

## D. NEW PROJECTS AND PROGRAMMES

### 1. FIELD TESTING OF HYBRID ULTRA CAPACITORS (HUC) POWERED SOLAR LIGHTING KITS AND SOLAR STREET LIGHTS FOR GRID DEPRIVED RURAL AREAS, LIGHTING IN VARYING CLIMATIC ZONES OF INDIA”.

Principal Investigator	:	Executive Secretary, KSCST
Co-Principal Investigator	:	Mr. S N Jayaram, KSCST
Budget	:	DST, GoI : Rs.37.74 Lakhs
		Industry : Rs.25.50 Lakhs
		KSCST : Rs. 13.20 Lakhs
Total Budget	:	Rs.76.44 Lakhs

#### **Introduction:**

The Hybrid Ultra Capacitor (HUC) technology is developed by the Solid State Structural Chemistry Unit (SSCU), Indian Institute of Science, Bengaluru and the technology is licensed to the Industrial partner M/s MESHA Energy Solutions Pvt. Ltd. Bengaluru. HUC is an energy storage device whose positive terminal is lead and the negative terminal is carbon coated graphite. Industry has developed the Solar PV Home lighting kits, Lanterns, Street lights and Power pack for micro-grid applications using this HUC technology.

The Department of Science and Technology, Government of India has sanctioned the project titled “Field testing of Hybrid Ultra Capacitor (HUC) Powered Solar PV Lighting Kits and Street Lights for Grid Deprived Rural area for Lighting in Varying Climatic Zones of India” to KSCST, vide sanction order No. DST/SSTP/Karnataka/484(G), dated 18.05.2017 for field testing the performance of the HUC Technology. This project is jointly funded by Department of Science and Technology, Government of India, KSCST and the M/s MESHA Energy Solutions Private Limited Bengaluru.

KSCST is procuring 960 units of 5 W capacity and 40 units of 10W capacity lighting kits from MESHA Energy Solutions and installing these lighting kits eight states for field testing the performance of the HUC technology in varying climatic zones.

#### **Progress:**

An MoA has been signed between KSCST and M/s MESHA for sharing of responsibilities for successful implementation of the project.

In order to review the price quoted by M/s MESHA for supply of 5W and 10 W capacity HUC Powered Solar PV Lighting kits, an Expert committee is constituted with the following Members.

1	Prof. S Subramainaian, Secretary, & professor, Materials Engineering Dept. Indian Institute of Science, Bengaluru	Chairman
2	Prof. N Munichandraiah Professor, Inorganic and Physical Chemistry, Indian Institute of Science, Bengaluru	Expert Member
3	Prof. Praveen C Ramamurthy Materials Engineering Department Indian Institute of Science, Bengaluru	Expert Member
4	Dr. S G Sreekanteshwara Swamy Executive Secretary, KSCST	Principal Investigator
5	Prof. A K Shukla, Emeritus Professor, SSCU, IISc, Bengaluru	Technology Developer
6	Mr. S N Jayaram, Project Engineer, KSCST	Co-Principal Investigator
7	Mr. H Shiva Prasad, Accounts Superintendent, KSCST,	Invitee
8	Mr. Govindaraja Assistant Administrative Officer, KSCST	Invitee
9	Representatives from MESHA Energy Solutions Pvt. Ltd. Mr. Amog Mukunda, General Manager, Mr. S Srikanth, and Mr. H V Karthik, Engineer	Industrial collaborator

The above expert committee met on 13<sup>th</sup> September 2017 and evaluated the quantity of materials, component and other accessories and also design and development cost of manufacturing the 5W and 10 W capacity HUC Powered Solar PV lighting kits and evaluate the unit price for procuring it for field testing under this project. The committee felt that the price quoted by M/s MESHA Energy Solutions for 5 W lighting kits art Rs.4,000/- per unit and for 10 W lighting kits at Rs.7,500/- per unit is reasonable..

- Interacted with State S&T Councils for identification of un-electrified villages/ hamlets in Assam, Arunachal Pradesh, Nagaland, Himachal Pradesh, Rajasthan, Uttarakand, Odissa, Andaman and Nicobar Islands.
- The technical team visited Hullegala village in Malavalli taluk and Santhebachanahalli in K R Pet taluk, Mandya District on 27.09.2017 and identified 54 un-electrified households for installation HUC powered lighting kits.
- On 09.10.2017 the technical team visited Tondemakki and Kuduragodu villages in Kundapura taluk of Udupi District and identified 60 un-electrified households in Udupi District. In addition to this visited Sirur, Paduvari, Uppunda, , Yedetare, Navanda, Tondemakki, Ganganadu Gram Panchayats and requested the concerned PDO's to provide the list of un-electrified houses in this respective Gram Panchayats for installation of HUC powered Solar PV Lighting kits.

- The technical team visited Odissa State on 27 and 28<sup>th</sup> October 2017 and identified 80 un-electrified houses in Kolhi Village in Dhenkal District. The site was identified with the support of Prof. M K Mohanthy, Associate Professor, College of Agriculture Engineering and Technology, Orissa University of Agriculture & Technology.
- It is planned to install 220 lighting kits in Karnataka by the end of December 2017 out of which 54 lighting kits at Mandya District and remaining lighting kits at Udupi District.



**Installation details of HUC Solar PV lighting kits under the project entitled  
“Field Testing of Hybrid Ultra Capacitors (HUC) Powered Solar Lighting Kits and Solar  
Street Lights for Grid Deprived Rural Lighting in Varying Climatic Zones of India”**

**Santhebachalli village, K. R. Pet Taluk, Mandya District**

Sl No	Name of the Beneficiary	Name of the hamlet / village	Category General OBC, SC / ST	Total No of family members	Date of Installation
1	Shankamma W/o Kari Hanumaniah	Santhebachalli	SC	3	08.12.2017
2	Manjamma W/o Ramabovi	Santhebachalli	SC	2	08.12.2017
3	Nandini W/o Krishna Murthy	Santhebachalli	SC	4	08.12.2017
4	Lakshamma W/o Krishna Bovi	Santhebachalli	SC	6	08.12.2017
5	Lalitha W/o Vishwanatha	Santhebachalli	OBC	3	08.12.2017
6	Gowramma W/o Eranna	Santhebachalli	SC	4	08.12.2017
7	Rathamma W/o Venkatesha	Santhebachalli	SC	5	08.12.2017
8	Jinath Banu W/o Bashusab Ajubi	Santhebachalli	OBC	3	08.12.2017
9	Mahalakshmi W/o Raju	Santhebachalli	SC	5	08.12.2017
10	Madesha S/o Palaniswamy	Santhebachalli	SC	4	08.12.2017
11	Ramamma W/o Narasimhaiah	Santhebachalli	SC	3	08.12.2017
12	Jayamma W/o Venkataiah	Santhebachalli	ST	5	08.12.2017
13	Gowri W/o Late Gowtham	Santhebachalli	SC	2	08.12.2017
14	Gowramma W/o Kariyappa	Santhebachalli	OBC	2	08.12.2017
15	Saraswathi W/o J Mani	Santhebachalli	OBC	2	08.12.2017
16	Manjula W/o Ranga	Santhebachalli	ST	4	08.12.2017
17	Mallesha S/o Ramaiah	Santhebachalli	ST	4	08.12.2017
18	Gowramma W/o Raju	Santhebachalli	ST	4	08.12.2017
19	Jayalakshamma W/o Rangappa	Santhebachalli	3A	2	08.12.2017
20	Narayana S/o Hanumaiah	Santhebachalli	ST	6	08.12.2017
21	Doddamma W/o Ramesha	Santhebachalli	ST	6	08.12.2017
22	Bhagya W/o Rajesha	Santhebachalli	ST	5	08.12.2017
23	Nirmala, W/o Raju	Santhebachalli	OBC	3	08.12.2017
24	Shyamala, W/o Palani	Santhebachalli	OBC	4	08.12.2017
25	Basavaraj Y S/o Late Shekharappa Y	Mysore	General	4	08.12.2017

**Hullagala Village, Malavalli Taluk, Mandya District**

Sl No	Name of the Beneficiary	Name of the hamlet / village	Category General OBC, SC / ST	Total No of family members	Date of Installation
1	Thayamma W/o Shivanna	Hullagala	OBC	3	12.12.2017
2	Chikka Mogamma W/o Chikkana	Hullagala	OBC	4	12.12.2017
3	Puttamma W/o Eregowda	Hullagala	OBC	2	12.12.2017
4	Sudha W/o Honnegowda	Hullagala	OBC	4	12.12.2017
5	Mariswami S/o Thimmegowda	Hullagala	OBC	3	12.12.2017
6	Nagarathnamma W/o Siddaraju	Hullagala	SC	4	12.12.2017
7	Sarojamma W/o Kullashetty	Hullagala	OBC	2	12.12.2017
8	Susheelamma W/o Basavaraju	Hullagala	OBC	3	12.12.2017
9	Nanjunda Gowda S/o Nanjundegowda	Hullagala	OBC	4	12.12.2017
10	Eregowda S/o Siddegowda	Hullagala	OBC	5	12.12.2017
11	Mahadevi W/o Swamigowda	Hullagala	OBC	1	12.12.2017
12	Jayanna, D/o Madegowda	Hullagala	OBC	2	12.12.2017
13	Bettegowada S/o Kunnegowda	Hullagala	OBC	2	12.12.2017
14	Rathnamma W/o Nanjundegowda	Hullagala	OBC	4	12.12.2017
15	Thimmegowda S/o Bettegowada	Hullagala	OBC	4	12.12.2017
16	Mariswamy S/o Siddegowda	Hullagala	OBC	2	12.12.2017
17	Honnegowda S/o Channegowda	Hullagala	OBC	2	12.12.2017
18	Sannamma D/o Thirumalegowda	Hullagala	OBC	1	12.12.2017
19	Puttanka Shetty S/o Doddakempa Shetty	Hullagala	OBC	2	12.12.2017
20	Eramma W/o Chikka Hydegowda	Hullagala	OBC	1	12.12.2017
21	Mangala Gowri W/o Cheluvraju HN	Hullagala	OBC	4	12.12.2017
22	Gowramma S/o Boregowda	Hullagala	OBC	5	12.12.2017
23	Kempamma W/o Mallegowda	Hullagala	OBC	6	12.12.2017
24	Mangalamma W/o Kumara	Hullagala	OBC	5	12.12.2017
25	Rathnamma W/o Siddegowda	Hullagala	OBC	3	12.12.2017
26	Lokesh S/o Thammegowda	Hullagala	OBC	4	12.12.2017