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# CHOTOTEL

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Impact Report November 2015

PREPARED BY TRUCOST



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## ABOUT TRUCOST

Trucost helps investors to understand the economic consequences of natural capital dependency in order to identify risk and opportunity from growing natural resource pressures and environmental costs.

Natural capital liabilities such as carbon, water, resource use, pollution and waste are threatening the ability of our natural ecosystems to deliver economic growth. The impact is already being felt through volatile commodity prices linked to extreme weather events, pollution impacts and natural resource constraints.

We provide the world's most comprehensive natural capital data representing 93% of global markets by market capitalisation to support the investment community in evaluating the environmental efficiency of companies and their supply chains, analysing portfolios against benchmarks, and creating new products.

Key to our approach is that we not only measure natural capital risk in physical quantities, we also apply a financial value to provide an overarching metric for risk and opportunity analysis.

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# 1. CEO OVERVIEW

Chototel was conceived out of a need to provide good quality, dignified housing solutions in a market that fails to cater to those at the bottom of the pyramid. Soaring rentals and housing prices are fuelling housing poverty resulting in vacant residential projects and a greater number of people living in substandard housing. There is clearly a mismatch in the supply and demand of housing, particularly with regard to the demands of the urban poor. There is a gap in the market that, if filled successfully, has the potential for phenomenal social impact.

Chototel, formed from the words “chotu” (meaning small) and hotel, is rolling out an exciting project building ‘super-budget hotels’, where tariffs start from US\$2/day with uninterrupted utilities, clean water and social infrastructure such as crèches, community kitchens and open, green spaces.

Access to decent affordable shelter is so fundamental to the health and well-being of people and the smooth functioning of economies that it is embedded in the UN Declaration of Human Rights. Yet, in developing and advanced economies alike, cities struggle with the challenge of accommodating their poorest citizens. There is a phenomenal migration of the rural poor to cities, such that they now constitute the majority of the urban population in developing countries; yet their living conditions represent a tragic failure on the part of urban planners.

## Customers

Traditionally, the private sector real estate market has focused on serving the needs of the higher income demographics of urban India. Housing finance has also been primarily geared towards higher income segments. Consequently, home ownership has been primarily reserved for

the population with a monthly household income of at least INR 25,000. However, a majority of the urban population, 92% or 73 million households earns less than INR 25,000 per month and most of the new housing being constructed has so far been unaffordable for them (Deloitte, 2013).

There is a huge need for housing in the lower-income population. According to the Government of India, there is a shortage of 18.78 million homes in urban India, 95% of which is accounted for by the Economically Weaker Section (households with annual income of less than INR 1 lakh) and Low Income Group segments (households with annual income of INR 1-2 lakh). (Deloitte, 2013) The Government recognizes that much of this population cannot afford private sector led housing, and has identified rental housing as a critical solution.

## The Pilot Project

The first Chototel is being built on a two acre parcel of land, 75 kilometers from Mumbai. It is a 300 room hotel with each unit of 280 sq ft containing a furnished multipurpose room, a kitchenette and a bedroom. Additionally, it is fitted with a television set, two sofa-cum-beds, a dining table and standard electrical and bathroom fittings.

The US\$2 rent can be potentially shared by at least four members. However, there is no restriction on the number of residents in each unit. Electricity, water and gas are charged on a consumption basis, which is not expected to exceed US\$0.50 per day and will discourage wastage.

Additionally the project contains a crèche (to enable working parents to leave their children in care), a community kitchen (working on a cost recovery system), an infirmary, a walking track, sports area, amphitheatre and children’s garden.

The location is at the centre of a vibrant industrial area. Over 50,000 casual workers are employed within a radius of 30km. They are categorized as daily wage labourers engaged in unskilled factory work. Typically they are paid US\$4-6 per day, and do not appear on the payrolls of companies. They are not entitled to any health, gratuity or other benefits.

## Organisational Summary

The company of 24 team members is directed by its founder Rhea Silva, and draws on the expertise of its network of experienced advisory board members. Key members of the management team and advisory board include:

- **Rhea Silva**, Founder and Chief Executive Officer. Rhea is a third generation entrepreneur and has worked in real estate, hotels and capital markets. She has a degree in management studies and is currently studying for a Bachelor of Law degree.

The senior management team is supported by an experienced team of operational staff that ensures the effective operation of the business. The Chototel team members include:

- **Kuldip Singh**, Project Head, a project management veteran with over 20 years of specialization in the design and construction of mass housing
- **Vishwas Phalke**, Operations Head, is an operations specialist in the area of customer management processes currently the vice-president of the Quality Assurance Circle of India
- **Rahul Agaj**, Design Head, is an architect and master planner and has designed over 10 million sq ft of affordable housing.
- **Shailesh Mahadik**, Land Head, is a land specialist and consults to India's top legal firms and investment funds on title, conveyance and liaison issues

- **Naven Dandekar**, Legal Head, is a Chartered Accountant and a Lawyer with a specialization in capital markets. Naven has participated in over a 100 transactions in his career, mostly in the real estate domain.
- **Gautam Rage**, Technical Head, has over 15 years of experience in the Software Industry, he has written two books about Ruby and MongoDB and spoken at numerous conferences round the world. He organises Ruby Conference India & Gophercon India.

Chototel is a new business and its first project of 60,000 sq ft and 300 rooms, at Nagothane, near Mumbai has commenced construction and is expected to be partially operational by February 2016 and completely finished by April 2016. Once the hotel is fully operational, the turnover is expected to be around US\$350,000 in the first year. Together with its other sites totalling over 1,000 rooms across India, Chototel is expected to turnover around US\$1 million.

Chototel's operating model, while delivering market returns, is still able to create significant economic, social and environmental benefits. The product is based on four pillars:

1. An inexpensive industrial-style dry construction method which can be assembled on site by unskilled labour.
2. The use of an 'off-grid, closed-loop utility system', where electricity, gas and water are generated on site from natural resources and recycled waste.
3. The use of micro-robots (bots) to automate functions of check-in, security, customer tracking of utility consumption, billing, real-time transfer of money, reporting and analytics.
4. A unique financing system that yields market returns to investors, while offering affordable rentals to the urban poor, by maintaining low capital and operating costs.





## Commitment to Social Value

Chototel was established as a means to deliver social and environmental benefits. Beyond the benefits that our core tenants and their families will experience by having access to adequate and affordable housing, Chototel will also positively impact the communities we operate in.

Community benefits include improved health, education, economic security and household stability. Chototel would also create job opportunities for vulnerable groups. The construction and operations of our hotels is done in a way to minimize our carbon footprint and foster the use of renewable energy, creating environmental benefits along with it, compared with traditional low-income housing.

Chototel is committed to measuring and regularly disclosing information on its social and environmental performance through the company's annual Impact Report and direct engagement with its partners, stakeholders and customers.

The way in which a social enterprise gets funding has undergone major changes in recent years with the birth of the belief that capital markets can also create social good for the world. Our entrepreneurial vision is driven by goals which are slightly different from the traditional return on capital principle prevalent in financial markets. Being registered on the Social Stock Exchange would give Chototel exposure to impact funds which infuse investments with a positive social and environmental impact without compromising financial returns.

We are therefore pleased to submit our first report to the Social Stock Exchange, as we believe our values and vision are closely aligned with its objectives. We intend to work with the SSX as a member to help provide affordable housing through sustainable business.

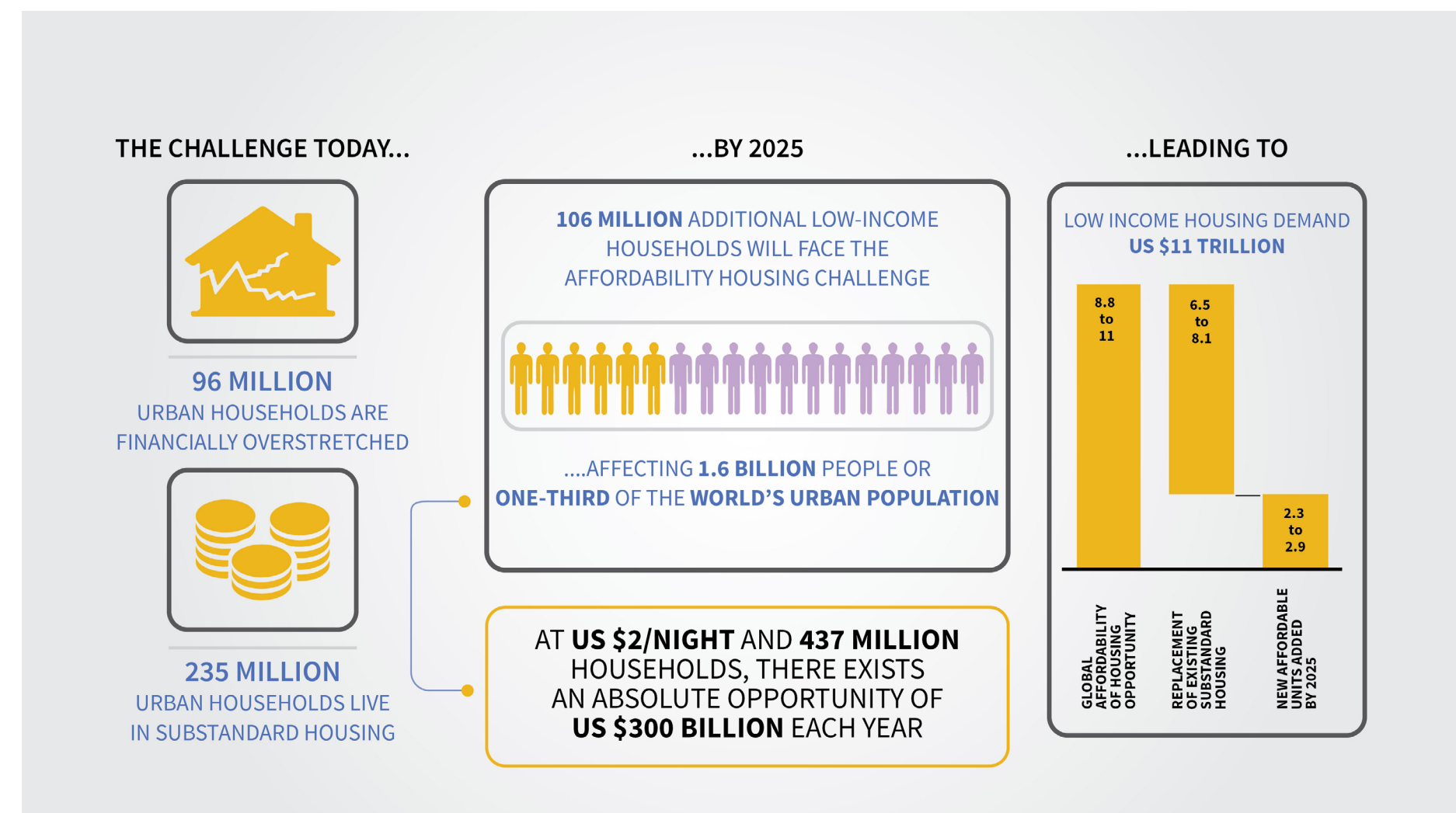
**Rhea Silva**

Chief Executive Officer

# 2. SOCIAL PURPOSE AND CONTEXT

## Challenge

Severe housing poverty affects 330 million households around the world today. Based on current trends in urban migration and income growth, it is estimated that 440 million households (i.e. 1.6 billion people or a third of humanity) will occupy crowded, inadequate and unsafe housing by 2025. The estimated cost to address this challenge is US\$16 trillion (McKinsey Global Institute. 2014).



SOURCE: CHOTOTEL

Providing decent housing for citizens is a challenge for governments around the world. The economic and human toll of the affordability gap is enormous. Even within cities that have found solutions to the housing problem, there is a need to find low-cost solutions, particularly for those at the bottom of the pyramid, who may be unable to afford a home.

In Greater Mumbai itself, out of the 28.3 lakh households, 40% reside in slums (Praja.org, 2014). Additionally, there are 15,274 homeless families in the city occupying the roadside, railway platforms and living under fly-overs. Within the next 20 years the population is expected to touch 1.5 crore (Census of India. 2011), heightening the problem even further.

## Mission

Chototel's mission is to deliver dignified housing options to the poor in an environmentally sustainable and economically viable manner.

Chototel's endeavour is to be a catalyst to end homelessness.

### Its goals rest on the following pillars:

- It provides clean, hygienic and affordable accommodation to the lowest economic strata of the cities they operate in.
- It is driven by innovative technologies that lend themselves to secure and joyful living environments.
- It creates social infrastructure so that children, elderly and non-working members of the household are cared for.
- It builds communities that are vibrant, hopeful and healthy.

## Social and environmental objectives

Ensure improved health, education, economic security and household stability. Additionally create employment opportunities for vulnerable groups. Consequently, it aims to provide dignity, peace and security to the poorer sections of society.

Construct and operate hotels in a way to minimise carbon footprints. Foster the use of renewable energy, reduce water footprint and recycle water, decrease wastes. Create environmental benefits much greater than traditional low-income housing options.

## Business strategy

Chototel's core business is focused on providing an innovative solution to the issue of homelessness in a manner that is cost-effective and environmentally sustainable. Chototel's vision is of 'super-budget hotels' where tariffs start from US\$2/day with uninterrupted utilities, clean water and social infrastructure such as crèches, community kitchens, targeting a market consisting of millions of informal workers or those suffering from housing poverty in developing economies.

To make the project economically sustainable, investors are invited to own the underlying assets, thus allowing them to benefit from both asset and rental appreciation. Moreover, rents are collected electronically and paid to the investors directly.

The social and environmental benefits derive directly from the performance of the hotel, thus intertwining its core business and social objectives.

## Governance measures

The following principles will be followed to help achieve Chototel's mission and ensure transparency and accountability:

- Appointment of third-party management auditors to assess the quality of management and governance including adherence, goal monitoring, risk management performance, material transactions, asset valuation, and reporting monthly to investors.
- Independent board with minority representation from investors.
- Separate asset pool for securities' holders.

- Online access to records for securities' holders.
- Monthly disclosure on Committees constituted for taking business decisions.
- All investments in projects insured.
- Borrowings from banks limited to 25% of the net appraised value of assets.
- Related party transaction processes defined.
- Securities' holders have a representative on performance, finance and audit, management audit and valuation committees.

## Communicating Chototel's social purpose to internal and external stakeholders

Due to the use of real-time data gathered by the Micro-bots, information is available to the investors, staff and customers in terms of numbers of different groups such as children, non-working family members and older people who are benefiting from the facilities. Chototel envisages a process whereby the data is compiled into reports and automatically mailed to stakeholders.

## Opportunity for social and environmental impact benefits in the future

Chototel expects approximately four people to be using a hotel room per day on average. This adds up to 1,460 man-days per year per room.

In the pilot phase, Chototel will build 300 rooms at its first project at Nagothane, near Mumbai. At 1,460 man-days per room per year that is 438,000 man-days.

In the second phase ending December 2016, Chototel should have rolled out 10,000 rooms<sup>1</sup>, which amounts to an impact equivalent to 14,600,000 man-days.

<sup>1</sup> This is subject to Chototel raising capital at US\$10,000 per room



# 3. WHO BENEFITS?

Chototel aspires to be an equitable and sustainable business that shares its success with all those participating in the value chain, as well as society and the environment.

Chototel measures benefit in terms of man-days of dignity. Each hotel room directly offers 1,460 man-days of dignity per annum.<sup>2</sup>

The following section describes the key beneficiaries of Chototel’s activities and the way they benefit:

## Core Tenants

The primary beneficiaries of Chototel are tenants and their families. They are mostly expected to be small nuclear families consisting of the father, mother, and two to three children. There might be some elderly parents living with some of the families too. In some cases there would be a group of between 2 to 6 workers staying together. Tenants will benefit from the hygienic and safe environments with uninterrupted and inexpensive utilities. The central location of the hotels will also benefit the tenants through reduced dependency on transportation to job centres. The affordable and shareable pricing of our hotels will lead to increased income savings.

The core tenants are expected to be from economically weaker sections of society. In the absence of Chototel, they would be compelled to reside in urban slums in crowded, unhygienic and unsafe conditions.

Chototel’s services almost doubles the living space that would have normally been available to the tenants:

	URBAN SLUM DWELLING	CHOTOTEL	PERCENTAGE INCREASE IN LIVING SPACES	SOURCE
Living space per household (m <sup>2</sup> )	13.4	20	49.2%	Slum Health: From Understanding to Action (2007), Chototel Data

### Key assumptions

- The target group is comparable to the inhabitants of urban slums.
- A household consists of an average of 4 persons.

### Families of Tenants

Benefits from living with Chototel extend far beyond the tenants, to their children, parents and extended families as well. Children of the tenants will have access to the crèche, community kitchen and play areas during the absence of their parents. This allows both parents to be gainfully employed. These services will typically be manned by residents who are not working. When labour is needed for the operations of the hotel, residents will be given an option to work and the rent for that day will be waived off. This focus on social infrastructure can positively influence household income as well as provide the children a healthy environment to grow up in.

Parents of the tenants, especially those that are elderly, will typically be housed on the lower floors to reduce the strain of climbing. Published data on elderly inhabitants of urban slums show that 83% suffer from visual impairment, more than 30% complain of hypertension and dental problems and 60% smoke tobacco (Thakur, R. et al, 2013). A clean and healthy environment at Chototel would gift the elderly occupants a more promising life. Moreover, in urban slums studies show that 54% (Udhayakumar, P., Ponnuswamy, I, 2012) of the elderly population not

<sup>2</sup> An average of 4 persons will be occupying each room for 365 days. (4 x 365 = 1,460)



engaged in work. Chototel would encourage the members of the aged community to help manage services such as like security, community kitchen, infirmary, crèche in exchange for accommodation, and thus have the opportunity of gainful employment.

Chototel’s strong focus on the social infrastructure allows core tenants and their families to not only be a part of, but actively participate in, a safe and accommodating environment directly benefiting all members of this community.

## Community Benefits

Chototel’s operations also creates benefits that extend beyond the individual tenants and reaches the community as a whole. These include improved conditions for health, education, economic security and household stability. Due to the locations and manner in which Chototel will be built, lower costs associated with transportation and energy can be realized. Additionally, Chototel will create job opportunities for vulnerable groups during its construction phases.

### Health

Long-term health benefits for residents arise from living in hygienic conditions with good quality water and sanitation. Slum dwellings often lack access to toilets or water. Chototel offers well-ventilated housing with access to clean water and sanitation, thus minimizing the risks of water-borne and respiratory diseases that are common in substandard housing. Quality affordable housing can also promote better mental and physical health, improved quality of life and independence especially for low-income seniors.

<sup>3</sup> Chototel are building 300 rooms and expecting an average of 4 persons residing in each room, therefore 1,200 people in total. To estimate the number of children benefitted by the Chototel initiative these statistics were compared with the proportion of children in the urban slum population (the target group). 11.2% of 1,200 would thus be 134 children. The census has accuracy limitations but provides a benchmark for Chototel beneficiary targets.

	URBAN SLUM DWELLING	CHOTOTEL	SOURCE
No access to clean drinking water from taps	22.2%	0%	Government of India (2011), Chototel Data
No access to latrine	14.7%	0%	Government of India (2011), Chototel Data
No access to proper sewage system	74%	0%	Government of India (2011), Chototel Data
No access to hygienic garbage disposal	35%	0%	Government of India (2011), Chototel Data

### Education

Children are regularly forced to drop out of school due to health issues, poor access to schools and the lack of infrastructure in their homes to support learning. Quality housing brings us one step closer to addressing these issues. With better housing, children are guaranteed schooling uninterrupted by easily preventable illness. They will have an environment conducive to study resulting in better learning, thus keeping them motivated to stay in school. The Indian Census suggests that 11.2% of the urban slum population in India consists of children (Census of India, 2011). With this in mind, Chototel opens the possibility of a brighter future for more than a 130 children.<sup>3</sup>

### Economic Security

High housing costs leave low-income families with little money for other expenses. Affordable renting increases the amount that families can put toward other important household needs and savings for the future. In addition, the living environment at Chototel allows families to have a dual income through community positions in lieu of rent, increasing earning potential and decreasing expenditure. The employment rate reported in the Indian slums is 36.4% (Census of India. 2011). Chototel promises an environment that will push working participation higher.

## Household Stability

Most households spend over half their income on housing, and hundreds of thousands more have no home at all. Access to decent, affordable housing would provide critical stability for these families, and lower the risk that vulnerable families become homeless. This is particularly true for daily wage earners and migrant workers who have little opportunity to save money to make lump sum monthly payments, and who are looking for temporary affordable quality housing.

The median household income per month in Mumbai is INR 20,000, implying 50% of the households earn less than INR 20,000 per month. (Praja.org, 2014). It is this economically weaker section that is the target group for Chototel. The High Level Task Force on Affordable Housing for All (Ministry of Housing & Urban Poverty Alleviation, 2008) set up by the Ministry of Housing and Urban Poverty Alleviation, suggested that to meet the criteria for affordability for the economically weaker sections, monthly rent cannot exceed 30% of gross monthly income.

Following these recommendations, the rental savings of the core tenants in Chototel can be calculated to an annual saving of 33% on rent alone.

	INDIAN AVERAGE FOR THE URBAN POOR	CHOTOTEL	SOURCE
Percentage of income spend on rent	30%	20%	Ministry of Housing & Urban Poverty Alleviation, 2008 Chototel Data
Monthly rent (INR)	6,000	4,000	
Annual rental savings by staying at Chototel (INR)		24,000	

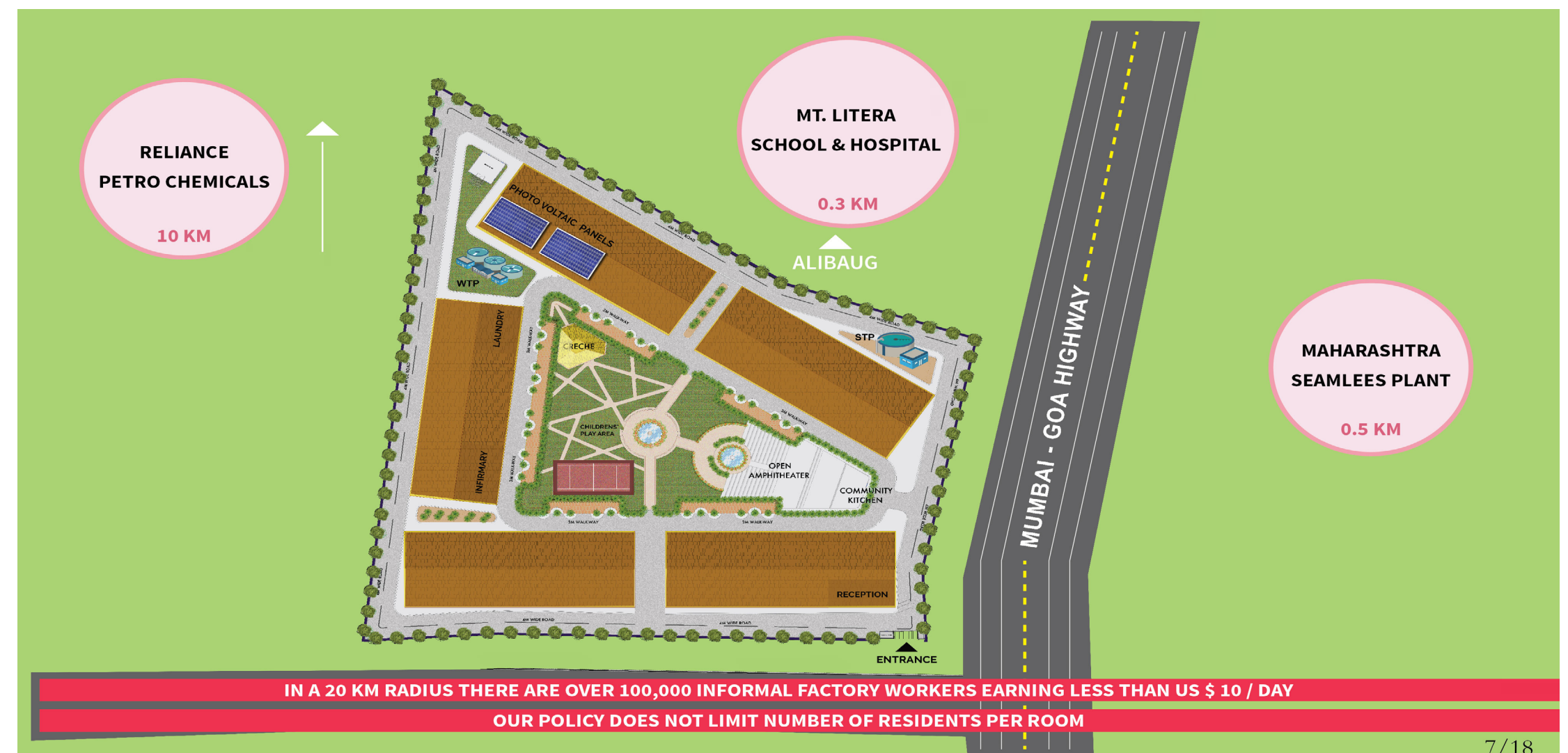
### Key assumptions

- The daily rent per room in Chototel is US\$2 (Chototel Data)
- An average tenant spends 30% of his monthly income on rent. (Ministry of Housing & Urban Poverty Alleviation, 2008)

- The exchange rate used between Indian rupees and US dollars is 0.015. (OANDA) (oanda.com, 2015).
- The median income of INR 20,000 has been used for simplicity of calculations. (The State of Affordable Housing in Mumbai, 2014)

## Reduced Costs

Chototel's energy efficiency reduces the operating costs of each house, freeing up much needed funds for other expenses. The hotel's location in the middle of a job growth centre can further assist low-income residents to save money through reduced dependence on transportation. The proportion of household budget that goes to transportation has risen dramatically over the last decade, leaving families with less money for other necessities. It also increases access to better jobs and improved health, and allows residents to access critical community services more easily.



SOURCE: CHOTOTEL



## Job Creation

Chototel's construction technology is highly automated, requiring a limited skill set to build. These skills are easily transferable, allowing Chototel to hire unskilled workers amongst the local labour force providing job opportunities for this vulnerable group. Additionally, the creation of community groups within our projects will lead to greater employment opportunities for women and senior citizens who can offer administrative services in lieu of rent. This alleviates some of the pressure on single earners in the family.

## Environment

While social benefits are the main focus of the organization, Chototel's operations will also ensure environmental benefits. These include reduced carbon footprint in construction, reduced carbon emissions in daily operation, and efficient water and waste treatment practices.

### Construction

Chototel will minimize its carbon footprint by eliminating the use of bricks and wood as raw materials, as illustrated below.

	EMISSION FACTOR <sup>4</sup>	TOTAL EMISSIONS AVOIDED (kgCO <sub>2</sub> e)	SOURCE
Brick	0.25254	6,527,957	EcoInvent Database
Wood	77.937	158,899	EcoInvent Database

### Key assumptions

- The number of bricks used per building is 13,000. (Chototel Data) The average weight of each brick is 3.314kg (theconstructioncivil.org, 2015).
- Wood used for each building construction is 1,200 cubic feet (Chototel Data).

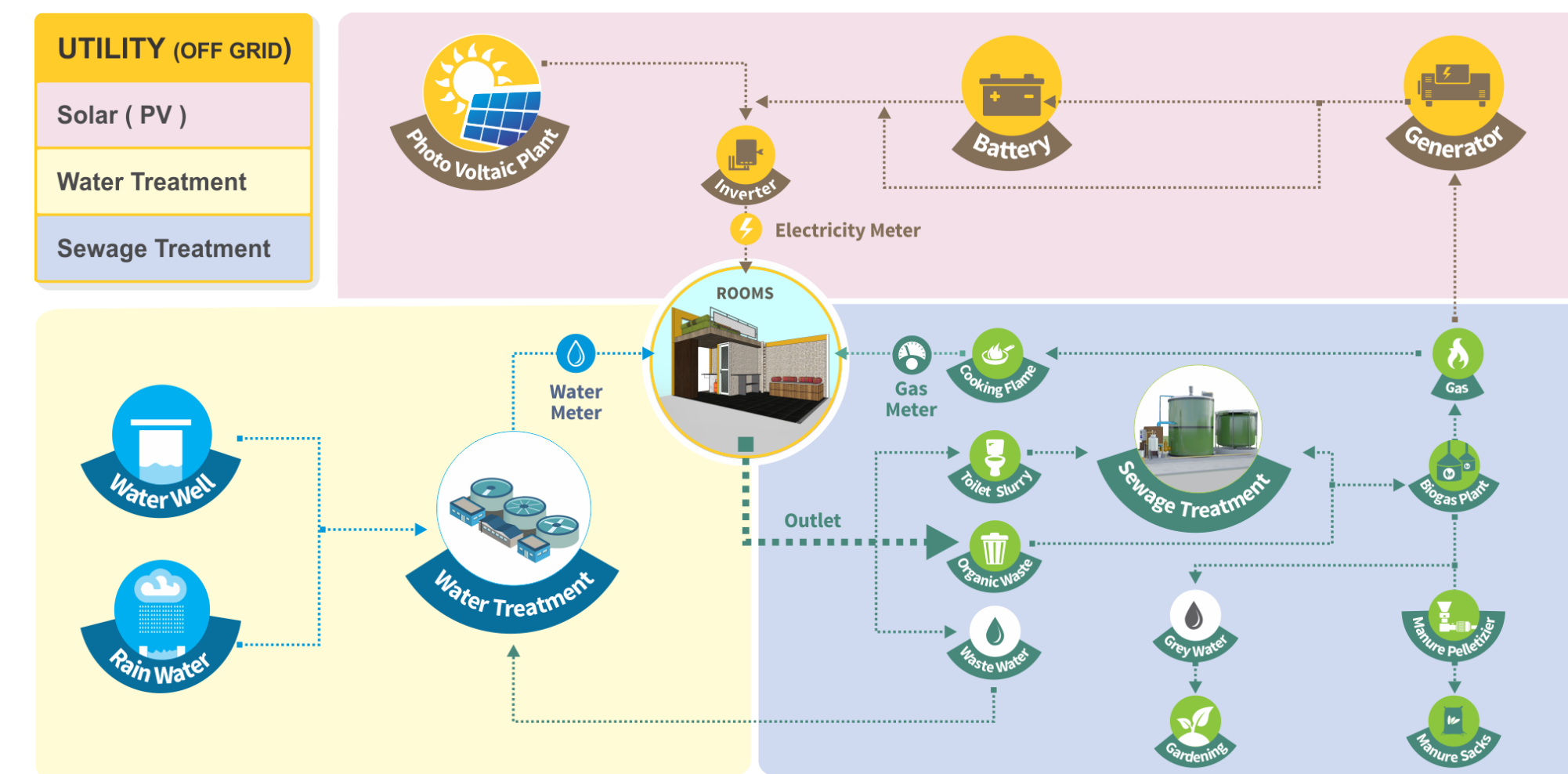
<sup>4</sup> An emission factor is defined as the average emission rate of a given GHG for a given source, relative to units of activity.

- The emission factor used for brick production was 0.25254 kgCO<sub>2</sub>e per kg (EcoInvent).
- The emission factor used for wood was 77.937 kgCO<sub>2</sub>e per m<sup>3</sup> (EcoInvent).

Buildings at Chototel will be primarily made of steel and lightweight concrete using a technology that consumes half the construction material that a typical building would have required. Due to the lack of granular data on the exact composition of building materials, full quantification of the carbon savings has not been conducted.

### Operations

The off-grid, closed-loop utility system fosters the use of renewable sources of energy such as solar power, reducing our dependence on traditional, fossil fuel sources. NSSO surveys conducted in India in 2009 indicated that 3.6% of slums had absolutely no access to electricity, inside households as well as in the streets (Government of India. 2011). Chototel, on the other hand, not only ensures electricity but promises economical and uninterrupted power for its tenants.



SOURCE: CHOTOTEL



The table below calculates the carbon emission savings from Chototel's utility system when Chototel operated at full capacity.

	USING ELECTRICITY FROM GRID	USING SOLAR POWER AT CHOTOTEL FACILITY	SOURCE
Total annual GHG emissions (kgCO <sub>2</sub> e)	74,045	491	Defra (2015), Chototel Data, Trucost(2012)
Total annual Carbon Saving (kgCO <sub>2</sub> e)			73,554

#### Key assumptions

- Total annual consumption includes residential consumption and consumption in the common area and is 89,308kWh (Chototel Data).
- The cost of solar power is INR 7.50 per unit (Chototel Data).
- The exchange rate used between Indian rupees and the US dollar is 0.015 (OANDA) (oanda.com, 2015).
- The total impacts of solar power consists of its operational and supply chain impacts and is calculated using Trucost's propriety econometric model.
- The emission factor for the grid mix in India is 0.83 kgCO<sub>2</sub>e per kWh. (Defra, 2014).

#### Water and Waste Management

Efficient water and waste management systems further reduce environmental impacts. The presence of a biogas plant ensures the prevention of waste disposal at the solid waste disposal site and thereby helps in reducing overall emissions.

<sup>5</sup> Chototel uses a sophisticated waste management system that recycles waste into manure and biogas. A modified upward anaerobic sludge blanket technology plant is used to treat all types of solid and liquid waste having large percentage of suspended solids to generate biogas, good quality organic manure and treated wastewater to the satisfaction of Pollution Control Authorities. Depending on the total quantity of biogas generated, it can either be used as cooking gas or to generate power using 100% biogas generator sets.

	WASTE DISPOSAL AT THE SOLID WASTE DISPOSAL SITE	SOURCE
Methane emissions avoided each year (t)	31.72	UNFCC Report, Annex 10

#### Key assumptions

Total waste generated is 243kg per day (Chototel Data)

Had the waste not been used in biogas plant<sup>5</sup>, it would have been given to the municipal corporation for disposal through municipal solid waste management system.

The type of waste is assumed to be segregated kitchen waste.

Chototel is also committed to reducing its water footprint and recycles both grey and black water. Black water is used to describe wastewater containing faeces, urine and flushwater from toilets. It is distinct from grey water, which is generated from washing food, clothes and dishware and bathing. A modified upward anaerobic sludge blanket technology plant is used to treat all types of solid and liquid waste to generate biogas, organic manure and treated wastewater.

The annual volume of water targeted to be recycled by Chototel has been tabulated below:

	GREY WATER	BLACK WATER	RAINWATER HARVESTING	SOURCE
Annual volume of water recycled (m <sup>3</sup> )	10,950	5,475	1,623	Chototel Data

#### Key assumptions

- It is assumed that 30m<sup>3</sup> of grey water and 15m<sup>3</sup> of black water would be recycled per day (Chototel Data)

- Number of rainy days is assumed to be 100 per year and the rain water harvesting pits collect 16.23m<sup>3</sup> per rainy day (Chototel Data).
- The black water recycled is used for gardening within the premises of Chototel.

## Investors

Chototel addresses the issue of investor returns and security using a Real Estate Investment Trust, which allows investors to invest in properties in the same way they invest in other industries, through the purchase of stock (reit.com, 2015). Investors own the underlying assets and rents are paid to them. Each security is, in this case, a 280 sq ft furnished house, at a cost of US\$10,000 complete with social and municipal infrastructure. Chototel, as the asset manager, applies a fee on the dividend whenever it is paid out to investors. Additionally, the value of the security appreciates when the market value of the house increases.

Rents are market driven. Investors benefit from both rental and asset appreciation. Because rents are electronically collected, investors could be paid on a daily basis, further improving their yields. Chototel presents a high social impact project that provides returns on par with other market opportunities. These high returns are to encourage more investors and help scale up projects, thereby increasing their positive impact.

# 4. ACTIVITIES AND OPERATIONS

Chototel undertakes a range of activities in the implementation of their business model that is closely aligned with, and complimentary to, their social and environmental objectives. Their key activities lie in the following areas:

1. Production of houses in an efficient manner that minimises negative environmental impact in an inexpensive, industrial-style, dry construction method which can be assembled on site by unskilled labour.
2. Use of an 'off-grid, closed-loop utility system', where electricity, gas and water are generated on site from natural resources and recycled waste.
3. Utilization of micro-robots (bots) to automate functions of check-in, security, customer tracking of utility consumption, billing, real-time transfer of money, reporting and analytics.
4. Putting in place a unique financing system that yields market returns to investors while offering affordable rentals to the urban poor, maintaining low capital and operating costs. Instead of artificially holding prices which can breed inefficiencies, Chototel's strategy is to maintain affordable rents by increasing supply. This is contentious, because some in society like to hold prices down often through the creation of artificial subsidies. However, time has proved that prices have to be market driven to be sustainable. The general view of economists is that their best way of sustaining low prices is to increase supply.

ENGAGEMENT WITH BENEFICIARY	ACTIVITIES	OUTCOMES (OR CHANGES EXPECTED) FOR BENEFICIARIES
Tenants and Families	Production of houses	Reduction of housing poverty by providing access to housing that is safe and hygienic with facilities including clean toilets, drinking water, etc at a reasonable cost.
	Interaction with bots	Ability to monitor, in real time, every aspect of living at Chototel including gas and water usage, billing, payments. Reduction of transaction costs by using an automated system.
	Health and safety reporting	It is mandatory that information on all residents is reported to the closest police station. As an annual feature, Chototel will publish a report on health and safety of its residents.
	Efficiency in energy and waste management	Increased energy security by reduced dependence on grid electricity. Increased energy resilience in times of grid service interruption and lower risk of power outages. Reduced energy consumption and costs. Reducing environmental footprint and supporting sustainable initiatives through the provision of cost effective and scalable on-site renewable electricity, water and waste management techniques.
Community	Self-help groups	Allow contribution of labor in lieu of rent. Encourages community members coming together for common goal. Creates jobs for vulnerable groups.
	Production of houses	More robust and resilient housing for increased security. The homes are more robust in terms of being earthquake, fire, flood and rodent resistance.



ENGAGEMENT WITH BENEFICIARY	ACTIVITIES	OUTCOMES (OR CHANGES EXPECTED) FOR BENEFICIARIES
Environment	Off-grid, closed-loop utility system	Reduced dependency on fossil fuels and carbon emissions from increased renewable energy usage.
		Reduced wastage of water. Recycled water used for irrigation.
		Diversion of wastes to biogas plant to generate electricity and avoid waste disposal at solid waste disposal plant.
	Production of houses	Reduction in building materials used. Usage of steel and light-weight concrete and eliminating the use wood and bricks.
Improved insulation for reduced energy needs. Increased energy efficiency for homes, consuming less than 100W peak power per house		
Investors	Interaction with bots	Ease of business as information from residents' interaction with bots are polled and sent to investors allowing them to receive relevant information about their investment based on real time data points.
	Putting in place a unique financing system	Greater investor returns and security by allowing investors to invest in properties the same way they invest in stock. Investors benefit from both rental and asset appreciation.

# 5. STAKEHOLDERS

## Identification and Engagement with Stakeholders

In addition to the broad range of beneficiaries of our business, Chototel has a range of key stakeholder groups. Chototel aims to interact and engage with its stakeholders in the course of its business through formalized processes and more informal interactions, in order to ensure the success of the business and the delivery of social and environmental objectives. These stakeholders both impact and are impacted by Chototel's operations. Chototel's stakeholders include:


STAKEHOLDER	DESCRIPTION AND ENGAGEMENT
Investors	Investors are essential to the success and expansion of the hotels. The proposed investors are typically institutional impact investors and development organizations. Chototel will engage with them on a one to one basis. Moreover, due to the use of real time data, information will be available to the investors whereby the data is compiled into reports and automatically mailed to them.  Additionally, Chototel would conduct meetings and communicate through annual reporting processes.
Residents	The residents are the primary beneficiary of Chototel's operations. Tenants will benefit from the hygienic and safe environment with uninterrupted and inexpensive utilities. Children and parents of tenants will also benefit from the social infrastructure created within the hotel. Residents will work together achieving common goals that shape the way the organization impacts them.  The assets shall be maintained by Chototel. The cost of doing are expected to be recovered from the utility surpluses that are generated from the closed loop utility system.

STAKEHOLDER	DESCRIPTION AND ENGAGEMENT
Vendors	These are organizations who have experience in the affordable housing sector. Chototel shall engage with them through tenders in an effort to ensure a transparent selection process, allowing them to construct the buildings in the manner Chototel has outlined. The builders are typically large organized contractors as the construction technology is based on sophisticated design and automation. Chototel has ensured that all workers have comprehensive insurance and work in the highest levels of safety.
Employees	Chototel's staff are critical to the operation and future success of the business. Chototel strives to cultivate a supportive environment for all staff that reinforces the company's corporate values and commitment to its social and environmental objectives.
Local Employers	Access to improved jobs and reductions in transportation costs owing to proximity to employment, also benefits local employers who will benefit from an increased pool of workforce and skills.
Environment	From the construction phase through the operational lifetime of Chototel's hotels, the environment will see continued benefits due to the use of off-grid, closed-loop utility system and efficient water and waste management systems. In addition, using steel and lightweight concrete would consume half the building materials that traditional, low-cost buildings normally would.

Currently, Chototel has not engaged with its stakeholders because they are in their nascent stage of construction and operation. However, in future reports they will assess the views and impact on their stakeholders and report them appropriately.

Chototel believes that stakeholder perspectives are intrinsically linked to the business strategy.

The framework that will be put in place in order to assist with intelligent, stakeholder engagement and data collection in future years has been highlighted below (BSR, 2012).

- 
- Identification of groups, organizations, and people. This step has already been undertaken by Chototel. They are driven by the belief that stakeholder engagement is of utmost relevance to the company.
  - Development of internal capacity before launching engagement activities, so that there is no risk of being unprepared for stakeholder insight.
  - Focusing on a cost-effective stakeholder engagement technique.
  - Measuring the value of investing in stakeholder engagement while understanding and managing stakeholder expectations.
  - Analysing stakeholder perspectives and prioritizing the stakeholders and identification of issues.
  - Communicating to the stakeholders through mass emails, newsletters, conference, survey and social media. Communicating more with these stakeholders will help them value engagement.
  - Informing stakeholders by making use of sustainability reports, marketing campaigns, publications or news coverage
  - In order to calibrate success and build on effort for future activities, engagements will be documented. It will be ensured that engagement is not an end in itself but a means to a process of continued dialogue.



# 6. EVIDENCING SOCIAL VALUE

## Evidencing social value

Chototel has begun the process of identifying the areas of impact. It is beginning the process by developing generally accepted methods of impact measurement. The company intends to assess impact, on a per house basis, and later to reduce it to an impact measure on a 'per square feet' basis under the following headings:

SOCIAL IMPACT DELIVERED ON	ENVIRONMENT IMPACT & CARBON FOOTPRINT OF	COMMUNITY – CREATION OF SELF-HELP-GROUPS FOR THE MANAGEMENT OF
Health	Energy efficiency	The crèche
Education	Off-grid Solar plant	The infirmary
Economic Security	Water recycling and quality	The community kitchen
Household Stability	Construction methodology	Site security
Hygiene & Sanitation	Use of Robots for automation	Community events
Transport Cost and access	Solid waste management	Housekeeping & front office
Crime reduction	Overall efficiency of closed-loop, off-grid system	Maintenance
Senior Citizen welfare		
Quality of living		

As a newly established company, Chototel has not yet collected comprehensive primary data on the social and environmental benefits created by its hotels. As such, Chototel has estimated the social and environmental impacts of its products and will continue to refine quantitative metrics throughout Chototel's growth and development. Chototel is committed to measuring and monitoring its actual social and environmental performance as the company develops in order to more accurately report on its impacts and to set more accurate targets for future impact.

BENEFICIARY	OUTCOME	INDICATOR	TARGET	SOURCE
Residents	Providing safe affordable housing	Annual number of man-days	14,000,000	Chototel
	Increased Education	Number of tenants' children in school compared to average	134	Chototel
Community	Opportunity Job Creation	Annual number of employees (SHGs and builders)	15 SHGs	Chototel
	Energy Savings	Annual net energy saved (kWh)	48,000	Chototel
Environment	Carbon Emissions Savings	Annual net greenhouse gas emissions avoided (kg CO <sub>2</sub> e)	73,554	Chototel
	Water Recycled	Annual volume of water recycled on site (m <sup>3</sup> )	18048	Chototel
	Building Material Saved	Reduced volume of building materials required per project compared to baseline (m <sup>3</sup> )	3,000	Chototel

Additional details on how these targets and metrics were estimated are in the table overleaf.

BENEFICIARY	OUTCOME	DESCRIPTION
Resident	Economic Security	Decrease in the proportion of income spend on rent.
		Increase in household income with more number of people being able to join the work-force.
		Decrease in cost of commute due to location in central industrial area. The target group is currently living in poorly constructed housing, without toilets, running water and intermittent electricity, paying up to 30% of their income as rent. Their target is to provide rental housing, with quality amenities, in a cost effective manner.
Resident	Health	Decrease in number of incidents of hospitalization of tenants after moving in to Chototel provided the improved hygienic living situation including ventilated housing with access to clean water and sanitation.
	Household Stability	Chototel aims to build and offer for rentals 1,000 rooms in their first year. Assuming each room is occupied by an average of 4 persons, living for 365 days, it amounts to 1,460 man-days of dignity per room per annum
	Energy Efficiency	By deploying energy efficiency measures 48,000 kWh saved per annum. This is an estimate based on the fact that each house is designed to operate on less than 100W, which is 20% of average house loads.
Environment	Resource Efficiency	Chototel's buildings are made of steel and lightweight concrete as the primary building material. Typical buildings consume 1m <sup>3</sup> of materials (steel + concrete) per square meter of constructed area. Their methodology uses half that quantity. The first project has a built area of 6,000m <sup>2</sup> for 300 hotel rooms, each room of 20m <sup>2</sup> carpet area. Therefore the project consumes 3,000m <sup>3</sup> of building materials versus 6,000m <sup>3</sup> for ordinary buildings using bricks, wood, some steel and cement.
	Efficient water and waste management system	30m <sup>3</sup> grey water recycled per day, 15m <sup>3</sup> black water recycled per day & used for irrigation, while we have 4 pits of rain water harvesting system of 16.23m <sup>3</sup> / day in rainy season.

BENEFICIARY	OUTCOME	DESCRIPTION
Community	Job Creation - Self Help-Groups (SHG)	Chototel will create 1 job as SHGs for every 10 rooms they build, which is 30 for the first 300 rooms. SHGs will be continuously trained on skills like electrical, mechanical, plumbing maintenance. On their first project they expect to create a SHG of 15 people, who will be trained on all aspects of running the hotel - thus also generating a human capital benefit.

## Current Management

The management is skilled in the area of affordable housing and committed to be a catalyst in ending homelessness in a cost effective and environmental sustainable manner. As Chototel has not yet commenced full-scale commercial operation, the potential social benefit and environmental impact targets have been estimated using either published data or the company's valuations. As the company grows and develops, Chototel will investigate strategies to better measure the social and environmental impacts. Chototel is at an early stage in its development and implementation of monitoring systems necessary to achieve its social and environmental goals, and is therefore working with consultancies to improve its capacity.

## Future Commitments

Chototel is a newly established company in the start-up phase of operations. As the company develops, Chototel commits to invest in more vigorous impact monitoring and reporting strategies.

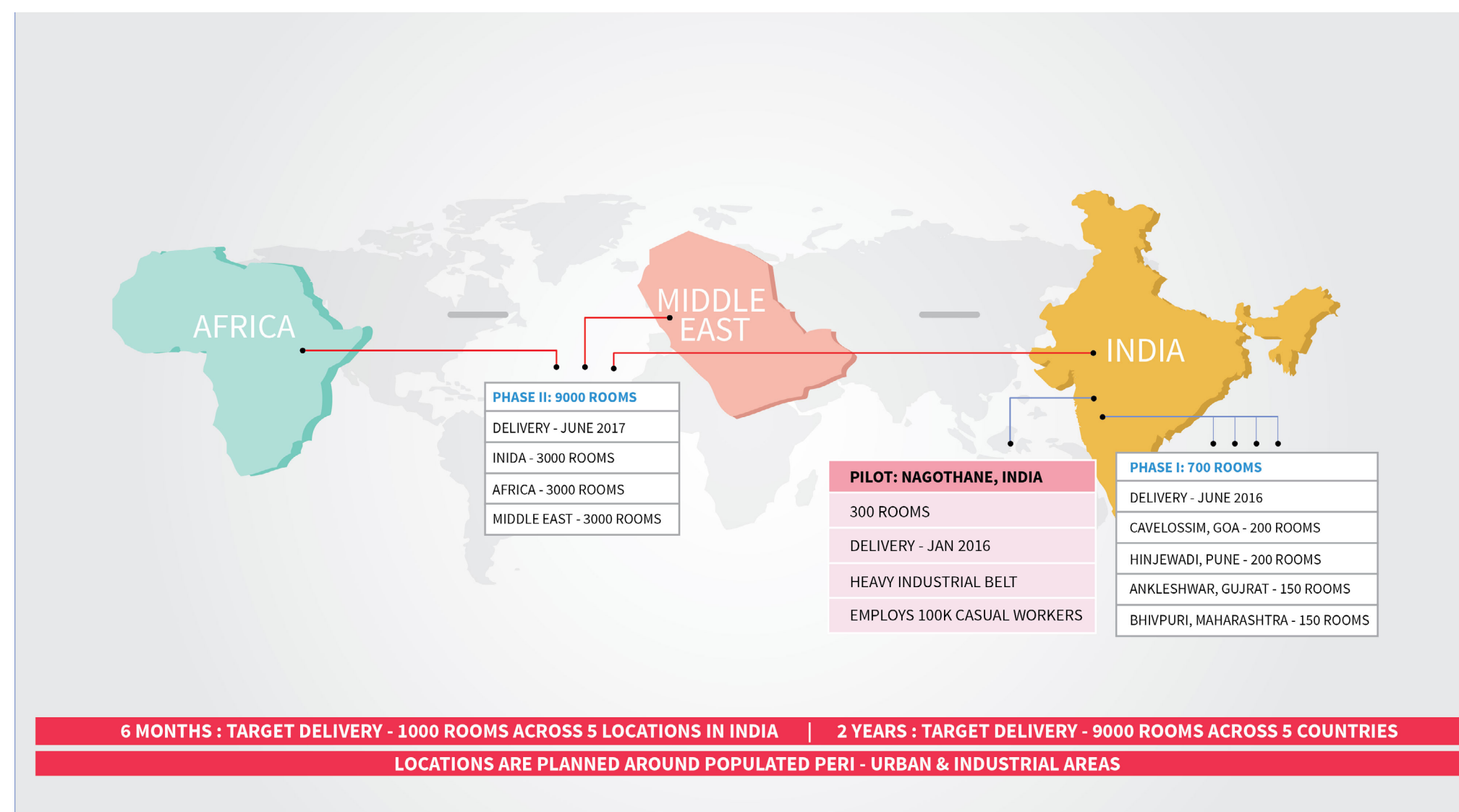
Chototel would be committed to:

- Understanding the environmental footprints of its operations
- Measuring and valuing the social impacts of its operations

- Setting robust, time-bound and quantified targets for future impacts
- Developing a more effective environmental and social management and reporting system

In a span of six months, Chototel promises to deliver 1,000 rooms across five locations in India and in two years 9,000 rooms in five countries across the globe.

The experience of the pilot project in Nagothane will be assessed and lessons learnt in order to make the future commitments a success.



SOURCE: CHOTOTEL



# 7. OTHER SUSTAINABILITY AND REPUTATIONAL ISSUES

A few issues that Chototel may face have been discussed below:

- Chototel has been designed to provide decent accommodation to those who are at the bottom of the social and economic pyramid. This is reflected in the rent charged for the rooms and the utilities. However, there may be some who come to Chototel even though they might not be the expected target beneficiary. This would dampen the social purpose of the hotel. Chototel aims to create a system to screen prospective clients to ensure that they are the intended beneficiaries.
- Chototel residents will only benefit from reduced transportation costs if local employers are engaged and provide secure and sustainable wages.
- Construction of the hotel has a one-time environmental benefit, whereas the off-grid utilities provide continued environmental benefits so long as they are superior in efficiency to the alternative (living in the slums). Should this change, the project will lose its annual environmental benefits. Chototel recognises this as a need for annual measurement and reporting. Any future expenditures to upgrade the systems will need to be considered.

Nonetheless, any potential negative impacts are expected to be small relative to the scale of the social and environmental benefits delivered by Chototel's activities.

As Chototel develops and expands, it will engineer ways to handle the issues and continue to be committed to end homelessness in a cost-effective and environmentally sustainable way. It will be open, transparent and accountable across its operations through the publication of quarterly and annual reports accessible to all stakeholders.

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