

# Accelerating Innovation



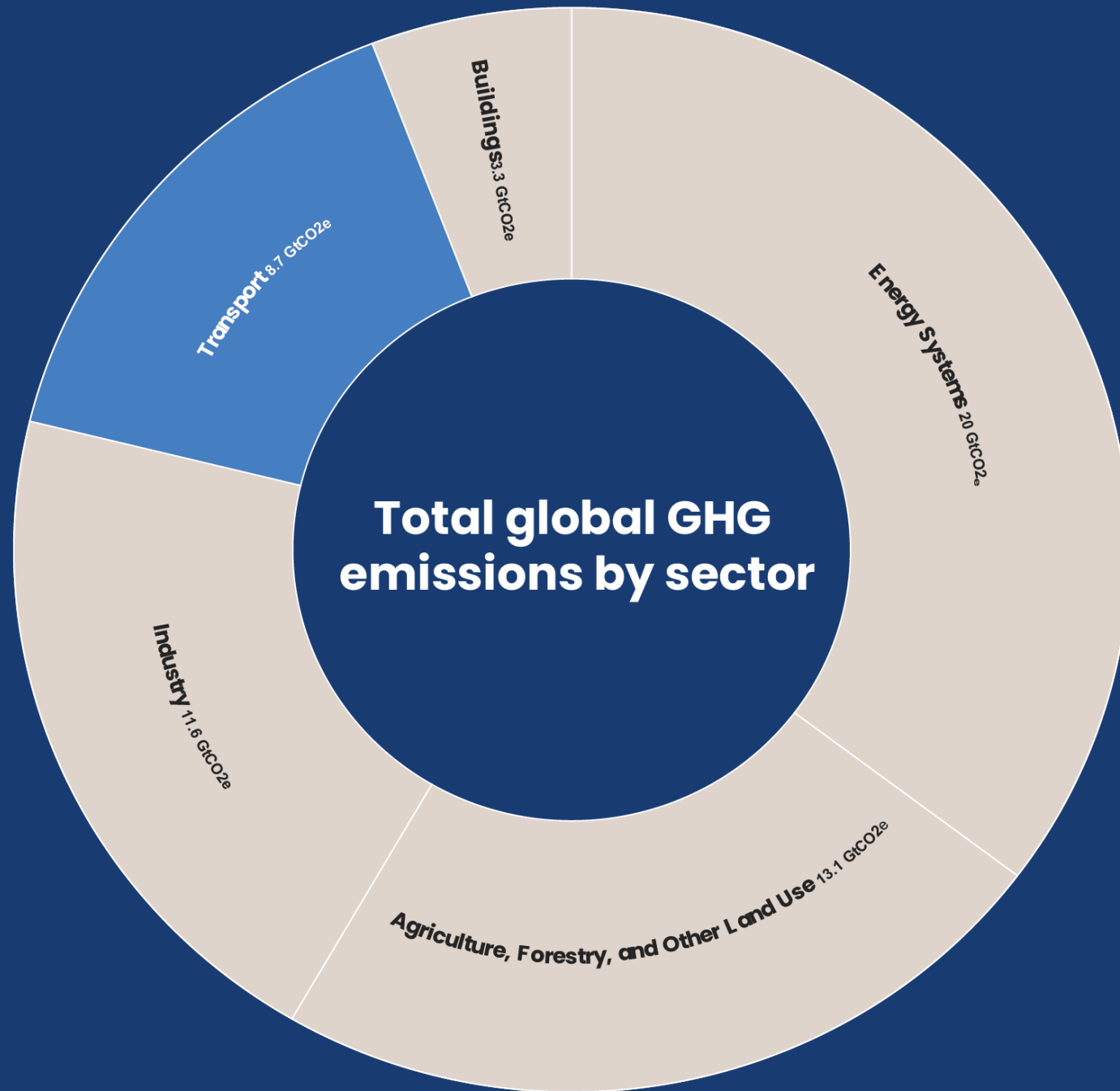
**Dr. Andrew Steer**  
President & CEO  
Bezos Earth Fund



BEZOS  
EARTH  
FUND



SYSTEMS  
CHANGE  
LAB



# What's Needed to Transform the Transport System

An aerial photograph of a large container ship at sea, surrounded by several tugboats. The ship is heavily loaded with colorful shipping containers. The water is dark blue, and the sky is clear. In the background, a port area with cranes and stacks of containers is visible.

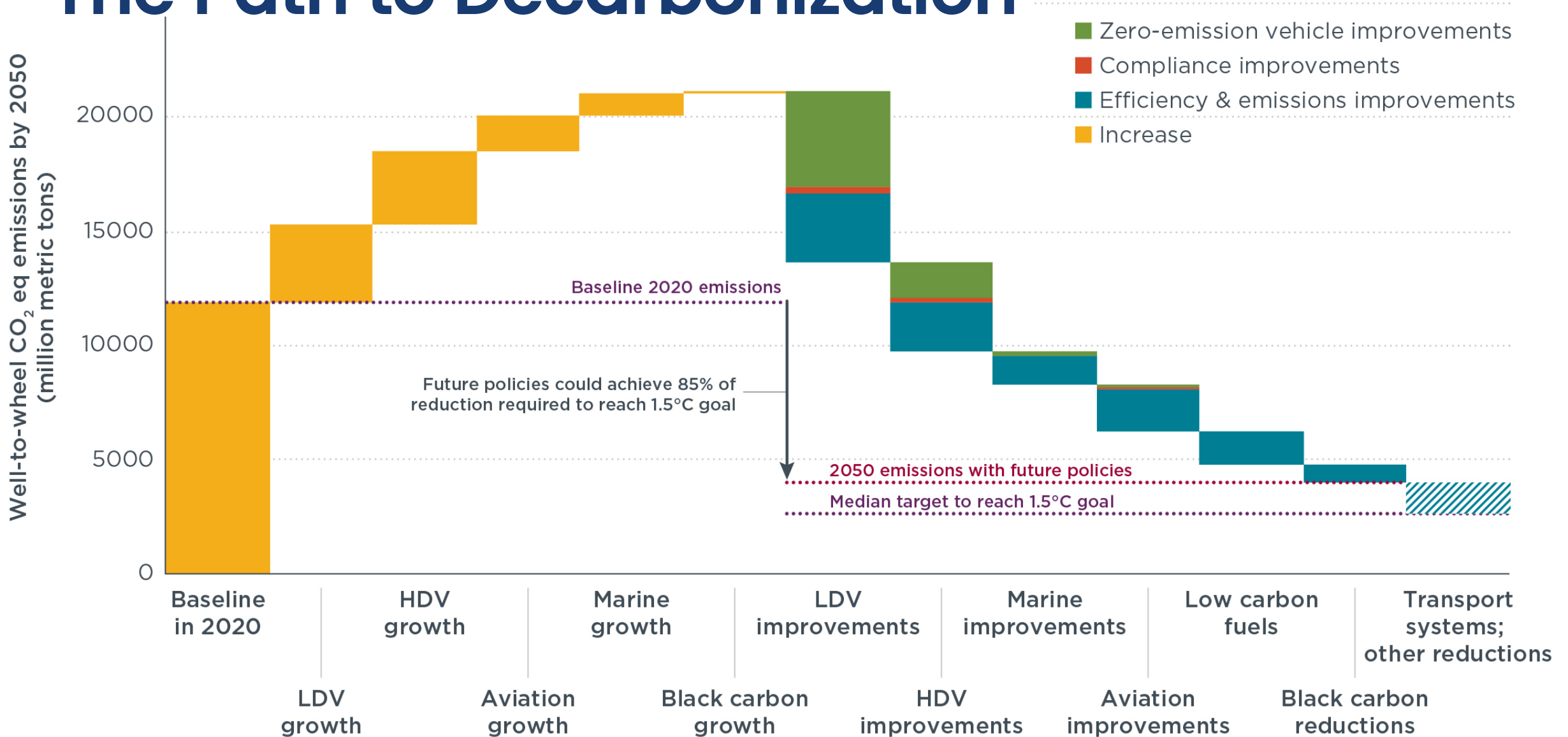
Reduce

Shift

Decarbonize

Provide Access

# The Path to Decarbonization

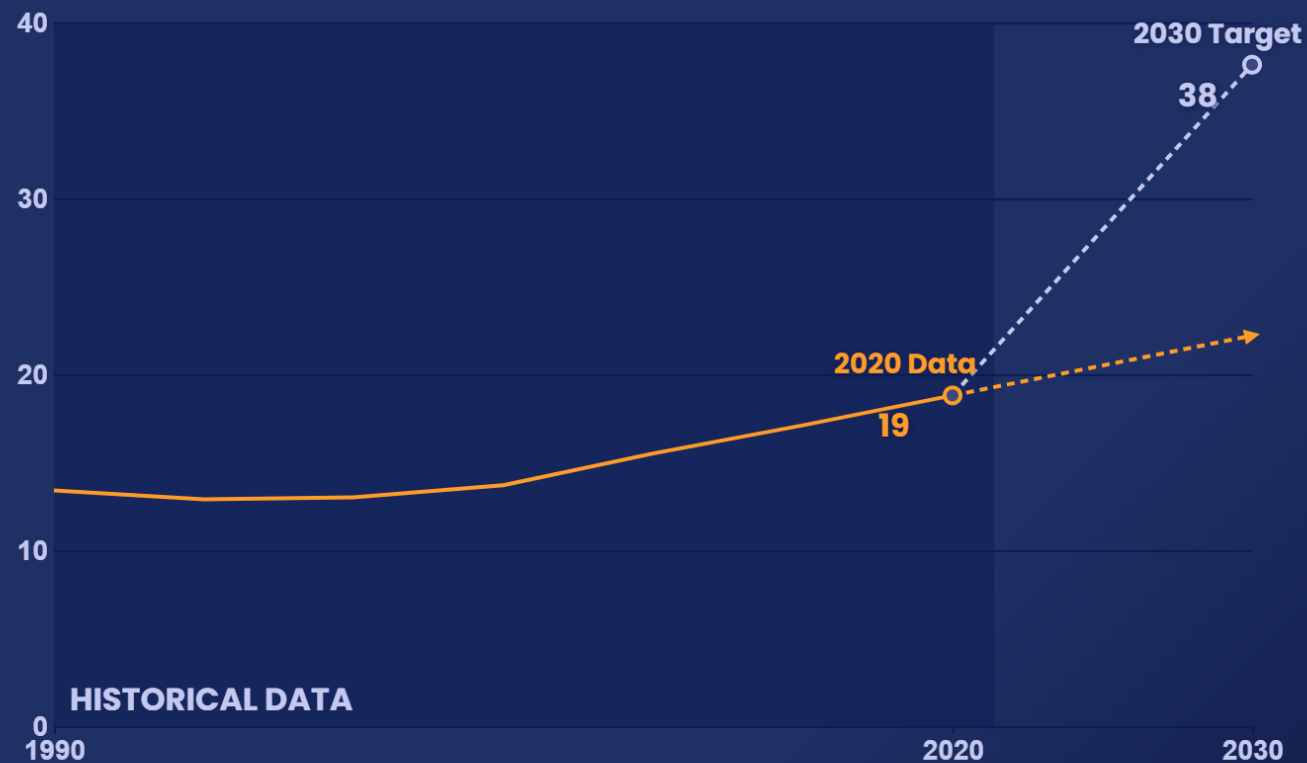


## Number of kilometers of rapid transit per 1,000,000 inhabitants (in the top 50 emitting cities)

—○ Historical Data - - -▶ Current Trend - - ○ Needed Pace

WORLD

km/1,000,000 inhabitants



EXPONENTIAL CHANGE UNLIKELY

ACCELERATION FACTOR  
NEEDED TO REACH 2030 TARGET **6X**

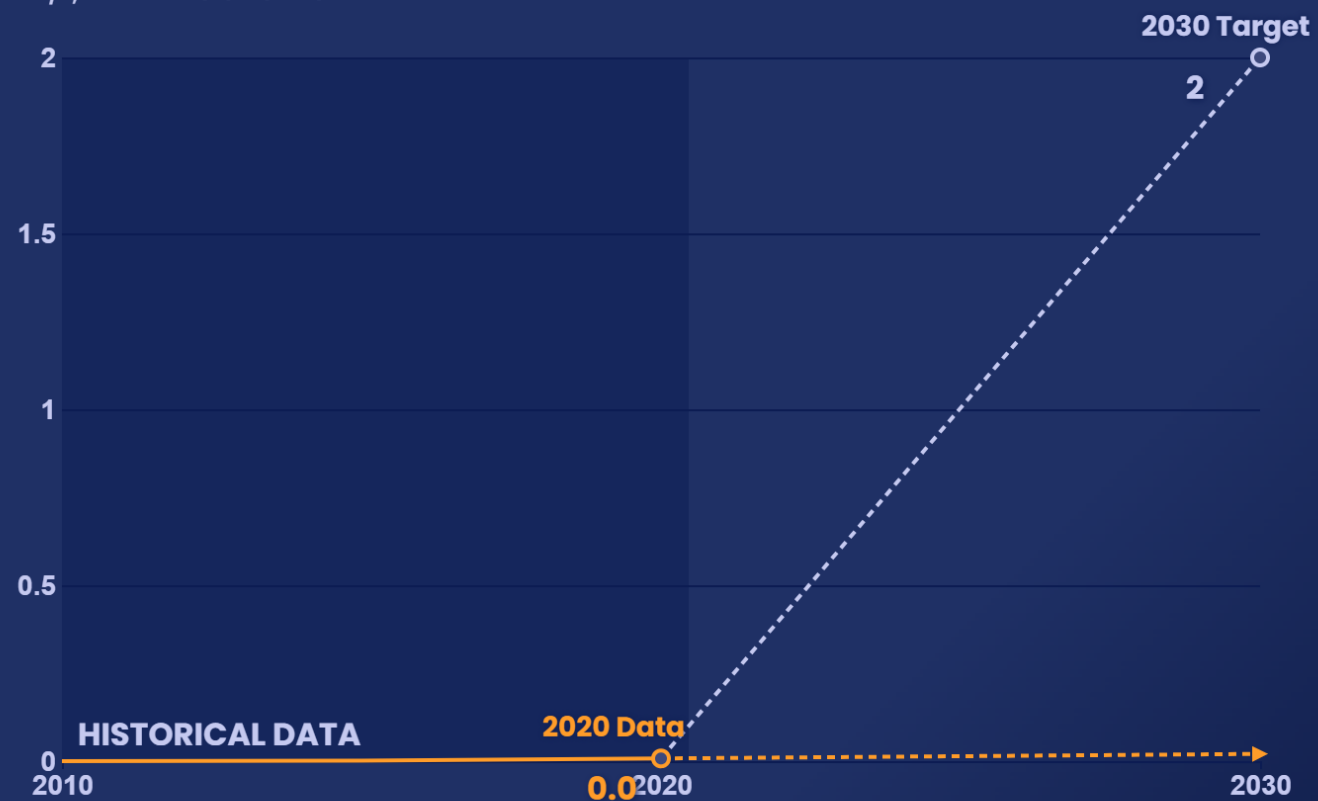
SOURCE: IITDP

## Number of kilometers of high-quality bike lanes per 1,000 inhabitants (in the top 50 emitting cities)

Historical Data Current Trend Needed Pace

WORLD

km/1,000 inhabitants



EXPONENTIAL CHANGE UNLIKELY

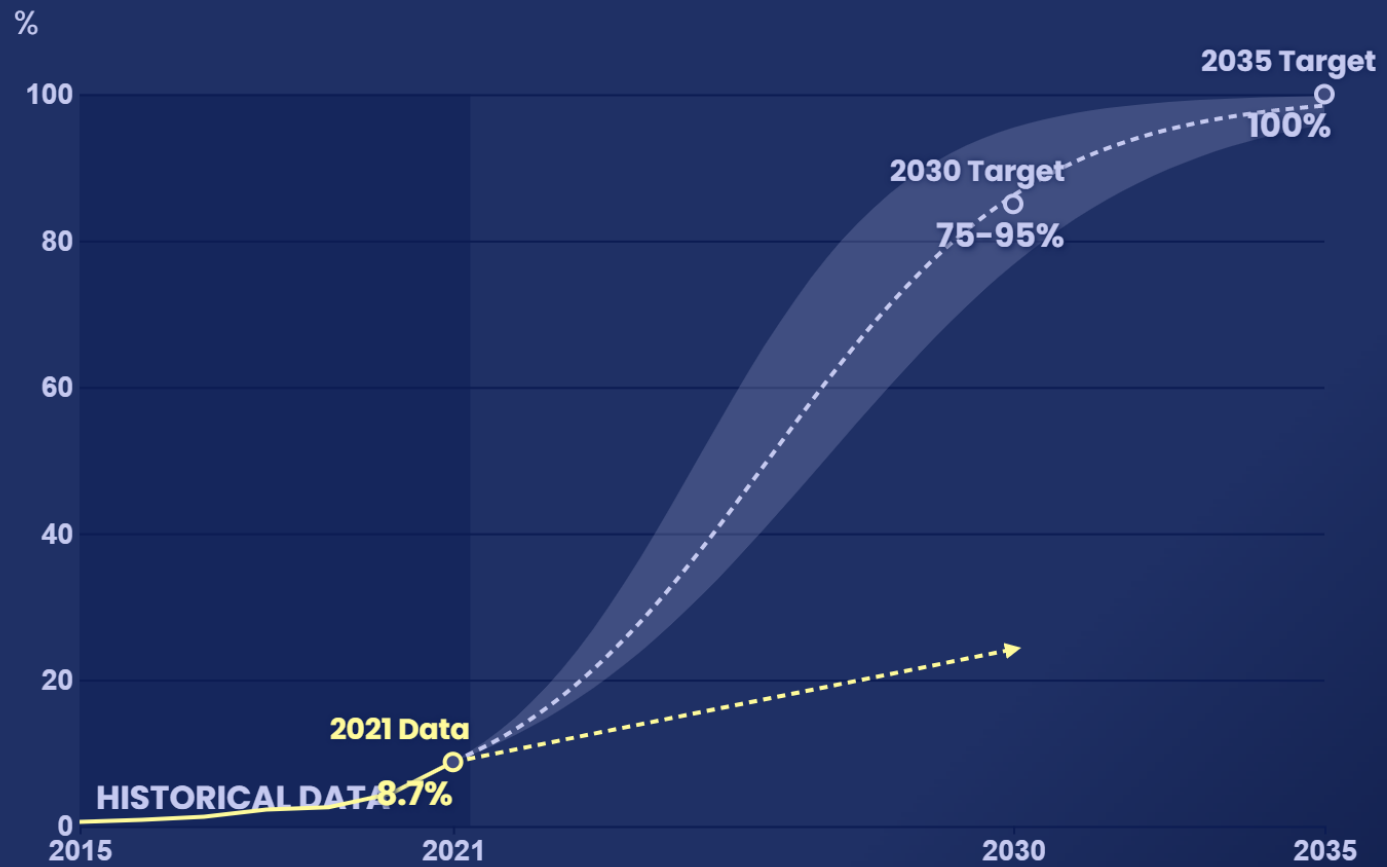
ACCELERATION FACTOR  
NEEDED TO REACH 2030 TARGET **10X+**

SOURCE: UNITED NATIONS

## Share of electric vehicles in light-duty vehicle sales

—○ Historical Data    - - -▶ Current Trend    - - ○ Needed Pace

WORLD



EXPONENTIAL CHANGE LIKELY

ACCELERATION FACTOR  
NEEDED TO REACH 2030 TARGET **5X**

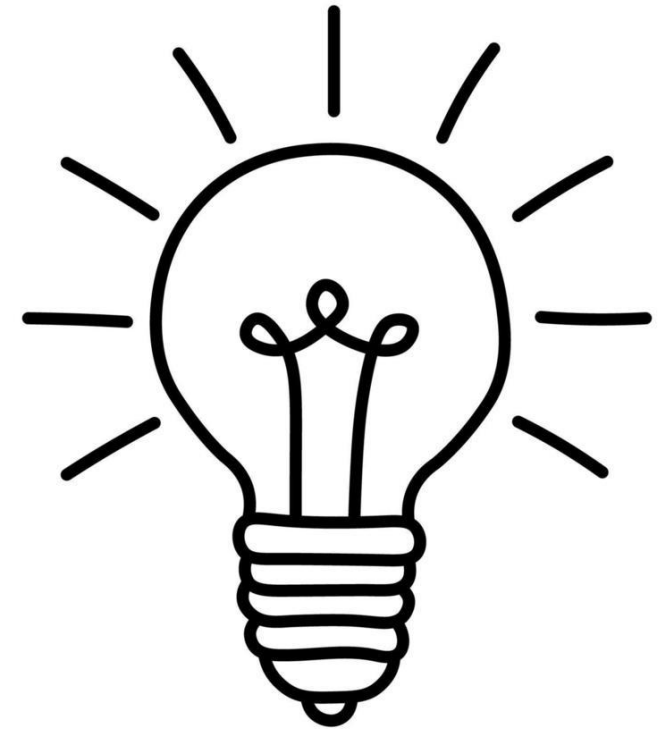
SOURCE: [BNEF](#)

# Innovation **noun**

in·no·va·tion

1: A new idea, method, or device

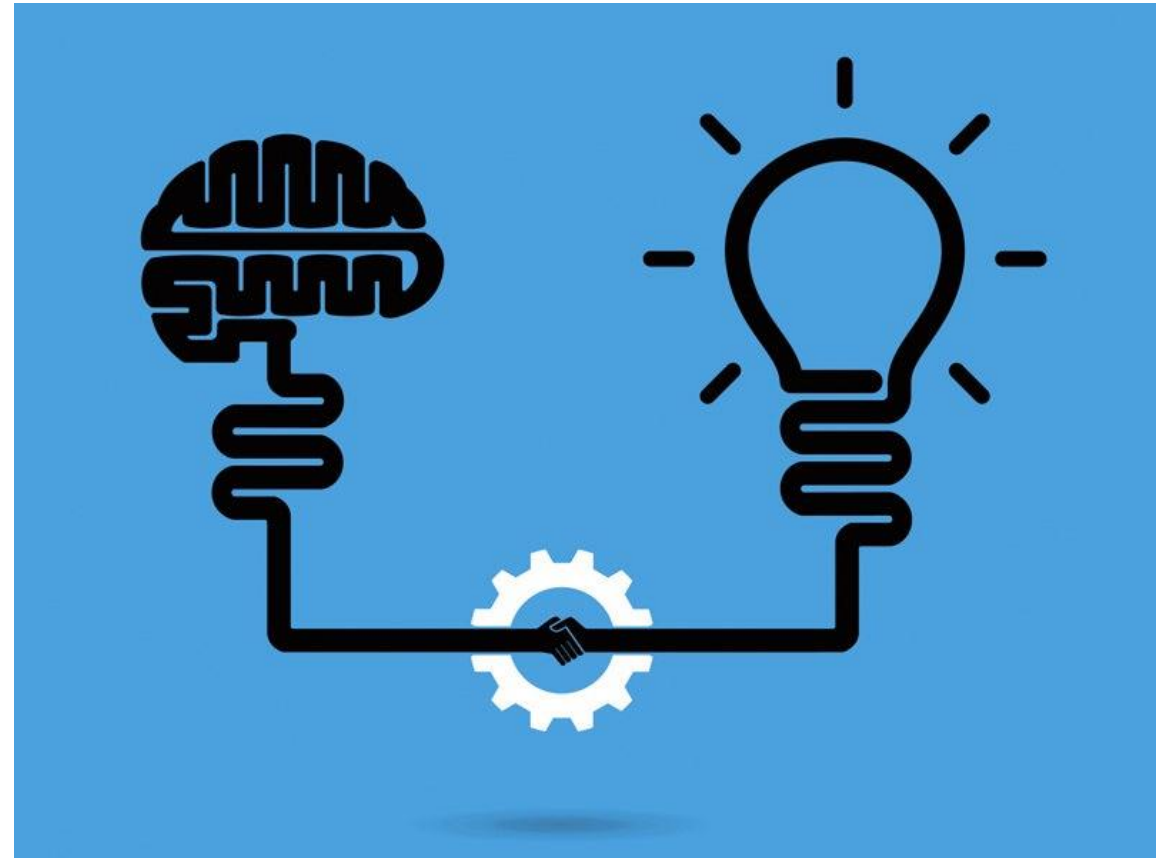
2: The introduction of something new





# Four Types of Innovation

1. Incremental
2. Basic research
3. Breakthrough
4. Disruptive







**1896  
Scissors**



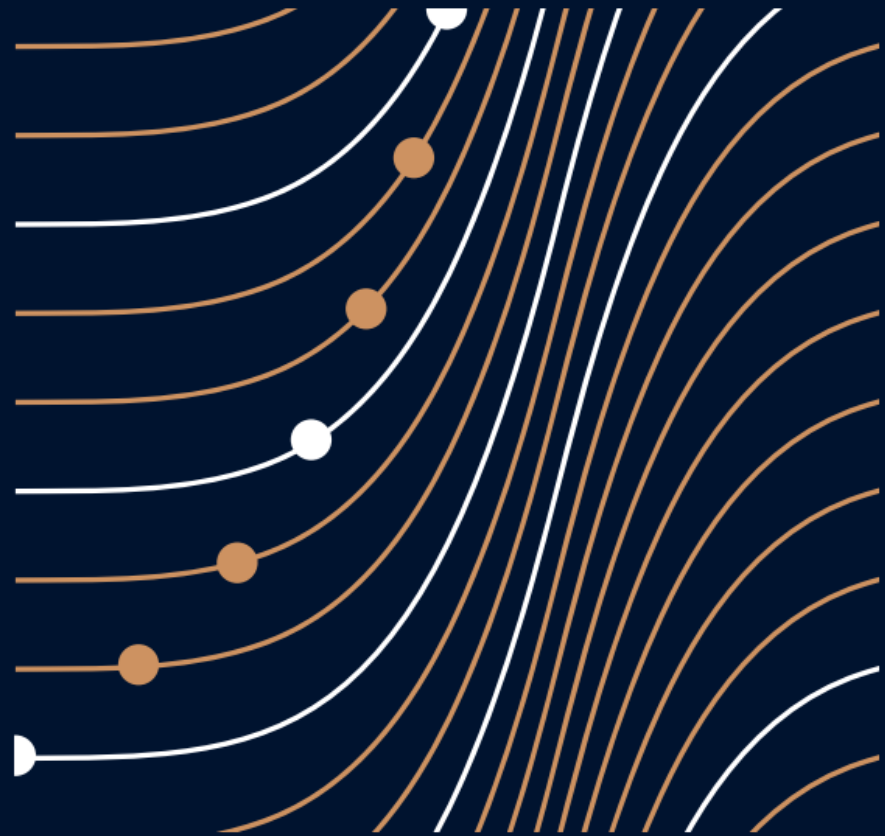
**1912  
Western Roll**



**1936  
Straddle**



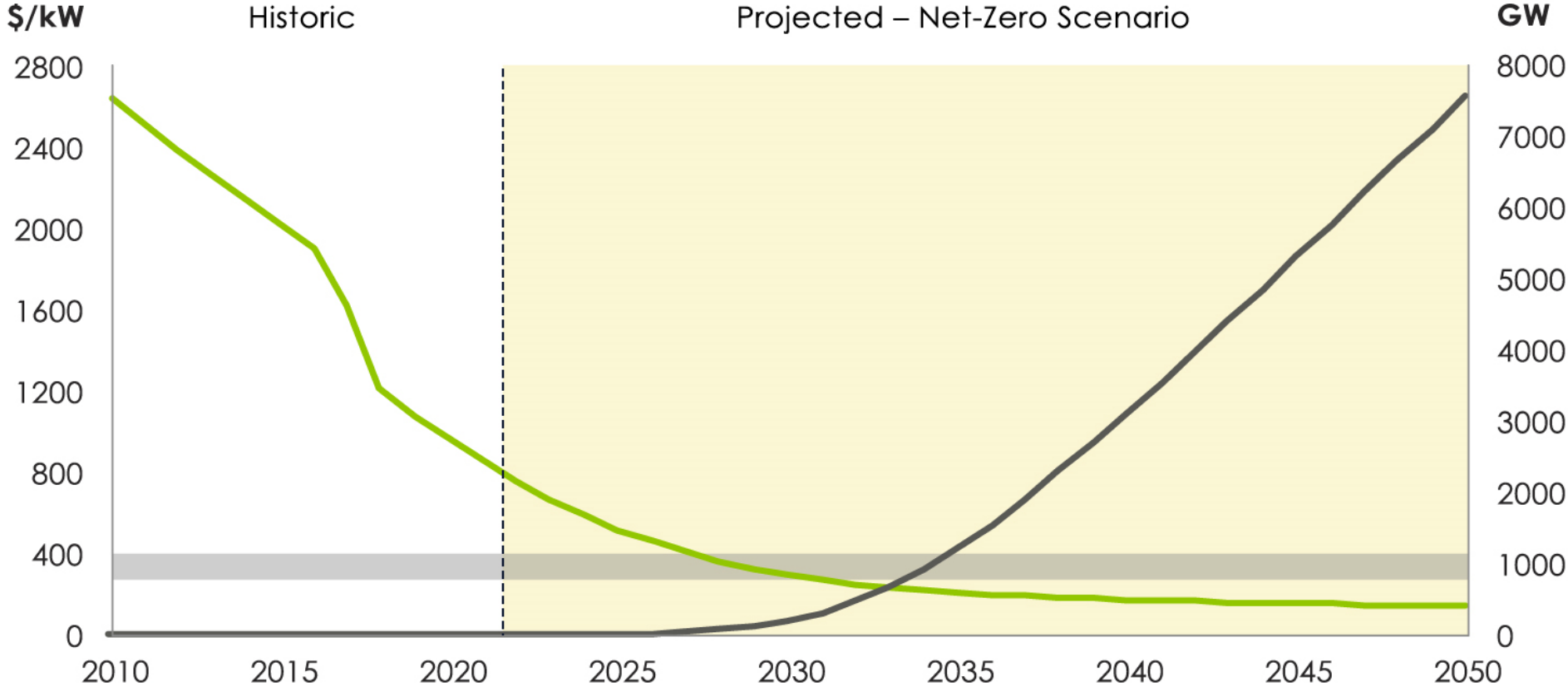
**1968  
Fosbury Flop**



**THE BREAKTHROUGH EFFECT:  
HOW TO TRIGGER A CASCADE OF  
TIPPING POINTS TO ACCELERATE  
THE NET ZERO TRANSITION**

# Historical and projected capital cost vs. installed capacity for P2X electrolyzers

Learning Rate: **18%**

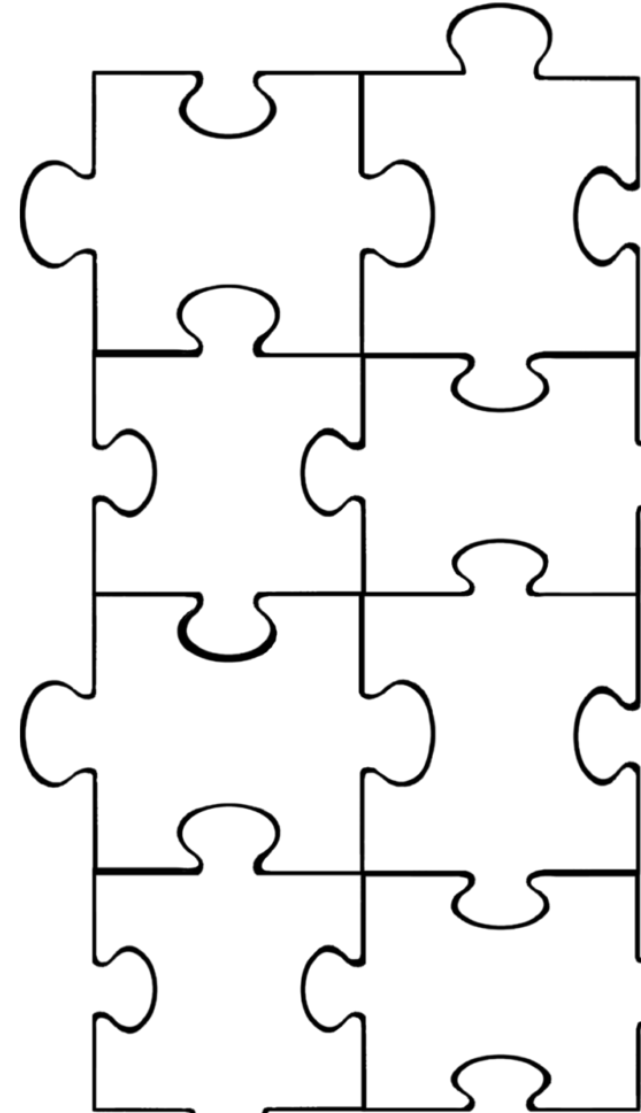


→ **-60%**      → **-85%**  
→ **x2,000**      → **x15,000**

— Installed Capacity      — Capital Cost      ■ Tipping Point Range

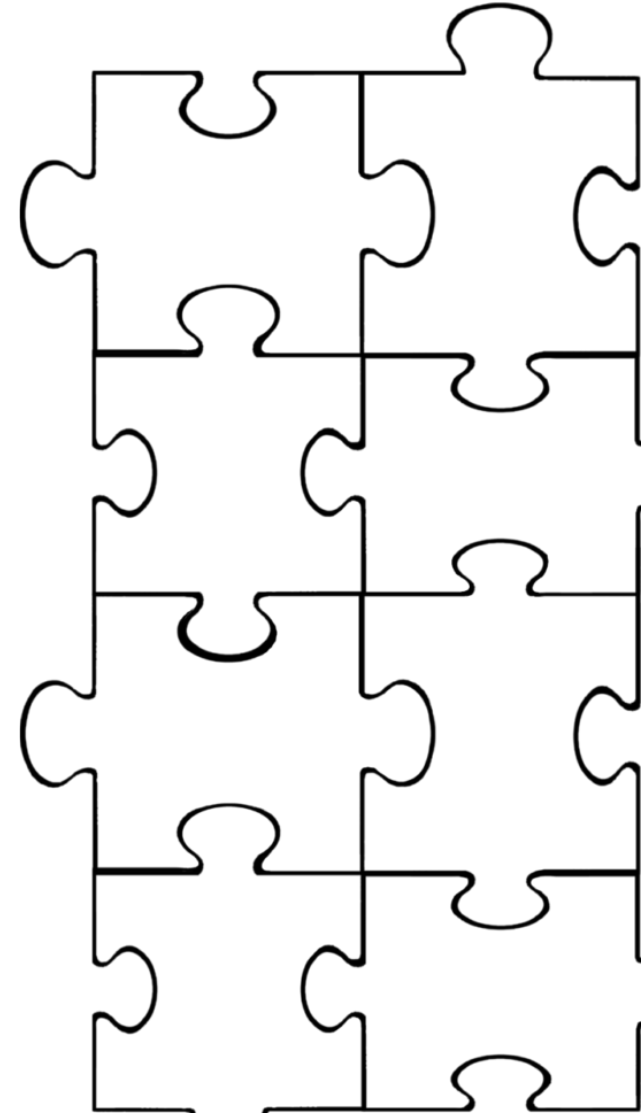
# Catalyzing Innovation

1. A narrative that inspires
2. A systems-change mindset
3. Leadership that takes risks
4. Smart politics, opportunities seized
5. Big thinking



# Catalyzing Innovation

1. A narrative that inspires



# Electric School Buses

Health

Economy

Generational transition

Utility storage

Climate change



# Paris: 15-minute city

FINANCIAL TIMES

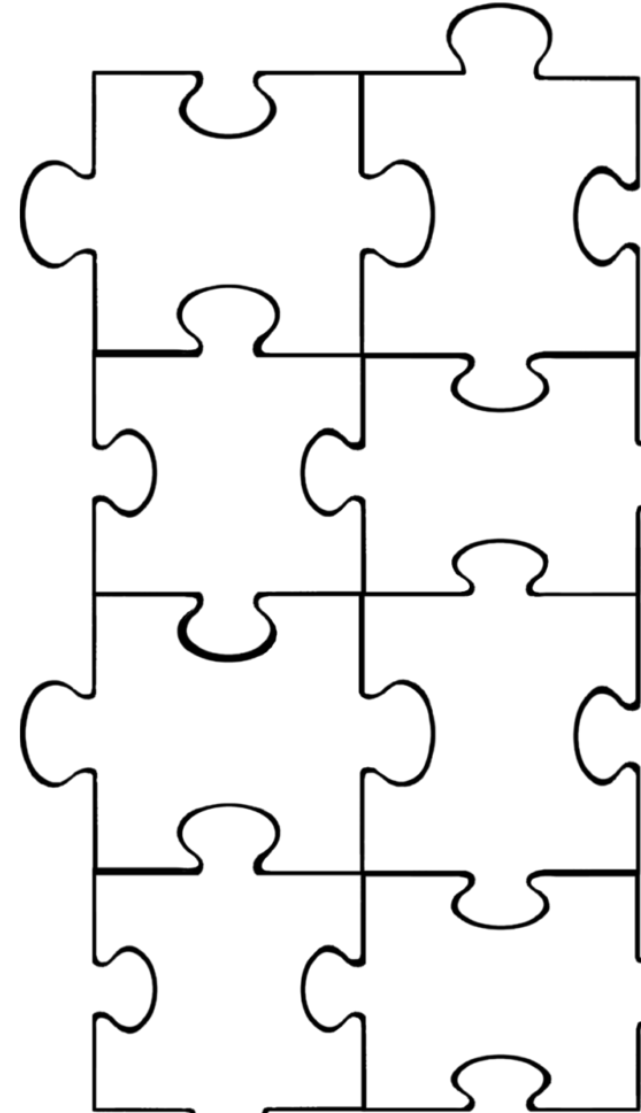
**Paris mayor Anne Hidalgo: 'A city's creativity doesn't depend on cars. That's the 20th century'**

Accused of desecrating the French capital, the politician wants more bikes, green spaces and social housing

# Catalyzing Innovation

1. A narrative that inspires

2. A systems-change mindset





**Bus Operators**

**School Districts**

**Federal Government**

**Parents**

**Utilities**

**Teachers**

**Manufacturers**

**Municipal Governments**

**Advocates**

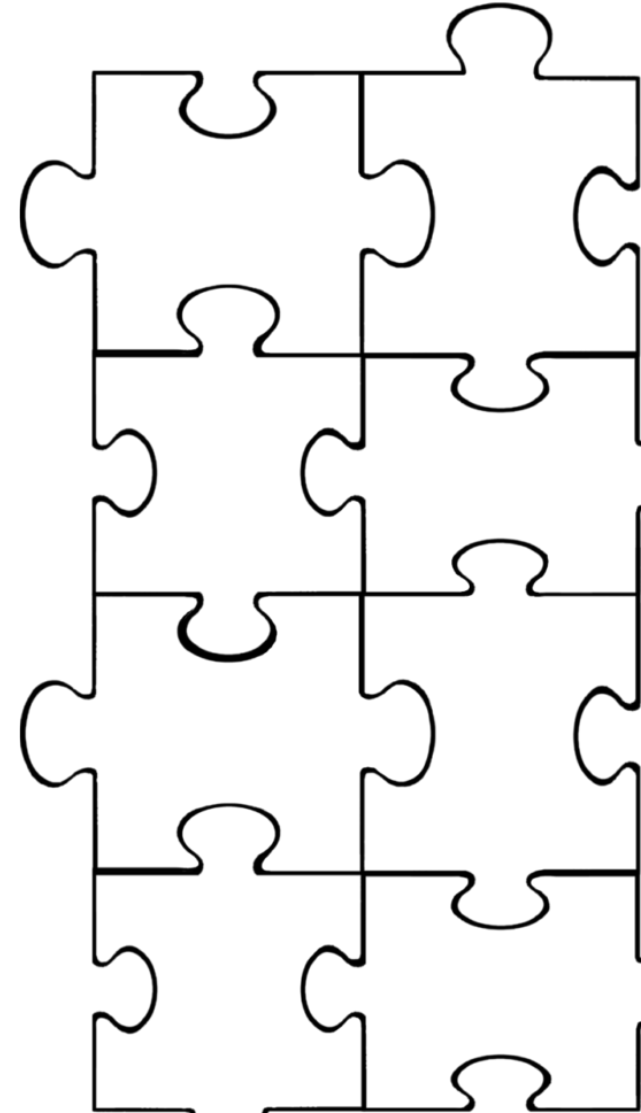
**Financial Institutions**

**State Governments**



# Catalyzing Innovation

1. A narrative that inspires
2. A systems-change mindset
3. Leadership that takes risks



# New York State commits to 100% electric school buses by 2035 [Update]



Michelle Lewis | Apr 8 2022 - 7:27 am PT | 0 Comments

ELECTRIC SCHOOL BUSES

## Colorado commits \$65 million to electric school buses

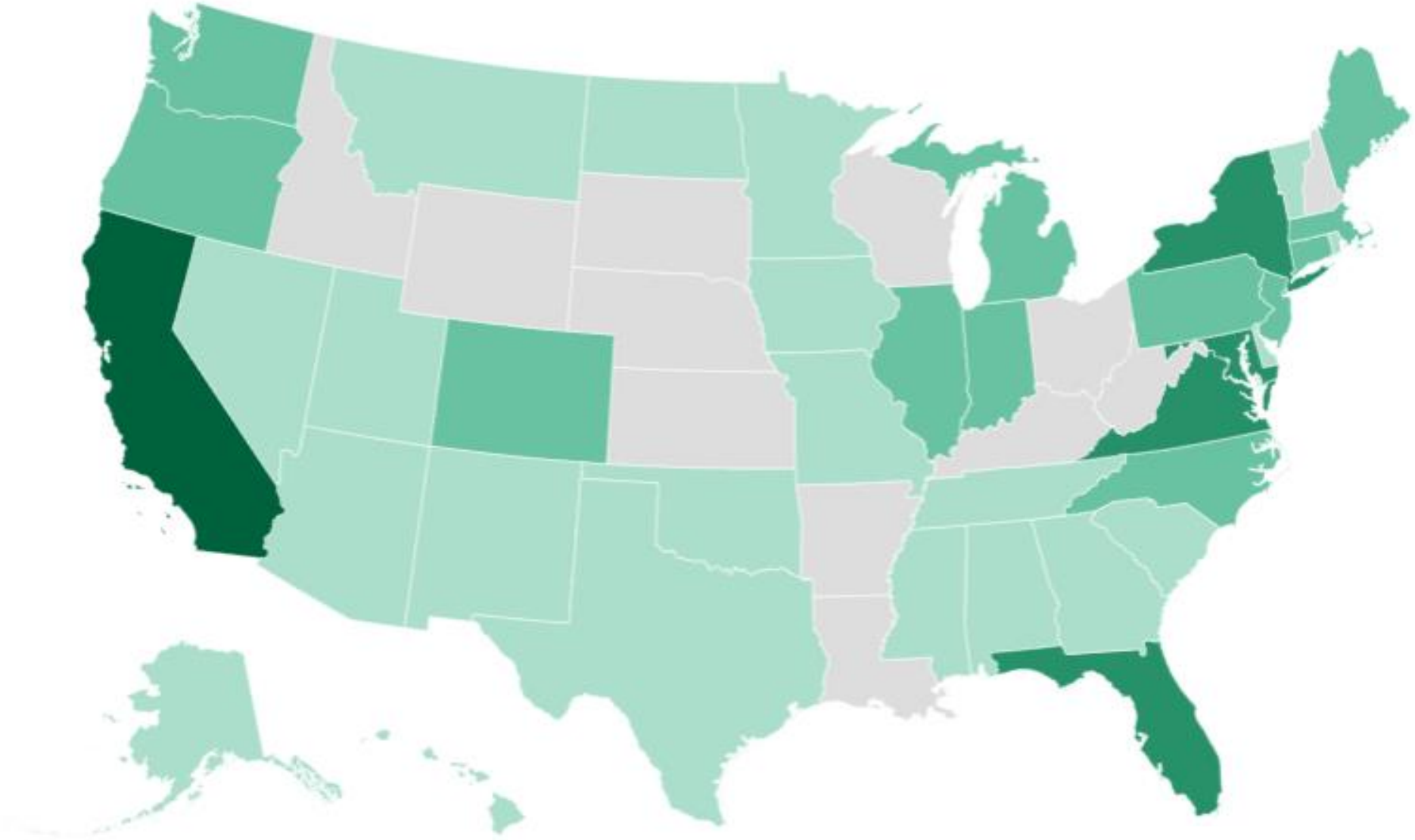
The Power to Change the World

TECH

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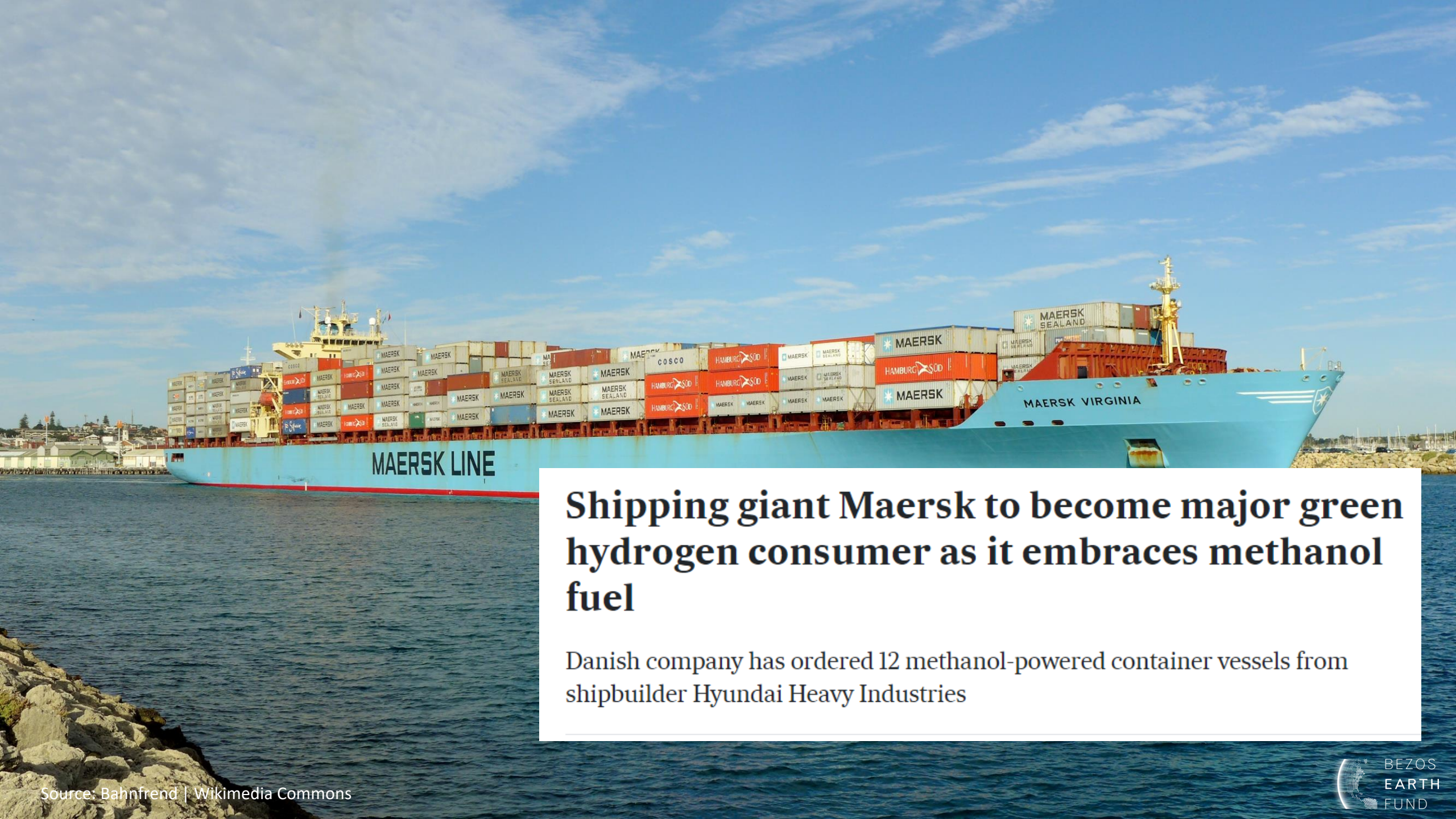
## The race to electrify America's school bus fleet

# Committed Electric School Buses by State



Source: Lazer and Freehafer, 2023. Visualization from WRI | Data as of September 2022





## Shipping giant Maersk to become major green hydrogen consumer as it embraces methanol fuel

Danish company has ordered 12 methanol-powered container vessels from shipbuilder Hyundai Heavy Industries



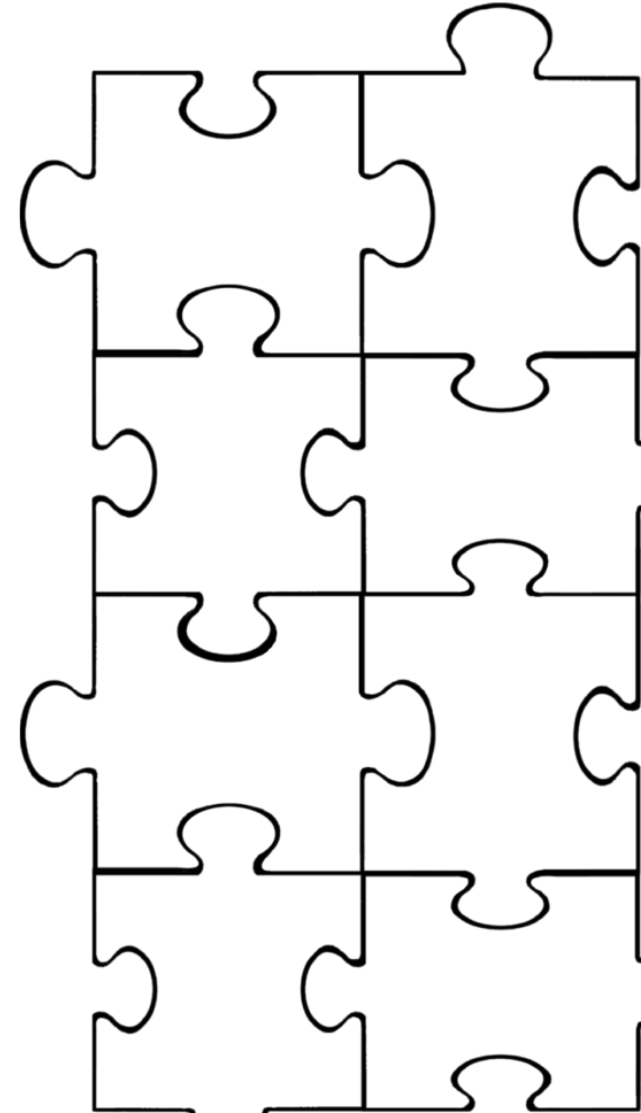
# Bogota, Colombia



Photo: Pedro Szekely, Wikimedia Commons

# Catalyzing Innovation

1. A narrative that inspires
2. A systems-change mindset
3. Leadership that takes risks
4. Smart politics, opportunities seized



# Biden's Big Bills

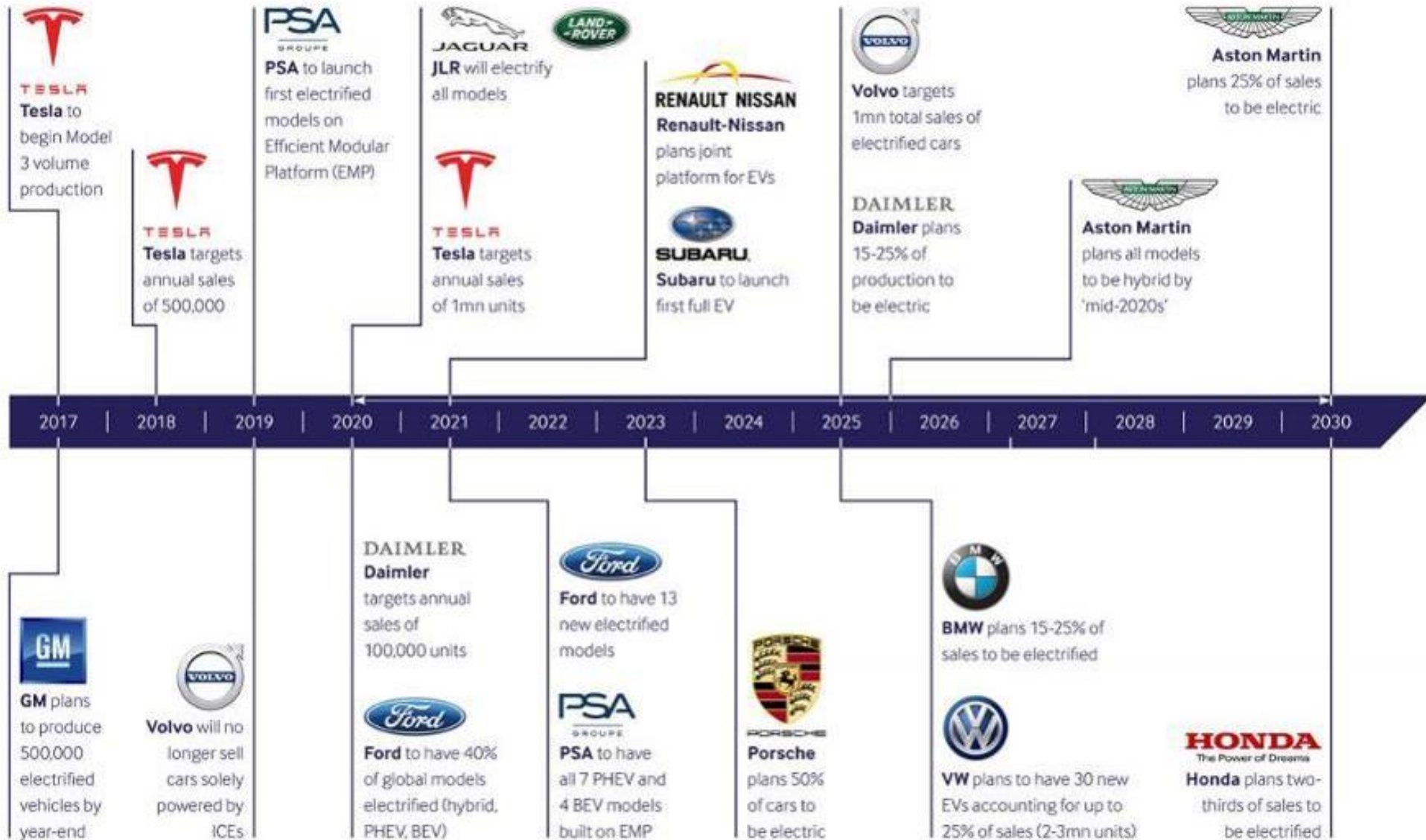
Inflation Reduction Act

Infrastructure Bill



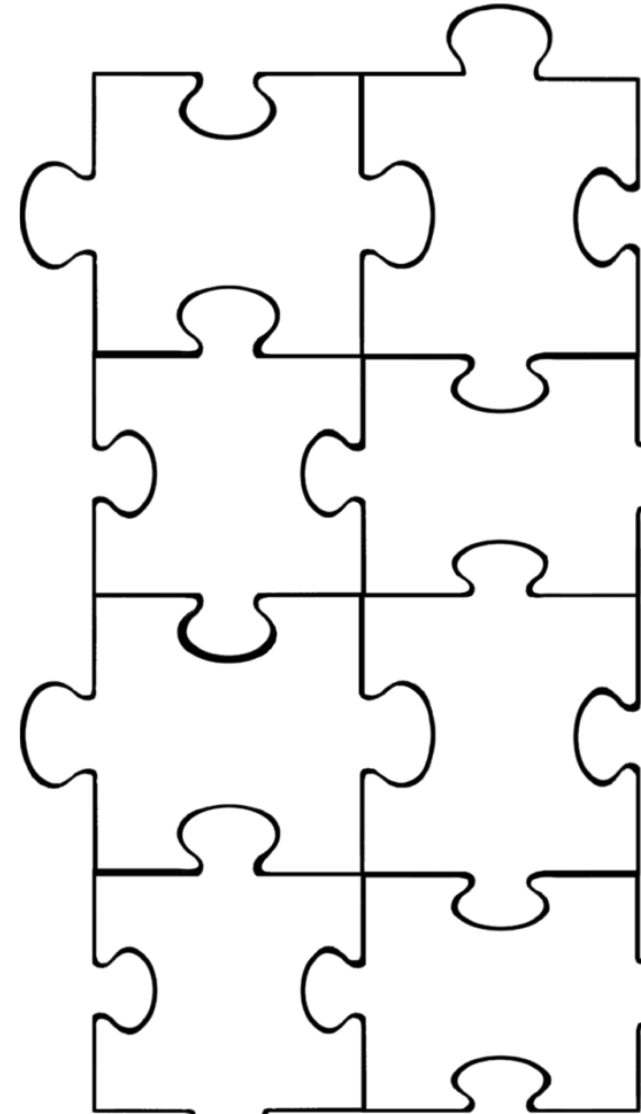


# Electric Vehicle Timeline

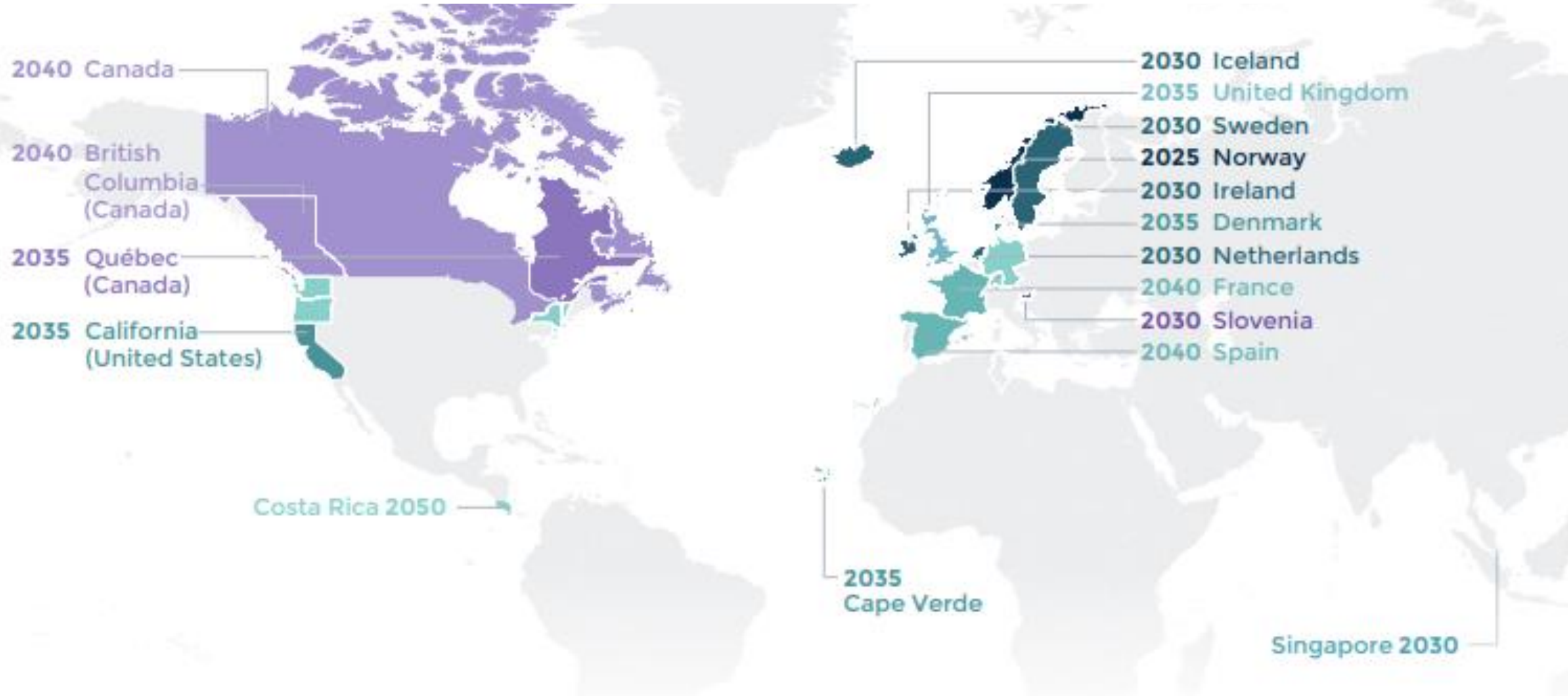


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5. Big thinking



# Governments with set targets for phasing out sales of all new internal combustion engine passenger cars



Note: BEV = battery electric vehicle; FCEV = fuel cell electric vehicle; PHEV = plug-in hybrid electric vehicle

Source: Wappelhorst, 2021

# Why is PM Modi setting such disruptive goals?

500 gigawatts of renewable energy and half of energy mix from sources other than fossil fuels by 2030



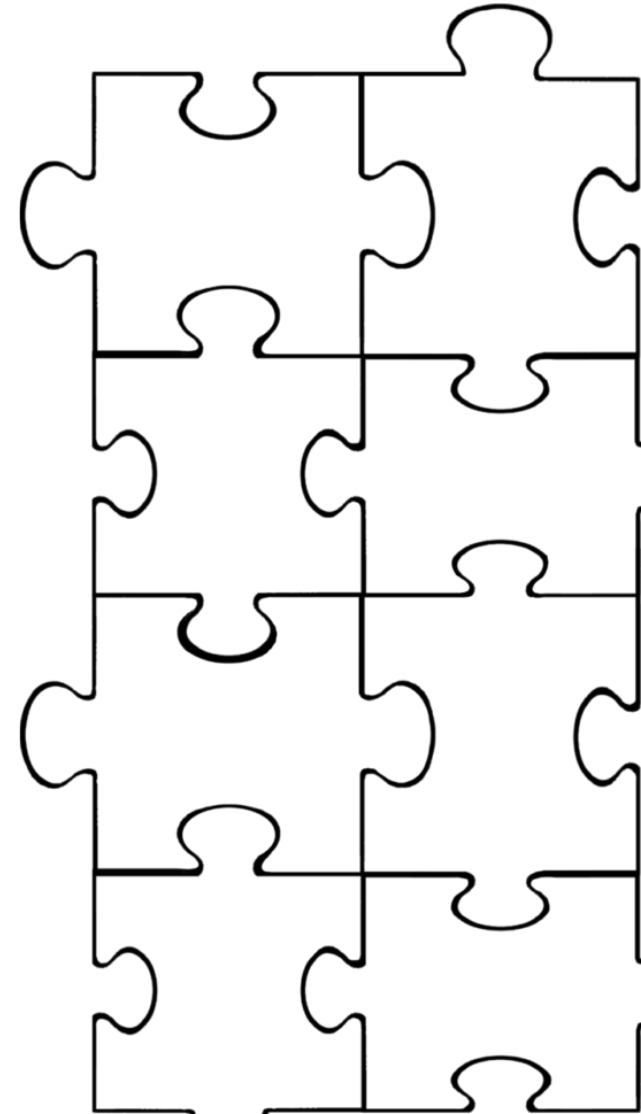
सत्यमेव जयते  
India @ COP 21  
JUST CLIMATE ACTION





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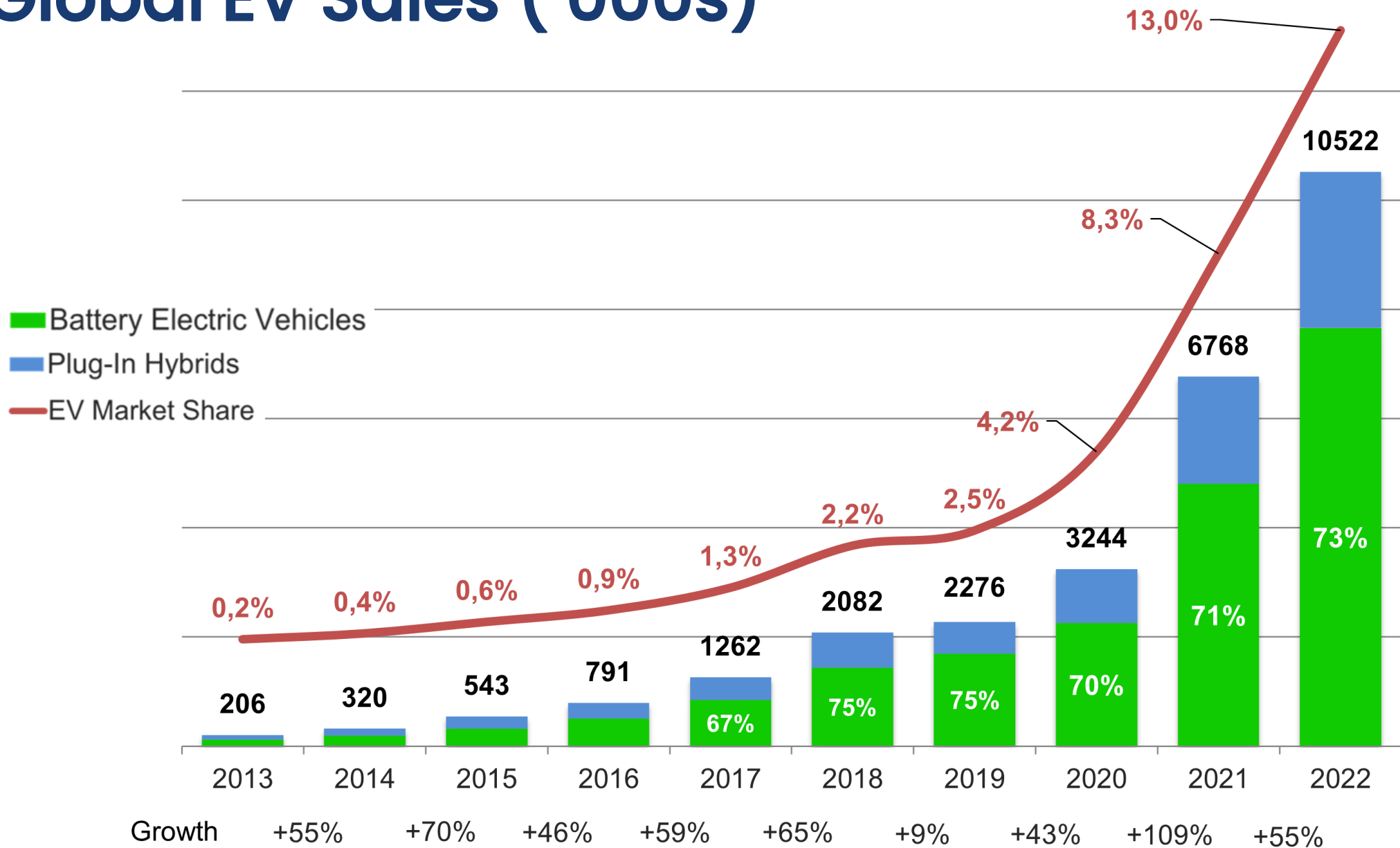
**5TH AVE,  
NEW YORK, 1900**



# 5TH AVE, NEW YORK, 1913

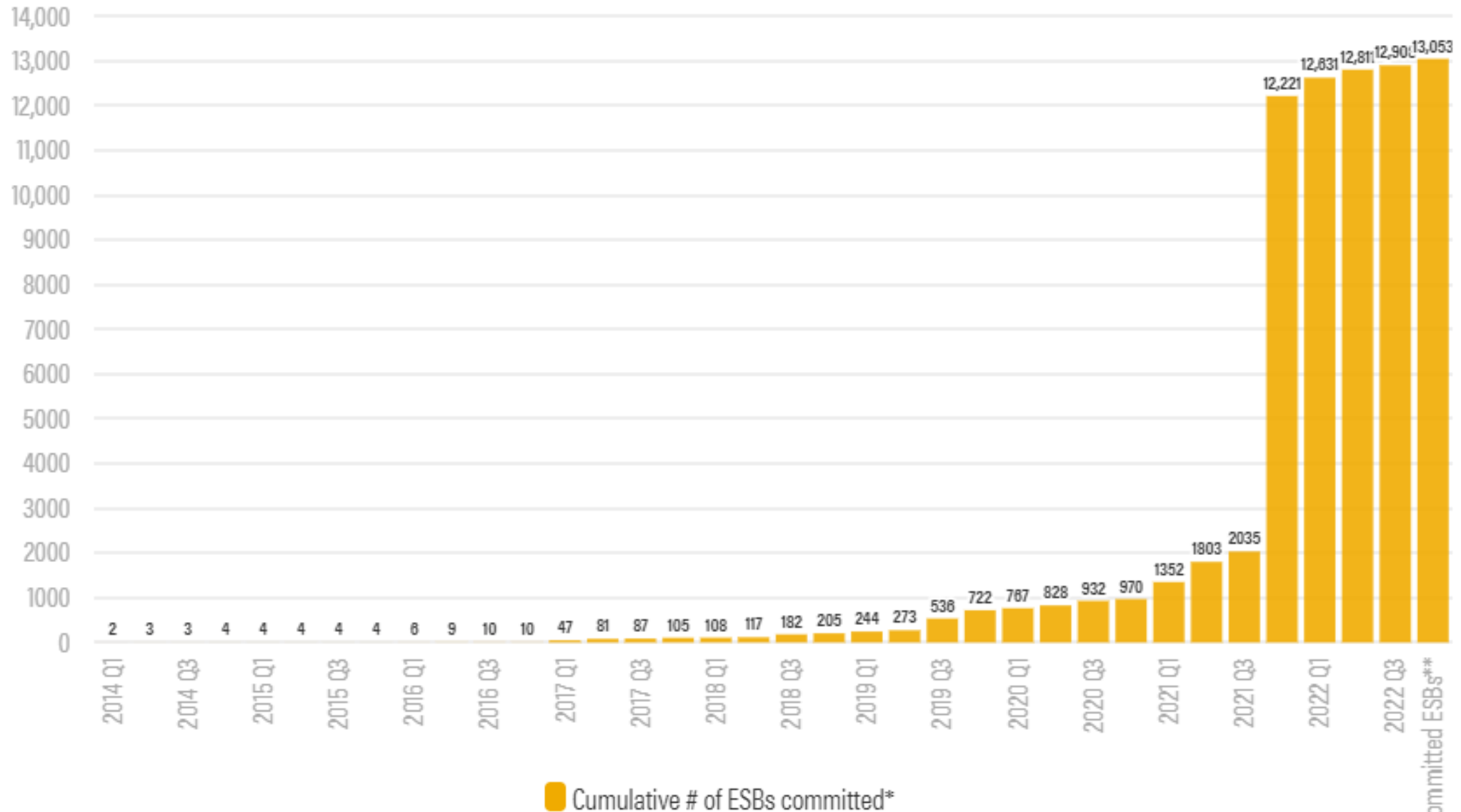


# Global EV Sales ('000s)



Source: EV Volumes

# Total Committed Electric School Buses



# The Systems Change Lab

A VIRTUAL SITUATION ROOM



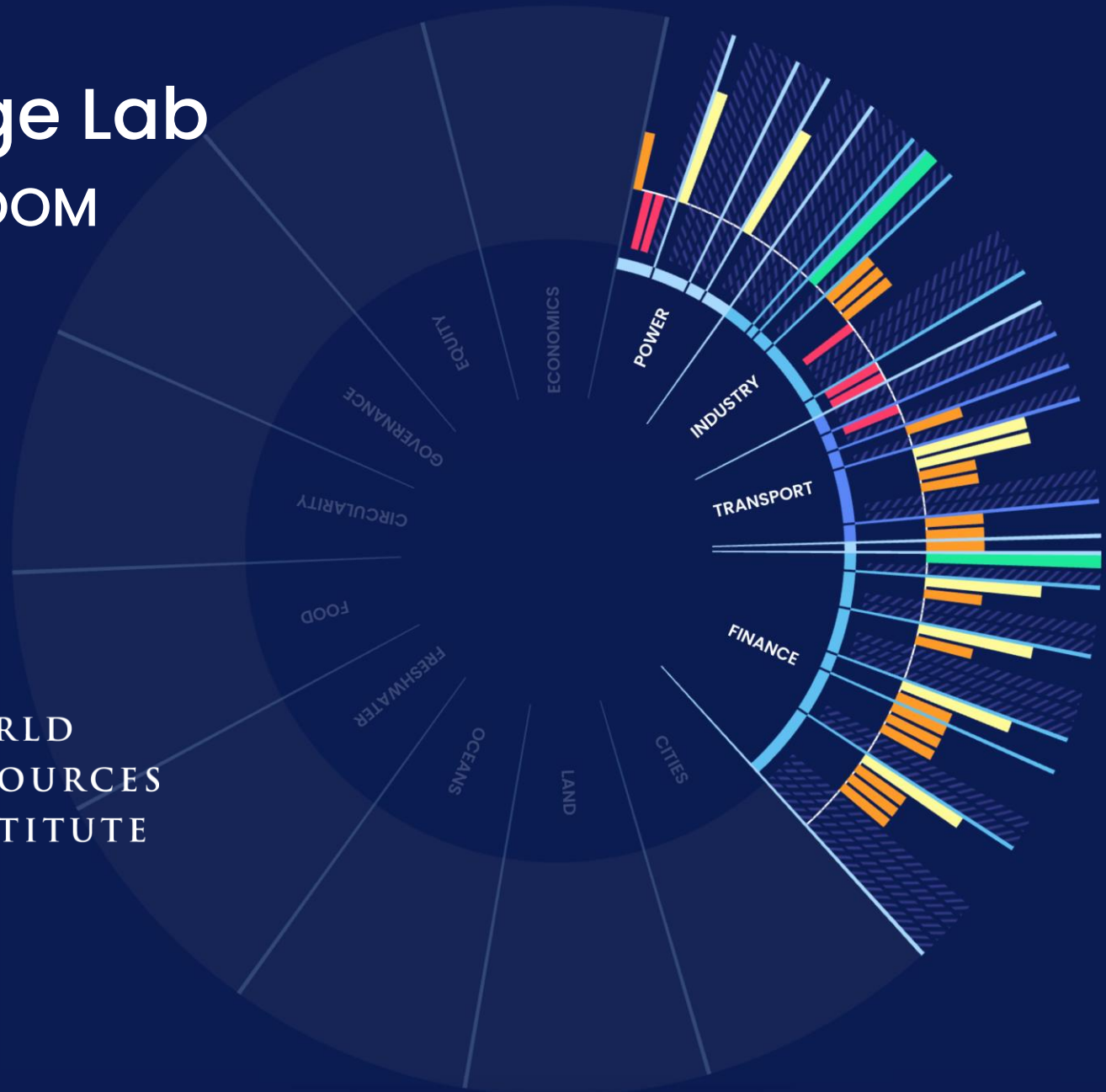
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BEZOS  
EARTH  
FUND



WORLD  
RESOURCES  
INSTITUTE







**Thank you!**



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