



# “eTelecom” Solutions

## Energy Storage Solutions for Telecom Applications

eTelecom is a turn-key Energy Storage Solution, developed specifically for the Telecommunication industry. eTelecom is ideally suited to power cell sites, relays stations and other remote applications where utility power may not be available.

eTelecom generates energy from high-efficiency bi-facial solar panels and stores it in special energy storage batteries to power the load for up to 10 days without sun.

eTelecom allows operators to run 24/7 without diesel generators, avoiding pollution, constant refuelling, and maintenance.

eTelecom includes advanced remote monitoring and control allowing the operator to constantly visualize the good operation of the network.

S360E

**E2L**™  
BRIDGING THE ENERGY GAP

The image shows three tall, lattice-structured telecommunications towers standing in a field of dry, golden-brown grass. The towers are equipped with various antennas and satellite dishes. The sky is a clear, bright blue with a few wispy white clouds. In the background, there are some small, white utility buildings and a fence line. The overall scene is a rural or semi-rural landscape.

**“Finally, a  
reliable, cost-  
effective and  
hassle-free  
solution to  
power telecom  
sites.”**

# Why eTelecom?

## Global Gap in Energy Supply

With rapid demographic and economic growth, demand for electricity is ever-increasing, and with it the gap between energy supply and demand. Electricity production from fossil fuels is the largest source of greenhouse gas emissions and will continue to grow as more people are connected to the grid. With the time and resources required to upgrade grid capacity, it is becoming harder for utilities to stabilize the availability of energy on the grid.

## Challenges in the Telecom Industry

Telecom operators rely on cell sites relays and repeaters to build modern telecommunications networks, which require stable and constant energy to operate. Any power cut or power disturbance may cause equipment damage that requires sending technicians to remote locations to repair, and results in long hours of down time.

Currently, Telecom operators use multiple diesel generators per site, connected to a large fuel tank to power these cell sites. This results in substantial operational costs and many hours of downtime and is inconvenient on several levels:

- They are costly to buy, refuel and maintain.
- They create air and noise pollution and are harmful in residential and commercial environments.
- They require space, regular maintenance and repetitive refuelling.

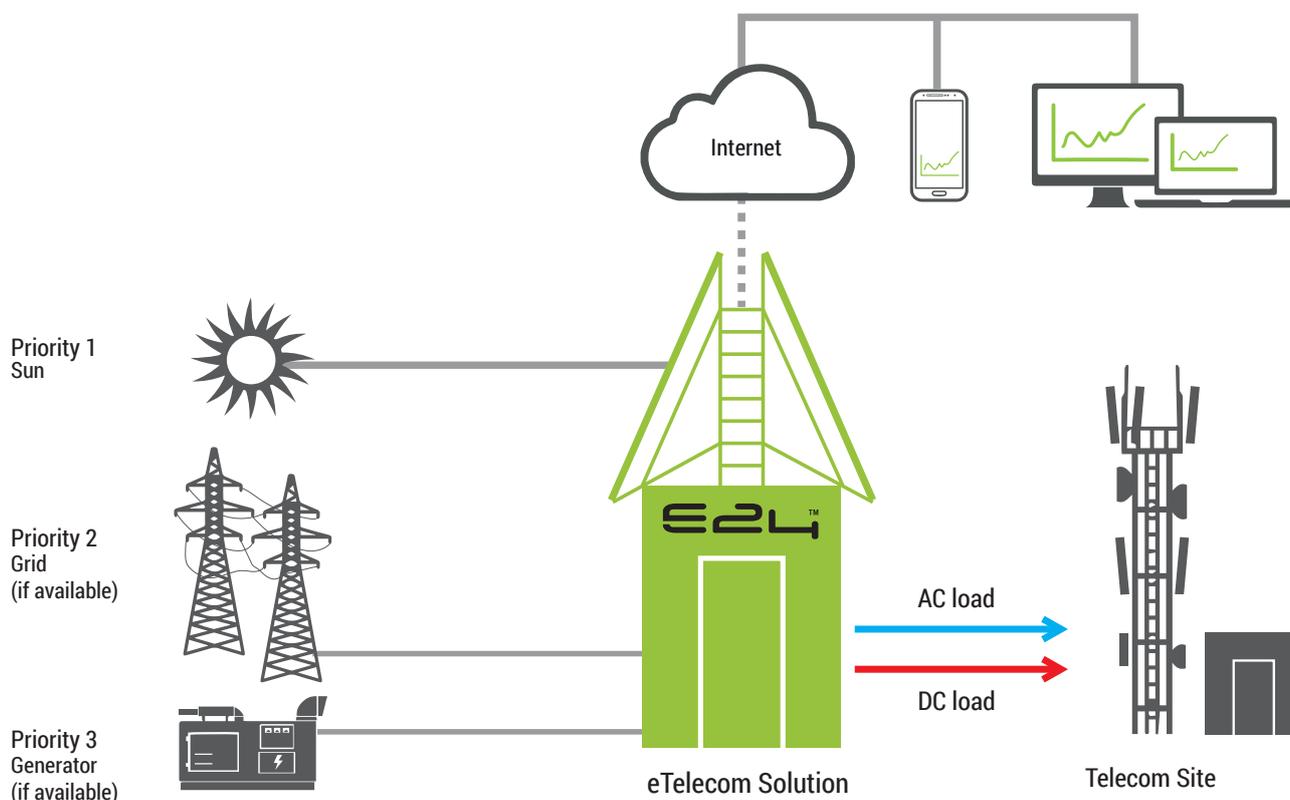
## A Cost-effective Solution

eTelecom's advanced technology overcomes these inconveniences by providing a fully integrated energy generation and storage system, allowing operators to build reliable networks. eTelecom guarantees substantial savings over any fuel based alternative while improving power quality, removing noise and environmental pollution, and limiting human intervention.



# eTelecom: A New Concept

eTelecom consists of an energy storage system installed in a tempered shelter coupled with high efficiency solar panels and a sophisticated monitoring and control system.



## DC and AC outputs

eTelecom provides stable electricity to your load in both AC 220 volts 50 Hz and DC 48 volts. Both outputs are protected against short circuits and overloads.

## Multiple Energy Input Management

eTelecom can be connected to utility sources if available or generator source if available and can be programmed to use these sources automatically under preset priorities in the worst case event where batteries are depleted

eTelecom includes the interface to automatically start generators in the rare case of low battery and automatically shut down the generator when battery energy level is restored.

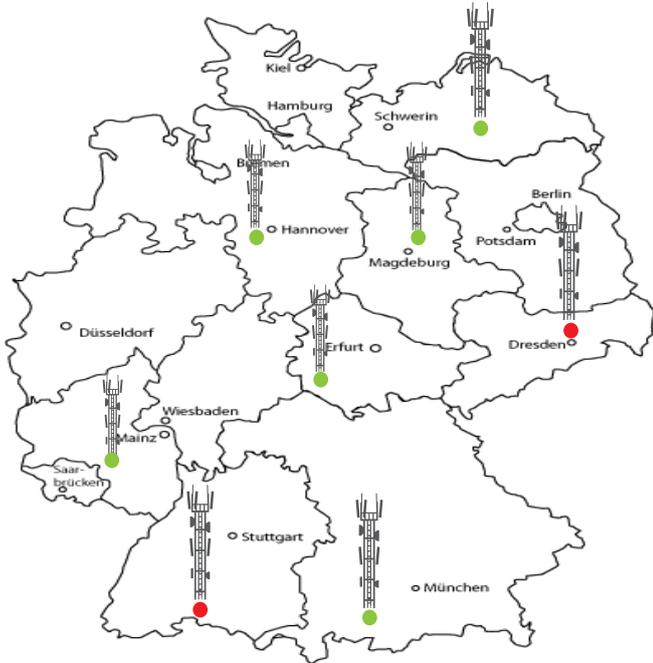
## Substantial Cost Savings

eTelecom saves on energy bills, with a lower cost of operation compared to diesel generators. eTelecom includes E24 proprietary Enhanced Lead-acid (ELA) energy storage technology to offer a highly reliable and cost-effective storage solution. ELA batteries offer up to 5000 cycles resulting in up to 15 years of operation.

## Advanced Solar Energy Generation

eTelecom uses bi-facial solar panels to generate the maximum possible energy output with the minimum footprint. Solar panels are installed at a steep angle to avoid any deposition of dust and panel self cleaning.

# Cloud Monitoring from the Comfort of Your Home



Instantly connect to any eTelecom site to view all data and system parameters.

## Remote Cloud Monitoring

eTelecom includes a state of the art web management tool allowing you to visualize and closely monitor the sound operation of your energy solution, control energy sources and load consumption.

The control system logs data from solar panels, utilities, loads and optional generators. All data is recorded, and history can be downloaded for analysis, keeping you in control of your energy generation and spending.

eTelecom is connected to the E24 cloud based monitoring system, allowing the technical support team to remotely manage your system and take immediate preventive action in case of anomalies, keeping your investment safe.





# eTelecom Key Benefits

**eTelecom is specifically designed for areas where utility power is unstable or unavailable. Its demonstrated benefits make it the ideal solution for Telecom operators:**

## Multi-day Storage Capacity

eTelecom's backup storage can power cell sites and relay stations for up to 10 days without sun, providing highly reliable power.

## Calm and Clean

eTelecom allows you to avoid the use of noisy, polluting diesel generators that release harmful gases.

## Resilient & Redundant

Multiple strings of ELA batteries are installed in parallel allowing continued operation even in a case of a damaged battery. Added storage and inverter capability keep the system connected in the rare case of failure.

## Unattended operation and low maintenance

eTelecom's smart system automatically switches between power supplies and manages energy storage, requiring very low maintenance. Its remote monitoring tools allow our technicians to ensure smooth operation and get notified in case of any issues. ELA batteries require only one check up per year.

## Safe and Reliable

eTelecom accepts a wide input voltage fluctuating between 180Vac to 280Vac, as well as a wide input frequency between 40 to 70Hz.

## Modular and Upgradable

eTelecom's modularity means that it is possible to add more inverters in parallel to increase power and reliability, and more battery modules to increase backup time, dynamically grows with your evolving energy needs.

- Up to 6 eTelecoms can be placed in parallel to provide up to 120 amps in AC.

- Up to 6 eTelecoms can be used to provide up to 3x40 amps in AC power.

## Eco-friendly image and values

Choosing solar energy demonstrates a commitment to lowering carbon emissions. eTelecom improves your image, sending a message of environmental responsibility.

## Advanced Monitoring and Control:

eTelecom includes an interface to connect to either the operator network management system or to the E24 cloud-based monitoring system that can be custom-designed to operator requirements.

## Designed for Harsh environmental Conditions

eTelecom uses sophisticated isolation and temperature regulation technology to ensure safe operation from -50°C to +60°C. It is also equipped with sophisticated filters to prevent even the finest particles of dust from entering the shelter.

# Health Comes First

**Cell sites, repeaters and relays are often installed on the roof of buildings creating substantial pollution, vibration and noise in residential areas, .**

- Toxic gases have a direct effect on the respiratory system, posing a variety of diseases
- Fine particle pollution contributes to ashtma, emphysema, chronic heart and lung disease.
- Exposure to diesel exhaust poses high risks of cancer.
- Engine produces irritating audible noise
- Exhaust contributes to smog creation.



# Enhanced Productivity

**There are multiple operational advantages that eTelecom has over diesel generators**

## Generator

- High operational cost
- Air & noise pollution
- Continuous maintenance
- Power cut between utility and generator
- Minimum 30% load
- Bulky (fuel tank and exhaust required)
- Continuous refueling
- Narrow temperature operation (deration)

## eTelecom

- Low operational cost
- Silent and non polluting
- Low maintenance
- Reliable
- Stable voltage and frequency
- Can be installed in any space
- Install once - replace batteries every 6 to 10 years
- Wide temperature operation
- Ready to be coupled with Solar PV

# How Does eTelecom Save On Your Energy Bills?

**eTelecom's smart system collects and stores energy from multiple sources according to their availability and lowest cost.**

- eTelecom reduces the need for expensive diesel generators, saving on fuel transportation to cell sites, fuel cost, maintenance and labour.
- eTelecom collects and stores solar energy, utilizing all solar energy produced. Unlike pure solar solutions, eTelecom's storage allows you to capture 100% of solar energy.
- If grid connection is available eTelecom returns excess solar energy to the grid, saving on utility bills through net metering.
- eTelecom overcomes costly power interruptions that result in lost profit, loss of customers, and degradation of the brand image.





# Smart, Easy Assembly

**eTelecom is particularly adapted to loads that need to be powered reliably in remote unattended locations.**

eTelecom is designed to be installed almost anywhere with minimal civil works as it includes a stabilising structure to distribute the weight on a large surface. eTelecom is supplied already cabled and configured to customer requirements as a 10ft container (half a standard 20ft container).

The solar structure is a ready to assemble kit that can be put together quickly by an installer. eTelecom becomes immediately visible on the cloud allowing all parameters to be visualized.

eTelecom is designed to bring the highest possible reliability. Every component is at least doubled in capacity to keep eTelecom functional in case of any component failure.

eTelecom's vertical bi-facial mirrors are self-cleaning, allowing it to operate in dusty and sandy environments without deposition on the panels. eTelecom is also conceived to make it extremely difficult for anyone to temper or steal solar panels.

# E24 Quality Pledge



E24 is the result of 30 years' experience in the field of energy generation, conversion and storage technology. E24 engineers the most durable, efficient and reliable energy solutions on the market tailored for the most demanding applications and locations around the world.

E24 designs, engineers, manufactures, assembles, tests and delivers its solutions in modular components that are easy and cost-effective to assemble on customer's premises.

E24 commissions its solutions through a network of affiliates or business partners under strict quality standards and procedures to ensure the highest optimal performance and customer's satisfaction.

E24 continuously invests in R&D and develops its own proprietary technology. Each part of the energy solution supplied is optimized to bring the highest customer value.

All solutions are designed to bring a fast and headache-less capital recovery and high return on investment.

# E24 Comprehensive Services

Our turnkey approach is what sets us apart. In addition to our complete solutions, we offer a variety of services, allowing you to make the most of your investment:

- **Site Assessment Visits**
- **Energy Saving Analyses**
- **Feasibility Studies**
- **Structural Designs**
- **Multi-Level Training Programs**
- **Commissioning Services**
- **Financing Services**

E24 works closely with its clients to look at all aspects of their energy-related costs and performance, identifying opportunities for improvement and potential to lower overall costs.

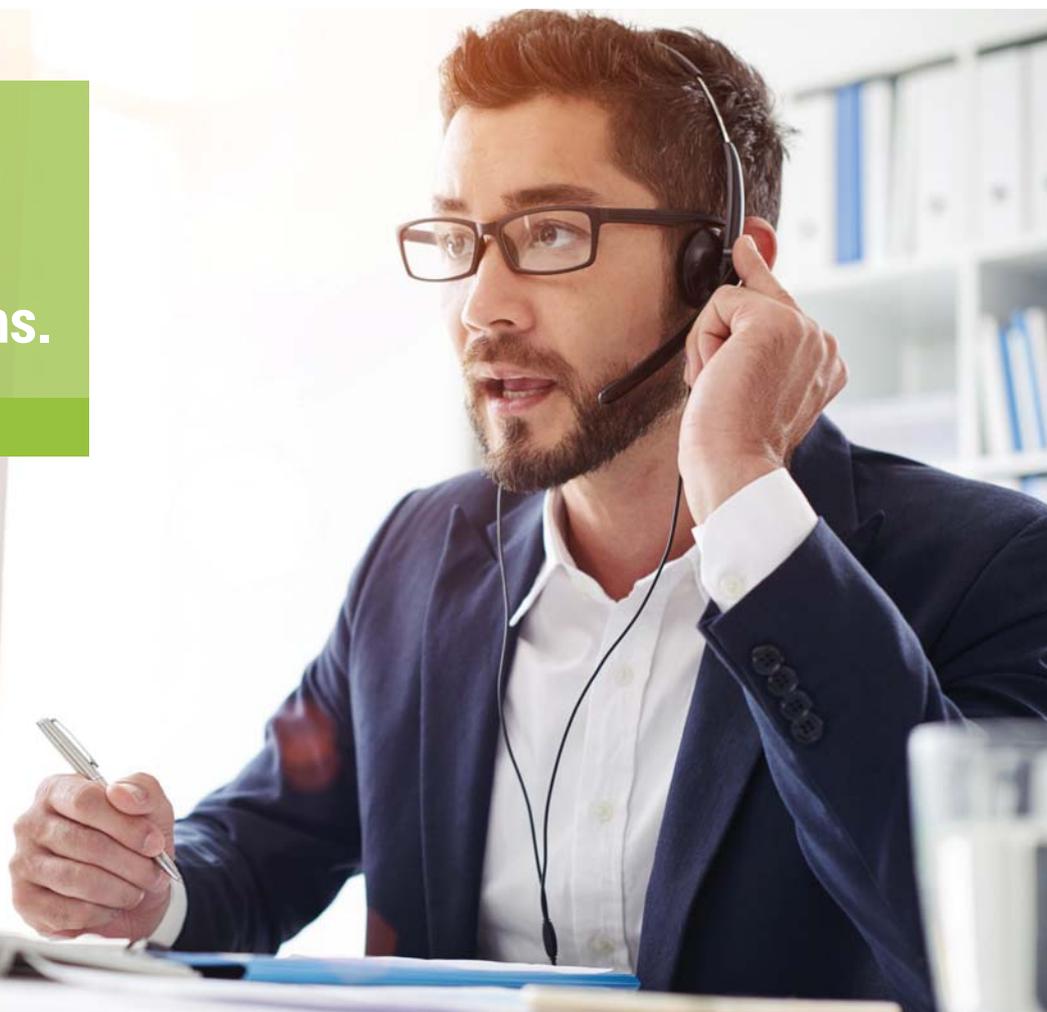
E24 also offers a number of financing services allowing customers to pay for their equipment gradually and partially finance their investments from the savings they generate.

With support centers, regional offices, and knowledgeable personnel, E24 brings an uncompromising commitment to customer satisfaction. Our after sales services include:

- **Warranty Extension Programs**
- **Comprehensive Maintenance Programs**
- **Field Service**
- **Overhaul & Refurbishments**
- **E24 certified parts**

Our services are provided by engineers operating from E24 regional offices, allowing customers to benefit from accurate data based on relevant local field experience.

**Our Energy  
Consultants are  
here to answer  
all your questions.**



## Energy Storage Solutions



eHome



eVilla



eBuilding



eBusiness



eFactory



eVillage



eTelecom



eGrid

## Energy Generation Solutions



eSolar



eHybrid



eParking



eAgri

# Comprehensive Energy Solutions

E24's broad portfolio of successfully completed projects ranges across a variety of sectors including Residential, Commercial, Industrial, Telecom and Governmental. We have built our reputation on our client focus and versatility to solve their problems. Our tailored solutions that place the lifestyle and needs of customers at their core. E24 leverages technology as a problem solver and enabler.

It is in this spirit that E24 develops targeted, personalized, seamless energy solutions for homes, villas, businesses, buildings, factories, villages, telecom and utility operators. E24 is constantly working towards enhancing the economics and lifestyle of its customers while saving on the planet.



# Ordering Information

Ref Number	Description
E360-010-48l	Energy Storage Solution, eTelecom Series, 1x10A @ 0.9 Pf, 66kWh, 220V,50/60Hz, 48Hrs. Runtime @50 % Load
E360-010-96l	Energy Storage Solution, eTelecom Series, 1x10A @ 0.9 Pf, 132kWh, 220V,50/60Hz, 96Hrs. Runtime @50 % Load
E360-015-48l	Energy Storage Solution, eTelecom Series, 1x15A @ 0.9 Pf, 88kWh, 220V,50/60Hz, 48Hrs. Runtime @50 % Load
E360-015-96l	Energy Storage Solution, eTelecom Series, 1x15A @ 0.9 Pf, 177kWh, 220V,50/60Hz, 96Hrs. Runtime @50 % Load
E360-020-48l	Energy Storage Solution, eTelecom Series, 1x20A @ 0.9 Pf, 132kWh, 220V,50/60Hz, 48Hrs. Runtime @50 % Load
E360-020-96l	Energy Storage Solution, eTelecom Series, 1x20A @ 0.9 Pf, 265kWh, 220V,50/60Hz, 96Hrs. Runtime @50 % Load
E360-PVKIT	Solar PV Kit for eTelecom, including 24xbifacial 450Wp panels, Metallic Structure and Cabling.





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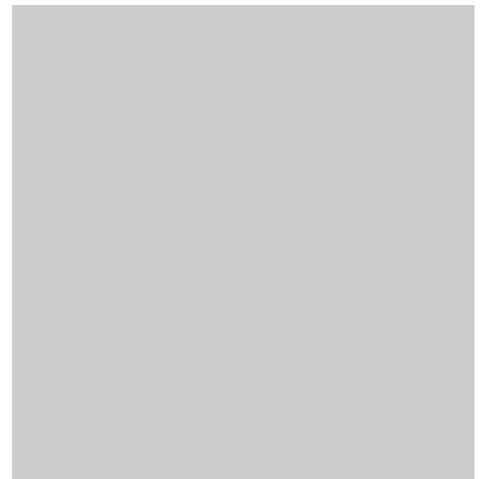
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