

Achieving sustainable development in Africa through inclusive green growth: leveraging the energy sector's potential

This policy brief is the fourth in a series of six briefs drawn from the fifth edition of the Sustainable Development Report on Africa, a joint publication of the Economic Commission for Africa (ECA), the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme, the United Nations Industrial Development Organization and the United Nations Development Programme on the theme "achieving sustainable development in Africa through inclusive green growth". The brief highlights the role of energy in promoting inclusive green growth in the region.

Energy is an engine of economic growth and poverty eradication. It supports businesses, wealth and employment creation, thus improving the welfare of the majority of Africa's population. However, although Africa is rich in energy resources, from traditional fossil fuels to underutilized hydropower and geothermal power, the region currently faces many energy-related challenges. More than 75 per cent of the population is without electricity and 81 per cent depends on the unsustainable harvest of biomass fuels for cooking, resulting into environmental and health problems. Per capita electricity consumption levels in Africa are much lower than the global average. Africa's current energy development and deployment approaches have not delivered the desired level of energy services and security, and a rethink is required. The region's energy resources endowment needs to be transformed into modern energy forms to drive Africa's transformation and sustainable development agenda. An inclusive green growth approach could ensure the sustainability of such a transformation.

Trends in inclusive green growth in the energy sector

Achieving inclusive green growth in the energy sector requires expanding investment to harness Africa's potential, boost the development of clean and renewable energy forms, including wind, solar, hydroelectricity and geothermal, and promote energy efficiency. In this regard, inclusive green growth principles and practices are increasingly being integrated into various facets of energy production and deployment. These include energy efficiency and demand side management, renewable energy deployment, bioenergy, availing adequate modern energy to various economic sectors and addressing cross-sectoral issues.

Energy efficiency and demand side management and deployment of renewable energy result in resource efficiency and reduction, or elimination of environmental harm arising from the use of fossil fuels. A certain critical amount of modern energy for cross-cutting usage in various economic sectors such as industry, transport and commercial premises will improve economic growth and human welfare. Specific inclusive green growth promotion initiatives include the national biogas programme in Ethiopia (see box); the replacement of incandescent bulbs with compact fluorescent lights in Ghana; the Bujagali hydroelectric power plant in Uganda, financed through public-private partnerships; national railway and bus rapid projects in Ethiopia; energy efficiency and demand side management programme in South Africa; and the multi-functional platforms for local agro-processing in Burkina Faso and Mali.

National biogas programme in Ethiopia¹

The Government of Ethiopia launched the national biogas programme to promote the uptake of domestic biogas and to develop and disseminate a commercially viable market for the biogas sector in the country. The goal of the programme is to improve health, livelihoods and the quality of life of rural households, through the exploitation of market and non-market benefits of domestic biogas.

The programme comprises eight major components: promotion and marketing, training, quality management, research and development, monitoring and evaluation, institutional support, extension and gender mainstreaming. The first phase of the programme (2008-2012) involved 5,000 biogas plants of 4, 6, 8 and 10 m³ in 18 selected districts.

The biogas plants generate sufficient energy for household consumption, and in some cases way beyond demand. The excess energy generated was used to cover the energy needs of nearby communities and institutions, including schools and health centres.

By supplying energy at affordable prices, biogas plants contributed to reducing health problems associated with smoke from burning fuel and cow dung. At the same time, it also reduced the time women and children spent collecting fuel wood. The national biogas programme's implementation package also includes a credit association. The programme provided more jobs for technical and vocational training graduates, and for construction cooperatives and small and medium enterprises.

The bio slurry also improved soil condition and maintained sustainable soil fertility by increasing the moisture retention capacity and the level of other soil nutrient elements that cannot be substituted by commercial fertilizer. By replacing wood and charcoal with biogas, the project saved standing forest stocks of 35.9 tons and 20.8 tons from being harvested for wood fuel and charcoal, respectively. This is estimated to offset emission of 65.7 tons of carbon dioxide equivalent (CO₂e) from direct wood burning or 53.4 tons CO₂e from charcoal burning.

Challenges and opportunities

In order to scale up the penetration of inclusive green growth principles and practices in the energy sector, countries need to tackle a number of challenges that are currently limiting progress.

Challenges

- Low investment in the sector, owing to perceived risks and low economies of scale, as individual countries do not offer a significant market for investors.
- High upfront costs of inclusive green growth-related technologies and inadequate capacity for propagating inclusive green growth technologies and practices.
- Dependence on donor support for projects, which compromises sustainability.
- Limited capacity for policy development and implementation.

Opportunities

- Emergence of new policies and strategies for the promotion of renewable energy.
- Energy sector reforms, including liberalization of the energy sector, to broaden the involvement of independent energy or electricity regulators.
- Ongoing technology development that reduces costs and promotes clean production.
- Establishment of new sustainable energy regional centres and cooperation in the sector through regional power pools and electricity regulators.
- International cooperation for financial and technical support, and tapping into new and emerging energy initiatives and financing models.

Forging ahead

Achieving inclusive green growth in the energy sector presents prospects for meeting Africa's energy-related challenges, creating jobs and enhancing human welfare. The huge potential for promoting inclusive green growth in the energy sector is demonstrated by the current generation levels, policy initiatives and reforms in improving energy efficiency; deployment of renewable energy; reducing energy intensity; increasing energy access; and social, environmental and cross-cutting and cross-sectoral considerations. In order to scale up inclusive green growth in the energy sector, countries should:

Unlock the full potential for inclusive green growth in the energy sector. In order to realize this, the policy process should start by identifying opportunities in the broad context of inclusive green growth objectives in the sector. Energy programmes should, to the extent possible, be integrated with national, rural development and poverty reduction strategies to leverage cross-cutting and cross-sectoral linkages.

¹ ECA (2015). Inclusive green growth in Ethiopia: Selected case studies.

Institute appropriate energy reforms. Governments should ensure that energy reforms being introduced are to the benefit of all, including the energy poor, and attract returns on investments. Moreover, transparency and accountability should be ensured by working closely with all stakeholders in the formulation and implementation of reforms.

Adopt and implement appropriate and coherent policies and strategies. Policies aimed at attracting investment should be evidence-based, taking into account all policy options, the country's overall development strategy and energy resource potential. This would help to speed up and deepen inclusive green growth in the energy sector.

Boost capacities for innovation and technology development. Capacities should be enhanced to develop domestic innovation and local manufacturing of technologies. This requires coordinated support from the private sector, Governments, donors and international partners.

Promote regional cooperation to address low economies of scale and investment in the energy sector. To be effective and address the issue of scale and low investments, national energy strategies should, as far as possible, be closely aligned with regional and continental integration initiatives.

Strategize to benefit optimally from the financial, technological and capacity development resources offered by global initiatives. In this regard, countries need to look into global and regional initiatives, which can provide significant support.

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