

03 STATEMENT OF NEED

3.1 Planning for Penang's Future Generations

In line with the realisation of the national aspiration under the 11th Malaysian Plan, TN50, Northern Corridor Economic Region (NCER) and the Third National Physical Plan (NPP3) that aims to ignite innovation and preparing the *Rakyat* for a high-income nation in the near future, the Penang State aligns its development vision to unlock economic opportunities while safeguarding the continued well-being of the *Rakyat*, as encapsulated under the Penang Paradigm.

The Penang Paradigm, a 10-year holistic development framework, has identified “Economic Dynamism”, “Liveability and Sustainability” and “Social Development and Inclusion” as three inter-dependent pillars to further strengthen Penang’s position as an international and intelligent State.

Putting the Malaysia National Development Strategy (policies highlighted above) and the tenets of Penang Paradigm into action, the Penang State Government has envisaged the Penang South Reclamation (PSR) objectives to be in parallel with the fulfilment of Malaysia’s ambition (refer *Appendix F.1* and *F.2* in *Volume 3: Appendices*). Concurrently, PSR, a development initiative by the Penang State Government, will serve as a vehicle to achieve Penang’s “Vision for the Future”, ensuring that the State continues to prosper sustainably in the coming decades as an inclusive society (refer F3.1).



F3.1

The thrust of the Penang State's vision encapsulated in the Penang Paradigm, are in line with national aspirations outlined under the 11th Malaysia Plan

Whilst the Penang economic roadmap recognises the need for the economy to move up the value chain and develop new economic drivers to attract investments, there are correlated issues that must also be addressed alongside building up Penang's economy – to create new land with a transformative development plan to (refer F3.2):

- a) Nurture valuable human capital to fuel sustainable growth; and
- b) Address the specific challenges faced by Penang.



F3.2 Major challenges currently faced by Penang

3.2 The Transformation of Penang - Smart City

To truly transform and future-proof Penang as a technologically advanced, modern and socially progressive state, a holistic transformation masterplan is needed to:

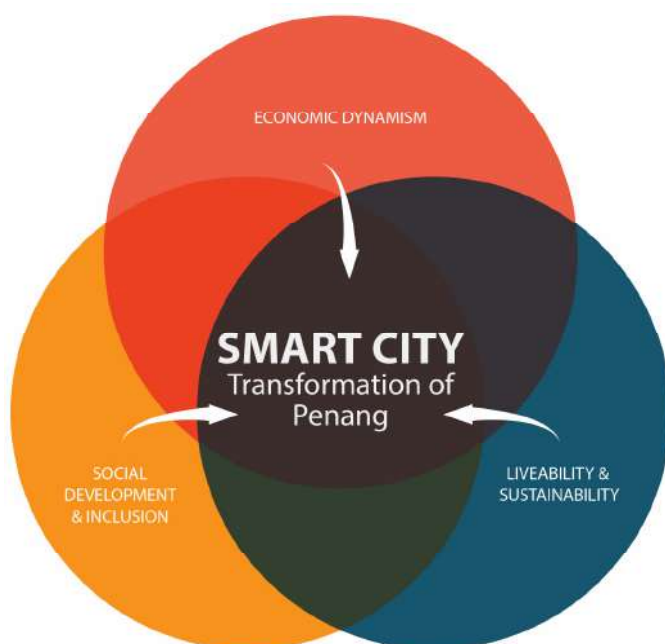
- a) Nurture the generation of world-class ideas;
- b) Re-energise its economic pillars by attracting investments that deliver high-value returns; and
- c) Provide the necessary public infrastructure to ensure the maximisation of social welfare.

The intent of the Penang State is in congruence with the Federal Government's vision to spur productivity and transform innovation to wealth through strategic measures and programmes to boost the capital and human economy.

The strategic transformation masterplan encapsulated under the proposed PSR initiative – a proposed offshore reclamation of three islands measuring 4,500 acres in the south coast of Penang Island – will be the vehicle to unlock the true potential of Penang, delivering high-impact results over the long term to resolve land supply, economic, social and related issues to the benefit of the Rakyat.

The overall PSR masterplan, adopts an “Smart City” concept that has been engineered to attract talents, create value, generate demand, sustain supply and preserve the cultural legacy of Penang. The concept offers the opportunity to build a “City of the Future” from day one in all aspects of living, business, sustainability and governance.

Once put into motion, the Penang State believes the Smart City blueprint would affect core transformation in all spheres of development – economic, sustainability and social – integrating all three aspects of Penang Paradigm into a single coherent agenda that would uplift Penang's growth trajectory in the next five decades (refer F3.3 and *Appendix F.3* in *Volume 3: Appendices*).



F3.3

The “Smart City” development concept of PSR will deliver the transformation of Penang into a world-class intelligent state

The Smart City concept covers six aspects as shown in F3.4.



F3.4

The “Smart City” development concept of PSR will facilitate a sustainable urban ecosystem to yield high quality of life for the *Rakyat*, and ultimately deliver a “City of the Future” where all social and information systems are inter-linked to offer an ideal living environment

Crucially, one of the vital aspects of Smart City is “Smart Environment”; which states that the development shall be climate responsive, low carbon, and integrated with multi-functional use.

The PSR will incorporate ample open spaces, parks and key amenities. Some of the public amenities provided are 5 km long public beaches, 32 km long coastal park and waterfront; and a network of bicycle path. Green connections on the islands will comprise designated bicycle lanes and sheltered pedestrian walkways. These will make up 660 acres (15% of PSR) of open and recreational spaces on the reclaimed islands.

The State Government established the non-profit Penang Green Council (PGC) in 2011 to nurture, facilitate and coordinate environmental causes in Penang. The PGC’s vision is to develop Penang into a green state that is clean, safe and harnesses green technology. Since the Project Proponent is the State Government, PSR will be adopting the vision of PGC (F3.5).



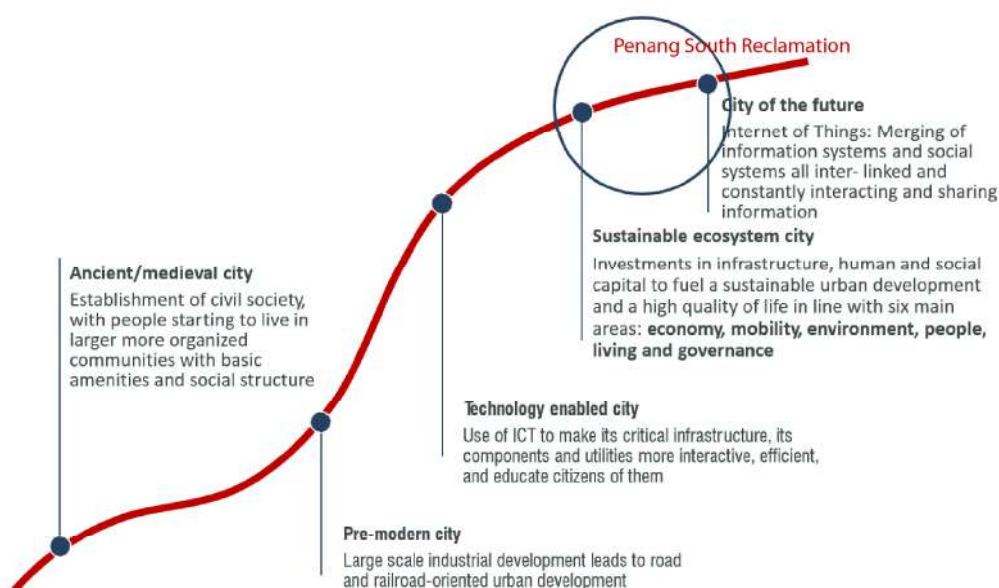
F3.5

An artist's impression of PSR where the community will be able to enjoy a high quality of life in a well-masterplanned “Smart City”

The new Smart City will also be the first State-led development of its scale in Malaysia, leveraging on “Internet of Things”, which comes with features including “Smart Governance”, “Smart Mobility & Connectivity” and “Smart Living”.

This future-proof city will be transformed into a sustainable urban development with investments in best-in-class infrastructure, human and social capital.

Consequently, it brings a higher quality of life for Penang’s future generations and ultimately to become the destination of talents from all walks of life and investments from MNCs. The transformation process of Penang once PSR is completed is illustrated in F3.6.



F3.6 Transformation process of Penang: Once PSR is fully completed and developed into the future Smart City, it will drive Penang’s vision for sustainable urban development

3.3 Human Capital to Drive Penang’s Transformation

The opportunities offered by the PSR project facilitate Penang transformation process to ensure continuous and sustainable contribution to the national economy. This platform also allows Penang to address one of its main constraining paradigms, which is the need for the creation of a knowledge-driven workforce can be addressed. The Penang’s annual percentage share to Malaysia’s GDP from year 2010 to 2015 is shown in F3.7.



Source: Department of Statistics, Malaysia

F3.7

Penang's annual percentage share to Malaysia's GDP (2010-2015)

With new land supply at a strategic high-demand location, PSR will be able to draw high-tech investments and R&D to keep Penang's main economic engines humming while creating value-added jobs that would not only upgrade the skills level of the Penang workforce and retain human talent in Penang; but also attract human talent to Penang.

This will be achieved through optimised, carefully-controlled land use planning that incorporates world-class infrastructure to foster an environment that generates investment value and demand (FDIs), and as well as the social underpinnings to create a vibrant, attractive "live, learn, work, play" lifestyle.

Particularly, the E&E sector, one the main driving forces of Penang economy, will benefit from the influx and retention of top talents attracted by higher-income. The dedicated PSR Industrial Park - a strategic extension of the Bayan Lepas FIZ – will be a fertile ground for collaborations between MNCs and SMEs such as technology transfer and human expertise development, supported by the academic rigour of universities and private tertiary institutions in the Education Hub on the reclaimed island. The Penang's workforce is shown in F3.8.



Source: Department of Statistics, Malaysia

F3.8

Visual showing the significant pool of manpower in Penang's manufacturing sector, specifically within Bayan Lepas, that can be further upskilled and provided with opportunity for higher income with the development of PSR

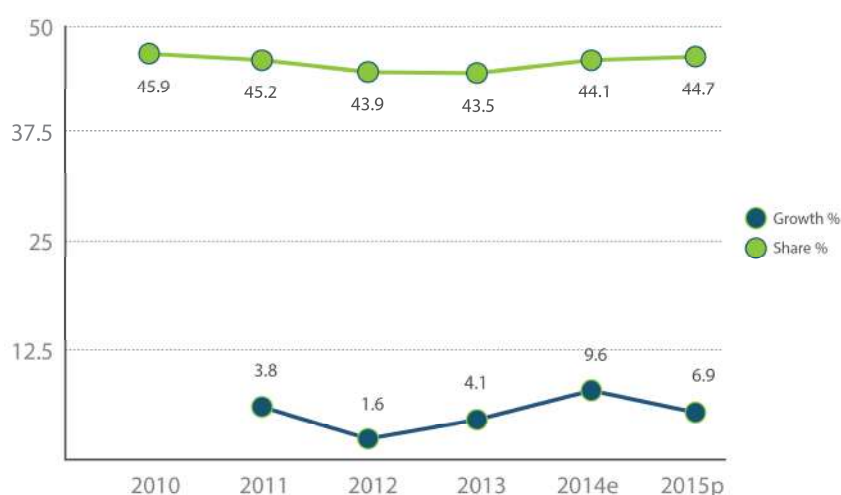


Human capital development strategy of PSR underpins the main thrust of the 11th Malaysia Plan where the *Rakyat* is the centre piece for all development efforts towards enabling the country to achieve high-income status by the year 2020 and sustaining its position in the years beyond.

3.4 Economic Transformation of Penang

3.4.1 Expansion of the Bayan Lepas Free Industrial Zone (FIZ)

The E&E sector is a very important sector to Malaysia and Penang. The E&E sector contributed RM62 billion in GDP in 2014, accounted for 25% of total manufacturing output in Malaysia and attracted RM10 billion of FDI into Malaysia in 2013 (representing 19% of all FDI investments into Malaysia). Penang's manufacturing percentage growth and share to Penang's GDP is depicted in F3.9 while the E&E sub-sectors in Malaysia is shown in F3.10.



Source: Department of Statistics, Malaysia

F3.9

Penang's manufacturing growth (%) and share (%) to Penang's GDP (2010-2015)

SECTORS	SUB-SECTORS	DESCRIPTION
Electronics	Consumer electronics	<ul style="list-style-type: none"> LED television receivers Audio visual products such as Blu-ray disc players/recorders Digital home theatre systems Electronic games console Digital cameras
	Electronic components	<ul style="list-style-type: none"> Semiconductor devices Printed circuit boards Electronic components such as media, substrates and connectors
	Industrial electronics	<ul style="list-style-type: none"> Computers Computer peripherals Telecommunication equipment Office equipment
Electrical	Electrical	<ul style="list-style-type: none"> Lightings Solar-related products Household appliances such as air-conditioners, refrigerators, washing machines and vacuum cleaners

Source: Invest Penang

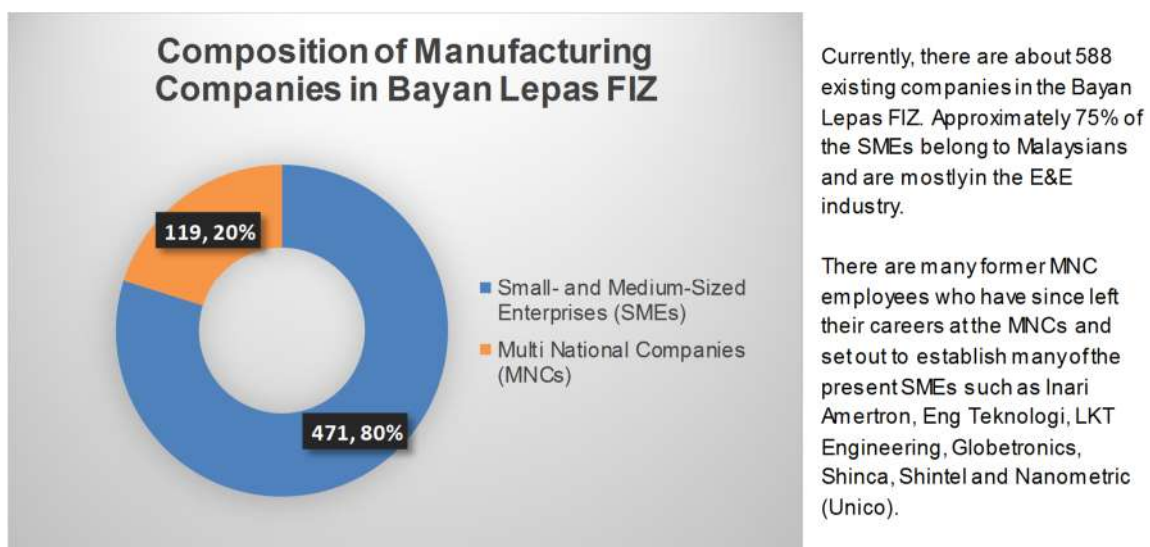
F3.10

E&E sub-sectors in Malaysia

The Bayan Lepas FIZ E&E cluster and ecosystem is the major reason for Malaysia's continued success in the E&E sector. Bayan Lepas FIZ has been recognised as one of the most successful export processing zones in the world by the World Bank, and its E&E cluster was the most vibrant of the 10 industrial clusters in the world examined by the United Nations Industrial Development Organisation (UNIDO), demonstrating successful manufacturing experience among developing economies.

In the last four decades, the multi-national companies (MNCs) and SMEs companies in Bayan Lepas FIZ have developed a unique ecosystem. Within this collaborative ecosystem, many of the SMEs have been nurtured and have developed strong linkages with the MNCs. Over the years, these SMEs have strengthened and expanded resulting in some of the SMEs having grown to become global contract manufacturers.

This unique synergistic relationship with world-class capabilities and proven track record between SMEs and MNCs needs to be expanded and enhanced to further move Penang's E&E sector up the value chain to increase its competitiveness in providing operational advantages, which include shorter development cycles, steeper learning curves and reduced cost and time to market, to potential local and international investors. The composition of manufacturing companies in Bayan Lepas FIZ is shown in F3.11.



F3.11 Composition of manufacturing companies in Bayan Lepas FIZ

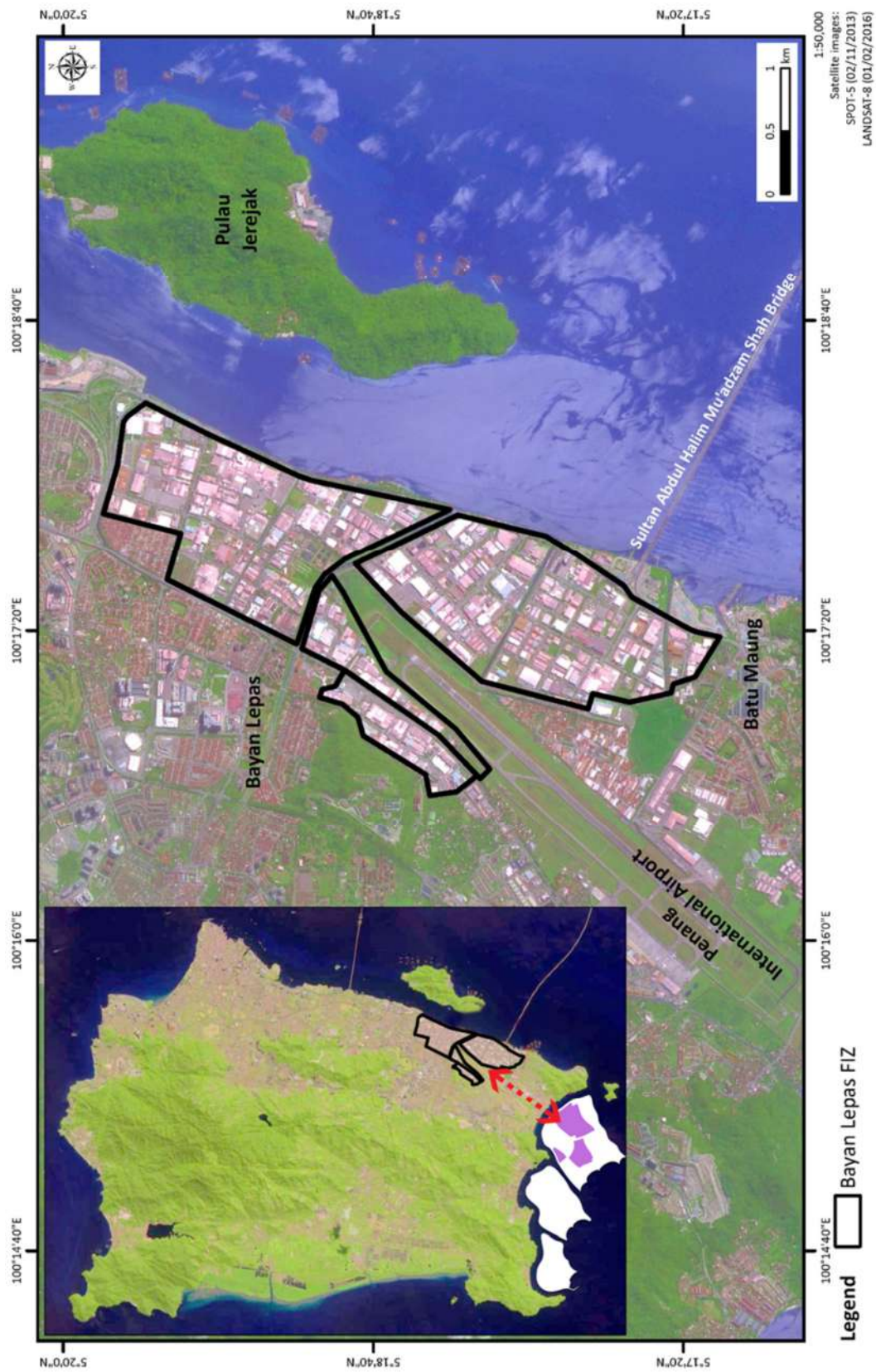
Today, the existing Bayan Lepas FIZ is fully occupied with no room to expand and move up the value chain, thus putting at risk the continued development of this significant national economic driver.

The expansion of Bayan Lepas FIZ acknowledges and addresses this risk as reflected in the national agenda, i.e. NPP3 Chapter 3 – Dynamic Urban and Rural Growth under sub-section PD1 (NPP3, JPBD) which states:

“PD1.4A of sub-section PD1: Developments of industrial clusters such as Chemical, E&E, Machineries & Equipment shall be prioritised for these industries are the main clusters that have contributed significantly to the national output. These industries are expected to continue to play an important role in the Manufacturing sector until year 2020.”

There are also opportunities to tap into spin-off industries ie. logistics and packaging, capitalising on the proximity of Bayan Lepas FIZ to the international airport.

The strategic location of PSR in the south of Bayan Lepas FIZ offers opportunities to ignite new value-added developments by tapping on existing synergistic linkages established between the MNCs, SMEs, logistics services available at the Penang International Airport, as well as the whole array of supporting services in the vicinity (F3.12). An artist's impression of the proposed location of PSR Industrial Park on Island A is depicted in F3.13.



F3.12 PSR Industrial Park, as an extension of the Bayan Lepas FIZ, will provide the space to catalyse the growth of the E&E sector, strengthening its role as a primary economic pillar of Penang.



F3.13

An artist's impression of the new high-tech PSR Industrial Park on Island A

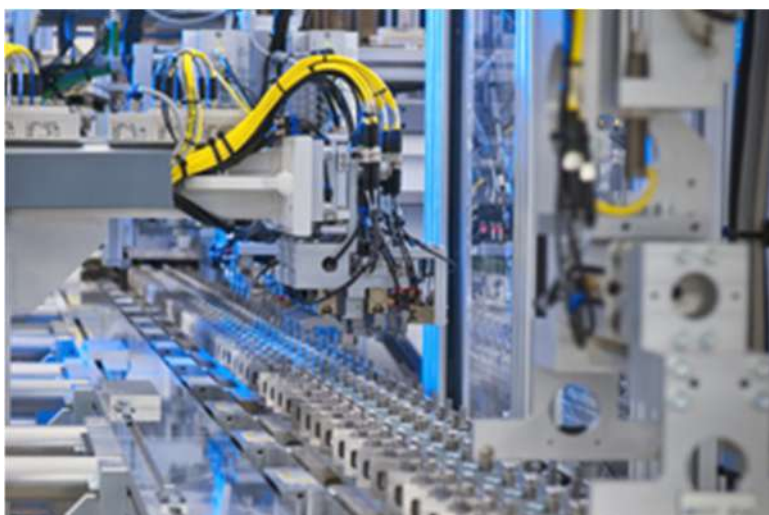
3.4.2 Diversifying the E&E Sector

Whilst having a vibrant E&E industry in Penang, the State Government has been actively promoting the diversification of its manufacturing sector into the high-value life sciences industry (e.g. bio-technology, medical devices, and pharmaceutical & biopharma industries) in recent years.

As expressed by the Penang Chief Minister during the Penang Medical Device Industry Roundtable 2015:

“As one of the two main medical devices clusters in Malaysia and with more than one third of total medical devices manufacturers and supporting companies in Malaysia located here, Penang offers an ideal ecosystem that is attractive to the large MNCs. Penang has been gaining the attention of the world top medical devices manufacturers, where we have received interested investors from medical devices industry in the past few months, exploring the potential of Penang as their new manufacturing site.”

The new land created from PSR directly supports the State's initiative towards diversification into the medical and bio-tech industries, underpinning the State's vision to be a Medical Hub in the Northern Region (F3.14).



F3.14

Diversification of the Bayan Lepas FIZ manufacturing activities into medical devices and other value-added products will propel the industry up the value chain

3.4.3 A New Hub to Charge Up the Services Sector

The business services sector is one of the State's critical growth engines. The contribution of the services sector to Penang's GDP has shown a steady increase, from 41.2% in Year 2005 to 47% in Year 2013. In 2009, KPMG recognised Penang as one of the 31 Business Processing Outsourcing locations of the future.

To further develop this economic engine, Penang needs to tap into the entire value chain of activities as the manufacturing sector expands, and to provide crucial business functions to support businesses' front and back office needs (e.g. business processing centers and data centers). Another significant area with room to expand into is the development of high value-added services (e.g. R&D, technical support, software development, and financial services).

New commercial district in PSR will contain high-rise office towers offering excellent connectivity and ICT infrastructure that will attract MNCs and global corporations to invest in Penang. A Central Business District will be introduced on Island B to support the manufacturing supply chain and services sector expansion in Penang (F3.15).



F3.15

An artist's impression of the Central Business District on Island B that will be home to MNCs and a thriving BPO and commercial hub to support the growing economic engines in Penang

3.4.4 Tourism

The tourism industry (e.g. medical tourism, eco-tourism, and retirement living) is a major income earner for Penang State. This is evidenced by the number of international visitors arrived at the Penang International Airport (F3.16).

It has been identified as a key enabler in the services sector that has gained traction through continued efforts by the Penang State Government in the last decade. Penang catapulted on Federal and the world tourism map when Georgetown was accorded a UNESCO World Heritage Site in 2008, a global recognition of Penang's unique architectural and cultural townscape.



Source: Penang Global Tourism

F3.16 International visitors in Penang via Penang International Airport for year 2013 and 2014

Other prestigious accolades that have boosted Penang's worldwide standing as a major attraction include:

- ECA International nominated Georgetown as eight most liveable city in Asia (above Kuala Lumpur) and 62nd in the world in 2010;
- Voted Top Ten Street Food Cities in 2012 by VirtualTourist.com;
- Yahoo@ Travel listed Penang as one of the top eight islands in the world "You must see before you die" in 2011;
- Kiplinger ranked Georgetown as one of the eight great places to retire abroad in 2011;
- Live & Invest Overseas ranked Georgetown third for Retire Overseas Index in 2014; and
- CNN Travel ranked Penang second in the "Best Place to Visit" in 2017.

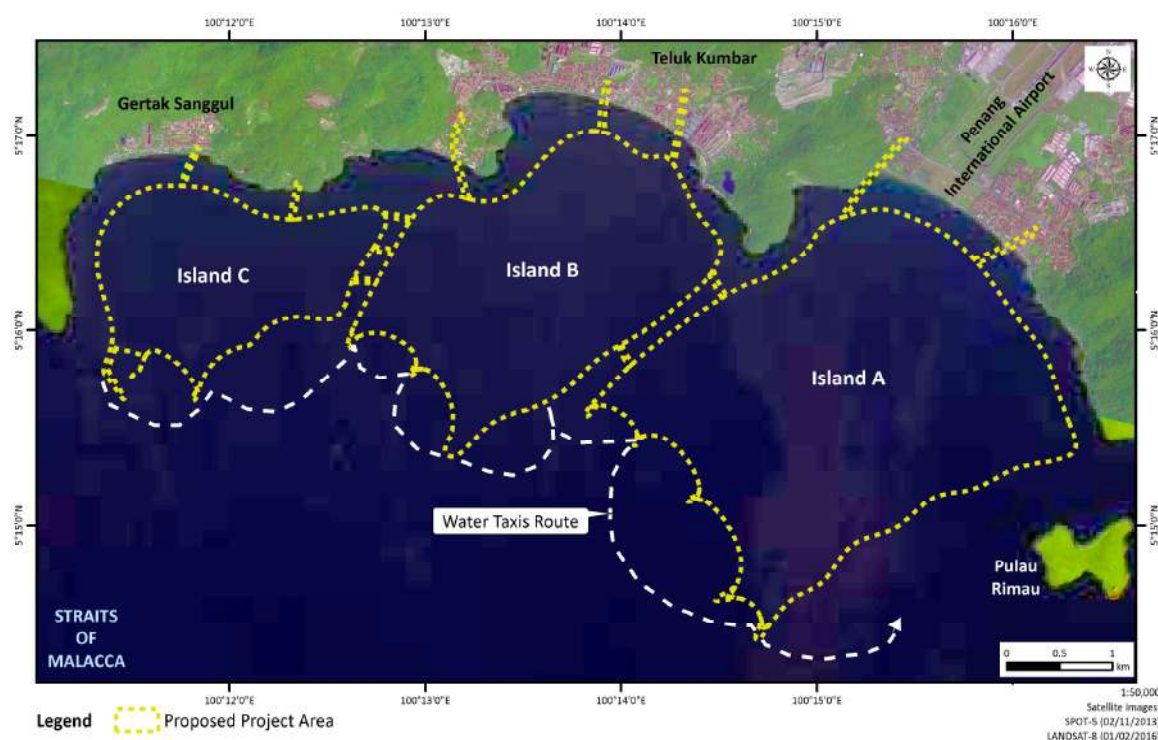
It is imperative to sustain Penang's top position on international tourists' radar in the coming years via new tourism attractions in the south of Penang Island. These new attractions will not only reinforce Penang's appeal as a must-visit holiday destination, but also significantly increase tourist receipts translated to the Government's annual incomes.

The masterplan of PSR has broadened its tourist attractions to include entertainment, sports, recreational beaches, arts and cultural centre, and international MICE (meetings, incentive, conference and exhibition) facilities. The PSR Performing Arts Centre, Marina, Museum, Sports Arena and MICE Complex will boost and sustain Penang as the destination of choice for visitors in an increasingly competitive world tourism market (F3.17) .



F3.17 New attractions envisaged to be on PSR Islands

As part of measures to ensure better income for the local fishermen, entrepreneurial opportunities will be provided where water taxi services (F3.18) can be provided through designated stops at each reclaimed island.



F3.18 Proposed water taxi services at the reclaimed islands will not only serve as a tourist attraction, but also provide entrepreneurial opportunities for local fishermen

Quality healthcare at highly affordable prices in Penang has attracted tourists as far as Indonesia, Singapore and Hong Kong, to seek treatment for various ailments.

In 2017, International Living has listed Penang as one of the top four destinations for medical tourism.

Hence, the new Medical Hub in PSR will cater for the booming medical tourism industry in Penang.

3.5 Relieve Development Pressures on George Town

Land scarcity has forced the majority of developments on Penang Island to locate around George Town and on the north-eastern coast of Penang Island. The pressure from the lack of land has led to a phenomenon of rising ad-hoc developments that threaten the preservation of George Town's heritage, and undermines the liveability of the island.

Concurrently, growth in the southern part of Penang Island has been comparatively slower than the north-eastern region, leading to an uneven distribution of wealth-generation activities throughout the island (F3.19).



F3.19 The southern coast of Penang Island is already developing, but still lags behind the highly urbanised northeastern region. Picture shows existing developments in the Bayan Lepas area.

For Penang to achieve a more inclusive growth over the whole island, the developments in the southern region can be further harmonised with PSR and complement a new holistic township that will absorb the spillover effects of the incompatible developments on Penang Island.

Furthermore, by shifting development focus towards southern Penang Island with the new land created, not only will the State Government be able to deliver transformation in a meaningful and substantial way for the Rakyat, but more importantly it will also narrow the socio-economic gap in the southern region.

It is envisioned that the overall liveability in Penang will be significantly enhanced with the carefully masterplanned PSR Islands, which offer sustainable amenities i.e. a new State Administrative Center; and a development mix consisting of residential, commercial, industrial, as well as education and medical hub; to support and accommodate the future growth of Penang.

This will directly mitigate haphazard developments and preserve the World Heritage character of George Town (F3.20).



Ad-hoc high-rise developments in George Town that threaten its World Heritage legacy



F3.20 Examples of ad-hoc developments and buildings that are incompatible with the UNESCO World Heritage Site character and identity of George Town, Penang

3.5.1 Why South Penang Island, Not Penang Mainland?

A number of strategic reasons outline why southern Penang Island is the ideal location for the creation of PSR:

- a) The close proximity of PSR Islands to the existing transport infrastructure, namely the Penang International Airport (planned for future expansion) and the Second Penang Bridge, will enable easy connectivity to Seberang Perai and regional cities. This provides logistics convenience to facilitate commercial, tourism and industrial activities that would contribute to the bulk of the economic growth from PSR in the future.
- b) This is in addition to the proposed dedicated high-tech PSR Industrial Park in Island A, which will be located just across the dredged channel from the Bayan Lepas FIZ, a place close enough to enable the extension of the fully-occupied, as well as the most mature and successful industrial zone in Penang.

With the above, PSR will serve as a prime strategic location where corporations may take advantage of and further value-add the MNC-SME synergies established within Bayan Lepas FIZ.

This is in stark contrast to other locations in the Penang Mainland, such as Northern and Southern Seberang Perai, which are generally used for fishing and agriculture practices (paddy fields and oil palm plantations) that are vital for food security in Penang. Moreover, agricultural land for the lack of essential amenities by and large generates lesser value and interest among investors, compared with prime land on Penang Island, which may in turn yield lower development value for the State (F3.21).



F3.21 The close proximity of PSR Islands with the Penang International Airport, Second Penang Bridge and the Bayan Lepas FIZ with a ready pool of manpower and crucial amenities render it a preferred location compared with Seberang Perai.

3.6 Addressing New Land Scarcity and Preserving Penang's Hills

Penang Island is predominantly hilly from the central north to the south as shown in F3.22, and rapid urbanisation and population growth have resulted in agglomeration of contiguous towns (e.g. Batu Ferringhi to Bayan Lepas) along the eastern coast.

As the western coast is mainly for agricultural and fishing villages, there is an acute shortage of land suitable for new developments on the island leading to rapid escalation of land and property prices. The proliferation of haphazard developments has led to encroachments into the hilly zone that threatens the sustainability of Penang's natural heirloom.

The proposed PSR will shift developments in the southern coast and provide Penang Island with the sufficient land mass required for the long-term (50-year horizon), thereby preserving Penang's hills that are well-loved by the people.

At the same time, the Penang State Government will also be able to moderate the escalation of land prices in Penang Island by supplying new PSR land in the market in an orderly, controlled manner.



F3.22

Google Earth visual showing outlined area of the steep mountainous belt running across central Penang Island, which takes up at least 60% of the land mass on the island and limiting developable land for new developments

3.7 Homes for All Income Levels Served by Well-planned Amenities

Due to land scarcity, house prices in Penang have risen faster than the income levels of average Penangite. In recognition of the growing affordability gap, the State Government has taken various intervention measures which includes new policies and affordable housing projects in Batu Kawan (Seberang Perai), Kampung Jawa and Teluk Kumbar.

According to Penang Monthly (February 2014), the Penang State Government has set up a RM500 million “Affordable Housing Fund” to build 20,000 of public housing and affordable housing. Current projections indicate that even with the largest affordable housing programme in the state’s history, coupled with promised supply from the federal government, affordable housing units will still be in short supply by 2020 by an order of between 50,000 and 100,000 units.’

The PSR will supplement the State and Federal Government’s efforts to build sufficient quality housing for the *Rakyat* (F3.23). This is in support of the NPP3 Chapter 5 – Building Inclusive and Liveable Communities, under sub-section KI 1 – Comprehensive and Quality Living Environment (Third National Physical Plan, Federal Department of Town and Country Planning, Malaysia) which states:

“KI 1.1 of sub-section KI 1: Providing sufficient and quality affordable houses for the target B40 lower-income households shall become a priority.”



F3.23

An artist's impression of public and affordable housing that will be built on future PSR Islands to cater for rising demand for affordably priced homes, served with efficient public transport right at the doorstep

3.8 Economic and Employment Benefit

PSR will provide positive economic and social impacts due to the additional economic activities that it generates (F3.24). This will come from the reclamation works, infrastructure, property development and higher value-added manufacturing and services activities.

The Project's construction activities are estimated to deliver an output multiplier of 2.5 times to the economy and contribute significantly to Penang's future growth. This will further elevate Penang's status as one of the most livable cities in Asia and beyond, and as an advanced metropolis with a robust manufacturing and services hub.

Plenty of new employment opportunities will be available once the Project begins. The commencement of the Project will attract job seekers to start new careers. This will subsequently improve income levels and living standards.

By the year 2050, new investments into the proposed Project components will support more than 300,000 job opportunities, particularly in the manufacturing and services sectors.



F3.24

An artist's impression of one of the community markets on PSR Islands. PSR, being a long-term and sustainable initiative, reinforces the realisation of the State Government's vision of an inclusive and well-balanced society in Penang

3.9 New Beginnings for Fishermen

In the Social Impact Assessment (SIA) study, which covers existing households in the south coast of Penang, it is shown that most of the fishermen households within the study have an average monthly household income of RM2,710.

These fishermen households are earning well below the national median monthly household income of RM5,228, and is also lower than the average national B40 monthly household income of RM2,848 (Department of Statistics Malaysia, 2017).

The fishermen communities in the south coast of Penang Island are predominantly in-shore fishermen who are still using traditional fishing methods and are susceptible to external shocks such as changes in environmental dynamics and fishing locations. They also lack a reliable and strong community support network to cushion them against such shocks (F3.25). Among the primary issues and challenges faced by them include:

- a) Widening socio-economic disparity with the rest of the Penang population;
- b) Generally, lower educational attainment and skills acquisition;
- c) Decreasing household income levels due to gradual decline in catch;
- d) Increasing difficulty in sustaining their livelihoods due to rise in cost of living;
- e) Lack entrepreneurship capabilities; and
- f) Limited access to social support network such as retirement and life protection schemes, quality healthcare services, etc.



F3.25

Fishermen community in the southern coast of Penang Island

Culmination of the above factors have rendered this stakeholder segment extremely fragile to further deterioration in their means of living if no strategic and concerted efforts are in place to strengthen their resilience in the community.

In line with the spirit of the 11th Malaysia Plan (RMKe-11), PSR will deliver new opportunities to the fishermen community as follows:

- a) Better fishing infrastructure in the south coast (F3.26 and F3.27);
- b) Improvements to local infrastructure such as flood mitigation, shoreline enhancement, rural development and roadworks for better living conditions;
- c) Accessibility to future amenities such as parks and recreational facilities, education, health care and government services on PSR Islands;

- d) Increase income through the “Alternative Livelihood Options” scheme carried out by the State Government in collaboration with relevant Federal agencies i.e. deep-sea fishing, aquaculture, water taxi, fish tourism and recreational fishing, home-stay programmes, alternative employment in other sectors, etc.; and
- e) Eligibility for public housing that is in close proximity to their existing residence.



F3.26 Proposed future jetties for the fishermen at the south coast of Penang Island



F3.27 Fishing boats parked along the beach (inshore)

In conjunction with PSR, a total of four new fishermen jetties are proposed to be built along the south coast of Penang Island, namely in Permatang Damar Laut, Sungai Batu, Teluk Kumbar and Gertak Sanggul with deepened shoreline to help improve productivity among local fishermen (F3.26). These jetties are also equipped with floating mooring facility that allow fishermen to park their boats at the jetties.

Without proper jetties, fishermen in the south coast of Penang currently park their boats along the beach (inshore) which limits their daily fishing activities as their boats are usually stranded during low tide (F3.27).

Through implementation of the above measures planned as part of the PSR development, the fishermen community and their future generations will experience renewed livelihoods with a brighter and more secured future.