The future of E-mobility and Urban Planning in Egypt

November 2019 – David Allan, Associate Director
Sustainable Infrastructure Group
I. An overview of EBRD

II. Focus on EBRD and Green Cities

III. E-mobility in Egypt
An overview of EBRD

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.
Results

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.
Activities

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

<table>
<thead>
<tr>
<th>Year</th>
<th>Cairo Metro Line I Modernisation (2018)</th>
<th>ENR Locomotive Renewal Programme</th>
<th>Maridive’s fleet modernisation programme</th>
<th>Cairo Metro Line II Purchase of trains</th>
<th>ENR Railways Restructuring</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBRD funded amount</td>
<td>EUR 200m</td>
<td>EUR 290m</td>
<td>USD 50m</td>
<td>EUR 175m</td>
<td>EUR 126m</td>
</tr>
<tr>
<td>Total project amount</td>
<td>EUR 749m</td>
<td>EUR 433m</td>
<td>USD 256.5m</td>
<td>EUR 341m</td>
<td>EUR 171m</td>
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<tr>
<td>Project description</td>
<td>Urgent infrastructure investments in signalling, telecoms, controls and track works</td>
<td>Acquisition of up to 100 new diesel locomotives</td>
<td>Fleet modernisation via purchase of offshore support vessels, financing working capital needs, and refinancing the existing debt</td>
<td>Purchase of 13 air-conditioned train sets and a portion of the long-term outsourced maintenance contract</td>
<td>Financing of Egyptian National Railways new rolling stock</td>
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### 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.**
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€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
  - District Energy
  - Solid Waste
  - Renewable Energy
  - Water & Wastewater
  - Building Energy Efficiency
  - Street Lighting
  - Climate Change Resilience

- **Building capacity of city administrators and key stakeholders**
EBRD’s Green City Infrastructure Investments

Financing Options

- Sovereign-backed loans
  - Central Government
- Municipal loans or utility loans guaranteed by municipality
  - Municipality
- Quasi corporate utility loans
  - Utility Company
- Loans to PPP/private companies
  - Private Company

Investment Size

€ 2 million to € 150 million
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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.
Barriers to e-mobility 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

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

Fintecc (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

Policies and Market
- Study of the e-mobility market and current policies

Business Model
- Charging infrastructure business model assessment

Impact
- Study of the impact of Egypt's e-mobility strategy

Opportunities
- Identification of immediate e-mobility private and public opportunities

Energy sector
- Study of e-mobility impact on Egypt's energy sector

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

- 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.

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.
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.

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.

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