1. **Country and Sector Background**

1. **Economic development in Burundi has been set back by several years of recurring internal conflict.** Burundi is a small, landlocked country that straddles Central and East Africa, with a total land area of 27,834 km², and approximately 8.5 million inhabitants, about 10.6 percent of whom live in urban areas. Burundi has emerged from a cycle of political-ethnic conflicts that lasted more than 13 years and claimed the lives of about 300,000 people while displacing about 16 percent of the population. These years of recurring conflict have had a devastating effect on Burundi’s economy. Burundi’s per capita income fell by about 40 percent between 1993 and 2007, from US$180 to US$110, making Burundi one of the poorest countries in the world.

2. **After about 25 years of protracted decline in GDP per capita, Burundi’s economy is beginning to experience positive growth.** Consolidation of the peace process has helped start reconstruction and created positive prospects, but the country has not experienced the typical post-conflict bounce in GDP growth, in large part due to periodic internal instability and a generally poor investment climate linked to heavily dilapidated infrastructure. The agriculture sector currently dominates Burundi’s economy, representing 46 percent of GDP and providing 90 percent of the population with income and employment. Recent growth in the service sector, which accounts for 37 percent of GDP, is largely due to a rise in public services. Burundi’s industrial sector only contributes to 17 percent of GDP, however the construction industry has shown considerable dynamism since 2001. The rate of growth of Burundi’s GDP is projected to increase from an estimated 3.5 percent in 2009 to 4.8 percent in 2012.
3. **Burundi’s second democratic elections in 2010 constituted a milestone in the country’s political transition.** The second democratic elections under the new constitution since 2005 took place from May 24th to September 8th, 2010. These elections were seen as a test of the strength of the country’s institutions and the stability of democracy. The National Independent Electoral Commission (CENI) and the European Union (EU) observers concluded that despite a few irregularities during the local council elections, the presidential election was conducted consistent with international standards. However, thirteen of 42 opposition parties, alleging fraud and vote-rigging, formed a coalition to boycott the presidential elections, leaving President Nkurunziza to stand virtually unopposed. As a result, President Nkurunziza, who claimed about 92 percent of the presidential votes cast, was re-elected and started his second, 5-year term as Burundi’s President on August 26, 2010. The ruling party is holding a majority in the parliament and the senate. Efforts of the ruling party to reach out to other opposition parties include appointments of opposition party members in government and convening meetings for political dialogue.

4. The current security situation remains calm but uncertain. The controversies over the election results sparked violence that sometimes led to loss of life. Although most of the country is at peace with sufficient security for economic and social activities, the self exile of the FNL president and former rebel leader along with other opposition leaders in the consortium of opposition parties, also known as the Democratic Alliance for Change (ADC), has created an atmosphere of uncertainty.

5. **Power sector infrastructure:** Burundi’s recurring conflict has largely destroyed the country’s infrastructure assets, including its energy generation, transmission and distribution systems. The country’s installed generation capacity is therefore very limited at about 50 MW. Most of the country’s electricity supply is generated by REGIDESO through seven hydroelectric plants, which have a combined installed power capacity of 30.6 MW. Two of these hydro power plants deliver 85 percent of the domestic power supply: Rwegura (18 MW) and Mugere (8 MW). Burundi’s energy supply therefore depends to about 95 percent on hydro power. This makes the country highly vulnerable to droughts which frequently decrease the electricity production by depleting the limited water storage capacity in the associated hydro power reservoirs. REGIDESO also owns a 5.5 MW thermal power plant in Bujumbura, which has been mostly idle since its acquisition in 1995. Low electricity tariff levels and high diesel prices did not allow REGIDESO to finance fuel payments, and the plant has long been kept as an emergency back-up in case of hydro power production failure. The Bujumbura thermal power plant started regular operations in September 2009.

6. **Utility structure:** REGIDESO is the main organization involved in the supply and distribution of electricity and water in Burundi. REGIDESO is a state-owned, vertically integrated power and water utility under the supervision of the Ministry of Water, Energy and Mines (MWEM) and is the implementing agency of two IDA-financed energy and water

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1. In addition DGHER operates eight small and micro hydro plants in rural areas while non-governmental organizations (NGOs) and some non-profit organizations operate another twelve micro hydro plants.

2. In rural areas of Burundi, the General Directorate of Water Supply and Energy (DGHER - Direction Générale de l’Hydraulique et des Energies Rurales), also an autonomous entity operating under MWEM’s supervision, is responsible for the provision of electricity and water.
infrastructure projects under implementation in Burundi. REGIDESO is serving electricity to about 53,000 clients. About 300 large electricity customers, mainly industrial, commercial and public service clients, account for about 40% of the electricity consumption in Bujumbura city. The household sector equally accounts for about 40% of the electricity consumption in Bujumbura city. Household demand is primarily driven by lighting equipment.\(^3\) A World Bank supported financial restructuring and recapitalization of REGIDESO was completed in 2008, followed by the signing of a five year performance contract between REGIDESO management and the Government of Burundi. This performance management contract includes detailed obligations of both parties to ensure the financial sustainability of REGIDESO. Independent audits of the performance contract are carried out annually to analyze the technical and financial status of REGIDESO. The April 2010 audit showed first progress of REGIDESO towards achieving the annual performance contract targets.\(^4\) Recommendations of this audit are currently being implemented, such as the establishment of an accounting system separated by activity and service; the establishment of 5-year investment plans; and measures to strengthen data collection and data quality.

7. **Growing power supply-demand gap:** During the 2004-2006 regional droughts, REGIDESO’s hydro power production decreased to 137 GWh per year, representing a 35 percent decline compared to the 2009 supply level. The total annual supply of electricity increased slightly from 188.8 GWh in 2007 to 208 GWh in 2009 due to the rehabilitation of some smaller hydro plants and increased generation from the Bujumbura thermal power plant. Supply reliability is further hampered by a severely dilapidated electricity grid in urgent need of repair. The absence of key system protection and control functions make outages more frequent and difficult to monitor and address in time. The steadily growing power supply-demand gap is due to a combination of several factors including: (i) lack of investments in the country's hydro power generation capacity during the last 13 years of civil war; (ii) rapidly increasing power demand in the Bujumbura capital area (further increased by the REGIDESO’s electricity access program for new connections); (iii) over-reliance of hydro power, immediately affecting power supply during droughts; (iv) degradation of the catchment area upstream of main hydro power plants due to deforestation and increased land usage during the years of conflict; (v) high technical and commercial losses in the electricity distribution network and (vi) failure to operate the existing (yet limited) thermal capacity due to lack of funds for fuel purchase, poor maintenance and lack of available spare parts. A major energy supply crisis affected Burundi during the 2009 dry-season. From June-September 2009 the country’s electricity supply was reduced by 40%, resulting in severe electricity shortages for all basic services (e.g. water supply, hospitals) and households in Bujumbura. A similar energy supply crises occurred in the 2010 and 2011 dry-season, resulting in large scale and systematic load-shedding (reaching approximately 40-50% of existing demand during peak hours) with severe effects on the country’s macro economic recovery.

8. **Energy Efficiency.** No consistent and coordinated government energy efficiency programs had been launched since the end of Burundi’s long term conflict. As a result, energy

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\(^3\) A survey of 489 households in Bujumbura city showed that 51% of electricity used in households accounts for lighting.  
\(^4\) Audit technique du contrat-plan intervenu entre la REGIDESO et le Gouvernement Burundais le 22 Septembre 2008: April 2010
efficiency is facing barriers at all levels in Burundi. Surveys conducted in Burundi have identified the following main barriers\textsuperscript{5}: low awareness for energy efficient products and appliances; unregulated markets for energy efficiency products and appliances; lack of quality technical and service standards for energy efficient equipment; low capacity and management experience; and lack of access to investment finance. Energy efficiency measures are currently being piloted by REGIDESO as part of Burundi’s first consistent and coordinated energy efficiency program since the end of the country’s long term conflict. With support from the World Bank the first energy efficiency awareness raising campaign combined with a bulk procurement and distribution of CFLs was initiated in 2011. The proposed GEF project will scale up the scope and effectiveness of the country’s energy efficiency program under development.

2. Objectives

9. The project’s global environmental objective is to selectively improve the energy efficiency of buildings in Bujumbura city and to strengthen the policy frameworks for energy efficiency. The project will result in GHG emission reductions from the energy saved through the use of energy efficient equipments.\textsuperscript{6}

10. The GEF energy efficiency project will be fully aligned with the demand side management program of the IDA financed MSWEIP under implementation. The project development objective of the MSWEIP is to: (i) increase access to water supply services in peri-urban areas of Bujumbura; (ii) increase reliability and quality of electricity services; (iii) increase water supply quality and reliability in Bujumbura; and (iv) strengthen REGIDESO’s financial sustainability.

3. Rationale for Bank Involvement

11. The proposed project is consistent with the World Bank Group’s Country Assistance Strategy (CAS), discussed by the Board of Directors in August 2008, which presents a medium-term vision of sustainable development by assisting Burundi’s transition from a post-conflict economy to a developing country. Improved electricity services and energy efficiency will play a crucial role in accelerating industrial and commercial activity and hence contribute to the country's economic growth. The proposed project is aligned with Burundi’s Poverty Reduction Strategy Paper (PRSP) of September 2006, which aims to promote sustainable economic growth and to develop human capital.

12. The Government of Burundi requested support from the World Bank to protect core development spending to the infrastructure sector and to strengthen the country’s economic recovery. Burundi suffers from extreme infrastructure gaps in road access, power generation, communications infrastructure, and access to water and sanitation. Two ongoing IDA-financed infrastructure operations are assisting the Government of Burundi in this regard: (i) the US$50

\textsuperscript{5} REGIDESO: Etude de la mise en œuvre d’un programme de Maîtrise de la Demand e d’Electricité au Burundi (2007)
\textsuperscript{6} The project objective has been further specified and targeted to GEF financed activities compared to the project objective approved in the GEF Project Identification Form (PIF) on March 17, 2010: The project’s global environmental objective is to remove barriers to Burundi’s low-carbon development by improving the efficiency of the electricity system and promoting small hydro development.
million Multi-Sectoral Water and Electricity Infrastructure Project (MSWEIP)\textsuperscript{7}, approved in May 2008, which is providing co-financing for the proposed GEF energy efficiency project, and (ii) the US$15.4 million Emergency Energy Project (EEP)\textsuperscript{8}, approved in September 2010. Additional US$2 million are being requested from GEF to ensure a more widespread understanding and use of energy efficient technologies and appliances in Burundi.

4. Description

13. **GEF financed activities will scale up the scope and effectiveness of REGIDESO’s energy efficiency program introduced in 2011 with support from IDA.** that represents Burundi’s first consistent and coordinated energy efficiency program since the end of the country’s long term conflict. GEF resources will be targeted to scale up the distribution and promotion of compact fluorescent lights (CFLs) and other energy efficient technologies and appliances, conduct an audit of the electricity grid and about 200 large electricity consumers, and introduce guidelines, policies, and regulations for energy efficient appliances. Continuous advisory support and technical assistance will be provided to increase technical, managerial and organizational capacities for energy efficient technologies and practices. GEF resources are also allocated to ensure proper project management, monitoring and evaluation.

14. The main GEF components are:

(a) **Sub-Component 1(e)A1: Distribution compact fluorescent lights (CFL)** – the first phase of the distribution and promotion of 200,000 CFLs under the IDA-financed MSWEIP will be scaled up, additional 200,000 CFLs will be procured and distributed.

(b) **Sub-Component 1(e)A2: Development and implementation of media communication and public awareness for energy efficient lights** - the first phase participatory media and awareness raising campaign under the MSWEIP (including advertisement tools such as leaflets, radio and television spots, newspaper supplements, and banners in public places, disseminated both in French and translated in the local language Kirundi) supported by the MSWEIP will be scaled up to provide continuous capacity building and consumer advise on the use of a variety of energy efficient products, including environmental, economic, safety, and health aspects.

(c) **Sub-Component 1(e)A3: Technical and managerial capacity building** – including workshop series to raise awareness of government agencies (ministries, regulatory and inspection authorities), private sector players, and standardization institutes on energy efficient products and appliances.

(d) **Sub-Component 1(e)B1: Utility energy audit** - The proposed GEF project will support the completion of an utility energy audit, targeting amongst others: (i) technical loss reduction in the electricity grid; (ii) efficiency of pumping systems in

\textsuperscript{7} The MSWEIP was approved on May 13, 2008, with an original IDA grant of SDR 30.4 million (US$50 million equivalent). The closing date of the MSWEIP is June 30, 2013. Component 1 of the MSWEIP is co-financing the proposed GEF Energy Efficiency Project with an amount of US$21.6 million.

\textsuperscript{8} The EEP was approved on September 30, 2010, with an original IDA grant of SDR 30.4 million (US$15.4 million equivalent) from the IDA Crisis Response Window. The closing date of the EEP is January 31, 2014.
use by the utility; and (iii) losses occurring from low power factor generated by larger industrial consumers. It comprehends the development of an action plan with short, medium, and long term objectives to prioritize energy efficiency investments, and the design of small investment packages for energy efficiency.

(e) **Sub-Component 1(e)C1: Energy efficiency advice to large public institutions, commercial and industrial consumers** The proposed project will finance technical assistance to promote energy efficiency technology and build local capacity to provide energy efficiency advice to large public institutions, commercial and industrial consumers. It comprehends a workshop series to raise awareness of government agencies (ministries, regulatory and inspection authorities), private sector players, and the national standardization institute.

(f) **Sub-Component 1(e)C2: Develop national guidelines for application of energy efficient technologies in new housing and commercial real-estate** – It aims to provide technical assistance to evaluate best practice international energy efficiency standards, labels, and technical specifications for energy efficient equipments and appliances for their application in Burundi. Considering that the institutional frameworks, monitoring mechanisms, and regulatory systems of the main stakeholders are weak, this component will provide analytical support and recommendations to facilitate a longer term market transformation by providing inputs for future energy efficiency policies and regulations appropriate for Burundi’s context.

(g) **Sub-Component 1(e)D: Support to project management.** - Support to project management, M&E, and implementation of an energy efficiency unit in the REGIDESO PIU

5. **Financing**

Source: ($m.)

<table>
<thead>
<tr>
<th>Source</th>
<th>($m.)</th>
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<tbody>
<tr>
<td>BORROWER/RECIPIENT</td>
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<td>Global Environment Facility (GEF)</td>
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<td>GLOBAL ENVIRONMENT - Associated IDA Fund</td>
<td>21.60</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>24.72</strong></td>
</tr>
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</table>

6. **Implementation**

15. **The project will be implemented by REGIDESO.** The project implementing unit for IDA operations (at REGIDESO) will be responsible for delivering the outputs of the project, the actual implementation, input management and sound administrative management. The proposed GEF project will support the development of an energy efficiency unit within the REGIDESO PIU to ensure continuous capacity building and advisory services for energy efficient products and appliances.

16. **A project steering committee** is proposed to be created to assess the progress achieved and to provide advice and directives to the REGIDESO PIU in order to increase the outcomes of

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9 A number between 0 and 1 (frequently expressed as a percentage, e.g. 0.5 pf = 50% pf). Low-power-factor loads increase losses in a power distribution system and result in increased energy costs.
the project, in particular with regards to the development of energy efficiency policies and regulations. This committee will be formed by individuals influential within the government, including representatives from the Ministry of Energy and Mines (MEM), the Ministry of Trade/Industry, REGIDESO, and the national standardization institute (Bureau of Standards). A representative of the MEM will take the lead of the project steering committee. Individual experts and sector institutions will be invited to provide inputs as appropriate for specific meetings. This will allow the committee to benefit from feedback and information about project progress, and enhance understanding of the potential impacts for the further development of the energy efficiency program in Burundi.

17. **Monitoring and Evaluation** of the project will be part of the PIU’s project management and will be carried out to provide feedback to the management unit of the project and to establish project impacts during the project period and a forecast of impact after the end of the project. The World Bank will be responsible for the financial oversight and administrative control, following standard World Bank rules and procedures.

7. **Sustainability and Replicability**

18. The World Bank is financing the Multi-Sectoral Water and Electricity Infrastructure Energy Project (MSWEIP) and the Emergency Energy Project (EEP), which among other things targets investments to improve the reliability of Burundi’s electricity generation, transmission and distribution systems. The Burundi GEF energy efficiency project is partially blended with the MSWEIP and will contribute to the removal of key barriers to energy efficiency in the country through the promotion of energy efficient equipment, awareness raising and technical assistance, and the development of a supportive legal and institutional framework. Both projects are setting the foundation for future energy efficiency developments in the country, in line with the East African Community (EAC) priorities.

8. **Lessons Learned from Past Operations in the Country/Sector**

19. The project design reflects best practices from the region. Lessons learned from implementing energy efficiency projects in Senegal, Benin, and Togo under GEF's Strategic West Africa Energy Program are reflected in the project design. Moreover, the proposed project will build on the results of GEF's Efficient Lighting Initiative (1999-2009), which focused on the reduction of global greenhouse gas (GHG) emissions through the transformation of the global market toward efficient lighting technologies and accelerated phase-out of inefficient lighting. Synergies will be created with the GEF-UNDP Standard and Labeling Program in Kenya (2009-2015), in particular with regards to policies, standards and labeling schemes.

9. **Safeguard Policies (including public consultation)**

<table>
<thead>
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<tbody>
<tr>
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<tr>
<td><strong>Physical Cultural Resources (OP/BP 4.11)</strong></td>
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Involuntary Resettlement (OP/BP 4.12)           [ ]        [X]
Forests (OP/BP 4.36)                           [ ]        [X]
Safety of Dams (OP/BP 4.37)                    [ ]        [X]
Projects on International Waterways (OP/BP 7.50) [ ]        [X]
Projects in Disputed Areas (OP/BP 7.60)*       [ ]        [X]

10. List of Factual Technical Documents

REGIDESO annual reports
Household surveys, 2006 and 1998
Energy efficiency survey, national statistics institute/REGIDESO, 2007
Etude de la mise en œuvre d’un programme de Maitrise de la Demande d’Electricité au Burundi; REGIDESO, 2007
Investment Climate Assessment, 2007
Burundi Infrastructure Action Plan, 2009
Burundi Country Economic Memorandum, World Bank, 2009
Burundi tariff study, REGIDESO, 2010
Strategies for CFL promotion, REGIDESO, 2011

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* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas