

Plans & Policies Around The Globe:



Electric Vehicles

Ken Hickson
ABC Carbon
EV Conference 11 November 2009

Plans & Policies Around The Globe: Electric Vehicles



Where is the leadership coming from, as the world moves in the direction of low or zero emission transport.

**What's happening in Europe?
Is France taking the lead?**

**What about Japan with its
hybrid superiority?**

What about the US & China?



- Is the world a Better Place?

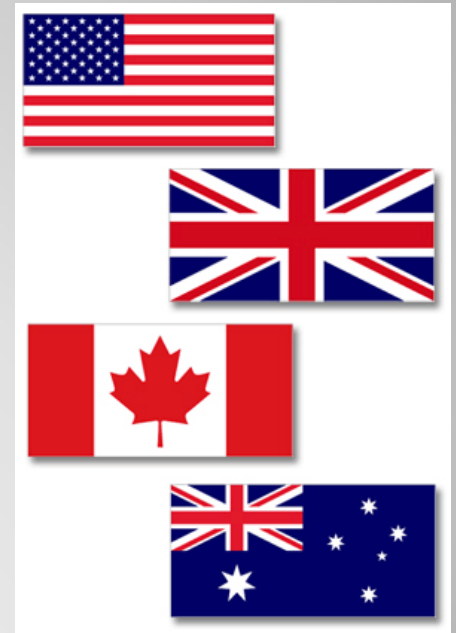


Shah Agassi is working with national and local Governments to put in place the infrastructure, and along with partners Renault Nissan, providing the electric cars and batteries.



Better Place wants to be the global provider of EV networks & services, accelerating the transition to sustainable transport.

Plans for Israel, Denmark, Australia, US, Canada, Japan, Portugal.





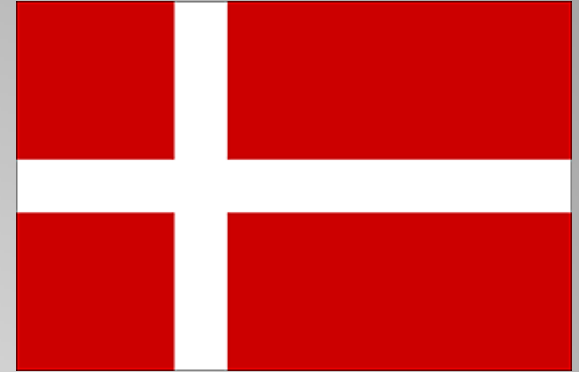
- Shai Agassi's electric vehicle infrastructure venture announced January 2008 that it will build its first pilot electric battery rechargeable grid system in Israel, and has partnered with the Renault-Nissan Alliance on the project's electric vehicles. A public-private partnership.

- October 2009, an agreement signed with Jerusalem Mayor, Nir Barkat to begin the deployment of a charging infrastructure for electrical cars in Jerusalem. Several charge spots have already been placed at the entrance to the city as part of the pilot that will take place next year.

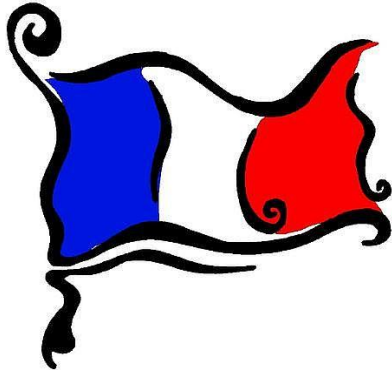




- **30% of Denmark's electricity is from renewables**
- **Copenhagen host for global climate change conference in December**
- **A city planned for cycles and clean energy transport**



- Better Place and Danish utility Dong Energy announced January 2009 they have lined up financing - US\$103 million - to bring an electric car charging network to Denmark by 2011. It will go towards constructing stations where drivers can swap in fresh batteries for electric cars.



- France is positioning itself to be a world leader in electric vehicles
- EVs will be commercially marketed by Peugeot - Citroen from 2010 and Renault from 2012.
- A network of charging stations in Paris, expanded to 1 million charging points across France by 2015.
- By 2015, France aims to have 100,000 EVs in government and private company fleets.
- By 2020, France expects to have 2 million EVs on its roads.

- Carbon emissions will be cut by 17.5 million tons by 2020.

- Energy imports will be reduced by 4 million tons of oil equivalent by 2020.

- The French Government estimates clean vehicle technology will generate 15 billion euros of business activity between now and 2030.

- 1.5 billion euros is being invested in infrastructure, of which 900 million is to come from a government loan and the remainder is to come from the business sector.



Infrastructure

- EDF, the 85% French Government owned electricity provider, is developing smart charging terminals.
-
- Vehicle recognition technology allows drivers to be invoiced directly for charging batteries irrespective of where they charge their vehicles.
- EV infrastructure is to be operational in time for a nation-wide EV vehicle launch in 2011.
- From 2012, all new apartment blocks will have to include charging stations.
- From 2015 charging stations will be obligatory in all office parking lots.
- 1 million battery charging points are to be built by 2015, with 90% of these in private car homes, and other charging points in car parks and roadside sites.
- The network will grow to 4 million points by 2020.

The weakest link: create a network of infrastructures



Charging at home



Charging at work



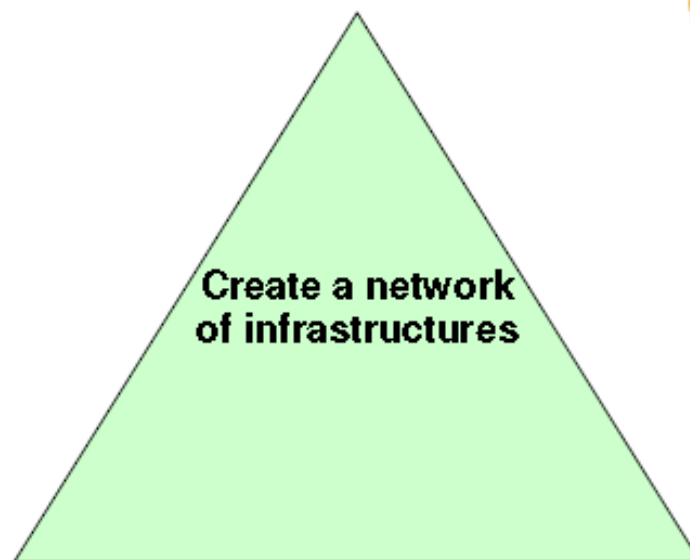
**Public charge
(parking/street)**



Quick/fast charge

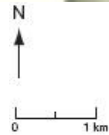
Battery swap station

**Communication between
vehicle and network**



**Create a network
of infrastructures**

Map of EV charging stations in Paris



LEGENDE

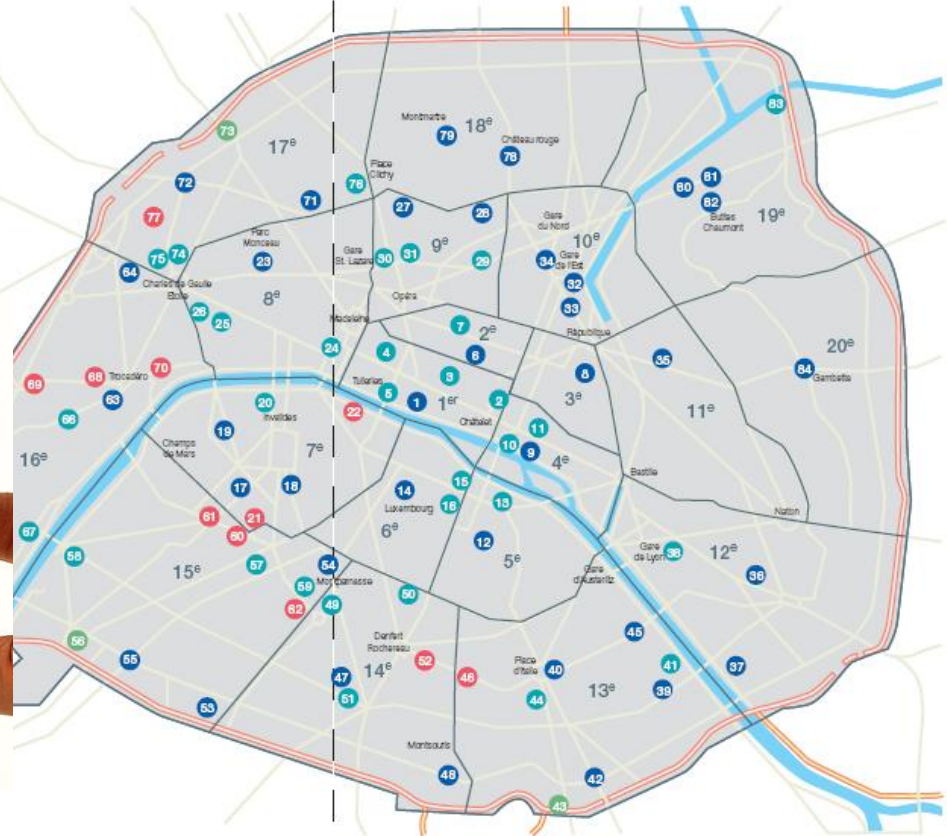
- BORNE SUR VOIRIE (accessible à tout moment)
- BORNE RAPIDE POUR VEHICULE PARTICULIER / UTILITAIRE ET INDUSTRIEL (réservé dans des stations service)
- BORNE DANS PARKING BOUTEFERRAIN (horaires d'ouverture variables)
- BORNE DANS PARC RESIDENTIEL (accès réservé aux résidents)

PRISE VEHICULE PARTICULIER / UTILITAIRE

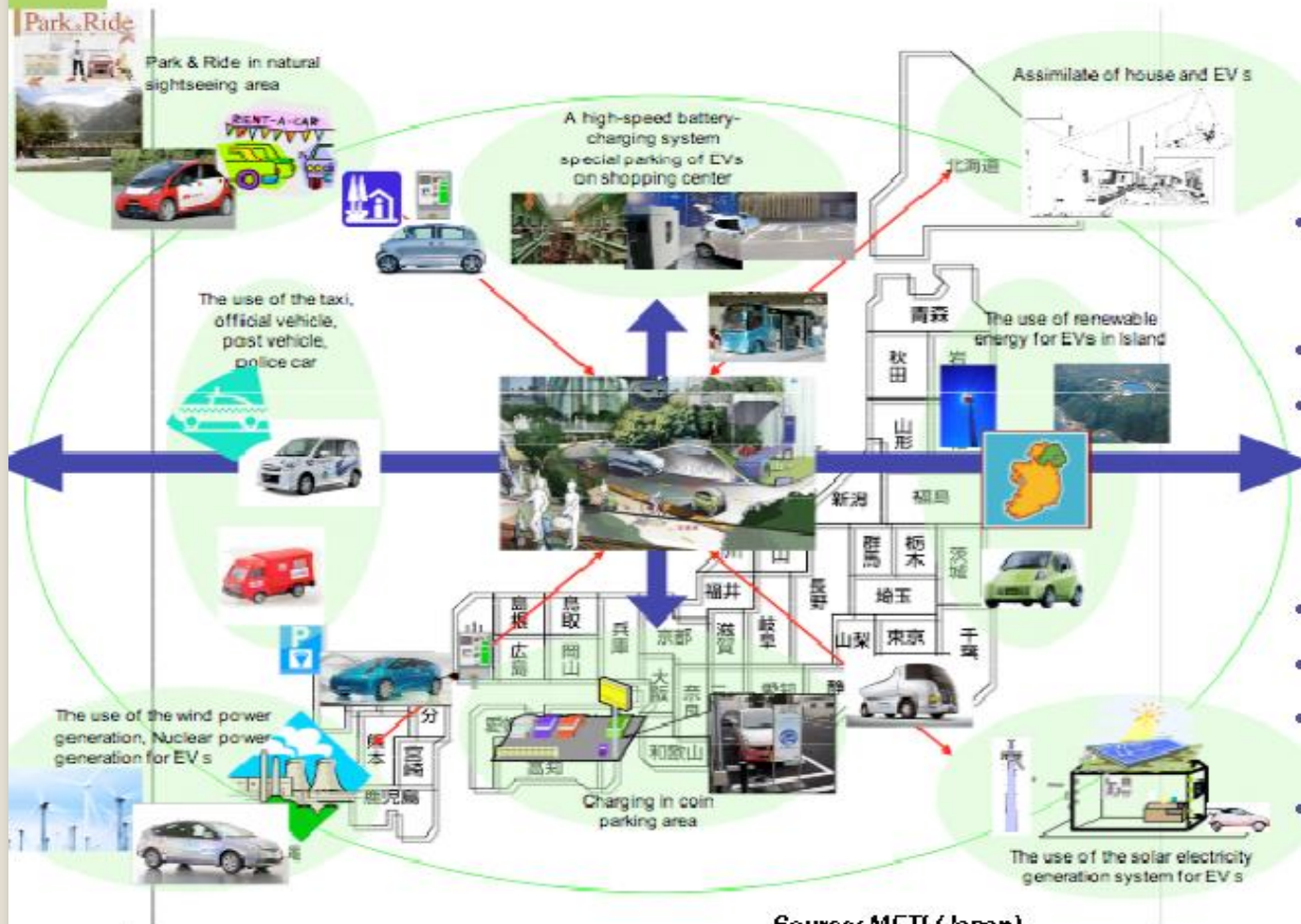
PRISE VEHICULE INDUSTRIEL

PRISE 2 ROUES

Localisation des bornes - Paris



Experimentation Plan



Usages

- Captive fleets of light duty (Baily report)
- Car pooling, taxis
- Individual

Locations

- Island
- Medium-size city
- Large urban area (Paris)
- Across borders

Source: METI (Japan)

“Who killed the Electric Car?”

California Governor Arnold Schwarzenegger, along with San Francisco Mayor Gavin Newsom, Oakland Mayor Ron Dellums, and San Jose Mayor Chuck Reed joined [Better Place](#) CEO Shai Agassi in [announcing a plan for a sustainable transportation model](#) for California. (November 2008)

TORONTO-January 2009 -Better Place, the world's leading mobility operator, today announced a partnership with the government of Ontario to help bring an electric car network to the province and create a model for the adoption of electric cars in Canada.



DETROIT (AP) -- A trade group representing 70 percent of U.S. electric utilities has pledged to work aggressively to put charging stations and other infrastructure in place to support electric vehicles that soon will be in dealer showrooms. (October 2009)

Where are the rest?

Iceland, Spain, Portugal, China

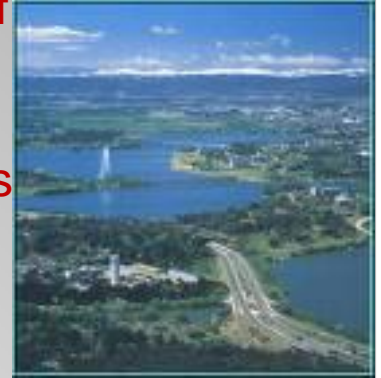
- Iceland is also attempting to take the lead in the shift to EVs and is seeking to make bulk purchases of EVs so as to provide more competitive prices for private purchases.
- Spain has announced it will construct 500 EV recharging stations and will introduce 2,000 EVs into urban areas over the next two years.
- As Portugal invests in renewable energy, its government commits to a network of 1,300 recharging stations.
- China is rushing in to build its own network of electric charging stations. State Grid Corporation, the world's largest electric power transmission and distribution company, is speeding up its plans to build electric car charging stations. The stations will be located in Shanghai, Beijing, Tianjin and other large cities.



Australia

Better Place selected Australia to show that our model works in any country, regardless of size.

We will build an electric vehicle network capable of supporting the switch of Australia's 15 million gas cars to zero emission vehicles. We have two strong partners: AGL Energy, and Macquarie.



Mitsubishi i MiEV - a plug-in electric car - registered for use on the nation's roads.

Canberra has been chosen as the host of Australia's first electric vehicle infrastructure with a network to be completed within four years.

Better Place Australia, the leading electric vehicle (EV) infrastructure and services provider announced that Canberra will host the first city-wide roll-out of electric vehicle infrastructure in Australia.



Are we really ready for Electric Vehicles?

A mind shift required.



A commitment at all three levels of Government.



Planning involving the private sector

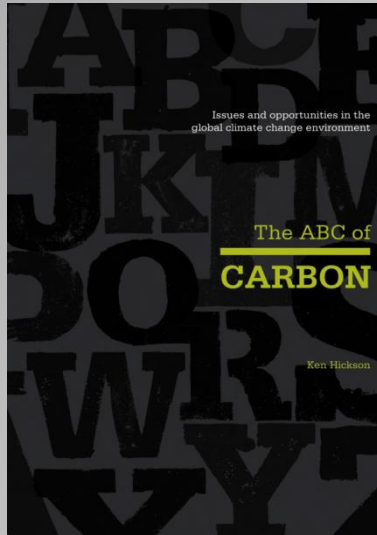
Partnerships – the Better Place model



Manufacturers can drive progress

Electricity suppliers can take a lead

The importance of infrastructure



Book- **The ABC of Carbon**

Weekly e-newsletter – **abc
carbon express**

Communication Consulting -
**Carbon Credibility &
Corporate Sustainability**

www.abccarbon.com

