



MANAV ENERGY

DELIVERING RELIABLE TOMORROW

Issue 2021-22



Corporate Brochure



**Delivering
Reliable
Tomorrow**



CHAIRMAN'S MESSAGE



Manav group is steadfast on the path of engineering ethics by understanding the obligation to society, customers and profession. Its overall business attitude is shaped by core values - Customer Orientation, Innovation, Excellence, Quality and Team Spirit.

We welcome you to our world and extend our expertise and service.

Thanks and warm regards

A handwritten signature in black ink, appearing to be 'S. Banerjee'.

Sonjib Banerjee
Chairman
Manav Energy Pvt. Ltd.

Business Profile

We started our journey in 2003 and have completed many prestigious and mission critical projects worldwide, backed by leading global alliances, ISO certifications, and unmatched credentials. Our presence can be felt in many esteemed projects around the world. Some of our best projects are shown below.



Burj Khalifa

World's highest man-made tower

Project Type : Design, Supply, and Install
Lightning Protection System



**Dedicated
Freight
Corridor**

Heavy weight high-speed rail & metro

Project Type : Earthing and Bonding Systems



**Atal Tunnel
Rohtang
Pass**

The longest tunnel above 10,000 feet in the world

Project Type : Design, Supply, Install Test, and
Commission, Earthing and Bonding systems



**Avaada
Energy**

600 MW Solar Plant

Project Type : Earthing & Lightning Protection
System Supply, Install, Test & Commission

With innovative solutions, Manav Energy aims to save lives, livestock and assets through best-in-class products and services in the field of electrical engineering.



RIL JIO

Telecom giants

Project Type : Supply of 250000 Earthing System kits



RIL JMD

World's largest refinery

Project Type : Earthing & Lightning Protection Audit (Entire plant)



Power Grid India

Largest government project

Project Type : Substation Earthing Health Assessment



NTPC

Thermal power plant

Project Type : Earthing and Lightning Protection Health Assessment



OUR MISSION AND VISION

Mission

Deliver disruptive & affordable technologies to serve mankind

Vision

Develop innovative solutions and state-of-art products using ethical engineering to deliver a safe and reliable tomorrow



OUR CORE VALUES

1

Customer Focus

2

Listen & Envisage

3

Know Why Attitude

4

Innovation and Design

5

Integrity and Excellence

Project Portfolio

Manav Energy has executed many medium and large-scale projects across the Africa, Asia and Middle East. Our team is trained to perform precision audits and installations in various geographies including deep-sea, dessert, sub-zero and high-altitude environments. Our team is capable of handling complex projects that demands continuous project management and optimum delivery. Some of our major limelight projects other than 1200+ projects are highlighted here.





World Wonders



Project Type: Design, Supply, and Installation of Lighting Protection System

Location Of Project: Dubai

Project Time: 7680 h

Project Value: USD 40839

The Burj Khalifa, with a total height of 829.8m (2,722 ft) is the tallest structure in the world. Manav Energy is the system integrator to supply and install the Lightning Protection System at the tip of this iconic structure.

Worlds Largest Refinery



Project Type: Electrical & Lightning Protection Health Assessment

Location Of Project: India

Project Time: 25920 h

Project Value: USD 544,515

This refinery is a private sector crude oil refinery owned by Reliance Industries Limited in Jamnagar, Gujarat, India. It is currently the largest refinery in the world. The entire complex consists of manufacturing and allied facilities, utilities, off-sites, port facilities, and a township (415 acres) with housing for its 2,500 employees, on over 7,500 acres (3,000 ha; 11.7 sq mi) of land.

We have experience with over many refineries worldwide.

High Speed Railway



Project Type: Over 360 KM of Pre and Post EM Management Study along with Installation & Commissioning of 560 TKM Overhead Electrification and Installing of Earthing Safety Systems

Location Of Project: India

Project Time: 57600 h

Project Value: USD 333,500

This is a double-track railway line that is built by Govt. of India to carry freight across India. Manav Energy's technology and products allowed a safe exchange of high energy hence reducing carbon footprint by 75%.

Tunnels and Road Infrastructures



Project Type: Design, Supply and Install Earthing Systems

Location Of Project: India

Project Time: 9600 h

Project Value: USD 515,894

SAVRONIK SISTEM INDIA PRIVATE LIMITED is located in India and is part of the Highway, Street, and Bridge Construction Industry. The electro-mechanical work at Atal Tunnel (Rohtang Pass) with 9.02 km length situated at 10,000 ft above sea level, was undertaken by Savronik.

Manav Energy designed, supplied, and installed the complete earthing system for that electro-mechanical work at the world's longest tunnel.

What Do We Do

Electrical safety and reliability play essential role in today's technological environment. With evolving technologies, asset management & risk mitigation for electrical and electronic systems in various environments is becoming more complex. These complex systems are susceptible to electromagnetic interference and prone to electrical faults resulting in accidents, service disruptions, and escalated costs in operations and maintenance.

Safe & reliable electrical systems can be achieved with proper design and application of equipment, correct installation, appropriate maintenance for the life of the equipment, and good operating practices.

Our Experts

A passionate team of highly trained and subject matter experts of electrical engineering, along with futuristic technology addresses multiple industries to make them incident-free and with zero down-time.

Our expertise spans from Survey, Study, Measurement, Design, Audit, Testing, Commissioning, Validation, RCA, O&M Expert Services in the field of Earthing Management, Lightning Management, EM

Management, Power Quality Management, Power System Studies, Control Systems & Instrumentation. We strive to exceed customer expectations by harmonizing experienced foresight and ethical engineering solutions. We follow IEEE, IS, BS EN, NFPA, NEC, NFC and other relevant national & international standards for all our services. Our tests and measurements are performed at the site in live condition (no-shutdown) with a record of zero incidences & zero down-time.

Benefits Of Our Business

Cost-effective
products & services

Customized implementation as
per the environment

Advanced
design & simulation software

Techno-commercial excellence

Reduced incidents and fatal accidents

Solutions We Offer



**Power System
Study**



**Root Cause
Analysis**



**Electromagnetic
Management**



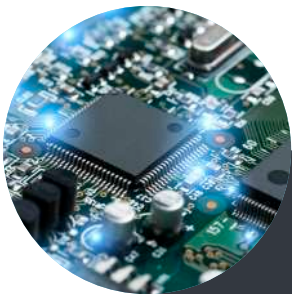
**Power Quality
Adequacy**



**Earthing &
Bonding**



**Lightning
Protection**



**Control &
Instrumentation**



**Excitation
System
Management**

Services We Offer

Survey and Measurement

This is a unique service given by Manav Energy for all greenfield and brownfield projects before starting other services such as Audit, Testing, Installation, and Measurements. This service helps to identify the site's present condition for new or existing installations and systems. During this service, the team visits the site to measure various criteria such as soil resistivity, terrain condition, existing grounding conditions, equipment aging, system deterioration, and assess the effect of the shared corridor on the project site. We conduct a visual inspection and perform various measurements as per national and international standards. The measured data is simulated using software such as CORRCAD, EMTP-RV, etc., to arrive at recommendations for safe electrical systems.

Design, Model & Simulate

The electrical system and protection designs are developed to protect lives and livestock from incidents or accidents during operations. Accurate system designs also aim to protect assets from excess electrical stress and accelerated aging. Minimizing spurious trips and unnecessary load shedding can be achieved through proper system design, which reduces huge O&M costs and plays a vital role in reducing carbon footprint by ensuring intended equipment life without any breakdown. Manav Energy design experts also develop various algorithms and modeling methods, simulating and designing the electric power system for all sectors. This includes Steady-state, Dynamic-state, and Transient-state design and performance evaluations. In addition, our capability to handle transient design and study gives an in-depth analysis of the stress caused during high energy discharge, causing heavy flash-over and fatal incidents and accidents.

Design Validation

Electrical design validation is generally performed to validate existing design specifications for prevailing system conditions and operations. This service provides a design that meets customer requirements and assures fault-free operations. We at Manav Energy perform design validation and provide implementable solutions to ensure safe and reliable electrical and instrumentation system operations based on the present condition.

Audit & Study

This specialized service is used not only for compliance with applicable safety standards and regulations but also to determine pre-emptive safety measures during operation and contingency conditions. These services have been instrumental in eliminating spurious trips, breakdowns, and unplanned shutdowns. It improves profit and shareholder value by minimizing operation and maintenance costs, decreasing downtime, and increasing revenue. The audit also validates



inadequacies or anomalies due to design, Installation, and aging. Electrical safety and reliability audits comprehensively ascertain the healthiness of systems. Our experts follow a systematic approach to evaluate the present condition. Based on the audit inference Manav Energy recommends various implementable solutions as per national and international standards.

Root Cause Analysis

Manav Energy specialist team are experts in performing root cause analysis (RCA). We use the 5-Why method for problem-solving in electrical systems. Spurious trips, unplanned shutdowns, unknown reasons for electronic card failures are some of the RCA worked by our team. RCA generally serves as input to a redress process to take corrective actions and prevent the problem from reoccurring. Our Power system studies consultancy plays a vital role in resolving these issues.

Supply Install Test & Commission (SITC)/(SSTC)

With its dedicated ISO 9001 certified manufacturing and product development facility, Manav Energy is a pioneer in developing various electrical safety and reliability products. We also play a vital role in procuring project-specific requirements through various quality checks and best-in-class supply chain management.

Our project engineers are well trained and equipped to install various safety and reliability-related electrical equipment or system that performs at their best in the intended environment. We are proficient and have completed underground and overhead equipment installations for tunnels, power stations, railway infrastructure, and telecommunication networks. The in-house specialized tools and equipment trained, dedicated manpower, systems, project planning & management give us the competitive advantage to execute large and complex installations. We also have trained experts who provide IIoT services for safe and reliable electrical and instrumentation operations. In addition, our testing and commissioning team ensure high-value equipment and structures are installed and tested according to the operational requirements as per

defined objectives and criteria.

Contracting & Project Management

Our project engineers are well trained and equipped to install various safety and reliability-related electrical equipment or system that performs at their best in the intended environment. We are certified and approved by significant PMC (project management companies) to undertake the installation. We are proficient and have completed underground and overhead equipment installations for tunnels, power stations, railway infrastructure, and telecommunication networks. The in-house specialized tools and equipment trained and dedicated manpower, systems, and project planning & management give us the competitive advantage to execute large and complex installations. We also have trained experts for our patented IIoT products.

Products We Offer

Earthing Enhancement Compounds

Earthing & Bonding Accessories

Lightning Protection, Prediction & Management Systems

Lightning Protection Accessories

IIoT Products

Research and Development

Manav Energy R&D facility housed at Bangalore (INDIA) has a hi-tech measuring and analytical platform suitable for fundamental and applicative research. It employs experts in software development, embedded system, hardware integration, mechatronic, and theoreticians to develop products as per futuristic needs from concept to packaging .

IIoT Product Launch

REMOTE FAULT-TIME EARTH RESISTANCE MONITORING SYSTEM (R-FERM)

World 1st IIoT system is the only product that can detect and alert earthing conditions during electrical faults or lightning strikes. The electrical system inspectors were unaware of the tool's changes in the earthing system during a fault such as short circuit and lightning strike etc., which led to unplanned shutdowns, load shedding, electrical accidents, incidents, and fire. This product has enabled the electrical system auditors to understand the electrical conditions of the ground and make informed design and operational changes to achieve a high degree of safety and reliability.

Additionally, it has changed the manual process of monitoring earthing systems health. It provides online monitoring that enables detection, recording, trend analysis, annunciation, and condition-based maintenance for the earthing system. More importantly, it performs fault-time health analysis, such that necessary corrections can be executed to save lives and assets during future faults.



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Sectors We Influence

Petrochemical



Telecom



Renewable



Infrastructure



Utilities





Rail & Metro



Air & Water Ways



Power



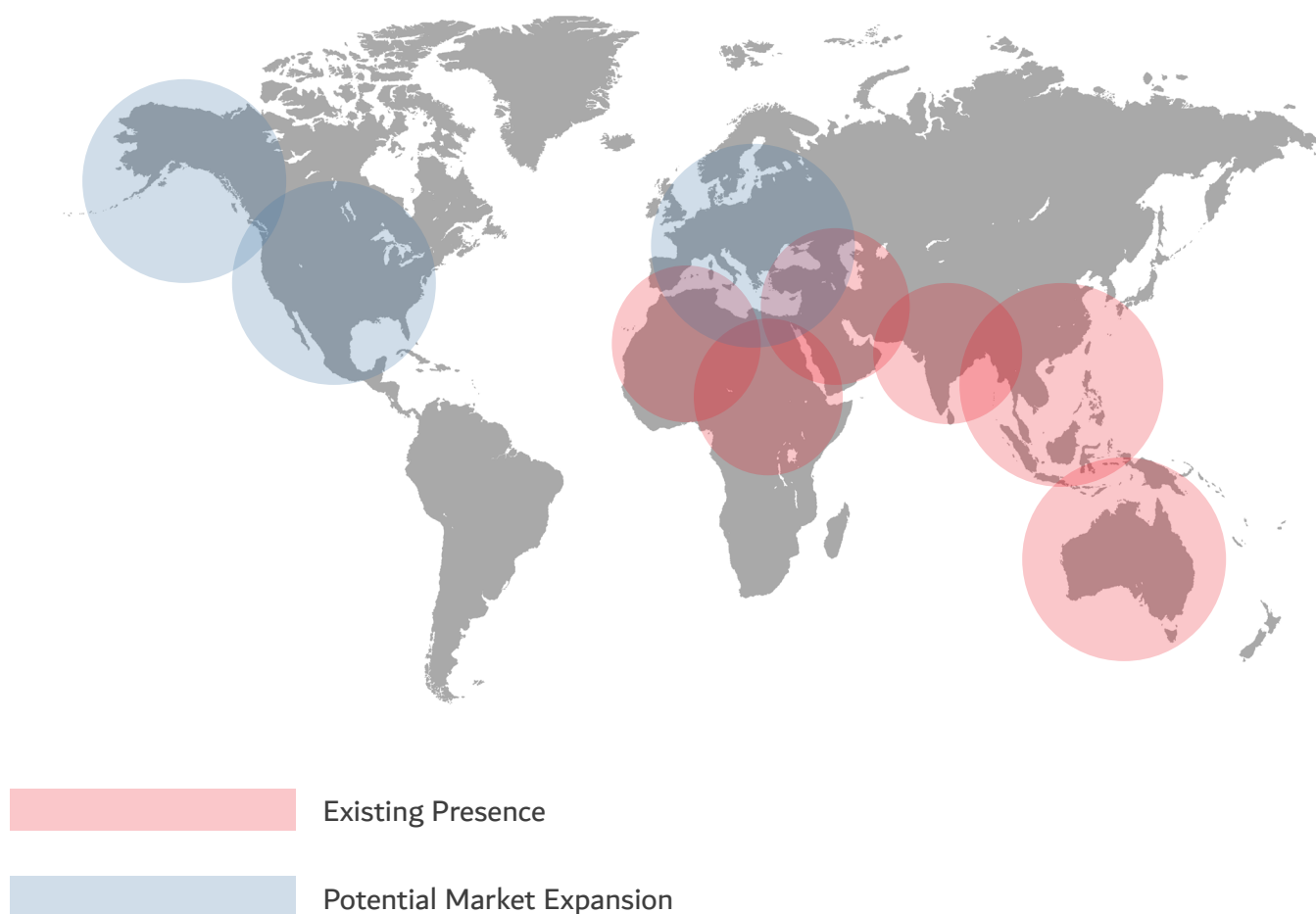
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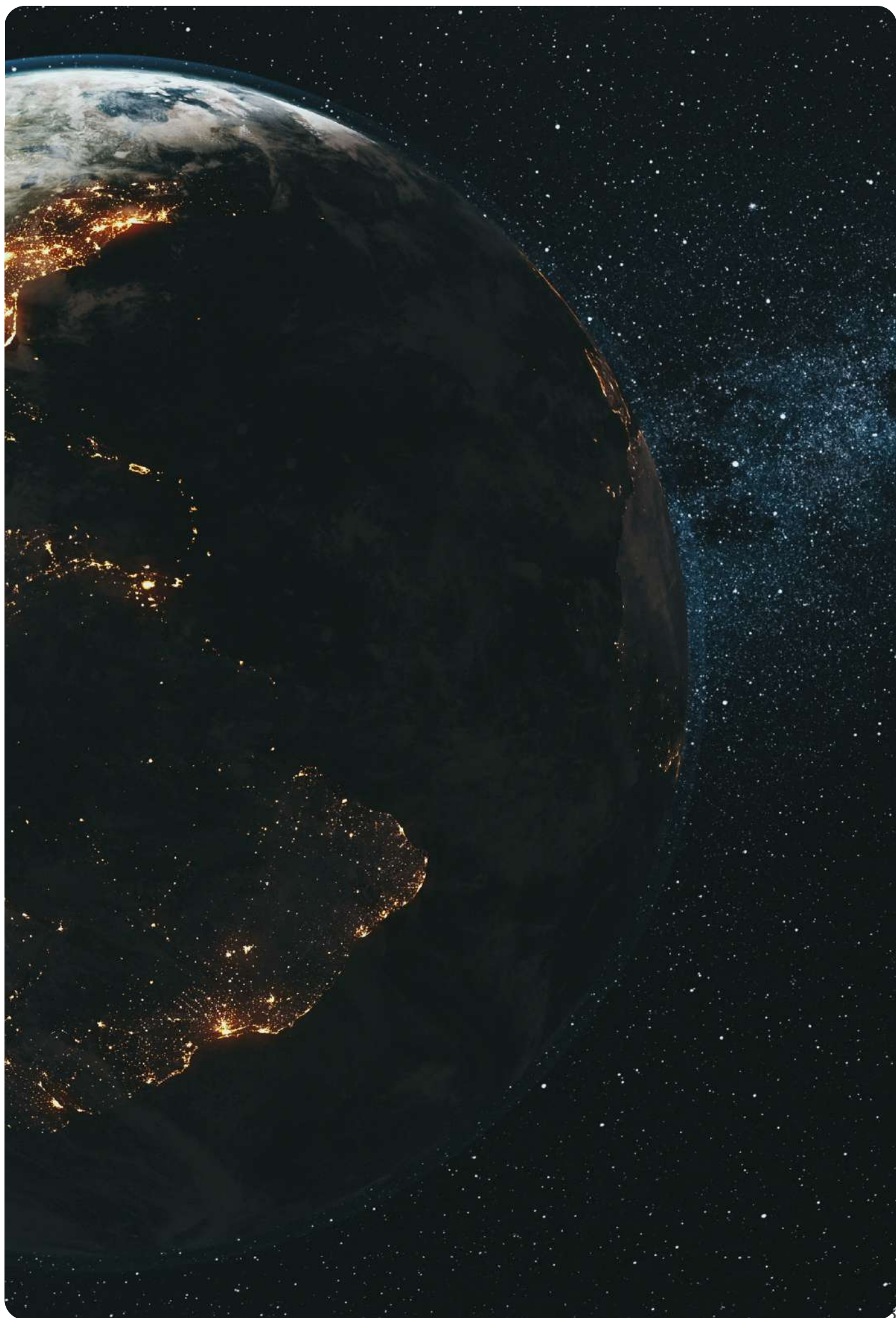


Smart Cities

Commercial Footprint

Manav Energy is expanding global footprint to support high risk and complex integrated projects that follow highest standards of regulatory norms.







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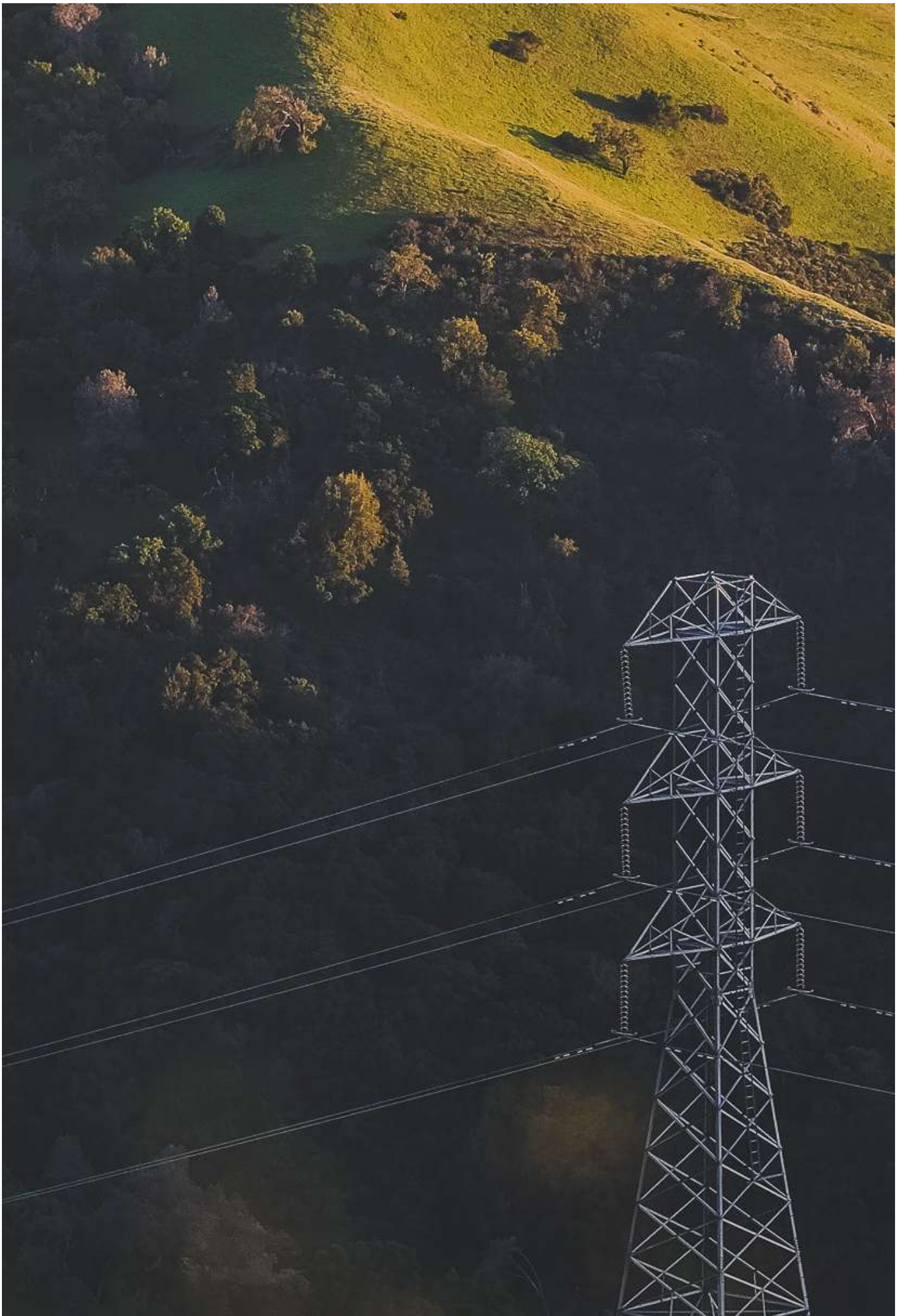
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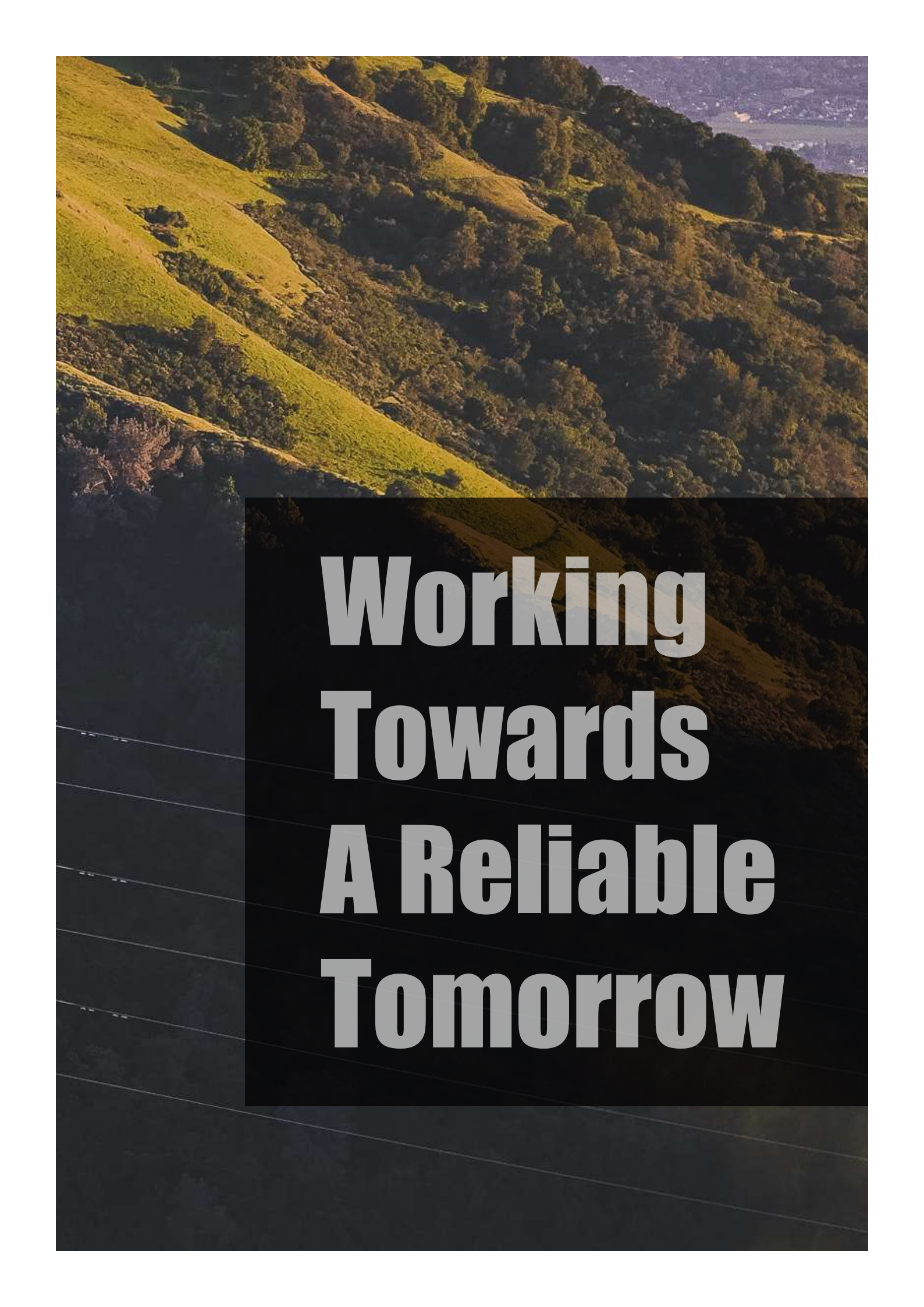
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An aerial photograph of a landscape. In the foreground, a dark asphalt road with white lane markings runs diagonally from the bottom left towards the center. Above the road, a steep hillside rises, covered in dense green forest. The upper part of the hillside is bathed in warm, golden light, suggesting late afternoon or early morning. In the far distance, a small town or village is visible on a flat plain under a clear sky.

Working Towards A Reliable Tomorrow



www.manavenergy.com

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