

Electric Mobility in Austria

Electric Vehicle Landscape Analysis
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Vienna, November 2010



- **Automotive Industry - Overview**
- **Introduction**
- **Infrastructure**
- **Government Role**
- **Clusters**
- **Case studies**
 - Clean Motion Upper Austria
 - Austrian Mobile Power
 - Everynear
 - E-Connected
 - Model Region Vorarlberg (VLOTTE)
- **Conclusion**

- **Automotive industry is one of the most important sectors of Austrian industries. Among industries sectors it has the 2nd highest R&D quota.**
- **More than 175.000 employees in 700 enterprises are generating an annual turnover of 30 bn EUR.**
- **Export-Quota of Automotive companies amounts to 87 percent.**
- **248.000 cars, 26.650 trucks, 26.000 tractors & trailers and 69.000 motorbikes are produced annually.**
- **2.25 mn drives and gears are „Made in Austria“**
- **Important automotive manufacturer/suppliers, led by BMW, Opel, Magna and MAN, have invested in Austria.**



- **E-Mobility is a trendy topic in Austria.**
 - Several stakeholders of different industries have identified e-Mobility as a key-topic towards future.
 - Due to this fact the number of projects, initiatives and platforms encouraging e-Mobility developments has risen significantly.
- **Furthermore governmental efforts to support e-Mobility development and introduction have increased by means of setting up steering groups, networking platforms and additional funding.**
- **Strategic goals of supporting e-Mobility projects:**
 - Competitive Advantage „Made in Austria“
 - Strengthening Austrian Automotive and Electronic industry
 - Reduction of CO2 emission as well as other social, ecological consequences of traffic
 - Sustainable substitution of fossil energy sources

- **According to recent studies 500 out of 1000 Austrians can imagine to buy an electric vehicle in the next 3 to 5 years.**
- **One study also figured out average asking price, which amounts to 17 500 EUR.**
- **Studies also pointed out that customers are asking for**
 - Extension of range
 - Efficient recharging infrastructure
 - Incentives for buying electric cars
- **Based on current technologies, political conditions federal ministry has published forecasts on the demand of electric and hybrid vehicle.**

Projected Demand	2010	2011	2012	2013	2014	2015	2020
# of reg. EV/hybrid	365	1392	3.157	5.831	9.426	20.761	209.333
Share of EV/Hybrid comp. to total cars	0,01 %	0,03 %	0,07 %	0,12 %	0,19%	0,41 %	3,91 %

- **Foreign Investors in Automotive Manufacturing**



Freude am Fahren

BMW Engines, Steyr:

- BMW Center of Competence for diesel engines
- Largest engine plant among the BMW Group
- In 2009 about 713.000 engines have been built



GM Powertrain Austria, Vienna:

- Largest engine and gear box plant among GM Powertrain
- In 2009 653.000 gears and 408.000 engines have been built
- 622 Austrian companies are supplying GM Powertrain Austria



Magna Steyr, Graz:

- develops and assembles automobiles for other companies in Graz
- E.g. BMW X3, Mini Countryman, AstonMartin Rapide, Peugeot RZA
- Annual production of 80.000-100.000 cars



MAN, Steyr and Vienna:

- 2 production sites in Austria (Steyr, Vienna)
- Focus: Specialized vehicles and light- to medium-weight vehicles
- MAN Center of Competence Cab

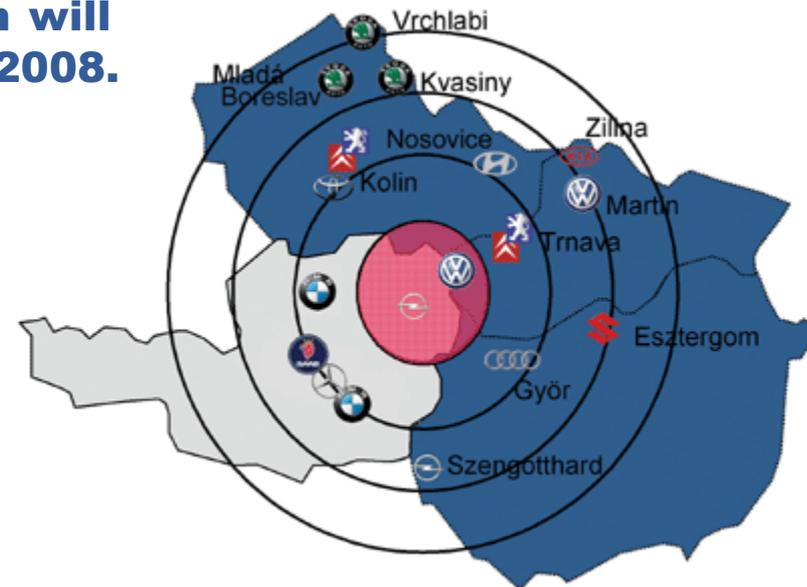
- **Big players in Automotive supply:**



BOSCH



- **Austria is part of a four-country cross-border platform „CENTROPE“. The border quadrangle between Slovakia, Czech Republic, Hungary and Austria is becoming even more significant for the automotive industry.**
- **Approximately 5 percent of vehicle production worldwide (more than 3.6 mn cars) roll of assembly lines of CENTROPE Automotive Cluster.**
- **The annual procurement volume of manufacturing plants in the wider CENTROPE region will exceed 20 billion Euro starting from 2008.**
- **Within a radius of 300 km of Vienna 10 automobile manufacturing plants can be found.**



- **Government has taken a leading role and responsibility of e-Mobility market development, since e-Mobility has major impacts on technology, transport, infrastructure, climate, energy and economic politics**
- **To promote e-Mobility government has agreed on a 10-Point Action plan, developed in the beginning of 2010 by federal ministries and chamber of commerce.**
- **Major points are**
 - Stimulus projects to increase e-Mobility R&D
 - E-Mobility Market-Development
 - Investing into e-Mobility infrastructure across the whole country
 - Establishment of strategic alliances between governmental organizations, industry and science.
 - Establishment of research facilities

- **Federal ministry of Traffic, Innovation and Technology is responsible of planning, financing and establishing infrastructure for e-Mobility. Therefore several governmental funds are giving financial aid to companies as well as individuals.**
- **Status Quo:**
 - About 3000 e-Charging stations are currently available
The majority is operated by individuals or SMEs
- **Current Developments:**
 - Retail chains, such as REWE and Spar, are starting to establish e-Charging infrastructure by utilizing their current network of branches.
 - Also companies in energy industry have either started pilot projects or launched cooperation to develop and establish e-Charging stations.
 - Telekom-Austria, a telecommunication company and operator of public phone boxes, has started to extend public phone boxes with e-Charging facilities.
- **Several initiatives like Austrian Mobile Power and companies like Everynear and Keba AG have focused on infrastructure development.**



- **Setup in 2002 Automotive Cluster Vienna Region is a technology network of automotive suppliers in and around Vienna.**
 - Leading companies among ACVR are General Motors, Robert Bosch, Continental, Gebauer & Griller, Zizala and Pollmann.
- **In total about 150 companies with 36.000 employees account for an annual turnover of 5 bn EUR.**
- **ACVR specially emphasis on networking of science and business, initiation of innovative projects and cooperation with suppliers and manufacturers of CENTROPE region.**
- **Supporting continuous development of cluster region is a main task of ACVR. EV technology is one of its key development topics and is backed by means of events, projects, etc. along with Automotive cluster CENTROPE.**

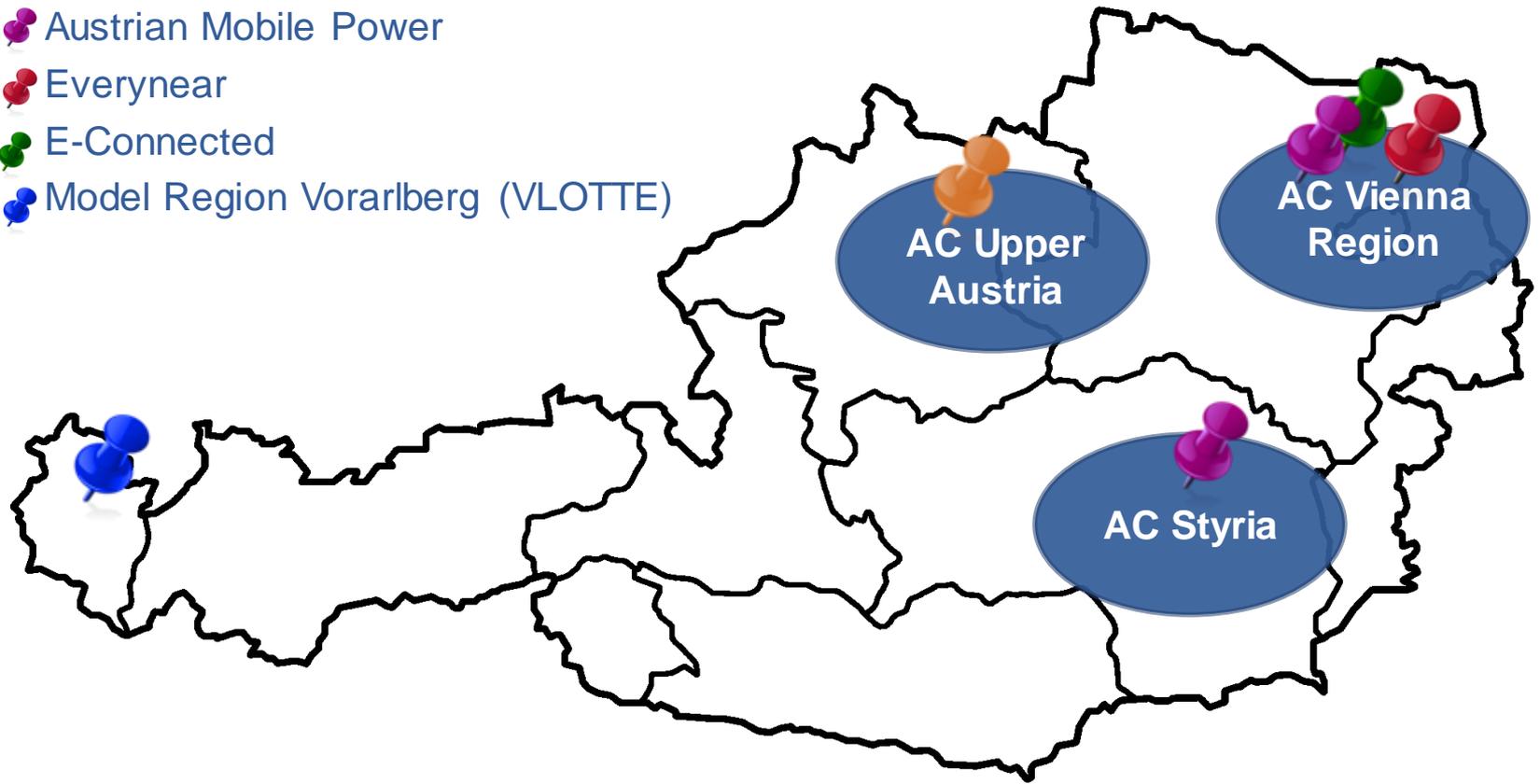
- **Automotive Cluster Styria (ACStyria) has been setup in 1995 and counts 180 members.**
 - The list of companies includes among others well-known global players such as AVL List, Infineon and Magna Steyr.
- **46 000 employees in ACStyria region account for a turnover of 11 bn EUR per annum.**
- **EV is a key issue of ACStyria „Future of Mobility“ program.**
- **ACStyria companies have specialized in development of EV, power trains (hybrid technology), battery & energy management and automotive electronics.**
- **5 universities, 2 universities of applied sciences and the „K2-Mobility - Sustainable Vehicle Technologies“ Center of Excellence are part of the cluster and driving forces in R&D of electric vehicle technology.**



- **Automobil Cluster (AC) in upper Austria is the largest automotive network in Austria with 240 registered member companies.**
 - e.g. KTM, Voestalpine, BRP-Powertrain, Polytec Group
- **84 000 employees work within AC region, generating a turnover of 23.50 bn EUR per annum.**
 - Export Quota amounts to 83.04 %
- **Key skill of AC covers R&D of light-weight components. (e.g. CoC Light Metals Technologies in Ranshofen)**
- **EV is a future prospering market for the region, thus AC supports automotive industry to develop new technologies in EV field. One of the projects is to build an EV “Made in Upper-Austria”**



-  Clean Motion Upper Austria
-  Austrian Mobile Power
-  Everynear
-  E-Connected
-  Model Region Vorarlberg (VLOTTE)



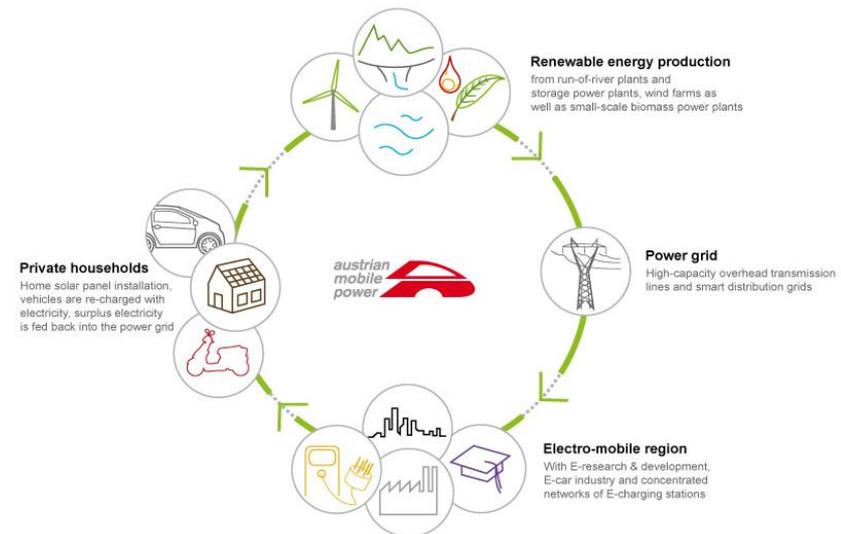
- **Is an initiative of 32 companies of the upper-Austrian automotive cluster ([Link to Project Information](#)), ranging from automotive suppliers to energy providers, to strengthen knowledge and experience in e-Mobility.**
- **First milestone is to build an upper Austrian electric vehicle „CMOmax“ within the next two years.**
- **The CMOmax project aims to explore new**
 - Light weight components
 - Basic materials
 - Wheel hub drives
 - Battery technologies
- **Further developments include establishment/increase of clean fleets and clean power infrastructure.**



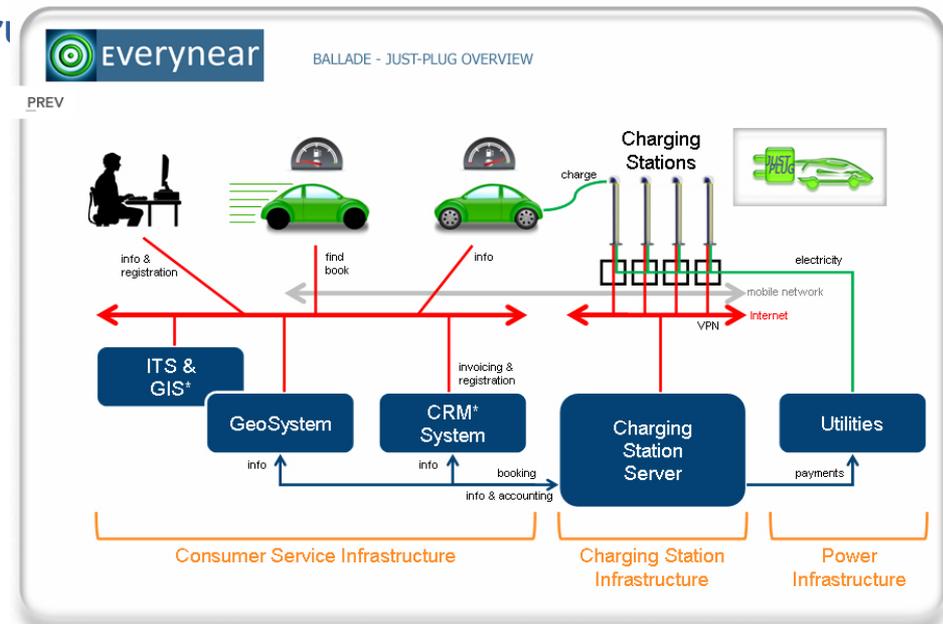
- **Austrian Mobile Power (www.austrian-mobile-power.at) is a platform of leading Austrian companies of different industries which aims to drive the country to e-Mobility era.**
- **Well-known companies like Siemens, Verbund, Magna, KTM, AVL are among the members.**
- **Aim of Austrian Mobile Power is to develop/establish a system covering all aspects of e-Mobility.**
- **According to their goals until 2010 there will be at least 100.000 electric cars on the roads in at least one conurbation.**

- **The cornerstones:**

- Renewable energy production
- Power grids
(high-capacity, smart distribution grids)
- Electro mobile regions
(e- R&D competence centers)
- Establish E-Charging infrastructure
- Private households
(recharge at home)



- **Everynear (www.everynear.eu)**, a private company, along with its partners (**EOX, FH Joanneum, Cirquent, Paybox**) has focused on developing and marketing complete solutions for electric vehicle infrastructure.
- **The concept has been developed in 2009 supported by governmental funds. In May 2010 the first e-Charging stations have been installed across Austria.**
- **Features of Everynear infrastr**
 - Easy to use - just plug in
 - Makes use of existing electricity infrastructure
 - cost-efficient solution
 - navigation system for finding charging stations
 - automated billing infrastructure



- **E-Connected (www.e-connected.at) is an initiative by Austrian ministries and the Austrian Climate & Energy fund.**
- **It is a networking and information platform for various stakeholders ranging from large companies, start-ups, NGOs up to research facilities.**
- **Ultimate goal of the governmental initiative is to reduce CO2 emissions of traffic by introducing e-Mobility to public.**
- **e-Connected consists of several expert groups (electric vehicle, charging infrastructure, education, business models, etc.) which try to highlight and solve issues towards e-Mobility market introduction.**



- **In 2008 the federal state of Vorarlberg was awarded to setup the first e-Mobility model region (www.vlotte.at) in Austria.**
- **Subsidized with 4.7 mn EUR by Austria's Climate and Energy fund Vorarlberg should develop the market for e-Mobility by test-driving different mobility-concepts**
- **Goals of VLOTTE project:**
 - Introduce e-Mobility to public by including various Stakeholders
 - Setup of Service and e-Charging infrastructure
 - Extension of renewable energy sources
- **Status after 1 year:**
 - Huge public interest
 - 75 e-Cars are on the road
 - 32 Charging stations have been built
 - 150.000 km have been passed



- **People are enthusiastic of e-Mobility, but demand is quite low.**
- **Factors like supply of EV, low range, infrastructure and missing incentives for purchase are main causes of limited demand.**
- **Austria is an important R&D area within CENTROPE automotive region. Several important automotive manufacturers and automotive suppliers are investing in Austrian projects.**
- **Government will increase efforts and spending to support e-Mobility market development.**
- **Cooperation, networking platforms, strategic alliances and clusters are essential to develop e-Mobility solutions.**
- **Main field of EV development are power-trains, due to Austria's competences in combustions engines.**