

# Chapter 27

## Government Policies and Private Investments Make for a Bright Cleantech Future in India

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### ABSTRACT

*Written from the perspective of private equity investment, this chapter highlights the factors needed to support clean technology development, and in particular, the importance of an enabling policy environment. Drawing from the experience of a private equity fund that seeks out environmental companies and develops them into viable international enterprises, this chapter showcases examples in India whose bottom lines include social and environmental benefits for all. Cleantech has a new resonance among law makers. International urgency on climate change issues and carbon emission reduction are converging with national government policies that seek to support clean energy, green jobs, as well as lessen industrial pollution and promote waste treatment, recycling and cleaner production. This is good news for all, including discerning green investors.*

*India's Nano isn't just a car, but also a symbol of a wave of technological innovation sweeping the country, which is helping revitalize India's business sector even as it struggles to navigate the rocky waters of a global downturn. And at the crest of that wave is Environmental and Sustainable technology.<sup>1</sup>*

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### INTRODUCTION

The cleantech<sup>2</sup> sector is only at embryonic stage, but its growth, expansion and deployment could be as dramatic, universal and as radical as the Internet revolution. Its spinal cord has grown around the clean and renewable energy sector but this is only one aspect of the entire gamut of processes and

technologies that we are going to need to clean up the systemic mess that our generation has inherited and continues to create. Revolutions<sup>3</sup> bring enduring social, political and economic change and if the effects of global warming are to be mitigated then everyone has a stake in ensuring that the cleantech sector delivers.

In our lifetime, we will witness not only a discerning demand for clean energy sources, but also a sea-change in the ways that science, engineering, business innovation and public policy collaborate with each other for a more sustainable future that will affect us at home and work.

The consultancy Clean Edge, in its *Carbon-Free Prosperity 2025 Report*, identifies solar, green building design, wind, sustainable bio energy and smart grid technologies as ‘The Big Five Opportunities’ in cleantech. Runners up include wave power, geothermal and clean transportation systems<sup>4</sup>. But if in fact we need systemic cleaning up, then we will also be looking to clean up our waterways, our agriculture and food production systems, our outer space, our entire mode of living. While technology development has always evolved over time to be better, faster and cheaper, it is now going for cleaner. As the underlying assumptions of the drivers of economic growth change, we can expect to see a shift away from the big centralized grid, industrial-type technologies to smaller more mobile technologies, akin to what has happened in the electronics industry, where we have witnessed an amazing miniaturization, multi-tasking and customization of technologies.

Policy change usually follows technological innovation. Germany has been leading the way in many ways, giving birth to one of the world’s more verdant green industrial heartlands. A straightforward and effective policy measure, called the Feed-in Tariff (FIT) obliges power distributors to purchase electricity from renewable sources at a fixed rate for a fixed period of time above market prices. The German FIT sets the price for green power far higher than market rates, and in the case of solar energy this had been up to seven times the

price. As a result, Germany’s renewable energy industry employed about a quarter of a million people and had brought in almost \$40 billion revenue in 2007<sup>5</sup>. Increasingly the attractiveness of India and China has been rapidly improving based on new renewable energy policies that subsidize clean energy production. However, in both these countries there is general shortage of energy and hence in a number of cases, the renewable energy produced is able to be meet the return sought by equity investors without excessive additional subsidies.

## **INDIA PAVES A WAY TO A CLEAN FUTURE**

India represents an exciting frontier in the cleantech sector, with small, medium and large-sized companies addressing the needs of domestic and international markets alike. The country still relies very heavily on fossil fuels to power its industrial production. This places it in the top five largest emitters of carbon dioxide in the world, while more than 400 million of its population lacks access to basic electricity. At the same time, the country is making important new strides in the clean sector, capitalizing on its own massive domestic market, a history of technology innovation and a skilled science and business-literate workforce. India offers an extremely attractive market for Environmental Technologies, Equipments and Services. The total market size was estimated at USD 5.29 billion in 2006 by the US Department of State. Since the early 1990’s the market for clean technologies has been growing at an annual rate of 15%.

Indian cleantech investments are estimated to total around US\$150 billion over the next ten years, according to a new HSBC<sup>6</sup> report. The report estimates a reduction in carbon emissions by 18% over that period compared to business-as-usual projections. Wind energy (in which India is already the world’s fourth largest market), hydro and solar power, biomass, biofuels, clean coal

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