

Preface

This report on the future of electric mobility (e-mobility) is really about today. It is designed and intended to focus decision makers in the Arab region on what they must do today to create the future.

Megatrends are socio-economic-technical phenomena that have reached a point in their evolution at which they are transforming society. These strategic forces are already shaping our world in profound ways. They produce disruptive impacts on existing economic, financial, social-cultural, environmental and other societal conditions, at the same time as they create wholly new conditions. The disruptions that megatrends create are almost always a mix of beneficial and harmful. Recognizing this, they demand policy measures and other actions by decision makers in the public, private and other sectors, to strengthen and take advantage of the potential positive impacts, while at the same time mitigating the potential negative impacts.

In reflecting on “Our Common Agenda”, the United Nations Secretary General has been considering key megatrends and exploring their impact on the world, and is planning to hold a “Summit of the Future” in 2024. As a strategic contribution to the planned “Summit of the Future”, the United Nations Economic and Social Commission for Western Asia (ESCWA) intends to undertake strategic analyses of some of the most important megatrends impacting the Arab region. The aim is to understand the implications of these megatrends on Arab countries, communicate their impacts to key stakeholders, and suggest policy actions that can begin to be undertaken immediately by member States to start addressing them.

Today, e-mobility can aptly be considered a global megatrend. The rise in the numbers of vehicles, fleets and transportation systems propelled by electric powertrain technologies is already having immense impacts around the world, and these impacts will increase and scale over the next two decades and beyond. The time for Arab decision makers to address the e-mobility megatrend is now, through policy, investment and other actions.

Other megatrends in addition to e-mobility are transforming the Arab region and the world, and actions by Arab decision makers today are imperative to capitalize on their positive impacts and forestall their negatives. Among these

megatrends are accelerated urbanization, the rise of “Fourth Industrial Revolution” technologies like artificial intelligence and robotics, climate change and the modification of ecosystems, and others.

This study on the future of e-mobility is the first analysis of such megatrends by ESCWA.

E-mobility was chosen for several important reasons. The electrification of mobility and the eventual elimination of internal combustion engine (ICE) vehicles is projected to have significant positive impacts on mitigating the effects of climate change. The Arab region is already experiencing some of the planet’s most severe climate change effects and is expected to suffer even worse effects in the future. The transition to e-mobility can also be a powerful element of economic diversification in the region and the source of large numbers of jobs. Because of the diverse forms that e-mobility takes, including relatively inexpensive two-wheel and three-wheel vehicles, it has the prospect of reducing inequity across the region. This will be by increasing access to transportation, and thereby access to employment and other economic and social opportunities. The transition to e-mobility will spur significant transportation infrastructure development. Importantly, this can include new cross-border transport infrastructure, which can play a key role in Arab region integration. E-mobility offers significant and potentially transformative investment opportunities and new prospects for public-private partnerships in the Arab region. The economic, social, environmental and other benefits that e-mobility can bring to the region are explored in the chapters of this report.

This report focuses predominantly on e-mobility on land, discussing the accelerating increase of electric automobiles, trucks and other road vehicles including micro-mobility (two-wheel and three-wheel electric scooters, motorcycles, pedal-assist electric bicycles, etc.); electric buses and public transportation systems employing e-buses, electric vans and jitneys, etc.; and electric-powered rail systems. The maritime and air domains of mobility are also moving in the direction of electric power, and a brief discussion of e-mobility in these domains is included in Section 2. The focus on land e-mobility was chosen because this domain offers the greatest impact soonest for the Arab region.

The focus on land e-mobility is also in recognition of the importance of effective trans-national road networks and other related transport infrastructure to improving regional economic and other integration in the Arab world. Such infrastructure is an essential building block in regional integration, enabling Arab countries to overcome limitations on trade, improve access to markets and improve their global competitiveness. Transboundary land mobility infrastructure is underdeveloped in the region for a variety of reasons including the region's geographical size and differences in the levels of economic development between the countries. More regional and international collaborative efforts are needed to develop connectivity and interoperability in the region's land transport infrastructure and align it with international standards. The transition to electric mobility offers new and compelling opportunities to embark on such efforts, if decision makers in the region recognize and seize them. Our analysis of

potential future land e-mobility pathways in the Arab region is intended to help and inspire these decision makers to do so.

This report focuses on electric mobility while recognizing that other alternative forms of sustainable vehicles are also being developed and deployed around the world. Examples of such alternatives are hydrogen fuel-cell powered vehicles, biofuel vehicles and solar-powered vehicles. A brief discussion of such alternatives is included in Section 2. The focus on electric mobility was chosen because the investment and momentum of e-mobility far exceeds all other forms of sustainable mobility, and is expected to do so for the foreseeable future. While decision makers in the Arab region should monitor developments in these other forms of sustainable mobility, electric is widely acknowledged to be the next dominant future of mobility. In light of this, policy and other actions today to facilitate its rise in the region would be the most beneficial focus of Arab decision makers.