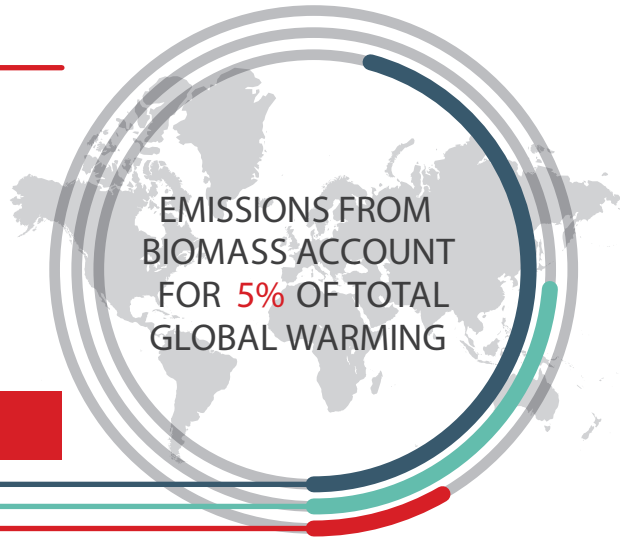
COOKING WITH ELECTRICITY
IN AFRICA & ASIA



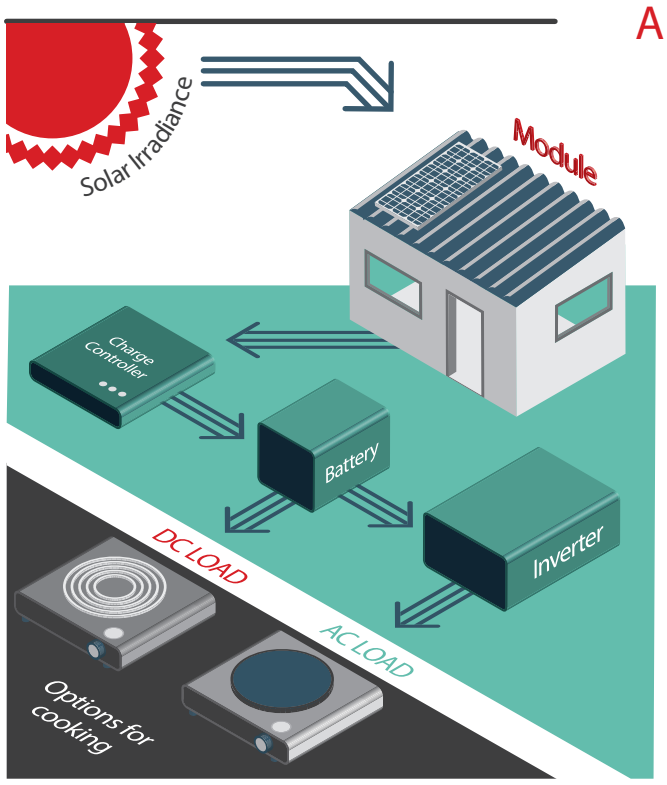
COOKING WITH ELECTRICITY WILL SOON BE A COST EFFECTIVE OPTION FOR THE POOR.

3 BILLION
COOK WITH BIOMASS WORLDWIDE

1.5 BILLION
PAY MORE THAN $10 PER MONTH TO COOK WITH BIOMASS

4 MILLION
PREMATURE DEATHS PER YEAR FROM ACUTE RESPIRATORY INFECTION AS A RESULT OF COOKING OVER WOOD AND BIOMASS

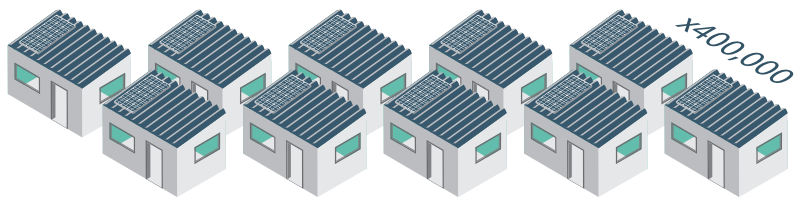
2020 CURRENT TRENDS IN PRICING INDICATE THAT BY 2020 SOLAR PV WILL SUPPLY ELECTRIC COOKING WITH 4-5 YEARS PAYBACK



A SOLUTION

STAND ALONE SOLAR PV SYSTEMS

With full lifetime costings, Solar PV could currently supply 'electric cooking' at an equivalent price ($10pm).

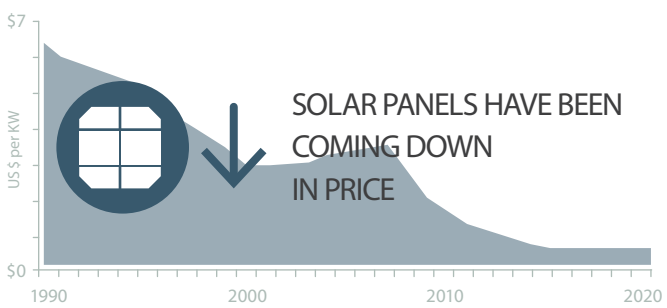


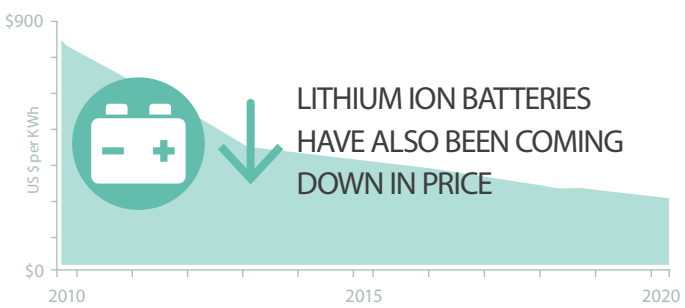
4 MILLION HOUSEHOLDS

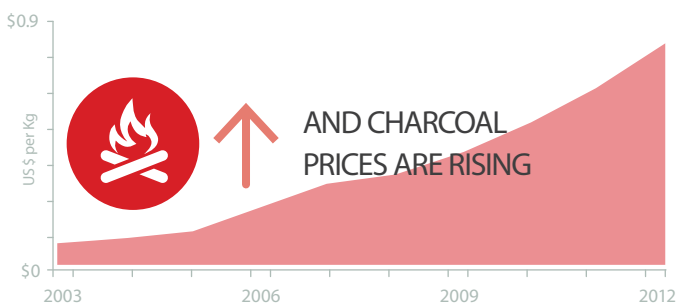
would likely change their cooking appliances if they were presented with an alternative to biomass at a similar cost per month ($10)

In most of Africa and Asia grid electricity is already cheaper than biomass, but is too unreliable for cooking. Energy storage is a key to zero emission kitchens.

SOME COST DATA AND ASSUMPTIONS



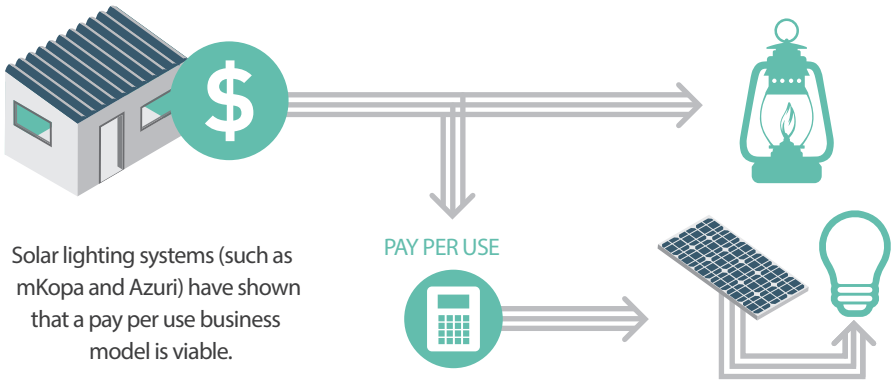




A SUITABLY SIZED SOLAR PHOTOVOLTAIC HOME SYSTEM SIZED FOR COOKING IS AT RETAIL PRICES TODAY APPROXIMATELY $0.52 CENTS PER KWH ($0.6 LEVELISED)

BUSINESS MODELS THAT WORK

Clean lighting systems have gained traction in the last few years because they substitute a monthly expenditure on Kerosene with solar energy.



Solar lighting systems (such as mKopa and Azuri) have shown that a pay per use business model is viable.

Pay per use models have also appeared in other sectors such as Water (Grundfos LIFELINK). Indeed the water industry is championing a shift away from thinking about infrastructure per se to a 'Service Delivery Approach'

Organisations or Private Sector willing to invest in the initial capital could run Service Delivery Approaches for cooking from Solar PV Panels at today's prices

RESEARCH REQUIRED

Technically the system is already possible (off the shelf), and price wise it will likely be picked up by the private sector as a product option at least by 2025.

We can accelerate this by:

- Some technical research on system design, sizing of battery, heat transfer and safety in connections.

Assuming this went to scale there is policy/market research required:

- Can the global industry provide the panels without a shortage?
- Are there emerging alternatives for energy storage?
- What should countries do to position waste disposal of the batteries?
- What are the foreign exchange implications for a scaled uptake?
- What are the local labour implications for the biomass stove market?
- Are there opportunities here for carbon markets?
- What behaviour change and awareness raising is required?

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2015. References available on request. More info: PV-eCook.org or Research@gamos.org