

**IEA RETD meeting
Paris**

28. Jan. 2010

Electric Vehicles Status report Austria

**Benefits, Standardisation, Charging Infrastructure,
Grid Control, Market Models, Road Map,
Next Steps and Actions, Cooperation**

Gerd Schauer

**Verbund Innovation, Research & Development
EURELECTRIC Task Force „Electric Vehicles“**

VERBUND

Anzengruber Chairman	Sereinig Vice Chairman	Baumgartner-Gabitzer Board Member	Kern Board Member
Holding			
Corporate Strategy & Corporate Development, M&A, Corporate Affairs, Finance, Controlling, Risk Management, Communication, R&D Innovation	Business Management & Marketing, Trade, Sales, Human Resources	Legal, EU-Lobbying	M&A International, Interest Management & Development International
Subsidiaries			
Thermal Generation VERBUND-Austrian Thermal Power GmbH & Co KG	Trade VERBUND-Austrian Power Trading AG	Hydro Power VERBUND-Austrian Hydro Power AG	International Interests VERBUND-International GmbH
Renewable Energies VERBUND-Austrian Renewable Power GmbH	Retail VERBUND-Austrian Power Sales GmbH		Transmission VERBUND-Austrian Power Grid AG
Procurement VERBUND-Management Service GmbH (procurement only)	Services VERBUND-Management Service GmbH (w/o procurement)		



Verbund 2008:

Sales:	3.744,7 Mio. €
Operating result (EBIT):	1.138,6 Mio. €
Group result:	686,6 Mio. €
Balance sheet total:	8.293,8 Mio. €
Operating cash flow:	934,2 Mio. €



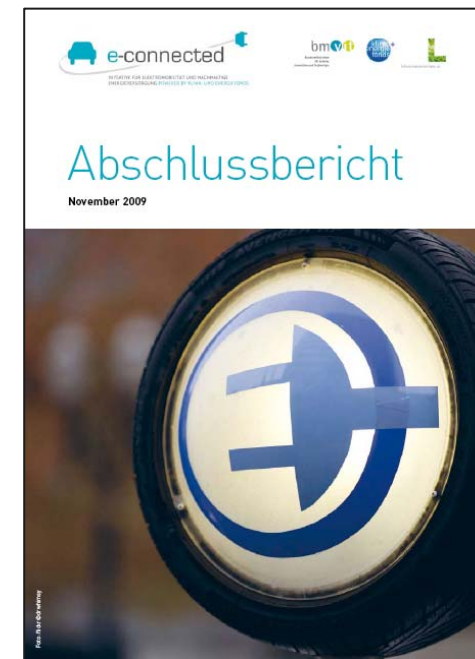
Austrian Initiative for Electromobility and Sustainable Energy Supply

➤ Goals

- > Networking of Stakeholders in Austria
- > Think Tank for Experience and Information Exchange
- > Reduction of the CO2 Emissions

➤ Workgroups

- > Energy Storage, Grid Integration, Framework Conditions, E-Vehicles, Charging Stations, System Integration



Pilotprojekte Österreich

Projekt VLOTTE in Vorarlberg

VLOTTE
ELEKTRISCH MOBIL

Projekt Electrodrive in Salzburg (Stadt)

ELECTRODRIVE
Steckt an. SALZBURG 

Projekt Graz E-Mobilität

ElmoSt

Initiative „Lebensland Kärnten“

LEBENS LAND
KÄRNTEN 

Initiative „austrian mobile power“

austrian
mobile
power 

Initiative „e-connected“

 e-connected 



Platform for e-mobility:

austrian mobile power



the drivers

Ecology

- Greenhouse gas emissions (GHG) from increased traffic
- Air pollution in highly dense urban residential areas from air pollutants and particulate matter
- Noise pollution from traffic in urban residential areas

Politics

- Exert pressure for reducing GHGs emissions in the transport sector
- Compliance with EU-targets
- Reducing dependence on import
- Identifying technological solutions for environmental goals

Industry & Clients

Automotive Industrie

- Solution for the fulfillment of the fleet goal
- Innovation as a way to overcome the crisis

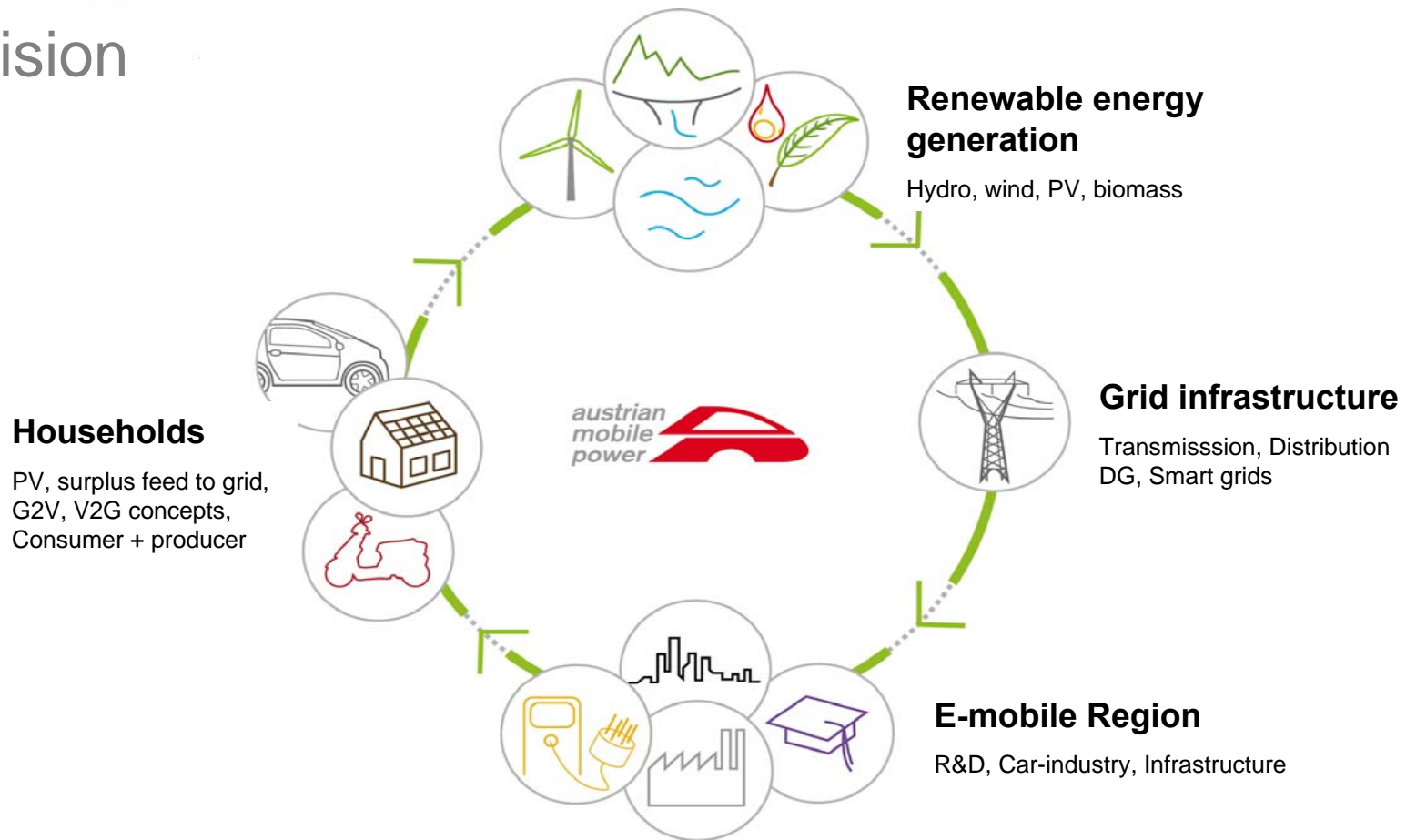
Clients:

- Intense fluctuations in fuel prices

The current state of play is more favorable of e-mobility than in the past

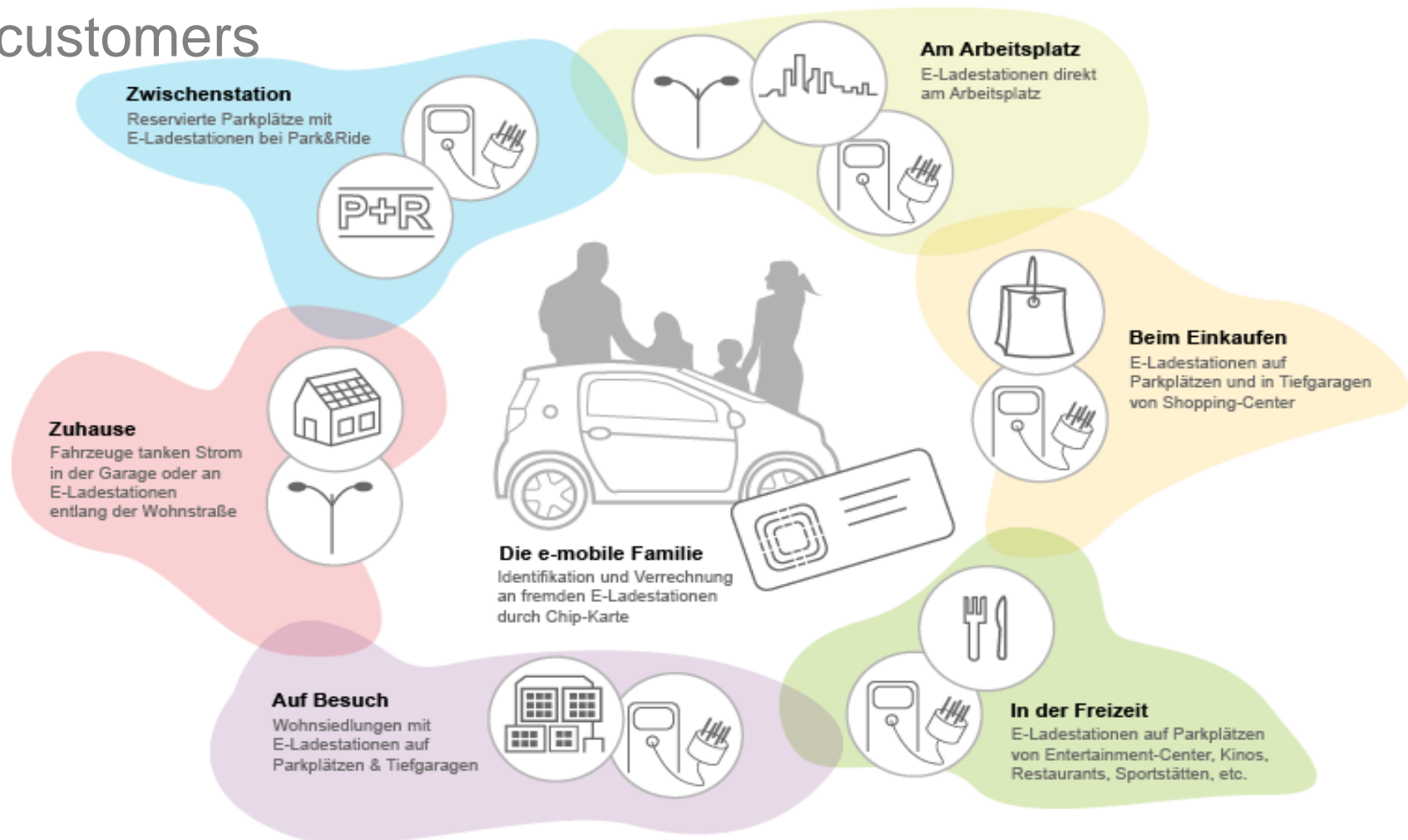


the vision



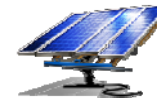


the customers





Policy City development, traffic concepts, energy policy, autarc region, financial incentives



Generation, Power

Hydro power, thermal power, Wind, PV, balancing power



Lighthouse projects

E-mobility model region



Customer

Mobility, reliability, in daily use, price



Smart grid, G2V, V2G

Grid capacity, grid control, Smart Grids, DG, DER

Business models

Mobility, DER, accounting system and trade of electricity, power

System architecture

Car electronics – battery system – charging – grid control/stability – billing – Data management!



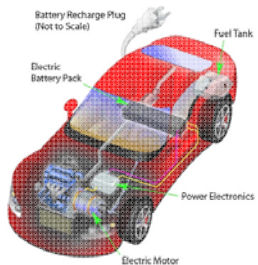
Charging station

connector: 1~, 3~ Anschluß
fast charging (~100 kW)

Garage, public parking
Fleet operators, P+R, shopping Centers, Charging infrastructure

Electric Vehicle

Car development, power train/Gear, drive motor, power electronics, Battery, Information management/Control, Safety





austrian mobile power

European Standards for e-mobility



MAGNA STEYR
SIEMENS

AVL

KTM

infineon

THE MOBILITY HOUSE

Verbund

E

WIEN ENERGIE

Salzburg AG

AIT
AUSTRIAN INSTITUTE OF TECHNOLOGY

REWE
GROUP

... open for more partners

Mobile power regions

Open platform

Vienna
Bratislava twin city CEE




Graz
Ljubljana twin city CEE



Others...
mobile power regions



...



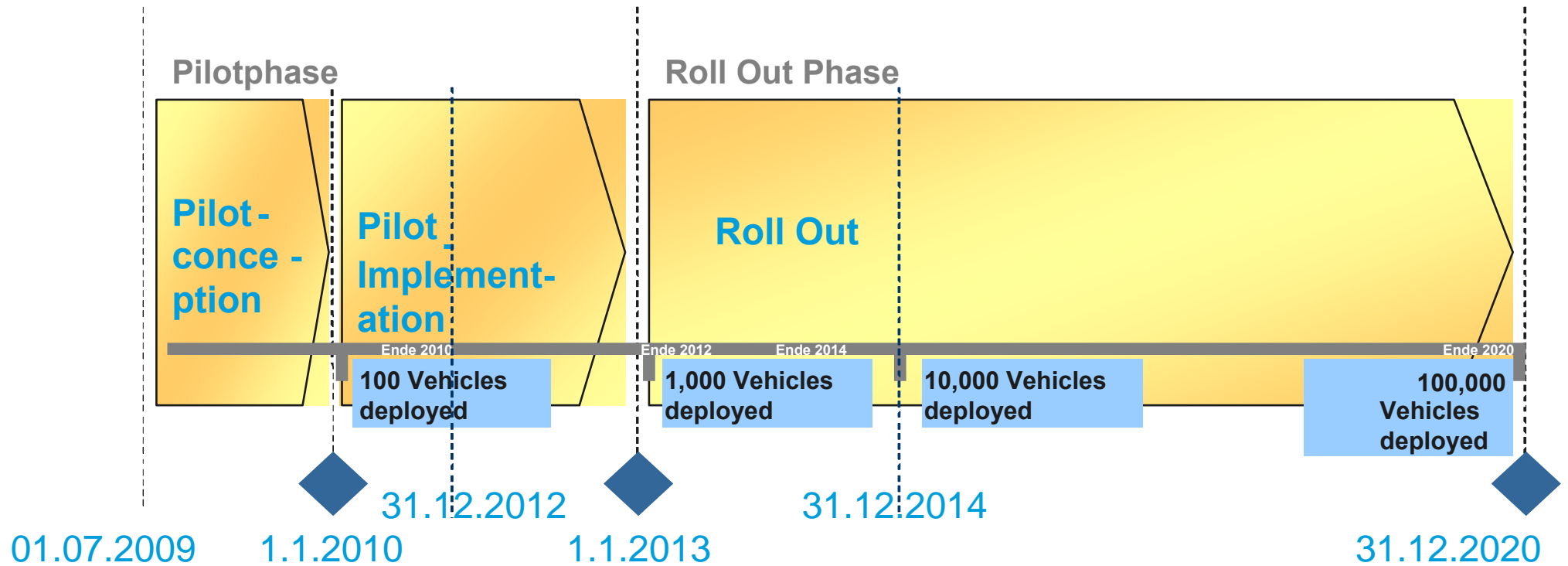


the goal

- Austria as a leader in the age of e-mobility
- Implementation of the overall system in pilot regions
- 100,000 electric vehicles in a pilot region
- Establish energy, infrastructure, and uniform accounting systems
- Collectively invest 50 million euros
- Trigger a total investment of 5 billion euros



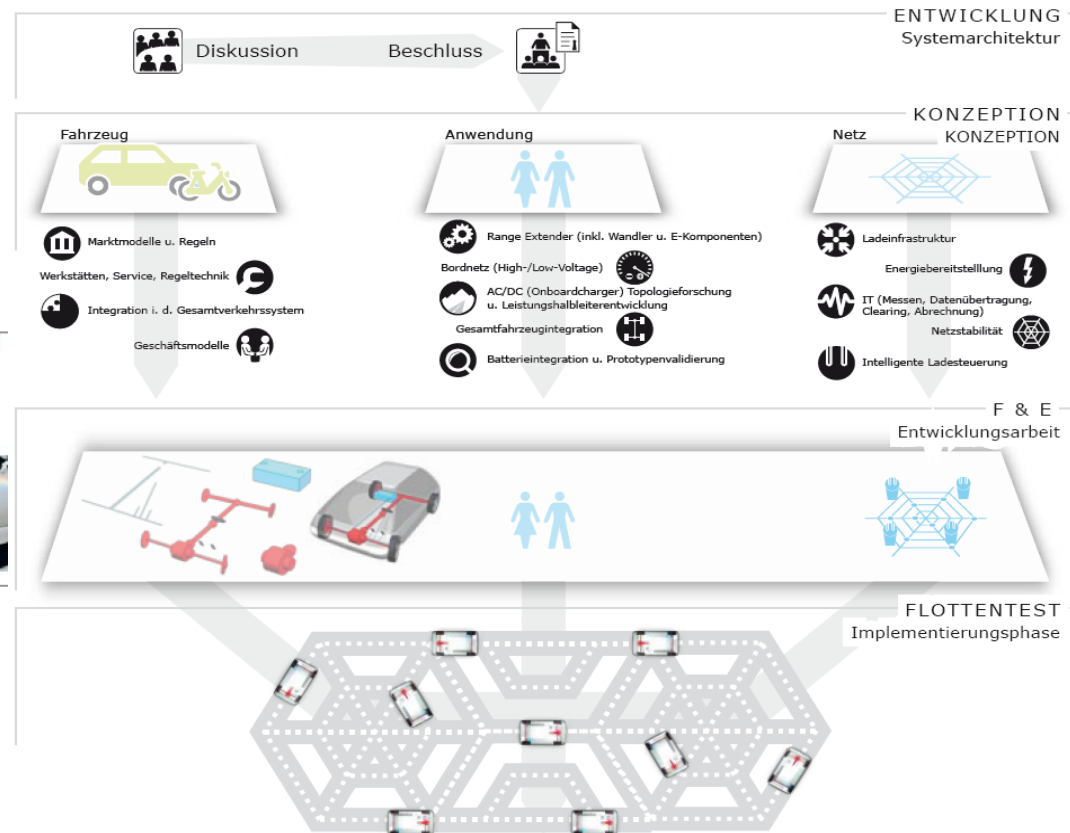
the roadmap





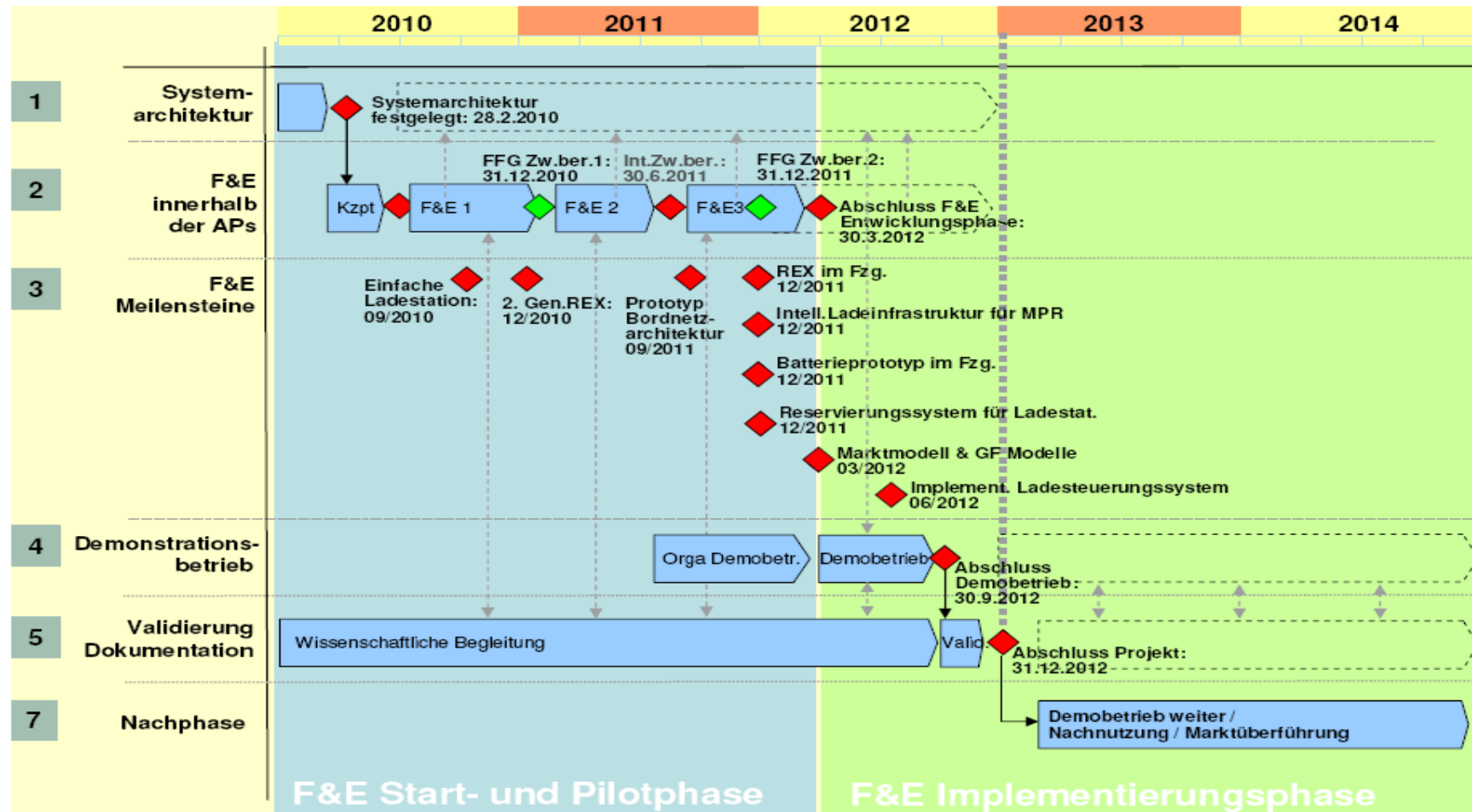
Austrian Lighthouse projects emporA – Project Goals

- Total System for Electromobility
 - Vehicle Technology
 - Infrastructure Technology
 - User
- Development Leap for Austrian Companies
 - Automotive
 - Infrastructure
 - Energy
- Utilization National and International
 - National Solutions; „Lighthouse Austria“
 - Contribution to European Solutions
 - Technologyexport





Übersichtszeitplan emporA





EU Green Car Initiative

- **Green Car Initiative of the FP7 (FP7-TRANSPORT-2010-TREN-1)**
 - Technology Development for Electromobility
 - Electromobility Demonstration Project: Electromobility in Conurbations
- **Electromobility Demonstration Project**
 - Demonstration of Vehicles, Infrastructure and Standards
 - Total Funding ~23 Mio. €, Funding Rate ~ 50%, Size of the Project ~46 Mio. €
 - Only one project will be funded, about 6 regions are funded in a project.
 - End of Call: 14. Januar 2010
 - Consortia of cities, regions, companies, research facilities can submit.
 - Austrian Contribution: **Twin Cities Wien-Bratislava** and **Graz-Marburg**

- › **Detailed discussion of common topics of interest**
- › **Grid control, Information system, smart grid**
- › **Metering, data processing**
- › **Business models**
- › **Clearing, billing**
- › **Market survey, available EV**
- › **Market Implementation, support mechanism, funding**
- › **Pilot projects, Information exchange**



Thanks for your attention!

Gerd.Schauer@verbund.at