



# Road to Electric



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European Regional  
Development Fund



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# Climate Change



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**The long-term alteration of temperature  
and typical weather patterns**

# Climate Change



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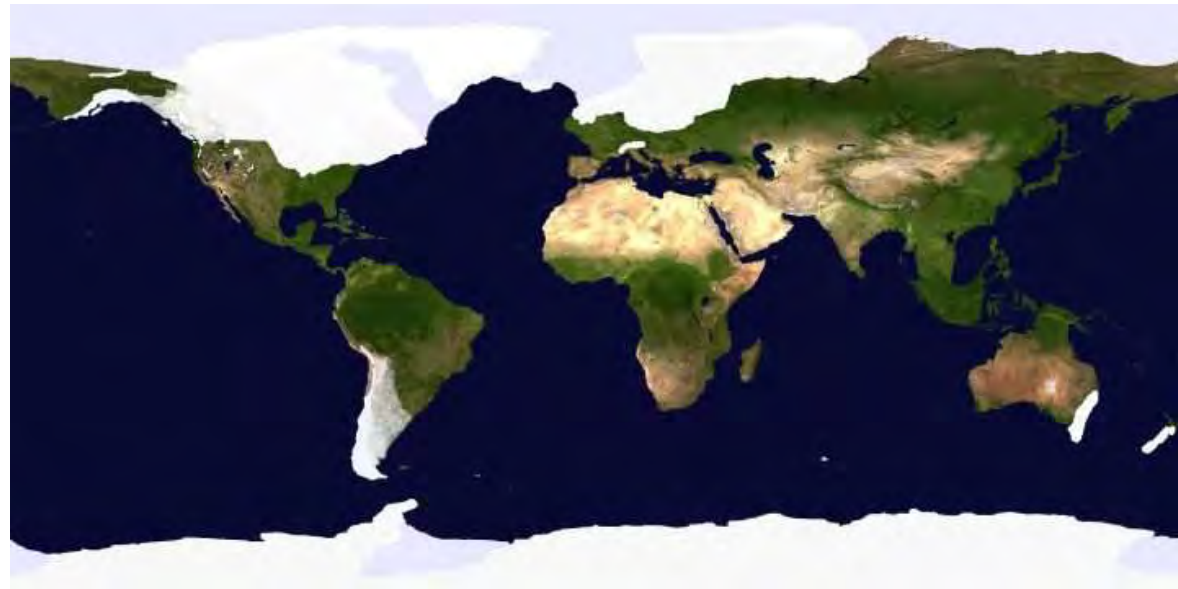


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## The long-term alteration of temperature and typical weather patterns

- It's happened before
  - the Ice Age; but stable for the last 10,000 years



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## The long-term alteration of temperature and typical weather patterns

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  - the Ice Age; but stable for the last 10,000 years
- What's causing it now?
  - Anthropogenic CO<sub>2</sub> emissions





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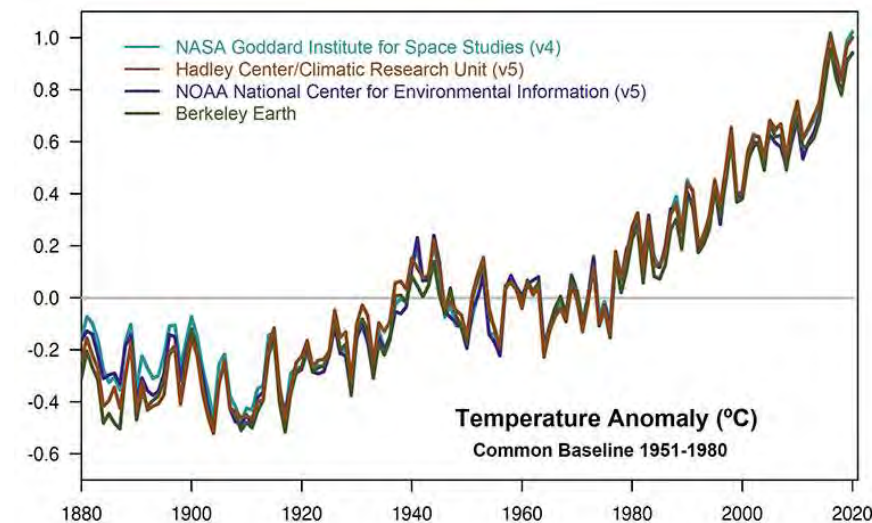
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## The long-term alteration of temperature and typical weather patterns

- It's happened before
  - the Ice Age; but stable for the last 10,000 years
- What's causing it now?
  - Anthropogenic CO<sub>2</sub> emissions
- The effects
  - Global warming





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Climate Change

**The different**

**futures that**

**lie ahead.**

**+1.5 °C**

**+2 °C**

**+3 °C**

The image consists of three vertical panels, each representing a different global temperature increase scenario. The left panel is teal and shows a large, intact ice floe. The middle panel is yellow and shows a smaller, melting ice floe. The right panel is purple and shows a dark sea with only small ice fragments. Each panel contains text about the probability of an ice-free Arctic summer and the corresponding temperature increase.

**3%**

probability of an  
ice-free Arctic  
summer in any  
one year..

**+1.5°C**

**16%**

probability of an  
ice-free Arctic  
summer in any  
one year.

**+2°C**

**63%**

probability of an  
ice-free Arctic  
summer in any  
one year.

**+3°C**





**2 months**  
average length  
of drought

**+1.5°C**



**4 months**  
average length  
of drought

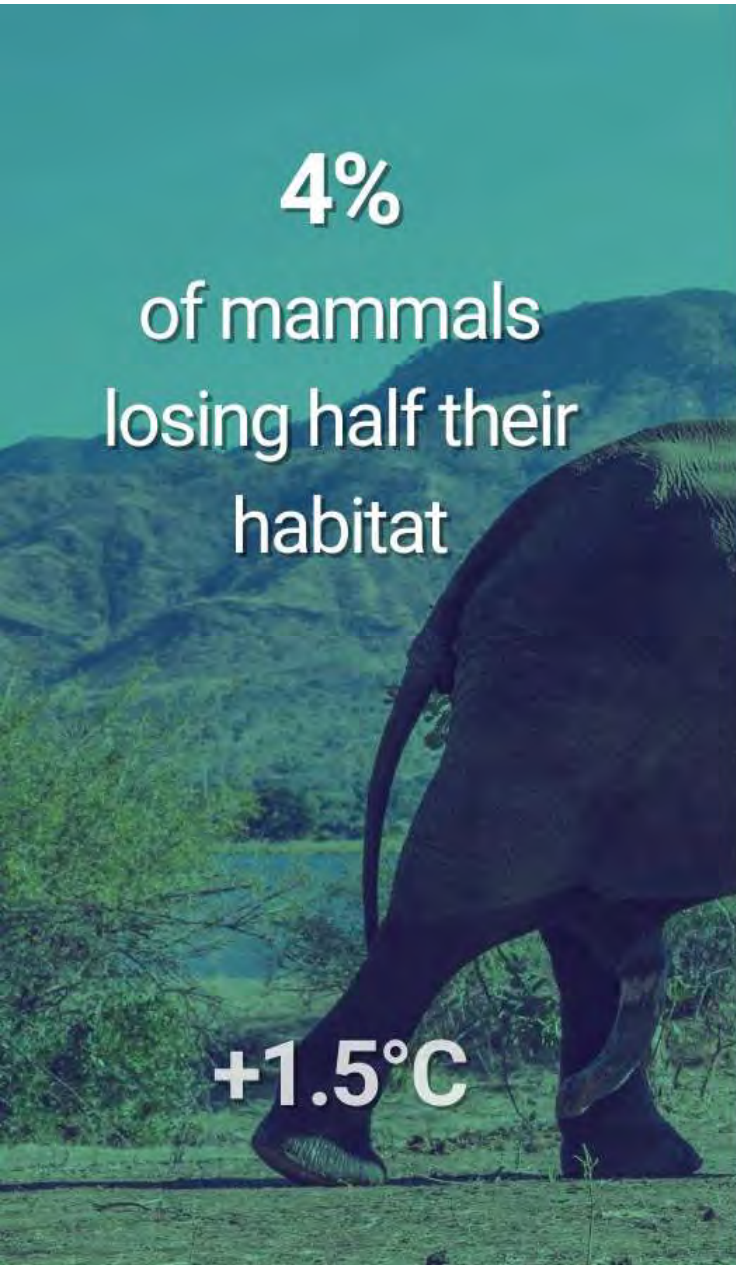
**+2°C**



**10 months**  
average length  
of drought

**+3°C**









The image consists of three vertical panels, each showing a forest landscape under a different sky color and fire intensity. The left panel has a greenish-yellow sky and a small fire at the bottom. The middle panel has an orange-yellow sky and a larger fire. The right panel has a dark orange-red sky and a very large, intense fire. Each panel contains text about the percentage increase in area burned and the temperature change.

**+41%**

increase in area  
burned by  
wildfires in  
average  
Mediterranean  
summer.

**+1.5°C**

**+62%**

increase in area  
burned by  
wildfires in  
average  
Mediterranean  
summer.

**+2°C**

**+97%**

increase in area  
burned by  
wildfires in  
average  
Mediterranean  
summer.

**+3°C**



# Climate Change: The defining issue of our time

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Driving government policy around the globe

## Mitigation

- Reduce greenhouse gas emissions
- Renewable energy
- Sustainable transport
- Reforestation & restore natural habitats
- Achieve Net-Zero

## Adaptation

- Build resilience to extreme weather events
- Flood/drought protection
- Change agricultural practices
- Reduce travel
- Improve energy efficiency

# Climate Change



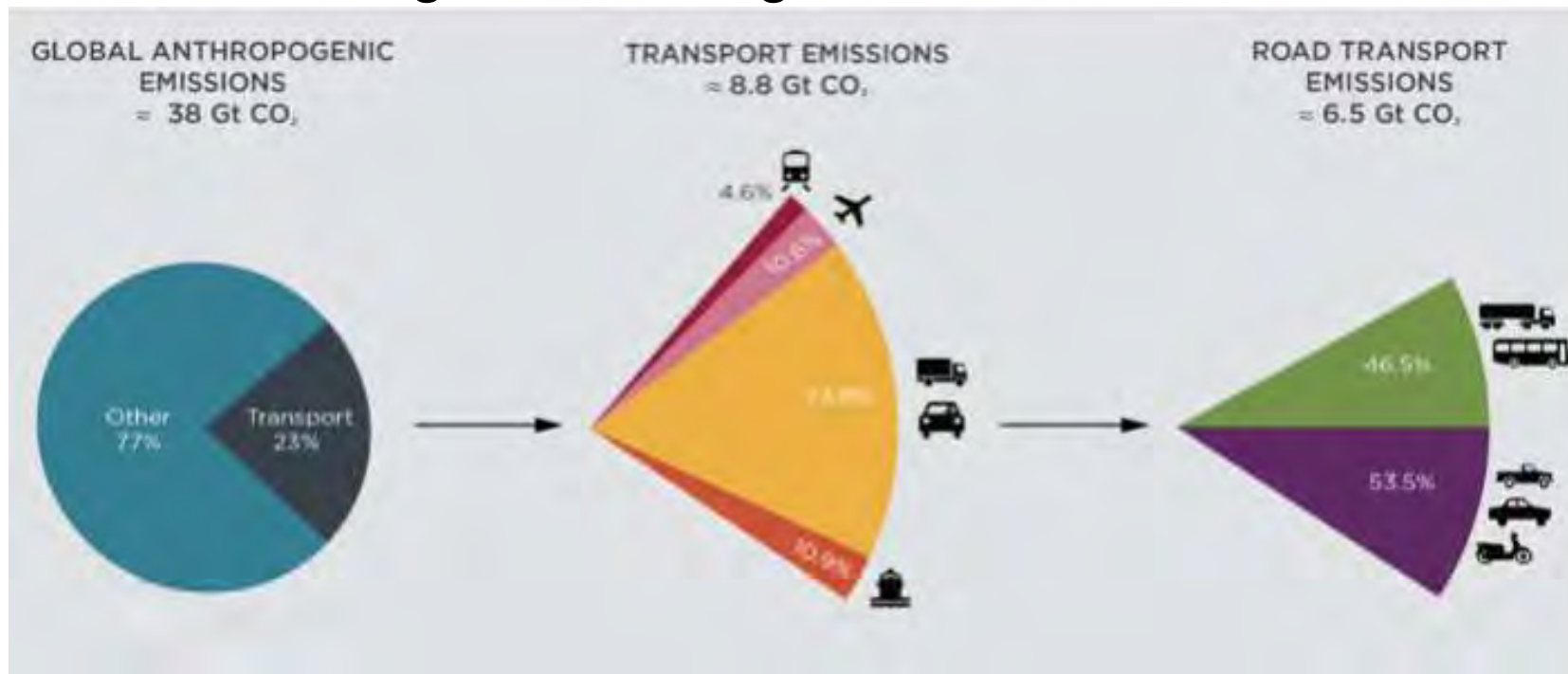
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## Road transport emissions

- ~20% of total greenhouse gas emissions\*



\* <https://www.ons.gov.uk/economy/environmentalaccounts/articles/roadtransportandairemissions/2019-09-16>  
<https://medium.com/@pdglakin/is-there-a-future-for-the-internal-combustion-engine-in-an-age-of-climate-change-7c250c99f191>



# The future is Electric



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## Driving change

- UK Government
  - **2022** legislation for all *new* homes and offices to have 'smart' EV chargers
  - **2030** ban on sale of *new* petrol & diesel cars
  - **2035** UK to reduce greenhouse gas emissions by 78% (legally-binding target)
  - **2035** ban on *new* 3.5 to 26tonne internal combustion engine vehicles
  - **2040** ban for *new* vehicles over 26tonnes internal combustion engine vehicles
  - **2050** UK to achieve Net-Zero
- Regional Government
  - Clean Air Zones (London, Birmingham, Greater Manchester, Bath, and more will follow)
  - Greater Manchester net-zero by **2038**
- Automotive OEMs
  - All major brands transitioning to EVs

# Transition to EVs: How long will it take?

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5<sup>th</sup> Avenue, New York **1900**

Horse-drawn carriages and just one car.



# Transition to EVs: How long will it take?

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5<sup>th</sup> Avenue, New York **1900**  
Horse-drawn carriages and just one car.

## Pollution driving change

- A horse dumps ~20kg of manure and 4.5litres of urine per day
- In 1900 there were 300,000 horses in London
  - That's 6,000 tonnes of manure per day

# Transition to EVs: How long will it take?

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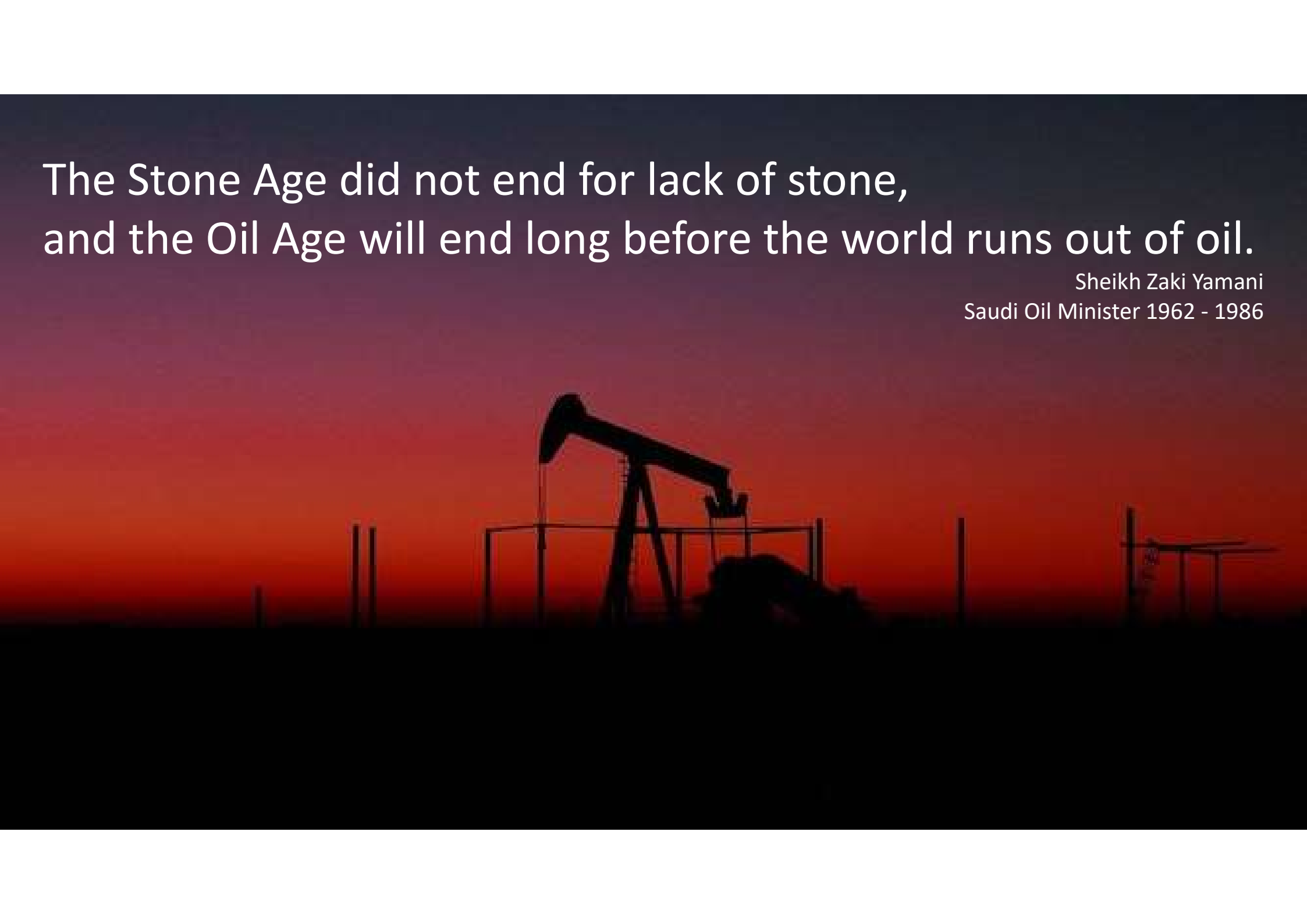
5<sup>th</sup> Avenue, New York **1900**  
Horse-drawn carriages and just one car.



5<sup>th</sup> Avenue, New York **1913**  
No horse-drawn carriages.

The Stone Age did not end for lack of stone,  
and the Oil Age will end long before the world runs out of oil.

Sheikh Zaki Yamani  
Saudi Oil Minister 1962 - 1986





# It's not all doom & gloom

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**University of Salford:** world leading research

- Energy Efficiency
- Nature-based Solutions
- Sustainability
- Disaster Resilience

## **Industry-focused**

- Working in collaboration with industry & business

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## Tuesday September 14<sup>th</sup>

- Overview of Electric Vehicles
- National Policy
- Greater Manchester Clean Air Zone
- Case studies (switching to an EV fleet)
- EV vehicle exhibition

## Wednesday September 15<sup>th</sup>

- EV charging & types of chargers
- Practical considerations
- Smart infrastructure
- Viewing of different EV chargers
- Tour of University facilities

