10º Congreso Nacional del Medio Ambiente (Conama 10)

El vehículo eléctrico, una oportunidad para la movilidad sostenible

Una visión internacional de la movilidad eléctrica

Robert Stüssi
APVE – AVERE - WEVA

CONAMA10
CONGRESO NACIONAL
DEL MEDIO AMBIENTE

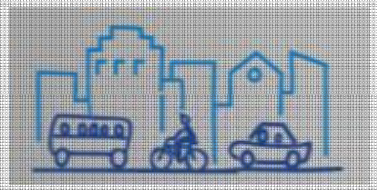
Martes 23 de noviembre de 2010

Robert Stüssi

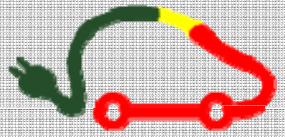
Mobility Consultant

CIVITAS MODERN

Coimbra



Presidente APVE



Presidente AVERE

AVERE

Vice Presidente WEVA

weva

AVERE

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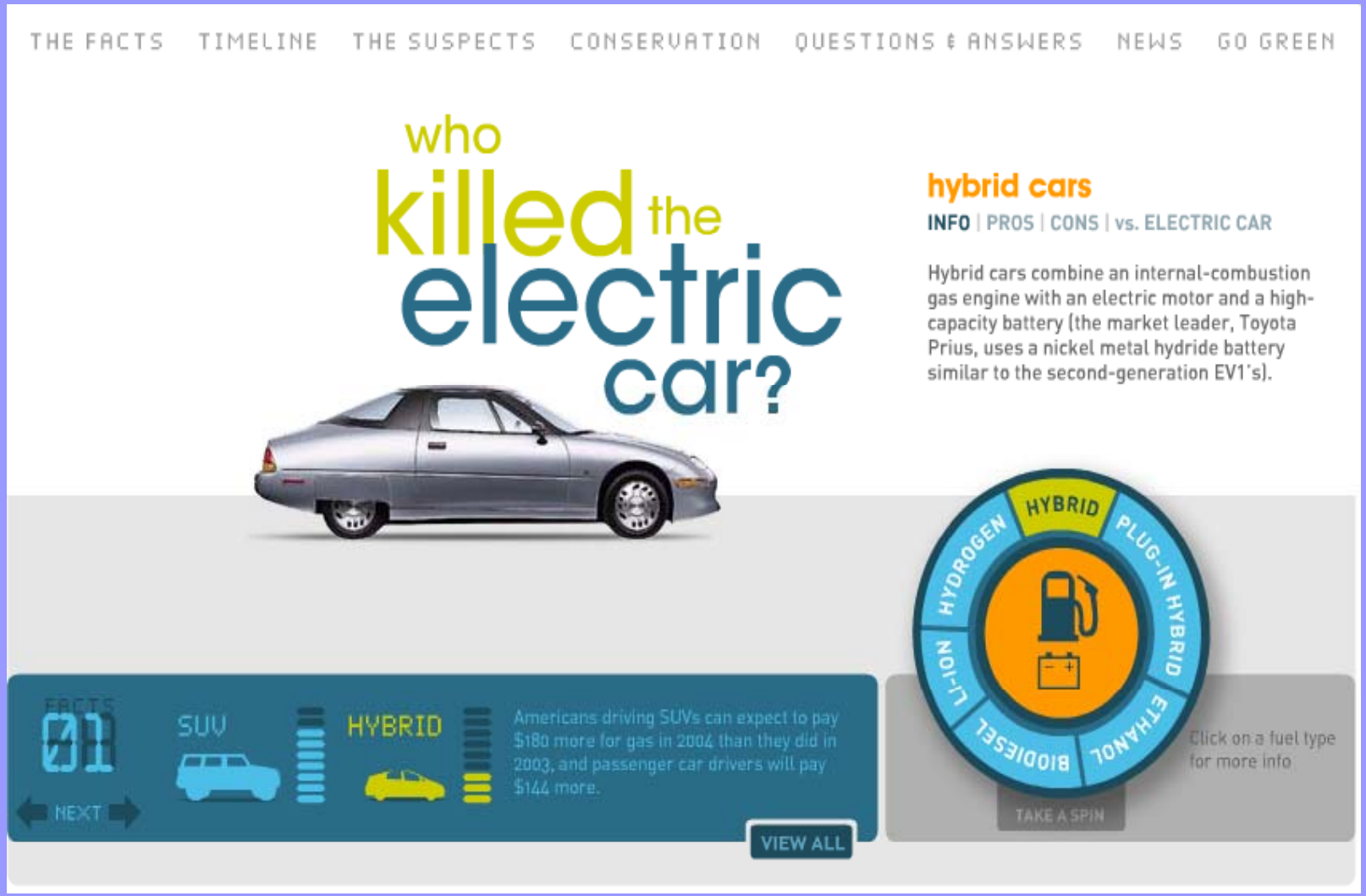
CONGRESO NACIONAL DEL MEDIO AMBIENTE



http://www.sonyclassics.com/whokilledtheelectriccar

infraestructura

vehículo

“movilidad E”

“movilidad (E)”

Movilidad sostenible

Fuente de energía

Tecnología del vehiculo

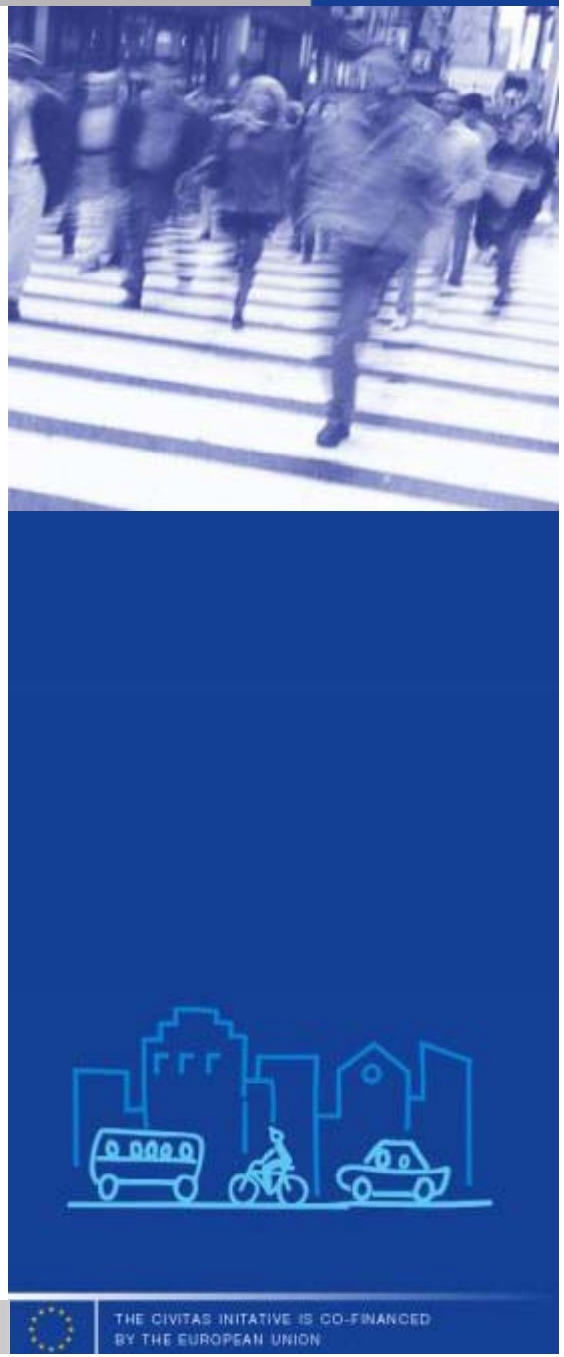
Accesibilidad y Movilidad

CIVITAS

City

Vitality

Sustainability

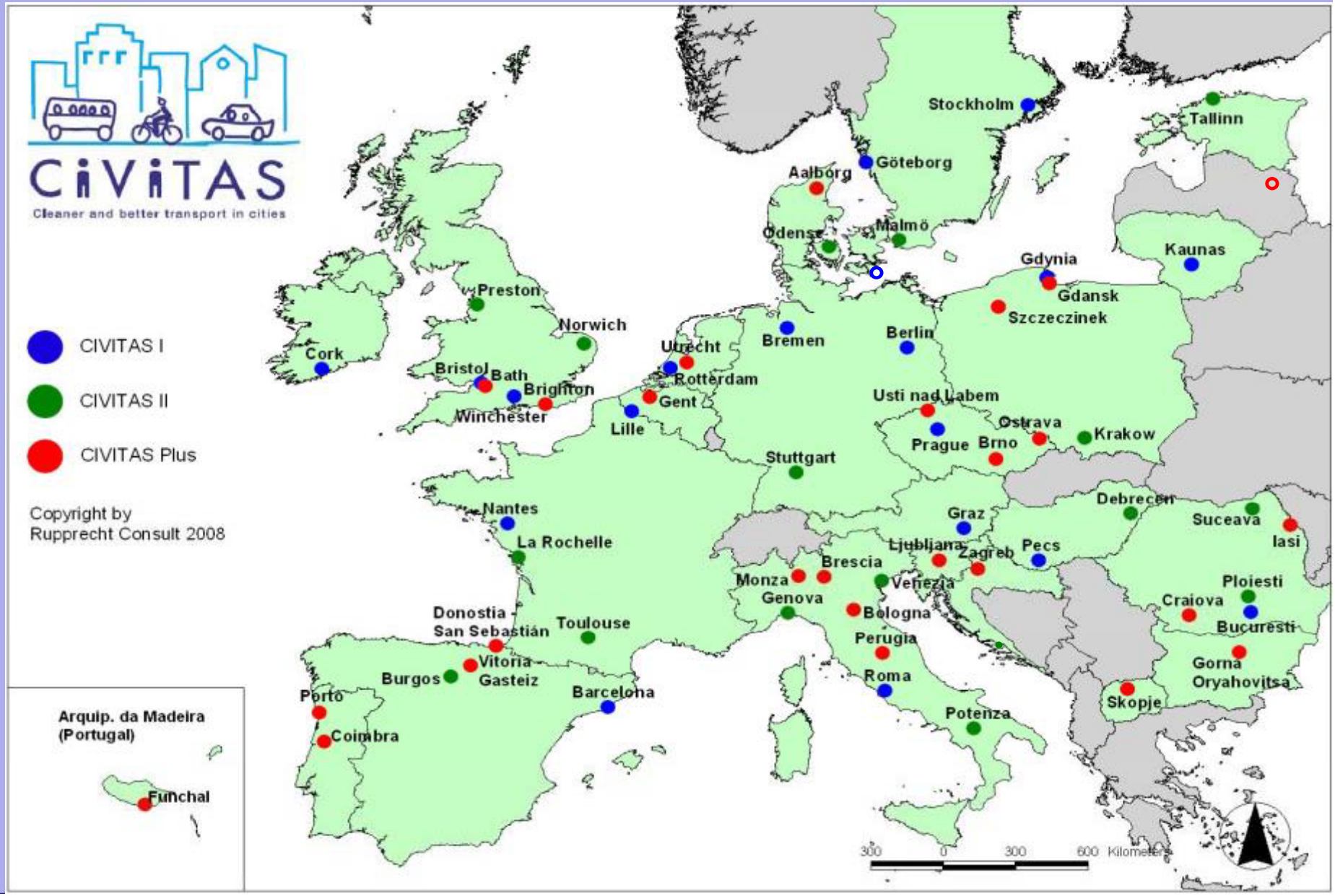


TOWARDS A NEW MOBILITY CULTURE FOR URBAN MOBILITY

CiVITAS

1. Free-flowing towns and cities
2. Greener towns and cities
3. Smarter urban transport
4. Accessible transport
5. Safe and secure urban transport

THE CIVITAS INITATIVE IS CO-FINANCED
BY THE EUROPEAN UNION


CiViTAS
Cleaner and better transport in cities
CIVITAS I
CIVITAS II
CIVITAS Plus
Copyright by
Rupprecht Consult 2008
Stockholm
Tallinn
Göteborg
Aalborg
Odense
Malmö
Gdynia
Kaunas
Gdansk
Szczeczinek
Preston
Norwich
Cork
Bremen
Berlin
Utrecht
Rotterdam
Bristol
Bath
Brighton
Winchester
Gent
Lille
Usti nad Labem
Ostrava
Prague
Brno
Krakow
Stuttgart
Nantes
La Rochelle
Graz
Debrecen
Suceava
Iasi
Ljubljana
Zagreb
Pecs
Brescia
Monza
Venezia
Genova
Bologna
Ploiesti
Craiova
Bucuresti
Donostia - San Sebastián
Toulouse
Perugia
Vitoria Gasteiz
Burgos
Roma
Gorna Oryahovitsa
Porto
Barcelona
Skopje
Potenza
Coimbra
Arquip. da Madeira (Portugal)
Funchal
300 0 300 600 Kilometers


The city
of Funchal
is pleased
to welcome
CiViTAS
FORUM
2011
CiViTAS
MIMOSA
THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

El pico de Hubbard's

el pico de Hubbard

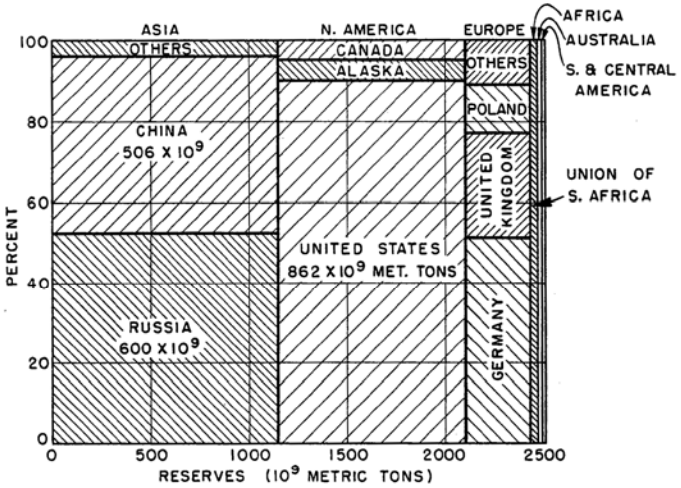


Figure 14 – World recoverable coal reserves assuming 50-percent loss in mining (U.S. Geol. Surv.).

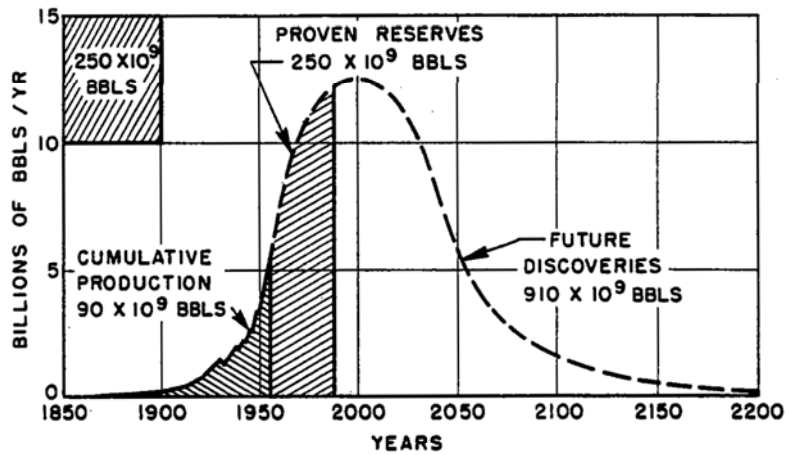


Figure 20 – Ultimate world crude-oil production based upon initial reserves of 1250 billion barrels.

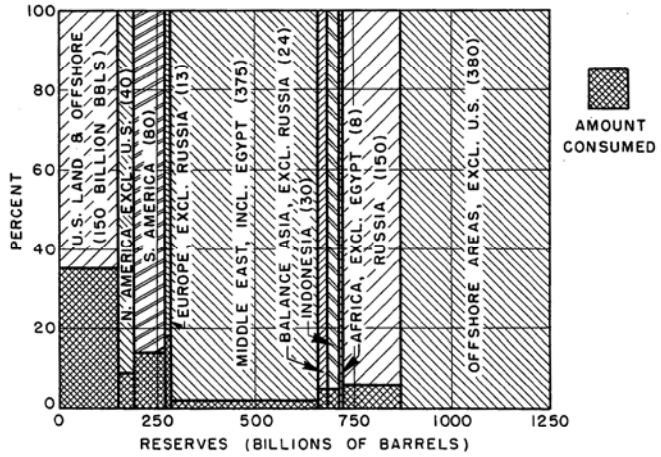
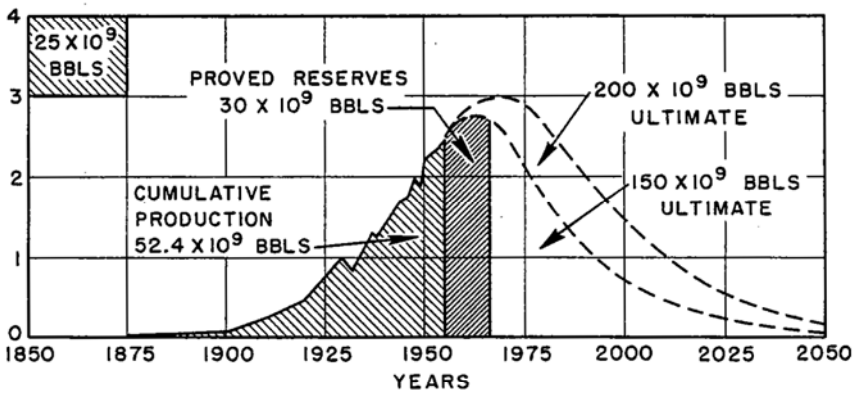
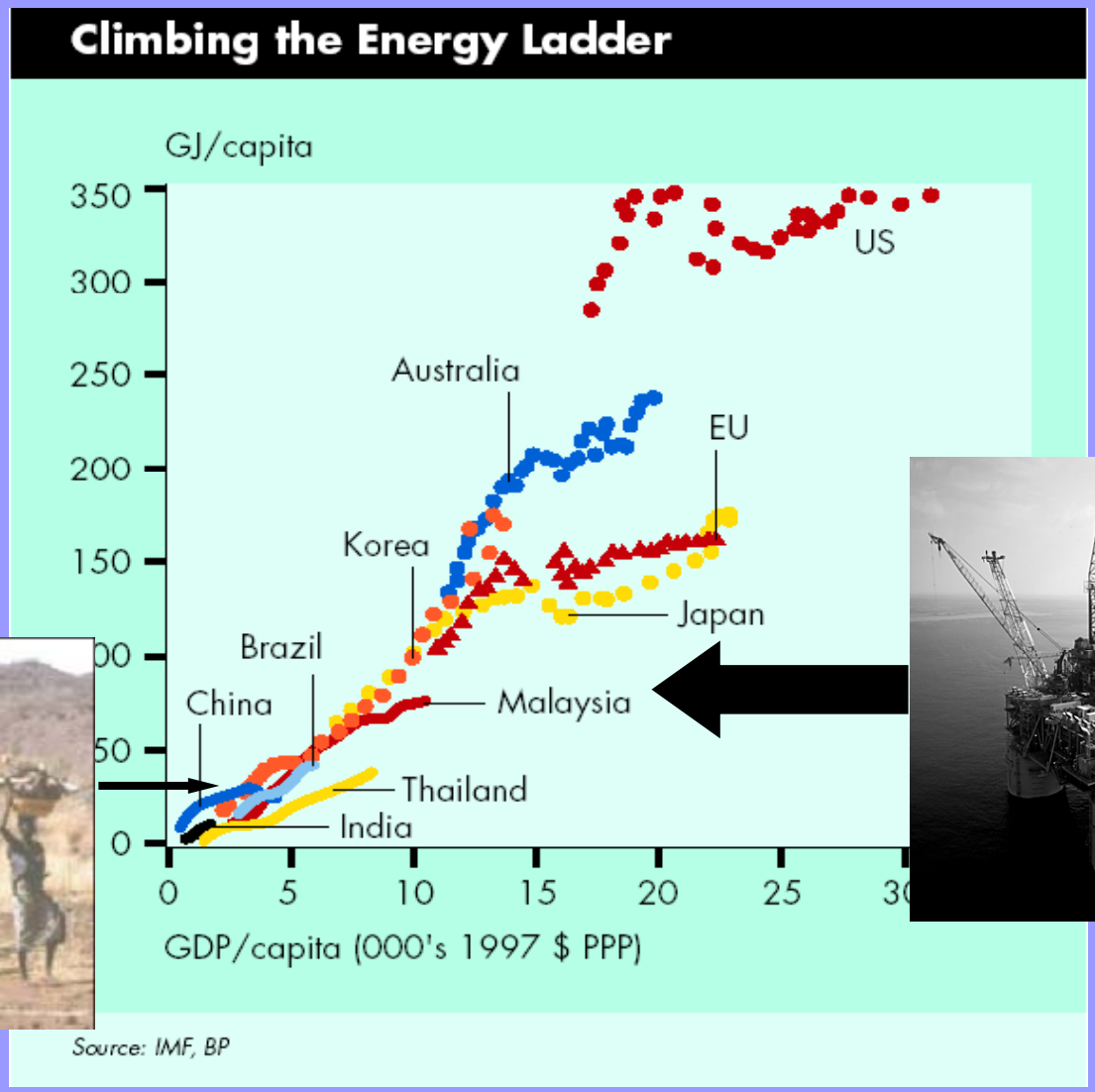


Figure 15 – Estimated world crude-oil reserves initially present which are producible by present methods (modified after L. G. Weeks).



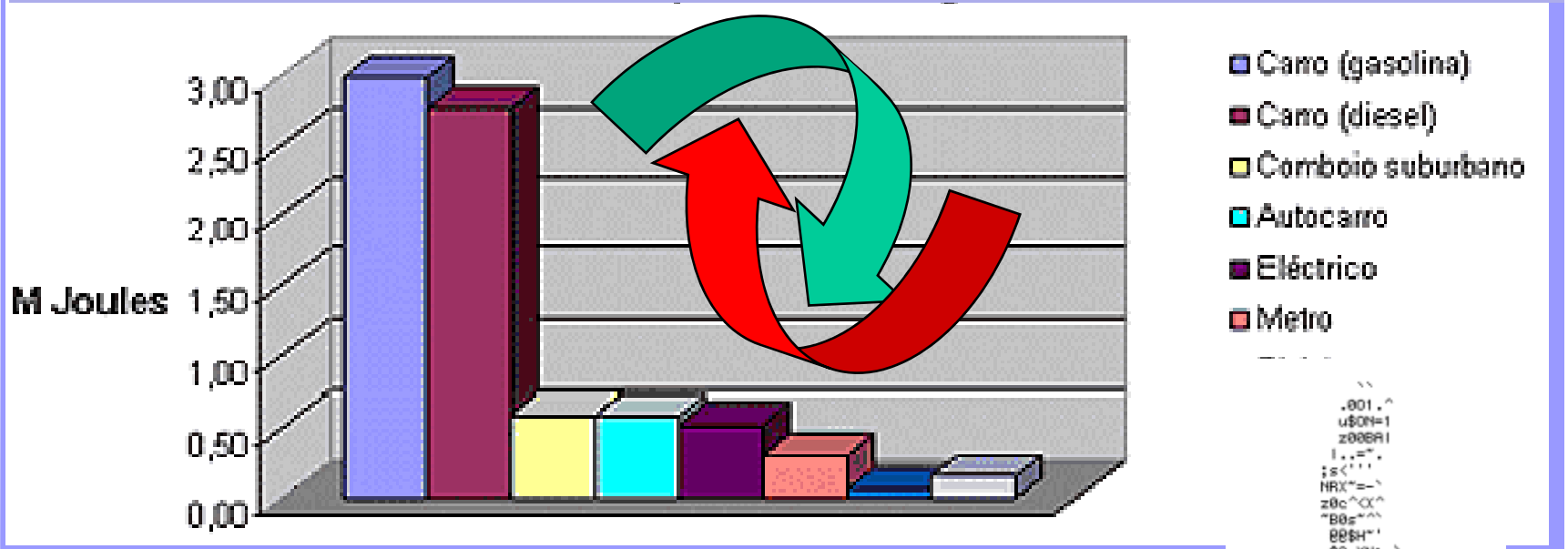
gure 21 – Ultimate United States crude-oil production based assumed initial reserves of 150 and 200 billion barrels.

espiral energética



consumo de energía

Energía necesario para transportar 1 pasajero por 1 km



Dutch Provos

Yaoundé Cameron (R. Stussi)

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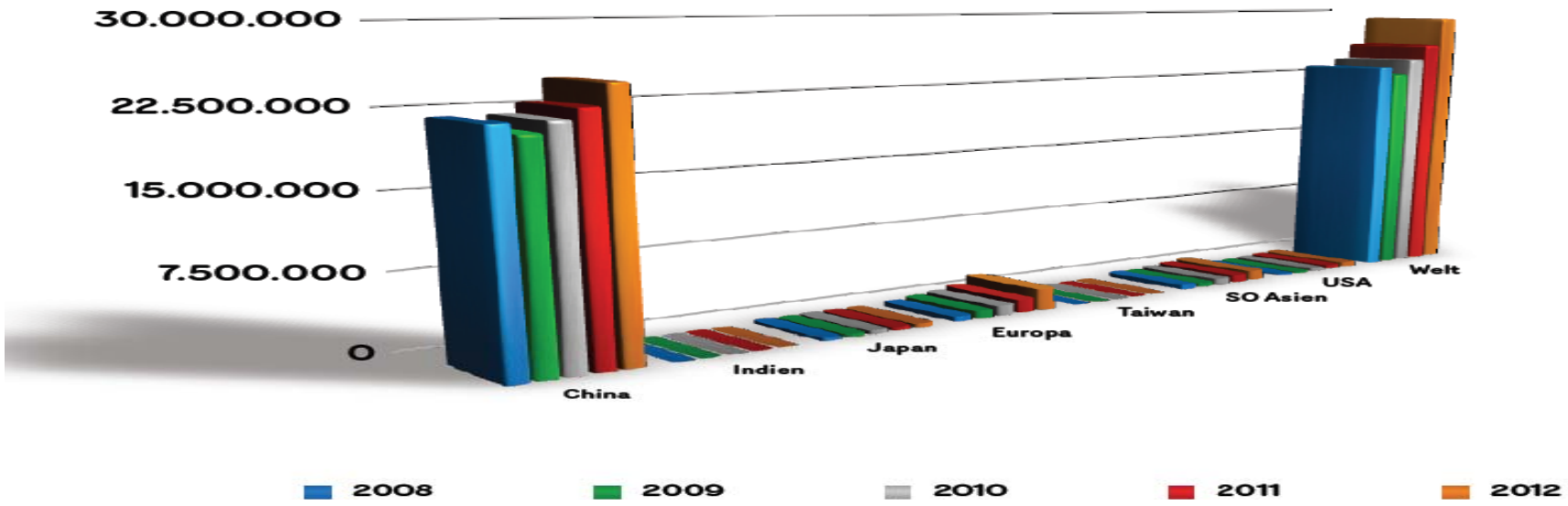
DEL MEDIO AMBIENTE

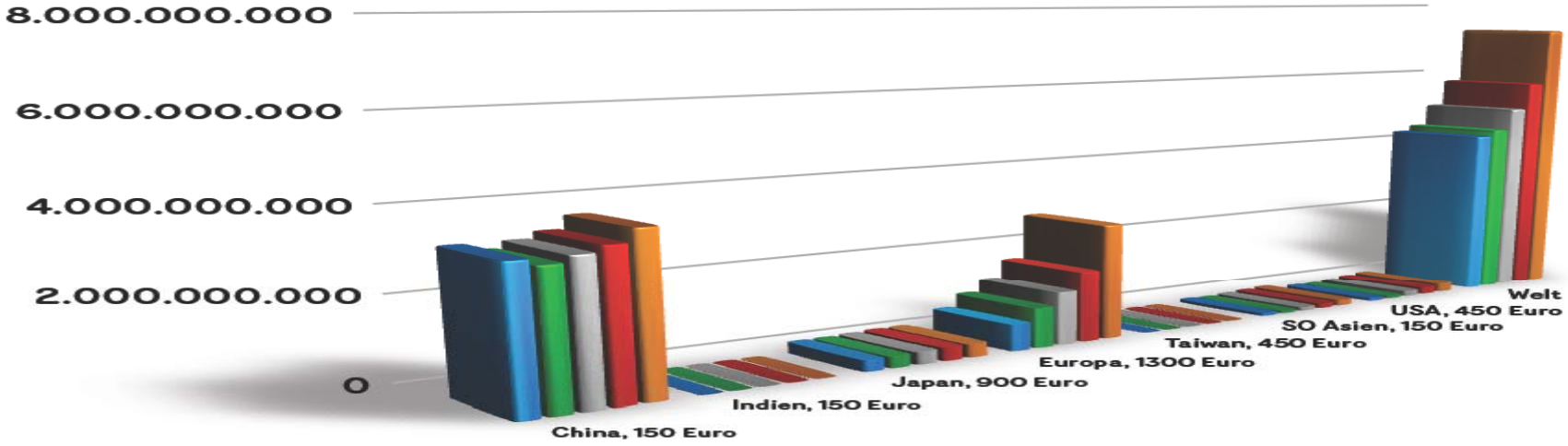
ExtraEnergy.org

Estimaciones de ventas. Mercado mundial bicis electricas



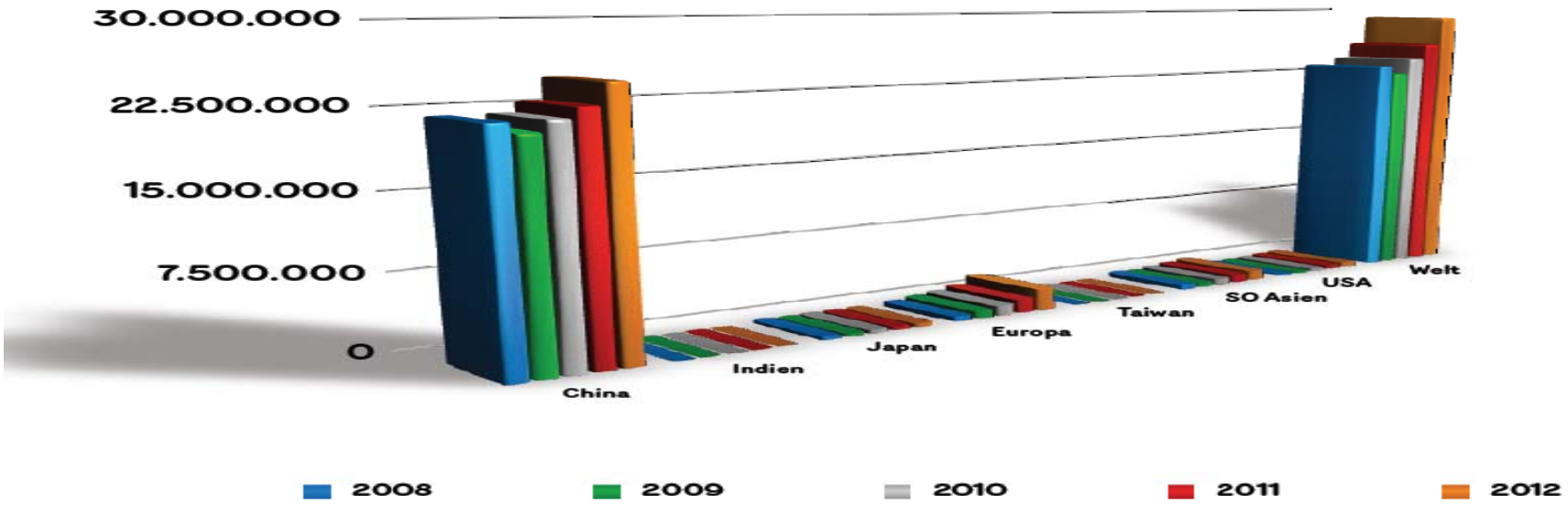
ExtraEnergy.org

Benefcios brutos Mercado mundial bicis electricas

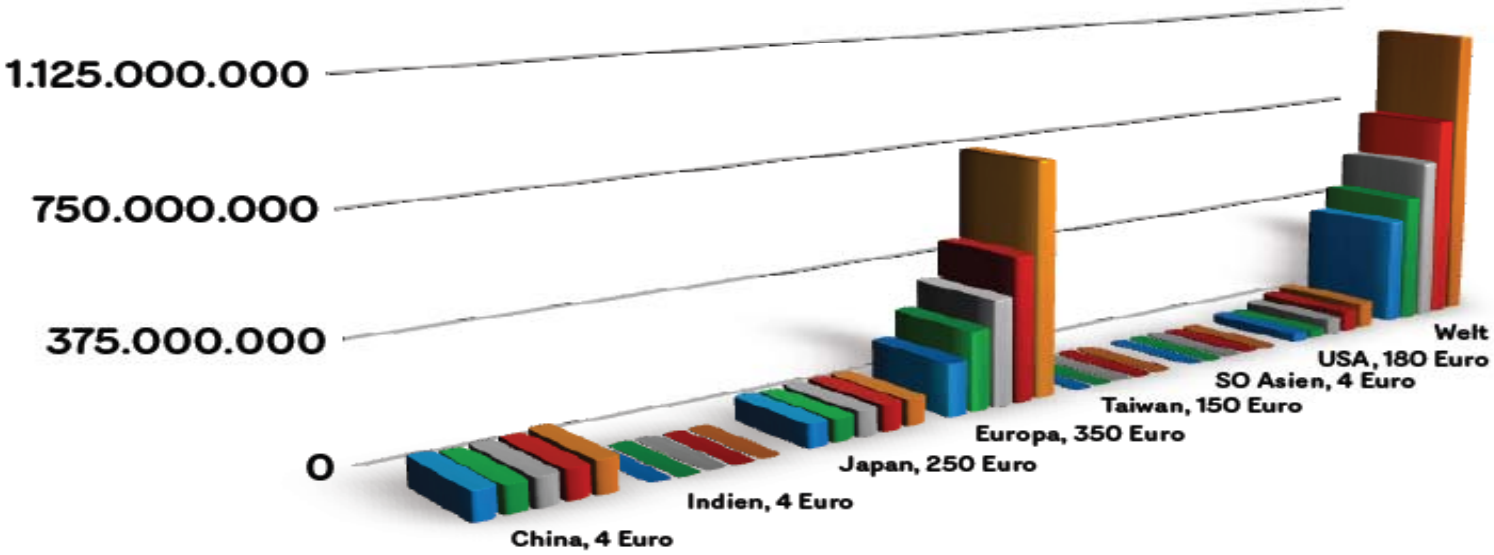


ExtraEnergy.org

Estimaciones de ventas. Mercado mundial bicis electricas



Beneficio (€)



¿QUÉ TECNOLOGÍAS / MODOS DE TRANSPORTE ?


BUS DE MER · VIEUX PORT · LES MINIMES
Panneaux solaires
Charge à induction
Jacques Saint-Marc
Le PASSEUR
LA ROCHELLE

EVASION


MoVeaveiro
663-AL "TÁXI"
TAXIS

CiViTAS
Cleaner and better transport in cities

CiViTAS
Cleaner and better transport in cities
MIMOSA

THE CIVITAS INITIATIVE
IS CO-FINANCED BY THE
EUROPEAN UNION

Beer Boat, Cargohopper:
Innovative inner city distribution in Utrecht.

CIVITAS Forum

27-29 September 2010

Malmö (Sweden)

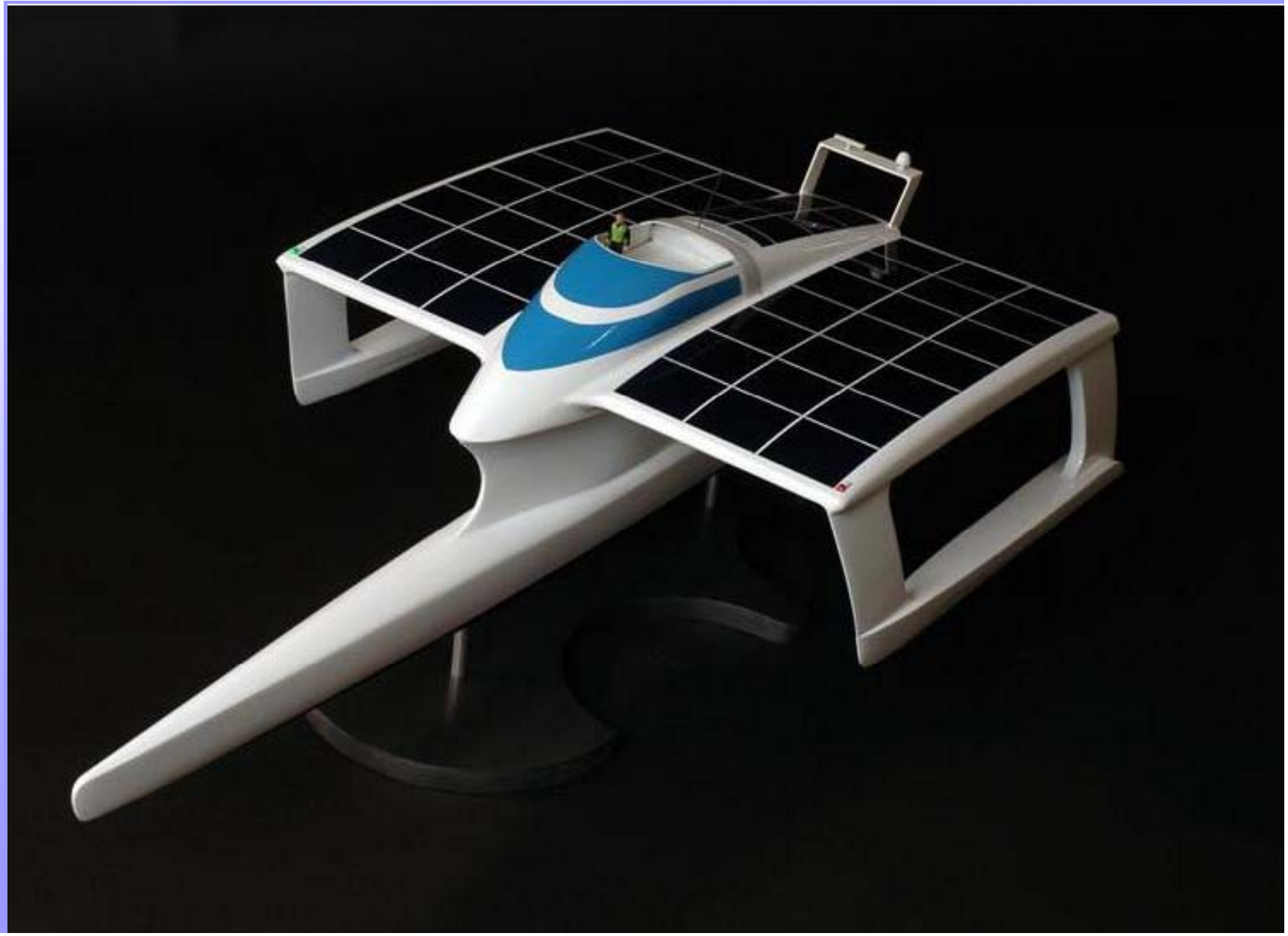
Mark Degenkamp, City of Utrecht (The Netherlands)

CARBIKE GmbH - Edgar Löhr

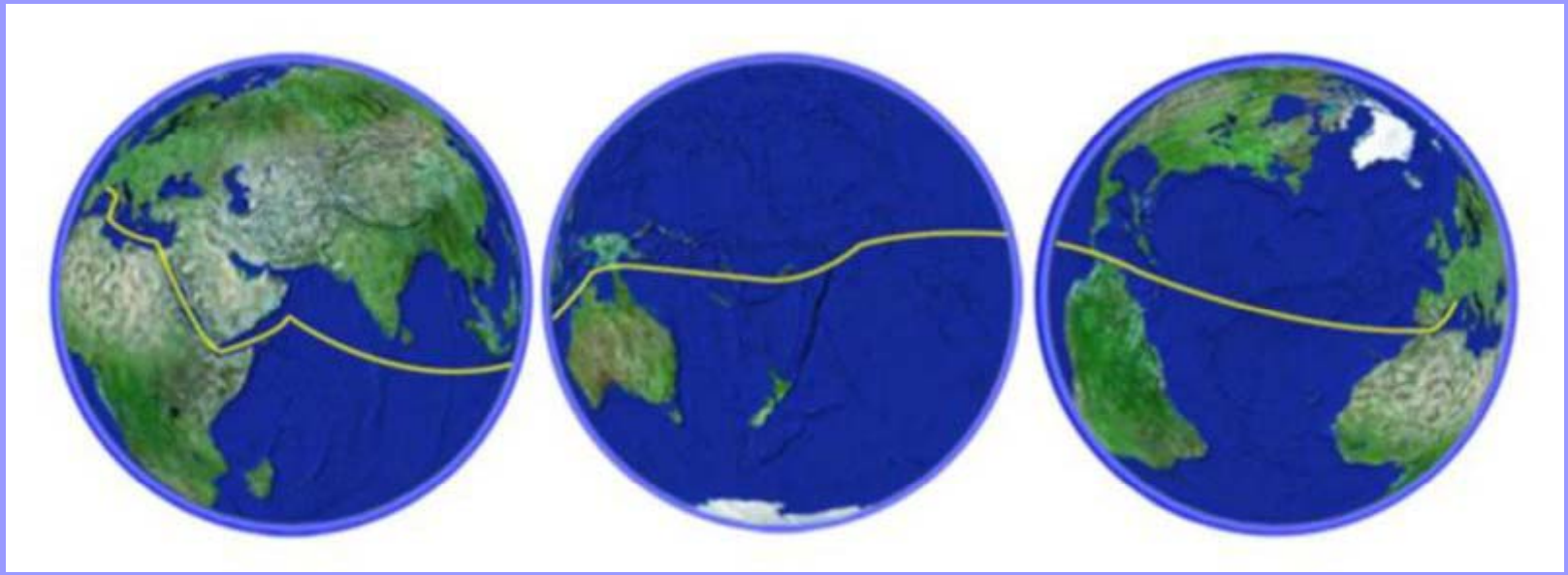

SUBARU

Visión para el Futuro

Visión para el Futuro

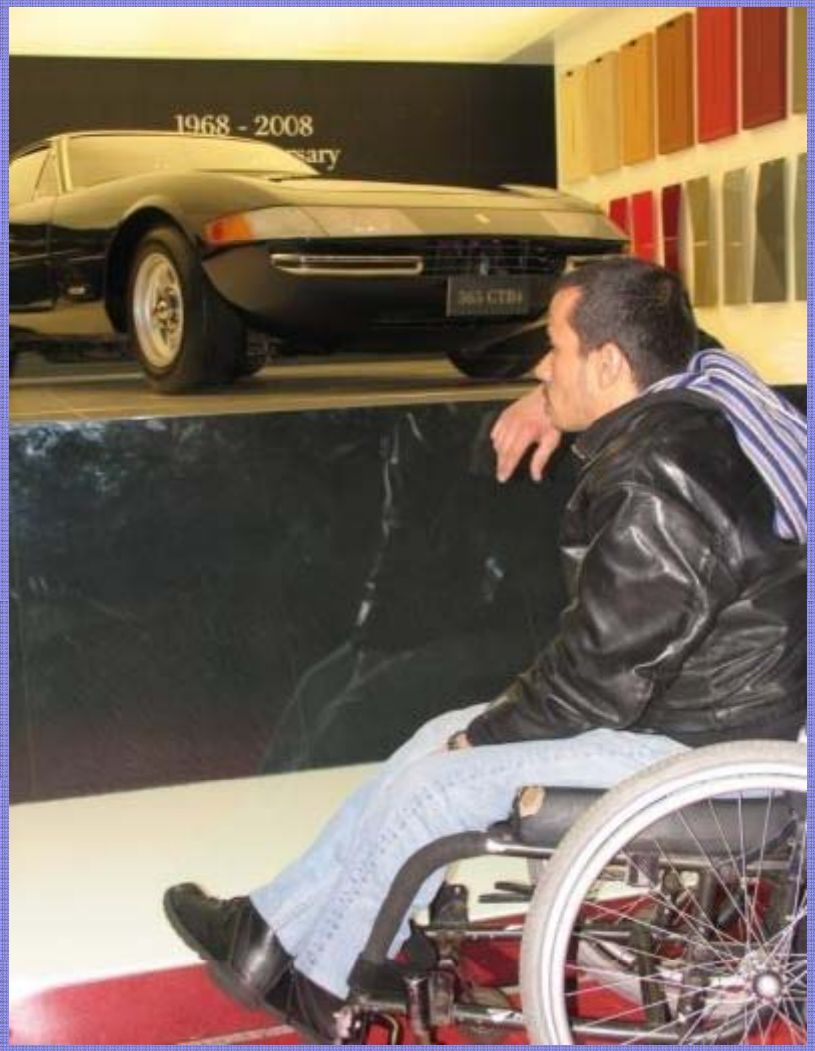


Visión para el Futuro

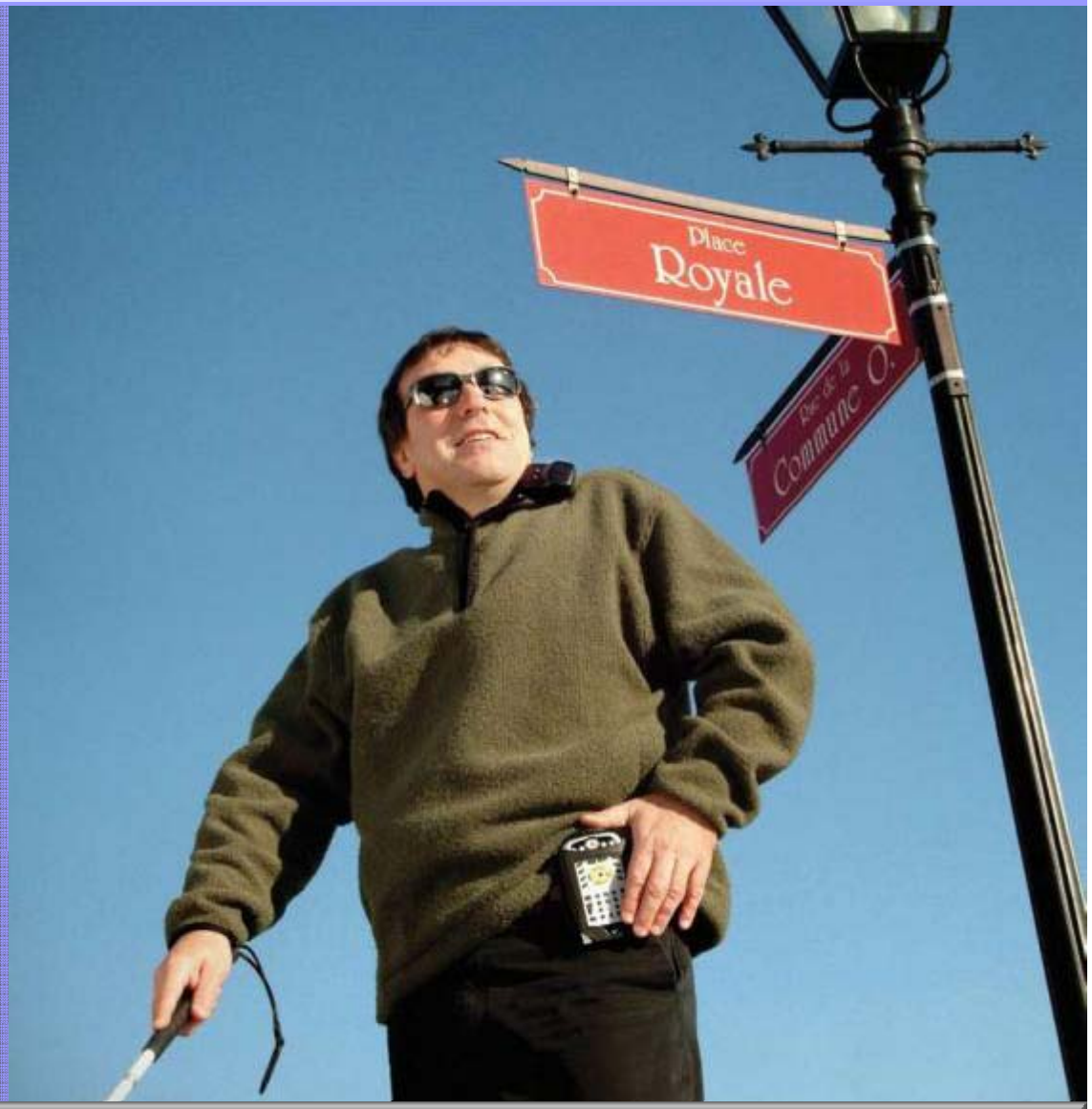


Visión para el Futuro

Visión para el Futuro

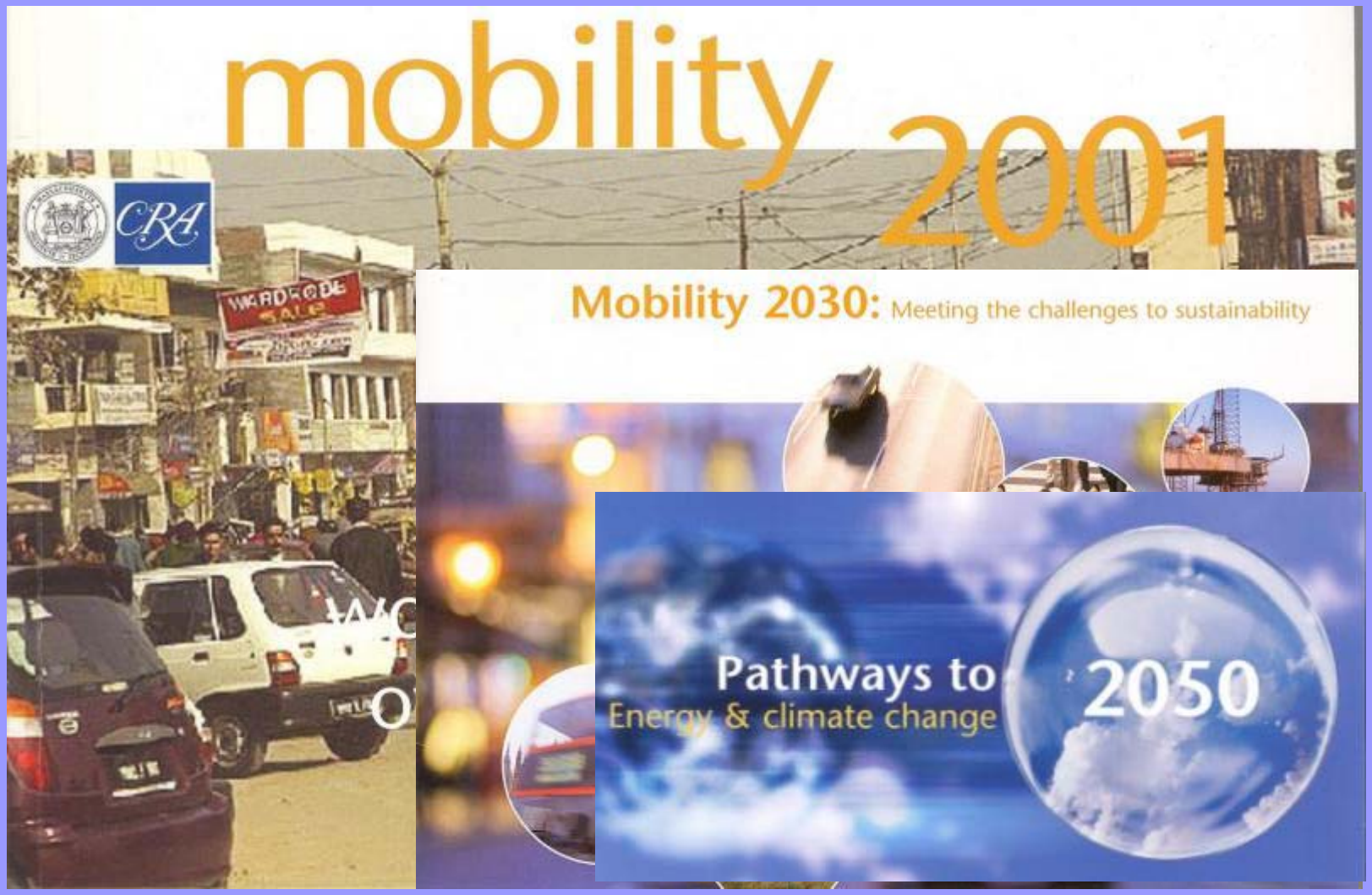


Visión para el Futuro



¿ EL FUTURO ?

Concejo Empresarial Mundial para el Desarrollo Sostenido

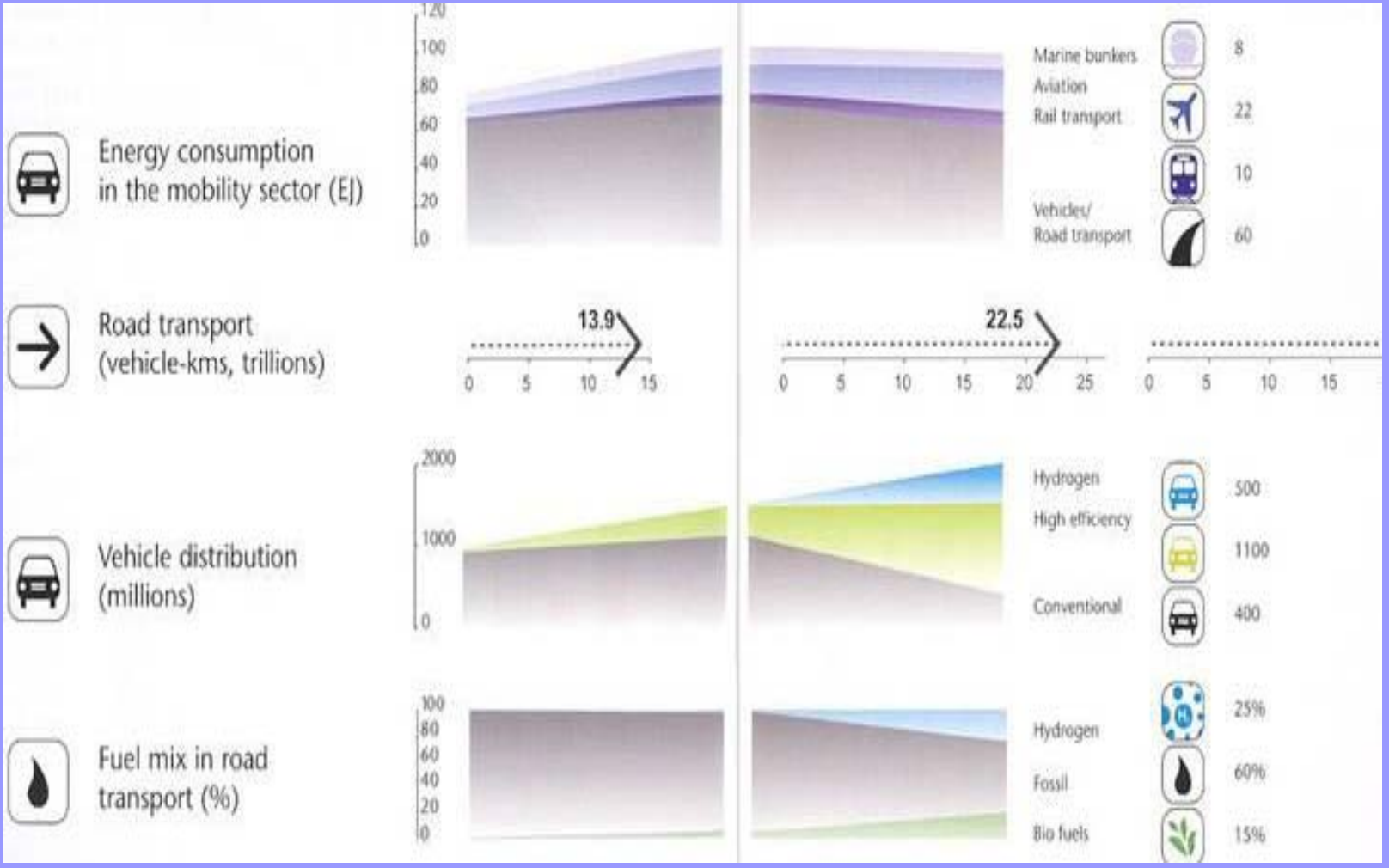


Protagonistas + “Stakeholders”

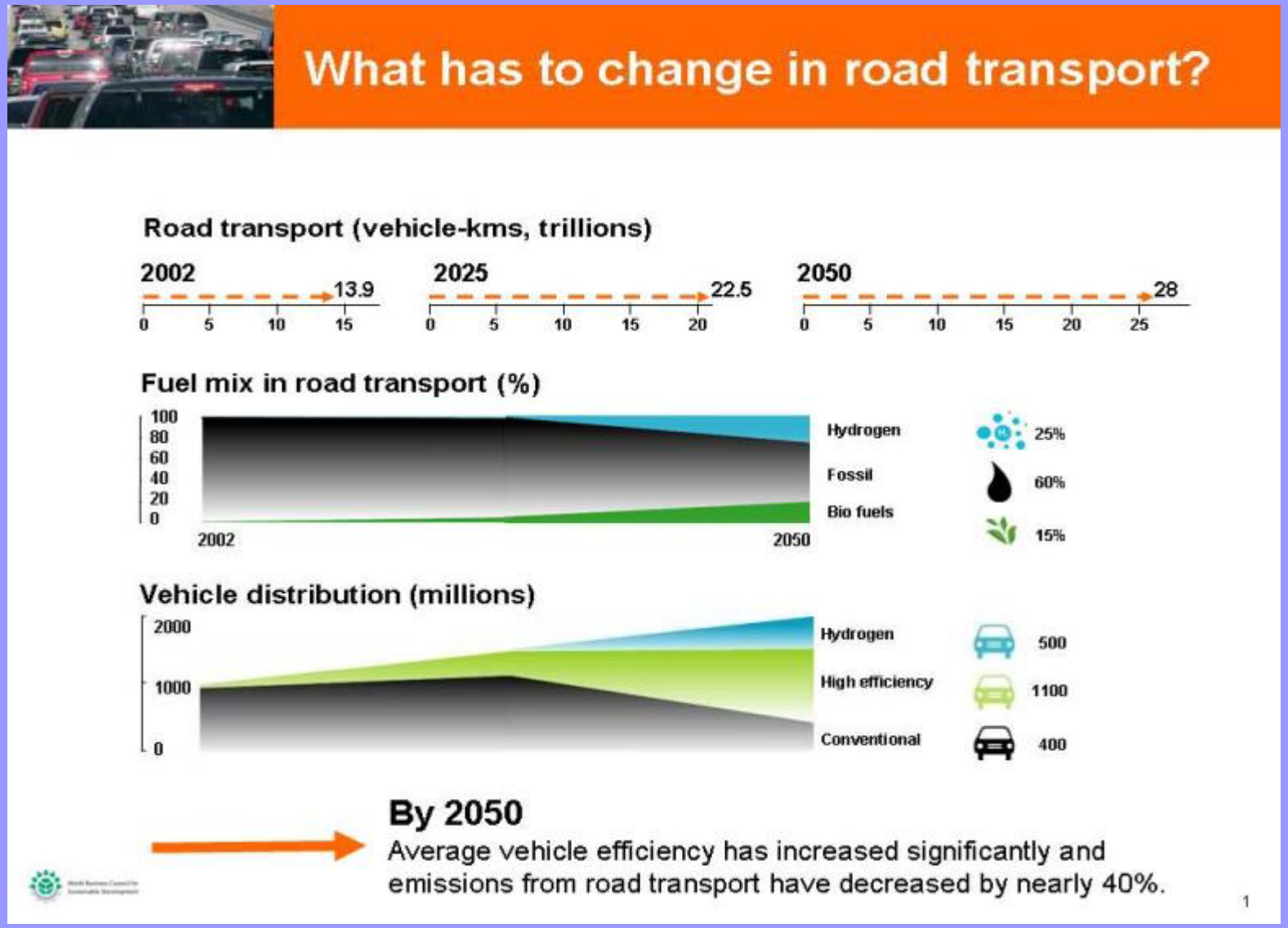
ONGs privadas e internacionales (Universidades) (Gobiernos) (Ciudades)

legitimidad

Método de previsión



Objetivos de la previsión



Consumo actual y previsione

2000 2005 2010 2015 2020 2025 2030 2035 2040 2045

Drives two cars	
SUV (15,000 miles)	1.42
Sedan (10,000 miles)	0.78
Air travel	
~15 short-haul	0.73
~8 long-haul	2.38
Drives one car	
Hybrid (5,000 miles)	0.23
Air travel	
~8 short-haul	0.32

Mercado ?

ELECTRIC VEHICLES WILL PLAY A RELEVANT ROLE IN THE FUTURE – MOST AUTO-MAKERS AND ANALYSTS BELIEVE IN 10-20% MARKET PENETRATION BY 2020

European Electric vehicles[1] market penetration in 2020, [% on total sales]

	Automakers	Analysts/Others
>25%		BAIN & COMPANY – Mid case
15 – 20%	Ford – Mid case	Deutsche Bank
10 – 15%		Roland Berger Strategy Consultants – Mid case; ALPIQ; iea; FROST & SULLIVAN
5 – 10%	RENAULT NISSAN[2]	BCG – Mid case; CREDIT SUISSE – Mid case
0 – 5%	VW	

Czech Republic, 14.8% (EV 4.5%; PHEV 10.4%) , Roland Berger project forecast

1) Both Electric vehicles (EVs) and Plug-in-Hybrid Electric Vehicles (PHEVs)
2) Only EVs

Selected quotes

RENAULT NISSAN — "By 2020 EV's will account for 10% of total car sales… this is a thorough analysis based on facts about what is going on in the world today"
Carlos Ghosn, CEO Renault – Nissan, October 2009

Ford — "In 10 -12 years you are going to see a major portion of portfolio move to EV's"
Alan Mulally, CEO Ford, March 2009

GM — "The electrification of the automobile is inevitable"
Bob Lutz, Vice Chairman General Motors, January 2008

MAGNA — "In 12 years we see 30 percent of all cars being electric"
Frank Stronach, CEO Magna, June 2009

FUTUR/E/MOTION
ENERGIE ZÍTŘKA

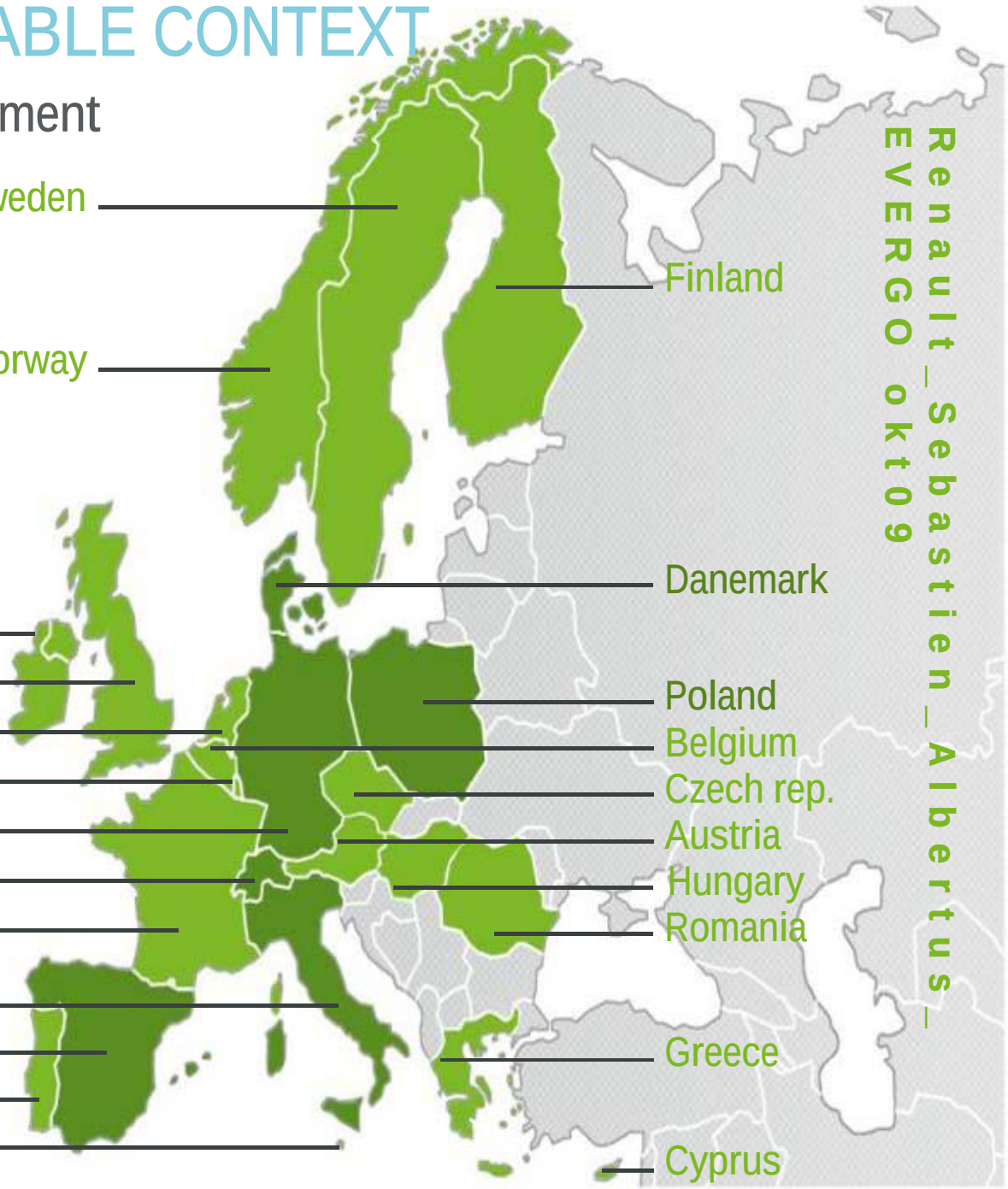
Source: Press releases; CEZ; Roland Berger

A DURABLY FAVOURABLE CONTEXT

Powerful institutional involvement

CO_2/EV fiscal incentives

- Already introduced
- Under discussion



Categoría (Según Directivas 2002/24/CE y 70/156/CEE, anexo II)	Superior (20% del Precio del Vehículo)	Inferior (15% del Precio del Vehículo)
Motocicletas (L3e)	1.200 €	750 €
Cuadriciclos (L7e)	3.500 €	2.000 €
Turismo/Comercial (M1 y N1)	7.000 €	5.000 €
Microbuses y Furgones (M2 y N2 < 6.500 kg)	20.000 €	15.000 €
Híbridos enchufables (M1 y N1)	7.000 €	5.000 €

Country	National incentives offered a selected number of European Countries
Portugal	€5,000 (€6,500) cash back, corporate tax reduction (consideration of 150% of EV cost).
Norway	No car registration tax (approx €7,500 on a b-class car), no VAT (25% of retail price), no annual car tax (€345).
Denmark	No car registration tax (approx €7,500 on a b-class car), no annual car tax.
Sweden	€2,500 cash back.
Ireland	50% reduction in registration tax, which equates to 22.5-30% of price.
Spain	€6,000 cash back or 22% of retail price.
France	€5,000 cash back or 20% of retail price.
Italy	€5,000 cash back for combustion engine trade-ins.
Belgium	€4,000 EV income tax reduction at point of purchase.
Greece	No car registration or road tax.

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MOBI.E MOBILIDADE ELÉCTRICA

MOBI.E

PORTUGUESE ELECTRIC MOBILITY PROGRAM

AVERE

MOBI.E
MOBILIDADE ELÉCTRICA

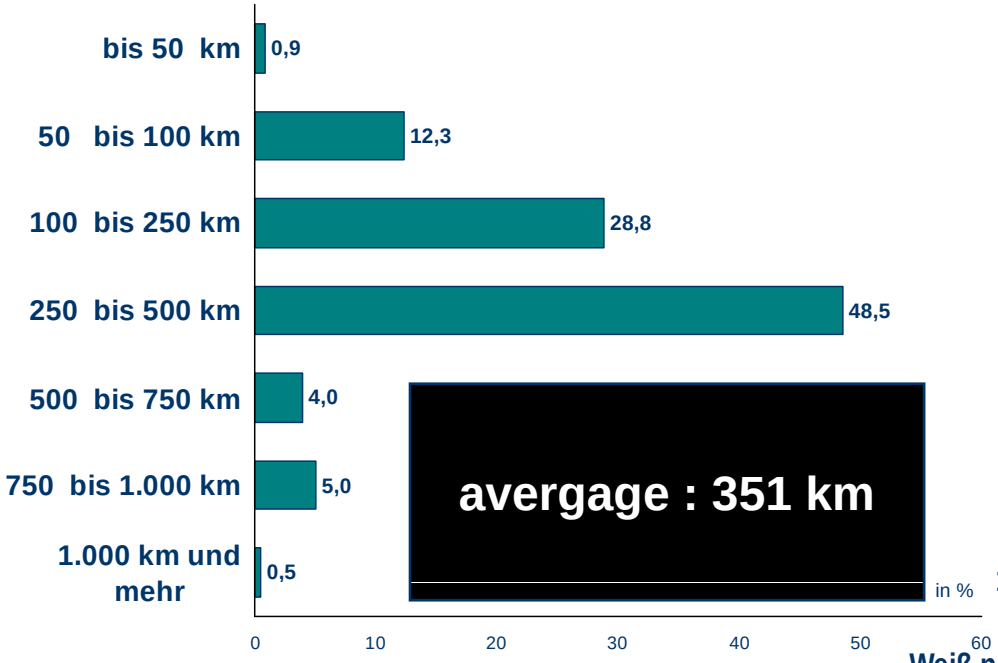
25 city consortium

top to bottom, bottom up ?

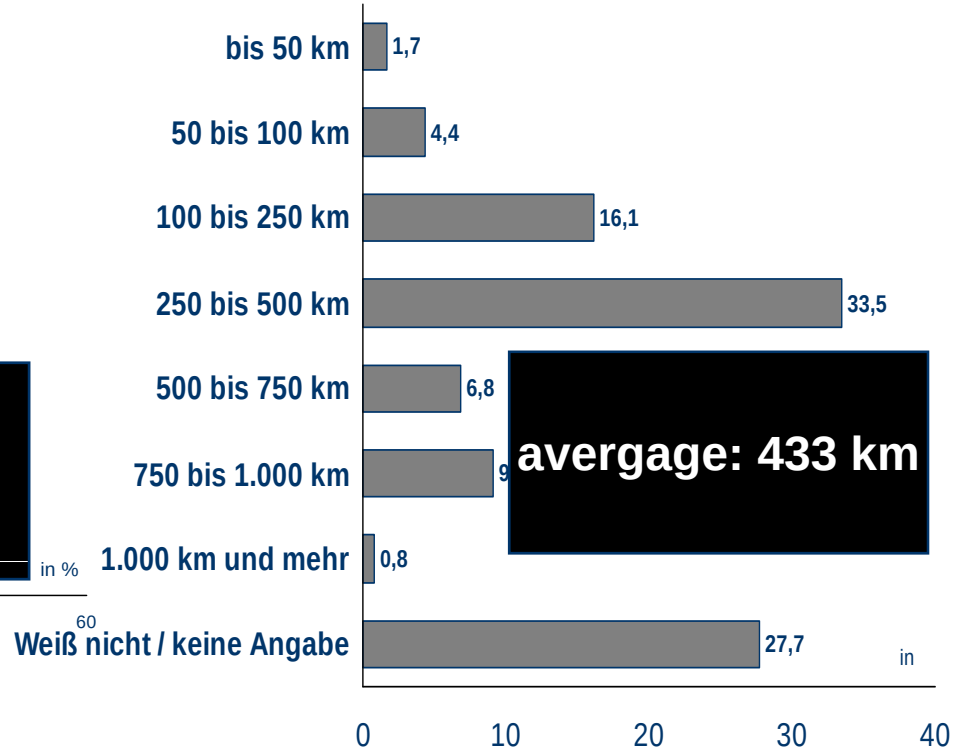
(sideways!)

opinión del consumidor: autonomía

what autonomy you expect from an EV?

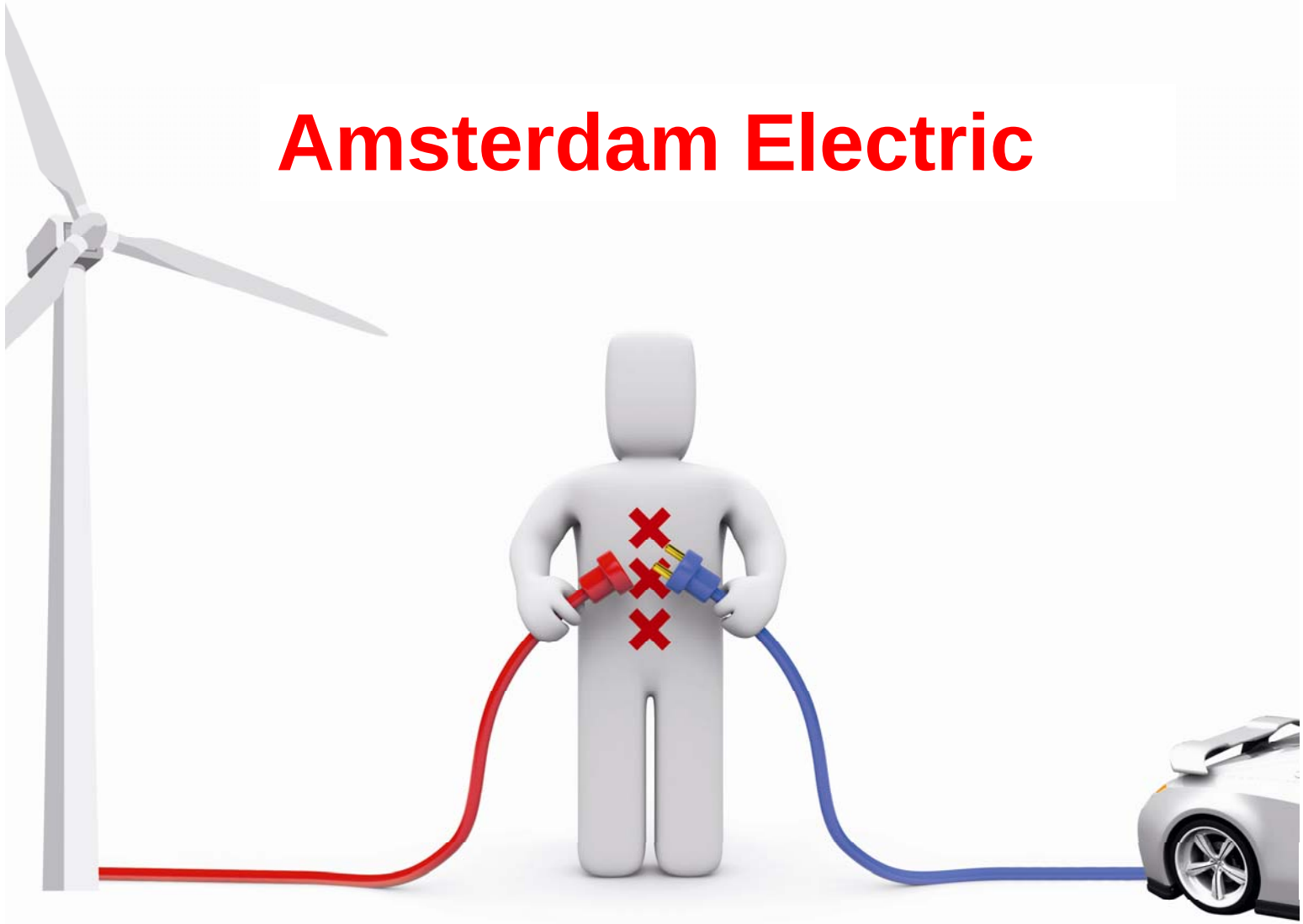


what autonomy you wish for an EV?



Quelle: Puls

Amsterdam Electric



EVS 25

Sustainable Mobility Revolution

November 5-9, 2010 Shenzhen, China

EVS 25 – E Visionary Award

DEMARCHE DE COORDINATION DE LA DEMANDE DE VEHICULES ELECTRIQUES

Christelle Chabredier Groupe La Poste
Direction développement durable

7 mai 2010

Öffentliche Ladesäulen und Batterietauschkonzepte sind wirtschaftlich relativ unattraktiv

Wirtschaftlichkeit von verschiedenen Ladeinfrastrukturkonzepten ABSCHÄTZUNG

Ladeinfrastruktur	Ladeleistung	Abrechnung	Kosten pro Ladeeinheit (in €, ohne Wiederbeschaffung)	Infrastruktur-kosten pro Fahrzeug (in €)	Auf Strom umgelegte Kosten in c€/kWh)
Privater Anschluss	3,7 kW	Nein	200 - 300	200 - 300	1.0
	11 kW or 22 kW		600 – 750	600 - 750	3,0 – 3,8
		Ja	1.050 – 1.250	1.050 – 1.250	5,3 – 6,4
Halböffentlicher Anschluss	11 kW or 22 kW	Nein	1.450 – 2.250	483 - 750	3,3 – 5,1
		Ja	1.950 – 3.250	650 – 1.083	4,4 – 7,3
Öffentliche Ladesäule	11 kW or 22 kW	Ja	4.050 – 10.450	450 – 1.161	4,2 – 10,8
	63 kW		7.850 – 17.000	654 – 1.417	6,1 – 13,2
Batterietausch-konzept		Ja	~750.000 + 1.450.000 (Batterien)	~800€	~8.0

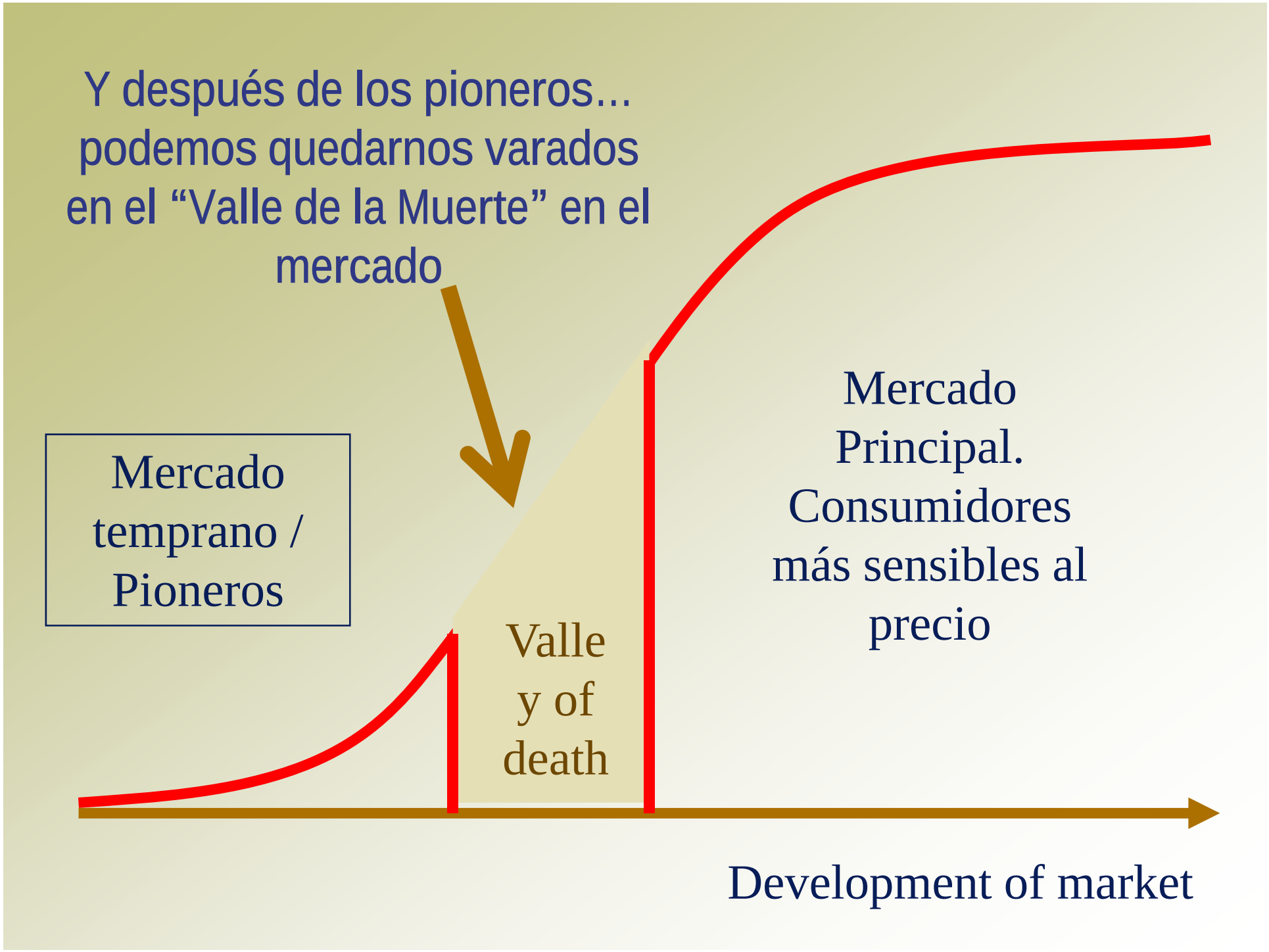
Fraunhofer ISI Institut System- und Innovationsforschung


Electric
LV09 BVX

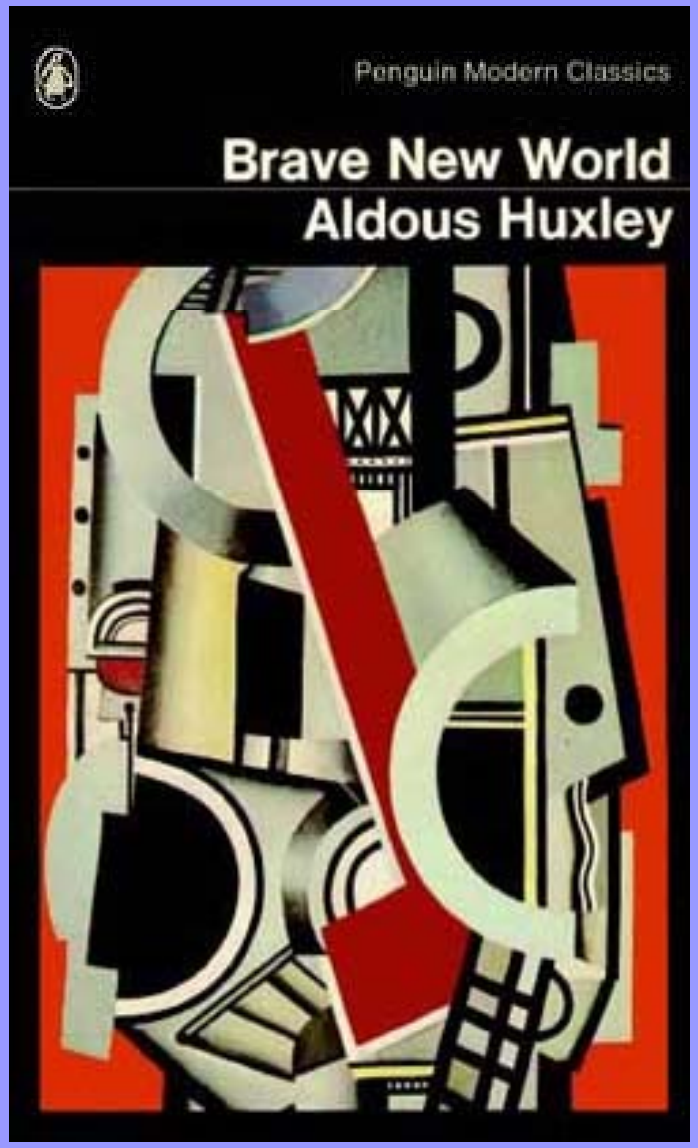
Running Cost Comparison
London City

Fuel (assuming 10,000 miles)

	Petrol	Electric
Fuel	1,250	220
Road Tax	35	0
Insurance	300	200
Maintenance	200	200
Congestion Charging	1,630	0
Parking	4,000	201
	£7,415	£821


Y después de los pioneros…
podemos quedarnos varados
en el “Valle de la Muerte” en el
mercado
Mercado
temprano /
Pioneros
Valle
y of
death
Mercado
Principal.
Consumidores
más sensibles al
precio
Development of market

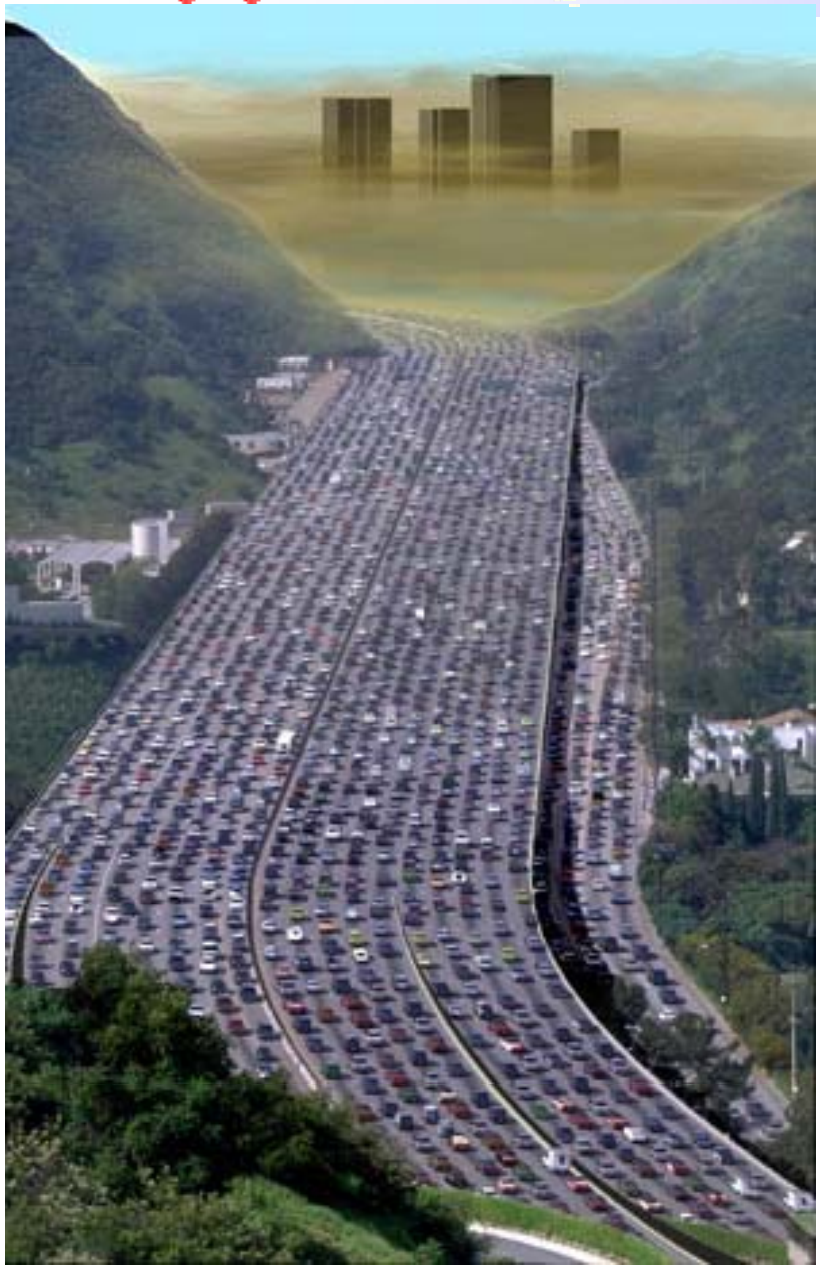
¿Qué tipo de MOVILIDAD ?

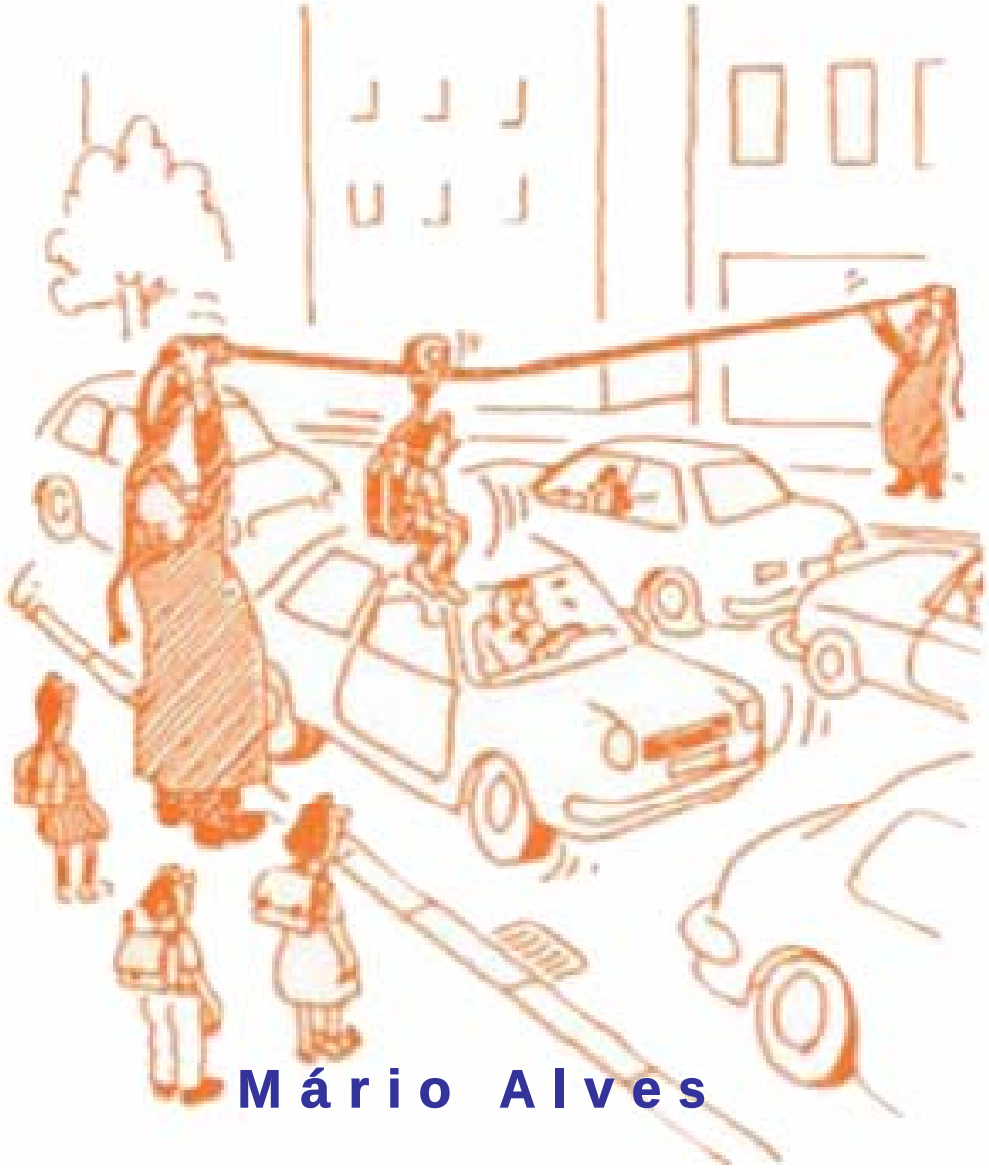


632 AF

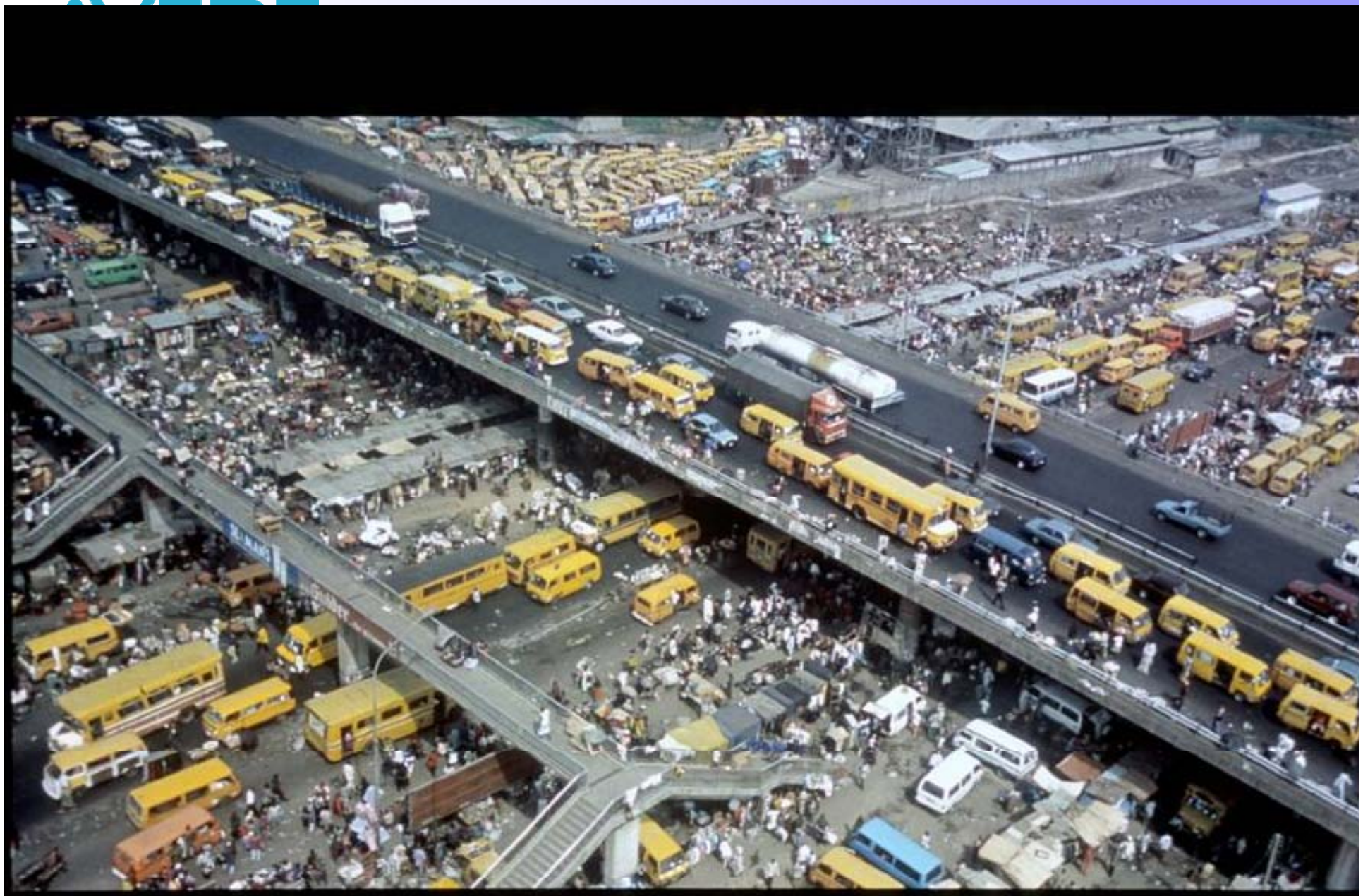
1932

Ciudades retroalimentadas?

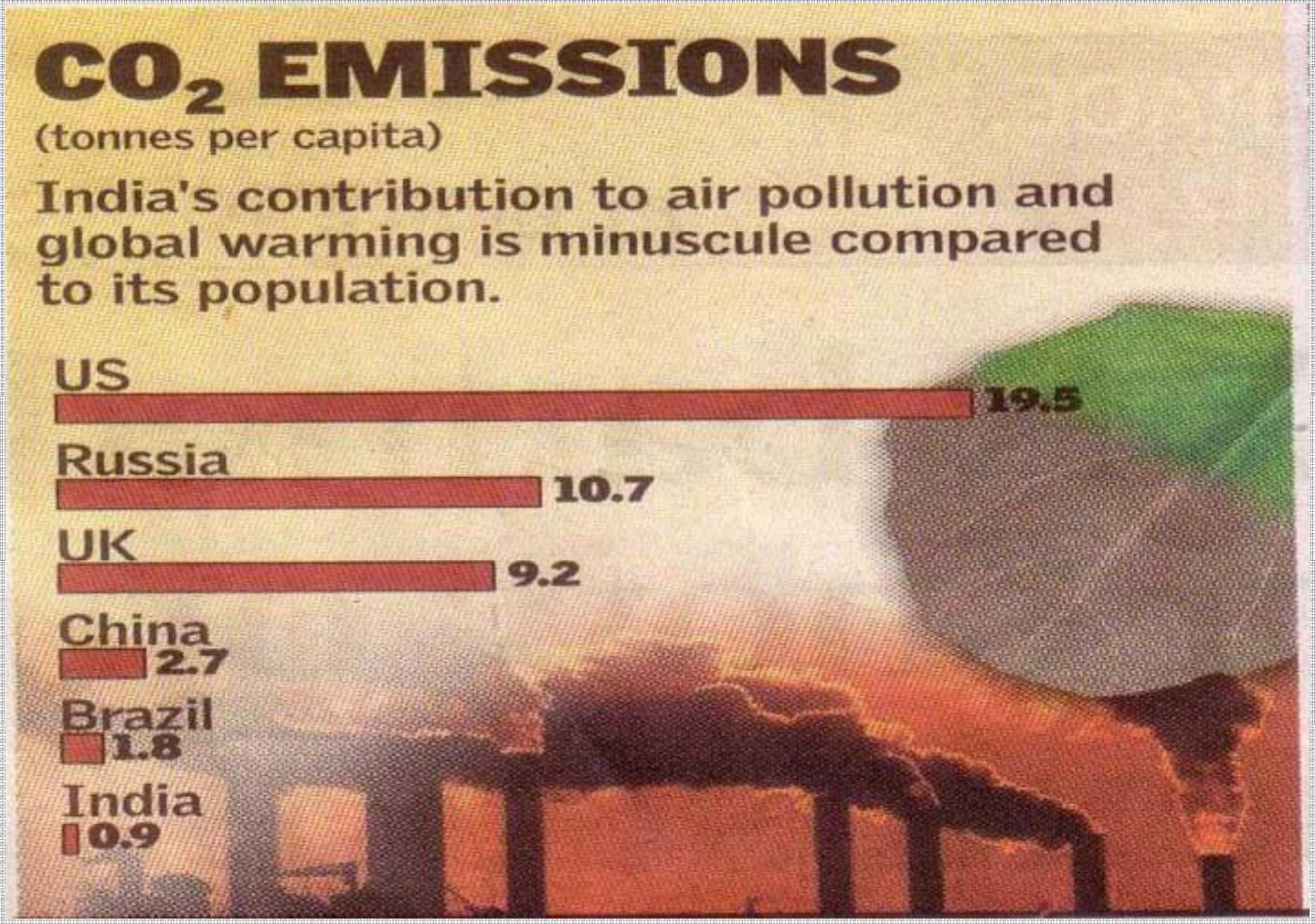




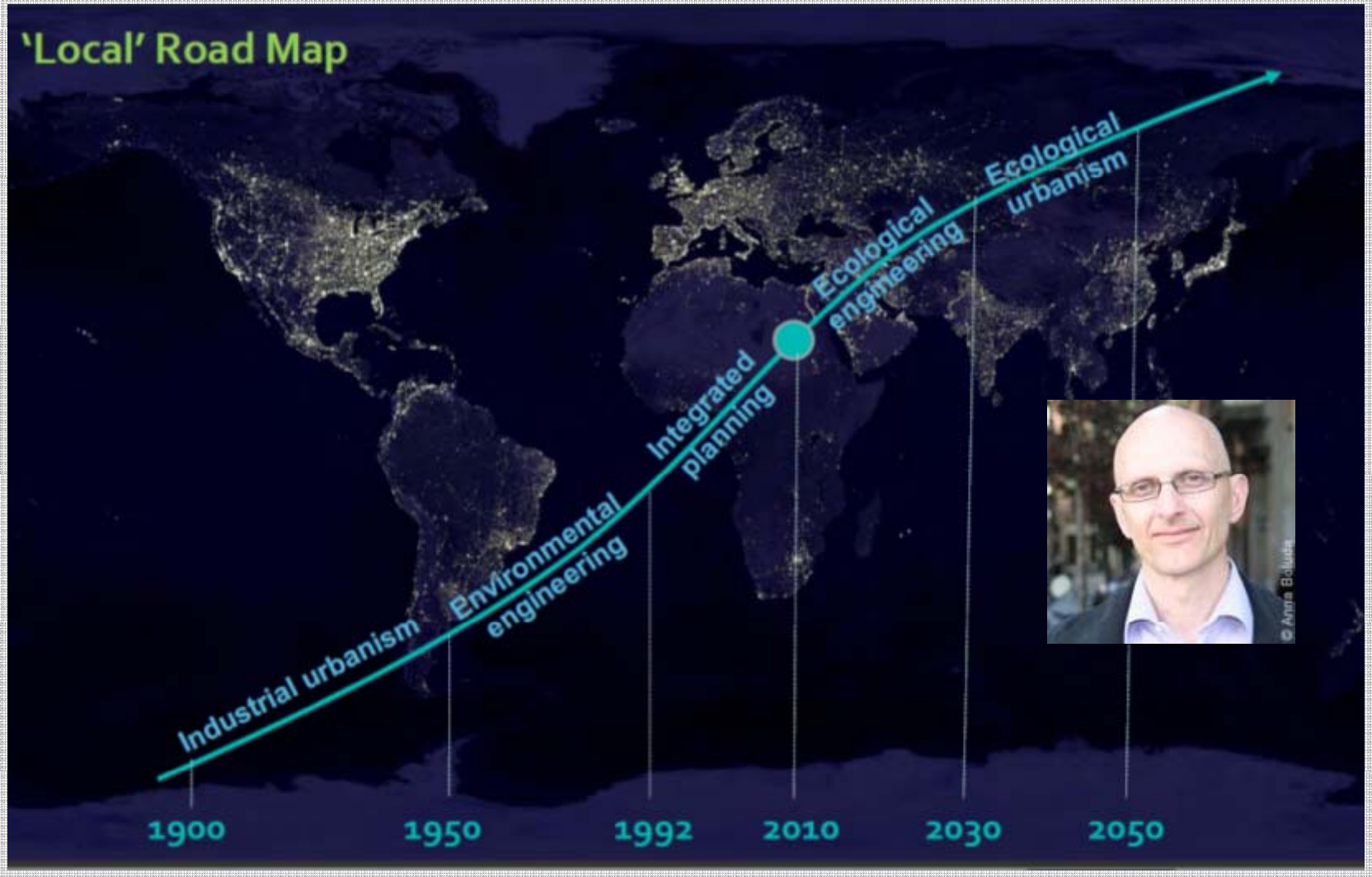
Mário Alves



Reinier de Graaf OMA - Office for Metropolitan Architecture Rotterdam


CO2 EMISSIONS
(tonnes per capita)
India's contribution to air pollution and global warming is minuscule compared to its population.
US
19.5
Russia
10.7
UK
9.2
China
2.7
Brazil
1.8
India
0.9

Welcome To The Urban Revolution



Jeb Brugman

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DEL MEDIO AMBIENTE

TECNOLOGÍA versus CALIDAD DE VIDA

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CONGRESO NACIONAL
DEL MEDIO AMBIENTE

before

introducing clean cars...

after

introducing clean cars...

¿OPCIÓN DEL POLÍTICO O DEL HABITANTE ?

Michael Glotz-Richter - City of Bremen

¿OPCIÓN DEL POLÍTICO O DEL HABITANTE ?

Michael Glotz-Richter - City of Bremen

¿OPCIÓN DEL POLÍTICO O DEL HABITANTE ?

Barcelona

DIFUSIÓN


Powered by Cleaner Electric
Hybrid Technology
MAYOR OF LONDON


MAYOR OF LONDON

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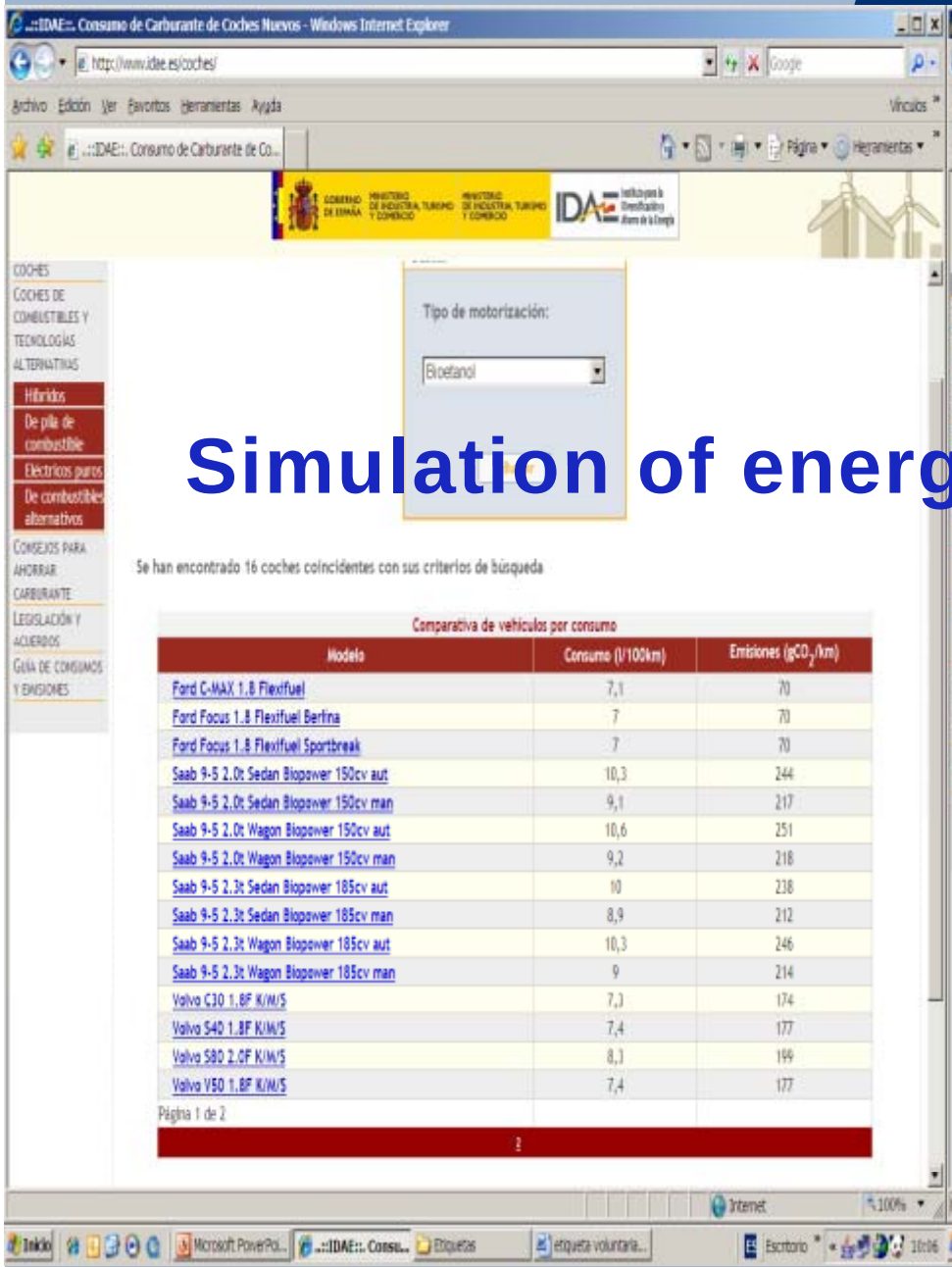
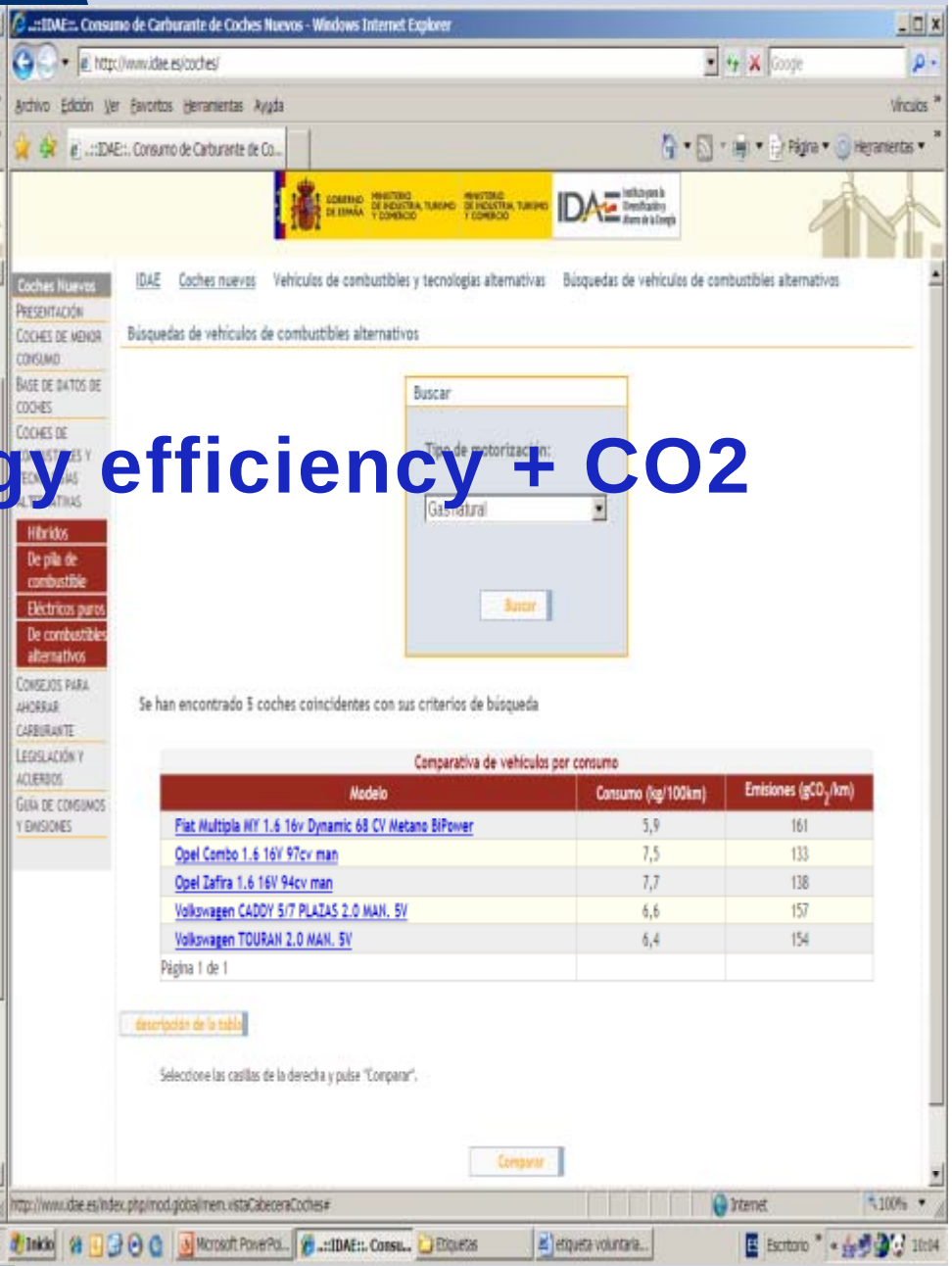
CONGRESO NACIONAL
DEL MEDIO AMBIENTE

BUSES

Transport for London

Simulation of energy efficiency + CO2





Resultados de la búsqueda

Categoria: Motocicleta Tipología: Todas

Catálogo Enero 2010

Volver Imprimir

Código: 01B01

ARNGREN
TEYCARS CANTABRICO
Motocicleta
Vehículo Eléctrico (BEV)
8,00/10,88 kW/CV
Fecha Disponibilidad: 01-01-2009
Ayuda Asignada: 465€
Consultar ficha Técnica

Código: 01B02

ARNGREN
B4000
Motocicleta
Vehículo Eléctrico (BEV)
8,00/10,88 kW/CV
Fecha Disponibilidad: 31-03-2009
Ayuda Asignada: 654€
Consultar ficha Técnica

Código: 01B03

ARNGREN ECOSCOOTER
URBAN TH
Motocicleta
Vehículo Eléctrico (BEV)
8,00/10,88 kW/CV
Fecha Disponibilidad: 10-09-2008
Ayuda Asignada: 620€
Consultar ficha Técnica

Código: 01B04

BERECO
VOLTIO
Motocicleta
Vehículo Eléctrico (BEV)
8,00/10,88 kW/CV
Fecha Disponibilidad: 20-01-2009
Ayuda Asignada: 585€
Consultar ficha Técnica

BERECO
AMPERIO
Motocicleta

BERECO Choice
VOLTIO
Motocicleta

NUEVAS MOVILIDADES

is the electric car

the second car ?

Car pooling
(auto partage)

Car sharing
(covoiturage)

MARCOS Y CONDICIONES

Parques de estacionamiento gratuitos con instalaciones para el lavado del coche

Áreas de acceso restringido + cobranza de congestionamiento

Líneas de HOL + fondo común de coches

Huella SOCIOLÓGICA (FOOTPRINT)

AVERE

CONAMA10 CONGRESO NACIONAL DEL MEDIO AMBIENTE

Movilidad y tecnología ¿Cuáles serán las medidas para el mañana?

Marlboro

AVERE

CONAMA10
CONGRESO NACIONAL
DEL MEDIO AMBIENTE

las asociaciones

AVERE

www.wevaonline.net

WEVA
World Electric Vehicle Association

EVS Conference | World Electric Vehicle Journal | WEVA Partners | E-Visionary Award

EVS 25
Sustainable Mobility Revolution

Weva Members

AVERE

EDTA
Electric Drive Transportation Association

EVAAP
Electric Vehicle Association of Asia Pacific

Welcome to the WEVA Homepage!

The World Electric Vehicle Association (WEVA) is an international organization launched in 1990 with the objective promoting the research, development and dissemination of electric vehicles. It is also responsible for coordinating EVS symposia. WEVA consists of three regional organizations, the European Association for Battery, Hybrid and Fu Cell Electric Vehicles (AVERE), the Electric Drive Transportation Association (EDTA), and the Electric Vehicle Association of Asia Pacific (EVAAP). EDTA, AVERE and EVAAP are international associations designed to populari electric vehicles in their respective regions of the Americas, Europe and the Asia-Pacific.

What is Electric Drive?

In an Electric Drive vehicle, the torque is supplied to the wheels by an electric motor that is powered either solely by battery, or an internal combustion engine using hydrogen, gasoline or diesel, or, by a fuel cell.

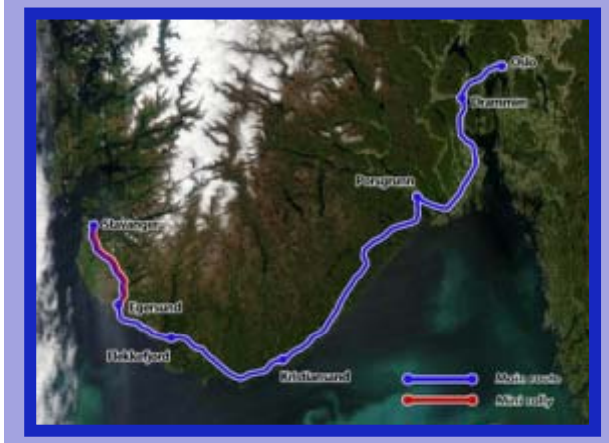
Benefits of Electric Drive

Cleaner vehicle technologies help everyone breathe easier, cut down greenhouse gas emissions and reduce our dependence on oil. Electric Drive is a compelling solution to these global concerns.

Obstacles to Electric Drive


EVS 24
Stavanger, Norway
2009
EVS 18
Berlin, Germany
2001
EVS 15
Brussels, Belgium
1998
EVS 4
Düsseldorf, Germany
1976
EVS 7
Versailles, France
1984
EVS 11
Firenze, Italy
1992
EVS 21
Monaco
2005
EVS 17
Montréal, Québec
2000
EVS 9
Toronto, Ontario
1988
EVS 2
Atlantic City, New Jersey
1971
EVS 1
Phoenix,Arizona
1969
EVS 20
Long Beach, California
2003
EVS 3
Washington, DC
1974
EVS 5
Philadelphia, Pennsylvania
1978
EVS 6
Baltimore, Maryland
1981
EVS 12
Anaheim, California
1994
EVS 14
Orlando, Florida
1997
EVS 8
Washington, DC
1986
EVS 23
Anaheim, California
2007
EVS 16
Beijing, China
1999
EVS 22
Yokohama, Japan
2006
EVS 19
Busan, Korea
2002
EVS 13
Osaka, Japan
1996
EVS 10
Hong Kong
1990
EDTA
Electric Drive Transportation Association
12 EVS
AVERE
The European Association for Battery, Hybrid and Fuel Cell Electric Vehicles
7 EVS
EVAAP
Electric Vehicle Association of Asia-Pacific
5 EVS
The World of
EVS

AVERE


Oslo
Drammen
Porsgrunn
Stavanger
Egersund
Bakkefjord
Kristiansand


Ride & Drive

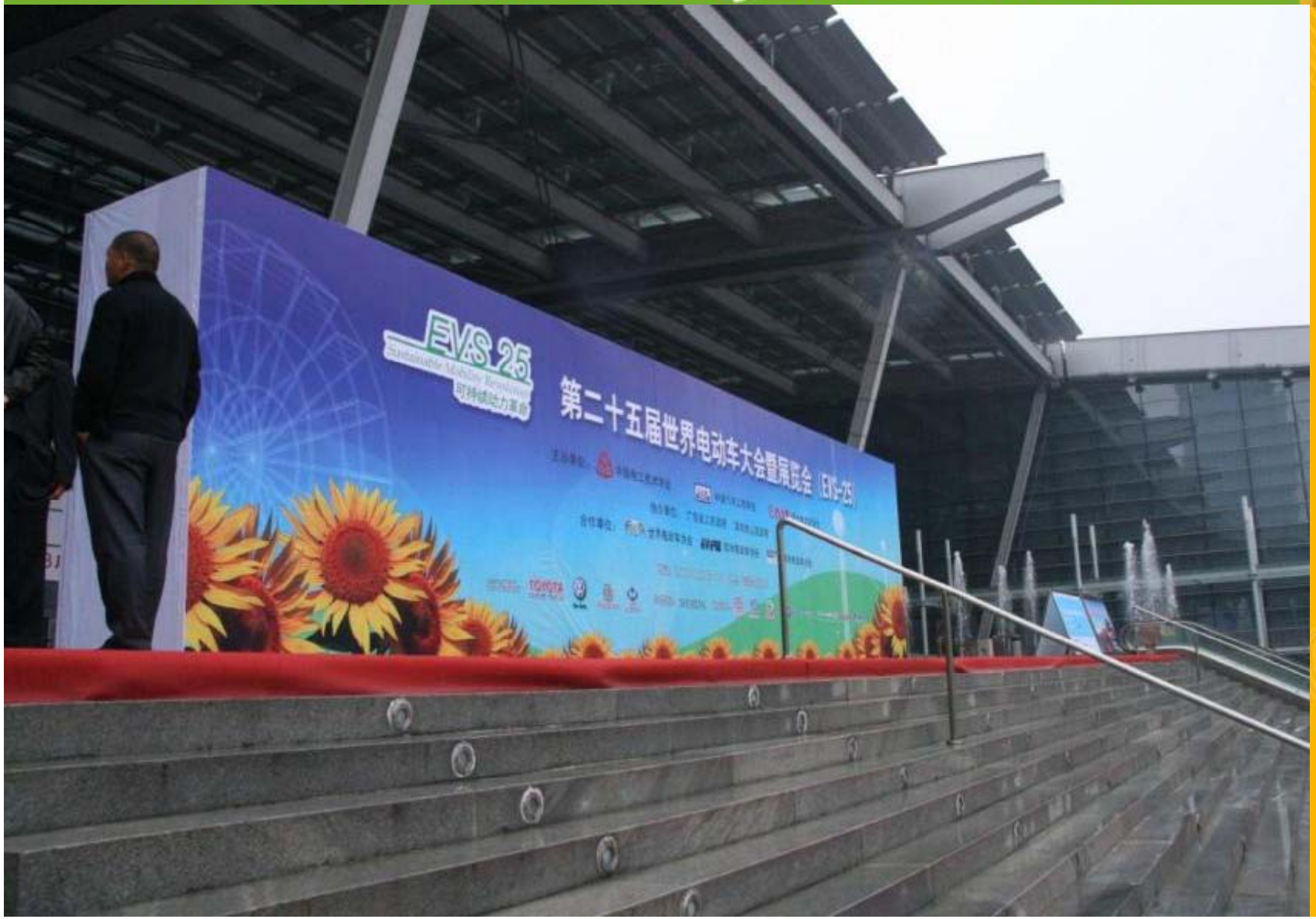

EVS 24
Towards Zero Emission
NEW: Download official programme
STAVANGER, NORWAY
13-16 MAY 2009
The 24th International Battery, Hybrid and Fuel Cell Electric Vehicle Symposium & Exhi
Towards Zero Emission
Nations
Cities
Vehicles
450
AVERE

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution



EVS 25

Sustainable Mobility Revolution

EVS 25

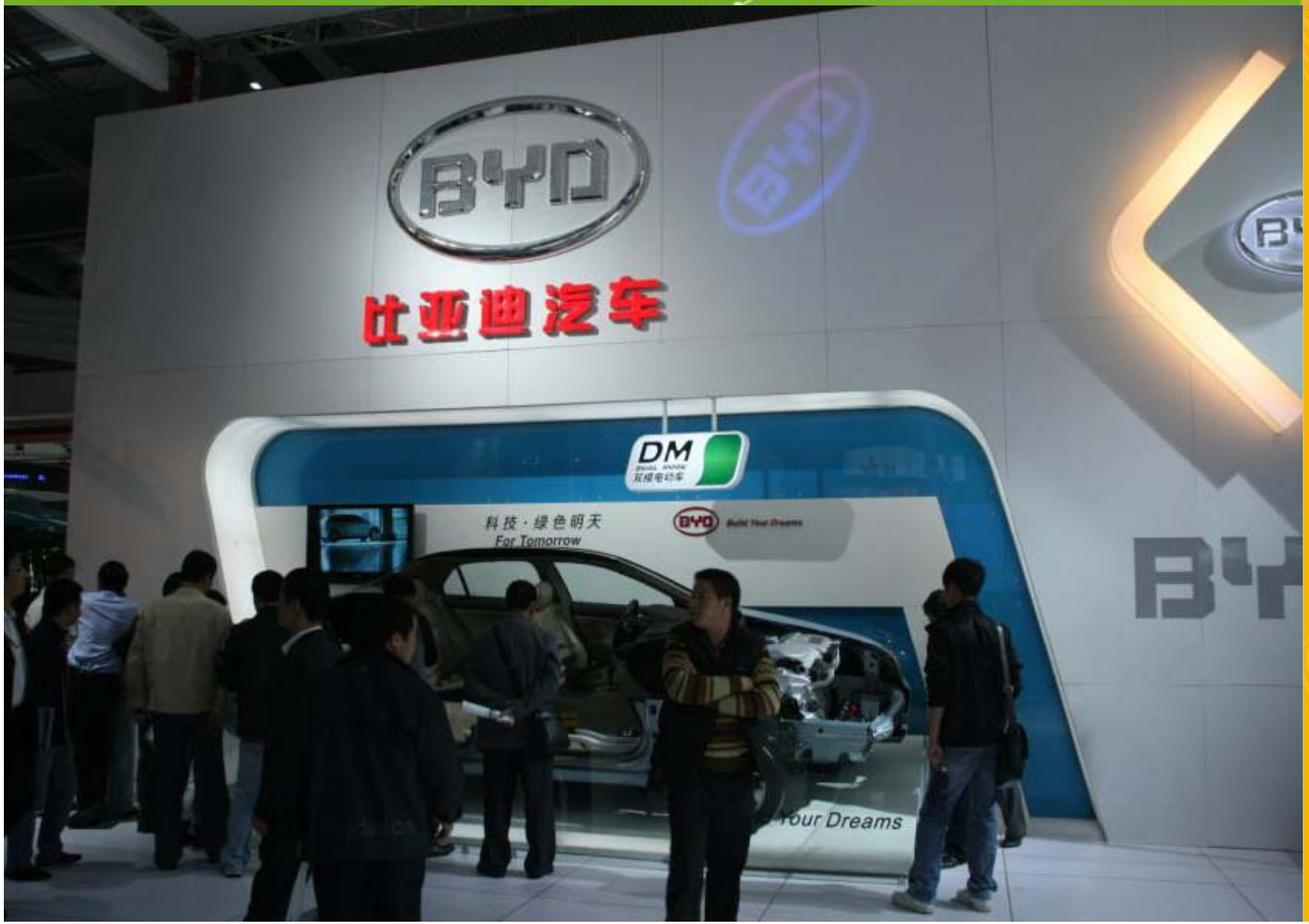
Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution



EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

EVS 25 +

Hosted by: EVAAP SAE
Assisted by: Guangdong Provincial Government
Shenzhen Municipal Government
In Cooperation with: NEA EDTA AVERE

EVS 25

Sustainable Mobility Revolution

EVS 25

Sustainable Mobility Revolution

AVERE

since 2007

World Electric Vehicle Journal

"The primary scientific journal serving the interests of the international electric vehicle community"

ISSN 2032-6653

- WEVJ
- WEVA
- EVS
- Editorial Board
- Contact
- Articles
  - Volume 1 (2007)
  - Volume 2 (2008)
  - Volume 3 (2009)

Welcome to the World Electric Vehicle Journal!

The World Electric Vehicle Journal is the first peer-reviewed international scientific journal that covers all studies related to battery, hybrid and fuel cell electric vehicles comprehensively.

Responding to demands from academia, the journal is intended to complement the EVS: International Battery Hybrid and Fuel Cell Electric Vehicle Symposium, which is the largest international symposium of its kind and is coordinated by the World Electric Vehicle Association.

The World Electric Vehicle Journal is published periodically in conjunction with EVS:

- Volume 1, following EVS-22 in Yokohama, Japan
- Volume 2, following EVS-23 in Anaheim, California
- Volume 3, following EVS-24 in Stavanger, Norway

AVERE

The European Association for Battery, Hybrid and Fuel Cell Electric Vehicles

17 national sections

2 networks

- ✓ CITELEC
- ✓ EURELECTRIC

indirectly over 1000 members

non profit-making association created in 1978 under the aegis of the European Union

European projects

MERGE

SAVEDRIVE

AVERE

IEA INTERNATIONAL ENERGY AGENCY

HYBRID & ELECTRIC VEHICLE IMPLEMENTING AGREEMENT

Urs Muntwyler - Switzerland

Chair IA Hybrid and Electric Vehicle

Annex XI - Electric cycles

Operation Agent:

AVERE European Association for Battery, Hybrid and Fuel Cell Electric Vehicles

Robert Stussi / Hannes Neupert
Urs Schwegler / Mo-Hua Yang

Objective:
Identify barriers for market deployment and develop ways to overcome them

2011 4th Edition

iamf
International Advanced Mobility Forum

International Advanced Mobility Forum

9-10 March 2010, during the Geneva International Motor Show

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Call for Papers →

Welcome to IAMF 2010

The IAMF (International Advanced Mobility Forum) is a scientific and public forum dedicated to individual mobility in the future, in other words, the cars of tomorrow.

More >

IAMF 2010:	9-10 March 2010
Location:	Geneva Palexpo
Getting to:	see map
Contact:	iamf@geneva-palexpo.ch

Programme →

IAMF 2010 detailed programme is now on-line (.pdf version, regularly updated)!

Registration →

Registration is open!

Special rates for registration before 31st January 2010!

Sponsoring →

Do you wish to increase your visibility and brand image?

Sponsor the exhibition!

Newsletter

Register hereby our newsletter


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CHALLENGE
BIBENDUM
next year in Berlin !

GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, TURISMO Y COMERCIO

Barcelona City Council

avele

EVS27 2013

10º Congreso Nacional del Medio Ambiente (Conama 10)

El vehículo eléctrico, una oportunidad para la movilidad sostenible

Robert Stüssi rstussi@gmail.com
APVE – AVERE - WEVA

CONAMA10
CONGRESO NACIONAL
DEL MEDIO AMBIENTE

Martes 23 de noviembre de 2010