

IAF SYMPOSIUM ON INTEGRATED APPLICATIONS (B5)  
Satellite Commercial Applications (3)

Author: Mr. Steve Lee  
Stevenson Astrosat, United Kingdom

Dr. Fraser Hamilton  
Astrosat Ltd, United Kingdom

KEYNOTE: THERMCERT - A SIGNATURE COMMERCIAL SPACE APPLICATION TO TACKLE  
FUEL-POVERTY IN THE UNITED KINGDOM**Abstract**

In the United Kingdom, approximately 2.5 million households experienced fuel poverty during 2015. Suppliers of energy have been tasked with addressing this problem, finding households in need, and then employing energy efficiency measures to help these families save as much money as possible - solutions such as insulation, better heating systems, smart boiler technology and more. Not only does this result in an improved economic situation and quality-of-life for the affected households, the energy companies can also maintain a competitive position in the marketplace and avoid costs associated with generating energy that simply goes to waste. A significant challenge, however, is to find the households in the UK that have the greatest needs. In partnership with the European Space Agency (ESA) and E.On, a leading energy provider in the United Kingdom, AstrosatUK has deployed the ThermCERT commercial satellite application product, which identifies and visualizes areas of the UK with the greatest levels of need, using a range of existing satellite data, combined with terrestrial data such as census results. Our machine-learning algorithms are put to work on these data, to identify demographics, geography, and other key indicators of fuel poverty, presenting results through detailed and interactive visual information. In this invited keynote talk, we present ThermCERT as one example of just how powerful the combination of existing space-based and terrestrial geospatial data can be, in order to solve critical human challenges through a commercial product. We outline the basic data, algorithmic learning, and information delivery components of ThermCERT, and will provide example use-cases of demonstrated energy savings brought about by AstrosatUK.