Energy and Minerals Regulatory Commission

E-mobility Charging Systems Regulations

Energy Conservation Division, Head

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Introduction

Jordan vision is to sustain energy and increase the energy efficiency, in line with the National Energy strategy, Energy Efficiency Action Plan and Green Action plan towards green economy and environment.

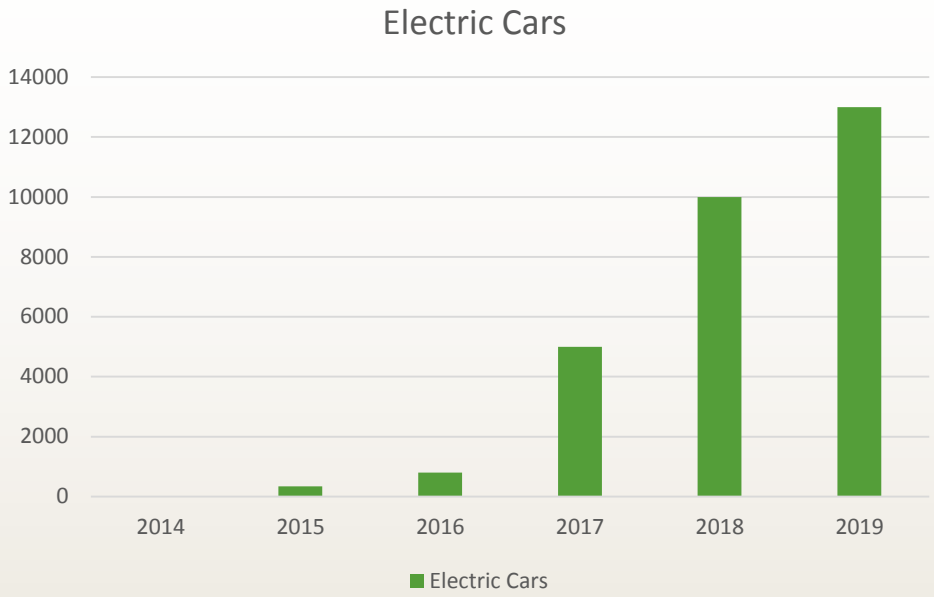
Energy and Minerals Regulatory Commission EMRC issued instructions to regulate and license the activities of charging electric vehicles, which contributed to increasing the number of charging points, and owning of more electric vehicles.

EMRC Role

- To regulate and organize the Energy sector fairly and transparently manner, to sustain and maintain the system, and balance between supply and demand.
- To play a key role in preparing legislations, directives, codes, standards and instructions for a competitive and feasible market.
- To Grant licenses and approvals for the qualified and eligible players in (electricity, mining and minerals, radiation and Nuclear).
- To Evaluate the performance of the sector.
- To Design the energy tariff.

E-mobility progress in Jordan

- EV in Jordan growth rate is high, people like to use it is cheaper, less maintenance, better features, clean Energy with zero emissions.
- Regulations for EV stations are reviewed and updated from time to time.
- The required infrastructure in progress and a lot of local and international concerns in this market.



year	Electric Cars
2014	9
2015	336
2016	900
2017	8000
2018	18000
2019	22000

Regulating EV activities

EV charging station services prices:

1- Private station points (122 JD /k.W.h) = 2.77 L.E = 0.17 $

2- Public station points (0.157 JD /k.W.h) = 3.65 L.E = 0.22 $

3- Residential electric vehicle meters up to 1000 kWh.
(122 JD/kWh)

4- Residential electric vehicle meters above 1000 kWh (265 f/kWh)

instructions of licensing EV charging

The instructions for licensing electric vehicle charging activities include all the necessary requirements and the principles that ensure: Build, operate and own a charging station, in an ideally way, taking into consideration regulatory, technical, environmental, security and safety issues.

http://www.emrc.gov.jo/Pages/viewpage?pageID=23

أنشطة محطات شحن المركبات الكهربائية

طباعة

انطلاقا من رؤية الهيئة لمواكبة اي مستجدات في قطاع الكهرباء، فإنه تم اصدار تعليمات ترخيص انشطة شحن المركبات الكهربائية من محطات الشحن الخاصة او العامة وهي المنشأت ذات الانواع والاشكال المختلفة التي تحتوي محطات شحن فرعية وتستخدم لشحن بطاريات المركبات الكهربائية (المركبة التي تتحرك بواسطة محرك كهربائي واحد او اكثر بشكل كلي او جزئي باستخدام الطاقة الكهربائية للشحن كليا او جزئيا) بالطاقة الكهربائية لتخزينها فيها، وذلك بعد ربط محطة الشحن على شبكات التوزيع، أو من خلال توليد الطاقة الكهربائية من نظم مصادر الطاقة المتجددة.

تشريعات ومستندات تنظيمية

- القوانين
  - قانون الكهرباء العام
- التعليمات
  - تعليمات ترخيص انشطة شحن المركبات الكهربائية

التراخيص

استنادا الى المادة رقم 3 من هذه التعليمات، فإنه لا يجوز لاي شخص أن ينشئ أو يتملك أو يدير أو يشغل محطة شحن للمركبات الكهربائية دون الحصول على تصريح أو رخصة صادرة عن الهيئة، لذلك تقوم الهيئة بمنح التصاريح أوالرخص وفقا التعليمات المنظمة لأنشطة محطات شحن المركبات الكهربائية العامة والخاصة.

منحت هيئة تنظيم قطاع الطاقة والمعادن رخص لشركات لممارسة أنشطة محطات شحن المركبات الكهربائية التالية:

- رخص لخمس محطات تابعة للشركة الاردنية الحديثة لخدمات الزيوت والمحروقات (المناصير) وهي :

قطاع الكهرباء

التوليد الكهربائي
النقل الكهربائي
أنشطة محطات شحن المركبات الكهربائية
التأهب والطوارئ
التوزيع والتزويد بالتجزئة
التعرفة الكهربائية
الفاقد الكهربائي
الإحصائيات

آخر الأخبار

بمقدار فلسين ...

ضبط 14 ألفا و497 حالة سرقة كهرباء في 9 ا...

الطاقة والمعادن تصدر رخصتين

- The location of all main public stations are determined on EMRC website , besides plug share app. which specifies all available individual charging points:

المواقع العاملة حاليا في محطات المناصير

1- بين دوار المدينة ودوار الداخلية https://goo.gl/maps/74tQv75MnyS2

2- ماركا قرب الترخيص https://goo.gl/maps/UmWMg13RPX62

3- السرو, بطريق السلط https://goo.gl/maps/u8yJLj7WH3s

4- محطة القدس https://goo.gl/maps/1tZQ8SPPaon

5- الحصن, طريق عمان-اربد https://goo.gl/maps/LsTAuPdWvck

6- وادي صقرة، اشارات الحدائقhttps://goo.gl/maps/t6h7JWXWPD92

7- الحزام الدائريhttps://goo.gl/maps/zfTwZM8rGG72

5- البقعة مقابل الاقمار الصناعية https://goo.gl/maps/QqScWLdErmr

9- اليادودة https://goo.gl/maps/YvzSYu3V7pM2

10- البحر الميتhttps://goo.gl/maps/jtRYGtXhwMp

11- القطرانة https://goo.gl/maps/QeHXV46GGtA2

- المواقع العاملة حاليا في محطات جلف

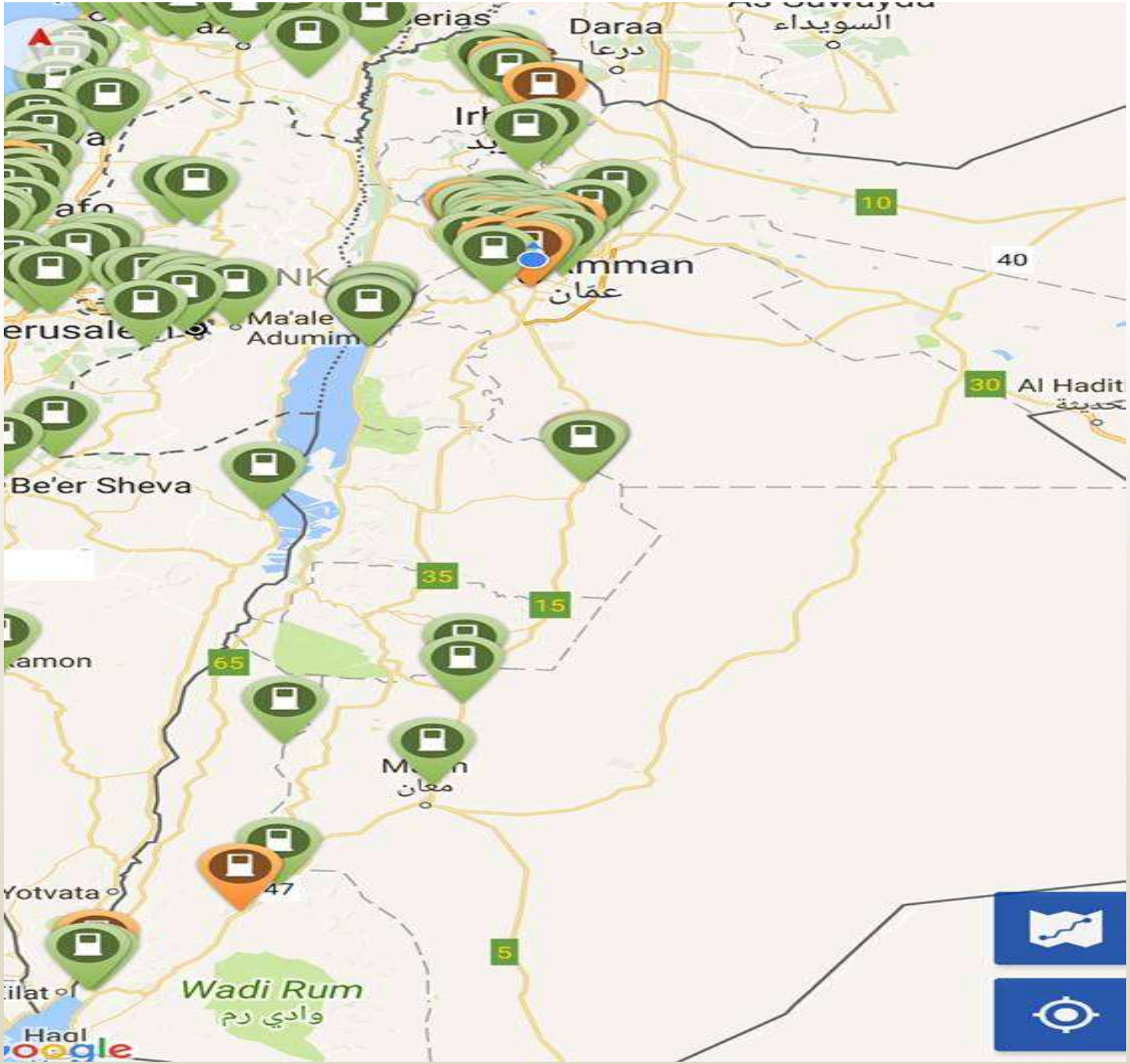
1- خلدا، امتداد شارع الجاردنز https://goo.gl/maps/DE31rE17YMv

2- المدينة الطبية. https://goo.gl/maps/RtPXbB5G9G22

3- العقبة. https://goo.gl/maps/PkBPRoS845p

- المواقع العاملة حاليا في محطات توتال

محطة نيفين، اربد، شارع البتراء، قبل إشارات الصريح https://goo.gl/maps/px5EM8MafKMVYk3z8


Daraa
درعا
السويداء
10
40
Al Hadit
30
Ma'ale Adumim
Be'er Sheva
35
15
65
47
5
Wadi Rum
وادي رم
Yotvata
Haql
معان

Licensing, permissions and approvals

	puplic	private
licenses	17	6
permissions	19	20

More than 300 approvals were issued for the installation of residential meters with EV charging price, after the verification of the requirements, and in coordination with the relevant distribution companies

Types of electric vehicles

- Pure electric vehicles (PEV).
- Hybrid electric vehicles (HEV).
- Plug in hybrid electric vehicles (PHEV).
- Fuel cell electric vehicles (FCEV).

عدد المركبات بأنواعها				
	2016	2017	2018	2019*
هجين	33058	37642	10000	10000
كهرباء	878	6974	9478	10989
بنزين	32153	24868	12216	12216

Electric Vehicles Charging Systems

The EV charging systems is defined as an establishment of different types (levels) and technologies that have sub-charging stations, and used to charge electric vehicle batteries - the vehicle that moves by one or more electric motors with plug point or in partially – using transmission grid, distribution grid, or using renewable energy sources.

Types of charging

Level 1:

A. Low current (about 12 A).
B. Less power (up 2 Kw).
C. More time (max 12 h).
D. For home.
E. safe and easy to use by individuals.

Types of charging

Level 2:

A. Current (up to 32 A).
B. Up to 8 Kw.
C. less time (max 3 h).
D. specific installations more expensive.

Types of charging

Level 3:

A. phase up to 32 A.
B. Up to 40 kw.
C. less time (30 minutes).
D. main stations.
E. Expensive infrastructure.


Grid Integration
Load Management
Billing
Real-Time Communication
Authentication & Authorization
IEC 61851-1 Type 2 Mode-3
Charging App
Payment Methods
Electric Vehicle (EV)
EV Driver

Public transportation

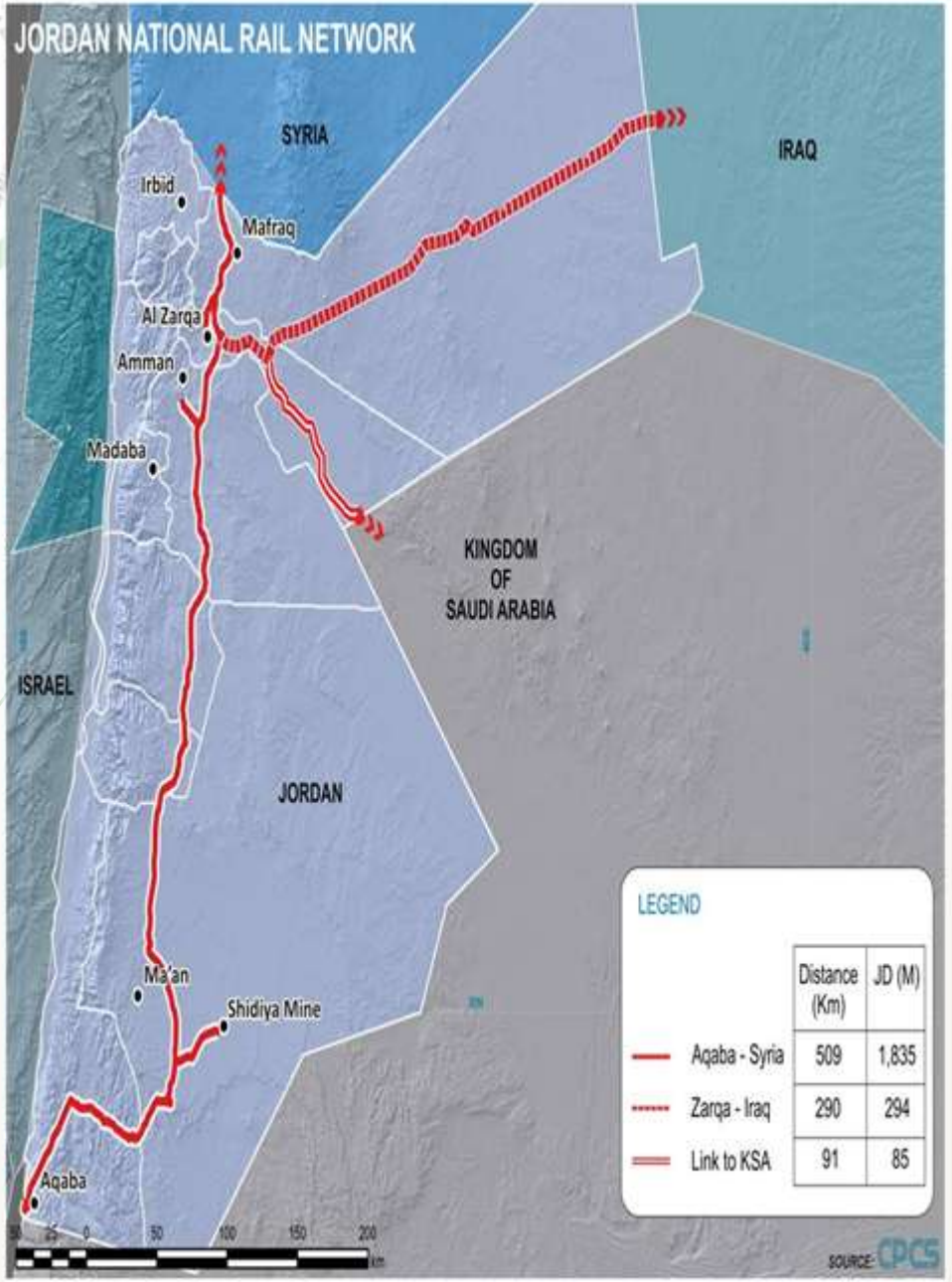
Jordan adopted many pioneer projects to enhance roads, infrastructure, services and buildings' envelope meeting the global requirement standards, and the quality of living, in Amman and all other cities.

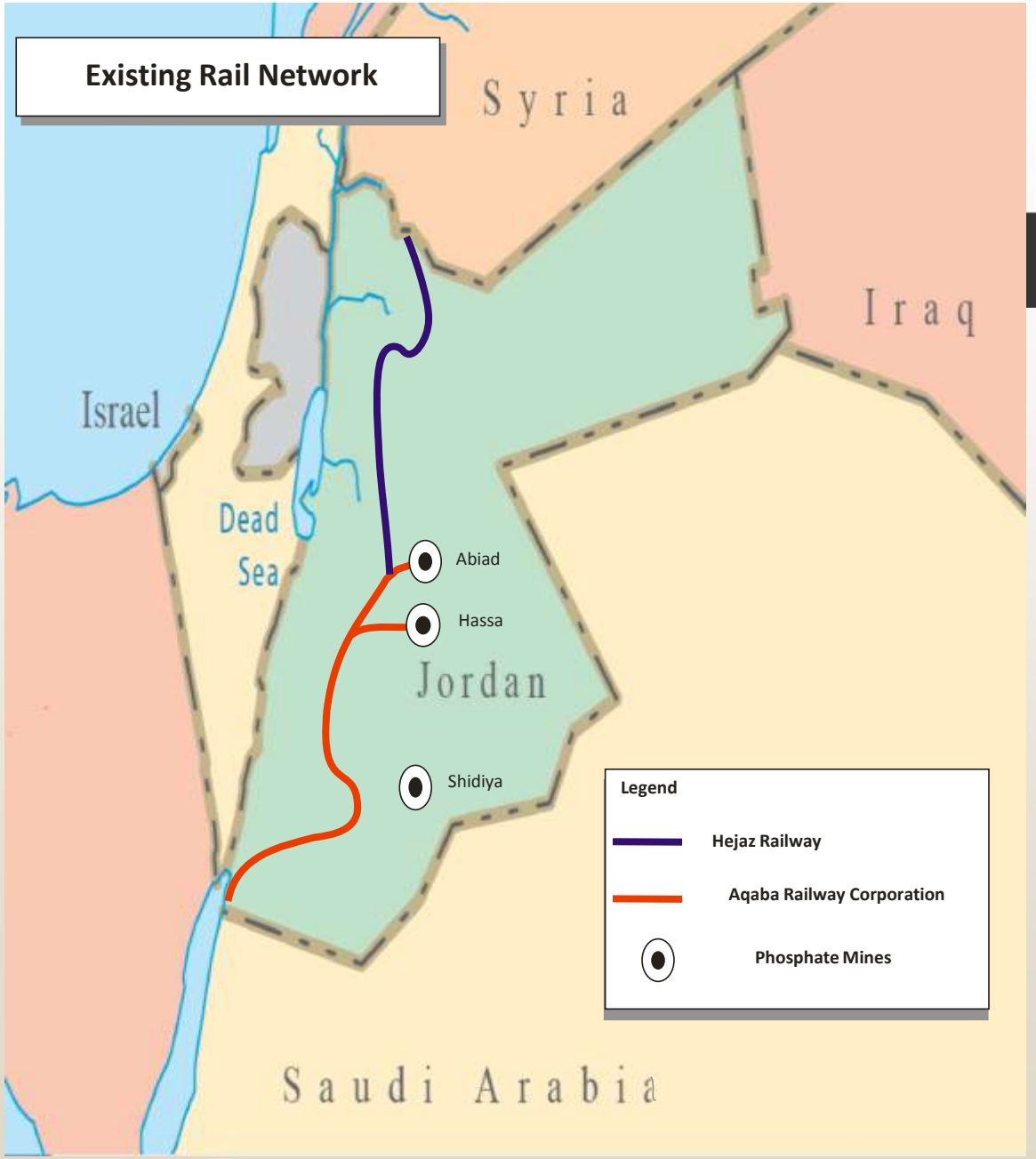
- 2 E- buses in Petra Development and Tourism Region Authority (PDTRA) to serve the tourism travels.
- Greater Amman Municipality introduced 135 buses with capacity of 59 and 42 passenger using euro 5.
- BRT bus rapid transit. To serve more than thousands of users daily in Greater Amman Municipality GAM.

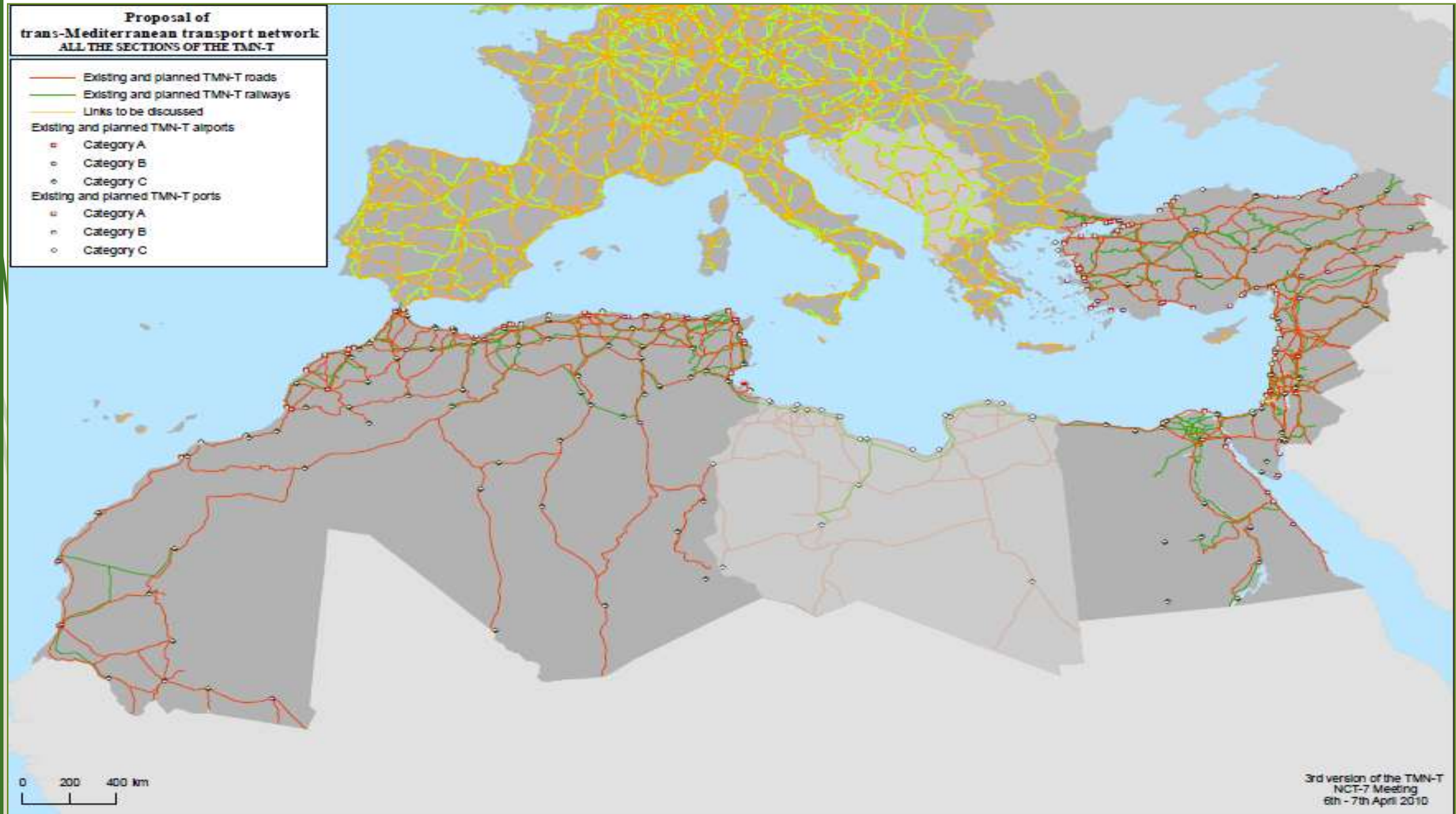

AMMAN BUS
باص عمان

Public transportation

- The Old Hejaz Railway which connects Syria to Saudi Arabia.
- The more recent Aqaba Railway (ARC) connects Jordan phosphate mines to the port of Aqaba. (trucking of phosphate is required from Shidyia Phosphate mine to the rail terminal at Aqaba Hejaz).


JORDAN NATIONAL RAIL NETWORK
SYRIA
IRAQ
Irbid
Mafraq
Al Zarqa
Amman
Madaba
KINGDOM OF SAUDI ARABIA
ISRAEL
JORDAN
Ma'an
Shidiya Mine
Aqaba
LEGEND
Distance (Km)
JD (M)
Aqaba - Syria
509
1,835
Zarqa - Iraq
290
294
Link to KSA
91
85
SOURCE: CPCS


Existing Rail Network
Syria
Iraq
Israel
Dead Sea
Abiad
Hassa
Jordan
Shidiya
Saudi Arabia
Legend
Hejaz Railway
Aqaba Railway Corporation
Phosphate Mines


Proposal of
trans-Mediterranean transport network
ALL THE SECTIONS OF THE TMN-T
Existing and planned TMN-T roads
Existing and planned TMN-T railways
Links to be discussed
Existing and planned TMN-T airports
Category A
Category B
Category C
Existing and planned TMN-T ports
Category A
Category B
Category C
0
200
400 km
3rd version of the TMN-T
NCT-7 Meeting
6th - 7th April 2010

Public transportation

- Contribute to growth in the Jordanian economy :
  1. Construction period:1.4% (about 10,000) increase in FTE jobs (Full-time equivalent), 3% increase In GDP.
  2. Operations period: 0.4% (about 2800) increase in FTE jobs (Full-time equivalent), 0.6% increase in GDP.
- Increase transit traffic which strengthens Jordan's contribution to regional trade and economic integration with its neighbours.
- Support competitiveness and development of Aqaba port.

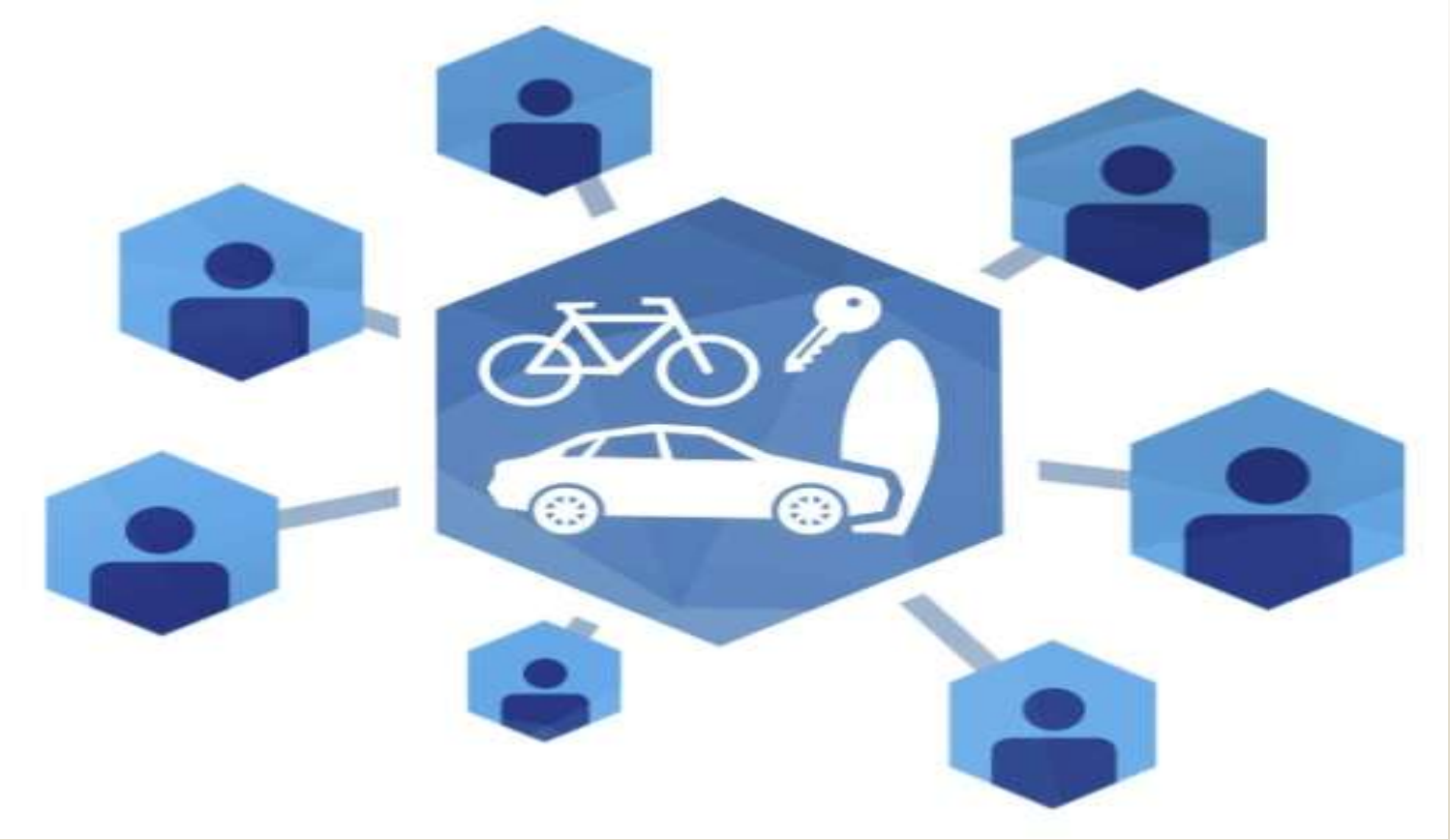
E-mobility facts

1-limited number of electric vehicle charging stations versus huge number of electric cars (22,000 electric cars)
2- Limited used technologies and applications
3- Charging average duration is 20 minutes
4- High costly investment, construction and infrastructure
5- Charging tariff (cost of electrical distribution operating system, approved profit margin for the owner)
6- improve coordination between relevant parties.
7- capacity building
8- the demand to introduce Light rail T, and micromobility.

vision

1. Enhance the legislations.
2. Incentivize and encourage investment in Clean Energy.
3. Adopt all sustainable solutions and enabling the environment.
4. Energy management solutions to balance between supply and demand.
5. Establish new indicators reflect the customer services.
6. Develop Smart grids and data bank.
7. Better Coordination between involved and affected parts.
8. Increase awareness within all sector to
9. R&D, awareness, plans …and transfer the know how.

Sharing is caring ……..



Thank you