strategy&

Part of the PwC network

How the MENA region can win in the future plastics economy

Plastics occupy a growing presence in the global discussion on sustainability. The plastics economy of the future will be more circular,[1] digital, and decarbonized, an economy in which Middle East and North Africa (MENA) region countries can play a significant role.

Although virgin plastics (which are newly produced) will remain dominant for the foreseeable future, the growth of recycled plastics (previously used) will outpace that of virgin plastics. Today, MENA countries hold a considerable feedstock advantage in virgin plastics production. However, they lag behind other countries in access to quality plastic waste and the development of recycling infrastructure.

Still, MENA countries are well positioned to capture the opportunity presented by the mismatch between rising demand for recycled plastics and inadequate supply. In particular, MENA countries possess cost advantages in chemical plastics recycling. Market demand for recycled plastics is soaring. Consumers are willing to pay a premium of up to 10 percent for sustainable products, according to a recent Strategy& survey in the Middle East.[2] There is substantial value at stake. For the countries of the Gulf Cooperation Council (GCC)[3] alone, we estimate that every 1 million tons of recycled plastics produced in the GCC region can generate approximately 1,500 jobs and US$650 million of direct GDP impact.

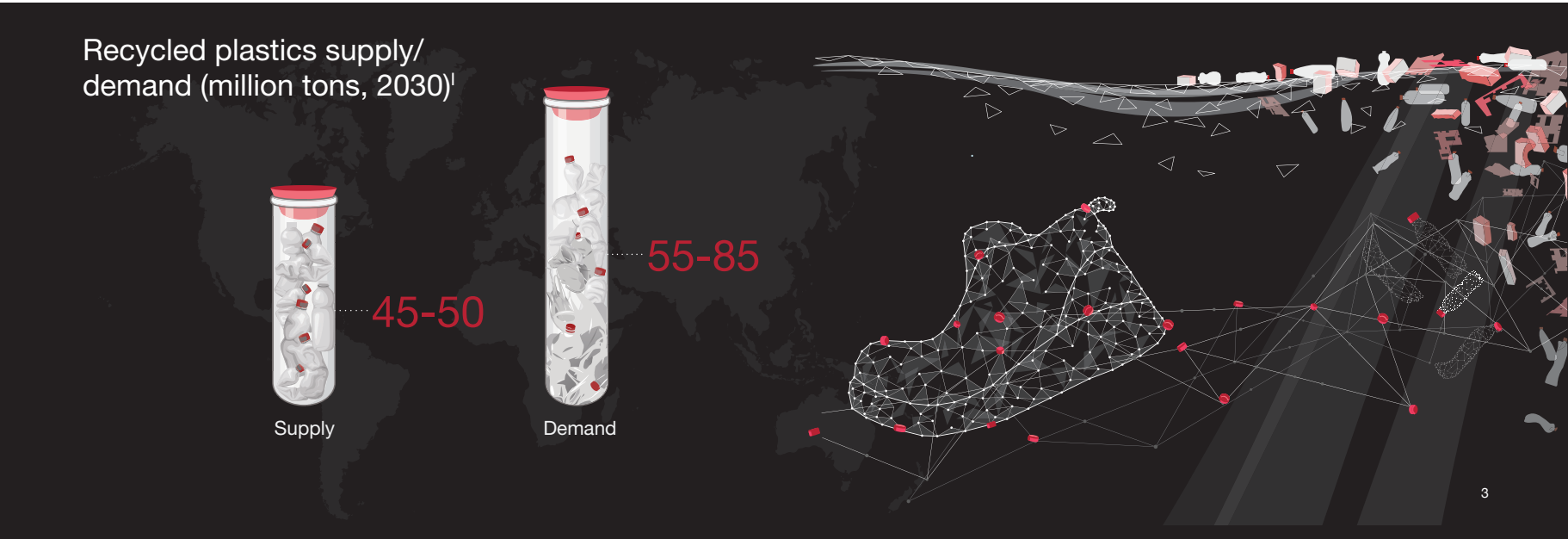
To become the leaders of the future plastics economy, MENA countries will need a dual feedstock advantage: access to quality plastic waste for recycled plastic production and an advantageous feedstock for virgin plastic production. To win this opportunity, MENA countries need to follow the six imperatives on page 7.

A global shortfall of recycled plastics will create a significant market opportunity

Demand for recycled plastic has accelerated, but supply is struggling to keep up. By 2030, we project a global shortage of up to 25 million tons of recycled plastic.

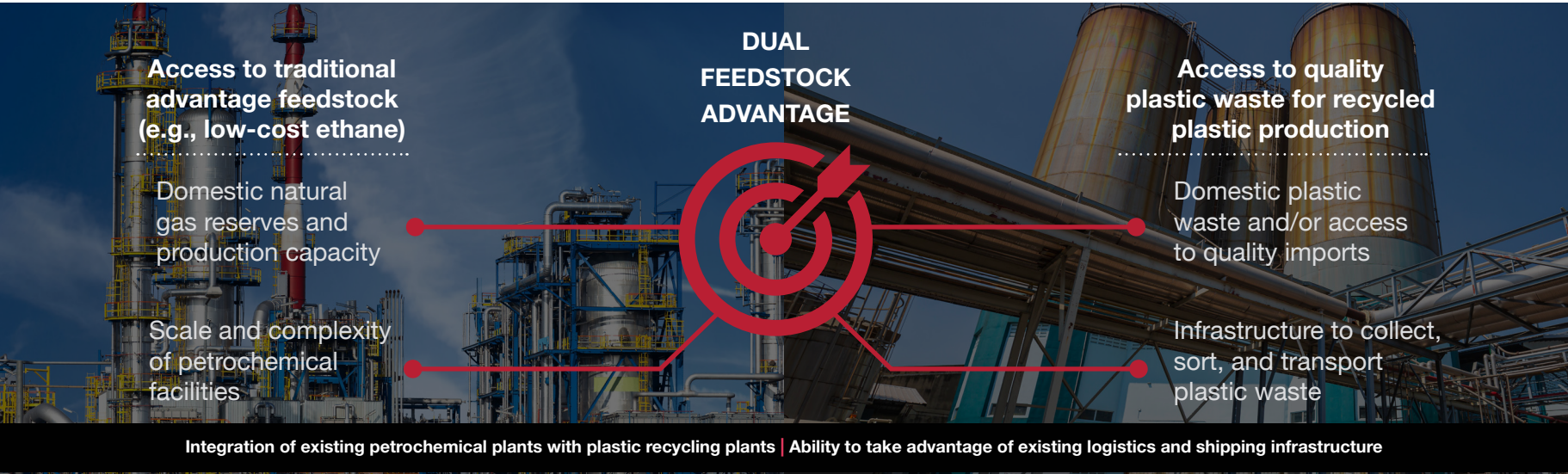
Consumer demand reflects the growing attention on sustainability and the circular economy. Over 500 organizations representing 20 percent of the global plastic packaging market have committed to reducing virgin plastic use.[4] Simultaneously, governments are assisting the shift toward recycled plastics by implementing taxes (such as the U.K. plastic packaging tax), imposing stricter product standards (such as the E.U. restrictions on single-use plastics), and increasing the responsibilities of producers.

The challenge is that the supply of recycled plastics is hampered by constraints in the recycling value chain such as the collection, sorting, and treatment of plastic waste. Consequently, recycling rates remain low (between 10 and 20 percent), and major consumer brands have been forced to postpone some of their commitments to use recycled plastics. This mismatch between supply and demand creates a significant market opportunity for potential suppliers.[5]



Supply-side winners will develop a dual feedstock advantage

Future supply-side winners will be those that create a "dual feedstock advantage"—access to traditional feedstock for virgin plastic production and access to quality plastic waste so they can produce recycled plastics. Although virgin plastics will still make up more than 90 percent of production capacity in 2030, recycled plastic production is expected to grow at nearly twice the rate of virgin plastic production in the same period (a 5 percent compound annual growth rate [CAGR] versus a 3 percent CAGR).[6] Winning on both fronts will require countries to integrate existing petrochemical plants with plastic recycling plants and expand existing logistics and shipping infrastructure.

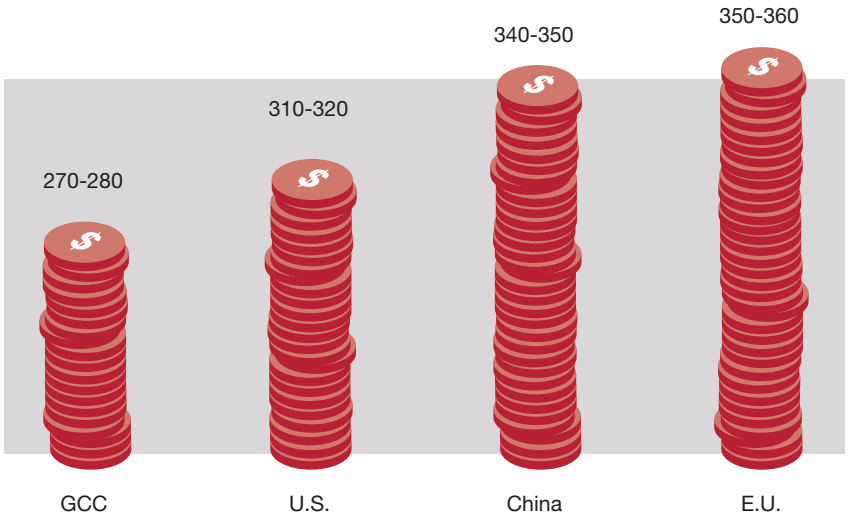


MENA countries have the potential to lead in recycled plastics

MENA countries are well positioned to capture emerging opportunities in the circular plastics economy. Traditional mechanical recycling remains dominant in the area, but chemical (or molecular) recycling technology is growing quickly. This type of recycling technology can create valuable end products from mixed and contaminated waste and hard-to-recycle products. The chemical recycling process is highly energy intensive; utilities account for roughly 60 percent of total production costs.[7] That confers a substantial cost advantage on the MENA region, given its cheap, abundant renewable energy.

The MENA region stands to gain considerable socioeconomic benefits from its increased role in plastics recycling. We estimate that for the GCC countries alone, every 1 million tons of recycled plastics produced can generate approximately 1,500 jobs and $650 million of direct GDP impact.

Cash cost of chemical plastic recycling (US$/ton)[II]



Note: The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

A 100,000-tons-per-year chemical recycling facility requires a capital investment of around US$300 million

Impact of plastic recycling (per million tons)

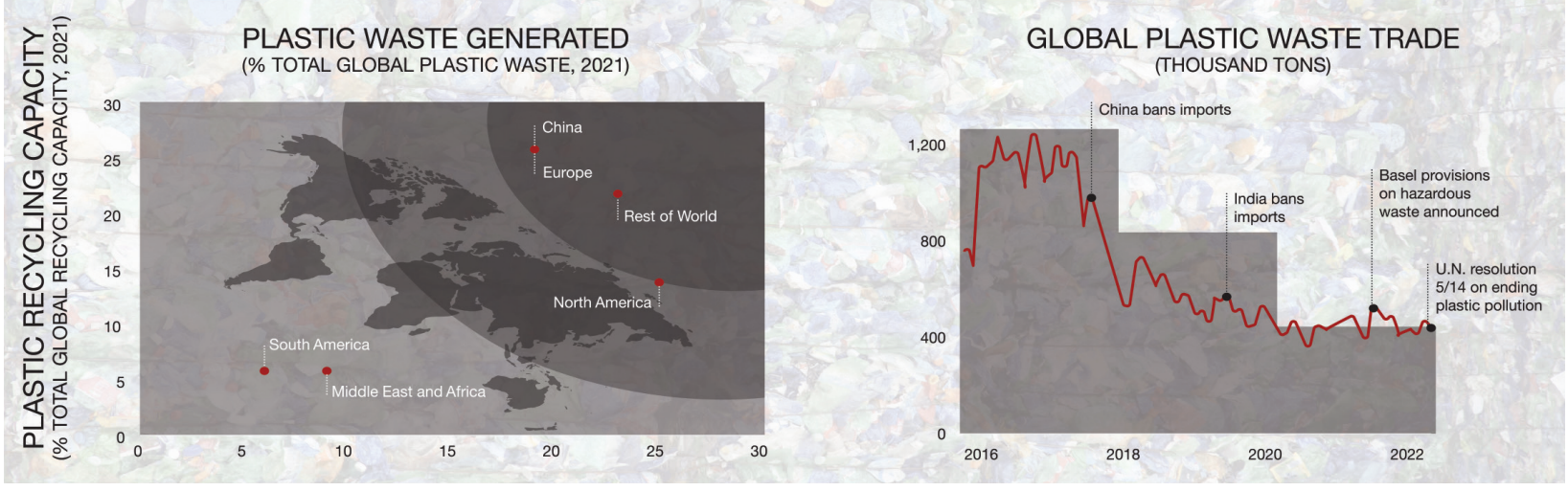
Some **1,500 jobs** created directly

Around **US$650 million** direct GDP impact

To capture the opportunity, MENA countries need to increase their access to plastic waste and increase their plastic recycling capacity[III]

Despite the advantages MENA countries have, they struggle with limited access to quality plastic waste and with relatively low recycling capacity. In 2021, the MENA region accounted for roughly 9 percent of global plastic waste production and just over 5 percent of global plastic recycling capacity—well behind China and Organisation for Economic Co-operation and Development countries. The region must also contend with a growing number of restrictions in the trade of global plastic waste, including import bans in China and India, the Basel provisions on hazardous waste, and U.N. Environment Assembly Resolution 5/14 to end plastic pollution.

MENA countries need to move quickly to close the gap and position themselves as leaders in plastics recycling. They must act now, as other regions are already building their recycling industry. For example, the E.U., which accounts for 20 percent of current global plastic waste production, is creating sustainability policies and standards while accelerating investments in recycling infrastructure, innovation funding, and market discovery.



MENA countries must follow six imperatives to win in the plastics economy

We have identified six imperatives for success in this specialized economy

1 MENA countries need to create global closed-loop supply chains and material marketplaces. These are vital in gaining competitive access to secondary markets, such as those for mixed plastic and other inorganic material.

2 MENA countries need to acquire recycling assets and supply chain capabilities, especially in large consumer markets.

3 MENA countries need to develop smart, digital capabilities as well as mission-oriented research, development, and innovation capacity for circular technologies, artificial intelligence, and industrial biotech, including for feedstock recycling.

4 Chemicals companies working in partnership with MENA governments need to invest between $30 billion and $40 billion over the next two decades to build world-class recycling infrastructure at scale, while exploring opportunities for synergies through integration with existing infrastructure.

5 MENA countries need to adopt a customer-driven sustainability lens that will enable them to develop tailored high-value products.

6 MENA countries need to be proactive in shaping global and regional standards and policies that incentivize plastics recycling and reuse, including enacting bans and taxes on single-use plastics.

ABOUT THE AUTHORS

Beirut

Dr. Yahya Anouti

Partner

+961-1-985-655

yahya.anouti

@strategyand.pwc.com

Dr. Yahya Anouti is a partner with Strategy& Middle East, part of the PwC network. He is a member of the energy, chemicals, and utilities practice in the Middle East. He specializes in resource-based sustainable development and energy-related strategies, and he supports governments, national oil companies, international oil companies, and utility companies in Africa, Asia, Europe, the Middle East, and the United States.

Dubai

Devesh Katiyar

Principal

+971-4-436-3000

devesh.katiyar

@strategyand.pwc.com

Devesh Katiyar is a principal with Strategy& Middle East. Based in Dubai, he is a member of the energy, chemicals, and utilities practice in the Middle East. He focuses on the petrochemicals industry and offers support in shaping localization efforts in the region in relation to procurement, supply chains, the innovation agenda, and human capital.

Riyadh

Jayanth Mantri

Manager

+966-11-249-7781

jayanth.mantri

@strategyand.pwc.com

Jayanth Mantri is a manager with Strategy& Middle East. He is a member of the energy, chemicals, and utilities practice in the Middle East. With over 11 years of experience in energy industry and strategy consulting, he focuses on sustainable industrial development, investment attraction, and supply chain localization. He has advised governments, energy and chemicals companies, and industrial majors in Africa, Europe, and the Middle East.

References

[1] Dr. Yahya Anouti, Frederic Ozeir, Saed Shonnar, and Jana Batal, “Circular Economy: A New Source of Competitive Advantage in the Chemicals Industry,” Strategy&, 2019 (https://www.strategyand.pwc.com/m1/en/ideation-center/ic-research/2019/circular-chemistry.html).

[2] Strategy& Middle East Environmental, Social, and Governance issues survey 2022, N=1,000, Q: How much are you willing to pay more for a product or service that meets your most important environmental and social criteria—assuming it offers the same quality as the conventional product or service in the following sectors?

[3] The GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

[4] The Global Commitment 2022, The Ellen MacArthur Foundation (https://tinyurl.com/tf99me9p).

[5] OECD (2022), Global Plastics Outlook: Policy Scenarios to 2060, OECD Publishing, Paris (https://tinyurl.com/3f632u9d); Joe Brock, “Set, miss, repeat – big brands and plastic recycling targets,” Reuters, October 5, 2020 (https://tinyurl.com/mwvnadu5); Vanessa O’connell and Uday Sampath Kumar, “P&G faces shortage of recycled plastic in race to meet sustainability goals,” *Reuters,* December 3, 2021 (https://tinyurl.com/y599rwb6); Robin Hicks, “Coca-Cola says it’s difficult to source recycled plastic at a ‘reasonable’ price in Asia,” Eco-Business, February 13, 2023 (https://tinyurl.com/bdd6rwfm).

[6] OECD (2022), Global Plastics Outlook: Policy Scenarios to 2060, OECD Publishing, Paris, (https://tinyurl.com/226vxj8s).

[7] “Closed Loop Partners Releases First-of-its-Kind Report Evaluating the Role of Molecular Recycling Technologies in Addressing Plastic Waste,” November 17, 2021 (https://tinyurl.com/2p9dvsf3).

Sources

[i] OECD, “Global Plastics Outlook: Policy Scenarios to 2060,” OECD Publishing, 2022 (https://doi.org/10.1787/aa1edf33-en); Strategy& analysis

[ii] Source: “Closed Loop Partners Releases First-of-its-Kind Report Evaluating the Role of Molecular Recycling Technologies in Addressing Plastic Waste,” November 17, 2021 (https://www.closedlooppartners.com/closed-loop-partners-releases-first-of-its-kind-report-evaluating-the-role-of-molecular-recycling-technologies-in-addressing-plastic-waste/); Walter Right Jr., “Economic Impact of Advanced Plastics Recycling and Recovery Facilities in the United States,” American Chemistry Council, February 2019 (https://www.jdsupra.com/legalnews/economic-impact-of-advanced-plastics-10314/); Andrew Beard, Simon Rawlinson, and Agnieszka Krzyzaniak, “International Construction Costs 2022,” Arcadis, 2023 (https://www.arcadis.com/en/knowledge-hub/perspectives/global/2021/international-construction-costs-2021); International Labour Organization, Statistics on Wages (https://ilostat.ilo.org/topics/wages/); U.S. Energy Information Administration, “Short-term Energy Outlook,” March 7, 2023 (https://www.eia.gov/outlooks/steo/); Eurostat, “Electricity Price Statistics,” data extracted in October 2022 (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Electricity_price_statistics); “Dwindling Coal Supplies and Rising Prices Have Created a Widespread Electricity Crunch in China,” BOFIT Viikkokatsaus/BOFIT Weekly, 2021/40, October 8, 2021 (https://www.bofit.fi/en/monitoring/weekly/2021/vw202140_1/).

[iii] Basel Convention on the Control of Transboundary Movements of Hazardous Wastes, U.N. Environment Programme, 1992 (https://tinyurl.com/emsc5v4h); UNEA Resolution 5/14, “End Plastic Pollution: Towards an International Legally Binding Instrument,” March 2, 2022 (https://tinyurl.com/2y6cmwrb); Plastics Recyclers Europe, “Plastics Recycling Industry in Europe: Mapping of Installed Plastics Recycling Capacities 2020,” May 2022 (https://tinyurl.com/4h95n939); OECD (2022), “Global Plastics Outlook: Policy Scenarios to 2060,” OECD Publishing, Paris (https://doi.org/10.1787/aa1edf33-en); UNEA Resolution 5/14, “End Plastic Pollution: Towards an International Legally Binding Instrument,” March 2, 2022 (https://tinyurl.com/2y6cmwrb); Recycling Today, “India Bans Plastic Scrap Imports,” March 6, 2019 (https://tinyurl.com/js4e5ks3); Dr. Michael Dent, “China’s National Sword Policy Could Spur On Global Recycling,” IDTechEx, September 3, 2020 (https://tinyurl.com/3t9cwt8p); Strategy & analysis.

Strategy&

Strategy& is a global strategy consulting business uniquely positioned to help deliver your best future: one that is built on differentiation from the inside out and tailored exactly to you. As part of PwC, every day we're building the winning systems that are at the heart of growth. We combine our powerful foresight with this tangible know-how, technology, and scale to help you create a better, more transformative strategy from day one.

As the only at-scale strategy business that's part of a global professional services network, we embed our strategy capabilities with frontline teams across PwC to show you where you need to go, the choices you'll need to make to get there, and how to get it right.

The result is an authentic strategy process powerful enough to capture possibility, while pragmatic enough to ensure effective delivery. It's the strategy that gets an organization through the changes of today and drives results that redefine tomorrow. It's the strategy that turns vision into reality. It's strategy, made real.

www.strategyand.pwc.com/me