



## SILICON INDUSTRIAL CLUSTER — TRINIDAD & TOBAGO

### Clean Tech Opportunities in Trinidad and Tobago

Feasibility has been completed for the establishment of a manufacturing complex for plants in four key areas of solar, silicon and glass manufacturing. These four areas include Metallurgical Silicon (MGSi), Polysilicon (PolySi), Float Glass, and Integrated Photovoltaic Manufacturing (Ingot, Wafer, Cell and Module) (PV).

An independent feasibility study was conducted by the Float Glass Consortium (UK), Viridis IQ (Germany) and SiTek Limited (Trinidad) to test the concept, and concluded that Trinidad was cost competitive against any global source of glass currently imported into Latin America, the Caribbean and the United States. The study has also shown Trinidad and Tobago to be in the top quartile for low cost silicon processing. The cost savings from these plants, combined with the availability of high quality of engineering talent, will aid in allowing the country to produce low cost and high quality PV panels for the Americas, as well as generating substantial returns for investors.

Each of the proposed plants can operate independently with substantial returns for investors. However, due to significant synergies and cost advantages in co-locating the plants, a 250 acre site in Point Lisas has been proposed for the location of these facilities. The site is in close proximity to Trinidad's robust

petrochemical and LNG industries and next to the Port of Point Lisas. The location offers easy access to the United States, Europe, Latin America and the Caribbean. Additional advantages of this site are its industrial infrastructure, industrial gas and chemicals, favourable geotechnical conditions and good electrical grid connection and utilities.

## Market Opportunities

- ❖ Trinidad and Tobago offers a highly competitive cost base for the manufacture and supply of solar modules, with many advantages for investors. The country has the 8<sup>th</sup> lowest energy cost in the world<sup>1</sup> and the lowest in the region<sup>2</sup> thanks to an abundance of natural resources. Its extensive activities in the petrochemical industry not only provide low energy costs but also highly skilled labour and experience in working with international investors.
- ❖ The country's strategic location allows for low shipping costs for the import of materials, and also allows easy access to key markets in the Americas and the Caribbean. Trinidad and Tobago can provide an extended market of 947 million people through trade agreements with Venezuela, Colombia, the Dominican Republic, Costa Rica, France, USA, Canada, Cuba and Europe<sup>3</sup>.
- ❖ Increasing global demand for energy, combined with reducing costs of solar manufacturing and installation create lucrative opportunities in the sector. Solar energy installations grew at an average of 45% per year for the past 15 years, reaching US\$100bn worth of installations in 2013, while annual growth is predicted to be 15 to 20% for the foreseeable future<sup>4</sup>. In addition to growing demand in some of the world's largest economies, such as USA, China, India, Southern Africa, Europe and Japan, there will be increased regional demand from Caribbean nations as they seek energy independence and to reduce imports of fossil fuels.



<sup>1</sup> Feasibility of a Solar, Silicon and Glass Manufacturing Cluster in Trinidad and Tobago. Prepared by SiTek Ltd, 2014

<sup>2</sup> Climatescope 2015/InvesTT

<sup>3</sup> InvesTT

<sup>4</sup> Feasibility of a Solar, Silicon and Glass Manufacturing Cluster in Trinidad and Tobago. Prepared by SiTek Ltd, 2014

- ❖ In terms of demand for glass, the Latin American and Caribbean regions are undersupplied with glass and imports some 25% of their glass needs, while ultra-pure glass for Solar-PV modules is a great value-add opportunity for a float glass plant.

## Investor Testimonials

*“Advantages include the presence of 600 billion cubic meters of proven natural gas reserves, a democratic government and a 50-year-old petrochemical industry. Trinidad also offers available land, skilled labor and easy access to North and South America.”*

Craig Blizzard, Marketing Director, LyondellBasell Industries.

## Incentives

Trinidad and Tobago wide range of incentives for manufacturing investments through government legislation:

- ❖ The Fiscal Incentives Act which includes exemption on customs duties on the construction of an approved project, exemption from value added tax, and exemption on income tax on dividends or other distribution (other than interest) out of profits or gains derived from the manufacture of the approved product during the tax holiday period.
- ❖ The Free Zones Act allows for exemption from corporation tax, exemption from import duties on capital goods, parts and raw materials for use in the construction and equipping of premises in connection for the approved activity, exemption from value added tax, exemption from withholding taxes, exemption from container examination fee, exemption from work permit fees, and exemption from land and building taxes.
- ❖ The Customs Act allows for duty free treatment for manufacturing enterprises for raw materials, machinery and equipment and, in some cases, packaging material.

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