



# **ELECTRI-CITY**

## **POLIS' activities on electromobility**

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EUROPEAN CITIES AND REGIONS NETWORKING FOR INNOVATIVE TRANSPORT SOLUTIONS

# About POLIS

- 👉 European network of cities and regions promoting innovation in transport
- 👉 Founded in 1989, around 70 members
- 👉 President: Barcelona
- 👉 Offices in Brussels
- 👉 Mission:
  - 👉 Encourage the **exchange of experiences** and the **transfer of knowledge** between local and regional authorities and transport-related organisations in Europe
  - 👉 Actively support the participation of Polis members in **European projects** in order to make research and innovation in transport accessible to cities and regions
  - 👉 Act as **communication channel** to the European institutions for cities and regions on urban and regional transport issues



mobility  
& traffic efficiency



safety  
& security



environment  
& health



economic  
& social aspects

## POLIS & electromobility

- ☞ Cities and regions share the EU's and Members States' interest in supporting the competitiveness of the European economy, as well as several policy objectives such as reducing the adverse impacts of transport on the environment (climate change, congestion...)
  - ☞ **They therefore support the deployment of electric vehicles to the extent that it contributes to achieving their and the EC's sustainable mobility policy objectives.**
  - ☞ **These authorities have a strong interest in taking advantage of the transition towards this technology to achieve a breakthrough in urban mobility patterns and thus accelerate the achievement of their policy objectives**
  - ☞ **Only a balanced package of mobility measures, usable well-connected services, a desirable product, and good value for money can bring large demand for e-vehicles**



# POLIS & electromobility

- ☞ Member of ERTRAC
  - ☞ **Leading ERTRAC urban mobility taskforce**
  - ☞ **Involved in ERTRAC electrification taskforce**
- ☞ Paper submitted to DG Research end of 2008 with cities' and regions' priorities for European research activities in the field of 'electrification of transport'
- ☞ POLIS electrification taskforce
  - ☞ **A significant number of POLIS members have expressed a clear interest in the deployment of electric vehicles in the urban and local environment, today and in the near future**
  - ☞ **Consists of leading cities with concrete policy objectives in the field of electromobility**



## All stakeholders & all modes

- 👉 Strong cooperation required between cities and regions (if applicable within national framework programmes for electric vehicles), vehicle manufacturers and energy suppliers
- 👉 Important to cover all relevant modes of transport and types of vehicles and not just the private car!
  - 👉 **Individual motorised transport: cars, powered two-wheelers**
  - 👉 **Public transport: buses, suburban and urban rail systems**
  - 👉 **Vehicles for urban delivery and logistics, utilities**
  - 👉 **Other vehicles, in particular public captive fleets**
- 👉 A large deployment of electric vehicles is unlikely to occur until the right combination of vehicles, infrastructure, services, financial incentives and environmental awareness is in place



## Towards a clean mobility package

- ➡ More than good technology needed to facilitate market introduction / uptake
- ➡ User view: leased vehicles, energy flat rate, PT subscription, car sharing...
- ➡ Mobility policy support: parking, access...
- ➡ Other policy support: use of public space, housing policy, inner-city development...
- ➡ Visibility & credibility



# The role of cities and regions

- ☞ The deployment of electric vehicles and of the corresponding charging infrastructure on urban networks can be efficiently supported by large scale demonstration activities relying on captive fleets and targeting innovative mobility services
  - ☞ **Can be a catalyst for the transition towards the new mobility culture called upon by the EC in the urban mobility Green Paper**
  - ☞ **i.e. the deployment of electric vehicles can be used to accelerate a modal shift towards public transport and alternative modes of transport by means of new mobility services making use of various types of electric vehicles**
- ☞ Examples of new mobility services to be considered for electrification:
  - ☞ **Demand responsive transport**
  - ☞ **Public bikes and cars**
  - ☞ **New use of powered two-wheelers**
  - ☞ **Electric bikes**
  - ☞ **Urban delivery systems with electric vehicles**



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## Role of cities and regions

- ☞ Captive fleets - such as public transport fleets, fleets of public vehicles, taxis, delivery vans & powered two-wheelers – can trigger the implementation of the adequate infrastructure and initiate the transition towards a larger deployment of electric vehicles
- ☞ Public authorities are interested in being pioneers and could include an increasing number of electric vehicles in their fleet, as well as encourage their staff to commute by electric vehicles
- ☞ The progressive large scale deployment of electric vehicles will have an impact on the whole mobility system
  - ☞ **Necessary to study and anticipate this impact and the incentives and frameworks required to favour deployment while not increasing the number of vehicles on urban roads**



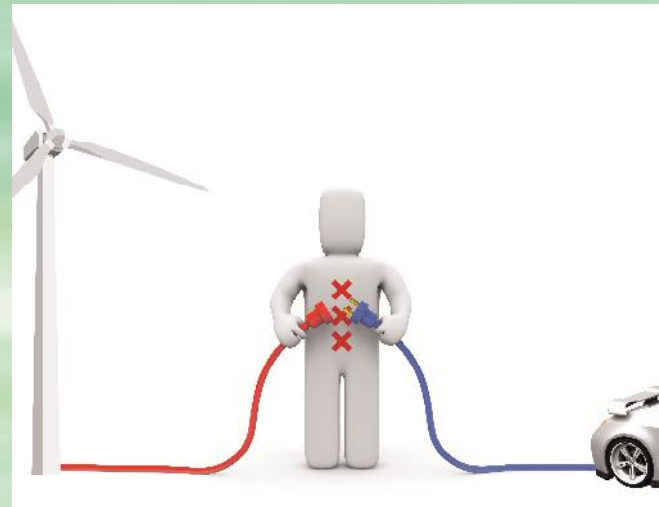
## Role of cities and regions

- ☞ Local and regional authorities can push the deployment of electric vehicles through incentives such as:
  - ☞ **Excise duty**
  - ☞ **Free parking or preferred parking locations**
  - ☞ **Free on-street charging**
  - ☞ **Reductions on tolling and any proposed infrastructure or congestion charge**
  - ☞ **Use of PT lanes and priority lanes for electric vehicles in the first phase of deployment**
  - ☞ **Access rights to restricted areas in the urban environment**
  - ☞ **Customer discount on electricity**
  - ☞ ...



## POLIS cities & regions taking the lead

- ☞ Amsterdam
- ☞ London
- ☞ Paris
- ☞ Stockholm
- ☞ Barcelona
- ☞ Madrid
- ☞ Berlin
- ☞ Noord-Brabant
- ☞ ...



Picture: City of Amsterdam



## Amsterdam Electric

### Ambition

2015: 10.000 vehicles electric

2020: 40.000 vehicles electric

2040: 200.000 vehicles electric

### Action plan 2009-2011

200 Vehicles

200 Charging points



Pictures: City of Amsterdam

# Amsterdam Electric



- Phased approach: technology is changing rapidly
- Charging points near stations, in garages, P&R areas, on the water
- Alliance with a selection of companies and organisation that create a lot of traffic within the city and will act as ambassadors to create visibility

- Subsidies from city for buying the vehicles
- Policy incentives such as free parking, free electricity, free use of bus and tram lanes



## London - Today

- Electric vehicles are exempt from the Congestion Charge
- £700k from 2007-10 to fund feasibility studies and 126 charging points
- Working with the Boroughs to increase the visibility of charging points and to increase the number of charging points in residential areas
- Funded [www.newride.org.uk](http://www.newride.org.uk) – a website providing information about electric vehicles to Londoners
- Encouraging contractors to use electric vehicles; 18 in use to date



Pictures: Transport for London

# London - Tomorrow

- Target: 100,000 vehicles (5%)  
“as soon as possible”
- 25,000 charging points by 2015  
– focus on homes, workplaces and off-street car parks
- Amend London Plan to require charging points in all major new developments
- Guaranteed congestion charge exemption
- 1,000 GLA electric fleet vehicles by 2015
- Estimated cost = £60m to 2015



➤ Mayor has committed London to spending £20m on EVs up to 2015

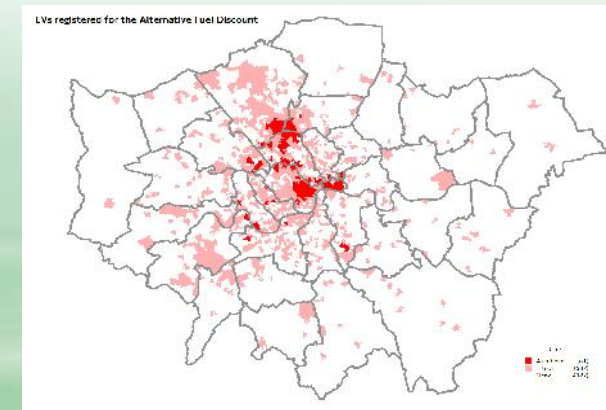


# London – infrastructure & vehicles

- Base level of infrastructure coverage across all areas
  - Ensuring no-one is excluded
  - Addressing “range anxiety”
  - Providing fast or faster charging for convenience
  - Utilising partnerships to get maximum coverage
- Targeted roll-out across boroughs
  - Starting with attractive areas within specific boroughs
  - Expanding throughout attractive boroughs and to adjacent boroughs
  - Filling in the gaps
- 1000 vehicles London government fleet by 2015
  - Fleet vehicles & buses
- 100.000 vehicles in London as soon as possible
  - Agreements with commercial operators
  - Incentives for private users



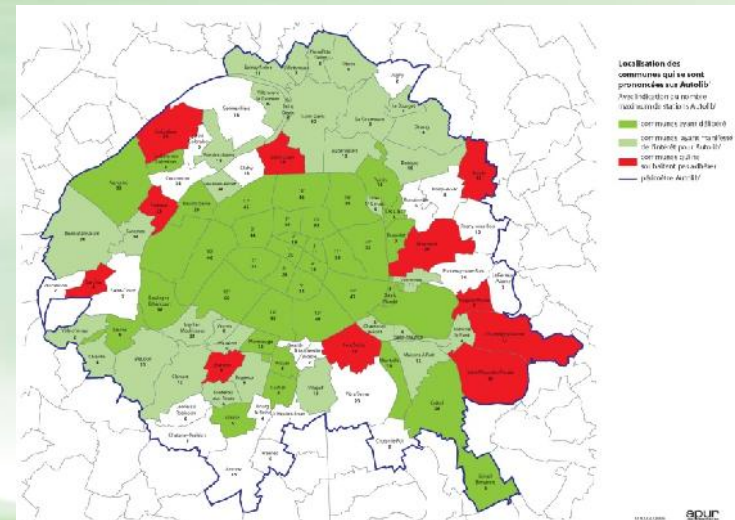
- Guarantee the 100% Congestion Charge discount
- Consistent parking incentives across the city
- Dedicated bays and charge points for car club Evs





# Paris – Autolib’

- Autolib’ = fleet of carbon-neutral hire cars
- Electric cars
- Short trips, complementary with alternative transport
- Self-service cars : no reservation + easy to use
- One-way : pick-up and drop-off anywhere in the city
- Reserved parking spaces
- Paris has offered to 80 suburb towns to join the project :
  - **16 towns have confirmed**
  - **32 towns are considering**
  - **21 towns haven’t answered**
  - **11 towns declined for the moment.**



map: city of Paris

## Paris – Autolib’

- ☞ The towns which have confirmed will become member of a public body “Syndicat mixte Autolib”
  - ☞ **will be in charge of Autolib’**: invitation to tender, choice of operator, monitoring stations work and quality of service
  - ☞ **The Syndicat mixte will subsidize the operator to fund electric vehicles and charging facilities**
  - ☞ **The members of the Syndicat mixte will finance this grant. The amount of this funding will be proportional to the number of Autolib’ stations on their territory**
- ☞ **Timing:**
  - ☞ **Set up of ‘syndicat mixte’: July/ September 2009,**
  - ☞ **Launch of invitation to tender : Autumn 2009,**
  - ☞ **Attribution of Autolib : 2010,**
  - ☞ **Commissioning of Autolib’: 2010 (contract for 10 years, including equipment, infrastructure, exploitation, maintenance, insurance, users management, financing...)**

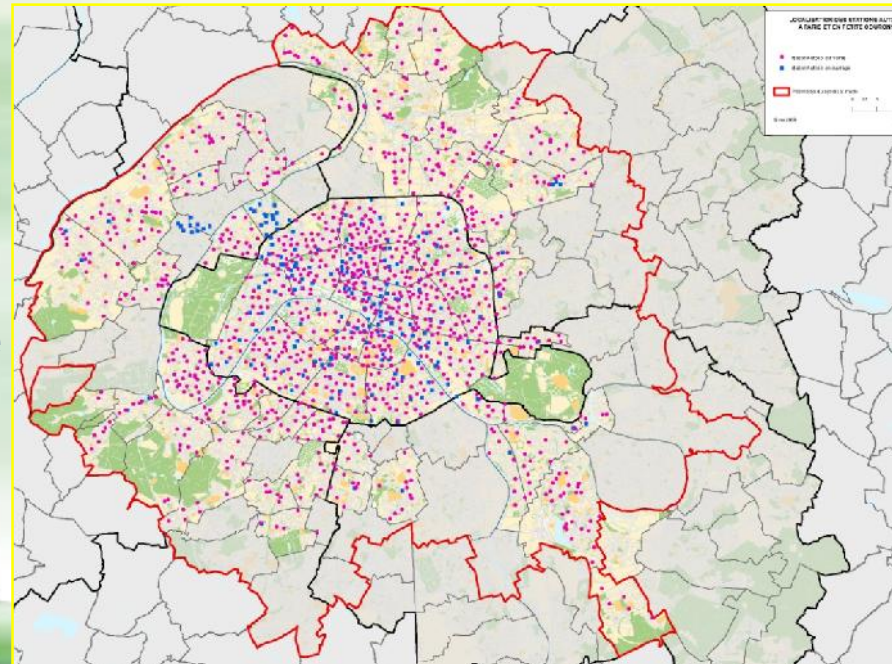


# Paris – Autolib’ Features

- 15 / 20 € per month, 5 / 4 € per 30 minutes + special rates for families, companies
- Real-time monitoring of vehicles;
- Many stations to maximize the opportunity to find a free station;
  - **Dense Network of small stations,**
  - **Establishment in district with high diversity of functions: housing, employment, business, leisure**
  - **Maximise visibility: lots of on-street parking,**
  - **Specific design for furnishing, identification of stations..**
- The users will pick-up and drop-off the cars only on reserved parking lots



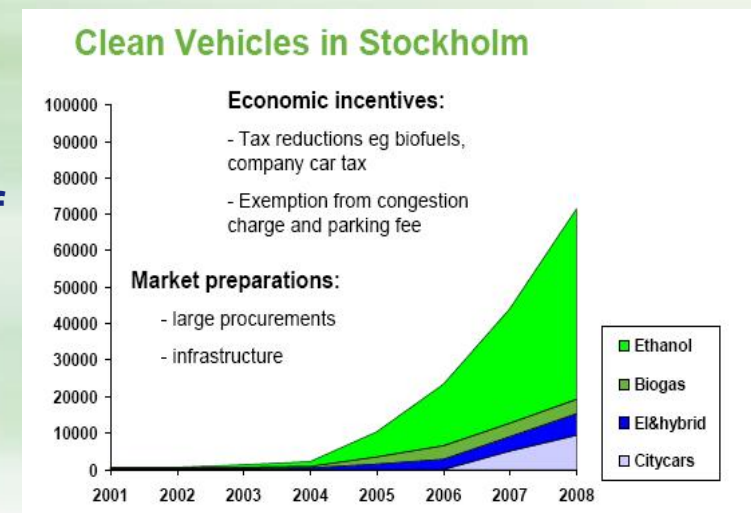
Map: City of Paris



# Stockholm



- 35% of cars sold in Stockholm today are clean
- A fleet of 1100 municipal service vehicles of which 60% is clean and 100% will be clean by the end of 2010
- Target: fossil fuel free by 2050
- Vision 'Electric Vehicle City 2030'
- **City traffic almost emission free**
- **Access to recharging where needed**
- **Renewable or CO2 free electricity**
- **Stockholm sets an example in terms of electric vehicles and recharging infrastructure**



# Stockholm

☞ 1994-2005:

- ☞ 160 pure electric cars, 90 hybrid electric vehicles, 50 electric two-wheelers, 6 electric hybrid buses, 6 electric hybrid trucks, 3 fuel cell buses
- ☞ Common procurement, free parking, 4 fast charging facilities, 40 normal charging facilities

☞ PHEV demonstration 2008-2009

- ☞ Convert 5 Toyota Prius to PHEV
- ☞ Install public recharging points
  - ☞ 5 in 2008, 100 in 2009
- ☞ Evaluate energy use, driver attitudes, regulations and permits, environmental recharging points
- ☞ Conclusions:

- ☞ PHEVs work and are used in everyday traffic
- ☞ Fuel consumption is reduced (10-20% in this non-optimised PHEV concept)
- ☞ Incentives necessary to stimulate drivers to plug in car
- ☞ Battery pack upgraded once
- ☞ Great difference in regulations around recharging stations depending on type of location



# Stockholm



## 👉 Lessons learnt:

- 👉 **No battery electric cars available on Swedish market today**
- 👉 **Hybrid electric cars & electric scooters work well and are popular**
- 👉 **Coordinated procurement important**
- 👉 **Public charging facilities not used much but important for marketing and information**

## 👉 Proposal from Swedish Energy Authority to Swedish Government

- 👉 **4-year national demonstration programme for electric cars and plug-in hybrids and charging infrastructure**
- 👉 **Including: financial support for vehicles and charging infrastructure; innovation, coordination and procurement; evaluation and dissemination; international cooperation**



## More information

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