Cities as Leaders of the Clean Energy Transition

Case Study: San Diego, California, USA
How relevant to Asian Cities?

June 10 2016
Asia Clean Energy Forum

Nilmini Silva-Send

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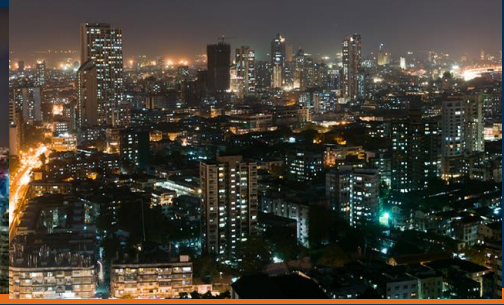


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TEXAS
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LOUISIANA
Houston
Gulf of California
FLORIDA
Gulf of Mexico
Mexico
San Diego

California cities: Why the push?

STATE ENERGY AND ENVIRONMENTAL MANDATES

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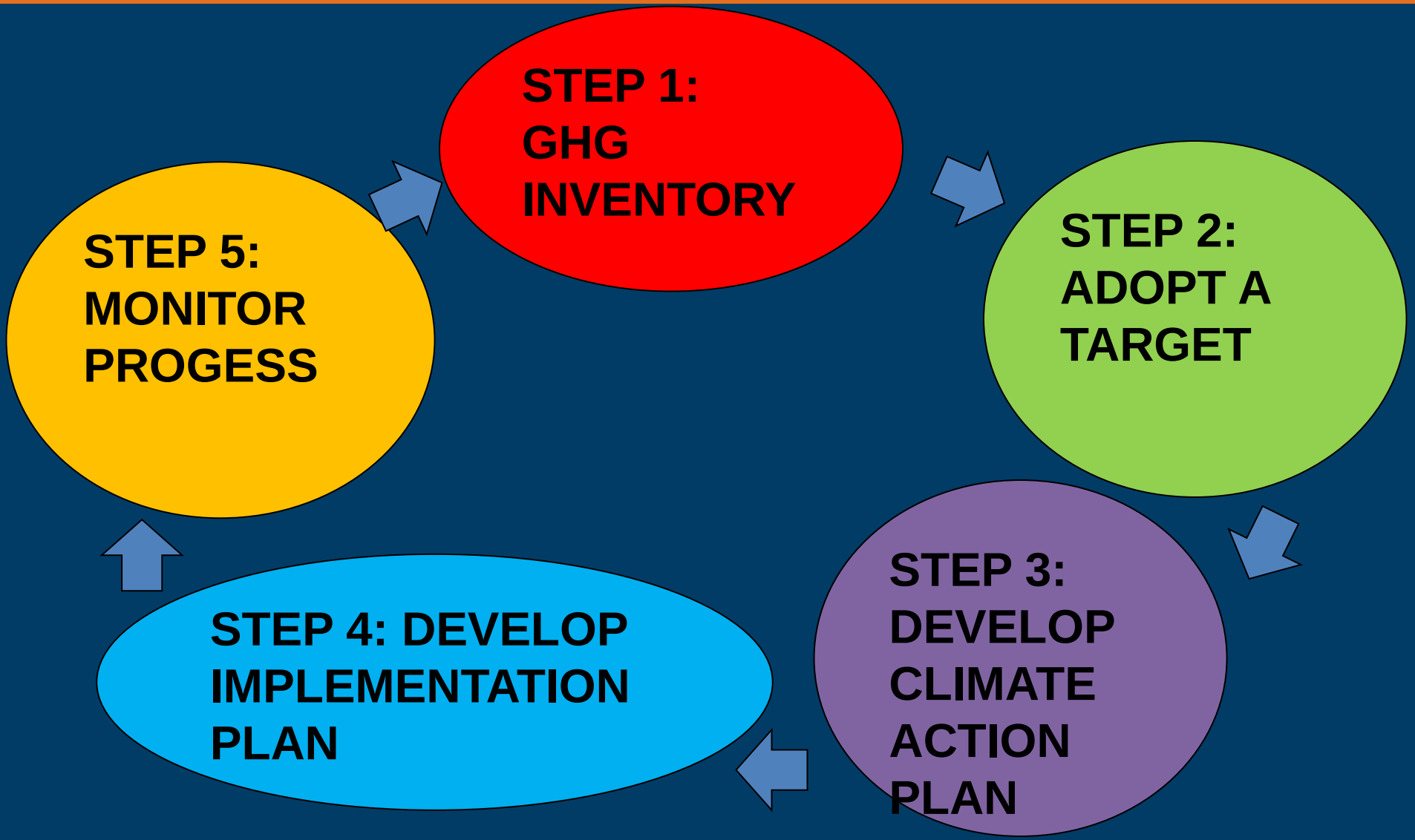
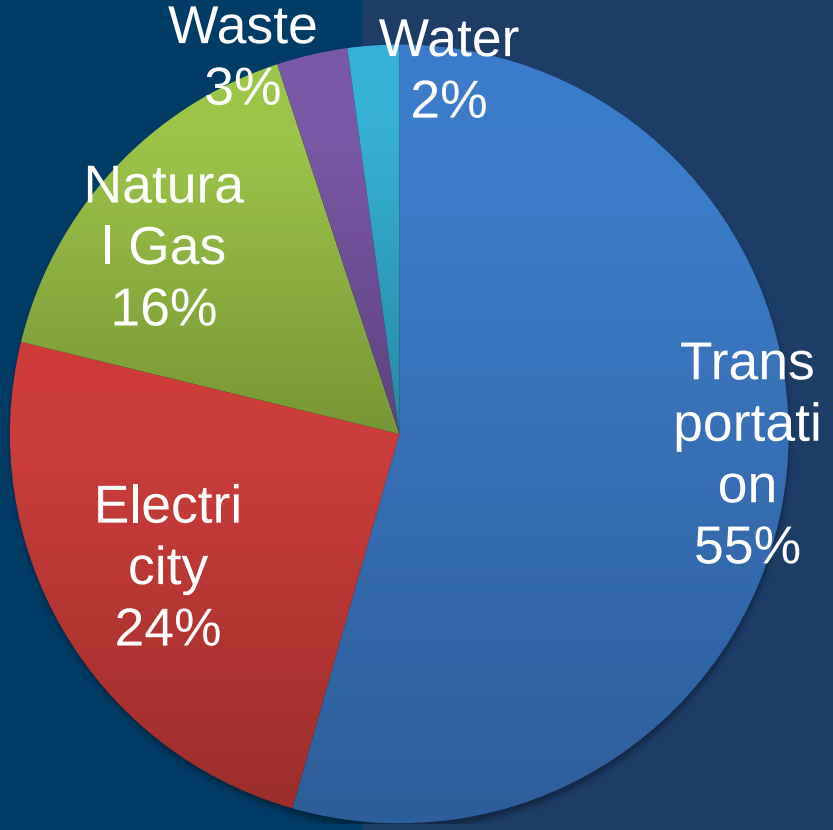
LITIGATION

Path to Clean Energy = Climate Action Plan

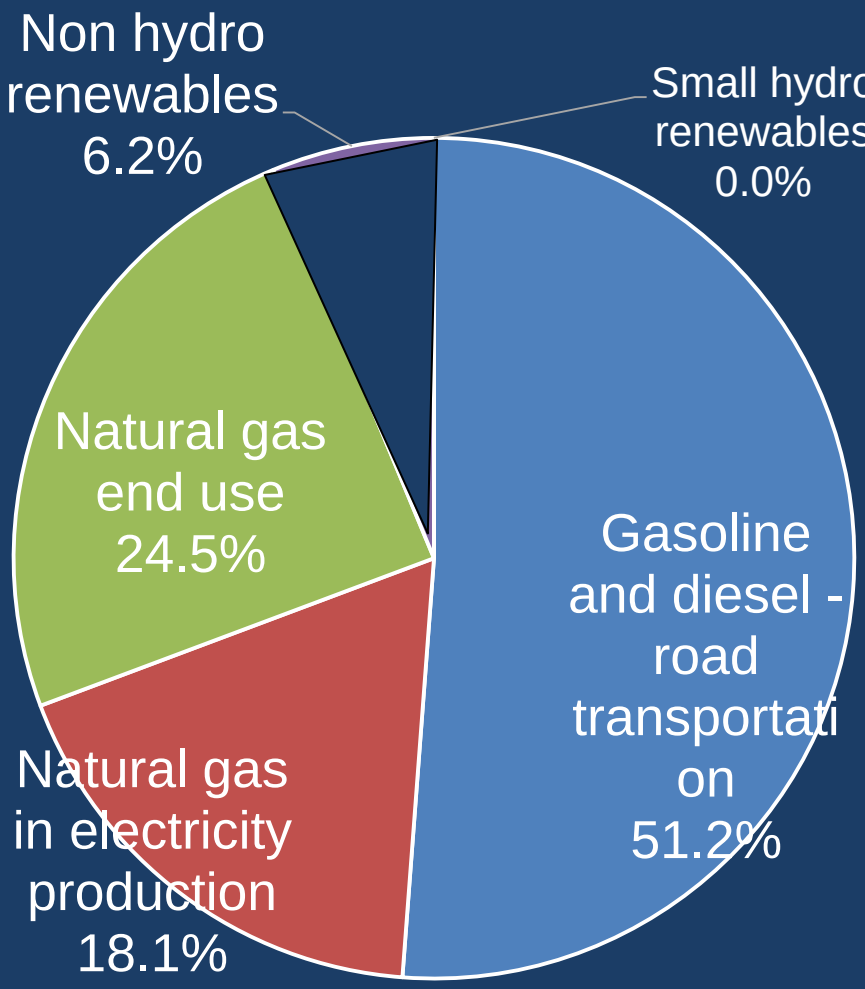


City of San Diego

GHGs by End Use 2010
Total 13 million tons CO2e



Energy by Fuel Source 2014



CLIMATE PLAN PROCESS

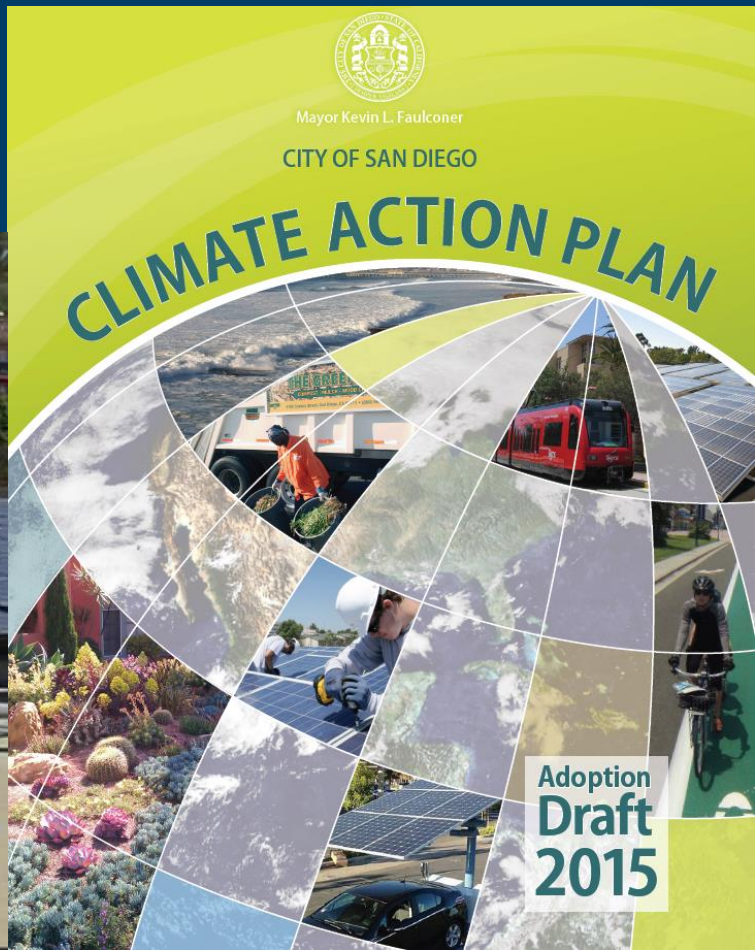
MULTISTAKEHOLDER EFFORT

- Strong mayor support
- Utility, transportation planning agency, all city departments, legal counsel, Env NGOs
- More than 150 meetings over 5 years

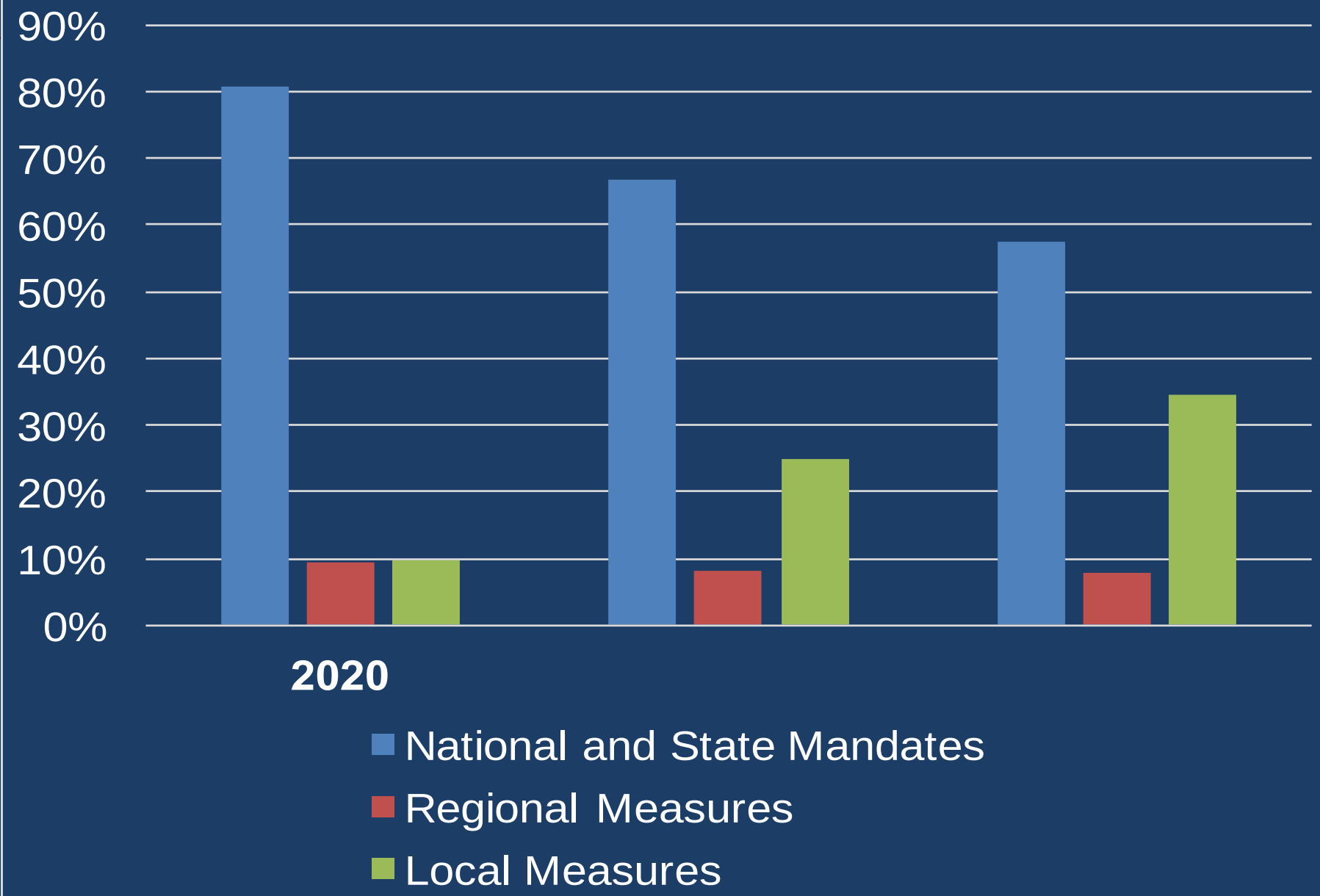
MULTIDISCIPLINARY – energy policy analysts, engineers, planners, economists, attorneys

DATA, METHODS, ATTRIBUTION TO CITY BECAME IMPORTANT!!!!

TARGETS
15% below 2010 in 2020
50% below 2010 in 2035



Which policies for most GHG reductions?



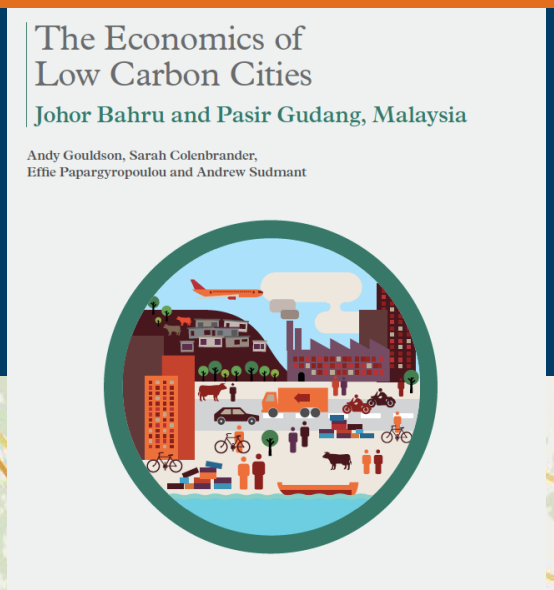
REDUCTION MEASURES

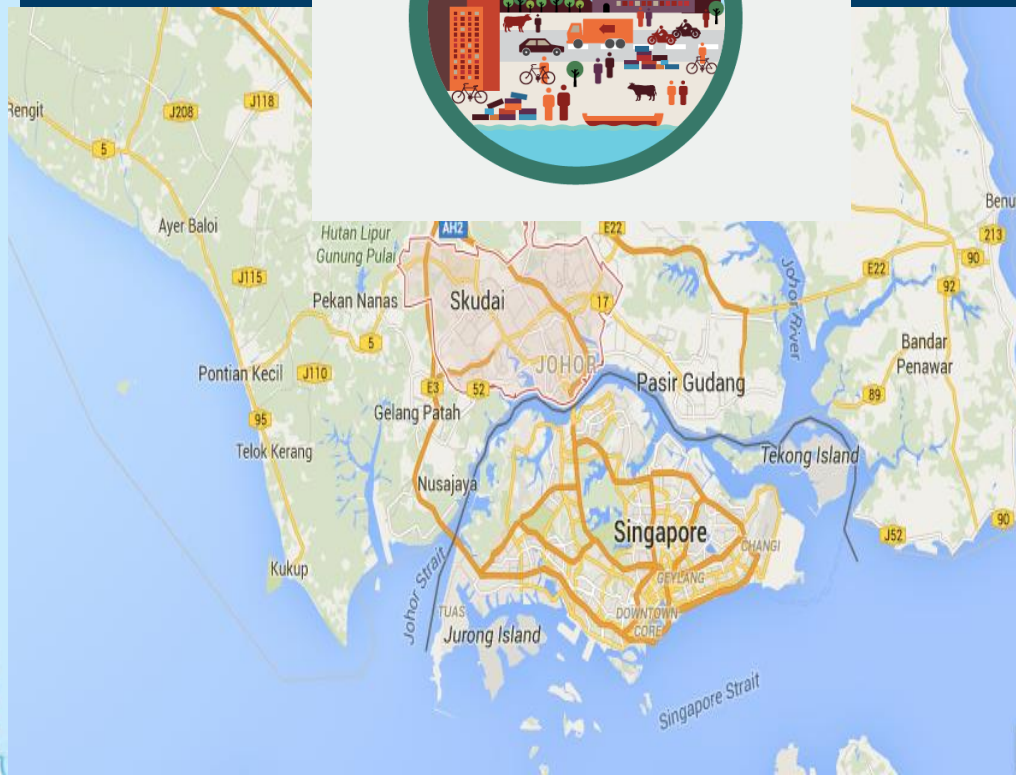
- Buildings
  - 100% renewable electricity by 2035
  - Efficiency

- Transportation
  - Urban planning → reduce travel demand
  - Shift mode – public transport from 4% to 50% in specific areas
  - Electrification

- Waste – methane capture + recycle/reuse
- Water

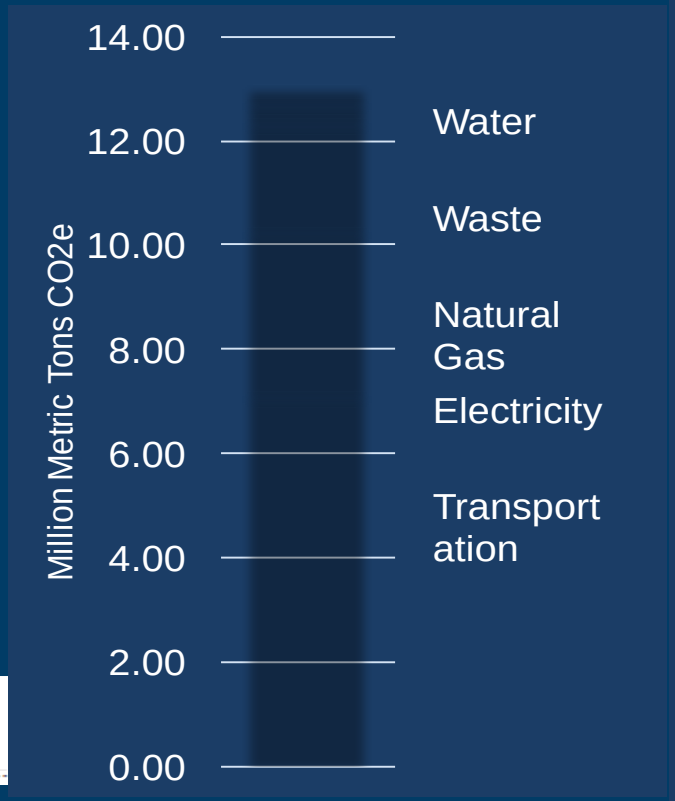
TWO ASIAN CITIES



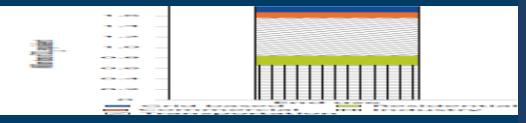


Can we compare GHG emissions?

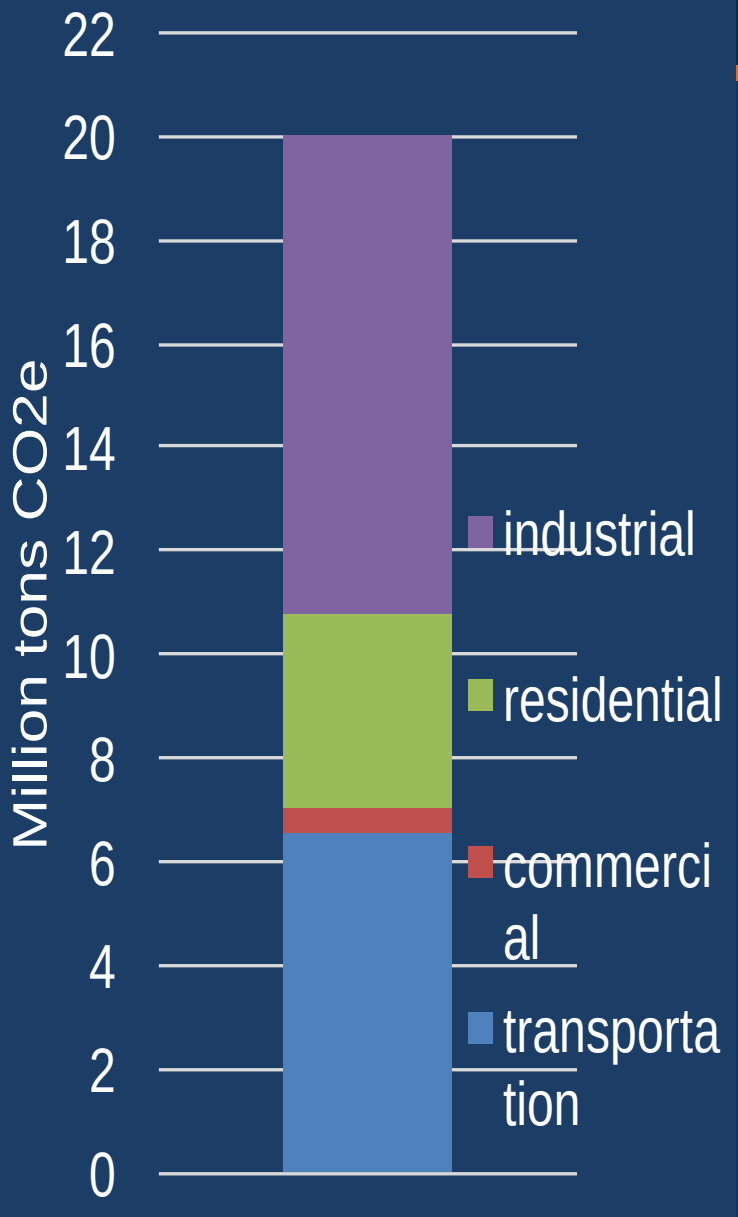
San Diego



Cebu City



Johor Bahru/Pasir Gudang



Asian Cities – Reduction Measures

- Waste – methane capture + recycle/reuse ?
- Water
  - Efficiency
  - Conservation
- Transportation - efficiencies
  - Urban planning → reduce travel demand ?
  - Shifting mode? public transport 80% to ?
  - Electrification ?
- Buildings
  - 100% renewable electricity by 2035 ?
  - Efficiency

100% RE and 100% GHG reduction ?

City	Approx Population	Country	Percent GHG Reduction	Target Year
Melbourne	4mi	Australia	100	2020
Copenhagen	583,349	Denmark	100	2025
Gävle	98,314	Sweden	100	2030
Östersund	60,495	Sweden	100	2030
Växjö	80,000	Sweden	100	2030
Santa Fe	70,000	US	100	2040
Stockholm	1.63mi	Sweden	100	2040
Turku	183,824	Finland	100	2040
Antwerp	1.02mi	Belgium	100	2040
Charlotte	800,000	US	100	2050
Edmonton	900,000	Canada	100	2050
Ghent	247,147	Belgium	100	2050
Oslo	647,676	Norway	100	2050
Seattle	662,400	US	100	2050
Somerville	75,754	US	100	2050
Adelaide	1.29mi	Australia	100	NA
Tucson	520,116	US	100	NA

City	Population	Country	Target Year
Aspen	6,600	US	2015
Burlington	42,400	US	2020
Oslo	624,000	Norway	2020
Copenhagen	583,000	Denmark	2025
Santa Monica	93,000	US	2025
Malmö	308,000	Sweden	2030
Säffle	9,000	Sweden	2030
San Francisco	805,000	US	2030
Växjö	80,000	Sweden	2030
Stockholm	1.63mi	Sweden	2040
Gävle	98,314	Sweden	2050
Vancouver	603,000	Canada	NA

THANK YOU

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CELEBRATING 10 2005 – 2015 YEARS