Kigali australia solar power

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Kigali Solaire is a solar power plant in Rwanda and at the time of construction was Africa"s largest grid-tied solar energy installation. It was built in 2006 on Mont Jali near the capital Kigali. The plant uses photovoltaics and has a peak output of 250 kW and an estimated annual output of 325,000 kWh. It was financed by the German city of Mainz"s utility company Stadtwerke Mainz AG (now: Mainzer Stadtwerke AG), with Mainz being the capital of Rhineland-Palatinate, which has a partnership with Rwanda.

The plant is only part of the initiative, consisting also of distributing 30 photovoltaic panels of 1 kW each to villages outside the countries power grid, which accesses only 5% of the country. The small stations are usually installed on the roof of hospitals or schools. The initiative is also financing and training local technicians for the maintenance of all the installations.[1]

Like many parts of Africa, motorcycles are the most popular form of transportation among Rwanda"s 13.3 million people. Whether they"re commuting to work or school, transporting jugs of water from the local taps or just running everyday errands, people on "motos" can be found zipping up and down most busy streets in the East African nation. Many locals also rely on these motos for their livelihoods as taxi drivers.

But despite their convenience and popularity, motos -- mostly powered by fossil fuels -- leave behind more than just dusty roads. The two-wheeled vehicles produce greenhouse gas emissions, noise, hazardous air pollution and contribute to the country"s heavy reliance on imported oil.

The road transport sector is responsible for 13% of Rwanda"s national emissions, with more than a quarter of it coming from motos. The gas-fueled motos also contribute more than 90% of particulate matter air pollution.

Electric motos, especially those powered by renewable energy, offer a promising solution for reducing emissions, improving air quality and providing economic benefits.

Kigali, Rwanda"s capital is among the fastest growing cities in Africa, with an urbanization annual growth rate of 4% and it contributes over 41% of the national GDP. In Kigali, there are about 26,000 moto taxis in operation, most of which are powered by gas engines.

In partnership with the United Nations Development Programme, the government of Rwanda launched a project to gradually phase out traditional gas-powered motorcycles and convert them to electric bikes. Kigali"s relatively small size and cohesive urban design also make the city an ideal testing ground to see if a transition to electric motorcycles could work across the continent.

While electric motorcycles are an effective way for Kigali to curb pollution and reduce dependence on imported oil, rolling out a large number of electric motos will be challenging. These hurdles include:

Some city districts still have very low electricity access. Blackouts and erratic outages are common occurrences at night when many devices are connected to the system. According to data published by the Rwanda Energy Group, the country"s total installed electricity capacity is only about 300MW, while demand is expected to reach 556MW by 2024, according to the Energy Sector Strategy Plan 2018-2024 published by Rwanda"s Ministry of Infrastructure.

In Rwanda, many motos are sold without the battery to make them more affordable for low-income customers. High-quality batteries can cost up to $1,000, so batteries are often leased. As a result, battery leasing and swap services have become the preferred choice for many moto drivers, but there aren"t yet enough of them to support a fully electric moto sector.

Charging an electric moto takes an average of six to eight hours, much longer than refueling with conventional gasoline. The lost operation time can reduce incomes for the many drivers that rely on them for work (such as taxi or delivery services). Moto drivers work an average of more than 10 hours per day, six days a week. Even fast charging still takes more time than refueling with conventional gasoline and comes with added risks of damaging batteries and reducing the lifecycle of the motorcycle.

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