

# Emerging PV Markets



## Success on New Terrain

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*The booming regions of the world's sunbelt are attractive for large-scale PV projects*

Investing in solar energy, especially PV power plants, offers the best development prospects in countries such as South Africa, India, Chile, Mexico and in the Middle East.

This is due to each region's significant increase in energy demand and the favorable climates. Highly populated countries within the global sunbelt need more and more energy to supply their developing economies. In fact, a great deal more energy is needed than can actually be produced, a situation further complicated by the steep rise in electricity prices for conventional energy sources.

So why not take full advantage of the solar energy to expand the electricity supply? Utilizing solar energy not only preserves the environment and conserves resources, but is already capable of achieving grid parity in some countries and will soon be significantly cheaper than conventional energy sources in terms of price per kWh. The entire solar sector is now focused on emerging markets, as established markets for renewable energies are currently in a transition phase due to government subsidy cutbacks, the decline in solar panel prices and company insolvencies.

Business success in these markets requires technologically advanced products and system solutions combined with longstanding experience and a solid company structure with global reach. Power plant owners and investors can achieve high yields and a secure cash flow despite the lack of state subsidies, clear regulations, and pervasive bureaucratic hurdles.

## Mastering Challenges Together

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### *Quality and experience to overcome various obstacles*

Emerging markets bring a host of challenges for the effective planning, implementation and operation of PV power plants.

### *Complicated bureaucracy*

PV projects in emerging markets must first contend with a lack of political understanding, laws and regulations in the renewable energy sector. Additional factors with a significant impact, especially on a financial basis, include complicated bureaucracies, different business cultures and infrastructural shortcomings.

### *Unstable power distribution grids*

Additional difficulties involve unresolved issues regarding grid stability, feed-in regulations and grid management capabilities of large-scale PV power plants. In such cases close cooperation is the only way to build trust and seize new opportunities. SMA employees are active around the world in helping define and establish requirements and standards through direct communication with electric utility companies and government authorities.

### *Changing environmental conditions*

Difficult climates often require specially designed inverters and other PV components. Inverters must be able to withstand temperatures higher than 50 degrees Celsius or far below freezing, sand and dust, humidity combined with corrosive effects of salty air and special requirements in high altitudes or during the monsoon season.

### *Trust in the specialist*

SMA Solar Technology AG has supplied inverters and leading system solutions for PV power plants with different architectures and sizes on a global scale for more than 30 years. We are the world market leader with over 5,500 employees and more than 23 gigawatts of installed PV capacity worldwide. SMA provides high quality products and technical expertise through all of its 20 subsidiaries located in 21 different countries on six continents.

### *Security during the planning phase*

Quality and know-how are not only critical for products, system solutions and the implementation of PV projects, but also provide our partners with confidence during planning and technical design phases.



Reliable system solutions that offer the best performance: SMA Power Plant Controller, Sunny Central CP XT, Sunny Tripower Economic Excellence, Transformer Compact Station, Optiprotect string monitoring and Sunny String Monitor

## PV Power on Its Way

*India, South Africa and Chile – three emerging PV markets*

### *India*

- » 1.2 billion inhabitants
- » 1,269,345 square miles
- » 300 sunny days per year
- » 8.5% economic growth
- » Target: 20 GW of solar power by 2022
- » Challenge: extremely varied climates, infrastructure, grid management capabilities

### *South Africa*

- » 50 million inhabitants
- » 470,693 square miles
- » 320 sunny days per year
- » 3.1% economic growth
- » Target: 8.4 GW of solar power by 2030
- » Challenge: climate, infrastructure, grid stability

### *Chile*

- » 17.3 million inhabitants
- » 292,258 square miles
- » 310 sunny days per year
- » 6% economic growth
- » Target: 7 GW of energy growth by 2020, mainly from renewable energy sources
- » Challenge: heat, extreme altitudes, grid capacity

## Focusing on Quality and Innovation

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*Energy management and power storage solutions are the future*

The balance of power is shifting in the solar sector. So far Europe and North America have been the focus, but now countries located in the global sunbelt are taking the spotlight. Strength in terms of grid stability and energy management is paramount in order to ensure the success of PV projects in emerging markets. The future of PV plant design will focus almost exclusively on cost-efficiency and financing methods rather than subsidy tariffs.

SMA offers superior technical solutions to climatic and structural challenges. Generating energy from a combination of renewable energies and fossil fuels is not new for SMA. Our engineers have been working on projects with hybrid solutions for more than 30 years. Today SMA is able to offer intelligent, efficient and cost-effective systems across the globe.

In the sunbelt regions there is often a demand for integrated energy systems rather than single product solutions. In particular, the market for decentralized energy systems as an alternative to grid power is booming. Complex system solutions are required to complement or even replace diesel generators, which are used to power entire industries in some regions.

PV-diesel hybrid solutions and power storage technologies are the way of the future for these areas because, thanks to its low cost per kWh, solar energy offers the best alternative to conventional energy types.

SMA can rely on more than 30 years of market leadership to help create innovations in the area of smart grids, energy management, hybrid and storage solutions. This market leadership is accompanied by a solid global corporate structure and a deep understanding of the political, economic and social conditions in emerging markets.

SMA America, LLC  
+1 916 625 0870  
[www.SMA-America.com](http://www.SMA-America.com)