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Energizing the Least Developed Countries to Achieve the Millennium Development Goals: The Challenges and Opportunities of Globalization

Issues Paper



ENERGIZING THE LEAST DEVELOPED COUNTRIES TO ACHIEVE THE MILLENNIUM DEVELOPMENT GOALS: THE CHALLENGES AND OPPORTUNITIES OF GLOBALIZATION¹

☞ Least Developed Countries at a crossroads

The Least Developed Countries (LDCs) are moving at a rapid pace to deal with the challenges of economic and social development. Some of the LDCs are witnessing large growth rates, while others are being left behind, still with very high poverty rates and lack of access to basic services. In fact 18 out of the 46 LDCs for which data are available were unable to achieve per capita growth rates of more than 1 percent per year during the period 2001–2004². Moreover, in a number of the LDCs, there are persistent inequities in the delivery of public goods and social services, financial services for the poor and legal empowerment, including property and labor rights.

The LDCs face both tremendous challenges and opportunities if they are to increase access to energy services in ways that are sustainable, equitable, and economically prudent. With globalization, the LDCs can tap into more modern and efficient technologies, information, and partners to tackle their energy access challenges. However, it is necessary for LDCs to ensure that they have the appropriate national strategies and policies, governance structures and capacity in place to protect their natural resources, their economies, and most importantly the interests of the poor women and men. This paper highlights the key energy related challenges and options for the LDCs in the context of globalization.

☞ Energy and the Millennium Development Goals

Many of the LDCs are off-track in meeting the Millennium Development Goals (MDGs) (Table 1). The crisis is most severe in sub-Saharan Africa where there is continuing food insecurity, disturbingly high child and maternal mortality, growing numbers of people living in slums and an overall rise in extreme poverty. In South Asia there has been little progress in meeting the MDGs and a majority of the population is living below the poverty line. It also continues to be vulnerable to droughts and natural disasters. Latin America, despite relatively lower rates of poverty, has failed to make significant progress toward MDG achievement in the past decade, with large pockets of poverty.

The energy challenges that underlie MDG achievement are best illustrated by the number of people who do not have access to modern energy services. It is estimated that worldwide there are 2.5 billion people who rely on traditional fuels such as wood, charcoal, and dung as their principal source of energy for cooking and heating. Almost 1.6 billion people have no access to electricity. In light of these daunting figures, energy's important role in underpinning MDG achievement is now being recognized by the international development community. This is due to the fact that energy is a prerequisite for meeting all of the MDGs because of its inherent linkage with poverty alleviation, education, gender equity, health, and the protection of the environment (Table 1). Although there is no MDG explicitly on energy, it is now recognized that the MDGs cannot be met without expanding access to affordable and reliable energy services for the poor and unserved. The Brussels Programme of Action, with specific

¹ This issues paper was prepared for the Ministerial Conference "Making Globalization Work for the LDCs", Istanbul, Turkey, July 9-11, 2007 by Minoru Takada, Kamal Rijal, and Ellen Morris from the Environment and Energy Group, Bureau for Development Policy, UNDP. Comments were provided by Olav Kjørven, Philip Dobie, Abul Barkat, Abeeku Brew-Jammond and staff in the Inclusive Globalization Cluster of the Poverty Group in the Bureau for Development Policy and the Office of Development Studies of UNDP. Additionally, the paper benefited from comments by the Government of Turkey and by the UN Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and the Small Island Developing States (UN-OHRLS). Issues raised by UNDP Country Offices have been included as appropriate.

² UNCTAD, LDC Report, 2006.

targets for the LDCs, is fully consistent with the MDGs and provides an excellent platform identifying concrete ways to improve access to energy.

Table 1. Energy services and the MDGs

MDG	GOAL	MDGs LINKAGE TO ENERGY	PROGRESS MADE IN DEVELOPING COUNTRIES (From 1990 to 2004) ³
1	Eradicate extreme poverty and hunger by reducing the proportion of people whose income is less than \$1 per day (in \$PPP)	<ul style="list-style-type: none"> • Access to modern fuels and electricity increases household incomes by improving productivity in terms of saving time, increasing output, and value-addition • Energy for irrigation increases food production and access to nutrition 	<ul style="list-style-type: none"> • Average decrease from 28 percent to 19 percent of people living on less than \$1 a day (1.1 billion people live on less than \$1 a day). • Sub-Saharan Africa only decreased marginally - from 45 percent to 44 percent and those living in extreme poverty increased by 140 million people.
2 and 3	Achieve universal primary education and promote gender equality	<ul style="list-style-type: none"> • Access to modern fuels and electricity frees up time for education, facilitating teaching and learning • Access to electricity empowers women to become educated on health and productive activities and brings major benefits to them 	<ul style="list-style-type: none"> • Net enrolment ratios in primary education increased on average 86 percent (high of 95 percent in Latin America and the Caribbean to a low of 64 percent in sub-Saharan Africa). • Women represent an increasing share of the world's labour force – over a third in all regions except Southern and Western Asia and Northern Africa.
4, 5, and 6	Reduce child and maternal mortality and reduce disease	<ul style="list-style-type: none"> • Modern fuels and electricity help improve health through access to clean water, cleaner cooking fuels, heat for boiling water, and better agricultural yields • Health clinics with modern fuels and electricity can refrigerate vaccines, sterilize equipment, and provide lighting 	<ul style="list-style-type: none"> • Rate of death of children under five years old per 1,000 live births declined on average from 106 to 87 (Sub-Saharan Africa accounted for half of the total deaths). • In 2004, 10.5 million children died before their fifth birthday, mostly from preventable causes. • Rates of HIV infection are growing and the number of people living with HIV has risen from 36.2 million in 2003 to 38.6 million in 2005 (nearly half are women).
7	Ensure environmental sustainability	<ul style="list-style-type: none"> • Cleaner fuels, renewable energy technologies, and energy efficiency can help mitigate environmental impacts at the local, regional and global levels • Agricultural productivity and land-use can be improved with access to energy needed to run machinery and irrigation systems 	<ul style="list-style-type: none"> • Deforestation rate is 13 million hectares per year, with highest rate seen in South Eastern Asia. • Per capita CO2 has remained fairly constant between 1990 and 2003, but due to population and economic growth, overall CO2 emissions are rising steadily.

Energy is central to practically all aspects of our lives, including access to water, agricultural productivity, health care, education, job creation, gender equality and environmental sustainability. Yet, millions of households in the developing world still lack access to safe and reliable energy and pay high prices for poor-quality substitutes. Moreover, poor people spend much of their income on energy services. This amounts to more than a third of household expenditures in some countries. They also devote a large portion of another important asset, their time, to energy-related activities — for example, women and young girls spend upwards of 6 hours a day gathering

³ United Nations, 2006.

fuelwood and water, cooking, and agro-processing. In Sub-Saharan Africa, only 8 percent of the rural population has access to electricity while 90 percent of the population still relies on traditional fuels for cooking⁴.

Having access to modern energy services can make a real difference to poor people's lives (Figure 1). Therefore, developing a new approach, where access to energy services is acknowledged not just as an outcome, but also as an actual driver of development, will be crucial if energy is to play a more prominent role in strategies aimed at achieving the MDGs and making globalization work for the LDCs .

Figure 1. Energy sources and options

Energy service needed	Current energy options	Modern energy options
Lighting	Oil/kerosene lamps	Off-grid electricity (solar, hydro, wind)
Cooked food	Wood/charcoal stove	Improved cookstoves/ LP Gas and kerosene
Pumped water	Surface/tube well	Electric pumps
Refrigeration	Grid/diesel power or nothing	Off-grid electricity (solar, hydro, wind)
Telecommunications	Grid/diesel power or nothing	Battery charger/ off-grid electricity
Transportation	Human/animal-powered vehicles	Motorized vehicles
Agro-processing	Human/animal-powered devices	Multi-functional platform/ micro-hydro

⌘ Challenges facing the Least Developed Countries

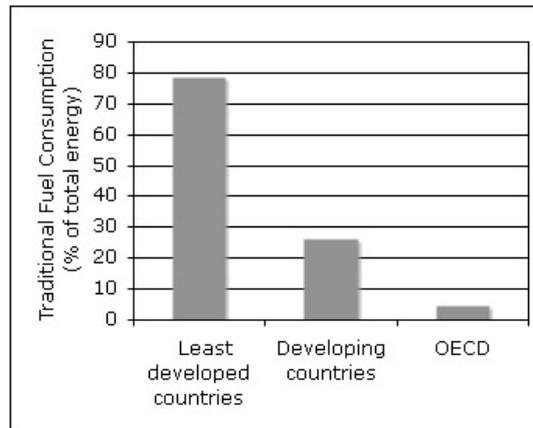
It is estimated that four out of five people without electricity live in rural areas in developing countries, mainly in LDCs in South Asia and sub-Saharan Africa. According to the International Energy Agency (IEA) these figures will remain largely unchanged in 2015 unless new strategies are adopted to expand access to modern energy services. Most people in LDCs, especially in rural areas, have to rely heavily on traditional fuels for cooking, which are injurious to health and the environment (Figure 1). Indoor air pollution is directly responsible for more deaths than malaria, and almost as many as tuberculosis and HIV/AIDS, killing 1.3 million people per year, mostly women and children⁵. Cutting in half the number of households using traditional fuels by 2015 will require 1.3 billion people switching from traditional fuels to modern fuels such as LP gas⁶.

⁴ Millennium Project, UNDP, World Bank, 2005.

⁵ WHO, 2006.

⁶ IEA, 2006.

Figure 2. People relying on traditional fuels as a percentage of total energy



Source: UNDP Human Development Report 2006

For the LDCs, it will be necessary to rapidly increase access to modern energy services along with protecting the environment, while ensuring energy security in order to reach the MDGs.

- **Access.** Expanding access to modern energy services for the poor and unserved remains the major development and environment challenge for the LDCs. For the majority of the poor in the LDCs, the reality includes numerous hours of labour each week grinding grain into flour, cooking over a smoky fire, with women and girls spending hours each day collecting biomass fuels - all because they do not have access to modern energy services. On the planning side, many LDCs face the challenge that their Poverty Reduction Strategy Papers (PRSPs) do not include targets and timelines to meet the energy priorities articulated by the country. A recent UNDP global review of the PRSPs found that only 48 percent of the PRSPs included references to energy⁷. In fact, few of the PRSPs focus on access, affordability, and choice of energy services. This study also showed a misalignment between the national priorities and the budgetary allocations for energy, resulting in a lack of coherence between the strategy or plan and programme implementation on the ground.
- **Sustainability.** The way in which countries produce and consume energy has a strong impact on the environment, locally, regionally and globally. At the local and regional levels, deforestation, primarily the conversion of forests to agricultural land, continues at an alarmingly high rate. The resulting large-scale land degradation will have impacts on soil and water resources. At the local level, fuelwood and charcoal use in households and businesses is unsustainable when it leads to land degradation from fuelwood gathering and indoor air pollution from burning biomass.

At the global level, climate change has emerged as one of the most important issues facing the global community in the 21st century. Greenhouse gas emissions from the LDCs are practically negligible due to the low level of industrialization; however the impacts of climate change pose a fundamental challenge to LDCs in reaching their development objectives. The estimated carbon that would be produced in meeting the needs of those who currently have no electricity or cleaner cooking fuels is only a fraction of the current global emissions (Table 2). In fact, only a 3 percent increase in global CO₂ emissions would be attributed to meeting these needs.

⁷ UNDP, 2007.

Table 2: Carbon produced to meet basic human needs

NEED	NUMBER OF PEOPLE WITHOUT ACCESS (billion)	PROJECTED CARBON EMISSIONS* (Gt C/year)
ELECTRICITY (assuming 50W per capita-year)	1.6	0.15
CLEANER COOKING FUEL (assuming 35 kg propane per capita-year)	2.5	0.07
TOTAL		0.22

*Note: Current global carbon emissions: 7.0 Gt C/yr

Source: Robert Socolow, 2006, Presentation at World Bank Energy Week, "Stabilization Wedges: Mitigation Tools for the Next Half-Century"

The evidence is mounting that development efforts are being undermined by climate change: droughts, land degradation, degraded water supplies and biodiversity loss all pose a threat to development in general and the poor in particular. The effects of climate change are expected to impact most heavily on the LDCs due to their dependence on the natural environment for their livelihoods as well as their lack of resources required for adaptation.

- **Security.** Vulnerable energy supplies and dependence on imported fuels leave many LDCs prone to instability, which can bring physical hardships and weighty economic burdens for the poor. Without energy security, it is not possible to ensure the continuous availability of energy services, in sufficient quantities, and at reasonable prices. The cost of fossil-fuel imports is unbearable for many poorer countries, particularly for the LDCs, and sudden price increases cause economic interference and can disrupt economic growth. In many LDCs, a large percentage of export earnings (e.g., up to 40 percent in Nepal) are diverted to pay for importing petroleum fuels. This imbalance puts the LDCs at great risk. At the local level, recent studies confirm that increasing oil prices have a disproportionately negative impact on the poor. For example, a household survey conducted in Northern India estimated that due to the increase of petroleum product prices, 39 percent of the households stopped using LP gas/kerosene for cooking, which resulted in increased consumption of biomass fuels⁸.

☞ What can the Least Developed Countries do to meet their energy needs?

The MDGs provide the impetus and direction for LDCs, and it is now time to support these countries as they move toward greater access, long-term sustainability, and enhanced energy security. The three priorities for consideration are:

- **Integrate energy considerations into MDG-based national development strategies**

ISSUE: Many national development strategies or poverty reduction strategies do not recognise energy access for the poor as a priority. Energy is still viewed only in terms of increasing energy supply and infrastructure rather than as a means of increasing access for the poor to the services that energy can offer.

⁸ Kjørven, 2006.

OPTIONS: For LDCs to make headway in expanding access to basic energy services for the poor, one option is to clearly make it a national development priority. This could begin with the LDCs defining national energy access goals and targets in macro-development strategies, policies and development programmes, and estimating the costs to meet the targets. Such clear policy signals coming from the LDCs could certainly help to strengthen their position as markets are opened with globalization. At the same time, public

budgets should be aligned with MDG-based national energy strategies in order to build coherence between the policies and the investment framework. An MDG-based national development strategy, with clear targets and strong political commitment, that articulates energy priorities and the needs of the poor, will help the LDCs make great strides within their own borders and in their expanded role with other countries.

- **Mobilize investments**

ISSUE: Often domestic and external financing (including official development assistance) is not aligned with the countries' priorities that are expressed in the national development strategies or poverty reduction strategies. Typically, investments have short-term horizons with unrealistic expectations, which do not always support the countries' development interests, and often times in the process, the poorest are left out of the equation. In addition, as a result of weak economic governance in the LDCs, rarely is there fair and equitable access to economic assets and opportunities.

OPTIONS: A significant financial commitment (US\$ 200 billion according to IEA estimates⁹) is needed to expand energy investments and services in developing countries. In order to mobilize investment, LDCs should clearly articulate their priorities, targets, and budgets outlined in the national development strategies or poverty reduction strategies to potential investors. This investment can come from national budgets, complemented by donor funds, household contributions, and the private sector, which together can finance modern energy services. In addition, there is a need to expand access to financial services for the poor and their legal empowerment, including through property and labour rights, so that people will have the means to pay for energy services and products that can transform their lives. By focusing on the productive use of energy, people will be able to improve their livelihoods and economic well-being in the LDCs. One part of this will be

Political commitment on energy access in West Africa

The Economic Community of West African States (ECOWAS) recently launched a Regional Energy Access Policy to strengthen regional integration on energy access, harmonize political and institutional frameworks, and develop coherent energy policies focused on poverty reduction and achieving the MDGs. Not only has the ECOWAS policy been endorsed by Heads of State, but it has also stimulated policy debates at the national level to up-scale and accelerate on-going national efforts for integrating energy access considerations into MDG-based Poverty Reduction Strategies. This is an excellent example of how, if there is political will, it is possible to reflect energy access goals in national and regional development strategies that have the necessary budget allocations.

Source: *ECOWAS White Paper for a Regional Policy, 2006*

How much will it cost to increase energy access in Senegal?

The UN Millennium Project (2006) estimated the cost to meet the following targets in Senegal:

1. Cleaner cooking systems
2. Electricity for households and communities
3. Mechanical power for agro-processing and water

They found that it would cost US\$12.20 per capita per year, or US\$ 1.7 billion to meet these targets over 10 years. Of this total cost, the per capita costs would amount to \$5.40 for cleaner cooking systems; \$4.30 for electricity; and \$2.52 for mechanical power. With GDP per capita at around US\$ 700, this amounts to no more than 1.7 percent of GDP per capita to reach these goals. Thus, the cost estimates for energy service needs in Senegal show that they are manageable if the investment can be mobilized. Source: *UNDP Energy Costing Tool, 2006*

⁹ IEA, 2006.

access to microfinance to provide small loans that can be used for building energy businesses or purchasing energy services needed to run a small business. Globalization will potentially attract new investment in the LDCs because of the opportunities to establish joint ventures and public private partnerships. For example, public-private partnerships can be a good option for bringing outside investors into the LDCs who have technical expertise and quality products. It is important to keep in mind that the LDCs will need capacity to formulate and enforce legal and regulatory measures to realize the benefits of globalization that could result in investment for increasing access to energy services.

- **Develop institutional capacity**

ISSUE: Lack of capacity in the LDCs is a major bottleneck not only in integrating energy into national development strategies or poverty reduction strategies and mobilizing investment, but also in delivering energy services at the local level. There is often limited capacity to translate political and funding commitments into viable, high impact policies and programmes. Moreover, there is often a lack of institutional capacity at the sub-national and local level for planning, coordination, management and monitoring of the delivery of modern energy services for the poor in the LDCs.

OPTIONS: Achieving the MDGs in the LDCs will not happen without sustained economic growth at the local level. LDCs need to consider ways to strengthen institutional capacity to manage and scale up energy service delivery. This is especially true at the local level since service delivery is increasingly being decentralized to local public authorities. Therefore, options can include building the capacity of the local authorities with incentives, training, and wider exposure in order to do more effective participatory planning in designing and managing energy service delivery systems. One example in Nepal serves to illustrate how decentralizing the delivery of energy services in the rural areas dramatically increased efficiency and created local empowerment to plan, implement and monitor local energy programmes. This required dedicated support to build capacity of local organizations involved in the entire supply chain of energy service delivery.

Institutional capacity development in Nepal: Shifting the governance of rural energy service delivery with the Rural Energy Development Programme (REDP)

	Responsibilities prior to REDP	Responsibilities after REDP
Central government	Policy formulation and implementation	Policy formulation
Local government (district level)	No role for local government authorities in decentralized energy planning and promotion	Planning and provision of energy services at district and village levels
Communities	No community involvement	Operation and management of energy systems done through community organizations
NGOs	Not active in energy services development through community mobilization	Community mobilization on contract with the district committee as social organizations
Private sector	Only few companies active, mainly involved in manufacturing and installations in urban areas (Kathmandu and other large cities)	Technical services provided through private sector organizations in rural areas for survey, installation, operation, repair and maintenance

Source: UNDP Rural Energy Development Programme
<http://www.undp.org.np/energy/projects/redp/>

As globalization proceeds, LDCs will need to increase the capacity to manage their resources, expand their entrepreneurial capabilities, and put in place policies that enable the economy to grow and develop in line with the MDGs. Micro, small and medium enterprises are very important engines of growth for the LDCs. However, these entrepreneurs need business training and technical capacity to build successful energy businesses. This

could include enhancing business skills to start new ventures for productive use of energy services; business management skills to access finance from different financing institutions; and marketing skills to sell products linked to external markets.

✎ Making the link with globalization: challenges and opportunities

The LDCs are at a crossroads in terms of the challenges and opportunities that face them in meeting the MDGs. The increasing integration of the LDCs into the global economy will bring unique challenges and opportunities.

With accelerating globalization, the tendency may be to adhere to conventional thinking whereby the emphasis is on energy supply and infrastructure rather than on increasing access to energy services. The challenge is to keep the focus on reliable and affordable energy services for the poor, because that will be the building block for economic growth, improvements in health and education and increases in productivity. Investments that will likely occur as globalization proceeds will require LDCs to have legal and regulatory measures in place to protect their interests. This will be a challenge as world trade continues to grow and the economies of LDCs are more linked with other countries through joint ventures and the expansion of transnational corporations.

The overarching challenge in making globalization work for LDCs is the need to build capacity of LDCs in managing and protecting their natural resources, expanding micro, small and medium energy enterprises; and putting in place policies that enable the economy to grow and develop in line with the MDGs.

To maximize the benefits of globalization, it is necessary for the LDCs to build capacity and skills domestically to accelerate both the formulation of national energy strategies, policies and governance structures and the delivery of modern energy services. MDG-based national development strategies, inclusive of expanding access to modern energy services for the poor, should be used to align donor, investor, and business interests.

Globalization will provide LDCs an opportunity to leapfrog to more efficient and cleaner energy systems, including renewable energy, that are now widely available. Moreover the transfer of technology for modern energy systems will help to transform markets in LDCs, allowing these countries to become better connected to national and global markets and better equipped to thrive in these markets. However the transfer of technologies and bringing in new partners for the LDCs will not be automatic and must be accompanied by strong capacity development efforts; increased investment, and improved access to information and knowledge. These can help the LDCs develop their productive capacities, enhance their energy security, and improve sustainability.

Practical options to consider in making globalization work for the LDCs on energy:

Enact supportive policies:

- * Tax incentives to support the deployment of modern energy technologies, such as renewable energy, at an affordable price.
- * Reform of subsidies to support sustainable development. These can be time-bound subsidies to reduce the cost of market entry for modern energy technologies or subsidies targeted at access to energy for the poor.
- * Loan guarantees for small and medium enterprises building energy businesses in the LDCs
- * Effective government oversight of trade and commerce regulations to protect public benefits and ensure equitable access to energy

Build capacity:

- * Training and learning exchanges for regulators, policy makers and energy planners in LDCs to understand how to optimize their energy economies while meeting the MDGs.
- * Business development assistance at the local level to include business planning and decision-making, sales and marketing, organization, basic accounting and legal issues.
- * South-south learning exchanges of best practices, skills, and resources to build experience in LDCs and promote market pull.

Promote investment:

- * Design and utilize carbon finance mechanisms for clean energy projects and programmes in the LDCs, such as the MDG Carbon Facility.
- Promote joint ventures with energy companies to allow LDCs to leapfrog to more modern technologies.

Capacity development will be needed to ensure sustainability and adaptability of energy policies and systems. North-South and South-South exchanges should support the use of indigenous resources and training of local communities to build productive capacity of the LDCs so that they can tap into new markets. Capacity development will help the LDCs better absorb and direct investments in a way that is compatible with the objective of reaching the poor.

There is potential to spur foreign direct investment (FDI) in the energy sector of the LDCs, however they need to leverage FDI with local capital in order to maximize the benefits of globalization. Market rules are not always fair and equitable for the LDCs, particularly as they impact the poor, women and more vulnerable groups. Therefore, pro-poor energy policies and regulations will need to be in place in order to ensure that investments are equitable.

Globalization will allow the LDCs to share information and knowledge through networking, organizational learning and improved communication with a broader set of actors that will enable new partnerships. With access to information, experts, tools, methodologies, policy innovations, and market data, LDCs will be poised to take advantage of the wealth of knowledge available globally to jump-start their work on energy access, sustainability and security at the national and local levels.

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