



EU INNOVATE

**SUSTAINABLE INNOVATION IN ACTION:
THE CASE STUDY “SNAPSHOT” SERIES**

VERBUND

Hydroelectric-Powered E-Vehicles in Austria



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About EU-InnovatE

Between 2014 and 2016, the EU-InnovatE project investigated the potential of citizen innovation and sustainable entrepreneurship to achieve sustainable lifestyles in Europe by 2050. The following is one of a series of case study “snapshots” illustrating how new enterprises are being created by passionate, visionary individuals to benefit society at large.

The Case of Verbund:

Enabling Hydroelectric Powered E-Vehicles in Austria

A nationwide network of charging points for electric vehicles in Austria – which draws on 100% hydro-electric power – has been jointly set up by an electricity company and an international engineering and electronics company.

Genesis of the Verbund – Siemens Partnership

With increasing numbers of vehicles on the roads and growing urbanisation, pollution levels are rising in towns and cities. Restrictions on hydro-carbon based vehicles can be introduced to cut pollution in built-up areas. However, people expect to move about freely, so an alternative sustainable energy source with minimal environmental impact is needed to ensure continued mobility.

Two companies in Austria are working together to ensure electric vehicles are never far away from an energy supply that offers this significantly reduced environmental footprint. Verbund is the principal electricity supplier in Austria and one of the largest hydro-electric producers in Europe. More than 95 % of the company’s energy is generated from renewable sources. Siemens is an international company that focuses on electrification, automation and digitalisation. The company is one of the world’s largest producers of energy-efficient and resource-saving technologies and is a leading provider of power transmission infrastructure.

In 2013, the two organisations formed the company E-Mobility Provider Austria (EMPORA), which trades under the brand name of Smatrix. The new company was set up to install and operate a network of charging stations for e-vehicles in Austria. Installations are located along the principle roads and in urban areas with a high population density enabling drivers to conveniently charge their e-vehicles. Siemens provided the hardware and control software for the network.

Collaborative Innovation in Practice

Verbund recognised that its approach to selling energy to consumers was not suitable for promoting electric mobility services. Consequently, a new business model was put in place for EMPORA that sought to determine transport trends and engage with end users.

The model consisted of three phases:

1/ Lead user study

A study was facilitated by open-innovation consultancy Winnovation, which through a series of workshops identified market needs and user fears relating to e-vehicles. The study also confirmed ideas gathered from existing Verbund businesses.

2/ Pilot Service

Based on feedback, Verbund devised an e-vehicle pilot service offer for 25 test drivers. The offer included: supply of totally renewable energy; installation of a home charging box; access to public charging stations; membership of an Austrian motoring organisation; a mobile app; and discounts for car sharing and holiday vehicle rentals. (The Smatrics service currently offered to customers is similar to the service offer made to test drivers who took part in the pilot.)

3/ Surveys

Short questionnaires were completed by first-time drivers of e-vehicles who took part in Verbund test drives. Questions were asked about drivers' expectations and thoughts on the driving experience. Their driving behaviours were also GPS-tracked and analysed by the Austrian Institute of Technology (AIT). Additionally, a group of long-term e-vehicle users took part in a more extensive survey that gathered information about, for example, household circumstances, charging patterns and attitudes to e-mobility.

As part of the company's new business approach, Verbund collaborated with a consortium of over 20 organisations and firms at different stages of the project. For example, operating as EMPORA arrangements were made with specialist companies to lease e-vehicles and finance charging stations. Verbund also worked closely with local municipalities and an Austrian motoring organization in the development, testing and launch phases of the initiative.

Summary of User-Driven Innovation

- In partnership, Verbund and Siemens formed EMPORA, a company that is responsible for installing and operating a network of charging stations for e-vehicles in Austria.
- A business model was put in place that sought to determine market needs and engage with e-vehicle users.
- The model included: a study of transport trends and concerns; a pilot service offer for e-vehicle test drivers; and surveys completed by new and existing e-vehicle drivers.
- Engagement was made with a consortium of companies and organisations, including an academic institute for data analysis and specialist leasing and finance firms.

Influence on Core Business

In partnership with Siemens, Verbund broadened its existing energy supply business by becoming the sustainable energy supplier for the network of e-vehicle charging stations that were installed strategically throughout Austria.

It also recognised its lack of experience in end user engagement by working with an open-innovation consultancy. In developing the new business, the company tapped into AIT's expertise in data collection and analysis of feedback from e-vehicle drivers. Verbund's collaboration with a wide consortium of firms and organisations ensured that all the elements were put in place to ensure a successful public roll-out of the Smatrics service.

Cross-Sector Relevance: Top Three Insights

- Development of innovative and sustainable systems can be informed by taking account of user needs, fears and expectations.
- User feedback from pilot testing can offer new insights, but can also confirm existing internal ideas.
- Collaborating with other companies and institutions in end-user engagement and service development can provide additional specialist knowledge, experience and expertise that may not be available internally.

To Learn More About the Case...

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Further Information

Verbund AG: www.verbund.com/en-at

Siemens AG (Mobility): www.siemens.com

www.siemens.com/global/en/home/products/mobility.html

Smatrics: <https://smatrics.com/>

Winnovation: www.winnovation.at

Austrian Institute of
Technology: www.ait.ac.at/en/

TUM School of
Management: www.wi.tum.de