

Case Study of E-mobility in Jordan and Opportunities for Emerging Economies

**The Future of E-mobility and Urban Planning in Egypt: EV Developments
in the Context of Sustainable Cities**

19-20 November 2019

SESSION-2: Market uptake and stimulating the sector

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Outline

- ▶ National context
- ▶ Enabling environment
- ▶ Key drivers and success factors
- ▶ Positive outcomes and challenges
- ▶ Opportunities
- ▶ Lessons learned

National context

- ▶ National **socioeconomic** indicators:
 - ▶ Rapidly growing **population** of 10.5 million
 - ▶ Including ~1.5 million **refugees** over past few years
 - ▶ High **unemployment**, young population (over 50% under age 24), high cost of living
 - ▶ High **debt-to-GDP** ratio (~95% in 2018 compared to 60% in 2008)
- ▶ **Energy** sector indicators
 - ▶ Energy sector **90%** dependency on fuel imports
 - ▶ Cost of energy to GDP: **10%**
 - ▶ **RE** at 8% of energy mix, target 10% by 2020
 - ▶ Highest **GHG emissions** (81%, including transport)
- ▶ **Transport** sector indicators:
 - ▶ Transport sector accounts for **49% of energy consumption** (2018)
 - ▶ 2nd contributor to GHG emissions (**32% of energy sector emissions**)
 - ▶ Low access to public transport (0.7 buses / 1000 persons , 11% use public transport)
 - ▶ **19% household income** spent on transport
- ▶ **Other sectors:**
 - ▶ **Water** scarcity (among most water-poor countries globally)
 - ▶ Overstretched **waste** management infrastructure
 - ▶ Agriculture accounts for majority of **water** use, linked to livelihoods



Development in all sectors is linked to challenges in the other sectors!

Enabling environment for sustainable transport

National vision 2025, strategies, sector plans, renaissance plan (15% by 2020)



Regulatory framework and policy incentives (RE, EV, CC) (tax, customs, fees)



Private sector investment opportunities (fleets, BRT, e-charging) -> NGGP



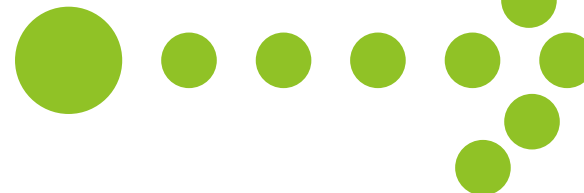
International agreements & finance (NDCs 14% by 2030, GCF, IFIs)



Engagement of private sector, NGOs, grassroots and donor community (studies, groups, projects)

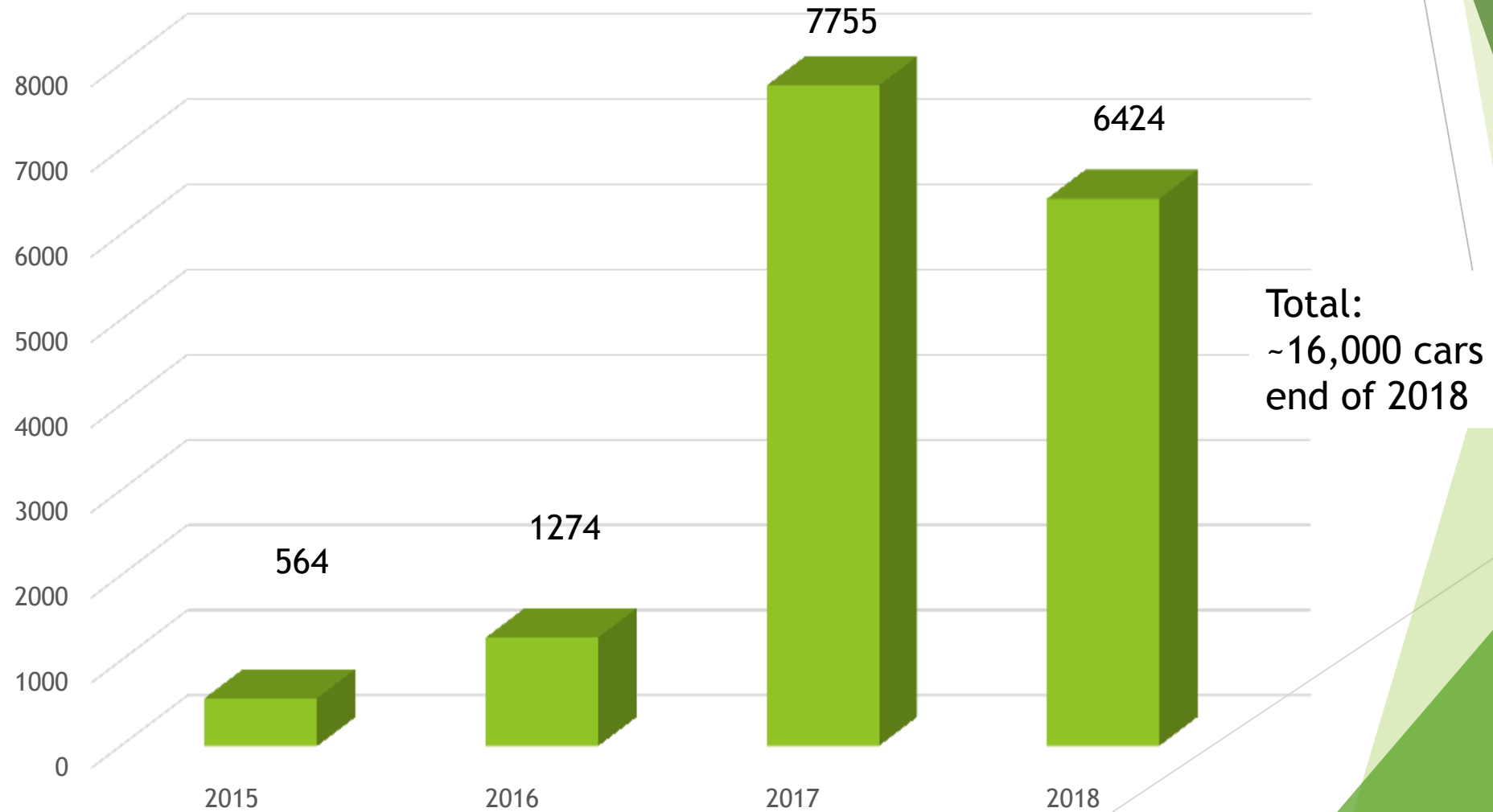


Sustainable transport in Jordan



History of e-car growth in Jordan

Number of E-cars



Source: DOS

Development of the Hybrid and EV market in Jordan

Key Drivers: regulatory framework and policy incentive

- Leading role of Ministry of Environment (green growth, climate change, air quality, policy incentives)
- Direct mention of ZEVs in INDCs (2015)
- Exchange schemes (e.g. scrapping fuel-based cars with exemption on Hybrid)
- Tax and customs exemption of Hybrids (partial) with 3-year visibility of increases by GoJ
- Total tax and customs exemption on EVs and reduction in annual registration fees
- Driven by economic development to attract investments and create jobs in the “clean tech sector”, create an EV market (USAID JCP)
- Issuing “EV Charging Instructions” in 2016 addressing both individual and commercial use (by the Electricity and Minerals Regulatory Commission)
- Leveraging RE&EE law, guidelines and tax incentives (zero carbon transport)

•Success factors

- Solid business case for individual and commercial deployment of EVs (cheaper to buy & operate)
- Pilot projects by public sector (e.g. Tawseeleh taxi service, municipal and public fleets)
- Engagement between stakeholders: regulators, private sector, NGOs, academia, int’l partners / donors
- Linking to wider national strategies and policy frameworks (climate, green growth)
- Active grassroots movement (60 K member social media group / EV Association)
- Potential for large-scale investment in charging infrastructure



Group by NLCJ - Nissan Leaf Club Jordan

Nissan Leaf Club - Jordan 🇯🇴

Public Group · 67.6K Members



End of 2018, future looking bright for EVs..

Uber Jordan Commits to 50 Percent Electric Vehicles by the End of 2018

Published February 19th, 2018 - 06:41 GMT Press Release

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Tesla Launches Electric Cars in Jordan

02/14/2017



Tesla has begun selling its cars in Jordan, in a further sign that EVs are finally becoming a viable option for motorists in the Kingdom.

Home » Local » Stakeholders hail project to install 10,000 electric car charging stations

Stakeholders hail project to install 10,000 electric car charging stations

By Ahmed Bani Mustafa - Mar 15, 2018 - Last updated at Mar 15, 2018

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AMMAN — Installing thousands of charging stations in Jordan will help the deteriorating car-dealing sector mitigate economic burdens on citizens and positively impact the environment, stakeholders said on Thursday.

The German-based company eCharge and local stakeholders on Wednesday signed cooperation agreements to build more than 10,000 smart electric vehicle charging stations in the Kingdom, Amr Abdou, head of business development at the company, told the Jordan News Agency, Petra, on Wednesday.

The car-dealing sector is currently suffering the consequences of recent government decisions to lift tax exemptions on hybrid cars and levy a tax on the weight of all sorts of vehicles, said car dealer Jihad Abu Nassef.

Nassef stressed that, once the stations



The new stations will charge vehicles in less than 15 minutes, and payments will be made through blockchains (File photo)

Positive outcomes

- Fast uptake of EVs in Jordan with about 16,000 cars on the road by end of 2018
- Reduced fuel dependency and improved air quality
- Monetary savings by users, improved connectivity and access to work / education
- Growing interest by public and private sector
 - Government fleets, GAM and other public sector entities (e.g. DOS switching its fleet)
 - Private sector uptake (e.g. Aramex mini-bus fleet, Uber)
 - Electric BRT & tariff restructuring being assessed, transport part of NGGP-AP (GGGI)
- Community of practice
- Growth for supporting industries (maintenance, services, smart systems / apps)
- Draft concept note to GCF prepared for solar powered e-buses / added to NDC action plan (going beyond 'cars')

Challenges

- Tax and custom exemptions lifted in 2019 (abrupt decline in sector)
- Commercial tariff to enable the investment in national charging infrastructure still a barrier
- Detailed grid impact assessments and energy storage potential have yet to be assessed
- Health and safety standards, enforcement (QC)
- EV technology / driving range (150 Km), charging time
- Already congested roads (20% increase in car ownership)
- Lifecycle impacts of batteries
- Leveraging solar, IT technology (slowdown of solar sector)
- Electric buses not yet materialized, only at study stage

Opportunities

- Holistic transport sector planning is gov priority, may include electric public transport
- FES mission to Germany in summer 2019 with key policy recommendations (infrastructure, finance, private sector)
- Grid upgrades, role of renewables, energy storage projects
- Stronger environmental agenda (driven by climate change and green growth action plans)
- Leveraging climate finance for strategic projects (e.g. electric buses GCF concept note)
- Better data collection and monitoring (MRV system starting with energy)
- Potential for large-scale investment if tariff challenge is addressed
- Potential to make use of EVs for Energy Storage
- “City Approach” with Greater Amman Municipality (GAM) Climate Action Plan (WB), and Green City Action Plan (EBRD) as well as other municipalities
- Potential for start ups and green innovations (e.g. apps, e-bikes, batteries..) and other businesses

Hot off the press!



استكمالاً للحزمة الأولى تنشيط الاقتصاد وتحفيز الاستثمار

إجراءات تحفيزية للقطاع التجري (قطاع تجارة السيارات والمركبات)



- لدعم التجار والمستثمرين في هذا القطاع وتمكين المواطن من الوصول إلى عمله بمركبة اقتصادية وصديقة للبيئة
- تخفيض الضريبة على مركبات الكهرباء فئة 250 كيلو واط فما دون من 25 إلى 10% وتخفيض الضريبة على مركبات الكهرباء فئة 251 كيلو واط فما فوق من 25% إلى 15% وإلغاء ضريبة الوزن على المركبات والاستعاضة عنها بضريبة 4% من قيمة السيارة

Lessons learned

- Clear national transport vision and strategies to guide growth, and attract partners
- Regulatory framework and policy incentives, with long term visibility
- Monetary savings are key drivers for people switching to cleaner transport
- Business case must make sense for private sector investments (tariffs)
- Cross-sectoral coordination (energy, transport, environment, planning, municipalities)
- Holistic view of transport sector (not pushing for cars at the expense of public transport)
- Stakeholder engagement in policy and project development (public, private, NGO)
- Role of grassroots organizations, civil society and startups
- Raising awareness at all levels
- In addition to traditional development finance, projects with climate change “adaptation” or “mitigation” aspects can unlock climate finance (strong MoEnv)
- Sustainability and O&M aspects need to be considered (grid impacts, links to renewables, quality / maintenance, lifecycle assessment e.g. batteries)
- Highlight positive economic impacts: jobs, investments, energy security, improved environmental quality
- Development co-benefits: education, work (especially females), markets, health

Thank you

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