



Decarbonisation and Electrification of Bus Fleets

A presentation by
Arjen Jaarsma, Public Transport Expert at Modasti Consulting
on 7 February 2023



Outline

1. Decarbonising our economies: the journey to net-zero
2. Transport decarbonisation: how?
3. What does the hydrogen economy mean for the bus sector?
4. The transition to zero-emission transport: the role of electric buses
5. Bus fleets in the MENA region: how to decarbonise, and how fast?

Our fossil fuel addiction must end, UN chief tells World Economic Forum



UN Secretary-General Antonio Guterres attending a session of the World Economic Forum (WEF) annual meeting in Davos on January 18, 2023. (AFP)

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Short Url <https://arab.news/7n5z5>

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469



- Antonio Guterres warned that the international commitment to limiting global warming to 1.5 C above preindustrial levels is 'going up in smoke'
- Net zero transition must be grounded in real emissions cuts, UN chief tells business leaders in Davos

DAVOS: Antonio Guterres, the UN secretary-general, used his address to the World Economic Forum in Davos, Switzerland, on Wednesday to urge world leaders and businesses to expand their efforts to achieve net-zero carbon emissions.

He also called on business leaders to provide "credible and transparent" plans by the end of the year on how they intend to achieve net-zero.

Guterres warned that many businesses had set their climate targets based on "dubious or murky" criteria, which can "mislead consumers, investors and regulators with false narratives."

"It feeds a culture of climate misinformation and confusion and leaves the door open to 'greenwashing,'" he told delegates at the WEF's Annual Meeting.

"The transition to net-zero must be grounded in real emissions cuts and not rely essentially on carbon credits and shadow markets. That is why we (the UN) created an Expert Group on Net-Zero Emissions Commitments."

1. Decarbonising our economies: the journey to net-zero

The global **transition towards clean energy** is underway. However, the MENA lags behind the EU and the US. The '**net-zero movement**' needs more Arab participants (until now, only UAE, KSA and Bahrain pledged to reach net zero).

Global net zero emissions targets

According to the UN, global net human-caused emissions of carbon dioxide (CO₂) would need to fall by about 45 percent from 2010 levels by 2030, reaching "net zero" by around 2050.



Saudi Arabia to reach net zero carbon by 2060: Crown Prince Mohammed bin Salman



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Updated 23 October 2021
Wael Mahdi
October 23, 2021 10:42
12/2018

Riyadh: Saudi Arabia's Crown Prince said the Kingdom is aiming to reach net zero carbon emissions by 2060, during a speech to the Saudi Green Initiative Forum on Saturday.

The Crown Prince said Saudi Arabia aims to reach net zero carbon emissions by 2060, during a speech to the Saudi Green Initiative Forum on Saturday.

Bahrain aims to reach net zero carbon emissions in 2060



Short Url <https://arab.news/annp>

Updated 24 October 2021
Reuters
October 24, 2021 18:12
10/21

MANAMA: Bahrain's Cabinet said the Gulf country aims to reach net zero carbon emissions in 2060, to help tackle climate change and protect the environment, the state news agency reported on Sunday.

The decision comes on the heels of the launch of the Saudi Green Initiative in Riyadh on Saturday, which aims to reach net zero emissions of greenhouse gases, mostly produced by burning fossil fuels, by 2060.

UAE unveils net-zero initiative for 2050

Government announces long-term vision worth Dh600 billion with UN secretary general, Antonio Guterres, hailing the UAE's pledge



President Sheikh Mohamed, who was Crown Prince of Abu Dhabi and Deputy Supreme Commander of the Armed Forces at the time, at the launch of the UAE's Net Zero 2050 Strategic Initiative at Expo 2020 Dubai. With him are Sheikh Maktoum bin Mohammed, Deputy Prime Minister and Minister of Finance, right, Mariam Al Mheiri, Minister for Climate Change and Environment, left, and Dr Sultan Al Jaber, Minister of Industry and Advanced Technology, chairman of Masdar and chief executive of Adnoc, second left. All photos: Ministry of Presidential Affairs

The National
Oct 07, 2021

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The UAE announced on Thursday an ambitious strategic initiative to reduce carbon emissions by 2050.

The plan will mean Dh600 billion being invested in clean and renewable energy sources in the next three decades.

It comes in a crucial year in the fight to protect the planet, with the UAE building momentum ahead of the Cop26 climate talks in the UK next month.

Sheikh Mohammed bin Rashid, Vice President and Ruler of Dubai, said the country would "play its global role in combating climate change".

1. Decarbonising our economies: the journey to net-zero

A positive sign is that with **COP27** and **COP28**, the Arab world is speeding up the battle against climate change. But will this result in **tangible results** regarding decarbonising (public) transport?



A 3°C world has no safe place

The extremes of floods and fires are not going away, but adaptation can lessen their impact



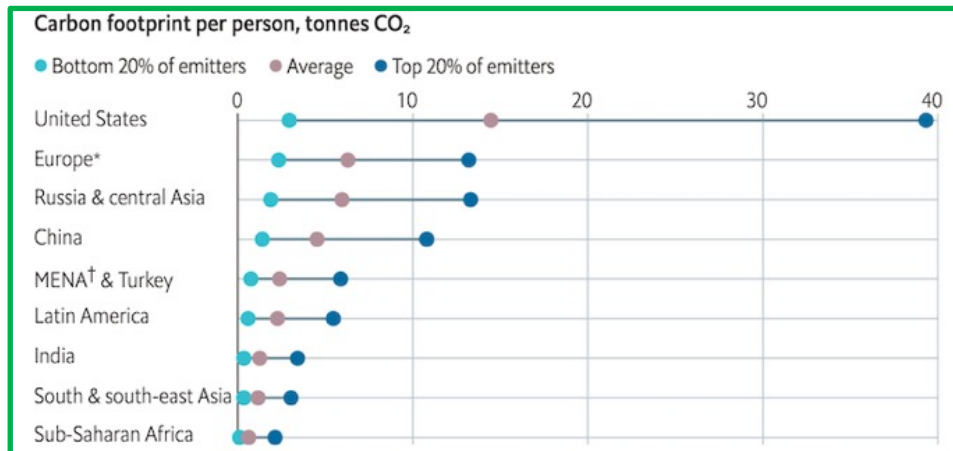
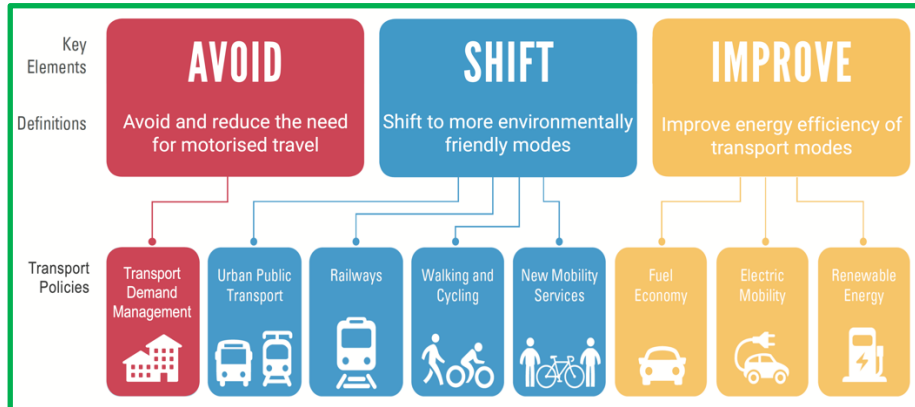
Jul 24th 2021 (Updated Oct 30th 2021)

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2. Transport decarbonisation: how?

Decarbonising our transport systems means **transport demand management** plus **technological solutions**!

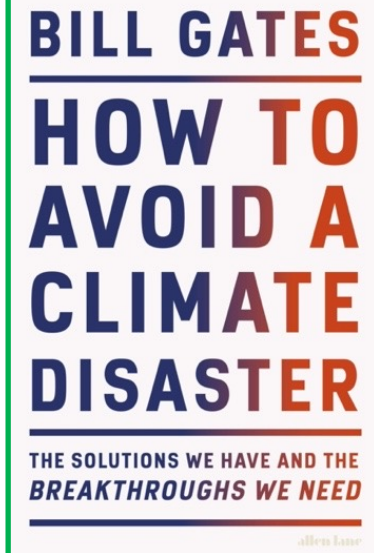
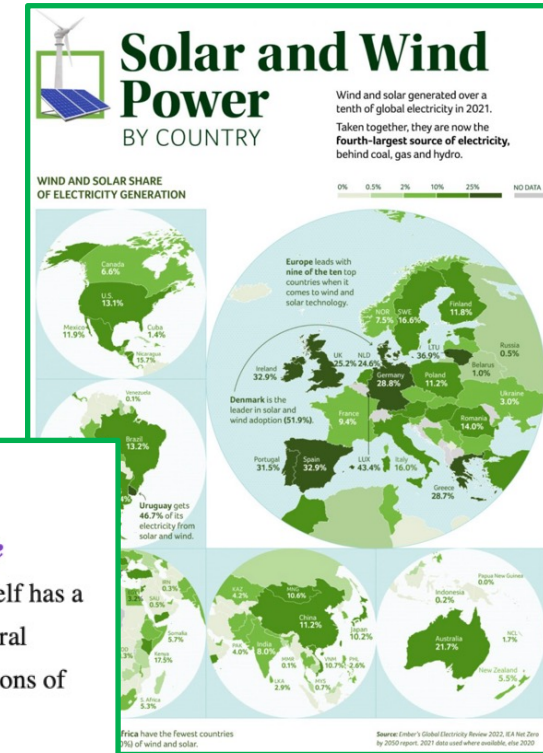


51 billion to zero

Last summer, I had the chance to read Bill Gates's *How to Avoid a Climate Disaster*. I was a bit sceptical when I started reading (after all, the author himself has a huge carbon footprint), but it is an impressive book. Gates clearly states that several technological breakthroughs are required to reduce the world's annual 51 billion tons of greenhouse gases to – eventually – zero.

Gates also gives a simple breakdown of the 51 billion tons of emissions:

- making things (cement, steel, plastic): 31%
- plugging in (electricity): 27%
- growing things (plants, animals): 19%
- getting around (planes, trucks, cargo ships): 16%
- keeping warm and cool (heating, cooling, refrigeration): 7%



3. What does the hydrogen economy mean for the bus sector?

Saudi Arabia and the UAE are **leading nations** in the transition towards a **hydrogen economy**. Since hydrogen mobility applications have **pros and cons**, the coming years will be exciting to see which technology will succeed in the MENA region.

Business | When brown meets green

Why the Gulf's oil powers are betting on clean energy

Aramco, ADNOC and others are placing multibillion-dollar wagers on the energy transition



Reuters

Dec 19th 2022 | ABU DHABI

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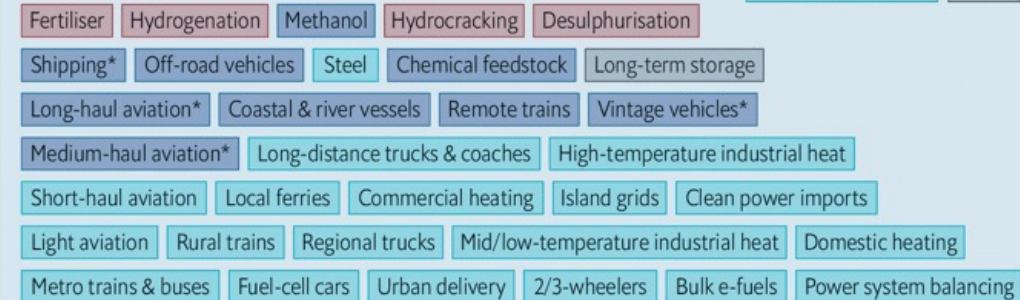
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Michael Liebreich, a clean-energy guru, notes that, as one moves away from applications where hydrogen has clear benefits over renewable electricity, it becomes harder to see serious markets for the gas. To illustrate his point he has developed a “hydrogen ladder” which ranks uses from indispensable to unaffordable (see diagram).

Steppin' up

Viability of hydrogen use in a net-zero world, August 2021

↑ Unavoidable

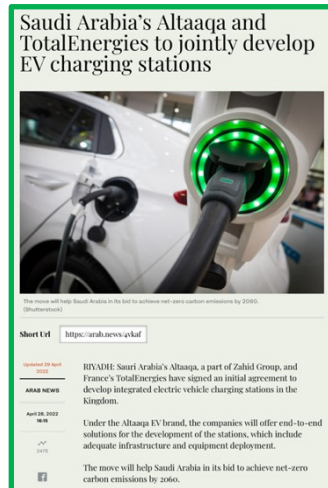
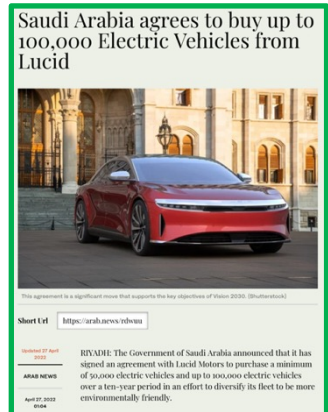
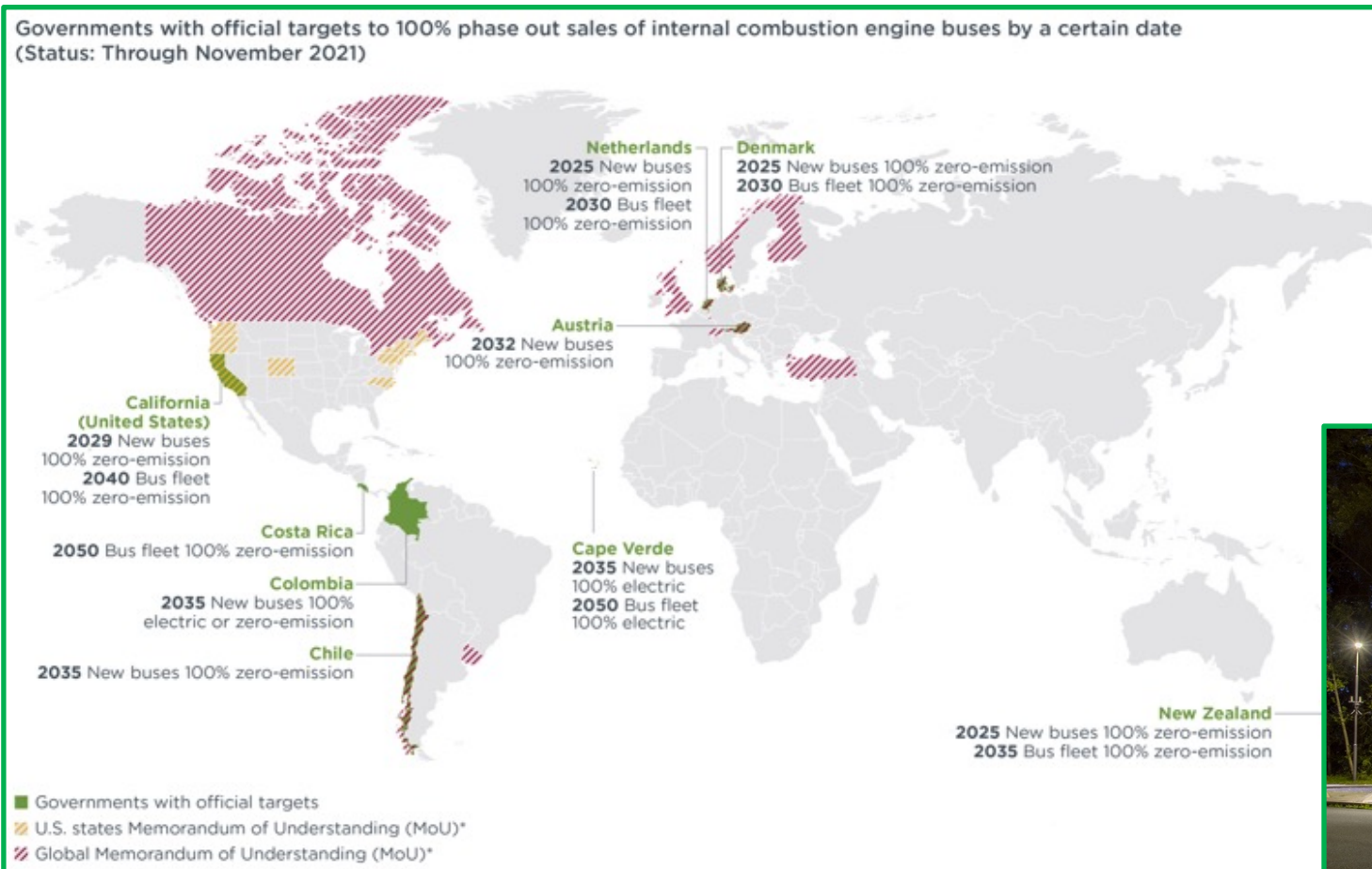


The Economist



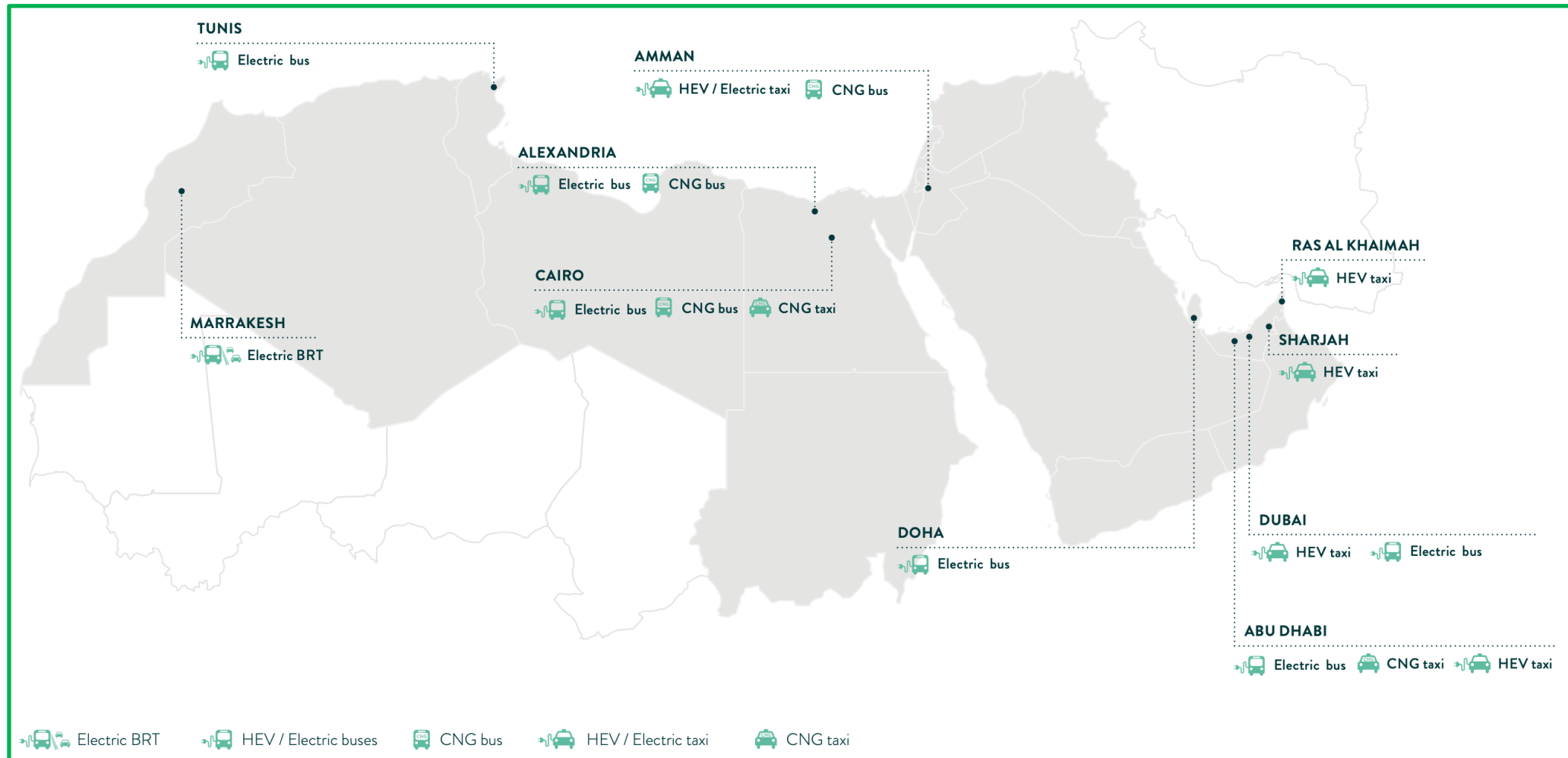
4. The transition to zero-emission transport: the role of electric buses

Electric buses are **proven technology** and are relevant in a swift transition to **clean buses** in the MENA region. The IAE expects that in 2030, between 11% and 25% of the **global bus fleet** will be electric.



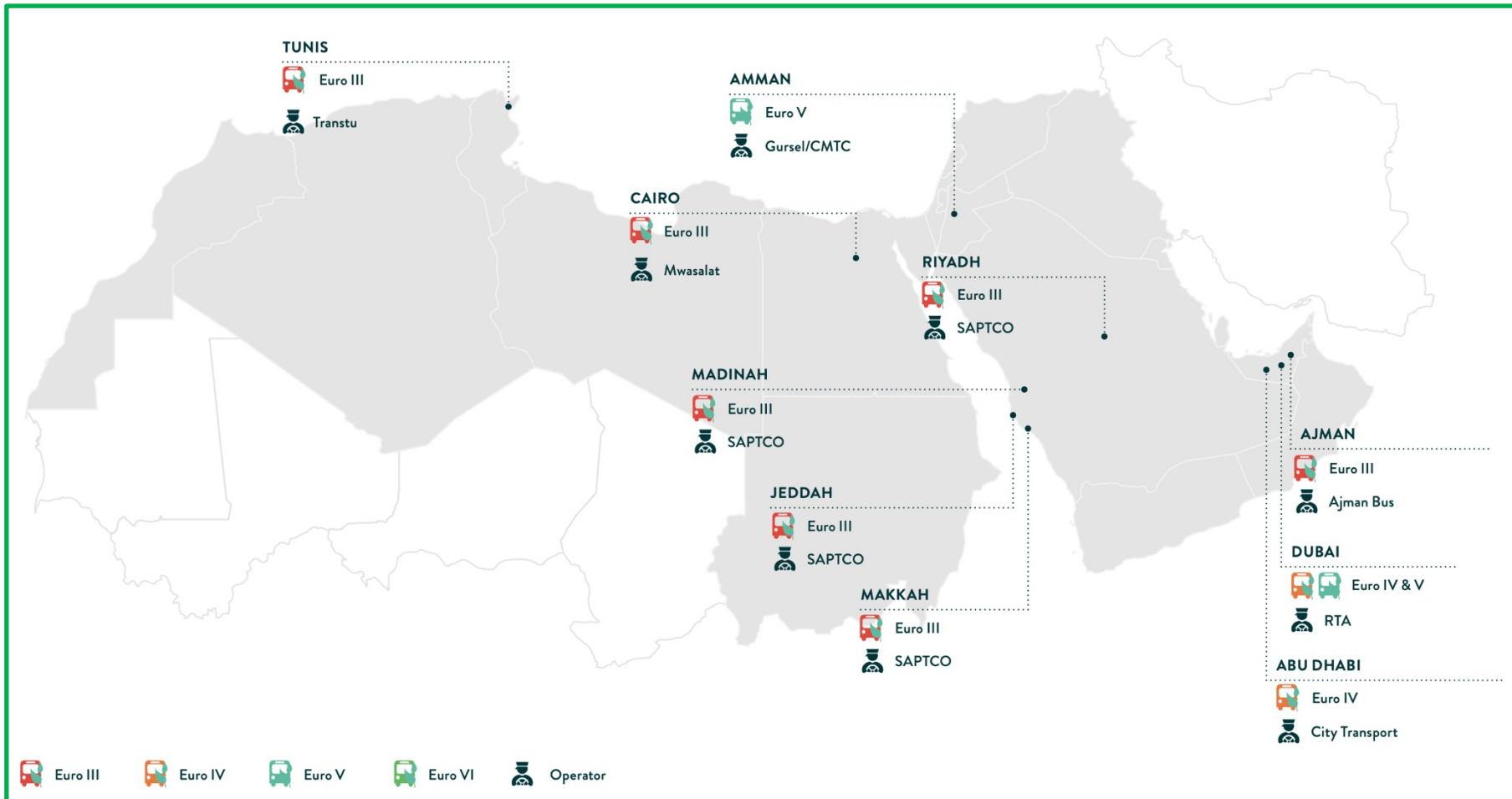
5. Bus fleets in the MENA region: how to decarbonise, and how fast?

This question is hard to answer, but we can explore it using two maps of the region from the **MENA Transport Report 2020-2021** published by the UITP.



5. Bus fleets in the MENA region: how to decarbonise, and how fast?

Higher **ambitions**, anchored in **legislation**, are necessary to end the region's fossil fuel addiction and to **transfer to a new economy!**



Vehicle Leasing Giant Arval Places Order for 10,000 Lightyear 2 Solar-Powered Cars

Staff Writer - Jan 16 2023



Lightyear, the Dutch high-tech company producing the world's first solar-powered electric car, Lightyear 0, has signed a pre-order agreement with Arval, the European vehicle leasing company, owned by the BNP Paribas Group. The pre-order covers 10,000 units of Lightyear 2.

The total number of Lightyear 2 pre-orders from its partners now exceeds 21,000 units, corresponding to a revenue of nearly €840 million.

Lightyear 2 features a solar roof and hood enabling the car to double its range to more than 800 km per charge and overall three times less charging than a conventional electric vehicle (EV).

It is being manufactured at Valmet Automotive's facilities in Usikaupunki, Finland.

Lex Hoefsloot, Lightyear CEO and Co-Founder, says: "Next to offering our solar electric cars to individual consumers, Arval plays a crucial role as a leasing company in making our technologies available for as many people as possible. We are grateful for their trust and being able to have their expertise and international footprint to roll out Lightyear 2."