UNITED NATIONS DEVELOPMENT PROGRAMME

Thematic Trust Fund on Energy for Sustainable Development

2004 Report

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FOREWORD

Currently, about 1.6 billion people do not have access to electricity and 2.4 billion people rely on traditional sources of energy such as wood, dung and other biomass to meet their cooking and heating needs. This situation significantly compromises the opportunities for economic development and leads to further poverty. Women and children are disproportionately impacted by smoke from indoor cooking and heating and the burden of gathering traditional fuels. This situation leads to a range of barriers for development such as adverse health conditions, foregone opportunities in education and income generation, gender inequality and environmental degradation. Access to cleaner fuels, mechanical power and electricity is needed for economic productivity and, ultimately, to alleviate poverty.

Although there is no Millennium Development Goal (MDG) on energy, sustainable development and the eradication of poverty are not possible without a significant increase in affordable and accessible modern energy services in developing countries. UNDP has played a significant global role in elevating the importance of energy for sustainable development through its active involvement in global intergovernmental fora such as the Ninth Commission for Sustainable Development (CSD) and the World Summit for Sustainable Development. At these sessions, access to energy was recognized as not only important, but essential to achieving meaningful and far-reaching development impacts. These efforts are complemented by UNDP's involvement in nearly all Country Offices in the undertaking of energy projects that are yielding poverty reduction outcomes. UNDP has been active in both of these sets of activities in an effort to make wider linkages between energy and development.

The Thematic Trust Fund (TTF) on Energy for Sustainable Development has proven to be a useful vehicle to quickly and efficiently receive and disburse funds for concrete, structured and inclusive activities at the country and global level that lead to optimum development impacts from affordable and accessible energy services. Since its inception in 2001, it has received a total of approximately US$ 15 million in funding commitments and programmed over 40 projects across all of UNDP's energy priority areas. The Energy TTF has been instrumental in linking country-level demand for energy services with wider development assistance discussions, expanding public-private partnerships, and better positioning UNDP on energy and the MDGs. These activities will need to be further amplified with the upcoming 2005 World Summit in September 2005 and CSD 14/15 in 2006/7 on energy and other related issues.

This report represents the 2004 assessment of the Energy TTF. I would like to thank all relevant UNDP Country Offices in designing and implementing projects that met national demands on energy for development and communicated the outcomes and lessons to us through annual project reports, final reports, financial documents, and informal email/telephone discussions. While project focal points were very helpful in communicating results to us, in particular I would like to thank the following individuals who provided extremely valuable and detailed insight into project activities and impacts: Hudha Ahmed, Mohamed Bayoumi, Madeleine Bolliger, Radomir Buric, Darshani de Silva, Melissa Edwards, Shaun Finnetty, Tek Gurung, Aminul Islam, Thomas Jensen, Savinus Kessy, Zhanar Sagimbayeva, Kalfa Sanogo, Zulya Sibagatulina, Youssoufa Silla, Istvan Tokes, Diane Wade, and Martin Zeh-Nlo.

Khalid Husain led the drafting and finalization of this report under the guidance of Minoru Takada and myself. This included analysis and synthesis of all country-level progress and final project reports, which contain very rich and diverse experiences and lessons from project design and implementation.

I would like to congratulate Khalid Husain for his tireless efforts to undertake the collection of information and for the excellent analysis presented in the report. I hope you find this document useful in supporting your thinking on energy and the wider issues of development, poverty alleviation and the achievement of the MDGs.

Susan McDade
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ANNEX : **List of Programmed Energy TTF Projects from Inception to Date, by Energy Priority**

Energy Priority	Country	Project Title	Amount Programmed (in US$)
3. ***Promoting clean technologies for sustainable development***	**Egypt**	*A Testing Laboratory for Energy Efficient Equipment*	**300,000**
	Ghana	*Substitution of Liquid Petroleum Gas (LPG) for Woodfuel in Homes and Small Enterprises*	**300,000**
	Niger	*Appui a la mise en place de la stratégie nationale et d'un plan d'action sur les énergies renouvelables*	**125,000**
	Philippines	*Renewable Energy-Based Village Power System in Palawan*	**256,700**
	Sri Lanka	*Biomass Resource Development*	**183,000**
	Uzbekistan	*Clean Energy for Rural Communities in Karakalpakstan*	**90,000**
TOTAL		**6 Projects**	**1,254,700**

Energy Priority	Country	Project Title	Amount Programmed (in US$)
4. ***Increasing access to investment financing for sustainable energy***	**Bangladesh**	*Capacity Development for CDM in Bangladesh*	**94,000**
	India	*The CDM & Biomethanation*	**94,000**
	Morocco	*Promotion d'un environnement favorable a la mise en oeuvre du MDP au Maroc*	**100,000**
TOTAL		**3 Projects**	**288,000**

Overall Impact of the Thematic Trust Fund on Energy for Sustainable Development at the UNDP Corporate Level

The Thematic Trust Fund (TTF) on Energy for Sustainable Development (*hereafter referred to as the Energy TTF*) was one of eight TTFs that UNDP established in 2001. The Energy TTF has defined UNDP's corporate energy priorities since its launch and has provided a useful mechanism to implement country and global activities to enhance the role of energy in meeting national and local development needs. The Energy TTF has had several important impacts, of which three are most notable:

- By crystallizing UNDP energy priorities, which later became the foundation for focus areas under the Multi-Year Funding Framework (MYFF) service line 3.3 (access to energy services), the Energy TTF has brought clear policy alignment across UNDP in the area of energy. This policy alignment has carved a distinct niche for UNDP energy activities, strategically positioned UNDP globally on energy and development issues, and allowed UNDP to play a significant role in linking the importance of energy resources, production, consumption and costing to the achievement of the Millennium Development Goals (MDGs).

- It has proven to be an important instrument for mobilizing thematically-oriented resources that can effectively respond to country-level demand for energy services delivery, while at the same time advancing alignments of UNDP activities to its energy priorities. Historically, capturing opportunities originating from ever-evolving development assistance discussions sometimes worked to dilute the organization's thematic focus. The Energy TTF has been very successful in striking the balance between the needs for resource mobilization and maintenance of focus. It has done so by allowing flexibility for the donors in terms of thematic and geographical specificities, while at the same time firmly maintaining that all activities be focused on the established energy priority areas.

- It has also been instrumental in expanding global partnerships on energy issues such as the Global Village Energy Partnership (GVEP), Liquefied Petroleum Gas (LPG) Rural Energy Challenge and the Clean Development Mechanism. In particular, these partnerships have produced useful frameworks to integrate energy into national development agendas, increase rural energy access, promote clean energy technologies and enhance investment financing for energy. Responding, in part, to the major thrust at the World Summit on Sustainable Development (WSSD) for scaling up on-the-ground implementation through the forging of global partnerships, the Energy TTF has been a catalytic and successful tool to mobilize resources for these partnerships. All Energy TTF projects, now numbering 43, with approximately $10 million of programmed funding, have involved the use of partnerships as project frameworks in which to design and implement on-the-ground activities.

In many ways, the experiences of the Energy TTF to date provide a very good example of how non-core resources can be mobilized and deployed to underpin and advance UNDP's strategic priorities. Responding to country-level demands in the era of the MDGs, however, requires seriously scaled-up funding at the country level. Access to energy services is an indispensable component of the entire package of the MDGs achievement at the country level.

As per the Executive Board decision in 2004, the Energy TTF was merged with the TTF on Environment to form a new TTF on Energy and Environment for Sustainable Development as of the

beginning of 2005, in which access to energy services is one of the core focus areas. Building on the success of the Energy TTF, UNDP will drastically expand engagements with its partners to mobilize resources for energy activities through the newly-merged TTF and to deliver activities that help meet the challenges of achieving the MDGs.

Financial Summary

The Energy TTF has a total funding commitment of approximately US$ 15 million since its inception in 2001 to date, of which US$ 13.1 million had been received by the end of 2004. In 2003, the Government of the Netherlands contributed 1 million Euros for GVEP activities. In 2004, approximately $4.45 million was received from mostly bilateral donors, namely the Governments of Austria, Denmark, Germany, Norway and the USA, as well as the World Bank. More funds are expected in 2005 and coming years.

Status of Projects

A total of 43 projects have been in operation since the inception of the Energy TTF. Active now for approximately 3.5 years, the Energy TTF has gone beyond the early stages of project design and formulation and entered into a more mature phase, with fruitful outcomes and lessons being produced. All of the projects in operation in 2004 are country-driven initiatives, with the exception of four global programs primarily focused on GVEP and one regional project on energy policy enhancement in the Pacific Islands area.

The resources received comprise a mixture of flexible allocations and also distinct earmarking (of certain contributions) across thematic and geographical lines. Certain donors such as France, Germany, the Netherlands and the USA have earmarked funds specifically for GVEP, while others such as Denmark have allocated funds to projects on a geographical basis. Half of all projects in operation in 2004 were focused on promoting rural energy services to support growth and equity, amounting to about $5 million in programming. This focus on rural energy access recognizes that increased energy services are critically needed in rural areas. Outside of two large projects in the Asia-Pacific region, the main geographical focus has been the African region, where the largest number of Energy TTF projects (14) is situated across the continent. This corresponds to the relatively higher development needs in Africa, reflected by the large majority of Least Developed Countries located there, critical rural energy concerns, including not only rural electrification but also mechanical and thermal energy needs, and efforts to mainstream energy into poverty reduction strategy (PRS) processes.

Substantive Trends

Now in operation since 2001, a number of key trends for the Energy TTF have emerged. These trends reflect the international efforts of UNDP and other relevant organizations to bring increased attention to the importance of energy services as a necessary means to yield sustainable human development benefits. Several policy measures have been identified through this global momentum to provide effective entry points for energy into the MDG discussion, including the 2005 World Summit in September 2005 and the Commission for Sustainable Development (CSD) process in 2006/7 which will focus on energy issues and how to help developing countries best design programs, undertake on-the-ground interventions, monitor progress, collect and disseminate lessons learned, and ultimately reach each of the eight MDGs in the remaining 10 years to 2015. The Energy TTF has aligned itself to respond to this momentum through the design, implementation and results of energy projects through four strategic measures: efforts to mainstream energy into national development processes such as Poverty Reduction Strategy Papers (PRS/Ps); focus on the issue of increased rural energy access and services; complementary design and implementation of sustainable energy interventions at local levels with macro-level energy policy analysis and strategy formulation at national levels; and development of public-private partnerships to increase

quality and quantity of energy services.

Energy TTF projects have contributed to knowledge generation on good practices and guidance on the process of successfully implementing energy projects. They have also exhibited examples of successful linkages with wider development areas such as health, agriculture, education, rural enterprise development and gender.

Of the three billion people living in rural areas in developing countries today, nearly 2 billion still do not have access to modern energy carriers, such as electricity and/or liquid or gaseous fuels. Lack of accessible and affordable modern energy services hinder sustainable development. Energy interventions that address poverty issues have been shown to correlate positively with development benefits, such as increased income, increased food security, higher education levels, improved health outcomes and empowerment of women through time savings and greater economic opportunities. The Energy TTF has responded to the critical issue of rural energy access by allocating half of its resources to this topic. In 2004, the primary vehicle for addressing this issue was GVEP, a WSSD energy initiative. Eight country-level projects on GVEP, complemented by four global programs, were underway at various stages in 2004, using multi-stakeholder dialogue to produce national action plans and to implement rural energy project-level interventions through capacity development, the facilitation of financing, results monitoring and knowledge dissemination. The Energy TTF, through GVEP and other projects, has addressed the core rural energy access issues of cooking, heating and mechanical processing needs, and rural electrification for household and productive uses.

The Energy TTF has also greatly helped to advance UNDP's position in advocating for strengthened linkages between energy, poverty reduction and the MDGs. In countries where UNDP had Energy TTF projects, national sustainable development plans and poverty reduction agendas such as PRS/Ps have better recognition of energy concerns for the poor. These efforts have led to recognition at the national level that rural and disadvantaged communities face severe energy problems, including issues of access, availability, quality and affordability of energy services. Energy TTF funds have helped in making the energy concerns of the poor more visible and elevated them higher on national development agendas.

Finally, the experience of Energy TTF projects reveals that linking local energy interventions with macro-level energy planning and integration into larger national development goals is necessary to achieve maximum impact. Local level energy project results, experiences and lessons can be useful in informing and refining existing national energy planning and elevating the issues of gaps and constraints on access, pricing, technology, institutional arrangements and financing needs onto the larger development agenda. This can be complemented by undertaking activities of local capacity development through workshops, consultations and hands-on pilot projects. Energy TTF projects have been successful in implementing these parallel micro/macro-level approaches.

WSSD reaffirmed the centrality of energy services in meeting the MDGs through the importance of partnerships. UNDP is leading a number of these partnerships such as GVEP and the LPG Rural Energy Challenge. In addition to these, which prominently feature in the Energy TTF, overall programmatic experiences from the Energy TTF indicate that external partnership development with entities from the private sector, national governments, civil society groups, other ongoing/planned initiatives such as Global Environment Facility projects and bilateral/multilateral-funded projects, were key to achieving optimum value-added impact and mobilizing external resources. Public-private partnerships between government (through regulatory, legislative and pricing mechanisms) and private sector (through investments, technology and technical assistance) contribute to successful energy interventions as the involvement of just one side is not sufficient to successfully undertake energy activities.

1. INTRODUCTION

The Thematic Trust Fund (TTF) on Energy for Sustainable Development (*hereafter referred to as the Energy TTF*), launched in the fall of 2001, defines UNDP corporate energy priorities.[1] It supports UNDP's focus on sustainable energy programs through service line 3.3 as part of the Multi-Year Funding Framework (MYFF) (2004-7). The Energy TTF is a flexible co-financing modality designed for rapid approval of proposals and swift disbursement of funds and has proven to be the principal vehicle for additional non-core resource mobilization to support energy-related activities, primarily at the country level. The Energy TTF complements UNDP's regular work funded from its country core and Global Cooperation Framework (GCF) resources, as well as from other trust funds, such as the Global Environment Facility (GEF). The Energy TTF supports four priority areas:

- **Energy Priority 1:** Strengthening national policy frameworks to support energy for poverty reduction and sustainable development;
- **Energy Priority 2:** Promoting rural energy access and services to support growth and equity;
- **Energy Priority 3:** Promoting clean energy technologies for sustainable development; and
- **Energy Priority 4:** Increasing access to investment financing for sustainable energy.

A fifth cross-cutting area supports global advocacy and analysis on energy for sustainable development.

TABLE 1:
Funds Received and Allocated for the Thematic Trust Fund on Energy for Sustainable Development

Donor	Funds Received				Allocation of Funds		Remarks
	2002	2003	2004	Total	Total Allocated	Total Unallocated	
Austria	$0	$0	$123,153	$123,153	$0	$123,153	*Earmarked for Energy and MDGs publication in 2005-6. Additional funding of Euros 500,000 (approx. US$ 625,000) committed in 2005.*
Denmark	$0	$0	$1,824,708	$1,824,708	$1,824,708	$0	*Allocated for Pacific region in 2004-2007 – country window*
France	$0	$418,328	$0	$418,328	$418,328	$0	*Allocated for GVEP activities with West African focus*
Germany	$0	$220,847	$0	$220,847	$220,847	$0	*Allocated for GVEP activities globally*
	$0	$0	$500,000	$500,000	$500,000	$0	*Allocated for renewable energy project in rural areas of India. Total of 1 million Euros (approx. US$ 1.19 million at time of commitment) pledged, with remaining balance to be received in 2005-6*
Monaco	$10,000	$5,000	$0	$15,000	$0	$15,000	*Not earmarked*
Netherlands	$0	$1,187,649	$0	$1,187,649	$1,055,000	$132,649	*1 million Euros (approx $1,187,649 at time of receipt) earmarked for GVEP project activities globally*
Norway	$2,275,313	$4,135,517	$1,587,301	$7,998,131	$5,022,359	$2,975,772	*Not earmarked*
USA	$0	$400,000	$400,000	$800,000	$800,000	$0	*Allocated for GVEP activities. Total of US$ 1.2 million pledged, with remainder to be received in 2005-6*
World Bank	$0	$0	$15,675	$15,675	$15,675	$0	*Earmarked for GVEP activities*
Totals	**$2,285,313**	**$6,367,341**	**$4,450,837**	**$13,103,491**	**$9,856,917**	**$3,246,574**	

[1] In 2005, the Energy TTF was merged with the TTF on Environment to form the TTF on Energy and Environment for Sustainable Development. This report is focused on the Energy TTF for 2004.

The Energy TTF currently has a total funding commitment of approximately **US$ 15 million**, of which US$ 13.1 million has been received since its inception to the end of 2004 (*Table 1*). In addition, the Norwegian Government has indicated there will be contributions to the newly-merged TTF on Energy and Environment for Sustainable Development during 2005-6. These funds are expected to substantially contribute to energy activities under the TTF.

As shown in Table 1, approximately US$ 4.45 million of funds were received in 2004 from mostly bilateral donors, namely the Governments of Austria, Denmark, Germany, Norway and the USA, as well as the World Bank. Renewed contributions from Norway and the USA, new funds from Austria and the World Bank, and a new use of the TTF as a country-driven mechanism to receive resources from donors (in this case Germany and Denmark) contributed to this increase in financial commitments to the Energy TTF last year.

A total of 43 projects have been in operation since the inception of the Energy TTF (*see Table 2*) with 40 operational in 2004. Active now for approximately 3.5 years, the Energy TTF is progressing beyond the early stages of project design and formulation and entering into a more mature phase. All of the projects in operation in 2004 are country-driven initiatives with the exception of 4 global programs, primarily focused on GVEP, and a regional project on national energy policy enhancement in the Pacific Islands region. Approximately $10 million has been programmed to date across the 43 projects in operation since the start of the Energy TTF.

A number of specific trends can be observed from a review of the macro-level operationalization of the Energy TTF:

a. Resource mobilization aligned to UNDP energy priorities, harnessing the organization's comparative strength and responding to country-level demand for energy services delivery: The TTF has proven to be an important instrument for mobilizing thematically-oriented resources that can effectively respond to the country-level demand for energy services delivery, while at the same time advancing alignments of UNDP activities to energy priorities. Historically, capturing opportunities originating from ever-evolving development assistance discussions has sometimes worked to dilute the organization's thematic focus. The Energy TTF has been very successful in striking the balance between the needs for resource mobilization and maintenance of focus. It has done so by allowing flexibility for donors in terms of thematic orientation and geographical specificities, while at the same time firmly maintaining that all activities be centered on priority areas. Although in the early stages of the Energy TTF no funds were earmarked, funds mobilized since 2003 reflect a mixture of non pre-set allocations and also distinct earmarking (of certain contributions) across thematic and geographical lines. For example, while the contributions from Monaco and Norway continue to remain free of any conditionalities, France, the Netherlands, USA, the World Bank and Germany (partially) have earmarked funds specifically for Global Village Energy Partnership Activities (GVEP) activities. The earmarking of funds for this World Summit on Sustainable Development (WSSD) energy partnership helps to explain the large presence of projects and funds available in 2003 and 2004 for the thematic category of promotion of rural energy access and services to support growth and equity (energy priority 2). There has also been earmarking of funds across geographical lines. The French contribution towards GVEP was

specifically marked for project activities in West Africa. Furthermore, two projects in 2004 were funded through earmarked donations, namely a German contribution on renewable energy in India and a Danish contribution for strengthening national energy policy frameworks in the Pacific Islands region. Whether earmarked or not, all resources have been clearly linked to one of the four energy priorities, advancing UNDP's efforts in aligning itself with country-level demand.

b. Thematic focus on promotion of rural energy access and services to support growth and equity: As can be seen in Figure 1, nearly half of all Energy TTF projects are focused on promoting rural energy access and services to support growth and equity (*energy priority 2*) amounting to nearly half of all programmable funds received (nearly US$ 5 million). This focus on rural energy access recognizes that increased energy services are critically needed in rural areas in order to alleviate poverty and contribute to the achievement of the Millennium Development Goals (MDGs) – not only through electrification, but also through a focus on heat and mechanical power, productive uses of energy and gender issues in relation to energy. UNDP's policy analysis and research in publications such as the *World Energy Assessment, Achieving the Millennium Development Goals: the Role of Energy Services* and the *Gender and Energy Toolkit*, feedback from relevant developed and developing country stakeholders, and lessons learned from UNDP's experiences in energy projects have led to this emphasis on rural energy services. In addition, international fora such as the Ninth Commission for Sustainable Development (CSD 9), the Millennium Summit and WSSD have brought attention to the centrality of energy in achieving development outcomes and, in particular, the need to enhance efforts on increasing rural energy services – particularly disadvantaged groups such as remote communities and women, who bear a disproportionate burden of collecting and using energy. These issues will again be on the agenda at the 2005 World Summit and CSD 14/15, which will focus on energy-related issues. The Energy TTF has responded to the importance of

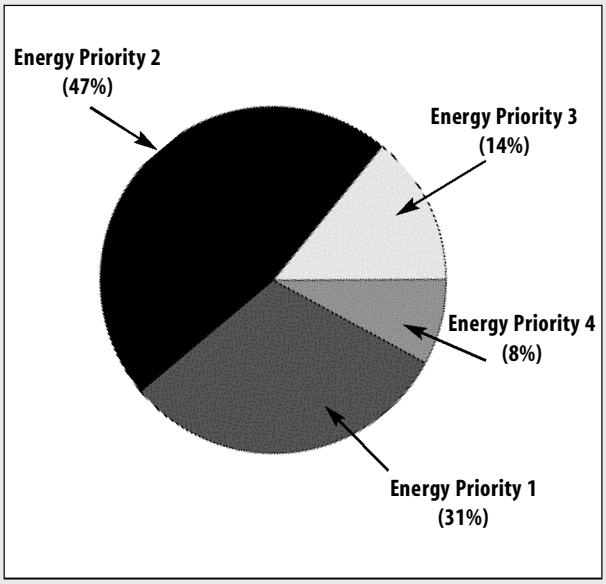
TABLE 2: Allocation of Projects and Associated Funds (both Received and Programmed) (in US$) per Energy Priority

	Closed in 2004	Operating in 2004	Total Projects to Date	Total Funding
Energy Priority 1: Strengthening national policy frameworks to support energy for poverty reduction and sustainable development	2	12	14	**$3,315,146**
Energy Priority 2: Promoting rural energy access and services to support growth and equity	0	20	20	**$4,999,071**
Energy Priority 3: Promoting clean energy technologies for sustainable development	1	5	6	**$1,254,700**
Energy Priority 4: Increasing access to investment financing for sustainable energy	0	3	3	**$288,000**
Total	**3**	**40**	**43**	**$9,856,917**

promoting rural energy access and services by developing country-level projects on WSSD partnerships such as GVEP and the Liquefied Petroleum Gas (LPG) Rural Energy Challenge, facilitating formulation of rural energy strategies, and exploring both fossil fuel and renewable energy options for remote and marginalized communities.

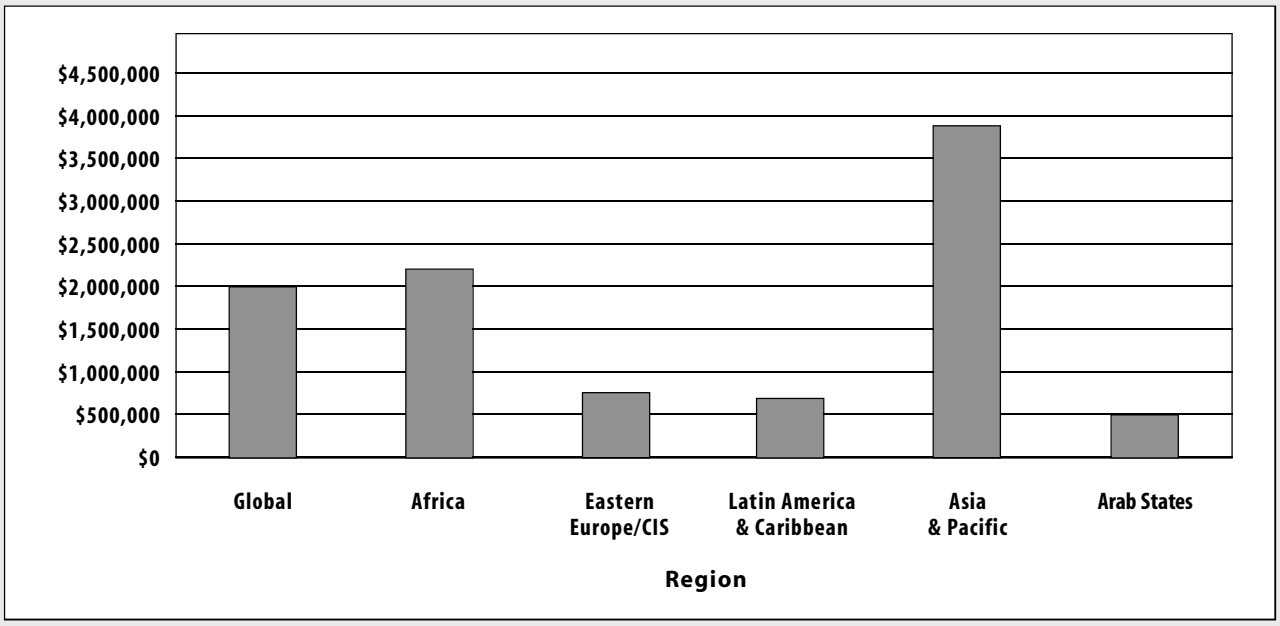
The second highest amount of funding (approximately $3.3 million) went towards strengthening national policy frameworks to support energy for poverty reduction and sustainable development (*energy priority 1*) through twelve projects. This is a relatively important area of work, given the strategic impact of elevating energy issues into national development agendas, such as the Poverty Reduction Strategy (PRS) and National Strategies for Sustainable Development (NSSD) processes, thereby allowing for more serious consideration of alignment of energy issues with development outcomes ultimately helping to meet the MDGs. Of the remaining projects in operation in 2004, five focused on the promotion of clean energy technologies for sustainable development (*energy priority 3*) and three on increasing access to investment financing for sustainable energy (*energy priority 4*). While these areas of work are also related to other energy priorities, UNDP-GEF's focus on mitigating climate change by transformation of the energy market through low carbon emitting technologies covers such an enormous portfolio (more than $2 billion since GEF's inception) that much less of a project focus could be given to energy priority 3. In addition, the uncertainty of the Kyoto Protocol to the UN Framework Convention on Climate Change initially led to relatively fewer demands under energy priority 4 than are seen at the present time on issues such as Clean Development Mechanism (CDM) capacity development. Now that the Protocol has entered into force and carbon markets are growing rapidly worldwide, interest in energy financing issues is likely to grow.

FIGURE 1:
2004 Distribution Across Energy Priorities of Energy TTF Funds Programmed



c. Geographical focus on Africa and Asia Pacific:
The largest proportion of funds has been earmarked for the Asia Pacific region (approximately US$ 3.95 million) followed by Africa (approximately US$ 2.26 million), as shown in Figure 2. However, outside of two large projects totaling approximately $3 million in the Asia Pacific region, it is clear that the main geographical focus area has been Africa, with 14 projects situated across all African sub-regions. This focus reflects the relatively higher development needs in Africa (the large majority of Least Developed Countries is located there), high rural energy concerns including not only rural electrification but also mechanical power and heating needs, and the opportunity to integrate energy into the ongoing PRS process. These factors present entry points for undertaking a variety of energy projects at the macro-policy and local project implementation level through capacity development on viable energy options, undertaking of hands-on pilot projects and formulation of appropriate policy

FIGURE 2:
Geographical Distribution of Energy TTF Funds: 2001-2004



frameworks on energy and development benefits. The Eastern Europe/Commonwealth of Independent States (CIS), Latin America and Caribbean, and Arab States regions have proportionately lower allocations of funds, varying from approximately US$ 500,000 to US$ 900,000, with a range of three to eight projects per region. There is also approximately US$ 2 million of funds for global level activities, primarily GVEP and, to a lesser extent, the LPG Rural Energy Challenge projects.

3. SUBSTANTIVE REPORTING

This section outlines the outputs, impacts and lessons learned from experiences across the four UNDP energy priorities. The primary sources of information for this section are Annual Progress Reports (APRs), periodic progress reports, and email/telephone communications with relevant UNDP Country Offices and national project focal points. Annex I outlines the projects per energy priority, with details on the project titles, country sites and total budgets.

3.1. Energy Priority 1: Strengthening national policy frameworks to support energy for poverty reduction and sustainable development

Description

Efforts in this priority area are focused on incorporating sustainable energy issues into policy dialogues on macro-economic reform, energy sector reform and sustainable development planning. These efforts help to address energy in ways that support growth and equity if the MDGs are to be achieved.

Main outputs and impacts

Energy TTF projects in this category have reinforced the need to reflect energy issues into wider development agendas through: mainstreaming of energy concerns into the PRS process; formulation of national energy sector diagnostics; macro-level energy strategies and indicators; and legislation on national energy policies, including issues of energy pricing restructuring, electricity use and renewable energy targets. Twelve projects in operation in 2004 fall under energy priority 1 and were at various stages of operation last year.

The projects in Burundi, Mali and Nicaragua have been instrumental in integrating energy-development linkages into the PRS process. Although the project in Burundi closed operationally in 2003, its impacts have been far-reaching, with the formulation and government validation of a strategy to integrate energy concerns in the PRSP process. This document clearly links energy and poverty in a comprehensive manner for the first time and has led to national-level recognition of the need to reflect energy concerns in development planning. The TTF project in Mali produced a national framework of key energy indicators which helped input energy issues into the PRSP, drawing upon a multi-functional platform for economic, health, gender and education benefits due to increased energy services. The Nicaraguan project, upon the request of the National Energy Commission, undertook national studies to identify barriers to the viability of renewable energy sources. Geothermal and hydroelectricity potential and baselines for CDM projects were mapped, leading to adjustments in the energy regulatory framework and input into the Rural Electricity Policy and the PRSP process.

Several projects successfully conducted energy surveys, produced diagnostics of energy issues, and helped develop national energy plans for approval at the highest governmental levels. These projects were instrumental in collecting data and analyzing macro-level issues of energy type, production, distribution and consumption – which was often being done for the first time in some countries – and elevating the importance of energy for meeting sustainable development goals at the highest governmental levels through multi-stakeholder dialogue, awareness-raising and capacity development. In Belize, the TTF project produced a diagnostic of the energy sector in relation to poverty reduction. Proposed recommendations on viable energy options for sustainable development were presented to the Prime Minister's Office and will result, in the near future, in the development of a National Energy Plan. The comprehensive energy recommendations and high-level momentum

gathered from this project also contributed to the creation of the Ministry of Energy. In Nepal, the TTF project has been catalytic in developing a new national policy framework that defines clear institutional linkages between national, district and village levels and establishes robust regulatory and legal mechanisms on decentralized rural energy options. The Nepalese national government is currently considering adoption of this framework. In Serbia and Montenegro, a comprehensive survey on household energy consumption, saving, pricing and other factors has led to a detailed analysis of the linkages between energy, poverty and environment. This analysis indicates an integrated national development framework is needed that targets an enforceable concept of property rights and public goods; improved institutional and corporate governance; strengthened coordination among energy, health and poverty policies; improved energy efficiency; and the reversing of inequitable pricing schemes that favor higher income classes. The Pacific Islands regional project, which got underway in late 2004, aims to improve the capacity of participating island states to develop strategic energy action plans. This initiative will help these countries contribute to the Barbados Programme of Action for Small Island Developing States and to participate in the European Union Energy Initiative as well as the Pacific Island Energy for Sustainable Development initiative (a WSSD partnership). National and regional consultations have been held and assessment of current energy policy opportunities and constraints is underway.

Energy TTF projects in Kazakhstan, Maldives, Namibia and Tokelau successfully linked renewable energy use to national development needs. The TTF project in Kazakhstan was innovative in linking energy use with water management by helping remote villages in an economically poor area meet their drinking water needs by introducing hybrid wind and solar systems for pumping and purifying water, benefiting approximately 1000 people. In Maldives and Tokelau, renewable energy resource assessments have been useful for the governments in providing the necessary information for making an informed national policy on energy, including viable sustainable energy options. In Namibia, the project supported the development of biomass management tools, including energy needs assessment, a users' manual and Geographic Information Systems (GIS) map, leading to the production of a national strategy for sustainable use of biomass energy.

Energy TTF projects were also instrumental in designing legislation and regulations, which resulted in the drafting of codes, laws and pricing reforms on energy for sustainable development purposes. The TTF project in the Central African Republic facilitated the development of a National Electricity Code, a comprehensive legislative instrument, composed of 11 sections and 87 articles on regulatory measures for production and use of electricity (along with penalties if these measures are not followed) from the angle of poverty reduction and rural development. The TTF project in Guatemala successfully produced a Renewable Energy Incentives Law that was passed by the Guatemalan Congress. The project has since followed up with multi-stakeholder dialogue to develop regulations for widespread applications of renewable energy, including by-laws for energy generation and distribution, bio-fuels standards, pilot projects on solar PV and hydroelectricity, and development of a small-scale CDM project. In Lebanon, the TTF funds contributed to assisting the national electric utility, Electricité du Liban, review its electricity pricing structure and evaluate the effects of energy subsidies on various income population groups, with a focus on restructuring pricing levels in favor of economic growth for the poor. Through this project, greater recognition has been placed on the need to have appropriate subsidy structures for the poor and modification of the existing tariff structure.

Main lessons learned

These projects have had substantial positive impacts at the national level in providing strategic inputs into the consideration, design and analysis of energy policies that are clearly in the context of sustainable development. The country ownership of the projects and leadership of the national governments have been critical in shaping the dialogue on national energy issues and integrating them into wider development agendas. Certain projects have been instrumental in identifying weaknesses in institutional and human capacities, particularly at the government level. The ability of national stakeholders to undertake studies and to develop energy and development policies at the national level has been strengthened through awareness-raising campaigns, technical workshops, demonstration projects and knowledge management. All projects have been marked by a lengthy and participatory multi-stakeholder process, which has not only facilitated dialogue with government but has also provided a mechanism to include the private sector and civil society in discussions on undertaking capacity needs assessments, energy surveys and production of national energy policies, leading to input into larger development processes such as the PRS.

In most cases, these projects have had local level linkages, with concrete analysis and strategy formulation on issues such as increased rural energy access, the critical role of women in using and providing energy, and the role of the private sector. Energy TTF projects have fostered public-private partnerships by providing a necessary entry point for the private sector, in particular technology providers, investors and financiers, including CDM project developers. In some cases the projects have identified low market capacity for sustainable energy options and recognized the need to create incentives for the private sector to provide energy options.

National stakeholders have recognized that while the resulting policy and legislative changes certainly mark progress in integrating energy into national sustainable development plans and policies, these efforts need to be amplified in order to ensure that these new energy frameworks move beyond macro-level design and strategy formulation and actually yield concrete opportunities for viable sustainable energy options.

3.2. Energy Priority 2: Promoting rural energy services to support growth and equity

Description

Activities to promote rural energy access and services focus on meeting people's cooking and heating needs and providing electricity for household and productive uses, through energy efficient options, including both conventional and renewable energy sources. In particular, the TTF projects under this energy priority are focused on the needs of women, who are disproportionately impacted by lack of access to energy in rural areas, and on the essential role of energy services in supporting productive activities in rural communities. Increasing access to modern energy services is the central issue under this energy priority and responds directly to the WSSD agreements on energy expressed in the Johannesburg Plan of Implementation.

Main outputs and impacts

In 2004, twenty projects focused on rural energy programs under energy priority 2 of the Energy TTF. Projects in this energy priority were most prevalent in Africa, with representation in most other regions. The focus on Africa, primarily through the GVEP, responds to the pressing issue of rural energy access that is most dominant in that region.

A key feature of the Energy TTF in 2004 was the operationalization and commencement of country-level activities on GVEP. UNDP has played an active role in GVEP, being a founding partner of this initiative at WSSD. Collaboration has been forged with a wide range of donor organizations,

including France, Germany, the Netherlands, USA, the UN Foundation and the World Bank, as well as more than 700 local and international private sector companies, NGOs, academia and public sector entities that coordinate and implement country-level activities in Africa, Latin America and Asia. Linking energy issues to development outcomes in multiple economic sectors (agriculture, health, education, water, etc) has been a central aspect of the GVEP approach.

Eight country-level projects on GVEP, complemented by four global programs on GVEP and other issues, were under operation in 2004. The country-level projects took place in Cameroon, Dominican Republic, Ghana, Guatemala, Kenya, South Africa, Tanzania and Uganda. In Cameroon, a national energy action plan (NEAP) was produced with energy linkages made to the PRSP process. Through this process, the NEAP has proposed increased provision of electricity to educational establishments, integrated health centers and rural water supply projects, as well as broadened the scope to consider the non-electricity energy needs of the poor, and involve banks, micro-credit institutions and more stakeholders (especially private sector and NGOs) in the process. The main activity in Ghana thus far has been the active participation and input of energy dimensions into the PRSP process by multiple stakeholders from diverse sectors. The GVEP projects in Kenya, South Africa and Guatemala are at earlier stages, with several activities being undertaken including: formation of project steering and technical committees; collection of energy baseline data as input into NEAPs; formulation of strategies on how to optimally position GVEP, including building on existing energy initiatives; and initiation of multi-stakeholder dialogue at governmental, municipal and local levels on energy needs and capacity gaps when considering energy as part of wider development issues. In Kenya, baseline energy data on sources, uses and consumption is being prepared through linkages to the energy needs of other sectors, as part of the Millennium Project. In South Africa, in addition to energy baseline data collection, strategies are being formulated on how to link with LPG initiatives, make better use of integrated energy centers and involve the private sector, especially women entrepreneurs, in taking up business opportunities involving energy services. In Guatemala, a national GVEP group was established, a matrix of geophysical and socio-economic information is being formulated, and a strategic action plan is being developed, with involvement of organizations such as Fundación Solar and rural indigenous communities. GVEP projects in the Dominican Republic, Tanzania and Uganda are due to become fully operational in 2005.

In addition to these country-level activities, global and regional activities were also undertaken on GVEP. At the global level, a workshop was held in the Philippines in May 2004, attended by practitioners from around the world, to discuss strategies to increase access to consumer loans and micro-finance for energy services. In addition, the global programs provided policy and technical advice on GVEP activities, including support from the USA on focal areas of funding facilitation and capacity development. International advocacy work on energy and development issues was also undertaken at global fora such as the International Conference for Renewable Energies in Germany (June 2004) and the Energy for Development Conference in the Netherlands (December 2004). Knowledge management activities for GVEP resulted in production and dissemination of newsletters, website maintenance and database management. A facilitators' workshop on GVEP was held in December 2004 in Kenya for the Africa region to share experiences on GVEP activities thus far, identify possible programming linkages and resource sharing between GVEP, energy and non-energy projects, eliminate any duplicate activities, and subsequently refine GVEP project design and objectives in light of this information sharing and network building.

The eight non-GVEP project activities under energy priority 2 took place in Albania, Bosnia and Herzegovina, Hungary, India, the Democratic People's Republic of Korea (DPRK), Slovakia, Tanzania and Turkey. The main outputs of these projects consisted of formulation of rural energy plans, mainstreaming of rural energy needs into the PRSP process, identification of productive activities and addressing of gender concerns. Energy efficiency measures were devised in Albania and Bosnia and Herzegovina. Energy audits and surveys undertaken in Albania resulted in demonstration projects to increase energy efficiency in public buildings in the southeastern part of the country; in four sites selected for further study, more than US$ 200,000 of savings through energy efficiency measures were identified. In Bosnia and Herzegovina, a training needs assessment on energy efficiency measures was under formulation in 2004. The TTF projects in Hungary and Slovakia tackled the issue of low energy services for the disadvantaged Roma communities through a situation analysis, detailed surveys of energy needs, and pilot projects, such as brick stove building, forest waste shredding and window improvements. Results were documented and shared at a national workshop in early 2005. In India, the TTF project on renewable energy for rural livelihoods worked closely with governments and NGOs in five provinces to identify appropriate technology systems, such as solar, biomass, and hydropower, for rural electrification in 60 villages. In addition, the project initiated the formulation of a strategy to provide local training for hydropower station operations and to establish a national resource centre for renewable energy mapping. In DPRK, the TTF project completed an assessment of rural energy needs; appropriate solutions to address the gap in rural energy demand and supply and a medium term rural energy investment strategy were proposed in a draft Sustainable Rural Energy Development document. Although donor consultations and comprehensive stakeholder meetings have been delayed due to current geo-political tensions in the Korean peninsula, the outcomes of the project thus far have nevertheless been instrumental in making linkages to a parallel UNDP pilot project for a decentralized power generation and distribution system that is intended to benefit vulnerable groups. In Tanzania, renewable energy technologies were scaled up in three districts from an earlier GEF biodiversity project, resulting in construction of more than 2000 improved cook stoves, planting of nearly 130,000 jatropha and other tree seedlings, and construction and training on the usage of one biogas plant. This has resulted in increased incomes for stove artisans and tree nursery owners, health improvements, time and economic benefits (especially for women), and increased forest conservation and regeneration. The TTF project in Turkey was catalytic in demonstrating the use of geothermal energy in greenhouse farming in a rural province and creating income generation opportunities for farmers.

Lessons Learned

Several lessons have emerged on enhancing rural energy access through GVEP and other projects. A clear cross-cutting lesson is that energy needs and concerns, for rural and disadvantaged communities is not always considered a priority in local and national development agendas. These projects have attempted to, at the very least, raise the profile of the energy situation in these areas through a variety of surveys, audits, workshops and pilot projects, in close collaboration with local, municipal and national authorities.

The TTF projects have been catalytic in bringing the energy needs of socially excluded groups to the attention of local authorities through participatory, transparent and collaborative processes. Coordination and support of public sector officials from the outset of a project is critical to gaining momentum to better understand the energy needs of local communities and to formulate concrete solutions to

solving the problems of these communities. A truly effective engagement with local communities has generated a sense of commitment and leadership, beyond mere attention, from the federal, provincial and village government side to helping design local development strategies that incorporate energy development strategies for rural and disadvantaged areas.

Reaching consensus through multi-stakeholder dialogue is a necessary and effective mechanism in order to ensure local project ownership, commitment and sustainability. However this process can be coordination-, labor- and time-intensive, as it involves accessing information and consulting with people in areas that may be difficult to reach or have poor communications systems. In addition, the agendas of government, private sector and civil society can sometimes conflict, due to their diverse needs and priorities, which may also pose difficulties in reaching agreement on project direction.

Capacity development for disadvantaged and/or rural communities, through awareness raising, technical training and pilot projects on energy efficient and renewable technologies, has been useful in demonstrating a range of viable sustainable energy options to not only community citizens but also municipal and national authorities. Despite these capacity development efforts, the projects demonstrate that there exists a relative paucity of specialists overall who are available for servicing and maintaining energy technologies in rural areas. Furthermore, the projects also identified social and economic differentiation amongst disadvantaged and/or rural residents in terms of access to energy sources, ability and willingness to pay, level of usage and quality of maintenance.

3.3. Energy Priority 3: Promoting clean energy technologies for sustainable development

Description

Under this energy priority, UNDP supports the introduction and adaptation of clean energy technologies that can promote economic growth, social development and environmental sustainability. This category includes a range of energy efficiency measures, renewable energies and clean fossil fuels for sustainable development.

Main outputs and impacts

In 2004, this category comprised five projects in Egypt, Ghana, the Philippines, Sri Lanka and Uzbekistan. These projects employed a range of modern energy technologies, such as biomass, solar photovoltaic, LPG and energy efficiency measures to address both global environmental protection and local development needs. While promoting clean energy technologies as an entry point for development, these projects show strong links with enhanced rural energy services, integration of energy into national development frameworks, and investments and economic viability for energy services, and thus are supportive of UNDP's other major energy priorities.

The TTF project in Egypt, although in early stages of implementation, is being implemented in close collaboration with an ongoing UNDP-GEF project on improving energy efficiency in the country through a testing laboratory and hands-on training. In Ghana, the TTF project on LPG substitution for woodfuel use has successfully introduced LPG cylinders in the kitchens of two secondary schools and seven small-scale enterprises, formed LPG User Associations, provided more than 400 LPG cylinders, stoves and accessories to these associations for channeling to communities, and developed a standards and safety regulations code of practice. Distribution bottlenecks, transportation costs and low economic margins of LPG have been

identified as barriers to widespread diffusion; the project aims to work towards removing these barriers in 2005. In the Philippines, the TTF project finalized the design of the hybrid diesel-solar power system and started construction of the powerhouse to supply power to 200 households in Ijabay. A cooperative society has also been established and trained through this project. The TTF project in Sri Lanka successfully undertook demonstration projects on using biomass waste for energy purposes from various small and medium scale industries such as tea, lime and spice production and brass melting. The project will be exploring options for an acceptable tariff for biomass-based electricity generation. In Uzbekistan, the TTF project led to educational, income-generation and social gathering opportunities through the installation of solar PV systems for water pumping and electricity. The project has catalyzed momentum in the country to develop a national renewable energy strategy and demonstrated an approach that could lead to energy savings and the creation of domestic and Central Asian markets through mass future production of PV systems.

Lessons Learned

The experiences of these projects reveal a number of lessons about the promotion of clean energy technologies for sustainable development. It is clear from all projects that these technologies yield multiple sustainable development benefits in rural areas, such as income generation, improved health, increased free time and labor services for other activities, such as education and social activities, as well as environmental benefits. However a number of barriers need to be addressed and removed throughout the duration of the project, otherwise the technology will not be adapted and will remain economically unattractive. While clean energy technologies are more environmentally beneficial than traditional fossil fuels, advocating for clean energy purely on an environmental rationale does not usually lead to full project ownership, as economic and social incentives are more pressing.

For renewable energy, energy efficiency and clean fossil fuels such as LPG to be economically viable and scaled up to widespread use, both public and private sector participation is needed. The public sector plays an important regulatory and policy guidance role, such as through clear national plans and appropriate subsidies, tariffs and tax structures which can help to provide a positive incentive for the private sector to provide investments, technology installation and distribution, and technical assistance in clean energy systems projects. Favorable pricing mechanisms help to increase the interest of private sector firms to consider developing and distributing clean energy systems, since many of these, including solar, wind and LPG, have high initial capital costs and generally low economic viability.

In addition to economic barriers, these technologies are often still viewed as a novelty, and uncertainty regarding their use, reliability and benefits often persists initially. It is thus essential to undertake capacity building exercises, involving awareness-raising campaigns, informational brochures and technical training on these technologies through hands-on pilot projects. Furthermore, while these technologies may lead to sustainable development benefits, there is often a low and/or unreliable domestic market to supply these technologies and limited local expertise to construct, maintain and/or train others in the technology applications, thus rendering the technology unavailable, expensive and, ultimately, unsustainable. Widespread scaling up of efforts to disseminate the technology through capacity development and engagement of the private sector in developing these technologies may lead to greater opportunities for technology diffusion and removal of barriers for clean energy applications for sustainable development.

3.4. Energy Priority 4: Increasing access to investment financing for sustainable energy

Description

In this category, UNDP focuses on enhancing the ability of developing countries to attract investment financing for sustainable energy options beyond traditional official development assistance. With increasing attention to climate change issues and the recent entry into force of the Kyoto Protocol and its associated mechanisms, new energy financing opportunities from both the public and private sectors are rapidly gaining attention. Knowledge-sharing and capacity development mechanisms are needed to allow developing countries to consider whether it is viable from a sustainable development perspective to engage in these opportunities and, if so, to take maximum advantage of them. UNDP aims to support the efforts of developing countries to shape, learn about, and participate in new energy financing mechanisms, including CDM.

Main outputs and impacts

In this category, there were three projects in Bangladesh, India and Morocco. (Two other projects included elements of CDM capacity development but were not exclusively focused on CDM issues. The TTF projects in Guatemala and Nicaragua undertook CDM capacity activities including baseline analysis and small-scale project development.) All the projects assisted in developing local capacity, creating public-private partnerships and enhancing institutional frameworks to effectively participate in the CDM established under the Kyoto Protocol. These interventions are strongly focused on creating enabling environments through hands-on project development, complemented by institutional strengthening, sectoral surveys and identification of ways to effectively create an interface between federal and municipal governments, project developers, domestic and international investors, technology suppliers and communities. The TTF interventions are helping to make a relatively new mechanism such as CDM yield national sustainable development benefits.

The projects in Bangladesh and India have used biomethanation as a specific entry point for capacity development on CDM, with lessons and experiences applicable to the national strategy on CDM generally. National workshops, sectoral studies and consultations have led to the enhancement of public-private partnerships with government, private sector and civil society, as well as policy development, including improved project review procedures, at the institutional level. In Bangladesh, the project contributed to the creation of an enabling environment for both the public and private sectors to effectively engage in the CDM through the establishment of a designated national authority (DNA), development and government approval of sustainable development criteria, and formulation of four pilot projects. Two of these projects, a landfill gas recovery project and a composting project received significant Dutch investments of US$ 10 million, with potential interest from a variety of bilateral and multilateral buyers to purchase resulting emissions reductions credits. In this case, the modest TTF project resources directly contributed to leveraging of greater project finance at the national level.
In India, the TTF project facilitated engagement of national stakeholders on the opportunities and challenges of the CDM, using landfill gas and municipal wastewater as pilot CDM areas of consideration. This project contributed to the National Master Plan on Waste to Energy through baseline development, identification of potential sub-sectors and six specific project proposals.
A national stakeholder's workshop held in 2004 brought the issue of CDM into the national dialogue on energy, waste and sustainable development. In Morocco, the TTF project, in collaboration with UNEP, helped to establish a functioning DNA, strengthen sustainable development indica-

tors for CDM, and develop three CDM pilot projects – catalyzing project entrepreneurs to develop a larger portfolio of more than 10 potential medium- to large-scale projects and several small-scale ones. Donor consultations, including a national round table, have resulted in Memorandums of Understanding with a range of Asian and European buyers indicating interest in purchasing carbon credits from Moroccan projects.

Lessons Learned

A variety of lessons can be learned from these project experiences. The projects have been instrumental in raising the level of awareness of relevant stakeholders (from both the public and private sector) of CDM opportunities and constraints. CDM is still a relatively new concept, and while it has gained attention recently as a potential mechanism for achieving sustainable development benefits, it is still a complex, bureaucratic, time and transaction cost-intensive mechanism. Awareness of CDM is usually limited to a few government ministries (notably the DNA) and relatively few investors, project developers and owners. Linkages to sustainable development and poverty are not usually well understood in tangible terms, and often times the over-riding incentive is purely financial. While CDM is a market-based mechanism, it is also meant to provide sustainable development benefits, including social and environmental benefits, in addition to economic gains. UNDP's mandate of helping countries achieve sustainable development outcomes has been instrumental in shifting focus towards project-level activities that yield development dividends.

In order to remove some of these barriers, institutional procedures, such as establishing a DNA and having clear and transparent project review procedures, are imperative to provide the proper enabling environment for development of projects. Hands-on project learning has proven to be a useful approach in not only engaging the private sector and developing their abilities to formulate and implement projects within CDM, but also in providing a positive signal, as in the case of Bangladesh and Morocco, to potential investors and purchasers of carbon credits. Training on very complex issues such as assessing project risk, developing baseline and monitoring methodologies, determining additionality, building skills to undertake local validation and verification, and conducting carbon credit negotiations, is needed in order to reduce transaction costs and time delays.

The Bangladesh, India and Morocco TTF project experiences provided valuable inputs into the country-level CDM lessons learned reports that were produced in 2004 and are currently being consolidated into a UNDP CDM lessons learned document. At a larger level, these project experiences are also helping UNDP develop a clear and focused global CDM strategy, involving global coordination and technical assistance from the Bureau for Development Policy and implementation of activities led by Country Offices with support from regional bureaux and service centers.

While the previous section outlined the status of projects and lessons learned under each energy priority, this section highlights overall lessons learned and problems encountered across all energy priorities.

The experiences from most projects indicate that energy is generally viewed as a stand-alone sector. The positive impacts of energy on sustainable development, especially for rural areas, are not widely known nor well understood within the macro-level spheres of government, private sector and civil society. Energy TTF projects have attempted to rectify this problem by providing visibility and focus on energy services in a cross-cutting manner as a means to yield development benefits such as improved health, education, gender equality, income generation and increased free time and labor services for other activities, such as education and social activities. Project lessons indicate that sustainable energy options are most effective when incorporated into national-level plans, such as a broader framework on poverty reduction (i.e., PRSP), national energy directive (i.e., NEAP) or legislation (i.e., Renewable Energy Incentives Law) complemented by downstream activities of awareness-raising, local level dialogue and training through workshops and hands-on demonstration projects at the municipal and village levels. These dual sets of activities are necessary to create the proper enabling environment for disadvantaged and/or rural people to gain access to energy, to promote clean energy technologies in a widespread and sustainable manner, and to obtain financing for energy systems.

A large focus of 2004 activities for the Energy TTF was increasing access to energy services in rural areas, particularly through the GVEP mechanism. GVEP activities have helped to raise the visibility of this issue. More than 700 local partners have been mobilized to more strategically yield development impacts that can be gained from increased energy services, not only through electrification but also through mechanical power and heat. These projects have also been catalytic in bringing the benefits of productive uses of energy, gender dimensions and potential involvement of microfinance institutions to the forefront of rural development agendas in the associated countries. GVEP and other rural energy project experiences reveal that participatory, transparent multi-stakeholder dialogues, in the form of workshops, consultations and hands-on training, are often time consuming, difficult to coordinate and labor intensive. However, they have proven to be necessary for reaching consensus and building national capacity to assess priorities and strategies for sustainable energy options. A balance needs to be struck between openness and flexibility of discussions on the one hand – in order to ensure that all relevant issues and constraints are addressed and relevant stakeholders feel a sense of commitment to the project – with clear focus, concrete objectives and realistic outputs on the other hand. Experience of successful TTF projects indicates a results-oriented approach, rather than emphasis on process, raises the likelihood of projects having far-reaching and meaningful development impacts.

Baseline data collection on energy production, use and consumption, through surveys, desk studies, interview and consultations, is essential in obtaining a comprehensive map of energy as it relates to different socio-economic parameters. These activities, however, are often difficult to undertake because of limited and/or non-existent energy data, weak telecommunications and difficulties in accessing remote areas to obtain first-hand data.

Energy TTF projects have reflected the need for strong leadership and ownership of projects

by key national stakeholders. Governments need to be involved from the early stages of project design and implementation in order to signal commitment to issues such as energy-poverty linkages, rural energy needs, clean energy technology promotion and financing. This signal is critical to attracting private sector involvement on energy and development issues. A clear and transparent stance on energy for the poor, complemented by favorable regulatory measures, such as legislation, energy plans, targets, and appropriate economic pricing, such as pro-poor tariffs and subsidies on sustainable energy systems, provide a positive incentive for energy-producing firms, technology suppliers, investors, project developers and distributors to become more involved in considering energy from the point of view of development. Public-private partnerships between government and private sector are often necessary in order to have a successful energy intervention; the involvement of just one side is not sufficient to successfully undertake energy activities.

Weak or non-existent capacity was noticed across certain stakeholders, namely local-level government (provincial, municipal, district and village officials), private sector (notably technology producers), national consultants/intermediaries and ordinary citizens. This capacity was weakest in rural areas where local, municipal and district officials as well as residents were not fully aware of the extent of their energy situation and the means to rectify it. Raising awareness and developing skills through actual demonstration projects, complemented by workshops and informal participatory consultations, have proven to be important elements of a successful capacity development approach.

The market for clean energy technologies, particularly in rural areas, is often underdeveloped. Although local citizens may adopt the energy technology being introduced, a lack of national expertise, developers, suppliers, entrepreneurs and investors often times makes the technology unavailable, prohibitively expensive when available and unsustainable. Furthermore, many sustainable energy systems, such as solar, wind and large biomass systems, have high capital costs and long payback periods. They can, however, be more economically attractive if appropriately scaled up, i.e., at a community level. Several energy TTF projects have devised strategies to facilitate the scaling up of clean energy technologies to an economically viable level, thus helping to create entry points for manufacturers, distributors, technicians and users of clean energy technologies and thereby rendering the options more affordable, locally accessible and sustainable.

Substantive synergies, in the form of coordination arrangements, sharing of lessons learned and joint implementation of project components, between Energy TTF projects and other UNDP projects can maximize the potential for effectiveness of projects. Linkages were made with other UNDP programs such as past and/or ongoing GEF projects (in the case of India, Egypt, Ghana, Namibia and Tanzania) and UNDP core-funded projects in areas such as energy, climate change and biodiversity (in DPRK and Nepal). As TTF project resources were often limited, partnerships were often critical in garnering further resources. The success of TTF projects often acted as a catalyst to attract other partners in order to scale up operations, replicate them at a mass level, or make more detailed linkages between the areas of energy, sustainable development and poverty alleviation. Co-funding from sources such as host governments, the GEF (in the form of project development funds, medium to full-scale projects and Small Grants Programme resources), bilateral funding (from sources such as Denmark, Norway and Sweden), foundations (i.e., Soros), NGOs and private sector entities (e.g., technology suppliers, investors and financiers) have been secured in several Energy TTF projects. Parallel funding from World Bank sources, including the Energy Sector Management Assistance Programme, have been

leveraged in many GVEP-focused projects.

Some Energy TTF projects have shown project externalities can often hamper implementation for several months. Severe weather in some countries of Asia (due to the tsunami disaster in late 2004) and to a lesser extent in Eastern Europe (due to a generally harsh winter season) has delayed the undertaking of surveys, audits and pilot projects. In addition, country and region-wide political tensions (in Burundi, DPRK, Haiti, Nepal and Serbia and Montenegro) and the changing of governments have also led to delays in certain projects. Exchange rate fluctuations have also lowered the programmable amounts available in local currency for certain projects, leading to minor drops in purchasing power, especially for equipment procurement.

The inception of the ATLAS PeopleSoft program, a newly instituted financial and program management software at UNDP, has caused delays in operational and financial matters in some projects. The UNDP-wide implementation of this operations and management software in 2004 led to some delays regarding payments, contracting and provision of services. However there should be fewer occurrences in the future as internal capacity is developed to more efficiently use the program.

5. CONCLUSION AND FUTURE PLANS

The Energy TTF is positively contributing towards presenting viable sustainable energy options as tools to help meet the MDGs. Projects funded through the TTF affirm the importance of energy as being central to sustainable development and poverty reduction efforts. Through an integrated development approach, the Energy TTF has identified strategic entry points for enhancing national policy frameworks to support energy by developing capacity, promoting rural energy access and services, providing support for clean energy demonstration projects, and enhancing access to investments and financing for energy services. The TTF has proven to be an important means of further alignment around the MYFF on energy for sustainable development as per service line 3.3.

UNDP will continue to provide a mixture of both local-level and global activities. At the local level, UNDP will provide policy and technical guidance and undertake on-the-ground project activities in each of the four energy priority areas to help developing countries create appropriate enabling environments for energy activities that yield optimum sustainable development benefits and meet the MDGs in the remaining 10 years to 2015. In addition to these efforts, UNDP will also be engaged in macro-level global advocacy and knowledge management activities, such as actively participating in the 2005 World Summit in September 2005, CSD 14/15 in 2006/7, and other relevant global and regional fora, to raise the world's attention to the importance of energy services in meeting the development aspirations of the poor.

In order to achieve these goals, strategic partnerships will need to be further developed. Currently, the success of external partnership development through the Energy TTF indicates a strong commitment of global partners to WSSD political accords and initiatives such as GVEP and the LPG Rural Energy Challenge. Further resources from bilateral and multilateral agencies, host governments, private sector, foundations and civil society will be needed to support these and other initiatives. These resources will be necessary to enable UNDP to harness the potential of this unique financial mechanism (TTF) and move towards presenting viable sustainable energy options as a tool to help meet the MDGs.

ANNEX **List of Energy TTF Projects from Inception to Date, by Energy Priority**

Energy Priority	Country	Project Title	Budgeted Amount (in US$)
1. ***Strengthening national policy frameworks to support energy for poverty reduction and sustainable development***	**Belize**	*Formulation of National Energy Plan for Belize*	**136,700**
	Burundi	*Stratégie d'intégration de l'énergie dans la réduction de la pauvreté et dans le développement durable*	**100,000**
	Central African Republic	*Strengthening National Policy Frameworks to Support Energy for Poverty Reduction and Sustainable Development*	**100,000**
	Guatemala	*Development of Policy and Legal Frameworks for Rural Energy Services (RES) for the Promotion of Renewable Energy Technologies (RETs)*	**230,000**
	Kazakhstan	*Renewable Energy Use for Potable Water Supply in Remote Villages of the Depressed Region in Kazakhstan*	**115,000**
	Lebanon	*Assessment of the National Tariff Policy Application*	**100,000**
	Maldives	*Energy Assessment for Policy Formulation in Maldives*	**94,000**
	Mali	*Intégration de la dimension énergie dans les stratégies de réduction de la pauvreté*	**144,835**
	Namibia	*Biomass Energy Strategy & Management Tool*	**115,903**
	Nepal	*National Policy Frameworks on Rural Energy for Sustainable Development and Poverty Reduction*	**94,000**
	Nicaragua	*Promoting Dialogue for Mainstreaming Sustainable Energy Strategies in PRSP and the Regulatory Framework of the Energy Sector*	**140,000**
	Pacific Islands	*Pacific Islands' Energy Policies and Strategic Action Plans*	**1,824,708**
	Tokelau	*Renewable Energy Barrier Assessment and Removal (REBAR)*	**30,000**
	Serbia and Montenegro	*Energy & Transition, Poverty & Environmental Impact*	**90,000**
TOTAL		**14 Projects**	**3,315,146**

ANNEX : **List of Programmed Energy TTF Projects from Inception to Date, by Energy Priority**

Energy Priority	Country	Project Title	Amount Programmed (in US$)
2. ***Promoting rural energy access and services to support growth and equity***	**Albania**	*Energy Planning & Energy Efficiency in Korca District*	**148,000**
	Bosnia & Herzegovina	*Sustainable Reconstruction for Post-Crisis Communities*	**200,000**
	Cameroon	*Support for GVEP Implementation in Cameroon*	**105,000**
	Dominican Republic	*Support for GVEP Implementation in the Dominican Republic*	**100,000**
	Ghana	*Support for GVEP Implementation in Ghana*	**150,000**
	Guatemala	*Support for GVEP Implementation in Guatemala*	**100,000**
	Global Project *(focus in West Africa)*	*Support for the GVEP in Africa*	**418,328**
	Global Project	*Support for GVEP Implementation*	**220,847**
	Global Project	*Support for the GVEP within the Framework of WSSD Follow-ups*	**1,200,000**
	Global Project	*Support for Energy TTF – Norwegian Energy Policy Advisor*	**1,267,221**
	Hungary	*Promoting Access to Energy Services to Foster Integration & Human Development for Disadvantaged Communities in Hungary, with a Special Focus on the Roma*	**45,000**
	India	*Renewable Energy for Rural Livelihoods*	**1,187,649**
	Kenya	*Support for GVEP Implementation in Kenya*	**150,000**
	Korea	*Formulation of Documentation on Sustainable Rural Energy Strategy and Investment Plan*	**94,000**
	Slovakia	*Promoting Access to Energy Services to Foster Integration & Human Development for Disadvantaged Communities in Hungary, with a Special Focus on the Roma*	**45,000**
	Tanzania	*Developing Sustainable Rural Energy Strategies at District Level in Tanzania (Phase 1)*	**100,000**
	Tanzania	*Support for GVEP Implementation in Tanzania*	**150,000**
	Turkey	*Geothermal Heat Pump Assisted Greenhouse*	**90,000**
	South Africa	*Support for GVEP Implementation in South Africa*	**200,000**
	Uganda	*Support for GVEP Implementation in Uganda*	**100,000**
TOTAL		**20 Projects**	**6,071,045**

UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources to help people build a better life. We are on the ground in 166 countries, working with them on their own solutions to global and national development challenges. World leaders have pledged to achieve the Millennium Development Goals , including the overarching goal of cutting poverty in half by 2015. UNDP's network links and coordinates global and national efforts to reach these Goals. UNDP's focus is on helping countries build and share solutions in five major areas including democratic governance, poverty reduction, energy and environment, crisis prevention and recovery, and HIV/AIDS.

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