SwanaSmartStore

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7 AFFORDABLE AND CLEAN ENERGY

SUSTAINABLE DEVELOPMENT GOALS

SwanaSmartStore aims to develop Intelligent solar+storage systems which will provide reliable & affordable household energy access and sustainable support for weak and stressed electricity grids in Zimbabwe and Botswana

| Electrical & thermal energy storage | Electricity demand reduction | Solar heat & electricity generation | Smart control algorithms based on Game theory | Affordable pay-as-you-go energy service business models |
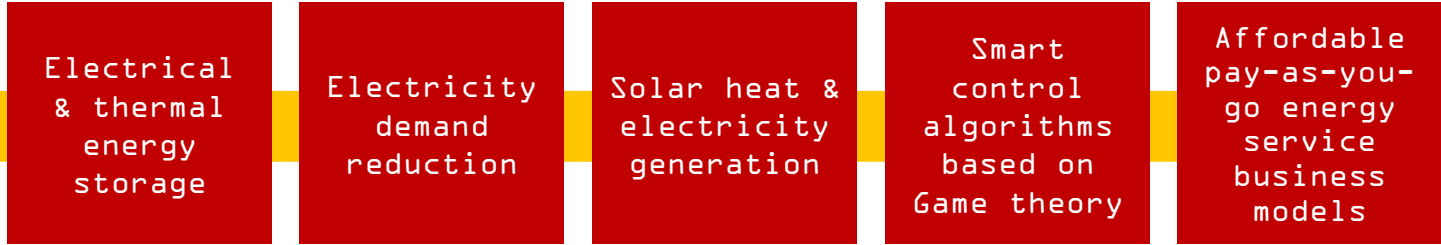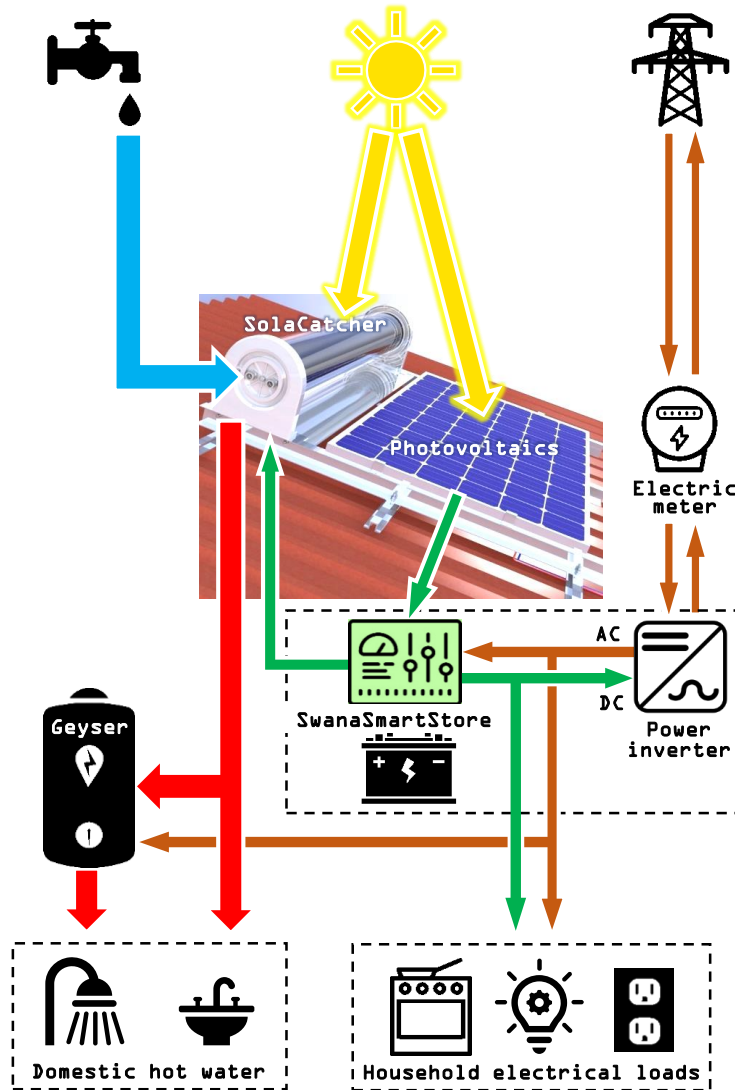
Current lack of access to modern clean energy limits social and economic development across Sub-Saharan Africa and continued reliance on firewood causes deforestation. Over-stressed national electricity grids rely on polluting coal fired power stations and diesel generators which cause pollution and contribute to global carbon emissions, thereby exacerbating the climate crisis. Despite electricity grids being present in cities and most large towns, grid connections in many Sub-Saharan African countries are unaffordable for low-income households. Customers who can afford a connection are subject to maximum power limitations during peak demand hours, scheduled load shedding, and unplanned brown-outs due to a lack of power generation capacity, weak grid infrastructure, and inefficient appliances.

Through progression of concept designs, stakeholder engagement, initial prototype testing, algorithm development & simulations, and evaluation of socio-economic & techno-economic considerations, this feasibility study will lay foundations for a follow-on commercially focused two-year field trial by producing a tangible commercial evidence base and quality academic outputs to attract attention from investors and government stakeholders.