LEDS GLOBAL PARTNERSHIP

USAID FROM THE AMERICAN PEOPLE

LEDS in Practice

January 2017

Benefits of low emission development strategies

The case of Kenya's Lake Turkana Wind Power Project

Pamela Cookson, Jessica Kuna, and Emily Golla, ICF, USA

Key messages

As Africa's largest wind farm, the Lake Turkana Wind Power Project will increase the national electricity supply while creating jobs and reducing greenhouse gas emissions. 310 MW of wind energy capacity will:

- mitigate greenhouse gas emissions equal to 740,000 metric tons of carbon dioxide equivalent (tCO_2eq) annually
- increase national electricity supply by 15–20% (relative to 2015 generating capacity)
- enhance reliability of energy supply
- stabilize energy prices
- create more than 2,000 local jobs including 150 permanent jobs
- mitigate human health impacts from harmful air pollutants
- improve access to food, health facilities, and water through corporate social responsibility programs
- increase income generating opportunities
- improve local education

Overview of the Lake Turkana Wind Power Project[1]

The Lake Turkana Wind Power Project (LTWP), currently under construction, will add 310 megawatts (MW) of wind power capacity to Kenya's national grid through the installation of 365 turbines, construction of 436 km of transmission lines, and rehabilitation of more than 200 km of existing roads.[2] In addition to the investment opportunity LTWP provides for its stakeholders, the project represents a strategic opportunity to help Kenya meet its socioeconomic development and sustainability goals.

The wind farm is being built in the Loiyangalani District of Marsabit West County in Kenya, covering an area of 162 km^2.[3] The site was selected for the strength of its wind resources along with its remoteness, unobstructed environmental landscape, road accessibility, security of the area, and low population density—with the project area inhabited by roughly 1,000 nomadic pastoralists.[5]

The **LEDS GP Benefits Working Group** focuses on the 'd' in low emission development strategies: providing knowledge products, trainings, tools and technical assistance to identify, communicate, and integrate development impacts beyond emission reduction.
Contact: benefits@ledsgp.org

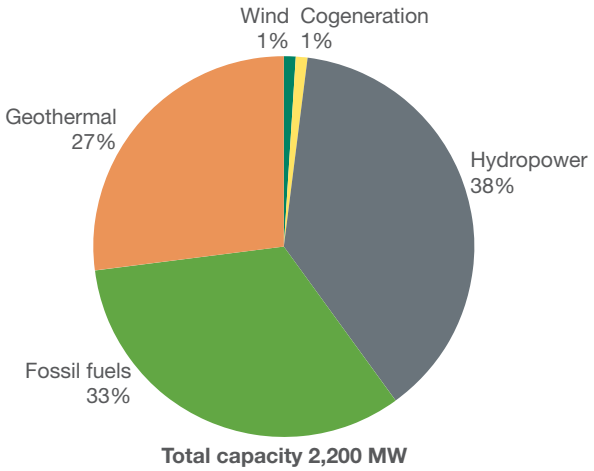
At a cost of €623 million (US$685 million), LTWP is Kenya's largest single private investment in history.[6] On its anticipated completion in July 2017, the site will be the largest wind farm in Africa, adding capacity equivalent to 15–20% of Kenya's 2015 installed electricity generating capacity.[7] Through the addition of reliable, low-cost wind energy, the project will contribute to the country's development objectives while enhancing its resilience to climate change and avoiding greenhouse gas emissions from electricity that would otherwise be generated from fossil fuels. The project has created more than 2,000 local jobs, improved business opportunities from increased access to (and traffic in) the surrounding areas, and contributed positively to community livelihoods, and it will mitigate roughly 740,000 tCO_2eq each year.[8]

LEDS context

Countries pursuing low emission development strategies (LEDS) aim to grow their economy while reducing greenhouse gas emissions, increasing resilience to climate change impacts, and achieving social development and environmental goals. Kenya has developed policies that align with these LEDS outcomes. For example, Kenya Vision 2030[9] includes a National Climate Change Action Plan highlighting the importance of developing a secure, climate resilient national grid that can support Kenya's development ambitions. In addition, Kenya's Draft National Energy and Petroleum Policy (2015)[10] aims to ensure an affordable, competitive, sustainable, and reliable supply of energy to meet national development needs at lowest cost, while protecting and conserving the environment. Kenya's Climate Change Act emphasizes the need to reduce greenhouse gas emissions and encourage the use of renewable energy as a mitigation measure.[11]

These goals are crucial for Kenya's development, as fewer than 50% of Kenya's population have access to electricity.[12] Moreover, while hydropower has been the single largest generation source for grid electricity in Kenya, low rainfall has led to reduced power generation and fluctuating energy costs. Thus the call to diversify the country's energy generation mix is key to improving energy reliability, stabilizing energy costs, and protecting against vulnerabilities to variations in hydrology and climate change. To further enhance climate resilience and mitigate climate change, it is critical that such energy diversification comes from low carbon technologies.

Figure 1 Kenya's total installed electricity capacity, March 2015[13]



Project planning and development

The project idea originated from a Dutch farmer living in Kenya who recognized the powerful wind resource and great potential investment opportunity during camping visits to the area. In the project's early planning years, LTWP partners studied the site's resource potential and worked with Kenyan authorities to obtain necessary approvals. Years of planning went into developing risk and mitigation plans informed by environmental and social impact assessments, and engagement with local stakeholders. The project faced delays as it confirmed its funding model, which was not secured until 2014. After overcoming financial and logistical planning challenges, construction began in late 2014 and the project is anticipated to be fully operational in July 2017. An overview of key project milestones is provided in Table 1.

Project financing

At a total cost of €623 million (approximately US$685 million), securing financing for this project was a tremendous feat. In addition to negotiating a Power Purchase Agreement (PPA) and financing the largest wind site on the continent, project developers faced a unique challenge associated with the need to connect the remote site to Kenya's grid. Specifically, the construction of roads and transmission lines that were included as part of the project's scope introduced a layer of difficulty in coordinating contracts, as investors were wary that the transmission lines would not be completed in time to deliver electricity generated from LTWP to Kenya's national grid in accordance with terms of the PPA.[14] While the World Bank was initially set to provide coverage for potential losses associated with transmission construction delays, it ultimately withdrew its funding over concerns that the project would generate more electricity than could be absorbed by Kenya's demand. With the World Bank's departure, and additional investors threatening to leave, the African Development Bank (AfDB) and European Investment Bank (EIB) stepped in to provide coverage and lead the project to financial close. Through financing from the U.S. Overseas Private Investment Corporation, the Power Africa initiative will provide up to US$250 million in investment guarantees to the project. Power Africa also carried out a grid management program to assist Kenya in integrating the intermittent renewable energy sources into its grid, thus addressing a key constraint to successful financing of LTWP.[15] Upon close of project financing in 2014, LTWP received three international awards in 2014 and 2015 for its ambitious undertaking, including the African Renewables Deal of the Year 2014, Thompson Reuters Project Finance International African Renewable Deal Award (2014), and The Banker's African Infrastructure and Project Finance Deal of the Year (2015).

Table 1 Key milestones for the Lake Turkana Wind Power Project

Date	Milestone
2005	A consortium of Kenyan and Dutch partners came together to raise money for the project.
April 2006	The consortium submitted a proposal to the Kenyan authorities and received approval to explore the area's electricity generating potential and to start developing the project.
March 2008	A draft environmental and social impact assessment (ESIA), which included an environmental and social management/monitoring plan (ESMP), was completed and disclosed to the public.
April 2008	Following presentation of the ESMP at a stakeholder workshop, the ESIA was submitted to the National Environment Management Authority and subsequently approved.
July 2009	The environmental impact assessment (EIA) license was issued.
January 2010	LTWP signed a PPA with Kenya Power.
February 2011	The project was registered as a Clean Development Mechanism (CDM) project with the United Nations Framework Convention on Climate Change (UNFCCC).[a]
March 2014	After a period of negotiations, project financing was arranged.
October 2014	Construction commenced.
December 2014	Debt financing was secured.
October 2016	155 of 365 turbines were installed and tested (not yet operational).[16]
July 2017	It is anticipated that the project will be fully operational.

[a] CDM projects registered under the UNFCCC earn certified emission reduction (CER) credits for each ton of CO_2 reduced. The CDM is eligible for projects in developing countries, though the CERs can be traded, sold, and used by industrialized countries to meet a part of their emission reduction targets under the Kyoto Protocol.[17]

Financial arrangements for the project were led by the AfDB with Nedbank Limited and the Standard Bank of South Africa acting as co-arrangers. Equity financing, equal to roughly €130 million (US$145 million), is being provided by Aldwych International, KP&P BV Africa, the Norwegian Investment Fund for Developing Countries (Norfund), the Finnish Fund for Industrial Cooperation Ltd (FinnFund), Vestas Wind Systems A/S, Danish Investment Fund for Developing Countries (IFU) Denmark, and Sandpiper Limited. Debt financing is being provided largely by the AfDB and EIB, along with a number of other private investors, including Nedbank and Standard Bank of South Africa.[18]

Efforts to mitigate negative environmental and social impacts

The Loiyangalani District of Kenya's Marsabit West County, where LTWP is being built, is a remote area characterized by harsh living conditions, and is home to a population of roughly 1,000 nomadic pastoralists.[19] In accordance with Kenya's national environmental and social regulations (including the 2nd Schedule of the Environmental Regulation of 2003), as well as international standards applied by LTWP's lenders (initially the World Bank, then the AfDB), multiple ESIAs were conducted to evaluate the impact of the proposed construction and operation of LTWP on the surrounding area. The studies identified 'limited, site-specific' impacts, occurring primarily due to the construction of roads, transmission lines, and project site. Mitigation measures were identified for each potential risk. For example, to mitigate the potential increased risk of HIV/AIDS from migrant workers, LTWP launched an HIV/AIDS awareness and education program prior to construction, which is ongoing.

To obtain support from affected communities and maintain regular stakeholder interaction, LTWP developed a stakeholder engagement plan (see Box 1). One key outcome from engaging local leadership was an employment plan that distributed employment and training opportunities among the tribes residing near the project site.

Box 1 LTWP Stakeholder Engagement Plan

LTWP developed a formal Stakeholder Engagement Plan in parallel with feasibility studies, planning and impact assessments, and community engagement during the project's conceptualization. Some key methods for engaging with stakeholder groups included:

- interviewing representatives and designated key informants
- surveying affected parties
- holding public meetings, workshops, and focus groups of vulnerable people
- utilizing visual representations, brochures, posters, and signage to inform stakeholders of roadworks, security requirements, access restrictions, and dangers near the project area (e.g. for road junctions and areas posing an electrocution risk).

Public consultation between LTWP representatives and Sarima village community members

To protect the community most impacted by the project's construction—the semi-nomadic Sirima encampment, which is located within the project footprint—LTWP representatives met with the pastoralists and community leaders to agree upon a temporary Resettlement Action Plan.[20] Community members are still able to pass through the site and set up *manyattas* (temporary settlements) wherever they wish, with an understanding of the risks that the construction and project site pose. LTWP representatives assisted the Sirima resettlement by reconstructing *manyattas*, compensating community members for loss of income and disturbance, and constructing additional facilities such as a community store, latrines, shower facilities, and a classroom.[21] With these and other mitigation measures implemented, the ESIAs concluded that the socioeconomic benefits of the project outweigh the costs.[22]

Furthermore, to improve the livelihoods of those surrounding the project site and follow good corporate practice, LTWP staff coordinated with local communities to develop corporate social responsibility (CSR) programs focused on enhancing employability/education, health, access to water, and other community activities—see 'Community benefits' below.

The combination of these efforts to improve social services and not disrupt the traditional activities of those in the area has led overall to a welcoming view of the project held by local people. However, some tensions do exist. Some members of the community are unhappy with their local leaders for not allocating jobs in a way that they consider equitable. Others have perceived there to be clashes between tribes over access to resources, as each tries to best leverage project benefits for themselves.[23] Additionally, some have questioned whether the nomadic pastoralists have legal rights to the land that LTWP leased from the Kenyan government, leading to a lawsuit that is still awaiting final decision.[24] The tensions that persist provide an example of the types of social challenges that utility scale green energy projects face, and underscore the importance of engagement and planning for social and environmental conflicts that may occur.

Project benefits

LTWP was initially developed as an investment opportunity that would bring low cost, reliable energy to Kenya—though it will result in many other positive impacts for both the local community and the country as a whole.

Energy reliability, security, and price stabilization

The electricity generated from LTWP will provide a cost effective alternative to fossil fuels, decrease dependency on foreign fuel imports, and stabilize prices through reliable generation. Power from LTWP will be sold to the grid at about one-third of the cost of fossil fuel generated electricity.[25] Additionally, the capacity from LTWP is expected to reduce the country's reliance on fuel imports from Uganda and other neighboring countries. These avoided fuel imports are anticipated to save Kenya more than €100 million (US$113 million) per year, improving the country's energy security.[26]

One reason why Kenya has historically relied on imported fuel is the country's dependence on hydropower, which has led to brownouts and blackouts, as well as significant fluctuations in electricity prices during times of drought.[27] In these situations, emergency fossil fuel reserves have been used to supplement the reduction in supply. Given the impacts of climate change, such droughts may become more common in the future. LTWP will provide a reliable source of electricity to Kenya's grid, helping to reduce the country's greenhouse gas emissions and enhance its resilience to climate change impacts.

Job creation

The LTWP is creating employment opportunities during both the construction (October 2014–July 2017) and operational (September 2016 and onwards) phases of the project. During peak construction, the project maintained roughly 1,500 employees, a substantial portion of whom came from local communities in the area (see below). Looking ahead, it is expected that roughly 150 permanent employees, about three-quarters of the entire maintenance team, will come from local communities, and will serve to maintain operations and provide security around the perimeter of the wind farm.

To engage the community and ensure the equitable hiring of local residents from the four tribes in the area, LTWP set up two employment offices—one to the north and one to the south of the project site—and engaged local leadership to facilitate the hiring process. For many of the local recruits, working for LTWP represents their first employment experience. Given this, LTWP has emphasized on the job training and money management as part of their employment services. The distribution of jobs by area in February of 2016 was as shown in Table 2.

Table 2 Distribution of employment by local community[28]

Area	Jobs
Loiyangalani	130
South Horr	159
Mt Kulal	118
Kargi	46
Sarima	92
Others	79
Total	**624**

Greenhouse gas mitigation

Through the generation of reliable renewable wind energy, the project is expected to lead to greenhouse gas emission reductions by adding electricity capacity that would otherwise be generated by fossil fuel fired power plants. According to CDM project documents, once fully operational, LTWP will mitigate CO_2 emissions equal to roughly 740,000 tCO_2eq on average each year.[29] Carbon credits are expected to generate a maximum of €6 million (approximately US$6.6 million) in revenue annually, the majority of which will be distributed by the government to communities throughout Kenya.

Economic growth

In order to transport materials to the project site, the project planners incorporated a road rehabilitation program. Under the program, more than 200 km of road from Laisamis to the wind farm site will be upgraded using high quality gravel.[30] The road, which was once unnavigable when rivers flooded the area, will now be available for

local traders in fish and livestock. Businesses will be able to transport their products over longer distances, and may expand their customer base due to increased accessibility. This rehabilitation effort is also expected to stimulate economic growth for businesses located along the sections of new roads due to increased traffic and the influx of LTWP workers living in the area.[31]

Community benefits

LTWP established a CSR foundation, Winds of Change, which began implementation of activities in June 2015, with approximately €1 million (US$1.1 million) already set aside for projects through December 2016.[32] Many projects are already complete, and more are under way focused on four categories: enhancing employability (education); access to health; access to water; and other community activities. To improve employability, LTWP has constructed desks, dormitories, laboratories, sleeping quarters, and offices for teachers; donated books, mattresses, pens, and uniforms; funded educational school trips; and provided training to 18 individuals on solar installation and maintenance.[33] The foundation has also completed projects in the other categories, including building a community store, constructing boreholes for water filtration, updating a dispensary, and increasing awareness of HIV and AIDS.[34] A detailed list of the program's overall goals is provided in Box 2.

Box 2 Overview of LTWP's CSR program goals

- Improve literacy rates in the project area
- Raise literacy levels among women
- Improve access to potable water
- Reduce distance to nearest water source
- Reduce infant (under 5) and maternal mortality rates
- Address HIV/AIDS prevalence
- Reduce malnutrition
- Increase immunization coverage
- Improve roads linking major market centers
- Support selected institutions (schools and health units) to access electricity
- Increase annual household incomes
- Enhance household food security

Increased energy access

While construction of distribution infrastructure and grid connectivity are not included in the scope of the LTWP plan, there are efforts under way by the Kenyan government and the primary electric utility, Kenya Power, to address this issue. The 436 km transmission line and substations being constructed in the Loiyangalani District as a part of LTWP will enable Kenya Power and the Kenyan Government to advance connectivity projects for local communities in the area, although the specifics of whether, and when, communities unconnected to the grid will gain access to affordable clean energy is not yet known.

Health benefits

In addition to mitigating CO_2 emissions, LTWP is expected to mitigate emissions of other harmful air pollutants—including oxides of nitrogen (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x), particulate matter (PM), organic hydrocarbons, and hazardous air pollutants—that are associated with burning fossil fuels. Specifically, it is estimated that the project will avoid emissions of up to roughly 18,000 MT of NO_x, 5,000 MT of CO, 200 MT of SO_x, 500 MT of PM, 500 MT of organic

hydrocarbons, and 5 MT of hazardous air pollutants each year.[35] Exposure to these pollutants can have significant impacts on human health, including adverse effects on the respiratory system, and increased risks of cancer and heart disease.

Replicability and lessons learned

The LTWP was developed based on an ambitious vision that required thoughtful planning and engagement with each of its stakeholders. While it faced delays during its planning phase, the project will have significant impacts, particularly on Kenya's development goals, and on the local communities that surround the project site. Many of the lessons learned from LTWP can be broadly applied to other countries advancing LEDS.

First, LTWP emphasizes the importance of planning and engaging local communities early in the process. Because of the challenges and potential risks addressed during the planning phase, few unexpected problems occurred. Tensions that persist reflect the need for continued engagement with stakeholders throughout the site's construction and operational phases.

Another lesson to take away from the project's development phase is the importance of development finance institutions for securing financing for large projects such as LTWP. Stakeholders suggest that the guarantees provided by development finance institutions provided the assurance needed for private investors to get involved.[36]

Applying these lessons for peer to peer learning is fundamental to accelerating the implementation and impact of LEDS worldwide. This successful development of such a large wind energy project to connect to the national grid can be replicated in other countries on the continent and beyond, especially those possessing strong wind resources in areas with low population density. Tanzania, Uganda, and Rwanda are already attracting utility scale green energy developers and investors due to their sustained economic growth and rising energy demand.[37] This trend is likely to increase over time, with Lake Turkana leading the way.

Additional resources

LEDS GP (2016) 'Presenting the benefits of low emission development strategies.' Six case studies. London: LEDS Global Partnership.

OECD/IEA (2012) *Water for energy: Is energy becoming a thirstier resource?* Excerpt from the World Energy Outlook 2012. Paris: Organisation for Economic Co-operation and Development and International Energy Agency.

OECD/IEA (2015) *Making the energy sector more resilient to climate change*. Paris: Organisation for Economic Co-operation and Development and International Energy Agency.

Notes

1. This case study was developed based on desk research, interviews with the LTWP project team, and independent analyses conducted by ICF.
2. LTWP (2016a) 'Lake Turkana Wind Power Project.' www.ltwp.co.ke
3. Of the 162 km^2 area, wind turbines will occupy 0.09 km^2, the switchyard 0.16 km^2, and the village and work area 0.12 km^2. The remaining area will act as a buffer around the wind site. AfDB (2011) *Updated Environmental and Social Impact Assessment Summary – Lake Turkana Wind Power Project*. Abidjan: African Development Bank.
4. LTWP (2016a) Op. cit.
5. LTWP (2014) *Full Resettlement Action Plan Summary: Sirima Nomadic Pastoralist Relocation of the Community Encampment*. Nairobi: Lake Turkana Wind Power Project.
6. CEPA (2015) *Mobilising finance for infrastructure – Kenya country case study*. Prepared for the UK Department for International Development. London: Cambridge Economic Policy Associates.
7. LTWP (2016a) Op. cit.
8. UNFCCC (2011) *Clean Development Mechanism Design Document Form (CDM-PDD) – Lake Turkana 310 MW Wind Power Project*. United Nations Framework Convention on Climate Change.
9. Republic of Kenya (2013) *National Climate Change Action Plan*. Nairobi: Republic of Kenya.

10. MEP (2015) *Draft National Energy and Petroleum Policy*. June 16. Nairobi: Ministry of Energy and Petroleum, Republic of Kenya; see also Government of the Republic of Kenya (2007) *Kenya Vision 2030: The popular version*. Nairobi: Government of the Republic of Kenya.
11. Republic of Kenya (2016) *Climate Change Act*. Nairobi: Republic of Kenya.
12. Kenya Power (2015) *Annual report and financial statements: fiscal year ended 30 June 2015*. Nairobi: Kenya Power.
13. Republic of Kenya (2015) *Kenya Vision 2030: Power sector medium term plan 2015–2020*. Nairobi: Republic of Kenya.
14. CEPA (2015) Op. cit.
15. USAID (2016) 'Kenya: Power Africa Fact Sheet.' Last updated May 27, 2016. Washington, DC: U.S. Agency for International Development.
16. SeeNews (2016) '*Lake Turkana wind farm advances on schedule*.' SeeNews Renewables, October 21.
17. UNFCCC (2016) '*What is the CDM?*' United Nations Framework Convention on Climate Change.
18. For further information on the mobilization of financing for this project, see CEPA (2015) Op. cit.
19. LTWP (2014) Op. cit.
20. LTWP (2012) *Resettlement action plan: relocation of Sirima encampment*. Nairobi: Lake Turkana Wind Power Project; LTWP (2014) Op. cit.
21. ibid.
22. For more information about LTWP's risk mitigation strategies, see AfDB (2011) Op. cit.
23. Cusick, D. (2016) '*How a huge wind farm in Kenya could transform Africa's energy landscape*.' E&E News October 11. However, according to LTWP representatives, various community members have said that LTWP's presence has actually enhanced tribal interactions: many community members are working side by side for the first time, and livestock theft has been reduced.
24. Danwatch (2016) 'Investigation: A people in the way of progress.' Copenhagen: Danwatch.
25. The cost to produce electricity from fossil fuels in Kenya is currently about €0.21 per kWh, whereas LTWP power will be sold at €0.0752 per kWh. LTWP (2013) 'Marsabit County to benefit from Dutch grant for Lake Turkana Wind Power.' October 30.
26. Harvey, C. (2015) 'Google's newest renewable energy investment: Africa's biggest wind farm.' *The Washington Post* October 20; Republic of Kenya (2012) *National Climate Change Action Plan: Mitigation*. Chapter 5: Electricity generation. Nairobi: Republic of Kenya.
27. AfDB (2011) Op. cit.
28. LTWP (2016a) Op. cit.
29. UNFCCC (2011) Op. cit.
30. LTWP (2013) Op. cit.
31. ibid.
32. LTWP (2016b) 'Winds of Change activity overview.' October 3. Unpublished document.
33. ibid.
34. For more information about the Winds of Change Foundation and the projects that have been completed under the program see http://ltwp.co.ke/winds-of-change.
35. Avoided emissions estimated using emission factors from the U.S. Environmental Protection Agency (US EPA 1996, 2000, *AP-42*, Fifth Edition, Volume I, Chapter 3: Stationary Internal Combustion Sources, Sections 3.4 and 3.1); typical power plant heat rates from the U.S. Energy Information Administration (US EIA 2016, 'Form EIA-860: Annual Electric Generator Report.' Washington, DC: US Energy Information Administration); and information on thermal power generation in Kenya from the CDM Project Design Document (UNFCCC 2011, Op. cit.). Information on fuel and combustion properties for facilities not included in the CDM Document based on Herbling, D. (2015) 'Aggreko's lucrative Muhoroni diesel-power deal ends.' *Business Daily* December 26 and KenGen (2016) www.kengen.co.ke.
36. CEPA (2015) Op. cit.
37. REN21 (2016) *Renewable Energy and Energy Efficiency Regional Status Report: 2016 East African Community*. Paris: Renewable Energy Policy Network for the 21st Century.

The **Resources to Advance LEDS Implementation (RALI)** project is a cooperative agreement between the United States Agency for International Development (USAID) and ICF. The RALI project supports the U.S. Global Climate Change Initiative by helping developing countries speed their transition to climate resilient, low emission, and sustainable economic growth. RALI supports the technically rigorous development and implementation of low emission development strategies (LEDS) by providing tools, technical assistance, and resources to support USAID and its partners, as well as host country governments, in the implementation of LEDS. www.climatelinks.org/projects/rali

LEDS GP's **Benefits Working Group** focuses on the 'd' in low emission development strategies: providing knowledge products, trainings, tools and technical assistance to identify, communicate, and integrate development impacts beyond emission reduction. (Co)benefits of LEDS can include poverty reduction, job creation, improved health, energy access and security, green growth and gender equality. These development priorities can be a key driver to shaping sustainable low emission pathways. We aim to support policy makers and practitioners in aligning climate change strategies, policies and programs with national and international Sustainable Development Goals (SDGs). Contact: benefits@ledsgp.org

The **Low Emission Development Strategies Global Partnership (LEDS GP)** was founded in 2011 to enhance coordination, information exchange, and cooperation among countries and international programs working to advance low emission, climate resilient growth. LEDS GP currently brings together LEDS leaders and practitioners from more than 160 countries and international institutions through innovative peer to peer learning and collaboration via forums and networks. For the full list of participants and more information on partnership activities, see www.ledsgp.org

The **Lake Turkana Wind Power Project**, Kenya, has changed the horizon of the Marsabit County skyline. The project seeks to successfully hoist 365 wind turbines which will see a contribution of 310 MW of power to the national gridline. According to its developers, "the economic and social impacts of the project in the community within which it operates in are tremendous, ranging from job creation to improving living standards through initiatives by LTWP's foundation, Winds of Change." http://ltwp.co.ke

This case study is made possible by the support of the American people through the United States Agency for International Development (USAID). The contents are the sole responsibility of ICF and the LEDS GP and do not necessarily reflect the views of USAID or the United States Government.

All photo credits: Lake Turkana Wind Power Ltd

Design and layout: Green Ink (www.greenink.co.uk)