



Elektrikli Şarj İstasyonları

Elektrik Tesisat Ulusal Kongresi / İzmir

Özgür TUĞCU
18.10.2019

Life Is On

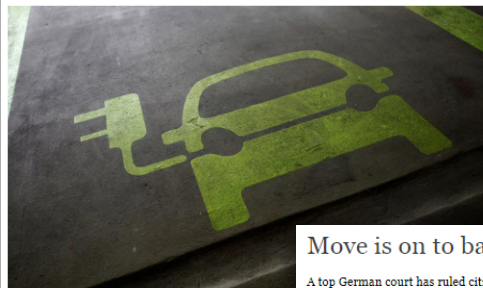
Schneider
Electric

Dünyada temiz hava önemli bir yer kazanıyor

Ülkeler, şehirler ve bazı araba üreticileri diesel arabaları yasaklıyor.

China to ban production of petrol and diesel cars 'in the near future'

Announcement aimed at tackling pollution will prove a huge incentive to development and sale of electric and hybrid vehicles



▲ China says it plans to ban petrol and diesel cars 'in the near future'.

China, the world's biggest vehicle market, is considering the ban as a major boost to the sale of electric cars. Beijing seeks to ease pollution.

Sweden gives green light for cities to ban old diesel cars

The Local
news@thelocal.se
@thelocalsweden

26 March 2018
07:54 CEST+02:00

car

diesel

environment

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Photo: Pontus Lundh/TT

Move is on to ban diesel cars from cities

A top German court has ruled cities can ban diesel cars on their own. DW looks at several places that have already started implementing similar plans to curb urban air pollution.



London. Oslo. Rome. Beijing. Shanghai. Ever more cities are introducing a variety of schemes to improve urban air quality by limiting the number or types of automobiles that can enter downtown zones, and the list is growing.

German automakers are biggest global spenders on electric cars: study

AFP
news@thelocal.de
@thelocalgermany

12 March 2018
14:31 CET+01:00

cars

e-cars

bmw

daimler

vw

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Porsche is getting out of the diesel business before building more plug-ins

Automaker stopped offering diesels in the US in 2015, but now the rest of the world loses them, too

By Zac Estrada | @zacestrada | Feb 20, 2018, 7:07pm EST

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Photo by Amelia Holway-Kirkles | The Verge

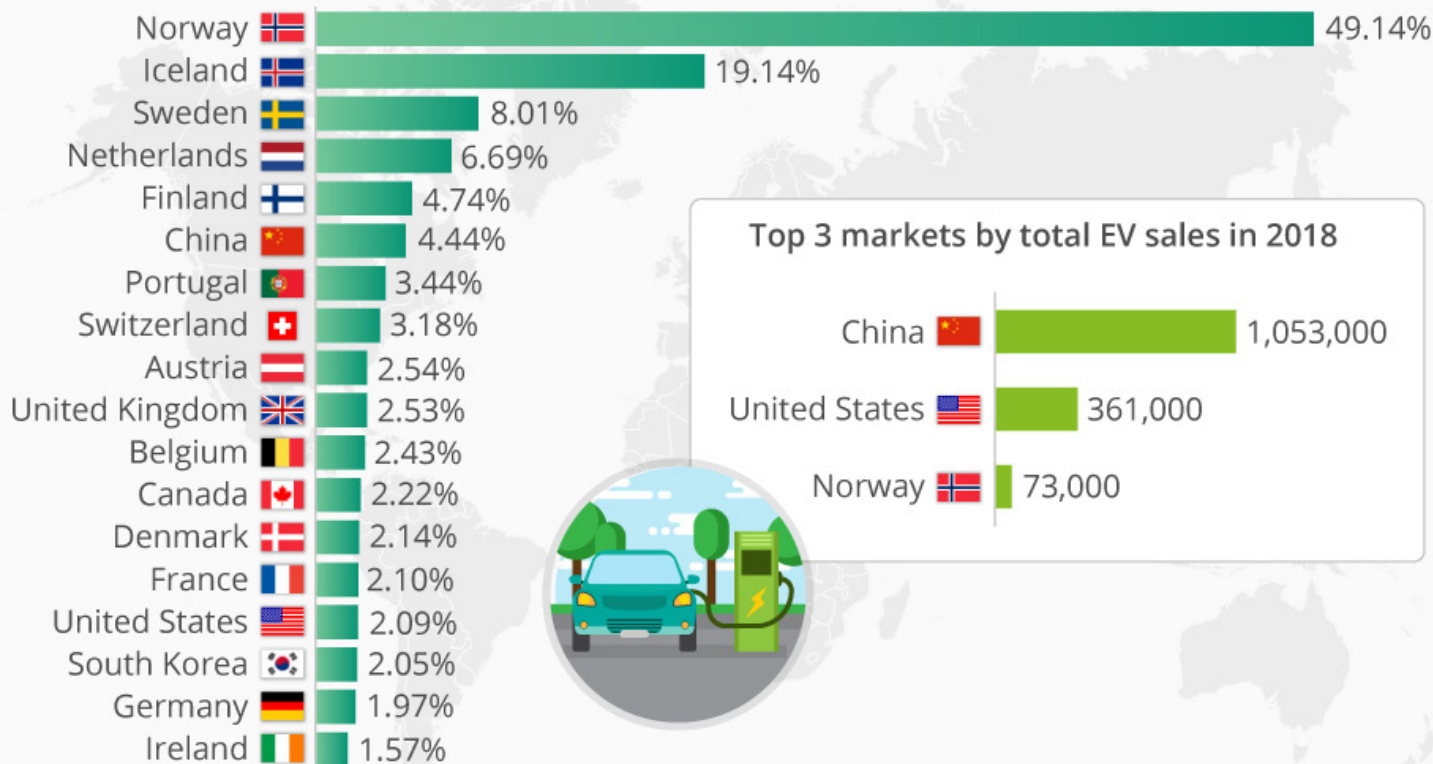
Porsche hasn't shied away from making a big push for electrification in its future lineup, even significantly boosting its investment in the full EVs and plug-in hybrids. But one type of propulsion may be running on borrowed time at the German automaker.



NOW TRENDING

Electric Mobility: Norway Races Ahead

Countries with the highest share of plug-in electric vehicles in new passenger car sales in 2018*



2040 yılında Tahmini Elektrikli Araç Sayısı

2040 Worldwide BLOOMBERG

530M



Tahmin Edilen Araç Sayısı

560M



Hesaplanan Şarj İstasyonu Sayısı

480M

Evlerde

80M

Halka Açık Alanlarda

2030 Turkey Shura

1-2,5M



Tahmin Edilen Araç Sayısı

1,5-3m



Hesaplanan Şarj İstasyonu Sayısı

%25

Evlerde

%75

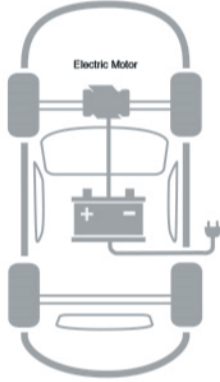
Halka Açık Alanlarda, İş Yerlerinde

Elektrikli Araç Nedir?

2 tip araç sarj edilebilir.

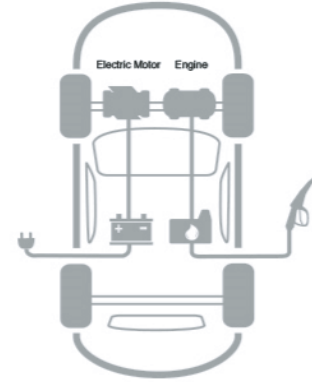
Bataryalı Elektrikli Araç

Batarya grubu olan ve enerji depolayan araçlar



Soket takılabilir Hibrit Araç

Sarj edilebilir bir batarya grubu ve yanmalı motor



Elektrikli Araç Nedir?

Elektrikli Aracın Kısımları;

İnvertör Tipi ve Gücü

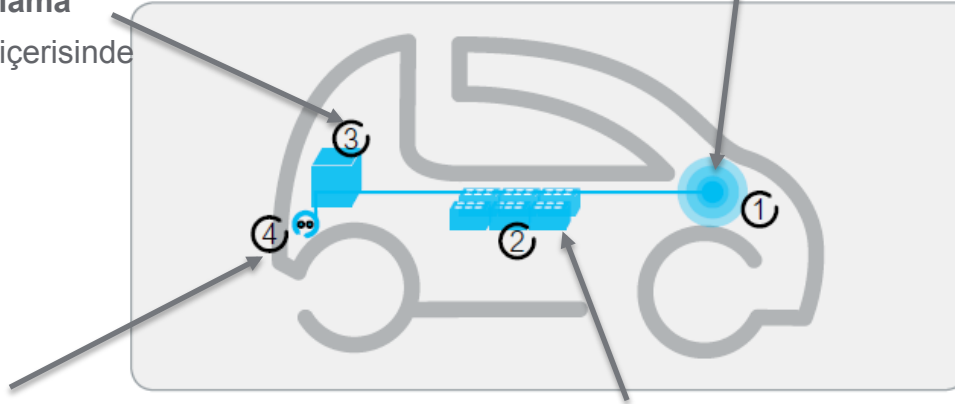
- Alternatif akımı Doğru akıma çevirir.

Doğru Akım Depolama

- 22kw'a kadar araç içerisinde

Motor

- Toplam güç 15-500kw arasında



Şarj Soket Çıkışları

- En az 1 adet AC şarj Çıkışı
- Opsiyon: 2. bir DC Şarj çıkışı (max 255A – 500V)

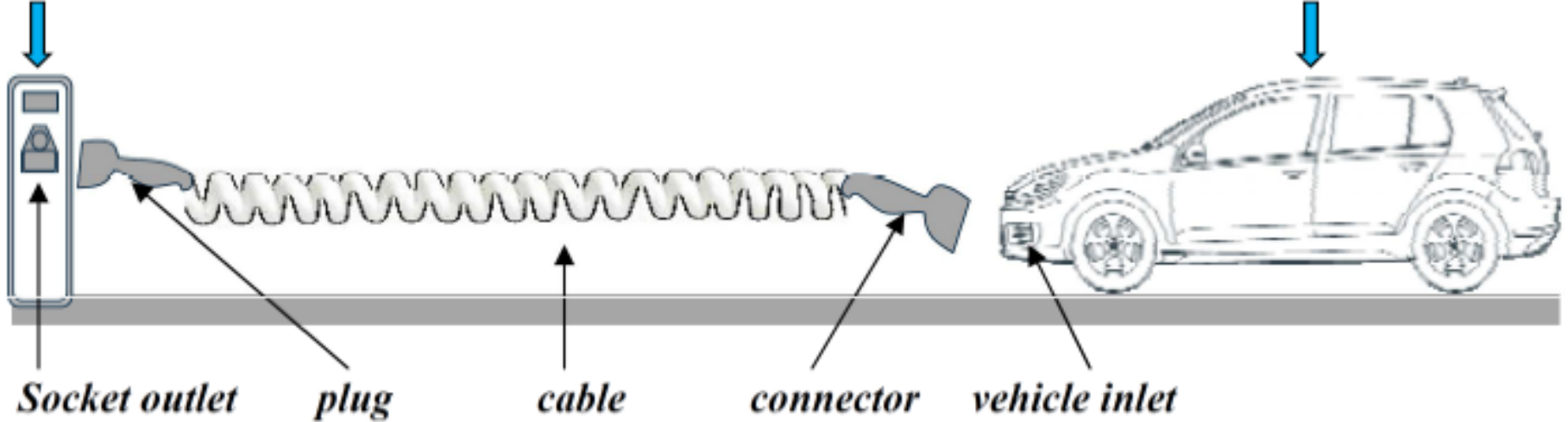
Batarya Seti=> Mesafe

- Enerjinin Depolandığı yer
- 5 ve 100kwh arası depolama Gerilim aralığı 300-500 V

Elektrikli Araç ve İstasyon

EVSE: Electric Vehicle Supply Equipment
Charging station

EV: Electric Vehicle



Elektrikli Araç Nasıl Şarj Edilir?

Yavaş Şarjdan Hızlı Şarja

AC için

Mod 1

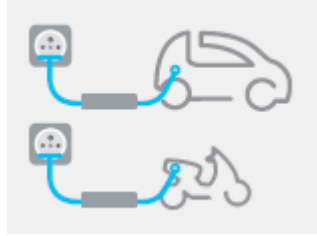
2.3 kW AC



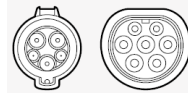
Domestic
Socket

Mod 2

2.3 kW AC



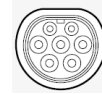
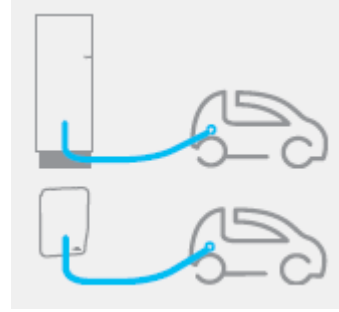
Domestic
Socket



Type1 Type2

Mod 3

From 3.7 kW to 22 kW AC



Type2



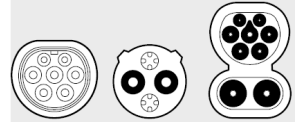
Type1



Type2

Mode 4

From 22 kW to 350 kW DC



Type2 CHAdeMO CCS
Combo

Hızlı Şarj

Genelde motor vb araçlar
Fazla ısınma riski

Araç Çeşitleri ve Şarj Süreleri

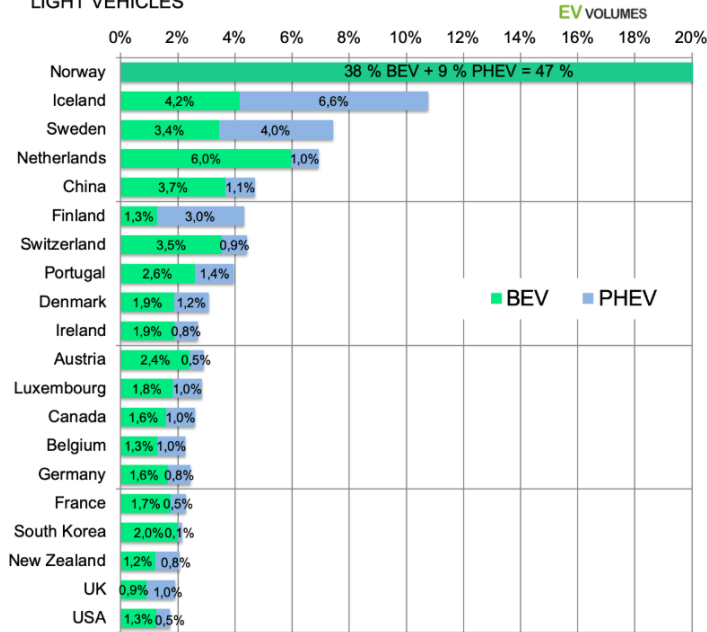
EV	Batarya (kWh)	Şarj Protokol	Araç Şarj Kapasitesi(kW)	Şarj Süresi 20 → 80% (*)		
				AC 22kW	DC 24kW	DC 50kW
Renault ZOE V1 / V2	22 / 41	AC 22kW	22	36dk/ 1h7dk	NA	NA
Nissan LEAF V1 / V2	30 / 39	DC CHAdeMO	6,6	2s45 / 3s35	45dk / 59dk	22dk / 28dk
BMW i3 V1 / V2	22 / 33	DC Combo	7,4 / 11	1s50 / 2s40	33dk / 50dk	16 dk / 24 dk
VW eGolf V1 / V2	24 / 36	DC Combo	7,2	2s / 3s	36dk / 54dk	17 dk / 26 dk
Hyundai Ioniq	28	DC Combo	3,3	5s	42 dk	20 dk
KIA Soul V1 / V2	27 / 30	DC CHAdeMO	3,7	4s20 / 4h50	40dk / 45dk	19 dk / 22 dk
Jaguar I-Pace	90	DC Combo	7,4	7h20	2h15	1s05
				1s50'den 7s20	33 dk'dan 2s15'e	16 dk'dan 1s05

Ortalama Süre

- Alışveriş Merkezleri: **1-2h30**
- Halka Açık Parklar : **1-2h30**
- Sinemalar : **> 2h**
- Restoranlar : **1- 1h30**

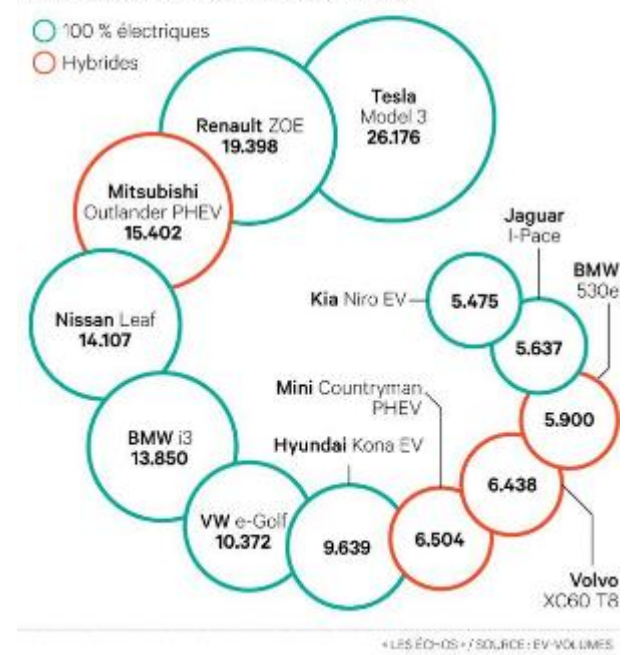
Avrupa'daki Elektrikli Araç Piyasası

EV SHARES AND COMPOSITION 2019 H1
LIGHT VEHICLES



Volume Change vs 2018 H1	
BEVs	PHEVs
+73%	-45%
+52%	-41%
+252%	-2%
+115%	+156%
+75%	+42%
+166%	-17%
+138%	-21%
+94%	+16%
+379%	-4%
+237%	+105%
+60%	-17%
+200%	+14%
+62%	-9%
+145%	-38%
+64%	+0%
+37%	+21%
+42%	+46%
+63%	+37%
+54%	-29%
+66%	-28%

En Çok satılan Elektrikli Araç Modelleri



E-mobility Ekosistemi Nedir?



Şarj Operatörü(CPO)



E-mobility Servis Sağlayıcısı(EMSP)
(Son Kullanıcı Servisi)



Servis Sağlayıcı

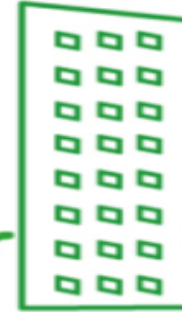
Data Aktarımı
Open Charge Point Protocol (OCPP)



Araba Üreticisi
Araba Kiralama Firmaları



Şarj İstasyonu Üreticileri

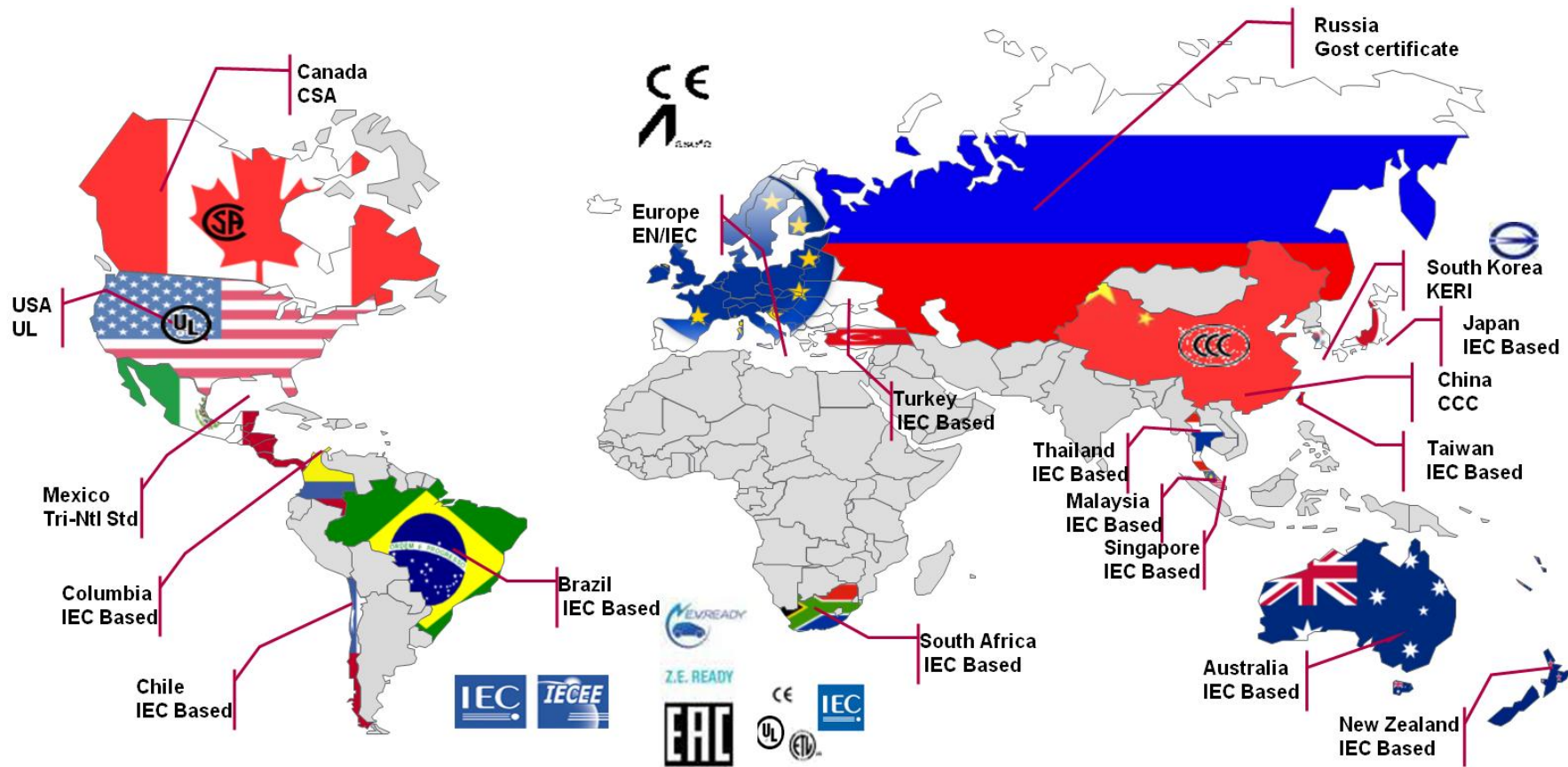


Özel Şirketler
Avm'ler
İş Merkezleri
Kişisel Evler



Şebeke

Ükelere göre Standartlar



Teşekkürler