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EXECUTIVE SUMMARY –  
SINGAPORE: A LIVELY,  
LIVEABLE, AND  
WELL-LOVED HOME



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## EXECUTIVE SUMMARY – SINGAPORE: A LIVELY, LIVEABLE, AND WELL-LOVED HOME



From the start, Singapore saw itself as a Garden City. Having independence thrust upon us unexpectedly, we had first to develop our economy and provide jobs for the people. Yet, we also knew that we could not focus only on economic growth. Even though the term “sustainable development” was not widely used then, we knew that we had to make the most of our scarce resources and attain a good quality living environment in this compact city state.

Therefore, we planned our land use wisely. We set up strict pollution controls to keep the air and waters clean, even as we urgently wooed new industries. We carried out a massive exercise to green our city and clean up our rivers. The result is today’s Singapore: business-focused and investor-friendly, yet clean and green.

But Singapore cannot stand still. We are in a continual race to attract investments and talents against stiff global competition. A thriving economy, able to provide ample good jobs for its people, is our starting point. But we have to continue to minimise the impact of growth on the environment and to use resources efficiently. We want to build Singapore into one of the most liveable cities in Asia – clean, green, safe and efficient, for Singaporeans now and in the future.

Our vision is to make Singapore a liveable and lively city state, one that Singaporeans love and are proud to call home.

This is our blueprint to realise this vision. It contains the strategies and initiatives we believe are needed for Singapore to achieve both economic growth and a good living environment over the next two decades. The government will, actively and imaginatively, draw up policies, regulations and incentives to promote this. However, for us to succeed, our business leaders, our community leaders and our people, have to share a common vision, and work together to bring about changes needed in our households, our communities, our businesses and our country. Ultimately, Singapore will be our best home if each one of us has contributed to its development, and together shaped a sustainable city that reflects our shared aspirations and our values as a society.

## THE CHALLENGES AHEAD

Singapore imports most of the food and water we consume, as well as the resources and materials needed for our industries. We

have to be plugged into the global system of trade and communications. Challenges facing the world, from the present financial crisis to the looming threat of climate change, have a greater impact on a small island such as ours. Singapore will have to join hands with others – countries, cities, communities – to address these global challenges.

We will face even bigger challenges in the future. These are:

### Managing the Demands of a Growing City

The growth of our city will put more pressure on our limited land, water and energy resources. Our city will also have to be more densely built as our economy grows and our population expands. It will be more and more challenging to ensure that economic growth does not come at a high environmental price: depriving us of the clean air, water and land we have worked for over the years.

### Adapting to Growing Resource Constraints

As cities across the world grow, the global demand for and cost of energy, food, and construction materials will also rise. As a resource scarce country, Singapore needs to use non-renewable resources like oil and gas more efficiently if we want to remain competitive and keep up economic growth. Even with renewable resources, such as water, we need to use them wisely and ensure that there will be sufficient supply for future generations. For Singapore, sustainable development means learning to achieve more with less.

## Mitigating Climate Change

Today, few doubt that global warming is a reality and human actions are contributing to it. It is clear that the way the world produces and uses resources is straining the planet's environment, leading to rising temperatures and sea levels, and falling ice and snow cover. To secure our collective long-term future, we need decisive action from all countries, including Singapore.

## THE SINGAPORE WAY

For Singapore, sustainable development means achieving both a more dynamic economy and a better quality living environment, for Singaporeans now and in the future.

We need the economy to grow. This creates jobs, raises our standard of living, and yields the resources that we need to safeguard our environment. But we must grow in a sustainable way, or else a high GDP per capita will be achieved at the expense of our overall quality of life, and cannot be maintained over the longer term. Protecting our environment safeguards a high standard of public health for our people, and makes our city attractive to Singaporeans and foreigners alike.

We have to achieve these twin economic and environmental objectives in a balanced way.

The world now faces a major economic crisis. But this should not cause us to lose sight of the long-term need to pursue these twin objectives. Indeed, the crisis presents us with both the challenge and the opportunity to boost our resource efficiency. If we succeed, we would

have helped to secure our future, by making our economy leaner and more competitive when the global economy recovers.

We will keep to our "Singapore Way" of pursuing long-term economic growth and environmental sustainability, by upholding the following principles:

- **Long-Term, Integrated Planning:** We will align our policies – from energy to transport to industry and urban planning – and take a long-term and complete view of our needs and circumstances. Indeed, this ability to plan and act in unison towards the overall goal of sustainable growth is one of our key strengths.
- **Pragmatic and Cost-Effective Manner:** We have to secure our twin goals of promoting economic growth and a good environment in the most cost-effective way. We must constantly ask ourselves "what works", and we will not shy away from long-term measures that are necessary, even if they entail short-term costs. But we will pace the implementation of these measures and provide help to temper and soften the short-term costs to businesses and individuals.
- **Flexibility:** The challenges to maintain economic growth and a good environment will span many decades. We therefore have to remain nimble, and adjust flexibly to changes in technology and in the global environment. We will invest in building our capabilities today to give us more options to better respond to the challenges of tomorrow.



Energy efficiency is a key priority

## DELIVERING: OUR STRATEGIES AND INITIATIVES

Implementing these principles and delivering on our vision for Singapore as a city which is liveable, lively and well-loved by its citizens and visitors alike, calls for much effort, imagination, and commitment.

We have a four-pronged strategy: boosting our resource efficiency, enhancing our urban environment, building our capabilities, and fostering community action.

### 1. Boosting Our Resource Efficiency

As Singapore has to import most of its resource needs, we have to ensure that we are making the most of what we use, always aiming to do more with less. Over the next two decades, we

will substantially improve our efficiency in using energy, water, and land.

Singapore does not have viable sources of renewable energy (such as wind, geothermal or hydropower). We will therefore have to focus on raising efficiency, aiming for a 35% improvement in energy efficiency from 2005 levels by 2030.

We will make optimum use of land, and seek to reach a recycling rate of 70 per cent by 2030.

We will also ensure adequate supplies of water for future generations, and we aim to reduce domestic water consumption to 140L per person per day by 2030.

Specific measures to deliver on these goals include:

- **Pricing energy appropriately:** We will continue to price energy according to sound

market principles, to make sure there is no waste and over-use. In addition, we will look at setting energy prices to reflect the environmental impact of energy-production and to further encourage conservation.

- **Providing information for better decisions:**

We will make more information on energy use, costs and benchmarks available to firms and consumers so that they can manage their usage and reduce waste. This can include mandating energy labelling and minimum performance standards for key electrical appliances, and setting energy performance benchmarks for industrial processes.

- **Boosting energy-efficient industry designs, processes and technologies:**

We will provide financial incentives and set new standards to promote more investment in energy-efficient technologies, designs and industrial processes. We will encourage industries to adopt good energy management systems to enhance their efficiency. In the longer term, we will study whether to set minimum energy performance standards for various types of industrial equipment and processes.

- **Building capabilities in renewable energy:**

In tropical Singapore, solar energy is now the most promising renewable energy source. We will invest early in solar technology test-bedding projects to prepare to use solar technology on a larger scale when the cost of solar energy falls closer to that of conventional energy.

- **Promoting resource-efficient buildings:**

We aim to have 80% of our existing buildings achieve at least a Green Mark Certification rating by 2030. For new buildings within

strategic districts, a higher rating of Green Mark Gold<sup>Plus</sup>/Platinum will be a condition for the land sales. We will also seek to improve the energy efficiency of public housing estates by 30% for mature HDB estates and 20% for new estates by introducing energy-saving devices.

- **Promoting public transport:**

We aim to have a 70:30 ratio between public and private transport journeys made during morning peak hours by 2020. The Land Transport Authority (LTA)'s Masterplan spells out the ways to do this. We will also refine private vehicle ownership and usage policies, and introduce new technologies for public transport.

- **Expanding our water supply:**

We will expand our water catchment areas from half to two-thirds of Singapore's land area, develop new fringe catchments, tap on more used water, and strive to raise recycling yields. We will build a trans-island pipeline network to link up our NEWater plants with demand areas.

- **Improving our water efficiency:**

We aim to reduce domestic water consumption to 140L per person per day by 2030, down from 156L in 2008, through promoting water-saving habits and appliances. We will promote water-efficient buildings and the use of water-efficient devices and process designs within industries. This includes promoting water monitoring and management systems in commercial and industrial premises. We will also mandate water-efficiency labelling for water fittings. Where feasible, industries will be encouraged to implement water recycling and replace potable water with NEWater or seawater.



Integrating greenery and waterways into the new Jurong Lake District



The Henderson Wave bridge is part of the Southern Ridges treetop walk

- **Minimising waste upstream:** We will engage industry to find ways to reduce packaging materials through the voluntary Singapore Packaging Agreement. We will provide co-funding to help companies redesign processes to reduce waste in their production.
- **Facilitating household recycling:** We will increase recycling facilities in housing areas. We will pilot the use of separate chutes for recyclables in more housing estates.
- **Targeting major sources of waste:** We will promote the recycling of large sources of waste that now have low recycling rates, such as plastic and food waste. In the longer term, we will study the feasibility of mandating the recycling of such waste.
- **Expanding our land resource:** Apart from reclaiming more land and building more intensively, Singapore will also develop an underground land use master plan that identifies potential uses for this space.

- **Enhancing land use planning:** The Urban Redevelopment Authority (URA) will further refine its urban land use planning framework and develop Marina Bay and Jurong Lake District into a new generation of sustainable high-density districts.

## 2. Enhancing Our Urban Environment

Our hard-earned clean and green environment has improved the quality of life for our people, and has made Singapore more attractive to investors and visitors. We will make further efforts to enhance public cleanliness, improve air quality, integrate greenery and waterways into the cityscape, conserve our natural biodiversity, and preserve a sense of space and comfort in a high-density city.

We aim to reduce Particulate Matter (PM) 2.5 levels to  $12\mu\text{g}/\text{m}^3$  and cap Sulphur Dioxide ( $\text{SO}_2$ ) levels at  $15\mu\text{g}/\text{m}^3$  by 2020, and maintain the same levels up to 2030.

We aim to have 0.8ha of green space for every 1,000 persons and increase greenery in high-rise buildings to 50ha by 2030.

We aim to open up 900ha of reservoirs and 100km of waterways for recreational activities by 2030.

We aim to improve walkways and cycling infrastructure for pedestrians and cyclists and have 70% of morning peak hour journeys made via public transport.

We will do this by:

- **Reviewing air emission standards.** We will regularly review emission standards for industry and transport to keep our air quality good. We will benchmark ourselves against top cities in Asia, but also ensure our standards do not impose prohibitive costs on industry.
- **Adopting new technologies:** As industry and transport are major sources of air pollutants, LTA will test if new technologies such as diesel hybrid vehicles, electric vehicles and diesel particle filters are feasible and cost-effective. The government will promote the use of more efficient pollution control equipment for industries, and the use of more efficient sulphur recovery systems for refineries.



Seamless connectivity between bus and rail

- **Pricing pollution:** In the longer term, the government will consider using financial measures to better reflect the social cost of pollution from vehicles in order to discourage excessive use of vehicles and encourage more people to use cleaner vehicles.
- **Improving water quality in our waterways and reservoirs:** PUB, the national water agency, will take steps to ensure that our streams, canals and reservoirs remain clean. We will protect our water sources from pollution caused by leaking sewers, soil and silt erosion, as well as the discharge of used water into drains. We will do this by repairing and upgrading old sewers, and working with construction contractors to promote better site management and housekeeping.
- **Making our city cleaner:** We will enhance public education and step up enforcement against littering. We will also clean public areas more often and better. Efforts to curb littering will also keep our waterways clean.
- **Improving transport links:** We will continue to improve our public transport system to make it a viable alternative to the car. LTA will make it easier for people to walk or cycle to key transport hubs, such as MRT stations and bus interchanges, or to get around towns.
- **Enhancing our greenery:** As Singapore becomes more built up, we will do more to enhance the sense of space, greenery and comfort for our people. We will have new parks, park connectors and new leisure options. The government will work with various agencies to research cost-effective ways of introducing more greenery in high-rise areas, and give incentives to the private sector to do so.



Solar pilot project in our public housing estates

- **Opening up our blue spaces:** The PUB will expand its Active, Beautiful and Clean Waters programme, to transform Singapore’s reservoirs, canals and drains into beautiful lakes, rivers and streams that can support more water-based activities.
- **Conserving urban biodiversity:** Singapore has already managed to keep a rich biodiversity alongside a vibrant economy in a compact and densely populated city. The National Parks Board will implement a new National Biodiversity Strategy and Action Plan to document and conserve this biodiversity in Singapore.

### 3. Building Our Capabilities

We have successfully achieved both economic growth and environmental sustainability over the years. Singapore is now well placed to

serve as a living laboratory for companies and research organisations to research, develop and test their ideas on environmental sustainability in a high-density urban setting. Singapore will build new environmental and technological capabilities so that we can be a global centre for knowledge and ideas on sustainable development in a high-density urban setting. This will lead to new businesses, products and services which the world needs to adopt a more sustainable lifestyle.

In line with this, we will:

- **Invest in R&D:** The government will test-bed new technologies in many areas (land use planning, water technologies, vertical greenery, solar adoption and green building) together with the private sector and academia – and adapt them to our local needs. We will also encourage more research in our local universities and test-bed new technologies



Community recycling drive organised by the South West Community Development Council

within key public projects, such as at Marina Bay, Punggol new town and Jalan Bahar CleanTech Park.

- **Facilitate international sharing of knowledge:** We have established the Centre for Liveable Cities to promote the sharing of best practices between Singapore and other cities. Singapore will host events such as the World Cities Summit and the Singapore International Water Week to promote sustainable development among cities.

#### 4. Fostering Community Action

However, to build a sustainable economy and environment, we need the support of the community itself. Community, business leaders, and non-government organisations, should

promote an environmentally responsible lifestyle through their everyday decisions and actions. Schools will also have to inculcate this consciousness in our young, and communities will have to care for our environment on an ongoing basis. We will facilitate this by:

- **Promoting community efforts:** Community groups and non-government organisations are critical in engaging and educating the public on how to adopt a more eco-friendly lifestyle. The Community Development Councils have pledged to reach out to their residents through their programmes. Organisations within the people sector can also form partnerships (such as between environmental groups and grassroots organisations or educational institutions) to promote environmental awareness and action.

- **Promoting industrial efficiency:** Businesses can promote resource efficiency as part of their productivity movements, and adopt new processes and systems to reduce the environmental impact of their operations.
- **Setting the pace:** The public sector will act as an enabler and pace-setter. It will take the lead to make government agencies and public buildings more resource efficient.

## A SUSTAINABLE SINGAPORE

This report is the result of extensive consultations with business and community leaders and members of the public, to develop a common vision for a sustainable Singapore. Realising this vision will call for all Singaporeans to each play his or her part.

The government will lead by example through its policies and actions. It will provide more information for consumers to make more well-informed decisions, address market failures through financial incentives and disincentives,

set minimum standards and put in place laws to promote sustainable development. It has committed \$1 billion to be spent over the next five years to achieve the goals outlined in this blueprint.

Companies will need to develop and deploy cleaner technologies. Businesses should incorporate environmental considerations into their operations, from production to consumption and disposal. Families have to embrace a responsible, environmentally friendly lifestyle.

Working together, we can keep Singapore economically and environmentally sustainable well into the future. We will overcome our natural constraints and geographical confines, and cooperate with other countries on global environmental problems, particularly the growing pressures that development is putting on our planet. By doing so, we can build a Singapore that we, and future generations, will cherish and be justifiably proud to call home.