

# Seminar on “Hong Kong Electricity Market: Post-2008”

## **Reliability, Security, Best Price : A Consumer’s View**

Presentation by KCRC

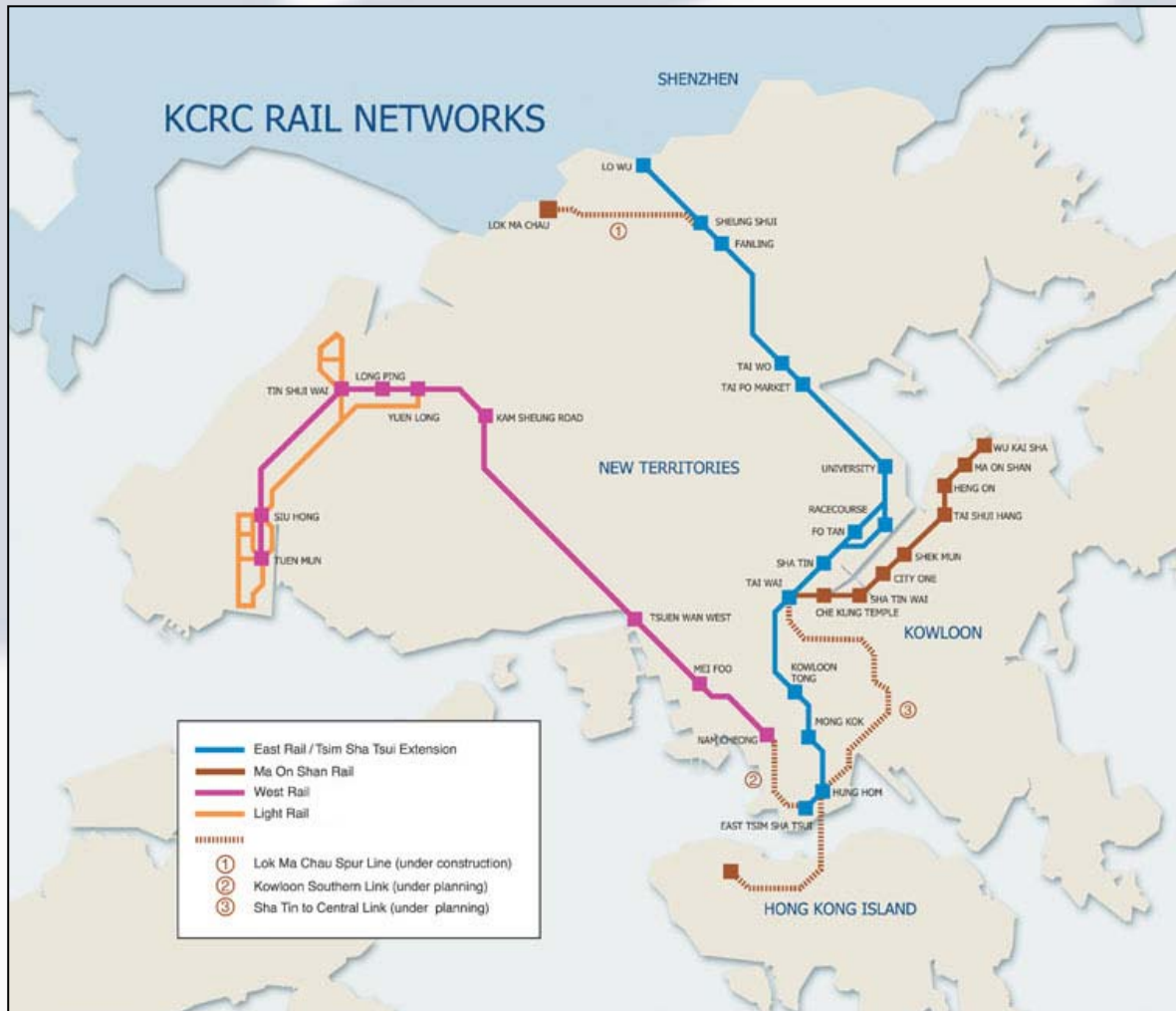
12 April 2005



# Content

- KCRC Electricity Consumption Profile
- KCRC Traction Supply Networks
- Potential Energy Cost Saving Measures
- Energy Demand for Future Extensions
- View on Post 2008 Electricity Market
- Q & A

# KCRC Network



- Total length > 150 km
- Annual electricity consumption HK\$ 450 million in 2004

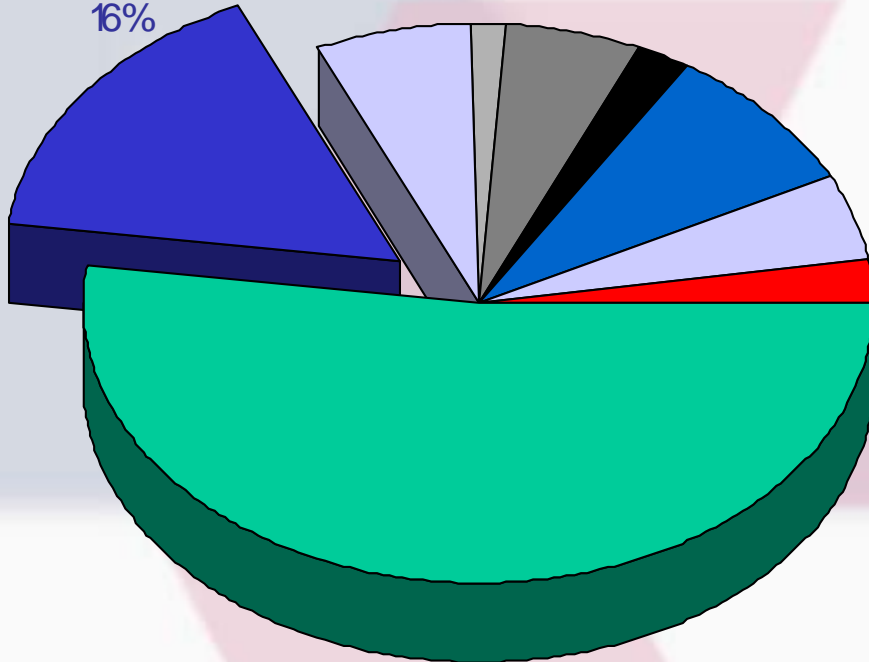
# Daily Patronage



Average daily patronage 1.5 million

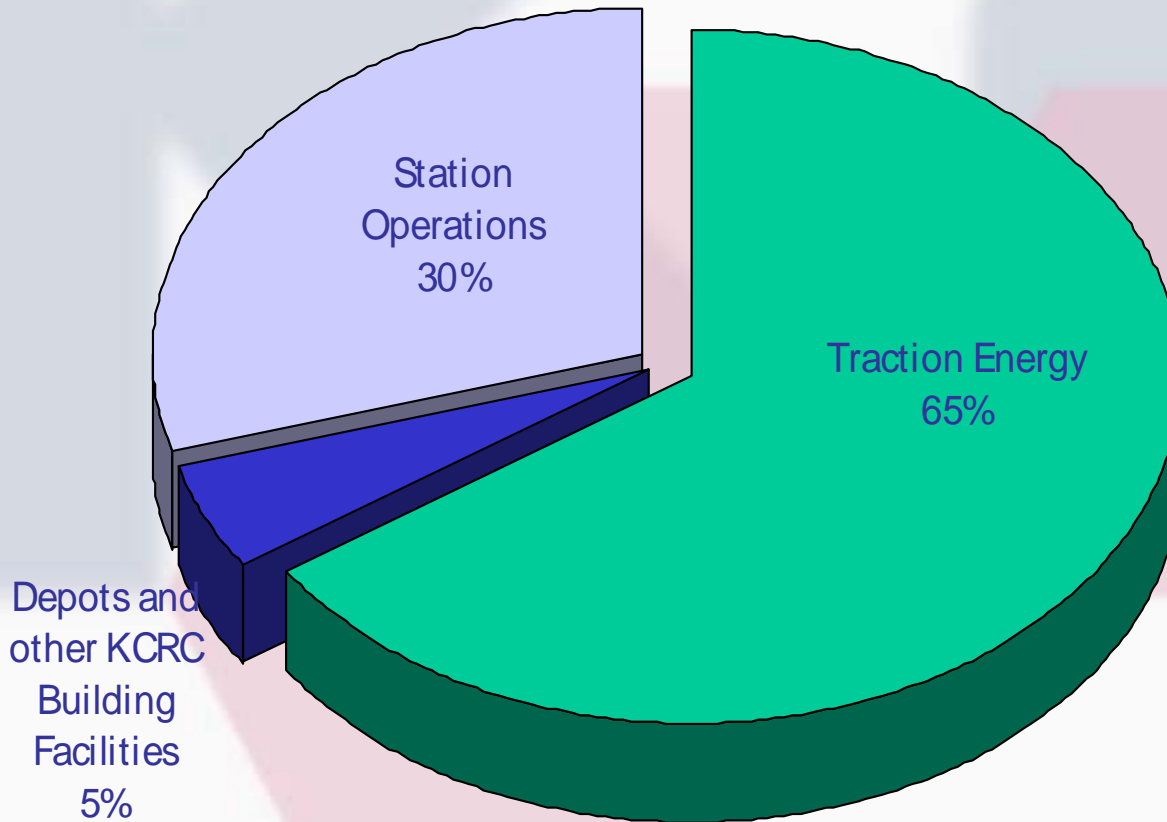
# KCRC Operating Expenses

Electricity and  
fuel  
16%



- Staff cost
- Electricity and fuel
- Repair and maintenance
- Material cost
- Store and spares consumed
- Property ownership and management expenses
- Others
- Cost of services acquired
- Government rent and rates

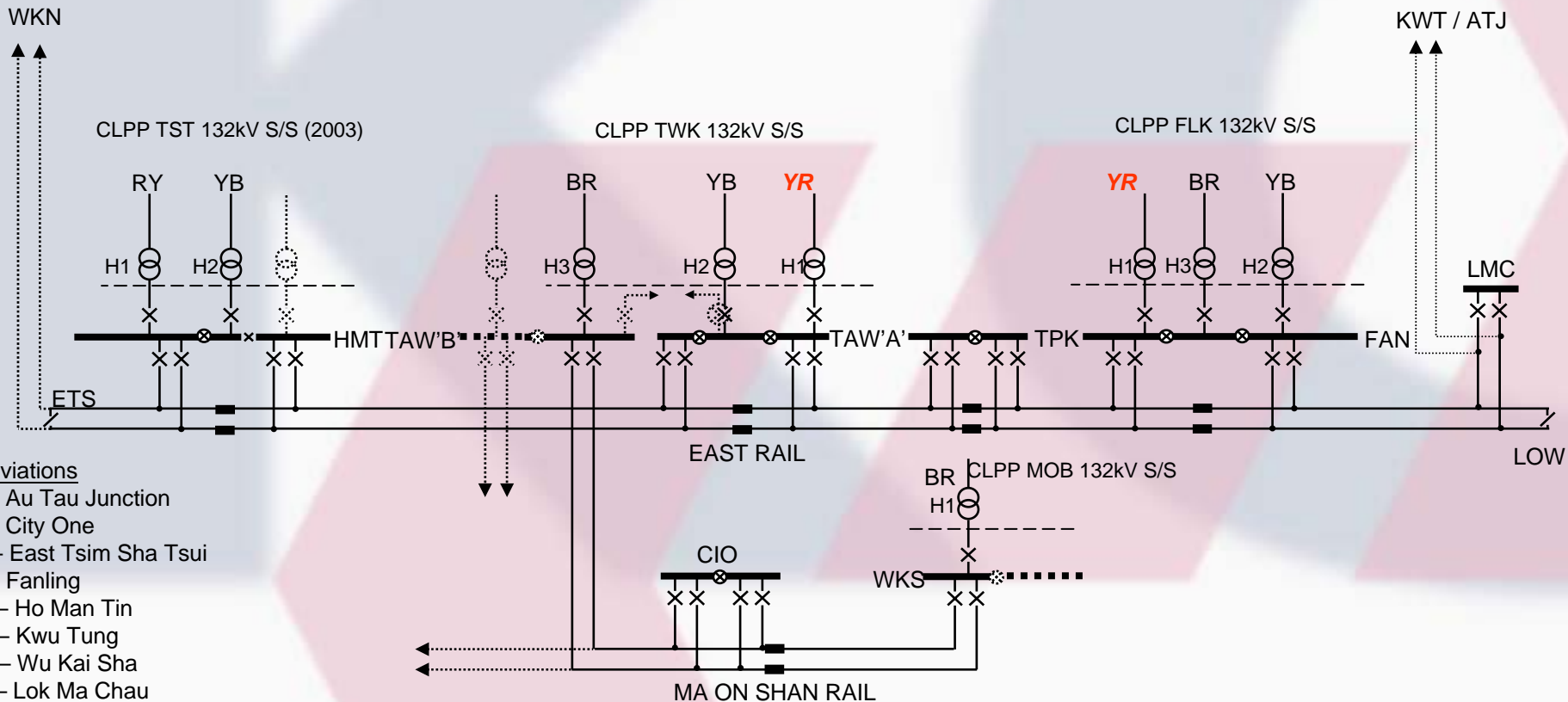
# Breakdown of Energy Cost



# KCRC Traction Supply Networks

	System Voltage	Infeed Points
East Rail	AC 25kV	Ho Man Tin, Tai Wai & Fanling CLP 132kV/25kV substation
West Rail	AC 25kV	Kwai Fong & Tin Shui Wai CLP 132kV/25kV substation
MOS Rail	AC 25kV	Tai Wai & Wu Kai Sha CLP 132kV/25kV substation
Light Rail	DC 750V	Tuen Mun, Yuen Long, Tin Shui Wai CLP 132kV/11kV substation

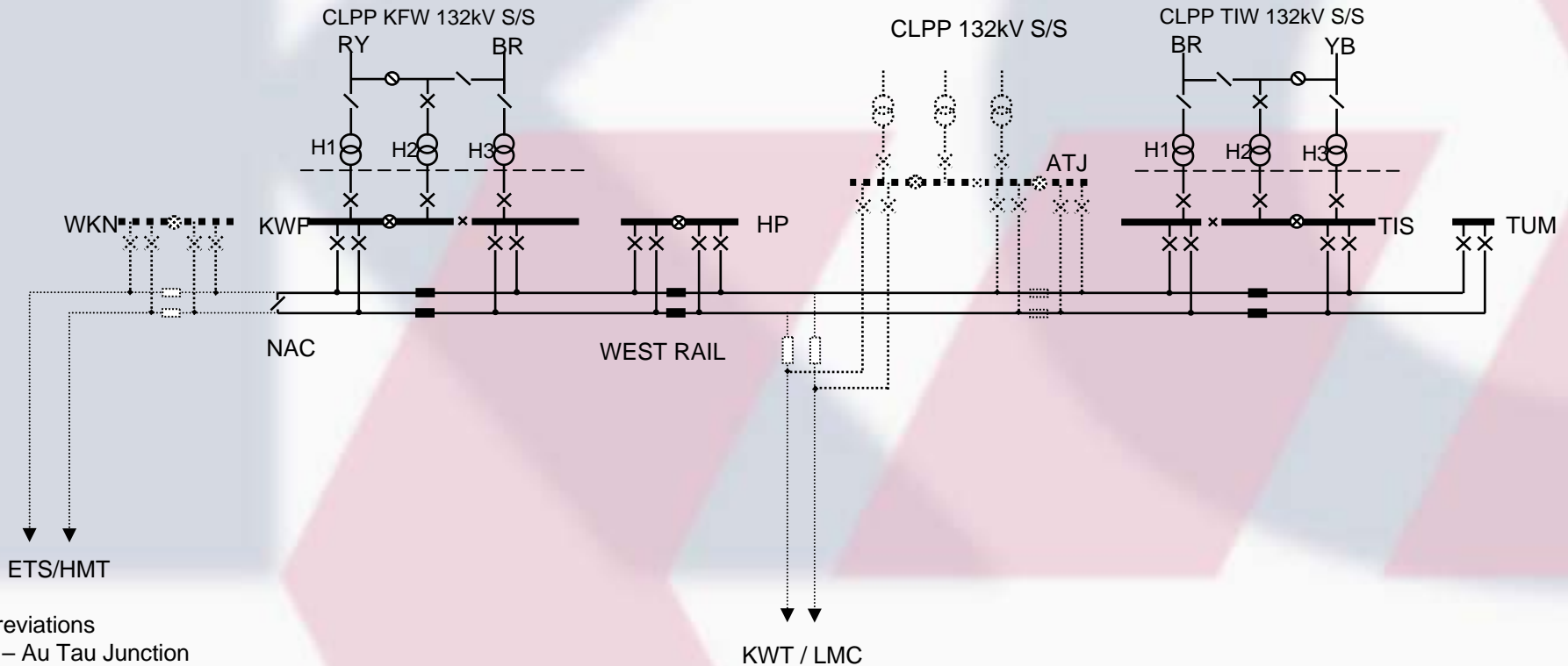
# East Rail Supply Networks



- Abbreviations**
- ATJ – Au Tau Junction
  - CIO – City One
  - ETS – East Tsim Sha Tsui
  - FAN - Fanling
  - HMT – Ho Man Tin
  - KWT – Kwu Tung
  - WKS – Wu Kai Sha
  - LMC – Lok Ma Chau
  - LOW – Lo Wu
  - TPK – Tai Po Kau
  - TAW'A' – Tai Wai 'A'
  - TAW'B' – Tai Wai 'B'
  - WKN – West Kowloon



# West Rail Supply Networks



## Abbreviations

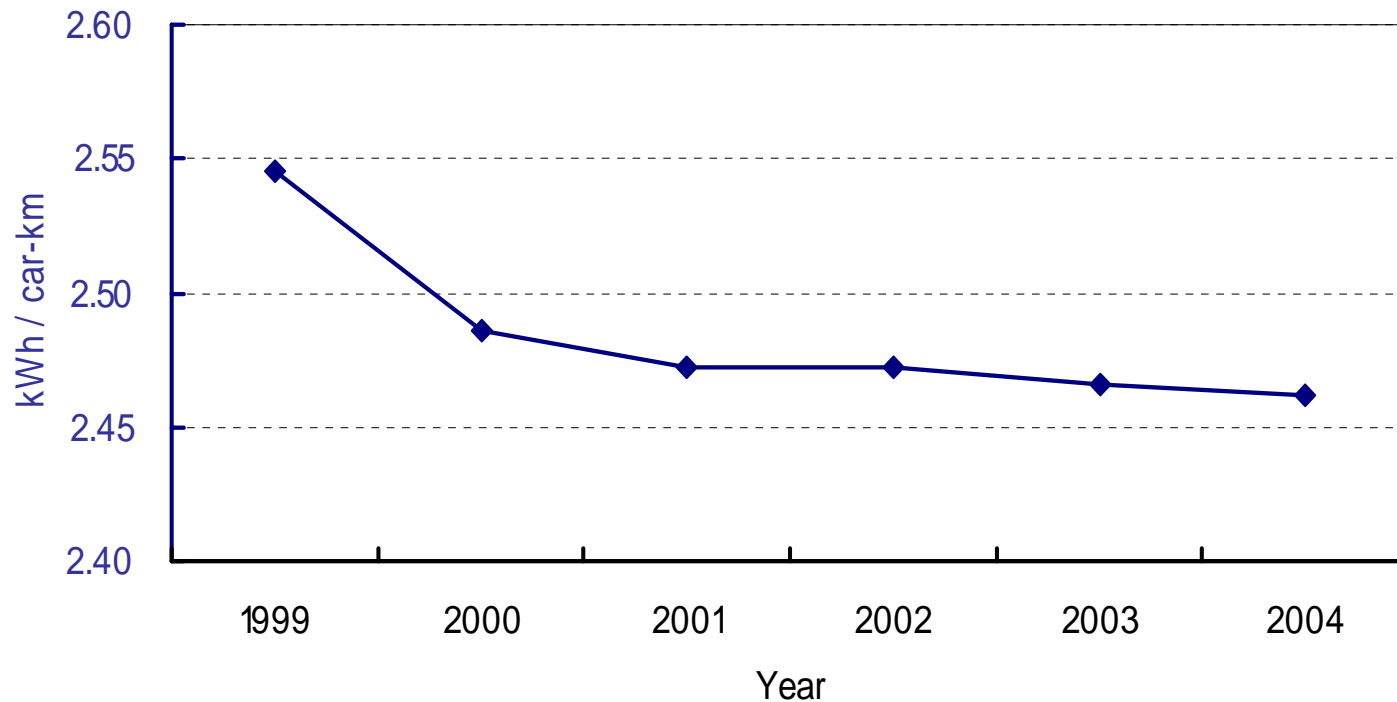
- ATJ – Au Tau Junction
- ETS – East Tsim Sha Tsui
- KWF – Kwai Fong
- KWT – Kwu Tung
- LMC – Lok Ma Chau
- NAC – Nam Cheong
- HP – Ho Pui
- TIS – Tin Shui Wai
- TUM – Tuen Mun
- WKN – West Kowloon

# CLP Tariff

- **Traction energy** -- Large Power Tariff Scheme
- **Station energy** -- Bulk Power Tariff Scheme
- **Keep on negotiating for a better rate**

# Trend of Traction Energy

East Rail Traction Energy



# Energy Management

## Introduction of Regenerative Braking



SP-1900 / SP-1950 New EMU

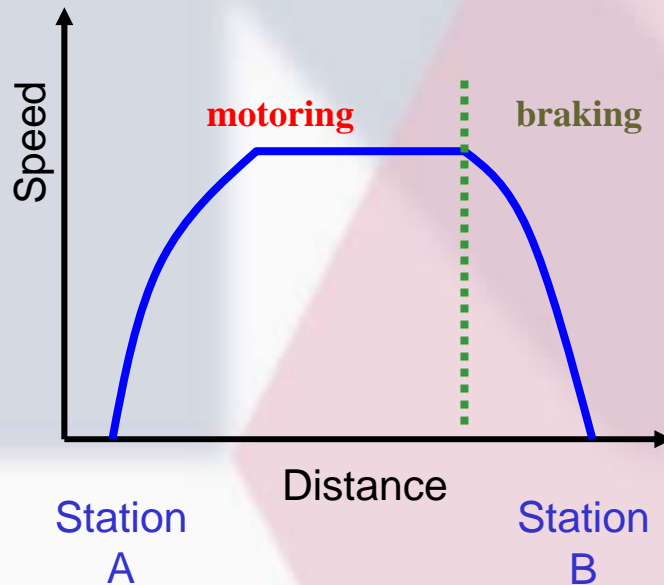


Phase III LRV

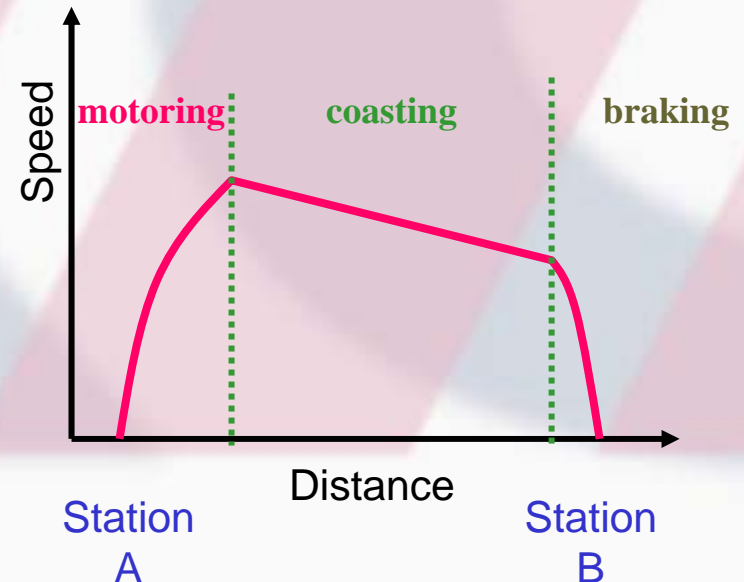
# Energy Management

## Traction Coasting Control

Hard Driving Profile



Coasting Profile



High Potential of Traction Energy Saving

# Energy Management

## Replacement of Motor Alternator with Power Electronic Converter



Traditional Motor-Alternator Set



State-of-the-art Power Electronic Converter

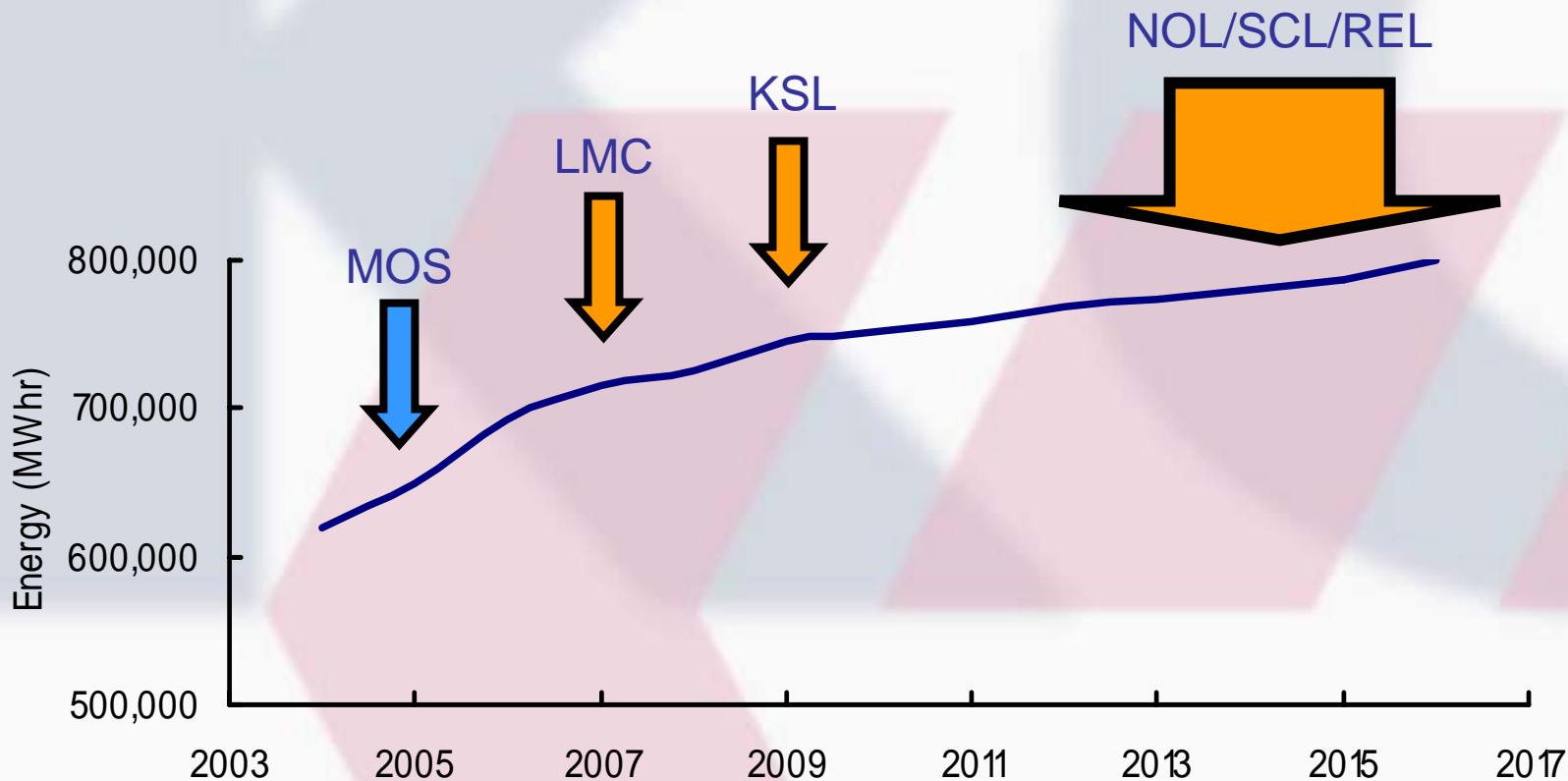
On-going energy saving approx. HK\$ 6 million annually

# KCRC Network Extension by 30% in future



- Lok Ma Chau Spur Line
- Kowloon Southern Link
- Northern Link
- Shatin Central Link
- Regional Express Line

# Energy Demand Projection





# Potential connectivity for **better security**

- Linking with **HEC** due to SCL
- Better assurance on the supply security due to two sources of supply

# Opening of electricity market will have *impacts* on

- Price structure
- Security
- Reliability
- Choice of optimal supplier

# Opinion

Being a mass transit service provider and probably one of the largest electricity consumer in HK, KCRC is closely observing the development of the electricity market reform with an open-minded.

# Bottom Lines

**To obtain electricity power with**

**+ Good security**

**+ High reliability**

**+ Best price**

**for enabling KCRC to provide good service to passenger**

End of Presentation

