Start Up
Energy Transition
Award | Tech Festival | Network

#SET100 2018

Announcing the best 100 start-ups working on the global energy transition

“Global energy transition is one of the biggest challenges in human history. But it is also an amazing opportunity for combining innovative business and political will to create a sustainable energy solution for the planet to prevent climate change. Tomorrow’s energy system is already in the making — an endeavor in which established players and start-ups fight side by side.

The German Energy Agency (dena) is one of the promoters of this process. It brings together partners from politics and the corporate world, investors and startups across many sectors and countries to make energy transition a success: Connecting minds for a greater good.

We know, our goals for a sustainable future are ambitious. They will include a wide range of sectors and need a focus on innovation. For this reason, we have decided to build a global community focusing on ‘Innovation in Energy Transition’. That’s why dena in cooperation with the World Energy Council and its partners hold the Start Up Energy Transition Award. With over 1000 applications from 88 in two years, we are incredibly proud to announce the amazing best 100 start-ups of 2018.

Now it is up to you join the SET network: Be part of it!"

- **Andreas Kuhlmann, CEO German Energy-Agency (dena)**

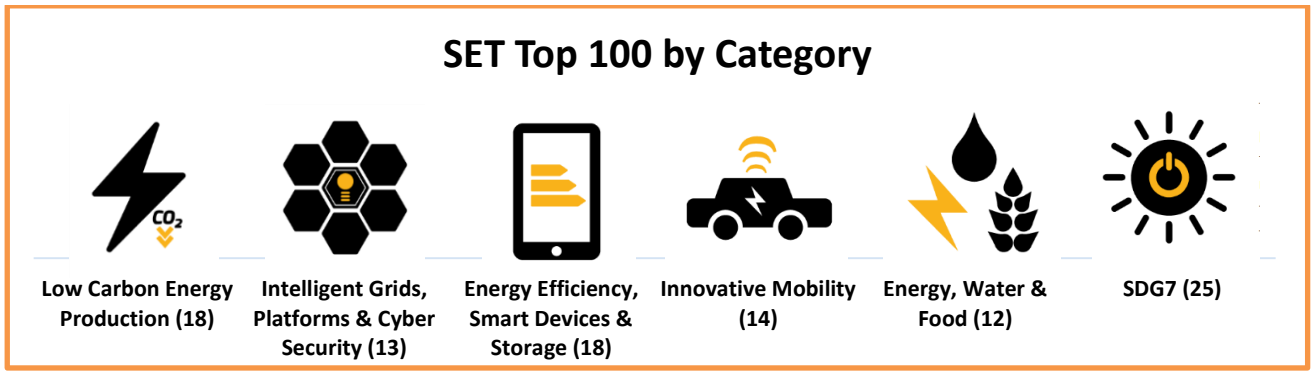
Find more about the SET project at www.startup-energy-transition.com

Powered by dena German Energy Agency

In cooperation with WORLD ENERGY COUNCIL

Presenting the SET 100 List

For the 2nd year in a row, the Start Up Energy Transition is proud to present the top 100 international start-ups from the 2018 SET Awards competition. Over 400 start-ups from around the globe competed in 1 of 6 categories to showcase their solutions to climate change, the energy transition and the future of our very world! The 100 start-ups come from 33 countries, 18 different sectors and cover all regions of the world.



What makes this list unique?

Climate change and the energy transition are some of the greatest challenges humanity has ever faced and those named on the SET 100 work specifically to overcome them. While other lists purely stress innovation or business success, SET celebrates innovative start-ups that the international community of cross-sectoral experts has acknowledged to have the largest impact in energy and in the fight against climate change. Furthermore, the SET 100 is uniquely focused on start-ups. This is a celebration of innovation, of tenacity, and of companies revolutionizing the energy world. Of these 100 companies, nearly half are 3 years old or less, and we are incredibly proud to feature such ambitious and competent ventures.

Methodology

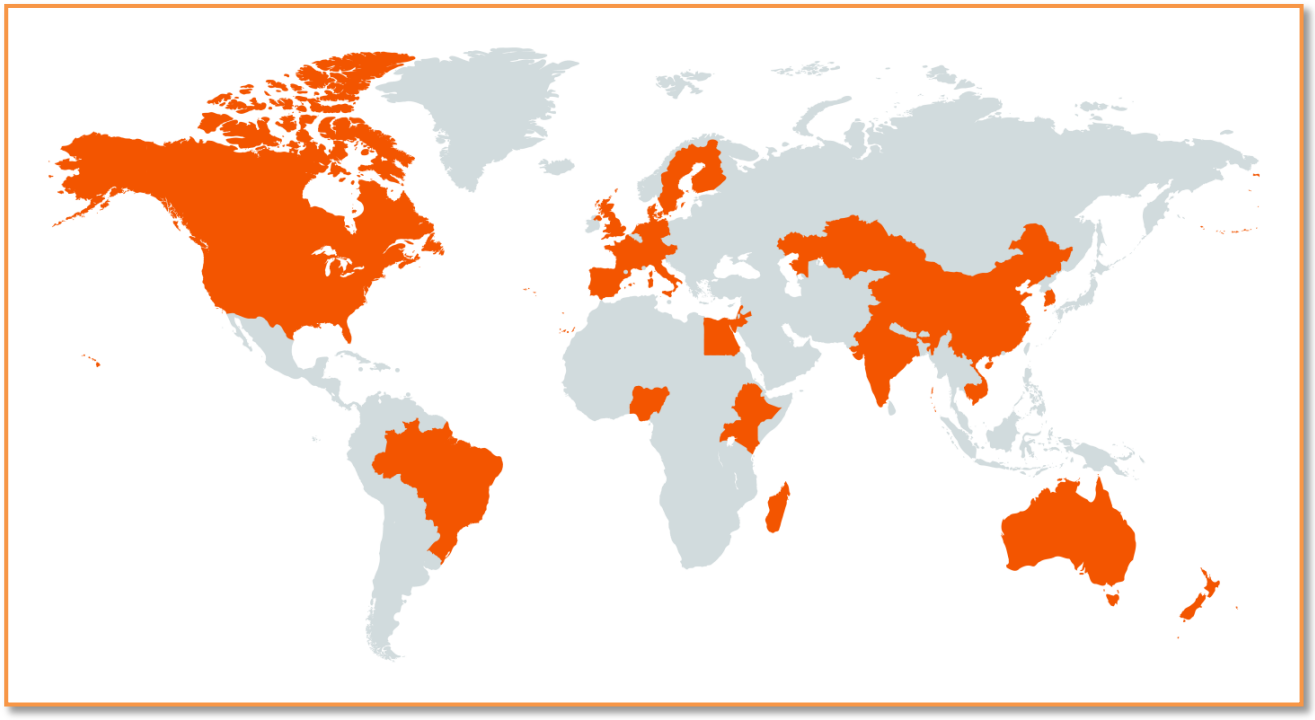
The Start Up Energy Transition designed this process to offer a fair and holistic representation of energy transition-related start-ups determined by international and cross-sectional experts within the energy community. To accomplish this, the evaluation occurred in three phases:

- Phase 1: Criteria management – The SET team processed all 400 + applications based on the following criteria: the company was founded not more than 10 years ago; there must have been a functioning prototype; and the business model must have been to some degree profit-oriented (social entrepreneurism was also accepted). We ensured a wide enough window to cover both the early-stage, and later stage start-ups and innovations.
- Phase 2: Reading Jury Evaluation - The qualifying companies were evaluated by the reading jury on a 10-point scale system per question. Each applicant was evaluated according to their relevance, business model, innovation level, market awareness and potential, and capacity to execute their strategies (finances, network, leadership, etc.). Scores were aggregated to form a preliminary 100+ list.
- Phase 3: High-level Jury Evaluation - The preliminary 100+ list was handed over to the high-level jury, comprised of some of the most prominent and influential individuals in the energy world. Using the same rating system as the reading jury, they selected the top 100. **The SET 100 list is presented here in alphabetical order.**

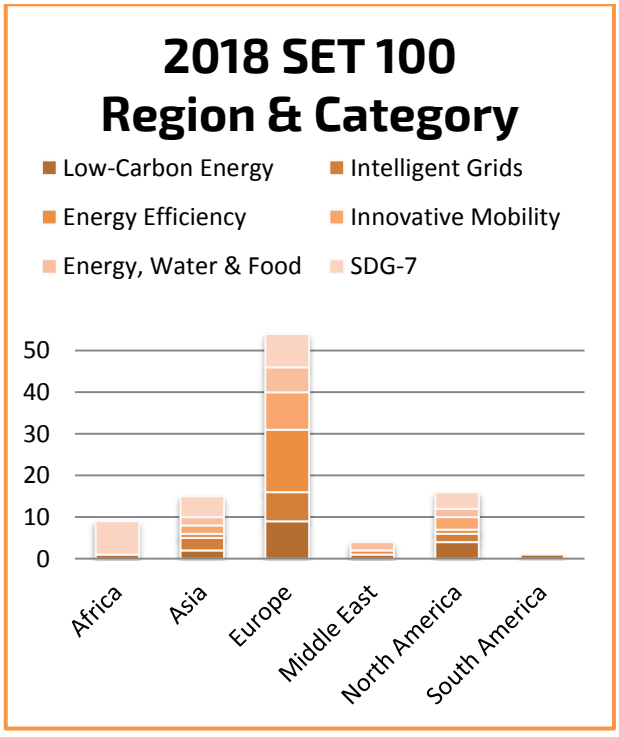
Start Up Energy Transition
Award | Tech Festival | Network

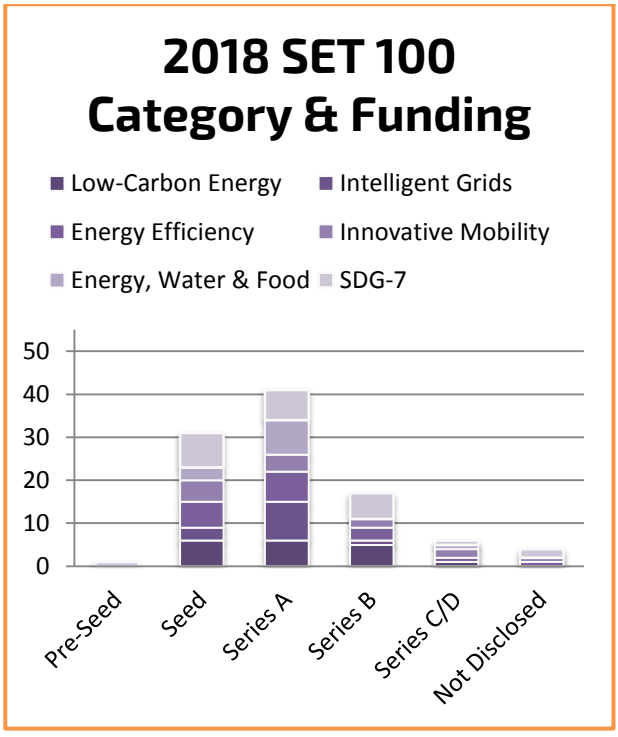
Where does the SET 100 come from?

2018 SET 100 from 33 Countries around the World



How are categories and funding spread across regions?





1. Acacia Innovations Ltd., Kenya

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage:** Seed

Acacia Innovations makes modern clean cooking affordable for schools in Kenya, through an innovative subscription model which allows schools to get a highly discounted affordable clean cookstove if they sign a contract to purchase Kuni Safi biomass briquettes (an alternative to firewood made of sugarcane waste). They have benefited 75,000 students in over 150 schools with a smoke-free learning experience and lower costs for school meals.

2. Adaptricity AG., Switzerland

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Series A

Adaptricity develops and markets innovative cloud-based, data-driven grid analytics tools and services for cost-efficient planning, operation and adaptation of electric distribution grids for the challenges of the energy transition. Adaptricity creates value by making grid planning and operation significantly more cost-effective – saving 10-20% in CAPEX (grid infrastructure investments) and 30-70% in OPEX (grid planning and grid analytics, operational improvements).

3. AESP Green Energy Inc., Canada

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series B

AESP Green Energy Montreal Canada has designed, developed, and deployed the i-kabin to sub-Saharan Africa. The i-Kabin is IoT solar-powered battery-recharging, similar to a solar well. The i-kabin replaces the need for noxious kerosene used in candles and Lanterns. Each kiosk supports 250 families with clean light and power.

4. Africa GreenTec AG., Germany

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series A

Africa GreenTec is developer, producer and seller of the "Solartainer" (Solarcontainer), a mobile plug & play solar power plant including energy storage to substitute diesel generators in rural areas of Africa. Their corporate entities are managing the distribution of electricity for approximately 1,500 people and offer financing solutions for rural villages within the core markets in Mali and Niger.

5. AgriProtein Holdings, Gibraltar

Category: Energy, Water & Food; **Funding Stage**: Series C/D

AgriProtein helps provide sustainable protein to the world, while reducing waste-to-landfill, and mitigating greenhouse gases. AgriProtein is leading the new industry of nutrient upcycling, creating natural, sustainable, protein & oil from organic waste. Using fly larvae fed on organic waste, AgriProtein has developed a new large scale, sustainable and natural source of protein and oil.

6. Agrisoma Biosciences Inc., Canada

Category: Low-Carbon Energy Production; **Funding Stage**: Series C/D

Agrisoma is meeting the growing global demand for sustainably sourced, renewable biofuels with Carinata, a non-food crop designed for producing low GHG fuels. Over the last 5 years, Agrisoma has established commercial production programs for Carinata in North and South America and are rapidly expanding globally to meet the demand for low GHG fuels.

7. Akselos S.A., Switzerland

Category: Low-Carbon Energy Production; **Funding Stage**: Series B

Akselos is revolutionising industrial operations by bringing predictive power to digital twins. By working with leading integrated energy companies who are focused on digital transformation, they help lower the cost of renewable energy and protect renewable energy generation across the globe. Technology innovation is essential to make the energy transition a reality, and they know we have a significant part to play by bringing the most advanced technology of its kind to the table.

8. ATEC Biodigesters International, Cambodia

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series B

ATEC's provisionally patented biodigester is targeted towards SDG7 energy access for Base of Pyramid (BOP) customers currently underserved. Designed to work in any conditions, ATEC's system is opening up BOP markets across the world to access to modern energy, removing biomass cooking in a sustainable manner, reducing greenhouse gases and improving household income.

9. Azuri Technologies Limited, United Kingdom

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series B

Azuri is a leading provider of PayGo Solar Home Systems for rural off-grid homes. Its solutions combined with mobile money payments to offer clean, affordable solar-powered products from lighting to TV. The company has the widest geographical footprint of any off-grid provider across East and West Africa and has sold over 130,000 units to date.

10. Beijing Muyu Technology Co., Ltd., China

Category: Energy, Water & Food; **Funding Stage**: Seed

Beijing Muyu Technology Co., Ltd. is committed to the research and promotion of highly-efficient water-saving cleaning technology. They put forward a totally new water-saving idea, named "Air Washing". Based on this idea, they have successfully developed the first-generation of product, “Air Faucet”. They use fine water mist, which is only a small amount of water, to dissolve stains and use air to wash them away instead of water.

11. Bemicro Lda, Portugal

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Seed

BeON Energy is a company developing cutting edge solar technologies. It is the first company in the world developing and producing PV panel integrated controllable microinverters, specially designed for energy self-consumption and smart energy management solutions. BeON Energy is focused on B2B offering the first win-win relationship between PV Users, Utilities and Governments.

12. Biolite Inc., USA

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series B

As a social enterprise dedicated to transforming the lives of off-grid, low-income families in East Africa, BioLite addresses multiple objectives of SDG #7. They offer two products: a biomass HomeStove that reduces toxic emissions by 90% and fuel consumption by 50%, and a modular/upgradeable solar home system called the SolarHome620. With every clean cookstove and solar home lighting system that BioLite sells, they reduce emissions, decrease household fuel use, and provide enhanced electricity access

13. Boreal Light GmbH, Germany

Category: Energy, Water & Food; **Funding Stage**: Series A

Boreal Light GmbH designs and manufactures low-cost solar-powered water desalination systems for irrigation and drinking water applications under the WINTURE® brand. Its business model is based on machine sales (B2B), and water sales to consumers using a franchise WaterKiosk approach. The core business of Boreal Light is focused on expanding its waterkiosks across East Africa and deliver hygiene reliable drinking and irrigation water and electricity to unprivileged communities.

14. Bound 4 Blue, S.L., Spain

Category: Low-Carbon Energy Production; **Funding Stage**: Series A

Bound4blue is passionate about reducing environmental impact of the maritime sector whilst generating a profitable business. b4b internationally patented solution is the only storable wingsail system for commercial vessels that saves an average of 30% of fuel and reduces emissions, without interfering with the vessels operation.

15. Breeze Technologies UG, Germany

Category: Innovative Mobility; **Funding Stage**: Series A

Breeze Technologies enables cities and corporates to create a more liveable environment by providing actionable insights based on environmental sensor data. They monetize on sensor leasing, intervention recommendations and data provision, and can measure common pollutants like carbon and nitrogen oxides, ozone, particulate matter and many more.

16. BrightGreen Renewable Energy, Kenya

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Seed

BrightGreen works to produce affordable eco-friendly charcoal briquettes from recycled organic waste. Through a team of local innovators and local machinery, BrightGreen upcycles this waste through carbonisation, and compress it into charcoal briquettes that are clean, eco-friendly and smokeless. Through a team of local empowered women, BrightGreen distribute these fuels to local consumers, who use it for their daily energy needs.

17. Brinergy Tech., S.L., Spain

Category: Energy, Water & Food; **Funding Stage**: Series A

Their Capacitive Desionisation (CDI) technology removes salt ions from brackish water upon applying an electrical voltage difference between two porous electrodes, in which the ions are temporarily immobilised. Brinergy system's water desalination aims to help in reducing GHG-emissions by not having to use electricity for water desalination and revolutionizing the field for the future.

18. C-Green Technology AB, Sweden

Category: Energy, Water & Food; **Funding Stage**: Series A

C-Green offers a new solution to the challenge of sludge handling for industrial and municipal wastewater treatment plants — an innovative technology that turns wet waste into an inert and odor-free biocoal fuel and enables phosphorus separation. C-Green aims to change the way sludge is treated, from an environmentally harmful material, to a renewable source of energy.

19. Chargery GmbH, Germany

Category: Innovative Mobility; **Funding Stage**: Seed

Chargery offers a green mobile charging service for electric cars in urban areas based on smart data analysis. Chargery delivers the energy right where it is needed. Furthermore, their delivery is perfectly fitted to urban areas due to their zero-emission delivery via electrified bike trailer.

20. Claro Energy Pvt. Ltd, India

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series A

Claro Energy intends to offer a pay-per-use irrigation service that uses a portable solar pump. The portable design will provide affordable, convenient, and on-demand irrigation. The service will meet the needs of a wide range of farmers who do not own pumps, with no upfront capital costs incurred. The farmer will call a toll-free line, pre-pay, and schedule irrigation service at his field.

21. CleverShuttle, Germany

Category: Innovative Mobility; **Funding Stage**: Series A

CleverShuttle offers ridesharing with zero emission cars at a fixed and reliable price. It is innovative because it actively reduces vehicles on the road thanks to pooling passengers, because it is on demand and because of the consequent green approach.

22. Coolar UG, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage**: Seed

Coolar envisions a world in which energy poverty is eradicated and clean energy is available to everyone. Cooling is a critical component in this world. As such, Coolar works on a 100% electricity-free and instead solar heat powered, water-based refrigerator to cool vaccines in remote hospitals off-grid.

23. Correlor Data Science Intelligence LTD, Israel

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Seed

Correlor develops machine learning algorithms and advanced data analytics methodologies to help its customers monetize data and solve complex business problems. Correlor is a SaaS company delivering its predictive analytics solutions for easy installation and integration either cloud based or on customer premises.

24. Dandelion Energy Inc., USA

Category: Low-Carbon Energy Production; **Funding Stage**: Seed

Dandelion's mission is to provide earth-powered heating for every home. Their geothermal marketplace connects homeowners seeking clean and affordable heat with local companies who can install geothermal. Heat is necessary for daily life in most parts of the world and one can only reduce the carbon impact of heat if we transition from fossil fuel heating to renewable electric heating with geothermal.

25. Deciwatt Limited, United Kingdom

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Seed

Deciwatt designs renewable energy solutions that tackle energy poverty. Their solution, nowlight, is uniquely versatile, offering instant light and mobile charging through both manual and solar power; with pay-as-you-go technology to ensure it is affordable for people living on $2-5/day. They have the aim of securing investment and partners to amplify their global launch in Q4 2018.

26. Desolenator B.V., Netherlands

Category: Energy, Water & Food; **Funding Stage**: Series A

Desolenator has created a technology that uses only solar power to both desalinate seawater and distil contaminated water, making undrinkable water sources drinkable. Although a commercially-driven company, they have a strong social mission to bring water purification to people at the bottom of the pyramid, who often are also at the forefront of the water crisis.

27. Didi Chuxing, China

Category: Innovative Mobility; **Funding Stage**: N/A

As part of China's sharing-economy, DiDi provides car-pooling services to commuters through its DiDi Hitch platform. Utilizing big data and deep-learning based algorithms, the platform matches drivers and passengers who share similar routes and provides car-pooling services based on available seats and passengers' destinations.

28. E.ON Off Grid Solutions GmbH, Germany

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series A

Rafiki Power utilizes its technology platform to develop mini-grid for rural areas without access to the grid to contribute to a world where everyone can benefit from affordable, sustainable, and renewable energy. The company enables access to reliable electricity, finance, appliances, and knowledge. Thereby, Rafiki Power increases life quality and livelihood opportunities driving forward economic growth.

29. e.pilot GmbH, Germany

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Series A

e·pilot is an end to end solution that makes selling and fulfilling energy products as easy as buying shoes online. They provide ready to use webshops for energy products, collect customer insights and provide the most powerful and flexible workflow engine in the energy space to fulfill and coordinate any complex product with ease.

30. ÉAU- Écosystèmes Alimentaires Urbains, Canada

Category: Energy, Water & Food; **Funding Stage:** Series A

ÉAU to develop vertical aquaponic farms that produce vegetables, fruits and fish all year round, regardless of weather conditions. Aquaponics is a closed-circuit food production system that creates a symbiosis between fish farming and hydroponics. This technology uses nutrient-rich water from fish farms to feed plants that extract the required minerals and nutrients for good growth while filtering water with their root systems. Once done, pure water can then be returned to the fish ponds.

31. eCAMION, Canada

Category: Innovative Mobility; **Funding Stage:** Series B

eCAMION is a turn-key energy storage solution provider, focused on the production and implementation of lithium-ion energy storage systems. They have been integrating energy storage with electric vehicle chargers, which has enabled to them to install EV chargers in places previously thought impossible. They are helping pave the way for the large-scale electrification of transportation.

32. ecoligo GmbH, Germany

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series A

ecoligo provides a fully financed solar-as-a-service solution for businesses in emerging markets. With a complete digital platform for financing and delivering solar projects, ecoligo removes the barriers that prevent such projects from being realised. Supplying these businesses with affordable electricity enables them to grow and boost the local economy.

33. Electrochaea GmbH, Germany

Category: Low-Carbon Energy Production; **Funding Stage**: Series A

Electrochaea has developed its technology to enable rapid and widespread adoption for power to gas applications, sector coupling and energy storage. To enable its partners and licensees to deploy the technology, Electrochaea is providing design and engineering support, and licensing its designs, patented catalyst, and services to partners with channels to market, scalable EPC capabilities or unique operations.

34. Elemize Technologies, Italy

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Seed

Through Elemize energy storage control platform, utilities can offer a better service to their customers, lowering the price of their energy bills and exploiting new business models for the distributed energy era. Their platform allows traders to exploit all possible profit streams that energy storage systems can provide.

35. emhTrade Limited, New Zealand

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Series A

emhTrade is innovating on its pioneering peer-to-peer electricity SaaS platform to help everyone in the world use cleaner, cheaper, community-oriented energy. It does this by using smart algorithms to connect peoples' personal preferences with what drives emissions and costs in the supply chain. emhTrade's Transactive Grid platform creates new opportunities to integrate renewables, cut emissions and positively engage consumers.

36. Enogia, France

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage**: Series B

ENOGIA aims to generalize the recovery of waste heat to produce electricity on small scales. They use a thermodynamic cycle called ORC - Organic Rankine Cycle - to convert a certain amount of heat normally lost during a process into power generation. ENOGIA wishes to become the reference company for waste heat recovery systems using the ORC technology on a small scale.

37. envelio GmbH, Germany

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Seed

envelio provides the software as a service solution Intelligent Grid Platform to assist grid operators in the next phase of the energy transition. With algorithms based on artificial intelligence and mathematical optimization, planning and operation processes in distribution grids are enabled for the integration of millions of distributed energy resources and data from smart meters.

38. e-Zn Inc, Canada

Category: Innovative Mobility; **Funding Stage**: Seed

e-Zn, with its breakthrough technology, Zn Reactor, for storing energy in zinc metal, aims to make renewable energy reliable and economical. The energy storage systems using the Zn Reactor will be uniquely suitable for applications that require long duration storage capacities such as for off-grid applications to eliminate or reduce the use of diesel generators.

39. ForCity, France

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Series A

ForCity provides urban decision-makers in various sectors (district heating, water…) with a ground-breaking Software-as-a-Service Twin City to simulate how their city could change over the next decades and plan sustainable decisions. Users can, on their own and at any time, build scenarios and compare their impacts on maps and dashboards against strategic indicators, be it financial, social or environmental.

40. Fresh Energy, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage**: Seed

With Fresh Energy, consumers have an easy means to identify "power guzzlers", show the costs of individual household appliances, and reduce their energy consumption - with highest data protection and security. Fresh Energy offers a white label solution for utilities to reduce dependencies on electricity prices and move towards a world, where we generate significant value for users based on smart meter data.

41. Frontier Markets, India

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage**: Series A

Frontier Markets (FM) is a last mile distribution company in Rajasthan, India, providing access to energy products and services. FM has built an opportunity for 2,000 retailers and 1,000 women "Solar Sahelis" to become clean energy entrepreneurs, earning income for their households and impacting over 350,000 households or 2.1 MN people to date.

42. Future Grid Pty Ltd, Australia

Category: Intelligent Grids, Platforms & Cyber-Security; **Funding Stage**: Series A

Future Grid takes the hard work out of managing and sharing data so that companies can focus on delivering outcomes. They help people to start sharing data in minutes, transform the data faster, and reduce costs at any scale. Their platform has been proven to manage trillions of records from millions of devices.

43. GETAWAY GmbH, Germany

Category: Innovative Mobility; **Funding Stage**: Seed

GETAWAY is able to unlock the potential of the market and make convenient on-demand car sharing the new normal for individuals. With GETAWAY, any individual is able to participate and profit from the mobility turnaround just with his or her private car - without any investment in infrastructure the mobility turn is just around the corner.

44. gridX, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage**: Series A

gridX believes in the power of decentralized energy producers to effectively replace conventional energy suppliers. Doubtless, one single decentralized energy producer is not capable of competing in capacity with large energy suppliers, but well-networked decentralized energy producers are. Therefore, gridX follows the idea of creating an efficient and powerful network of decentralized energy suppliers.

45. Hawa Dawa GmbH, Germany

Category: Innovative Mobility; **Funding Stage**: Seed

By combining Internet-of-Things and Artificial Intelligence, they make the invisible visible. Hawa Dawa provides hyperlocal environmental data on air quality, noise and microclimate and makes this data accessible via a straightforward API. Their clients integrate this data into their platforms, services and products.

46. Heliac, Denmark

Category: Low-Carbon Energy Production; **Funding Stage**: Series A

Heliac offers a solution that produces solar-based heat in utility-scale at costs below any other source of energy almost anywhere in the world, without a need for feed-in-tariffs. The heat can be used for process heat up to 400C (=15% of total global primary energy consumption), district heating and cooling, desalination, and power production.

47. Hero Balancer, Netherlands

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage**: Seed

Hero Balancer is a product that makes large-scale heating smart by adding artificial intelligence. It is an add-on to a building management system (the existing system that manages everything), this way they can extract data from the heating installation. Following this, they can start to analyse the data, predict demand and learn the weather impact on the building.

48. Hydra Energy Corporation, Canada

Category: Innovative Mobility; **Funding Stage**: Series B

Hydra's Hydrogen as a Service™ (HaaS™) business model relies on geographically optimized long term, buy/sell fuel agreements. Both the vehicle retrofits and refueling infrastructure are provided at no upfront cost to the fleet operator, in exchange for an exclusive fuel supply agreement. This enables fleets to reduce fuel spend between 5-10%, and eliminates capital investments.

49. Innocorps Research Corporation, Canada

Category: Energy, Water & Food; **Funding Stage**: Series A

Innocorps is commercializing a water treatment technology that continuously treats water from any industrial source on-site using a mobile treatment solution. Their system is designed to easily integrate with customer's current operations to efficiently recycle and reuse waste water streams. For their primary market (oil and gas exploration), this creates value by substantially reducing the costs associated with water hauling and disposal.

50. Innovating Green Technology (IGT), Lebanon

Category: Energy, Water & Food; **Funding Stage**: Series B

PRO-Shield is a covering mechanism mounted on the solar water heater regardless of its size, type and brand, protecting it against the hazardous effects of the overheating problem and hence enhancing the renewable energy reliability and efficiency. This worldwide problem has no solution yet, as people tend to cover the solar water heater manually which is not safe and not efficient.

51. Interpanel GmbH, Germany

Category: Low-Carbon Energy Production; **Funding Stage:** Series B

Interpanel delivers the solution for healthy, natural and sustainable room climate. They manufacture, develop and distribute directly to end customers, which are supported with engineering services throughout the planning process. Today, many buildings need up to 60 % of their total energy demand only for achieving a comfortable room climate and Interpanel promises a solution to this challenge.

52. Ionomr Innovations Inc., Canada

Category: Low-Carbon Energy Production; **Funding Stage:** Seed

Ionomr designs, adapts, and manufactures advanced ion-exchange membranes to enable cost-effective clean energy generation and storage, wastewater treatment, and industrial processes. As a manufacturer and contract R&D partner, they optimize high performance materials for the technology of the future. Aemion®, Ionomr's go-to-market anion-exchange membrane (AEM), offers significant improvements to capital, operational, and maintenance costs in devices.

53. Jiro-VE, Madagascar

Category: Special Prize, Sustainable Development Goal 7; **Funding Stage:** Series B

Jiro-Ve in Malagasy means ´do you want light? we got light!´ and this is currently true for 30.000 beneficiaries and over 30 franchises that deliver affordable, cleaner, safer and cheaper energy provided by Jiro-VE. They are on a mission to replace all the kerosene and candles that people are still forced to use. This is done through a model that is built on local entrepreneurship

54. KOKO Networks, Kenya

Category: Low-Carbon Energy Production; **Funding Stage:** Series A

KOKO is a hardware and software technology company that is building a new industry in the $20bn cooking fuel market of Africa's biggest cities. KOKO engages existing fuel companies and urban shopkeepers to enable the last-mile distribution of sustainable ethanol for cooking, destroying demand for deforestation-based charcoal.

55. KunTech LLP, Kazakhstan

Category: Low-Carbon Energy Production; **Funding Stage:** Seed

KunTech LLP has the motto that, "Energy comes free." As industries seek cost effective and reliable material to build walls, rising tariffs and outdated grids lead to demand for solar heat. However, installation can be expensive and constrained by roof/wall space. KunTech's prefabricated HelioFacade solution presents energy generation in the elegant form of a glazed wall element at limited costs!

56. Leaftech GmbH i.G., Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** N/A

LeafTech offers cloud based virtual sensors for solar radiation, which provide data for enhanced shading automation, solar radiation prediction, and energy balance monitoring. Integrating the data into the building automation via LeafTech's API saves up to 10% of HVAC and 13% of light energy. LeafTech's target customers are building owners who lower the utility costs and can increase the cold rent.

57. Leanheat Oy, Finland

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

Leanheat is a Finnish software company improving the energy efficiency and predictive maintenance of properties. It has been installed in tens of thousands of residences in Finland and aims to grow internationally. Leanheat unleashes the untapped potential of buildings with IoT and AI to maximize energy efficiency and to enable smart maintenance.

58. LO3 Energy, USA

Category: Intelligent Grids, Platforms & Cyber Security; **Funding Stage:** Series A

LO3 Energy is an energy firm with a focus on innovative technologies related to energy, cleantech and currency systems. They build tools and develop projects that support and accelerate proliferation of distributed energy, utilities and the computation sharing economy of the future. Their Blockchain-based transactive energy platform called Exergy promises to revolutionize the energy industry.

59. Lumenaza GmbH, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series B

Lumenaza enables suppliers and new actors to make growing number of consumers with decentralized systems the core of their business model. They offer a software as a whitelabel solution in the software-as-a-service model. With their software, they are able to transform any energy market player into an innovative digital utility.

60. Mera Gao Power, India

Category: Low-Carbon Energy Production; **Funding Stage:** Series B

Mera Gao Power is a power utility company for the rural poor. It has identified a large unserved market of small, remote, poor hamlets which are unviable for service by the national grid. Because of their low incomes, these households are not deemed attractive to purely commercial energy companies. MGP aims to demonstrate that these communities not only need improved energy services but are also able to pay for it.

61. Meva Energy, Sweden

Category: Low-Carbon Energy Production; **Funding Stage:** Series A

Meva Energy offers turn-key, modularly- based plants for thermo-chemical conversion of biomass residue waste to renewable energy gas. Unlike conventional gasification systems, Meva Energy's gasification system is based on so-called entrained flow gasification. This enables the usage of fine-fraction feedstocks such as saw dust or wood fibre. In 2016 the WWF estimated that the GHG reduction potential of Meva Energy in 2025 is 17 million tons of CO2 –equivalents per year.

62. Mobike Germany, Germany

Category: Innovative Mobility; **Funding Stage:** Series C/D

Mobike is a bike-sharing service to cover urban short-distance, anytime, anywhere by combining innovation with today's IoT technology. With over 7-million IoT-connected Mobikes in operation, they are already the largest mobile IoT application in the world. They believe in applying the concepts of smart cities sustainability to improve urban living.

63. MotionTag, Germany

Category: Innovative Mobility; **Funding Stage:** Seed

MotionTag has developed a technology based on machine learning on smartphone sensors, which recognizes when, where and how people travel, thus providing essential mobility data to transport providers. Their business model is a B2B mobility platform offering a seamless experience to the user, and a data collection and analysis platform for customers.

64. M-PAYG, Denmark

Category: Special Prize: SDG-7; **Funding Stage:** Series A

M-PAYG is democratising sustainable energy by introducing prepaid off-grid Solar Home Systems on a pay-as-you-go basis. Monthly mobile payments of approximately 10 USD unlocks the system and gives access to clean energy for lighting, phone charging and powering appliances for an equal period of time. This enables costs to be broken into affordable chunks, allowing low-income households in developing countries access to clean energy.

65. NAWA Technologies, France

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

On the road to developing their unique technology, NAWA Technologies developed numerous promising solutions for the energy transition including breakthroughs in electrodes, blackbodies, thermal interfaces, wiring and more. They aim to bring these innovations to market. NAWA's breakthrough electrode technology, specifically, enables a better balance between power and energy, resulting in faster recharge cycles, improved lifetime and improved safety!

66. NovoMoto, USA

Category: Special Prize: SDG-7; **Funding Stage:** Seed

NovoMoto replaces kerosene and diesel with clean and reliable electricity by way of offering rent-to-own solar-powered systems. Customers use a Pay-As-You-Go (PAYG) system to pre-pay for a week's worth of electricity, similar to how they currently purchase kerosene and diesel. After 3 years, customers own their systems. NovoMoto's systems consist of a battery pack connected to a solar panel and energy-efficient appliances.

67. Opus One Energy Corporation, Canada

Category: Intelligent Grids, Platforms & Cyber Security; **Funding Stage:** Series B

Opus One is a software engineering and solutions company empowering utilities and new business models in a decentralized energy economy. Their GridOS platform provides utilities with a true understanding of the value of distributed energy resources (storage, renewable generation, micro grids, EVs, and demand response) that can be applied to planning, real-time operations, and the creation of distribution markets.

68. Perto GmbH, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Seed

Perto is an energy efficiency service provider which helps people save energy and money by replacing inefficient electrical equipment. They seeks to contribute in reaching the national climate protection goals of Germany by providing energy efficient measures to key sectors such as energy consumption from private households and the general decarbonisation of buildings.

69. Pollinate Energy India Pvt Ltd., India

Category: Special Prize: SDG-7; **Funding Stage:** N/A

Pollinate Energy brings life-changing products to people who need them most. For urban Indian communities, Pollinate Energy is the missing link in the chain that allows them to access, understand, and afford household products that make daily life easier. They do all this whilst creating jobs and skill development opportunities for people from disadvantaged backgrounds – their Pollinators.

70. Power-Blox AG, Switzerland

Category: Special Prize: SDG-7; **Funding Stage:** Series B

Power-Blox develops, produces and distributes innovative and sustainable energy systems, especially for rural electrification in developing countries. Their innovative swarm technology allows the lego-like development of a decentralised energy supply, based on solar, wind and other sustainable forms of energy. This is all without any special knowledge or engineering, according to the simple plug-and-play principle.

71. Pro-Drone, Portugal

Category: Low-Carbon Energy Production; **Funding Stage:** Seed

ProDrone is determined to contribute to the widespread implementation of renewable energy, and are accomplishing this through their automated drone inspection solution of wind blades. They lower operation costs of wind turbines by offering high quality, robust, repeatable and safe inspections of critical components.

72. RatedPower, Spain

Category: Intelligent Grids, Platforms & Cyber Security; **Funding Stage:** Series A

RatedPower's cloud-based software (SaaS), pvDesign enables the automated design and engineering of solar Photovoltaic plants possible. They perform in minutes what would take traditional engineering weeks. The result is a faster, more automated, accurate and reliable process.

73. Rensource Distributed Energy Limited, Nigeria

Category: Special Prize: SDG-7; **Funding Stage:** Series A

Rensource is a fast-growing distributed energy company providing innovative solar solutions and financing to both lower/middle income residential consumers and small businesses/SMEs in urban/peri-urban Nigeria to address the huge electricity demand-grid supply gap. Rensource aims to replace individual fossil-fuel generators across Nigeria on a large scale with distributed solar assets via a scalable Power-as-a-Service model.

74. Rhebo GmbH, Germany

Category: Intelligent Grids, Platforms & Cyber Security; **Funding Stage:** Series A

Rhebo is a German technology company offering software, hardware and audit services to ensure and secure the operational reliability of industrial control systems in networked productions as well as telecontrol in Critical Infrastructures by monitoring the control communication in real-time. Rhebo is listed as one of the 30 top providers for industrial security in Gartner's »Market Guide for Operational Technology Security 2017«, and member of Teletrust – IT Security Association Germany.

75. S4S Technologies, India

Category: Energy, Water & Food; **Funding Stage:** Seed

S4S Technologies is a high quality dehydrated foods company. Sourcing their dehydrated foods from near farm communities by providing farmers with low-cost energy hardware and selling it along market channels, S4S delivers strong livelihood impact, i.e. increased income for near farm communities, empowerment of women, nutritional security, etc., and strong resource impact, i.e. much reduced energy required to dehydrate and reduced post-harvest loss.

76. Shanghai Lianyu Energy Technology Co. Ltd (Energo Labs), China

Category: Intelligent Grids, Platforms & Cyber Security; **Funding Stage:** Series A

Energo Labs uses emerging technologies such as blockchain and Internet of Things (IOT) with existing hardware such as microgrids, smart meters, and energy storage systems to create a network where renewable energy can be traded to meet the demand of the community. Such a community-centered approach will be imperative in creating a mass movement and encourage current passive consumers to choose where their energy comes while making an extra source of income through any excess energy they produce.

77. Skeleton Technologies, Germany

Category: Innovative Mobility; **Funding Stage:** Series C/D

Skeleton Technologies is an ultracapacitor manufacturer operating in the B2B market and helping companies save energy by powering hybridization and electrification of biggest industries in the world. Skeleton Technologies is passionate about coming up with innovative ways to help companies save energy and decrease emissions.

78. Solandeo GmbH, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series B

Solandeo provides highly accurate forecasts for energy production and consumption that are hyper-local (e.g. by individual plant and customer), provided in real-time and at minimal cost. Indeed, Solandeo offers its forecasts to partners for free, to help integrate even the smallest producers and consumers efficiently into the smart grid.

79. Solar Freeze, Kenya

Category: Special Prize: SDG-7; **Funding Stage:** Seed

Solar Freeze Farm from a box is a one stop turnkey portable off-grid toolkit. This solution is offered through simple mobile phone payments via M-pesa ranging from $0.2 to $0.8, providing an easy and accessible one stop shop for small farmers in Kenya.

80. Solar PiezoClean, Jordan

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Seed

Solar PiezoClean solves the dust collection problem by making the solar panel self-cleaning without using water. A transparent Piezoelectric film is installed on top of solar PV panel, and whenever the dust sensor at the solar farm senses dust collection, it sends a signal to the main controller in which it trigger the Piezofilm with the needed frequency and pitch that makes it vibrate, taking all the dust off the panels using gravity.

81. SOLHO B.V., Netherlands

Category: Energy, Water & Food; **Funding Stage:** Seed

At SOLHO, they have developed an innovative fully off-grid energy system called SPRHOUT (Solar PoweRed Horticultural Off-grid UniT) that, using solar power and thanks to a thermal energy storage system, fulfils the needs of a GBHP. They aim to bridge the gap for technology that will address dramatic increases in food production while reducing environmental impact.

82. Solmove GmbH, Germany

Category: Low-Carbon Energy Production; **Funding Stage:** Series A

Solmove builds smart roads that generate clean photovoltaic energy to power the electric vehicle revolution. The solid, horizontal photovoltaic modules can be laid on flat surfaces such as driveways, paths, and car parks. The module surface is skid-proof and catches sunlight perfectly despite its horizontal design and the installation is quick and easy.

83. Solstice Power Technologies, Inc., USA

Category: Special Prize: SDG-7; **Funding Stage:** Pre-Seed

Solstice radically expands access to clean energy by providing community solar to the 80% of American households that cannot install an array on their roof. Community solar allows households to tap into a local solar farm and receive savings on their energy bill, all without requiring an upfront cost or a rooftop. The digital platform provides an online marketplace and customer management platform for community solar and incentivizes customers to spread solar virally to their friends and neighbors.

84. Solynta Nigeria Limited, Nigeria

Category: Special Prize: SDG-7; **Funding Stage:** Seed

Solynta is a fast-growing distributed-energy company providing solar energy solutions and financing to both residential consumers and commercial entities in urban areas in Nigeria to displace individual fossil-fuel generators on a large-scale. Solynta offers its customers different Lease-to-Own (LTO) payment options. To date, the company has deployed over 425 systems across Nigeria.

85. SparkMeter, Inc., USA

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

SparkMeter offers comprehensive low-cost metering solutions for everything from rural micro-grids to existing urban central grid utilities. Their products help make access to electricity possible in hard-to-reach places and underserved markets, enabling the energy transition itself.

86. SunCulture, Kenya

Category: Special Prize: SDG-7; **Funding Stage:** Seed

SunCulture designs and distributes solar powered irrigation products paired with value add services and financing tailored to the needs of smallholder farmers. This holistic approach allows farmers to increase their yield and income while spending less.

87. SUNEW FILMES FOTOVOLTAICOS S.A., Brazil

Category: Low-Carbon Energy Production; **Funding Stage:** Series B

Driven towards sustainability, innovation and making our planet a better place, SUNEW produces and sells the greenest energy (organic photovoltaics). Client-oriented to deliver value and build impact in energy transition, SUNEW is in the beginning of the value-chain and have strategic partnerships to deliver innovative products aligning design, functionality and sustainability.

88. Sustainable Green Fuel Enterprise, Cambodia

Category: Special Prize: SDG-7; **Funding Stage:** Series C/D

SGFE wants to set up an international franchise, where local franchisees will use SGFE's production technology and systems to produce high quality char-briquettes at competitive prices. SGFE's business model is oriented to conquer the worldwide charcoal market, by providing a better quality and environmental friendly alternative which will make the old product and its unsustainable system obsolete.

89. Swimsol GmbH, Austria

Category: Low-Carbon Energy Production; **Funding Stage:** Series B

Swimsol is changing the way small tropical islands produce energy, by creating the world's first marine-floating PV solar plant “SolarSeaTM”. This technology is game-changing and makes it possible to bring unlimited solar power to tropical island nations where land is scarce. They are replacing the expensive and environmentally unfriendly diesel-generated power with cheaper, sustainable, and scalable solar energy.

90. Swisscom Energy Solutions AG, Switzerland

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series C/D

As one of the biggest real-time Smart Grids in the world, tiko enables players within the energy industry, such as utilities, grids and device manufacturers to innovate and create new business models. With the possibility of connecting all kinds of behind-the-meter devices the scalable tiko Virtual Power Plant Platform (VPP) provides you with the technology and confidence to deliver certified energy and grid services while offering smart home energy management to your end-customers.

91. Teraloop Oy, Finland

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

Teraloop is revolutionizing the world of energy storage, with an innovative and patented configuration of existing, proven technologies: MAGLEV, flywheels and brushless electric motors. Their system consists of a large scale magnetically levitated rotor, which is charged and accelerated when surplus energy is available, and then discharges into the grid when the energy is needed.

92. Tevatronic LTD., Israel

Category: Energy, Water & Food; **Funding Stage:** Series A

Their system forwards the control over the irrigation timing and amount to the plants on the field. Such a method changes the game of irrigation by using water as medium for reducing plant's stress for water. Their system provides water to the plants based on their actual need it. This way individuals save 20% up to 75% percent of water and liquid fertilizer that comes with it.

93. TRINE, Sweden

Category: Special Prize: SDG-7; **Funding Stage:** N/A

TRINE is an innovative 'fintech' company closing the gap between private capital in developed countries and solar companies in emerging markets, offering an alternative finance solution to off-grid solar projects through a novel crowdfunding model. Their mission is to democratize finance by enabling people to invest in a sustainable future.

94. Uprise Energy, LLC, USA

Category: Low-Carbon Energy Production; **Funding Stage:** Seed

Uprise Energy has developed a portable, renewable energy system that generates its carbon-free power from the wind and responds to enormous market demand across many segments. The company will sell the Mobile Power Station to international markets via regionalized distribution partners and is motivated to create strategic relationships throughout European territories.

95. vilisto GmbH, Germany

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

vilisto offers an energy saving solution for radiator heated office buildings. Fully automated, it cuts heating cost and CO2-emissions by up to 40% and enables value-added digital services for an energy efficient building management. vilisto is able to scale their savings potential globally pushing the energy transition to its goals by a high impact, low cost, retrofit solution.

96. Village Energy, Uganda

Category: Special Prize: SDG-7; **Funding Stage:** Seed

Village Energy is a last-mile distributor of customized solar installations that enable productive use of energy for businesses, agriculture and community institutions in Uganda. Through PayGo financing, remote monitoring, and on-site servicing through our network of branches and technicians, they de-risk solar adoption for rural customers, leading to improved livelihoods, job creation, and access to services.

97. VOLABO GmbH, Germany

Category: Innovative Mobility; **Funding Stage:** Series A

volabo e-drives outclass the standard in efficiency, safety and ease of mass production. ISCAD reduces losses in common driving cycles by more than 50 % compared to reference drives based on induction machines. The system is based on a battery voltage of 48 V and hence, fundamentally eliminates the electrical hazard potential for passengers – even in heavy car crash situations.

98. Volex Power, Israel

Category: Low-Carbon Energy Production; **Funding Stage:** Seed

Volex Power enables the power grid to achieve a 100% penetration of renewable energy, through real-time localized volt stabilization. Volex power is developing an add-on hardware unit that can be fitted to existing distribution power transformers. The add-on unit allows for the real-time voltage control of the output of the distribution transformer. The company's potential customers are power utilities.

99. Wattwatchers Pty Ltd, Australia

Category: Energy Efficiency, Smart Devices & Storage; **Funding Stage:** Series A

Wattwatchers is a coming-of-age digital energy technology start-up that is now scaling for international growth. Propelled by the rise of distributed energy resources, IoT and the behind-the-utility-meter market for energy solutions, Wattwatchers has a globally-deployable solution suite based on the clever integration of hardware, firmware, software and fast communications to support a clean, equitable and cost-effective energy transition.

100. XCharge, China

Category: Innovative Mobility; **Funding Stage:** Series A

XCharge is a high-tech innovative company specializing in providing High Power Smart Charging Solutions and Energy Solutions for future transportation. They offer a “Hardware + Software” systems which allows their clients to maximize charging revenue while minimizing maintenance costs.