



Designing Circular Cities in Malaysia Stakeholder Consultation Webinar, 29th June 2020 co-hosted by MBPJ and IUC, EU-Asia

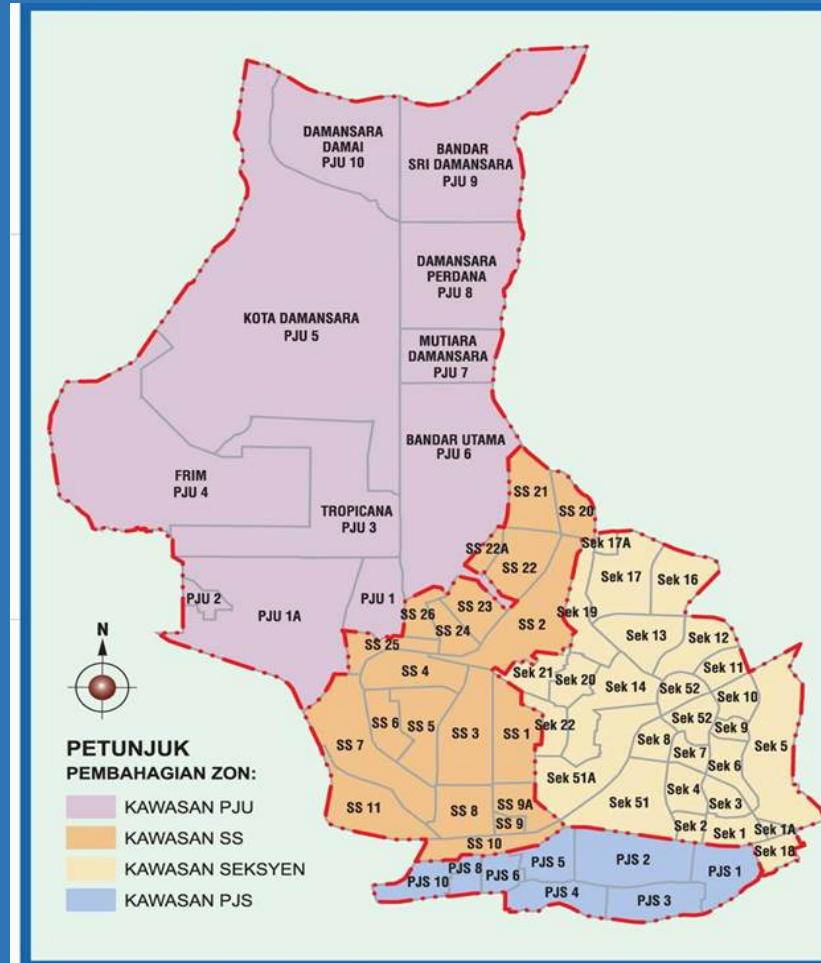
Circular Economy Solutions To Address Top 5 Challenges of Petaling Jaya



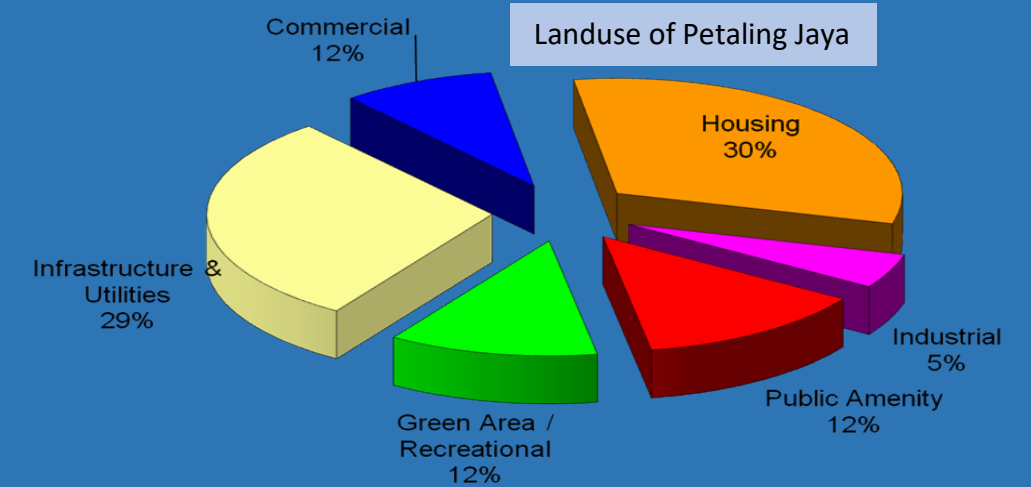
Lee Lih Shyan
Director

Department of Solid Waste Management & Public Cleansing
Petaling Jaya City Council (MBPJ)

PETALING JAYA CITY PROFILE



PJ as A Smart, Sustainable & Resilient City by 2030



Mission

- To provide quality facilities and services for the prosperity of Petaling Jaya

Vision

- Petaling Jaya leading towards a dynamic and sustainable City
- Target 30% of CER by 2030**

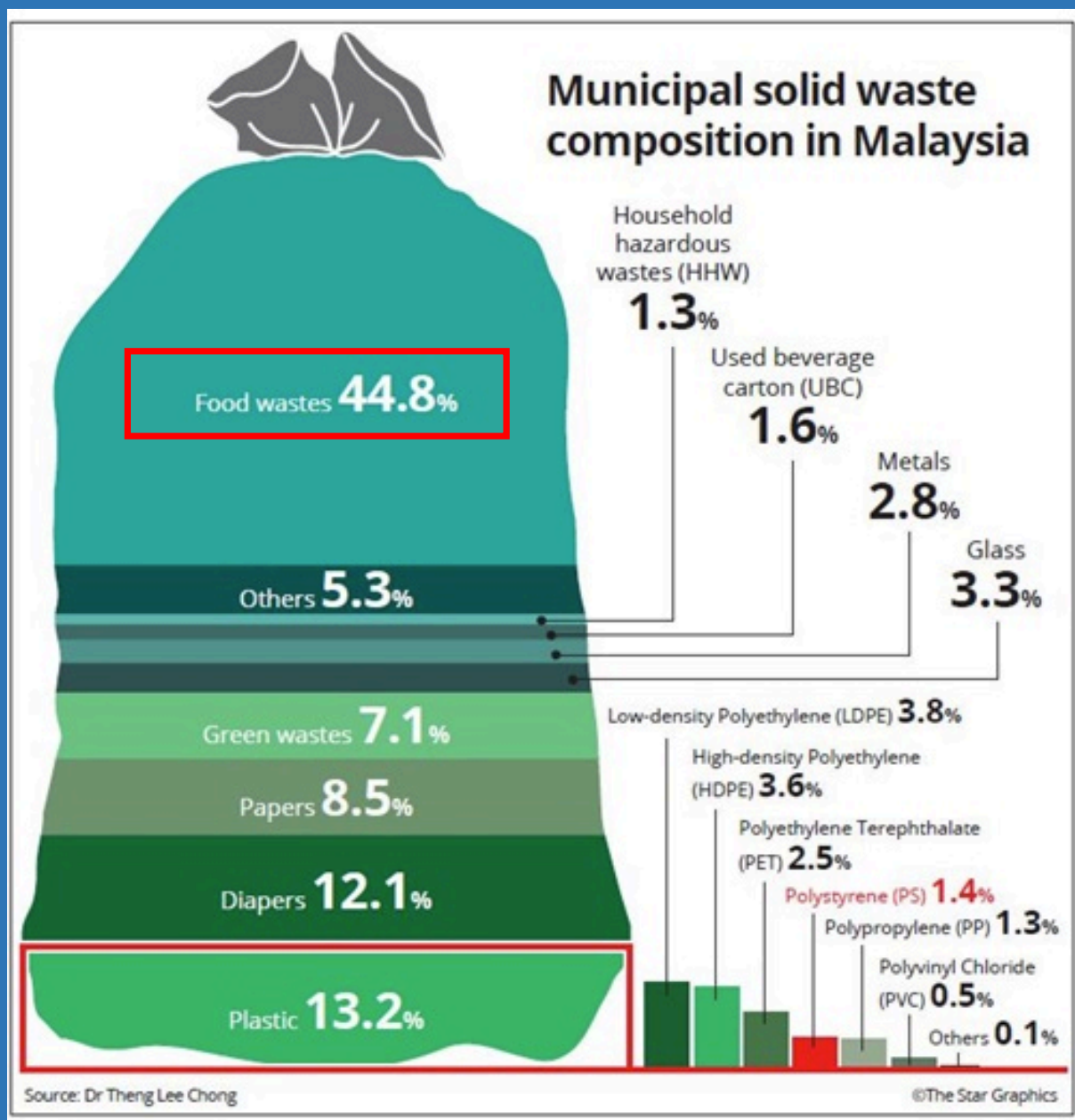
Total area	97.2 kilometers
City centre	22 include 2 sub-regional centre
Administrative zone	4
Population	772,763 (2019)
Household income	<ul style="list-style-type: none"> Year 1996 (USD 740) Year 2000 (USD 1270) Year 2010 (USD 1900)
Total Properties	254,174
Neighbouring city	Kuala Lumpur (East), Shah Alam (West), Selayang (North), Subang Jaya (South)

5 IDENTIFIED CHALLENGES IN PJ

- **Challenges for PJ in the process of transition to a circular city could be numerous and complex, it is workable to start with challenges that within the control or influence and capacity of the City Council**
- **As such, Priority is given to the 5 challenges :-**
 - **Food Waste**
 - **Plastics waste and packaging**
 - **Construction Waste**
 - **Household E-Waste**
 - **Digital platform as an enabler for circularity**

WASTE CATEGORIES

~ A General Overview



Household E-Waste

- ✓ Under the Environmental Quality Act (EQA)
- ✓ Generated from households and ICI

Construction Waste

- ✓ Under Act 672* as controlled solid waste / Local by-law
- ✓ Not in municipal solid waste stream

Plastic Packaging Waste

- ✓ Part of municipal solid waste
- ✓ Generated from both households and ICI

Municipal Solid Waste

- ✓ Under Act 672* / local by-law
- ✓ General solid waste from municipal services

Other Scheduled Waste
Other Household Hazardous Waste

Solid Waste

Other Special waste

Agriculture Waste

Medical waste

* Act 672 is not applicable in PJ

Expenses (2019)	RM (mil)
Collection Service	27.6
Disposal Fee	7.9
Total	35.5

Inventory On Domestic Waste Collected	
CONTRACTOR	PREMISES
KDEBWM	208,556
KPL	7,272
TOTAL	215,828



DATA ON WASTE IN PETALING JAYA

QUANTITY OF WASTE DISPOSED, YEAR 2004-2019

Weight (tonne)



Recyclable Items Collected, 2017-2019

Year	Weight (kg)
2017	16,826
2018	92,886.41
2019	141,379
Total	251,091.41 kg

Year	Weight (kg)
2018	147,511.73
2019	65,531.15
Total	213,042.88 kg

Food Waste Composted, 2018-2019

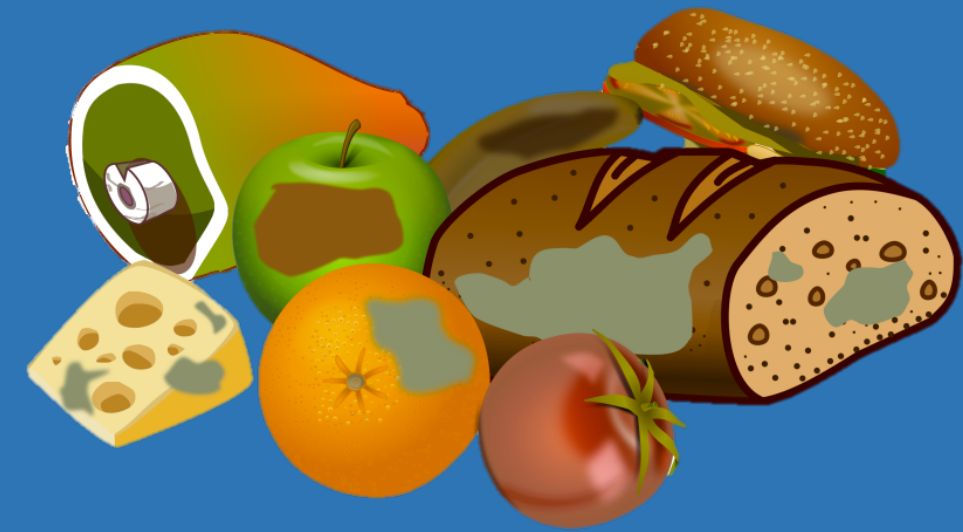
Food Waste

**Largest Composition of Malaysia MSW
~ 45%, equivalent to 17,000tpd**

- 1 Main contributor of Greenhouse Gases (GHG) emission from solid waste sector – from the process of food waste degradation
- 2 Main source of problems from waste in terms of smells, attracting insects and rodents, and carries harmful bacteria
- 3 It is a global concern, not only in terms of food waste generation, but “food wastage” issue is significant worldwide (about 1.3 billion tons of food is wasted yearly in the world).
- 4 About 10~15% of the total food waste generated in Malaysia is actually “wasted food”, means we have wasted about 2,000 tons of good food everyday



Food Waste



MBPJ's Perspectives



Reduction of Overall Solid Waste Management Costs

Reduction of food waste generation at source would significantly reduce the total amount of waste generation and thus reduce the overall management costs.



Towards Circular Economy / Low Carbon City

Treatment of food waste not only divert adverse impacts due to disposal to landfill, it also promotes circular economy by effective reuse or recycling, in line with the concept of being a low carbon city.



Contribution to local and national GHG reduction target

Dealing with food waste generated at local level would contribute towards overall GHG emission from waste sector, subsequently contribute to the targets set in 2030.



Minimize Adverse Impacts from Food Waste

Local issues require local solutions, effective management of food waste at local level assures cleaner and healthier environment for the local residents.

MBPJ spent >RM 80mil per year for MSW & C

MBPJ Low Carbon City Framework, MBPJ target 30% CER by 2030 and Waste contributes 7.6%

For a healthier living environment in PJ

MBPJ's Food Waste Initiatives

MBPJ Composting Initiative

- 6 centres of AD Composting with combined capacity of 3.4 tpd
- 592 tonnes of food waste, 2019
- > 1400 families practice composting at home
- > 20 community composting site/urban farming

Composting way to sustainability

Machine can support up to 100kg of food waste a day



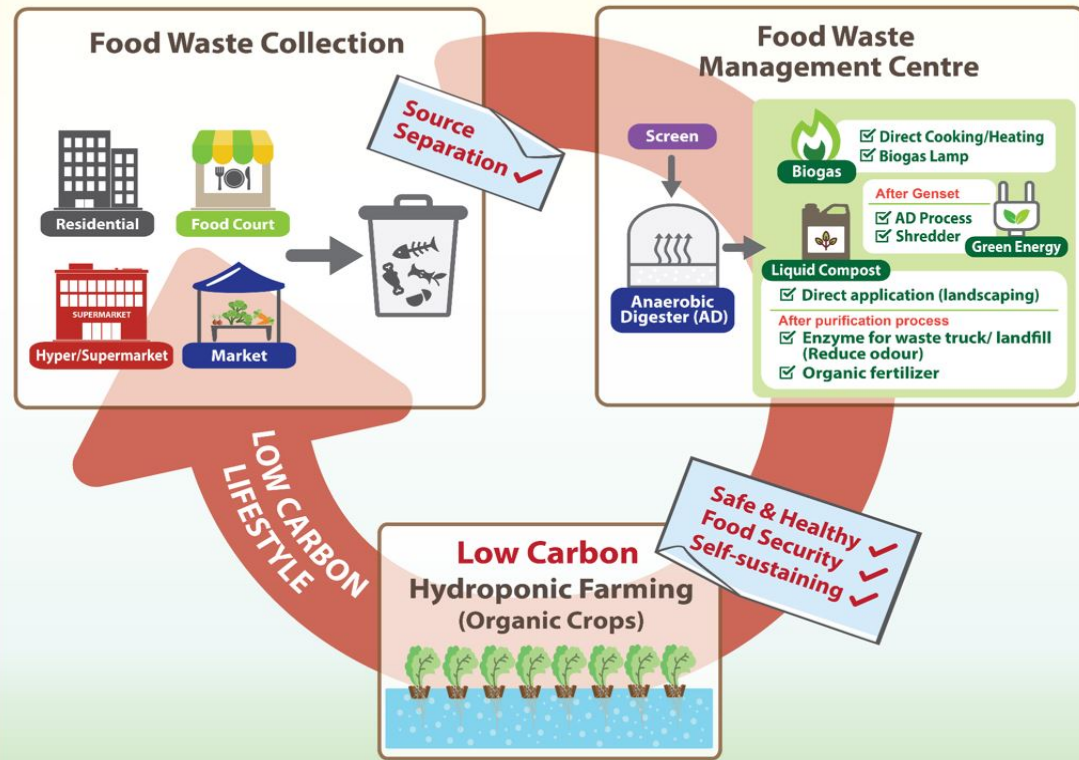
SMART PJ Waste Solution Lab@SS 2



Food Waste Composting Awareness Program With Section 17, PJ Residents
April 2018



Community / Home Composting



MBPJ's Food Waste Initiatives



MBPJ Food Bank

- Recipients include 64 Charity Homes & 800 poor families
- 67 Volunteers
- > 80 tonnes of food being rediverted since 2012



Urban Farming / Community Garden

PROJEK AGROBOX DI URUS OLEH PERSATUAN PENDUDUK SOUTH AVENUE PJS 2, SUMBANGAN UMEC.



6 Events

Thinking out of the box to end poverty
Use of shipping containers in Taman Medan urban farming project reduces land usage, increases farmers' income

By NURUL ATIQAH MOHD RAMI
metro@metronews.com.my

IT IS estimated that by 2020, the percentage of people living in large cities will go up to 70% and this will result in more urban poverty and food supply crises.

In an effort to curb this situation, steps need to be taken now and one of the initiatives being carried out by the Petaling Jaya City Council (MBPJ) was unveiled during the Agroblox project launching in conjunction with National Landscaping Day 2017.

The effort, in partnership with Taman Medan residents, Universiti Malaysia Entrepreneurship Centre (UMEC) and PJS1 South Avenue Residents Association (PPR11 SA), is the first urban farming initiative in the area and is located in Dataran Anak Mada, Jalan PJS 105, Taman Medan.

"We did a demographic research of population income here in PJS and found that 47% families were in the urban poverty bracket.

"As a temporary solution, we are encouraging families to start their own urban farming projects.

"This Agroblox initiative is one way for MBPJ to help," said Petaling Jaya Deputy Mayor Jahary Jusaid. "It will not only benefit the residents here with food resources, but offer an alternate source of income as well," he added.

Agroblox is a portable two-storey farm that fits into a 5.8m shipping container with a small hydroponic garden on top and a fish farm below.

The use of the shipping containers helps reduce land usage to conduct farming activities, something that is important in city living.

"If we look around Taman Medan or even other areas in Petaling Jaya, empty spaces are hard to come by. For community gardens," said Taman Medan assemblyman Haris Mukhammad Talib.

"By using Agroblox, we can conduct urban farming for our community and produce organic products.

"As soon as we have more space, we plan to expand this location for more Agroblox," she added.

This effort was the brainchild of Universiti Malaysia students, through their UMEC programme. Using shipping containers as a base platform for their farms, will also increase the income of farmers once the project is fully running after about six months.

UMEC began the project in October last year and will advise the residents of Taman Medan how to run their farms in order to generate the full benefits.

"The residents can also build their own Agroblox on a smaller scale in their homes but the Dataran Anak Mada location will serve as a centre for all residents in the area.

Plastic Packaging Waste

Global Concerns

National Concerns

NON-DEGRADABLE

Conventional plastics are mostly non-degradable (hundreds ~ thousands years)

TOXIC SUBSTANCES

Improper management of plastics causes release of toxic substances, endangers human health and ecosystem

Some plastics release dioxins, phthalates, vinyl chloride, ethylene dichloride, lead, cadmium and other toxic chemicals

TREMENDOUS AMOUNT

Amount of plastic used especially for packaging and disposable / single use is tremendous

OCEAN PLASTICS

It creates global issues of ocean plastics, threaten the environment and sea life

Plastic straw takes 200 years to decompose

8 million tonnes of plastics flow into the ocean yearly

About 500 tpd of plastic in MSW stream

Some plastics are not recyclable or not being recycled due to various constraints

NON-RECYCLABLE

Some plastics are not recyclable, some are not being recycled due to various constraints



MBPJ's Perspectives

- ✓ Local participation is essential for effective segregation and recycling of plastic waste (at source)
- ✓ Consumer behavior in handling plastic at source should be enhanced, such as tremendous amount of plastic packaging waste from online purchases

- ✓ The concept of 3R to reduce, reuse and recycle plastic waste by the local to ensure circular economy
- ✓ Creating awareness and necessary mechanism to support effective local collection networks is much needed to enhance plastic waste recycling

MBPJ's Plastic Waste Initiatives



- ~ Towards Plastic-free Society
- ~ Imposed Fee on plastic bag
- ~ Plastic Bag Trust Fund
- ~ No plastic straw
- ~ Biodegradable bags
- ~ Collection of plastics waste
- ~ Shared TAPAU Corner
- ~ Styrofoam recycling (70 tonnes)

Selangor mula kempen bebas straw plastik di semua premis makanan



BRING YOUR OWN BOTTLE

REUSE plastic bottles to
REFILL detergent and
REDUCE pollution!

SAVE EARTH SAVE COST

Bestsellers:

Dishwash	RM 2.00/l
Laundry Liquid	2.80/l
Softener	1.90/l
Pine Gel	3.80/l
Mop Shine	2.90/l

FILL and REUSE your water bottle to
REDUCE your contribution to the world's carbon footprint

Bottled water cost **3,500** times the price of tap water.

The Story of Bottled Water

10 billion of plastic bottles are thrown away every year and ended up in landfills.

In the manufacturing of bottles, 300,000 tonnes of carbon dioxide are produced every year and increasing.

THE BOTTLED WATER HABIT! Bring your own water for free water refills at 1 Utama's Water Refill Station

Examples of Private Initiatives



In line with green city initiative

MBPJ will invite NGOs, companies to take part in activities at recycling centre

Household E-waste

Global Concerns on E-waste Generation

E-waste is one of the fastest growing waste categories in the world, due to technology developments

It was estimated that Malaysians generate about 53 million pcs of E-waste in 2020

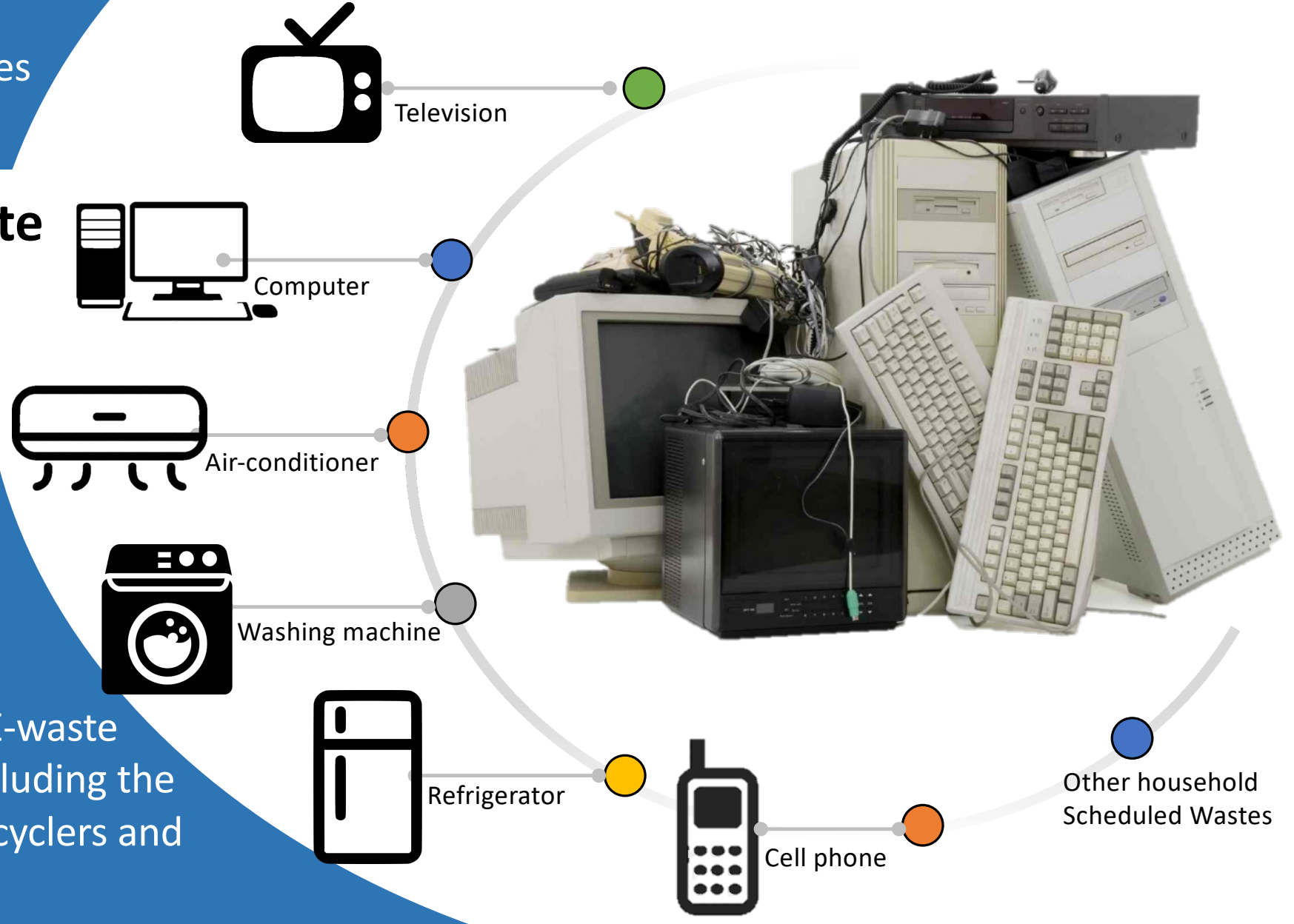
Recycling by informal sector

Many household E-wastes are handled in informal sectors at the moment, creating much environmental and health concerns

New Household E-waste Regulation

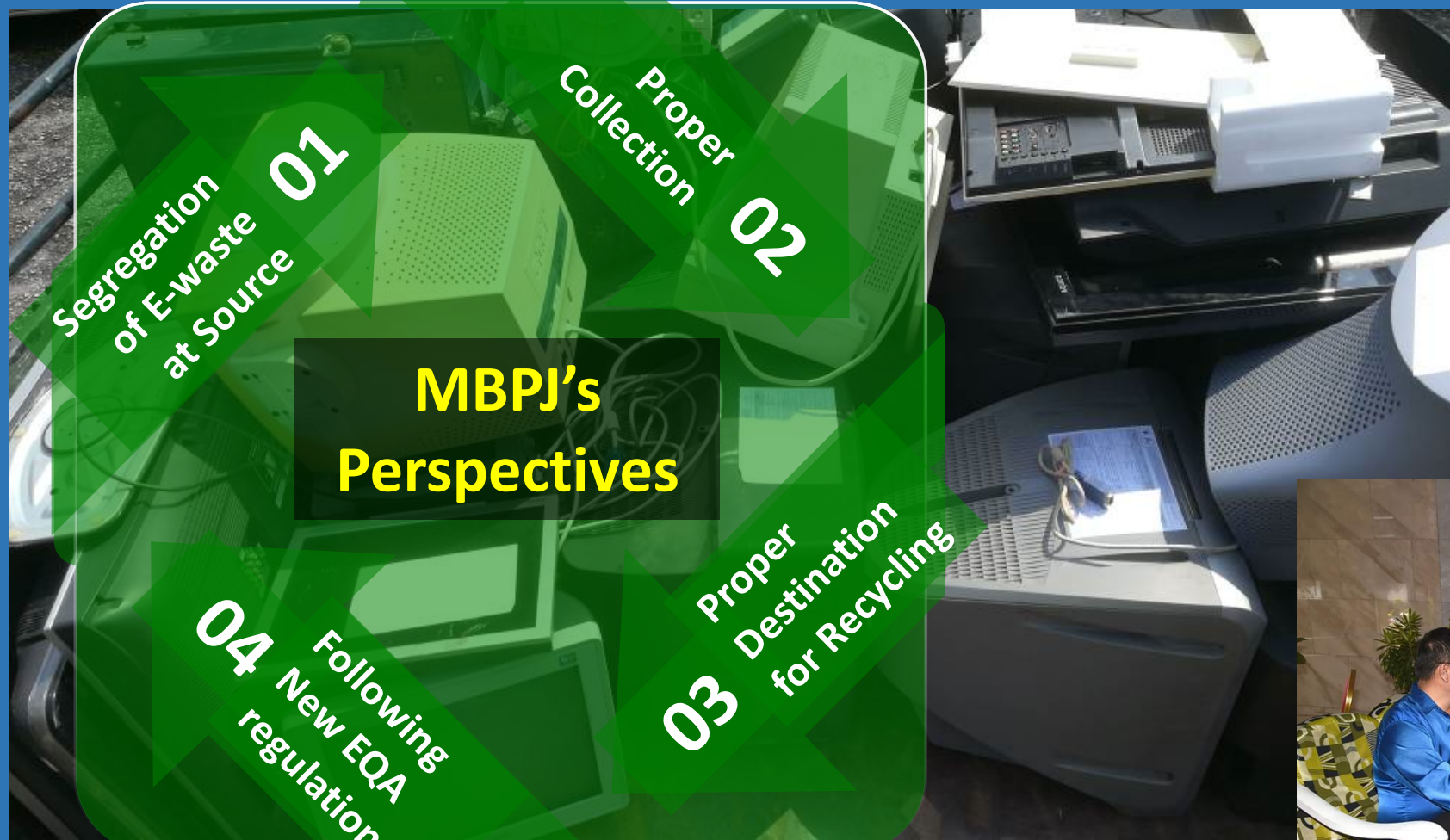
DOE has drafted a new regulation on household E-waste under the EQA, regulating all the stakeholders including the manufacturers, importers, collectors, retailers, recyclers and consumers (Expected to be enacted within 2020)

~ Global / National Concerns



MBPJ's E-Waste Initiatives

- ~ To begin mainstreaming in Recycling Activities with ISO 14001 certification
- ~ Presently mainly Private driven
- ~ School recycling contest jointly organised with private sector and by companies
- ~ Programme on Jalinan Kasih 3R in which electrical appliances collected from Spring Cleaning are redistributed to B40 families
- ~ Donation of old computers to schools



Construction Waste



National Concerns

Tremendous amount (Heavy weight)

Quantity of construction waste is tremendous, handling cost is high because it's heavy in terms of weights
(Estimated about 10 million tonnes per year in Malaysia)

Inert but no proper management system

No proper system in place thus construction waste is not specifically managed, illegal dumping often happens
(Less than 5 inert landfills in Malaysia)

Low reuse and recycling rate

Most of the construction wastes are not being reused or recycled due to market constraint / viability
(Lack of supporting scheme for usage of recycled materials)



ILLEGAL DUMPING

MBPJ's Perspectives

Illegal dumping of construction waste is one of the major problems faced by most Local Authorities in Malaysia. The Local Authorities spent huge budget every year to clean up illegally dumped construction wastes, which create nuisance to the surrounding environment

Existing Initiatives of MBPJ

- Mandatory for building owners to engage Council's contractors for dumping waste
- Green Building Accreditation is required for planning approvals
- Integrated Buildings System is a condition for construction
- Min 60% of construction material is locally sourced

Innovative Solutions for Waste Management

~ Internet of Things (IoT)

~ Big Data

IoT-powered waste management solutions focus on improving the total efficiency of waste management such as waste collection and recycling through optimization.

- ✓ Solution of the new era
- ✓ Borderless / defined boundary
- ✓ Wide range and flexibility of application for all sectors
- ✓ Connecting all players at one single platform
- ✓ Generating big data for effective future planning

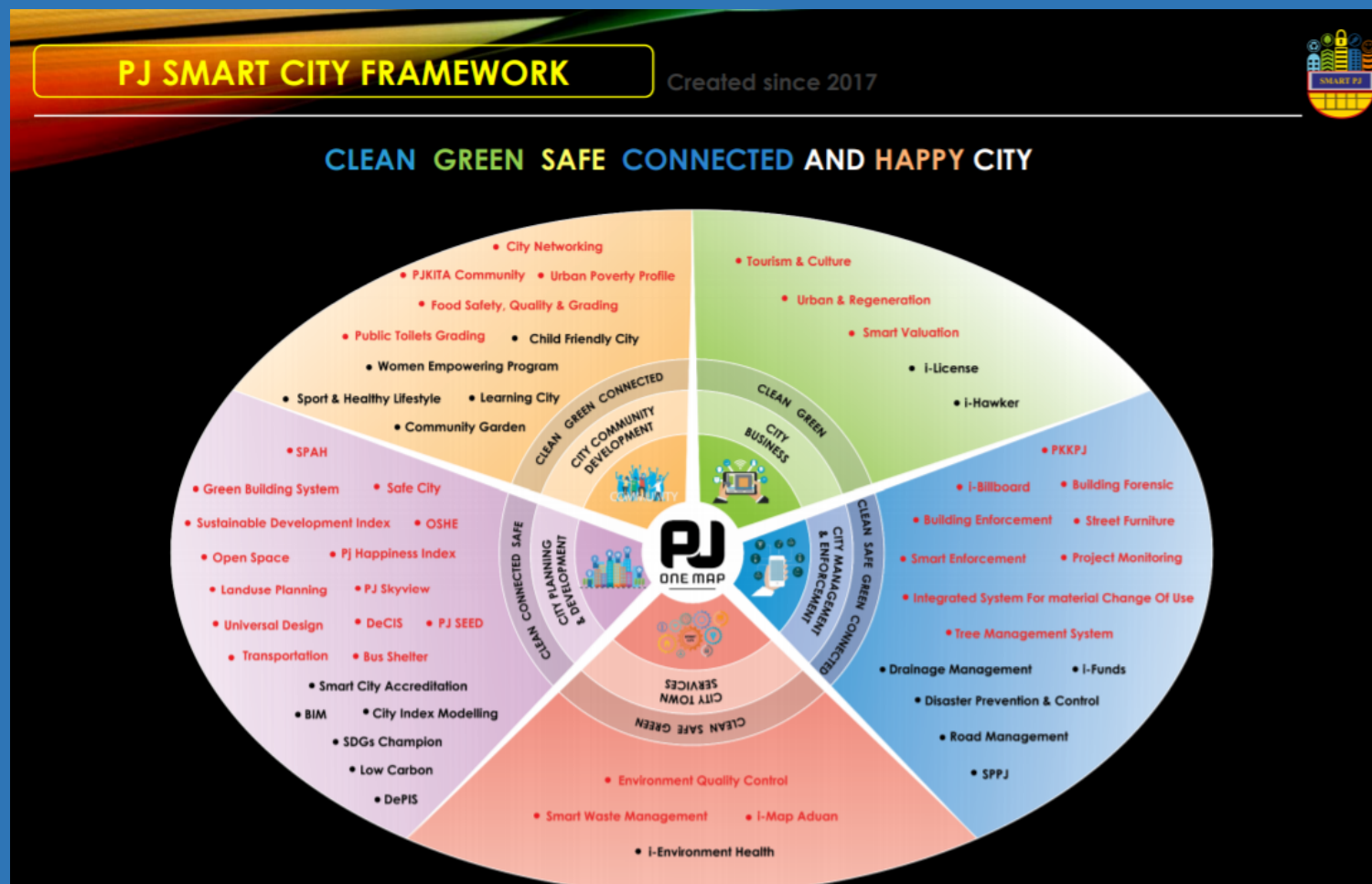
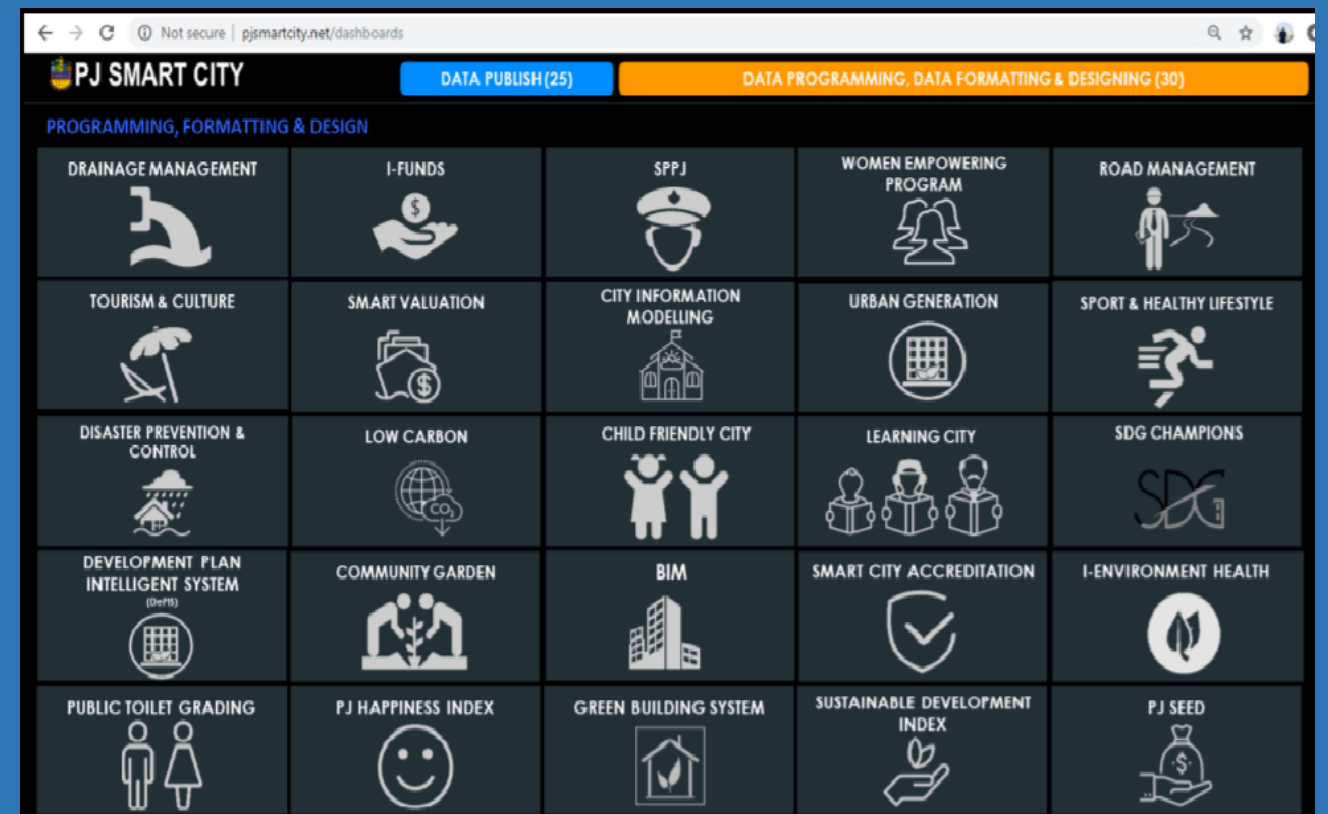
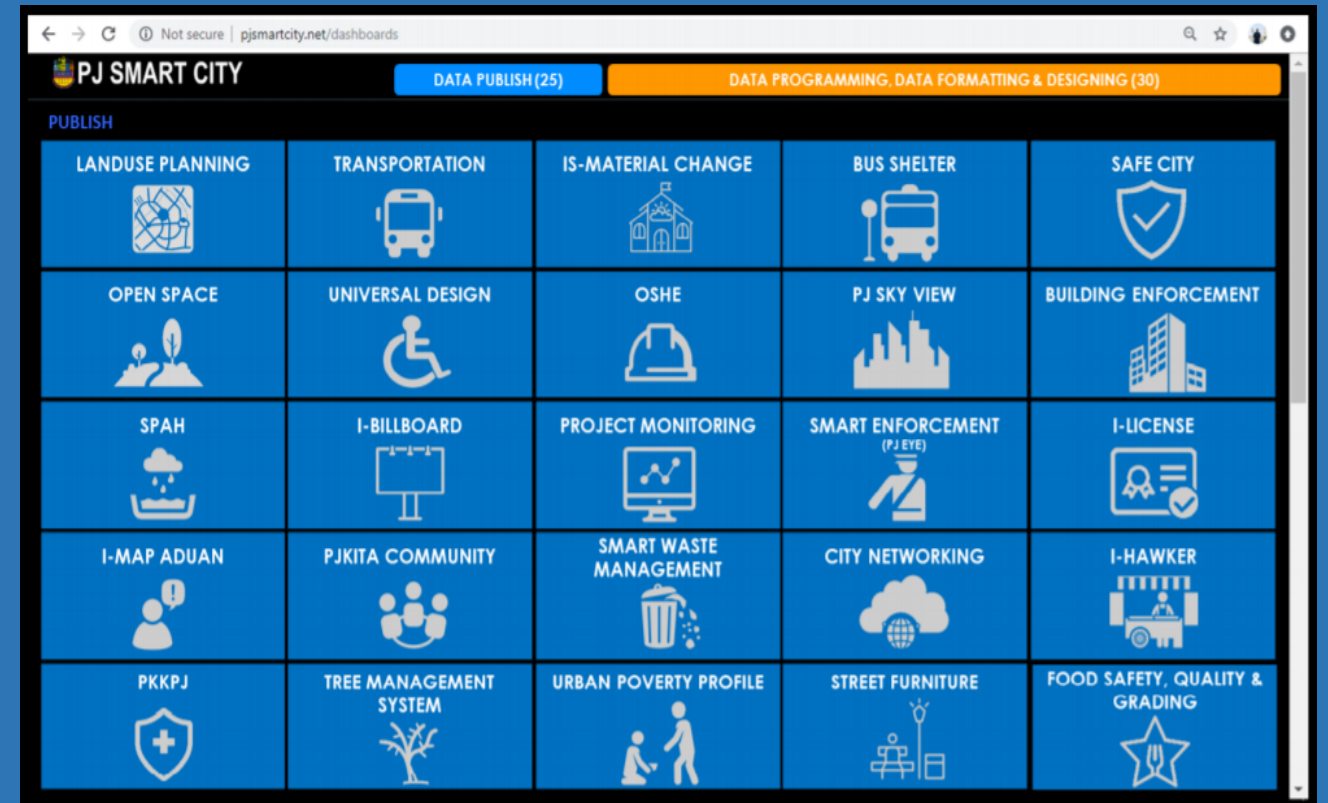


~ Waste minimization
~ Waste reporting
~ Waste tracking
~ Waste disposal

~ Waste segregation
~ Waste treatment & recycling
~ Waste collection & transfer
~ GHG emission from waste

Smart City of Petaling Jaya

- Connecting the “Dots” Digitally
 - Dots include the existing metabolisme, initiatives, players, data, funding and platforms
- Smart PJ could be a gateway and enabler





Future Smart City of Petaling Jaya for circularity

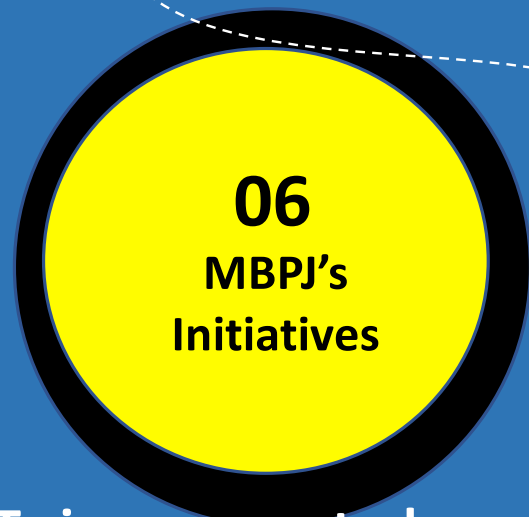
~ With Innovative IoT Waste Management Solutions



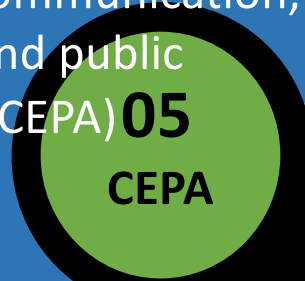
~ To ensure continuous efforts on communication, education and public awareness (CEPA)

~ To monitor waste recycling activities; ensure effective recovery and accurate recycling rate for the council

~ To impose requirements on integration of all data into a single platform; registration of players; collection of data / information

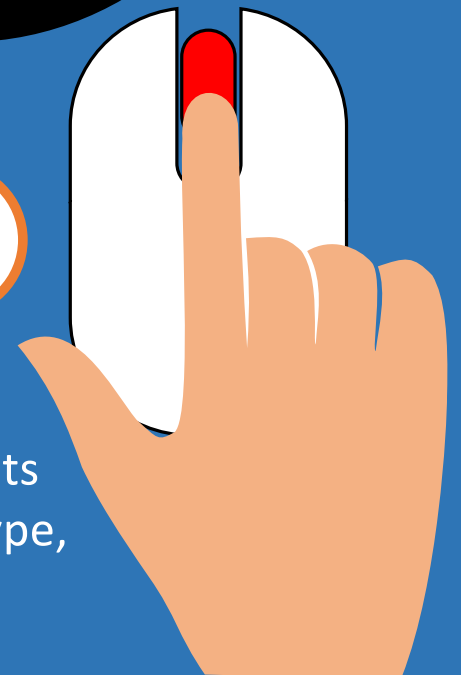


- ✓ To impose control on producers:
 - Product design (waste reduction)
 - EPR / Packaging law
 - Recycling Fees / Levy
 - Eco Park
- ✓ To implement other initiatives (national strategic plan, national roadmaps etc.)



~ To ensure all wastes generated from the council areas are properly disposed only to dedicated destinations

~ To enforce reporting requirements on waste flow (how much, what type, who collects, where it goes)



Property Assessment Tax Rebate Scheme for Environmental Friendly House Owners in Petaling Jaya

E-REBATE APPS IS COMING SOON 1ST LA IN ASIA

Actions

- Application is opened to 100,000 house owners in Petaling Jaya
- Rebate is evaluated by independent assessors based on 6 major criteria, namely **energy, water, transportation, biodiversity, waste management and other initiatives**



Reuse of Water



Household Waste Composting

Rain Water harvesting System

Achievements

- Incepted in Year 2011, and up to 2019, 1978 house owners received a total rebate of RM 652,068 (**48% on 3R**)
- The First Local Authority in Asia and Second in the World having similar scheme
- Economic incentive rewarding green residents and to spur more local action
- Introduced criteria on **Behaviour Change** in Year 2012
- Higher weightage on **Efficiency and Sustainable Lifestyle**



Community Grant for Petaling Jaya Sustainability

PJ S.E.E.D

Petaling Jaya Social, Environment, Economy, Development

2019

TAWARAN GERAN KOMUNITI PETALING JAYA MAMPAN 2.0

TERBUKA KEPADA
 Persatuan Penduduk, Rukun Tetangga, JKKK, JMB, MC, PIBG atau Persatuan dalam sekolah atau institusi pengajian, Jawatankuasa Tempat Ibadat ataupun badan/organisasi bukan kerajaan berdaftar dan diperakui oleh MBPJ

JUMLAH PEMBIAYAAN GERAN
RM 5,000.00 - RM 50,000.00
Jumlah Pembiayaan Geran ini tertakluk kepada Kelulusan Majlis.

BERMULA DARI
2 MAC 2020

TARIKH TUTUP PERMOHONAN
31 OGOS 2020

11 BIDANG YANG BOLEH DIPOHON
 LEARNING CITY | SMART PJ | LOW CARBON CITIES PJ | BANDAR HIJAU | MASYARAKAT PENYAYANG | ECOMOBILITY PJ | CASHLESS SOCIETY | CIRCULAR ECONOMY | KOTA SENI PJ | BANDAR SELAMAT | ARTIFICIAL INTELLIGENCE / INDUSTRY 4.0

5 CADANGAN PROJEK YANG DICADANGKAN MENGIKUT KRETERIA
 Kreteria-kreteria ini berdasarkan permohonan yang dicadangkan oleh pemohon untuk permohonan geran ini berdasarkan kriteria projek yang dibuat oleh pemohon sendiri berdasarkan 5 kriteria tersebut.
 COMMUNICATION, EDUCATION AND PUBLIC AWARENESS (CEPA) | PERKHIDMATAN (SERVICE) | INFRASTRUKTUR (Peruntukan tidak melebihi 30%) | KAJIAN | JARINGAN (NETWORKING)

Untuk maklumat lanjut, hubungi:
 URUSETIA GERAN KOMUNITI UNTUK PETALING JAYA MAMPAN,
 Jabatan Pengurusan Sisa Pepejal & Pembersihan Awam,
 Majlis Bandaraya Petaling Jaya,
 Tingkat 20, Menara MBPJ,
 Jalan Tengah, 46200 Petaling Jaya, Selangor Darul Ehsan.

Laman Sesawang
www.mbpj.gov.my
<https://embpj.mbpj.gov.my>

No.Tel: 03-7954 1440 | Faksimili: 03-7954 1579
 Emel: safari.baharum@mbpj.gov.my

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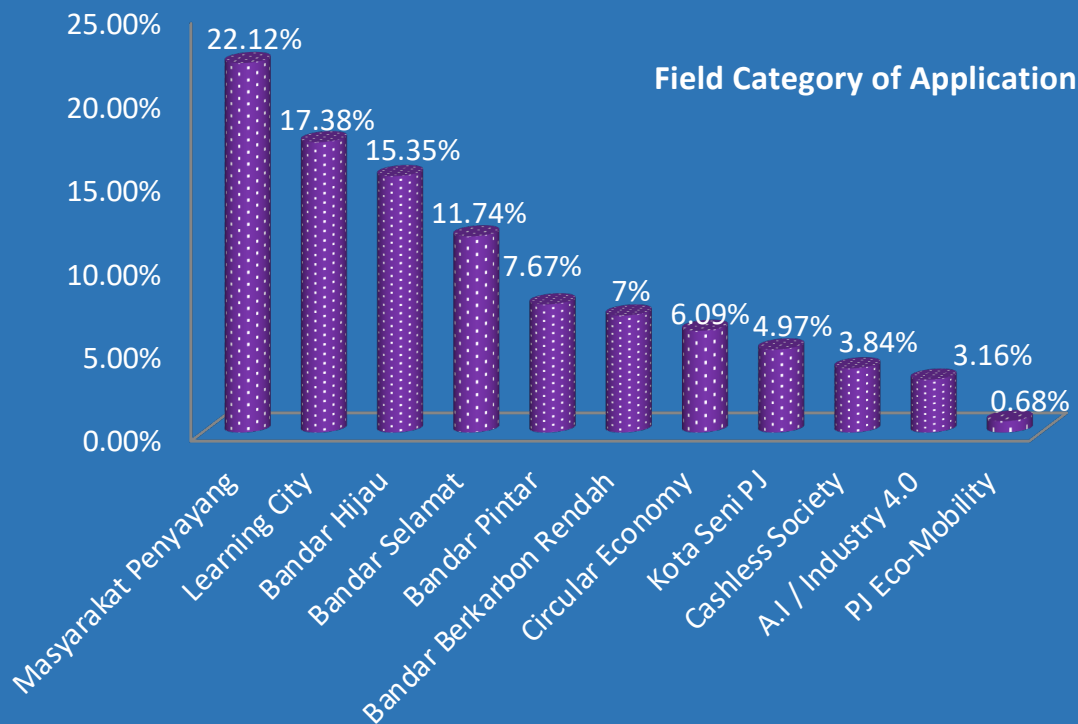
A bottom up engagement and startups fund for community groups in implementing SDG related programmes

> 70 % are climate actions related initiatives e.g. urban farming, waste composting, rain water harvesting, tools bank

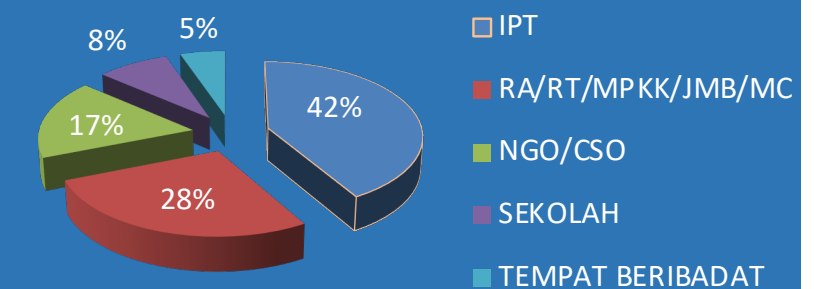
284
Application

56
Approval

29.5%
RM 883,816

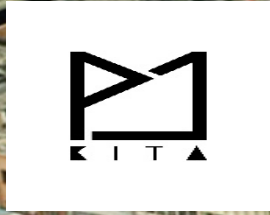


Composition of Applicants





THANK YOU



As an A List city we're leading by example to act on climate change