Urbanization, a financing challenge for a sustainable world

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The transition to a smarter, lower-carbon way of living will need a rapid transformation of existing and future city development. Investors are willing to help fund this transformation if we can find the right approach to infrastructure finance. We are seeing new levels of ambition by local authorities. Achieving it will require integrated planning and investment from both public and private sources.

Urbanization is at the heart of mankind's future, and this is to be welcomed. By 2050, 70 per cent of the world's population will live in cities, compared to only 10 per cent at the end of the nineteenth century, up from 50 per cent as recently as 2008. Urbanization goes hand in hand with development and, if delivered well, it is both a consequence, and an accelerator, of that development. In future the concentration of the urban population in developing countries will be even greater as this is where 95 cent of urban growth will come from. By 2050, 5.2 billion people will live in emerging market cities. As a consequence, and as Table 1 shows (please see below), the major megacities of the future will mostly be Asian or African.

Emerging market cities will also likely be the future drivers of global GDP growth in the coming decades. With GDP growth expected to reach 3.2 per cent in the 2040s, 2 per cent of this will come from emerging market cities, while they accounted for only 1 per cent of the 2.8 per cent of global growth of the 2000s.

Since cities are responsible for 70 per cent of greenhouse gases worldwide and 80 per cent of energy consumption, for those forecasts to ensure growth is sustainable, and that it to bring benefits to the urban population, several important and related challenges have to be addressed. These include creating employment, managing water resources, providing clean and reliable energy, ensuring production and distribution of food, managing migration (and avoiding the risks of sudden fluctuations), widening access to education, dealing effectively with waste, developing transport solutions, fostering innovation and tackling poor air quality. Failure to address all of these issues implies the risk of rising inequality and associated levels of crime, congestion and pollution. These can all prove costly both for human living standards and hard-pressed public finances. Therefore, good governance is a key for driving a just and orderly transition. The new urban agenda adopted at the UN-Habitat III Conference (that took place in October 2016 in Quito) laid out how cities should be planned and managed to best promote sustainable urbanization.

To support this vision and ensure long term growth, higher productivity, and population wellbeing, cities have to invest heavily in new infrastructure, while integrating digital technology to optimize its efficiency.

Some countries, most notably in Asia, are leaders in the development of "smart and sustainable cities". In China, smart city development is one of the priorities of the 13th Five Year Plan (2016-2020). India has a program to create 100 Smart Cities. At the same time, cities in developed countries - while not showing such high rates of growth - have the challenges of aging infrastructure to address. Their infrastructure is often outdated, with very low levels of energy efficiency. Transport infrastructure can need significant modernization and investment (for example the London Underground system has been around for more than 150 years and has recently been significantly modernized and upgraded!). Private car use has also grown and it is highly polluting, prompting recent efforts to reduce it (such as congestion charges in city centers or the development of electric vehicles and car sharing schemes). While useful, these measures must be enhanced to make a real impact.

In any event, transformation is often gradual rather than immediate. It relies on both political will and leadership at city and municipal levels and a more integrated approach to planning. Whether in China, in the US, in France or in Nigeria, significant power and financial resources reside with city mayors to lead this transition. Hong Kong wants to become Asia's showcase for sustainable development: a ten year plan has been launched in 2015 to drastically

(1) Mr. Mark Tucker took over from Mr. Douglas Flint as the Group Chairman on October 1st, 2017.

	1985		2000		2015		2030	
	City	Pop'n (Mn)	City	Pop'n (Mn)	City	Pop'n (Mn)	City	Pop'n (Mn)
1	Tokyo	30.30	Tokyo	34.45	Tokyo	38.00	Tokyo	37.19
2	Osaka	17.58	Osaka	18.66	**Delhi**	**25.70**	**Delhi**	**36.06**
3	New York	15.83	**Mexico City**	**18.46**	**Shanghai**	**23.74**	**Shanghai**	**30.75**
4	**Mexico City**	**14.28**	New York	17.81	**São Paulo**	**21.07**	**Mumbai**	**27.80**
5	**São Paulo**	**13.39**	**São Paulo**	**17.01**	**Mumbai**	**21.04**	**Beijing**	**27.71**
6	**Mumbai**	**10.39**	**Mumbai**	**16.37**	**Mexico City**	**21.00**	**Dhaka**	**27.37**
7	Los Angeles	10.18	**Delhi**	**15.73**	**Beijing**	**20.38**	**Karachi**	**24.84**
8	**Buenos Aires**	**9.96**	**Shanghai**	**13.96**	Osaka	20.24	**Cairo**	**24.50**
9	**Kolkata**	**9.95**	**Cairo**	**13.63**	**Cairo**	**18.77**	**Lagos**	**24.24**
10	Seoul	9.33	**Kolkata**	**13.06**	New York	18.59	**Mexico City**	**23.86**
11	**Rio de Janeiro**	**9.24**	**Buenos Aires**	**12.41**	**Dhaka**	**17.60**	**São Paulo**	**23.44**
12	Paris	8.96	Los Angeles	11.80	**Karachi**	**16.62**	**Kinshasa**	**20.00**
13	**Moscow**	**8.58**	**Rio de Janeiro**	**11.31**	**Buenos Aires**	**15.18**	Osaka	19.98
14	**Cairo**	**8.33**	**Dhaka**	**10.28**	**Kolkata**	**14.86**	New York	19.89
15	Nagoya	8.02	**Beijing**	**10.16**	**Istanbul**	**14.16**	**Kolkata**	**19.09**
16	London	7.85	**Karachi**	**10.03**	**Chongqing**	**13.33**	**Guangzhou**	**17.57**
17	**Delhi**	**7.33**	**Moscow**	**10.00**	**Lagos**	**13.12**	**Chongqing**	**17.38**
18	Chicago	7.29	**Manila**	**9.96**	**Manila**	**12.95**	**Buenos Aires**	**16.96**
19	**Jakarta**	**7.01**	**Seoul**	**9.88**	**Rio de Janeiro**	**12.90**	**Manila**	**16.76**
20	**Manila**	**6.89**	Paris	9.74	**Guangzhou**	**12.46**	**Istanbul**	**16.69**

Source: UN urbanisation prospects. Note: Bold equals Emerging Market

reduce the city's electricity consumption and manage its growth. Numerous American cities are making ambitious commitments on emissions which go well beyond the Paris Agreement. Paris itself is aiming to be carbon neutral by 2050. Major investment will be needed to match these ambitions. For example, in order to reach its carbon emission reduction target, and to adapt to climate change, Lagos will need to spend $140 billion by 2040.

Taken together, what is the overall level of investment needed to meet all these individual commitments? A recent study estimated the costs of smart cities to reach €1.5 trillion euros by 2020 [(2)] growing at CAGR (*Compound Annual Growth Rate*) of 13.6%. This is across numerous sectors with smart energy representing nearly 17 per cent, transport more than 9 per cent, and other infrastructure close to 14 per cent.

If public money can be allocated to finance part of the transformation, it is mostly available for lower-cost projects. Entirely city-funded projects decrease as project costs rise. Policymakers have long hoped that institutional investors could help fill the gap. As active buyers of corporate and government bonds, they manage about $100 trillion of assets globally. So far there has been a lack of incentives for financing to be allocated towards green assets, despite the wish of many of those investors to play their part in the fight against climate change. According to an independent survey commissioned by HSBC in 2016, two-thirds of investors want to invest more in green and sustainable projects [(3)]. While the gap can be expected to shrink in the coming years, thanks to numerous initiatives helping to clarify and prepare the pipeline of projects to be financed, such as the sustainable Infrastructure pipeline compiled by C40 cities and CDP, or the Green Climate Fund which seeks to bring together public and private funding to invest in low-emission and climate resilient development, more is needed to mobilize finance at the scale and speed we need.

Commercial banks have a crucial role to play in helping to bring in this private finance. By evaluating the various risks in specific projects, infrastructure banks like HSBC can propose different and innovative ways of raising funds, whether through grants or subsidies, debt issuance, arranging loans or risk protection or advising on public-private financing agreements.

At HSBC, we have been supporting green and sustainable projects in every continent, working with many different types of businesses, whether through green lending, green bonds, climate funds, advisory, or providing structured products. We face both an economic and a moral imperative to make rapid progress. There is both political will and growing investor appetite. Technology is developing quicker than ever – bringing sustainable and smart urbanization within reach of more of our citizens. We have all the ingredients to deliver the Paris Agreement, and should have no excuses to fail.

(2) Smart City Market by segments, Global, 2020 – Frost & Sullivan & Global Smart Cities Market, Grand View research, 2016 (http://www.grandviewresearch.com/industry-analysis/smart-cities-market).
(3) "Soaring appetite for green investments hindered by low disclosure: HSBC Survey", december 2016.