

Sustainable Energy for Climate Protection in Ghana

Making energy greener and more affordable to benefit people, industry and the environment

The challenge

Energy is the key to a country's development. The expansion of renewable energies enables a reliable, cost-effective, and environmentally friendly energy supply. At the same time, it creates new jobs and opportunities for entire industries. While Ghana has made a lot of progress in the field of renewable energy, challenges remain.

One of these challenges is the high electricity prices. These are not only a burden on private households and companies, but also lead to high public debt.

Other challenges include an inadequate power supply infrastructure, frequent outages and difficult conditions for private investments into the sector. Furthermore, more than two thirds of Ghana's energy sources come from burning fossil fuels, which generates high Greenhouse Gas (GHG) emissions. In addition, the lack of qualified personnel in the fields of sustainable energy, including both renewable energies (RE) and energy efficiency (EE), results in a slow development of the sector.

Renewable energy – most of all solar power – and energy efficiency, meaning using less energy to perform the same task, are solutions to these challenges. They make energy cheaper, have the potential to bring down the number of outages, do not pollute the environment and therefore prevent global warming.

Our objective

The project Sustainable Energy and Energy Efficiency for Climate Protection in Ghana (SE4C) aims at tackling those challenges. It assists Ghana in installing more RE, increasing EE in different

Project name	Renewable Energy and Energy Efficiency for Climate Protection in Ghana
Commissioned by	Federal Ministry of Economic Cooperation and Development (BMZ)
Project region	Nationwide in Ghana
Lead executing agency	Ministry of Energy
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areas and thus bringing down its electricity costs and GHG emissions. To realise this, several conditions must be improved. Ghana needs regulations that allow for the development of more RE and EE. Staff in public office and private companies need the necessary expertise, which entails practical training and knowledge.

The SE4C project is commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) and implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH in cooperation with Ghana's Ministry of Energy and Ministry of Education. Thus, it contributes to the objectives of the German-Ghanaian Reform and Investment Partnership. Namely, to support financial recovery of the energy sector and improve the framework for private investments. Furthermore, it assists Ghana in achieving its pledge to the world to bring down its GHG emissions (Nationally Determined Contribution [NDC]).

Our approach

The project's interventions are grouped into five main outputs, each of which address different crucial areas that are important to a successful outcome.



Picture 1 (left): SE4C equips public buildings with solar energy – here, for example, technicians are installing a photovoltaic system on the roof of the Public Utilities Regulatory Commission (PURC).

Picture 2 (right): Gender plays a major role in the training of skilled workers in the field of renewable energies. Therefore, young women are particularly encouraged, such as here at St Paul Technical School (SPATS) in Kukurantumi.



Picture 3 (left): The project is building a nearly zero-energy building (nZEB) for the Energy Commission, thus creating a pioneer for sustainable construction.

Picture 4 (right): SE4C carries out energy audits to help companies and public institutions become more energy efficient

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- Output 1 aims to improve the political and regulatory framework at national scale to encourage faster development of the RE/EE market in Ghana.
- The activities in Output 2 are directed at enabling electricity distribution utilities to make a profit from the increasing number of private solar photovoltaic (PV) systems that are run by households and private companies.
- Output 3 aims to strengthen the capacities of the Energy Service Centre (ESC) hosted by the Association of Ghana Industry (AGI) as a RE/EE service provider for the private sector. It will also enable it to become a financially viable structure.
- Output 4's focus is to support RE/EE investments in public buildings. This includes, for example, the construction of a nearly zero-energy building for the Energy Commission, which is intended to be a pioneer for sustainable construction.
- Output 5 aims to strengthen the capacities (knowledge, methods, didactics) of teachers and the technical equipment of selected vocational training institutions in Ghana in the area of RE/EE.

The benefits

Benefits of the project are numerous – some are immediate, others will become visible in the longer term. Greener energy and thereby reduced GHG help to diminish the effects of climate change, which benefits everybody in Ghana, since climate change effects are already noticeable. Cheaper power relieves every single Ghanaian, be it private households, schools, hospitals, or companies. The same is true for more stable grids with less power outages – they benefit individuals in their everyday activities, business owners who suffer losses from power cuts, and crucial

areas such as the health sector. Some groups benefit from direct cooperation with the project, e.g. decision-makers at the Ministry of Energy, as well as in Ghanaian regulatory authorities and utility companies. Vocational schoolteachers will also benefit directly from the project activities, e.g. from training activities.

The SE4C projects builds on results achieved by previous projects. These include:

- A major milestone was the opening of the AGI Energy Service Centre (AGI-ESC). This centre supports companies that want to invest in their own renewable energy supply and in energy efficiency measures. It furthermore created a data base of local companies that are suitable as service providers or suppliers for the planning and implementation of such investments. These measures actively promote the use of renewable energies in the private sector and help develop the local market, creating investment and jobs. The ESC includes its own service website and an Energy Efficiency Network.
- Through the training of teachers, the development of curricula and various teaching materials, several hundred students have enrolled in courses on solar photovoltaic technology, which are currently being conducted at 10 public TVET institutes. Over 100 students have already successfully completed the course.
- In cooperation with the Ministry of Energy, we have succeeded in developing and adopting a Sustainable Energy Action Plan for Public Institutions (PF-SEAP). The PF-SEAPs aims to provide 1,170 public facilities such as water supply systems, schools and hospitals with solar energy systems and to support 2,500 public facilities in using energy more efficiently. The plan also creates the opportunity for further sustainable energy projects to be financed in the future.

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