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Why Latin America is a fertile ground for green tech industries

Rapid urbanisation has made south and central America an attractive testbed for innovation in sustainable living

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Latin America is becoming a global arena for green innovation as foreign companies head for the region to partner with a rapidly growing local clean technology sector.

Abundant resources, favourable regulations and government, and multilateral initiatives are nurturing international collaboration in the race to commercialise sustainable technology. And as the costs of technologies such as solar PV fall, a favourable investment climate is enabling local market entrants to become competitive and scale up.

"Green tech industries are growing fast in Latin America. The environment has been transformed in the past five years," explains Luis Aguirre-Torres, chief executive of Green Momentum, a consultancy based in Mexico City. "I have seen a significant increase in investment, both in the development of technology and in project development, and large European or North American companies are flocking to Mexico, Brazil, Colombia and other countries to launch projects."

There are no estimates of the size of the sustainable technology market in Latin America but the scale of investment in renewable energy offers a clue: the Climatescope 2013 report says the region captured $16.8bn (£10.2bn), or 6%, of global clean energy investment in 2012.

Renewable energy has been the main focus of innovation, and bodies such as the Inter-American Development Bank (IDB) have an optimistic outlook for the region. According to GTM Research, Latin America is already the global frontier for unsubsidised solar markets.

IDB energy specialist Arnaldo Vieira de Carvalho says: "Latin America already has an energy matrix that is cleanest of all regions: in terms of power generation, we have almost 70% renewables - three times the world average."

Brazil leads the field as a hydro power giant with the world's largest potential wind resources and vast biomass capacity, but renewables in Central America have grown rapidly; Mexico is challenging Brazil in wind, leads the region in solar and has huge geothermal reserves.

The potential scale of Brazil's green economy hints at the overall size of this market, with the Carbon Trust pointing to the country's "$200bn low carbon opportunity". In 2013 the UK's Technology Strategy Board (TSB) led 17 clean tech companies on a successful trip to the country.

Several factors are driving the growth of sustainable technology in Latin America. The region is turning to new green solutions for old development problems typified by the pollution, water shortages, waste disposal and traffic congestion challenges of its cities. Rapid urbanisation has made it a testbed for mass transit systems, and its built environment and young population lend themselves to sustainable housing experiments.

Natural resources are the main source of growth and according to José Miguel Benavente, head of the IDB's IT and innovation division, as technology used in traditional sectors such as mining has barely changed in 50 years. "The obvious problem with natural resources is that they generate negative externalities, and most of this production is in the form of what engineers call 'continuous processes' - it's very difficult to make changes through technological improvements."

Latin America's abundance of resources and geography are also luring innovators to natural laboratories such as Chile's desert and Antarctic regions. Vast open spaces and skies are free of the obstacles faced by companies elsewhere. The policy climate has also warmed to clean tech as governments take a proactive role.

Projects including the Clean Technology Fund and UNEP's Green Growth Initiative, and thinktanks such as the Global Green Growth Institute, are working with governments across nations to cataylse clean tech strategies.

But government interventions pose questions about the role of the private sector in driving green growth. A World Bank report found that Latin America is hampered by low innovation and a lack of "transformational" entrepreneurs. So does this mean Latin American researchers are sitting on the sidelines? Some studies of R&D in the region certainly suggest expenditure on innovation is comparatively low.

Mike Pitts, who led the TSB trip to Brazil, says: "There's definitely a lot of indigenous innovation, but one of the challenges we saw is that a lot of it is top down. What seems to be lacking is some of the more organic growth - the bottom-up stuff."

Observers believe this is set to change as clean tech companies take advantage of an improving investment climate, with national development banks like Brazil's BNDES pushing inward investment hard. Even small countries are fostering an enabling environment for green tech: Climatescope 2013 put Nicaragua third in the region for its policies.

As Claudio Alatorre, an IDB climate change specialist, says: "My impression is that many of the renewable energy projects that we are seeing have some local participation. It is not completely fronted by international companies and national development banks are playing a very important role."

There is clearly no shortage of local ideas as revealed by clean tech conferences such as Brazil's FIMAI and Mexico's GREEN Expo, as well as competitions such as the Cleantech Challenge México and the IDB's IDEAS energy innovation contest.Aguirre-Torres says: "Technology companies in Latin America are going to be very busy trying to satisfy demand from domestic markets. But globalisation is a priority for governments, so the next step has to be to increase global market share."

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