



Rijksdienst voor Ondernemend
Nederland

Business opportunities E-mobility in Switzerland

Dutch solutions for green mobility

>> *Duurzaam, Agrarisch, Innovatief
en Internationaal ondernemen*

Colofon

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Introduction

E (Electric)-mobility in the Netherlands is increasingly popular. In 2016 nearly 25.000 extra electric vehicles (EV) were registered resulting in an amount of around 120.000 EVs in total. One of the accelerators of this development is the [Electric Transport Green Deal 2016-2020](#), an agreement between the Netherlands Ministry of Economic Affairs and Climate Policy, the Ministry of Infrastructure and Water Management and 18 private organizations. This Green Deal aims to support Dutch E-mobility and to increase the number of EVs. The Netherlands Government sees innovation as a key solution to environmental challenges and E-mobility is very important in this regard. Especially as E-mobility and mobility itself are in many economic models the first step towards a green and circular economy.

In Switzerland E-mobility is not as advanced in certain aspects as in the Netherlands. Even though the amount of EVs in Switzerland might be as comparable to that in the Netherlands, when taking into account that the Dutch population is twice the size of the Swiss, the EV charging infrastructure is relatively underdeveloped. It is organized separately per canton and the cantonal charging systems do not interconnect. Therefore, the Swiss Federal Government is preparing a large public tender to install a universal accessible charging framework along Swiss high ways.

The Swiss governments see E-mobility furthermore as a solution to improve green policies. The Swiss parliamentary group Electro Mobility and the forum Swiss E-mobility are important players in the Swiss market to stimulate and improve E-mobility. The Swiss Parliament published the [E-mobility master plan](#) in 2015 setting out the next E-mobility steps. One thing is clear: the Swiss are working hard to catch up in the field of E-mobility.

Sometimes there is doubt whether EVs actually contribute to sustainability among others due to an extensive production process and the (excessive) amount of energy required for charging. Nevertheless, academic consensus is clearly leaning towards pro-sustainability effects (roughly 95% of the EV studies), since EVs emit less CO₂ compared to gasoline vehicles.

1 E-mobility in the Netherlands

“Technological innovation gives us the opportunity ultimately to achieve an increasingly cleaner, more integrated transport system.”

- **Netherlands Government Coalition Agreement 2017**

It is not remarkable that E-mobility tycoon Uber chose Amsterdam to be its European headquarters. The city has of late been known to struggle to transport (tourist) crowds through its centre and just for that reason Amsterdam has started to experiment with mobility innovation. The New York-based Institute for Transportation & Development Policy refers to Amsterdam as “a mobility lab”.

The Netherlands Government sees innovation as a key solution to environmental challenges. In many economic models it is the first step towards a green and circular economy. Our expertise translates into a flourishing E-mobility market. With a high number of EVs and electric charging points, the Netherlands has become a world player when it comes to E-mobility and mobility innovation. This development has already accounted for 600 new fulltime jobs.

1.1 Electric Vehicles (EVs)

In the Netherlands there is an increasing amount of EVs. Already more than 120.000 EVs are on the Dutch roads and currently around 2% of the newly bought cars is electric. Apart from private cars, public transport is also more and more powered by electricity.

E-mobility leads to new business opportunities. The development of electric cars enables new players in the market and has resulted in various Dutch mobility players with an innovative approach and customised solutions for E-mobility. Traditional companies have moreover decided to shift to E-mobility, for example Shell that has started with charging stations.

Nevertheless, the amount of newly registered EVs per year has dropped recently from 6% to 2%, as the Dutch Government stopped a special tax incentive in January 2016.

STATISTICS ON THE NETHERLANDS

Population
±17.000.000

Passenger cars
±8.000.000

Market share of EVs
2016: ±1,4% (±115.000 EVs)
2017: ±1,5% (±120.000 EVs)

Publicly accessible charging points
2016: ±26.000
2017: ±30.000

More information available at [Netherlands Enterprise Agency \(RVO\)](#) (only available in Dutch)

1.2 Publicly accessible charging points

The Netherlands has a very strong publicly accessible charging points infrastructure for EVs. This system consists of more than 30.000 charging points and 670 fast chargers. In 2015, the amount of charging points increased by 45%. The Netherlands is one of the global market leaders in this field. Dutch companies provide charging systems for EVs in many countries, including the United States, China, India, Australia etc. and have proven to be competent business partners. You can find these companies in part 6 of this report named "Business partners".

The Government strongly supports this development, among others in its [Vision on the charging infrastructure for electric transport looking ahead to 2035](#). This has been confirmed by the new Government [Coalition Agreement](#) in October 2017. The objective is to ensure that the charging infrastructure accommodates the development of electric transport in the Netherlands. This means making sure that adequate charging infrastructure is available to avoid impeding the rise in the number of electric vehicles.

The Netherlands Government has furthermore always underlined the importance of the interoperability of the charging points among different nations and aims to secure this at the international and European level. The Netherlands Government aims at having the Dutch Open Charge Point Interface (OCPI) protocol adopted at a European Union level. It is uncertain whether a European standard would be adopted.

Some relevant market players on the other hand have stated that the discussion on a public pan-European standard is not of relevance. The market will provide for a solution. Take for example a gas station nowadays: it provides for different forms of gasoline, sometimes even four different ones. Future electric charging systems may offer different plugs for different EVs. After all, the owner of the charging systems would like to offer services to as many EVs as possible.

2 E-mobility in Switzerland

E-mobility developments in Switzerland lag behind in comparison with the Netherlands, especially in the area of charging infrastructure for EVs. Switzerland has the capacity however to go through a fast process to turn to E-mobility. Although the charging infrastructure in Switzerland lags significantly behind EV developments, the Swiss Government is set to make steps forward.

2.1 Electric Vehicles (EVs)

Electric Vehicles (EVs) are more and more common in Switzerland and already account for 2% of the total amount of cars. Furthermore there was a steady increase of EVs with approximately 10.000 cars in 2016 accounting for around 86.000 vehicles in 2017. Since The growth is exponential and this will lead to a significant annual increase from 2020.

In Switzerland the Government sees E-mobility as an opportunity to achieve energy and environmental goals. An important measure by the Federal Government is the exemption of import tax on EVs, thus there are no custom duties when importing EVs into Switzerland from the EU.¹ This provides for a possible vast and quick import of EVs into Switzerland. Secondly, many Cantons have introduced (tax) benefit schemes for EVs. These schemes are listed on the [website of the Federal Office for Energy](#) (only available in German, French and Italian). Lastly, the Federal Government stimulates the increase of EVs. It stimulates the official use of EVs by Government officials to set an example.

A challenge for EVs in Switzerland is the power of EVs. Most EVs have not much power and are not suitable for a tow hitch for example. Swiss citizens actually prefer large, luxurious and strong cars; and combined with the steep ascent of the Swiss Alpine landscape this might be a hurdle for Swiss to opt for an EV. At this moment Tesla (S and X), Renault Zoe,

¹ For up-to-date information on Swiss customs, always check the website of the Swiss Federal Customs Administration and its [Tares Tool](#). The tariff number for cars transporting persons starts with 8703.

STATISTICS ON SWITZERLAND

Population
±8.300.000

Passenger cars
±4.300.000

Market share of EVs
2016: ±1,75% (±75.000 EVs)
2017: ±2% (±86.000 EVs)

Publicly accessible charging points
2016: 3.879
2017: 3.869

More information available at [the European Alternative Fuels Observatory](#)

BMW i3 and Opel Ampera-e are the most common EVs in Switzerland, but it is not realistic that these brands can cover the complete market. The medium segment is not very common on the Swiss roads yet.

2.2 Publicly accessible charging points

Although one might think there are many publicly accessible charging points available in Switzerland (1 on 22 EVs), this does not necessarily result in a strong charging point infrastructure. The current framework consists of charging points delivered by different (energy) providers and there is no universal system to interconnect different technologies. Neither do these frameworks offer plugs for different EVs.

Due to Switzerland's unique federal administration of a Federal Government and 26 Cantonal Governments, there has not been a clear approach to EVs in Switzerland yet. The Federal Swiss Government lacks the competence to do so and only has a coordinating and planning role. The Cantonal authorities (and even Swiss cities) are competent in this regard and still have different approaches to the development of an EV charging infrastructure strategy. For a long time the Federal Government has refrained from taking significant steps towards EVs. This attitude has changed under pressure of the [Federal Swiss Parliament](#). The Swiss Federal Government will now open a public procurement procedure in February 2018 and invite companies to offer a bid for a charging system at Federal parking lots along the Swiss high ways. All tenders in Switzerland are published at the [website of Simap](#).

3 Business opportunities for Netherlands companies in Switzerland

With a gross domestic product (GDP) per capita of nearly US\$ 80.000, the Swiss have a very strong purchasing power and expect high quality. The excellent business climate is furthermore an asset for investment in E-mobility: low value-added tax (VAT), stable monetary policies and politics, high innovation and competitiveness levels and close participation with European Markets.

Apart from the general benefits of Switzerland, there is much to offer in the field of E-mobility. After many years Swiss Governments have adopted a stronger coordinating role in the transition to electric driving. Consequently they provide for [fiscal incentives](#) to make the Swiss purchase EV. Moreover most EVs are able to drive only approximately 150 km before they require recharging, taking account of different factors as climate, mountains, use of car lights etc. This has already increased to 300 km in the 2017 and 2018 generation EVs. In a relatively small country such as Switzerland, distances are not as large as in bigger European nations and this makes Switzerland more attractive for EVs. Thirdly, Switzerland has no national car manufacturing champion, which is another interesting feature in Switzerland compared to for example Germany (Volkswagen and BMW) or France (Renault or Peugeot); this "car neutrality" might provide for a more open attitude to different and new (electric) vehicle brands.

The Swiss market also involves challenges. Whereas it is true that there is a distinct interest among Swiss people to purchase EVs, the infrastructure is not suitable for a quick increase of EVs. Due to the aforementioned fragmented structure of the charging system, finding charging points might pose a challenge. It may require the installation of a private charging system at home. The Netherlands are very developed, specifically in the field of charging infrastructure and might be a suitable partner to assist Switzerland in this regard. The adoption of the current non-interconnecting technology to an universally applicable system is another clear business opportunity. Especially as the Netherlands charging standard (OCPI) is one of the contenders to be adopted European wide.

More general challenges are that Switzerland is not part of the European Union and legislation may differ from other European nations. Furthermore, because of the Federal structure of Switzerland, legislation may again differ from Canton to Canton.

4 Trade organisations, public institutions and information centres

The following list gives an overview of important trade organisations, public institutions and information centres in the Netherlands and Switzerland. The entities' descriptions follow their own websites.

4.1 The Netherlands

AutomotiveNL

"AutomotiveNL is the cluster organization for the Dutch automotive industry, mobility sector, automotive education sector and has over 170 members. It is financially independent and continues to expand its activities and facilities in this domain."

Automotive Campus 30 (formerly Steenovenweg 1)

5708 JZ Helmond

The Netherlands

+31 49 256 25 00

<http://www.automotivenl.com/> and info@automotiveNL.com

BOM (Brabantse Onwikkelings Maatschappij)

"BOM has helped companies in the Province of Brabant grow their business since its establishment in 1983. With the Ministry of Economic Affairs and the Province of Noord-Brabant as its shareholders, BOM plays an active and stimulating role in the economy of Brabant."

Goirlese Weg 15

5026 PB Tilburg

The Netherlands

+31 88 831 11 20

<https://www.bom.nl/> and info@bom.nl

Brainport Eindhoven

"Brainport, with Eindhoven at its heart, has become one of Europe's prominent high-tech regions in recent years. Not just a place on the map but a state of mind. This is the Brainport philosophy, a unique form of collaboration that lays the foundation for open innovation: sharing knowledge to multiply knowledge."

Emmasingel 11

5611 AZ Eindhoven

The Netherlands

+31 40 751 2424

<http://www.brainport.nl> and [e-mail](mailto:)

Connecting Mobility

"Connecting Mobility acts as a catalyst and creates the necessary conditions and preconditions with significant attention to security, safety and human factors as well as the associated legal issues, and orchestrates the cooperation between government and market players, in part through making smarter use of precompetitive cooperation and a focus on standardization. Connecting Mobility monitors the developments."

For contact details, see National Data Warehouse for Traffic Information.

<http://www.connectingmobility.nl/> and info@connectingmobility.nl

Connekt

"The independent network for smart, sustainable and social mobility. A healthy blend of knowledge, creativity and dynamism within a network that brings influential parties together. With more than 500 partners across the globe we develop and implement tangible solutions that make the world a better place – ecologically and economically."

Ezelsveldlaan 59
2611 RV Delft
The Netherlands
+31 15 251 65 65

<https://www.connekt.nl/en> and info@connekt.nl

Formule E-team (FET)

"The Dutch government's ambition for electric driving is to reduce CO2 emissions, improve energy-efficiency, and reduce dependency on fossil fuels. Electric driving also reduces noise pollution from traffic while opening up new opportunities for the commercial sector. For these reasons, the Dutch government is eager to realize a critical mass of 200,000 electric vehicles on the roads in the Netherlands by 2020. The Dutch government and Formula E-Team are aiming for: 1) that in 2025 50% of the newly sold cars are equipped with an electric drive line and plug and that at least 30% of them - which means 15% - are fully electric, 2) by 2020, the ambition is that 10% of newly sold passenger cars have an electric drive line and can be charged and 3) that by 2020 75,000 consumers drive electric vehicles, of which 50,000 used cars and 25,000 new vehicles."

<https://nederlandelektrisch.nl/gateway-to-europe>

Holland Trade and Invest

"Hollandtradeandinvest.com is commissioned by the Ministry of Foreign Affairs of the Government of the Netherlands. It is authorized by the Netherlands Enterprise Agency. By providing information about Holland's innovative and sustainable solutions to global challenges, the website aims to stimulate trade and cooperation between international partners and Dutch enterprises, knowledge institutes and non-profit organizations."

For contact details, see Netherlands Enterprise Agency.

<https://www.hollandtradeandinvest.com> and <http://bit.ly/2xml8Zh> (mobility page)

Ministry of Infrastructure and Water Management (*Ministerie van Infrastructuur en Waterstaat*)

"The Ministry of Infrastructure and Water Management is committed to improving quality of life, access and mobility in a clean, safe and sustainable environment. The Ministry strives to create an efficient network of roads, railways, waterways and airways, effective water management to protect against flooding, and improved air and water quality."

Rijnstraat 8
2515 XP The Hague
The Netherlands
1400 (domestic) and +31 77 465 67 67 (international)

<https://www.government.nl/ministries/ministry-of-infrastructure-and-the-environment> (home page), <http://bit.ly/2hgPxm0> (self-driving vehicles page) and [e-mail](#)

National Data Warehouse for Traffic Information (Nationale Databank Wegverkeersgegevens, NDW)

“In the Netherlands, the National Data Warehouse for Traffic Information (NDW) is an organization best known for the product that gives it its name: its enormous database of both real-time and historic traffic data. Yet NDW is more than its database. First and foremost, it is a unique alliance in which 19 public authorities work together, learn from each other, and consolidate their data and other resources.”

Griffioenlaan 2
3526 LA Utrecht
The Netherlands
+31 30 280 66 83

<http://www.ndw.nu> and info@ndw.nu

Netherlands Enterprise Agency (*Rijksdienst Voor Ondernemend Nederland, RVO*)

“Netherlands Enterprise Agency encourages entrepreneurs in sustainable, agrarian, innovative and international business. It helps with grants, finding business partners, know-how and compliance with laws and regulations. The aim is to improve opportunities for entrepreneurs and strengthen their position.”

Prinses Beatrixlaan 2
2595 AL The Hague
The Netherlands

+31 88 042 42 (domestic) and +31 70 379 80 00 (international)

<https://www.english.rvo.nl/> (home page), <https://www.emobility.rvo.nl/> (eMobility page) and [e-mail](#)

Platform Optimising Use (*Beter Benutten*), part of the Netherlands Ministry of Infrastructure Water Management

“In the Optimising Use programme, the Dutch government, regions and businesses are working together to improve road, waterway and railway accessibility in the busiest regions. We are aiming to reduce congestion at the busiest points by 20 percent in 2014, using a package of around 300 practical and quantifiable measures.”

For contact details, see Netherlands Ministry of Infrastructure and Water Management.

<https://www.beterbenutten.nl>

TenderNED

“TenderNed is the Dutch government’s online tendering system. All Dutch authorities are obliged to publish their national and European tenders on TenderNed’s announcement platform, so businesses can access all public publications from a single webpage.”

<https://www.tenderned.nl/>

Traffic Innovation Centre (*Innovatiecentrale*)

"The Netherlands is frontrunner in Smart Mobility. It is an ambition that complements the transition routes of the 'Better informed on the road' roadmap. The Traffic Innovation Centre, an experimental and development area within the South Netherlands traffic centre, was founded to facilitate this development. The Traffic Innovation Centre comprises the Innovation Desks and the Innovation Lab."

For contact details, see AutomotiveNL.

+31 6 20 413 524

<https://www.innovatiecentrale.nl/en> and info@innovatiecentral.nl

University of Technology Eindhoven (Strategic Area Smart Mobility) (TU/e)

"Smart Mobility at TU/e focuses on technological solutions to societal problems like emissions, traffic jams and accidents by preventing unnecessary transport and making the necessary mobility more sustainable. There are 5 research themes: Automotive Technology, Transport & Logistics, ICT/embedded systems, Mobility & Traffic and Intelligent Transport Systems."

MetaForum 3.092

Groene Loper 5

Postbus 513

5600 MB Eindhoven

The Netherlands

+31 40 247 35 36

<https://www.tue.nl> and smartmobility@tue.nl

ViriCiti

"Four engineers started ViriCiti in 2012 with backgrounds in e-mobility, mechanical engineering, computer science and entrepreneurship. Our company has since then specialized in combining the newest Internet technologies with electric vehicle knowledge and we are now involved in the biggest commercial electric vehicle projects (city buses and trucks) in Europe and beyond. Our main office is located in Amsterdam and we have two sister companies on the East Coast and West Coast, USA."

Willem de Zwijgerlaan 350-352

1055 RD Amsterdam

The Netherlands

<https://www.viriciti.com/> and info@viriciti.com

4.2

Switzerland

e'mobile (Electro Suisse)

"e'mobile was founded in 1980 and is engaged in Switzerland in the market introduction of efficient and low emission vehicles, such as hybrid, natural gas and electric cars, as well as of fuels from sustainable sources. e'mobile offers unbiased information and consulting and organizes exhibitions, test drives, workshops and conferences."

Luppenstrasse 1

CH-8320 Fehraltorf

Switzerland

+41 44 956 14 55

<http://www.e-mobile.ch> and [e-mail](mailto:)

SIMAP

"The aim of this portal is to facilitate business relations between the contract-awarding authorities, the bidders and the public sector and provide related services such as information, consultancy and training under the supervision of the association simap.ch."

<https://www.simap.ch/>

Swiss Federal Office of Energy (Bundesamt Für Energie, BFE)

"The Swiss Federal Office of Energy (SFOE) is the country's competence centre for issues relating to energy supply and energy use at the Federal Department of the Environment, Transport, Energy and Communications (DETEC)."

For contact details, see the Federal Department of the Environment, Transport, Energy and Communications.

<http://www.bfe.admin.ch> and [e-mail](#)

Swiss eMobility (Mobilitätsakademie)

"Swiss eMobility ist der Elektromobilitätsverband der Schweiz und freut sich, Sie auf den nächsten Seiten umfassend über dieses Thema zu informieren." (*Only available in German, French and Italian*)

Maulbeer-strasse 10

3001 Bern

Switzerland

+41 58 827 34 09

<https://www.swiss-emobility.ch/> and info@swiss-emobility.ch

The Federal Department of the Environment, Transport, Energy and Communications (Das Eidgenössische Departement für Umwelt, Verkehr, Energie und Kommunikation, UVEK)

"DETEC deals with infrastructure and environmental matters. Modern transport routes, communication networks and the power grid all fall under its remit. However, DETEC also deals with issues relating to the environment and health and safety. This concentration of user interests and protection interests under one roof can often create conflicting objectives. Decisions must therefore often be very carefully prepared."

Kochergasse 6

3003 Bern

Switzerland

+41 58 462 55 11

<https://www.uvek.admin.ch/uvek/en/home.html> and info@gs-uvek.admin.ch

5 Business partners

The following list gives an overview of important business partners in the Netherlands and Switzerland. The entities' descriptions follow their own websites.

5.1 The Netherlands

Alfen

"Alfen offers a complete range of charge points for use at home, work and in public areas. These charge points are available in a large variety of charging capacities and functionalities. The unique combination of Alfen's transformer substations, energy storage systems and charge points allows for optimal balancing of local grids."

Hefbrugweg 28

1332 AP Almere

The Netherlands

+31 36 549 34 00

<https://www.alfen.com> and info@alfen.com

Allego

"Allego will help you install EV-charging points, simply and fast. Your municipality maintains complete control, even if you make no financial contribution. We can install, finance and maintain charging points for the use of the municipality, local residents and visitors. All within the current policy framework of your municipality. In addition to this, we are working with our partners to facilitate problem-free charging for other electric transportation in urban areas. In this context, think of sustainable bus, boat or taxi transport."

Industriepark Kleefse Waard

Westervoortsedijk 73

6827 AV Arnhem

The Netherlands

+31 88 750 03 00

<https://www.allego.eu> and e-mail

APPM

"With passion, courage and vision, the 80 employees of APPM work on planning, developing and restructuring urban and rural areas. APPM projects focus on better accessibility, infrastructure and mobility. Our goal is a future for the Netherlands that is climate-proof, abundant in water and sustainable."

Spicalaan 8

2132 JG Hoofddorp

The Netherlands

+31 23 562 16 30

<http://www.appm.nl/en> and info@appm.nl

Camptoo

"First electronic camper. "

Binckhorstlaan 36 (H0 08)

2516 BE The Hague

The Netherlands

+31 85 273 74 52

<https://www.camptoo.nl> and support@camptoo.nl

Deodrive

"Import of Fuel Cell Electric Vehicles. "

Heijplaatstraat 23

3089 JB Rotterdam

The Netherlands

+31 71 240 11 11

<https://www.deodrive.nl> and e-mail

Dutch Incert

"Dutch innovation centre for electric road transport."

Postbus 5

2600 AA Delft

The Netherlands

+31 15 278 89 65

<https://www.d-incert.nl> and info@d-incert.nl

EBUSCO

"EBUSCO is a Dutch company, focused on the development, marketing and sales of full electric buses for the European market. In addition, existing designs are adapted to the European regulations and the buses are equipped with the monitoring systems that the European concessionaires require serving a safe and economically optimal public transport. EBUSCO is a pioneer in the development of electric bus transport and was the first European company to receive a full European type approval for a full electric bus. Since 2010 we have gained extensive practical experience through the deployment of 300 buses driving in a normal timetable (325 km per day). With the introduction of the deliverable fully electric buses from EBUSCO, the emissions targets of the EU for the public and freight transport and private transport are realized in an urban environment for the next 50 years."

Berenbroek 3

5707 DB Helmond

The Netherlands

+31 88 110 02 00

<https://www.ebusco.eu> and e-mail

Emodz

"Current technologies offer numerous opportunities to use our (mobility) equipment more efficiently and intelligently, and to make them sustainable while reducing their costs. However, using the most effective methods and having them interact in the best possible way requires specialist expertise. Emodz has these skills."

Stationsstraat 11

7607 GX Almelo

The Netherlands

003154 649 29 97

<https://www.emodz.nl> info@emodz.nl

Emoss

“Sales of electric trucks.”

Visserijweg 2
4906CJ Oosterhout
The Netherlands
+31 16 242 00 05

<https://www.emoss.nl> and info@emoss.nl

EV-Box

“EV-Box is the leading global manufacturer of electric vehicle charging stations and charging management software.”

Pedro de Medinalafan
311086 XP Amsterdam
The Netherlands
+31 88 775 54 40

<https://www.ev-box.com> and info@ev-box.com

e-Traction

“Founded in the Netherlands e-Traction offers superior technology in e-mobility and related services that is based on solid expertise and experience. Since 1981 the key focus has been to commercialize and integrate innovative and state of the art e-mobility solutions. We developed a unique electric in-wheel powertrain technology which offers the essence of pure direct drive power. With our sustainable technology only a bare minimum of components is required to reach the highest efficiency level. The simplicity of our drivetrain is the ultimate sophistication.”

Watermanstraat 40
7324 AH Apeldoorn
The Netherlands
+31 55 521 11 11

<http://www.e-traction.eu> and info@e-traction.com

Greenflux

“GreenFlux has developed an award winning Smart Charging Controller. Our high-tech controller can turn every charge point into a connected device. By creating a connected device, charge points are ready for revenue management and many other smart charging solutions. You can manage your charge point without having to be in the same country.”

Mauritskade 63
1092 AD Amsterdam
The Netherlands
+31 88 605 07 00

<https://www.greenflux.com> and info@greenflux.com

EV Consult

“Consultancy for E-mobility.”

Overtoom 60-4
1054 HK Amsterdam
The Netherlands
+31 6 52 66 30 32

<https://www.evconsult.nl> and info@evconsult.nl

FASTNED

"Today Fastned is operating a network of over 60 charging stations along the Dutch highways and in cities. We are expanding this network to other countries. Fastned builds, owns and operates all stations. The focus of our first expansion wave is Germany and London. Fastned is also preparing to enter the Belgian and Swiss markets."

James Wattstraat 77-79
1097 DL Amsterdam
The Netherlands
+31 20 715 53 16

<https://fastned.nl/en> and info@fastned.nl

Jedlix

"Jedlix manages the charging of your electric car based on the balance between production and consumption of renewable energy. By selecting the optimal charging moments, we increase the share of renewables in the energy mix. We charge your car with renewable energy when the prices are at their lowest and we share the financial reward generated with you."

Marten Meesweg 5
3068 AV Rotterdam
The Netherlands

<https://www.jedlix.com> and ichargesmart@jedlix.com

Hansa Green Tour

"Hansa Green Tour is an international network and business community to showcase sustainable solutions. We organize networking tours with electric and alternative energy vehicles for companies, knowledge institutions and policy makers who want to showcase sustainable solutions and explore business opportunities together."

+31 6 55 56 72 18

<https://www.hansagreentour.com> and info@hansagreentour.com

Heliox

"Heliox fast charges Volvo's first all-electric buses in Luxembourg in cooperation with Volvo Buses and Sales Lentz. Heliox has successfully delivered 3 Heliox Fast Charge Systems with OppCharge interface in the city of Differdange in Luxembourg. The electric buses run through the city center and are charged at end of route with 300kW."

De Waal 24
5684 PH Best
The Netherlands
+31 88 501 63 00

<https://www.heliox.nl> and info@heliox.nl

New Motion

"NewMotion provides residential and corporate charging solutions for both private and public use. The company's award-winning charging stations come with all the smart and user-friendly technology which makes it possible to charge safely and quickly, and which are fully integrated with NewMotion's own charging services. The charging stations are connected to the cloud, so that everything can be remote-controlled and electricity costs can be billed automatically."

Keizersgracht 585
1017 DR Amsterdam
The Netherlands
+31 88 010 95 00
<https://newmotion.com> and [mail](#)

NHTV (Breda University of Applied Sciences)

"NHTV is a university of applied sciences with about 7,000 students from over 100 countries. It is situated in the south of the Netherlands, in the city of Breda."

P.O. Box 3917
4800 DX Breda
The Netherlands
+31 76 533 22 03
<https://ww.nhtv.nl> and [e-mail](#)

Power Research Electronics (PRE)

"PRE designs innovative EV charging solutions. More than 20 years of experience in power electronics and collaboration with carefully selected partners result that we welcome each challenge. We are the Power developers."

Minervum 7073
4817 ZK Breda
The Netherlands
31 76 58 11 077
<http://www.pr-electronics.nl/en/> and info@pr-electronics.nl

VDL Group

"VDL Groep is an international industrial company focused on the development, production and sale of semi-finished products, e-buses & coaches and other finished products and the assembly of cars. It is a conglomerate of flexible, independent companies, each with its own specialty."

Hoevenweg 1
5652 AW Eindhoven
The Netherlands
+31 40 292 50 00
<http://www.vdlgroep.com> and info@vdlgroep.com

5.2 Switzerland

ABB

"ABB is leading with Internet-based charging infrastructure, supporting all EV charging standards. ABB offers a total solution: specific charging solutions for any location type and connected services to enhance your business. The chargers easily

connect to any service or payment application. ABB's Internet connected chargers enable fast global service and pro-active maintenance. ABB has years of experience in creating, installing and maintaining charging infrastructure, including several nationwide charger networks."

Affolternstrasse 44

CH-8050 Zürich

Switzerland

+41 84 484 58 45

<http://www.abb.com> and [e-mail](mailto:)

BRUSA

"As a development service provider, BRUSA Elektronik AG, headquartered in Sennwald, Switzerland, has contributed significantly to the worldwide breakthrough of electric mobility since the company's foundation in 1985. We are constantly working on innovations to drive electric mobility forward. As a technology leader and an innovation platform, we offer, together with our international partners and specialists, solutions for civilian applications that provide our customers worldwide with a vital lead."

Neudorf 14

9466 Sennwald

Switzerland

+41 81 758 19 00

<http://www.brusa.biz> and info@brusa.biz

Cablex AG

"Rapid technological innovation, the coming energy reform and increasing mobility require investment in communication, energy and transport. We offer comprehensive networking solutions with state-of-the-art technology and work together with you to lay the infrastructure foundation for the future."

Tannackerstrasse 7

3073 Gümligen

Switzerland

+41 84 822 25 39

<http://www.cablex.ch/> and cablex.info@cablex.ch

EVTEC

"EVTEC offers ready to use products for the segment of Electric Mobility with a focus on EVSE (Electric Vehicle Supply Equipment) and EV board electronics."

Renglochstrasse 19

6012 Kriens-Obernau

Switzerland

+41 41 260 88 38

<http://www.evtec.ch> and evtec@evtec.ch

GOFAST

"Göthard FASTcharge is a Swiss company with the mission to create a "supercharger for all". This means to provide a high-performance charging infrastructure at which an EV-Driver can recharge within 10 minutes up to 100 km of range. It is therefore no coincidence that we have named our company according to the most important Swiss mountain range for European traffic innovations."

Via Industria 10
6826 Riva San Vitale
Switzerland
<https://www.gofastcharge.com/> and nfo@gofastcharge.com

Green Motion

"Green Motion est une entreprise indépendante fondée à Lausanne en 2009 qui conçoit et produit localement des systèmes de recharge pour véhicules électriques. L'entreprise suisse fait partie des pionniers du marché des infrastructures de recharge et depuis plus de 9 ans installe ses bornes avec succès dans tout le pays."

Chemin de Maillefer 59-61
1052 Le Mont-sur-Lausanne
+41 21 544 04 44
<http://www.greenmotion.ch> and info@greenmotion.ch

SWARCO

"SWARCO is a growing international group providing the complete range of road marking, signaling and traffic management products, services and solutions. The focus of SWARCO's business is to keep traffic in motion and inform and guide the traveller with innovative products and services in order to support the growing mobility needs of society."

Industriestrasse 23
5036 Oberentfelden, Switzerland
+41 62 723 92 22
<https://www.swarco.com/> and [e-mail](mailto:)

Swiss.charge.ch AG

"swisscharge.ch macht es noch interessanter, Ladestationen zu betreiben. Sie werten dadurch die Standorte Ihrer Ladestationen auf, erzielen höhere Einnahmen aus den Ladevorgängen und verstärken die Kundenbindung."

Tellstrasse 4
9200 Gossau
Switzerland
+41 71 388 11 50
<https://www.swisscharge.ch> and [e-mail](mailto:)

6 Further reading

6.1 General

[European Alternative Fuels Observatory \(EAFO\)](#)

"The European Commission initiative to provide alternative fuels statistics and information (electricity, hydrogen, natural gas, LPG). The websites provides for information on EU Member States, EFTA Member States (thus including Switzerland) and Turkey."

[International Energy Agency \(IEA\) – Global EV Outlook 2017 \(2017\)](#)

"The Global EV Outlook 2017 provides insights on recent EV technology, market, and policy developments, in particular with regards to the sector's status outlined previously in the Global EV Outlook 2016. Detailed information for the past five to ten years on EV registrations (vehicle sales), number of EVs on the road, and modal coverage across the most relevant global vehicle markets is provided."

6.2 The Netherlands

[Netherlands Enterprise Agency – The Netherlands. Your Partner in E-mobility \(2017\)](#)

"The Netherland Enterprise Agency (RVO.nl) has been commissioned by the Netherlands Ministry of Economic Affairs to promote electric transport. It is evident from the growing interest in electric transport that this innovation offers economic opportunities for the business sector. This report portraits the highlights of the E-mobility sector in the Netherlands in 2016."

[Netherlands Enterprise Agency – Electric transport in the Netherlands - 2016 Highlights \(2016\)](#)

"The Netherland Enterprise Agency (RVO.nl) has been commissioned by the Netherlands Ministry of Economic Affairs to promote electric transport. It is evident from the growing interest in electric transport that this innovation offers economic opportunities for the business sector. This report portraits the highlights of the eMobility sector in the Netherlands in 2016."

[Amsterdam Round Tables in collaboration with McKinsey & Company – Electric vehicles in Europe: gearing up for a new phase? \(2014\)](#)

"In the past few years, Europe has gone through the initial adoption phase of electric mobility. After a "turbulent" period of excitement and promise as well as disappointment, it is now possible to formulate a clearer view on the development of electric mobility to date and its drivers going forward."

6.3 Switzerland

[ALPIQ – Electric vehicle market penetration in Switzerland by 2020](#)

"Alpiq is one of the leading energy companies in Switzerland and the largest energy services provider with a European orientation."

[The Federal Council – Bericht in Erfüllung der Motion 12.3652 Elektromobilität. Masterplan für eine sinnvolle Entwicklung](#) *(only available in German)*

“Der Bundesrat hat den Bericht zur Motion 12.3652 «Elektromobilität. Masterplan für eine sinnvolle Entwicklung» der Kommission für Umwelt, Raumplanung und Energie des Nationalrates gutgeheissen. Er kommt darin zum Schluss, dass die Anliegen der Motion mit den bereits eingeleiteten und empfohlenen Massnahmen im Rahmen der Energiestrategie 2050 sowie den im vorliegenden Bericht vorgesehenen Massnahmen zur Verbesserung der Rahmenbedingungen für die Elektromobilität erfüllt sind. Die Erstellung eines separaten Masterplans Elektromobilität erachtete der Bundesrat daher für nicht notwendig.“

[The Federal Assembly of the Swiss Parliament - Voraussetzungen für ein Schnellladnetz für Elektroautos auf Nationalstrassen \(2017\)](#) *(only available in German, French and Italian)*

“Die Elektrifizierung des Strassenverkehrs kann einen Beitrag zur Erreichung der schweizerischen energie- und klimapolitischen Ziele leisten. Damit Elektroautos im Alltag wirklich akzeptiert werden, braucht es eine ausreichende Reichweite und, um unterwegs nachladen zu können, ein leistungsstarkes Netz von Ladestationen. Der Bundesrat wurde mit dem Postulat 14.3997 aufgefordert, die notwendigen Voraussetzungen zu prüfen, um den raschen Aufbau eines Schnellladernetzes für Elektroautos entlang der Nationalstrassen zu ermöglichen.“

[ZH AW School of Management and Law – Zukunftsstudie Elektromobilität Schweiz 2030](#)

“Elektromobilität beginnt sich in der Schweiz zu formieren. Für die nächsten Jahre sind neue Elektromobile Fahrzeugmodelle und Infrastrukturlösungen angekündigt. Auch die öffentliche Hand beschäftigt sind intensiv mit möglichen Implikationen, Wirkungen und Erfordernissen dieser neuen Mobilitätsform.“



This is a publication of the Embassy of the Kingdom of the Netherlands in Bern