SINGAPORE'S CLIMATE CHANGE STRATEGY

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Singapore's National Circumstances

- Small low-lying island state of 700 km^2
- Flat Coastline
- Rising temperatures and sea levels, increasing frequency of days with intense rainfall
- Highly urbanised, densely populated
- Development constraints
  - Singapore's lack of natural resources and hinterland required the development of a strong export-oriented manufacturing base
- Import almost all our energy needs
  - High dependency on fossil fuels

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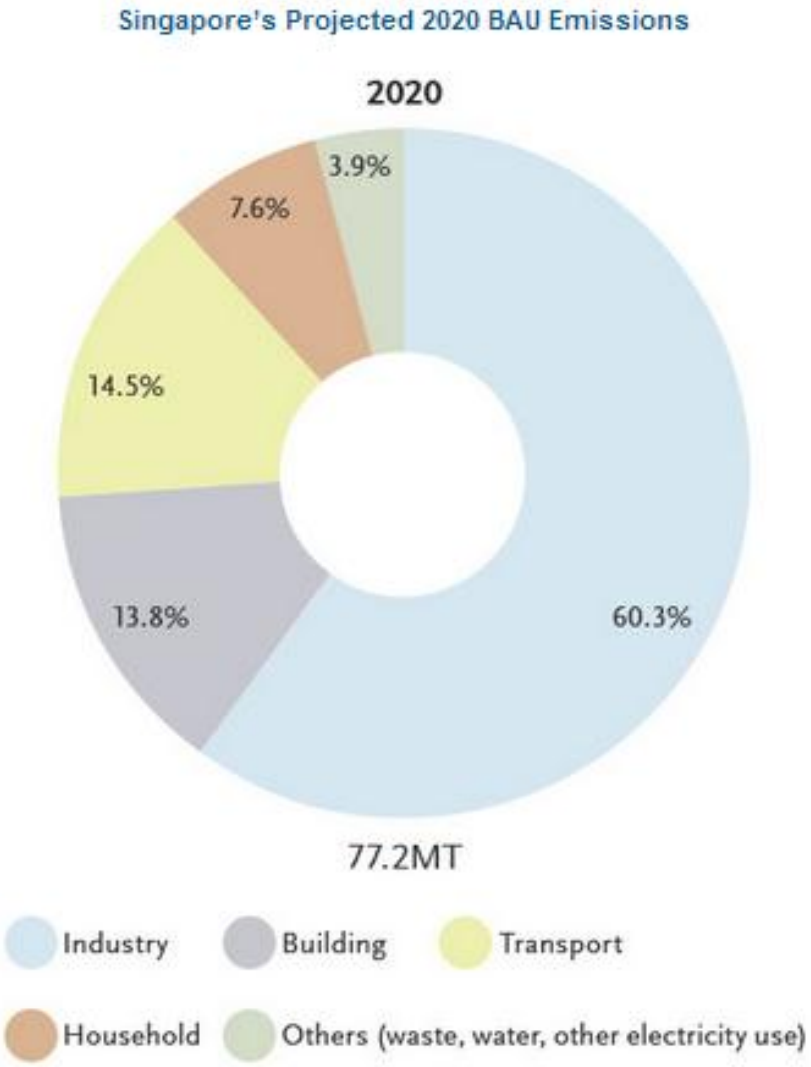
Singapore's Projected Emissions



Projecting from 2005, Singapore's BAU emissions are expected to reach 77.2 million tonnes (MT) in 2020

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Singapore's Mitigation Pledge

To undertake mitigation measures leading to a reduction of greenhouse gas emissions by 16% below business-as-usual levels in 2020, contingent on there being a legally binding global agreement in which all countries implement their commitments in good faith

Singapore has already begun to implement an initial phase of measures that would result in a reduction of 7-11% reduction of greenhouse gas emissions, regardless of whether there is a legally binding agreement.

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MITIGATION MEASURES

Power Generation

- Switch fuel mix away from fuel oil to natural gas for power generation
- The liquefied natural gas terminal has commenced operations since May 2013
- Encourage solar test-bedding and research

Waste & Water

- Increase recycling rate from 59% to 70%
- Increase energy efficiency of desalination process through investments in R&D

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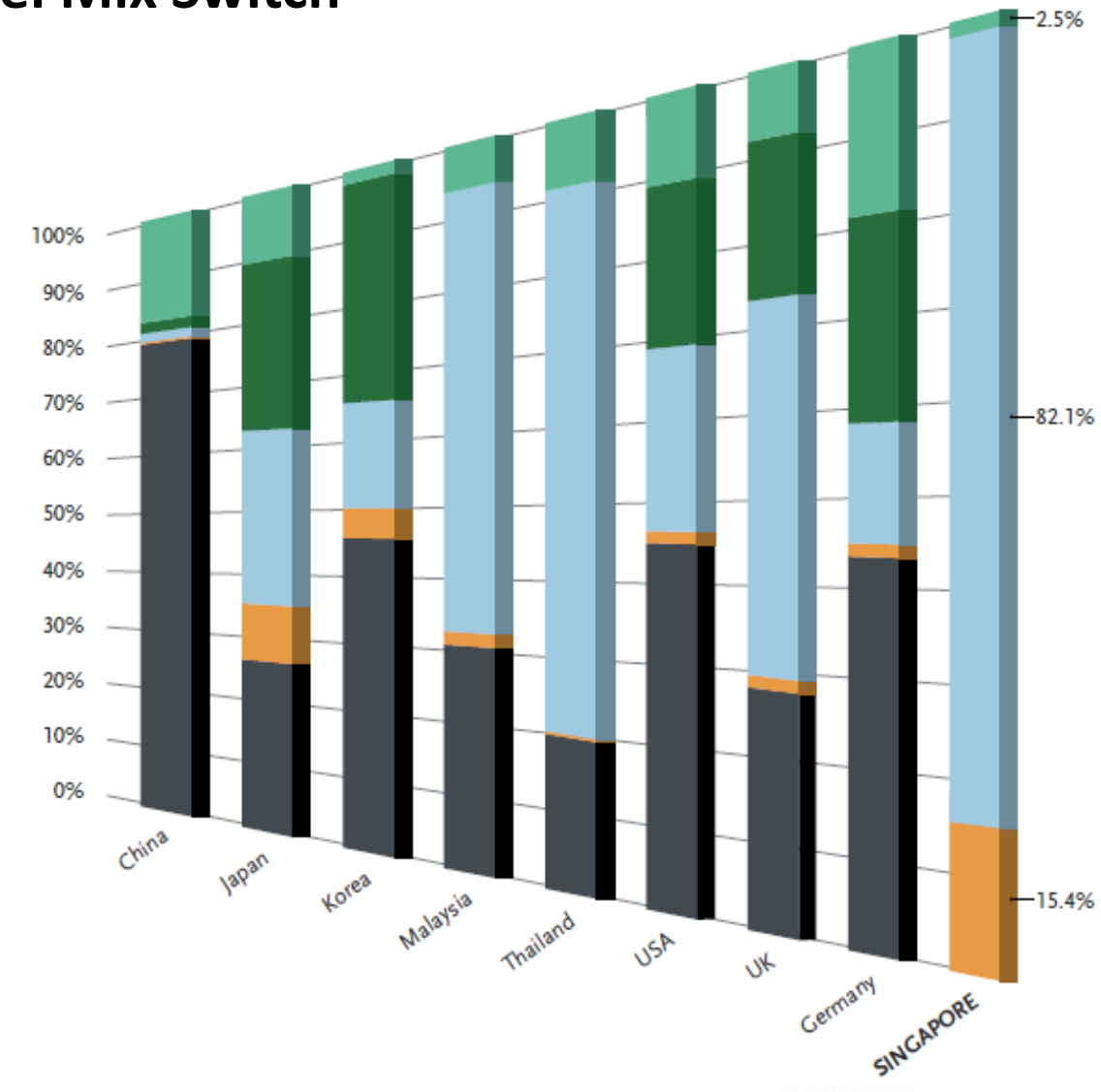
MITIGATION MEASURES

Fuel Mix Switch



Sources: IEA Online Statistics © OECD/ International Energy Agency 2012 and Singapore Energy Statistics 2011 © Research and Statistics Unit, Energy Market Authority, Singapore, 2011.

MITIGATION MEASURES

Industry

- Encourage new co-generation plans in energy-intensive sectors
- Co-funding schemes to help companies identify and realise commercially viable energy efficiency improvements

  - Design for Efficiency Scheme (DfE)
  - Energy Efficiency Improvement Assistance Scheme (EASe)
  - Grant for Energy Efficient Technologies (GREET)

Households

- Mandatory Energy Labeling Scheme (MELS)
- Minimum Energy Performance Standards (MEPS)

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MITIGATION MEASURES

Transport

- **Mandatory Fuel Labelling Scheme**
- **Carbon Emissions-based Vehicle Scheme (CEVS)**
- **Increase public transport share to 75% by 2030**
- **Rail network to double by 2030**
- **8 in 10 homes within a 10 min walk from a train station by 2030**

Band	CO_2(g/km)	Rebate/Surcharge* for Cars
A1	0 to 100	$20,000 rebate
A2	101 to 120	$15,000 rebate
A3	121 to 140	$10,000 rebate
A4	141 to 160	$5,000 rebate
B	161 to 210	0
C1	211 to 230	$5,000 surcharge
C2	231 to 250	$10,000 surcharge
C3	251 to 270	$15,000 surcharge
C4	271 & above	$20,000 surcharge

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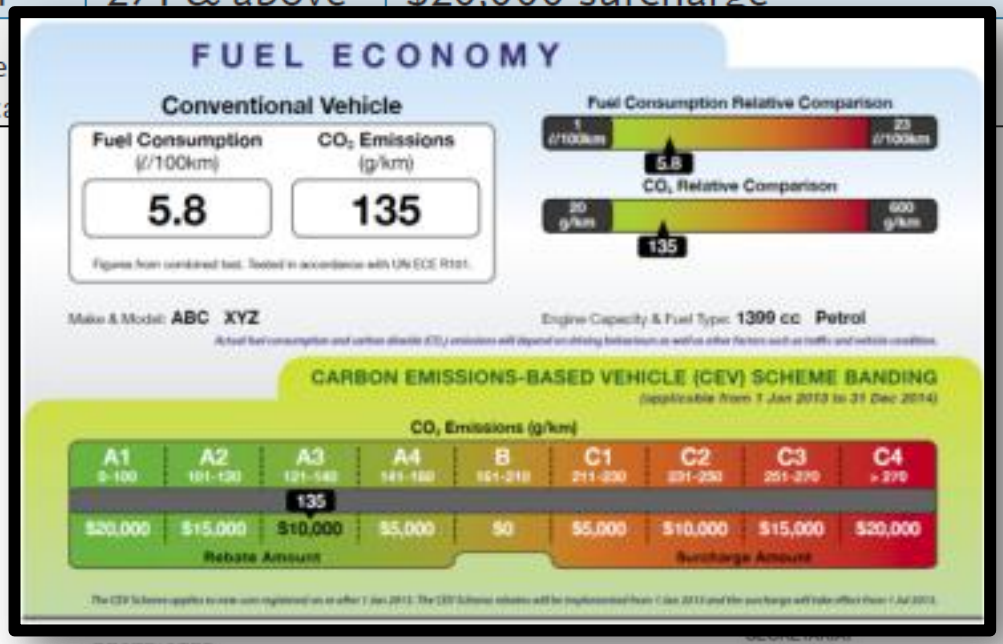


MITIGATION MEASURES

Buildings

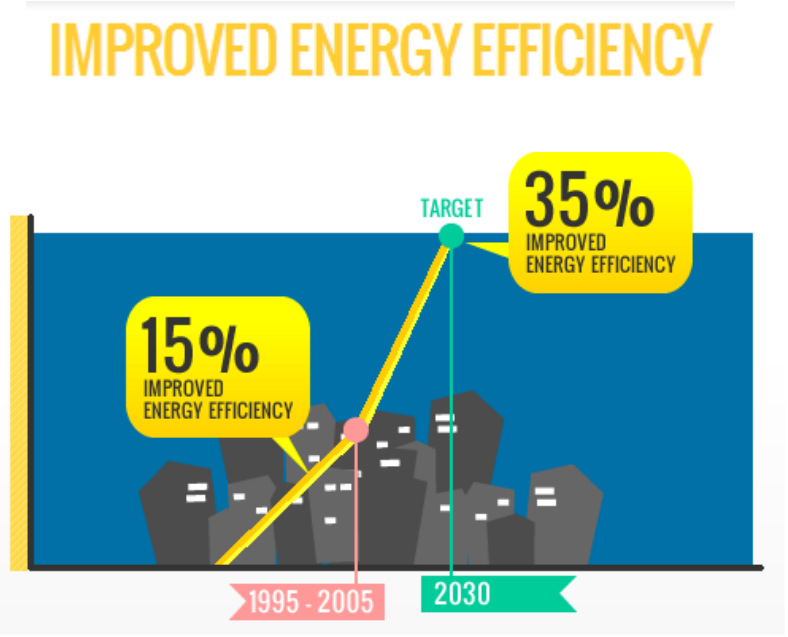
- **Green Mark Scheme**: new and existing buildings undergoing major retrofitting required to meet requirements on environmental sustainability

- S$100 million incentive scheme for existing buildings

- Target 80% green buildings by 2030

Singapore's Energy Conservation Act 2013

- Government introduced minimum energy management standards for large energy users in the industry sector from FY2013 and involves
  - Appointment of energy managers
  - Reporting of energy use
  - Submission of energy efficiency improvement plans for large energy users.



- Will affect companies that consume more than 15 GWh of energy annually

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Environmental Sustainability & the Building Control Act

- In December 2012, Environmental Sustainability Measures for Existing Buildings was introduced to the Building Control Act (Act)

- From 1 July 2013, building owners are required to submit their building information and energy consumption data annually to BCA.

- Building owners can enter their information through BCAs new Building Energy Submission System (BESS)

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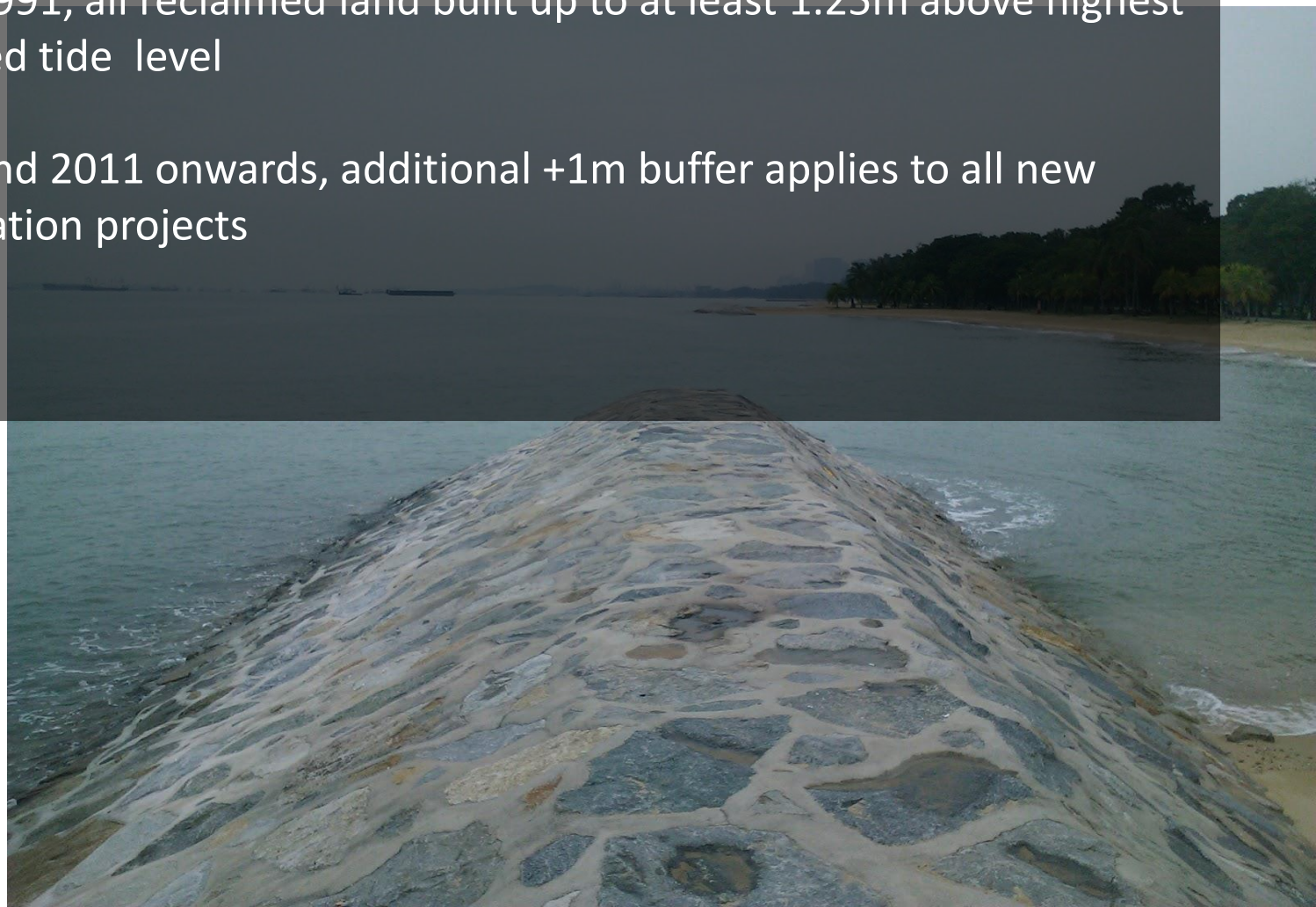
Enhancing Resilience to Climate Change

- **Future sea level rise is a concern to Singapore**
  - Since 1991, all reclaimed land built up to at least 1.25m above highest recorded tide level
  - From end 2011 onwards, additional +1m buffer applies to all new reclamation projects



Enhancing Resilience to Climate Change

Safeguarding Against Flood Risks

- Revamped approach to improve the resilience and adaptability of the drainage system to recognise increasing urbanisation and weather uncertainties

- Over the last 30 years, SIngapore has invested some $2 billion to upgrade Singapore's drainage infrastructure

  ✓ implementing higher drainage design standards and holistic catchment-wide solutions

  ✓ working with stakeholders to improve preparedness

Minimum crest levels are required for entrances to underground facilities such as Mass Rapid Transit (MRT) stations.

Continual drainage improvement works, which include expansion of drains and canals, are carried out to ensure the adequacy of Singapore's drainage system.

Harnessing Green Growth Opportunities

Singapore: Global clean tech hub

- Critical in enhancing knowledge, expertise, capabilities and opportunities
- Green opportunities in:
  - Clean tech
  - Waste and water technology
  - Urban management and solutions
  - Climate risk management
  - Carbon services and climate finance
  - Green information and ICT

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Forging Domestic Partnerships

Approach – Working with 3P Partners

Work with **People, Public, Private (3P) sector partners** on public outreach and education initiatives to achieve the following objectives :

- Create public awareness
- Translate public awareness to action

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Singapore's International Partnerships

DOHA 2012
UN CLIMATE CHANGE CONFERENCE
COP18·CMP8

- Participation in climate change fora such as UNFCCC, ICAO, IMO, ASEAN and APEC

- **Exchanging climate-friendly practices** within and beyond the region
  - C40 network
  - Singapore Cooperation Programme
  - Bilateral Cooperation Initiatives

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“Our vision for Singapore is a climate resilient global city that is well positioned for green growth... Together, we can ensure that Singapore remains a vibrant and liveable nation for our future generations.”

— DPM Teo Chee Hean, March 2012

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Thank you