

Electrification, a sustainable business disruption

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The main drivers for urban mobility

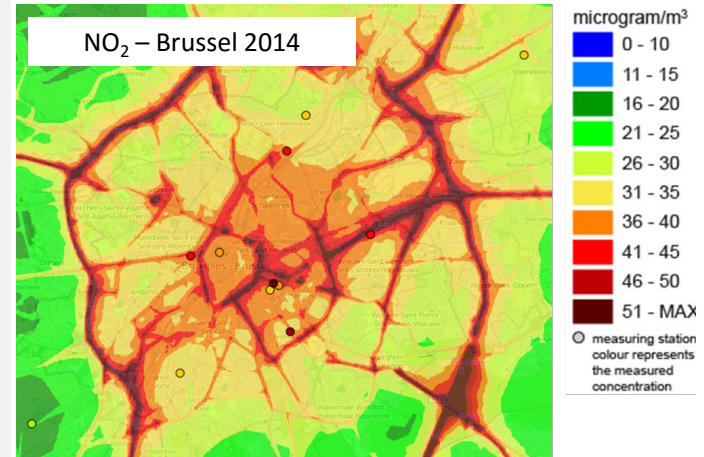
Today: Air quality / Fine dust

Today: Smart Logistics

Today: Noise / Quality of live

Tomorrow: Energy / CO2

Always: €€€€€€€



Where is the Car, where is the Horse? (Tony Seba)



Photo: Fifth Ave NYC on Easter Morning 1900
2001-2014 by Tony Seba

Source: US National Archives from
(Wikipedia)



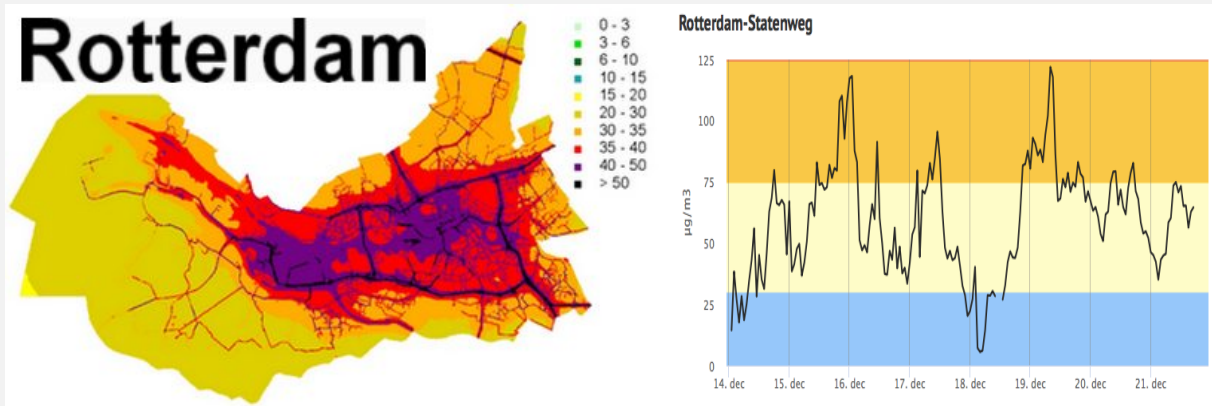
Photo: Easter 1913, New York. Fifth Avenue looking north. George
Grantham Bain Collection

Source: shorpy.com

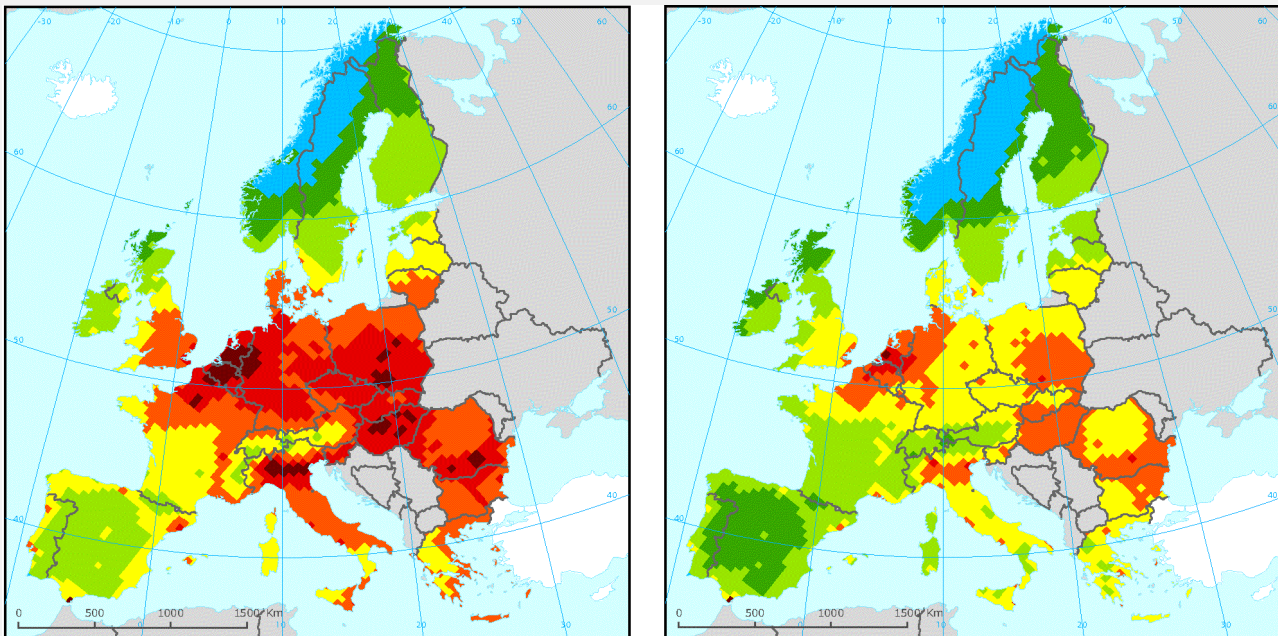
Mission question: Do we accept emissions?
More death than by car accidents



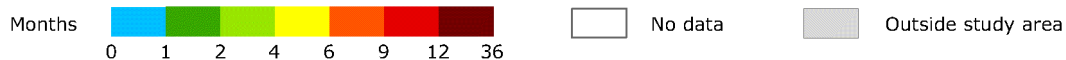
Clean air measurements



Loss of life expectancy (fine particulate PM_{2.5})



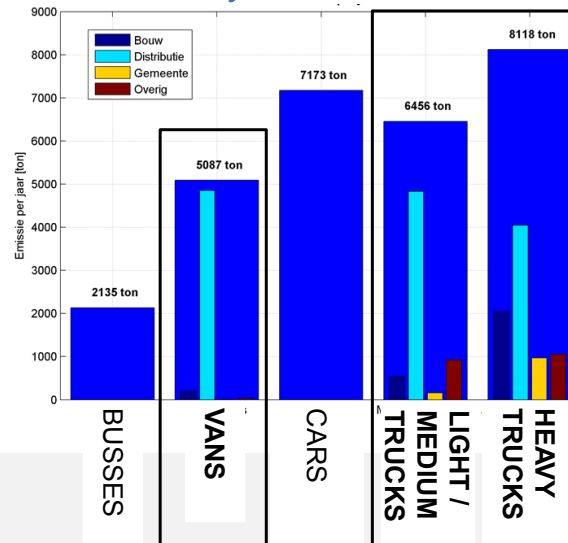
Estimated losses in life expectancy attributable to exposure to fine particulate matter (PM_{2.5}) from anthropogenic emissions for 2000 (left) and 2020 (right)



The big three urban polluters 1/3 of km's cause 2/3 emissions



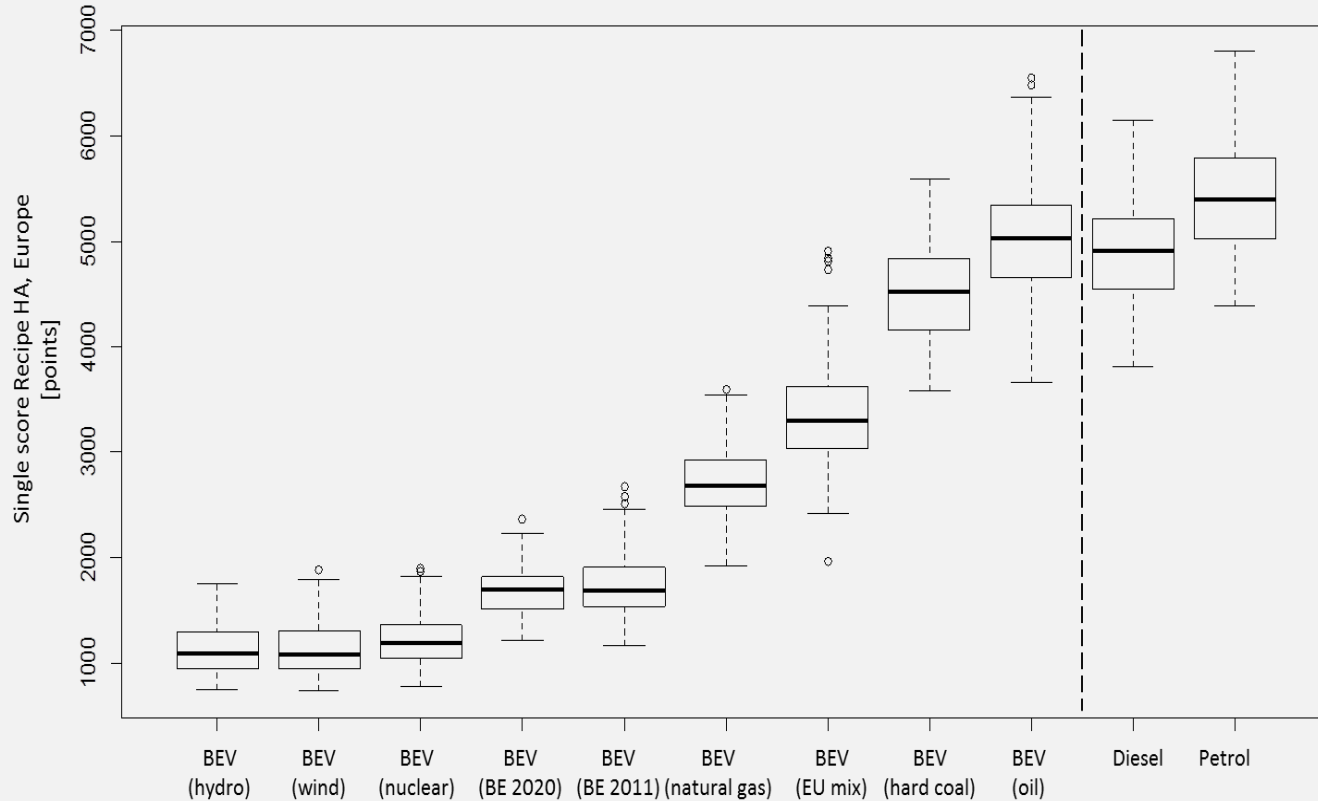
Urban freight transport Total NOx emissions city traffic in the Netherlands



Estimated total emissions per year per vehicle type for all urban traffic in the Netherlands (TNO, 2015)



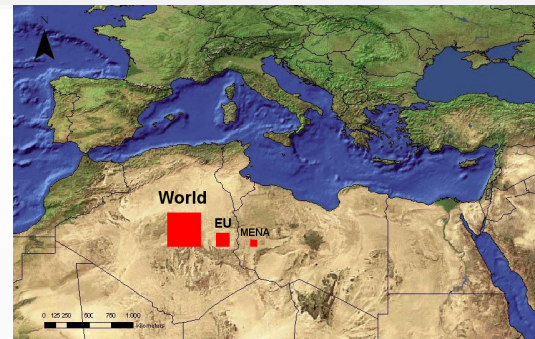
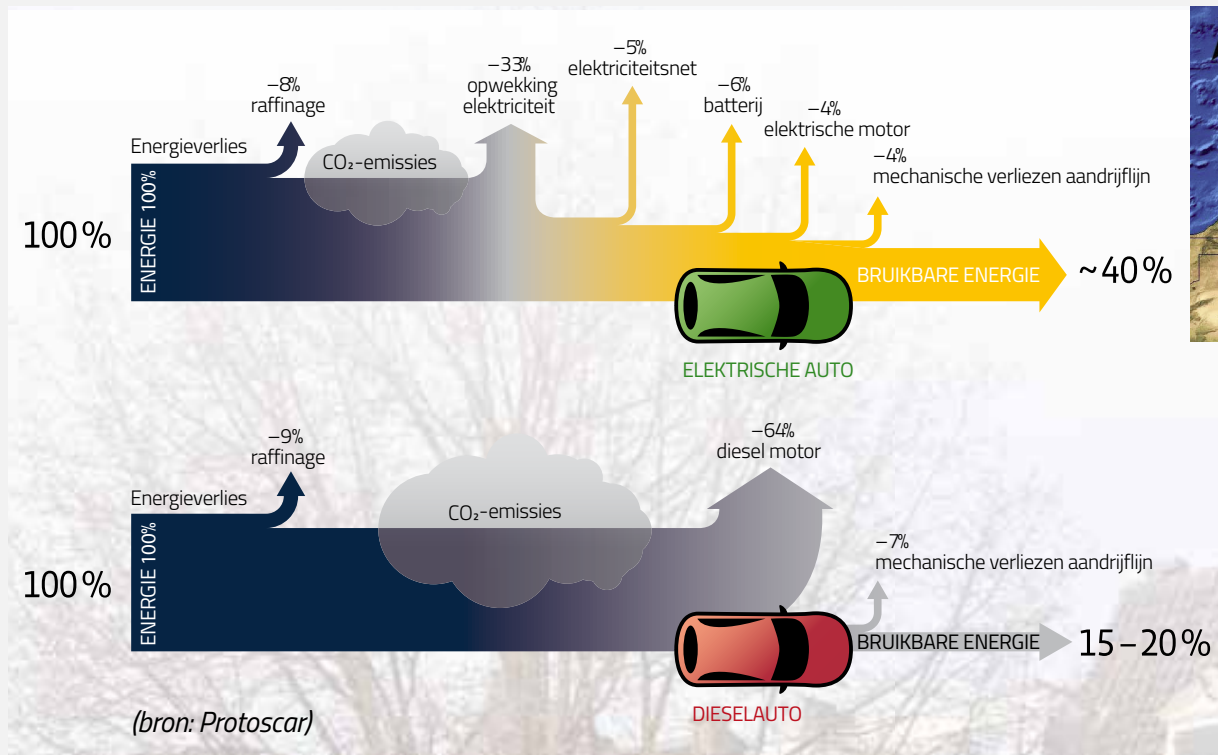
Influence of the electricity mix on single (eco) score Recipe



Mission question: Do we have to spill energy or deplete resources?



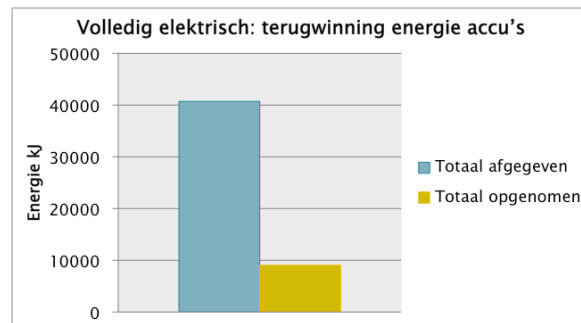
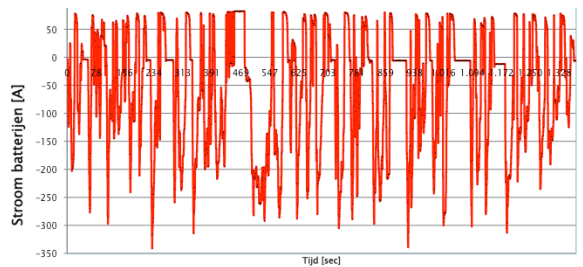
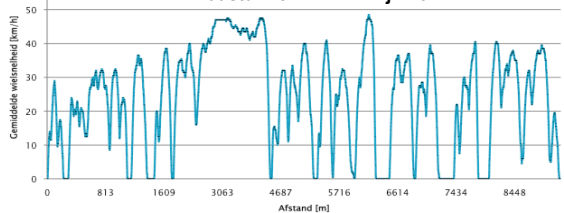
Already today EV's are 2 to 3 three times less energy consuming from Well to Wheel



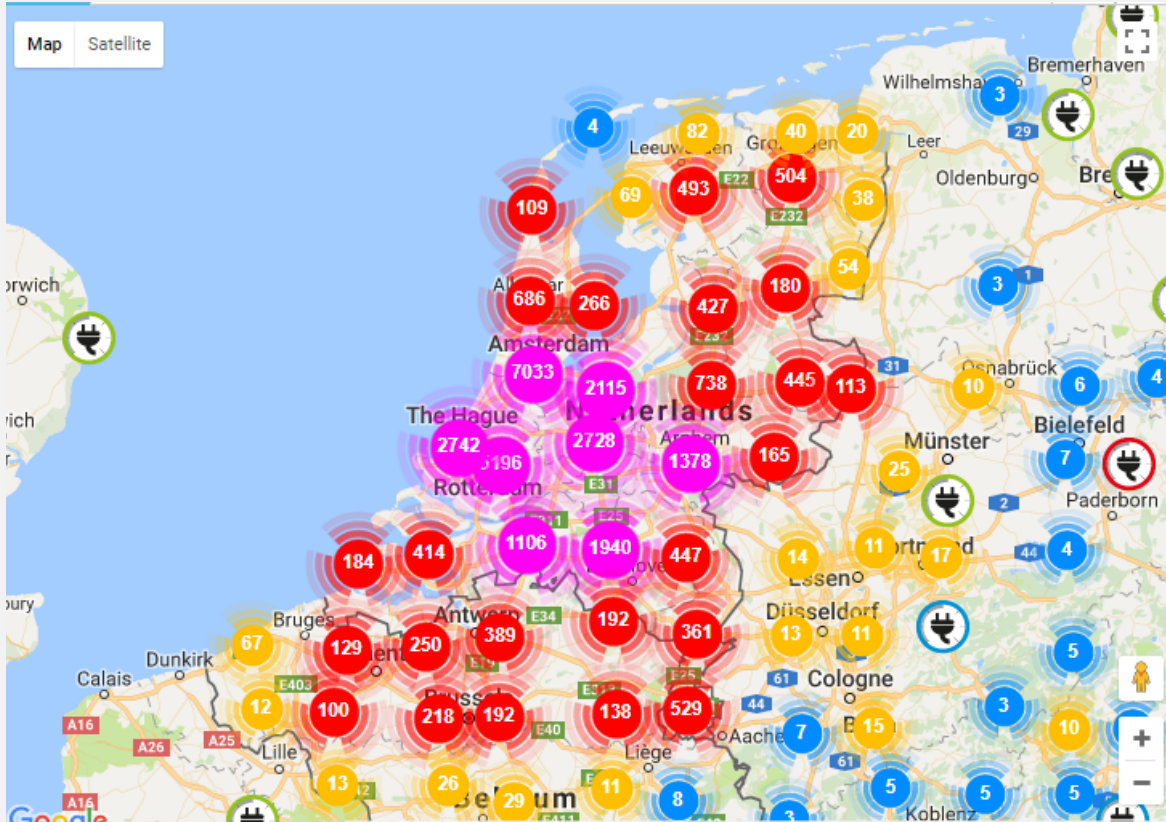
Recuperation of brake energy saves energy and cost in urban areas



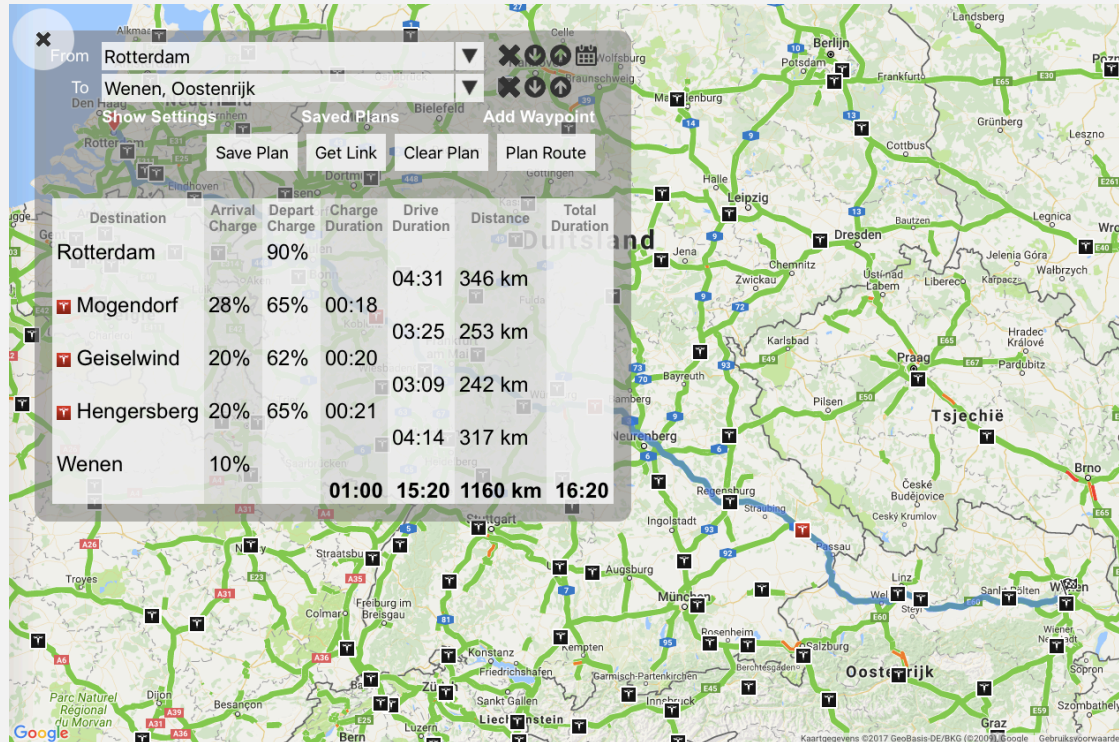
Maastunnel RET Lijn 46



Access to clean renewable energy



e-Corridor for traffic Rotterdam - Vienna



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Thank you!