



## Felix Boldt – CEO

- Head of operations experience in East Africa
- Fluent in local language Kiswahili
- Environmental Engineer with 7 years experience in renewable energies and product development

## Jakob Schily - CTO

- Development Engineer, 4 years experience
- Production specialist
- Environmentalist



## Franz J. Buschmeier – CFO and Strategy

- 25 years experience in General Management
- Entrepreneur and Startup Co-Founder
- Senior Business advisor



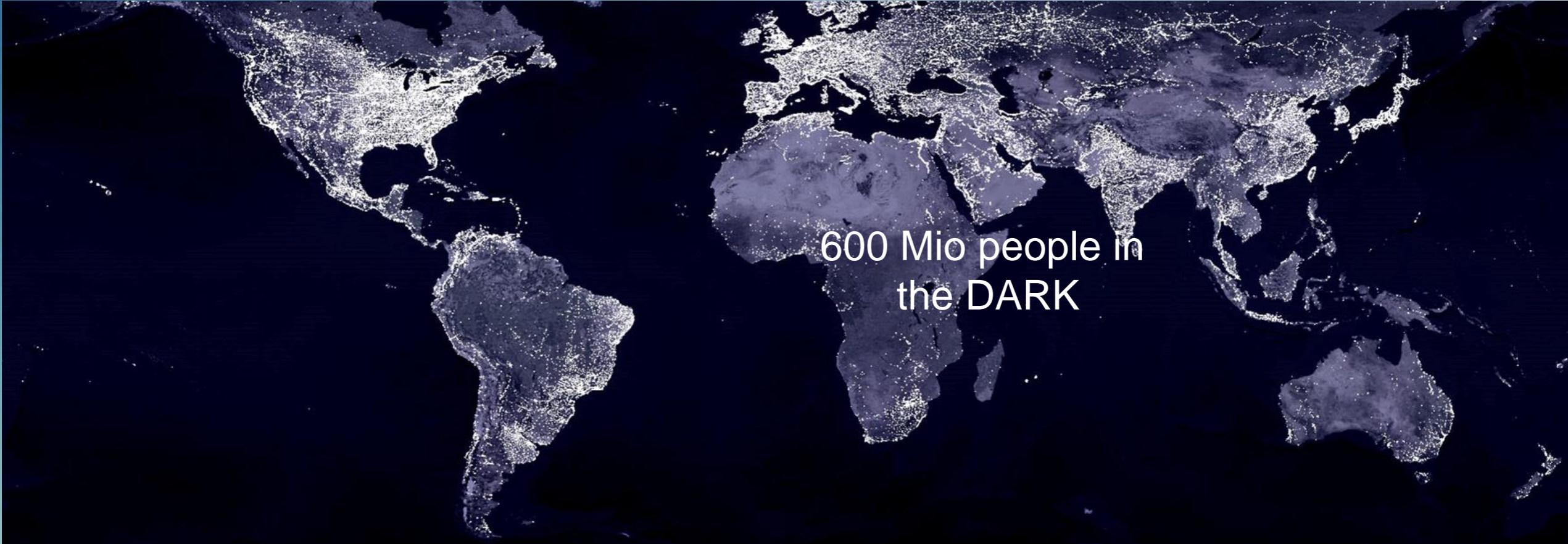
Meeting the growing demand for energy with decentralized & sustainable “empowerment” solutions



# The Global Energy Challenge



requires local off-grid solutions:



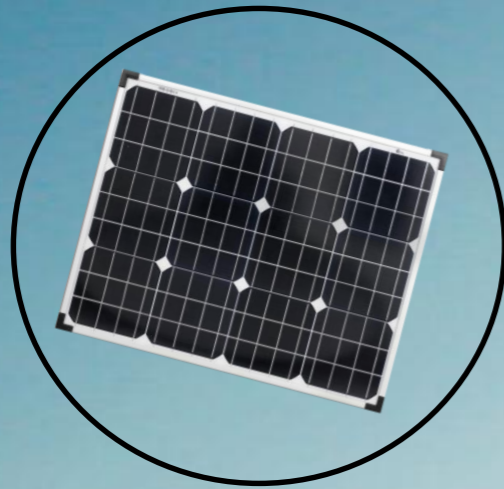
But today's solutions are not the future:



This is where



SolarWorX comes in:



Clean Solar Energy



Efficient LED lighting



Productive Use

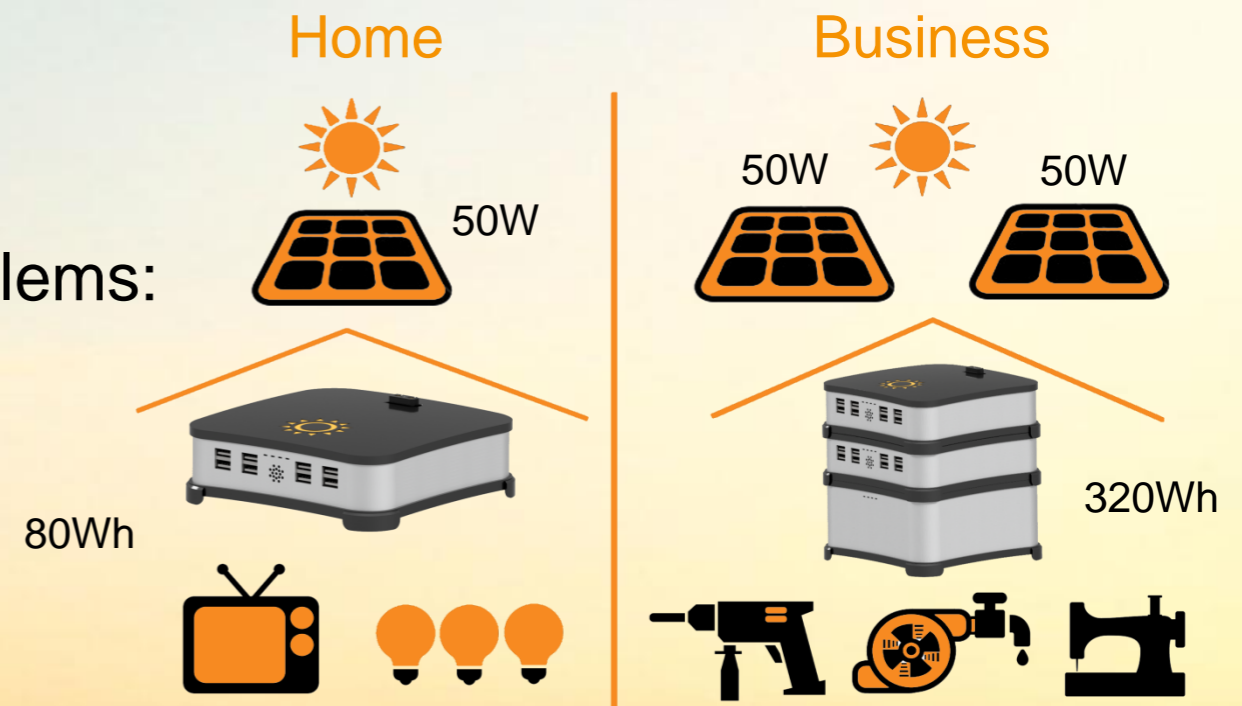


PAYGO Ready  
45Cent/day

## Value Proposition

Product solves all four major off-grid problems:

- Provides reliable energy
- Decreases energy cost
- Creates job opportunities
- Improves health conditions





Stacked Combination	Basic Module
	
e.g. 250W output	e.g. 50W output

### Power Specs per Basic-Module

Solar modul	18-50 V_MPP
Max. MPPT-Power	100 W
Battery Capacity	Typical 80Wh
Amount of 12V ports	5
Amount of USB ports	4x2 with 1A per port each

Modularity

Enabler for local business

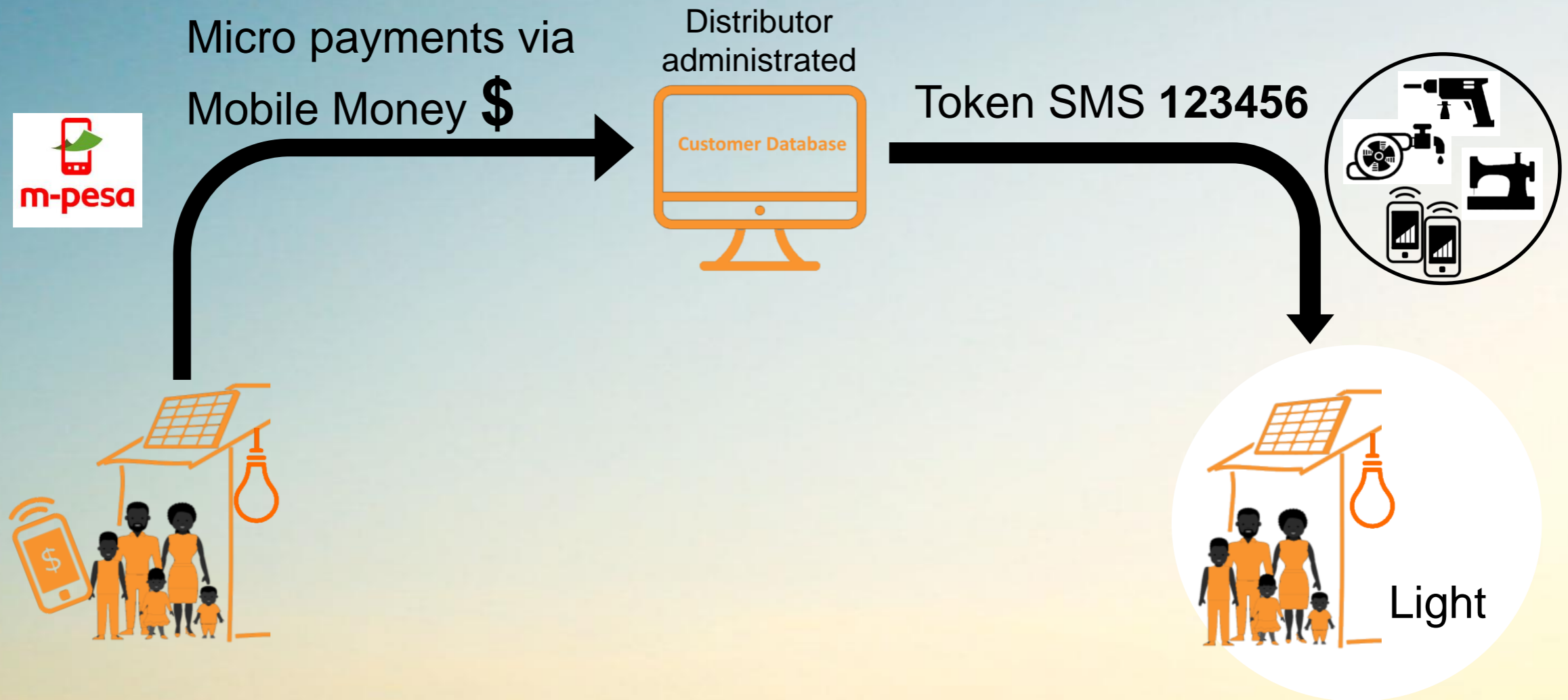
Ease of use i.e. voice communication

USP

### Connectors:

Type	Amount	Rating
USB	8 (4x2USB Double Ports)	1A each
Panel Ports	2	5A Current Rating each
12V Load Ports	5 (up to 6 possible)	3A each (mainly used for lights, TV, electric fence, small fridges)
High Power Port for power appliances and system stacking	1	90A customized port with a single wire communication between the systems or appliances

Stacked Modules	Maximum continuous power				
	At night powered by battery only	Daytime			
		2x 50W panel	3x 50W panel	4x 50W panel	6x 50W panel
2x Standard (160Wh)	100W	200W	250W	300W	N/A
1x Standard, 1 Maxi (240Wh)	150W	250W	300W	350W	N/A
2x Maxi (320Wh)	200W	300W	350W	400W	N/A
3x Maxi (440Wh)	300W	N/A	450W	500W	600W





## Home Use

- > TV
- > Radio
- > Fans
- > LED Bulbs
- > DC Fridge
- > USB
- > Stereo



## Modular Solar System 50W - 500W Power



## Business Use

- > Power Tools (builder and farmer)
- > Water Pump (farmer)
- > Shoplight (kiosk)
- > DC Fridge (kiosk)
- > USB Charging (kiosk)
- > Electric Fence (farmer)
- > Hair Cutter (kiosk)
- > Sell electricity





## Business Case 1: Solar Home System

- > 1x or 2x 50W Solar Panel
- > 80Wh or 160Wh battery
- > 3 light bulbs
- > PayGo via keypad or GPRS token
- > 8x USB, 5x 12V Ports, 1x PowerPort
- > System communicates verbally in local language



### Distributor benefits

- > plug and play design allows customer driven installation and maintenance
- > Ideal after sales opportunity due to system modularity/upgradability (Lego approach)

### End-User benefits

- > gradually climb the energy ladder
- > earn money with USB charging
- > audio user interface in local language (e.g. Swahili, French, English)







## Business Case 2: Farmer

- > 2x to 6x 50W Solar Panel
- > 1 to 3 modules with up to 480Wh
- > 3 light bulbs
- > PayGo via keypad or GPRS token
- > Ports multiplied with each stack
- > Common high power port with up to 1000W



### Solar Water Pumping

- > increase harvest amount by up to 50% by pumping water from well or nearby river

### Agricultural Power Tools

- > run agricultural power tools like maize grinder for a higher local value creation

### Electric Fence Line

- > power an electric fence line for securing cattle





## Business Case 3: Kiosk

- > 2x to 6x 50W Solar Panel
- > 1 to 2 modules with up to 240Wh
- > 3-5 light bulbs
- > 8 - 16 USB Ports
- > TV
- > Solar lantern
- > Hair cutter



**Kiosk LED lighting (24h)**  
> opening hours after dark

**Solar Fridge (24h)**  
> run a small Fridge, sell cold drinks

**TV Shows (7h after dark, 12h day)**  
> Offer TV shows and become the village meeting point while increasing Kiosk sales

**USB Charging (24h)**  
> charge between 30 and 100 phones per day  
> expected income 0.2USD/charge

**Hair dressing (business hours)**  
> extend your business by offering hair dressing





## Business Case 4: Builder (Fundi)

- > 2x to 6x 50W Solar Panel
- > 1 to 3 modules with up to 480Wh
- > 3 light bulbs
- > PayGo via keypad or GPRS token
- > Ports multiplied with each stack
- > Common high power port with up to 1000W



## Power Tools

- > do heavy duty work like metal grinding and drilling where no one else can do it in off-grid areas
- > Bosch offers a large product portfolio of power tools compatible to SolarWorX system such as grinders, saws and drilling machines
- > connect a DC motor to the high power port and run custom appliances with it (e.g. milling)



## This is what the end-customer gets:

- Longer opening hours after dark for shop owners
- Additional income, e.g. by charging phones (20€ Cent/charge)
- Irrigation pump increases harvest amount for farmers
- After two years free energy
- Children can do homework after dark
- Health improvement



# First Field Installation - Pilots



planned in Zambia /Cameroon



Thanks for the attention!

Any Questions?



*Getting ready...*

April 10, 2018  
Extreme North  
Cameroun

