

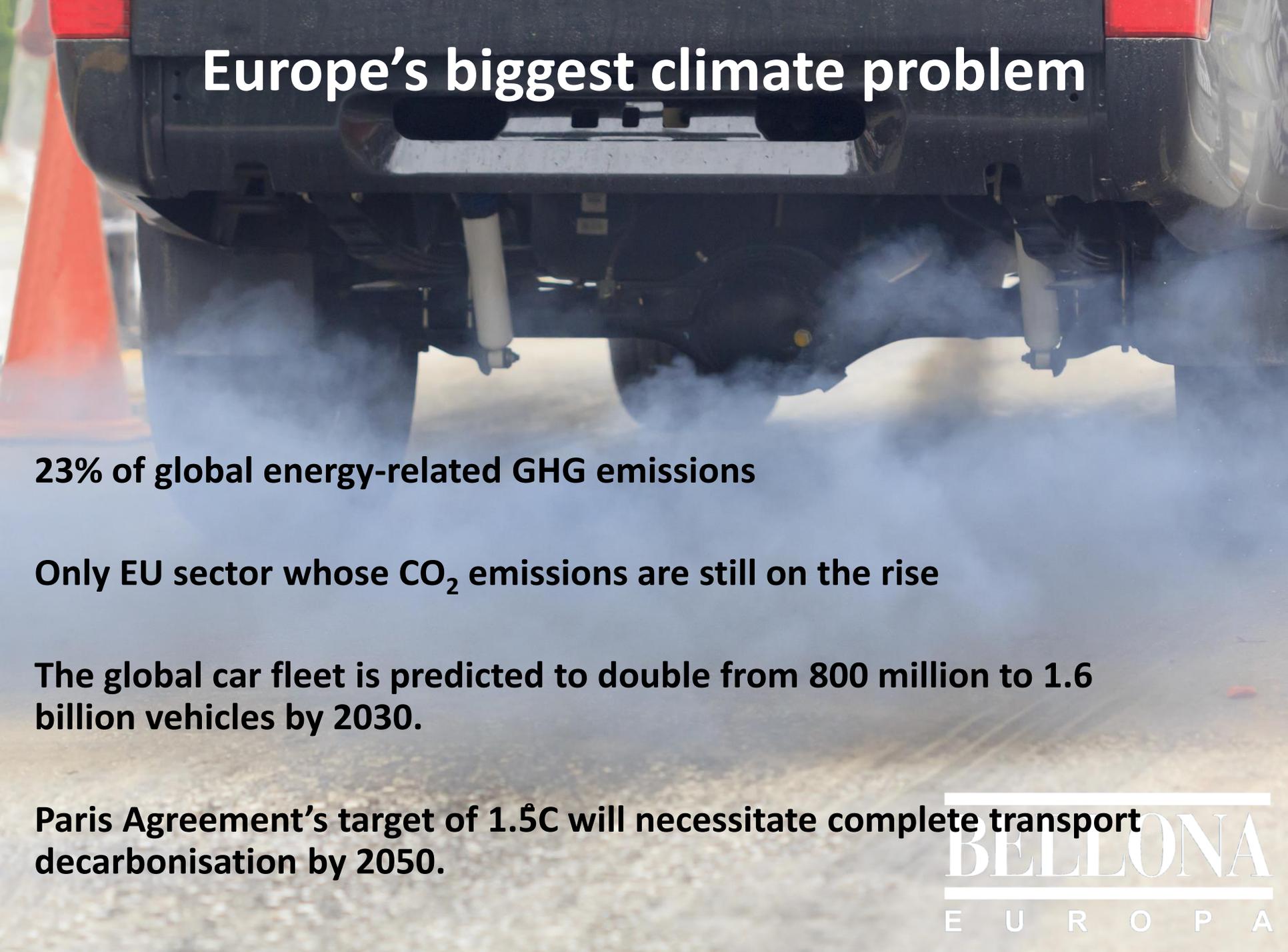


***Going Electric Towards
Cleaner and Healthier
Cities***

**Jonas Helseth
Director, Bellona Europa
23 November 2017, Brussels**

BELLONA
EUROPA

Europe's biggest climate problem



23% of global energy-related GHG emissions

Only EU sector whose CO₂ emissions are still on the rise

The global car fleet is predicted to double from 800 million to 1.6 billion vehicles by 2030.

Paris Agreement's target of 1.5°C will necessitate complete transport decarbonisation by 2050.

A transport-induced human health crisis

Over 3 million people a year are killed prematurely by outdoor air pollution, more than malaria and HIV/AIDS combined;

“Biggest killer” on European continent (EEA, 2016)

If human health costs from the fossil car industry were to be accounted for, **ICEVs' price tags would double** (Bellona Europa, 2017)

If car makers were to pay the human health bill, how much would the average ICE car cost?

253 million ICE cars in EU 28 today

€600 billion annually in human health costs from fossil transport-induced air pollution (mid-estimate based on European Commission figures)

€2,371 worth of human health costs per fossil car per year

€23,710 of additional costs in terms of human health per ICE car during its lifetime, taking into account the average age of an ICE car in the EU is 9.73 years

€50,150 would be the average sticker price of an ICE car in the EU: this is double the current average price of €26,436

Going electric to clean up the air and save lives

In a well-to-wheels perspective, EVs emit 20 times less NO_x than ICE cars

No CO₂ emissions/km when powered by renewable electricity

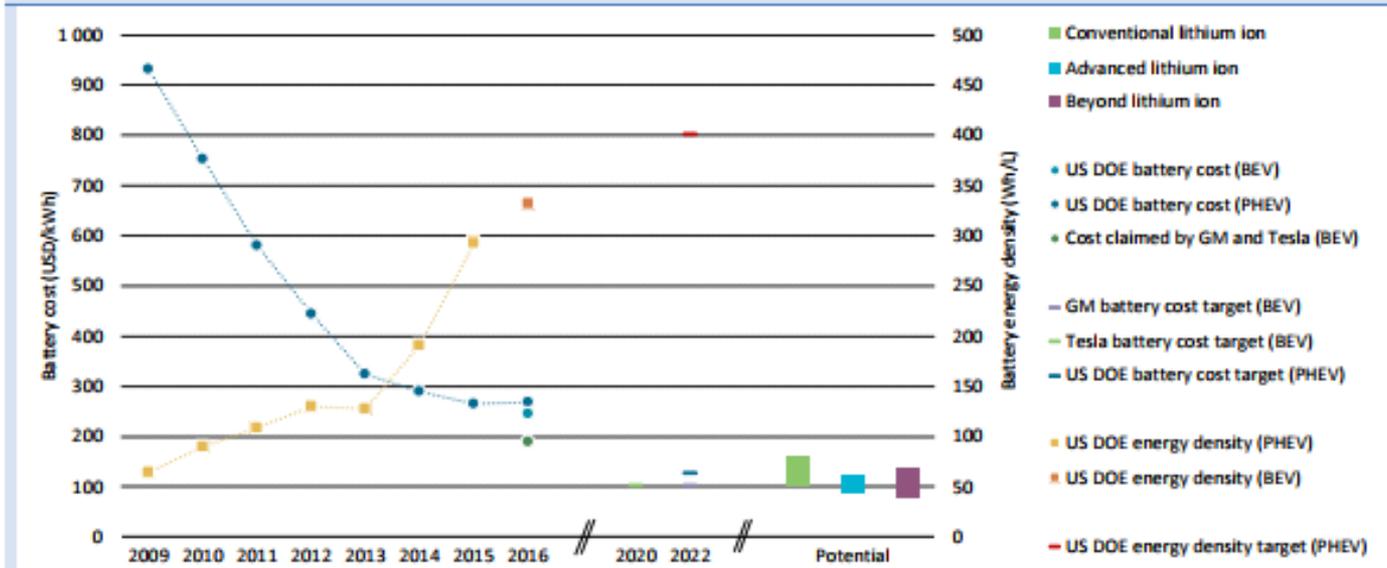
60% more efficient than ICE cars

Could enable a net increase of EU-wide employment of up to 1,1 million jobs in 2030 and decrease fuel bills by up to EUR 83 billion in 2030



Price parity around the corner

Figure 6 • Evolution of battery energy density and cost



Notes: Contrary to the results assessed for 2009-15, which targeted PHEV batteries, the 2016 estimates of costs and volumetric energy density by the US DOE (costs are to be interpreted as projections for the high-volume production of technologies currently being researched) refer to a battery pack that is designed to deliver 320 km of all-electric range and is, therefore, suitable for BEVs. The latest update of this cost assessment was developed accounting for an advanced lithium-ion technology (with silicon alloy-composite anode). Being a technology that is still being researched today, this is currently deemed to have a greater cost but also a larger potential for cost reductions compared with conventional lithium-ion technologies.

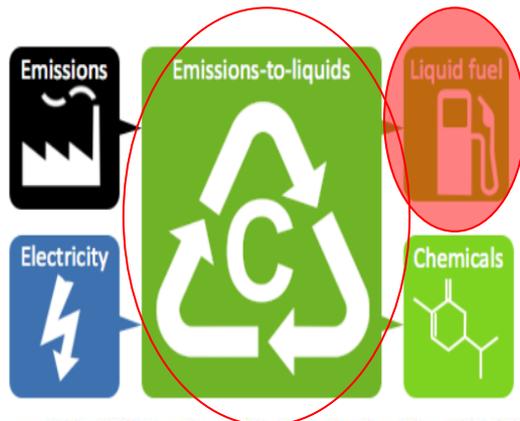
Sources: Howell (2017), EV Obsession (2015) and Cobb (2015a).

Key point: Prospects for future cost reductions from the main families of battery technologies confirm the encouraging signs in cost and performance improvements observed over the past decade.

Petition for Integration of renewable CCU in the RED

to those revising and extending the “Renewable Energy Directive (RED) in the 2030 Climate and Energy Framework” in the European Commission, European Parliament and the Member States

Carbon Recycling International (CRI) is the world leader in power to methanol technology. We produce renewable methanol from carbon dioxide, hydrogen, and electricity for energy storage, fuel applications, and efficiency enhancement. We are a technology provider to the power generation and industrial production industries. Our solutions are environmentally friendly and do not impact the food chain or land use.



1 See for example the ISCC certificate for CO₂-based methanol, ISCC-PLUS-Cert-10016121, Carbon Recycling International, Grindavik, Iceland.

on

Lara Dammer, nova-Institut GmbH, Hürth (Germany), Christian Schweitzer Leipzig GmbH (Germany), Stephan Rieke, ETOGAS GmbH, Stuttgart (Germany)

1 this petition and give additional input on the discussion of CCU integration in the RED petition

signatories and the feedback from the policy will be presented and discussed at the huge Conference on Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers, 6 - 7 June 2017, Hürth, Germany (www.co2-chemistry.eu).

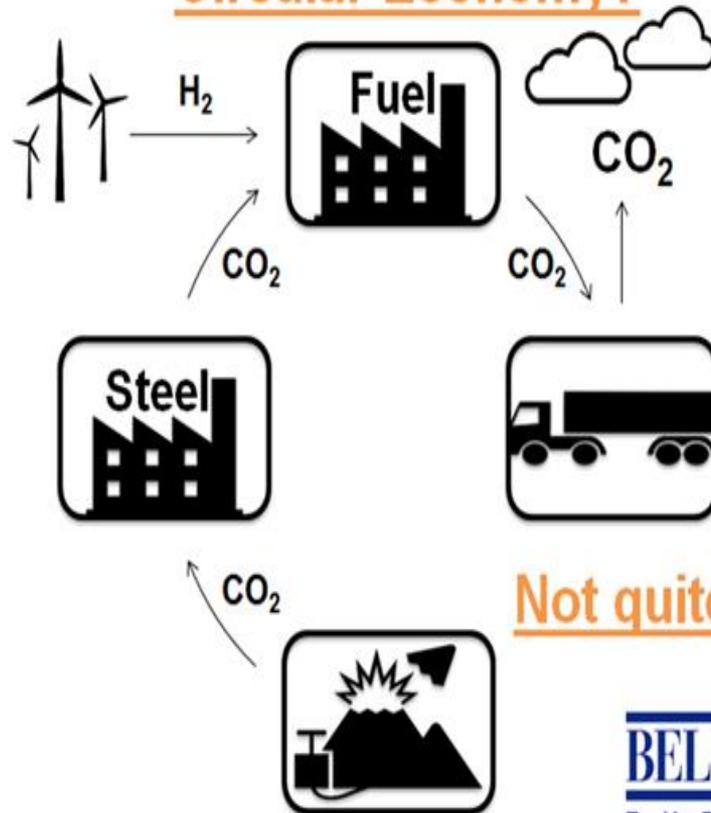
in (V.i.S.d.P.): Michael Carus, nova-Institut GmbH, Industriestraße 300, 50354 Hürth, Germany, www.nova-institute.eu

Technologies will play a crucial role in the transition to a low-carbon economy and for climate protection. Latest assessments clearly prove that rCCU fuels and chemicals show very high GHG emission reductions compared to fossil- and bio-based fuels¹ and chemicals and need much less land and water compared to fossil- and bio-based fuels and chemicals. It is also a way of overcoming the whole

Energy transition. Fossil-based fuels and chemicals have to become more sustainable and to contribute to energy security for Europe.

CCU 'renewable', 'low-carbon' fuels: 'Circular' Economy

Carbon Capture and Utilisation: Circular Economy?



Diff dif

Alternativer Kraftstoff

Wunder-Diesel macht Autoindustrie Hoffnung

Von Klaus Dieter Oehler - 10. Juli 2017 - 21:36 Uhr

Ein synthetisch hergestellter Kraftstoff könnte eine Konkurrenz zum Elektroantrieb werden. Er wurde in Norwegen entwickelt.



Grüner Diesel, das wäre doch was. Deutsche Autoingenieure hoffen auf den neuen Kraftstoff.

Foto: dpa-Zentralbild

Frankfurt - Die deutschen Auto-Ingenieure haben sich noch nie so richtig für eine rein elektrische Antriebsart für die Fahrzeuge der Zukunft begeistern können. Daher kommt ihnen nun eine Initiative, die ausgerechnet aus dem nicht unbedingt als Autoproduktionsland bekannten Norwegen kommt, gerade Recht.

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Verband der
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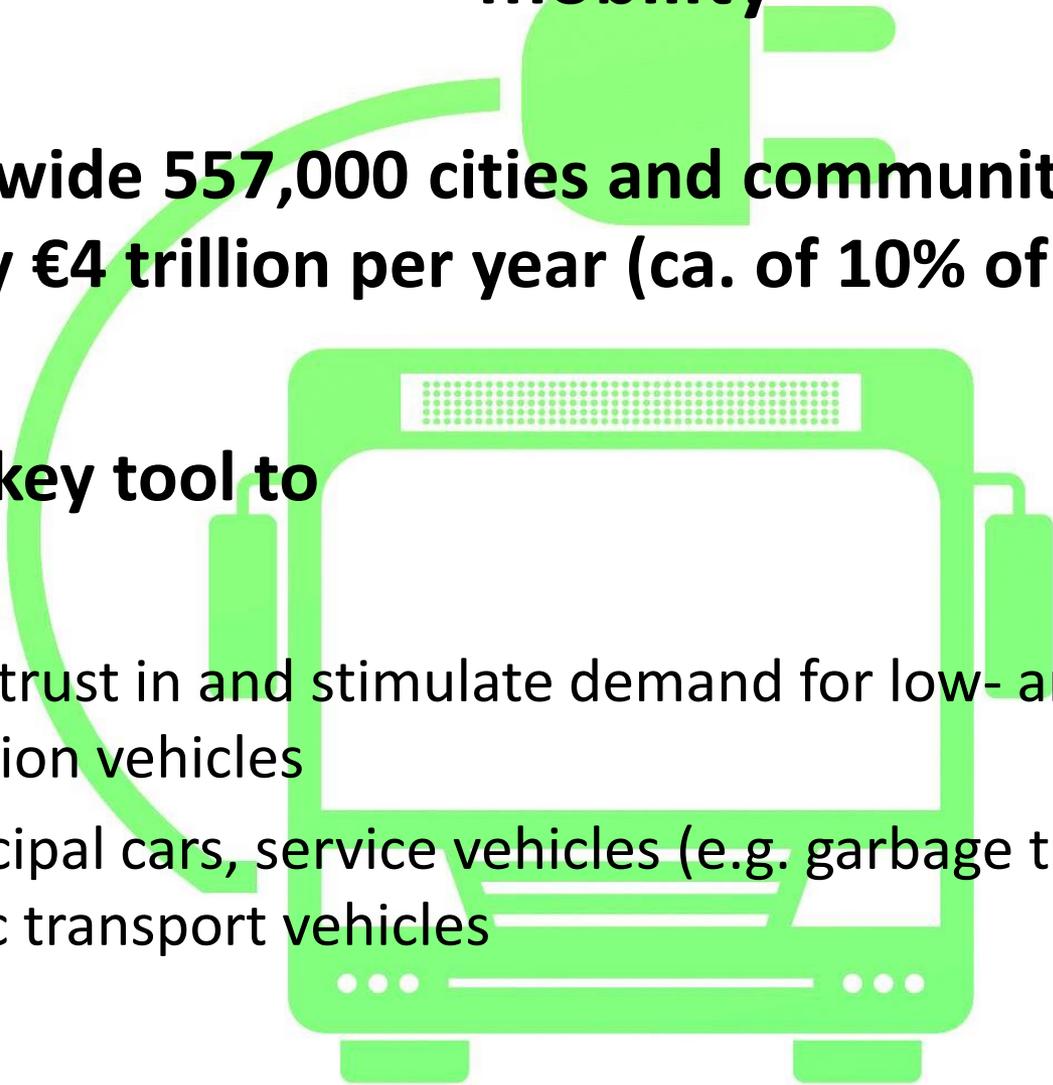
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Cities: key actors in the transition to low carbon mobility



World-wide 557,000 cities and communities spend roughly €4 trillion per year (ca. of 10% of global GDP)

GPP, a key tool to

- build trust in and stimulate demand for low- and zero-emission vehicles
- municipal cars, service vehicles (e.g. garbage trucks) and public transport vehicles