consultative process and knowledge sharing among the key</p>	

stakeholders on sustainable energy development through the production and use of renewable energy sources. The workshop was implemented in cooperation with the Ministry of Power and Energy (MoPE) of the Government of Sri Lanka, and other stakeholders including the Sustainable Energy Authority (SEA).

ESMAP ACTIVITY: RENEWABLE ENERGY MARKET TRANSFORMATION INITIATIVE – SOUTH ASIA CONCENTRATING SOLAR POWER PROGRAM (P119536)

COUNTRY: REGIONAL | **FISCAL YEAR:** 2010- | **STATUS:** ONGOING

OUTCOME: KNOWLEDGE INCREASED

INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS

ESMAP's REMTI program is supporting a three-year program 1) to facilitate deployment of and investments in CSP technologies in India; 2) to build knowledge and strengthen capacity of SA energy sector specialists and local partners in India and in the region on understanding of key technical and institutional aspects of utility-scale concentrating solar power applications; and 3) to build expertise on related project development and implementation. The first year has been complete and has contributed to knowledge increasing through a) building knowledge and understanding technology related costs and technical performance indicators in India's context for further dissemination , b) building a technical basis for solar resource database through the evaluation of solar radiation and parallel hands-on training for scientists and specialist resources on radiation measurement techniques, and c) providing early opportunities to learn from and embrace international best practice industry experience and academic research achievements.

A2.3.7. Global

ESMAP ACTIVITY: CLEAN ENERGY TECHNOLOGY ACCELERATION (P113329)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2009-2009 | **STATUS:** COMPLETED

OUTCOME: POLICY/STRATEGY INFORMED

INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED

The strategic intent of the project was to develop strategies to then be adopted by the Bank or externally. This has happened to a great extent with the vehicles and underlying strategy of tackling identified barriers being taken both inside and outside the Bank. The Regional Energy Innovation Centers have been taken up by infoDev, and much of the Technology Policy Support Program is included in what the energy anchor has been doing with the action groups on CCS, CSP and smart grids. The project's work has also fed into the new strategy for the Global Environment Facility (GEF) to support their enhanced work in pre-commercial technologies.

ESMAP ACTIVITY: EXPERT PANEL (P118166)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2010-2011 | **STATUS:** COMPLETED

OUTCOME: KNOWLEDGE INCREASED

INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS

The expert panel was successfully convened with a summary report that suggested various areas for ESMAP's future engagement including a more detailed look at climate vulnerability of the energy sector. The key outcome of this activity was the facilitated knowledge exchange with top climate and energy experts who provided ESMAP with feedback for future activities. The recommendations of this panel led to a new area of focus on energy and climate adaptation, in which a series of various knowledge products have been produced under a separate activity.

ESMAP Activity: REMTI COORDINATION & OUTREACH (P120448)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>Through the establishment of the Renewable Energy Market Transformation Initiative (REMTI), ESMAP aimed to improve the coordination and outreach aspects of the various renewable energy projects, to glean lessons -- on specific RE technology, policy and/or institutional framework, as well as financing aspects -- that are applicable to other developing country contexts. More specifically, this component of REMTI has focused on enhancing client country institutional capacity to develop, plan and implement strategies to accelerate deployment of select RE technologies. REMTI has partnered with the Renewable Energy & Energy Efficiency Partnership (REEEP) to create a platform for knowledge sharing, such as jointly sponsored events. This activity supported REMTI Knowledge Exchange Forum (which featured REMTI's work to support the Philippines RE Policy Reform) and knowledge products (e.g., REMTI brochure, AMC/ OBA Market Support Mechanism concept paper).</p> <p>REMTI also has partnered with the Bloomberg New Energy Finance (BNEF) to expand the scope and source of knowledge related to the RE sector, to include global private sector investment trends.</p>	

ESMAP Activity: REMTI KNOWLEDGE EXCHANGE (GEOTHERMAL) (P120449)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH CLIENTS
<p>The overarching goal of REMTI's geothermal component is to enable low-income countries with geothermal potential to upgrade their knowledge and capabilities to enable them to scale up the development of the resource, especially for power generation. ESMAP undertook a mission to Rift Valley -- Tanzania, Uganda, Rwanda -- to assess the status of geothermal development in the sub-region, and to identify areas for potential ESMAP engagement. The mission conducted a series of consultations which helped increase knowledge on geothermal energy with various stakeholders and agree on the priority assistance areas for geothermal. Continued support and request for assistance on Geothermal has been requested by ESMAP and a Geothermal Handbook was prepared as a separate activity.</p>	

ESMAP Activity: SCALING UP DEPLOYMENT OF RE (VARIOUS) (P123069)	
COUNTRY: GLOBAL FISCAL YEAR: 2011-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: DISSEMINATION OF BEST PRACTICES
<p>This activity has supported development of analytical studies and data related to scaling up grid-connected RE energy in developing countries. ESMAP provided TA and studies/ reports that address issues and challenges to scaling up RE deployment. Products include knowledge products that synthesize other country experiences and key lessons learned. These knowledge products are specifically designed to facilitate dissemination of new knowledge/ technology/ best practice to broader audiences. An online report was published in October 2010 titled Best Practice Guidelines for Mesoscale Wind Mapping Projects for the World Bank. The report increased knowledge on cutting-edge innovations and best practices towards scaling up deployment of grid-connected RE and ESMAP is now considering a program for meso-scale RE resource mapping.</p>	

ESMAP Activity: ENERGY ADAPTATION KNOWLEDGE DISSEMINATION (P123137)	
COUNTRY: GLOBAL FISCAL YEAR: 2011-2012 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The aim of this activity was to raise awareness of the impacts of climate change on energy sector activities and provide experts with options and experiences to raise awareness and apply lessons to their work. Two key ESMAP knowledge products were disseminated to increase knowledge – a book on “Climate Impacts on Energy Systems” and an online toolkit - HEAT (Hands-on Energy Adaptation Toolkit) were highly disseminated through BBLs, presentations (external and internal), missions, blogs and news stories as well as through training courses. These knowledge products were also presented at the UNECA conference on Africa Development Forum VII (Energy and Climate for Development) in October 2010.</p>	

ESMAP ACTIVITY: LOW CARBON GROWTH KNOWLEDGE PRODUCTS (P117056)	
COUNTRY: GLOBAL FISCAL YEAR: 2010- STATUS: ONGOING	
OUTCOME: INNOVATIVE APPROACHES AND SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED
<p>The Low Carbon Growth Knowledge Products and Program laid the foundation for the roll out and implementation of learning programs inside and external to the Bank on low carbon development. Together with WBI, ESMAP and the World Bank placed significant efforts on the creation of a body of knowledge drawing on the lessons, analysis and results from the ESMAP low carbon studies. Briefing materials, training modules and online tools have been developed. Two key tool outputs were MACTool and EFFECT.</p> <p>MACTool (Marginal Abatement Cost Tool) was produced, which builds upon the prototype of the model developed under the Brazil and Mexico Low Carbon Country Case studies and discussions with World Bank Department of Research and the office of the LAC Chief Economist. The Brazilian government is currently using MACTool to develop their local cap and trade program. Several Bank teams developing new low-carbon scenarios: Colombia, Uruguay, Vietnam, Macedonia, and others, have expressed interest in using MACTool as well. In India, the Bank collaborated with the Government of India through its Planning Commission and other sector specialists to develop a low carbon development model, EFFECT (Energy Forecast Framework and Emission Consensus Tool) which is an open tool for forecasting greenhouse gas emissions from low carbon development scenarios. Since then, EFFECT has been implemented in 11 countries and 9 different cities. In Poland, it catalyzed the work on renewable energy and energy efficiency. In Georgia, it's been used to develop a green transportation strategy as championed by the Ministry of Economy and Sustainable Development in order to reduce fuel imports. In Nigeria, the Energy Commission created an EFFECT modeling group within its Energy Planning and Analysis group in order to investigate generation options for a thirty-year time horizon.</p>	

ESMAP ACTIVITY: ENERGY SECTOR LOW CARBON DEVELOPMENT TOOLS (P127168)			
COUNTRY: ESMAP/GLOBAL FISCAL YEAR: 2012 STATUS: ONGOING			
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF NEW OPERATIONS INFORMED		
<p>Over 2007-2011, ESMAP has led and supported the development of seven low carbon studies. In the course of preparing the low carbon studies, several low carbon development planning tools have been developed, given some gaps in the market for user-friendly quantitative tools to enable consensus building around policy options to mitigate emissions. Two tools in particular have been developed: EFFECT (Energy Forecasting Framework and Emissions Consensus Tool) and MACTool (Marginal Abatement Cost Tool). This technical assistance activity will focus on refining the tools developed, in particular to add specific sectors to expand their scope, enhance technologies to improve their software, support country level use of the tools and further dissemination and training.</p> <p>In Vietnam, ESMAP has been helping the government assess low carbon development options through the use of the tools and by sharing its experiences with the low carbon assessments in seven countries. This technical assistance informed the Vietnam Climate Change DPL with the endorsement of the key outputs of the assessment included as a policy condition for the loan. Upon completion, the low carbon options assessment is expected to inform the implementation of Vietnam Green Growth Strategy as well as the preparation of its next Socio-economic Development Plan.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Total financing (US\$)
Vietnam Climate Change DPL	P122667	FY2012	\$22.4 M (IDA)

ESMAP ACTIVITY: GEOTHERMAL HANDBOOK (P125368)	
COUNTRY: GLOBAL/ESMAP FISCAL YEAR: 2011-2012 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>ESMAP has supported the development of the Geothermal Handbook which is dedicated to geothermal energy as a primary source for electricity production and aims to provide energy investment practitioners with practical advice on how to set up, design, and implement a geothermal development program. The World Bank has supported geothermal development in Europe, Asia, Latin America, and Africa and hopes to contribute with this handbook to scaling up the use of this energy. The study has been published in September 2012 and the process of producing this study has led to considerable knowledge exchange with the regions and partners who are developing geothermal activities in Ethiopia, Malawi and Djibouti. The UN university for geothermal UNU-GTP has confirmed they will use this handbook as part of training courses.</p>	

ESMAP ACTIVITY: REVIEW DESIGN PERFORMANCE RE POLICY (P122077)	
REGION/COUNTRY: GLOBAL/ENERGY ANCHOR FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The objective is to analyze the experience with the design, implementation and performance of policy instruments aimed at promoting the development of RE in selected developing countries and a thorough cross-country analysis to identify lessons learned and best practices. The general emerging lessons and recommendations found in the review were published into a discussion paper and report: <i>Design and Performance of Policy Instruments to Promote the Development of Renewable Energy: Emerging Experience in Selected Developing Countries</i> which was disseminated at various foras.</p>	

A2.3.8. Clean Energy Activities with Limited or Unobservable Results

ESMAP ACTIVITY: REHABILITATION OF HYDROPOWER INFRASTRUCTURE (P103265)	
REGION: GLOBAL/ENVIRONMENT ANCHOR FISCAL YEAR: 2009-2011 STATUS: COMPLETED	
<p>This is a combined ESMAP and Water Anchor knowledge product for FY2009 on the Rehabilitation of Hydropower Infrastructure as part of the Water for Energy hydropower studies. Specific impacts directly linked to this project have not been identified.</p>	

ESMAP ACTIVITY: CARBON ACCOUNTING (P113561)	
COUNTRY: GLOBAL/ENERGY ANCHOR FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
<p>The objective of this activity was to provide background information around coal power generation including aspects of energy supply security, current technologies, expected technological advances and economic development; tools for evaluating coal power projects with alternatives on parameters like environmental impact, social effects, risk management; and energy and environmental policy and regulations relevant to coal power. No specific results directly linked to this project have been identified at this time.</p>	

ESMAP ACTIVITY: SOUTH EASTERN EUROPE REGIONAL ENERGY EFFICIENCY AND RENEWABLE ENERGY (P110548)	
COUNTRY: REGIONAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
<p>ESMAP supported a report focused on improving energy efficiency in the Western Balkans countries. The report has been produced highlighting status for Energy Efficiency and options for improvements in the Western Balkans countries. The report will serve as a useful guidance for countries in the Region that want to take concrete steps to improve their EE performance. The report was disseminated to relevant stakeholders in each country by the respective World Bank country offices, however, no specific impacts or results directly linked to this project have been identified.</p>	

ESMAP ACTIVITY: CSP: REGULATORY AND FINANCIAL INCENTIVES (P118730)

COUNTRY: GLOBAL/ ENERGY ANCHOR **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

Various workshops have been organized to enhance client's institutional capacity and facilitate knowledge about deployment of utility-scale concentrating solar power (CSP) in developing partner countries through information exchange and sharing, operational and policy response assistance, and expert capacity building. There is also outreach for disseminating this knowledge within the Bank's regional CSP programs. Identifying specific outcomes is still premature for this project.

ESMAP ACTIVITY: REGIONAL COOPERATION TO REMOVING TECHNICAL BARRIERS TO SUSTAINABLE HYDROPOWER DEVELOPMENT IN SOUTH ASIA (P120452)

COUNTRY: REGIONAL | **FISCAL YEAR:** 2010-2010 | **STATUS:** COMPLETED

ESMAP supported the study on Regional Cooperation to Reducing Barriers to Sustainable Hydropower Development in South Asia which identified and documented the emerging good practices in the region on tunnel construction, geotechnical aspects and sediment management. The study also undertook a gap analysis in order to compare current practices in the region with international practices from other regions to help identify areas/practices where improvements or changes could be implemented. Furthermore, analysis was successfully done on the identification of barriers to advancing relevant practices in the region and outlined recommendations on how to remove/mitigate those barriers. The research in the report has led to related work on tunneling issues is being explored such as the tunnel boring machine and other modern tunneling technology. Specific impacts directly linked to this project have not been identified.

ESMAP ACTIVITY: REMTI - KNOWLEDGE EXCHANGE ACTIVITIES (P123072)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2011-2012 | **STATUS:** COMPLETED

This activity focused on disseminating ESMAP knowledge and to exchange products with various partners and stakeholders regarding RE technology deployment in client countries. The large objective of knowledge dissemination and exchange has been achieved, through support not only from ESMAP but from other donor funding that supported this activity. ESMAP facilitated knowledge promotion in several ways, by holding workshops for clients and other stakeholders (government officials, utilities, regulators, project developers, private sector investors) as well as participating in major international fora. No direct outcomes have been identified at this point.

ESMAP ACTIVITY: PROMOTION OF RENEWABLE ENERGY (P107150)

COUNTRY: IRAN **FISCAL YEAR:** 2008-2010 | **STATUS:** COMPLETED

The ESMAP-funded Islamic Republic of Iran Power Sector Note found that Iran has a large potential for hydropower generation, estimated at about 50 billion kWh/year. The study helped the Government in: (a) designing a policy to ensure the implementation of economically viable hydro projects which are not able to compete commercially with the fossil-fuel- based electricity generation, due to very low and subsidized gas price; (b) formulating a program of other renewables, particularly wind and solar energy; and (c) preparing an agenda and list of possible priority projects for investment including possible funding from GEF). Since the team had a ban on travel to Iran, they conducted a desk update of the study in June 2010 to reflect developments and lessons learned from the Bank activities in MENA region and internationally during FY2010. Further, since the Bank has no program in the energy sector in Iran since June 2009 it has no influence over the interpretation and implementation of measures proposed in the report.

ESMAP ACTIVITY: RENEWABLE ENERGY INVESTMENT CLIMATE ASSESSMENT (P099005)

COUNTRY: INDIA | **FISCAL YEAR:** 2006-2011 | **STATUS:** COMPLETED

The ESMAP report has been finalized and published in 2010, "Unleashing the Potential of Renewable Energy in India." The study effectively set out the concepts for improving risk and reward allocations under the existing regulatory framework. It sets out three models that attempt to capture the range of regulatory approaches seen across states in India. By doing so - it created a framework to enable discussions to take place between state regulators. A number of models (anchored in real projects) were developed to bring in the private sector. These were successfully road tested at a conference held for the private sector but no specific outcomes have been

identified at this point.

ESMAP ACTIVITY: URBAN TRANSPORT CLIMATE CHANGE STRATEGY (P117917)

REGION/COUNTRY: EAP/CHINA | FISCAL YEAR: 2010-2011 | STATUS: COMPLETED

The aim of this ESMAP supported activity is to effectively promote a national urban public transport development strategy aimed at slowing the growth in transport GHG emissions, improving urban air quality, and providing better transport services for the vast majority of urban dwellers who don't own a car. Tools and approaches to use the latest spatial mapping techniques for urban transport planners and decision-makers have been identified and are being documented for adoption and dissemination. The next steps will be to disseminate this knowledge product at a final workshop and contribute this work towards a series of case studies helping decision makers and Bank TTLs understand and use the tools created and well as have input into a forthcoming publication on Low Carbon Cities.

ESMAP ACTIVITY: ENERGY ADAPTATION COUNTRY BRIEFS (P123139)

REGION/COUNTRY: GLOBAL/ESMAP | FISCAL YEAR: 2011-2012 | STATUS: COMPLETED

This ESMAP activity has recently completed with the aim to develop an approach jointly with the World Bank's Climate Change team and in consultation with key energy stakeholders to develop a screening tool of potential climate stressors for the energy sector, by identifying current and potential climate risks and energy sector vulnerabilities, as well as potential adaptation options. The approach will be applied in 3 countries with outputs presented in a synthesized form through a standardized dashboard and tailored country briefing notes that will be later used by the WB Climate change team to prepare online versions within the Climate Change Knowledge Portal. The operational tool will be structured for possible further development as an online automated tool that help a country/ project screen for and identify potential vulnerable energy assets. The activity is now completed and will be published online for use and dissemination in the coming fiscal year.

ESMAP ACTIVITY: TRANSPORT & CLIMATE CHANGE (P113671)

REGION/COUNTRY: GLOBAL/TRANSPORT ANCHOR | FISCAL YEAR: 2009-2009 | STATUS: COMPLETED

This activity is ongoing with a report being produced for publication and dissemination on integration of climate change issues in the transport sector over the short, medium and long term. The report focuses on the review of the evidence on the contribution of the transport sector to climate change in the course of development, including policy options and an analysis of barriers to reduce the energy and carbon intensity of the transport sector.

ESMAP ACTIVITY: PILOT PROGRAM FOR CLIMATE ADAPTATION (P096390)

REGION/COUNTRY: ECA/REGIONAL | FISCAL YEAR: 2010-2011 | STATUS: COMPLETED

This activity is ongoing with activities including targeted reviews of climate change impacts and adaptation strategies for vulnerable sub-sectors in vulnerable sub-regions of ECA and supporting studies and analysis that will be reviewed and discussed during regional workshops to help the Bank and client countries development strategies for further mainstreaming of climate adaption into Bank lending and sector work.

ESMAP ACTIVITY: LOW CARBON DEVELOPMENT IN POWER SECTOR (P121622)

REGION/COUNTRY: GLOBAL / ENERGY ANCHOR | FISCAL YEAR: 2010-2012 | STATUS: COMPLETED

This activity developed a toolkit of analytical instruments and methodologies to facilitate low carbon development in electricity sector in the developing countries. It is still too early to determine results for this activity.

ESMAP ACTIVITY: RENEWABLE ENERGY FRAMEWORK (P122591)

REGION/COUNTRY: MNA/YEMEN | FISCAL YEAR: 2011-2012 | STATUS: COMPLETED

The activity helped: (i) to support the Government of Yemen develop policies and key contractual framework, adapted to the local context of Yemen, for successful commercial wind project implementation; and (ii) to build the capacity of relevant government officials in the successful implementation of wind programs. It is still too early to determine results for this activity.

ESMAP ACTIVITY: ELECTRIFICATION – PLN CAPACITY BUILDING IN HOMER (P130999)

REGION/COUNTRY: EAP/INDONESIA | **FISCAL YEAR:** 2012-2012 | **STATUS:** COMPLETED

This activity helped the Government of Indonesia to enhance the national power utility's (PLN) technical capacity to design renewable energy generation projects; and to transfer the know-how on renewable energy technology integration. It is still too early to determine results for this activity.

ESMAP ACTIVITY: DJ GEOTHERMAL POWER GENERATION PROGRAM (P127143)

REGION/COUNTRY: MNA/DJIBOUTI | **FISCAL YEAR:** 2012-2012 | **STATUS:** COMPLETED

This activity supported the exploration phase and tendering process of a 50 MW geothermal power plant in the Lac Assal region, 80 km away from the city of Djibouti. It is still too early to determine results for this activity.

ESMAP ACTIVITY: LOW CARBON CITIES PLATFORM (CHINA) (P123996)

REGION/COUNTRY: EAP/CHINA | **FISCAL YEAR:** 2012 - 2012 | **STATUS:** COMPLETED

This activity helped develop an edited book comprised of the various Sustainable Development activities in China that support low-carbon cities, from land use to urban transport, from district heating to urban energy, from carbon finance to urban planning and include various instruments (AAA, GEF, Carbon Finance and Lending). It is still too early to determine results for this activity.

A2.3.9. Ongoing Clean Energy Activities

ESMAP ACTIVITY: LOW CARBON PATH (P121716)

REGION/COUNTRY: ECA/SERBIA | **FISCAL YEAR:** 2010- | **STATUS:** ONGOING

This is a new activity with a World Bank mission conducted in December 2011 to discuss Analytic and Advisory support in the energy efficiency field financed by ESMAP.

ESMAP ACTIVITY: CENTRAL AMERICA PROGRAMMATIC STUDY V: PROMOTING GEOTHERMAL ENERGY (P118280)

REGION/COUNTRY: LAC/REGIONAL | **FISCAL YEAR:** 2010- | **STATUS:** ONGOING

The Programmatic Study on the Energy Sector in Central America was conceived to formulate a strategic approach to addressing key energy sector issues faced in the region, with an emphasis on the power sector. Four modules were developed, including a general issues (also known as the "umbrella") module, a short-term measures module, a regulation module, and a renewable energy module. The project on promoting geothermal energy constituted another module within the Programmatic Study. It built upon the knowledge obtained in the renewable energy module and addressed the issues related to geothermal energy development in greater depth. It was shared with the client in early 2012 and should be finalized within the year.

ESMAP ACTIVITY: INTEGRATING RENEWABLE ENERGY IN GRID CODE (PXXXXX)

REGION/COUNTRY: EAP/PHILIPPINES | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

TBD (confirming activity and P code)

ESMAP ACTIVITY: DEFINING AND MEASURING LOW CARBON CITIES IN CHINA (P129835)

REGION/COUNTRY: EAP/CHINA | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This study aims to assist decision makers in China in defining appropriate criteria and benchmarks for the determination of low-carbon cities and select adequate indicators to measure progress to reach envisioned targets. This activity is ongoing.

ESMAP ACTIVITY: CAPACITY BUILDING FOR SMART GRID DEVELOPMENT IN CHINA (P127871)

REGION/COUNTRY: EAP/CHINA | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity aims to support Capacity Building for Smart Grid Development in China through the preparation of the Smart Grid Industrialization Strategy; Financing Requirement and Cost Benefit Analysis of Smart Grid Development; and Recommendations on regulatory requirements to support the Smart Grid Development in China.

ESMAP ACTIVITY: CUMULATIVE ENVIRONMENTAL IMPACT OF HYDROELECTRIC POWER PLANTS (P129244)

REGION/COUNTRY: ECA/TURKEY | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity is part of a National Watershed Management TA project and focuses developing regulatory and/or implementation guidelines on cumulative environmental impact assessment, raising awareness among key stakeholders, and sharing international experience on the subject matter to help contribute to the enhancing dialogue on natural resource and water management policy with the Government of Turkey.

ESMAP ACTIVITY: CLIMATE MARKET AUCTIONS (P129195)

REGION/COUNTRY: LAC/REGIONAL | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

TBD

ESMAP ACTIVITY: WIND POWER MARKET STUDY (P129247)

REGION/COUNTRY: MNA/LEBANON | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity is an ongoing TA aiming to enable the Lebanese Centre for Energy Conservation, ElectriciteDu Leban, and the Ministry of Energy and Water, to develop an understanding of the policy issues it will need to address in promulgating wind power in Lebanon, and to provide a broad roadmap for development of initial public sector project and a larger wind power market in Lebanon.

ESMAP ACTIVITY: CLEAN ENERGY STAFF TRAINING AND KNOWLEDGE PLATFORM (P127169)

REGION/COUNTRY: ESMAP/GLOBAL | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity is ongoing and aims to increase the level of knowledge of Bank's Staff and the access to updated information on renewable energy project design, financing and performance monitoring to enhance ability of staff to contribute to AAA, TA and lending operations related to Renewable Energy development. The ultimate goal of the training program is to enhance the quality of the advice provided by Bank staff to client countries on the development and implementation of renewable energy scale-up programs. This activity will also develop a Renewable Energy Library (RE_Library) to create a dynamic, searchable and regularly updated database of renewable energy resources to assist both client countries and WB task teams as they work to scale up renewable power.

ESMAP ACTIVITY: CLIMATE VULNERABILITY IN THE ENERGY SECTOR (P127170)

REGION/COUNTRY: ESMAP/GLOBAL | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity is ongoing and aims to strengthen the capacity of energy sector decision makers to manage sector vulnerability to climate change, by developing tools to identify risks for the energy sector and assess potential adaptation options.

ESMAP ACTIVITY: CLEAN ENERGY GUIDEBOOKS AND BRIEFS (P127172)

REGION/COUNTRY: ESMAP/GLOBAL | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

This activity is ongoing and aims to produce and disseminate a series of renewable energy handbooks, starting with concentrated solar power and wind power generation, which will provide client countries and Bank staff with practical advice on renewable energy investment program development and scale-up strategies.

ESMAP ACTIVITY: TUNISIA – LOW CARBON ACTION PLAN FOR TRANSPORT SECTOR (P121039)
REGION/COUNTRY: MNA/TUNISIA | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

The objective of this technical assistance is to assist the Government of Tunisia in implementing some of the measures recommended by the Low Carbon Transport Strategy developed with the Bank in 2009-2010. These measures aim at reducing the GHG emissions and the fossil energy consumption of Tunisia's land transport sector.

ESMAP ACTIVITY: VIRTUAL NETWORK TO SUPPORT SIDS DOCK PLATFORM (P129318)
REGION/COUNTRY: GLOBAL/ENV | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

The Virtual Network will be designed to support small island developing states as they transition to a more balanced energy sector thereby reducing fossil fuel imports and freeing up fiscal space for development and climate resilience efforts and objectives. It will do so by building a community of practice with formal and informal information and knowledge sharing for capacity building amongst (a) SIDS representatives including policy makers and practitioners in the energy and energy-related sectors (b) SIDS DOCK National Coordinators and its administration and (c) the SIDS DOCK Support Program partners (d) and eventually, the public.

ESMAP ACTIVITY: REVOLVING FUND OPTIONS PAPER (P129321)
REGION/COUNTRY: GLOBAL/ENV | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

The development objective of the Revolving Fund Options Paper is to enable SIDS to mobilize additional funding for innovative RE and EE technologies in SIDS. By providing a detailed analysis of revolving financing options for RE and EE, the activity will improve the ability of SIDS governments and donors to make informed decisions on funding mechanisms and design viable instruments.

ESMAP ACTIVITY: PREPARATION OF A GRID CODE, FEED-IN-TARIFFS AND MODEL ENERGY SUPPLY PURCHASE AGREEMENTS FOR RENEWABLE ENERGY SYSTEMS GREATER THAN 50KW (P131818)
REGION/COUNTRY: MAURITIUS | **FISCAL YEAR:** 2012 | **STATUS:** ONGOING

The objective of the project is to promote investment in renewable energy infrastructure, contribute to energy security, reduce GHG emissions, and encourage household-private sector investment in renewable energy technologies.

A2.4. ENERGY ACCESS

A2.4.1. Africa Region

ESMAP ACTIVITY: CAPACITY BUILDING AMONG SMALL SCALE ENERGY SUPPLIERS (P107574)
COUNTRY: BURKINA FASO | **FISCAL YEAR:** 2008-09 | **STATUS:** COMPLETED

OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED
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During the preparation of the Burkina Faso Energy Access Project, initial discussions of the ESMAP-supported activity began and the activity was reflected in the Energy Access project's appraisal document, which indicates that the subcomponent to build the capacity of energy service providers will be implemented in collaboration with the ESMAP-supported activity. The Energy Access project was approved by the World Bank in July 2007. ESMAP support was used to assess constraints and opportunities in involving SMEs in electricity supply. It set the stage for the WB project to improve the regulatory and institutional framework governing the involvement of SMEs in energy service provision.

<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Burkina Faso Energy Access Project</i>	<i>P078091</i>	<i>2008</i>	<i>\$38.8 WB loan</i>

ESMAP ACTIVITY: 3A: RENEWABLE ENERGY EDUCATION PROJECT (P120478)
COUNTRY: BURKINA FASO AND GHANA | **FISCAL YEAR:** 2010- | **STATUS:** ONGOING

OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
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The activity was aimed to strengthen the capacity of two West African universities - the International Institute for

Water and Environmental Engineering (2IE) in Burkina Faso and The Energy Center at the Kwame Nkrumah University of Science and Technology (TEC/KNUST) in Ghana - to transfer know-how on renewable energy technology to their clients. Although the activity is still ongoing, the two universities have already trained 28 persons and certified 6 persons as trainers on RETScreen and GIS Energy Planning, which indicates an increased capacity to design and offer renewable energy training.

ESMAP ACTIVITY: CAPACITY BUILDING AMONG SMALL-SCALE OFF-GRID ENERGY SUPPLIERS (P107606)

COUNTRY: CAMEROUN | FISCAL YEAR: 2008-09 | STATUS: COMPLETED

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: PREPARATION OF NEW OPERATION INFORMED

The activity analyzed the regulatory, legal, and institutional framework of the energy sector in Cameroun. The analysis recommended that the government review the functions of the rural electrification agency and establish a rural energy fund to facilitate SMEs participation in electricity delivery. The activity further helped develop an operational manual for the proposed rural electrification fund.

The activity' outputs were incorporated in the design of the Energy Sector Development Project, approved by the World Bank in June 2008. The project includes a US\$ 40 million rural energy fund to provide investment subsidies to rural energy projects.

<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
<i>Cameroun-Energy Sector Development Project</i>	<i>P104456</i>	<i>2008</i>	<i>65 WB loan</i>

Impacts of WB loan influenced by ESMAP

- The rural energy fund was established on December 14, 2009 and first private sector-led projects are still under preparation.
- 2100 community electricity connections provided

ESMAP ACTIVITY: SCALING UP SMEs PARTICIPATION IN RURAL ELECTRIFICATION (P108841)

COUNTRY: GUINEA | FISCAL YEAR: 2008-09 | STATUS: COMPLETED

OUTCOME: POLICY/STRATEGY INFORMED

INDICATOR: GOVERNMENT STRATEGY / POLICY INFORMED

This ESMAP-funded SME technical assistance helped the Decentralized Rural Electrification Agency prepare a rural electrification strategy that is conducive to the involvement of energy SMEs. The agency also designed and initiated four pilot projects to provide solar home systems through SMEs. Although the assistance stopped because of a military coup that led to World Bank ceasing project activities in Guinea, ESMAP support resulted in an enhanced policy and institutional framework that can be built upon to increase electricity access in rural areas.

ESMAP ACTIVITY: AFREA-LIBERIA RURAL ENERGY (PHASE 1) (P118460)

COUNTRY: LIBERIA | FISCAL YEAR: 2010-2012 | STATUS: COMPLETED

OUTCOME: CLIENT CAPACITY INCREASED

INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: MOBILIZATION OF NON-BANK RESOURCES INFORMED

The AFREA-funded activity assisted the Ministry of Lands, Mines, and Energy (MLME) to set up and build the capacities of an agency responsible for mobilizing investments and renewable energy services for rural areas. The activity team provided technical and legal services that resulted in President Ellen Johnson Sirleaf issuing an Executive Order establishing a Rural and Renewable Energy Agency (RREA) and its associated Rural Energy Fund as a legal entity, in January 2010. Subsequently, the agency was staffed with advisors who helped develop its financial, procurement, and operational manuals. The agency staff was trained on renewable energy technologies, annual plan development, and use of GIS-based tools for energy planning. The RREA has been operational since April 2010 and was allocated a government budget.

With the enhanced capacity, the RREA has begun preparing a rural energy master plan. It held a stakeholders workshop that identified rural energy priorities, which led to an outline of a rural electrification strategy and to a draft action plan. With the workshop outputs, the RREA applied for and received a 1.5 million Euros grant (US\$1.98 million) from the European Union, in August 2011, to pilot off-grid solar lighting activities in Lofa County and complete the rural energy master plan. The plan will include a spatial analysis of grid extension and priority stand-alone renewable systems for remote villages, using GIS technologies.

<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>
LR-LESEP Additional Financing	P129097	2012	22 M (IDA)

ESMAP ACTIVITY: SUSTAINABLE ENERGY DEVELOPMENT PROJECT (GEF) (P097818)	
COUNTRY: RWANDA FISCAL YEAR: 2010- STATUS: ONGOING	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT STRATEGY / POLICY INFORMED
With the AFREA grant, the Rwandan power and water utility, EWSA, commissioned a study that resulted in the elaboration of a feed-in tariff for electricity generated from micro-hydro plants. The proposed tariff was submitted to the Rwanda Utilities Regulatory Agency (RURA) and was approved in February 2012.	

ESMAP ACTIVITY: INTEGRATING SMES IN TANZANIA'S RURAL ENERGY INITIATIVES (P107301)	
COUNTRY: TANZANIA FISCAL YEAR: 2008-09 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT STRATEGY / POLICY INFORMED
OUTCOME: INNOVATIVE APPROACHES AND SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED
<p>The activity assisted the Tanzanian Energy and Water Utilities Regulatory Authority (EWURA) and the Rural Energy Agency (REA) to develop standardized power purchase agreements for projects under 10MW, and simplified regulatory procedures for projects under 1 MW.</p> <p>ESMAP-assisted, light-handed regulatory procedures and power purchase agreements have been considered good practices in Eastern Africa. A number of regulatory agencies in East Africa conducted study tours to learn from the Tanzanian regulatory mechanisms. The experience has been disseminated for possible adoption to other African countries. For instance, it was presented at Africa Electrification Initiative's Maputo workshop, which was attended by representatives from more than 32 Sub-Saharan African countries. The Tanzanian SPP regulatory system was also presented to electricity regulators from 10 Southern African countries at the 2009 annual meeting of the Regional Electricity Regulatory Association of Southern Africa (RERA).</p> <p>The agreements and procedures were included in Tanzania's Electricity Act and formally adopted by EWURA in 2009. EWURA expanded on this initial work and leveraged SIDA funds to prepare Guidelines for Small Power Producers (SPPs). Under this enhanced regulatory framework, five Standardized Power Purchase Agreements have been signed with the national electricity utility, TANESCO, for 24 MW and four Letters of Intent have been drafted for estimated sales of 17.8 MW. Two projects with commitment to supply 10.4 MW are selling power to TANESCO.</p>	

ESMAP ACTIVITY: LIGHTING RURAL TANZANIA (P117260)									
COUNTRY: TANZANIA (FUNDED BY AFREA) FISCAL YEAR: -2010 STATUS: COMPLETED									
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED								
<p>The activity complements the World Bank-financed Tanzania Energy Development and Access Expansion Project (TEDAP). It provides TEDAP with a parallel additional financing to develop sustainable business models that would enable access to efficient, clean and affordable lighting for the Tanzanian poor. The activity is being implemented by the Tanzanian Rural Energy Agency (REA), which is also carrying out TEDAP's small power component. The REA coordinated an open and competitive selection of 10 private operators who were granted up to US\$100,000 each to implement proposed pilots following a results-based financing approach. Although the activity is still under implementation, it has yielded noticeable results.</p>									
<table border="1"> <thead> <tr> <th><i>WB Lending Operation Informed</i></th> <th><i>Project ID</i></th> <th><i>Approval FY</i></th> <th><i>Amount (US\$)</i></th> </tr> </thead> <tbody> <tr> <td>Tanzania Energy Development and Access project</td> <td>P101645</td> <td>2008</td> <td>111.5 WB loan</td> </tr> </tbody> </table>		<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>	Tanzania Energy Development and Access project	P101645	2008	111.5 WB loan
<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>						
Tanzania Energy Development and Access project	P101645	2008	111.5 WB loan						
<p>Direct impacts of AFREA-funded activity. The selected private operators sold over 6,000 solar lanterns, installed 1,500 solar home systems, and equipped 12 schools and 40 health clinics with PV systems.</p> <p>Impacts of World Bank loan influenced by ESMAP activity</p> <ul style="list-style-type: none"> • Signed Standardized power purchase agreements will add 24.4 MW electricity from renewable energy sources • REA fully functional 									

ESMAP ACTIVITIES:	
TASK 3: LIGHTING AFRICA MARKET DEVELOPMENT AND QA (P116289)	
COUNTRY: TANZANIA FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
LIGHTING AFRICA DEVELOPMENT MARKETPLACE AWARDEES SUPERVISION (P113808)	
COUNTRY: TANZANIA FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>Under a competitive grant program sponsored by the Lighting Africa Initiative, AFREA funded three award-winning projects in Namibia, Nigeria, and Tanzania. Although the award recipients in Namibia and Nigeria faced difficulties, the Tanzanian recipient successfully implemented its proposal. It resulted in 42,000 LED lanterns and other lighting products sold, providing improved lighting to 8,450 households and 331 organizations, while creating 123 local jobs. Lessons learned from the grant-funded initiative have informed the design of the Lighting Rural Tanzania activity, which adopted a similar approach to providing grants.</p>	

ESMAP ACTIVITY: LADM 4509: PROVIDING AFFORDABLE AND RELIABLE SOLAR SYSTEMS IN NORTHERN TANZANIA (P114094)	
COUNTRY: TANZANIA FISCAL YEAR: 2012-2012 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>This Lighting Africa Development Marketplace (LADM) grant was implemented in the Mwanza, Lake Victoria region of Tanzania where it sought to provide a means for rural people to afford solar products and supplying reliable goods with adequate technical support for installations and maintenance. The project built a large distribution network of over 30 rural entrepreneurs in regions outside Mwanza, including Mara, Kagera Shinyanga, and Tabora, managing to cover many previously unchartered remote areas. With this approach, the project manager engaged 60 schools, 50 health centers, and over 20 SACCOS. Four sales and support teams were formed to provide sales, installation and maintenance support, focusing on the sale of solar home and institutional systems. Sales grew considerably with Zara Solar selling in excess of 500 units a month. It is estimated that over 60,000 people benefitted from this project and have significantly reduced the use of kerosene and candles in the Mwanza region of Tanzania. Operations are being expanded to Dar-es-Salaam and the surrounding rural area.</p>	

ESMAP ACTIVITY: LADM 4560: POWER TO THE POOR – OFF-GRID LIGHTING FROM CASSAVA WASTE IN NIGERIA (P114089)	
COUNTRY: NIGERIA FISCAL YEAR: 2009-2009 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>The idea is to abate pollution, mitigate greenhouse gas emission hence improving ecosystem and human health through investment in sustainable biogas plant. The zero emission biogas technology treats the cassava waste and produce biogas which would drive microturbines for low cost, safe and reliable off-grid energy efficient lighting to 2,250 peri-urban and rural poor homes with the sludge as environmentally safe organic fertilizer for low-income farmers. The developed plans for the construction of a biogas facility using donor co-financing which the project did not receive, affected the overall goal of the activity. One of the main recommendations for private sector firms is to study carefully the market and business models used prior to entering the market and to 'plan for the unexpected'. From the experience of this project, the Lighting Africa team and the recipient learned that changes in policy environment can affect the project and the need for contingency planning when developing a business plan in a nascent market/ field. Knowledge obtained has provided the Lighting Africa program insight on this developing new market which is disseminated to its stakeholders and new firms. This knowledge was also exchanged through the Lighting Africa global conferences.</p>	

ESMAP ACTIVITY: LADM 7437 – VILLAGE LIGHTING SOLUTIONS IN NAMIBIA (P114087)	
COUNTRY: NAMIBIA FISCAL YEAR: 2012-2012 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY DEVELOPED	INDICATOR: DESIGN CAPACITY STRENGTHENED
<p>This activity aimed to bring lighting to rural households in Namibia by introducing a low-cost combination of microbial fuel cell (MFC) and polymer light emitting diode (PLED) technology, and thereby improved education, health, safety, quality of life, and income levels in rural villages. The project worked on testing a new technology for implementation in rural Namibia. Being a new, almost experimental technology, used in an unfamiliar location, and due to improper planning, the project was not able to meet its objectives. As a result of implementing this project, the Lighting Africa team learned that technical innovations require strong management and planning along with local presence in order to succeed. Knowledge obtained has provided the Lighting Africa program insight on this developing off-grid lighting market in the region. The lessons learned are now being transferred through technical assistance to other firms interested in establishing off-grid lighting enterprises in the region.</p>	

ESMAP ACTIVITIES: AFRICA ENERGY ACCESS SCALE-UP PLAN CONSULTATIONS (P121306)	
COUNTRY: REGIONAL - AFR FISCAL YEAR: 2010-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED
<p>This activity supported the preparation and organization of the 3rd Ministerial FEMA two day conference which included high level panel discussions and a focus on climate change, regional projects and consultations on the new WBG Energy Sector Strategy. This activity also supported the preparation of background materials on the AFTEG and the Bank's strategy in the energy sector and projects, analytical work and best practices through the AFTEG website and possibly through the publication of written material.</p>	

ESMAP ACTIVITIES:	
3A-ESMAP LIGHTING AFRICA (P106178)	
COUNTRY: REGIONAL FISCAL YEAR: 2007-2010 STATUS: COMPLETED	
SOLAR LANTERN TESTING & CERTIFICATION (P109027)	
COUNTRY: REGIONAL FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
TASK 2: LIGHTING AFRICA-2010 CONFERENCE (P116277)	
COUNTRY: REGIONAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR:
	<ul style="list-style-type: none"> • GOVERNMENT STRATEGY / POLICY INFORMED • DEV'T COMMUNITY/PARTNER POLICY/STRATEGY INFORMED
OUTCOME: INNOVATIVE APPROACHES AND SOLUTIONS GENERATED	INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED

Lighting Africa (LA) is a joint IFC and World Bank program that aims to mobilize the private sector to provide reliable and affordable lighting to 250 million people. LA comprised several components including: business support, consumer education & outreach, policy & regulation, and quality assurance. LA provided business support services to over 1900 companies and 2,500 individual members. Through over 100 road shows and 500 forums, LA reached out to 11 million people in rural Kenya and 675,000 people in Ghana, raising their awareness of the benefits of clean and affordable off-grid lighting while showcasing products. Under the policy & regulation component, studies to foster favorable policy and regulatory environments for commercializing lighting products were conducted in eight countries including Ethiopia. To ensure quality of lighting products being sold, LA developed standards and test procedures as well as equipped a laboratory at the University in Nairobi, Kenya, to provide low-cost screening tests to manufacturers and distributors.

LA's policy and regulatory study in Ethiopia resulted in the Government of Ethiopia waiving duties on all off-grid lighting products that meet or exceed LA-recommended performance targets.

Lighting Africa's activity has enabled the certification of quality lighting products for consumers who rely on candles and kerosene for lighting. In 2007, there were no quality-certified off-grid lighting products on the African markets, and no affordable test methods to certify quality for this low-cost segment. With LA's first-ever standards and testing methods, 18 products were certified.

The United Nations Framework Convention on Climate Change (UNFCCC) used the Lighting Africa-developed, standards and testing procedures to build up the CDM methodology for off-grid lighting. Also, Lighting Africa has been chairing the GEF/UNDP En.Lighten Project Steering Committee, leading efforts to harmonize quality assurance systems across different organizations and continents in order to enhance off-grid lighting markets.

Direct Impacts of LA

LA has significantly contributed to transform the off-grid lighting market in Sub-Saharan Africa. With LA support, lighting product sales have more than quadruple (sales increased of 450%) in FY 2011. Since 2010 close to 1.5 million people in Africa have acquired cleaner and safer lighting products. Lighting Africa’s target of reaching 2.5 million people by 2012 is likely to be achieved.

ESMAP ACTIVITY: BIOMASS ENERGY INITIATIVE (P116419)
COUNTRY: REGIONAL (FUNDED BY AFREA) | **FISCAL YEAR:** 2009- | **STATUS:** ONGOING

OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: <ul style="list-style-type: none"> • PREPARATION OF NEW OPERATION INFORMED • MOBILIZATION OF NON-BANK RESOURCES INFORMED
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The Biomass Energy Initiative in Africa (BEIA) aims to test promising biomass energy building blocks that have the potential to be incorporated in future Bank’s operations. The initiative comprises activities executed by both AFTEG and recipient organizations in Sub-Saharan Africa.

The recipient-executed activities provided NGOs and private organizations with grants to implement nine biomass pilot projects in Benin, Ethiopia, Gambia, Kenya, Uganda, Rwanda, Tanzania, and South Africa. Although the pilots are at different stages of implementation, two have already leveraged non-Bank funding. The grant recipient in Gambia, the Center for Research in Energy and Energy Conservation, obtained a US\$500,000 grant from USAID to scale up efforts to disseminate locally manufactured stoves. Also, the grant recipient in Ethiopia, Gaia Association, successfully leveraged 346,059 Euros (US\$456,800) from the Nordic Climate Fund to pilot other micro plants distilling ethanol for cooking.

The AFTEG-executed activity published an issues-and-approach paper on “Wood-Based Biomass Energy Development for Sub-Saharan Africa.” The team that produced the paper shared knowledge and supported the WB team assisting DRC government in preparing an investment plan for funding under the CIF’s forest investment program (FIP). Through this support, the paper has informed the preparation of the investment plan.

The BEIA’s paper has also informed the preparation of another AFTEG-led initiative, the Africa Clean Cooking Initiative (ACCI). ACCI builds on BEIA’s efforts to enable market conditions for high quality and performance cooking stoves and aims to promote enterprise-based, large-scale dissemination and adoption of clean cooking solutions in Sub-Saharan Africa. ACCI’s concept was launched in November 2011 and is supported by ESMAP, GPOBA, and PPIAF.

AFREA’s BEIA Operation Informed	Total financing (US\$)
<i>P128887 - DRC Forest Investment Program [(FY2013) – in pipeline for FIP**]</i>	<i>60 FIP</i>
<i>Gambia – Promotion of Improved Biomass Vesto Stoves (funded by USAID) – FY 2012</i>	<i>0.5</i>
<i>Ethiopia – Promotion of Ethanol Micro-Distilleries Project (funded by the Nordic Climate Fund) – FY 2012</i>	<i>0.4</i>

**FIP stands for Forest Investment Program, which is one the three strategic climate funds constituting the Climate investment Funds (CIF).

BEIA ACTIVITIES

ESMAP ACTIVITY: PROMOTION OF IMPROVED BIOMASS VESTO STOVES IN THE GAMBIA (P120024)
COUNTRY: GAMBIA | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank’s operations. Gambia is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. This activity in Gambia aims to demonstrate the feasibility of the use of sustainable fuel efficient cooking stoves using biomass briquettes from waste materials in three target urban/peri urban communities who primarily use firewood as fuel in the greater Serrekunda area in the Gambia.

<p>ESMAP ACTIVITY: PROMOTION OF SOCIAL BIOFUELS IN BENIN PROJECT (P119662) COUNTRY: BENIN FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. Benin is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. This activity in Benin aims to start a pilot crude Jatropha oil (CJO) production social enterprise.</p>
<p>ESMAP ACTIVITY: PROMOTION OF IMPROVED BIOMASS ROCKET STOVES IN SOUTH AFRICA PROJECT (P120029) COUNTRY: SOUTH AFRICA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. South Africa is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. The project aims to create a thriving market for efficient biomass stoves in South African rural off-grid market by awareness raising/marketing, establishing distribution infrastructure, creating sustainable commercial operations, and providing consumer credit to potential customers.</p>
<p>ESMAP ACTIVITY: PROMOTION OF IMPROVED BIOMASS TOP LIT UP DRAFT STOVES IN UGANDA PROJECT (P120030) COUNTRY: UGANDA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. Uganda is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. This project aims to produce and promote 10,000 air controlled top lit updraft (TLUD) stoves manufactured by local tinsmiths and small business entrepreneurs in Uganda</p>
<p>ESMAP ACTIVITY: TANZANIA – AGRICULTURAL WASTE TO CHARCOAL (P120035) COUNTRY: TANZANIA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. Tanzania is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. The project aims at providing hands-on training on charcoal briquette production from agriculture waste and dry biomass.</p>
<p>ESMAP ACTIVITY: PROMOTION OF CHARCOAL PRODUCERS' ORGANIZATIONS IN RWANDA (P120037) COUNTRY: RWANDA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. Rwanda is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. The project aims to modernize charcoal industry through organizing and transforming the charcoal production sector into profitable and sustainable businesses.</p>
<p>ESMAP ACTIVITY: KENYA – RURAL BIODIESEL PROJECT (P120038) COUNTRY: KENYA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The objective of the Biomass Energy Initiative for Africa (BEIA) is to test promising building blocks dealing with biomass energy that have a potential to be incorporated in the future Bank's operations. Kenya is one of the 9 pilot projects with recipient executed activities focused on conducting research to support biomass development in SSA. The project aims to scale up the biodiesel production by increasing the production capacity from 300 liter to 800 liter per day.</p>

ESMAP ACTIVITY: ESMAP SWAP INVESTMENT & POLICY / RWANDA & KENYA (P107546)			
COUNTRY: REGIONAL (FUNDED BY ESMAP AND AFREA) FISCAL YEAR: 2009-2012 STATUS: COMPLETED			
OUTCOME : DEVELOPMENT FINANCING INFORMED		INDICATOR:	
		<ul style="list-style-type: none"> • PREPARATION OF NEW OPERATION INFORMED • MOBILIZATION OF NON-BANK RESOURCES INFORMED 	
OUTCOME : POLICY/STRATEGY INFORMED		INDICATOR: BANK COUNTRY STRATEGY INFORMED	
OUTCOME: INNOVATIVE APPROACHES AND SOLUTIONS GENERATED		INDICATOR: NEW INNOVATIVE APPROACH DEVELOPED	
<p>The activity, funded by both ESMAP and AFREA, assisted the governments of Rwanda and Kenya to develop energy access scale-up plans, using GIS-based lowest-cost spatial planning and applying a sector-wide approach. The developed plans included energy access targets and estimated investments required to meet the targets. The developed plans led to the preparation of World Bank-financed energy access projects and mobilization of non-Bank resources. With the plans, the Government of Rwanda and Kenya held donor roundtable conferences, where donors pledged funding to support the implementation of the plans: US\$228 million for Rwanda and US\$ 1.5 billion for Kenya. On this basis, the Government of Rwanda and Kenya, with World Bank assistance, prepared the (1) Rwanda Electricity Access Scale-up and Sector Wide Approach Development project and the (2) Kenya Electricity Expansion Project, which were partially financed by the World Bank: US\$70 million for Rwanda and US\$330 million for Kenya.</p> <p>The sector wide approach, used to prepare the national electricity access programs in Rwanda and Kenya, was adopted in subsequent World Bank's country assistance strategies. The FY2009-2012 Country Assistance Strategy for Rwanda pointed out that the World Bank will support energy sector reform by, in part, ensuring progress on an energy sector wide approach focused on access expansion. Similarly, the 2010-2013 Country Partnership Strategy for Kenya indicates that the World Bank will follow a sector wide approach in different sectors including the energy sector.</p> <p>The use of geographic information tools to determine grid electrification plans in the electricity access programs has been hailed as innovative. Energy planners in Rwanda and Kenya have adopted the GIS tools used to forecast electricity demand, identify priority areas, select least-cost electrification options, and illustrate options to roll out grid electrification up to 2020. This was the first time such GIS tools were used in electrification planning in Rwanda and Kenya.</p>			
WB Lending Operation Informed		Project ID	Approval FY
<i>Rwanda Electricity Access Scale-up and Sector Wide Approach Development Project</i>		<i>P111567</i>	<i>FY2010</i>
<i>Kenya Electricity Expansion Project</i>		<i>P103037</i>	<i>FY2010</i>
		Amount (US\$)	
			<i>70 WB loan</i>
			<i>330 WB loan</i>
Donor funding: \$228 M in donor funding for Rwanda + \$1.5 billion for Kenya			
IMPACTS OF WB LOAN INFLUENCED BY ESMAP:			
<ul style="list-style-type: none"> • 99,000 households, 11 health centers, and 6 schools connected to electricity in Rwanda. 			

ESMAP ACTIVITY: 3A-ESMAP IMPLEMENT ACTION PLAN FOR ENERGY ACCESS SCALE-UP IN AFRICA (P103456)			
COUNTRY: REGIONAL (FUNDED BY BOTH ESMAP AND AFREA) FISCAL YEAR: 2007-2010 STATUS: COMPLETED			
OUTCOME: POLICY/STRATEGY INFORMED		INDICATOR:	
		<ul style="list-style-type: none"> • BANK SECTOR STRATEGY INFORMED • PUBLIC DEBATE STIMULATED/INITIATED 	
<p>The activity included: (i) an update of the Africa Energy Strategy funded by AFREA, (ii) a ministerial roundtable discussion on "What Would it Take to Transform Africa's Energy Sector" funded by AFREA, and (iii) an African energy Ministers Conference "Road to Durban: Promoting Sustainable Energy Access for Africa" funded by ESMAP. The updated Africa Energy Strategy diagnoses the energy access challenges in Sub-Saharan Africa, presents core business lines to be pursued, and proposes a plan to implement the strategy. The strategy was annexed to the draft World Bank's Energy Sector Strategy.</p> <p>In addition to the strategy, a ministerial roundtable discussion was held in April 2011 as a side event to the World Bank Spring Meetings. The roundtable brought together over 20 ministers and 200 external participants and World</p>			

Bank staff to brainstorm on what needs to be done to address Africa’s power shortfall. Nearly 600 people connected on live-stream to watch the discussions, indicating a great interest from the public. Also the associated short movie on “Africa’s vision for 2020” that was prepared is still one of the most clicked videos on the Africa region webpages.

The Africa Energy Ministers Conference “*Road to Durban: Promoting Sustainable Energy Access in Africa*” was held in Johannesburg on September 15-16, 2011. The conference, hosted by the South Africa’s Department of Energy and the African Union and officially supported by ESMAP, the World Bank and the United Nations Industrial Development Organization, brought together over 40 Energy Ministers or Deputy Ministers and representatives from regional economic communities and power pools. The conference offered a unique opportunity to highlight Africa’s energy challenges and gain global support to Africa’s transformational energy agenda. Energy Ministers reached consensus on the Johannesburg Declaration, which informed policy discussion and catalyze action at COP-17.

ESMAP ACTIVITY: 3A-ESMAP AFR. ELECTRIFICATION EXPERIENCE (P110999)	
COUNTRY: REGIONAL FISCAL YEAR: 2009- STATUS: ONGOING	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS
<p>Africa Electrification Initiative was designed in late 2008 to respond to the need to better document successes and challenges of electrification programs in Sub-Saharan Africa and to encourage electrification practitioners to learn from each other.</p> <p>The initiative’s first phase was launched at a workshop in June 2009 in Maputo, where over 170 electrification practitioners from 42 countries shared ground-level implementation experiences, established a network of electrification practitioners, refined topic areas where SSA practitioners face the most significant knowledge constrains, and identified suitable, long-term dissemination mechanisms. The second phase involved sharing knowledge (discussion and research papers); establishing long-term dissemination mechanisms including website, blog, online archive of operational documents; enhancing the established network of senior SSA electrification practitioners; and holding thematic mini-workshops.</p> <p>AEI recently held a workshop in Dakar in November 2011, which brought together over 200 electrification practitioners who shared the lessons learned from Rural Electrification agencies’ experiences on specific topics including low-cost design, connection subsidies, tariffs, productive uses, rural electrification planning, financing renewable energy development, and sustainable solar PV solutions.</p> <p>Through the workshops, online archive, and network, AEI facilitates the dissemination of best practices in designing and implementing rural electrification projects. A participant from a Rural Energy Agency commented as an AEI thematic workshop: “<i>As high connection charges are a stiff barrier to access in my country, I am planning to immediately introduce measures discussed here at the workshop.</i>” Another participant stated: “<i>I am going to probe some of the new low-cost technologies being used by other practitioners for possible adaptation in my own country.</i>”</p>	

A2.4.2. East Asia and Pacific Region

ESMAP ACTIVITY: DECENTRALIZED ENERGY SERVICES FOR IDA COUNTRIES (P095219)	
COUNTRY: CAMBODIA FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED
<p>ESMAP helped two organizations-Centre Krom Ngoy and EDC-Training center-to train 122 rural electricity enterprises (REEs) on business management and electricity loss reduction. The training resulted in many REEs reporting 20% decrease of electricity losses. Under a separate component, ESMAP supported local artisans and home-based entrepreneurs to produce and disseminate improved cookstoves following a market-based approach. The activity has influenced the operations of an ongoing World Bank project. The positive feedback from the trainees and the reported results led to the Rural Electrification Fund, an agency implementing a component of the WB-financed Rural Electrification and Transmission project, providing similar training to new licensed REEs and advanced training to REEs that attended ESMAP-supported training.</p> <p>Besides, ESMAP’s support to disseminate improved cookstoves led to 8,000 improved cookstoves and 40 efficient</p>	

palm sugar stoves sold.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Cambodia Rural Electrification and Transmission Project</i>	<i>P064844</i>	<i>FY2004</i>	<i>40 WB loan</i>

Impacts of World Bank loan influenced by ESMAP activity

- 45,097 new rural households connected to electricity
- 243 licenses issued to independent power producers and rural electrification enterprises

ESMAP ACTIVITIES:
 SMEs IN DECENTRALIZED ENERGY SERVICE (P107193)
COUNTRY: LAO PDR | **FISCAL YEAR:** 2008-2010 | **STATUS:** COMPLETED

STIMULATING SMEs FOR PRODUCTIVE USE OF ELECTRICITY (P120983)
COUNTRY: LAO PDR | **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

OUTCOME : DEVELOPMENT FINANCING INFORMED	INDICATOR: <ul style="list-style-type: none"> • EXISTING OPERATIONS INFORMED • PREPARATION OF NEW OPERATION INFORMED
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED

P107193 - SMEs in Decentralized Energy Service: The ESMAP-supported activity has supported the implementation of an ongoing rural electrification project and influenced the preparation of a second rural electrification project. The activity was initiated during the implementation of the first phase of the Rural Electrification project financed by the World Bank. The project includes a sub-component to develop alternative financing mechanisms, including a dedicated fund, to support rural electrification. The development of the rural electrification fund was supported by ESMAP, whose funding enabled the recruitment of an international consultant who assisted the Ministry of Energy in preparing the rural electrification fund (REF)'s operational manual with a view to enable the private sector to have access to the fund. The prepared manual has set the stage for making the REF operational. The adoption of the manual was required as an effectiveness condition of the second phase of the Rural Electrification Project (REP II), approved by the World Bank in January 2010.

Impacts of WB loan influenced by ESMAP

- 14,081 households in 230 villages were electrified by solar home systems
- 51,625 households in 570 villages were electrified through grid extension

The Rural Electrification Fund (REF) was established and operational in September 2010

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Rural Electrification Phase I Project of the Rural Electrification (APL) Program</i>	<i>P075531</i>	<i>FY2006</i>	<i>13.75 WB loan</i>
<i>Lao Rural Electrification Project – Phase II</i>	<i>P110978</i>	<i>FY2010</i>	<i>25.7 WB loan</i>

P120983 - Stimulating SMEs for Productive Use of Electricity: Following the first support, ESMAP further funded a second technical assistance activity, aimed at supporting SMEs to increase income-generating services that are linked to the use of electricity. The activity was integrated as a sub-component of the Rural Electrification Project II (REP II).

The activity team, in close collaboration with a unit of the national electricity utility (EdL), the electricity department of the Ministry of Energy and Mineral Resources, and district government representatives, conducted a market analysis of current businesses and services, as well as major agro-processing and other income-generating activities in six selected provinces connected to grid-based electricity and in 10 rural villages with off-grid power supply. The vast majority of the business owners surveyed recognized the potential for expanding their enterprises with electricity access, but pointed out critical challenges they faced to do so. Based on this feedback, the team proposed measures to promote productive uses of electricity. The proposed measures include educating consumers, providing technical assistance, helping business owners access financing and credit, and facilitating

business investment and expansion. The measures also highlighted the important role that the national electricity utility company (EdL) can play in implementing the measures.

The activity has also contributed to increase the capacity of the EdL. Prior to the activity, EdL was interested in promoting productive uses of electricity but was lacking the required capacity. After the activity, EdL has acquired the required skills because of its closed involvement in carrying out the market analysis and developing the recommendations. EdL is now well equipped to implement measures promoting productive uses of electricity in its rural service areas.

A2.4.3. Latin America and Caribbean Region

ESMAP ACTIVITY: STRENGTHENING SMALL-SCALE OFF-GRID ENERGY SUPPLIERS (P105119)			
COUNTRY: BOLIVIA FISCAL YEAR: 2007-09 STATUS: COMPLETED			
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR:	
		<ul style="list-style-type: none"> EXISTING OPERATIONS INFORMED MOBILIZATION OF NON-BANK RESOURCES INFORMED 	
<p>Before the ESMAP-funded activity was initiated, the <i>Decentralized Infrastructure for Rural Transformation Project (IDTR)</i>, financed by the World Bank, was under implementation. The project included a solar PV market development sub-component to improve access to electricity in rural areas.</p> <p>The ESMAP-funded activity complemented the IDTR project. It assessed IDTR's solar home systems model and drew lessons that were incorporated in revised medium-term service contracts, used to involve SMEs to supply solar home systems to households. It also assisted the government in developing a new market for "Pico-PV"-powered (5-20 Wp) lighting kits, targeting the rural poor.</p> <p>In addition, the activity assisted in designing a pilot project to disseminate 3000 Pico-PV systems, which was proposed to and later funded by GPOBA, leveraging \$5.4 million.</p>			
WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
<i>Bolivia Decentralized Infrastructure for Rural Transformation Project</i>	<i>P073367</i>	<i>FY2003</i>	<i>20 WB loan</i>
Impacts of World Bank loan influenced by ESMAP activity			
<ul style="list-style-type: none"> 10,174 PV systems installed 6 medium-term service contracts for SHS awarded and signed New regulatory framework for rural electrification and ICT enacted 			

ESMAP ACTIVITIES:	
WOODFUELS: PROMOTING EFFICIENT STOVES (P103968)	
COUNTRY: HAITI FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
ESMAP - DECENTRALIZED ENERGY SERVICES (P095153)	
COUNTRY: HAITI FISCAL YEAR: 2005-2010 STATUS: COMPLETED	
TECHNICAL ASSISTANCE HOUSEHOLD AND OTHER ENERGY SECTOR (P125192)	
COUNTRY: HAITI FISCAL YEAR: 2011- STATUS: ONGOING	
OUTCOME : POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT STRATEGY / POLICY INFORMED
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>The three ESMAP activities have influenced policy dialogue on household energy in Haiti under a potential energy infrastructure access project, which did not get formalized but was discussed with the government: <i>Haiti Rebuilding Energy Infrastructure and Access Project (P127203)</i>.</p> <p><u>Woodfuels - Promoting Efficient Stoves:</u> The activity piloted improved cook stoves dissemination, designed based on recommendations from a "Strategy to Alleviate the Pressure of Fuel Demand on National Wood Fuel Resources", which was prepared with ESMAP's previous support.</p> <p><u>ESMAP - Decentralized Energy Services:</u> The cookstoves dissemination pilot was followed up with an ESMAP-</p>	

funded reconnaissance mission in Haiti to draw lessons from the pilot and explore follow-up support. Based on the mission findings, a preliminary follow-up program was developed and discussed with the LCSEG, the energy unit of the LAC region. The discussions led to LCSEG preparing a follow-up technical assistance to the Haitian Ministry of Public Works, Transport and Communication (MTPTC).

Technical Assistance household and other energy sector: The technical assistance to MTPTC aims to develop energy sector policies and investment operations focusing on capacity development, household energy, and planning. Although the assistance is still ongoing, it provided MTPTC with coordinators on household energy and rural electrification, who are key members of a team preparing an investment project-Haiti Rebuilding Energy Infrastructure and Access Project- to be partly financed by the World Bank. The project’s integrated safeguards data sheet (ISDS) mentioned that the sub-component to strengthen Haitian government’s oversight of the energy sector will be carried out in coordination with ESMAP-funded TA.

Besides the influence on the preparation of the World Bank project, ESMAP-supported activities have informed the preparation of an energy strategy paper. The lessons learned from the stoves dissemination pilot and the strategy to reduce wood fuel demand informed the inclusion of household energy interventions into a post-earthquake energy strategy paper prepared jointly by USAID, IDB, and World Bank. The paper was presented to and adopted by the Government of Haiti.

Direct impacts of ESMAP-supported activity. The cookstoves dissemination pilot resulted in 11,000 improved cookstoves sold by local SMEs in Haiti.

ESMAP ACTIVITY: TECHNICAL ASSISTANCE FOR IMPROVED SMALL-SCALE ENERGY SUPPLY (P103865)	
COUNTRY: NICARAGUA FISCAL YEAR: 2007-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: GOVERNMENT POLICY / STRATEGY INFORMED
The activity analyzed a new market segment for lanterns powered by PV modules from 5 to 20 Wp and found a strong demand for two types of lanterns costing between US\$20 and US\$50. It also indicated that financing barriers could be overcome by tapping into existing rural micro-finance institutions. The study’s findings on potential demand of solar PV lanterns were useful and timely. It informed the development of the national electrification and renewable energy program led by the Ministry of Energy and Mines was developing.	

ESMAP ACTIVITY: JOINT INFO-DEV /ESMAP SME ASSESSMENT (P120429)	
COUNTRY: NICARAGUA FISCAL YEAR: 2010-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: DEVELOPMENT COMMUNITY/PARTNER POLICY/STRATEGY INFORMED
The original activity scope was to assess opportunities to develop and strengthen SMEs providing renewable energy services in Nicaragua, and if opportunities exist, to establish a business incubator to support renewable energy SMEs. The assessment concluded that it was premature to establish a business incubator. With this increased knowledge, the activity team and their key partners decided to not establish the initially planned business incubator.	

ESMAP ACTIVITY: PROMOTION OF PRODUCTIVE USES OF ELECTRICITY (P123643)	
COUNTRY: PERU FISCAL YEAR: 2011- STATUS: ONGOING	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: EXISTING OPERATIONS INFORMED
The ESMAP-supported activity was initiated when the World Bank-financed First Rural Electrification project was being implemented and the Second Rural Electrification project was being prepared. The First Rural Electrification project includes a pilot to promote productive uses of electricity in rural areas. The pilot implementation resulted in 1,466 families adopting electric equipment to process cereals, coffee, cocoa, baked goods, meat products, milk, wood, and metal products in villages near Curzo, a city in southeastern Peru.	
ESMAP support aimed to sustain, scale-up, and replicate the Curzo pilot. The support served to hire an international expert in productive uses of electricity, who worked with the agency implementing the First Rural Electrification project and NGOs contracted to promote productive uses of electricity. The ESMAP-supported activity has increased the capacity of the agency implementing the First Rural Electrification (RE) project. The	

expert's assistance enabled the agency to: (i) standardize reporting frameworks for the NGOs; (ii) review and revise the methods used by NGOs to identify potential productive activities and reach out to potential beneficiaries; (iii) and build channels for knowledge exchange among NGOs.

The expert's work has informed the implementation of the productive uses pilot of the first RE project and influenced the design of the productive uses activities for the second RE project. The expert has helped the implementing agency and NGOs enhanced the provision of services that have resulted in an increased number of home-based enterprises using electrical equipment. Besides, as part of the preparation of the second RE project, the expert proposed ideas to improve the timing and cost-benefit analysis of productive uses activities as well as to involve local governments. These ideas were incorporated in the design of productive uses activities within a component of the Second Rural Electrification project.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
Peru First Electrification Project	P090110	FY2006	10 M GEF
Peru Second Rural Electrification Project	P117864	FY2011	50 M WB loan

Direct impacts of ESMAP-supported activity. The ESMAP-supported pilots to promote productive uses of electricity resulted in over 4,760 families/micro-enterprises adopting electrical equipment to process cereals, coffee, cocoa, baked goods, meat products, milk, wood and metal products, as well as to pump water for expanded agricultural production and processing.

ESMAP ACTIVITY: SMEs Energy Services Delivery in Peru (P104354)

COUNTRY: PERU | FISCAL YEAR: 2007-2009 | STATUS: COMPLETED

OUTCOME: POLICY/STRATEGY INFORMED

INDICATOR: GOVERNMENT STRATEGY / POLICY INFORMED

The activity assessed SME participation in the delivery of rural energy services. The assessment found that incomplete or absent regulatory frameworks restrict the involvement of (i) distribution company services using individual PV systems and (ii) SMEs operating or owning micro and small hydro power networks-in electricity delivery. The findings resulted in regulatory and policies changes. The electricity sector regulator established a tariff band for individual PV systems within the national tariff framework and ruled that electricity distribution companies providing PV systems services were eligible for a cross subsidy to make the service more affordable. Also, the General Directorate for Rural Electrification (DGER) introduced guidelines setting capital cost subsidies for rural electrification from solar PV.

ESMAP ACTIVITY: IMPROVED COOK STOVE FRAMEWORK (P124390)

COUNTRY: CENTRAL AMERICA REGION | FISCAL YEAR: 2011- | STATUS: ONGOING

OUTCOME: DEVELOPMENT FINANCING INFORMED

INDICATOR: MOBILIZATION OF NON-BANK RESOURCES INFORMED

ESMAP is supporting the development of an Improved Cook Stove (ICS) toolkit that assesses technical performance, as well as socioeconomic, gender and cultural aspects of cook stove uses in Central American countries. Although the activity is ongoing, the activity team has already assisted the unit preparing the SREP investment plan for Honduras in defining studies needed to disseminate improved cook stoves successfully. The assistance resulted in the SREP investment plan including a subcomponent to disseminate 50,000 improved cook stoves, under the component 3 of the plan – Sustainable Rural Energization. SREP funding amounts to US\$30 million.

ESMAP ACTIVITY: BENCHMARKING ANALYSIS OF ELECTRICITY DISTRIBUTION CENTER (P110668)

COUNTRY: REGIONAL | FISCAL YEAR: 2008-2009 | STATUS: COMPLETED

OUTCOME: KNOWLEDGE INCREASED

INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS

The activity overhauled an existing database on electricity distribution utilities in the LAC region and added information on new utilities, expanding the database coverage from 70 percent of the electricity connections in the region to 89 percent. The overhauled database provided a clearer status of the electricity sector in LAC and allowed for a more meaningful comparison of utility performance across and within LAC countries. A broad audience used the database including electricity distribution utilities, World Bank TTLs, PH. D students, and government officials. For instance, the Government of India requested and was granted access to use the database

to benchmark Indian electricity utilities.

A2.4.4. South Asia Region

ESMAP ACTIVITY: ADDRESSING INDOOR AIR POLLUTION (P083898)	
COUNTRY: BANGLADESH FISCAL YEAR: 2008-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICES WITH CLIENTS
<p>This ESMAP-supported study reviewed ongoing household energy programs in Bangladesh and international experiences on improved stoves; drew lessons from successful interventions in the sanitation sector; and offered recommendations for developing a large-scale improved cook stoves program in Bangladesh. The study's findings were disseminated at two workshops attended by government officials, practitioners, entrepreneurs, and representatives of donors and NGOs. The findings were used as part of the development of a household energy program in Bangladesh.</p>	

ESMAP ACTIVITY: ASSESSING THE SOCIAL IMPACTS OF RURAL ENERGY (P111242)	
COUNTRY: NEPAL FISCAL YEAR: 2008- 2010 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: MONITORING AND EVALUATION CAPACITY STRENGTHENED
<p>Prior to the ESMAP-supported activity, the Nepalese Alternative Energy Promotion Center (AEPCC), the primary institution dedicated to develop and promote renewable and alternative energy technologies, was facing growing pressure to demonstrate results of its renewable energy program funded by various multilateral and bilateral agencies. ESMAP supported the AEPCC to develop a web-based monitoring and evaluation system and train the AEPCC's M&E cell on how to use the system. The developed M&E system helps the AEPCC to report program's outputs and impacts on households and businesses and to make informed decisions as well as devise appropriate solutions. At the activity completion, AEPCC was equipped with not only a state-of-the-art monitoring system to track progress and demonstrate the impacts of its programs but also with trained staff who can sustainably manage and update the system, as required.</p>	

A2.4.5. Global

ESMAP ACTIVITY: WORK ON GENDER AND YOUTH IN EI (P104135)	
COUNTRY: GLOBAL FISCAL YEAR: 2007-2011 STATUS: COMPLETED	
OUTCOME: DEVELOPMENT FINANCING INFORMED	INDICATOR: PREPARATION OF EXISTING AND NEW OPERATION INFORMED
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK COUNTRY STRATEGY INFORMED

ESMAP's grant contributed partially to implement the Gender and Extractive Industries Program of the World Bank's Oil and Mining Unit (SEGOM). The grant supported the publication of key analytical and operational products including: (i) *Gender-Sensitive Approaches for the Extractive Industry in Peru*, (ii) *Gender dimensions of the Extractive Industries*, and (iii) *Mainstreaming Gender into Extractive Industries Projects - Guidance Note for TTLs*. The *Guidance Note* provides a consistent and structured approach to identifying gender-sensitive activities during project design and preparation.

The guidance note has influenced the design of gender-sensitive activities for mining projects approved since FY08 including the following four projects:

1. **Papua New Guinea – Second Mining Sector Institutional Strengthening TA:** The project's component 2 will build capacity of a women technical group to implement the National Women-in-Mining Action Plan in collaboration with the Mineral Resources Authority.
2. **Tanzania - Sustainable Management of Mineral Resources:** Gender-sensitive activities are included in two sub-components: (i) Extension Services for Artisanal and Small-scale Mining communities and (ii) Environmental and Social Management.
3. **Mongolia – Mining Sector Technical Assistance Project:** The project supports gender-sensitive reforms in the mining sector to protect women from discrimination and promote employment equity.
4. **Democratic Republic of Congo -Growth with Governance in the Mineral Sector:** The project includes activities to facilitate gender inclusion in mining benefit sharing and to pilot innovative approaches to gender and child labor issues under component D.

In Papua New Guinea (PNG), the work on gender and extractive industries, supported by ESMAP, influenced the development of a national, women-in-mining action plan. The development of this plan was well received and appreciated by several stakeholders. It resulted in the 2008-11 country assistance strategy indicating that gender is one the two cross-cutting themes of World Bank's PNG portfolio. The strategy also mentions that the World Bank will support the implementation of the women-in mining action plan to improve the positive impacts of mining, while reducing the negative impacts of extractive industries operations on women, children and youth.

WB Lending Operation Informed	Project ID	Approval FY	Amount (US\$)
Papua New Guinea - Second Mining Sector Institutional Strengthening TA	P102396	FY2008	17 WB loan
Tanzania - Sustainable Management of Mineral Resources	P096302	FY2009	50 WB loan
Mongolia – Mining Sector Technical Assistance Project	P108768	FY2008	9.3 WB loan
Democratic Republic of Congo - Growth with Governance in the Mineral Sector	P106982	FY2011	50 WB loan

ESMAP ACTIVITY: GENDER AND ENERGY (P109952)

COUNTRY: GLOBAL | **FISCAL YEAR:** 2008-2009 | **STATUS:** COMPLETED

OUTCOME: POLICY/STRATEGY INFORMED

INDICATOR: BANK SECTOR STRATEGY INFORMED/INFLUENCED

ESMAP organized a 2-day horizon scanning and planning workshop in May 2008 comprised of World Bank energy task team leaders. The key findings and recommendations of that workshop and preparatory analysis led to the **Gender and Energy Development Strategies (GEDS) Program**, which is a key component of the Business Plan FY08-13. This program was developed on feedback from energy team leaders who requested "just in time assistance" and need greater support on the evidence and approaches of integrating gender into ongoing and future operations. This feedback now forms the basis of the Gender and Energy program which aims to develop traction on the ground by contributing to the on-going programs and enhancing client capacity through the i) *regional ii) thematic, and iii) knowledge sharing and outreach activities.*

ESMAP ACTIVITY: GENDER & ENERGY AND DEVELOPMENT STRATEGIES PROGRAM (P123004) COUNTRY: GLOBAL FISCAL YEAR: 2011- STATUS: ONGOING															
3A: GENDER AND ENERGY (P116908) (FUNDED BY AFREA AND ESMAP) COUNTRY: GLOBAL FISCAL YEAR: 2010 - STATUS: ONGOING															
OUTCOME: DEVELOPMENT FINANCING INFORMED		INDICATOR:													
		<ul style="list-style-type: none"> • PREPARATION OF EXISTING AND NEW OPERATIONS INFORMED • MOBILIZATION OF NON-BANK RESOURCES INFORMED 													
OUTCOME: CLIENT CAPACITY INCREASED		INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED													
<p>In Senegal, the joint AFREA-ESMAP Gender & Energy team assisted the World Bank team preparing the second phase of the Senegal - Second Sustainable and Participatory Energy Management project (PROGEDE I) in drawing the lessons learned from the first phase of the project and recommending future gender-sensitive activities. The recommended activities were included in the design of the project's second phase (PROGEDE II), which is financed by the World Bank. The project development objective explicitly states gender equality: <i>"the project development objective is to contribute to increase the availability of diversified household fuels in a sustainable and <u>gender equitable</u> way, and to contribute to increase the income of participating communities while preserving the forest ecosystems."</i></p> <p>In Mali, the Gender & Energy operational support resulted in the Household Energy and Rural Electrification Agency (AMADER) formally establishing a gender desk within its organizational structure to better mainstream gender in its operations. The AFREA/ESMAP-funded Africa Gender & Energy program has been assisting AMADER in assessing the gender dimensions of the World Bank-financed Household Energy & Universal Access Project, and in preparing an action plan. The assistance resulted in the inclusion of gender impact assessment in the additional financing for the Household Energy and Universal Access Project.</p> <p>Besides ESMAP influence in the additional financing, the action plan, prepared under the gender & energy program, identified gender-sensitive activities and some of those activities have been included in an investment plan prepared for funding by the Scaling up Renewable Energy Program (SREP), one of the financing windows under the Climate Investment Funds.</p>															
<table border="1"> <thead> <tr> <th><i>WB Lending Operation Informed</i></th> <th><i>Project ID</i></th> <th><i>Approval FY</i></th> <th><i>Amount (US\$)</i></th> </tr> </thead> <tbody> <tr> <td><i>Second Sustainable and Participatory Energy Management Project (PROGEDE II)</i></td> <td><i>P120629</i></td> <td><i>FY2010</i></td> <td><i>15 M WB loan</i></td> </tr> <tr> <td><i>Additional Financing for the Mali Household Energy and Universal Access Project</i></td> <td><i>P111018</i></td> <td><i>FY2008</i></td> <td><i>8.5 M WB loan</i></td> </tr> </tbody> </table>				<i>WB Lending Operation Informed</i>	<i>Project ID</i>	<i>Approval FY</i>	<i>Amount (US\$)</i>	<i>Second Sustainable and Participatory Energy Management Project (PROGEDE II)</i>	<i>P120629</i>	<i>FY2010</i>	<i>15 M WB loan</i>	<i>Additional Financing for the Mali Household Energy and Universal Access Project</i>	<i>P111018</i>	<i>FY2008</i>	<i>8.5 M WB loan</i>
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<p>Other investment informed: SREP investment plan in Mali (\$40 M) Impacts of WB loan influenced by ESMAP Mali:</p> <ul style="list-style-type: none"> • 18,525 households and a total of 416 schools, health centers, and other municipal institutions connected to electricity in Mali • 408,755 improved cookstoves purchased by households • 16 new private operators providing electricity in rural areas 															

ESMAP ACTIVITY: GENDER & ENERGY DEVELOPMENT (P119673) COUNTRY: GLOBAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: CLIENT CAPACITY INCREASED	INDICATOR: IMPLEMENTATION CAPACITY STRENGTHENED
<p>The activities , implemented in partnership with SDV, involved a number of knowledge exchange events, including a three-day workshop on Energy and Gender for South Asia, which was attended by World Bank energy staff and over 50 government officials from Bangladesh, India, Pakistan, Nepal, and Sri Lanka. During the workshop, government officials developed gender action plans for mainstreaming gender in their respective energy portfolios. 86% of the workshop participants rated the usefulness of the information provided good to excellent.</p>	

ESMAP ACTIVITY: MODERNIZING ENERGY SERVICES FOR THE POOR (P112370)	
COUNTRY: GLOBAL FISCAL YEAR: 2009-2009 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED
<p>To support the World Bank's efforts to scale up access to modern energy, ESMAP reviewed over 500 World Bank energy access-related projects approved between the fiscal years 2000 and 2008. The review, published in December 2010, found that only about 1 percent of the energy lending was dedicated to promote transition to more modern cooking fuels, a strong signal that more needs to be done in the household energy sub-sector (biomass energy and cooking fuels). The review's findings provided the analytical basis for two subsequent papers: (1) an "issues and approach" paper issued by AFTEG and (2) "Household Energy Access for Cooking and Heating: Lessons Learned and Way Forward", a background paper to the World Bank Energy Strategy. It provided the rationale for a renewed World Bank engagement in the household energy sector.</p>	

ESMAP ACTIVITY: HOUSEHOLD ENERGY PAPER – LESSONS LEARNED (P121383)	
COUNTRY: GLOBAL FISCAL YEAR: 2011-2012 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: BANK SECTOR STRATEGY INFORMED
<p>ESMAP-supported study released a report entitled <i>Household Energy Access for Cooking and Heating: Lessons Learned and Way Forward</i>. The report reviews experiences from World Bank's projects and programs as well as from governments and bilateral organizations; draws lessons learned; and proposes what the World Bank and partners can do to scale-up access to sustainable and cleaner cooking fuels and stoves. The report stimulated debate on how the World Bank' can help mainstream household energy in its lending. It contributed to the inclusion of "household energy" as a key business line within the fiscal year 2012 work program of the World Bank's Sustainable Energy Department.</p>	

ESMAP ACTIVITY: REVIEW OF STRATEGIES FOR SUSTAINABLE PRODUCTION OF COMMERCIAL FUEL WOOD (P114371)	
COUNTRY: GLOBAL FISCAL YEAR: 2009-2010 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: PUBLIC DEBATE STIMULATED/INITIATED
<p>The activity compiled best practices from community-based, forest management approaches that involved small and medium enterprises to serve as a reference guide to wood energy project designers and developers around the world, and will be based on the long term experience from the World Bank Village Based Natural Resources Management in Africa, and also WB supported Forest Replacement Associations in Latin America. The findings of this report were presented at the XIII World Forest Congress in Buenos Aires in October 2009 and have been disseminated through the ESMAP and World Bank websites. An article based on the review has been published in the Household Energy Network journal.</p>	

ESMAP ACTIVITY: ECONOMIC BENEFITS OF ELECTRICITY SUPPLY (P116227)	
COUNTRY: GLOBAL FISCAL YEAR: 2010-2011 STATUS: COMPLETED	
OUTCOME: KNOWLEDGE INCREASED	INDICATOR: FACILITATED EXCHANGE OF BEST PRACTICE WITH PARTNERS
<p>The activity studied the economic benefits associated with improved access to electricity. It suggested better understanding of the drivers for energy demand to improve design of electrification investments and was discussed internally during review meetings with plans to further research results and recommendations. The study offered policy recommendations for preparing electricity access investments and pointed out the methodology limitations of using consumer surplus to measure economic benefits of electricity access to help inform energy planning.</p>	

ESMAP ACTIVITY: EVALUATION OF RURAL ELECTRIFICATION (P111450)	
COUNTRY: GLOBAL FISCAL YEAR: 2008-2011 STATUS: COMPLETED	
OUTCOME: POLICY/STRATEGY INFORMED	INDICATOR: PUBLIC DEBATE STIMULATED/INITIATED
<p>The activity involved supporting the World Bank energy project teams in Bangladesh, Nepal, Kenya, and Peru to monitor and evaluate the impacts of their projects. The activity team trained and advised the Bangladeshi Rural Electrification Board and the Nepalese AEPC on M&E development and impact evaluation. It further assessed impacts of rural electrification projects in Bangladesh, studied welfare impacts of micro-hydro projects in Nepal,</p>	

and conducted a feasibility study for impacts evaluation in Kenya. Several papers are published as working papers in the Bank with one of the papers accepted for publication in the Energy Policy Journal.

A2.4.6. Energy Access Activities with Limited or Unobserved Results

ESMAP ACTIVITY: DECISION TOOL - PV FOR COMMUNITY SERVICE (P118980)
COUNTRY: REGIONAL – AFR | **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

The activity developed a decision toolkit to facilitate an effective design and implementation of off-grid solar PV projects to power households, health clinics, schools, and low-lift water pumps. The toolkit was presented at a workshop organized by the Africa Electrification Initiative in November 2011 in Dakar, Senegal. It will be disseminated at AEI future workshops. Since the activity is still under dissemination, it is too early to observe major impacts.

ESMAP ACTIVITY: ECONOMICS OF CONNECTING THE POOR TO NATURAL GAS (P111466)
COUNTRY: REGIONAL - ECA | **FISCAL YEAR:** 2009-2009 | **STATUS:** COMPLETED

ESMAP supported a study on the economic and financial viability of connecting poor and low income households to natural gas in Serbia, Bosnia & Herzegovina, and Macedonia. The study highlighted barriers and options for connecting vulnerable groups to natural gas. Information on impacts was not found.

ESMAP ACTIVITY: IDENTIFYING TRADITIONAL AND NON-TRADITIONAL MECHANISMS FOR REACHING THE POOR IN INFRASTRUCTURE SERVICES (P110667)
COUNTRY: REGIONAL – LAC | **FISCAL YEAR:** 2008-2009 | **STATUS:** COMPLETED

The study report documented traditional and non-traditional mechanisms for enabling access to affordable infrastructure services. The report contains case studies and lessons learned from experiences where selected mechanisms were used at a community, utility, and country level. It provides information to clients seeking to expand the coverage of infrastructure coverage. Information on impacts was not found.

ESMAP ACTIVITY: IDENTIFICATION AND TESTING OF INPUTS FOR ENHANCED ELECTRICITY ACCESS PACKAGE (P100860) FUNDED BY AFREA)
COUNTRY: REGIONAL – AFR | **FISCAL YEAR:** 2006-2009 | **STATUS:** COMPLETED

The activity assessed the impacts of rural electrification on productive uses of electricity in selected villages in Benin, Nigeria, and Uganda. The assessment was conducted in close collaboration with GTZ, who provided funding and expertise. A preliminary draft report was prepared, peer-reviewed and is being revised. The report is set for publication in FY13.

ESMAP ACTIVITY: ESMED ENERGY ACCESS FOR URBAN POOR - CA (P120447)
COUNTRY: GLOBAL | **FISCAL YEAR:** 2010-2012 | **STATUS:** COMPLETED

This activity helped develop a work plan to address limited access to modern energy services by slum dwellers and peri-urban populations. The activity's first phase studied energy access issues in three slums in Ghana and prepared eight case studies documenting innovative approaches to increasing access to electricity and cooking fuels for slums in Bangladesh, India, Brazil and Colombia. The second phase organized online and face-to-face consultations to develop an action plan. It is still too early to determine results for this activity.

ESMAP ACTIVITY: HOUSEHOLD ENERGY & UNIVERSAL ACCESS (P073036) (FUNDED BY AFREA)
COUNTRY: MALI | **FISCAL YEAR:** 2010- | **STATUS:** ONGOING

The activity helped strengthen energy services delivery schemes in rural and peri-urban areas in Mali as part of Component 2 of the Household Energy and Universal Access (HEURA) Project. Within the HEURA project, AFREA funds were earmarked to promote the wider use of clean, renewable energy technologies in off-grid electrification schemes managed by local private energy service companies under the supervision of Mali's Household Energy and Rural Energy Service Agency, AMADER. . It is still too early to determine results for this activity.

A2.4.5. Ongoing Energy Access Activities

<p>ESMAP Activity: ENHANCING THE CLIMATE RESILIENCE OF GROWTH (P117818) (FUNDED BY AFREA)</p> <p>COUNTRY: NIGERIA FISCAL YEAR: 2011- STATUS: ONGOING</p> <p>The activity will identify low-carbon development options in Nigeria’s energy sector, evaluate their economic feasibility, estimate the financial and institutional needs to implement the low-carbon options, and strengthen capacities on low-carbon planning. The activity is still ongoing.</p>
<p>ESMAP Activity: CATALYZING NEW RENEWABLE ENERGY IN RURAL LIBERIA (PHASE2) (P118439) (FUNDED BY AFREA)</p> <p>COUNTRY: LIBERIA FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The activity constitutes the second phase of the AFREA grant that resulted in the establishment of the Rural Renewable Energy Agency in Liberia. The grant agreement launching the activity was signed on March 15, 2011 and implementation is ongoing.</p>
<p>ESMAP Activity: MODERNIZING BIOMASS ENERGY SERVICES IN BENIN (P110075) (FUNDED BY AFREA)</p> <p>COUNTRY: BENIN FISCAL YEAR: 2012 - STATUS: ONGOING</p> <p>The activity complements the biomass component of the World Bank-financed Increased Access to Modern Energy Project in Benin. Its objective is to increase access to cleaner cooking stoves, support the efficiency of biomass use, and promote non-wood income generating activities. It is too early to observe the activity outcomes. The activity’s implementation began on November 09, 2011, when the grant agreement was signed. It is ongoing.</p>
<p>ESMAP Activity: DIRECT DELIVERY OF POWER SUBSIDY (P122107)</p> <p>COUNTRY: INDIA FISCAL YEAR: 2011- STATUS: ONGOING</p> <p>This ESMAP-supported study seeks to assess opportunities to introduce an alternative system for delivering power and subsidy to farmers in India. The study is ongoing.</p>
<p>ESMAP Activity: CLEAN COOKING INITIATIVE FOR AFRICA (P127726)</p> <p>COUNTRY: REGIONAL – AFR FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>The Africa Clean Cooking Initiative (ACCI) is ongoing with the objective to promote enterprise-based, large-scale dissemination and adoption of clean cooking solutions in Sub-Saharan Africa in order to improve access to clean household energy, and make biomass use and supply more sustainable for women and men.</p>
<p>ESMAP Activity: ECONOMICS OF HOUSEHOLD ENERGY (P127216)</p> <p>COUNTRY: ESMAP/GLOBAL FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>This activity is ongoing and will analyze the economics of household energy use and interventions for cooking. The study aims to better inform decision making, policy dialogue, and interventions on access to clean cooking technologies and fuels. The activity will develop a framework for analyzing costs and benefits associated with household energy use patterns and interventions. The adoption of such a framework would facilitate the identification and design of sound household energy interventions, paving the way for increased access to clean cooking solutions.</p>
<p>ESMAP Activity: CLEAN COOKSTOVES MAPPING (P127219)</p> <p>COUNTRY: ESMAP/GLOBAL FISCAL YEAR: 2012- STATUS: ONGOING</p> <p>This activity is ongoing. ESMAP has a strategic partnership with the Global Alliance on Clean Cookstoves to contribute to the objective of disseminating 100 million clean cookstoves by 2020. ESMAP is contributing to this goal by, among other things, developing a mapping report that will serve as a primer for a broad cross-sector audience including government, non-governmental agencies, foundations, donors, and private sector constituents including social entrepreneurs and traditional investors. The report aims to broadly map the global clean cookstove sector bringing together the key challenges, solutions and barriers currently preventing clean cookstoves and fuels being adopted at scale.</p>

ESMAP ACTIVITY: DEFINING AND MEASURING ACCESS TO ENERGY (P129411)

COUNTRY: ENERGY ANCHOR/GLOBAL | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

This activity is ongoing and aims to develop a framework for defining and measuring energy access that is accepted within the World Bank and among partner agencies. This framework aims to enable better informed decision-making and performance measurement on policies, regulations and investment strategies for energy access. An intermediate outcome of this activity would be a broad consensus among international agencies on defining and measuring energy access, achieved through a participatory process.

ESMAP ACTIVITY: HOUSEHOLD ENERGY GUIDANCE NOTE (P129095)

COUNTRY: ENERGY ANCHOR/GLOBAL | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

This activity aims to develop an operational guidance note on household energy access to help mainstream household energy access in both World Bank and country operations. It is expected that a broad dissemination of the note will facilitate the preparation of household energy access interventions.

ESMAP ACTIVITY: BIOMASS-BASED DISTRICT HEATING (P130977)

COUNTRY: REGIONAL-AFR | **FISCAL YEAR:** 2012- | **STATUS:** ONGOING

This TA activity aims to advise Belarus on the following two main subjects: (i) increasing the use of renewable biomass in selected towns in Belarus and (ii) improving energy efficiency of heat generation, transmission and distribution in the same towns. The review and analysis is ongoing.

ANNEX 3 | SUMMARY OF ACTIVITIES COVERED IN PORTFOLIO REVIEW, BY OUTCOME TYPE

The following pages provide templates listing all ESMAP activities by country, region and project ID under each of the four themes. There are five columns, one for each of the outcomes shown below. The number on each box refers to the specific indicator related to the outcome. For example, a number 1.1 on the “Development Financing Informed” column corresponds to indicator 1.1 (Preparation of new preparation informed) under outcome 1 (Development Financing Informed).

1. Development Financing Informed

- 1.1 Preparation of new operation informed
- 1.2 Existing operations informed
- 1.3 Mobilization of non-Bank resources informed
- 1.4 Government expenditure informed

2. Policy/strategy Informed

- 2.1 Government policy/strategy informed
- 2.2 Public debate stimulated/initiated
- 2.3 Contributed to stakeholder involvement
- 2.4 Dev't community strategy informed
- 2.5 Bank country strategy (CAS/CPS) informed
- 2.6 Bank sector strategy informed/influenced

3. Client Capacity Increased

- 3.1 Design capacity increased
- 3.2 Implementation capacity strengthened
- 3.3 Monitoring & Evaluation capacity increased
- 3.4 Clients are recognized with good practice awards

4. Knowledge Increased

- 4.1 Facilitated exchange of best practice with clients
- 4.2 Facilitated exchange of best practice with partners
- 4.3 Disseminated best practices

5. Innovative Approaches & Solutions Generated

- 5.1 New innovative approach fostered
- 5.2 New innovative approach developed
- 5.3 Client is able to adopt/harness new technologies,

Program	Project ID	Title	Country	Theme	Initial FY	Completion FY	Total Allocation	1. Development Financing Informed	2. Policy Strategy informed	3. Client Capacity Increased	4. Knowledge Increased	5. Innovative approaches & solutions generated
ESMAP	P118730	CSP: Regulatory and Financial Incentives	World	Clean Energy	2010	2011	308,945					
ESMAP	P105702	BR CCH Low Carbon Country Case Study	Brazil	Clean Energy	2007	2011	1,054,721	1.1	2.1	3.1		5.2
ESMAP	P123227	Evaluation of the Incentive Mechanism fo	China	Clean Energy	2011	2012	99,891		2.1			
ESMAP	P129323	SIDS Energy Innovation Fund	World	Clean Energy	2012	ongoing	100,000					
ESMAP	P123137	Adaptation Knowledge Dissemination	World	Clean Energy	2011	2012	73,312				4.2	
ESMAP	P127871	CN - Capacity Building for Smart Grid	China	Clean Energy	2012	ongoing	100,000					
ESMAP	P129835	Defining and Measuring Low-carbon Cities	China	Clean Energy	2012	ongoing	50,000					
ESMAP	P129247	LB-ESMAP Wind Power Development Study	Lebanon	Clean Energy	2012	ongoing	70,965					
ESMAP	P127938	Smart Grids Guidebooks	World	Clean Energy	2012	ongoing	50,000					
ESMAP	P118280	CA Prog. Study V: Promoting Geothermal	Central Amer	Clean Energy	2010	ongoing	203,996					
ESMAP	P117870	MX Renew. Energy Assistance Program	Mexico	Clean Energy	2010	2012	832,736	1.1				
ESMAP	P121039	TN-Low Carbon Action Plan for Trp Sector	Tunisia	Clean Energy	2012	ongoing	153,550					
ESMAP	P121716	SERBIA: LOW CARBON ENERGY PATH	Serbia	Clean Energy	2010	ongoing	157,641					
ESMAP	P120040	ET-BEIA-Charcoal	Ethiopia	Clean Energy	2012	ongoing	148,000					
ESMAP	P122591	RY-Renewable Energy Framework	Yemen	Clean Energy	2011	2012	77,769					
ESMAP	P117056	LCCS Knowledge Products	World	Clean Energy	2010	2012	756,811					5.2
ESMAP	P129244	WATERSHED DIALOGUE	Turkey	Clean Energy	2012	ongoing	100,000					
ESMAP	P127143	DJ Geothermal Power Generation Program	Djibouti	Clean Energy	2012	2012	28,305					
ESMAP	P129321	Revolving Fund Options Paper	World	Clean Energy	2012	ongoing	83,473					
ESMAP	P123996	China Low Carbon Cities - SDN edited bk	China	Clean Energy	2012	2012	50,000					
ESMAP	P123139	Energy Adaptation Country Briefs	World	Clean Energy	2011	2012	49,263					
ESMAP	P130999	Renewable Energy Project Design	Indonesia	Clean Energy	2012	2012	50,000					
ESMAP	P129318	Virtual Network to Support SIDS Dock Pla	World	Clean Energy	2012	ongoing	100,000					
ESMAP	P127169	Clean energy staff training and knowledg	World	Clean Energy	2012	ongoing	110,000					
ESMAP	P125368	Geothermal Handbook	World	Clean Energy	2011	2012	68,164				4.2	
ESMAP	P127172	Clean energy publications	World	Clean Energy	2012	ongoing	150,000					
ESMAP	P115745	ID: Geothermal Risk Mitigation Framework	Indonesia	Clean Energy	2011	ongoing	162,500	1.1				
ESMAP	P127170	Climate vulnerability in the energy sect	World	Clean Energy	2012	ongoing	160,000					
ESMAP	P120042	UG-BEIA-Bioelectricity	Uganda	Clean Energy	2012	ongoing	150,000					
ESMAP	P119536	IN: CSP-Renew Egy Mkt Transformation I	India	Clean Energy	2010	ongoing	799,676			3.1		
ESMAP	P121622	Low carbon development in power sector	World	Clean Energy	2010	2012	250,000					
ESMAP	P112371	Renewable Development and Market Reform	Philippines	Clean Energy	2009	2012	645,903	1.1	2.1	3.1		
ESMAP	P126747	3A-Road to Durban-Energy Ministers Event	Africa	Clean Energy	2011	2012	174,123				4.1	
ESMAP	P113684	SM-Regional Solar Power Initiative	Middle East a	Clean Energy	2009	ongoing	1,425,494	1.1				
ESMAP	P127168	Energy sector low carbon development/Tools	World	Clean Energy	2012	ongoing	340,000	1.1				
ESMAP	P099005	IN: Renwb Egy Inv Climate in India	India	Clean Energy	2006	2011	195,046					
ESMAP	P109969	PE (CCH)Overcoming Barriers to Hydropwer	Peru	Clean Energy	2008	2011	198,093	1.2			4.1	
ESMAP	P113561	Carbon Accounting	World	Clean Energy	2010	2011	88,829					
ESMAP	P096390	PILOT PROG - CLIMATE ADAPTATION	Europe and C	Clean Energy	2010	2011	71,453					

Program	Project ID	Title	Country	Theme	Initial FY	Completion FY	Total Allocation	1. Development Financing Informed	2. Policy Strategy informed	3. Client Capacity Increased	4. Knowledge Increased	5. Innovative approaches & solutions generated
ESMAP	P118166	ESMAP - Expert Panel (FY10)	World	Clean Energy	2010	2011	299,526				4.2	
ESMAP	P101555	IN: Low Carbon Growth	India	Clean Energy	2007	2011	835,266		2.1	3.1		
ESMAP	P114517	Poland Low Carbon Growth Study	Poland	Clean Energy	2010	2011	260,000		2.1	3.1		
ESMAP	P117917	CN-FY10 Urban Tran. Climate Change Strat	China	Clean Energy	2010	2011	75,000					
ESMAP	P108461	ZA-ESMAP Low Carbon Growth (FY11)	South Africa	Clean Energy	2008	2011	339,066	1.1	2.1			
ESMAP	P121572	RESILIENT CITIES: DECISION-SUPPORT TOOLS	East Asia and	Clean Energy	2011	2011	53,333	1.3				
ESMAP	P103265	Rehabitation of Hydropower Infrastructure	World	Clean Energy	2009	2011	142,611					
ESMAP	P123069	Scaling Up Deployment of RE (various)	World	Clean Energy	2011	2011	133,306				4.2	
ESMAP	P108804	ID - Low Carbon Growth Strategy	Indonesia	Clean Energy	2010	2011	386,234	1.2				
ESMAP	P123072	REMTI - Knowledge Exchange Activities	World	Clean Energy	2011	2011	250,727					
ESMAP	P099006	Private Renewable Power Generation Study	Sri Lanka	Clean Energy	2006	2010	100,561				4.1	
ESMAP	P107150	IR - Promotion of Renewable Energy	Iran	Clean Energy	2008	2010	87,485					
ESMAP	P110548	SEE REGIONAL ENERGY EFFICIENCY & RENEWA	South Eastern	Clean Energy	2009	2010	97,175					
ESMAP	P120449	REMTI Knowledge Exchange (Geothermal)	World	Clean Energy	2010	2010	37,680				4.1	
ESMAP	P107982	REGULATION OF RENEWAL ENERGY	Bulgaria	Clean Energy	2009	2010	159,988		2.1			
ESMAP	P115422	Renewable Energy-Implementing Agencies	Latin America	Clean Energy	2009	2010	87,689			3.2		
ESMAP	P110305	PE Assess. of CC in hydrology	Peru	Clean Energy	2008	2010	205,109				4.3	
ESMAP	P119220	Capacity Building for Renewable Energy	East Asia and	Clean Energy	2010	2010	83,702			3.1		
ESMAP	P120452	REG: Removing Barriers to Hydropower	South Asia	Clean Energy	2010	2010	100,000					
ESMAP	P118293	MX-Promoting Mini-Hydro Potential	Mexico	Clean Energy	2010	2010	105,873				4.3	
ESMAP	P120448	REMTI Coordination & Outreach	World	Clean Energy	2010	2010	106,217				4.1	
ESMAP	P114161	TN-ESMAP Low Carbon Transport Strategy	Tunisia	Clean Energy	2009	2010	149,856	1.1				
ESMAP	P113712	Climate Change - Energy Vulnerability	Europe and C	Clean Energy	2009	2010	191,891				4.2	
ESMAP	P108304	MX (CCH)Low Carbon Development Study	Mexico	Clean Energy	2008	2010	616,415	1.1	2.1	3.2		
ESMAP	P108945	CO Policy Options for Renewables	Colombia	Clean Energy	2008	2009	109,378		2.1			
ESMAP	P103422	PE Small Hydropower	Peru	Clean Energy	2007	2009	130,920		2.1			
ESMAP	P107158	CO Alternative Energy and Bioenergy	Colombia	Clean Energy	2009	2009	89,523		2.1			
ESMAP	P110330	EG Commercial Wind Development Framework	Egypt	Clean Energy	2009	2009	90,465	1.1				
ESMAP	P090657	Regulation of Renewable Energy (ESMAP)	Slovak Repub	Clean Energy	2007	2009	177,568		2.1			
ESMAP	P101999	MZ-Modern Biofuels Assessment (FY09)	Mozambique	Clean Energy	2007	2009	200,462	1.1	2.1			
ESMAP	P113329	Clean Energy Technology Acceleration	World	Clean Energy	2009	2009	125,792		2.6			
ESMAP	P110557	CN-FY09 Urban Tran. Climate Change Strat	China	Clean Energy	2008	2009	159,997	1.1				
ESMAP	P120423	Private and Public Sector Roles	World	EASP	2010	2012	185,137		2.6			
ESMAP	P110201	6C(CCH) Program. Energy Study	Central Amer	EASP	2008	2012	479,767		2.6			
ESMAP	P121712	EG-Cairo Congestion Study	Egypt	EASP	2011	ongoing	70,000					
ESMAP	P118729	Electricity Transmission planning	World	EASP	2010	2012	118,476		2.1		4.1	
ESMAP	P122936	CA Prog. Study 6: energy diversification	Central Amer	EASP	2011	2012	135,400					
ESMAP	P127530	Analytical work on indicators, value-for	World	EASP	2012	ongoing	14,620					
ESMAP	P113129	Power Sector Market Structure	World	EASP	2009	2012	209,677				4.3	
ESMAP	P128157	1W: Synchronization of Mashreq, TR & EU	World	EASP	2012	ongoing	70,000					

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ESMAP	P123636	Philippines Power Sector Strategy Advice	Philippines	EASP	2012	ongoing	295,000	1.1				
ESMAP	P118225	GAS DIALOGUE	Bulgaria	EASP	2012	ongoing	50,000					
ESMAP	P129287	Armenia Power Sector Tariff Study	Armenia	EASP	2012	ongoing	100,000					
ESMAP	P129510	PE TA for Energy Planning	Peru	EASP	2012	ongoing	85,000					
ESMAP	P113836	VN-FY09 Cluster-Infra Policy/Regu Reform	Vietnam	EASP	2010	2012	140,539	1.1				
ESMAP	P116748	ELECTRICITY SUPPLY RELIABILITY	Armenia	EASP	2011	2012	97,680	1.2				
ESMAP	P128881	POWER SUPPLY OPTIONS STUDY	Tajikistan	EASP	2012	ongoing	150,000					
ESMAP	P129821	TN-Strategic Energy Vision TA	Tunisia	EASP	2012	ongoing	125,150					
ESMAP	P102843	IN: Luhri Hydro Electric Project	India	EASP	2011	ongoing	144,525					
ESMAP	P112754	DISTRICT HEATING AAA - BELARUS & UKRAINE	Europe and C	EASP	2011	2012	113,057	1.2				
ESMAP	P110853	JO - Energy Sector TA	Jordan	EASP	2009	2012	174,989					5.1
ESMAP	P122951	Regional Energy Sector Note	Caucasus	EASP	2011	ongoing	223,296					
ESMAP	P119291	Impact of High and Volatile Oil Prices	Latin America	EASP	2010	2012	331,692				4.1	
ESMAP	P122927	UAP-ES ASSESSMENT	Uzbekistan	EASP	2011	2012	100,000					
ESMAP	P122363	5M-AWI Electricity Networks Integration	Middle East a	EASP	2011	2012	181,538					
ESMAP	P122960	NP:Support to Strategic Energy Sector De	Nepal	EASP	2011	2012	166,652	1.1				
ESMAP	P114534	CAPACITY BUILDING FOR ELECTRICITY MARKET	Turkey	EASP	2009	2012	323,691	1.1				
ESMAP	P128535	6L Impacts of HighOil Prices in LCR	Latin America	EASP	2012	2012	100,000					
ESMAP	P123047	MV: Developing a Regulatory Framework	Maldives	EASP	2011	2012	200,000					
ESMAP	P128995	International Expc with PSP Open Access	World	EASP	2012	ongoing	300,000					
ESMAP	P127532	RBF for Energy Sector Development: KP	World	EASP	2012	ongoing	500,000					5.1
ESMAP	P122931	IN: Power Sector Stocktaking	India	EASP	2011	ongoing	411,447		2.1, 2.6			
ESMAP	P122369	REG:South Asia Reg. Energy Studi. Series	South Asia	EASP	2011	2012	310,475					5.2
ESMAP	P121518	Flagship Electricity Tech. Options Assess	World	EASP	2010	2012	713,202					5.2
ESMAP	P120587	REG:SAR Energy Sect. Vulnerability Asses	South Asia	EASP	2010	2011	161,524		2.6			
ESMAP	P110874	ESMAP: SMART METERING	Hungary	EASP	2010	2011	86,429		2.1			
ESMAP	P116206	5M-Assess Energy Sect.Credit Constraints	Middle East a	EASP	2009	2011	69,993	1.1				
ESMAP	P082155	VN-ESMAP-Gas Master Plan	Vietnam	EASP	2007	2011	79,456	1.1	2.1			
ESMAP	P118724	IMPACT OF FINANCIAL CRISIS ON POWER SECT	Europe and C	EASP	2010	2011	126,176					
ESMAP	P116253	Global Energy Assessment; Capacity Build	World	EASP	2009	2011	157,837					
ESMAP	P108579	Regional Power Trade Study (TF055999)	World	EASP	2008	2011	318,696					
ESMAP	P103315	4E-Regional Energy Study	East Asia and	EASP	2007	2011	321,402		2.6			
ESMAP	P112430	LCR Energy Procurement & Auctions	Latin America	EASP	2009	2011	242,427					
ESMAP	P113882	EAP-Phase II (Energy, Env. & Population)	Latin America	EASP	2009	2011	441,975		2.3			
ESMAP	P109169	NOCs Case Studies	World	EASP	2010	2011	290,156		2.1			
ESMAP	P105191	Coal Fired Generation - Energy Eff. Impr	India	EASP	2007	2010	464,811	1.1	2.1	3.2		
ESMAP	P104800	ESMAP: TN-Review of Energy Mgt Policy	Tunisia	EASP	2007	2010	457,867	1.1				
ESMAP	P109700	SSA Downstream Petroleum Efficiency Stud	Africa	EASP	2008	2010	159,401					
ESMAP	P111012	PE Natural Gas Study	Peru	EASP	2009	2010	99,326		2.1			
ESMAP	P111444	VN-Gas Sector Development Framework	Vietnam	EASP	2009	2010	132,186	1.1				

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ESMAP	P109447	3A-ESMAP Inst. Framework Dev.& Cap. Bldg	Africa	EASP	2009	2010	38,673	1.1		3.2		
ESMAP	P119796	MN-Diagnostic of Econ Crisis to Infrast	Mongolia	EASP	2010	2010	35,000					
ESMAP	P106446	MNA-Maghreb Energy Market Study	Middle East a	EASP	2009	2010	65,705	1.1	2.6			
ESMAP	P114377	4M - GMS Power Trade: Policy Support	Mekong	EASP	2009	2010	150,545			3.1		
ESMAP	P110209	GZ-Transport Sector TA	West Bank an	EASP	2009	2010	76,087					
ESMAP	P116216	Maghreb-Vulnerability Assessment MA & TN	Middle East a	EASP	2009	2010	56,501					
ESMAP	P110581	SY - Electricity Sector Strategy	Syrian Arab R	EASP	2008	2010	241,993		2.1			
ESMAP	P108120	ESMAP:MA-Energy Supply Strategy	Morocco	EASP	2009	2010	184,525	1.1				
ESMAP	P114009	6L Electricity Security	Latin America	EASP	2008	2010	278,251					
ESMAP	P119344	Vietnam Financial Impact Assessment 2	Vietnam	EASP	2010	2010	68,711			3.2		
ESMAP	P118014	Impact of Credit Crisis on Energy in LAC	Latin America	EASP	2010	2010	74,097	1.1				
ESMAP	P111861	5M-RY/DJ/GCC Electricity Trade & Intercon	Middle East a	EASP	2009	2010	85,000					
ESMAP	P113903	AWI: 5M-Energy Integration Study	Middle East a	EASP	2009	2010	130,175					
ESMAP	P112552	PPP Options for Electricity Generation	Montenegro	EASP	2009	2010	93,775		2.1			
ESMAP	P105103	ESMAP:SUPPORTING ELECTRICITY MARKET OPER	Turkey	EASP	2007	2010	596,513	1.1		3.2		5.2
ESMAP	P105194	Coal Fired Power Plant - Engy Eff. Reg.	India	EASP	2008	2010	291,504	1.1				
ESMAP	P107067	DJ-Energy Sector Master Plan	Djibouti	EASP	2009	2010	134,841		2.1			
ESMAP	P111245	Environmentally Sustainable Power Dev.	Sri Lanka	EASP	2009	2010	206,577			3.1	4.1	
ESMAP	P111243	IN: Org Trans & PPPs in MSETCL	India	EASP	2009	2010	209,918	1.1		3.2		
ESMAP	P111483	3A-ESMAP Regulating Elec.Trading in SADC	Africa	EASP	2009	2010	299,998			3.1		
ESMAP	P112423	SEE Wholesale Market Opening	South Eastern	EASP	2009	2010	355,677	1.1	2.1			
ESMAP	P099315	3S-ESMAP Indicative Gen & Transm Expans	Southern Afri	EASP	2006	2010	836,302	1.2				
ESMAP	P114643	WAPP Broadband Program Assessment	Africa	EASP	2009	2010	288,006		2.1			
ESMAP	P110294	Sub-Saharan Africa Refinery Study	Africa	EASP	2008	2010	445,028		2.3			
ESMAP	P099257	DROPP3A-ESMAP Oil Supply Logistics&Secur	Africa	EASP	2006	2009	61,526					
ESMAP	P104087	ESMAP:MA-Structuring New Energy Agency	Morocco	EASP	2007	2009	162,243	1.2	2.1			
ESMAP	P105332	ESMAP: THERMAL POWER PLANT REHAB	Ukraine	EASP	2008	2009	104,955		2.1			
ESMAP	P106901	IR - Elec. Pricing & Power Sector Reform	Iran	EASP	2008	2009	85,088					
ESMAP	P115088	Impact of Credit Crisis -- Energy Sector	East Asia and	EASP	2009	2009	89,854	1.1				
ESMAP	P110522	Fuel Price Risk & Power Systems Planning	World	EASP	2008	2009	129,288					
ESMAP	P104888	ESMAP: EG-Design of Load Mgt Program	Egypt	EASP	2007	2009	250,825	1.1				
ESMAP	P107068	EG-Energy Pricing Strategy	Egypt	EASP	2008	2009	464,048	1.1	2.1			
ESMAP	P106041	CN-Generation Pricing, Tradg & Dispatch	China	EASP	2008	2008	45,000					5.2
ESMAP	P120983	Stimulating SME for Productive Use of EI	Lao	Energy Access	2010	2011	182,333	1.1		3.2		
ESMAP	P121306	Africa Energy Access Scale-Up Plan	Africa	Energy Access	2010	ongoing	600,000					4.1
ESMAP	P129095	Household Energy Guidance Note	World	Energy Access	2012	ongoing	90,000					
ESMAP	P129411	Defining and Measuring Access to Energy	World	Energy Access	2012	ongoing	120,000					
ESMAP	P097818	RW - Sustainable Energy Dev. Proj (GEF)	Rwanda	Energy Access	2010	ongoing	4,000,000		2.1			
ESMAP	P130977	Biomass-based District Heating	Belarus	Energy Access	2012	ongoing	239,940					
ESMAP	P107546	RW&KE - ESMAP SWAP Investment & Policy	Africa	Energy Access	2008	ongoing	2,000,000	1.1 // 1.3	2.5			5.2

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ESMAP	P121383	Household Energy Access: Lessons Learned	World	Energy Access	2011	2012	47,800		2.6			
ESMAP	P118980	Decision Tool - PV for Community Service	World	Energy Access	2010	2012	258,632					
ESMAP	P127216	Economics of household energy	World	Energy Access	2012	ongoing	55,000					
ESMAP	P120024	GM-BEIA-Stoves	Gambia, The	Energy Access	2011	ongoing	149,833					
ESMAP	P073036	ML- Household Energy & Univ Access (FY04)	Mali	Energy Access	2010	2012	200,000					
ESMAP	P110075	BJ-Increased Access to Energy SIL	Benin	Energy Access	2012	ongoing	2,200,000					
ESMAP	P119962	BJ-BEIA-Charcoal	Benin	Energy Access	2012	ongoing	90,155					
ESMAP	P127219	Clean cookstoves mapping	World	Energy Access	2012	ongoing	240,000					
ESMAP	P120037	RW-BEIA-Charcoal	Rwanda	Energy Access	2012	ongoing	111,590					
ESMAP	P120029	ZA-BEIA-Stoves	South Africa	Energy Access	2011	ongoing	134,310					
ESMAP	P120035	TZ-BEIA-Charcoal	Tanzania	Energy Access	2011	ongoing	134,815					
ESMAP	P120038	KE-BEIA-Biofuel	Kenya	Energy Access	2011	ongoing	135,744					
ESMAP	P125192	HT TA household and other energy sector	Haiti	Energy Access	2011	ongoing	250,000	1.1				
ESMAP	P118460	AFREA - Liberia Rural Energy (Phase 1)	Liberia	Energy Access	2010	ongoing	1,481,387	1.3		3.2		
ESMAP	P120030	UG-BEIA-Stoves	Uganda	Energy Access	2011	ongoing	150,000					
ESMAP	P124390	CA Improved CookStove Framework	Central Amer	Energy Access	2011	ongoing	184,699	1.3				
ESMAP	P123004	GEDS Program	World	Energy Access	2011	ongoing	258,000	1.1 // 1.3		3.2		
ESMAP	P120478	3A: Renewable Energy Education Project	Africa	Energy Access	2010	ongoing	1,130,000			3.2		
ESMAP	P123643	Promotion Productive Uses Electricity	Peru	Energy Access	2011	ongoing	225,896	1.2		3.2		
ESMAP	P122107	Direct Delivery of Power Subsidy to Agri	World	Energy Access	2011	ongoing	410,000					
ESMAP	P127726	3A: Clean Cooking Initiative for Africa	Africa	Energy Access	2012	ongoing	660,553					
ESMAP	P117818	Enhancing the Climate Resilience of Grow	Nigeria	Energy Access	2011	ongoing	335,000					
ESMAP	P120447	ESMED EGY Access for Urban Poor - CA/IFC	World	Energy Access	2010	2012	936,343					
ESMAP		BJ-Increased Access to Energy SIL (duplicate)	Benin	Energy Access	2012	ongoing	2,200,000					
ESMAP	P116908	3A: Gender and Energy	Africa	Energy Access	2010	ongoing	1,500,000	1.1 // 1.3				
ESMAP	P111018	ML-HEURA Additional Financing	Mali	Energy Access	2012	ongoing	2,000,000					
ESMAP	P110999	3A-ESMAP Afr. Electrification Experience	Africa	Energy Access	2008	ongoing	1,923,001				4.1	
ESMAP		3A: Renewable Energy Education Project (duplicate)	Africa	Energy Access	2011	ongoing	1,130,000					
ESMAP	P116289	Task 3: LA Market Dev. and QA	Africa	Energy Access	2010	ongoing	2,863,630			3.2		
ESMAP	P116419	Biomass Energy Initiative	Africa	Energy Access	2009	ongoing	2,115,000	1.1 // 1.3				
ESMAP		RW - Sustainable Energy Dev. Proj (GEF) (Duplicate)	Rwanda	Energy Access	2011	ongoing	4,000,000					
ESMAP	P118439	LR: AFREA-Liberia Rural Energy (Phase 2)	Liberia	Energy Access	2012	ongoing	2,000,000					
ESMAP	P117260	TZ:Additional Financing - TEDAP	Tanzania	Energy Access	2010	2011	1,100,000	1.2				
ESMAP	P116227	Economic Benefits of Electricity Supply	World	Energy Access	2010	2011	88,581				4.2	
ESMAP	P104135	Work on Gender in EI	World	Energy Access	2007	2011	209,664	1.1 // 1.2	2.5			
ESMAP	P116277	Task 2: Lighting Africa-2010 Conference	Africa	Energy Access	2010	2011	256,922					5.2
ESMAP	P111450	Evaluation of Rural Electrification	World	Energy Access	2008	2011	396,877		2.2			
ESMAP		TZ:Additional Financing - TEDAP (Duplicate)	Tanzania	Energy Access	2011	2011	1,100,000					
ESMAP	P103456	3A-ESMAP Implement Action Plan (FY09)	Africa	Energy Access	2007	2010	1,484,544		2.2 // 2.6			
ESMAP	P109027	Solar Lantern Testing & Certification	Africa	Energy Access	2008	2010	203,794					5.2
ESMAP	P083898	BD Addressing IAP	Bangladesh	Energy Access	2008	2010	104,025				4.1	
ESMAP	P120429	Joint infoDev/ESMAP SME Assessment	Latin America	Energy Access	2010	2010	27,187		2.4			
ESMAP	P095153	ESMAP:Decentralized EGY.SERV	World	Energy Access	2005	2010	784,995	1.1				
ESMAP	P106178	3A-ESMAP Lighting Africa	Africa	Energy Access	2007	2010	502,838		2.1 // 2.4			5.2
ESMAP		LA Dev. Mrktplace Awardees Supervision	Africa	Energy Access	2009	2010	210,176			3.2		
ESMAP	P114371	Review of strategies for fuelwood Assess. Social Impacts of Rural Energy	World	Energy Access	2009	2010	149,613		2.2			
ESMAP	P111242	Assess. Social Impacts of Rural Energy	Nepal	Energy Access	2008	2010	209,380			3.3		
ESMAP	P114094	LADM 2008 - Providing Affordable and Rel	Tanzania	Energy Access	2009	2010	180,000			3.2		
ESMAP	P107574	BF-ESMAP Capacity Building (FY09)	Burkina Faso	Energy Access	2008	2009	23,869	1.2				
ESMAP	P100860	3A-ESMAP Product Uses of Elect (FY11)	Africa	Energy Access	2006	2009	286,287					

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ESMAP	P109952	Gender and Energy	World	Energy Access	2008	2009	132,568		2.6			
ESMAP	P111466	Econ of Connecting Poor to Natural Gas	South Eastern	Energy Access	2009	2009	49,894					
ESMAP	P112370	Modernizing Energy Services for the Poor	World	Energy Access	2009	2009	51,453		2.6			
ESMAP	P107606	CM-ESMAP Cap Bldg Small Scale (FY09)	Cameroon	Energy Access	2008	2009	107,879	1.1				
ESMAP	P114087	LADM 2008 - Village Lighting Solutions	Namibia	Energy Access	2009	2009	59,663			3.1		
ESMAP	P114089	LADM 2008 - Power to the Poor: Off-Grid	Nigeria	Energy Access	2009	2009	60,000	1.2		3.2		
ESMAP	P108841	GN-ESMAP SMEs in Rural Electr. (FY10)	Guinea	Energy Access	2008	2009	115,392		2.1			
ESMAP	P107301	TZ-ESMAP Integrating SME in Rural (FY10)	Tanzania	Energy Access	2008	2009	143,999		2.1			5.2
ESMAP	P110668	6L-Benchmarking of Electricity Distrib	Latin America	Energy Access	2008	2009	118,168				4.1	
ESMAP	P110667	Mechanisms for Reaching the Poor in INF	Latin America	Energy Access	2008	2009	114,448					
ESMAP	P104354	SMEs Energy Services Delivery in Peru	Peru	Energy Access	2007	2009	373,565		2.1			
ESMAP	P103865	NI-Improv. Small-Scale Egy Supply	Nicaragua	Energy Access	2007	2009	216,341		2.1			
ESMAP	P105119	BO Strengthening Small Scale Offgrid	Bolivia	Energy Access	2007	2009	277,589	1.2 // 1.3				
ESMAP	P107193	LAO SMEs in Decentralized Egy Serv	Lao	Energy Access	2008	2009	261,925	1.2				
ESMAP	P103968	HT-Woodfuels: Promoting Efficient Stoves	Haiti	Energy Access	2007	2009	465,077	1.1	2.1			
ESMAP	P095219	ESMAP:Decentralized Energy Services	Cambodia	Energy Access	2005	2009	752,922	1.2				
ESMAP	P099764	MN - Rural Energy Project	Mongolia	Energy Access	2006	2008	55,446			3.2		
ESMAP	P129252	Energy Efficiency Dvp in SSA cities	Africa	Energy Efficiency	2012	ongoing	450,000					
ESMAP	P125354	EE for Water and Sanitation Utilities	World	Energy Efficiency	2011	2012	75,230	1.1				
ESMAP	P129900	UA-Municipal energy efficiency financing	Ukraine	Energy Efficiency	2012	ongoing	130,000	1.2				
ESMAP	P122464	EE Strategy for Industrial Enterprises	Uzbekistan	Energy Efficiency	2011	ongoing	196,400	1.2				
ESMAP	P113858	LB - Support to Impl of Electricity Sect	Lebanon	Energy Efficiency	2011	2012	53,415		2.1			
ESMAP	P119918	EECI/Urban Mobility Strategies	World	Energy Efficiency	2010	2012	176,401					
ESMAP	P127140	Diagnostic tool for EE urban transport	World	Energy Efficiency	2012	ongoing	19,157					
ESMAP	P131211	HCMC Bus Energy Efficiency Improvements	Vietnam	Energy Efficiency	2012	ongoing	70,000	1.1				
ESMAP	P123396	CHISINAU ENERGY SUPPLY IMPROVEMENT TA	Moldova	Energy Efficiency	2011	2012	150,000	1.1	2.1			
ESMAP	P115771	EE Cities Good Practice Awards	World	Energy Efficiency	2009	2012	145,137				4.1, 4.3	
ESMAP	P130578	Facilitating SME EE Financing	Turkey	Energy Efficiency	2012	2012	32,224	1.1				
ESMAP	P119998	Cost of Delivering DSM- EE Activities	World	Energy Efficiency	2011	ongoing	90,000					
ESMAP	P124688	EG-Energy Efficiency Strategy (Phase2)	Egypt	Energy Efficiency	2011	ongoing	113,574					
ESMAP	P116044	China Heat Regulation Phase II	China	Energy Efficiency	2009	2012	218,269					
ESMAP	P127039	Public Procurement of Energy Efficient P	World	Energy Efficiency	2012	2012	56,000	1.1			4.1	
ESMAP	P123066	Government Facilities Energy Efficiency	China	Energy Efficiency	2011	2012	120,000	1.1				

Program	Project ID	Title	Country	Theme	Initial FY	Completion FY	Total Allocation	1. Development Financing Informed	2. Policy Strategy Informed	3. Client Capacity Increased	4. Knowledge Increased	5. Innovative approaches & solutions generated
ESMAP	P127534	Making cities more energy efficient	World	Energy Efficiency	2012	ongoing	125,000					
ESMAP	P122924	EECI Small Grants (Zarqa)	Jordan	Energy Efficiency	2011	2012	130,217					
ESMAP	P127138	Capacity Building for EE Urban Transport	World	Energy Efficiency	2012	ongoing	125,000					
ESMAP	P120479	EE Cities Project Support Facility	World	Energy Efficiency	2010	2012	395,783	1.1				
ESMAP	P123713	BR Mainstreaming Green Trucks NLTA	Brazil	Energy Efficiency	2012	ongoing	175,000					
ESMAP	P099544	CN - Energy Intensity Strategy	China	Energy Efficiency	2009	2010	349,550	1.1	2.1	3.1		
ESMAP	P111246	PK:Large-Scale Efficient Lighting Progr.	Pakistan	Energy Efficiency	2008	2011	40,591	1.2				
ESMAP	P119866	EE Country Performance Indicators	World	Energy Efficiency	2010	2011	92,917					
ESMAP	P114056	Programmatic Approach to Building EECode	World	Energy Efficiency	2009	2011	199,669	1.1				
ESMAP	P112532	CL National Energy Efficiency Program	Chile	Energy Efficiency	2009	2011	86,766			3.2		
ESMAP	P120481	IBNET Energy M & T Pilot	World	Energy Efficiency	2010	2011	213,359					
ESMAP	P119287	Fuel efficiency, trade facilitation	Vietnam	Energy Efficiency	2010	2011	97,571					
ESMAP	P115793	Analytical Framework for EE Cities.	World	Energy Efficiency	2009	2011	626,358					5.1
ESMAP	P115770	EE Cities Small Grants	World	Energy Efficiency	2009	2011	203,536			3.1	4.1	
ESMAP	P108023	Energy Efficiency	Belarus	Energy Efficiency	2010	2011	199,790	1.1			4.2	
ESMAP	P118728	Smart Meters	World	Energy Efficiency	2010	2010	24,480	1.1				5.1
ESMAP	P120480	Energy Efficiency in Water Utilities	Africa	Energy Efficiency	2010	2010	38,999					
ESMAP	P113570	DISTRICT HEATING RESTRUCTURING	Moldova	Energy Efficiency	2009	2010	58,276		2.1			
ESMAP	P121254	EG-Energy Efficiency Strategy	Egypt	Energy Efficiency	2010	2010	52,572					
ESMAP	P114361	Operational Toolkit for En Eff Lighting	World	Energy Efficiency	2009	2010	131,860	1.1				5.1
ESMAP	P112187	Public Procurement of Energy Efficiency	World	Energy Efficiency	2008	2010	248,510	1.1				
ESMAP	P111239	Energy Savings Oppor. in Large Buildings	Afghanistan	Energy Efficiency	2008	2010	146,282	1.2	2.1			
ESMAP	P101264	MA-Transport and Energy Efficiency	Morocco	Energy Efficiency	2009	2010	109,827	1.1	2.5			
ESMAP	P113599	LED Lights Quick Screening Methodology	Africa	Energy Efficiency	2009	2010	153,279					5.2, 5.3
ESMAP	P111240	BD:Energy. Eff. & Clean Tech in Brick sec	Bangladesh	Energy Efficiency	2009	2010	234,699	1.2	2.1			5.2
ESMAP	P114431	RY-Inst Framework for Energy Efficiency	Yemen	Energy Efficiency	2009	2009	47,714		2.1			
ESMAP	P113671	Transport & Climate Change	World	Energy Efficiency	2009	2009	74,069	1.1				
ESMAP	P111927	Survey and Knowledge Sharing on Egy Con	China	Energy Efficiency	2009	2009	75,829	1.2				
ESMAP	P114245	Energy Efficient Cities Practitioners WS	World	Energy Efficiency	2009	2009	127,527		2.6			

ANNEX 4 | LIST OF LENDING PROJECTS INFORMED BY ESMAP ACTIVITIES

LENDING ID	COUNTRY/REGION	TITLE	TOTAL (\$ MILLION)
P111943	Afghanistan/SAR	Power System Development Project	\$35
P105654	AFR	Southern African Power Market Project – Adaptable Programmatic Loan	\$180
P097201	AFR	Regional and Domestic Power Market Development Project	\$196
P084404	AFR	Mozambique – Malawi Transmission Interconnection Project - Adaptable Programmatic Loan	\$45
P11326	AFR	West African Power Pool – Adaptable Programmatic Loan (Phase 1) CSLG	\$176
P116748	Armenia/ECA	Electricity Supply Reliability Project	\$39
P116680	Armenia/ECA	Energy Efficiency Project	\$2
P098151	Bangladesh/SAR	Clean Air Sustainable Environment Project	\$62
P112963	Bangladesh/SAR	Rural Electrification and Renewable Energy Development – Add'l Financing	\$90
P073367	Bolivia/LCR	Decentralized Infrastructure for Rural Transformation Project	\$-
P114204	Brazil/LCR	Electrobras Distribution Rehabilitation Project	\$388
P078091	Burkina Faso/AFR	Energy Access Project	\$39
P064844	Cambodia/EAP	Rural Electrification and Transmission Project	\$0
P104456	Cameroun/AFR	Energy Sector Development Project	\$65
P098915	China/EAP	GEF Tianjin Eco-City Project	\$6
P114182	China/EAP	GEF Provincial Energy Efficiency Scale-Up Program	\$13
P114069	China/EAP	Shangdong Province Energy Efficiency	\$150
P106956	China/EAP	Ningbo New Countryside Development Project	\$1
P119654	China/EAP	Guangdong Green Freight Demonstration Project	\$5
P106982	DRC/AFR	Growth with Governance in the Mineral Sector	\$50
P128887	DRC/AFR	Forext Investment Program	\$-
P117656	EAP	Kunming Urban Rail Project	\$300
n/a	ECA	Energy Community of South East Europe - Adaptable Programmatic Loan	\$1,000
P100047	Egypt/MNA	Ain Sokhna Power	\$600
P116194	Egypt/MNA	Giza North Power Project	\$600
P113416	Egypt/MNA	Wind Power Development Project	\$220
P120191	Egypt/MNA	Kom Ombo Solar Power	\$-
P117407	Egypt/MNA	Helwan South Power Project	\$385
P120016	Ghana/AFR	Energy Development and Access Project	\$0
P127203	Haiti/LCR	Rebuilding Energy Infrastructure and Access Project	\$-
P10434	Honduras/LCR	Power Sector Efficiency Enhancement Project	\$4
n/a	Honduras/LCR	SREP Investment Plan	\$-
P112893	India/SAR	Kabeli Transmission Project	\$38
n/a	India/SAR	IFC Loan for Maharashtra State Electricity Transmission Company Ltd	\$200
P100531	India/SAR	Coal-Fired Generation Rehabilitation	\$180
P100101	India/SAR	Coal-Fired Generation Rehabilitation	\$45
P110051	India/SAR	Haryana Power System Improvement Project	\$330
P120313	Indonesia/EAP	Climate Change Development Policy Loan I	\$200
P123135	Indonesia/EAP	Climate Change Development Policy Loan II	\$-
P113078	Indonesia/EAP	Geothermal clean Energy Investment Project	\$300
P112780	Jamaica/LCR	Energy Investments and Technical Assistance	\$15
P103037	Kenya/AFR	Electricity Expansion Project	\$330
P075531	Lao PDR/EAP	Rural Electrification Project Phase I - Adaptable Programmatic Loan	\$14
P110978	Lao PDR/EAP	Rural Electrification Project Phase II	\$26
P124014	Liberia/AFR	Lighting Lives in Liberia	\$1
P129097	Liberia/AFR	LR-LESEP – Add'l Financing	\$22
P089656	Macedonia/ECA	GEF Sustainable Energy Project	\$3
P111018	Mali/AFR	Household Energy and Universal Access Project – Add'l Financing	\$9

LENDING ID	COUNTY/REGION	TITLE	TOTAL (\$ MILLION)
n/a	Mali/AFR	SREP	\$-
P106424	Mexico/LCR	Energy Efficient Lighting and Appliances GEF Project	\$70
P115608	Mexico/LCR	Framework for Green Growth Development Policy Loan	\$1,503
P121800	Mexico/LCR	Low Carbon Development Policy Loan	\$400
P106424	Mexico/LCR	Efficient Lighting and Appliances	\$251
P080104	Mexico/LCR	GEF Wind Umbrella Project III	\$17
P106956	Moldova/ECA	Moldova – Add'l Financing for Energy Project II	\$10
P108768	Mongolia/EAP	Mining Sector Technical Assistance Project	\$9
P099618	Morocco/MNA	Energy Sector – Development Policy Loan	\$100
P115659	Morocco/MNA	Urban Transport Development Policy Loan	\$137
P122028	Morocco/MNA	Ouarzazate Concentrated Solar Power	\$297
P108444	Mozambique/AFR	Energy Development and Access Project	\$0
P108444	Mozambique/AFR	Energy Development and Access Project	\$3
P095982	Pakistan/SAR	Electricity Distribution and Transmission Improvement Program Project	\$267
P090110	Peru/LCR	First Rural Electrification Project	\$10
P117864	Peru/LCR	Second Rural Electrification Project	\$50
P090116	Peru/LCR	Rural Electrification Project	\$50
n/a	Philippines/EAP	Clean Technology Fund (IFC)	\$250
P102396	PNG/EAP	Second Mining Sector Institutional Strengthening Technical Assistance	\$17
P111567	Rwanda/AFR	Electricity Access Scale-up and Sector Wide Approach Development Project	\$70
P120629	Senegal/AFR	Second Sustainable and Participatory Energy Management Project (PROGEDE II)	\$15
P122329	South Africa/AFR	ESKOM Renewables Support Project	\$250
P096302	Tanzania/AFR	Sustainable Management of Mineral Resources	\$112
P104266	Tunisia/MNA	Energy Efficiency and Renewable Energy Investment Project	\$55
P122029	Tunisia/MNA	Concentrated Solar Power	\$-
P122029	Tunisia/MNA	STEG Concentrated Solar Power	\$-
P110643	Turkey/ECA	Programmatic Electricity Sector – Development Policy Loan	\$720
P110841	Turkey/ECA	Energy Community of South East Europe - Adaptable Programmatic Loan #6	\$200
P112578	Turkey/ECA	Private Sector Renewable Energy and Energy Efficiency Project	\$500
P124898	Turkey/ECA	Private Sector Renewable Energy and Energy Efficiency Project – Add'l Financing	\$500
P117651	Turkey/ECA	ESES - Development Policy Loan	\$350
P132189	Turkey/ECA	Small and Medium Enterprises Energy Efficiency Project	\$-
P096586	Ukraine/ECA	Energy Efficiency Project	\$200
P096586	Ukraine/ECA	UA – Energy Efficiency Project	\$200
P118737	Uzbekistan/ECA	Energy Efficiency Industrial Enterprises	\$25
P122667	Vietnam/DAP	Climate Change – Development Policy Loan	\$140
P111183	Vietnam/EAP	Poverty Reduction Strategy Credit 10 for Vietnam	\$150
P114875	Vietnam/EAP	Transmission & Distribution II – Add'l Financing	\$180
P111182	Vietnam/EAP	Poverty Reduction Strategy Credit 9 for Vietnam	\$150
P12417	Vietnam/EAP	Power Sector Reform – DPO2	\$200
P126507	Vietnam/EAP	HCMC Green Transport	\$-
P111741	West Bank/MNA	Municipal Program (Phase 1)	\$1

ANNEX 5 | LIST OF POLICIES AND STRATEGIES INFORMED BY ESMAP ACTIVITIES (FY09-12)

REGION	COUNTRY	ACTIVITY TITLE	COMPLETION YEAR
AFR		World Bank's Country Assistance Strategies for Kenya and Rwanda	
AFR		World Bank Africa Region's Energy Strategy	2010
AFR		West Africa Regional Communications Program	2010
AFR		Africa Refiners Association Action Plan for Fuel Upgradation in the Region	2010
AFR	Ethiopia	Duty Waiver for Off-Grid Lighting Products	2010
AFR	Guinea	Guinea's Rural Electrification Strategy	2009
AFR	Mozambique	National Policy and Strategy for Biofuels	2009
AFR	Rwanda	Feed-In Tariff for Electricity Generated from Micro-Hydropower Plants	
AFR	South Africa	Long-Term Mitigation Scenario	2011
AFR	Tanzania	Power Purchase Agreements for Small-Size Power Projects	2009
EAP		World Bank's East Asia Region Energy Strategy	2011
EAP	China	China's Twelfth 5-Year Plan	2010
EAP	Philippines	Renewable Energy Legislation	2012
EAP	Vietnam	Gas Master Plan	2011
ECA	Bulgaria	Renewable Energy Legislation	2010
ECA	Hungary	Draft Smart Metering Policy	2011
ECA	Moldova	Corporate Restructuring Plan for the District Heating Company Termcom and Combined Heat and Power Plants	2012
ECA	Moldova	Regulatory Framework for District Heating	2010
ECA	Montenegro	Renewable Energy Legislation	2010
ECA	Poland	Low Carbon Strategy	2011
ECA	Slovak Republic	Renewable Energy Act	2009
ECA	South Eastern Europe and Balkans	Regional Energy Market Design	2010
ECA	Ukraine	Government Strategy for Addressing the Rehabilitation needs of Thermal Power Plant	2009
GBL		World Bank Energy Sector Strategy	2012
GBL		World Bank Energy Strategy	2012
GBL		ESMAP's Gender and Energy Program	2009
GBL		World Bank's Household Energy Strategy	2009
GBL		GEF Strategy on Pre-Commercial Technologies	2009
GBL		ESMAP's Energy Efficient Cities Initiative	2009
GBL	Bangladesh	World Bank's Approach to Climate Resilient Development; Bangladesh Government's Program of Investments under the Pilot Program on Climate Resilience	2011
GBL	Papua New Guinea	World Bank's Country Assistance Strategy for Papua New Guinea	2011
GBL	Philippines	Transmission Regulations	2012
GBL	Uganda	Design of Uganda's National Oil Company	2011
LCR		World Bank's Energy Strategy for Central America	2012
LCR		Consultations between Governments, Companies, and Indigenous People so Facilitate the Development of the Regions' Hydrocarbon Potential	2011
LCR	Brazil	National Climate Change Plan	2011
LCR	Colombia	Regulatory Framework for Renewable Energy	2009
LCR	Colombia	Biodiesel Production Targets	2009
LCR	Haiti	Energy Strategy Paper	2009
LCR	Mexico	Climate Change Program	2010
LCR	Nicaragua	Establishment of Business Incubator for Renewables in Nicaragua	2010
LCR	Nicaragua	National Electrification and Renewable Energy Program	2009
LCR	Peru	Natural Gas Sector Regulations	2010
LCR	Peru	Renewable Energy Regulations	2009
LCR	Peru	National Tariff Framework for PV Systems	2009

MNA		World Bank's Middle East and North Africa Regional Strategy	2010
MNA	Djibouti	Regulations on Electricity Billing and Metering Systems	2010
MNA	Egypt	Energy Pricing Reform Plan	2009
MNA	Lebanon	Policy Paper for the Electricity Sector	2012
MNA	Morocco	World Bank's Country Assistance Strategy for Morocco	2010
MNA	Morocco	Establishment of a National Agency for Renewable Energy and Energy Efficiency	2009
MNA	Syrian Arab Republic	Electricity Legislation	2010
MNA	Yemen	National Strategy for Renewable Energy and Energy Efficiency	2009
SAR		World Bank's South Asia Region Energy Strategy	2011
SAR	Afghanistan	National Energy Efficiency Policy and Work Plan	2010
SAR	Bangladesh	Proposed Regulatory Framework for Brick Information and Technology Center	2010
SAR	India	World Bank's South Asia Region Energy Strategy; India's Twelfth 5-Year Plan	
SAR	India	Government's Action Plan for Rehabilitation of Thermal Power Plants	2010

ANNEX 6 | LIST OF GENDER-INFORMED ESMAP ACTIVITIES

PROJECT ID	TITLE	REGION	THEME
P120040	ET-BEIA-Charcoal	AFR	Clean Energy
P110075	BJ-Increased Access to Energy SIL	AFR	Energy Access
P119962	BJ-BEIA-Charcoal	AFR	Energy Access
P120037	RW-BEIA-Charcoal	AFR	Energy Access
P127726	3A: Clean Cooking Initiative for Africa	AFR	Energy Access
	BJ-Increased Access to Energy SIL (duplicate)	AFR	Energy Access
P111018	ML-HEURA Additional Financing	AFR	Energy Access
P118439	LR: AFREA-Liberia Rural Energy (Phase 2)	AFR	Energy Access
P100860	3A-ESMAP Product Uses of Elect (FY11)	AFR	Energy Access
P116908	3A: Gender and Energy	AFR	Energy Access
P110999	3A-ESMAP Afr. Electrification Experience	AFR	Energy Access
P111786	Gender and Energy Gender Action Plan	EAP	Energy Access
P120983	Stimulating SME for Productive Use of El	EAP	Energy Access
P129287	Armenia Power Sector Tariff Study	ECA	EASP
P130977	Biomass-based District Heating	ECA	Energy Access
P123643	Promotion Productive Uses Electricity	LCR	Energy Access
P124390	CA Improved CookStove Framework	LCR	Energy Access
P107158	CO Alternative Energy and Bioenergy	LCR	Clean Energy
P113882	EAP-Phase II (Energy, Env. & Population)	LCR	EASP
P109969	PE (CCH) Overcoming Barriers to Hydropower	LCR	Clean Energy
P107068	EG-Energy Pricing Strategy	MNA	EASP
P111242	Assess. Social Impacts of Rural Energy	SAR	Energy Access
P127169	Clean Energy Staff Training and Knowledge	World	Clean Energy
P129095	Household Energy Guidance Note	World	Energy Access
P129411	Defining and Measuring Access to Energy	World	Energy Access
P127216	Economics of Household Energy	World	Energy Access
P127219	Clean Cookstoves Mapping	World	Energy Access
P118980	Decision Tool - PV for Community Service	World	Energy Access
P119673	Client Capacity Increased	World	Energy Access
P109952	Gender and Energy	World	Energy Access
P121383	Household Energy Access: Lessons Learned	World	Energy Access
P104135	Work on Gender in El	World	Energy Access
P123004	GEDS Program	World	Energy Access

ANNEX 7 | GENDER ACTIVITIES WITH DEVELOPMENT IMPACT

Gender and Energy Gender Action Plan (P111786) | 2008 | Completed

Output: Assessment | Outcome: The assessment revealed that the technologies that were being commercialized, improve the lives of families in particular women. This finding supported greater involvement of women in setting up retail networks at village level in Cambodia.

Work on Gender and Youth in EI (P104135) | 2007-2011 | Completed

Output: Knowledge Products | Outcome: Development Lending Informed
Activity supported Gender and Youth Program in Oil, Gas and Mining and production of guidance notes and knowledge products leading to informed lending in 4 operations and country level plans

Gender and Energy (P109952) | 2008- 2009 | Completed

Output: Workshop | Outcome: Policy and Strategy Informed
ESMAP organized a 2-day horizon scanning and planning workshop in May 2008 comprised of World Bank energy task team leaders. The key findings and recommendations of that workshop and preparatory analysis led to the Gender and Energy Development Strategies (GEDS) Program, which is a key component of ESMAP's Business Plan FY08-13.

Africa Electrification Experience (P111099) | 2008- | Ongoing

Output: Workshop | Outcome: Developing Financing Informed
During the AEI workshop, a session and working discussion on gender and energy took place. During that the experience of Mali's Rural Energy Agency was shared with various agencies. After the exchange session, the Senegalese agency, ASER, came forward with a request to develop a similar assessment and action plan for its programs.

Gender & Energy Development Strategies Program (P123004) | 2011 | Ongoing

3A: Gender and Energy (P116908) | 2010 | Ongoing

Output: TA | Outcome: Development Financing Informed
TA focused on gender assessments and consultations provided gender specific components to 3 World Bank operations – Mali HEURA Additional Financing Project and SREP Investment Plan and Senegal's PROGEDE II operation.

Gender & Energy Development (P119673) | 2009| Completed

Output: KP and workshop | Outcome: Client Capacity Increased
SDV partnership delivered a number of knowledge exchange events, including a three-day workshop on Energy and Gender for South Asia. During the workshop, government officials developed gender action plans for mainstreaming gender in their respective energy portfolios.

Household Energy Paper: Lessons Learned (P121383) | 2011-2012 | Complete

Output: KP | Outcome: Policy/Strategy Informed
The report highlighted the benefits of clean cooking, especially due to the impact of IAP for women and children. The paper stimulated debate on how the World Bank' can help mainstream household energy in its lending. It contributed to the inclusion of "household energy" as a key business line within the fiscal year 2012 work program of the World Bank's Sustainable Energy Department.

Overcoming Barriers to Hydropower Investments in Peru (P109969) | 2008-2011 | Complete

This ESMAP report was completed and widely disseminated to government officials and over 60 participants in workshops on the topic. The Government of Peru has increased knowledge on technical, economic and social viability of mid-scale hydropower development, as well as of the need to improve social and environmental safeguard practices, especially in the context of more politicized social environment in Peru.

CA Improved Cookstoves Framework (P124390) | 2011- | Ongoing

Output: KP | Outcome: Knowledge Increased
In the development of an Improved Cookstoves Framework, gender and cultural considerations have been considered in the methodology, consultation and framework design leading to specific chapters on gender within the reports and ongoing discussions with women's groups and community level organizations.

Assessing the Social Impacts of Rural Energy (P111242) 2008-2011 | Completed

Output: TA | Outcome: Client Capacity Increased

ESMAP supported the Nepalese Alternative Energy Promotion Center (AEPC) to develop a web-based monitoring and evaluation system and train the AEPC's M&E cell on how to use the system which helps the AEPC to report program's outputs and impacts on households and businesses and to make informed decisions.

Off-grid Rural Electrification SME Program | 2008 | Complete

Output: TA | Outcome: Client Capacity Increased

ESMAP assisted TDE, Bolivia's largest electricity transmission company, to conduct studies that led to the identification of solar PV-powered LED lanterns and energy-efficient wood stoves as suitable technologies to be promoted in villages within TDE's operation area. Subsequently, TDE designed and implemented pilot projects that resulted in over forty families acquiring a LED lantern and a woodstove, both wholly financed under the enterprise's corporate social responsibility program.

Alternative Energy and Bioenergy (P107158) | 2009 | Completed

Output: TA | Outcome: Knowledge Increased