



MINISTRY OF ENERGY TRANSITION AND WATER TRANSFORMATION

KEMENTERIAN PERALIHAN TENAGA DAN  
TRANSFORMASI AIR

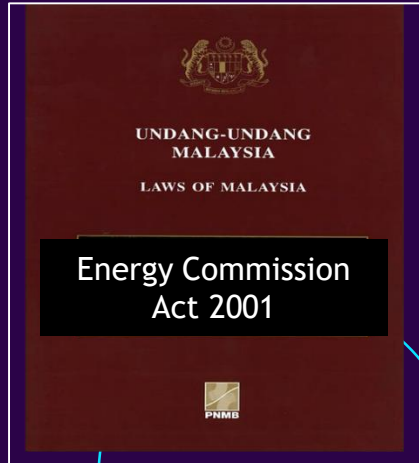
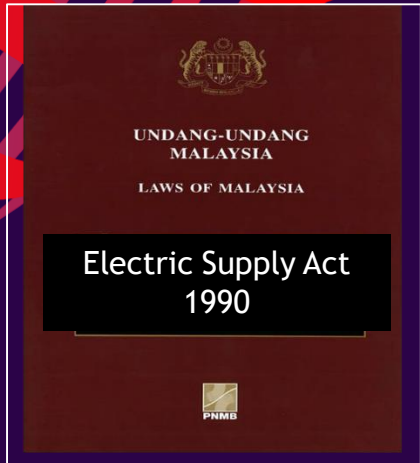
# **AI DRIVEN ENERGY INNOVATION**

## **MALAYSIA OVERVIEW**

**KHALILULNISHA ABU BAKAR**

**PRINCIPAL ASSISTANT SECRETARY  
ENERGY EFFICIENCY SECTION  
SUSTAINABLE ENERGY DIVISION**

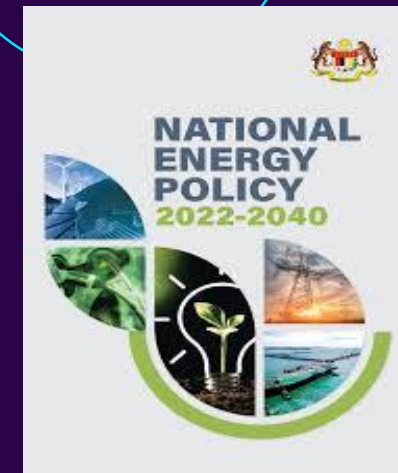
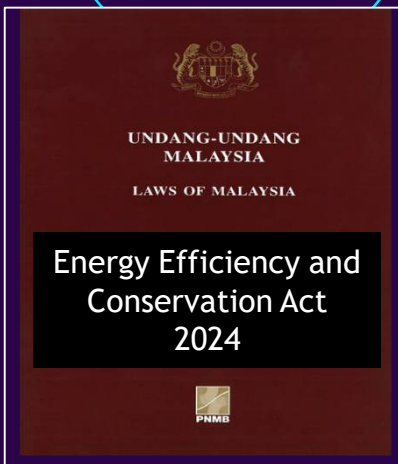
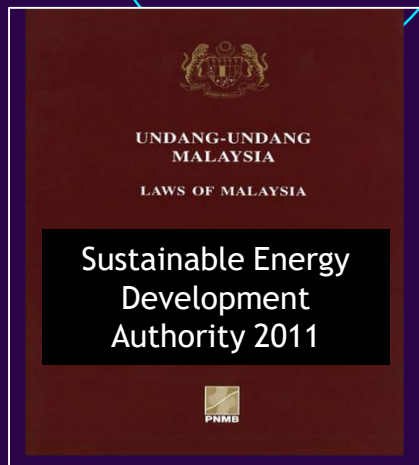
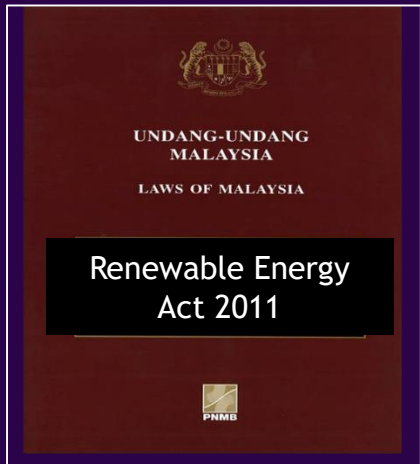
# MALAYSIA'S ENERGY REGULATORY FRAMEWORK & POLICIES



*Sarawak & Sabah:*

*\*Sarawak Electricity Ordinance 1999*

*\*Sabah Electricity Supply Enactment 2024*







DISEMPURNAKAN OLEH  
TO' SERI ANWAR BIN IBRAHIM  
PERDANA MENTERI

4 | DEWAN BESAR, UNIVERSITI PUTRA MALAYSIA (UPM)



## AI LEADERSHIP IN MALAYSIA





# ISSUES & CHALLENGES

## ELECTRICITY SUPPLY

- Legacy infrastructures
- Over RM100 million (USD 24 m) losses per annum

## RENEWABLE ENERGY

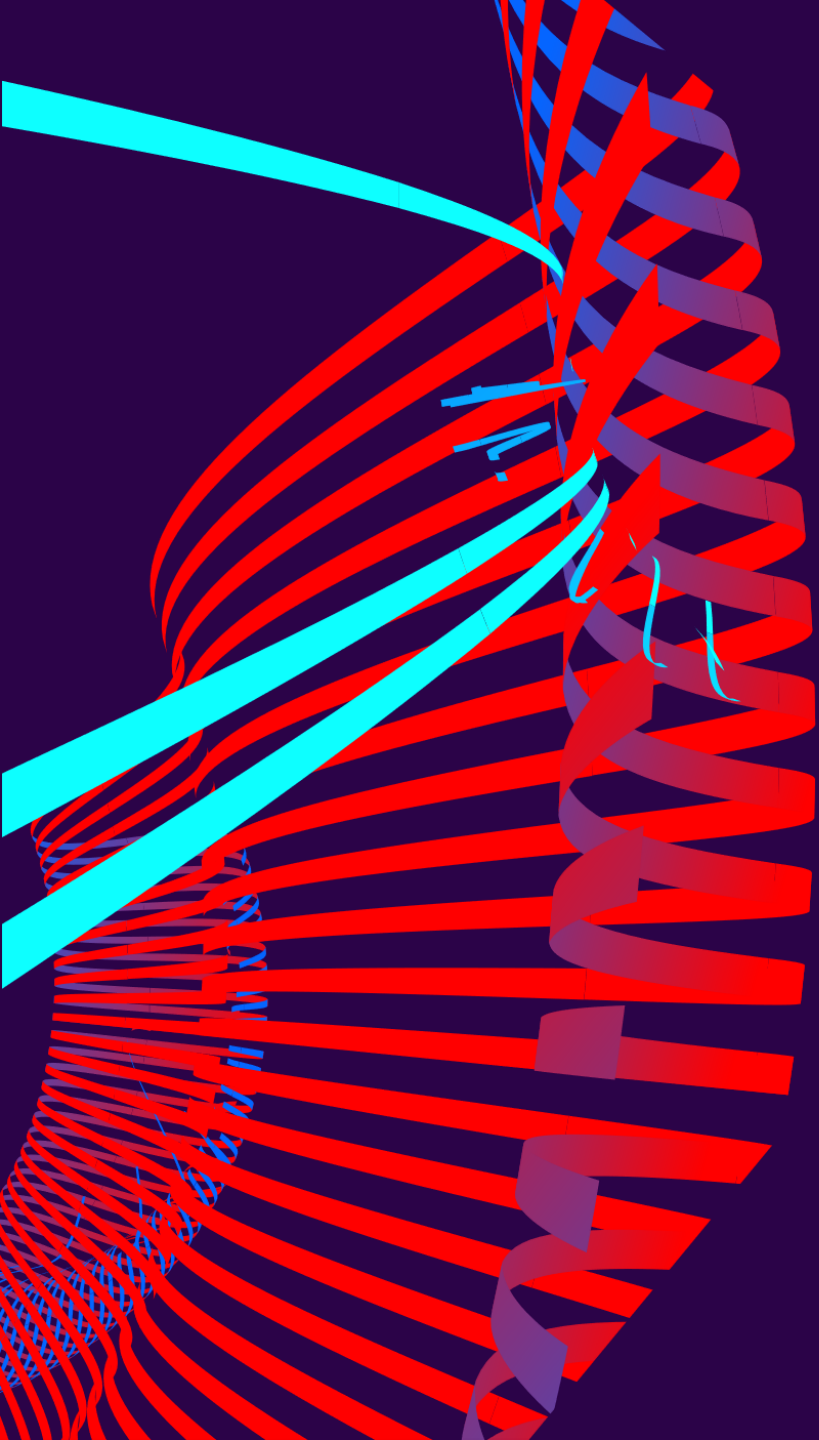
- Grid integration
- Grid stability

## ENERGY EFFICIENCY

- Energy not being used efficiently in commercial and residential buildings
- Data & visibility of energy usage

## CROSS SECTORAL CHALLENGES

- High cost of adoption
- Integration to legacy systems & infra
- Behavioural
- Financing
- Policy frameworks



# SUCCESSFUL IMPLEMENTATION OF AI IN THE ENERGY SECTOR

## 1. ELECTRICITY SUPPLY

### TNB SMART GRID INDEX PROGRAMME

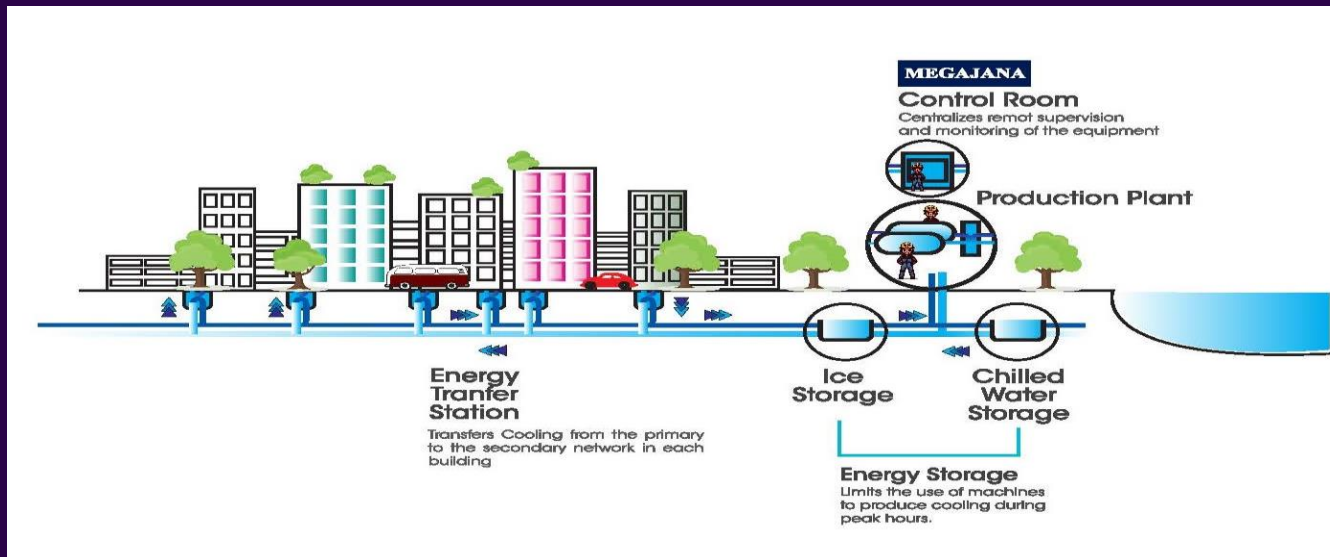
- Advance Metering Infrastructure
- Advanced Asset and Grid Analytics for Monitoring, Forecasting and Decision Support
- Machine Learning Algorithms for 11Kv Underground Cables
- Digital Twin Application



## 2. ENERGY EFFICIENCY

### BUILDING AUTOMATION & OPTIMISATION SYSTEM

- Passive and active design building
- Energy Management System
- Sensor & Predictive Maintenance
- EC Diamond Building in Putrajaya
- District cooling system- Cyberjaya



Energy Commission Diamond Building in Putrajaya

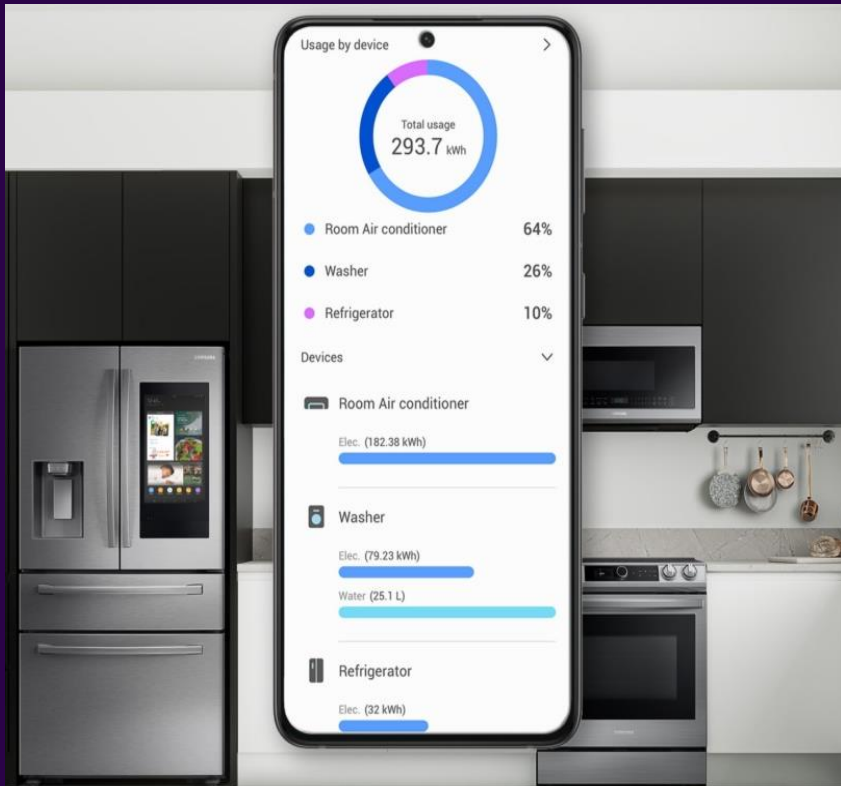




# SUCCESSFUL IMPLEMENTATIONS:

## 2. ENERGY EFFICIENCY

### SMART APPLIANCES & APPS



- Installation of Smart Meter by 2026
- Link to MyTNB app for energy usage monitoring
- Samsung SmartThings control over smart devices
- Promote behavioural change

#### Benefits of having a Smart Meter.

Smart Meters are a new way for Malaysians to get their meter readings for a better energy experience. The Smart Meter and its installation is free for all!

#### 01 Smarter Control

Smart Meters share information with your myTNB app, so you can track and adjust your energy usage to save money and the environment.

#### 02 Smarter Information

View half-hourly energy usage updates and receive notifications via the myTNB app when your electricity supply is disconnected (available soon).

#### 03 Smarter Payment

Smart Meters continuously read your energy usage to give an accurate bill. You can pay your Smart Meter bill anytime, anywhere via the myTNB app.



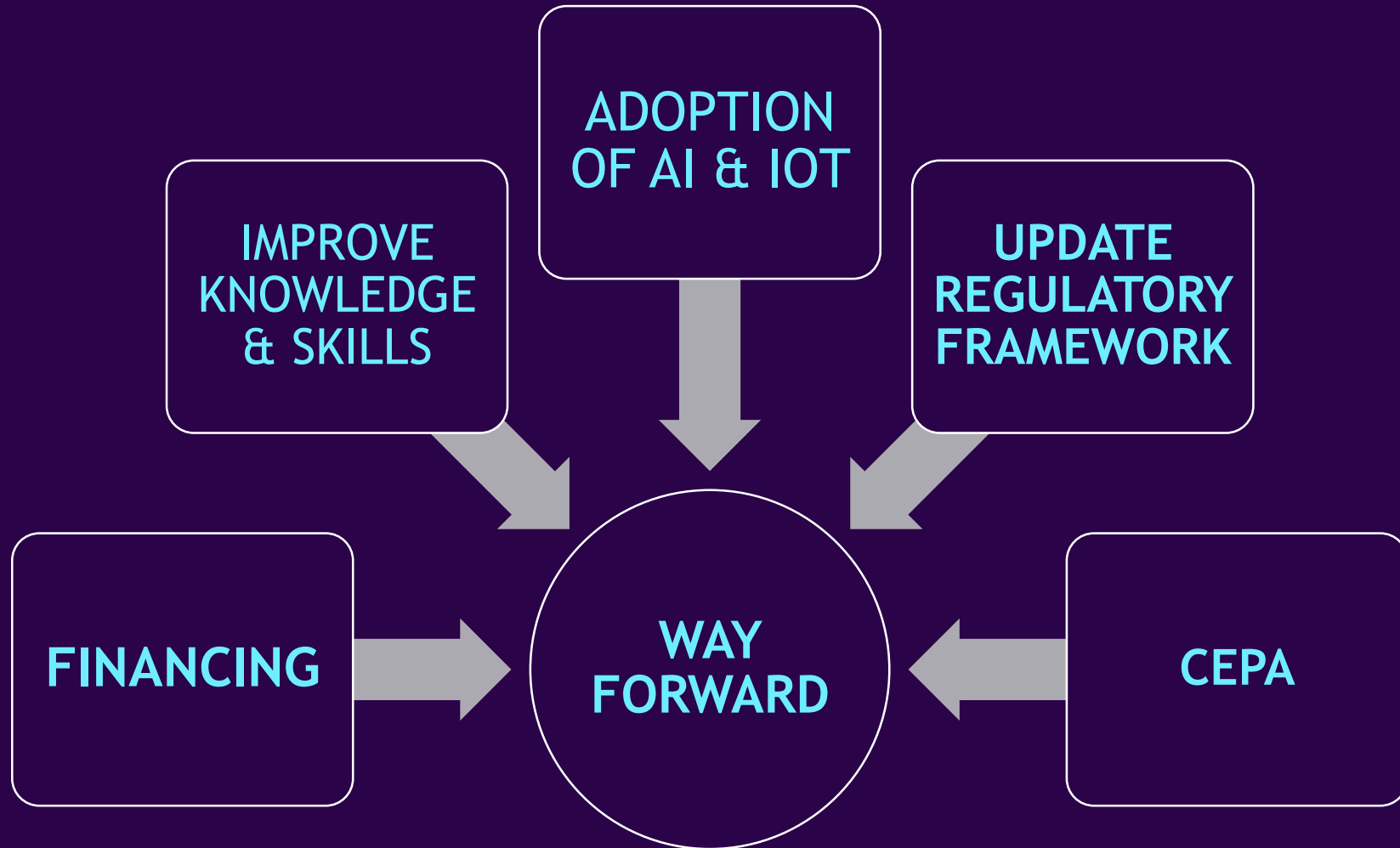
### 3. RENEWABLE ENERGY

#### POWERTRACK AIOT

- Performance Optimisation
- Predictive Maintenance
- Adaptive load management
- Forecasting tools
- Energy Storage & Management
- Batang Ai Floating Solar Farm in Sarawak (71 MW) with Huawei
- Solarvest partnered with Envision Digital for operations and management of solar PV systems



# WAY FORWARD



# CONCLUSION

- Continue to accelerate AI adoption in energy sector in Malaysia
- Continue to disseminate info and awareness on the use of AI to all related stakeholders





# THANK YOU

Khalilulnisha binti Abu Bakar

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Ministry of Energy Transition and Water  
Transformation