



technology talking to
environment

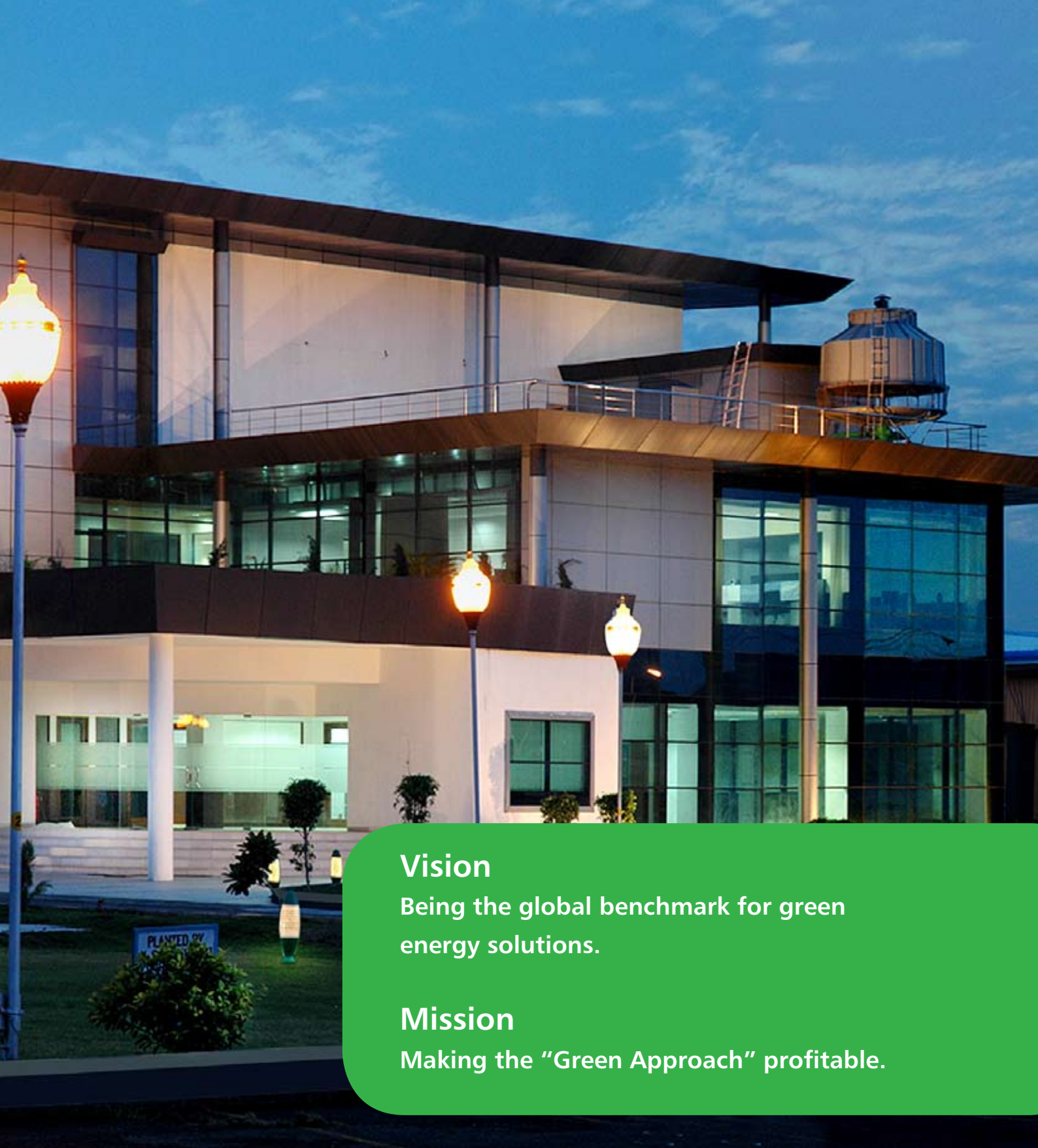


ACME TELE POWER LIMITED



Manoj Kumar Upadhyay
Managing Director

At ACME, our philosophy is to envision and develop technologies that not only make great economic sense in terms of acceptability, efficiencies and return on investment, but also have a lasting impact on social well being. We firmly believe, that any technology we develop has to be socially rewarding, through augmenting and enriching the environment. Our principal idea is to make the green approach financially rewarding.



Vision

Being the global benchmark for green energy solutions.

Mission

Making the "Green Approach" profitable.





TOTAL ENERGY MANAGEMENT FOR A GREENER WORLD

ACME is a leading provider of innovative, green energy solutions for wireless telecommunications, alternative energy, waste water treatment and environmental impact solutions.

ACME was inceptioned in 2003 and was the brainchild of founder, Mr. Manoj Kumar Upadhyay. His vision was to provide new technology solutions radically, as opposed to making incremental changes to existing technologies.

“The challenge in adaptation of green solutions is cost. If ‘Green’ increases the benefits then it is easily accepted. But if it is going to cost more on the OPEX, then people will hesitate. Therefore, it is the duty of vendors to innovate on technologies and provide solutions to operators at lower costs than the existing OPEX. One needs to focus on three main concepts; first is to reduce power consumption; second is to reduce the run time of diesel generators and lastly to completely replace fossil fuel based power generation.

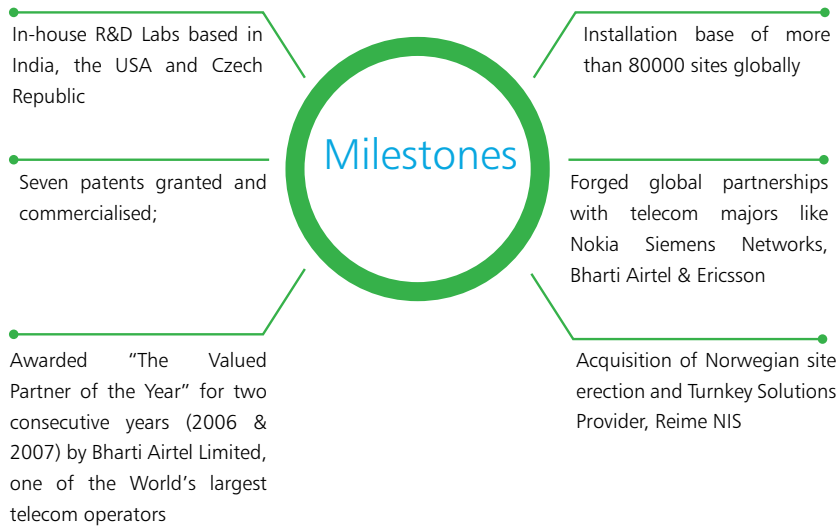
At ACME we are working on all these three concepts and have come up trumps.”

ACME along with its wholly owned subsidiary Reime NIS offers a range of innovative products and services including single & multi operator enclosures, power management solutions, cooling solutions and turn-key site installation & management services, which work seamlessly to reduce “OPEX” by up-to 30 - 40%.

ACME’s ‘Energy Management Solution’, provides a green solution without the associated increase in CAPEX while providing a radical reduction in OPEX. This lets operators focus on their core business of servicing customers, with total peace of mind.

ACME is actively pursuing alternative energy initiatives such as Fuel cells and Solar. The company has entered into an exclusive licensing agreement with eSolar to build up to 1000MW of solar thermal power plants in India, over next 10 years. This is a translation of the company’s commitment to a non- conventional energy portfolio for emerging markets.

ACME’s ‘clean energy’ venture will revisit and enhance the dimensions of distributed energy and will have substantial bearing on reduction of green house gases, which lead to a threatening carbon footprint and global warming.



Certifications





SPHERES OF PRESENCE

The corporate office of ACME is based in Gurgaon, in the state of Haryana in Northern India with a nationwide network of 4 regional offices and 14 other sales and service offices, which serve all major hubs and telecom circles.

ACME also has over 15 international offices in the USA, Canada, Dubai, Cote d'Ivoire, Ghana, West Africa, Kenya, Uganda, Tanzania, Singapore and Indonesia. In addition, it has presence in several more countries through designated channel partners and distributors.

In terms of marketing, sales, installation and after sales support, the ACME has the requisite and highly skilled manpower in all 23 telecom circles in the country – which essentially means that it is totally geared up to provide end-to-end solutions and support for any of our innovative technological solutions in any part of India.

MANUFACTURING UNIT

Innovations Playground ACME operates through its world class, production unit at Pant Nagar, Uttarakhand, The Pant Nagar plant is the largest of its kind in Asia and incorporates state-of-the-art equipment and a high level of automation. It is capable of delivering over 250 Green Shelters a day.

Highlights of its plants include:

- » A fully-automated state-of-the-art Panel Manufacturing line from PUMA, Italy
- » Shelter Panel processing unit from Tekna, Italy
- » Automated lines for manufacturing:
 - Telecom Air Conditioners
 - Power Interface Units
 - Line Conditioning Units
 - DC Generators
 - Battery Coolers

ENVIRONMENT-FRIENDLY INITIATIVES

ACME's PUF Panel Line utilizes environment-friendly technology, wherein it uses n-pentane as a foaming agent avoiding use of CFCs which are normally used and are known to be ozone depleting substances. The plant has installed a 50 cu.m, per day STP to cater to entire Sewage Treatment needs. Utilities like Boiler and DG sets are provided with stipulated size of chimneys to avoid air pollution. In addition, the DG sets deployed have acoustic enclosures to cut down on noise-pollution.



SAFETY INITIATIVES

ACME has deployed a Pentane Storage system that conforms to safety parameters that meet the most stringent global standards and uses nitrogen gas as the propellant. ACME also has a Pressurized Fire Hydrant System in place.



ACME'S PRODUCT LINE

ATPL's pioneering R&D endeavors', aimed at developing a comprehensive range of cost- and energy-efficient solutions for the wireless telecom sector, have resulted in the company offering a rich and innovative product portfolio, based on advanced technologies.

DC Power House (DCPH)

Development of DC Power House is one more great effort of ACME in this direction. ACME has specially launched this solution for green energy - serving emergency power supply. With intelligent use of this innovative product of high efficiency, energy saving and environmental friendly, the running cost is greatly reduced. At Telecom site, when there is no utility power, the DC output of DCPH not only ensures the telecom grade power supply for the load but at the same time charges the battery and thereby meets the constant power demand for telecommunications devices.

In the pursuit of excellence, this product has been conceptualized and engineered to address not only the optimum consumption of fuel (diesel) at varying loads but also in the process helps bridging the ever widening gap that exists between electrical power supply and demand in developing countries. Relative saving in fuel burning as compared to the conventional AC Diesel Genset results into considerable reduction in CO2 emission. With intelligent use of DC Power House, ACME also achieves its corporate mission "Technology talking to the environment" and also earns Carbon Credits.

Concept and Technology of DC Diesel Generator has evolved out of following facts:

- » Offers the cheapest and most efficient of all Back-Up-Power solutions
- » Specially designed variable speed engine consumes fuel with varying load conditions unlike conventional AC Diesel Gensets
- » AC DGs waste fuel while operating at partial loads as engine runs at fixed speed only
- » AC DGs use bigger size (over size) engine to address

peak load whereas DC PH uses smaller engine & it is not over sized for the same load

- » Huge AC to DC conversion loss (10%) associated with AC Diesel Gensets
- » MTBF & operational reliability of DC Diesel Gensets better than ACDG's
- » For telecom network penetration into rural areas having little or no-grid availability, initial investment for other back-up power solutions like Solar, Wind, etc. too high
- » Has brought to limelight several benefits over ACDG's (refer table at other page)
- » Usually, for few months telecom site requires less loads initially. Load increases gradually once the tower is shared by other operators when more BTS's are added
- » Shift of power from AC to DC results into considerable saving on CAPEX & OPEX
- » DCPH has provision to integrate with Network Monitoring System (GEMC) designed and installed at ACME HQ (Gurgaon, India). Unique features offered include: remote real-time access, monitoring and control of various parameters (load, alarms, fuel consumption, break down -action taken report/closure, MTTR, MTBF, Billing, tracking of Preventive maintenance schedule, spares tracking, DCPH auto start /stop, etc



Non Adiabatic Compressor-less Cycle (NACC) Air Conditioner

AMCE's 'Non Adiabatic Compressor-less Cycle' technology, has developed a highly advanced and energy efficient cooling solution. It is eco friendly and uses an aqueous medium as cooling fluid instead of harmful chemical refrigerants which deplete ozone layer.

Features

- » 60% reduction in energy consumption
- » Produces air temperature below 25°C over a wide range of ambient condition

Power Savings: 14016 units/year/site & Carbon emission reduction of 11.2 tonnes per year



Phase Change Material (PCM)

Phase Change Material is an innovative solution for storing thermal energy in off-peak hours and providing heating or cooling in peak hours or when there is no electricity.



Features

- » Phase changing process can be repeated over a 1,000 cycles with no change in physical or chemical properties
- » Overall reduction in fuel consumption by more than 6,500 litres per annum per site
- » A wide operative range from -20°C to 300°C
- » Non combustible and non toxic



High Energy Efficiency Ratio (HEER) Air Conditioner

ACME offers a complete range of energy efficient air conditioning solutions optimized for the telecom industry, specially designed to maintain the desired temperature in telecom shelters and while saving energy.

Features

- » Specially designed for telecom applications
- » 0.9 sensible heat factor cooling mode
- » 900 CFM in free cooling mode
- » Higher CFM can be achieved through free cooling mode

Power Savings: 6000 units/year/site & Carbon emission reduction of 4.8 tonnes per year

Network Monitoring System (NMS)

- » ACME through its innovation has created a unique Network Monitoring Solution that improves site efficiency through real time monitoring and control of the passive infrastructure
- » Solution is the largest deployed in the world today with over 22,000 sites running
- » It ultimately ensures a continuous check on the running cost of the site hence providing significant reduction in OPEX



Nano Cooled Shelter

ACME's Nano Cooled Shelter is an integrated, tailor made and end-to-end energy management solution to minimize energy needs at site.

Features

- » Average power savings: 3,120 unit/ year/site
- » 70% of solar radiation is reflected back to the environment using Nano-coated PUF panels
- » Provides safe operating environment (temperature and dust particle)
- » Air and water tight to achieve IP55 level protection
- » Quick installation time helps in faster roll out of shelters

Savings: 15232 units/Year/site & 12.18 tonnes of carbon emission stemmed again per year



Fuel Cell

ACME's Fuel Cells are a reliable and high quality source of power offering the ease of modularity and scalability. They have widespread applications not only in telecom but also in residential, commercial and other industrial sectors.

Features

- » Pollution free, nearly no greenhouse gas emissions
- » Low weight and noise level
- » Compact and modular solution
- » Quick start, even in sub-zero temperatures



Power Interface Unit

The Power Interface Unit is powered by unmatched patented technology and offers unbeatable savings. It is most trusted by the telecom industry – and **ATPL has installed over 75,000 PIUs.**

Features

- » Unique controller for energy management at site to maximize utilization of mains power and minimizing diesel usage through generators
- » Regulate clean power to site, wide range input
- » Wide range of options: 44 PIU variants
- » Fastest real time running operation: response time of 10 micro-second
- » Energy monitoring for better energy management: equipped with GPRS modem

Savings: 2300 ltrs /year/site



Free Cooling Unit (FCU)

The Free Cooling Unit reduces AC running hours on the telecom site whenever the ambient temperature is lower than the shelter temperature.

Features

- » Can control up to two AC and one free cooling unit
- » Temperature control
- » Humidity sensor



INNOVATIVE MANAGEMENT SERVICE LINE

Fully Integrated and comprehensive telecom infrastructure services.

Helping operators maintain highest performance levels through hassle-free operations.

Integrated bouquet offerings

- » Remote Monitoring (via NMS solution)
- » O&M (operation of the site including AMC)
- » Installation services
- » Site Management
- » Diesel Filling
- » Higher uptime results in more revenue
- » Higher satisfaction to user's customers
- » Large pool of field resources to deliver on-time performance
- » Vast experience in handling telecom infrastructure services successfully over years

Maintaining
>99.95%
site uptime



Energy Management Solution

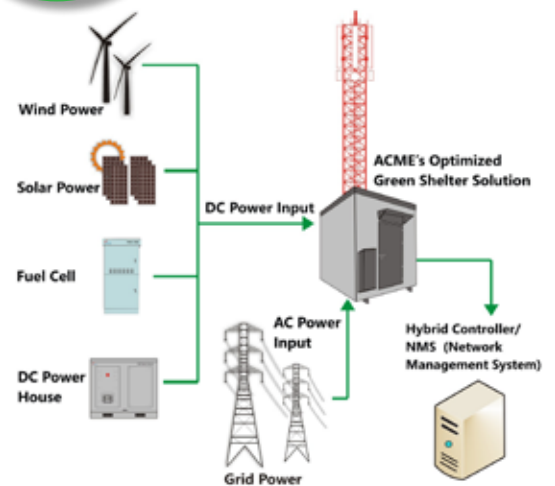
ACME's EMS (Energy Management Solution) incorporates state-of-the-art, environment friendly ACME products which can operate in the most adverse conditions.

The various components work together seamlessly to maximize thermal and electrical back-up, optimize cooling efficiencies and minimize power conditioning losses, thus facilitating a substantial reduction in energy consumption.

Features

- » Radical reduction in energy consumption
- » Innovation energy management
- » Lower CAPEX investment versus other green energy solutions
- » Unique DC architecture
- » Reduces Air Conditioning load requirements
- » Future proof : 2G, 3 G, 4G support
- » Gain Carbon Credits

Guarantee
reduction
in existing
energy cost



The ACME Optimization Edge

- » Reduced OPEX costs
- » Support for 1 to 3 BTS configurations
- » Reduces Battery back-up requirement
- » Cost efficient, energy efficient and eco-friendly
- » Increase tenancy for Tower Cos due to lower OPEX

Ultra Low Cost Site (ULCS)

ULCS is the most advanced and economical integrated solution for efficient, low energy consuming operation.

Features

- >> Energy-optimized, DC Powered telecom site solution
- >> Replacement for conventional telecom shelter sites
- >> Upto 35% energy saving for sites for poor grid connectivity
- >> Smaller carbon footprint
- >> Energy monitoring and management

ULCS ELEMENTS

- >> Green Shelter
- >> Spilt Power Interface Unit (PIU)
- >> Battery Cooler
- >> Combi Cooling System
- >> Fuel Cell
- >> DC Power House



Key Benefits

- >> Drastically reduces OPEX
- >> Reduces losses associated with AC to DC power conversion
- >> Reduces Battery Backup requirement
- >> DC based architecture to allow plug & play green power

Wide Range of Options

- >> Support for 1-3 BTS Configurations
- >> Indoor BTS support
- >> Outdoor BTS support
- >> Applicable to 2G,,3G, or 4G technologies

ULTRA-SAVING

- >> Diesel consumption : 30% reduction
- >> Air Conditioner power : 67% reduction
- >> Battery bank : 50% reduction
- >> PIU: > 97% efficiency, reliable integration
- >> Shelter : Upto 50% smaller size
- >> DC Power Architecture : Saves 20% on AC-DC power conversion

Green Towers

Our solution is based on green and low cost innovative technologies that will enable site roll out in hitherto uncovered rural areas in a cost effective manner. Our offered solution is modular in nature, capable of supporting multiple tenants and is backed by ACME's expertise in manufacturing, installing and servicing 100,000+ sites across India.

Our fixed cost solution will provide visibility to your customers' (operators) in terms of operating costs (Rental as well as every costs) and is optimized for rural area operations. Through the usage of next generation green and low cost solution, we are confident of delivering costs as well as SLAs that are in line with Industry's expectations.

Features

- >> 4 Ton/year of carbon emission reduction per site
- >> Fixed Cost model - predictability of cost to customer
- >> Beneficial in areas with power crunch
- >> Energy Efficient Tower: 30% saving in Cost

Carbon Emission Savings

Product Emission	Total Savings / Site kWh / annum	Savings in Installed Base Mn kWh/annum	Carbon Emission Tonnes / annum
Power Interface Unit	15232 kWh/annum 1533	761.6Mn kWh/annum 76.65 Mn	609280 Tonnes/annum 65320
Green Shelter	kWh/annum 6000	kWh/annum 300 Mn	Tonnes / annum 240000
Cooling Thermal	kWh/annum 4380	kWh/annum 219 Mn	Tonnes / annum 153300
Storage Compressorless	Ltrs/annum 14016	Ltrs/annum 700.8Mn	Tonnes / annum 560640
AC	kWh/annum	kWh/annum	Tonnes / annum



ACME cares enough to dedicate itself to making a difference

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Also present in:

Zambia

Madagascar

Republic of Congo

Democratic Republic of the Congo

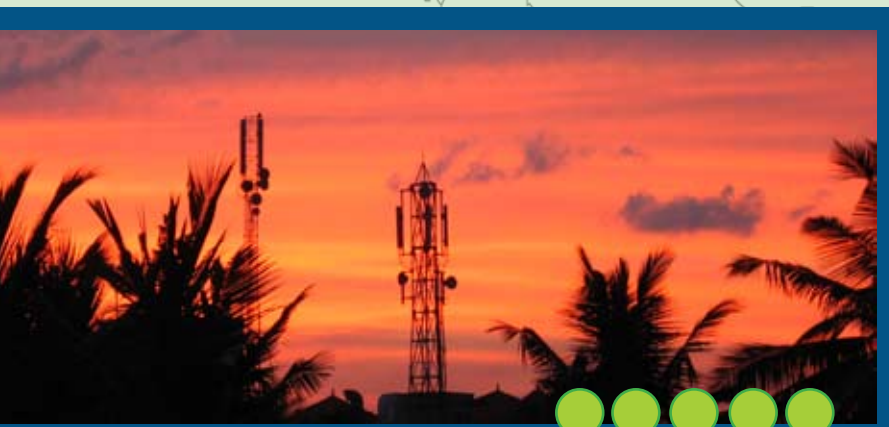
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