MINISTRY OF FOREIGN AFFAIRS
OF DENMARK

COPENHAGEN

- THE FIRST CARBON-NEUTRAL CAPITAL IN THE WORLD BY 2025

Singapore International Energy Week (Siew) 2019

ACE Roundtable on Thursday 31st October, 9 am – 12 pm

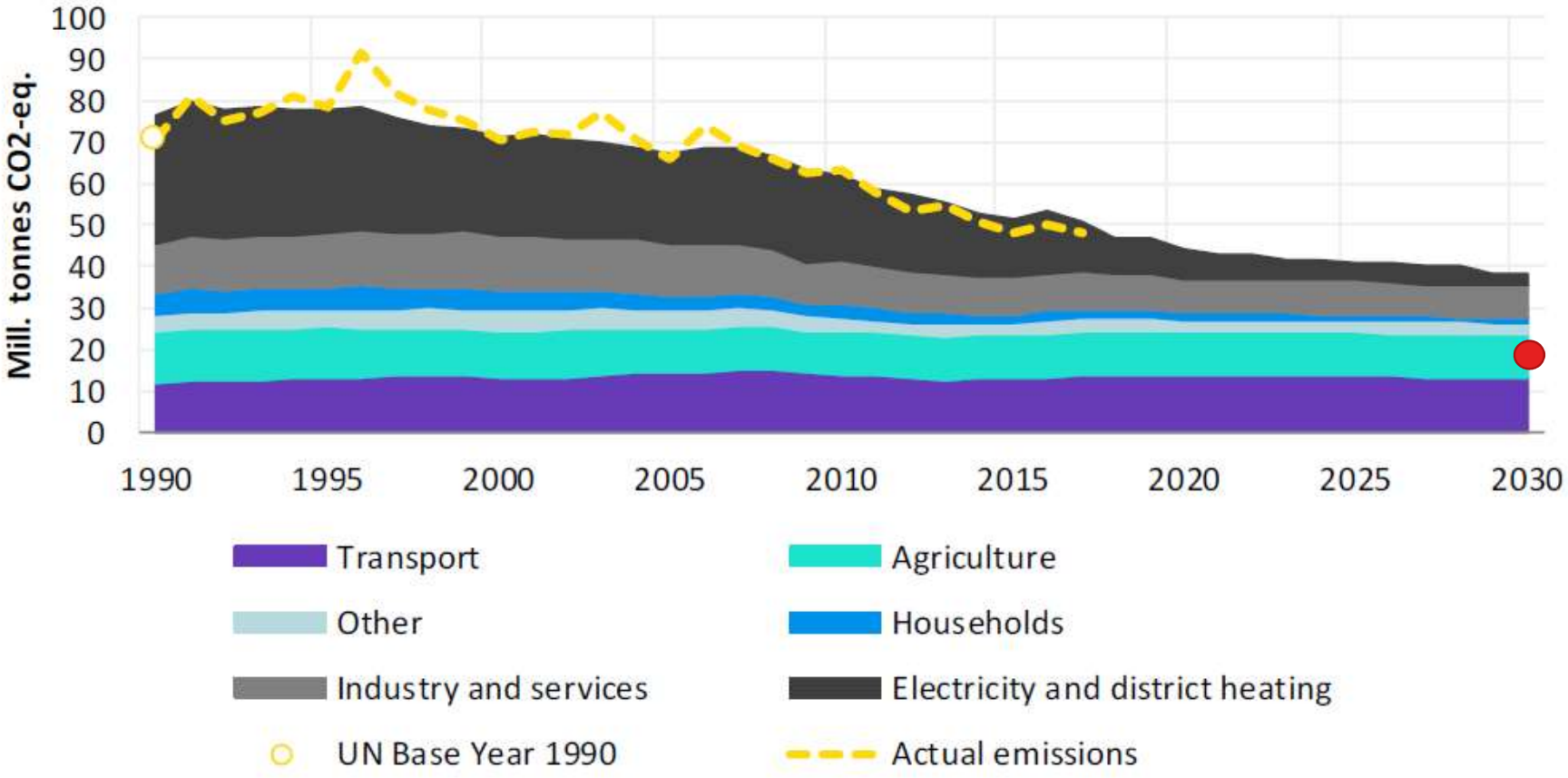
The Role of Smart Cities in Energy Transformation in ASEAN

THOMAS CAPRAL HENRIKSEN

HEAD OF ENERGY COOPERATION

EMBASSY OF DENMARK TO INDONESIA, TIMOR-LESTE, PAPUA NEW GUINEA & ASEAN

STATUS IN DENMARK



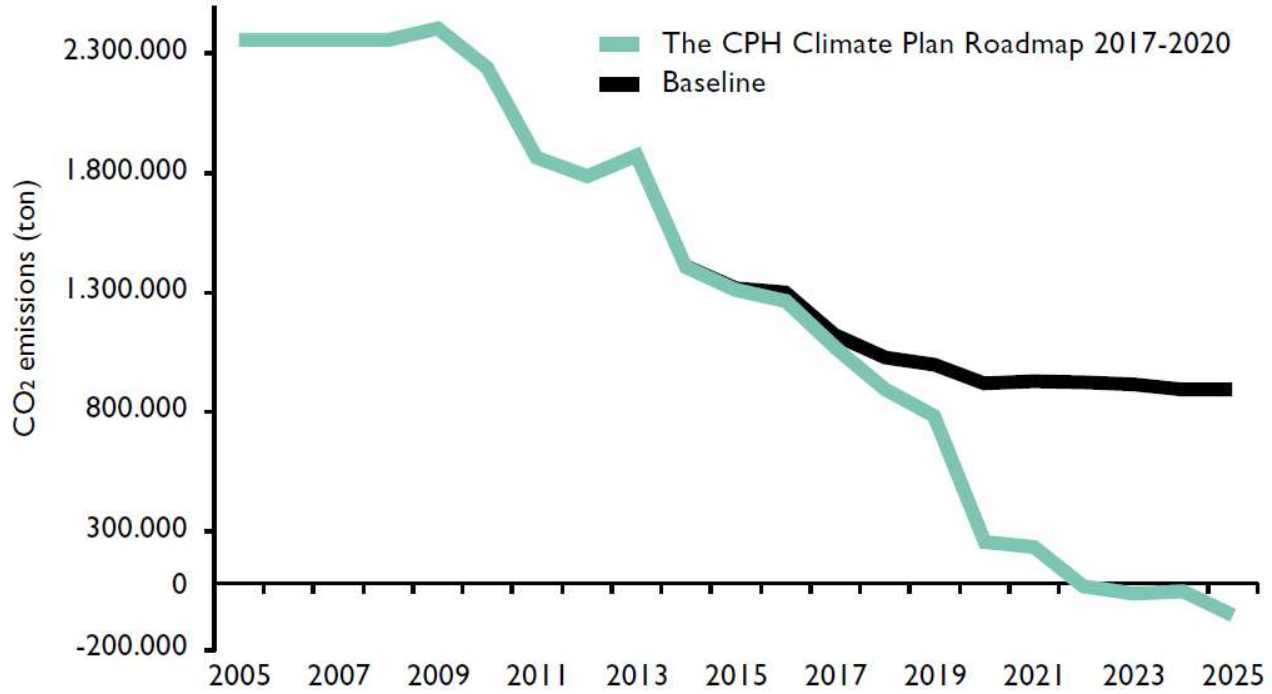
POLITICAL TARGET -70 PCT.

COPENHAGEN FACTS

- Copenhagen is the Capital of Denmark
- Population: 1,333.888 people
- 20% population growth by 2025
- OECD: World leader in green growth
- On its way to become carbon neutral in 2025
- Monocle: Most livable city in the world 2014

THE PLAN FOR COPENHAGEN

The figure shows CO_2 emissions since 2005, plus projections with and without the initiatives outlined in the roadmap



INSTITUTIONAL FRAMEWORK CPH 2025 CLIMATE PLAN

CPH 2025 Climate Plan is a holistic plan to reach carbon neutrality by 2025.

It contains concrete targets and initiatives based on four pillars:

1) Energy consumption
2) Energy production
3) Mobility
4) City Administration Initiatives

INSTITUTIONAL FRAMEWORK - ROADMAP 2017-2020

CPH 2025 CLIMATE PLAN IS DIVIDED IN THE THREE PHASES:

1. **ANALYSIS**
2. **DEMONSTRATION**
3. **IMPLEMENTATION**

ROADMAPS OUTLINE THE INITIATIVES FOR EACH PHASE THAT CORRESPOND TO THE OVERALL OBJECTIVE

THE CURRENT ROADMAP RUNS FROM 2017-2020 AND DESCRIBES THE DEMONSTRATION PHASE.

1) ENERGY CONSUMPTION – PARTNERSHIPS ARE KEY

Flagships 2017-2020

- **Efficient Operations**

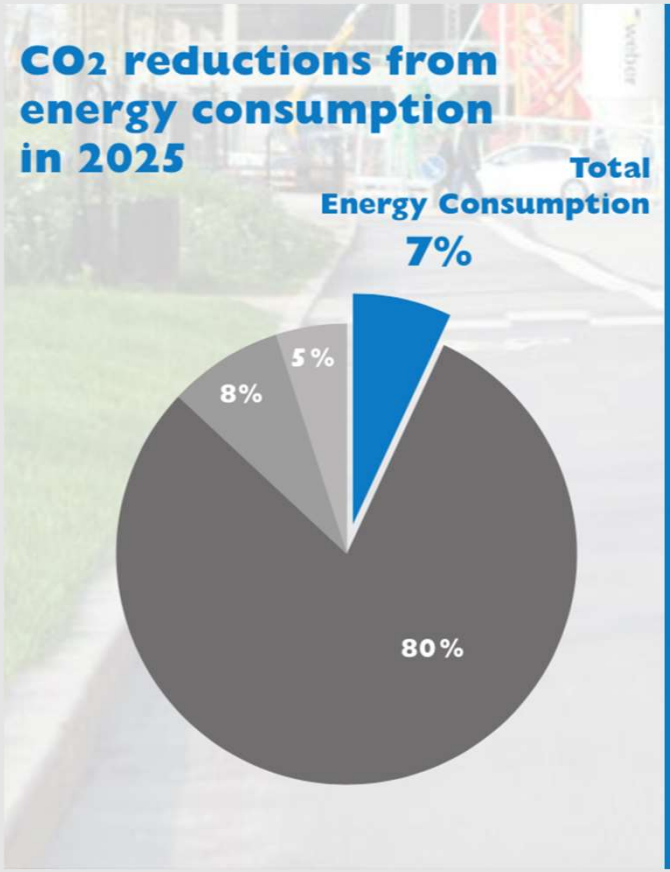
The Climate Plan includes several initiatives to optimize at least half of the district heating units in the city by 2020.

- **Energy Leap**

As part of the Energy Leap project, the City of Copenhagen will enter into agreements with large building owners to show the way for others.

- **Improvement to E, F and G energy-label ratings**

The City of Copenhagen will improve properties with energy-label ratings E,F and G to save energy and reduce sound pollution.



Targets for Energy Consumption in Copenhagen by 2025

- 20% reduction in heat consumption
- 20% reduction of electricity consumption in commercial and service companies
- 10% reduction of electricity consumption in households
- Installation of solar panels corresponding to 1% of electricity consumption in 2025

Baseline 2010.

2) ENERGY PRODUCTION – FLEXIBILITY IS KEY

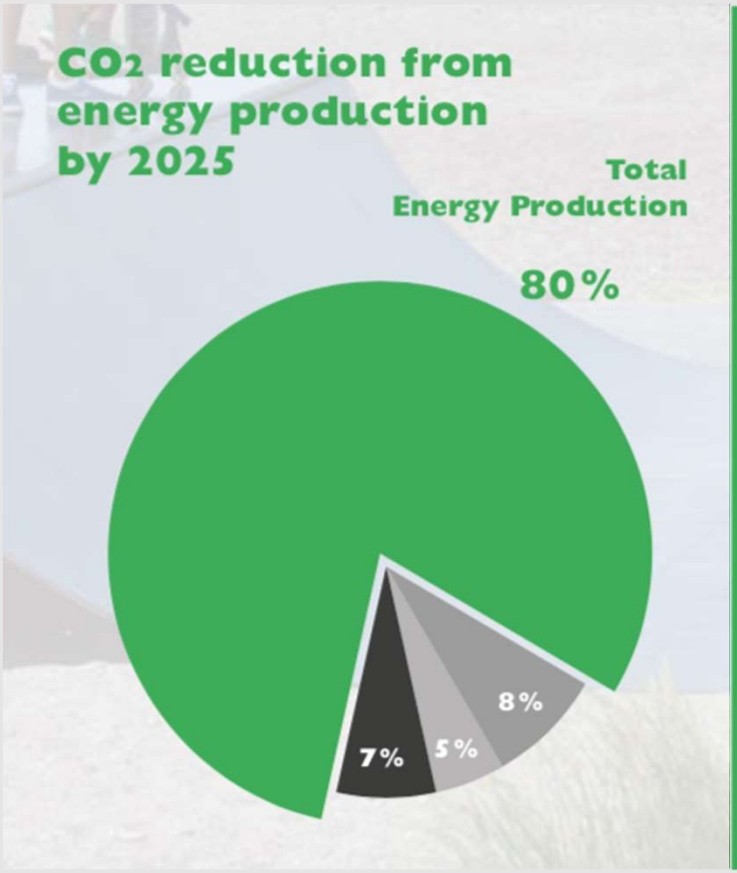
Flagships 2017–2020

- **BIO4**

BIO4, the new biomass fired combined power and heating unit at will replace a coal fired unit, making more than 80% of the production for the district heating system carbon neutral.

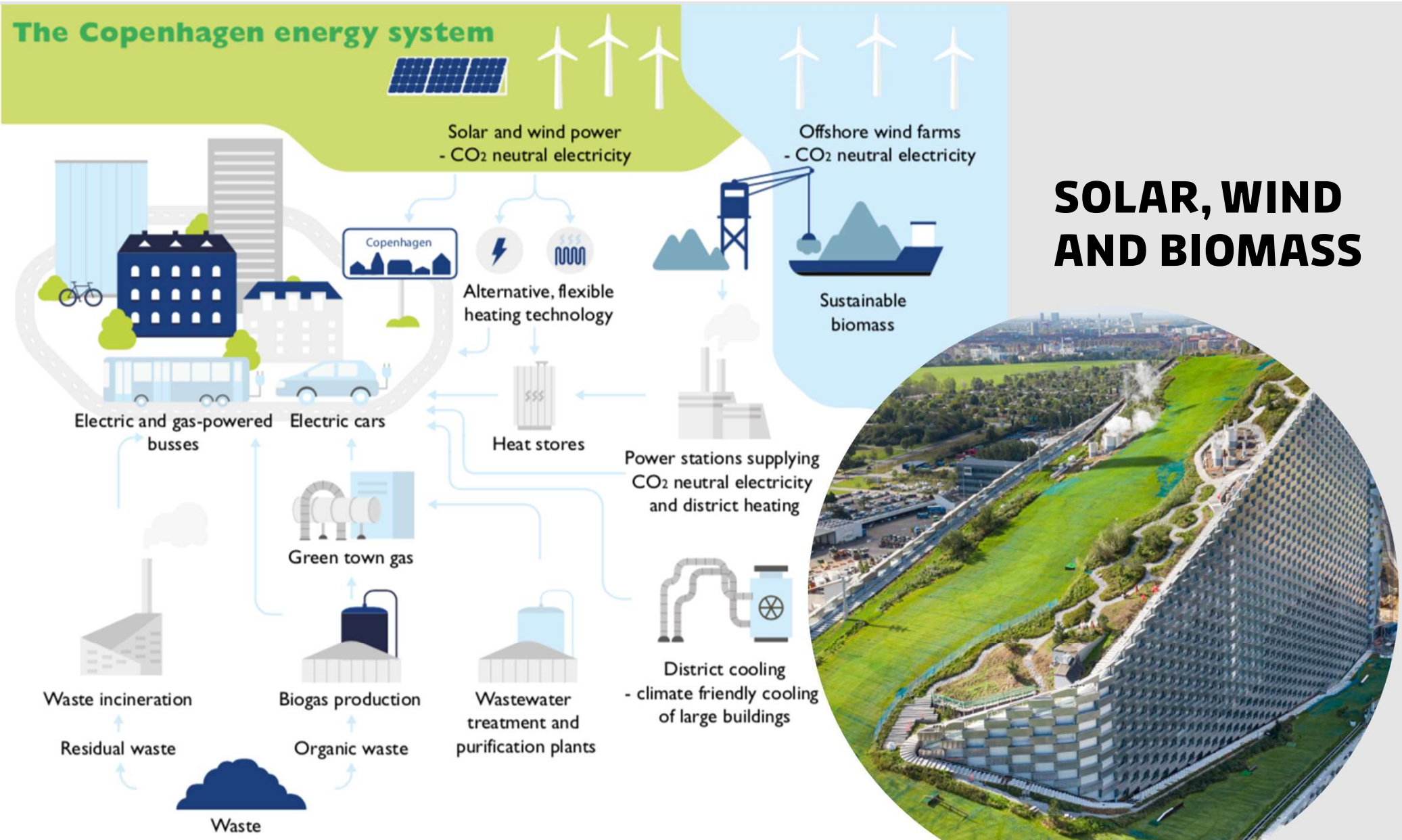
- **Windmills at sea and on land**

Windfarms generating 350 MW will be set up outside the City of Copenhagen



Targets for Energy Production 2025

- District heating in Copenhagen is carbon neutral
- Electricity production is based on wind and biomass and exceeds total electricity consumption in Copenhagen
- Plastic waste from households and businesses is separated
- Biogasification of organic waste



SOLAR, WIND AND BIOMASS

3) MOBILITY

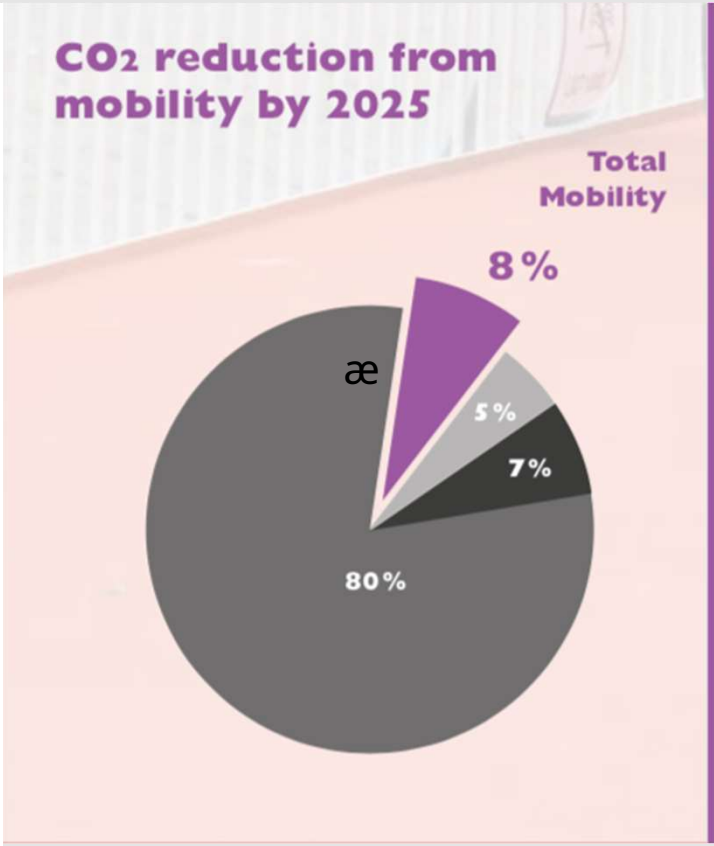
Flagships 2017-2020

- **Mobility as a service**

The Mobility as a Service initiative will introduce a subscription scheme to provide easy access to ordering and paying for transport alternatives to private cars.

- **Carbon neutral buses**

The City of Copenhagen will collaborate with the public transport company Movia to make alternative fuels a requirement when bus routes are put out to tender.



Targets for Mobility in Copenhagen by 2025

- 75% of all trips in Copenhagen are on foot, by bike or public transport
- 50% of all trips to work or school in Copenhagen are by bike
- 20% more passengers use public transport compared to 2009
- Public transport is carbon neutral
- 20-30% of all light vehicles run on new fuels
- 30-40% of all heavy vehicles run on new fuels

Baseline 2010.

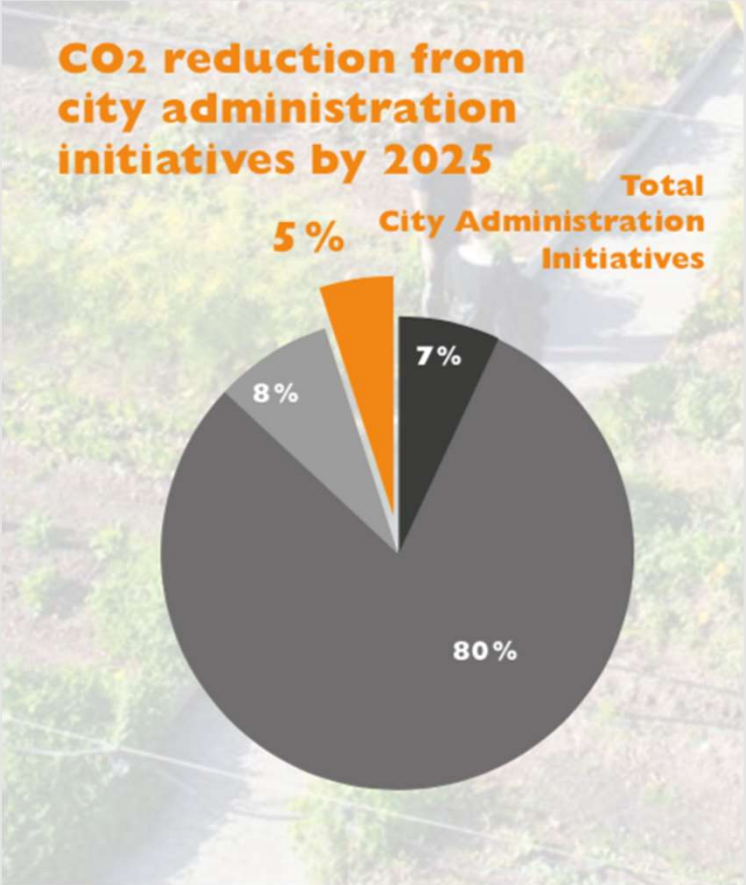
4) CITY ADMINSTRATION INITIATIVES

Flagships 2017-2020

- **Requirements placed on non-road mobile machinery**

Efficiency in non-road mobile machinery has been lagging behind that of car and van engines used for construction.

Therefore, the City of Copenhagen will map the use of non-road mobile machinery and use alternative fuels in its own non-road mobile machinery.



Targets for the City Administration Initiatives in Copenhagen by 2025

- **Reduce energy consumption in municipal buildings by 40%**
- **Municipal new build up to 2015 meets the requirements of the 2015 classification and up to 2020 meets the requirements of 2020 classification**
- **The City of Copenhagen's vehicles run on electricity, hydrogen or biofuels**
- **The energy consumption for street lighting in Copenhagen is halved**
- **A total of 60,000 m² of solar panels on existing municipal buildings and municipal new build is installed**

Baseline 2010.

CURRENT STATE OF DEVELOPMENT

40%

The city has cut its CO2 emissions by 40% since 2005

LESSONS LEARNED - CHALLENGES & OPPORTUNITIES

Opportunities

- Growth
- Employment
- Quality of life
- Showcase for successful green regional initiatives

Challenges

- Converting private vehicles to new types of fuel
- Reducing energy consumption in the city
- Achieving the targets for organic waste by sorting out plastic
- A city is not isolated from its surroundings


MINISTRY OF FOREIGN AFFAIRS
OF DENMARK
THANK YOU !
THOMAS CAPRAL HENRIKSEN, HEAD OF ENERGY COOPERATION
THE EMBASSY OF DENMARK IN INDONESIA, 31 OCTOBER 2019