Mobile for Development Utilities Programme

Catalogue of Grantees

Mobile for Development Utilities

The Mobile for Development Utilities Programme promotes the use of mobile technology and infrastructure to improve or increase access to basic utility services for the underserved. Our programme focuses on any energy, water or sanitation services which include a mobile component such as mobile services (voice, data, SMS, USSD), mobile money, Machine to Machine (M2M) communication, or leverage a mobile operator's brand, marketing or infrastructure (distribution and agent networks, tower infrastructure). The Programme receives support from the UK Government.

The Innovation Fund

The Mobile for Development Utilities Innovation Fund was launched in June 2013 to test and scale the use of mobile to improve or increase access to energy, water and sanitation services. In two phases of funding, grants were competitively awarded to 34 organisations across Asia and Africa. Seed grants were awarded for early stage trials, Market Validation grants for scaling or replication of business models, and Utility Partnership grants to foster partnerships between utility companies and the private sector.

The specific objective of the Innovation Fund is to extract insights from the trial and scaling of these innovative models to inform three key questions for growing the sector:

- How can mobile support utility services?

- For a mobile-enabled solution to be adopted at scale, what building blocks are needed?

- What are the social and commercial impacts of delivering community services to underserved mobile subscribers?

These insights, as well as grant-specific learning objectives, are included in individual case studies such as this one, as well as thematic reports that will be published throughout 2015 and 2016.

Mobile for Development

Mobile for Development brings together our mobile operator members, the wider mobile industry and the development community to drive commercial mobile services for underserved people in emerging markets. We identify opportunities for social, economic impact and stimulate the development of scalable, life-enhancing mobile services.

The GSMA represents the interests of mobile operators worldwide, uniting nearly 800 operators with more than 250 companies in the broader mobile ecosystem, including handset and device makers, software companies, equipment providers and Internet companies, as well as organisations in adjacent industry sectors. The GSMA also produces industry-leading events such as Mobile World Congress, Mobile World Congress Shanghai and the Mobile 360 Series conferences.

For more information, please visit the GSMA corporate website at www.gsma.com

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Introduction

In 2015, there are 1.2 billion people without basic energy access,[1] 663 million without access to improved water services and 2.4 billion with no access to sanitation.[2] The challenges to providing universal access to utility services include last mile distribution, operation and maintenance costs and payment collection. Furthermore, as urban growth stretches the limits of existing and antiquated infrastructure, millions more people across emerging markets are increasingly living with intermittent and an unpredictable supply of basic utility services.

The slow growth of energy, water and sanitation access (between 1% and 2% per year for energy) compared to the rapid expansion of GSM mobile networks (approx. 11% per year) mainly in rural locations,[3] has widened the existing gap between access to mobile and access to utility services. The size and the reach of the mobile industry's infrastructure, distribution channels, mobile payments and technologies, therefore offer new pathways to achieve improved access to utility services to underserved communities.

The GSMA's Mobile for Development Utilities programme (formerly MECS) was launched in 2013, with the support of the UK Government, to explore the role that mobile technology and infrastructure can play in improving access to basic energy, water and sanitation services in underserved communities from urban to rural settings.

There are a number of ways in which service providers can benefit from the presence of mobile networks and access to mobile devices, services and technology, which the M4D Utilities programme categorises into the following five mobile channels (next page).

One of the key objectives of the programme is to identify and support innovative mobile-enabled solutions that will improve the lives of many by providing access to affordable utility services.

To date, £5.6M has been committed through the M4D Utilities Fund to 34 organisations who are leveraging mobile to increase or improve access to utilities services. Over four separate rounds 354 unique applications were received, with a 30% increase in applicants between rounds in 2014 and 2015, reflecting the maturing market and increased appetite for mobile-enabled products and services to solve these challenges. The fund was 11 times oversubscribed with applicants requesting a total of £61M in grants demonstrating the untapped demand for additional risk capital to support early innovators.

This catalogue presents a range of innovative and potentially transformative solutions to closing the utilities services gap, across three sectors; energy, water and sanitation. Twenty-one of the programme's most recent grantees, awarded in May and September of 2015, are included in this catalogue.

This is an exciting time, when now, more than ever, the proof of concept for using mobile as a solution to provide life-enhancing services to the underserved, is being realised. Take a look at some of the latest solutions to see how far the industry has come in the past few years. The time is ripe for mobile operators and other ecosystem players to enter into this space and create partnerships to solve these problems, whilst increasing their profits.

M4D Utilities team

1. Mobile for Smart Solutions: How Mobile can Improve Energy Access in Sub-Saharan Africa
2. Progress on sanitation and drinking water – 2015 update and MDG assessment.
3. Predicting the future of Mobile-Enabled Community Services

Source: GSMA

MOBILE INFRASTRUCTURE

The Telecom Tower acts as the anchor load for the energy system providing power for consumptive and productive use to surrounding communities via a minigrid and/or energy hub model.

The energy can be supplied by a third party Energy Service Company (ESCO) who manages these two demands.

MOBILE OPERATOR'S DISTRIBUTION NETWORK & MOBILE MONEY AGENTS

The extensive footprint of Mobile Operator's Distribution Channels and Mobile Money Agent Networks can be leveraged to reach underserved customers and distribute energy and water solutions.

MACHINE-TO-MACHINE CONNECTIVITY

Smart metering and monitoring over GSM networks of decentralised utility systems can improve their lifetime and efficiency, and trigger more responsive maintenance and repair. It can also enable remote on/off control of services for customers on a Pay-As-You-Go arrangement.

MOBILE PAYMENTS

Mobile Payments (Mobile Money Services, SMS Payments, Airtime) and Mobile Savings are enabling the development of Pay-As-You-Go models and other innovative financing schemes providing affordable energy and water solutions to low income populations.

MOBILE SERVICES

Mobile Services (Voice, SMS, USSD, Applications) can be used by communities, village agents, and service providers to report service delivery status, improve field force operations, optimise supply chain, or provide customer support.

Minigrid

Telecom Tower

Energy Hub

Agricultural Processing | Phone & Battery Charging | Barber | Vaccine Refrigerator

Distribution Network Sales

Mobile Agent's Kiosk

Solar Home System Metering & Monitoring

Communal Water Systems (Hand pumps, Water Kiosks) Metering & Monitoring

Smart Metering & Monitoring of grid energy and piped water services

Mobile payments for energy and water products and services

Account Paid

Two-way communication platform to collect & disseminate critical utility systems information

Water Point Broken

I'm on my way!

Optimise supply chain logistics with SMS, USSD and mobile web platforms

Warehouse

Order for five units

Village Entrepreneur

Energy
Brighterlite
Norway AS

Name of project
Pilot sales of solar home
systems in Myanmar

Project location
Myanmar

Type of grant
Seed

Grant Awarded
May 2015

Partners
Telenor Myanmar

Description
Brighterlite, in partnership with Telenor Myanmar, will
provide solar home systems through a fee for service
model, using Telenor Myanmar's agent network for
acquiring customers and collecting payments. The seed
grant will test the viability and impact of launching a
mobile-enabled service in a green-field market.

"

Brighterlite is testing mobile-
enabled sales of renewable
electricity to off-grid households in
Myanmar. It is a challenging country
to do business in, but the GSMA
grant will certainly enable us to
road-test our product and service
offering and our payment solution.

Martin Hamann
CEO, Brighterlite Myanmar

"

brighterlite.net

Energy
d.light

Name of project
d.light Solar as a Service:
Affordable Energy Access
in Haiti

Project location
Haiti

Type of grant
Market validation

Partners
Re-Volt

Description
d.light has developed a business model designed to simultaneously drive mobile money adoption and expand energy access in Haiti. In partnership with Re-Volt, d.light will offer energy as a service to customers, leveraging Digicel's existing network of Tcho Tcho mobile money agents as points of sale for their energy as a service offering. Part of the process of registering an account with Re-Volt will include registering for a mobile money account. This Market Validation grant will test how the adoption of d.light's energy offering will drive adoption of mobile money, providing a use-case for maintaining an active account over time.

"

Through this project, we are hoping to demonstrate that PAYG solar can drive mobile money adoption in markets with low mobile money penetration. This will show that the viability of the PAYG business model is not limited to countries that already have vibrant mobile money markets.

Karl Skare,
Director of New Business Initiatives, d.light

"

dlight.com

Energy
Devergy East Africa Ltd

Name of project
Accelerating commercially sustainable and scalable rural electrification through the installation of low-cost, scalable, solar PV-based micro-grids in partnership with mobile service providers

Project location
Tanzania

**Type of grant**
Market Validation

Grant Awarded
May 2015

Partners
Tigo Tanzania

Description
Devergy, in partnership with Tigo Tanzania, will scale their low-cost solar-PV micro-grids to provide access to basic lighting, charging and appliances to rural communities. This market validation grant will test the opportunities to integrate energy distribution with mobile distribution including the impact on mobile phone usage and mobile money uptake.

"
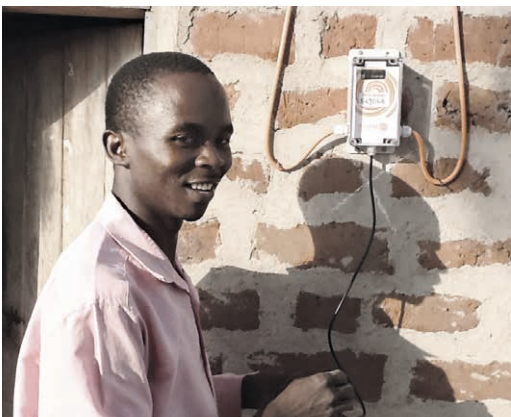
We are very proud to be contributing to the growth of the rural energy sector in East Africa, and are confident our partnership with Tigo will grow well beyond this initial step.

Fabio De Pascale
Chief Energising Officer, Devergy

"

devergy.com

Energy
Dialog Axiata PLC

Name of project
MPOWER

Project location
Sri Lanka

Type of grant
Utility Partnership

Grant Awarded
Sep 2015

Partners
Lanka Electricity
Company (LECO)

Description
The objectives of this project are to offer smart metering to the domestic market and improve power distribution network monitoring capability. The smart meters will also be used to introduce a prepaid metering facility to the Sri Lankan market. The project will run in an identified Green Energy Zone where 3200 smart meters will be deployed with 10% operating in prepaid mode. In addition, about 144 distribution network monitoring points will be established within the zone.

"
With this funding Dialog will leverage its state-of-the-art mobile technology and services to improve access to electricity as we strive to influence national level adoption of smart metering, prepaid metering and power distribution network monitoring in Sri Lanka.

CEO, Dialog
"

dialog.lk

Dialog

Energy
Gham Power Nepal Private Limited

Name of project
Khotang Microgrid Extension to power Telecom and Additional Community

Project location
Nepal

Type of grant
Seed

Grant Awarded
May 2015

Partners
Ncell | eSEWA

Description
Gham Power, in partnership with Ncell, will install solar micro-grids to provide energy to mobile towers, households and businesses, bringing energy access and mobile connectivity to remote communities in Nepal. This seed grant will test the impacts of mobile access and energy access on local businesses and the financial viability of this business model.

"

We are excited about the impact of introducing access to electricity, telecom and data to these areas all at the same time. Enabling an inter-related suite of new services and their collective viability under the current financing structure can set an example for rural electrification and telecom services.

Barrett Raftery
VP of Business Development, Gham Power

ghampower.com

Energy
KopaGas

Name of project
KopaGas PAYG LPG Meter

Project location
Tanzania

Type of grant
Seed

Grant Awarded
Sep 2015

Partners
SCHI, Mobile Power, BCPIT, AGA, Auditax

Description
KopaGas is developing the next generation LPG canisters and meters equipped with M2M technology that will enable medium and low-income households to switch from dirty and expensive charcoal to ultra clean LPG. Our business model eliminates upfront costs and allows women to pre-pay for the quantities of gas that fit their budget, improving greatly their economy and their family health.

kopagas.com

"

Thanks to this grant, KopaGas will be able to finalize the development of our M2M technology required for a scalable model to sell cooking gas in small quantities, with the most convenience for medium and low income households.

Sebastian Rodriguez
Co-Founder and CEO, KopaGas

"

Energy
ME SOLshare Ltd.

Name of project
SOLshare: Bottom-up
rural electrification

Project location
Bangladesh

Type of grant
Seed

Grant Awarded
Sep 2015

Description
ME SOLshare has developed a smart grid concept that is targeted for the Global South and has been tailored to the Bangladeshi market: a smart DC microgrid that manages and meters power flows between rural households and businesses. Solar panels and decentralized storage systems are added incrementally in a step by step manner so that supply is guaranteed while avoiding sunk costs of earlier investment.

> "
> SOLshare sets up smart microgrids that manage and meter power flows between rural households, enabling increased electricity access for everyone. We may well be on the cutting edge of one of the most exciting energy opportunities of the 21st century.
>
> **Sebastian Groh**
> CEO, ME SOLshare

me-solshare.com

Energy
Product Health Ltd.

Name of project
Remote monitoring and battery intelligence research trial

Project location
Bangladesh, Kenya & Tanzania

Type of grant
Seed

Grant Awarded
May 2015

Partners
Bright Green Energy Foundation
Barefoot Power
Niwa

Description
Product Health will provide remote battery monitoring to three solar home system (SHS) manufacturers and distributors in Tanzania (NIWA), Bangladesh (BGEF) and Kenya (Barefoot Power). The seed grant will test the value of remote monitoring and Smart Batteries for producers and distributors of SHS for improving battery performance, reducing OPEX and supporting pre-emptive customer service and sales.

Integrated Monitoring Kit: connect your hardware to the Smart Battery Service

The **Integrated Monitoring Kit** is a plug-and-play remote monitoring hardware solution for individual batteries. It means that Solar Home Systems (SHS) batteries can be connected to the Smart Battery Service in the Cloud to send data about themselves

> "
> This funding is a fantastic opportunity to broaden our reach and learn more about our customer's real-world needs and requirements. It is also an opportunity to validate and demonstrate the business case for remotely connected and monitored batteries in the Solar Home System market.
> "

Tamara Giltsoff
Founder Director, Product Health Ltd.

producthealth.com

Energy
SMS Energy Services Ltd

Name of project
Demonstrate the
Mobile4Energy solution
in the Kiangurwe
community

Project location
Kenya

Type of grant
Seed

Grant Awarded
May 2015

Partners
Mobile4Energy
Airtel Kenya
My Green Electricity

Description
Smart Metering Systems plc in partnership with
Mobile4Energy, Airtel Kenya, and My Green Electricity,
will develop and deploy a mobile-enabled turnkey
meter-to-cash solution for utilities supporting rural
electrification in Kenya. The seed grant will test
whether by using an independent cross-sector
mediation platform, mobile operators' existing prepaid
billing and collections infrastructure can be used to
service other industries such as utilities.

"

The Kiangurwe rural
electricity project allows
us to demonstrate
Mobile4Energy's turnkey
Meter to Cash Prepay
solution under the same
conditions African and
Asian Utilities are facing
every day, reducing
revenue leakage and
overall cost to serve.

Jason Simpson
Co-Founder,
Mobile4Energy

mobile4energy.com

MOBILE
4 ENERGY

Energy
SNV

Name of project
Bright Lights for Benin

Project location
Benin

Type of grant
Seed

Grant Awarded
Sep 2015

Partners
MTN, Greenlight Planet

Description
The Bright Lights for Benin project will catalyse the PAYG solar market in Benin by linking Greenlight Planet PAYG products with a ready-made solar supply chain. The project builds on a successful 18 month partnership between SNV and MTN to develop a solar distribution network. It introduces PAYG solar to Benin for the first time and expects to sell 9,000 PAYG products over 18 months via sustainable business model. The government of Benin has agreed to provide tax exemption on all products imported under the project.

"

This initiative is perfectly aligned with MTN's philosophy of doing good business as a corporate citizen; it improves the livelihoods of our customers, reduces the use of unsafe and polluting products, and helps MTN expand its services.

Mr Nicolas Gomez
Head of Corporate Services, MTN

"

snvworld.org

SNV

Energy
SunCulture

Name of project
Product development, Kenya field trials, and production setup for an affordable PAYG solar powered irrigation solution for small holder farmers

Project location
Kenya

Type of grant
Seed

Grant Awarded
Sep 2015

Description
SunCulture designs and sells solar-powered irrigation systems that make it cheaper and easier for farmers in Kenya to grow high-value fresh fruits and vegetables. SunCulture is developing a solar powered irrigation system targeting the mass market of underserved small holder farmers, utilising pay as you go technology to ensure affordability and thereby extending access to water pumping solutions to underserved communities in the developing world (starting with Kenya).

sunculture.com

> "
> By 2030, our planet will be home to over 8 billion people. The world's 450 million smallholder farmers, most of whom live in the developing world, must adapt new technologies to keep up with growing food demands.
> "
>
> **Samir Ibrahim**
> CEO, SunCulture

Energy
Village Infrastructure Angels (VIA)

Name of project
Solar Light Industrial Centres (SLICs)

Project location
Vanuatu

Type of grant
Seed

Grant Awarded
Sep 2015

Partners
Telecom Vanuatu Ltd (TVL) and
ACTIV Association

Description
VIA's goal is to provide energy for lighting and productive uses to offgrid communities in developing countries. The use of telecom services and infrastructure has been well proven for small consumer-level loads like lighting, phone charging and TVs, but not yet for community-level productive loads such as agro-processing mills, refrigeration and carpentry tools. Vanuatu suffered a direct hit by a massive typhoon in March 2015, and these solar powered Light Industry Centres will help with reconstruction efforts.

> "
>
> Poor people in Sumba spend valuable long hours on relatively easy tasks such as milling of maize. Using VIA's small scale solar solutions can change the lives of these people drastically.
>
> **Mr Eco Matser**
> Global Coordinator for Energy and Development, Hivos
> "

villageinfrastructure.org

Village Infrastructure

Water
Africa Water Enterprises

Name of project
eWATERpay and
eWATERtaps rural water
supply revolution

Project location
The Gambia

Type of grant
Seed

Grant Awarded
Sep 2015

Partners
Africell, Gam Solar, Village
Development Committees

Description
Africa Water Enterprises will repair broken water systems and install eWATERtaps in villages in rural Gambia. Users buy eWATERcredit either directly onto NFC phones or via women water entrepreneurs using a tag and pay $0.09 cents per 20 litres. An App will allow retailers to buy credit direct from QCell via SMS text and convert this to water credit. Funds are used to pay for professional maintenance and repairs with the aim of overcoming the tragedy of broken water supply systems in villages.

"
We believe that with this fantastic grant funding from GSMA will enable the eWATERtap to revolutionise rural water supplies in Africa, ending the current catastrophe of broken taps and hand pumps scattered across rural villages.

Alison Wedgwood
CEO, Africa Water Entrerprises
"

africawaterenterprises.com

AFRICA WATER ENTERPRISES

Water
CityTaps

Name of project
Smart prepaid water meters for urban populations in Niamey, Niger

Project location
Niger

Type of grant
Seed

Grant Awarded
Sep 2015

Partners
Société des Eaux du Niger (SEEN, operated by Veolia)

Description
CityTaps has developed a smart prepaid water meter to enable the urban poor to access running water at home. The meter incorporates mobile money and M2M technologies, which allows households to make micro-prepayments for their water at any time using mobile money. The project will see SEEN trial the technology across Niamey, Niger.

> "
> We're striving to improve the livelihoods of people living in cities without access to running water at home, by pushing the boundaries of social and technological innovation.

Gregoire Landel
CEO & Co-Founder, CityTaps

citytaps.org

CITY TAPS

Water
Lilongwe Water Board

Name of project
eMadzi - Using mobile technology to bring innovative payment solutions to peri-urban water supply in Malawi

Project location
Malawi

Type of grant
Utility Partnership

Grant Awarded
Sep 2015

Partners
SeeSaw

Description
The project is about development of an alternative water payment solution for communal water points in peri-urban areas using mobile money. Use of water codes purchased through mobile money will enable water users to access water 24/7. Elimination of an intermediate water seller will lead to a reduction in water cost by 50%.

"

We are of the view that the whole community will benefit as a result of reduced water price due to roll out of those automatic vending devices.

Village Headman Mitengo of Area 22

lwb.mw

Water
Manobi

Name of project
mWater™ Services to Improve Rural Water Service Perfomance in Benin

Project location
Benin

Type of grant
Utility partnership

Grant Awarded
Sep 2015

Partners
MTN, AFEB, ECOBANK

Description
mWater™ aims to improve rural and small town water pipe system (WPS) performance in Benin, and ultimately across Africa through the provision of (i) financial, (ii) business, and (iii) assistance mobile 2 web added value services to WPS operators. The project plans to introduce these new services to the present 150 mWater™ WPSs within 15 months, reaching 3.6 million people in 46 municipalities in 10 regions across the country.

> "
> The mWater™ platform enables better asset management and service analysis. Impressive scaling has been achieved through balancing a focus on water service providers' needs, with standardising reporting, implementing each component of the platform in a modular manner, and a public/private cost sharing business model for a financially sustainable service.
>
> World Bank Benin
> "

manobi.com

Water
Safe Water Network

Name of project
Real-time Data for Improved Water Service Delivery - Ghana

Project location
Ghana

Type of grant
Seed

Grant Awarded
Sep 2015

Description
Since its founding in 2006, Safe Water Network has focused on solving the twin challenges of drinking water quality and sustainability. A comprehensive model of water supply is anchored by the Safe Water Station – a community-level water treatment facility that produces high-quality water sold at affordable rates. This project will use mobile data collection to improve both the monitoring of water points and response to maintenance issues for better water service delivery to small towns and peri-urban Ghanaian communities.

"

We believe mobile monitoring will play a critical role in improving operations and reducing the costs of water service delivery for millions in need, served by Safe Water Network and others in the water sector.

Kurt Soderlund
CEO, Safe Water Network

safewaternetwork.org

Safe WATER NETWORK

Water
Upande Ltd.

Name of project
Development and implementation of WaSHGIS 1.0

Project location
Kenya

Type of grant
Seed

Grant Awarded
May 2015

Partners
BRCK
Kericho Water and Sanitation Company (KEWASCO)

Description
Upande, building from their previous work, will partner with BRCK and Kericho Water and Sanitation Company (KEWASCO) to develop and implement WaSHGIS 1.0, including a dashboard, job card, alert modules and low-cost solar-powered data loggers. The seed grant will test the value of a real time monitoring system to reduce non-revenue water losses for KEWASCO

"

With the GSMA grant, we are able to transform our prototype into a real product, as well as help seed local low cost data logger development. The Internet of Things (IoT) for African utilities is becoming a reality, one month at a time.

Mark de Blois
CEO/Founder, Upande Limited

"

upande.com

Upande

Water
Wonderkid Multimedia Ltd.

Name of project
Deployment of integrated mobile utility management system

Project location
Kenya

Type of grant
Utility Partnership

Grant Awarded
May 2015

Partners
Kisumu Water and Sewerage Company (KIWASCO)
Kakamega-Busia Water Company
Nanyuki Water and Sewerage Company (NAWASCO)
Murang'a Water and Sanitation Company (MUWASCO)

Description
Wonderkid will customize and deploy the IMUM (Integrated Mobile Utility Management) solution to four water utilities (Kisumu Water, Muranga Water, Nanyuki Water and Kakamega Busia Water) in Kenya to support mobile meter reading, self-meter reading and complaint management. The utilities partnership grant aims to test the viability of using mobile-enabled solutions with various utilities to improve operational efficiencies and customer service.

"

We see this opportunity immediately benefiting over 800,000 Kenyans with improved water services and better quality of life by leveraging on Mobile Technology - and millions soon thereafter.

Daniel Kamiri
Director, Wonderkid Multimedia

"

wonderkid.co.ke

WONDERKID
everyday solutions

Sanitation
Loowatt Ltd

Name of project
A Better Service: the Loowatt ICT Sanitation Platform

Project location
Madagascar

Type of grant
Seed

Grant Awarded
May 2015

Partners
SAMVA Municipal Waste Treatment Facility
Pit Emptiers' Association

Description
Loowatt will develop and test an ICT platform and mobile application to improve the coordination of waste collection logistics and customer service associated to their waterless toilets for households in an urban area of Antananarivo, Madagascar. The seed grant aims to prove the value of ICT and mobile services on reducing the cost of waste logistics, improving the likelihood of safe waste disposal and collecting mobile payments from customers for their sanitation needs.

"

Our mobile ICT platform aims to empower local urban sanitation operators by improving cost efficiency and verifying the provision of safe and sustainable waste treatment.

Virginia Gardiner,
CEO, Loowatt Ltd.

loowatt.com

Loowatt

Sanitation
Sanergy, Inc.

Name of project
Mobile Sensors for
Improved Efficiency in
Waste Collection

Project location
Kenya

Type of grant
Seed

Grant Awarded
May 2015

Partners
SweetSense

Description
Sanergy, in partnership with SweetSense, will develop
and test the use of sensors to determine the fill levels
of Fresh Life Toilets, operator-owned waterless toilets
designed for informal settlements. The seed grant will
aim to test whether sensor technology works in the
sanitation environment and is appropriate to optimise
waste collection routes and reduce operating costs.

"

In partnership with GSMA,
Sanergy is testing how we
can use sensors in our Fresh
Life Toilets to optimize our
waste collection process thus
increasing the availability of
toilets for users.

Ani Vallabhaneni
Co-founder, Sanergy

saner.gy

SANERGY

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