

Connecting an all-electric world

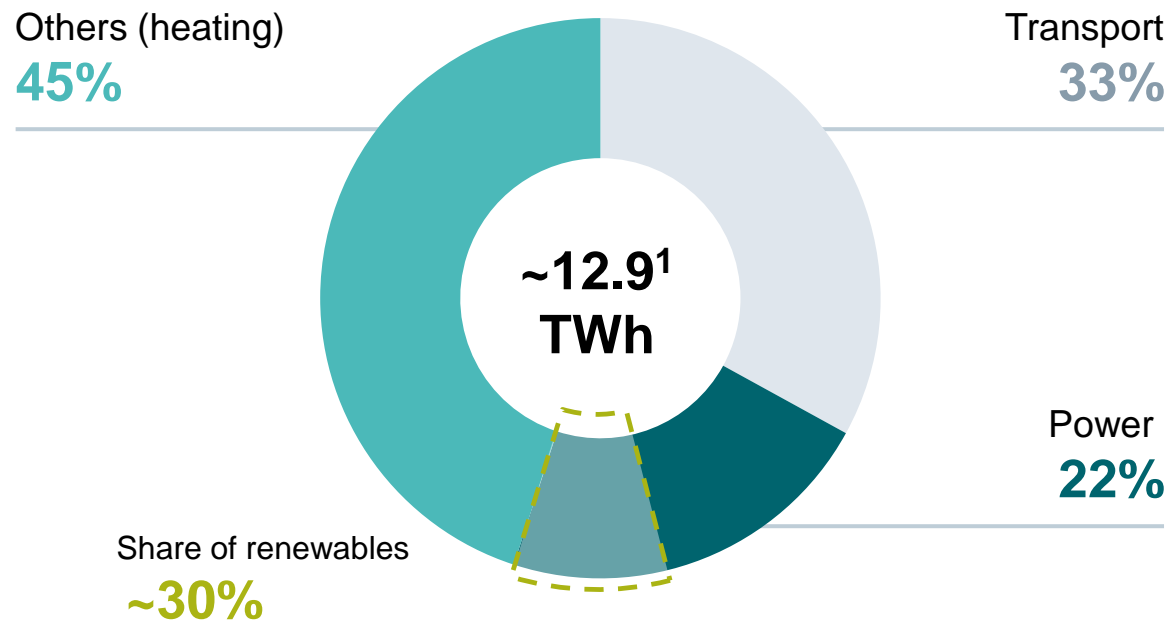
Intersolar | Munich, June 20, 2018

Ralf Christian, CEO Siemens Energy Management Division

The need for electric power worldwide is rising immensely and quickly ...

Huge potential for electrification

Final energy consumption EU28 in 2016



Source: ec.europa.eu/eurostat/en/web/products-statistical-books/-/KS-02-17-394
1 In thousands

1.1 bn people worldwide

lack access to electricity

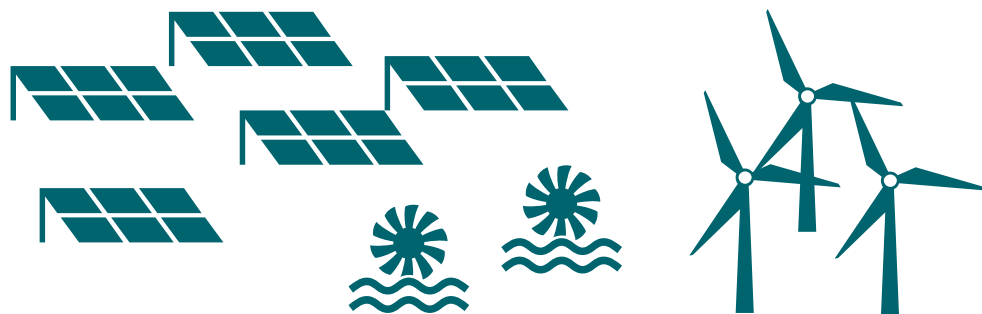


Renewable, decentral power generation units are increasing



+3,139 GW

Global renewable power generation capacity additions 2015 – 2030



Global distributed power generation

New installations in 2020



Need for smart
energy management

Some 1.1 bn
smart meters
by 2021



SIEMENS
Ingenuity for life

~1,900
Microgrid
projects in 2017



Source: NavigantRSRCH, as of 4Q 2017

Connecting an all-electric world



Decarbonized Decentralized Digitalized

Siemens and Solarkiosk join forces to power Africa with microgrid solutions

Intersolar | Munich, June 20, 2018 | Constantin Ginet, Head of Digital Grid – Microgrid, Siemens Energy Management Division

SOLARKIOSK is ...



SOLARKIOSK is the energy-connectivity gateway and last mile distribution network to untapped markets at the Base-of-the-Pyramid (BoP).



Mission

Establishing the energy, connectivity and retail gateway to new markets, thus becoming the new sustainable marketplace in BoP communities;

Driving economic growth, human development and environmental protection at the BoP.

Vision

Scaling to 5,000 E-HUBBs in 5 countries in 5 years, generating jobs and sustainable, measurable triple bottom line impact.



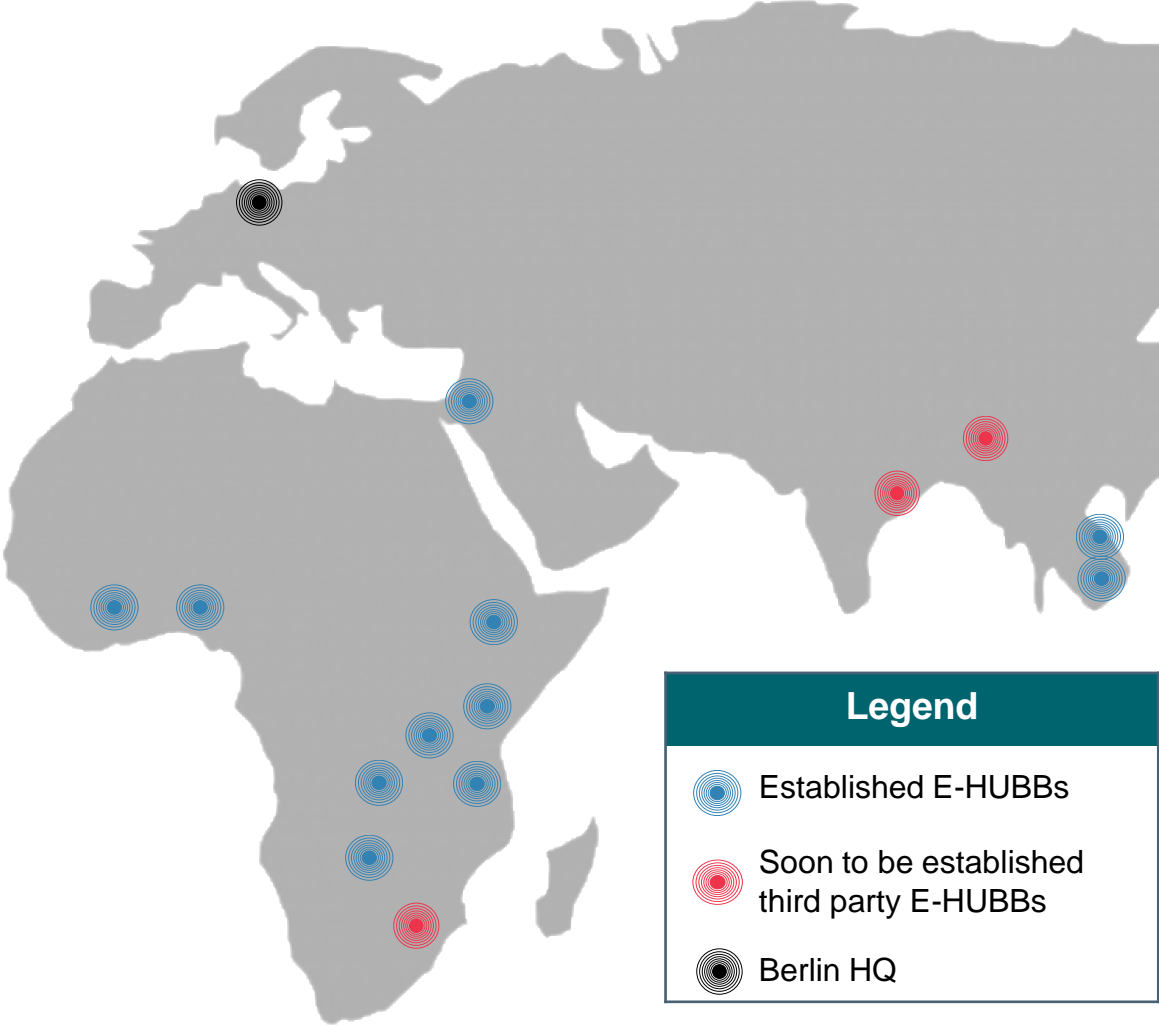
With the core piece of infrastructure in the center of villages worldwide




The Solution

The E-HUBB is an energy autonomous, solar-powered, connected, modular and expendable business unit that is specifically designed for reliable decentralized off-grid energy operation.



SOLAR KIOSK



Legend	
	Established E-HUBBs
	Soon to be established third party E-HUBBs
	Berlin HQ

Expanding from the E-HUBB to B2B Microgrid owned and operated by SOLARKIOSK



SOLARKIOSK's E-HUBB architecture is expandable into a local, self-powered Microgrid supplying

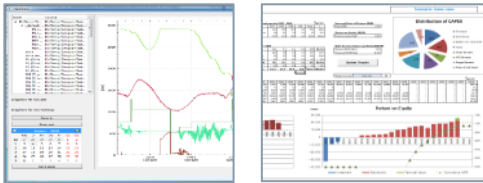
- energy to other on-site businesses; and
- energy related services to local communities
 - charging (mobile phones, batteries, lights)
 - internet connectivity
 - cooling of products and medication
 - water purification
 - copy, print or scan
 - news and entertainment

Siemens EM Digital Grid provides Modular and scalable Control/Automation & digital offering for distributed energy systems

SIEMENS
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Simulation services

Simulate project, Evaluate DES baseline and DES solution benefit (hardware and software)



Managed service

Customer DES solution, operation recommendations



Simulation services

Historical or predictive
Evaluate best solution
configuration (injection
function settings) and
operation recommendations
and verification

Microgrid controller offering

Design data to design
functionalities

Microgrid controller portfolio

Reliability, energy efficiency, market interaction and data gathering



DER Performance Analytics and Monitoring

DES Data gathering, reporting, benchmarking data analytics (Actual vs. Historical, Simulation baseline, anomalies detected)



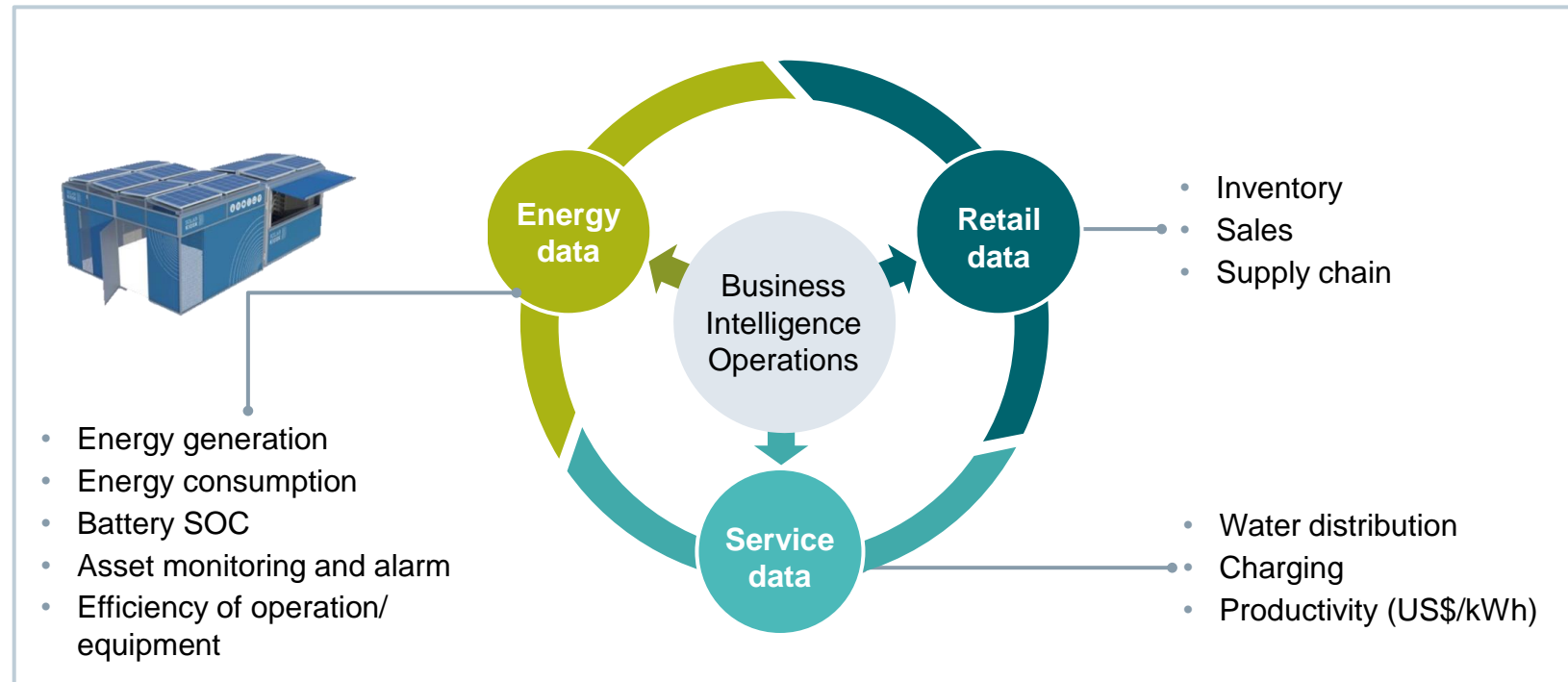
Siemens EM Digital Grid supports in digitalizing E-HUBB to create clear additional benefits for stakeholders



Combination of Siemens Microgrid Gateway and cloud based application powered by Mindsphere with E-HUBB

Enabling monitoring and data analytics of Energy, Service and Retail data Plus remote control

Creating clear value proposition



Operation

Efficiency of usage of energy



Maintenance & Service

Corrective vs. preventive maintenance



Logistic

Just on time, reduce inventory



Business

Business and Market intelligence

Contact



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[siemens.de/microgrids](https://www.siemens.de/microgrids)

Siemens to deliver digital solutions for distributed energy systems in Brazil

Intersolar | Munich, June 20, 2018 | John Kovach, Global Head of Distributed Energy Systems, Siemens Energy Management Division

Cost pressure Security of supply CO₂ reduction

Customized local energy solutions hold significant optimization opportunities for industries, larger buildings, municipalities, urban residential districts, and communities.

Be energy intelligent!



- Optimize energy costs
 - Optimize energy mix
 - Reduce energy consumption
 - Increase energy efficiency
- Reduce grid fees
- Increase property value
- Create additional revenue



- Improve reliability and availability of power supply
- Ensure power quality
- Implement resilience
- Safeguard your processes
- Become future-proof and scalable



- Reduce emissions
- Use green sources
- Save energy
- Save resources



Athon invests in Solar/DG, aiming to build no less than 500 MW of clean energy in Brazil

Team	Multi-disciplinary Team – Energy, Infrastructure, Renewable Energy, Capital Markets and Private Equity
Governance	High Standards of Corporate Governance - Environmental Impact, Leverage, Ethics and others
Business	To Invest and Manage Portfolios Of Renewable Energy Projects (DG, Solar, Hybrid Systems)
Capital	Solid Funding Base – Comprised Of Few Respected Brazilian Entrepreneurs, In Addition To Robust Financing Instruments
Capex	Expect to Deploy up to BRL 400 Million until 2020



Sustainable Social Development



Efficiency of Natural Resources



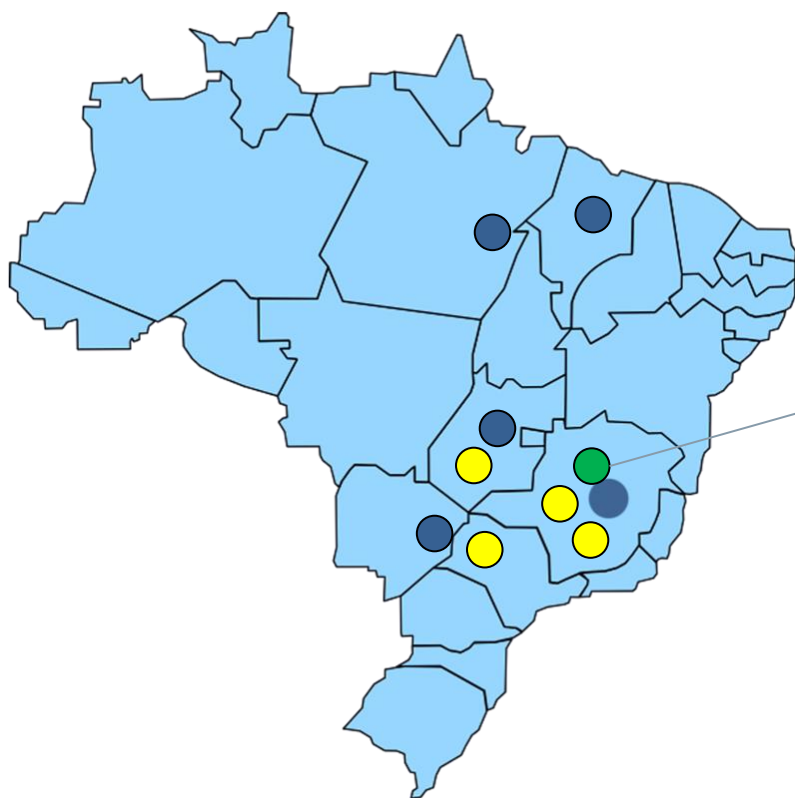
Environmental Interests



Climate Change



Athon has been partnering with top notch firms that will work in parallel initiatives



PROJECT SEXTANS | BURITIZEIRO/MG

One of the First Solar/Remote DG plants in Brazil

- 5,148 MWp
- 15.840 PV modules
- 150.000 m² area

- In Operation
- Development
- Legal Arrangements

Siemens will be the preferred partner of Athon Energia in the area of local energy solutions



- Remote operations and maintenance
- Data management
- Project architecture planning
- Software services

Memorandum of Understanding



Daniel Maia

CEO

Raphael Eckmann

COO

John Kovach

Global Head of Distributed Energy Systems

Guilherme Mattos

Head of Distributed Energy Systems Brazil

Be energy intelligent!

Intersolar 2018