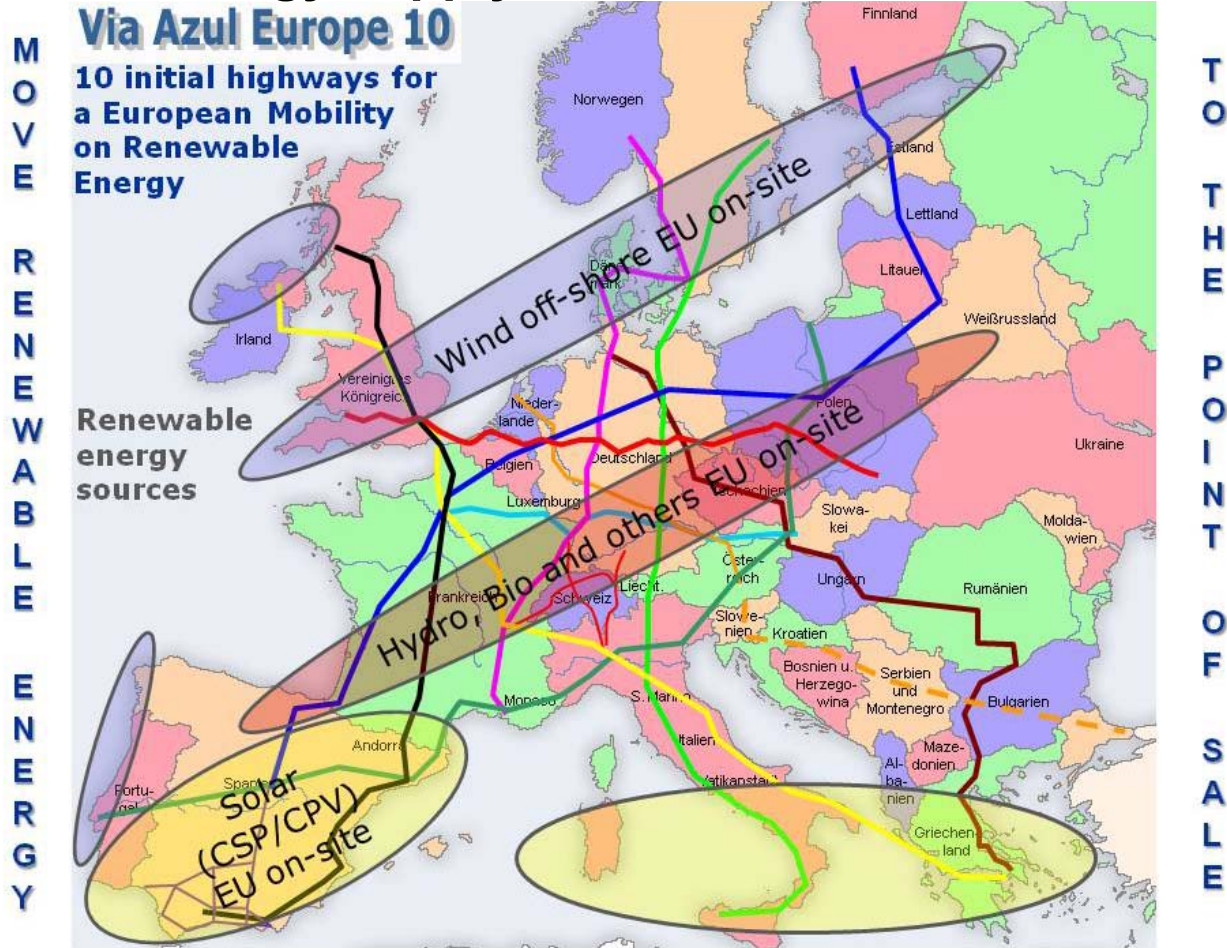


# Electromobility+



## Synergy infrastructure: Energy supply for BEV, PHEV, FCEV



**Project idea: Via Azul Europe 10 - Feasibility Study**  
Electromobility+ Brokerage Session, Cologne 2011-01-13





	<b>Peter Kindzierski</b> 	
<b>Company</b>	renergy mobility UG (SME/Germany)	IDHELIO (SME/France)
<b>Objective</b>	Solutions and alliances for the exploitation and the mobile application of renewable energy	Development of a solar concentrator with energy storage adapted for buildings and mobility applications
<b>Expertise</b>	MS Physics; More than 10 years international program management; Since 2007 (via ISCEER S.L. (ES)) - International alliance management to establish the VA initiative;	Engineer with 20 years expertise for energy technologies: solar energy, hydrogen and fuel cell, NGV, Biogas,..utilities management with an environmental (GHG balance, LCA) and an economical approach
<b>Contact</b>	+49 89 420957653 pk@renergymobility.de	+ 33 (0)6 70 60 33 47 didier.martin@idhelio.com
<b>Web</b>	www.renergymobility.de	www.idhelio.com



# Electromobility+ VA: Objectives/Roadmap



## 1 - Focus on renewable (low carbon) resources, for European Mobility

- Reduce CO2 emissions
- Avoid Peak-Oil consequences, through reduction of fossil fuel dependency

## 2 - Move electrical energy to Point of Sale (PoS) NOT fuels!

- Build VA Energy Supply Grid (ESG), connecting northern (Wind), southern (Solar) and central renewable (low-carbon) resources with Point-of-Sale (fuelling stations)
- Apply 'Energy Vector Hydrogen' for local energy storage at PoS, enabling European wide electricity grid supply/demand balancing

## 3 - Simultaneous setup: Infrastructure for mobile energy carriers Electricity and Hydrogen + Initial BEV, PHEV, FCEV fleets

- Implement VA ESG on initial 10 VA highways:
  - European Wide Area Network (WAN) Smart Grid: HVDC buried highway cable, integrating energy resources (north-south)
  - Local Area Networks (LAN) Smart Grid to PoS: HVAC/GIL
  - Local Hydrogen Grids (HyG): Distribution of locally produced Hydrogen within local PoS clusters
- Reduce risk and secure ROI on VA infrastructure and fleet developments for European Mobility on Renewable Energy
- Establish VA ESG intersections with local crossing Mobility sub grids (train networks, stationary applications, etc.)

## Deliverables (Electromobility+ Call) and subsequent realization strategy

### 1 - Perform feasibility study (2011/Q4 - 12/Q4)

- Legal, technical, environmental and economical proof of concept VA Energy Quadrants (Resources, Transmission, Storage, Application)
- Develop Blueprints for implementation in selected Pilot regions and concluding for European rollout (10 VA highways)
- Confirmed stakeholder commitments for VA Consortiums (Regional and European level) and realization strategy (VA business model)

### 2 - Establish European VA Consortium based on feasibility study results, to drive:

- Decisions on EC adoption of VA concept
- Business plan and investment concept for European VA rollout
- European and regional VA implementation plans development, based on Blueprints
- Rollout: VA Pilot regions (2013-15) and 10 VA highways (2015-22)

## Confirmed partners to build the project:

- ISCEER (ES)
- Fraunhofer IFAM (DE)
- Alstom (FR)
- McPHY (FR)
- INPT (FR)
- i-Tésé CEA (FR)

## Partners engagement in progress:

### Pilot regions

#### ('Green Corridors'):

- 'NWDE-Benelux' (DE-NL-B)
- 'Rhine-Rhone' (FR-DE)
- 'Inn-Danube-East' (AT-DE)
- 'Pyrenees oriental' (ES-FR)
- 'Andalucía-Madrid' (ES)

### Public and

#### research partners:

- BMWi / BMVBS-NOW (DE)
- DERBI (FR)
- BMVIT (AT)
- IDEA (ES)
- *Faunhofer IISB (DE)*

### Industry partners for VA Energy Quadrants:

- Siemens (DE)
- Linde (DE/Benelux)
- PSA (FR)
- Air Liquide (FR)
- GDFSUEZ (FR)
- EDF (FR)

## Further preferred partners for VA Energy Quadrants:

- **Automotive:** VW, Daimler, BMW (DE); Fiat (IT); Toyota, Honda (JP)
- **Utilities:** EnBW, RWE, E.ON (DE), Iberdrola (ES), ENEL (IT/ES)
- **Oil&Gas:** BP/Aral (DE), Shell (NL), Total (FR), Repsol (ES)
- **OEM:** ABB, Hydrogenics, ELT (DE); Statoil (NO)

**Others welcome!**

