

# Demand forecasts for passive infrastructure equipment and services in Central and South America



TowerXchange checks in on demand across six different categories of equipment and services in the 14 most active CALA tower markets



Central and South America are interesting regions, home to dozens of towercos and very different local telecom markets. In spite of significant macroeconomic challenges, CALA markets have been able to attract considerable investments and have been embracing the independent towerco business model over the past seven years. In this market by market review, TowerXchange focuses its attention of opportunities for equipment and service providers as well as offering an update on who the key players are in terms of towercos and MNOs in each CALA market.

**Keywords:** Access Control, Americas, Argentina, Asset Lifecycle Platform, Batteries, Belize, Bolivia, Brazil, Build-to-Suit, Capex, Central America, Chile, Colombia, Costa Rica, Cuba, DAS, Dominican Republic, Ecuador, El Salvador, Energy, Energy Storage, Guatemala, Honduras, Hybrid Power, IBS, Jamaica, Lawyers & Advisors, MNOs, Managed Services, Market Forecasts, Market Overview, Masts & Towers, Mexico, Monitoring & Management, Nicaragua, O&M, Off-Grid, On-Grid, Panamá, Paraguay, Passive Equipment, Perú, Procurement, RMS, Sale & Leaseback, Site Management System, Small Cells, South America, Steelwork, Strategic Consultancy, TowerXchange Research, Towercos, Unreliable Grid, Uruguay, Venezuela

## Read this article to learn:

- Which markets should be business development priorities for solution providers?
- What is happening in terms of new network deployments across the Americas?
- Which MNOs could still sell their towers and generate new business in terms of tower upgrades and O&M contracts?
- Which countries need towers and which projects are driving growth?
- Which are the hottest markets for small cells and DAS

In the run up to fourth edition of the TowerXchange Meetup Americas, taking place June 7 and 8 in Boca Raton, we offer our readers an exclusive analysis of where opportunities lie for tower manufacturers, turnkey providers, energy solution companies, RMS and site management system suppliers, access control experts as well as consultants.

In this article, we analyse the dynamics of the top fourteen markets in the region as well as provide snapshots of some of the other countries which are yet to see any towerco activity but might become interesting targets in the future.

Here are the specific categories we are analysing:

- **Energy:** our focus in this category is on backup and primary power solutions, energy storage and energy efficiency solutions.
- **RMS, ILM and access control:** is there need for remote monitoring and access control systems on most towers? Are they connecting to a NOC and to a Site Management or Infrastructure Lifecycle Management platform? And if not, should they?
- **How many new towers are being built in the region? And who is deploying 4G LTE hence densifying its network? Which portfolios are currently being sold, opening to a wave of upgrades on existing sites?**
- **Where is there demand for small cells, microcells, DAS and other infill and in-building solutions? And in which markets are the greater volumes of such solutions being deployed?**
- **Where are deals happening? Which countries are still designing their telecom and infrastructure legal framework? These are the markets where the expertise of consultants and law firms is high on demand!**



# Meetup Americas 2017

Meet the top 250 industry executives at this year's TowerXchange Meetup Americas, taking place on June 7 and 8 in Boca Raton, Florida!  
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## Brief commentary on a selection of CALA's less active telecom markets


- **Belize:** TowerXchange estimates that there are less than 100 towers in Belize, with no active towerco to date in this duopoly.
- **Cuba:** In 2016, Cuba and the U.S. have reinstated their diplomatic relations which is a first step towards a modernisation of the country's economy. However, the time isn't right yet for its telecom sector to open up to towercos, especially since to date there's only one, state-owned MNO, ETECSA and not a real interest in giving up the ownership of its infrastructure. That said, TowerXchange is aware of a number of solution providers and MSPs working with the MNO in the country.
- **Honduras:** The only known towerco in Honduras is Continental Towers and for now, there's been little visibility on the local industry and its potential with around 20% towerco penetration and the two carriers – Tigo and Claro – still holding on to their tower portfolios.
- **Jamaica:** TowerXchange is aware of only one towerco - Continental Towers Corp - active in Jamaica. Digicel and FLOW are both engaged in 4G deployment with the former having launched service earlier in 2016 and the latter actively building the network.
- **Panama:** SBA, PTI, Torrecom, Continental Towers and Torres de Panama are all active towercos in the country. And news on this market will be announced shortly! Panama is a stable market with four creditworthy MNOs - C&W, Movistar, Claro and Digicel - and high growth potential in terms of its overall economy.
- **Uruguay:** Uruguay is yet to welcome any towerco (beside a company called Uruguay Torres of which we don't know anything but the name...) but TowerXchange expects it to be the next target virgin market for towercos right after Paraguay. With a stable and competitive MNOs landscape - consisting of state-owned Antel, Movistar and Claro - we might see some towerco action in the near future.
- **Venezuela:** The local telecom sector is behind in terms of its development compared to the rest of the region, with mobile penetration below 100%. However, the market has been growing fast and local MNOs Movilnet and Movistar are both engaged in deploying 4G LTE across major cities.

Vendor opportunity matrix	Static assets	Energy	RMS, site management & access control systems	Turnkey infrastructure	Small cells, microcells, DAS and IBS	Advisors	MNOs	Towercos
<b>Argentina</b> 	High	Medium	Medium	High	Low	High	Claro Movistar Personal Nextel	American Tower Innovattel Plata Tower Company Teletower Argentina Tower 3
<b>Bolivia</b> 	Medium	Medium	Medium	Medium	Unknown	Low	Entel Tigo Viva	N/A


Argentina has seen its attractiveness to towercos and the investment community going from low to very high in just over eighteen months. Thanks to a radical change in economic policies and overall government direction, Argentina is now welcoming its first wave of infrastructure firms from all over the Americas. With 16,000 active towers and as many as 10,000 more needed by 2020 to reach decent levels of coverage and capacity, Argentina is tower-hungry and eager to bring on the change. The four active MNOs are all deploying 4G and while relying on towercos for some BTS projects, they are also building sites in-house. Taxation regimes make it very difficult to complete substantial sale and leasebacks in the near term. While energy isn't an issue in major cities, MNOs still need some energy solutions for off-grid sites as they move out of urban areas as well as backup power on connected sites. The sheer volume of new build makes Argentina a hot market for tower manufacturers and turnkey infrastructure providers, although many suppliers will be local, while RMS solutions and access control solutions may be a greater priority than in some CALA markets as security is and is likely to remain an issue in the country. Given the population density of Buenos Aires, there is obvious potential for small cells, DAS and other IBS in Argentina, but that potential remains relatively untapped at this time.

Bolivia is yet to welcome any towerco into the country but this doesn't mean that its MNOs aren't investing in their networks. In fact, recent investments include Entel's US\$1bn five year plan which will focus mainly on enhancing the quality of mobile infrastructure and ensuring coverage of rural communities. On the other hand, Tigo invested US\$130mn to expand its infrastructure across the country and Viva committed US\$80mn back in 2015. So while the country might not be colonised by towercos in the near future, pockets of interesting opportunities remain for solution providers interested in doing business with MNOs. Tower manufacturers and turnkey infrastructure providers are likely to receive the lion's share of MNO spend on passive infrastructure, while there is an opportunity to evangelise a more robust approach to site monitoring, management and access control.

Electricity is a state-owned business in Bolivia and over 60% of it is currently supplied via thermal generation, with the remaining 40% being produced thanks to hydropower. The Bolivian government is heavily engaged in providing universal access to electricity and over-producing in order to export. However, some energy solutions are likely to be needed when coverage plans extend to rural communities beyond the reach of reliable grid.



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<b>Brazil</b> 	Medium	Medium	High	Medium	Medium	Medium	TIM Brasil Vivo Claro Oi Nextel Algar Telecom Sercomtel	American Tower SBA Communications Grupo TorreSur Phoenix Tower do Brasil Highline do Brasil CSS Brazil Tower Company AlfaSite Centennial QMC Skysites
<p>A deep recession combined with a forex crisis and Oi's bankruptcy have combined to make trading conditions less than easy in Brazil. However, the country is now on its path to recovery and we need to remember that Brazil still needs tens of thousands of towers to keep up with its data demand. With close to 5,000 subscribers per site, the potential for towercos to deploy thousands of new green field sites in the country remains. And while H2 of 2015 and 2016 have been a slow 18 months, there's general consensus that the BTS market will pick back up in 2017. Actually, since H2 2016 towercos reported a timid recovery and a slow return to "business as usual" with new search rings being issued and a higher level of spending by the mobile network operators. So what are towercos and MNOs likely to buy? Towers and especially new site typologies for urban, high density areas. Some energy solutions especially as they move their coverage plans towards the north of the country and Amazonian regions. RMS and access control have been only selectively deployed; more may be required, especially in light of the size of the country and its well known security issues. With most of the MNO towers already sold, expect towerco-on-towerco consolidation to keep advisors busy when the transaction pipeline resumes, which remains in stasis thanks to FX. Brazil potentially has huge untapped demand for small cells and DAS; a few DAS have been deployed by towercos, but it remains early days for this supplier category: the sheer scale of potential prompts us to categorise it as medium.</p> <p>Brazil is the largest electricity market in LatAm and 82% of it is produced via renewable sources (77% of it is hydroelectric) vs only 17% via fossil fuel. Drought years have caused serious energy crisis in the country such as the 2001-2002 one. Around 99.5% of the population has access to electricity.</p>								







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<b>Chile</b> 	Medium	Medium	Medium	Medium	High	Medium	Movistar Entel Claro WOM	American Tower Torres Unidas SBA Communications Balesia

Whereas towerco activity in the country has slowed down considerably as a result of the ‘Tower Law’, Law N. 20.599, which has created several restrictions in terms of new builds, permitting et cetera, this is driving MNOs and towercos to deploy lighter infill sites, driving demand for small cells, micro sites, poles and DAS. Entel has recently deployed an extensive 4G network across the country and WOM has been investing as much as US\$200mn since last year. And with American Tower, Torres Unidas, Balesia and - since Q3 2016 - SBA Communications all active in the country, suppliers can count on a pool of very professional towercos to negotiate with! Solution providers might need to look at doing business with MNOs as much as with towercos but Chile is a country that does need towers and there’s plenty of opportunities available for static asset manufacturers and turnkey infrastructure providers.


Chile relies heavily on both thermal (approx 38%) and hydropower (approx 62%) for its electricity supply. The government has been involved in the construction of various new hydropower and coal-fired thermal plants as well as a 500MW solar power generation project. Around 99.6% of the population has access to electricity.



Vendor opportunity matrix	Static assets	Energy	RMS, site management & access control systems	Turnkey infrastructure	Small cells, microcells, DAS and IBS	Advisors	MNOs	Towercos
<b>Colombia</b> 	<b>High</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>Medium</b>	<b>High</b>	Claro Movistar Tigo Avantel	American Tower Andean Tower Partners Torres Andinas Centennial Golden Comunicaciones Innovattel Uniti Towers PTI QMC Torres Unidas
<p>With Tigo reportedly looking at selling its towers in Colombia, the tower market is likely to become exciting soon! With a tower sale comes a strict evaluation of the portfolio - tower by tower - to evaluate the co-location potential of each site and its needs for structural upgrade and improved monitoring and control. In the meantime, there is an over-supply of build to suit firms active in the country, so expect towerco-on-towerco consolidation. With since the much awaited 700MHz auction is currently being held (Q1 2017), the market is gearing up for a wave of new deployments which is definitely good news for turnkey infrastructure providers, static asset manufacturers and energy solution suppliers offering backup power systems to MNOs. Colombia is one of the largest and most active markets in the CALA region and one suppliers should keep a close eye on! ExteNet Systems have been schooling another Digital Bridge subsidiary Andean Tower Partners in the deployment of small cells, while American Tower have been deploying DAS selectively.</p> <p>The Colombian electricity sector relies mostly on hydropower (65%) and thermal generation (35%). The country is yet to fully explore its renewable potential while a transmission line connecting Colombia with Central America is currently underway. The government has created a system of cross-subsidies between higher income / large consumers and low income / low users of electricity (and water). Around 97% of the population has access to electricity.</p>								
<b>Costa Rica</b> 	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Unknown</b>	<b>Low</b>	Kölbi Movistar Claro	SBA Communications American Tower Continental Towers Telesites TOCSA Phoenix Tower International
<p>Millicom is eyeing opportunities in Costa Rica and assessing a bid in the upcoming 4G spectrum auction. If Millicom becomes the fourth player in the country, this will open up new opportunities for all types of suppliers since the MNO will need to rollout rapidly to compete in an already fierce market. In terms of towercos, Costa Rica is the first country beyond Mexico where Telesites is pursuing its expansion. Telesites is one of six infrastructure firms active in the market and has built around 300 sites for Claro in 2016 and is now enhancing its presence in the country and selecting partners to work with.</p> <p>As of 2015, 93% of the country's electricity comes from renewable sources and in 2016, achieving 98% of electricity from renewable means, it has run on renewable sources for 110 days non-stop. A move in line with the government's plan to become 100% carbon neutral by 2021. Around 99.5% of the population has access to electricity.</p>								


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<b>Dominican Republic</b> 	Medium	Medium	Medium	Medium	Unknown	Low	Claro Orange Viva	Phoenix Tower International
<p>Phoenix Tower International has been expanding its presence in the country thanks to the acquisition of Teletower Dominicana and its 190 towers and of 545 sites from MNO Viva. Altice acquired both Orange and Tricom and turned the MNO market into a three-way contest. Since entering the market, Altice has announced investments of approximately US\$430mn for the triennium 2017-2020 which could very well mean imminent opportunities for tower manufacturers, I&amp;C and O&amp;M firms, as well as towercos. With the grid neither complete nor reliable, RMS and energy equipment suppliers could find plenty of business in the DR (and elsewhere in the Caribbean).</p> <p>The Dominican Republic has been going through years of electricity crisis, blackouts and overall inefficiency of the sector. To date, 86% of its electricity is supplied by fossil sources and it's been noted by the World Bank that the country's overall economic growth depends greatly on the improvement of its electricity sector. Around 98% of the population has access to electricity.</p>								
<b>Ecuador</b> 	Medium	Low	Low	Medium	Unknown	Low	Claro Movistar CNT	SBA Communications Innovattel Balesia Aplicanet
<p>Ecuador had been the quietest of all Andean States since its MNO landscape was seen less attractive for towercos: Claro enjoys a dominant position in the country and CNT is the government-owned player holding the third spot after Telefónica's Movistar. However, there is some potential growth to be found, attracting SBA Communications, Innovattel, Aplicanet and Balesia to all launch in the market in the last 18 months.</p> <p>56% of the country's installed electric capacity comes from thermal power and around 33% from large hydropower with the remainder 11% split between various forms of clean energy. In 2011, the government has launched regulation 004/11, creating its first FiT (Feed-in-Tariff) initially benefiting mainly photovoltaic projects and then open to non-solar FiT. Around 97.2% of the population has access to electricity.</p>								

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<b>El Salvador</b> 	<b>High</b>	<b>Medium</b>	<b>Medium</b>	<b>High</b>	<b>Unknown</b>	<b>Low</b>	Tigo Claro Movistar Digicel	SBA Communications Phoenix Tower International Continental Towers
<p>Belize notwithstanding, El Salvador is the least penetrated market by towercos in Central America (17%). However, El Salvador presents a stable MNO landscape with creditworthy players and plenty of network investments being announced. Among them, it's recent news that Digicel El Salvador is planning a US\$450mn investment to deploy 4G LTE network across the country, which means plenty of business opportunities for various suppliers including tower manufacturers, turnkey providers, RMS providers, security solutions and also energy and backup power options.</p> <p>El Salvador is the N. 1 producer of geothermal energy in Central America. Its hydroelectric sector is mostly public while the other sources are in the hands of private companies. To date, 40% of its electricity is supplied via fossil sources and 60% thanks to hydroelectric and geothermal plants. The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 93.7% of the population has access to electricity.</p>								
<b>Guatemala</b> 	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Medium</b>	<b>Unknown</b>	<b>Low</b>	Tigo Claro Movistar	SBA Communications Torrecom Continental Towers
<p>Guatemala was reportedly planning a 900MHz spectrum auction as of September 2016 but no news has been announced since. In the meantime, it's also been hinted that a 700MHz auction could take place in the near future. If they happen, this would definitely prompt a wave of new build and new colocation. Torrecom and SBA Communications have added 250 towers between them since Q2 2015.</p> <p>Guatemala's electricity comes from fossil-based sources (46%), hydropower (26%) and other renewables such as small-hydro and biomass (29%). The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 78.5% of the population has access to electricity.</p>								



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Mexico	High	Medium	High	High	Medium	High	Telcel Movistar AT&T	Telesites American Tower Mexico Tower Partners IIMT Centennial Torrecom Intelli Site Solutions Conex MX Towers Rent-A-Tower Uniti Towers
	<p>The two factors likely to affect the Mexican tower market most in the near future are the evolution of AT&amp;T's market entry strategy and the 700MHz shared network known as Red Compartida. In fact, while AT&amp;T might have halted its BTS projects for the time being, it will need to start deploying again in the future and is likely to use BTS firms and solution providers again. On the other hand, ALTÁN Redes - the awarded company in charge of deploying the Red Compartida - is the best news the Mexican tower market has had for a while and everyone offering services to the telecom infrastructure industry should gear up for a busy few years. It's been estimated (and there's general consensus among industry experts) that up to 7,000 new sites are needed for the Red Compartida project. So although much business will be taken over by co-locations on existing sites, there will be plenty of opportunities for tower manufacturers and MSPs to win new business, followed by RMS solutions and access control products. Meanwhile, Telesites continues to build apace, having added around 4,000 sites since Q3 2015. TowerXchange is aware of more than one Mexican towerco concentrating on addressing demand for infill solutions through small cells and DAS, making Mexico one of CALA's better markets for vendors of such solutions. The Mexican towerco market is ripe for consolidation, so expect towerco-on-towerco deals to keep advisors busy, more likely in 2018 than 2017.</p> <p>The Mexican constitution requires the electricity sector to be federally owned and the Comisión Federal de Electricidad is in charge of its organisation. The electricity sector is mainly focused thermal sources (75%) followed by hydropower (19%) and a small component of geothermal energy (2%) and nuclear energy (2.4%). Around 99.1% of the population has access to electricity.</p>							

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<b>Nicaragua</b> 	Medium	High	Medium	Medium	Unknown	Low	Claro Movistar CooTel	SBA Communications Torrecom Uniti Towers Continental Towers
	<p>Xinwei has finally launched operations in the country under the CooTel brand and we can imagine the operator playing catch-up to enlarge its subscribers' base. New towers, contractors and services are likely to be needed by the operator. And in the meantime, Telefónica is steadily building towers via BTS firms. Between them, SBA, Torrecom and Uniti (formerly NMS) have built almost 300 towers in Nicaragua in the last two years.</p> <p>Out of all countries in Central America, Nicaragua is the one with the lower levels of electricity generation and access to electricity. Its supplies rely heavily (75%) on fossil energy (oil) and only 25% on alternative sources such as hydro and geothermal. The country is part of SIEPAC, a project aiming at integrating the electricity networks of Central American countries. Around 77.9% of the population has access to electricity.</p>							
<b>Paraguay</b> 	Medium	Medium	Medium	Medium	Unknown	High	Tigo Personal Claro VOX	American Tower
	<p>With four MNOs and a stable economy, Paraguay just delivered its first tower deal with the sale of approximately 1,400 sites from Tigo to American Tower. In the meantime, MNOs have been busy deploying 4G LTE across major cities, which means that Tigo might not be the only MNO looking at monetising its towers in the near future. With the first towerco having just entered the market, there will be an immediate need to professionalise, upgrade and build towers. Suppliers in the tower manufacturing, engineering and turnkey infrastructure businesses should keep a close eye on the country and its local market</p> <p>The Paraguayan electricity sector is a public monopoly and the country is one of the world's largest exporters of hydropower, which is being exported to Argentina and Brazil. With less than 0.1% of its electricity being supplied via fossil fuels, the country enjoys some of the lowest tariffs in the region. The sector is still heavily affected by the lack of investment in both transmission and distribution. Around 98.2% of the population has access to electricity.</p>							

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Peru	High	Medium	Medium	High	Medium	Medium	Movistar Claro Entel Bitel	American Tower Andean Tower Partners Torres Andinas Torres Unidas Innovattel Balesia BTS Towers
	<p>Peru's Ministry of Transport and Communications has called for an increase from their current 9,167 to 22,000 cell sites over the next three years, an increase of almost 2.5x in tower stock. In order to ease the notoriously complex permitting regime, the Congress passed Law N. 29022 back in 2015 which introduced, among other things, the tacit approval of permit requests after thirty days from the initial demand. And according to local sources, this change has considerably improved the process for towercos, especially in comparison with neighbouring country Chile. With these aggressive targets in mind, operators are gearing up for a busy few years ahead. MNOs are looking for the right partner to do the job, seeking innovative structures, small cell and DAS solutions for high density, indoor areas. Solution providers serving the industry should definitely take a close look at Peru!</p> <p>The Peruvian electricity sector has improved considerably since the 90s. In fact, access to electricity moved from 45% in 1990 to 88.8% in 2011, mostly thanks to the privatisation reform of the 90s. To date, fossil energy accounts for 52% of the overall production with 48% relying on renewable suppliers (hydropower). Around 91.2% of the population has access to electricity.</p>							