

# PRODUCTION & INSTALLATION OF SOLAR PANELS

**DIRECTION:** Green Energy

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# THE FUTURE OF ENERGY TRANSITION TO SOLAR GENERATION

Renewable energy is one of the key drivers of sustainable development. In recent years, the shift toward renewable sources has accelerated, and solar energy has taken a leading position due to its accessibility and efficiency

Over the past decade, the installed capacity of solar power plants has increased more than **15-fold**, exceeding **1 TW**. However, its share in global energy consumption currently stands at only **6%**, highlighting the tremendous growth potential of the industry

The expansion of solar energy is not only an economically sound solution but also a strategic step toward reducing dependence on fossil fuels and minimizing environmental impact

Del Mar Energy Inc plays a leading role in this process by offering advanced technologies for the production and installation of solar panels. Our innovative solutions deliver maximum efficiency, reliability, and resilience under any climatic conditions

# WE CREATE TECHNOLOGICAL SOLUTIONS THAT TRANSFORM THE ENERGY SECTOR

The mission of Del Mar Energy Inc is to accelerate the global transition to renewable energy by providing reliable, innovative, and affordable solar panels for industrial, commercial, and residential use

## ENERGY INDEPENDENCE

Accessible technologies that enable businesses and homeowners to reduce reliance on traditional energy sources and shield themselves from rising utility rates



## ENVIRONMENTAL SUSTAINABILITY

Innovative developments aimed at reducing carbon footprints and minimizing environmental impact



## TECHNOLOGICAL LEADERSHIP

Advancing new materials, enhancing the efficiency of solar panels, and extending their lifespan through cutting-edge engineering solutions



Del Mar Energy Inc is committed to making solar energy the primary source of electricity by combining technological excellence with sustainable development

# GROWTH STRATEGY AND TECHNOLOGICAL LEADERSHIP



## EXPANDING GLOBAL PRESENCE

Del Mar Energy Inc is actively increasing its market share in solar energy by entering new regions in Europe, Asia, and Latin America. The development of international partnerships and localization of production enable us to tailor our solutions to various climatic and economic conditions



## INNOVATIVE DEVELOPMENT & EFFICIENCY ENHANCEMENT

We invest in research and development (R&D) to create solar panels with improved performance, extended lifespan, and resilience to extreme weather conditions



## SCALING PRODUCTION

The launch of new manufacturing capacities and the implementation of automated processes help reduce production costs, making solar energy more accessible to the mass market



## ENVIRONMENTAL SUSTAINABILITY

We integrate the principles of carbon-neutral production by reducing CO<sub>2</sub> emissions, minimizing waste, and employing material recycling at every stage of manufacturing



## A Rapidly Growing Market

Solar energy is one of the fastest-growing segments within renewable energy. Over the past **10 years**, the installed capacity of solar power plants has exceeded **1 TW**, accounting for **6%** of global energy consumption. According to the International Energy Agency, this share is projected to increase to **30% by 2050**, positioning solar energy as a primary source of electricity

# Prospects and Advantages of Solar Energy

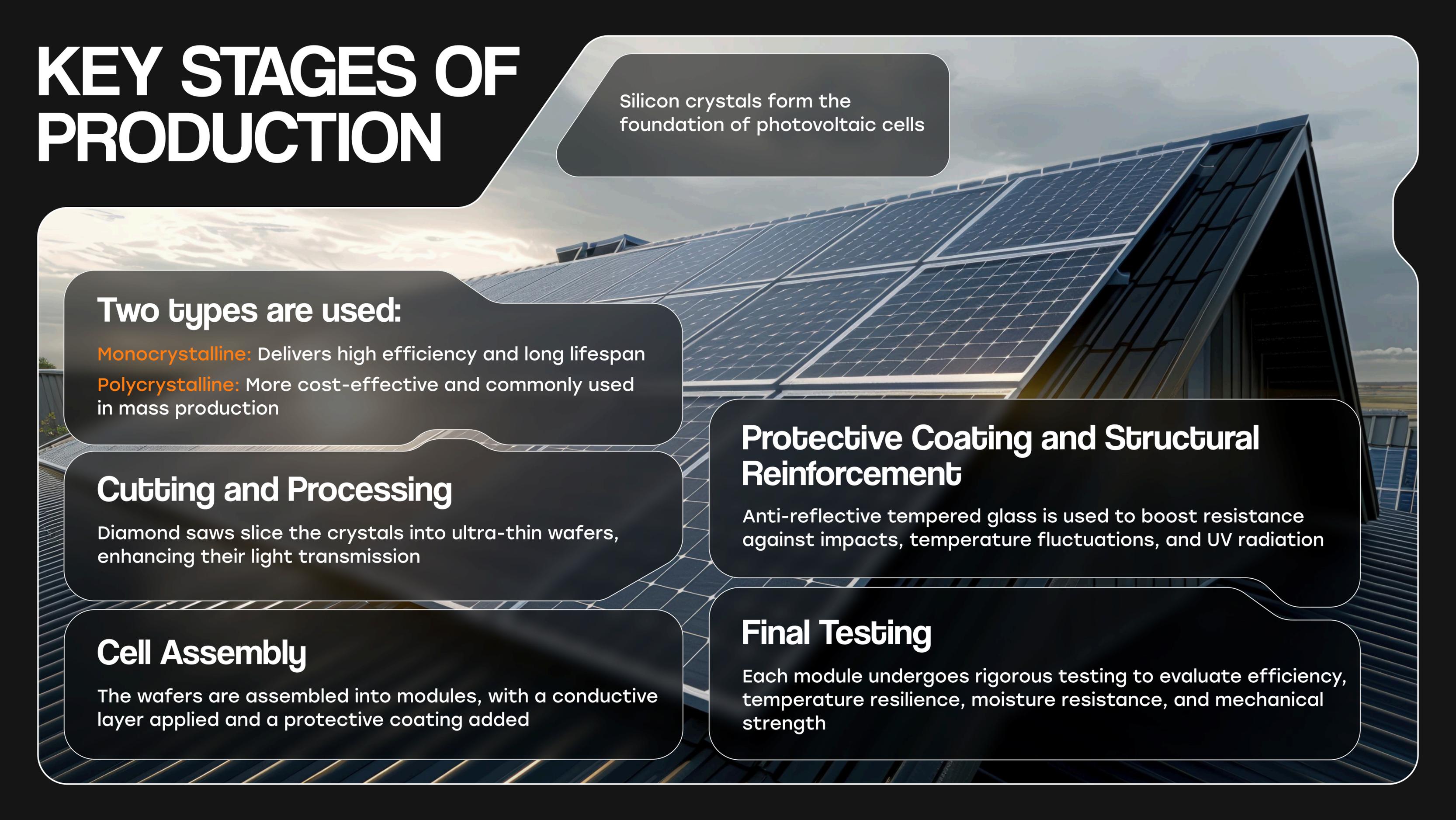
## Key Advantages:

- **Unlimited Resource:** Sunlight is available everywhere
- **Environmental Safety:** No CO<sub>2</sub> emissions and minimal impact on the environment
- **Low Operating Costs:** Solar panels require minimal maintenance and can operate for over 35 years
- **Versatility:** Suitable for residential, commercial, and industrial applications

## Advanced Technologies

Modern solar panels achieve efficiencies of up to 23% thanks to the use of monocrystalline photovoltaic cells. Integration with energy storage systems ensures uninterrupted power supply even during nighttime or periods of low solar activity

# KEY STAGES OF PRODUCTION



Silicon crystals form the foundation of photovoltaic cells

## Two types are used:

**Monocrystalline:** Delivers high efficiency and long lifespan

**Polycrystalline:** More cost-effective and commonly used in mass production

## Cutting and Processing

Diamond saws slice the crystals into ultra-thin wafers, enhancing their light transmission

## Cell Assembly

The wafers are assembled into modules, with a conductive layer applied and a protective coating added

## Protective Coating and Structural Reinforcement

Anti-reflective tempered glass is used to boost resistance against impacts, temperature fluctuations, and UV radiation

## Final Testing

Each module undergoes rigorous testing to evaluate efficiency, temperature resilience, moisture resistance, and mechanical strength

# EFFICIENCY AND RELIABILITY OF SOLAR PANELS

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## PERFORMANCE IN ALL CONDITIONS

Modern solar panels deliver stable energy output across diverse climatic zones—from northern regions with low sunlight to hot areas with intense solar radiation

## KEY TECHNICAL PARAMETERS:

- **Efficiency up to 23%**  
Monocrystalline panels maximize the use of sunlight
- **Operating Temperature Range -50°C to +70°C**  
Ensures stable performance in both extreme cold and heat
- **Anti-Reflective Coating**  
Enhances light transmission even in cloudy conditions or if the surface is dirty
- **Ultra-Durable Glass**  
Provides robust protection against hail, strong winds, and mechanical stress
- **Lifespan over 35 Years**  
Minimal maintenance costs and high durability

## OPTIMIZING GENERATION IN CHALLENGING CONDITIONS

Solar panel performance can decline due to shading, dust, or an unfavorable tilt angle

## MODERN SOLUTIONS INCLUDE:

- **Sun-Tracking Systems**  
Automatically adjust the tilt, boosting output by 20–30%
- **High-Sensitivity Photovoltaic Cells**  
Ensure effective performance under diffused light
- **Integration with Energy Storage**  
Enables the use of stored energy at night and during periods of low solar activity

# TYPES OF SOLAR PANELS



## MONOCRYSTALLINE PANELS

**Efficiency up to 23%** – the most efficient on the market

**Durability** – lifespan of over 35 years

**High performance even under low-light conditions**

Ideal for installations in regions with limited sunlight

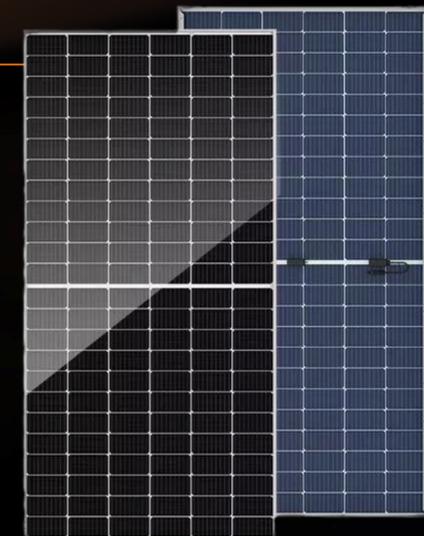


## POLYCRYSTALLINE PANELS

**Efficiency up to 18%** – slightly less efficient but more affordable

**Suitable for large-scale installations** where cost per watt is critical

Best suited for regions with high solar activity

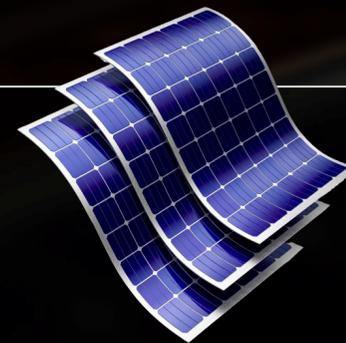


## BIFACIAL PANELS

Generate energy from both the front and back sides

**Enhanced efficiency** – up to 30% additional output thanks to reflected light

Ideal for installation at industrial sites and large solar power plants



## THIN-FILM PANELS

Lightweight and flexible, making them ideal for unconventional applications

Capable of operating under diffused light and high humidity conditions

**Lower efficiency** – typically around 10–12%

# AND THEIR FEATURES

# INSTALLATION AND INTEGRATION OF SOLAR PANELS | Key installation steps

## SITE ANALYSIS

Evaluate energy consumption and determine the optimal system capacity

Choose a location with maximum solar insolation



## SYSTEM DESIGN

Define the wiring layout and panel placement

Calculate the optimal tilt angle and assess the need for tracking systems



## MOUNTING STRUCTURES AND FASTENINGS

Install supporting structures (roof, facade, or ground mounts)

Secure the panels to protect them from weather and mechanical stress

## GRID CONNECTION AND SYSTEM CONFIGURATION

Install inverters to convert DC to AC power

Integrate the system with the building's energy network or a centralized grid



## TESTING AND COMMISSIONING

Verify energy output under various operating conditions

Implement monitoring systems to track performance

# INNOVATIVE INSTALLATION TECHNOLOGIES

## SOLAR TRACKERS

Automatically adjust the tilt angle to boost generation by 20–30%

## SMART CONTROLLERS

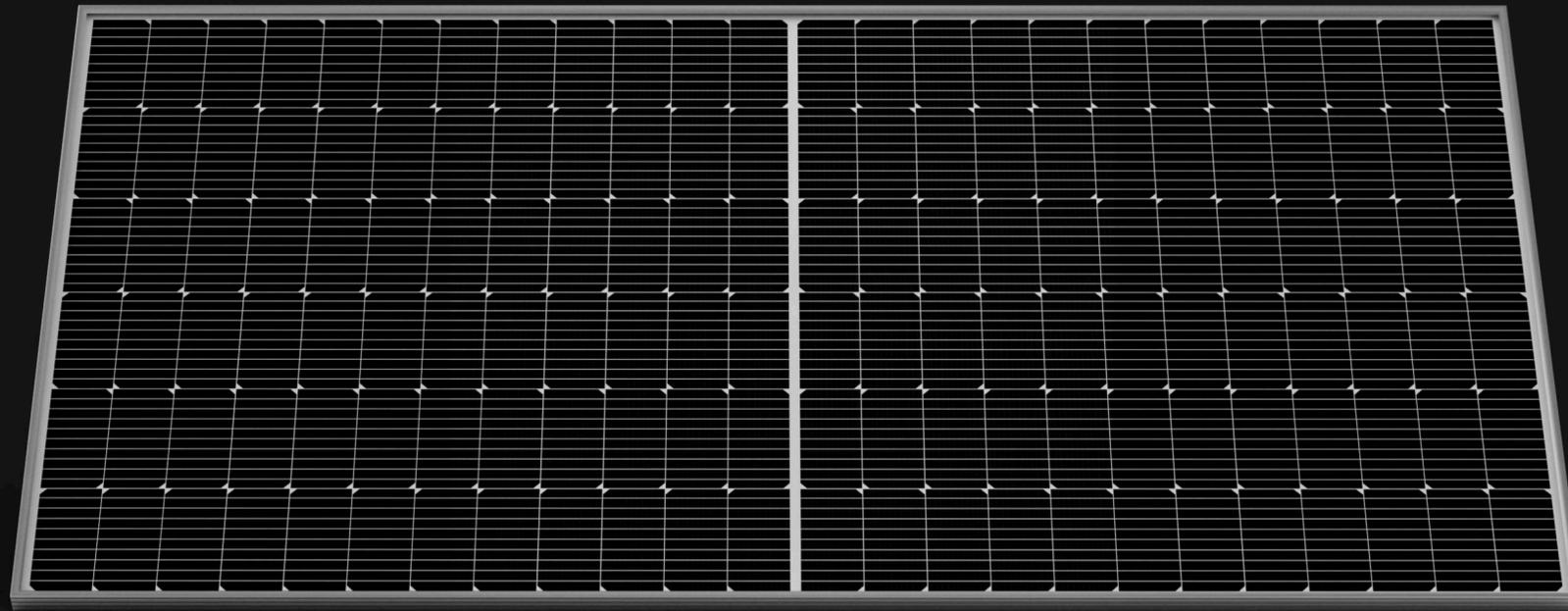
Analyze energy consumption and optimize system performance

## HYBRID SYSTEMS

Combine solar panels with energy storage for autonomous operation

# FINANCING SOLAR PROJECTS

Loans, Grants, And Subsidies



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## GOVERNMENT SUPPORT AND SUBSIDIES

Governments in many countries encourage the development of solar energy by offering tax incentives, subsidies, and reimbursement programs. In the U.S., the Investment Tax Credit (ITC) allows businesses and homeowners to offset a portion of the costs of installing solar panels. Similar programs exist in Europe, Canada, and Australia

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## BANK LOANS AND GREEN FINANCING

Financial institutions offer green loans with low interest rates for investments in solar energy. In recent years, major banks and international organizations such as the World Bank and the European Investment Bank have allocated billions of dollars to fund renewable energy projects

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## PRIVATE INVESTMENTS AND CROWDFUNDING

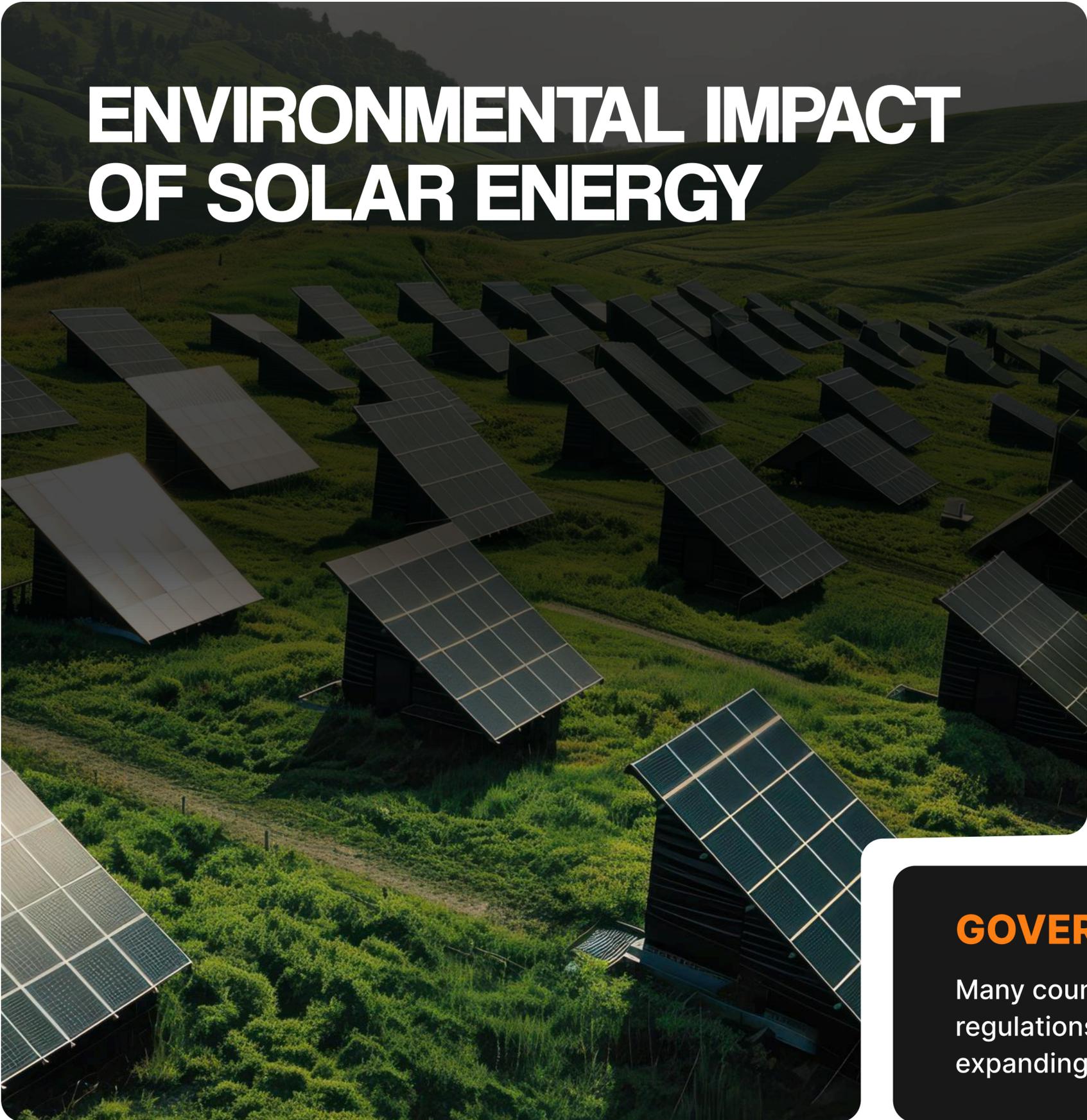
The growing interest in ESG (Environmental, Social, and Governance) investments has led to an increase in private capital in the solar industry. Large funds and venture capital investors finance solar projects expecting long-term stable returns. Additionally, crowdfunding platforms are emerging, allowing private investors to participate in the development of solar power plants

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## LEASING AND POWER PURCHASE AGREEMENTS (PPA)

For businesses and homeowners, leasing models allow access to solar panels without upfront costs. Long-term Power Purchase Agreements (PPAs) enable companies to buy electricity directly from solar farms at fixed prices, reducing exposure to market fluctuations

# ENVIRONMENTAL IMPACT OF SOLAR ENERGY

An aerial photograph of a solar farm. The solar panels are arranged in neat rows on a hillside, tilted towards the sun. The surrounding landscape is lush and green, with rolling hills in the background under a clear sky.

## REDUCING CO<sub>2</sub> EMISSIONS

Unlike traditional power plants, solar panels generate electricity without harmful emissions. One megawatt-hour (MWh) of solar energy reduces carbon dioxide emissions by 1,500 pounds, making it an effective solution for lowering the global carbon footprint

## WATER CONSERVATION

Thermal power plants consume vast amounts of water for cooling, whereas solar power generation requires no water resources, which is especially crucial for arid regions

## A RENEWABLE AND SAFE ENERGY SOURCE

Solar energy is inexhaustible and does not harm the environment during generation. It reduces dependence on fossil fuels and supports the transition to sustainable energy solutions

## GOVERNMENT SUPPORT

Many countries are implementing environmental regulations and incentive programs aimed at expanding solar energy and reducing greenhouse gas emissions

# APPLICATIONS OF SOLAR PANELS ACROSS DIFFERENT SECTORS



## INDUSTRIAL SECTOR

Solar energy helps businesses reduce electricity costs and improve energy efficiency. Panels are installed on factories, logistics centers, and warehouses, ensuring stable and uninterrupted power supply



## COMMERCIAL REAL ESTATE

Shopping malls, office buildings, and hotels utilize solar panels to lower operational costs. Energy storage integration enhances self-sufficiency and minimizes reliance on external power grids



## RESIDENTIAL HOMES AND FARMS

Homeowners benefit from lower utility bills and protection from rising electricity rates. Farmers use solar panels to power irrigation systems, lighting, and automated crop management



## PUBLIC AND MUNICIPAL PROJECTS

Urban infrastructure, including street lighting, transportation hubs, and public facilities, is increasingly adopting solar energy to cut government expenses and reduce carbon emissions

# BARRIERS TO SOLAR ENERGY DEVELOPMENT AND SOLUTIONS

## High Initial Investment Costs

Although the cost of solar panels has dropped significantly over the past decade, installation and infrastructure expenses remain a barrier to widespread adoption

**Solution** – Government subsidies, tax incentives, and leasing models allow businesses and homeowners to benefit from solar energy without large upfront investments

## Volatile Material Costs

The prices of silicon, lithium, and rare earth metals used in solar panels and batteries are subject to market fluctuations

**Solution** – The development of alternative materials such as perovskites and the localization of manufacturing to reduce reliance on global supply chains

## Underdeveloped Infrastructure

In many regions, power grids are not equipped to handle distributed solar generation, limiting new solar installations

**Solution** – Modernizing the grid, implementing smart energy systems, and expanding peer-to-peer energy trading, allowing consumers to exchange excess electricity directly

## Limited Performance at Night and During Low Sunlight

Solar panels do not generate electricity at night, and their efficiency decreases on cloudy days

**Solution** – Energy storage systems (ESS), integration with hybrid energy grids, and the development of solar-to-hydrogen technologies that store excess energy as hydrogen for later use

## Regulatory and Bureaucratic Barriers

In some countries, obtaining permits for solar installations and grid connections can take months or even years

**Solution** – Simplifying regulations, standardizing approval processes, and implementing digital platforms for faster documentation and permitting



# NEW CONCEPTS AND TECHNOLOGIES

## TRANSPARENT SOLAR PANELS

Research into transparent photovoltaic elements enables the integration of solar panels into building windows, facades, and even smartphone screens. These technologies are currently in testing and could eventually replace conventional glass surfaces, generating energy without altering architectural aesthetics

## STRATOSPHERIC SOLAR STATIONS

Scientists are developing concepts for solar power stations in the stratosphere, where sunlight is more intense than on Earth's surface. These stations could transmit energy wirelessly to the ground. Similar research is being conducted for satellite-based solar energy, where orbiting solar farms could supply electricity to remote regions

## SOLAR-TO-HYDROGEN TECHNOLOGIES

Hybrid solar systems use excess solar energy to produce hydrogen, which can be utilized in energy storage and transportation. This solves the issue of intermittent energy production and enhances the versatility of solar power plants

## QUANTUM DOTS AND NANOMATERIALS

Quantum dot technology can increase solar panel efficiency beyond **40%** by capturing a wider spectrum of sunlight. Meanwhile, advances in flexible nanomaterials could lead to ultra-lightweight solar panels that can be embedded in textiles, vehicles, and household appliances

## SMART ENERGY SYSTEMS

In the future, solar power will integrate into Smart Grids, where each consumer can become an energy producer, selling surplus electricity directly to others through blockchain-based platforms. This shift will create a decentralized energy system, reducing reliance on traditional power grids

# HOW SOLAR ENERGY IS TRANSFORMING THE MARKET AND CREATING NEW BUSINESS MODELS

## DECENTRALIZED ENERGY SYSTEMS

- ▶ Traditionally, energy supply relied on large power plants and centralized grids
- ▶ With the rise of solar power generation, localized energy systems (microgrids) are emerging, allowing homes, businesses, and farms to both consume and sell excess electricity



## SMART CITIES AND ENERGY INDEPENDENCE

- ▶ Solar technology is becoming the foundation of smart cities, providing power for transportation, lighting, and essential infrastructure. This reduces dependence on centralized grids and enhances urban energy efficiency

## PEER-TO-PEER (P2P) ENERGY TRADING

- ▶ New technologies eliminate intermediaries by enabling solar panel owners to sell electricity directly to neighbors or businesses via blockchain-based platforms, automating payments and consumption tracking

## VIRTUAL POWER PLANTS (VPPS)

- ▶ Interconnected solar panels create a Virtual Power Plant (VPP), enabling energy distribution between users, grid stabilization, and participation in the energy market as full-scale producers

## HYBRID SOLUTIONS FOR BUSINESSES

- ▶ Companies are adopting hybrid energy systems, combining solar power with battery storage and traditional energy sources. This approach reduces costs and enhances resilience against energy price fluctuations

# SOLAR ENERGY IN URBAN INFRASTRUCTURE



## ENERGY-EFFICIENT CITIES

Solar panels are playing a vital role in smart city development, powering buildings, transportation, and street lighting. Integrating renewable energy sources helps reduce grid strain and lower municipal costs



## ROOFTOP SOLAR POWER PLANTS

High-rise buildings and commercial centers are increasingly integrating solar panels into their architectural designs. This cuts electricity costs and utilizes rooftop space for energy generation



## SOLAR-POWERED TRANSPORTATION

Innovations in solar technology enable charging stations for electric vehicles and autonomous public transport to operate entirely on solar energy. Some buses are already equipped with integrated solar panels to extend their range

## SOLAR STREET LIGHTING

Standalone solar-powered streetlights reduce municipal grid demand and provide lighting in remote areas without costly infrastructure expansions. These systems include energy storage, ensuring continuous operation even during cloudy days



## ENVIRONMENTAL AND ECONOMIC BENEFITS

Solar energy adoption in cities reduces CO<sub>2</sub> emissions, lowers reliance on centralized power grids, and allows municipalities to reallocate budgets towards infrastructure development and sustainability initiatives



# TRENDS AND FORECASTS IN SOLAR ENERGY

## EFFICIENCY IMPROVEMENTS IN SOLAR CELLS

Modern solar panels have reached 23% efficiency, but new developments in perovskite cells and multi-layer structures are expected to push this figure to 30-35% in the coming years. This will allow smaller panels to generate the same amount of power, optimizing space and cost

## ADVANCEMENTS IN GRID INFRASTRUCTURE

Over the next decade, massive grid modernization is anticipated, shifting toward decentralized energy models. Solar panels will be integrated into intelligent energy networks, allowing each consumer to act as both a user and a producer of electricity

## SOLAR ENERGY AND HYDROGEN TECHNOLOGIES

Ongoing research focuses on integrating solar power plants with green hydrogen production systems. This technology will store excess energy for use in industry, transportation, and heating applications

## HYBRID SOLAR INSTALLATIONS

The development of hybrid systems combining photovoltaic and thermal technologies will enable buildings to generate both electricity and heat, reducing reliance on traditional energy sources

## ECONOMIC FORECASTS

According to the International Energy Agency, by 2050, solar energy will become the world's primary electricity source, covering over 30% of global energy demand. Falling technology costs and stricter environmental policies will drive the gradual phase-out of fossil fuels

# WHY SOLAR ENERGY IS AN ATTRACTIVE INVESTMENT

## HIGH PROFITABILITY AND STEADY GROWTH

- ▶ Solar energy is one of the fastest-growing industries in the global economy. In 2023, investments in solar projects exceeded \$380 billion, and by 2030, this figure is expected to double. Declining technology costs and increasing demand for clean energy make this sector highly lucrative

## STABLE DEMAND AND GOVERNMENT SUPPORT

- ▶ Many governments offer subsidies, tax incentives, and long-term contracts (PPA) for solar energy, ensuring predictable revenue streams with minimal risk for investors

## REDUCED VOLATILITY AND CRISIS RESILIENCE

- ▶ Unlike traditional energy markets, which are highly affected by fluctuations in oil and gas prices, solar power offers stable costs and fixed rates, making it an ideal choice for long-term, low-risk investment strategies

## INTEGRATION INTO ESG STRATEGIES

- ▶ Institutional investors and corporations are increasingly allocating capital to sustainable projects. Solar energy investments not only generate financial returns but also align with Environmental, Social, and Governance (ESG) principles, enhancing their appeal in global financial markets

## DIVERSIFICATION OPPORTUNITIES

- ▶ The solar sector offers various investment options, from direct funding of solar power plants to equity stakes and green bonds in companies that manufacture solar panels, inverters, and energy storage systems



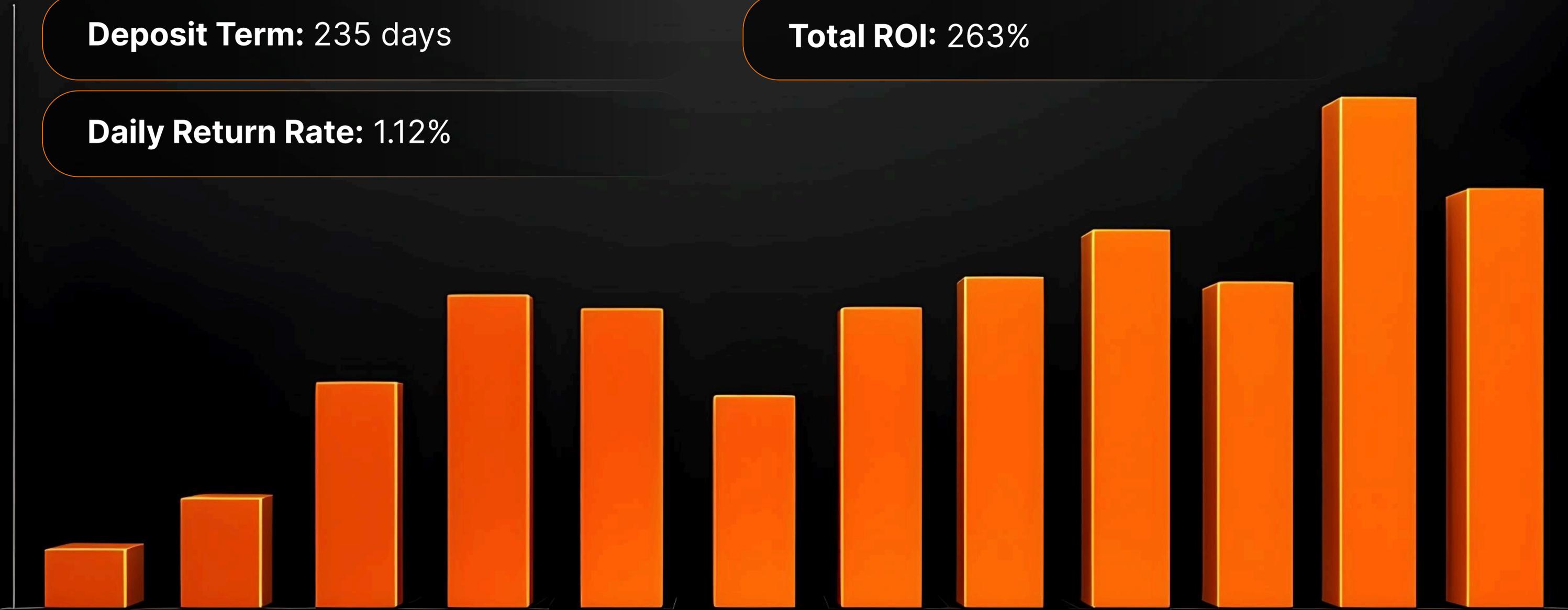
# INVESTMENT OPPORTUNITY

By opening a deposit with a minimum investment of **\$14,000**,  
your balance will reach **\$36,820 in 235 days**

**Deposit Term: 235 days**

**Total ROI: 263%**

**Daily Return Rate: 1.12%**



# DEL MAR ENERGY INC.

- ▶ is an american holding company primarily focused on the extraction, processing, and sale of oil
- ▶ The company also engages in electricity production and distribution; manufacturing, repairing, and leasing electromechanical equipment; designing and constructing wind, solar, and geothermal power plants; extracting coal and gas; and developing oil and gas infrastructure

Having started out with just a few oil rigs in **2002**, we began developing and manufacturing with our own technologies in **2012**

today

**91%**



of our products are exported to more than **40** countries worldwide

# LEADERSHIP TEAM



## MICHAEL LATHAM

Founder/CEO

Michael Latham is the founder and CEO of Del Mar Energy. He established the holding company in 2002 in Texas, successfully building and growing industrial sectors

01 ——— 04



## NICK KAUFMAN

COO (Chief Operating Officer)

Nick has served as COO since 2018. A Texas native and graduate of the University of Massachusetts, Nick initially worked in law. He first encountered Del Mar Energy in 2013 and officially became a partner in 2018. Nick introduced many of the modernized technologies now used in production

02 ——— 04



## STEFAN RUSSO

CIO (Chief Information Officer)

Stefan started his internship at Del Mar Energy in 2016. In less than five years, he advanced from intern to company director

03 ——— 04



## THOMAS LIEBERMAN

CMO (Chief Marketing Officer)

Born in 1984 in Nevada, Thomas studied at a local university before moving to New York in 2006 to work in marketing and public relations. He began collaborating with Del Mar Energy in 2011. Prior to joining the company, Thomas worked on promoting brands such as P&G, Gillette, and General Motors

04 ——— 04