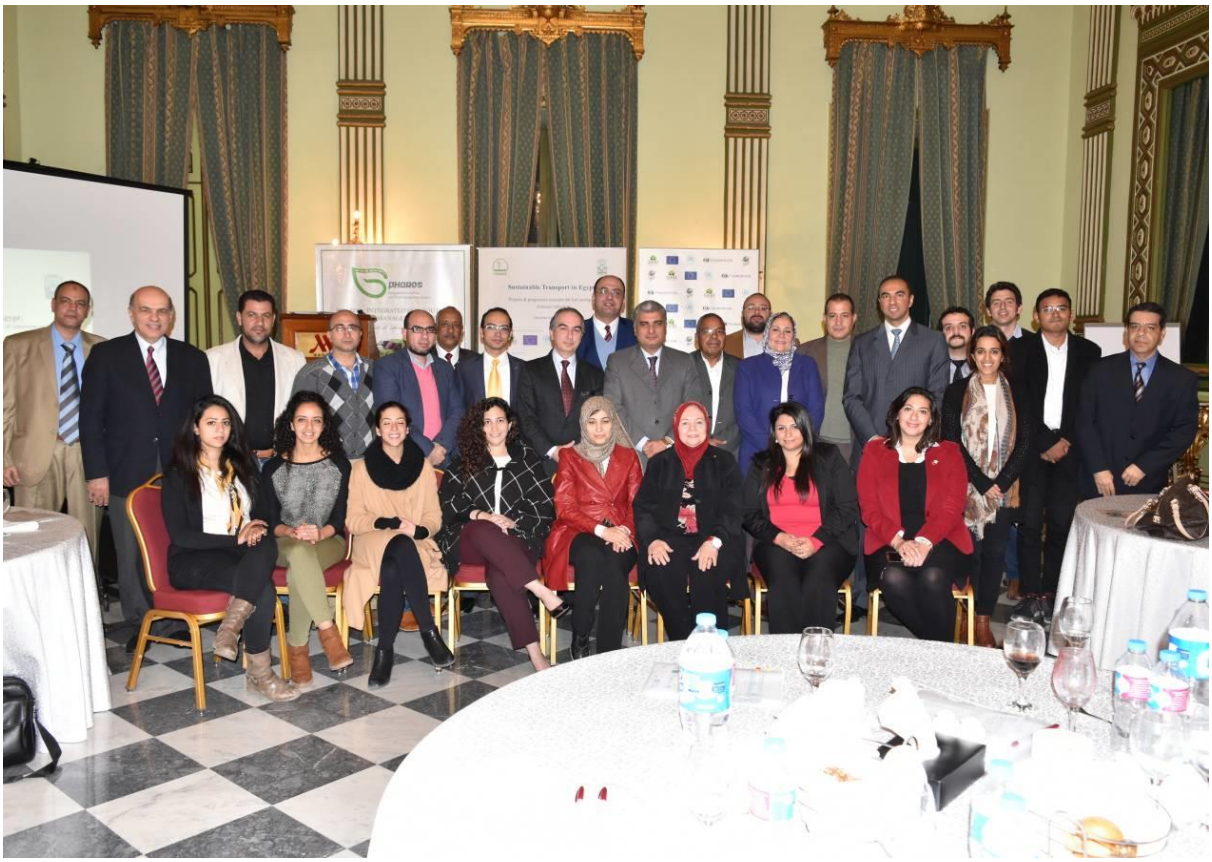
Sustainable Transport in Egypt:

Progress, Prospects and Partnerships

Wednesday, December 14th, 2016 (10am - 4:00 pm)
Marriott Hotel (Salon Vert hall)



Global Fuel Economy Initiative

PHAROS project

Awarded Project of the EU-Egypt Innovation Fund

EVENT SUMMARY:

On December 14th, 2016, diverse stakeholders in the fields of transportation, urban planning, environment, and intelligent transportation systems, all gathered for a dissemination event held by Center for Environment and Development for the Arab Region and Europe (CEDARE) to disseminate their projects in sustainable transportation. The results of the Global Fuel Economy Initiative study on fuel economy for light duty vehicles for Egypt was presented, along with an interactive discussion about the various policies suggested in Egypt and presented through a policy brief that was handed out to all participants.

The day was initiated through welcoming notes by Dr. Hossam Allam, Regional Programme Manager of CEDARE, Dr. Mona Kamal, Director of the Environmental Quality Sector (EQS) of the Egyptian Environmental Affairs Agency, and Ms. Zeinab El-Sadr, Manager of the Research, Development and Innovation programme of the Ministry of Scientific Research of Egypt.

Topics covered included fuel economy of vehicles and GFEI's activities in Egypt and globally and the diverse activities of CEDARE within the Avoid-Shift-Improve framework of sustainable mobility as presented by Eng. Ahmed El-Dorghamy, as well as an overview of electric mobility and the activities of UN Environment as presented by Ms. Kamala Ernest through teleconferencing, and other fuel saving projects implemented by CEDARE and its partners including the PHAROS integrated eco-routing and fleet management systems projects, and futuristic concepts in transportation were presented by leading experts. The state of discussion of e-mobility for Egypt was presented by transport planning expert Prof. Ahmed Mosa, former Minister Advisor for Transport Planning and co-founder of the Egyptian MASARAT consultancy firm, and the vision for the futuristic concepts in transport, including autonomous vehicles, data driven innovations, and big data was presented by Dr. Hossam Abdelgawad, of Cairo University, and Director of the consultancy firm, SETS North Africa. The diversity of the projects discussed highlighted the importance of a systems approach to sustainable transport and how GFEI's activities falls within a larger framework of activities to be more effective.

Valuable insights from the audience were discussed, including interventions from Prof. Khaled El-Adly, former governor of Giza governorate and current vice president of the International Society of City & Regional Planners (ISOCARP), as well as Prof. Hafez Salmawy, former Managing Director of the Egyptian Electric Utility and Customer Protection Regulatory Agency of Egypt, as well ad Dr. Ibrahim Yassin, manager of the Energy Efficiency Improvement and Greenhouse Gas Reduction (EEIGGR) Project of Egypt which introduced and operates the Energy Efficiency labeling scheme for residential appliances in Egypt.

The event hosted more than 60 participants from the public and private sectors, academia, and NGOs and civil society initiatives and public authorities. Key points stressed were the importance of involvement of young calibers in addressing the challenges of the future and the role of CEDARE as a platform for networking between stakeholders and awareness raising to promote the necessary paradigm shift needed in addressing sustainable mobility and to facilitate implementation of fuel economy policies among the larger policy mix needed for emission reduction and fuel savings.

The Agenda, photos, and attendance are Annexed to this report.

Event handouts and visibility:

The following items were handed out (to be made available online):

- GFEI Policy Brief for Egypt
- Arabic and English policy brief for PHAROS project for Eco-Routing and Fleet Management Systems
- Event videotaped for editing and segmentation into YouTube videos for CEDARE's channel "CEDARE Online".

EVENT HIGHLIGHTS:

OPENING SESSION:

Following welcoming remarks by the Center for Environment and Development for the Arab Region and Europe (CEDARE), the Egyptian Affairs Agency (EEAA), the Research, Development and Innovation (RDI) programme of the Ministry of Scientific Research, an overview of the general framework of CEDARE's activity in sustainable transport was presented.

CEDARE's approach in Sustainable transport and overview of projects (Ahmed El-Dorghamy, CEDARE)

Avoid-Shift-Improve: Background about the overall goal and vision for sustainable transport was presented, along with the Avoid-Shift-Improve framework under which CEDARE's projects in sustainable transport are structured. Key issues highlighted included the paradigm shift toward more human-centered planning and shift away from car dependence, as well as the role of Travel Demand Management.

Active Projects: CEDARE's three projects in the area of sustainable transport were then introduced:

- PHAROS Eco-routing and Fleet Management Systems project.

- Global Fuel Economy Initiative (GFEI) studies, awareness activities, and policy support.

- Partnership for Cleaner Fuels and Vehicles (PCFV) studies, awareness activities, and policy support.

SESSION-1: NATIONAL AGENDA FOR SUSTAINABLE TRANSPORT IN EGYPT

National Agenda For Sustainable Transport In Egyp (Dr. Mona Kamal, EEAA)

- The Egyptian Environmental Affairs Agency (EEAA) has developed a five year program for reduction of vehicle emissions and fuel consumption updated in 2016. The plan identifies the various dimensions of transport problems, enlists the relevant ongoing programs, and presents the planned programs envisioned for the following 5 years. The ongoing programs can be summarized and classified in the following three categories, each comprising multiple programs and activities in cooperation with other authorities:

- **1. Vehicle emission testing and inspection:** A key challenge in this field is the limited budget and ability to administer the scheme.

- **2. Vehicle scrapping and replacement** (targeting old taxis, and to a lesser extent, old microbuses and two-stroke motorcycles)

- **3. Demonstrational activities** in sustainable transport projects (a mix of demonstrational solutions for promotion of sustainable transport in terms of catering to pedestrians and cyclists,

establishing new bus lines in underserved areas, providing parking solutions, and assessing vehicle emission factors). Among the activities is promotion of non-motorized transport (walking and cycling) and implementation of pilot cycling lanes.

- A key challenge in all activities is in instilling a paradigm shift among the local stakeholders (i.e. from car-centered to human-centered), so awareness activities is still very much needed before substantial investment in large projects.

- Furthermore, the vision of EEAA is elaborated in the plan, indicating the discourse towards promotion of collective transport, and specific interest in electric-mobility (both electric public transport and other e-vehicles in general), as well as the move towards private sector involvement in management and operations (e.g. in vehicle inspection), as well as extending vehicle replacement programs to the rest of Egypt, and improving fuel quality.

- **Electric mobility** was highlighted as one of the key interests of the government, but assistance is needed on "where to start".

- **Egyptian Organization for Standardization (EOS):** In an intervention of the Egyptian Organization of Standardization, it was highlighted that coordination with the EEAA is needed since there is mutual misunderstanding of roles and responsibilities that need to be resolved, and there are ideas of cooperation (e.g. helpful transport-related projects the EOS is involved in) that can be offered.

SESSION 2: PHAROS INTEGRATED ECO-ROUTING AND FLEET MANAGEMENT SYSTEMS PROJECT

Pharos Project Overview (Mary Zekrie, SOFTEC)

- **PHAROS Integrated Eco-Routing and Fleet Management System Project (2014-2016**): PHAROS is a two-year project led by CEDARE and funded by the EU-Egypt Innovation Fund, through the Research, Development and Innovation Programme (RDI) of the Ministry of Scientific Research of Egypt. It aims to provide low-cost smart solutions for fleet managers to facilitate efficient route choices and eco-driving that minimizes fuel consumption and carbon emissions. The system will be integrated into an existing fleet management system developed in Egypt. PHAROS aims to support innovation in the Egyptian industry and to link the local industry with leading research institutions (see: pharos.cedare.org for further information). Final results were presented with notes on the vision of future ongiong development and follow-up.
- **SOFTEC International** is the local industrial partner in Egypt representing the sector, together with the project lead, CEDARE, and other academic institutions supporting in R&D.
- **Policy Brief on establishing the ITS sector in Egypt:** Intelligent Transport Systems (ITS) offer many opportunities in reducing fuel and emissions due to better fleet management and also enabling many other ITS measures. A policy brief in English and Arabic was handed out to all participants (and available on http://pharos.cedare.org). There are already case reporting's in Egypt where fleets reduced up to 40% of fuel consumption due to better monitoring and management.
- In the Q&A session, Eng. Mary Zekrie noted synergies that SOFTEC is working on between PHAROS and other solutions under development including "E-Nav" which will include traffic prediction.

SESSION 3: FUEL ECONOMY POLICIES FOR VEHICLES

Promoting Electric Mobility in Developing Countries (Kamala Ernest, UN Environment)

- Light Duty Vehicles are expected to grow exponentially in the coming decades and specifically in non-OECD countries.
- International Energy Agency (IEA) assesses that 20% of all road vehicles must be electric-powered by 2030 to achieve the global 2°C climate scenario.
- UN Environment's activities in promoting sustainable transport within the Avoid-Shift-Improve framework is as follows:
    - **Africa Sustainable Transport Forum** – develop and adopt action plans in Africa for sustainable and low emissions transport
    - **Share the Road (StR)** – promote and develop non-motorized transport policies
    - **Global Fuel Economy Initiative (GFEI)** – double vehicle fuel efficiency by 2050
    - **E-Mob** – supporting electrification of the vehicle fleet
    - **Partnership for Clean Fuels and Vehicles (PCFV)** – reduce emissions from light-duty vehicles
    - **Reducing Emissions from Heavy-Duty Vehicles**
    - **Clean Ports** – reduce emissions from port activities
- Focus areas of the E-mobility program in specific was highlighted as follows:
    - (A) Electric 2&3 wheelers (seen as an exceptionally promising intervention as a "low-hanging fruit").
    - (B) Electric Buses (challenged by affordability, but innovative financing solutions are foreseen as well as linking to Mass Transit Systems). This is linked to a soot-free bus project as well.
    - (C) Developing National Policies for Electric Cars and fiscal policies (going from 30 to 50 country project in 2017).
    - (D) Regional and Global Outreach & Replication
- UN Environment is interested in discussing cooperation with any interested parties in Egypt with regards to e-mobility and any of the aforementioned areas of activity in sustainable transport.

Fuel Economy status and policies for cleaner vehicles for Egypt (Ahmed El-Dorghamy, CEDARE)

- Egypt's car fleet is expected to almost double by 2030, approaching 8 million. Transport is already responsible for about 1/3 of air pollution in Cairo.
- Gradually doubling efficiency of new cars will save 1 billion liters/yr of gasoline and 2.4 million tons of CO_2 emissions/yr by 2030, and other local pollutants.
- Emission reduction addresses both climate change action (CO_2 reduction) and local air pollution (e.g. several carcinogenic pollutants and lung irritants, etc) that harm public health and damage the environment.
- To double the efficiency, all new cars need to go from 8 l/100 km (global baseline of 2005) to 4l/100 km by 2030; a target of the Global Fuel Economy Initiative (GFEI).
- Status: In 2015, Egypt's fuel economy of new vehicles hovered just below 7l/100km, with a much slower rate of improvement than required, and a lost opportunity for fuel savings and pollution prevention. It is therefore recommended that Egypt starts introducing fuel economy policies
- To start the first step on the roadmap, Egypt must establish a fuel economy labeling scheme, which is the focus of this policy brief, in parallel with other FE policies (feebate scheme, mandatory standards, etc).

- Support for policy development is offered by the Global Fuel Economy Initiative (GFEI) and CEDARE, its regional partner in the MEWA region.
- Parallel (or follow-up) policies can further include a set of economic instruments and regulatory measures to encourage a market shift toward more efficient vehicles as well as policies for cleaner alternative technologies such as tax reductions for electric vehicles.
- CEDARE is also part of the Partnership for Cleaner Fuels and Vehicles (PCFV), and it is highlighted that improvement in fuel quality in Egypt is a fundamental parallel process in FE improvement in order to have fuel that is compatible with new efficient cars. There are currently no mandatory Euro standards for either gasoline or diesel at any level.

SESSION-4: FUTURE/EMERGING CONCEPTS & TECHNOLOGIES IN SUSTAINABLE TRANSPORT

E-mobility (Dr. Ahmed Mosa, MASARAT Consultancy)

- Context of future transport:
  - Most of the GDP growth in the future will be attributed to cities not to countries.
  - By 2025 1 trillion devices will be online with 15 devices per household; 5 billion internet users. This is the future context of mobility and transportation.
- Current traditional infrastructure-based paradigm in Egypt:
  - In Egypt, most roads are over-capacity (based on level-of-service mapping of Egypt's road network) with cost of congestion reaching 50 Billion EGP/yr by 2030 (WB study), i.e. 2 Billion liters of gasoline is wasted due to congestion.
  - Investments needed in infrastructure are about 40 Billion USD (planned/ongoing and needed) over the next 5 years.
- New paradigm:
  - Transport in the digital age is based on:
    - User-centered.
    - Integrated and intelligent
    - Automated and safe.
    - Pricing and payments facilitated.
  - Multimodal door-to-door planning with mobility integrators or "mobility aggregators" to integrate all services in a clearinghouse, powered with a payment engine.
  - This implies new products for "cities as a customer".
- Advanced cities already show positive results with regards to "substitution effects" reducing fuel consumption and kilometers traveled.
- E-mobility:
  - E-mobility is an essential part of such developments and forecasts indicated rapid uptake of electric 4-wheelers (E4Ws), 2-wheelers (E2Ws), and E-buses. There are already more than 20 million E2Ws worldwide, mostly E-scooters.
  - Level of development/maturity of each technology is presented in terms of distance (range per charge/refueling), time to recharge, storage weight, and infrastructure investment.
  - "Wired" charging is growing most in Europe, serving BEV (Battery Electric Vehicles) and PHEV (Plug-in electric vehicles), while battery swapping, wireless induction charging, and hydrogen refueling are behind in the development process. A good BEV example is the Renault Zoe.
- E-mobility business model:
  - Different e-mobility business models were presented, noting the traditional and new paradigms with more elaboration of a larger ecosystem.
  - Suggested business models were presented at a conceptual level involving leasing, subsidy mechanisms, and contract times.

- Key advice for Egypt was presented, highlighting the need for a holistic approach to promotion of e-mobility (demand creation, supply-side interventions, infrastructure, and R&D, involving all stakeholders.

Future of Transportation (Dr. Hossam Abdelgawad, SETS North Africa).

- An update of the topics related to the future of transportation were presented.
- Autonomous vehicles:
    - APS and cruise control already widespread as elements of autonomy (4 levels of automation), level 4 is entirely passenger-less.
    - SAE envision level-4 by 2030.
    - Today: between level-0 and level-1.
    - Key enabler today: Sensors.
    - (Tesla trial video was presented).
    - Why AVs?
        - 90% of accidents are due to human error.
        - Efficient driving can lead to 20-30% reduction in fuel consumption.
        - Equity and accessibility (for the elderly and disabled, etc)
        - Fuel savings in better operations in delivery of goods.
        - Parking facilitation.
        - Productivity/utility for people.
    - Vehicle Miles Traveled (VMT) controversy is highlighted:
        - Induced demand due to facilitation (either distance or new users)
        - Shared use however may reduce VMT.
    - Challenges:
        - Vehicle reaction.
        - Transition between human and autonomous control.
        - **Need accurate mapping**; +/- 10-20cm accuracy.
        - Interaction with urban settings
        - Glitches and hacking.
        - Legislation and laws.
        - Liability for collisions (driver, road, manufacture).
            - Case of the first AV fatality noted: Tesla car crashing into a truck.
        - Privacy and who owns the data?
        - Should a person always be inside?
        - Code of ethics.
        - Roads need major modification and other urban setting consideration.
    - Readiness of people:
        - N=1000 sample survey in USA notes women less willingness to use for children while males are interested to learn more. Many also see it as unnecessary or too expensive.
        - Other pending issues relate to: driver licensing, cultural shifts, stakeholders consensus, job losses, transition period.
    - Key players:
        - Uber started with the first self-driving car in Pittsburg.
        - Ford, Newtonomy, Google and Chrysler minivans Pacifica Minivans.
        - Uber's Otto self-driving truck of "Makers" operated on US highways.
- Connected vehicles (CVs):
    - Vehicle to X, termed V2X, can be: V2V (vehicle), V2I (infrastructure), V2P (pedestrian), V2C (cloud).
    - Safety and environment promises.
    - Car2X, Ship2X, Airplane2X, Rail2X as well.

- Internet of things and sensors data:
    - All enabled through "internet of things" was enabled in 2008 when connected devices exceeded the global population. Today an average person owns 3 connected devices.
    - IoT combines sensors, connectivity, and people & processes.
    - Example: Mobile phones containing about 20-30 sensors connected online.
    - Example: Google's 2013 self-driving vehicle captured 750 MB of data per second.
    - This is all described as "Big Data". In 2011-2013 all global data throughout it's history was doubled in only two years.
- Value of Data and openness
    - AVs and CVs (connected vehicles) data are expected to be the most valuable asset.
    - Digitization of Urban Land space rapidly developing (Google Auto, Here, and Uber). Only 'Here' is sharing their data, with partners; BMW, Benz and VW).
    - Ownership, privacy and security is controversial.
    - Level of "openness" was articulated as follows:
        - If I can access the data using a machine-ready format with no cost with no limits or rights, then this is open: "Liquid Data"
        - Open data policy adopted since 1998 with Hong Kong as the earliest adopters along with USA (president Obama executive order in 2009 to Open Data for Public), UK (2009), Kenya (2011), and Colombia (2012), among others.
        - Initiatives to refer to:
            - Open Data Institute
            - Open Data Parameter
            - Open Data Impact Map
            - Open Data Watch, etc.
- Open Data in Egypt
    - In Egypt, there is also promotion activity in on the topic: Dr. Raed Sharif of IDRC implemented a workshop on "Data Driven Innovation" in Cairo University in 2015.
    - Egypt signed a law of the "Open Data Initiative"
    - Some data available through ITI and CAPMAS.
    - Privacy and security must be discussed.
        - As an example of available open Traffic Data in Egypt, a density plot for Google Traffic Data was presented with reference to data from other applications to explain variations.
- Finally, elements of the past and future paradigms of transport were enlisted to summarize the change happening in the sector.
        -

<u>PANEL DISCUSSION: INTEGRATING NEW CONCEPTS INTO NATIONAL PLANS</u>

- Dr. Mosa: Political will is the key issue. In Dubai for example, the CEO of the transport authority of Dubai has direct support from Sheikh Mohammed Bin Rashid.

- Ownership is a key issue, especially with regards to overlapping responsibility between the Ministry of Transport and the Governorates, whereas the law allows governorates to provide an operate transport services as we see today. This conflict creates a deadlock in the progress of many projects in Egypt and must be resolved. Furthermore, the Ministry of Transport should have clearer mandates and not operate as a contractor.

- The Greater Cairo Transport Authority (GCTRA) was established since 2010 for that purpose but is not effective yet due to the following issues:

    - It is under-capacity.

- It is still under the umbrella of the Ministry of Transport. It must be promoted to be under the cabinet of Ministers or under the presidency.
- Other parallel initiatives are short-lived such as the Egyptian Transport Center of Excellence (ETCE) that was active only until the Sharm El-Sheikh Economic Summit in Egypt.

- Dr. Mona highlighted that EEAA is only responsible for environmental aspects but cannot be responsible for transport planning, and EEAA faces great challenges in identifying who the owner of transport planning is, and how transport is segmented (e.g. passenger transport, freight transport, etc) to have better tailored planning.
- Dr. Hossam Abdelgawad highlighted the need of the public authorities to react to the rapid change in the sector of transport and of big data and open data rather than fearing change, giving references to change management. Furthermore, having a 'champion' is essential in promoting open data.

- Key issues raised in the discussions among the audience revolved around the need to improve coordination among stakeholders, and avoiding the repetition of mistakes, resolving conflicts of interests, and instilling a change in mindsets amongst public authorities to shift toward human-centered planning rather than planning to cater for cars and building more roads and bridges.

CLOSING: Wrap up and prospects for collaboration in 2017.

ADDITIONAL INTERVENTIONS:

Prof. Hafez Salmawy, Zaqaziq University

- The **Egyptian Energy Strategy of 2035** was developed and endorsed by the higher committee of energy of Egypt in **October 2016**. It envisioned reductions from the residential sector (16%), industrial sector (18%) and the transport sector (22%).
- Regarding e-mobility, we should also learn from mistakes. There was an Israeli project with Nissan and Renault funded by an Australian billionaire targeting the introduction of 100,000 e-vehicles with a battery-exchange recharging scheme. They introduced 20,000 vehicles, faced problems and the company went broke later.
- Egyptian Regulatory Agency (Egypt-ERA [جهاز تنظيم مرفق الكهرباء]) had formed **a committee for E-mobility** and a study was made (together with a Master student study) investigating e-mobility for public transport, promising 40% fuel savings and diversification of energy sources.
- 40 years ago, there was a central planning authority for transport (e.g. there was a problem of phasing out 140,000 animal driven wagon that was swiftly addressed) and there was a higher committee for transport and traffic, but it seems that today there is a broken institutional structure that we need to address without "re-inventing the wheel" by learning from the past.

Dr. Khaled El-Adly, ISOCARP

- Being personally involved in the Cheonggyecheon public recreation project of South Korea that was presented as an example of sustainable transport improvements, Dr. Khaled reiterated the international trend of adopting a 'paradigm shift' of focusing on humans rather than cars in the approach to urban planning and transport interventions design, which may include in many instance the reduction of street-space to expand pedestrian walkways and alternative public spaces. An example was given of a reduction project in Zurich.

Dr. Samir Mowafi, MSEA

- Fuel Economy labeling and standards will be very effective and important in Egypt since until now we have new cars of recent models that are operating on very old technology standards, possibly since the 80's, and examples are the Lada cars and Shahin.
- Fuel quality: Currently Egypt is not mandated any Euro standard. A key issue is to improve fuel quality in parallel to have effective operation of emission control devices.

Eng. Ahmed Elleithy, Danone Egypt

- Control of fleets in itself has been very effective in reducing fuel consumption, and most notably in limiting speed violations in the fleets of Danone Egypt.

Mr. Karim Tarraf, HawaDawa

- "Hawa Dawa" is a project that enables the creation of a real-time heat-map of air pollution in any urban setting using innovative and connected sampling devices.
- It started off to serve sensitive people to avoid air pollution hotspots.
- Studies indicate immature deaths attributed to air pollution:
    - Studies say that 450,000 premature deaths in Europe per year
    - Center of Disease Control in USA made a study in 1996 indicating that the Olympics caused a 23% reduction in traffic and 11% reduction in air pollution and a 42% reduction in hospitalization due to respiratory illness related diseases, only in the 3 weeks of the Olympics. This indicates the bill that is paid.
- In any pilot project in Egypt, it would be very valuable to conduct similar monitoring and evaluation activity.

Eng. Islam Gaber, Greater Cairo Transport Authority (GCTRA)

- In Greater Cairo Transport Authority (currently under-capacity) we see no coordination and accessibility for data availability and quality control and standards and there is a clear need for a data warehouse center for traffic data to avoid the current confusion about responsibilities and access rights, etc.
- At a certain time (2014), those labeled as responsible for planning transportation included: Egyptian Transport Center for Excellence, Greater Cairo Transport Authority, Transport Planning Authority (TPA), Egyptian National Railways (ENR), etc, without clear mandates for coordination.

Eng. Maha Mohamed, Egyptian Organization for Standardization

- Vehicle standards cannot be addressed alone without attending to the challenge of poo licensing and inspection regulation and enforcement in Egypt, both for the vehicles and the drivers. This must be done in parallel in order to have any impact of any proposed policy for new vehicles.
- EOS has been involved in a 4-year EuroMed study that highlighted the seriousness of the lack of enforced inspection of vehicles in Egypt.
- Manufacturers and Importers in Egypt must announce the standards that they abide to, and they refer to EOS for this purpose for confirmation (e.g. Ovens, Refrigerators, etc), and they also contribute to placing the standards.

Eng. Mohamed El-Khateeb, Transport for Cairo (TfC)

- Stressing that there is indeed an abundance of plans and planning efforts in Egypt but the problem is that the discourse remains to be based on roads and bridges rather than holistic planning.

- We must separate between technology solutions (which is mentioned a lot in Egypt) and governance/policy issues, since that is really the bigger challenge rather than the technical/technology issues.

Annex-1: Agenda

Time	Activity
9:30-10:00	**Registration (coffee served)**

10:00 -10:15	• Welcome notes
	  ○ Dr. Hossam Allam, Regional Programme Manager, Sustainable Growth Programme, CEDARE
	  ○ Eng. Ahmed Aboul Seoud, CEO, Egyptian Environmental Affairs Agency (EEAA)
	  ○ Ms. Zeinab El-Sadr, Executive Director, Research Development and Innovation Programme, Ministry of Scientific Research of Egypt.
	• Overview of CEDARE's projects in sustainable transport*; **Avoid-Shift-Improve (A-S-I)** framework* (Eng. Ahmed El-Dorghamy, CEDARE)

10:15-11:15	**SESSION-1:** NATIONAL AGENDA FOR SUSTAINABLE TRANSPORT IN EGYPT **Objective:** Update on national projects & activities in sustainable transportation. • Ministry of Environment's plans, programs, and future prospects for sustainable transport in Egypt (EEAA) • Open discussion and stakeholders feedback on policy recommendation.
11:15 -11:45	**SESSION 2:** PHAROS INTEGRATED ECO-ROUTING AND FLEET MANAGEMENT SYSTEMS PROJECT **Objective:** Present PHAROS project outcomes and invite future cooperation • PHAROS project: Background about the Egyptian Industrial Partner, intro to Altair Fleet Management System, overview of PHAROS project, and future prospects (presenter: Eng. Mary Zekrie, SOFTEC International) • Q&A session.
11:45-12:00	***Coffee Break***

Time	Activity
12:00-12:45	**SESSION 3: FUEL ECONOMY POLICIES FOR VEHICLES** **Objectives:** Present latest study on the status of fuel economy (efficiency) of cars in Egypt, and present policies for efficiency improvement and greenhouse gas reduction as part of the **Global Fuel Economy Initiative (GFEI)** campaign, and discuss future prospects for **electric mobility**. Feedback from stakeholders will then be discussed. • Promoting Electric Mobility in Developing Countries, (Ms Kamala Ernest, UN Environment) *[via teleconferencing]* • Fuel Economy status and policies for cleaner vehicles for Egypt (Eng. Ahmed El-Dorghamy, CEDARE)
12:45-14:00	**SESSION-4: Future/emerging concepts & technologies in Sustainable Transport** • Electric Mobility (Dr. Ahmed Mosa, Transportation Planning & Smart Mobility Expert) • Future of Transportation: Autonomous vehicles, data driven innovations, and prospects for Egypt (Dr. Hossam Abdelgawad, Director, SETS North Africa) • Q&A
14:00-15:15	**Panel Discussion:** Integrating new concepts into national plans in sustainable transport & designing necessary policies and programs + Open discussion with audience. Panelists: Dr. Mona Kamal, Director of Environmental Quality Sector, EEAA Dr. Ahmed Mosa, Co-founder & Managing Director, MASARAT Consultancy Dr. Hossam Abdelgawad, Asst. Prof. Cairo University & Transp. Director, SETS North Africa *Moderator: Eng. Ahmed El-Dorghamy* Topics: Policy & regulatory measures; capacity-building needs; development of collaborations and partnerships in Egypt & MENA region.
15:15-15:30	• Wrap up and prospects for collaboration in 2017 (Eng. Ahmed El-Dorghamy, CEDARE) • Closing remarks (Dr. Hossam Allam, CEDARE)
15:30-16:30	***Lunch & Networking***

About CEDARE

Center for Environment and Development for the Arab Region and Europe (CEDARE) is an international not-for-profit organization based in Egypt. It was established in response to the convention adopted by the Council of Arab Ministers Responsible for the Environment (CAMRE) in 1991, and upon the initiative of the Arab Republic of Egypt, the United Nations Development Programme (UNDP) and the Arab Fund for Economic and Social Development (AFESD).

The mission of CEDARE is to provide leadership and advocate sound governance for sustainable development, through building human resources and institutional capacity, advancing applied research and environmentally friendly technologies and acting as a catalyst to enhance collaborative action between the Arab World, Europe and the International Community.

About Global Fuel Economy Initiative

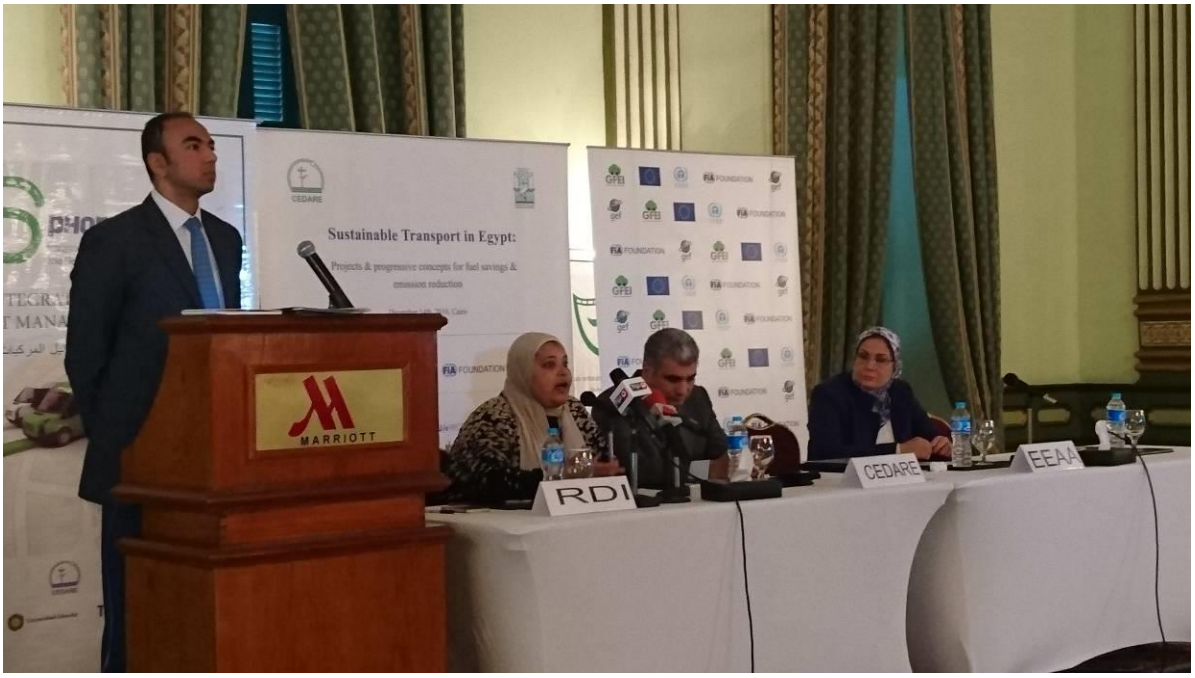
The Global Fuel Economy Initiative (GFEI) is a partnership of the International Energy Agency (IEA), United Nations Environment Programme (UNEP), International Transport Forum of the OECD (ITF), International Council on Clean Transportation (ICCT), Institute for Transportation Studies at UC Davis, and the FIA Foundation, which works to secure real improvements in fuel economy, and the maximum deployment of existing fuel economy technologies in vehicles across the world. The Initiative promotes these objectives through shared analysis, advocacy, and through the Cleaner, More Efficient Vehicles Tool for in-country policy support

Center for Environment and Development for the Arab Region and Europe (CEDARE) is the regional partner for GFEI in the Middle East and West Asia (MEWA) region, providing technical assistance to several countries in the region.

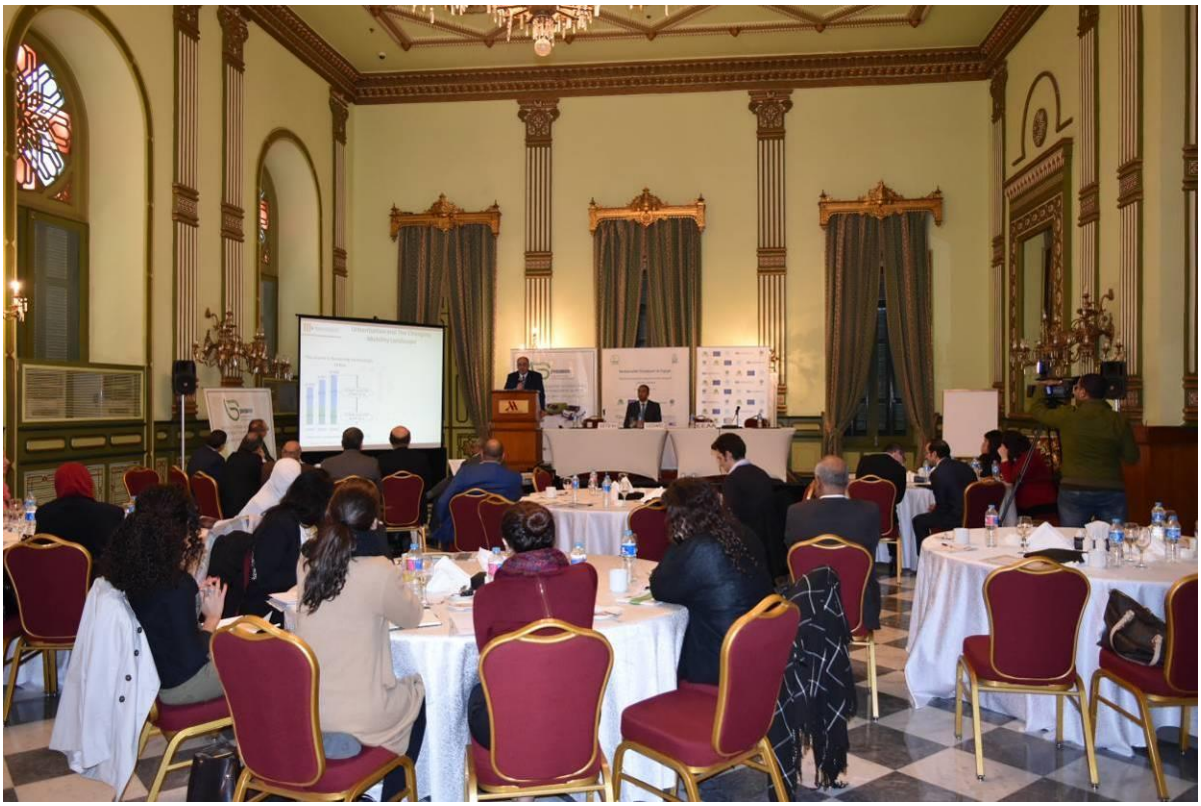
About PHAROS Project

PHAROS Integrated Eco-Routing and Fleet Management System Project (2014-2016) is a two-year project led by CEDARE and funded through the EU-Egypt Innovation Fund, through the Research, Development and Innovation Programme (RDI) of the Ministry of Scientific Research of Egypt. It aims to provide low-cost smart solutions for fleet managers to facilitate efficient route choices and eco-driving that minimizes fuel consumption and carbon emissions. The system will be integrated into an existing fleet management system developed in Egypt. PHAROS aims to support innovation in the Egyptian industry and to link the local industry with leading research institutions (see: pharos.cedare.org for further information).

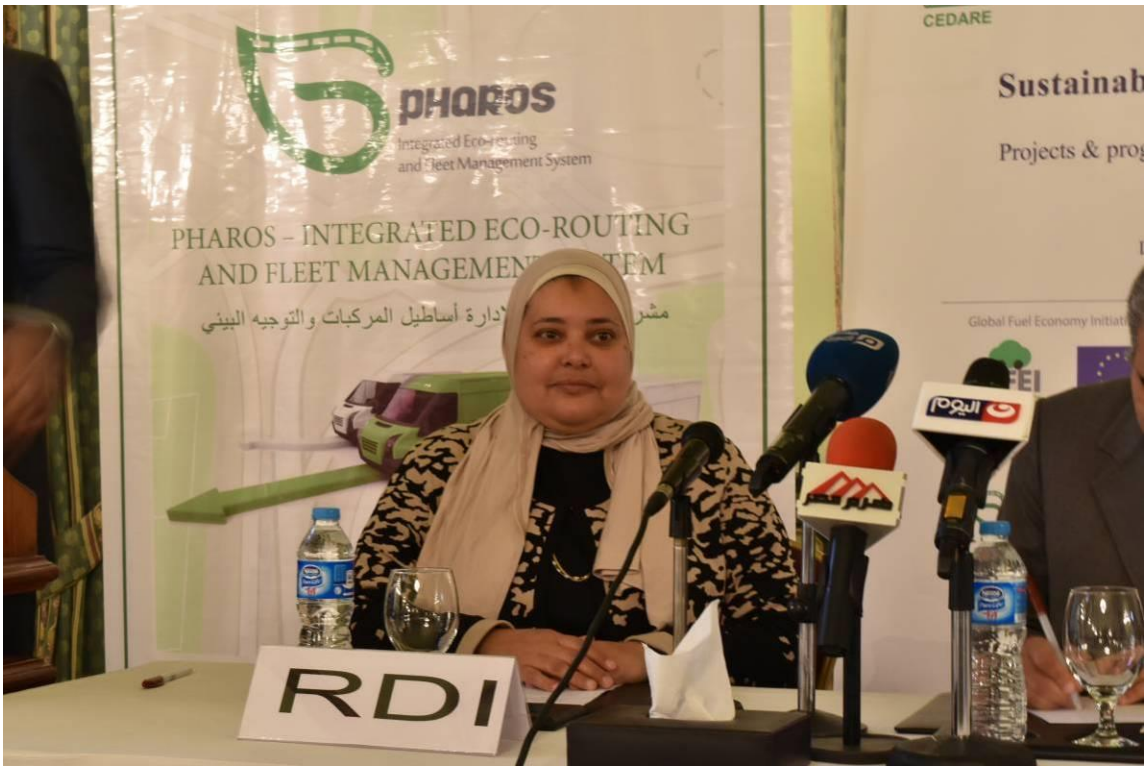
Annex-2: Photos



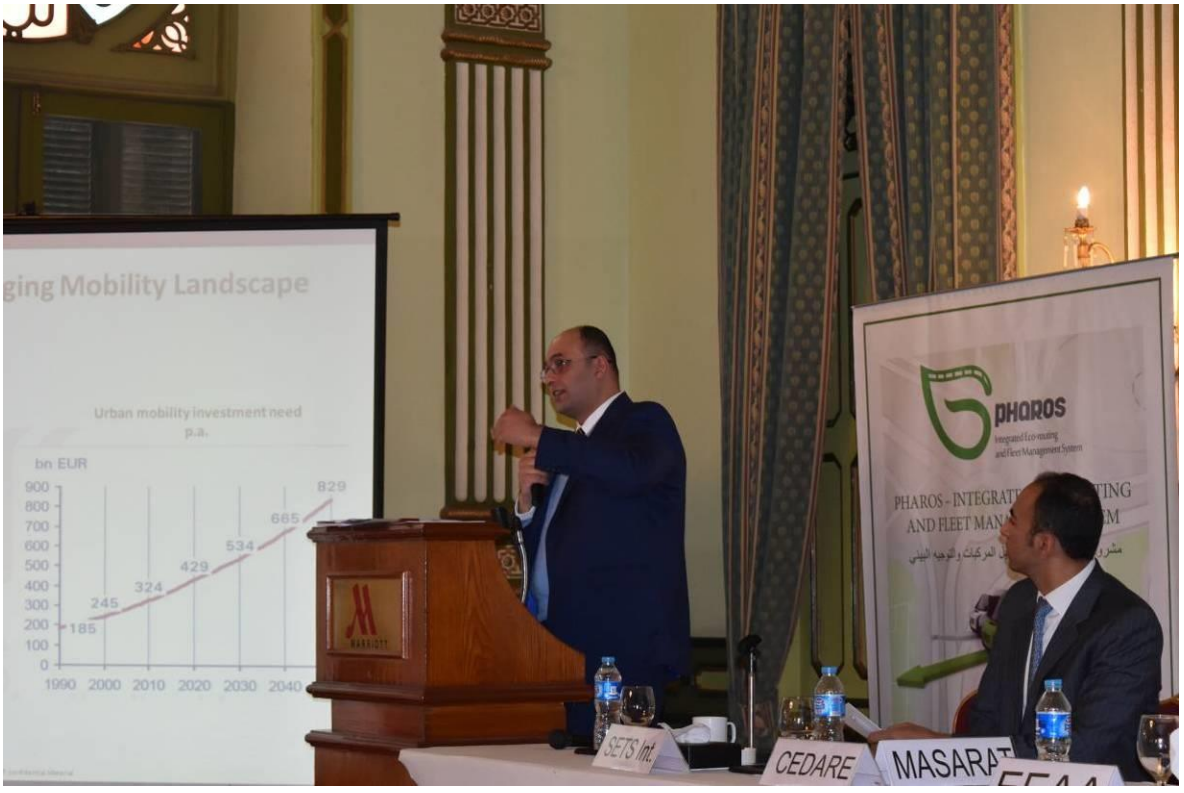
Dr. Zeinab EL Sadr, RDI – Dr. Mona Kamal EEAA – Dr. Hossam Allam – CEDARE – Eng. Ahmed El-Dorghamy – CEDARE



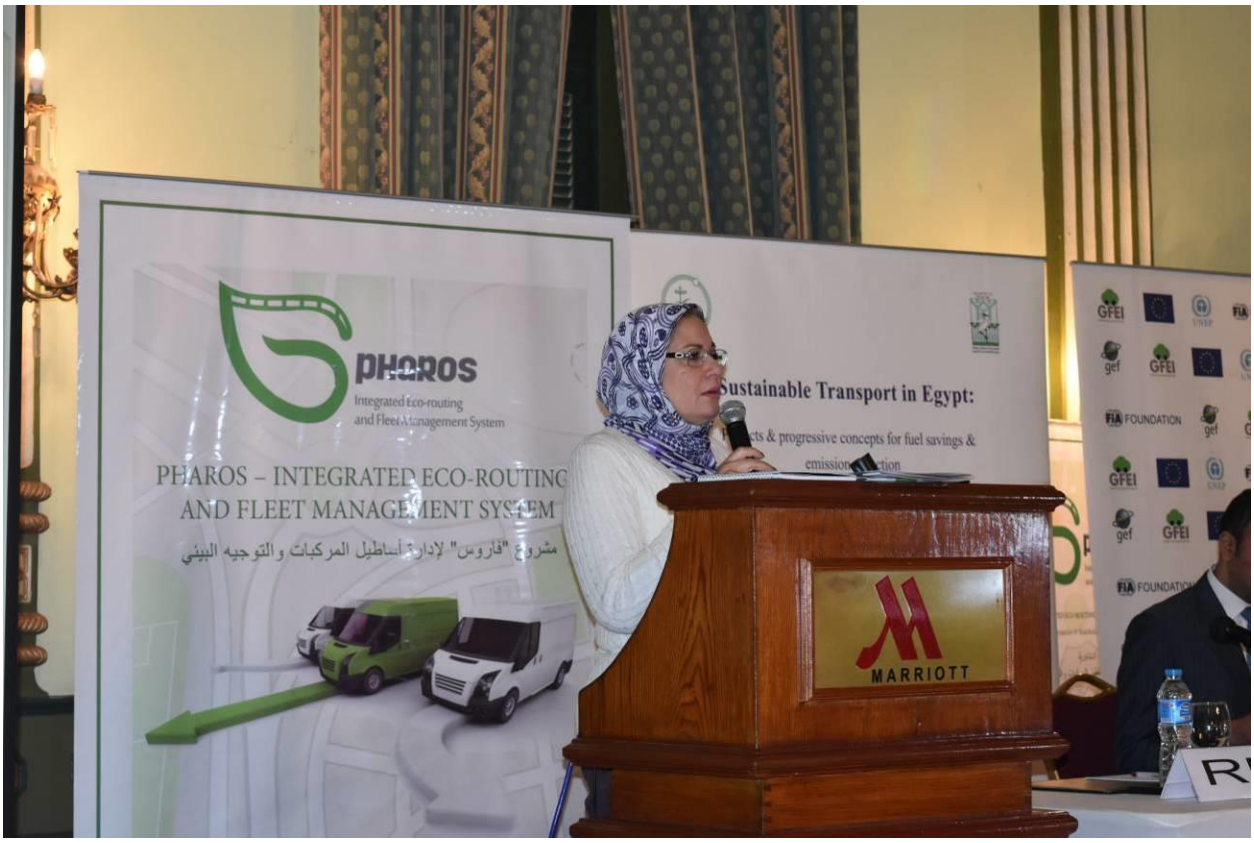
Dr. Ahmed Mosa, transport planning expert and co-founder of MASARAT consultancy



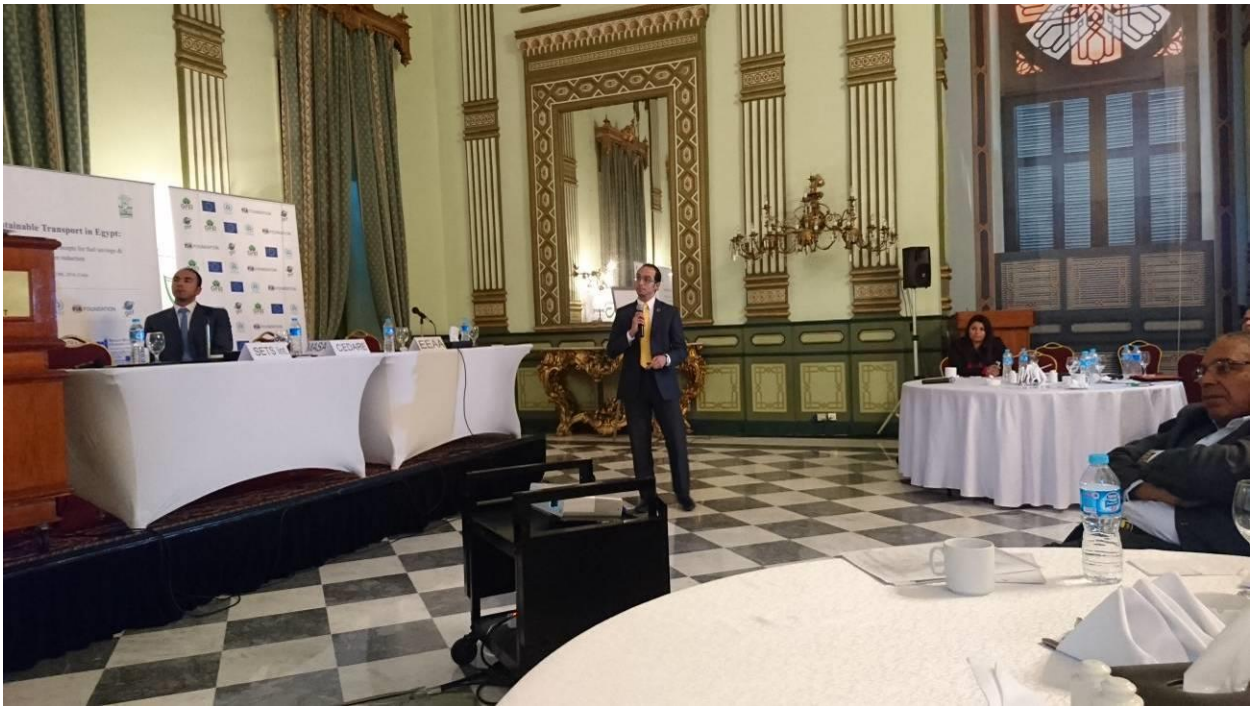
Dr. Zeinab EL Sadr, Egyptian Ministry of Scientific research, Research, Development and Innovation (RDI) programme



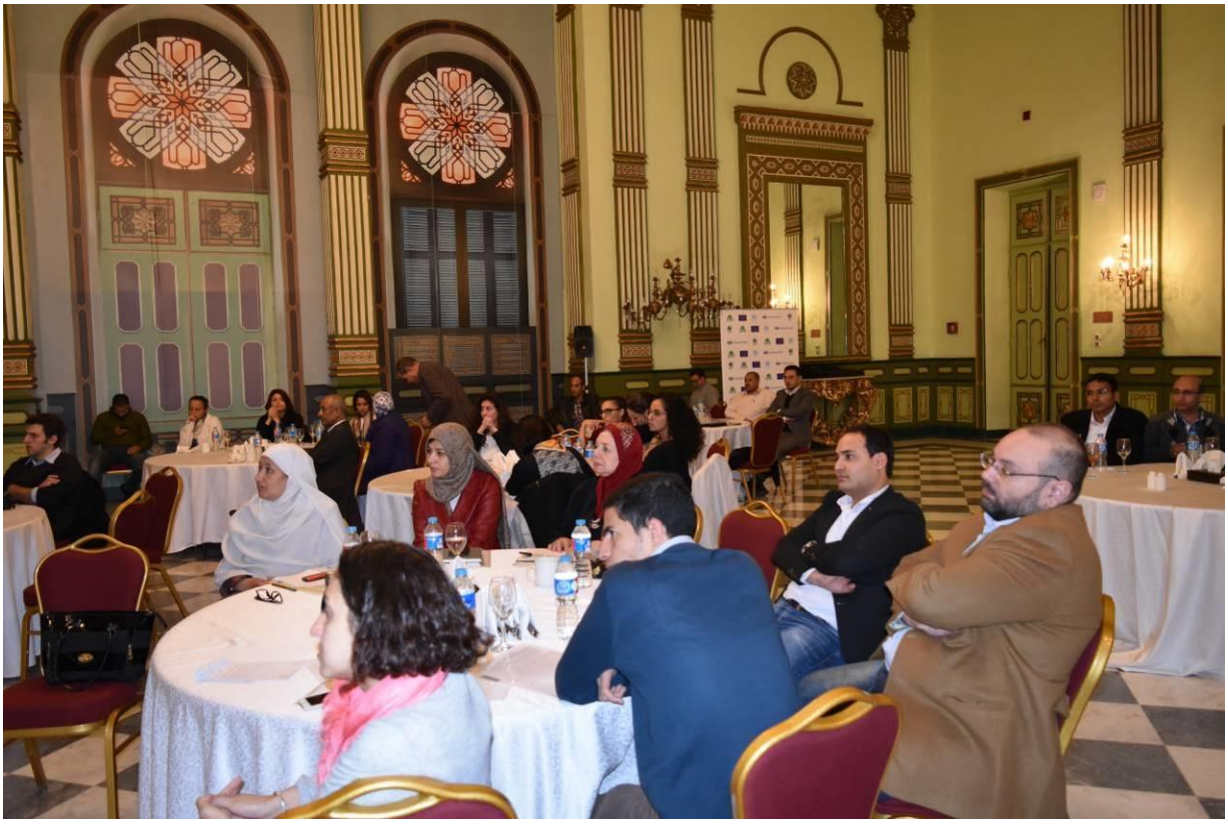
Dr. Ahmed Mosa, Masarat consultancy



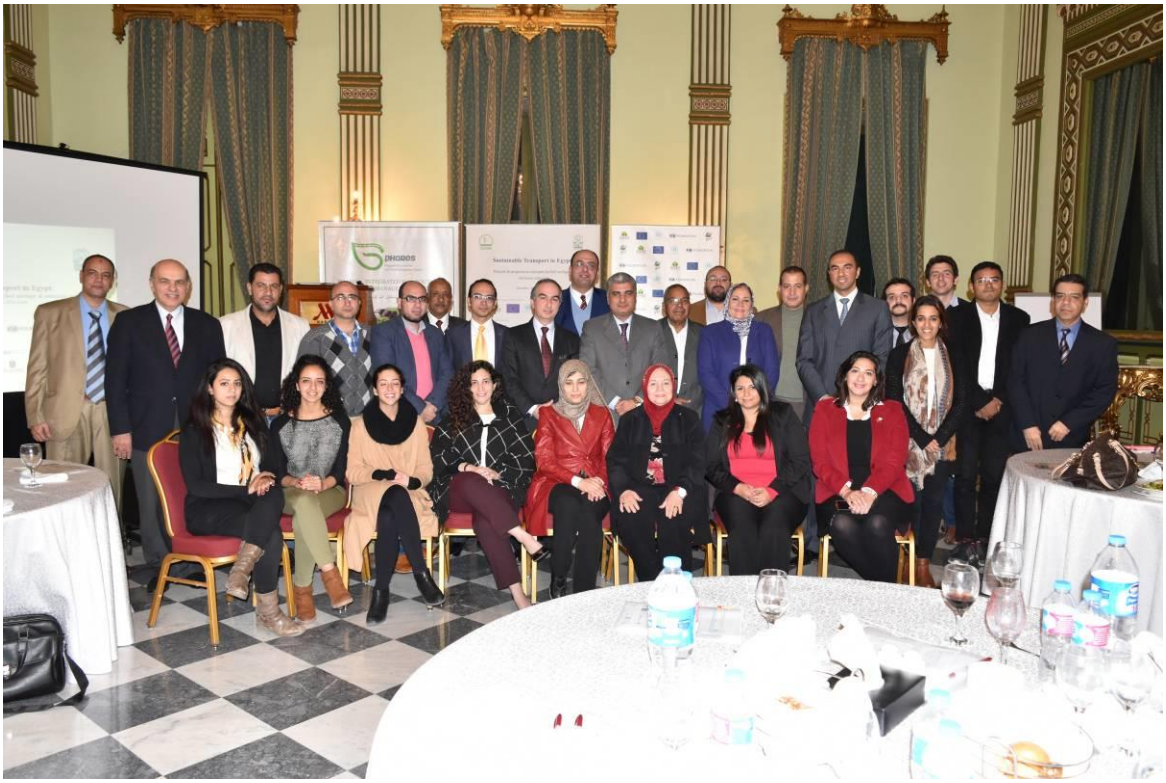
Dr. Mona Kamal, Egyptian Environmental Affairs agency (EEAA)



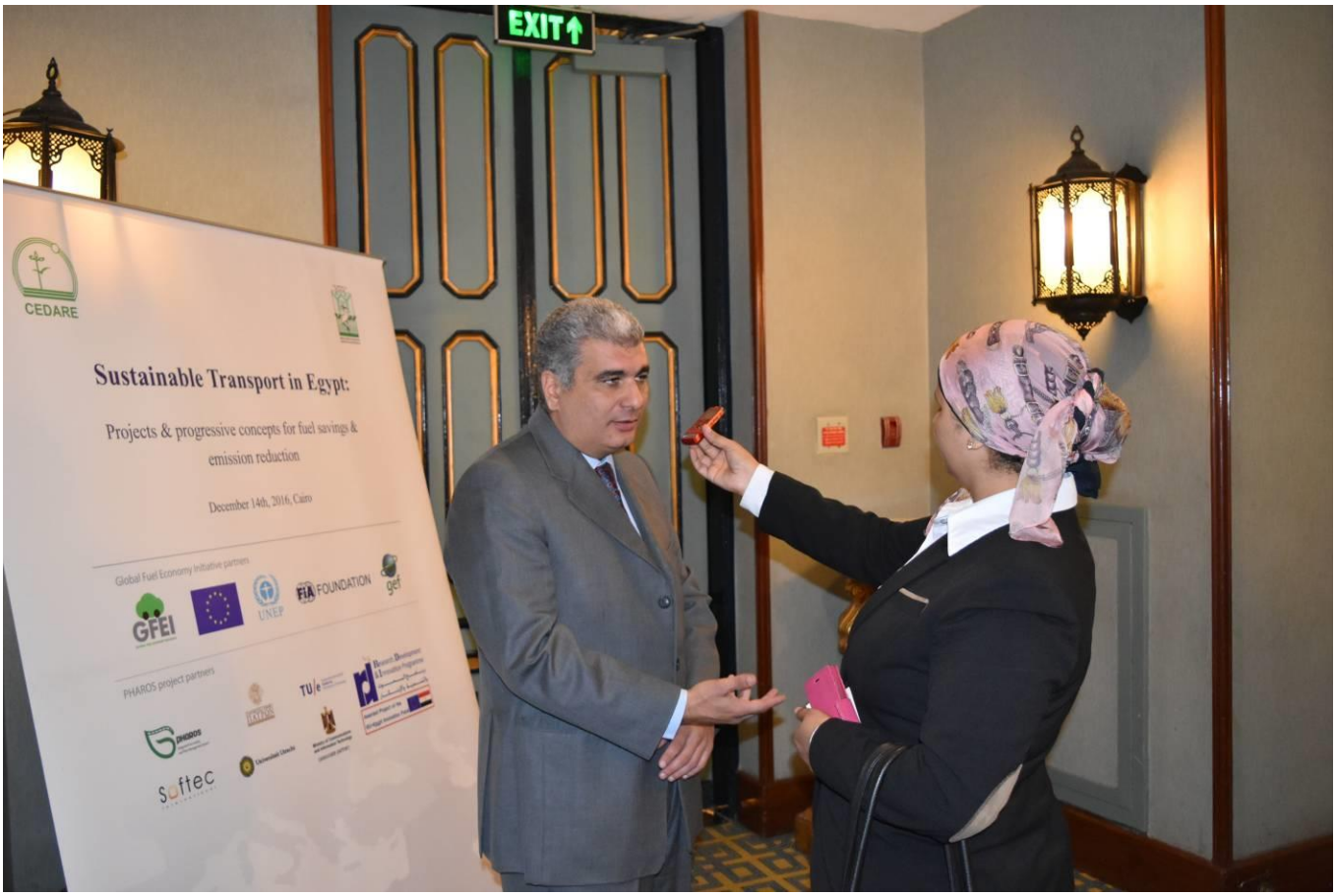
Dr. Hossam Abdelgawad, Assistant professor, Cairo University and Director of SETS North Africa.



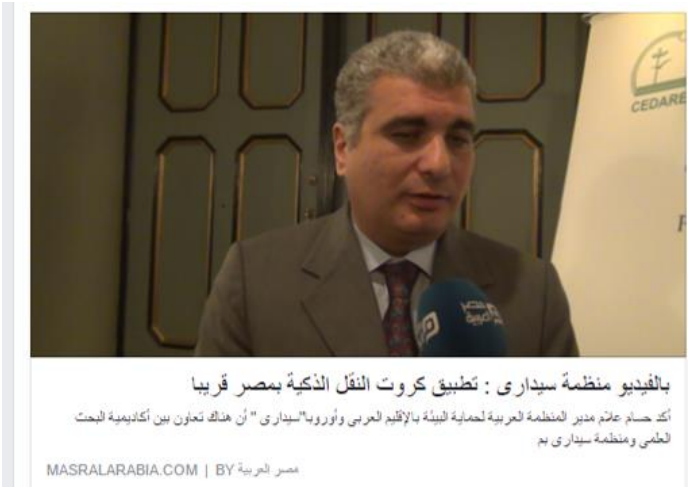
Q&A Session

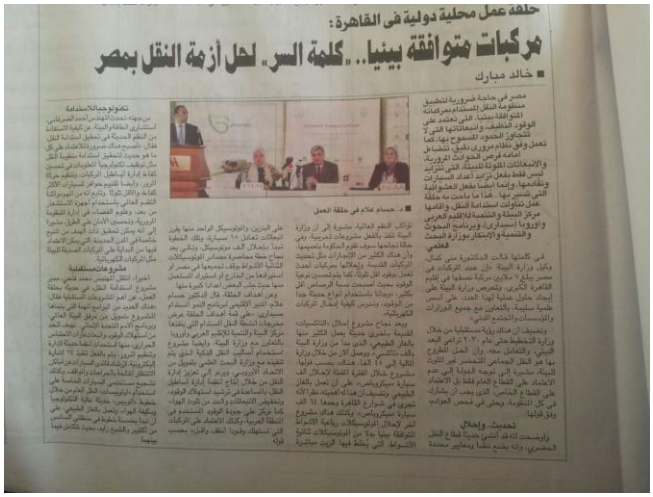


Group picture of the attendees of the final session.



Interviews by the entrance with clear GFEI branding




حلقة عمل محلية دولية فى القاهرة:

مركبات متوافقة بيئيا.. «كلمة السر» لحل أزمة النقل بمصر

■ خالد مبارك

Sample of TV and online coverage of the event.

Annex-3: Attendance

Name & title:	Position & dep.:	Organization:
Walid Gebril	Assistant general manager for quality control	EGPC
Dr. Samir Elmowafi	Consultant, Technical Advisor MOE	MOE-EEAA
Mohamed Refat	Sales account manager	Softec International
Maha Atef	Teaching Assistant Building Technology	GUC
Ms. Noor Amr	Researcher	Access to Knowledge for Development (AUC)
Ramy Mounir	Supply Chain Performance & Projects Manager	Danone Egypt
Maha Mohamed	Engineering standardization	Egyptian organization for standardization and quality
Mr. Islam Gaber	Co-Founder	Transport for Cairo
Ms. Riham Helmy	Environmental Specialist	African Economy council
Dr. Hossam Allam	Regional Programme Manager	CEDARE
Nada Sallam	Researcher	Access to Knowledge for Development Center - AUC
Ms. Yara Sultan	Senior researcher/ Access to Knowledge for Development Center	The American University in Cairo
Ms. Nancy Salem	Research Officer	A2K4D, AUC
Mohamed ElHiti, Sales Manager	Sales Manager, Sales	Softec International
Mohamed Elkhateeb	Program Manager	Transport for Cairo
Dr. Raed M. Sharif	Senior Program Officer, Technology and Innovation	International Development Research Center (IDRC) of Canada

Ayman Sheta	**General Manager of Vehicles Exhaust General Department**	**Egyptian Environmental Affairs Agency**
Tarek ElAggan	**Information & Transport Technology**	**MASARAT**
Dalia Nagaty, Senior Innovation Expert	**Innovation and Support Unit**	**RDI Programme**
Mr.Mohamed El-Toukhy	**Advisor to the Board Of Directors**	**Commercial International Bank**
Mohamed Badr	**Financial Officer - SGP**	**CEDARE**
Dr. Wafaa Nadim	**Associate Professor**	**The German University in Cairo**
Mr. Karim Tarraf	**CEO**	**Hawa Dawa**
Salma Mousallem	**Programe Officer**	**UN Habitat**
Mr / Ahmed Elleithy	**Transportation Manager**	**Danone Egypt**
Ms. Layla Elm Gueretly		**Giran Project**
Dr. Ahmed Mosa	**Co-Founder**	**MASARAT**
Mr. Hossam Abdelgawad	**Director**	**SETS**
Dr. Mona Kamal	**EQS**	**EEAA**
Ms. Mary Zekry	**SOFTEC**	**SOFTEC**
Mr. Mohamed Fathy	**STP Egypt**	**EEAA**
Dr. Zeinab El Sadr	**Director**	**RDI Programme**
Ms. Amira El Kholy	**PRESS**	**Masr Al Arabia**
Ms. Mona Abdel naeim	**PRESS**	**Elgomhoreya**
Dr. Ibrahim Yassin	**UNDP**	**UNDP**
Mr. Hussein	**UN-Habitat**	

Mahfouz		
Ms. Asmaa Yahia	**PRESS**	**Al Nahar T.V.**
Ms. Noor Amr		**Access to Knowledge for Development**
Mr. Hafez El Salmawy		**ZU**
Dr. Khalid El Adli	**Director**	**EAG Consulting**
Mr. Taha Amer		**EEAA**
Mr. Mohamed El Saedy		**EEAA**
Mr. Emad El Shinawy		**SOFTEC**
Mr. Ibrahim Fawzy	**Office of the Minister**	**Ministry of Environment**
Mr. Yasser Mahgoub		**ETIT**
Dr. Mahmoud Bakr	**PRESS**	**Al-Ahram**
Eng. Mervat Mostafa		**EOS**
Mr. Michael Nashaat		**Upscal Egypt**
Mr. Hossam Targam	**BD Manager**	**Ellispon**
Mr. Khaled Moubarak	**PRESS**	**Al-Ahram**
Ms. Yasmin Khalafallah		**Takween Integrated Community Development**
Mr. Badr Farghaly		**EGPC**
Dr. Nabila Sultan	**R.E. and Environmental Consultant**	**Arab Organization for Public Relations and Popular Diplomacy**

Dr. Ahmed Bahaa Khairy	**Ex. GUC Dean**	
Ms. Nancy El Guindy	**PRESS**	
Ms. Samah Said	**PRESS**	
Mr. Mohamed Abdel Salam	**PRESS**	
Ms. Asmaa	**PRESS**	**Masr Al Arabia**
Mr. Mohamed Abu El Nour	**PRESS**	
Eng. Ahmed El Dorghamy	**Energy and Environment Expert**	**CEDARE**
Ms. Terry Fahmy	**Regional Programme Officer**	**CEDARE**