

EXPLORING DIFFERENT POWERTRAIN PATHWAYS IN EGYPT

PRELIMINARY RESULTS

IATF 2023 Automotive Forum

11 November 2023



Subject to revisions

Reliance restricted

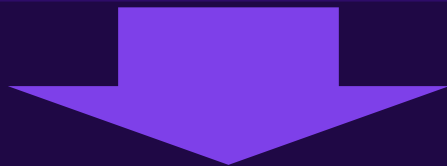


The work-in-progress study aims to empower Egypt's mobility transformation by evaluating alternate drive train technologies and drivetrain adoption pathways

An ideal transformational roadmap for Egypt's adoption of alternative drive train technology

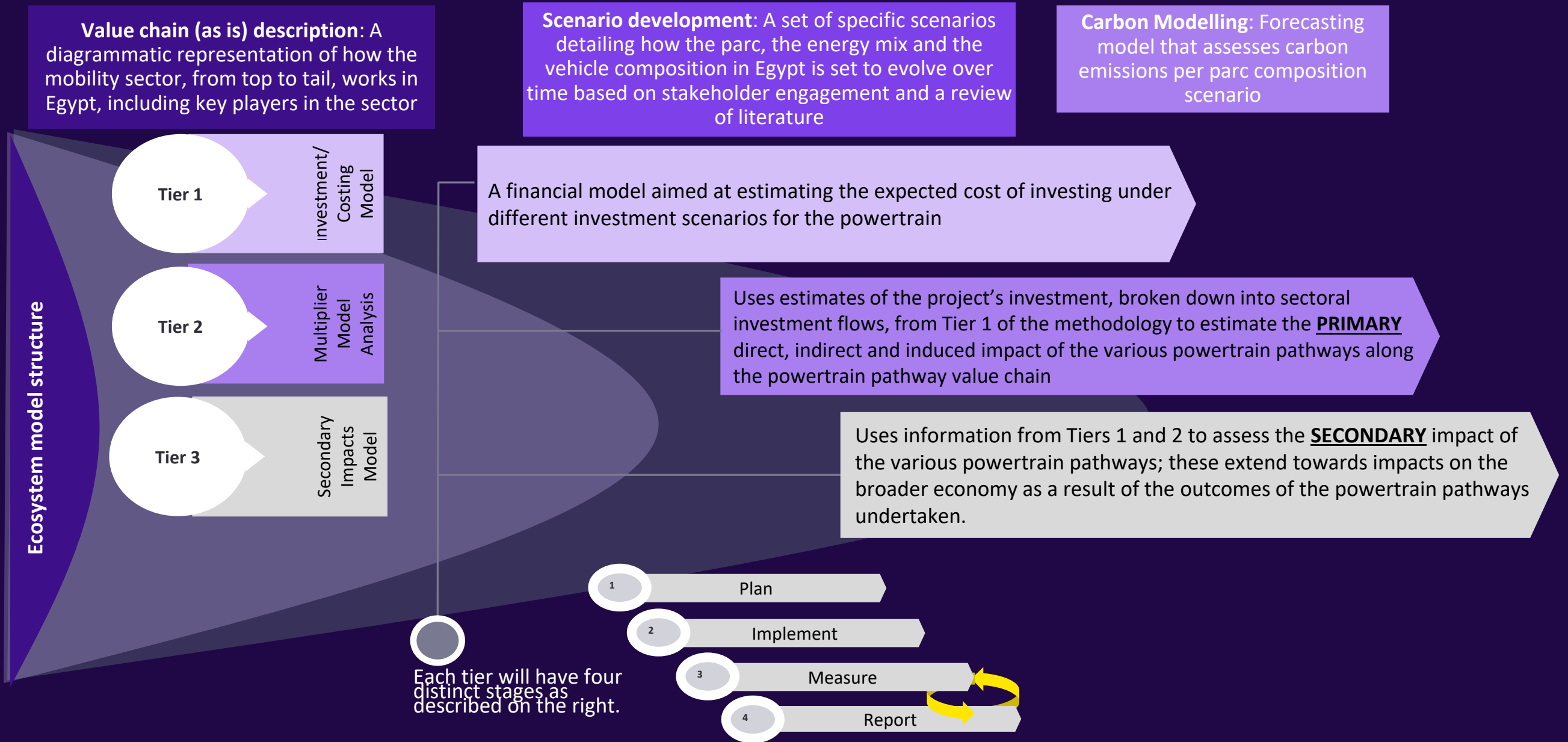
Egypt's vehicle parc (population) composition in 2030, 2035 and 2050 to meet climate commitments

The preferred (and most feasible) economic route to achieve Egypt's transformation to alternative drive train technologies



A tool to assist the stakeholders to evaluate the proposed scenarios in the transformational roadmap as well as the economic and environmental benefits associated with the transformation.

The Egyptian Powertrain Socioeconomic Modelling (E-PSM) tool comprises multiple individual model components, strung together into cohesion



The tool considers three scenarios, above and beyond a baseline

Baseline:

- What were to occur in Egypt if no inorganic changes were made to the parc (investment continues as it is)

Scenario A:

- High road scenario where Egypt meets its 7% transport sector CO2 reduction (from baseline) commitment by 2030 and keeps transitioning thereafter at a steady pace

Scenario B:

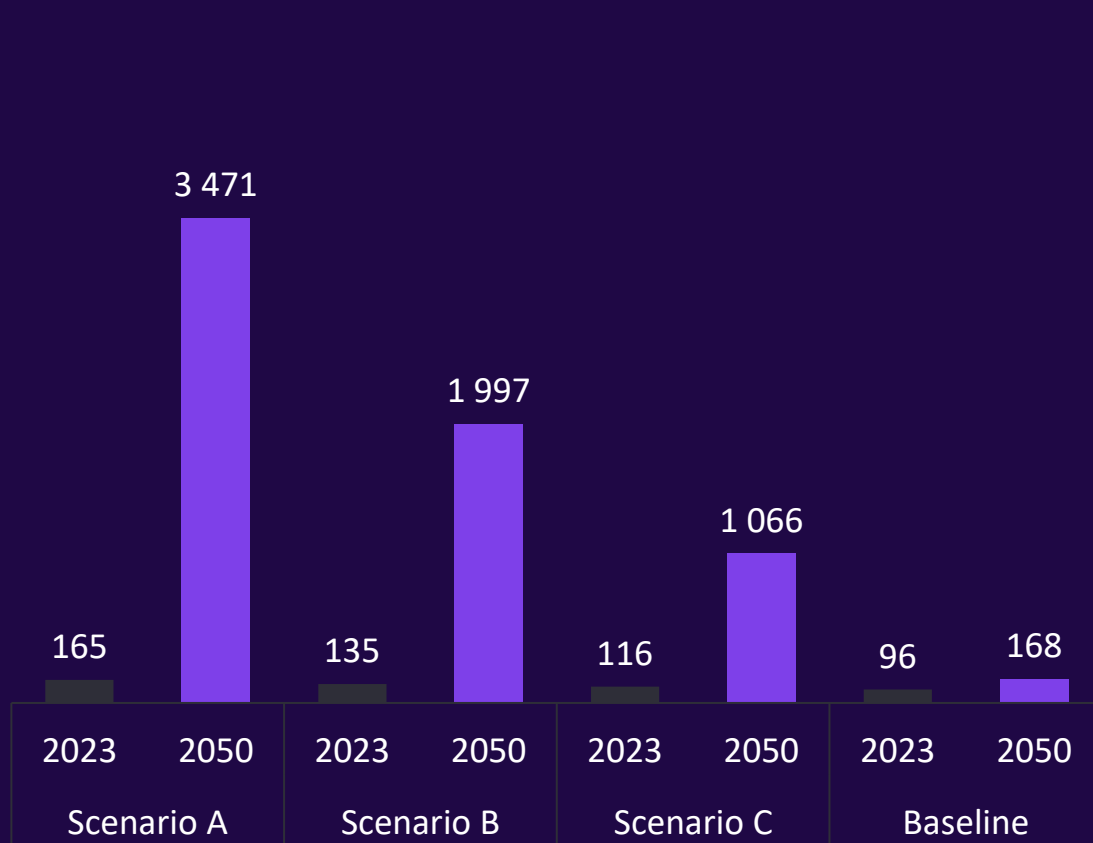
- The user-defined case, where users are encouraged to alter assumptions and assess how the alterations of those scenarios affect costs, and socioeconomic dynamics as a result of a different evolution pathway of the parc.

Scenario C:

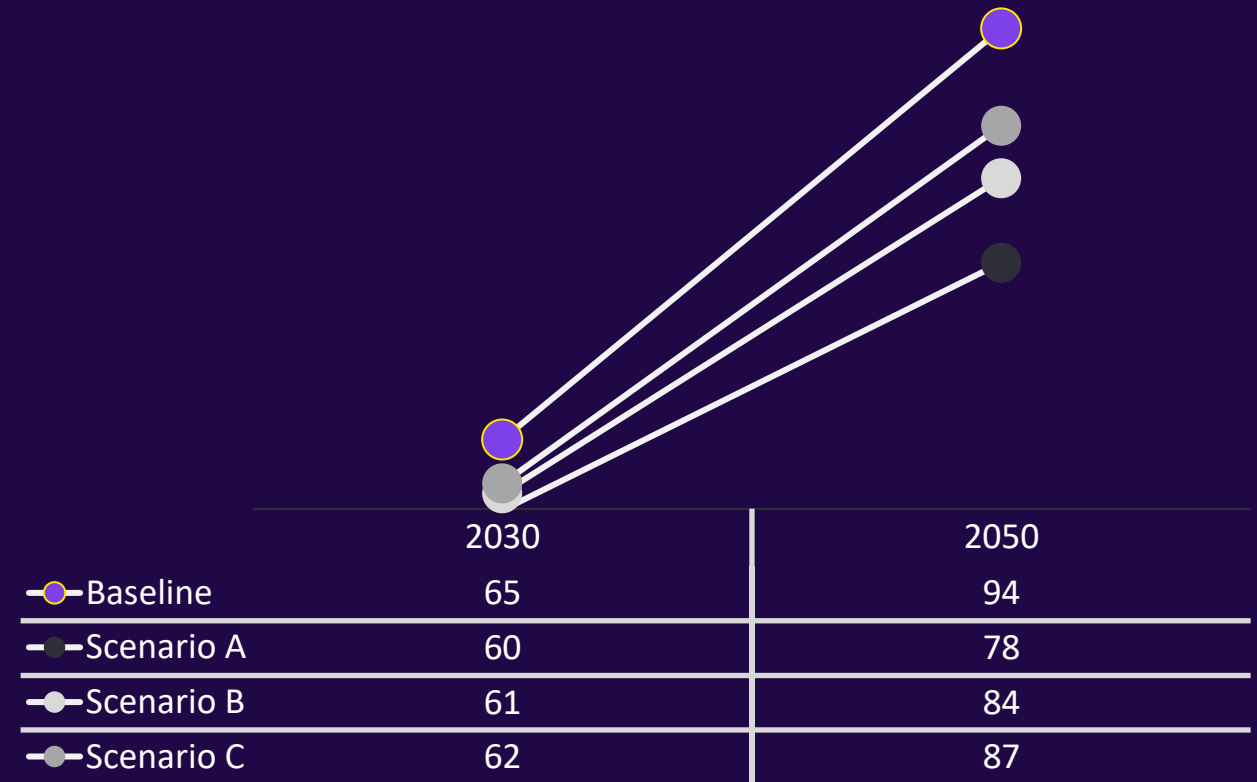
- Low road scenario where Egypt meets its 7% transport sector CO2 reduction (from baseline) commitment by 2050 and keeps transitioning thereafter at a steady pace

The vehicle parc (out of a forecast of roughly 20 million vehicles by 2050), would need to comprise between 5 and 17% NEVs to meet emissions targets

Number of NEVs (in thousands) in vehicle parc



CO2 emitted by the vehicle parc (millions of tons)



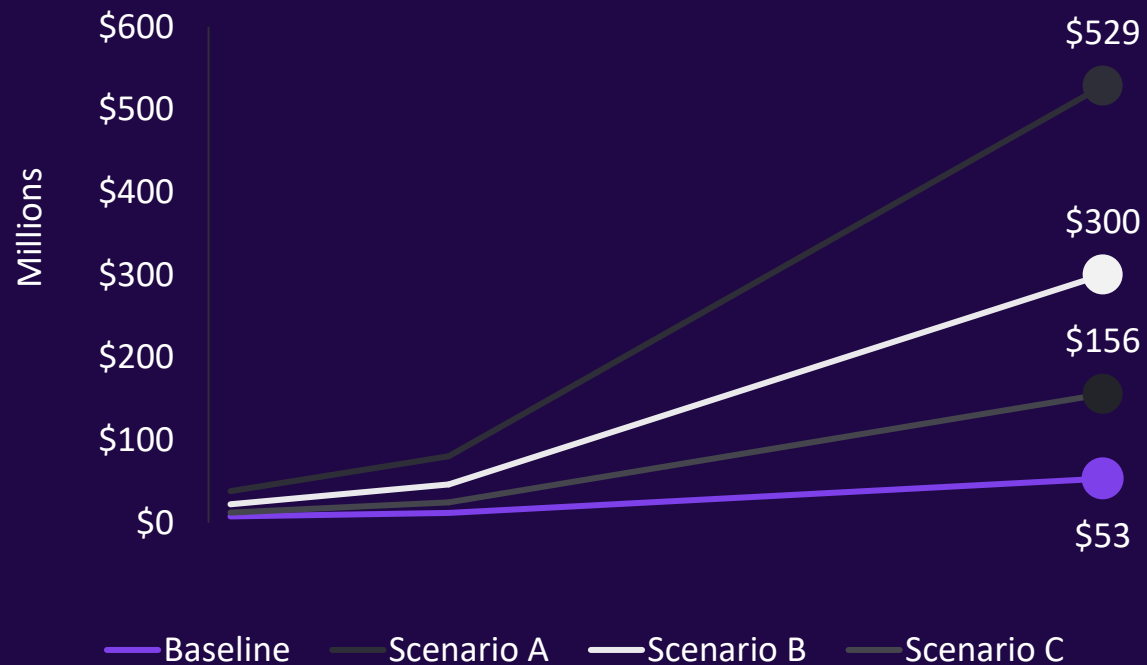
- ▶ Such a parc could yield between a 1 and 6% reduction in national CO2 emissions as compared to baseline forecasts

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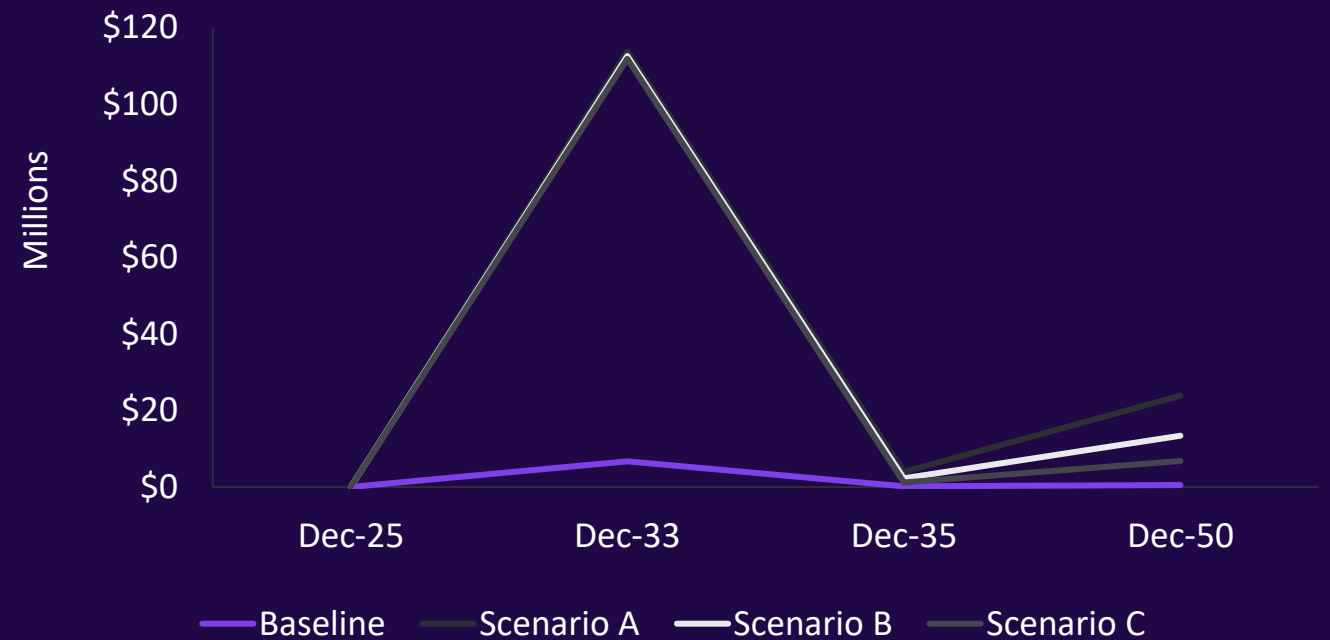
While this would be an expense for the Egyptian private and public sector, additional revenue streams could be unlocked as a result

- ▶ Depending on the scenario, between \$3 billion and \$6 billion in additional customs and vehicle licensing revenue could be collected by the Egyptian government by 2050
- ▶ On the other hand, the cost of developing enough charging stations and recycling plants to service the number of NEVs is below the revenue likely to be collected.

Infrastructure (charging station) costs



Recycling costs

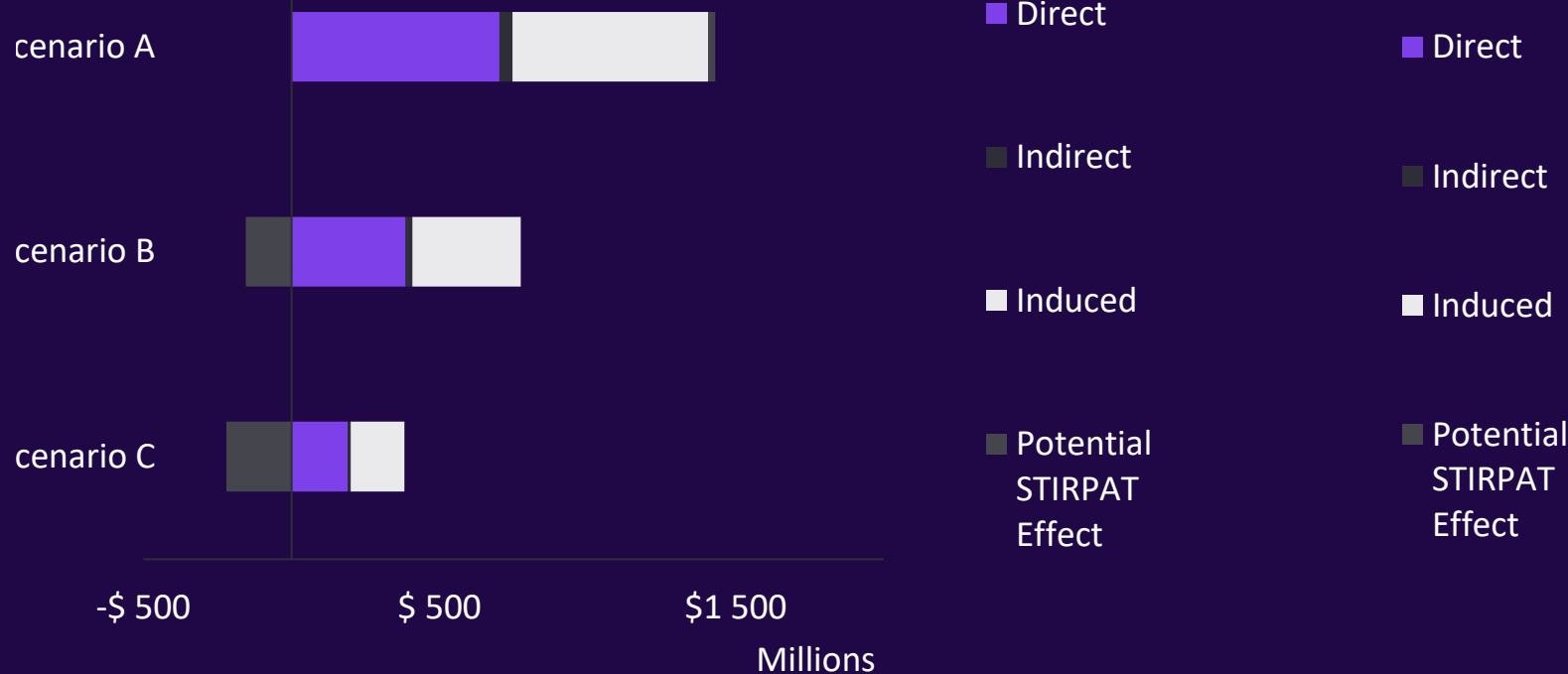


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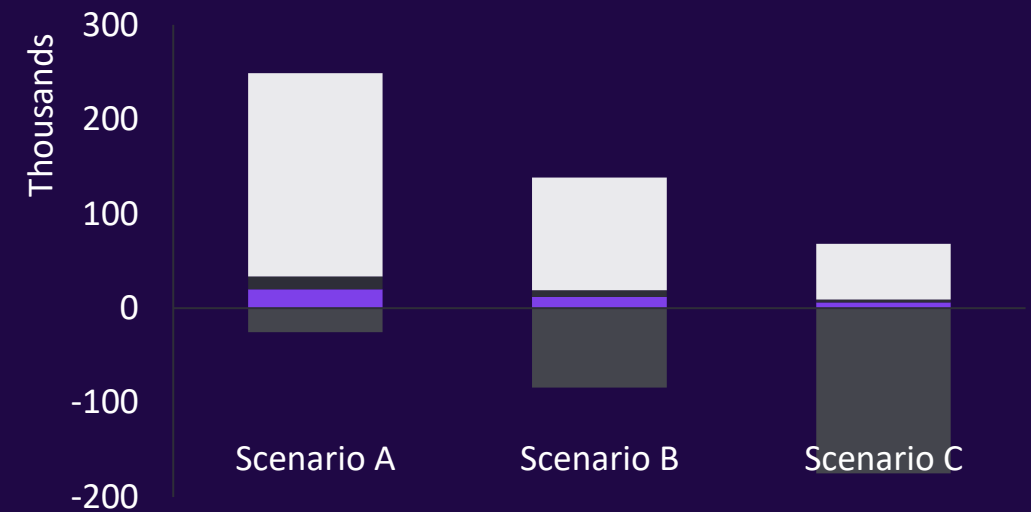
This tool shows that the shift towards NEVs could also have positive overarching macroeconomic impacts

- ▶ According to the preliminary results of the tool, the speed of adoption of NEVs will drive macroeconomic benefits in Egypt.
- ▶ If adoption is too slow, and FX challenges persist, a rising relative cost of NEV imports into Egypt could eat away at the macroeconomic gains likely to occur if adoption of NEVs is more rapid.

With rapid adoption, Egypt's real GDP (in 2022 prices) could be boosted by as much as \$1.5 billion by 2050



Faster adoption could also see as many as 250 000 additional jobs being created in Egypt by 2050 as compared to baseline forecasts



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Where is the study at present and whereto from here

- ▶ The final consultation workshop was held this week in Cairo with the Power Train Workgroup and industry stakeholders who have participated with inputs, through the course of the project.
- ▶ The consultation workshop was held in two sessions.
- ▶ The feedback, suggestions, additions and inputs gathered from the two sessions of the workshop will have to be worked into the tool to finalise the model.
- ▶ A further workshop will be held with the Power Train Work Group to present the above in the tool for their final signoff.
- ▶ We are proposing a further workshop for industry stakeholders on the refined inputs and outputs for the tool.
- ▶ We are proposing to present the final tool and report to the Supreme Auto Council upon final approval from the Power Train Work Group.
- ▶ The project will close by the end of November 2023.

What have we learnt from the Study to formulate recommendations?

- ▶ Battery Electric Vehicles are not the panacea solution for all vehicle segments – cannot be BEV myopic.
- ▶ Each vehicle segment needs to be evaluated separately – a fit for purpose alternate drive train solution needs to be considered i.e. BEV for motorcycles but maybe not for commercial vehicles.
- ▶ There is a need to create an awareness of alternate drive train technologies and their benefits
- ▶ There needs to be a full value chain evaluation of each drive train type to determine the complete economic, environmental and social benefits.
- ▶ NEV adoption will require incentives and support for adoption for the mass consumer market: need to show balance “carrot and stick” approach.
- ▶ Vehicle finance needs to be accessible i.e. cost of finance needs to be lower to attract consumers to finance vehicles – cost of financing to be attractive for vehicle buyers, link cost to vehicle emissions.
- ▶ Need to explore reduced vehicle pricing to end consumers from localising CKD vehicle assembly, T1 and T2 component manufacture.

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