

# Solar PV integrated clean cooking for grid connected areas: A field implementation

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The MECS programme (UK) and EnDev (GIZ, Germany) co-funded a recent study exploring ‘inverterless’ integration of solar PV in grid based electric cooking systems across both domestic and commercial use. The study was conducted by United International University (UIU) in Dhaka, Bangladesh.

**Domestic:** 3 households were connected to 400Wp solar PV array and received a **curry cooker** and **multicooker** over a period of **18 weeks**.



**Commercial:** 2 tea stalls connected to 400Wp solar PV, over 18 and 10 weeks each, received **kettles**. A **small restaurant**, connected to **800Wp** solar PV array for 7 weeks, received an **EPC** and **rice cooker**.



**Low cost** of cooking means that **initial investment costs** would be **covered within 3 years**. Domestic monthly cooking with grid and solar (levelized) was BDT 100, while before the solar it was close to BDT 1000.



The **low power of the system works well** with ‘long cook’ food – curry, fish, vegetables. It does not fry well. Rooftop solar in **urban spaces** can be overshadowed from neighbouring high-rises and tenants often do not have permission to install systems.



Lack of knowledge of systems was an initial barrier, but **once users were comfortable, they were impressed** with the time saved in not needing to monitor pots.



**Low power appliances need to be developed for this application.** Users seemed to take about 2/3 weeks to get adjusted to the slight change in the way they cooked.



**Solar PV-integrated cooking systems** are suited and cost effective to urban, peri-urban and rural areas. They complement the grid and **save users money**. Successful implementation may hinge on appropriate **micro-credit business financing models** being made available to users.