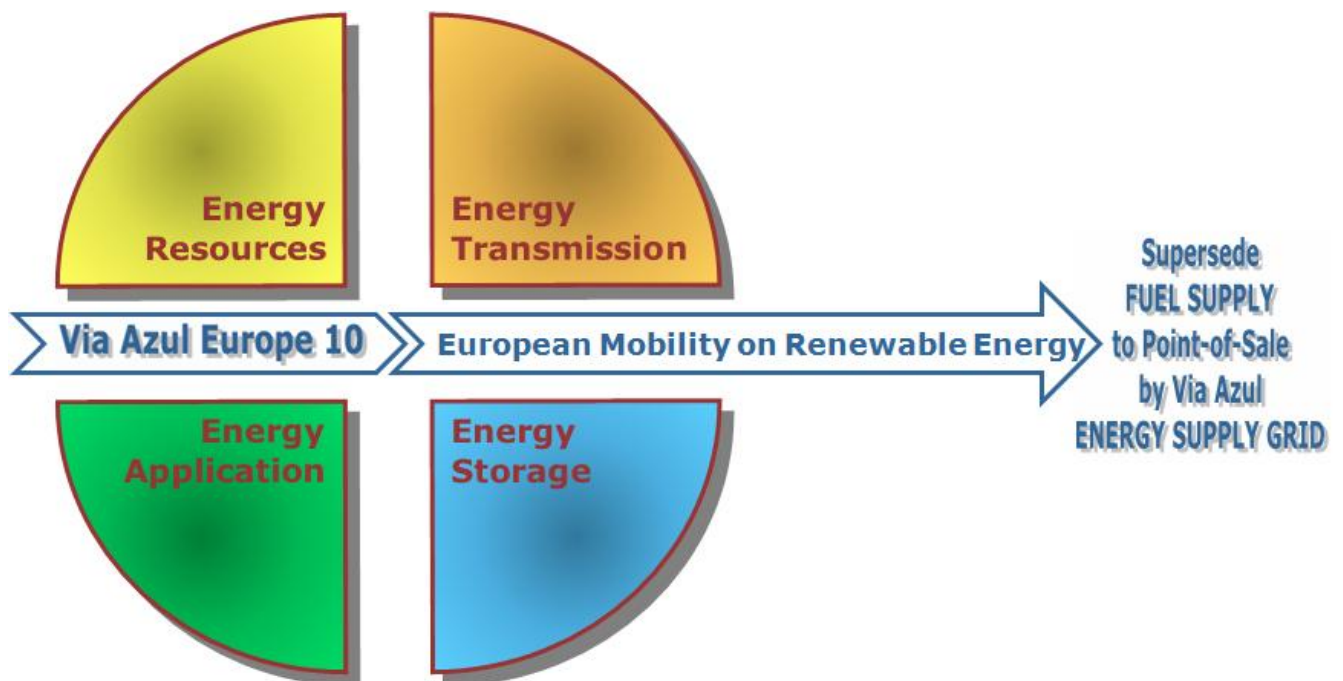


Via Azul Europe 10

Comprehensive synergy initiative for a European Mobility on Renewable Energy

The ingenuity is the smart fusion of the Via Azul Energy Quadrants:



Feasibility Study

to launch the final establishment of the Via Azul Europe 10 initiative

Via Azul (VA) Feasibility Study consortium:

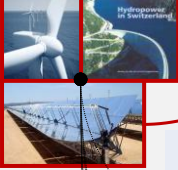
www.via-azul.eu/feasibility_study.htm

Via Azul Europe 10

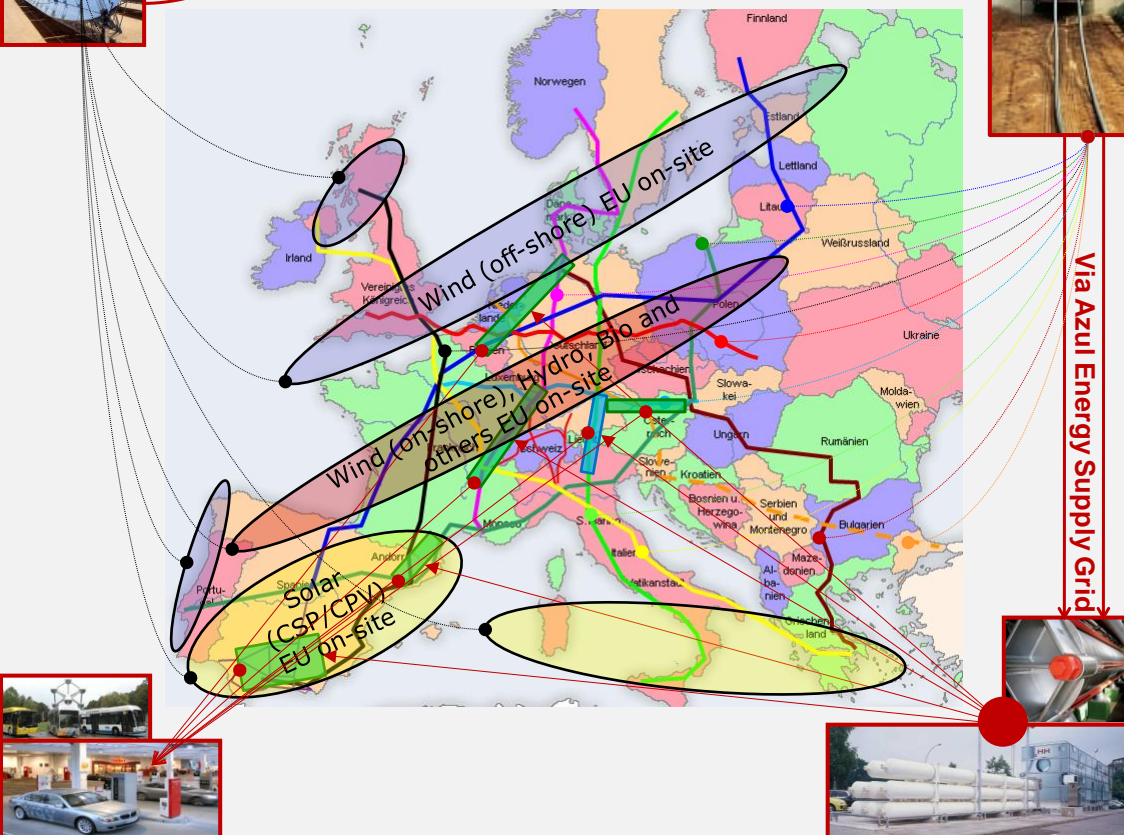
The initiative harmonizes & merges the critical masses of:

1. Renewable Energy Resources (RES) like :

- EU-North Wind-Off-Shore farms
- EU-South Solar Power plants
- Wind-On-Shore, Water, Biomass etc.



2. The **Electrical Energy Transmission** to the Point-of-Sale (PoS), realized through the **VA Energy Supply Grid** and applying the HVDC/AC buried cable technology for its **Wide Area Network**, can substantially shorten line approval cycles, if this **WAN** will be implemented along 10 VA Highways. Complementary **DC/AC Local Area Networks**, amplified by local RES and H₂ supply, enable charging/fuelling every 50 km.



4. **Mobile energy carrier** (Electricity and Hydrogen) supply for **Electro Mobility applications** BEV, PHEV and FCEV, starting in VA Pilot Regions + incl. cities.

3. Required infrastructure at PoS fuelling station, providing **Energy Storage** via: - Direct grid connected vehicle batteries
- Local facilities for hydrogen generation, storage and flexible disposal
These enable, together with the supporting Smart Grid technology, accurate net stability and supply/demand balance (Demand Side Management) for renewable energy sources.



Move ELECTRICAL ENERGY to Point-of-Sale - NOT FUELS!

Via Azul (VA) Feasibility Study consortium:

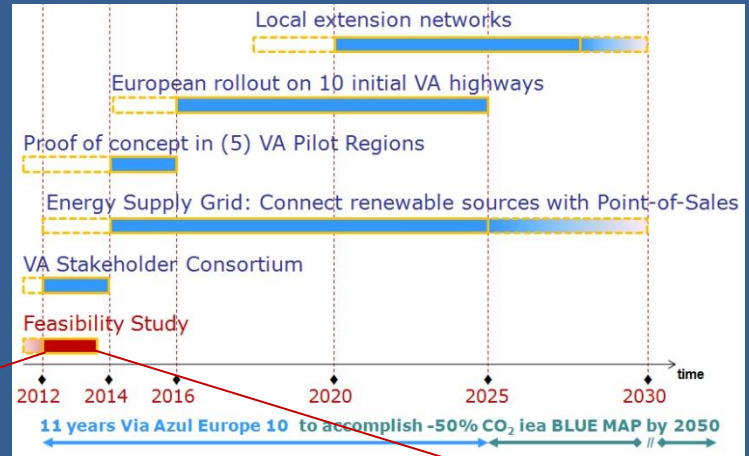
www.via-azul.eu/feasibility_study.htm

VA Key Figures

Total investments	~30.000 Mio Euro*
Total CO2 reductions	~4.000.000 t/year*
Network of fuelling stations / 50 km	~665* (2 electrolyzers each)
Highway cable	~33.000 km*
Concentrating Solar Power Plants (CSP)	~55* (50 MW each)
FC Buses	~820* (in close-by cities)
FC Cars	~16.400*
Electric Vehicles	~20.000*

*To be refined during VA Feasibility Study

VA Roadmap



Feasibility Study

The goals are...

1. Approve

- Objectives
- Key figures
- Environmental impacts **of VA 10**

2. Derive **aligned**

implementation roadmap for the final VA 10 establishment.

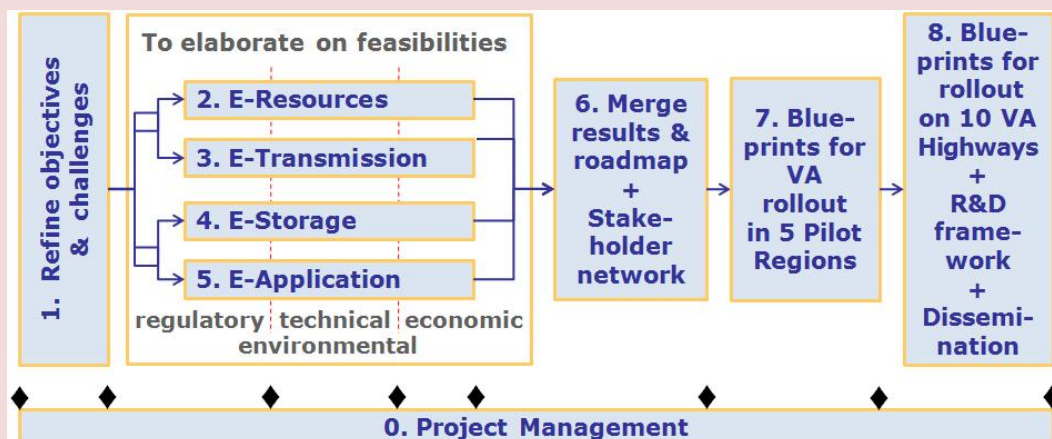
Feasible supply and value chain simulations for each of the VA Energy Quadrants

...and the Output is:

- VA 10 **Blueprints** for rollout
- R&D project framework
- Driving **Stakeholder**

VA Work Plan

with 8 Work Packages



Required resources:

- 18 international stakeholders
- 198 Person Months within 1,5 years
- Total costs: € 2.440.360 / funding: € 1.786.417

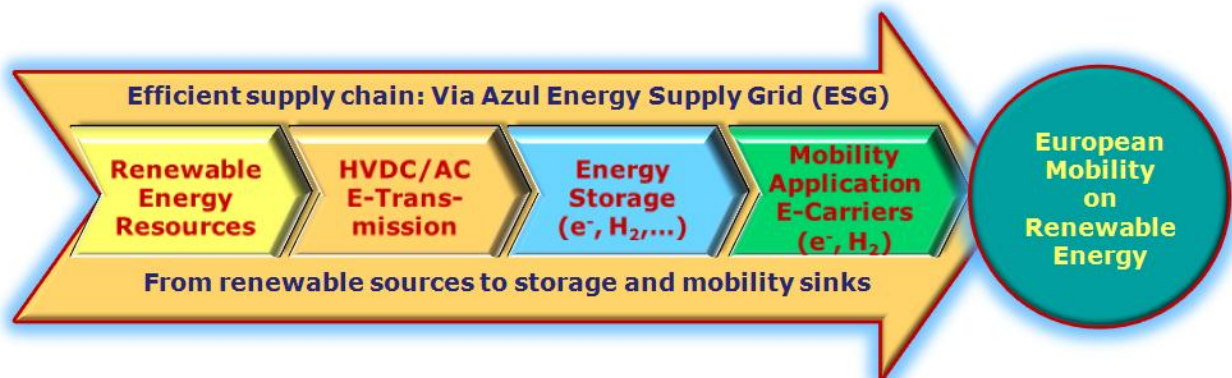
Via Azul (VA) Feasibility Study consortium:

www.via-azul.eu/feasibility_study.htm

Summary **Feasibility Study**

The Via Azul Europe 10 (VA) is a crosscutting, comprehensive synergy initiative to establish a European Mobility on two energy carriers Electricity and Hydrogen from renewable sources. The simultaneous implementation of a charging/fuelling infrastructure and setup of initial electric propulsion vehicle fleets along the corridors of 10 initial European VA Highways (until 2025), starting with selected cross country VA Pilot Regions and tangential cities (until 2015), will connect substantial renewable energy sources throughout Europe with new generation fuelling stations. The stations will be equipped with facilities for local energy storage and charging/fuelling of Battery-Powered Electric Vehicles (BEV), Hydrogen-Powered Fuel Cell Electric Vehicles (FCEV) and Plug-in Hybrid Electric Vehicles (PHEV). The corresponding primary energy supply from RES will be realized through a new VA Energy Supply Grid (VA ESG), implemented preferably underground along mostly public highway trails. The innovative VA concept: 'Move electrical energy to the Point-of-Sale - NOT fuels!' requires a smart fusion of already existing/evolving technologies and business models, in 4 distinct areas, the VA Quadrants: Energy Resources, Energy Transmission, Energy Storage and Energy Application.

As a result of this smart fusion approach, a European consortium of 5 SMEs, 8 Academic partners and 5 industry partners has been formed, to elaborate on the regulatory, technical, economical and environmental feasibility of VA Energy Quadrants, in order to derive and approve the entire VA solution approach/business model, incl. identified GAPs in legal/regulatory frameworks and for further R&D, as well as potential investments and public private partnerships for its final implementation.



The scientific and industrial experience of the consortium partners will enable:

- The performance of the Feasibility Study main tasks for each VA Energy Quadrant:
 - Regulatory
 - Technical
 - Economical
 - Environmental (incl. LCA)
- The Elaboration on VA Feasibility Study key deliverables, like:
 - The VA Business Model, incl. the VA Energy Supply Grid (ESG)
- The development and application of the framework for Supply & Value Chain Models, in order to permit final simulation of both chains for the entire VA Business Model
- The creation of the Blueprint framework for the final Feasibility Study Blueprint developments:
 - In VA Pilot Regions*
 - On the 10 VA Highways *

*(incl. required infrastructure and initial BEV/FCEV, PHEV fleet establishments)

Via Azul (VA) Feasibility Study consortium:

www.via-azul.eu/feasibility_study.htm