

# SERC - Strathmore Energy Research Centre

A transformational input into the RE & EE industry



May 2015

**Strathmore**  
UNIVERSITY

# The 600kW grid-connect system *does the technology work?*

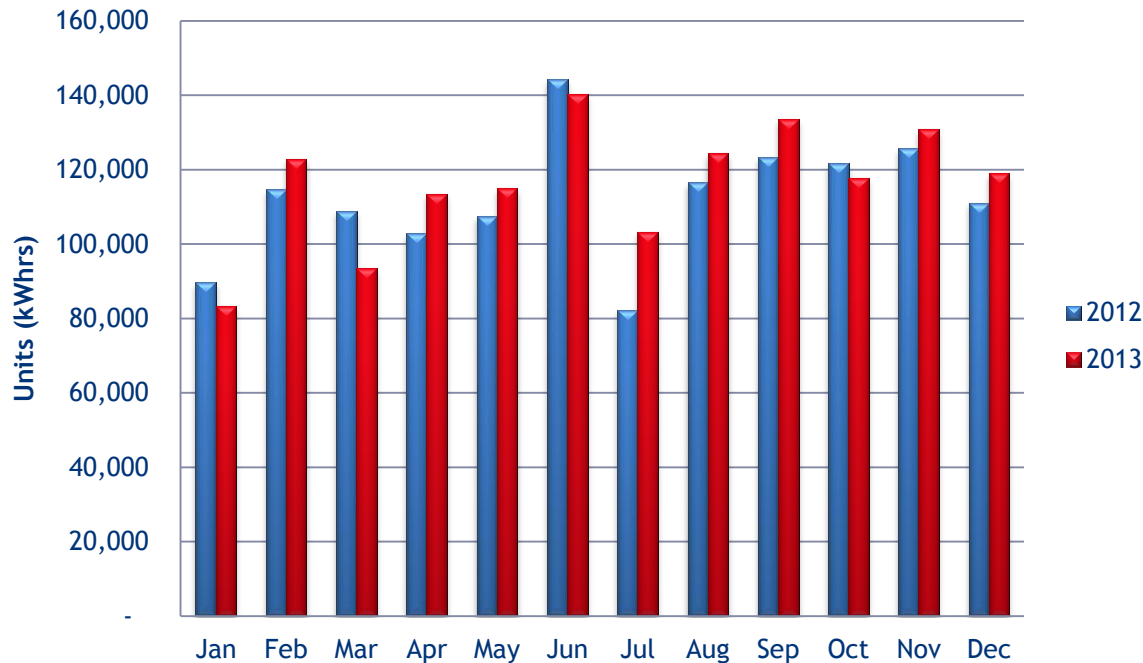
- In 2012, SERC started with a mission to strengthen the RE and EE industry in Kenya and the EA region.
- Four areas: Research, Consultancy, Training and Testing
- Four years down the line, what do we have to show?



# The 600 kW grid-tied PV system

## *The first zero carbon footprint university in SSA*

- 1.37 million units of electrical energy are consumed per year in Strathmore at a cost of about USD 273,000 per annum (US cents 20/unit)



# The 600 kW grid-tied PV system

## *Financial mechanism*

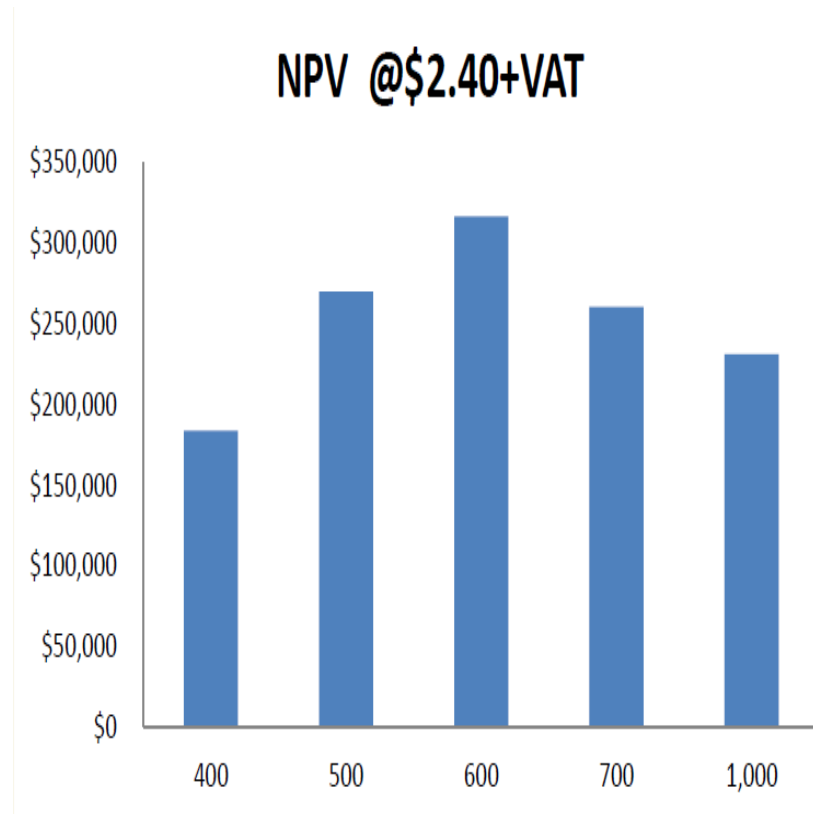
- A simple calculation with the existing financing mechanism showed clearly that investing in solar energy does not make financial sense, despite the ever decreasing cost of solar modules and inverters.
- The AFD green line of credit - 4.1% per annum, 10 years payback period and 1 year grace period made all the difference.

**Mortgage VS paying Rent**

# The 600 kW grid-tied PV system

## *System sizing*

- Once the finances were made right, the next issue was the technical aspect.
- Bidding process, award to QuestWorks Co.
- Size, IRR study
- 0.5 - 10 mW; 12 cents of USD per unit
- Current price 20 US cents paid to utility

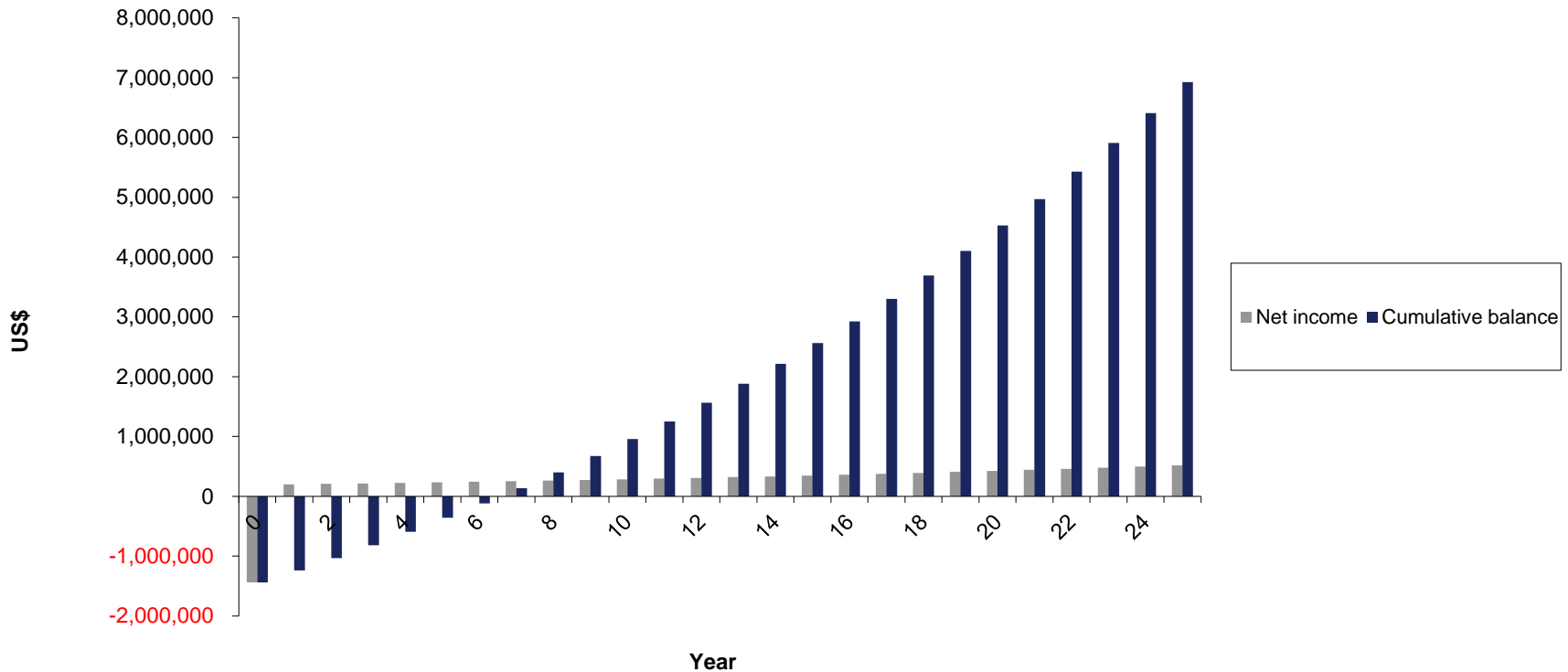


# The 600 kW grid-tied PV system

## *Availability of roof space*



# Cumulative project balance and net income for 25 years



# Consequences - Impact

- First PPPA in Kenya
- 11<sup>th</sup> December 2015: 41 VCs in Mombasa... Go solar for health and wealth.
- Using the law to back us up! Energy Bill 2016
- The system will also serve as a training tool for engineers in Kenya
- Awareness creation amongst students. Greening 5000 minds!





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