



Joint Venture  
SILICON VALLEY NETWORK

# Metropolitan Region Amsterdam drives e-mobility

Dr. Peter van Deventer MPA

# PRESENTATION

**What** is happening right now in our region?

**Which** trends and opportunities may develop in your region?

**Conclusions**

# Metropolitan Region Amsterdam



# Governance strategies for transition

Governing the transition to e-mobility: small steps towards a giant leap

## Governing the transition to e-mobility: small steps towards a giant leap

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**NSOB**

Netherlands School of Public Administration

**What is happening  
in our region?**



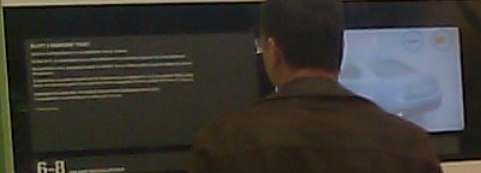
# No auto shows without E-cars



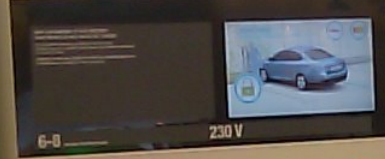
# Integrating technologies

Z.E. DE VERSCHILLENDE MOGELIJKHEDEN OM UW ELEKTRISCHE AUTO OP TE LADEN 

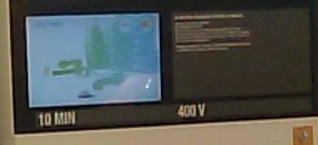
RENAULT  
**Z.E. WALL-BOX\***  
STANDAARD OPLAADPUNT  
WEEK 10000  
6-8 OP WEEK WILDE OPLAADPUNT



RENAULT  
**Z.E. STANDAARD OPLAADPUNT**  
6-8 OP WEEK WILDE OPLAADPUNT



RENAULT  
**Z.E. SNEL OPLAADPUNT (VANAF 2012)**  
10 OP WEEK WILDE OPLAADPUNT



RENAULT  
**Z.E. QUICKCHOP**  
3 OP WEEK WILDE OPLAADPUNT



Z.E. **DE VERSCHILLENDE MOGELIJKHEDEN OM UW ELEKTRISCHE AUTO OP TE LADEN**



# Investments: charging, parking, funds



# ICT/charging industry



ICU charging stations » Laadoplossingen » Laadoplossingen » ICU Charge

## ICU Charge

Complete reeks laadpunten voor iedere toepassing.

- Vier basis modellen
- ICU regular
- ICU advanced
- Normaal en snelladen
- Voor auto's en scooters
- Creëer uw eigen laadpunt met ICU-inside

ICU Charge



Laadpunten



## Events

### Ecomobiel 2011

27 en 28 september vindt u ICU op de ecomobiel beurs in Ahoy Rotterdam. ecomobiel is dé vakbe...  
[Lees verder »](#)

### Elektrotechniek 2011

ICU en Alfen zijn van maandag 3 tot en met vrijdag 7 oktober aanwezig op de vakbeurs Elektrotechniek...  
[Lees verder »](#)

More than just fancy e-cars...



# Fast charging at the dealer



# Bill Boards everywhere



# Integrated e-car concepts



# European headquarters to MRA

The screenshot shows a web browser window displaying the Zero Motorcycles website. The address bar shows the URL <http://www.zeromotorcycles.com/zero-ds/>. The browser's toolbar includes various utility icons and a search bar. The website header features the Zero Motorcycles logo and a navigation menu with categories: DIRT, STREET, DUAL SPORT, GALLERY, FASTEST, CLEANEST, LIGHTEST, NEWS, LOCATOR, and STORE. A prominent banner for the Zero DS electric motorcycle is displayed, with the text "ZERO DS" in a large, bold font. Below the banner, a navigation bar contains links for INTRO, FEATURES, SPECS, PHOTOS, ORDER, and DEMO. The browser's address bar also shows "ZERO DS Electric Motorcycle || ZERO MOTORCYCLES".

# Exporting navigation innovations

Internet Explorer browser interface showing the URL: <http://www.zerauto.nl/index.php?page=nieuws&pid=2&id=651>. The browser includes a menu bar (File, Edit, View, Favorites, Tools, Help), a toolbar with buttons for Print, Preview, Clip, Auto Clip, and Clip List, and a Favorites bar with links to Gmail, Suggested Sites, Free Hotmail, MSN.com, Radio Station Guide, and Web Slice Gallery. The active tab is titled "ZERAuto - Nieuws".

## Nieuws

02 augustus 2011

### TomTom leidt Amerikaanse EV-rijders naar oplaadpunten

toon

- nieuws
- agenda

kennishuizen:

- Technologie
- Energie
- Milieu
- Verkeer
- Economie
- Showroom

Zoeken in nieuwsberichten:

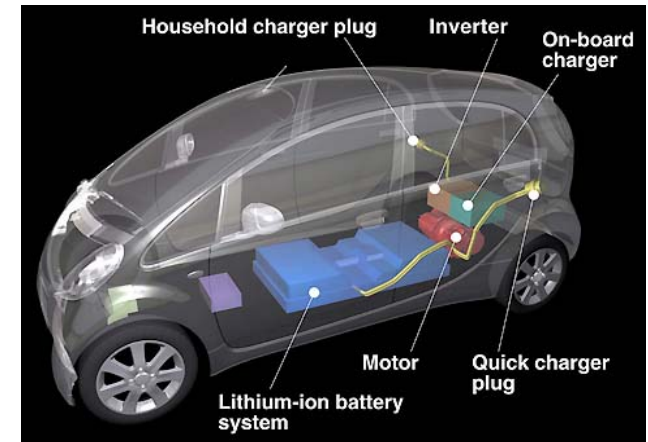
ZOEK

Blijf op de hoogte:

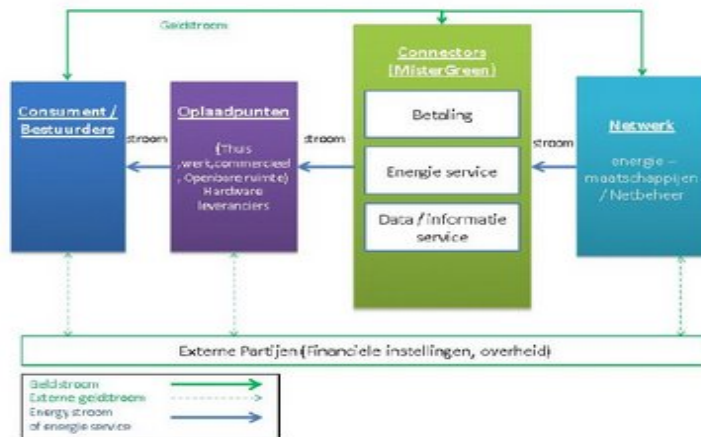




# New players entering the market



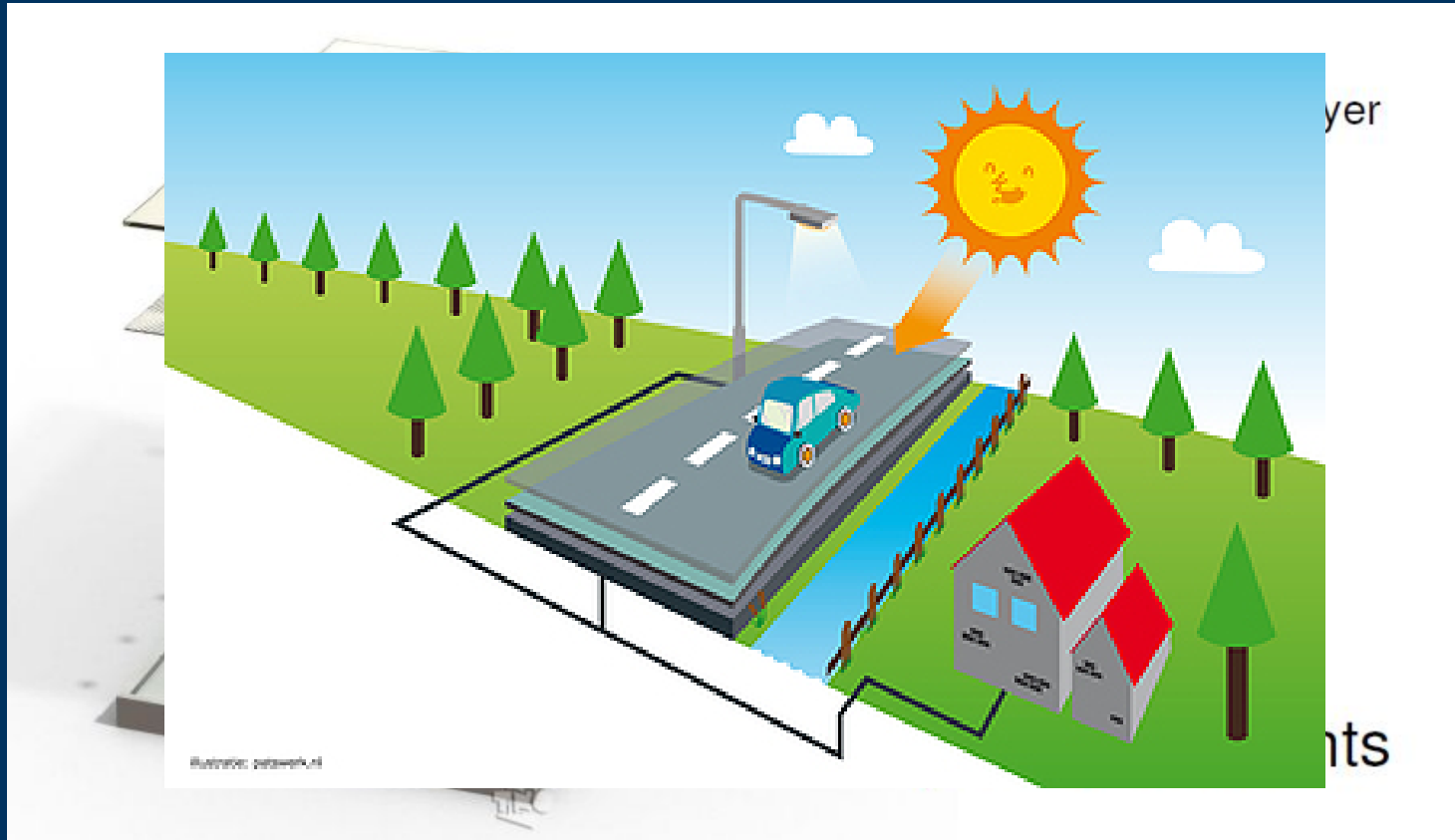
Waardeketen oplaadinfrastructuur



Bron: smart garage charrette report



# SolaRoad project



# Knowledge sharing via social media

http://www.zerauto.nl/

File Edit View Favorites Tools Help

Canon Easy-WebPrint EX Print Preview Clip Auto Clip Clip List


bert hesseling stanford Search YouTube KFOG

Favorites Gmail - Nieuw bericht - pete... Suggested Sites Free Hotmail MSN.com Radio Station Guide Web Slice Gallery

ZERAuto - Home

ADVERTENTIE

GreenSource NEW MOBILITY “We connect and make you move!” EV CHARGER

 **ZERAUTO**  
nieuws / discussies / achtergronden over elektrisch rijden

VEELGESTELDE VRAGEN | CONTACT | BEGRIPPENLIJST

ZOEK

HOME \ NIEUWS \ DISCUSSIE \ KENNISHUIZEN \ MARKT \ LINKS INLOGGEN \ AANMELDEN


**Nieuws**

15 juli 2011,  
LEAFplan strand net voor finishlijn Alpe d'Huez

15 juli 2011,  
Deelwil... ..

**Agenda**

27 september 2011, Rotterdam  
Ecomobiel-vakbeurs naar Ahoy (27/28 september): Stop Thinking, Start Acting

 **Column Marc Bolier**

Internet 100%

# Ecomobiel 2011: Presenting Interreg and SolaRoad



**Which trends  
and opportunities  
may develop?**

# Value Chain = \$250 billion (2020)



SAVE World Bank says "new global electric vehicle ...  
Published to Electric Cars | No reactions yet

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## World Bank says "new global electric vehicle value chain" worth \$250 billion by 2020

Unsurprisingly, China will play a huge role



By Sebastian Blanco  
Posted May 5th 2011 7:48PM



Comments 7

"When you do some of the back-of-the-envelope calculations, it really points to a massive shift."

That's the takeaway point from a new study – "The China New Energy Vehicles Program: Challenges and Opportunities" – released by the World Bank Transport Office and global management consulting firm PRTM. We recently had the chance to talk to PRTM's Oliver Hazimeh, who said the study shows that there's really no chance that plug-in vehicles are *not* going to make a huge impact in the coming decade. One way is through a new global value chain for electric vehicles that is estimated to reach \$250 billion by 2020.

People's crystal balls differ, but Hazimeh believes that it is "more than doable" and "likely" that somewhere between nine and ten percent of the vehicles sold in 2020 will be plug-ins. Add up all the different pieces that make up these vehicles (especially batteries) and things like the associated expansion at utilities due to a smart grid, and you get to the study's \$250 billion headline number:

*Given what we see the OEMs committing to, given the cost curves and what we expect from ICE technology and fuel costs, the trends point to a direction where the economics will create enough pull for that number.*

The study authors didn't need to use outrageous oil prices for 2020 – just \$120 a barrel – to get to the 10 percent number. If the real price of oil hits \$150 or \$160, something Hazimeh said was "more likely," then some of the pressures get applied even stronger. "When it starts making economic sense, then we think it's more than the early adopters – the two or three percent – who will buy these things," he said.

Even 10 percent annual sales is still only two-three percent of the total fleet, but this is still a very optimistic prediction. Hazimeh has been studying these numbers for a long time, though, and hasn't changed his

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Select Your Age

25
26
27
28
29

Get quote →

TotallyMoney.com

### SOCIALIZE



Facebook



Twitter



iPhone



RSS

### RESEARCH A NEW CAR

All Makes

All Models

ZIP

Aol Autos.

### POPULAR NEWS STORIES

◀ 1 of 6 ▶



Florida sued for ticketing motorists who warn others of speed traps

Like 7K



R/C F16 jet with swiveling pilot's view blows our tiny little minds

Like 1883

Saab hoping to secure \$157M

# Integration E-car & CleanTech policies

## Green Vision Clean Energy Showcase Live Energy Generation



Live Data

How It Works

### Current Generation

Data as of: Tuesday, 9:17 am, April 26, 2011

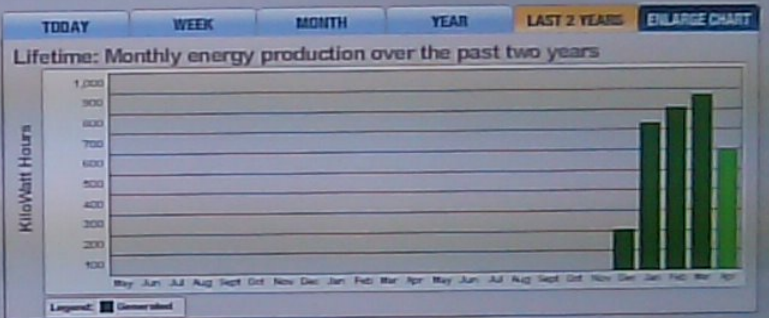
GENERATING 1.35 kW



Conditions: A Few Clouds  
 Recorded at: San Jose International Airport, CA  
 Updated at: Apr 26 2011, 10:53 am PDT  
 Visibility: 10.00 mi.

### Historical

GENERATED 3,213.66 kWh



### Environmental Benefits Since Installation

Greenhouse gases avoided by use of solar energy

CO<sub>2</sub> 3,998 lbs.

NO<sub>x</sub> 1 lbs.



We've generated enough power to operate 1 home for 1 year.



We've generated enough power to operate 1 car for 1 year.



# E-HUBS: integration cars, bikes, trains





# E-car Parking Policy

1.0

2.0



10 million e-kilometers driven...



# Fast Food: eat, generate, charge

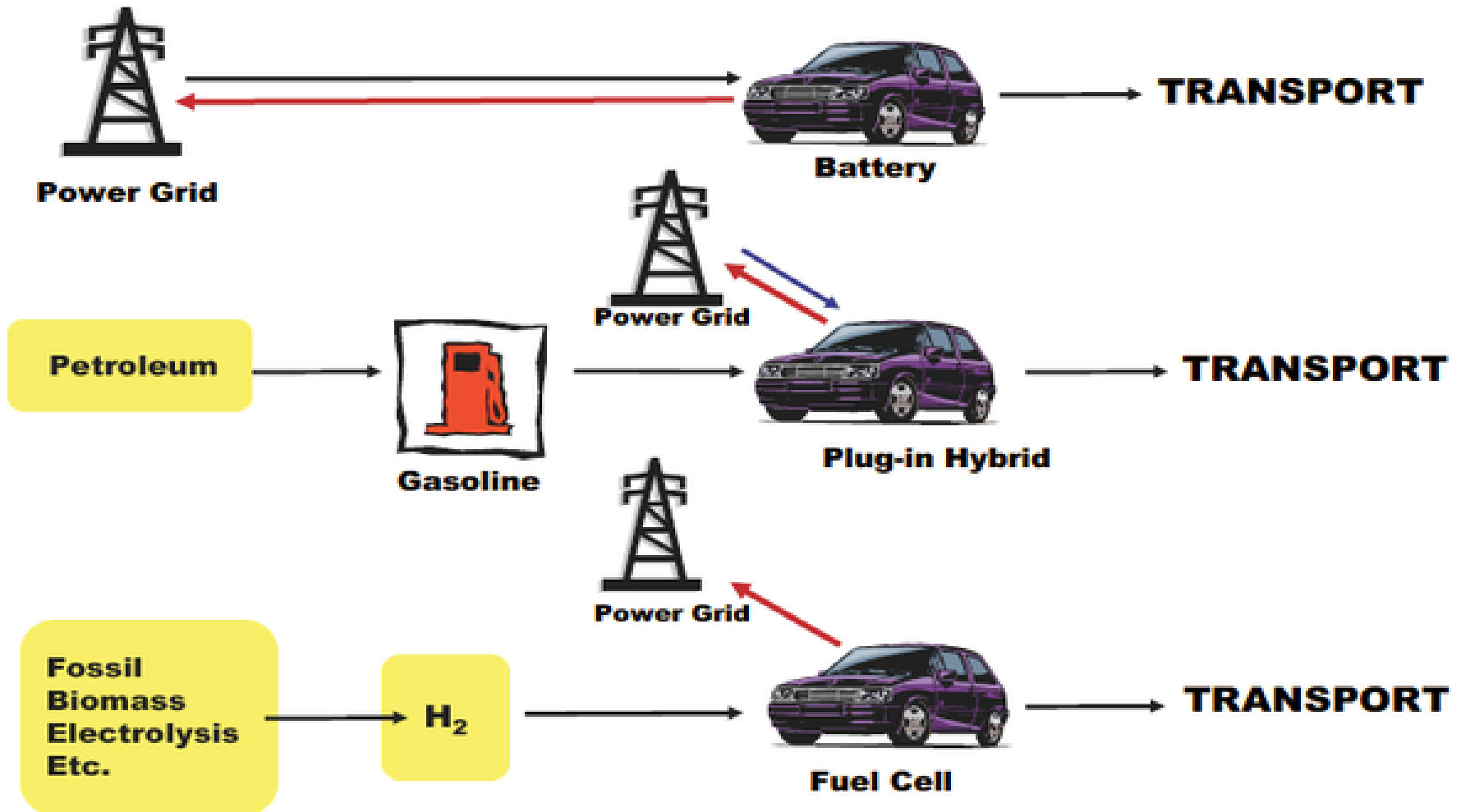


Industry innovators to your region

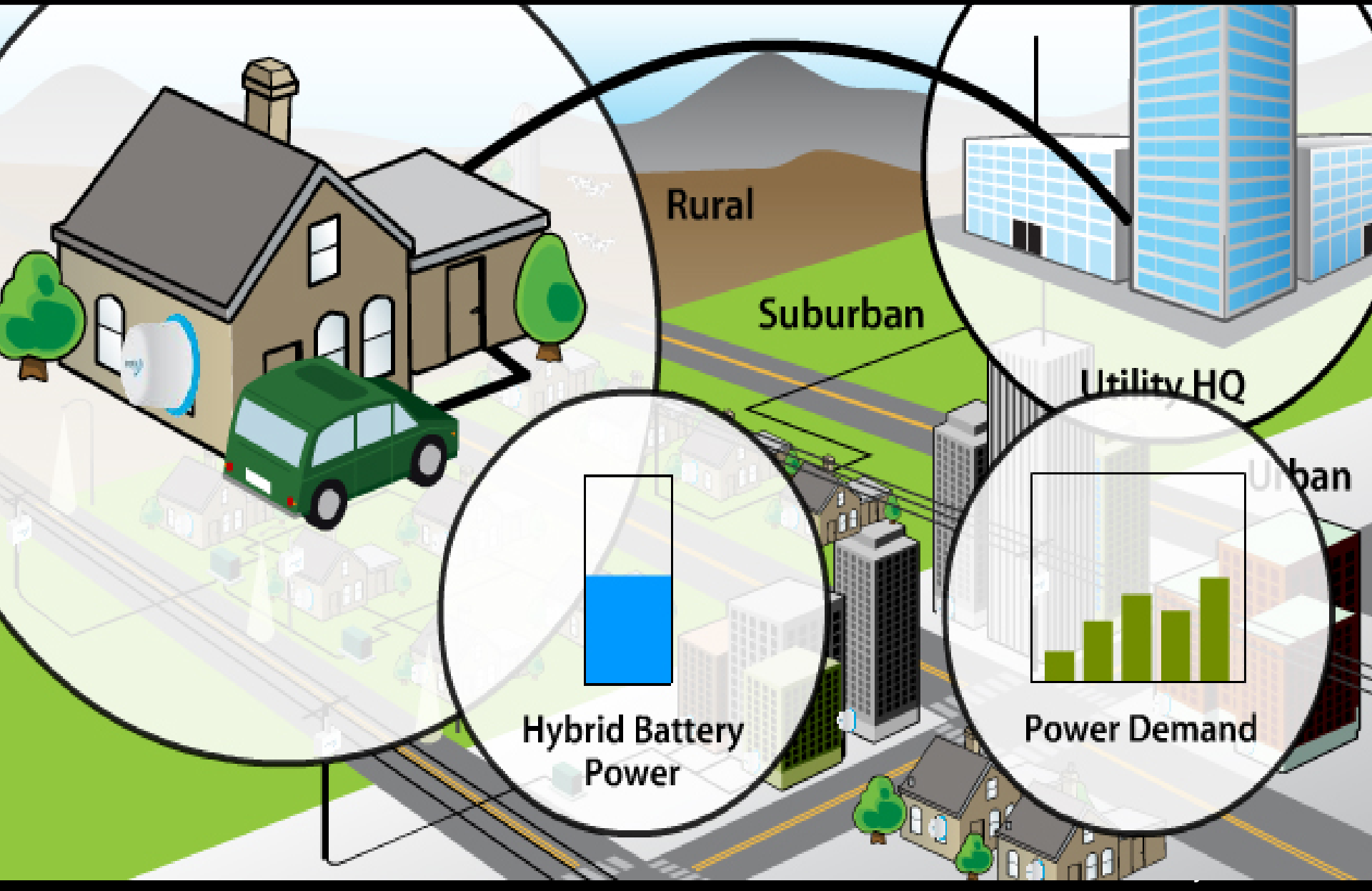


# Vehicle-to-Grid $\leftrightarrow$ Grid-to-Vehicle business

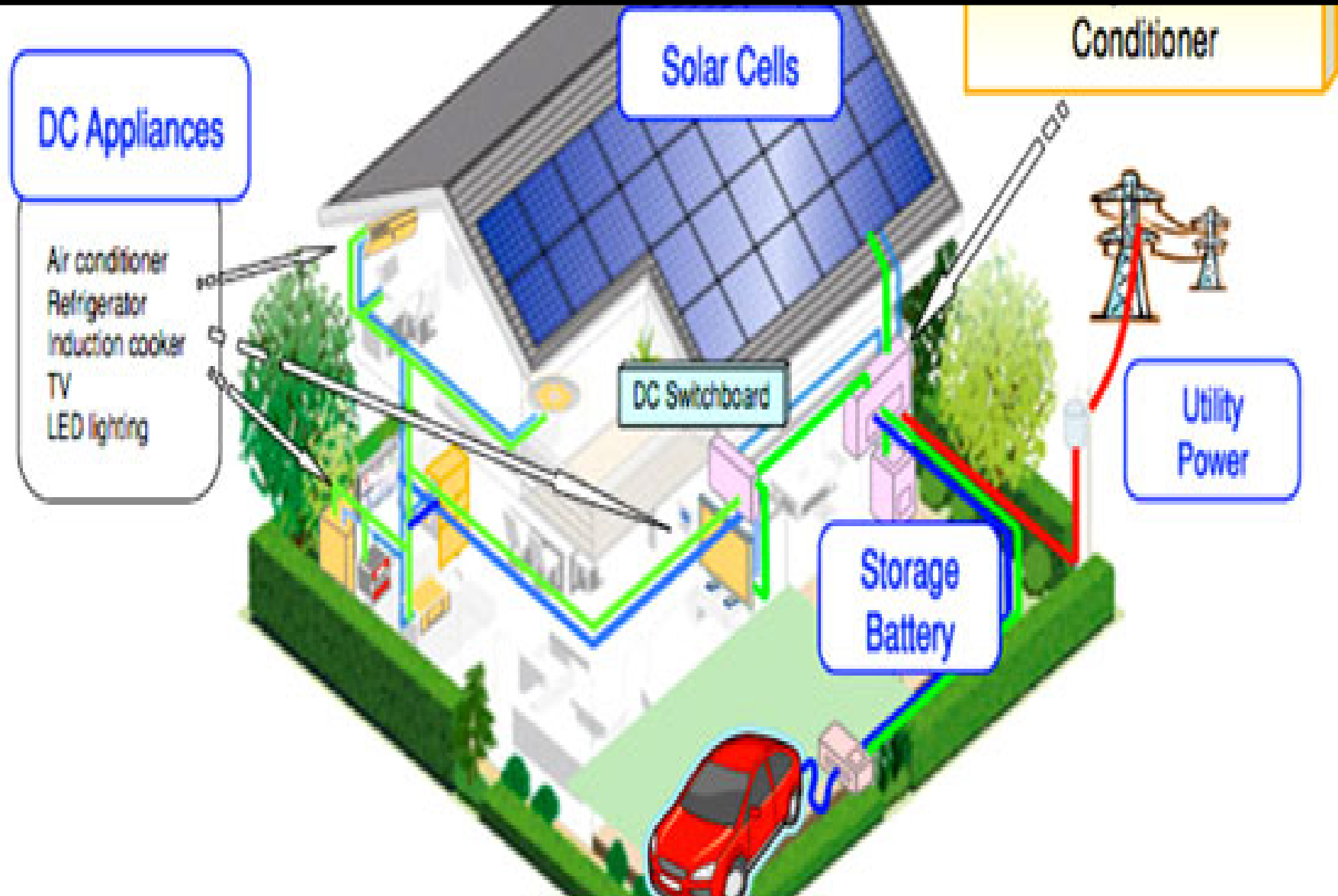
## OUR PROPOSAL - V2G Power



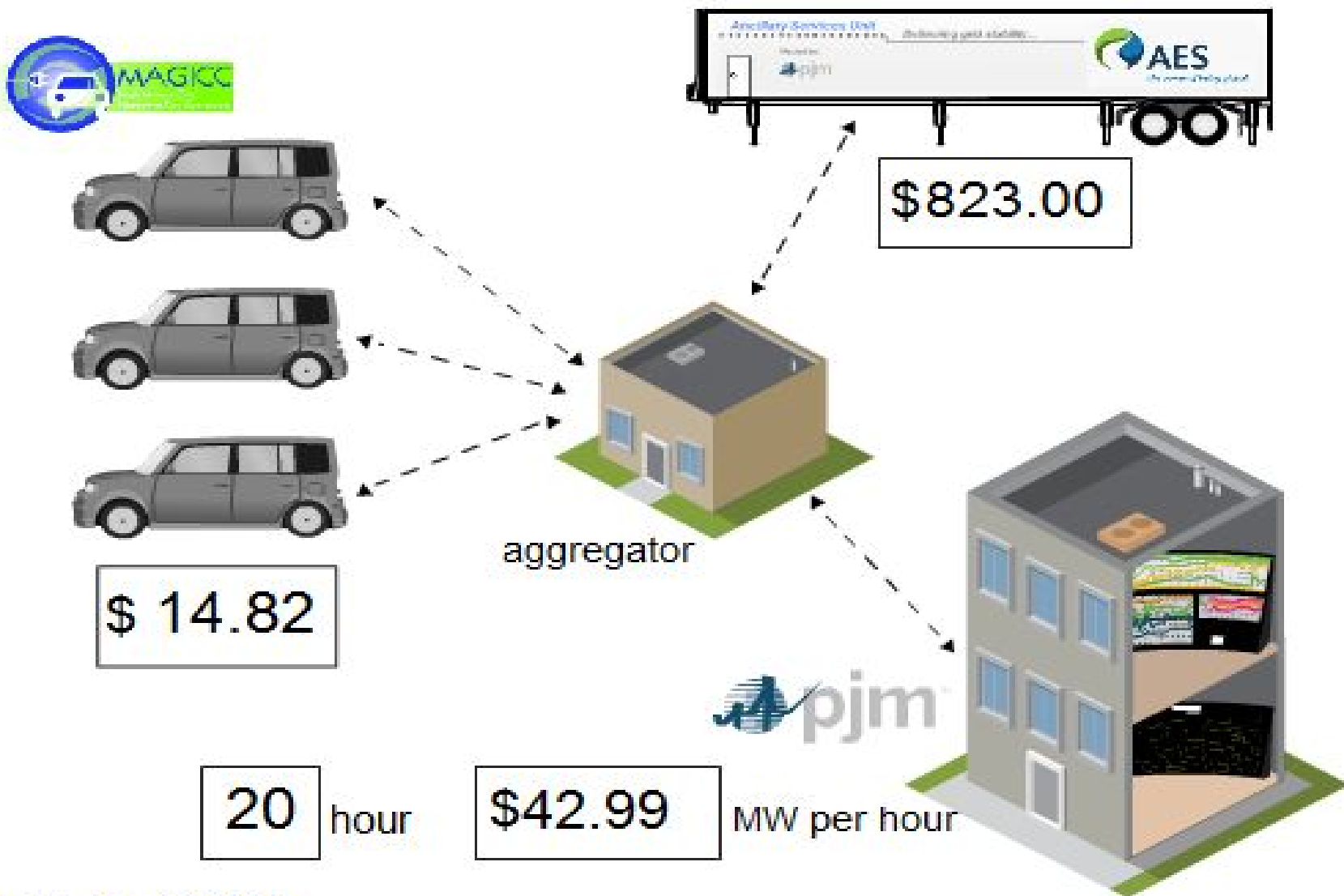
# E-car ↔ Smart-grid business



# Decentralized energy storage



# Free battery via utility/netprovider?



\* Data taken from 01/11/10



# Car sharing 3.0 – share your e-car!

nieuws - Microsoft Internet Explorer provided by Provincie Noord-Holland

http://www.mywheels.nl/nieuws/

Bestand Bewerken Beeld Favorieten Extra Help

Favorieten Web Slice-galerie

nieuws

beta

My Wheels

home nieuws hoe werkt het? meedoen idealen en meer english

Deel je auto met familieleden, vrienden of wie je maar wilt

MyWheels op BNR Nieuwsradio

Op 21 juni 2011, in Geen categorie, door admin2

Ronald Haverman praat over nieuwe vormen van autodelen op BNR Nieuwsradio. Over Peer-2-peer car sharing en over samenwerken. "Ook spreken we met Ronald Haverman. Hij is bedenker van de OV-fiets, maar stort zich nu in een heel ander avontuur: autodelen 2.0. Dat is het delen van je eigen auto met anderen." Beluister autodelen 2.0 bij BNR [...]

De overheid gaat stoelen / werkplekken delen

Op 12 juni 2011, in Geen categorie, door admin2

We vermelden op deze blog ook graag andere interessante initiatieven om zaken te delen. Want naast het delen van je auto is het delen van je werkplek natuurlijk ook een heel goed idee. Via [www.deelstoel.nl](http://www.deelstoel.nl) hebben ambtenaren de mogelijkheid om gratis een werkplek of vergaderzaal te boeken bij andere overheidsorganisaties in het land. Je kunt [...]

Car2Go: one way carsharing in Amsterdam

Op 7 juni 2011, in Geen categorie, door admin2

Bekijk het filmpje van de Smarts in Amsterdam.

Deelauto's verdubbeld in 5 jaar tijd – KpVV

Op 7 juni 2011, in Geen categorie, door admin2

In april 2011 waren er 2102 deelauto's in Nederland. Sinds jaar en dag is Amsterdam kampioen autodelen in Nederland. In Amsterdam staan meer deelauto's dan in alle grote steden samen. Het aantal deelauto's in Nederland is in vijf jaar tijd gestegen van 908 naar 2102. Dat is een groei van 17 % per jaar. Overheden [...]

Deel een auto... dat is voordelig én duurzaam

Op 7 juni 2011, in Geen categorie, door admin2



# Induction charging on your roads?

## Google Headquarters Tests Wireless Electric Vehicle Charging

BY ARIEL SCHWARTZ Mon Mar 21, 2011



As if you needed another reason to check out [Google](#) headquarters in Mountain View, California, electric vehicle technology startup [Evatran](#) announced this week that it has installed a [Plugless Power charging station](#) at Google HQ. This is the first public installation of Evatran's wireless EV charger, which uses something called "proximity charging" to juice up Googlers' Nissan Leafs and Tesla Roadsters.

The charging station is made up of a parking block, a control tower that keeps track of whether a car is charging, and an adapter mounted to the vehicle. When an adapter-equipped car pulls up to the parking space, the block adjusts to align with the adapter and starts charging. There is no flow of electricity between the adapter and the parking block--instead, the charger uses [electrical induction](#), which generates power from the connection of two magnetic coils. In this case, the coils are housed inside the parking block and the adapter.

There is a disadvantage compared to the plug and cord variety of EV charger: the Plugless Power stations lose a little bit of energy in the transfer from coil to coil. Evatran plays off the problem on its website, explaining that "although Plugless Power does anticipate a small

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WikiLeaks And The  
Tech Industry



Corruption Tracker  
Keeps Dirty Public  
Officials,  
Organizations In  
The Public Eye



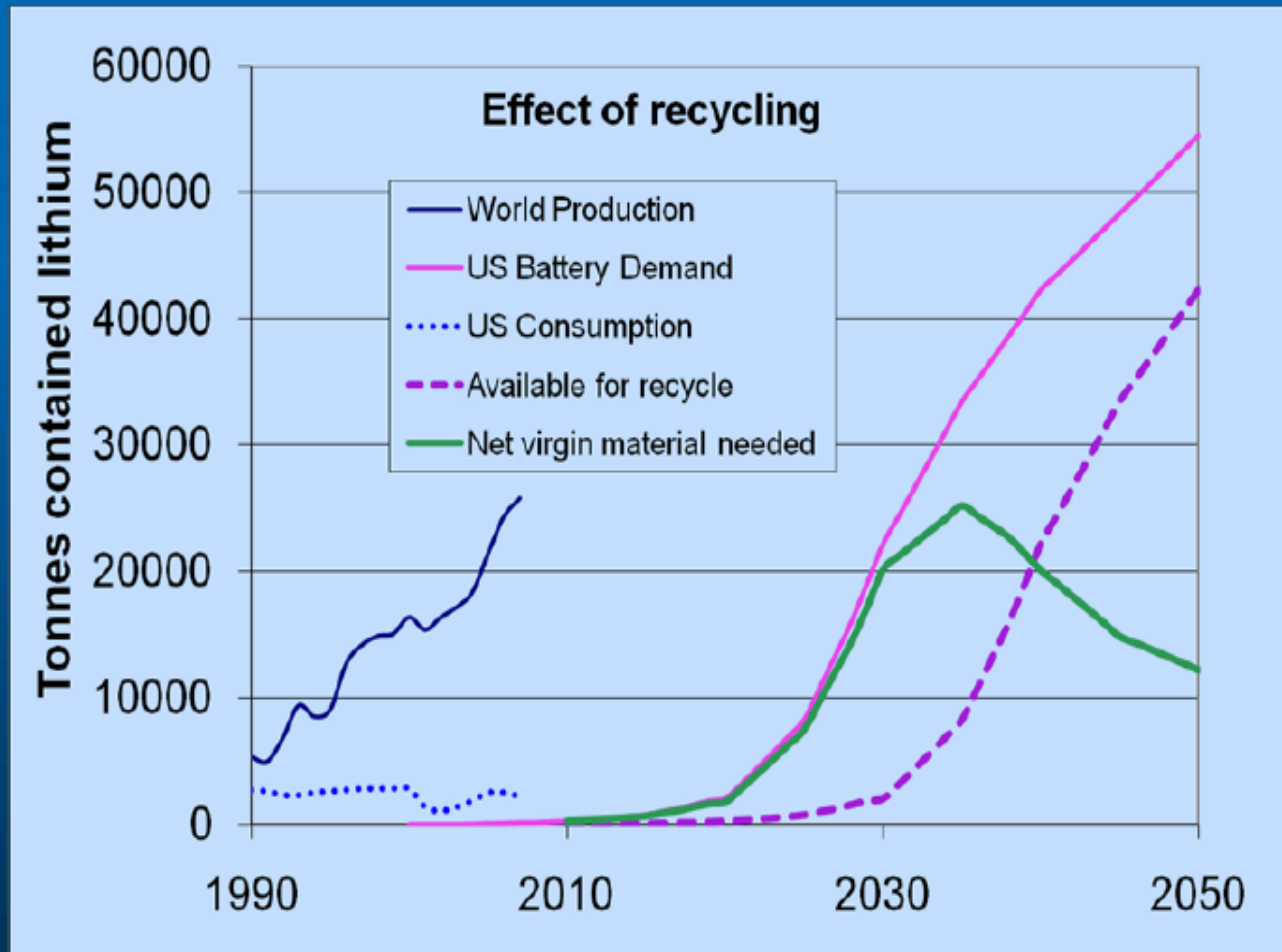
Editorial Spotlight:  
Special Features



# Innovation: rare material recycling



## Recycling can drastically reduce lithium demand



# Secondary battery use

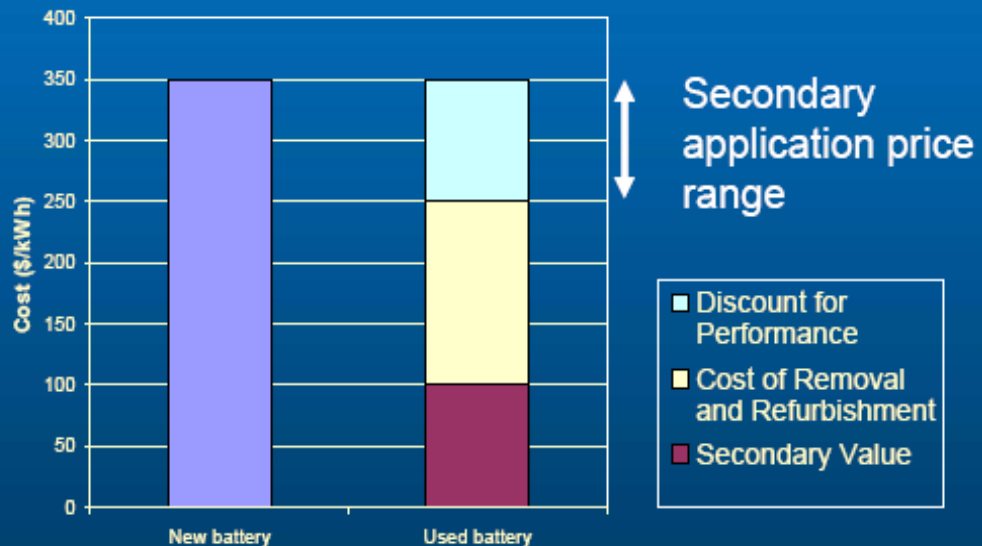
PLUG-IN  
2009



## PHEV Batteries in Secondary Use

Many questions about secondary uses...

- What performance can we expect?
- What cost discount will there be?
- What will the cost be for refurbishment?



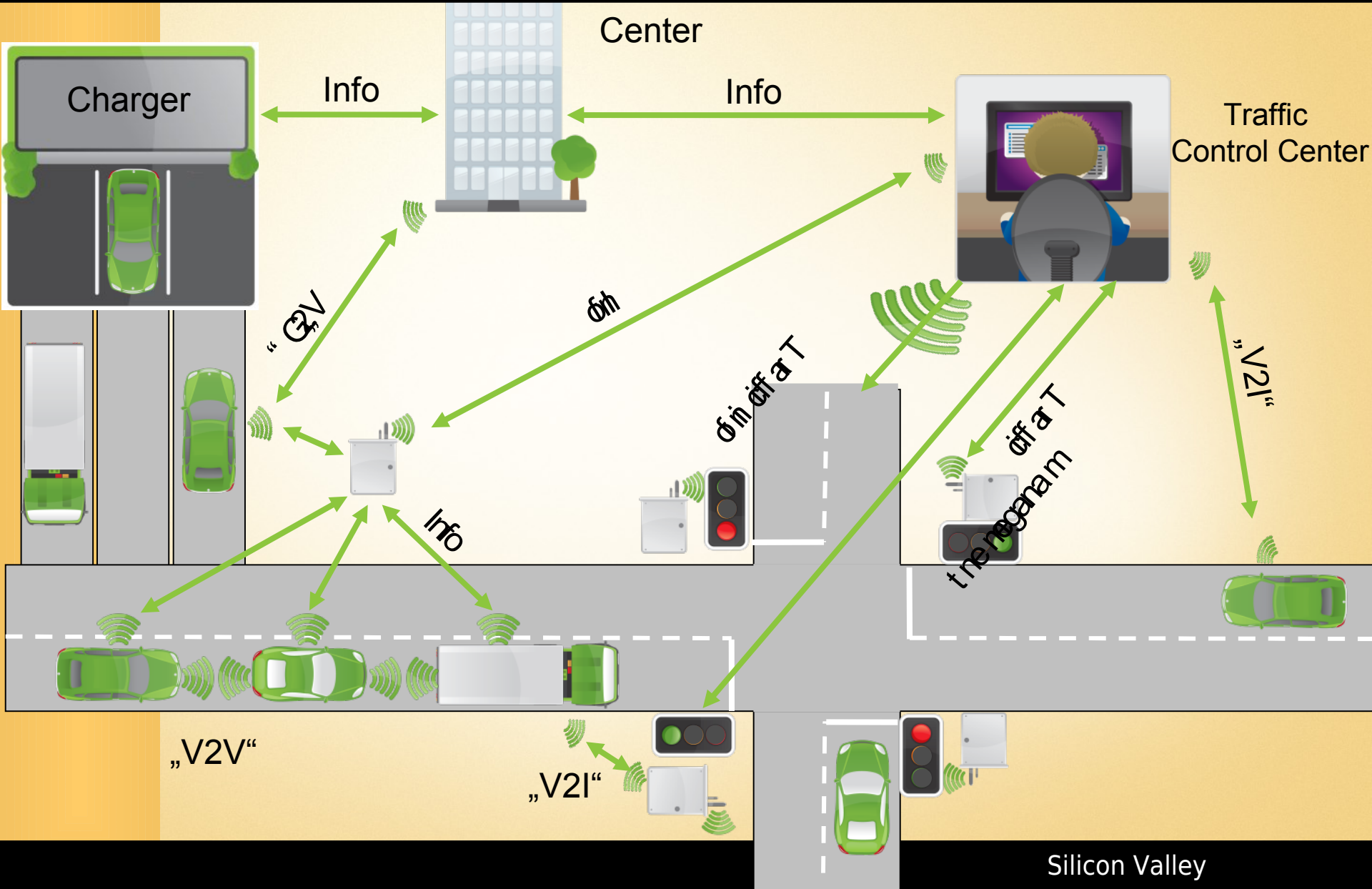
# Cooperation between urban regions (e.g. Portland - Utrecht)



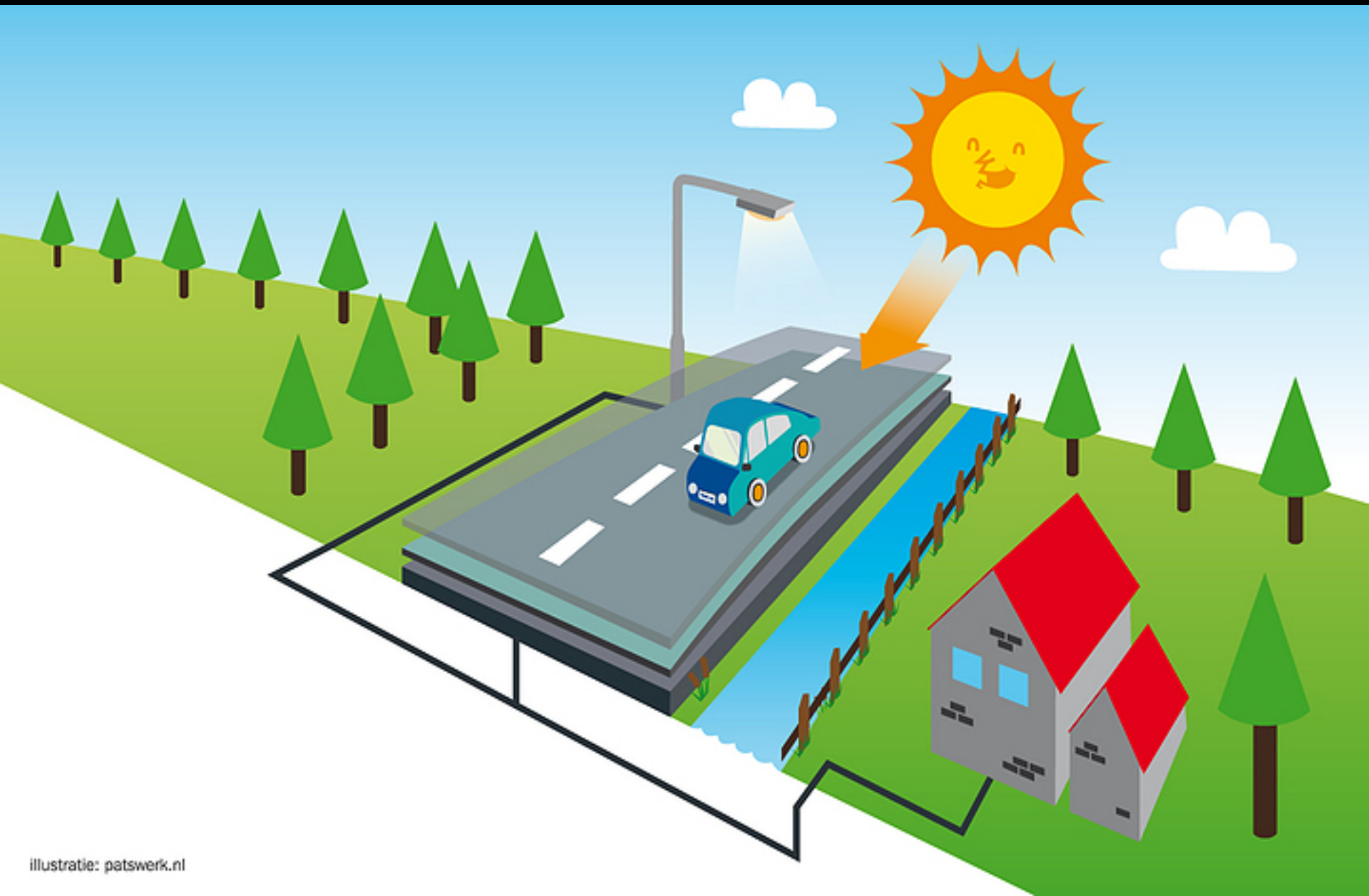
# Enthusiastic users and clubs



# Intertraffic 2012: integration DTC/E-car



# SolaRoad: 'the road that pays for itself'





# CONCLUSION

Come and visit us!