

DEVELOPMENT OF A PERMANENT SOLAR COOKER FOR THE UK - CONVENIENCE, RELIABILITY AND SAFETY.

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Abstract: *Attempts to introduce solar cookers to new populations or markets often result in disappointment (e.g. Kebede & Mitsufuji, 2014, Beltram & Levine 2014). The reasons for these failures have been widely studied (e.g. Ahmad, 2001) and attempts made to devise better strategies (e.g. Larsen & Seim, 2015). This paper describes an ongoing project to introduce solar cooking to the UK by a) increasing familiarity with the technology, and b) developing a solar cooker that performs adequately in the UK climate, and c) meets the requirements of potential users. The challenges are the same as those encountered in attempts to do the same in other cultures – the cookers need to be recognized and understood, perform well in the climate, and satisfy a number of consumer requirements regarding convenience, reliability, and safety. Most standard household kitchens in the UK contain built-in ovens, hobs and microwaves, enabling baking, boiling, steaming, frying and other cooking techniques. This cooking equipment is permanent, convenient, durable, and reliable, and situated indoors. Many households have several sources of fuel available for cooking, including solid fuels, gas, and electricity. The total cost of these fuels usually represents a very small proportion of the annual household budget. Domestic cooking in the UK is therefore usually cheap, convenient, and reliable. Solar cookers simply cannot compete in this domestic cooking sector. The only time that UK residents cook outdoors at home while the sun is shining is when they have a barbecue. If solar cookers are to gain recognition and a foothold in the UK, they must first compete with barbecues. But anecdotal evidence suggests that few UK residents would recognize a solar cooker, still less believe it could be used effectively in their climate. The authors introduce a rapid, simple visual recognition test for assessing familiarity with solar cooking devices. They then report on the development of a permanent, convenient, reliable and safe solar cooker that is suited to local climatic conditions, and can compete in the UK outdoor cooking market, currently dominated by charcoal and gas barbecues. In particular, factors are addressed that are known to impede the adoption of solar cookers in any community, including: awareness and unfamiliarity, convenience, habitual behaviour patterns, reliability, cost, and safety. Results of extensive performance testing and design modifications resulting from user feedback are presented as part of a full description of the product development program.*

Keywords: Solar cooker recognition survey, barbecues, UK market, product development.