

The future of E-mobility and Urban Planning in Egypt

November 2019 – David Allan, Associate Director
Sustainable Infrastructure Group



European Bank
for Reconstruction and Development

I. An overview of EBRD

II. Focus on EBRD and Green Cities

III. E-mobility in Egypt

An overview of EBRD



European Bank
for Reconstruction and Development

Why we are here

To develop open and sustainable market economies in countries committed to and applying democratic principles.

What we want to achieve

Sustainable, entrepreneurial economies with opportunities for all.

How we think

We take an internationalist approach, believing in economic integration and multilateralism to fight common challenges.





Central Europe and the Baltic states

- 01 Croatia
- 02 Estonia
- 03 Hungary
- 04 Latvia
- 05 Lithuania
- 06 Poland
- 07 Slovak Republic
- 08 Slovenia

Southern and eastern Mediterranean

- 29 Egypt
- 30 Jordan
- 31 Lebanon

South-eastern Europe

- 09 Albania
- 10 Bosnia and Herzegovina
- 11 Bulgaria
- 12 Kosovo
- 13 Montenegro
- 14 North Macedonia
- 15 Romania
- 16 Serbia

- 32 Morocco
- 33 Tunisia
- 34 West Bank and Gaza

Eastern Europe and the Caucasus

- 17 Armenia
- 18 Azerbaijan
- 19 Belarus
- 20 Georgia
- 21 Moldova
- 22 Ukraine

- 35 Cyprus
- 36 Greece

Central Asia

- 23 Kazakhstan
- 24 Kyrgyz Republic
- 25 Mongolia
- 26 Tajikistan
- 27 Turkmenistan
- 28 Uzbekistan

- 37 Russia
- 38 Turkey

Net cumulative Bank investment

€130.6 billion (since 1991)

€9.6 billion (in 2018)

Number of projects

5,325 (since 1991)

395 (in 2018)

Cumulative disbursements

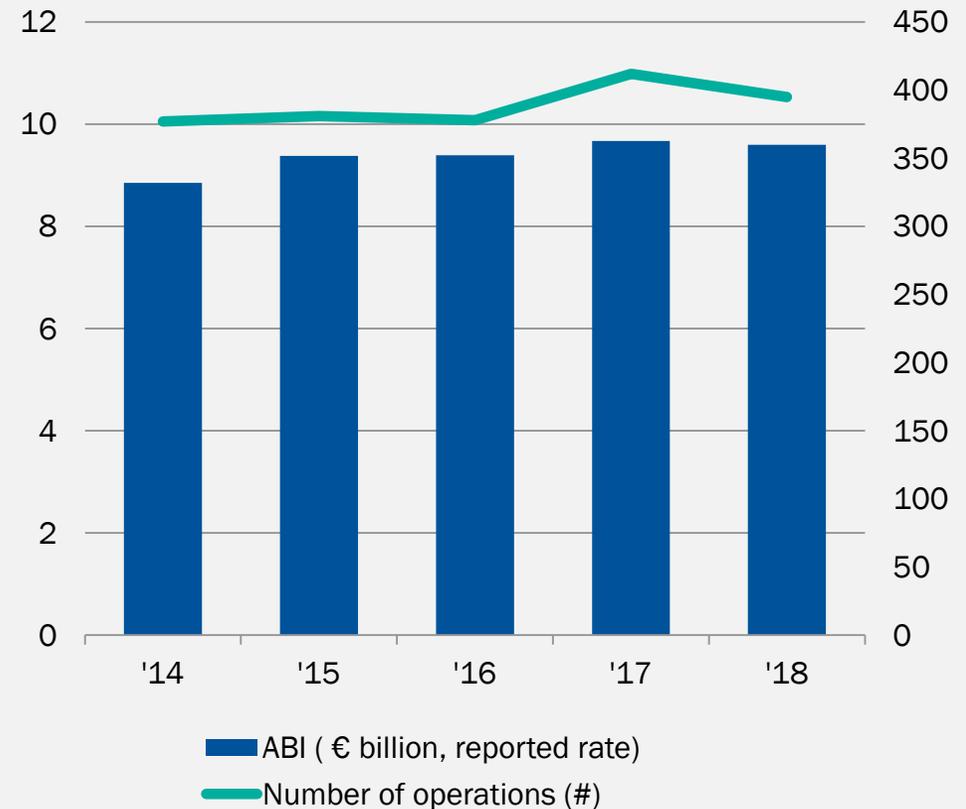
€99.5 billion

Private sector share of cumulative investment

79%

Annual Bank Investment (ABI) is the volume of commitments made by the Bank during the year. This includes: (i) new commitments (less any amount cancelled or syndicated within the year); (ii) restructured commitments; and (iii) amounts issued under the Trade Facilitation Programme (TFP) during the year and outstanding at year-end.

Annual Bank Investment and Operations



As at December 2018



Debt

- Loans to the private sector (up to 35% syndicating the rest), including SME
- Sovereign, sovereign guaranteed and loans to state owned companies
- Debt co-financing, working with commercial banks and IFIs
- Project finance loans (incl. PPP)
- Hard/local currency. Fixed/floating rates
- Syndication under preferred creditor status
- Access to capital markets

Equity

- Investing with majority sponsor to reduce equity burden and add partnership value. No more than 25%
- Common or preferred stock
- Privatisation and initial public offering (IPO)
- Mezzanine equity and subordinated debt
- Infrastructure funds
- PPP

Technical Cooperation

- EBRD brings in additional financial capital and technical assistance (TC) to economically viable projects

EBRD Sustainable Infrastructure Group in Egypt



European Bank
for Reconstruction and Development



	Cairo Metro Line I Modernisation (2018)	ENR Locomotive Renewal Programme	Maridive's fleet modernisation programme	Cairo Metro Line II Purchase of trains	ENR Railways Restructuring
Year	2018	2017	2017	2015	2014
EBRD funded amount	EUR 200m	EUR 290m	USD 50m	EUR 175m	EUR 126m
Total project amount	EUR 749m	EUR 433m	USD 256.5m	EUR 341m	EUR 171m
Project description	Urgent infrastructure investments in signalling, telecoms, controls and track works	Acquisition of up to 100 new diesel locomotives	Fleet modernisation via purchase of offshore support vessels, financing working capital needs, and refinancing the existing debt	Purchase of 13 air-conditioned train sets and a portion of the long-term outsourced maintenance contract	Financing of Egyptian National Railways new rolling stock
Impact	Rehabilitate existing infrastructure to restore it to its original design capabilities and potentially reduce traffic headway. Enhance Cairo's economic integration.	Promoting commercialization of freight sector, supporting economic inclusion of women with a campaign against sexual harassment	Increased efficiency, improved energy performance, corporate governance aligned to international standards	To improve the quality, financial sustainability, and maintenance of the line. To alleviate congestion by increasing capacity.	Safer and faster service, additional capacity, improvement of energy management

I. An overview of EBRD

II. Focus on EBRD and Green Cities

III. E-mobility in Egypt



€1 billion framework to support cities to identify, benchmark, prioritise and invest in Green City measures to improve urban environmental performance through:



Delivery of strategy and policy support

Green City Action Plans (GCAP)
Policy dialogue



Facilitating and stimulating Green City infrastructure investments

Urban Transport	Water & Wastewater
District Energy	Building Energy Efficiency
Solid Waste	Street Lighting
Renewable Energy	Climate Change Resilience



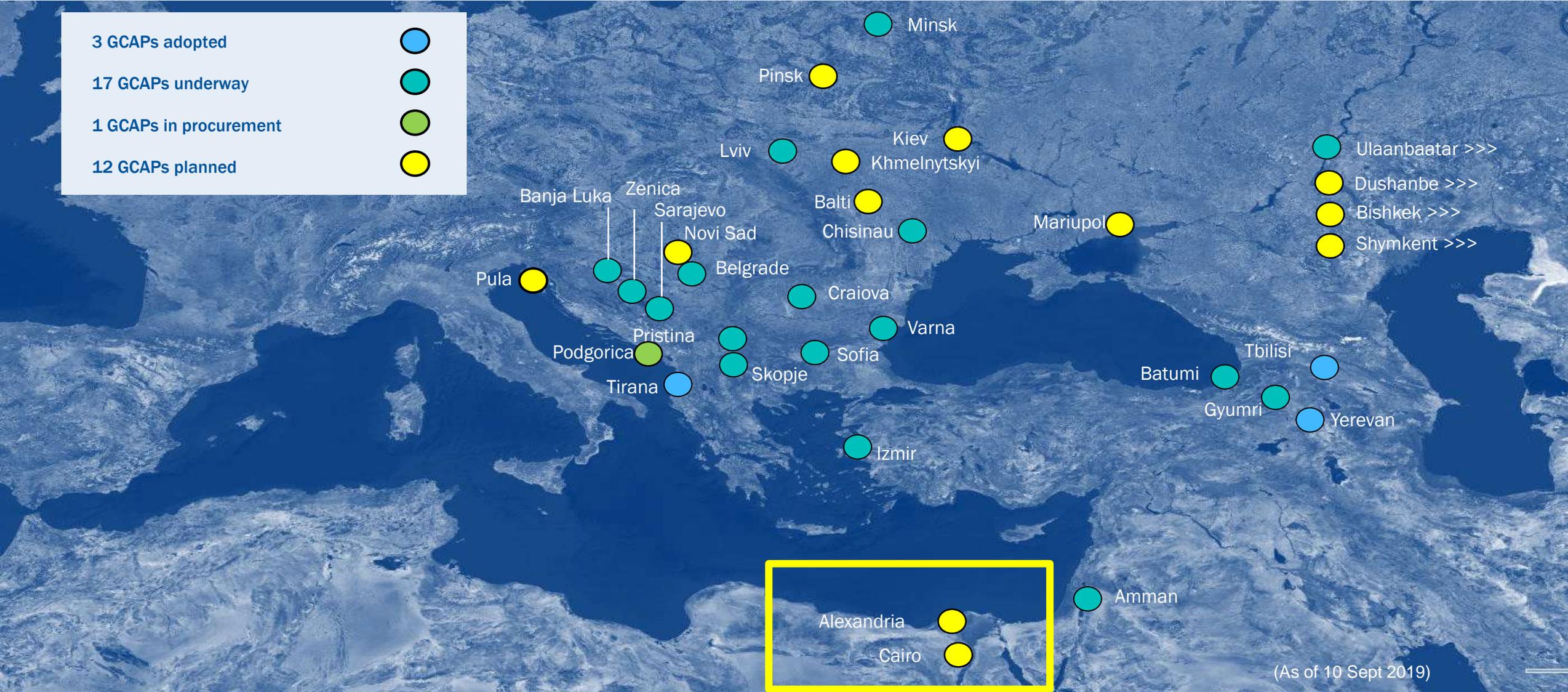
Building capacity of city administrators and key stakeholders

EBRD and Green Cities



European Bank
for Reconstruction and Development

3 GCAPs adopted	
17 GCAPs underway	
1 GCAPs in procurement	
12 GCAPs planned	



(As of 10 Sept 2019)

EBRD's Green City Infrastructure Investments

Financing Options



Investment Size

€ 2 million to € 150 million



I. An overview of EBRD

II. Focus on EBRD and Green Cities

III. E-mobility in Egypt

Electrification of Transport

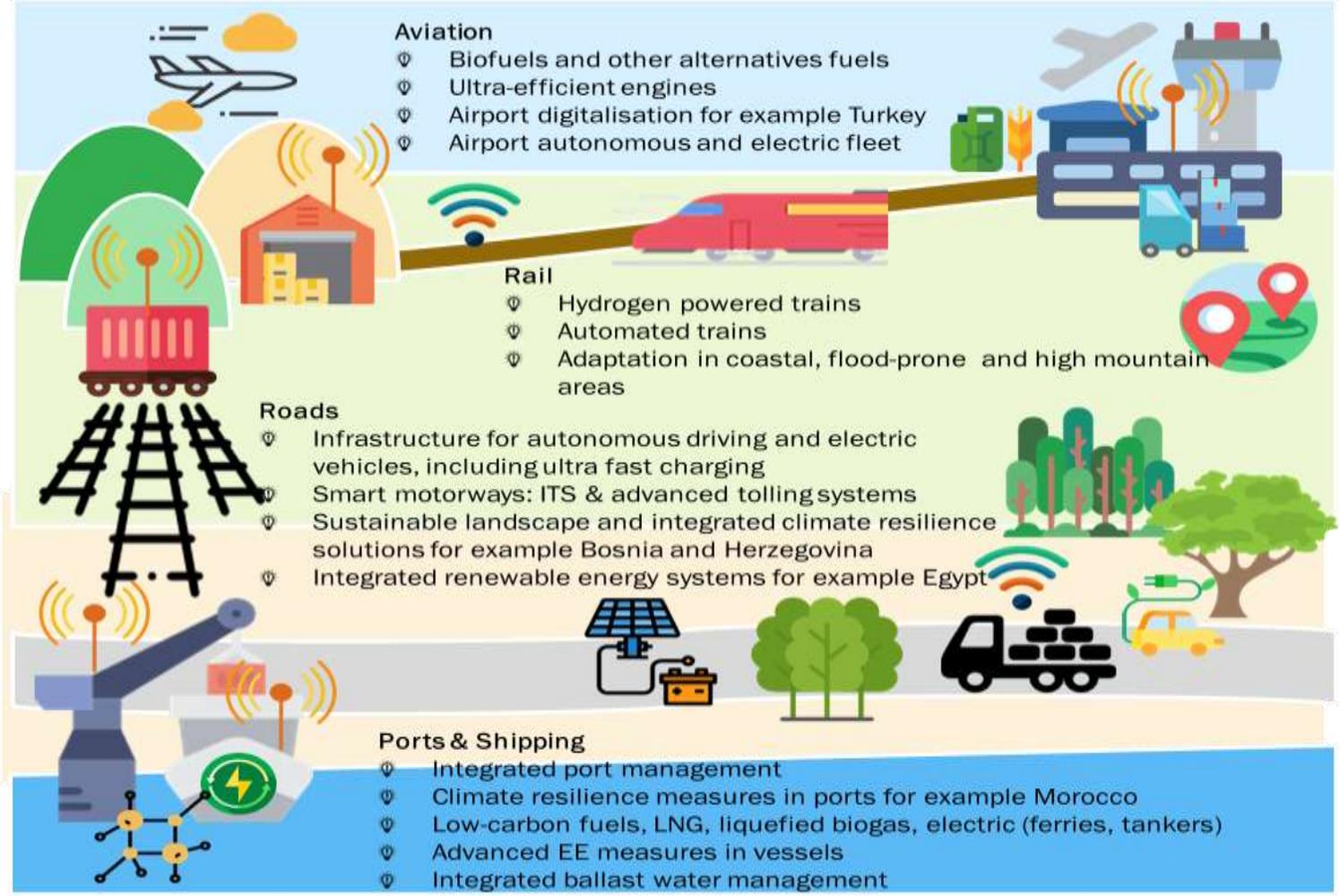


European Bank
for Reconstruction and Development

The Bank recognises the importance of **introducing new technologies to increase efficiency and reduce the carbon intensity of the transport sector.**

The timing for the introduction of new technologies will depend on the speed of technological advances for long distance transport, client readiness and economic value of the innovative solutions.

- Cross-cutting Logistics**
- ❖ Reverse logistics and pooling solutions to support circular economy
 - ❖ Automation in warehouse and terminals for example Ukraine, Georgia
 - ❖ Ultra-efficient cooling/freezing technologies along cold value transport chains
 - ❖ Advanced intermodal solutions for example Turkey, Bulgaria
 - ❖ Digital solutions to optimise movement of goods, such as single window transit corridors for example Caucasus
 - ❖ Electric vehicles for short distances for example postal operations



Barriers to e-mobility development



European Bank
for Reconstruction and Development



Main challenges to adoption by consumers

- Lack of charging facilities: EV demand could move much faster than charging infrastructure.
- Lack of EV maintenance expertise
- Price of electric vehicles, until purchase price parity is reached

Structural drivers of e-mobility development

- Regulation
- Access to funding
- Appropriate incentive structures
- Capacity constraints in the power system for the added electricity needs, and design of electricity markets

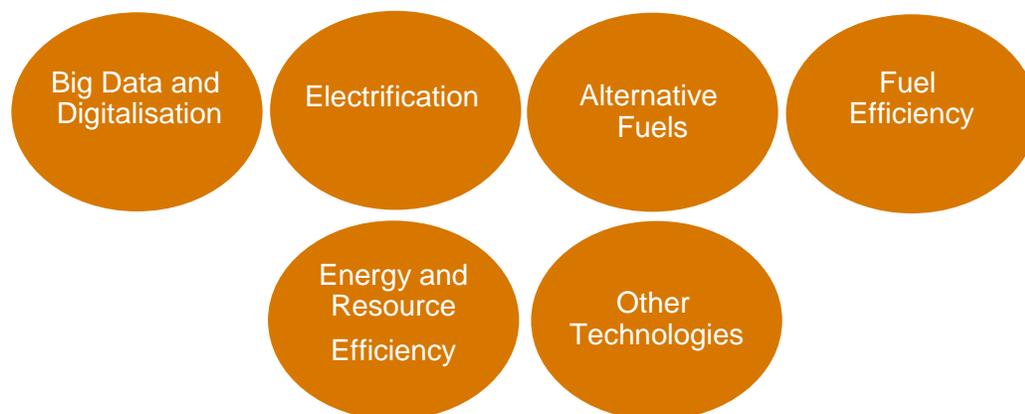


EBRD fosters E-mobility development



European Bank
for Reconstruction and Development

Through financing and policy engagement, the Bank supports the introduction of innovative technologies in the economies where the it invests.



Types of Bank activities that support e-mobility development:

- **Financing** :provide financing for technologies with limited adoption in a region, such as digitalisation and electric vehicles.
- **Policy engagement**: develop regulatory frameworks to facilitate introduction of new technologies such as electrification and charging.
- **Green Logistics**: offering clients assistance and guidance to improve operations from an energy and fuel consumption perspective.
- **Innovation**: promoting innovation and technologies linked to energy efficiency, renewable energy and other environmental benefits, where clients can benefit from TC and investment grants to support R&D and use of relevant technologies.
- **Concessional and Grant finance**: Supporting companies to implement advanced climate technologies, primarily those with low market penetration and good replicability potential, by providing incentive grants in the context of a direct EBRD investment.

Example: Sofia (Bulgaria), Electric bus

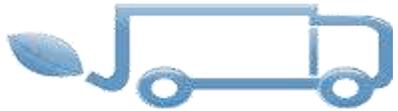
- Supporting the City of Sofia to improve and modernise bus operations through the purchase of a new bus fleet of 30 electric buses and 12 charging stations:
 - Low floor and fast charging
 - GCAP preparation
 - Procurement support
 - Reduce CO2 by more than half
- 50% of funding from EBRD Green Energy Special Fund



Funding: Blending Facilities Available



European Bank
for Reconstruction and Development



Green Logistics Program (funded by EBRD and GEF):

- Objective: Support modal shift and innovation in logistics sector in Mediterranean and Black Sea with a focus on private sector.
- Conditionality: National Logistics intensity level, Impact (avoid, shift, improve), Best available technology, green corporate governance (carbon footprint, EE action plan, improved standards) etc.
- Concessional finance



Green Energy Special Fund (funded by EBRD and ICDF of Taipei China)

- Objective: carbon reduction through introduction of new technologies “BAT”
- Conditionality: Best available Technology,
- GESF can cover up to 1/3 of an EBRD loan with an interest rate reduction proportional to carbon savings.



Fintec (funded by GEF and EU)

- Objective: Introduction of climate technologies with low penetration by private sector in KZ, UK, Central Asia and SEMED
- Incentive payments (CAPEX grant + TC)



High Impact Loan (funded by EBRD and CTF)

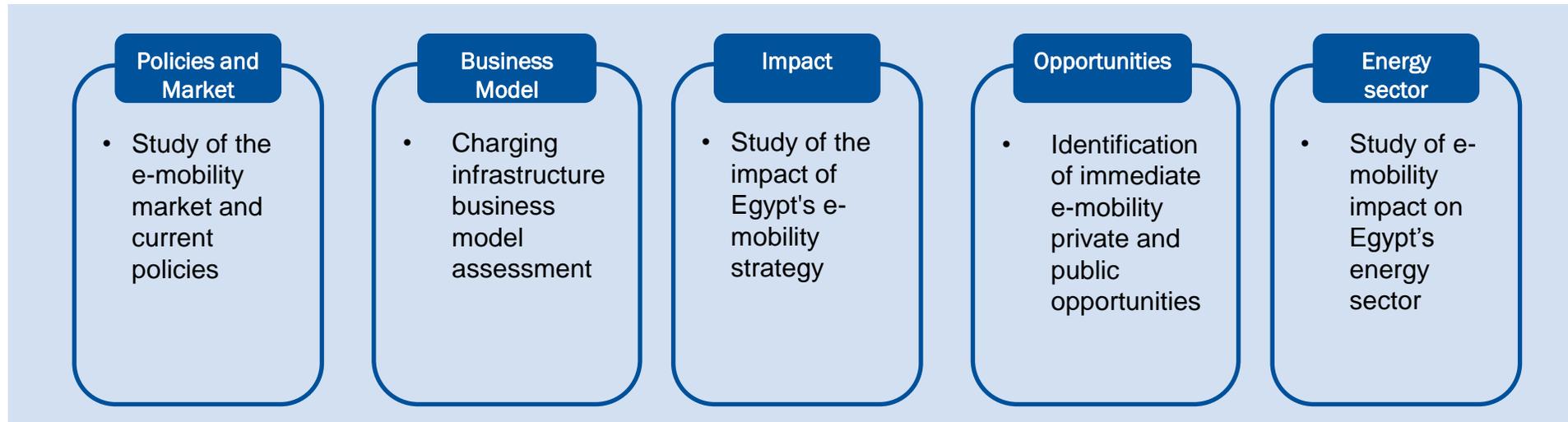
- Objective: coupled with TC to support to the client in developing a low-carbon corporate strategy
- Conditionality: > 5,000 tonnes CO₂eq/year saved, commitment to develop a low-carbon corporate strategy (with EBRD TC support)

EBRD and E-mobility in Egypt

Technical assistance to the Ministry of Transport and the Ministry of Electricity and Renewable Energy on the e-mobility strategy



European Bank
for Reconstruction and Development



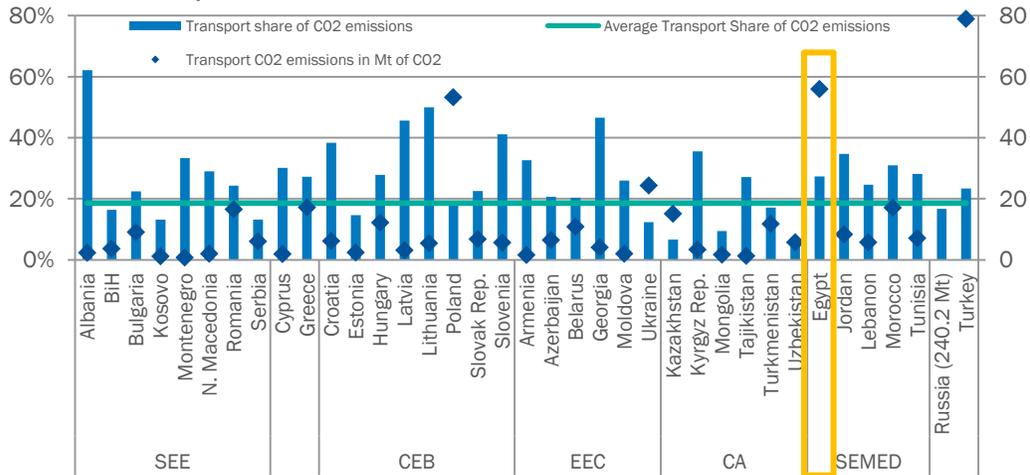
Outputs

- Feasibility of e-vehicles adoption on the Egyptian market (Cost / Benefit analysis)
- Investment strategy and opportunities
- Task list for policy changes and policy action plan (technical and non-technical)
- Recommended best applicable business model for e-mobility in Egypt
- Impact report on of e-mobility and energy sector

Electrification of Transport: potential for Egypt



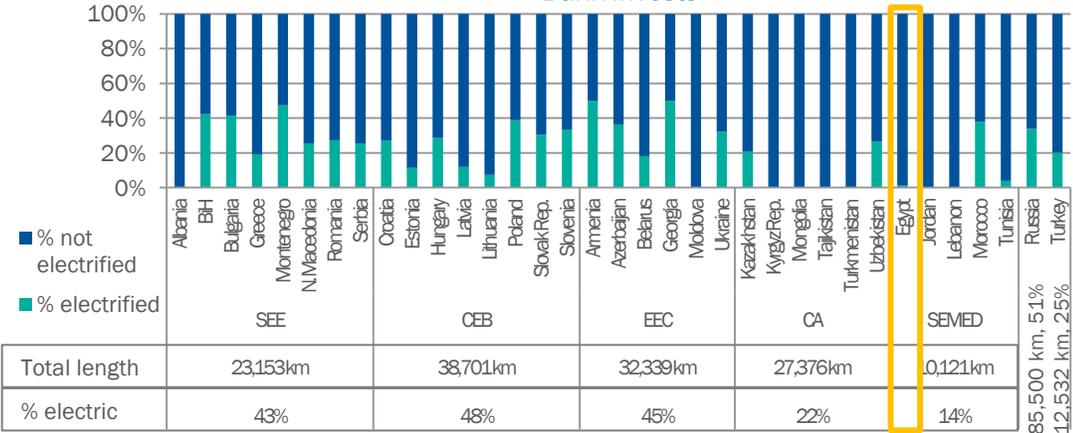
Transport sector CO2 emissions from fuel combustion, IEA, 2016



Transport Share of Combined Emissions

- The transport sector is slow to change, with significant environmental impacts.
- On average, the transport sector share of the combined fuel combustion emissions is around 19 per cent in the economies where the Bank invests.
- Local air quality and emissions pose a threat to human health, but struggle to attract political focus and concessional finance.

Percentage of Electrification of Railways in Economies where the Bank invests



Rail Electrification

- Rail sector: significant and immediate opportunity for electrification of transport systems. The most significant gaps can be seen in CA, SEMED and Turkey regions.
- Beyond rail electrification, vehicle electrification is at an early development stage. Egypt could become a pioneer in the SEMED region in this field.

E-mobility strategy and market study in Egypt

Preliminary conclusions – EBRD commissioned report



European Bank
for Reconstruction and Development

Egypt e-mobility achievements

- The Egyptian government has introduced **electric bus trials in Alexandria** and has **removed import taxes on imported electric vehicles** from Europe. The number of used electric cars is rising after customs exemptions were put in place.
- A number of **private entities** are attempting to take advantage of the market potential by **introducing electric chargers** around the country.
- In March 2018, the Egyptian Minister of Trade and Industry allowed the import of used electric vehicles less than three years old.
- **BMW and Volkswagen introduced the first electric vehicles in the Egyptian market at the beginning of 2019.**

E-mobility development opportunities in Egypt

- Charging infrastructure: **Range Anxiety** is one of the key factors that affects consumer's decisions to purchase Electric Vehicles. The main areas of Egypt's EV charging infrastructure strategy could be:
 - **Investing in transit charging points** (occurs primarily on major travel routes such as highways), including the introduction of unilateral payment system for electricity. **Incentivising private companies** to invest in charging infrastructure.
 - **Reducing import duties on charging components** such as cabling and specific chargers.
 - **Defining specific areas** for setting up chargers and potentially have **auctions for capacity of charging**.
- Beyond charging infrastructure: other necessary investments and non financial incentives can include **parking facilities in metropolitan areas** for residents without access to off-street parking, **bus lane access** and **free/priority parking** for electric vehicles.
- Policy Dialogue: Working with **public transport providers and state companies** to influence uptake of electric vehicles in exchange of current buses / two-wheeler / three-wheeler / taxi.

Contacts



European Bank
for Reconstruction and Development

David Allan

Associate Director, Senior Banker
Infrastructure TMEA
Tel: + 44 020 7338 8789
Email: AllanD@ebrd.com

EBRD, One Exchange Square
London, EC2A 2JN
United Kingdom
www.ebrd.com

Find us on social media

