

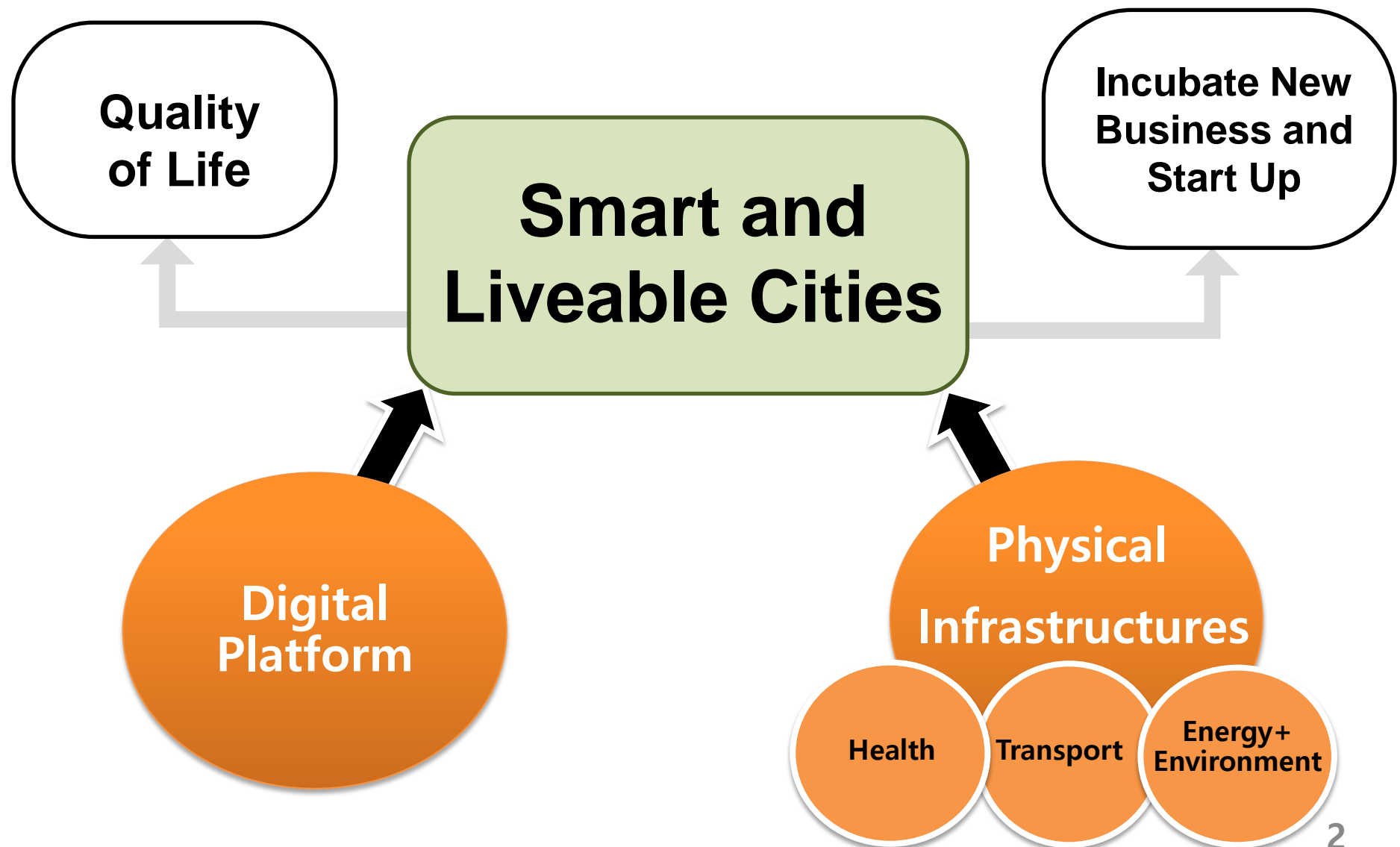


# Smart Cities Initiative in ASEAN And How does Thailand's Energy 4.0 Support it

**Dr. TWARATH SUTABUTR**

Inspector General Ministry of Energy, THAILAND

Singapore International Energy Week (SIEW) 2019  
31 October 2019



# Establishment of ASCN



## ASEAN Smart Cities Network

### National Representative

City # 1

Chief Smart  
City Officer  
(CSCO)

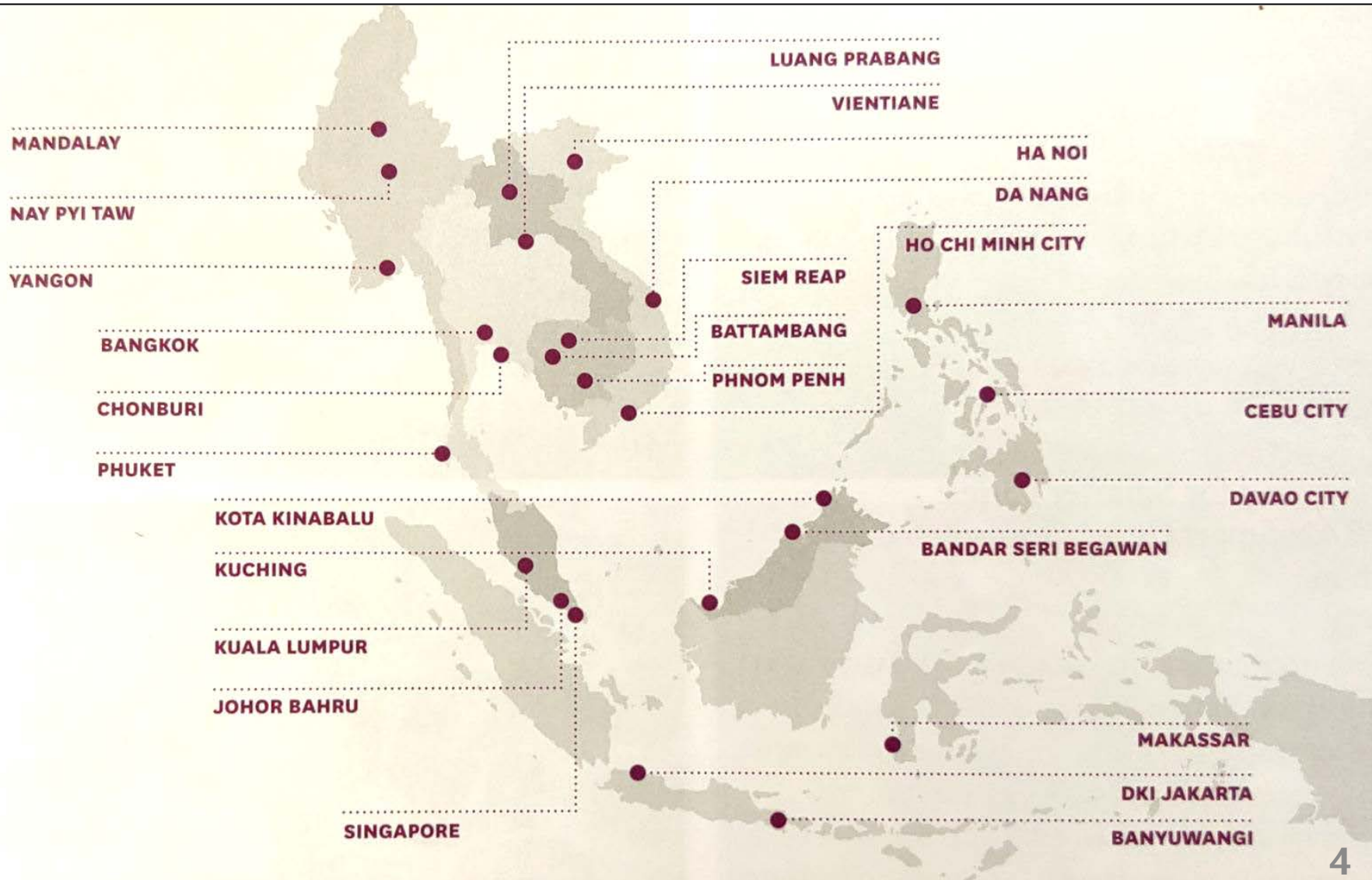
City # 2

CSCO

xxx

CSCO

# 26 Cities for ASEAN





# ASCN Activities



## : May 2018 in Singapore Brainstorming for Smarter Cities : The ASEAN Smart Cities Governance Workshop

- To exchange ideas and learn from industry experts about successful adoption around the globe.



## : July 2018 in Singapore The Inaugural ASCN Meeting

- The Smart City Action Plan that 26 ASEAN cities had developed during the workshop were showcased during the Inaugural meeting.
- The ASEAN Smart Cities Framework (ASCF) was endorsed.



## : June 2019 in Bangkok

-  
-

# Summary Record of ASEAN-Japan Smart Cited Network High-level Meeting, Yokohama, Japan, 8-9 Oct 2019



- ✓ There are various definitions and different types of smart cities
  - uniqueness, needs, priorities, challenges
- ✓ To realize smart city -> '**Challenge-Oriented concept**' rather than Technology-Oriented
  - overall approach using advanced technology + wise know-hows to solve the challenges cross-cuttingly in optimizing the entire city and region
- ✓ Acknowledge "**Japan Association for Smart Cities in ASEAN (JASCA)**"
  - framework to facilitate cooperation between ASEAN and Japan
  - composed of Japanese partners from various fields that interests ASCN and public sectors eg. JICA, JOIN, JBIC, NEXI, JICT, UR supporting finance and know-hows.
- ✓ Noted Japan's proposal for extensive analysis of challenges, needs, targets of the cities
  - study of comprehensive solutions and measures for the cooperation
- ✓ Noted Japan's continuous share of experiences, know-hows and good practices with ASCN through "**Smart City Public-Private Partnership Platform**"
- ✓ Affirmed the continued cooperation between ASEAN and Japan
  - another ASEAN-Japan Smart Cited Network High-level Meeting in the future agreed

# Implementation of Smart Cities Initiative



**Planning**



**Implementation**

**1**

**Role of Local  
Government**

**2**

**Sand box Area**

**3**

**Digital Readiness**

**4**

**Funding and  
Partnership**

# 1. Role of Local Government



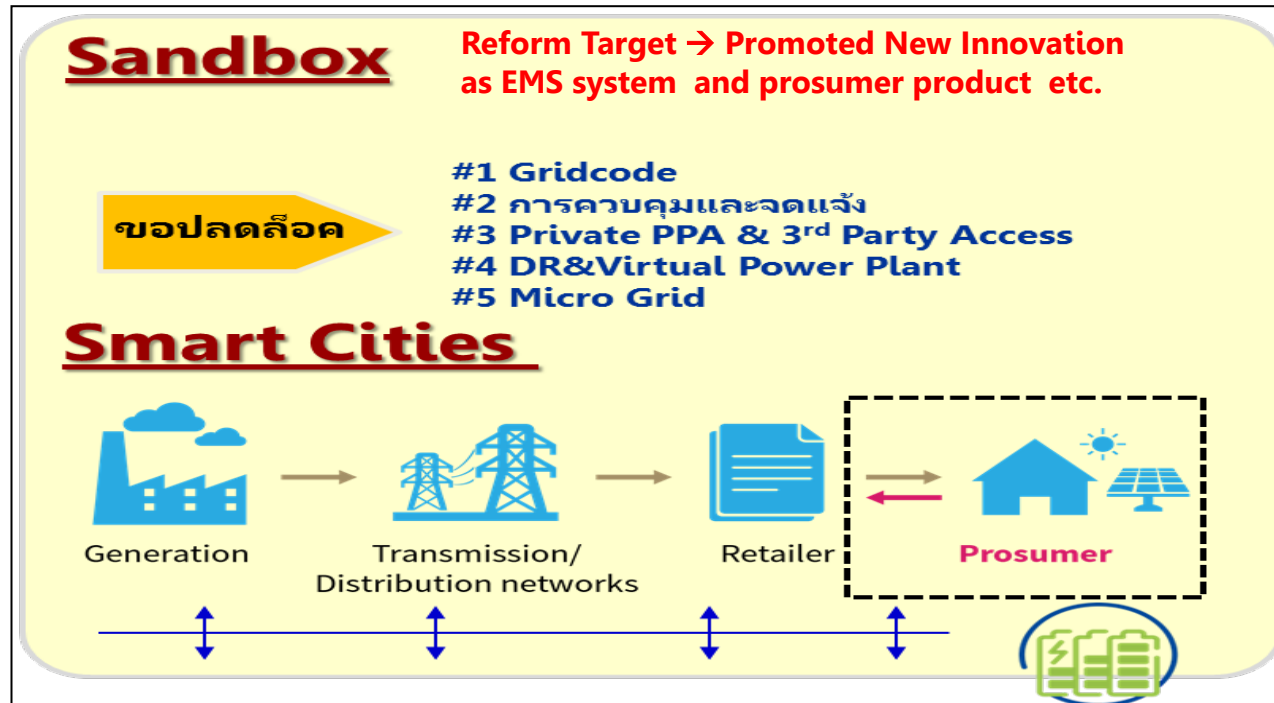
- Take a lead  $\Rightarrow$  Local Champions
- Adaptable to Change  $\Rightarrow$  Flexible
- Creating Participatory Platform



## 2. Sand Box Area



- A designated area that is selected for “Pilot Project”

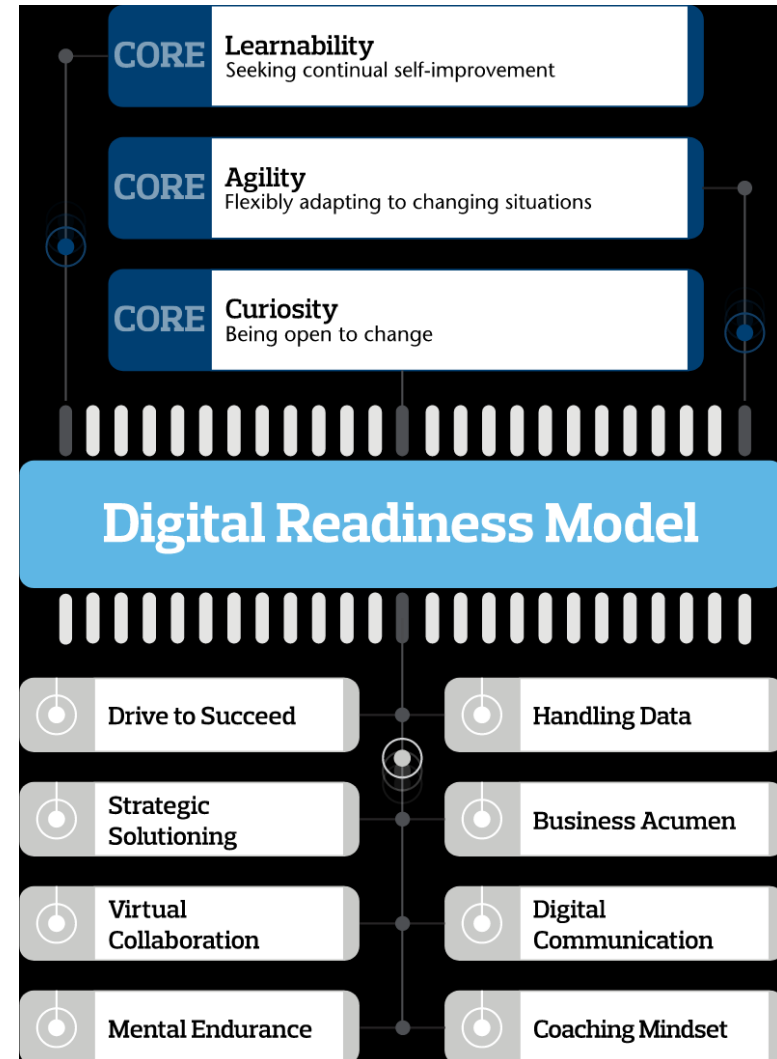


- Rules-Relaxation
- Extended Flow of Funding / Crypto-Currency !!
- Free Flow of Data

# 3. Digital Readiness



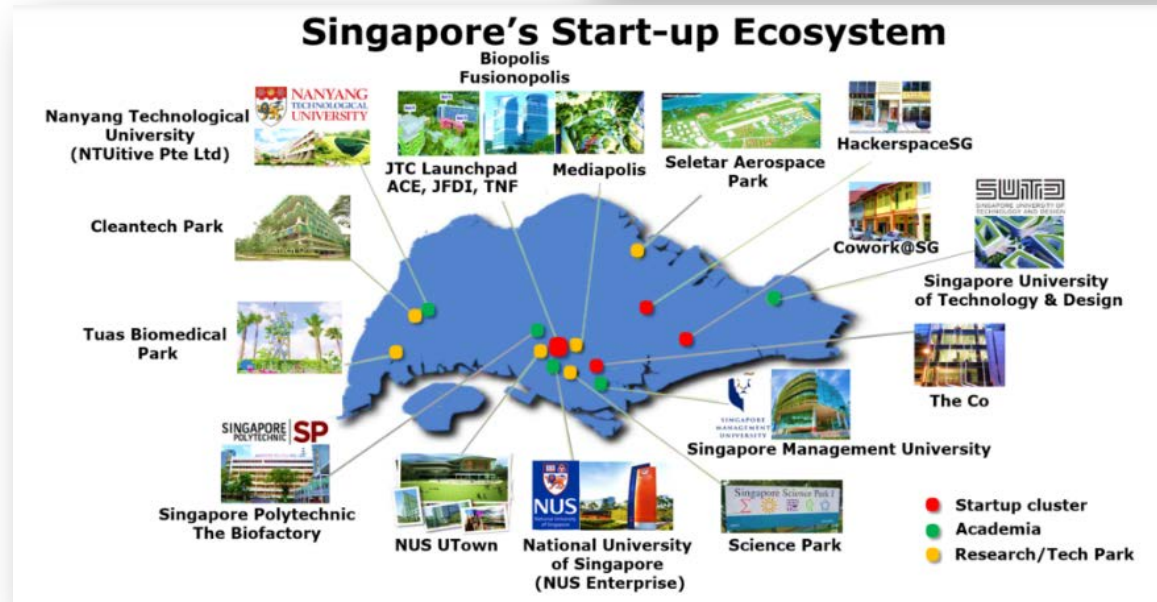
- Era of "Sensorization"
- Cyber-Security
- Cloud Computing Platform
- Digital Manpower



# 4. Funding and Partnership

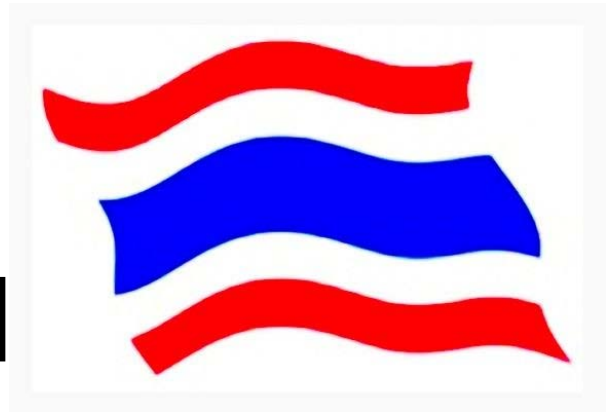


- International Funding
- Technology Transfer
- Start Ups Ecosystem
- Alliances

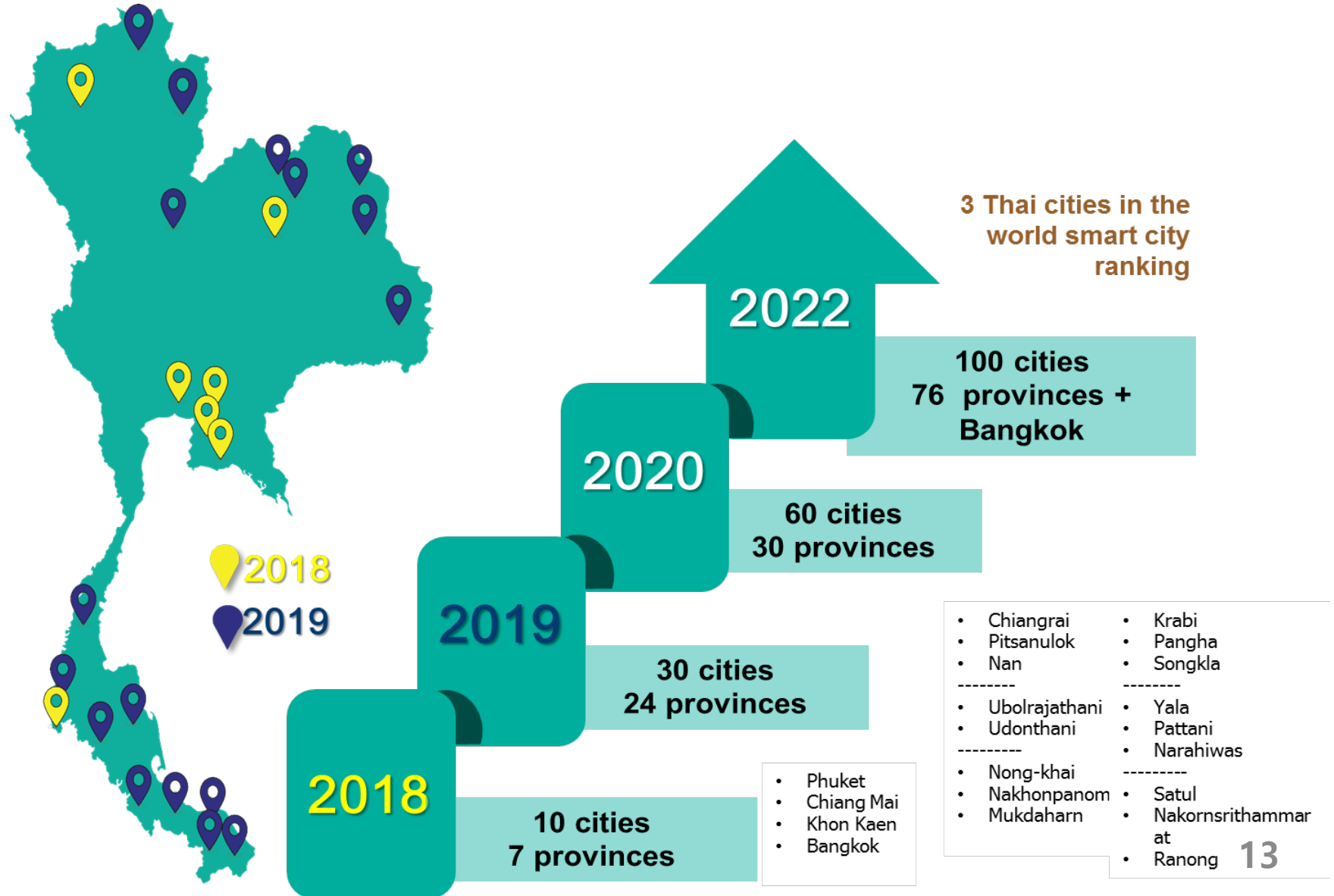




# Smart City Development in Thailand



# Smart City Development Roadmap



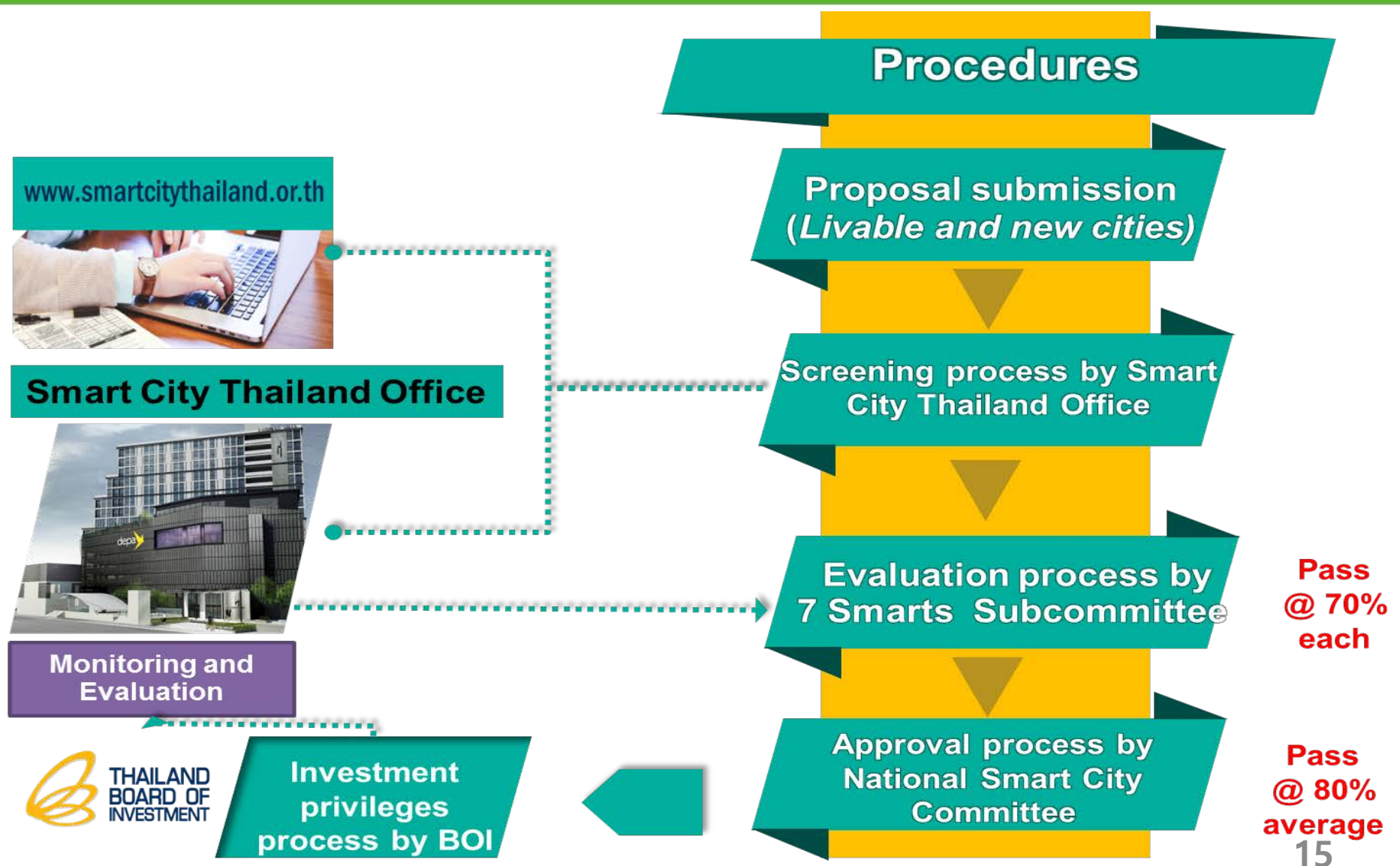


# Criteria of Thailand Smart City





# Smart City Evaluation Criteria and Procedures



## Smart City Data Platform

### 3 Intelligent

Tourism IoT Env. Sensors + Safety Real Estate



### 2 Interconnected

Data Integration + Analytic → Services



Gov. Open Data



Social Analytic



Data from Instrumental (Near Real time)

### 1 Instrumental (Near Real time)



City Application



Waste lot



Public WiFi



City + Marine Safety



Env. Sensors



Transport

#### Smart Safety

**Now** :- CCTV Integration 700 of 1,300 cameras

- LPR (8 Installation point, 37 cameras, Detected > 59.38 M plate)
- Face recognition (3 Fixed cameras, 8 Smartphone Detected > 1.49 M)
- Traffic law enforcement (5 Installation point, 41 cameras, Detected > 41 M, 620 K Offenders)
- CCTV Command Centre
- Vessel Tracking and Monitoring System (23 Radar + AIS Stations)
- Maritime Safety (1 Pier UAT, 4 Piers expend)
- Guide / Job order System

**New** :- Integrate data with Smart City Data Platform  
- 3,500 cameras for Complete CCTV

#### Smart Healthcare

**Now** :- Project plan

#### Smart Economy

**Now** :- Smart City Innovation Park (IoT Lab, Co Creation Space, Investment OSSC)  
- 200 SMEs participated Digital transform Courses  
- 28 BOI Digital Cluster, 156 M Invest  
- 5 x 500 K Fund for Smart City Startups

**New** :- Digital OSS for Startups + SMEs  
- 200 SMEs to Digital transform  
- 50 Startups



#### Smart Environment

**Now** :- 10 IoT sensors stations (CO, DO, Water levels, etc.)

- 16 IoT sensors stations (Rain, Temperature, Humidity)
- Traffic Waste Platform (10 Installation point in Patong)

**New** :- 5 IoT sensors station on NB-IoT

- Integrate data with other sensors platform
- Integrate data with Smart City Data Platform

#### Smart Education

**Now** :- Project plan

#### Smart Tourism

**Now** :- PHUKET App. for FIT

- Support Tourism Startups
- Public free WiFi (1,000 AP / >1.3 M Accounts > 40 K Connected per day)
- LoRaWAN Network (35 base, > 500 sq.km)

**New** :- Collaborate PRSThailand for content + PR on PHUKET App.  
- Integrate data with Smart City Data Platform

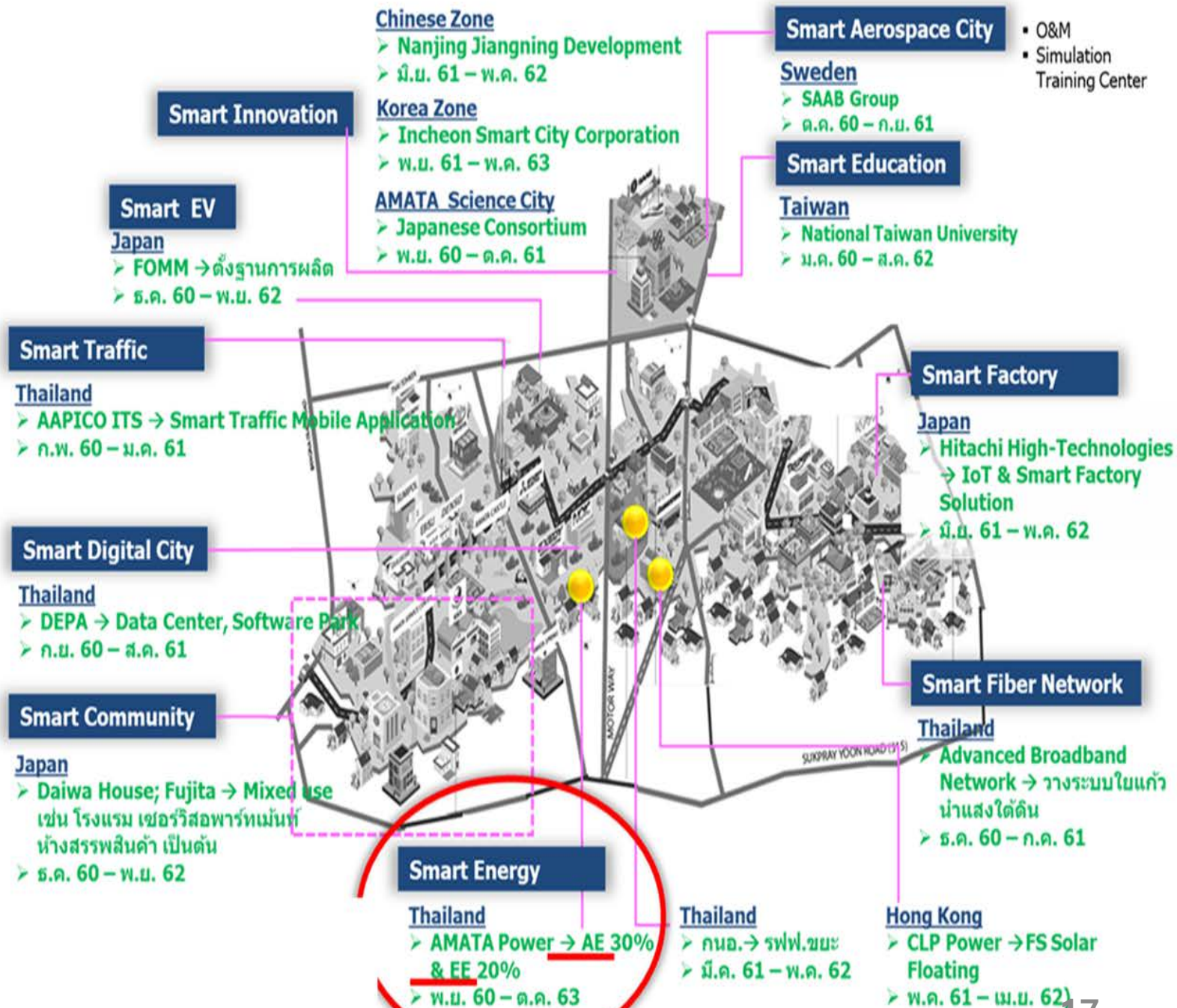
#### Smart Governance

**Now** :- Smart City Data Platform

**New** :- Phuket Intelligent Communication Center



**ออกแบบ AMATA เป็น เมืองคู่แฝด Yokohama**



# Key Take aways



1. Smart Cities Policy have been kick-started
2. Moving from Planning to “Implementation”, to successful implementation SC policy

## **4 Factor to be concern**

- 2.1 Local Government
- 2.2 Sand Box Area
- 2.3 Digital Capabilities
- 2.4 Funding







**Ď ZnáčĚ ěŠn**  
**Thank you**  
**for your Attention**





# Back UP

# THAILAND

## BANGKOK

### About the City

Total Land Area	1,568.7 sq.km.
Population	8.28m
Density	5,300 / sq.km.

### Smart City Project

1. Transport Hub Development at Bang Sue Area
2. Smart City Plan



## CHONBURI

### About the City

Total Land Area	43 sq.km.
Population	215,000
Density	5,000 / sq.km.

### Smart City Project

1. Smart Grid Project
2. Waste to Energy plant



## PHUKET

### About the City

Total Land Area	543 sq.km.
Population	0.4m
Density	719 / sq.km.

### Smart City Project

1. City Data Platform
2. Phuket Eagle Eyes - Safe City based on Big Data

Harvesting and Analytics CCTV Safe City



# MYANMAR



## MANDALAY

### About the City

Total Land Area	285 sq.km.
Population	1.23m
Density	4,300 / sq.km.



### Smart City Project

1. Traffic Congestion Management
2. Solid Waste and Waste Water Treatment



Built Infrastructure



Safety and Security

## NAY PYI TAW

### About the City

Total Land Area	7,054.37 sq.km.
Population	924,608
Density	131 / sq.km.



### Smart City Project

1. Affordable Housing and Low-cost Housing Project
2. International Comprehensive University



Built Infrastructure



Health and Well-being

## YANGON

### About the City

Total Land Area	576 sq.km.
Population	5.21m
Density	9,045.1 / sq.km.



### Smart City Project

1. Conservation of Yangon City Downtown Area
2. Low Cost Rental Housing and Transit Oriented Development



Civic and Social



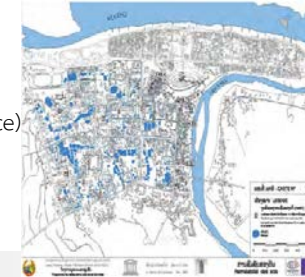
Health and Well-being



## LUANG PRABANG

### About the City

Total Land Area	16,875 sq.km. (Province)
Population	97,760
Density	5.79 / sq.km.



### Smart City Project

1. Heritage Wetland Restoration for City Green Spaces and Habitats
2. Construction of Concrete Alleyways and Footpaths



Quality Environment



Built Infrastructure

## VIENTIANE

### About the City

Total Land Area	130 sq.km.
Population	821,000
Density	6,315 / sq.km.



### Smart City Project

1. Establishment of Drainage System
2. Sustainable Transport Plan



Quality Environment

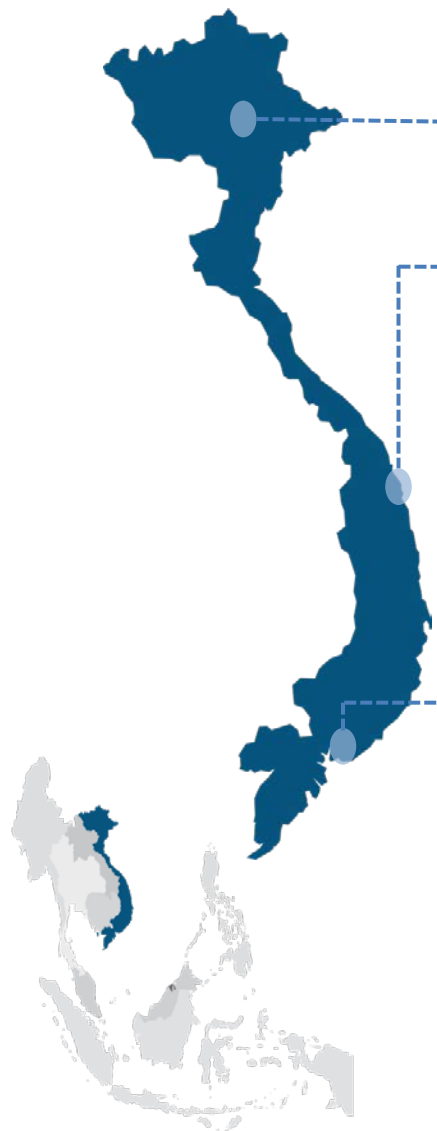


Built Infrastructure





# VIETNAM



## HANOI

### About the City

Total Land Area	3,358.9 sq.km.
Population	7.6m
Density	2,280 / sq.km.



### Smart City Project

1. Intelligent Operations Centre, IOC
2. Development of Intelligent Transportation



Safety and Security



Built Infrastructure

## DANANG

### About the City

Total Land Area	1,285 sq.km.
Population	1.0m
Density	814 / sq.km.



### Smart City Project

1. Intelligent Traffic Control System
2. Smart Water Management



Safety and Security



Quality Environment

## HO CHI MINH CITY

### About the City

Total Land Area	2,095.6 sq.km.
Population	8.2m
Density	3,924.4 / sq.km.



### Smart City Project

1. Integrated Operations Centre, IOC
2. Integrated and Unified Emergency Response Centre



Safety and Security

# CAMBODIA

## SIEM REAP

### About the City

Total Land Area	424.7 sq.km.
Population	268,380
Density	631.8 / sq.km.

### Smart City Project

1. Smart Tourist Management System
2. Solid Waste and Wastewater Management



Civic and Social



Quality Environment



## BATTAMBANG

### About the City

Total Land Area	115 sq.km.
Population	161,030
Density	1,395 / sq.km.

### Smart City Project

1. Urban Street and Public Space Management
2. Solid and Liquid Waste Management



Civic and Social



Quality Environment



Built Infrastructure



## PHNOM PENH

### About the City

Total Land Area	693 sq.km.
Population	2.8m
Density	4,040.4 / sq.km.

### Smart City Project

1. 11 Sidewalks Rejuvenation Project
2. Improving efficiency of Phnom Penh's Public Transport Services



Built Infrastructure



# PHILIPPINES



## MANILA

### About the City

Total Land Area	39 sq.km.
Population	1.8m
Density	45,700 / sq.km.

### Smart City Project

1. Command Centre Upgrade
2. E-Education
3. E-Health



Safety and Security



Health and Well-being

## CEBU CITY

### About the City

Total Land Area	315 sq.km.
Population	923,000
Density	2,930 / sq.km.

### Smart City Project

1. Automated Citywide Traffic Control Systems
2. Bus Rapid Transit (BRT) System



Built Infrastructure



Safety and Security

## DAVAO CITY

### About the City

Total Land Area	2,444 sq.km.
Population	1.7m
Density	699 / sq.km.

### Smart City Project

1. Converged Command and Control
2. Intelligent Transport and Traffic Systems with Security



Built Infrastructure



Safety and Security



# MALAYSIA

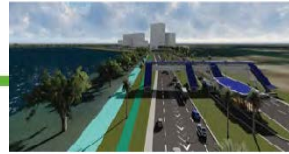
## KUALA LUMPUR

### About the City

Total Land Area	243 sq.km.
Population	1.8m
Density	7,377 / sq.km.

### Smart City Project

1. G-Asset
2. Kuala Lumpur Integrated Submission System (KLIS)
3. GoKL Journey Planner



## JOHOR BAHRU

### About the City

Total Land Area	220 sq.km.
Population	1.5m
Density	6,909 / sq.km.

### Smart City Project

1. Iskandar Malaysia Urban Observatory (IMUO) Tool  
For Decision Making, Stocktaking And Measurement
2. Management of Water Resources and Distribution



## KOTA KINABALU

### About the City

Total Land Area	366.03 sq.km.
Population	452,940
Density	1,290 / sq.km.

### Smart City Project

1. Integrated Public Transport System
2. Integrated Solid Waste Management
3. Smart New Township
4. Smart Water Management



## KUCHING

### About the City

Total Land Area	2,031 sq.km.
Population	680,000
Density	336 / sq.km.

### Smart City Project

1. Smart Mobility - Integrated Smart Traffic Light System
2. Integrated Flood Management and Response System



# BRUNEI DARUSSALAM & SINGAPORE



## BANDAR SERI BEGAWAN

### About the City

Total Land Area	100.4 sq.km.
Population	64,409
Density	641 / sq.km.

### Smart City Project

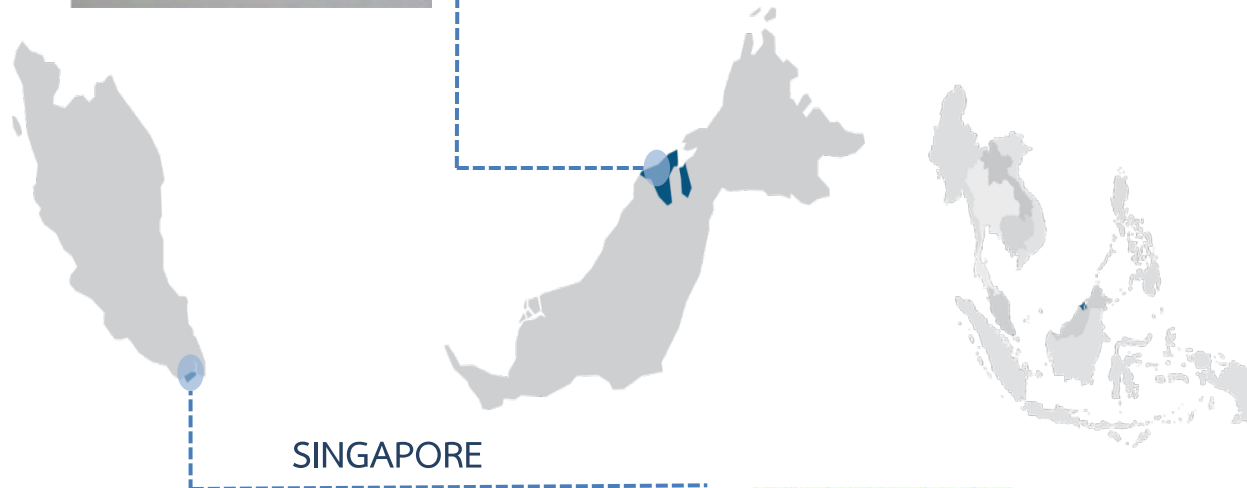
1. Revitalise Kampong Ayer (Water Villages)
2. Clean River Management Projects



Civic and Social



Quality Environment



## SINGAPORE

### About the City

Total Land Area	719.9 sq.km.
Population	5.61m
Density	7,796 / sq.km.

### Smart City Project

1. E-Payments
2. National Digital Identity



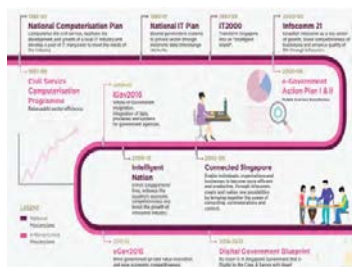
Civic and Social



Health and Well-being



Industry and Innovation





# INDONESIA



## MAKASSAR

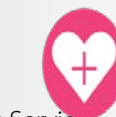


### About the City

Total Land Area	199.3 sq.km.
Population	1.77m
Density	7,400 / sq.km.

### Smart City Project

1. Improved Health Care
2. Integration of Online Tax Services



Health and Well-being



Civic and Social

## DKI JAKARTA



### About the City

Total Land Area	662.3 sq.km.
Population	10.1m
Density	15,367 / sq.km.



Built Infrastructure



Civic and Social



Industry and Innovation

### Smart City Project

1. Job Creation Through Linking Research Institutes And Potential Entrepreneurs
2. OK OTriP Integrated Transit Cashless Payment

## BANYUWANGI

### About the City

Total Land Area	5,782.5 sq.km.
Population	1.6m
Density	277 / sq.km.

### Smart City Project

1. Spearheading Industrial Growth through Education
2. Creating Inclusive Economic Growth Through Tourism-Based Development



Health and Well-being



Industry and Innovation