



Solafin2go

Solar Finance to Go

Dr Adrian Pugsley

Centre for Sustainable Technologies



Aims and objectives

Achieving through collaboration

Address challenges of providing clean and affordable modern energy access for off-grid households in Sub-Saharan Africa:

- **Technical:** Design and test cost effective stand-alone solar energy systems which store and deliver electricity and hot water
- **Financial:** Develop scalable business models that attract capital investment to deliver solar energy-as-a-service to unbanked customers
- **Social:** Undertake a pilot study to test solutions through village field trails in Botswana



Solar energy research (Project lead)



Robust photovoltaic modules for extreme climates



Fintech PAYG platform based on mobile, cloud & blockchain



Innovative solar thermal diode water storage heater



Joint funders
Energy Catalyst Round 5



Business case

Market demand and revenue generation model

Customers:

- 1 billion people worldwide without access to electricity or clean fuel
- 150 million households worldwide market for Solar Home Systems (*McKinsey & Company, 2018*)
- 130 thousand households Botswana market valued at \$47 Million (*World Bank, 2017*)
- Mostly “unbanked” citizens with limited capital and no access to finance

Ability to pay:

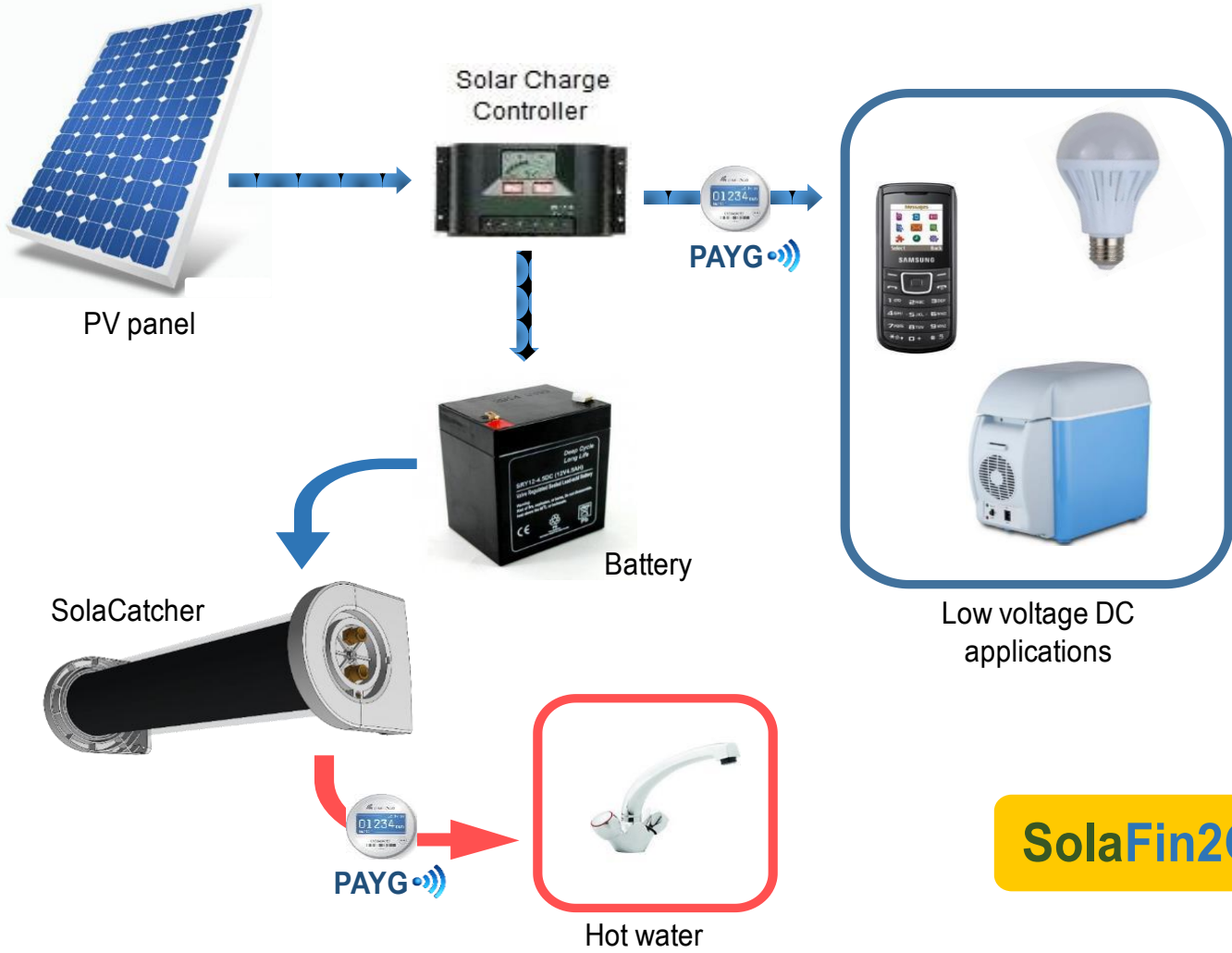
- Re-purposed household income: Currently spent on dirty fuels, phone recharging & disposable batteries
- Private or 3rd sector loan investment: Finance for capital equipment, repaid by customer through PAYG
- Government subsidies: Use funds currently allocated to uneconomical electricity grid expansion projects

Income growth and socio-economic development:

- Energy access enables households to generate additional income
- Increased household income stimulates energy demand growth which yields higher returns for investors
- Empowering communities

Technology concept

Stand-alone photovoltaic electricity & solar hot water service



Key features & Unique Selling Points

Customer in-bounding & Energy-as-a-service

- EmPowered FinTech platform utilises mobile, cloud and blockchain to:
 - In-bound “unbanked” customers (USP)
 - Secure personal details and check (or generate) a credit history
 - Record geographical location of household and solar energy hardware
 - Deliver a fully managed and maintained PAYG energy service
 - Enable affordable customer repayment of capital investment and ongoing service provision
- Robust solar energy hardware with a long service life:
 - Photovoltaic modules, electrical batteries & intelligent charge control
 - Solar thermal diode water storage heater, boosted by surplus electricity (USP)
 - Remote control and smart metering via mobile and cloud

Project status

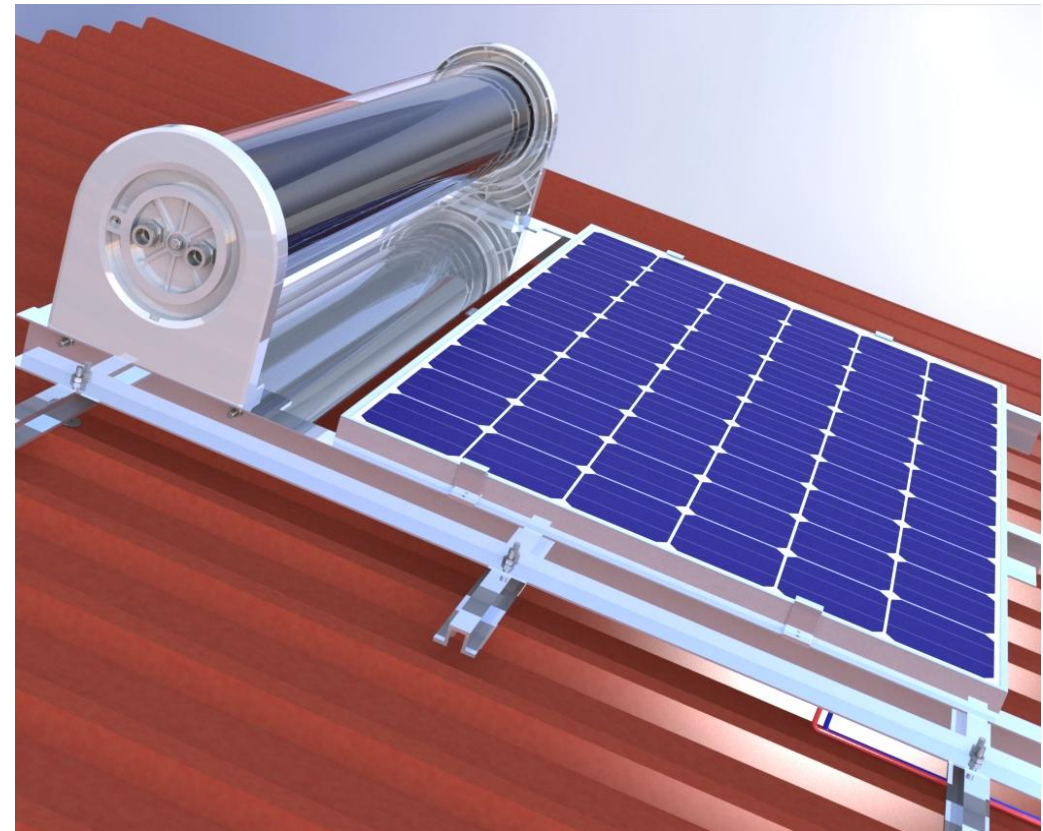
Current progress & future plans

Current 1-year project:

- Design, assembly & laboratory testing of solar energy system hardware
- Develop business models
- Develop software for the EmPowered FinTech platform
- Field trials in Botswana

Future plans:

- Value engineer optimized solar energy hardware solutions
- Test business models and Fintech platform variants
- Scaled-up pilot roll-out in several countries
- Seeking partnerships for:
 - Further funding & capital investment
 - Component manufacturing
 - Local distribution and servicing





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Thank you for listening



Come and talk to
us at **Stand no. 18**



a.pugsley@ulster.ac.uk



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