

# Via Azul Europe 10

A comprehensive synergy initiative for the:  
**European Mobility on Renewable Energy**

enabled through  
the Energy Vector Hydrogen  
and the Via Azul ENERGY QUADRANTS:  
*Energy Resources, Energy Transmission,  
Energy Storage and Energy Application*

Current Via Azul initiators:

**ISCEER**

  
UNIVERSIDAD  
DE MÁLAGA

**Fomenta AG**  
Fomenting Energy & Technology

  
Zukunft. Heute!  
Futuro. Adesso!

*flow-advice*  
coached innovations



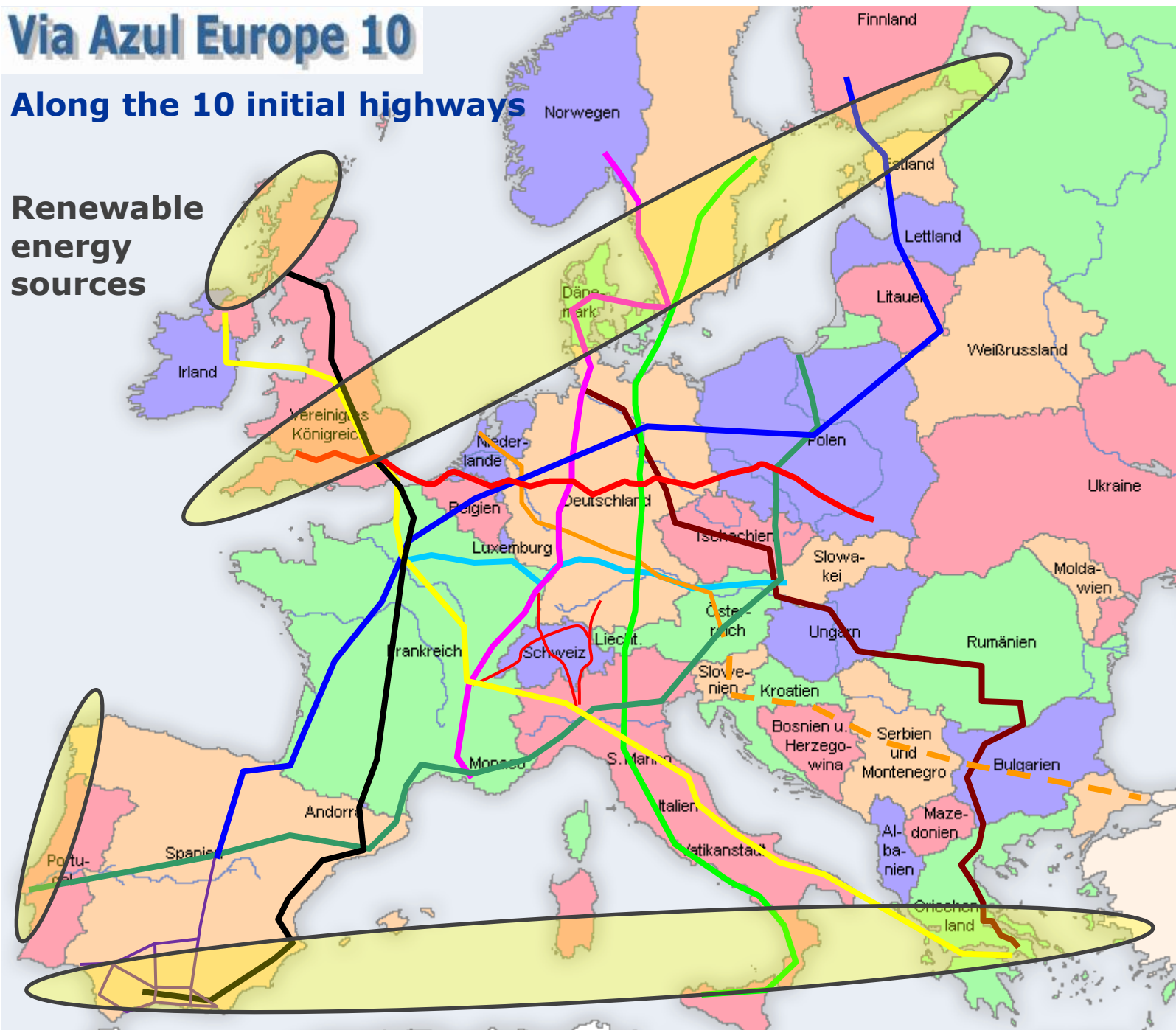
# Via Azul Europe 10

Along the 10 initial highways

Renewable energy sources

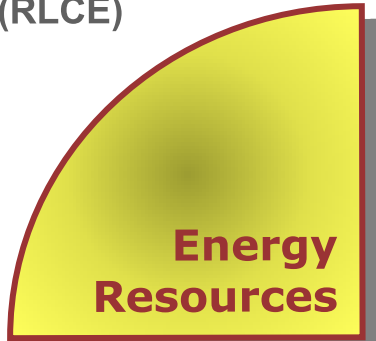
MOVE  
RENEWABLE  
ENERGY

TO  
THE  
POINT  
OF  
SALE



# Establish the Critical Mass for the EU Electro Mobility..!

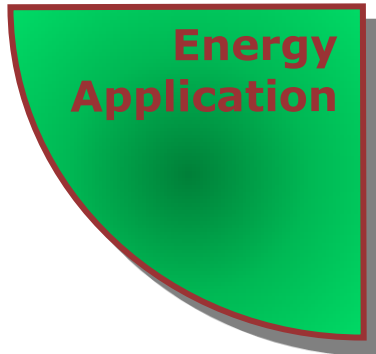
✓ Renewable (low-carbon) Energies (RLCE)



!!Regional RLCE plants

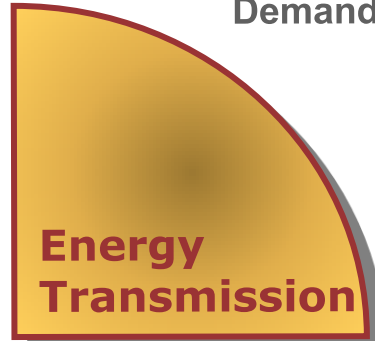
**Via Azul Europe 10**

!!Fuelling stations/ Vehicle fleets



✓ Energy efficient driving and easy rapid fueling (Battery + FC)

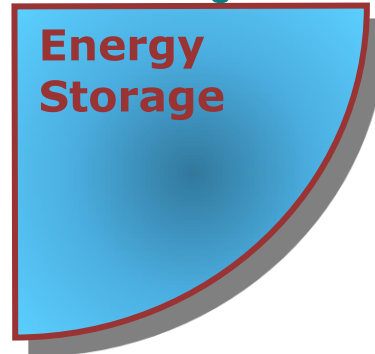
✓ Smart Grid enabled RE Supply/ Demand balancing



!!Super Grid Transportation

**European Mobility on Renewable Energy**


!!Local storage infrastructure



✓ H<sub>2</sub> Electrolysers/Metal Hydrides  
New gener. batteries/charging

Supersede  
**FUEL SUPPLY**  
to Point-of-Sale  
by Via Azul  
**ENERGY SUPPLY GRID**

# Vía Azul ENERGY QUADRANTS



**Via Azul Smart Grid**


**WAN/LAN**




Hydropower in Switzerland

Society for the Art of Civil Engineering

**Via Azul ENERGY SUPPLY GRID on European highways**



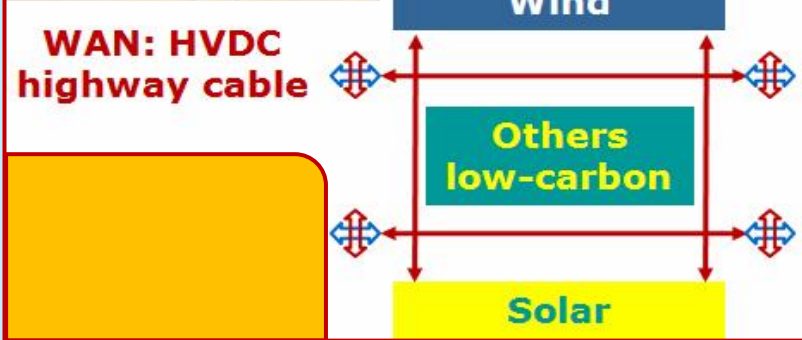
N  
 W — E — WAN  
 S — LAN/H<sub>2</sub> Grid

**Wind**

**WAN: HVDC highway cable**

**Others low-carbon**

**Solar**




Hydrogen refueling station with a silver car and a green bus.



Hydrogen storage tanks and industrial facility.

# Vía Azul ENERGY QUADRANTS

1. Renewable (low-carbon) **Energy Resources** like :
  - EU-North Wind-Off-Shore farms
  - EU-South Solar Power plants
  - Water Etc.

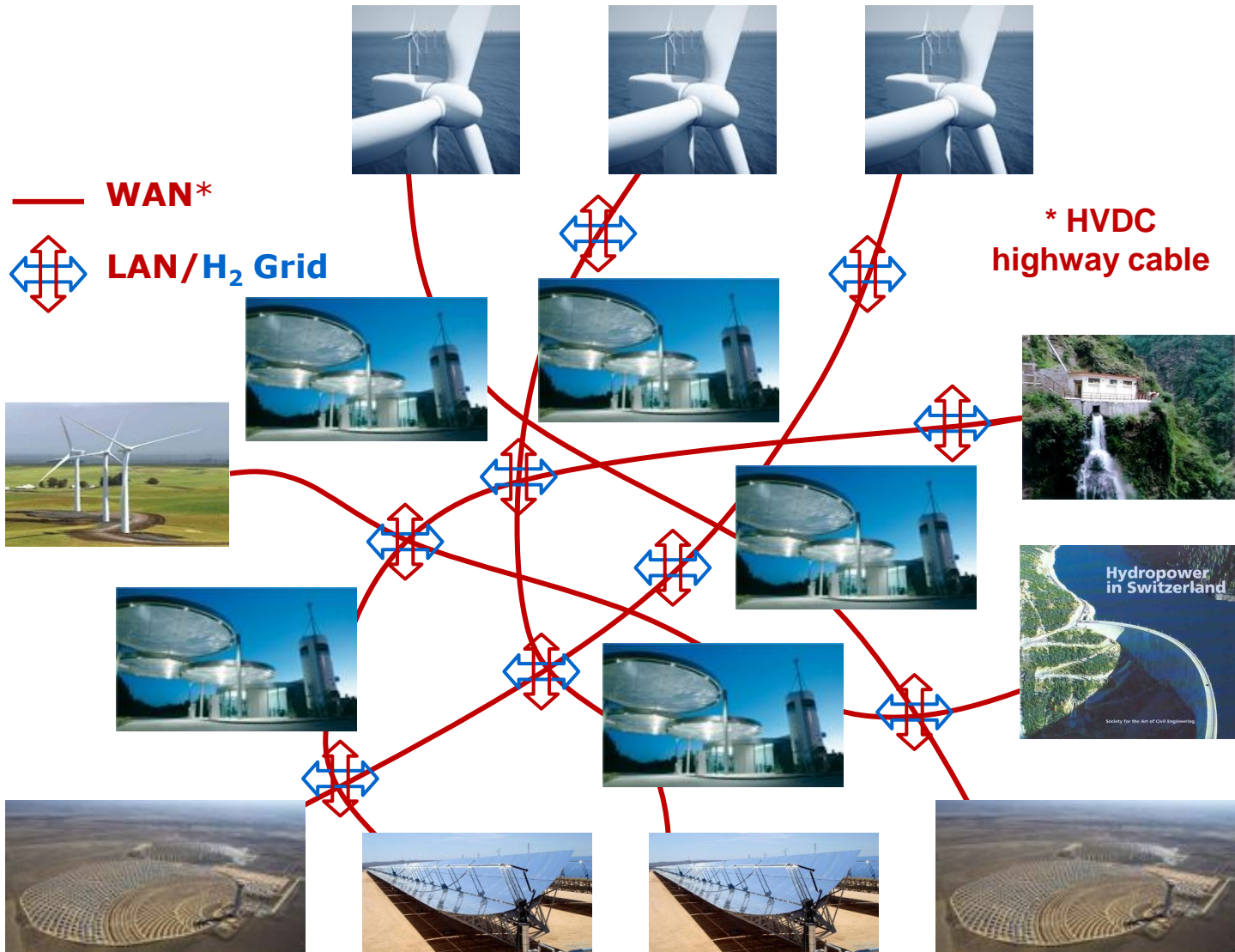
2. The Electrical **Energy Transmission** to the Point-of-Sale (PoS), applying HVDC underground cable technology, can substantially shorten line approval cycles for a new **Wide Area Network** of the **Via Azul Energy Supply Grid**. The **WAN**, implemented on the 10 VA highways with complementary (HV)AC **Local Area Networks**, enables charging/fuelling every 50 km.

## Via Azul Energy Supply Grid

4. Electro and hydrogen based low-carbon mobility applications like **hybrid, battery & fuel cell vehicles**, starting in VA pilot regions and 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 disposalThese enable, together with the supporting Smart Grid technology, accurate net stability and supply/demand balance for renewable (low-carbon) energy sources.

# Via Azul Energy Supply Grid (Example)



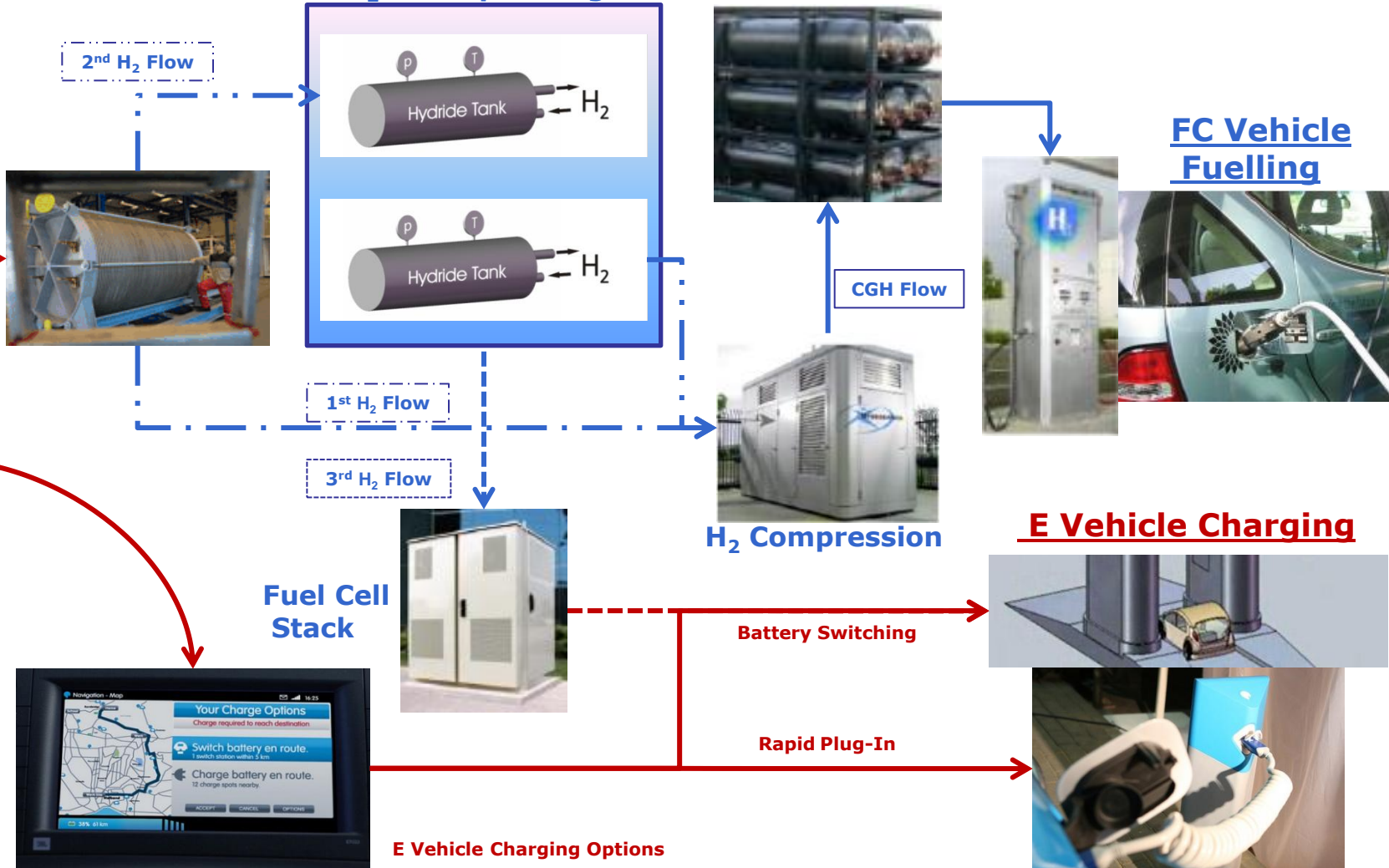
# Network of existing/amplified Highway Fuelling Stations

Smart Grid

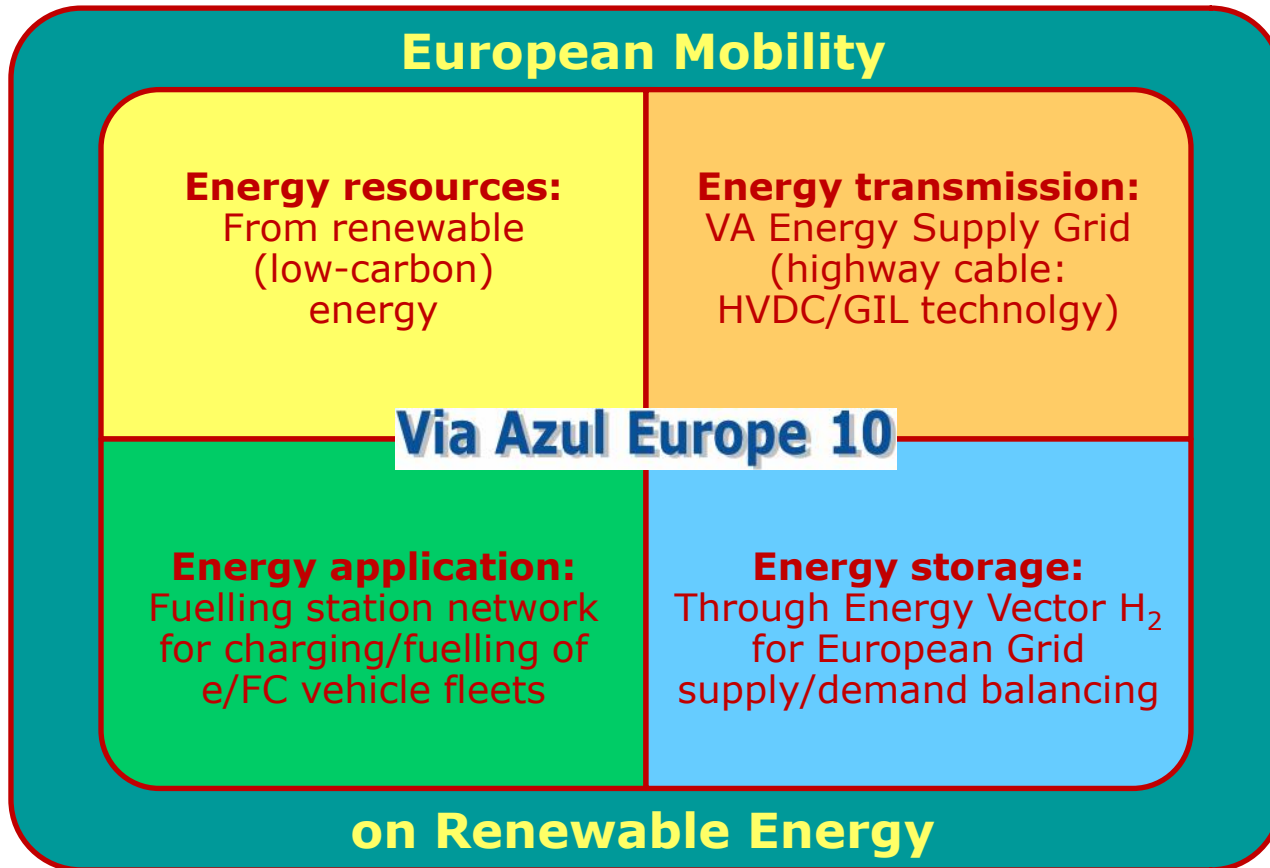
Electrolyser

Cascading  
H<sub>2</sub> Backup Storage

Operative CGH Storage  
< 1.000 bar

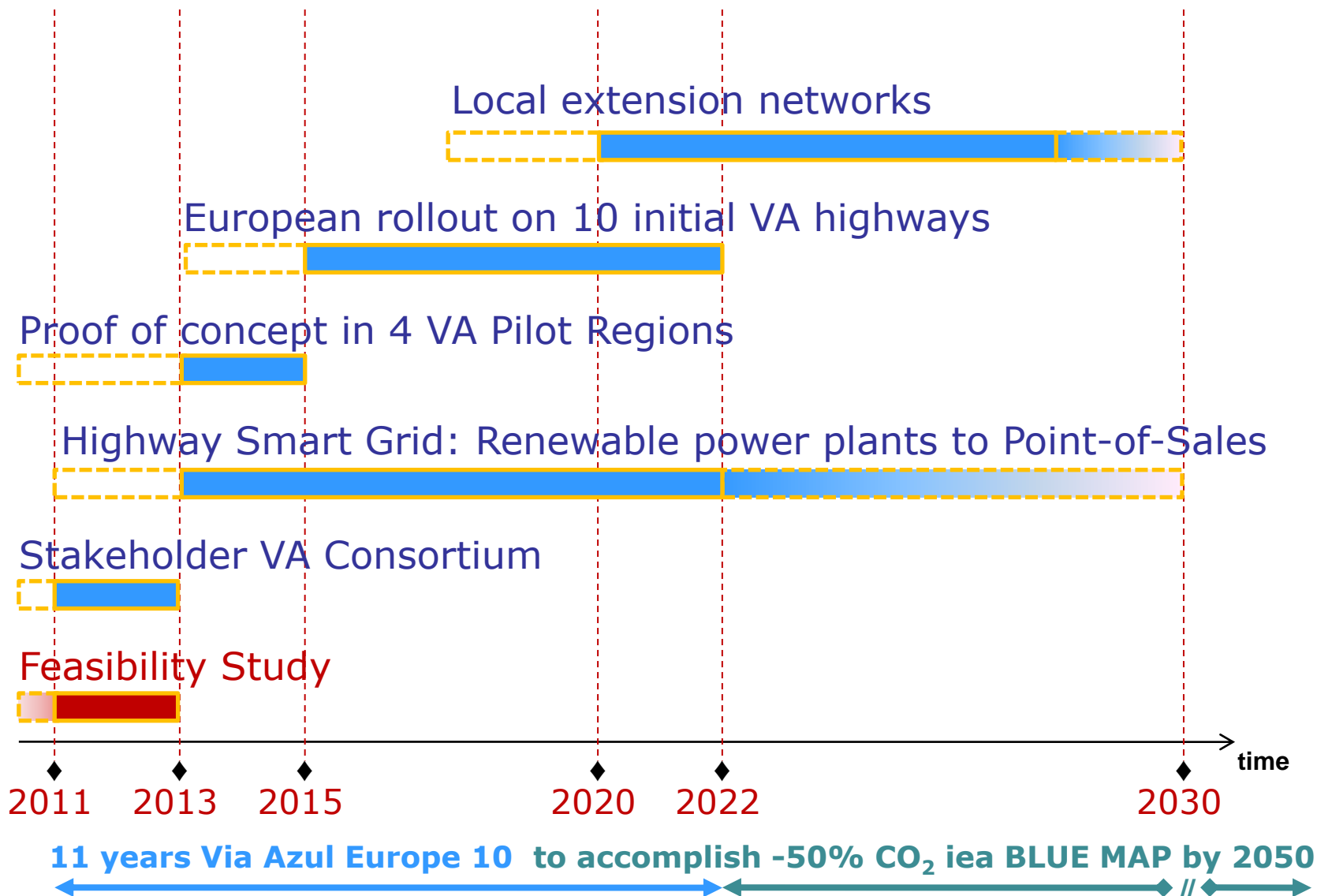


# Vía Azul value add





# Via Azul Roadmap to accomplish -50% CO<sub>2</sub> iea BLUE MAP scenario 2050

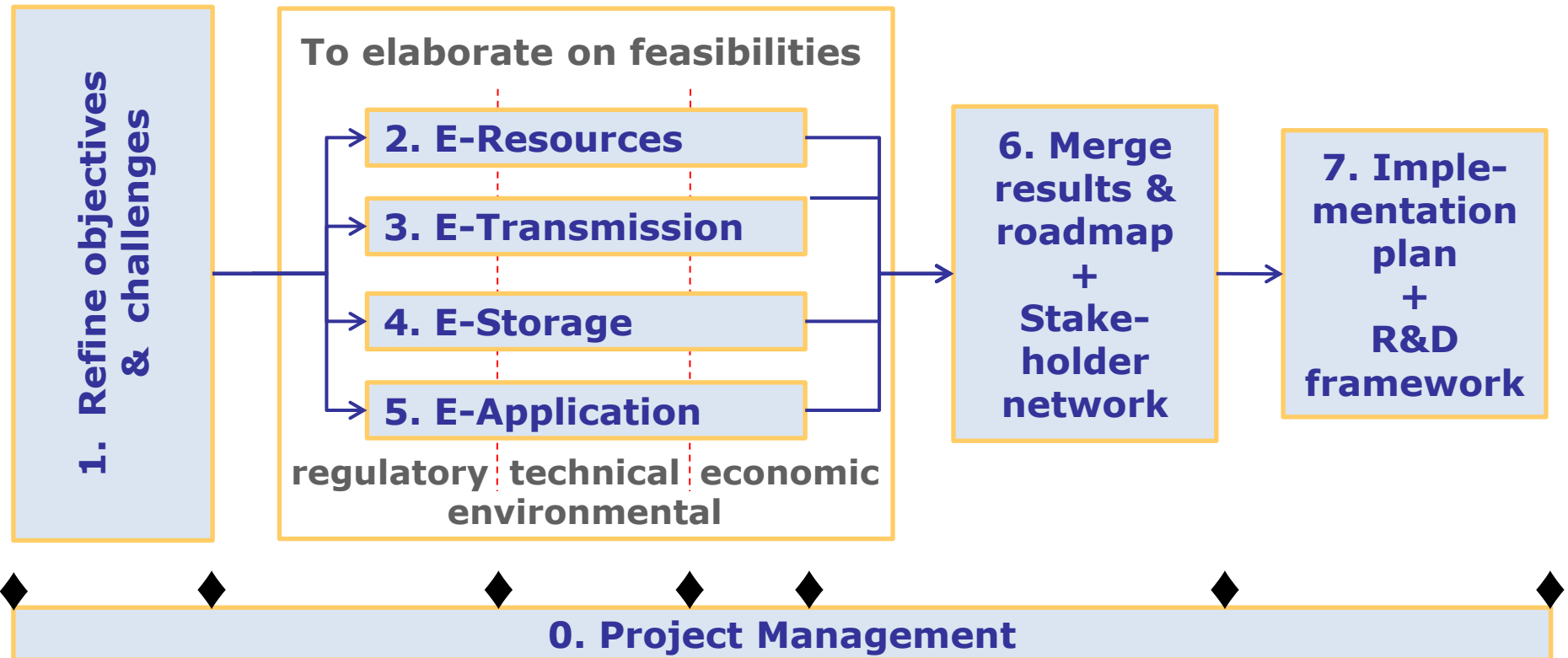


# Estimated key figures

(based on the final implemented capacity of 662 initial fuelling stations)

<b>Total investments</b>	<b>21.686 Mio Euro</b>
<b>Total CO2 reductions</b>	<b>3.240.000 t/year</b>
Network of fuelling stations / 50 km	662 (2 electrolysers each)
Highway cable	32.876 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

# Feasibility study work program – process flow



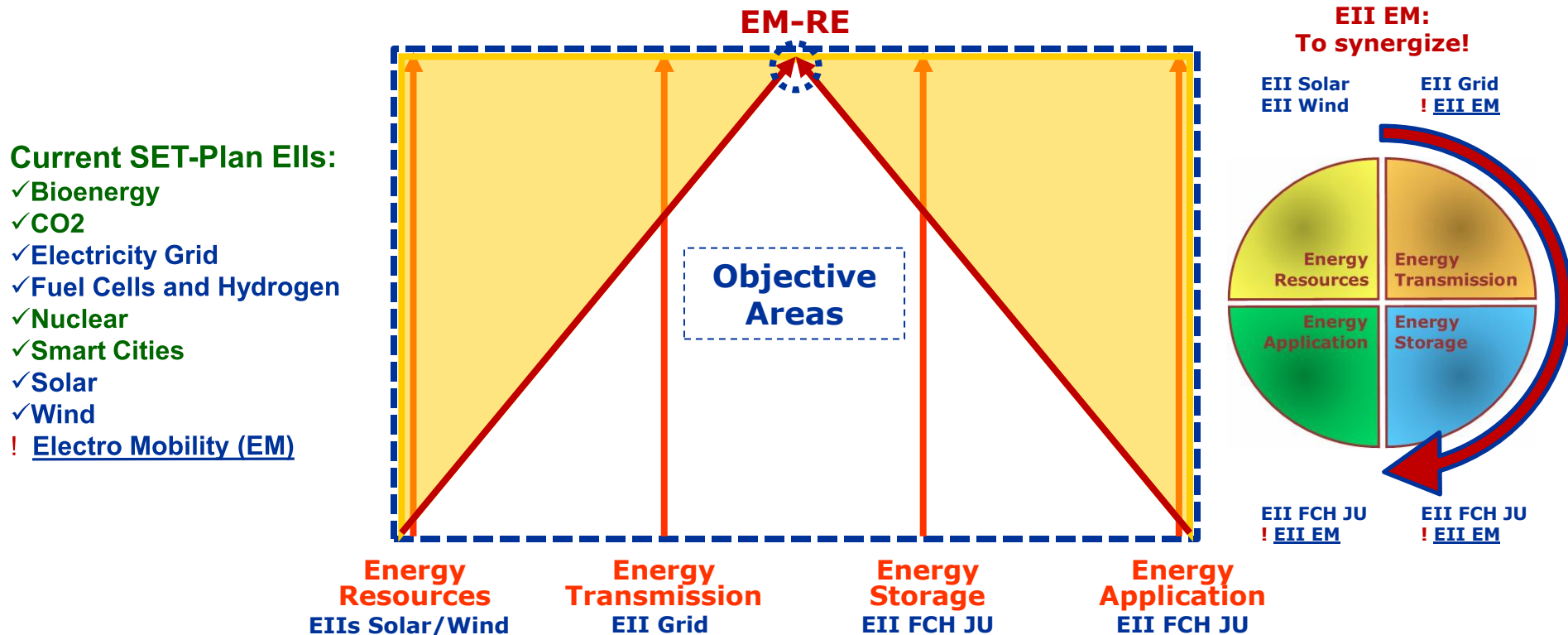
The corresponding flyer can be downloaded: <http://www.via-azul.eu/links/links.htm>

# Feasibility Study: Stakeholder networking (negotiation status) for Public Private Partnership

- **Industry partners**
  - **Energy Resources**
    - SET-Plan EIIs 'Solar' and 'Wind'
  - **Energy Transmission**
    - SET-Plan EII 'Grids'
  - **Energy Storage**
    - SET Plan EII 'FCH JU'
  - **Energy Application**
    - SET Plan EII 'FCH JU'
    - European Hydrogen Bus Alliance
    - Other local electro vehicle initiatives
- **Public authorities (EU and national/local Ministries)**
  - EU
    - Cabinet EC Oettinger
    - SET Plan
  - AT
  - CH
  - DE
  - ES
  - IT
  - Others

# Via Azul to enforce a SET-Plan EII\* 'Electro Mobility'..?

Up to 50% savings on investments through synergy potentials, if the European Mobility on Renewable Energy (EM-RE) would be driven by EII Electro Mobility (! EII EM)



Currently: EU wide spread and various efforts on **EM-RE Key Components**, to realize diverse national Mobility Strategies

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# Via Azul Europe 10

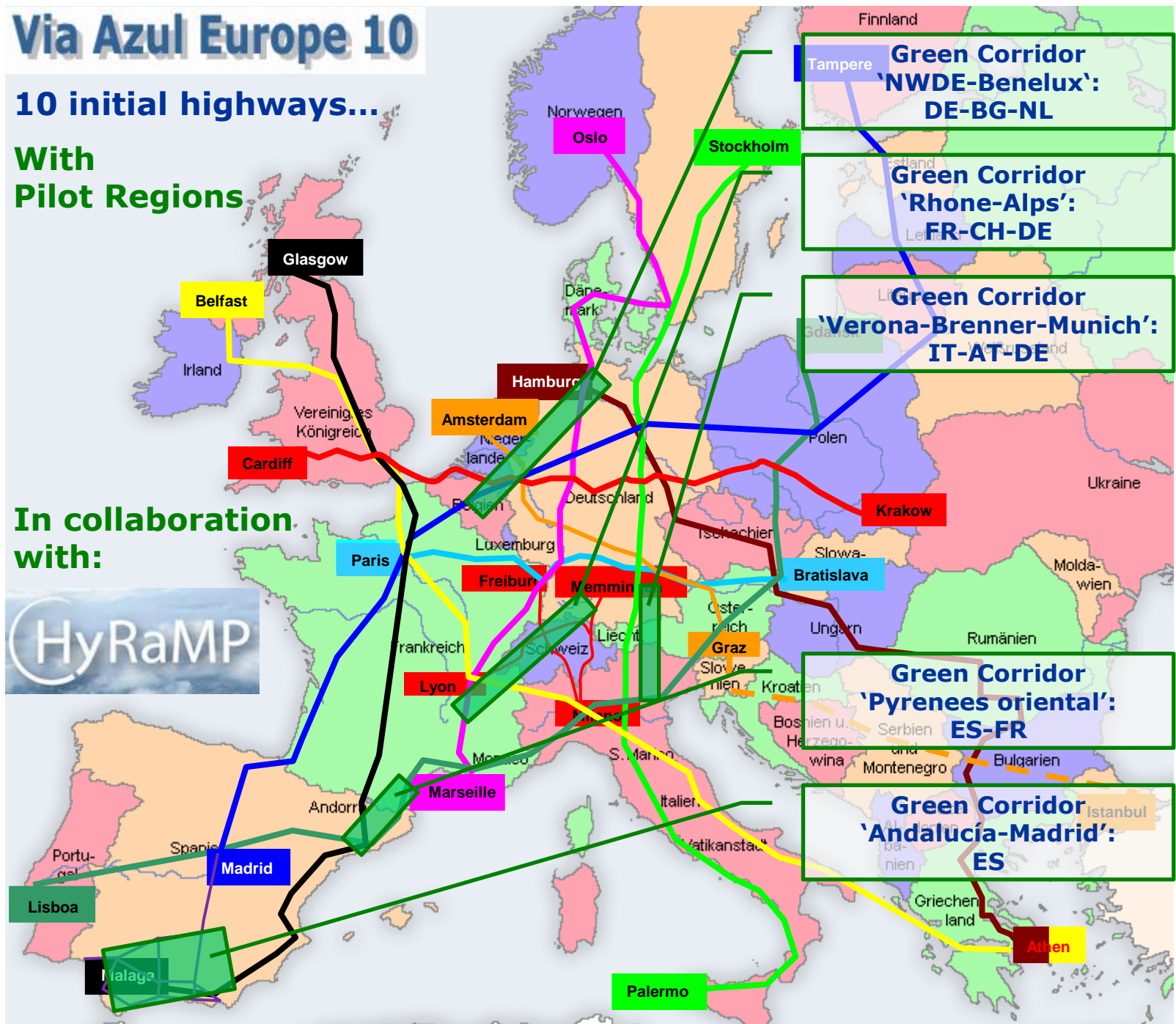
10 initial highways...

With  
Pilot Regions

In collaboration  
with:



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# Via Azul Europe 10

We are preparing a **VA meeting** in the Bolzano region's office in **Brussels** by the end of **November**, to share **Green Corridor Brenner** experiences with other interested **VA Pilot Regions..!**

*Pilot Regions will be:  
First time movers and  
eMobility beneficiaries..!*



**How could your region contribute...  
with current, planned or new VA projects...  
as well as funding, resources and political support..?**

**Interested and motivated contributors welcome! ([info@via-azul.eu](mailto:info@via-azul.eu))**

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