



BAB

4

**HALA TUJU
DAN SASARAN
BANDAR PINTAR**

Kajian pelan tindakan bandar pintar ini adalah melibatkan keseluruhan Daerah Kuala Terengganu dan Daerah Kuala Nerus. Bagi memastikan perancangan bandar pintar ini dapat dilaksanakan secara menyeluruh, perancangan komponen bandar pintar ini akan dilaksanakan mengikut tiga (3) kawasan atau petempatan yang telah dikenalpasti iaitu:-

- a) Pusat bandar raya
- b) Dalam pusat pertumbuhan / Koridor utama antara pusat pertumbuhan
- c) Luar pusat pertumbuhan

4.1 SASARAN PELAKSANAAN BANDAR PINTAR

KPKT melalui PLANMalaysia dengan kerjasama Jabatan Standard Malaysia (JSM) telah membangunkan Standard Indikator Bandar Pintar MS ISO 37122:2019 dan Malaysia National Annex MS ISO 37122:2019 sebagai panduan kepada Pihak Berkuasa Tempatan (PBT), agensi dan pihak berkepentingan di dalam merancang dan membangunkan bandar pintar di Malaysia. Dokumen ini mengandungi 85 indikator yang dibangunkan untuk kegunaan penilaian penarafan bandar pintar bagi kawasan Pihak Berkuasa Tempatan (PBT) oleh pihak KPKT.



4.2 PENERAPAN STANDARD INDIKATOR BANDAR PINTAR MS ISO 37122 : 2029 DALAM PELAN TINDAKAN

Standard Indikator Bandar Pintar (MS ISO 3172:2029) yang dibangunkan terdiri daripada 19 *city indicators* dan 85 indikator.

ECN Economy (4)	HS Housing (2)	59. Micro Mobility-Sharing Services
1. Open Data on City Services	30. Houses with Smart Energy Meter	60. Transport Lines with Real-Time System
2. Survival Rate of New Businesses	31. Houses with Smart Water Meter	61. Public Transport with Unified Payment System
3. ICT Labour Force	POP Population & Social (4)	62. Parking Spaces with e-Payment Systems
4. Education & R&D Labour Force	32. Building Accessible by Special Needs	63. Parking Spaces with Real-Time Availability Systems
ED Education (3)	33. Budget for Special Need	64. Smart Traffic Lights
5. Proficiency In > 1 Language	34. Pedestrian Crossing with Signals	65. Real-Time Interactive Street Maps
6. Digital Learning Devices	35. Budget for Bridging Digital Divide	66. Registered Autonomous Vehicles
7. Higher Education Degrees	SR Sports & Recreation (1)	67. Public Transport with Internet Connectivity
EGY Energy (10)	36. Online Booking for Sports & Public Recreation Facilities	68. Autonomous Driving Systems
8. Electrical Energy Produced from Wastewater/Solid Waste/Liquid Waste/ Waste Heat	SF Safety (5)	69. Motor Driven City's Bus Fleet
9. Electrical & Thermal Energy Produced from Wastewater	37. Digital Surveillance Camera	U/L Urban / Local Agriculture & Food Security (3)
10. Energy from Solid Waste/Liquid Waste Treatment	38. * Volunteer Smartphone Patrol	70. Budget for Urban Agriculture Initiatives
11. Electricity from Distributed Generation Production System	39. * High Risk Building – Fire Certificate	71. Food Waste being Composed
12. Storage Capacity of Energy Grid	40. *Response Time – Fire & Rescue	72. Online Food-Supplier Coverage
13. Smart Street Light with Performance System	41. * Crime Index Threshold	UP Urban Planning (4)
14. Refurbished / Newly Installed Street Lighting	SW Solid Waste (7*)	73. Citizen Engaged in Planning Process
15. Refurbished / Renovated Public Building	42. Waste Drop-off with Telemetering	74. Construction Permits Through e-Submission
16. Public & Commercial Buildings with Smart Energy Meter	43. Household Garbage Monitoring Device	75. Construction Permit Approval
17. EV Charging Station	44. * Waste Vehicles with System	76. City Population by Density
EV Environment & Climate Change (3)	45. Waste to Energy	WW Wastewater (5)
18. Newly Built / Refurbished with Green Building Principles	46. Plastic Waste Recycled	77. Treated Wastewater being Reused
19. Real Time - Air Quality Monitoring Station	47. Sensor-Enabled Public Bins	78. Bio-Solids being Reused
20. Indoor Air Quality System - Public and Private Building	48. Recycled E-Waste	79. Energy Derived from Wastewater
FNC Finance (2)	CUL * Culture (4)	80. Wastewater reused to Generate Energy
21. Revenues - Sharing Economy	49. Online Booking for Cultural Facilities	81. Real-Time Wastewater Pipeline Network
22. E-Payment to the City	50. Digitised Cultural Record	W Water (4)
GV Governance (4)	51. E-Books	82. Real-Time Drinking Water Quality Monitoring
23. Online Visit to Municipal Open Data	52. E-Public Library User	83. Real-Time Environmental Water Quality Monitoring
24. City Services Requested Online	TEL Telecommunication (3)	84. Water Distribution with Smart Water System
25. Non-Emergency Response Time	53. Fast Broadband	85. Buildings with Smart Water Meter
26. IT Infra Downtime	54. White/Dead Zone on Telecom Connectivity	
H Health (3)	55. Internet Connectivity Coverage	
27. Online Unified Health File	TR Transportation (14)	
28. Medical Appointment Conducted Remotely	56. Real-time Online Traffic Alert and Information	
29. Real Time Info System for Air & Water Quality	57. User for Sharing Economy Transportation	
	58. Low-Emission Vehicle	

Rajah 4.2.1: Senarai Indikator Bandar Pintar MS ISO 37122:2019

4.3 MATRIKS PELAKSANAAN BANDAR PINTAR MALAYSIA

		PRE	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
		Pre-Smart City	Smart City Early Adopter	Developing Smart City	Leading Smart City	Visionary Smart City
POLICY	Smart City Action Plan	<ul style="list-style-type: none"> NIL 	<ul style="list-style-type: none"> Prepare Smart City Action Plan 	<ul style="list-style-type: none"> Implement some initiatives in the Smart City Action Plan 	<ul style="list-style-type: none"> Implement most part of Smart City Action Plan 	<ul style="list-style-type: none"> Fully implement the Smart City Action Plan Reviewing the Smart City Action Plan
	Smart City Governance	<ul style="list-style-type: none"> NIL 	<ul style="list-style-type: none"> Establish Smart City Committee 	<ul style="list-style-type: none"> Active Smart City Committee Established Smart City Unit / Division 	<ul style="list-style-type: none"> Proactive Smart City Committee Smart City Unit / Division 	<ul style="list-style-type: none"> Proactive and effective Smart City Committee Smart City Unit / Division SME Smart City
DATA MANAGEMENT	Data Management	<ul style="list-style-type: none"> No Open Data Policy Siloed Data Manual Data Access 	<ul style="list-style-type: none"> Formulate open data policy Limited data integration and sharing 	<ul style="list-style-type: none"> Implement open data policy Comprehensive data integration (intra-agency) Advanced dashboard & reporting 	<ul style="list-style-type: none"> Implement comprehensive open data policy Comprehensive data integration (inter-agency) 	<ul style="list-style-type: none"> Implement comprehensive open data policy Automated data integration
	Data Analytic	<ul style="list-style-type: none"> NIL 	<ul style="list-style-type: none"> Descriptive 	<ul style="list-style-type: none"> Descriptive Diagnostic 	<ul style="list-style-type: none"> Descriptive Diagnostic Predictive 	<ul style="list-style-type: none"> Descriptive Diagnostic Predictive Prescriptive
	Command Centre /IOC	<ul style="list-style-type: none"> NIL Command centre / dashboard 	<ul style="list-style-type: none"> Initial dashboard / mini command centre 	<ul style="list-style-type: none"> Integrated command centre 	<ul style="list-style-type: none"> Advanced command centre 	<ul style="list-style-type: none"> Advanced command centre with Machine Learning Modelling
PROJECT & PROGRAM	Internet of Things (IoT)	<ul style="list-style-type: none"> NIL / Limited 	<ul style="list-style-type: none"> Integrated IoT and connectivity 	<ul style="list-style-type: none"> Integration between IoT vertical 	<ul style="list-style-type: none"> Extensive integration between IoT vertical 	<ul style="list-style-type: none"> Next Generation IoT (NGIoT)
	MS ISO 37122:2019	<ul style="list-style-type: none"> Not complied 	<ul style="list-style-type: none"> Comply 10 indicators 	<ul style="list-style-type: none"> Comply 35 indicators 	<ul style="list-style-type: none"> Comply 63 indicators 	<ul style="list-style-type: none"> Comply 85 indicators

4.5 MATRIKS PELAKSANAAN BANDAR PINTAR MALAYSIA

Kategori penafaran bandar pintar Malaysia mempunyai empat (4) kategori. Kategori adalah sebagaimana rajah di bawah.

