Policies and strategies to support smart and electric mobility in cities

Global EV Pilot City Forum 2019

Guangzhou, November 15, 2019

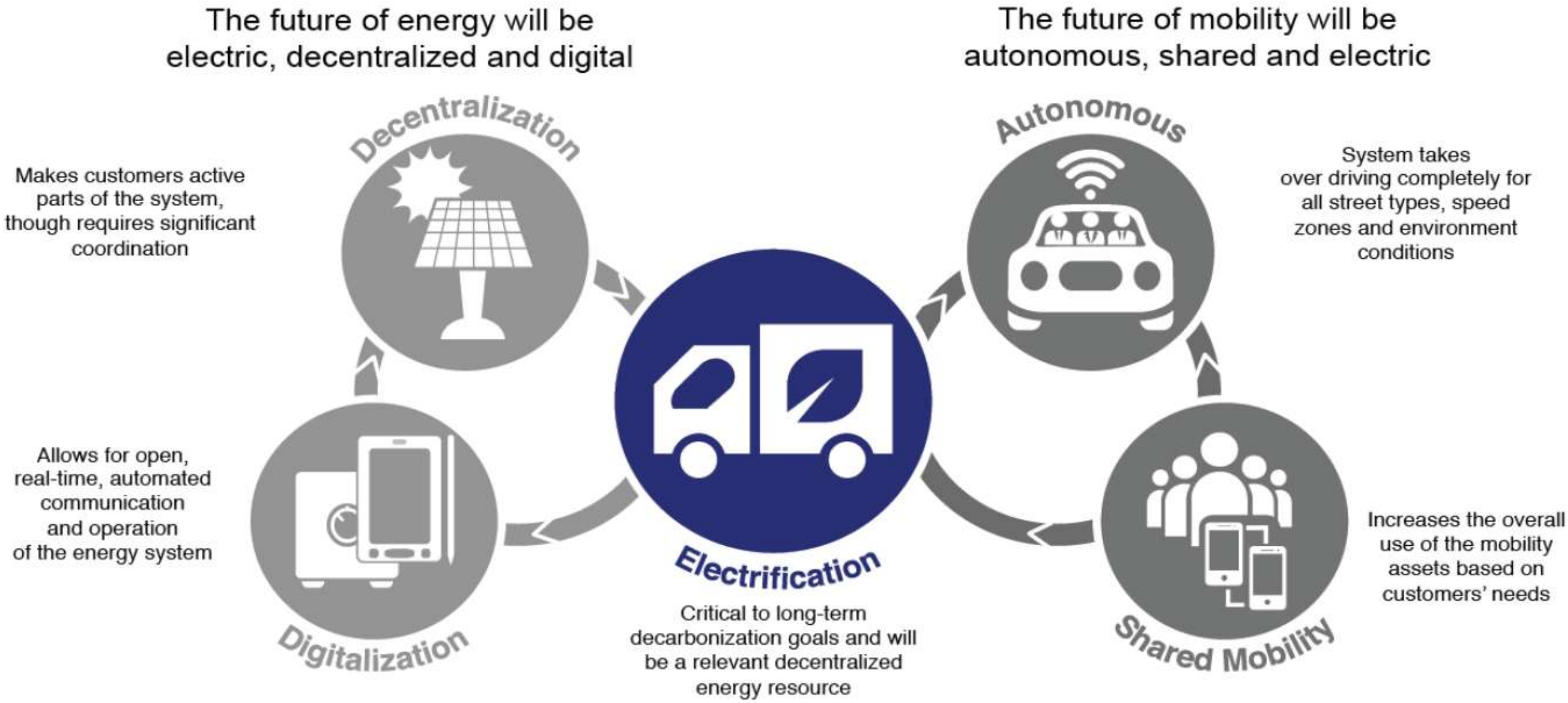
Ivan Jaques

Senior Energy Specialist

ESMAP
Energy Sector Management Assistance Program

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

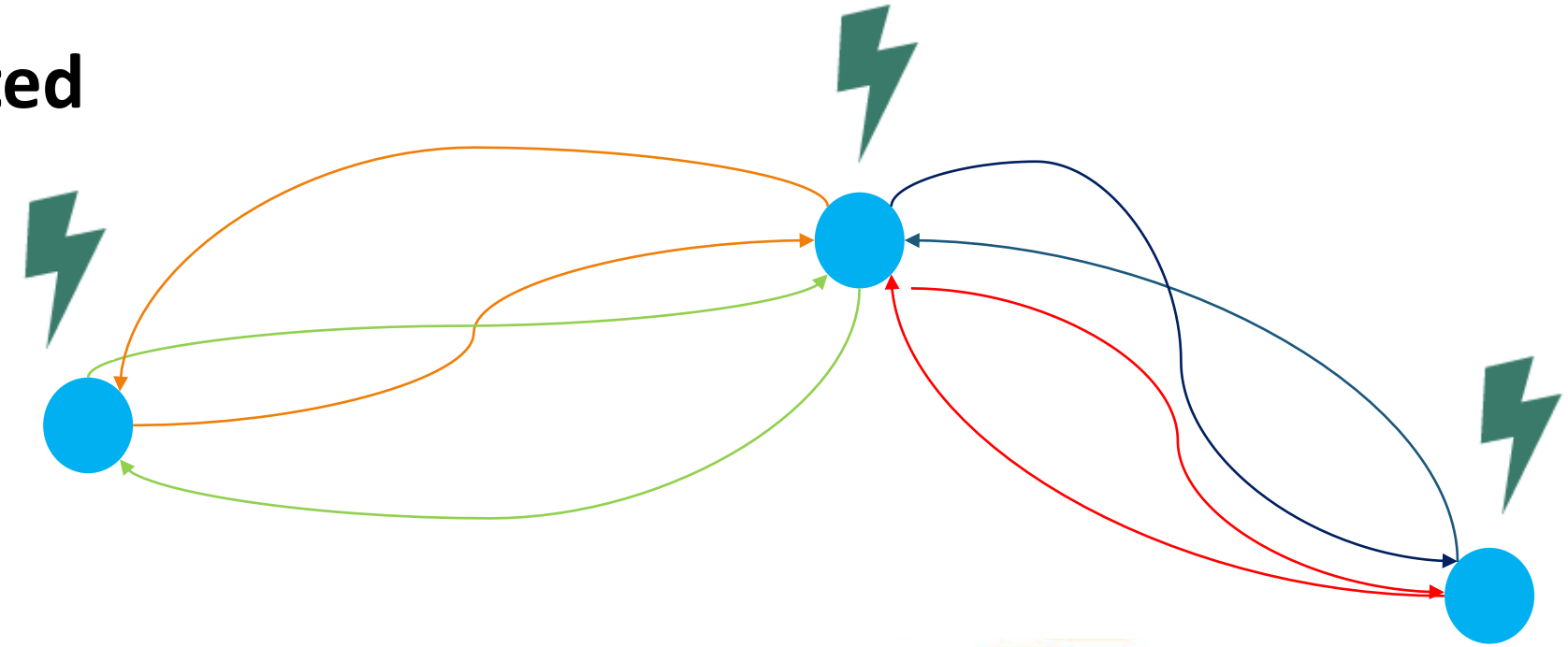
Context



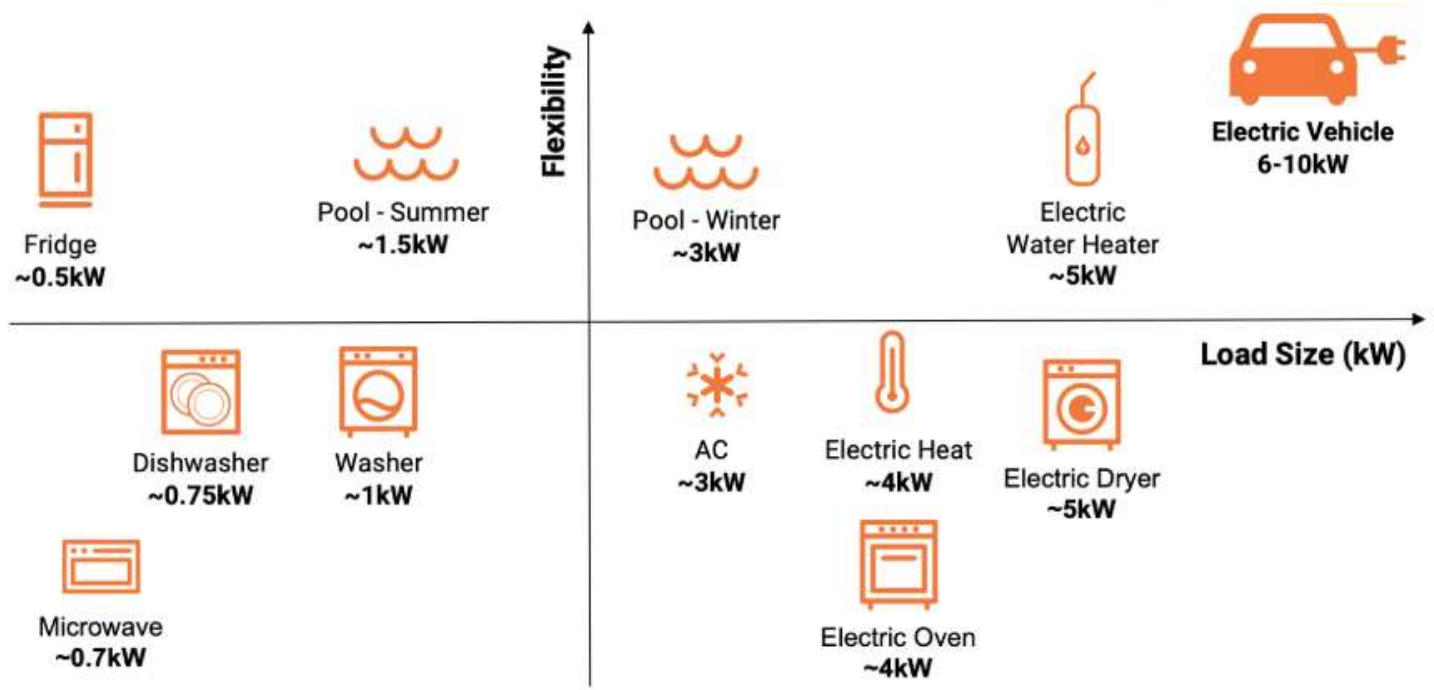
Source: World Economic Forum, The Future of Energy and Mobility, 2018

ESMAP
Energy Sector Management Assistance Program

Movable & distributed



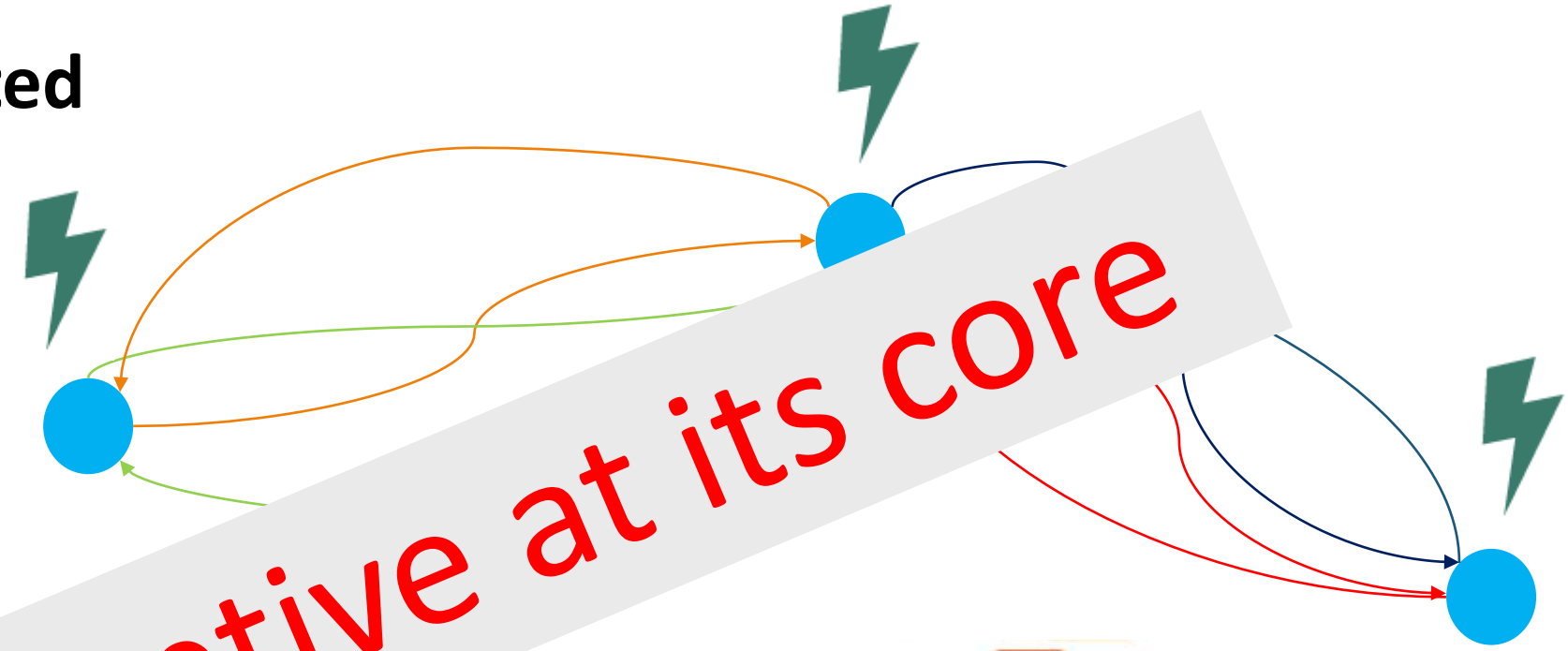
Flexible



Source: www.emotorwerks.com

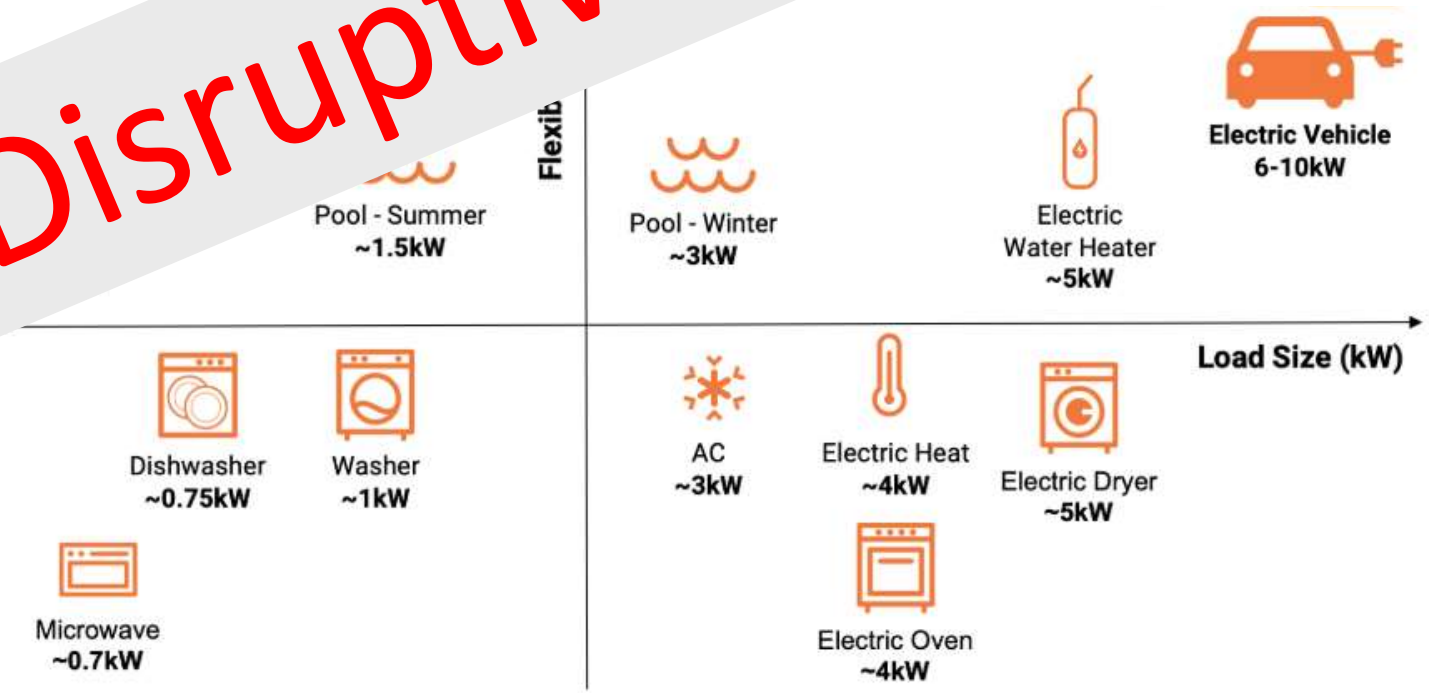
ESMAP
Energy Sector Management Assistance Program

Movable & distributed



Disruptive at its core

Flexible



Source: www.emotorwerks.com

ESMAP
Energy Sector Management Assistance Program

Drivers

ESMAP
Energy Sector Management Assistance Program

SUSTAINABLE DEVELOPMENT GOALS

COP21 · CMP11
PARIS 2015
UN CLIMATE CHANGE CONFERENCE







Porto Santo featured on BBC

Tuesday, June 11, 2019

Aspirations to become first energy independent island



Surprised this morning to find that the island of Porto Santo was featuring on BBC Breakfast, where it was described as "aspiring to become the first energy independent island by eliminating the use of fossil fuels altogether". The report started by showing diesel generators fuelling pollution, and moved on the detail the efforts being made to use reversible car batteries to recharge the electric grid.

The initiative, run by Renault and Empresa de Electricitade da Madeira (EEM) has actually been running for some time, and involves electric vehicles, second-life battery storage units, smart charging and vehicle-to-grid (V2G) charging to boost the island's energy independence and stimulate the production of renewable energy. The blog first featured the story in June 2018.

Source: madeiraislanddirect.com

The many flavors of e-mobility

ESMAP
Energy Sector Management Assistance Program


驱动驾乘快感
工况续航481km 最大续航585km
最高能量回收效率23%
0.15s极速响应流畅加速
-25℃~50℃极寒酷暑无忧用车
D60EV
启辰 D60


无毒青春 健康生活
花都公汽






OLA
KINETIC



ESMAP
Energy Sector Management Assistance Program




普天充电站
Potevio Charging Station
公交大厦站
Potevio
中国普天
安达
普天充电站
Potevio Charging Station
公交大厦站



PlugShare

Ahmad

J-1772
SemaCharge

Check In

BOOKMARK | ADD PHOTO | DIRECTIONS | EDIT

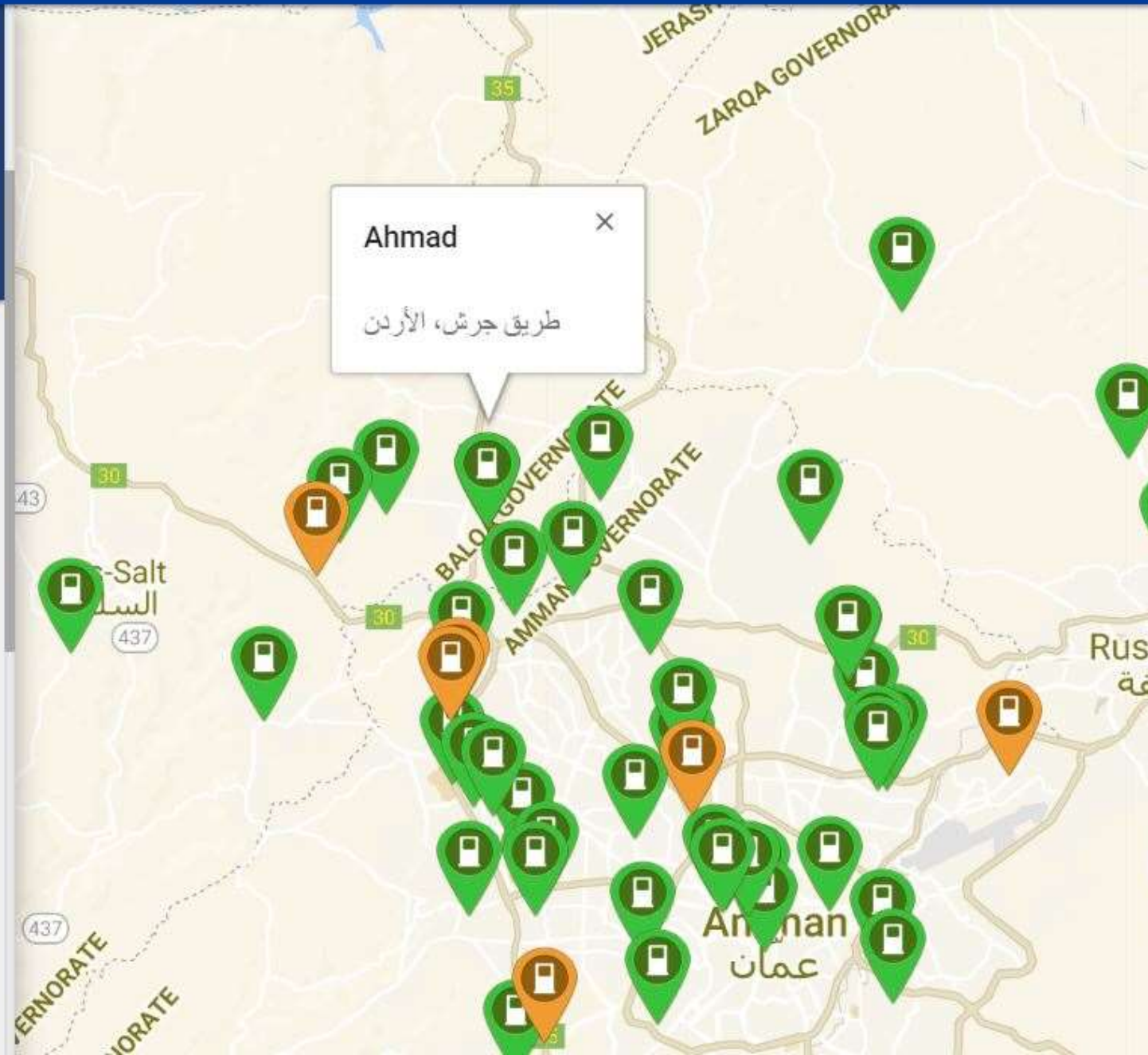
طريق جرش، الأردن

+962 7 9601 3230

I can help u 😆

Plugs (1 Kind) More Details

J-1772
1 station
SemaCharge




Mi Teleférico
UNIENDO NUESTRAS VIDAS
SOLO HAY UN
HILUX
TOYOTA
30

eVTOL

2023

Dallas, Los Angeles, international (tbd)

Uber Elevate + Bell Helicopter, Boeing, Embraer



Source: www.uber.com

ESMAP Energy Sector Management Assistance Program

Policies & Strategies

ESMAP
Energy Sector Management Assistance Program

Good policies and strategies:

- Aligned with a clear vision
- Have easy to understand targets/goals
- Have priorities and are focused
- Provide market certainty and clear, strong signals to all stakeholders
- Need to adapt – it is a dynamic environment!
- Are technology neutral
- Right mix of sticks and carrots
- Right mix of national and local level
- Result of coordinated efforts and involvement by all stakeholders
- Have measurement and verification mechanisms for continued improvement

EV Policy Menu

Starters: Enabling environment

Fuel economy standards

Vehicle emissions standards

Ban on ICE vehicles

Zero emission zones

Carbon neutral city

Battery second life and recycling regulations

Main course 1: Stimulate uptake of EVs

Subsidies

Tax exemptions

EV registration exemptions and ICE vehicle registration restrictions

Free parking

Free access to priority traffic lanes

Financing mechanisms

Public procurement for fleets

EV Policy Menu

Main course 2: Charging infrastructure

Choose from private (home or workplace), semi-public, public, or highway:

Direct public investment

Subsidies

Financial support

Building codes and permits

Changes to electricity distribution regulation

Changes to land use regulation

Interoperability and standardization

Dessert: Grid integration

Smart charging with time-of-use tariffs or dynamic pricing

Changes to power market regulations to enable new players

Renewable energy integration

Enablers of V2G – EVs as a flexible resource

THANK YOU

Ivan Jaques: ijaques@worldbank.org

ESMAP
Energy Sector Management Assistance Program

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Energy Sector Management Assistance Program
The World Bank
1818 H Street, NW | | Washington DC | | USA
www.esmap.org | | esmap@worldbank.org