



INDEVCO

**CATALYZING THE
CIRCULAR ECONOMY
OF PLASTICS**



Catalyzing the Circular Economy of Plastics

Our commitment is to foster premium re-use of plastic waste to reduce carbon emissions and to divert plastics destined for landfills or incineration into recycled applications supporting a circular economy of plastics.

How we manage this topic

INDEVCO Flexible Packaging and Napco National CJSC Flexible Packaging divisions have actively pushed for a circular economy of plastics as part of their manufacturer and supplier responsibility to address plastic waste, while creating green revenue streams from recycling plastic waste. INDEVCO companies provide post-industrial plastic collection, recycling, and regeneration. INDEVCO also offers waste-to-energy technologies.

Why this topic matters

As global issues like pollution, waste, biodiversity loss, and climate change grow more pressing, it is essential to move towards a circular economy. A circular economy encourages redesigning products so that they do not end up in waste stream, utilizing goods and materials for as long as possible, and recycling materials from end-of-life products back into the economy to close the loop between extractions, manufacture, and disposal.


Circular economy scenarios have the potential to reduce resource extraction by 28% and to cut global carbon emissions by 39% [1]. Gulf Cooperation Council (GCC) cities could save 148 million tons of CO2 emissions between 2020 and 2030 by adopting circular economy practices [2].


UN Sustainable Development Goals




IMPACT

From 2019-2022

 Diverted over **300,000 m²** of post-industrial plastic scrap from landfill [10]

 Eliminated associated landfilling GHG emissions by over **3,000 metric tons of carbon dioxide equivalent (MTCO₂e)** [11]

 Reduced GHG emissions by over **170,000 metric tons of carbon dioxide equivalent (MTCO₂e)** from recycling plastic [12]

COUNTRIES

-  Egypt
-  Lebanon
-  Saudi Arabia
-  UAE

Adopting a circular economy not only benefits the environment but also the economy. If the Middle East countries adopt the circular economy model, they will save nearly 138 billion U.S. dollars by 2030. This will increase the total GDP of Middle East economies by 1% approximately [3].

Middle East countries are moving forward towards a circular economy. Saudi Arabia's Vision 2030 includes objectives that aim to enhance waste management efficiency, launch recycling projects, and reduce consumption and utilize treated and renewable water [4]. The United Arab Emirates is the first nation to sign the World Economic Forum's "Scale 360" initiative, a creative framework for developing a circular economy using Fourth Industrial Revolution technologies like artificial intelligence and others [5].

The Middle East is one of the highest waste generating regions worldwide. Saudi Arabia generates roughly 53 million tons of waste yearly, polluting the soil and groundwater [6]. While recycling is limited, 95% of waste is disposed of, untreated, in landfills, or incinerated [7]. Due to high population growth, rapid urbanization, and increased industrialization, waste management is a significant priority for Saudi Arabia. By 2030, Saudi Arabia plans to divert 100% of municipal solid waste from landfills through recycling 82% of this waste, and processing 19% to use as energy sources [8]. In Lebanon as well, most of the generated municipal solid waste ends up in dumpsites and landfills while 15%-20% is recovered as recyclable or reusable materials [9].

OUTCOMES

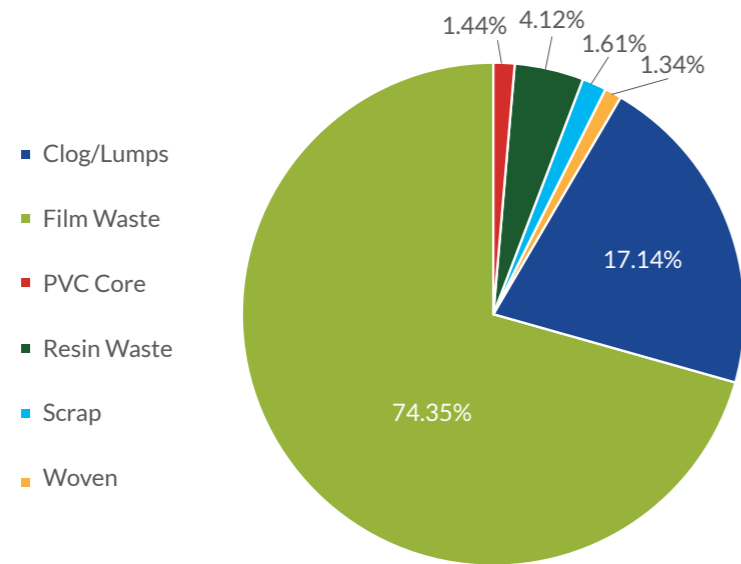
As a leading manufacturer of plastic raw materials, films, and packaging, INDEVCO and subsidiary, Napco National, address plastic waste through industrial and commercial plastic scrap recycling in Lebanon and Saudi Arabia. Napco National's Recom and INDEVCO's Bazyoun facilities use closed-loop mechanical recycling to generate high-quality recycled plastic materials that plastic converters can use to replace virgin fossil fuel-based raw materials. Recom facilities in Dammam and Jeddah offer petrochemical companies 24/7 on-premises collection, as well as sorting, washing, and regenerating recycled resins from post-industrial plastic scrap.

In 2019, the plants increased plastic scrap collection by 15.76%, Recom by 11%, and Masterpak and its Bazyoun recycling plant by 58.5%. In 2020, however, plastic scrap collection dropped by over 60% due to the high scarcity of feedstock in the Saudi Arabian market. In 2021, our recycling plants brought plastic scrap collection up 10% which they maintained in 2022.

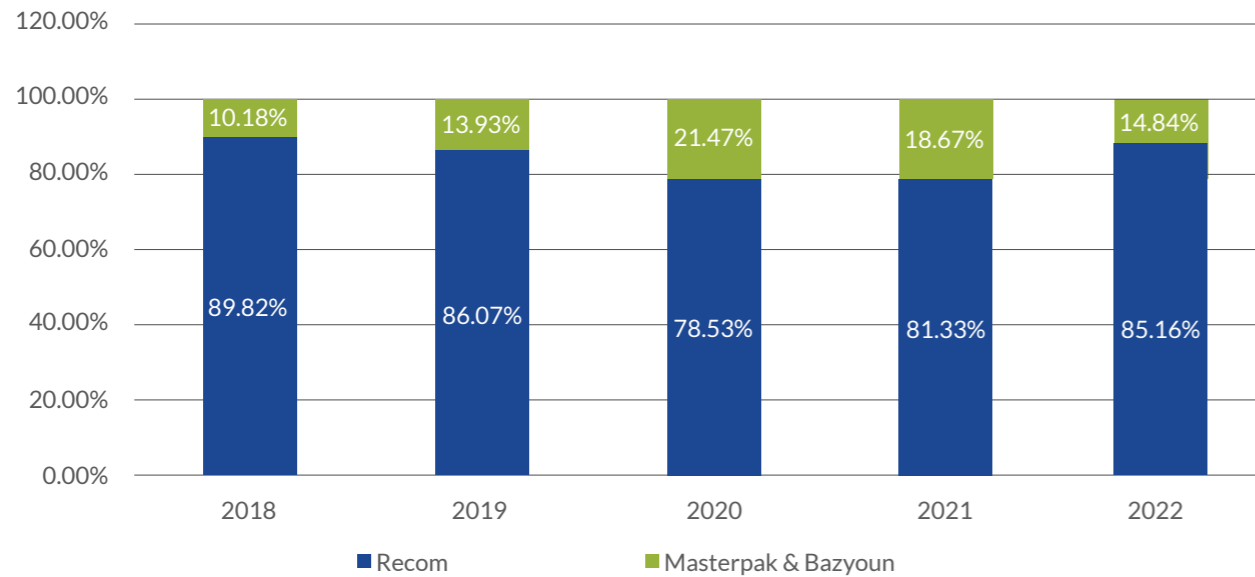
In 2020, Recom expanded production through a new machine and upgraded recycling line. In 2021, Masterpak facility in Zouk Mosbeh transferred its plastic recycling machine to the Bazyoun facility, increasing capacity by 40% from 2019. Bazyoun reached 100% capacity by Q2 2020. Bazyoun plastic recycling services focus predominantly on industrial and agricultural plastic scrap, including plastic waste generated from the production process of sister company Masterpak and post-consumer plastic scrap collected from local third-party collectors for conversion by sister companies. Although both plants invested in expanding operations, production of regenerated resin dropped gradually in 2019 and 2020, falling 8.5% in comparison to 2018. This coincides with various global situations including the COVID19 pandemic and the drop in feedstock. By 2022, however, our recycling plants brought back up production of regenerated resins to the pre-COVID19 volume.

In addition to expanding recycling operations, INDEVCO's plastic recycling facility in Bazyoun upgraded two manufacturing technologies with a new energy efficient line that reduces waste generation and improves efficiency. The plant also commissioned a PV system to power the plant with solar energy and installed a water treatment system to improve the water cycle by 20% at the washing plant.

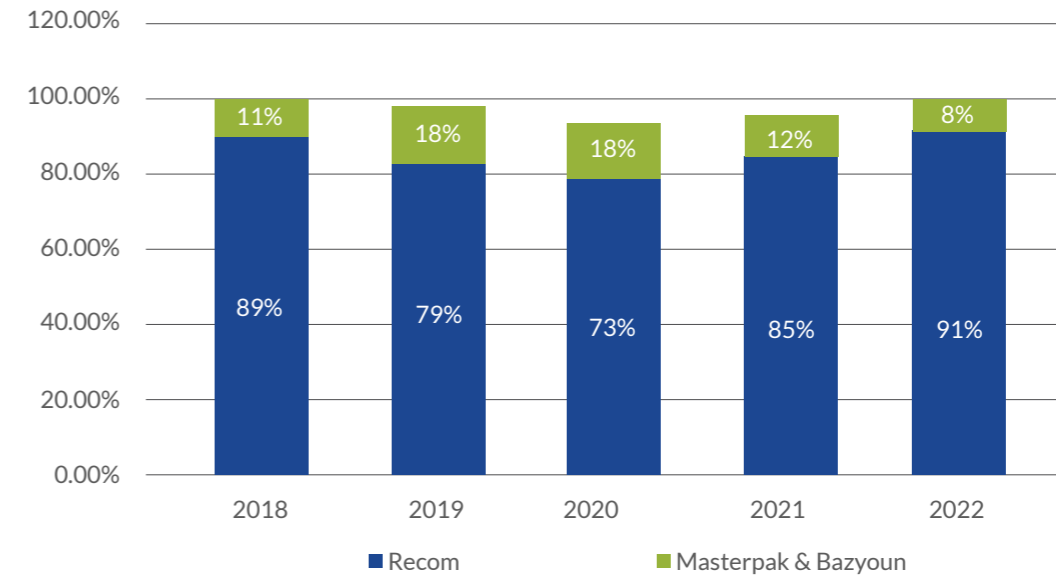
Plastic Scrap Collected by Type 2019-2022



Plastic Scrap Collection by Plant



Actual Regenerated Resins in % vs 2018*



*Taking 2018 as baseline data for comparison, percentages in 2019, 2020, 2021, and 2022 are in comparison to the total volume of regenerated resins produced in 2018.

Clean Ups to Divert Plastics from Environment

Sanita Supported Human Environmental Association for Development Zero-Plastic Initiative for Lebanon Coast

On World Environment Day 2021, Sanita HPC supported the Human Environmental Association for Development beach clean-up initiative held on 29-30 May.

The beach clean-up ran across Jbeil, Blat, Kartaboun, Mastita, Moncef, and Fidar in Lebanon. During the clean-up event, volunteers were able to collect 1,000 large bags and 200 medium bags of plastic waste from the shores. The initiative was a part of the Sea Without Plastic project implemented with the European Union, the Lebanese Consortium for the Environment, and the Environmental Movement. It also aligned with the 'BeMed' commitment to a Mediterranean Sea free of plastic.

In addition, Sanita HPC took part in the Hiking and Cleaning project on 8 August covering Beja to Maad in Lebanon. The initiative was implemented with the youth of Beja, Ghabaleen, Ain Kafa and Maad. During the project, Sanita HPC with the youth volunteers collected 1,200 extra-large bags of waste for recycling.



See full article at <https://news.napconational.com/corporate/napco-national-supports-hejaz-ploggers-clean-efforts-jeddah/>

<https://news.napconational.com/corporate/napco-national-hejaz-ploggers-launch-first-world-cleanup-day-initiative-saudi-arabia/>

Napco National Supported Hejaz Ploggers Clean-Up Efforts in Jeddah

Starting in 2019, Napco National partnered with Hejjaz Ploggers, an eclectic team of joggers working to create a litter-free environment, to launch World Clean-Up Day initiative in September. For four consecutive years, Napco National has supported efforts to clean up the beaches and corniches of Jeddah.

In 2020, the initiative brought together over 200 volunteers, while in 2021 it expanded to bring over 500 volunteers from different ages and backgrounds to jog and pick up litter (plogging) around the beaches. Waste collected during the event was segregated and sent to corresponding and related recycling facilities in the Kingdom. In 2022, the initiative targeted two beaches: Bahador Resort offered a scuba cleanup with 12 divers collecting 50 kg of mixed waste; while Khaleej Salman beach welcomed a new record of 1,050 participants, 50% of whom were students, collecting 856 kg of plastic, 123 kg of glass, and 67 kg of metal in less than 90 minutes.

Napco Sustainability Program supported Hejaz Ploggers & volunteers by providing the essentials needed for World Cleanup Day activities, including uniforms, garbage bags, gloves, and trucks to transport the collected waste to the relevant recycling plants. Volunteers collected plastic litter from around the beach and sent it to Napco National recycling plant, Recom, supporting a circular economy of plastics in the Saudi Arabia.

<https://news.napconational.com/corporate/napco-national-and-sanita-sponsor-saudi-arabia-second-world-cleanup-day/>

<https://news.napconational.com/corporate/napco-national-sponsors-world-cleanup-day-for-the-3rd-year/>

Napco National Supported 'Green Roads' Initiative with King Abdullah University of Science & Technology

In 2022, King Abdullah University of Science & Technology (KAUST) in Jeddah, Saudi Arabia partnered with Napco National's Recom recycling plant, Dow Chemical company, and Averda to launch the 'Green Roads' initiative.

Over 20 Napco National employees joined more than 300 volunteers to collect 860 kg plastic waste from the roads surrounding the university, which will be recycled at RECOM plant into a new bitumen modifier that enhances the quality of the roads and extends their lifespan. The bitumen will be used to build green and sustainable roads under the management of the Dow Chemical Company.



See 'Innovating Sustainable Products - Partnerships - Napco National & Dow Chemical Partner for Sustainable Roads in 2020' on page 133

See full article at <https://news.napconational.com/corporate/napco-national-employees-participate-in-the-green-roads-event-sponsored-by-king-abdullah-university-of-science-and-technology-kaust-and-in-collaboration-with-its-partners-recom-do/>

Napco National Participated in MODON & Jeddah's Social Responsibility Association #بيئة_عامة Initiative

Napco National employees joined 500 volunteers to help clean up Jeddah Industrial City streets. The #بيئة_عامة initiative was launched under the patronage of the Saudi Authority for Industrial Cities and Technology Zones (MODON) and Jeddah's Social Responsibility Association.

The initiative aimed to improve the quality of life within these areas, promote the concept of recycling, emphasize the importance of volunteer work, and the value of joint efforts between government and private sectors, highlighting the role of industrial facilities located there in preserving the environment.

See full article at <https://news.napconational.com/corporate/napco-national-stars-at-industrial-facilities-participate-in-initiative-launched-to-clean-jeddah-city-streets/>

Recycling at Offices & Operations

INDEVCO Launched “Be Part of the Solution, not the Source of Pollution” Office Waste Segregation Initiative in Lebanon

On Global Recycling Day, 18 March 2022, INDEVCO launched “Be Part of the Solution, not the Source of Pollution” office waste segregation and recycling initiative across all INDEVCO Business Units in Lebanon. For the initiative, INDEVCO collaborated with L’Ecoute Recycling, an NGO that works with and for people with disabilities (namely the hearing-impaired).

Paper waste (Pa+Ca)	332 L bag, 684 XL bag, 24 XXL bag
Plastic waste (PET+PI)	132 L bag, 358 XL bag, 3 XXL bag
Nylon waste	257 L bag, 62 XL bag
Mixed items	15 L bag, 222 XL bag
Glass waste	1 XL bag

INDEVCO corrugated manufacturing company, Unipak, provided 700 corrugated waste sorting bins for the separation of plastic, paper, metal, glass, and e-waste that we distributed across all INDEVCO business unit offices, floors, and cafeterias. L’Ecoute association handles the collection, further segregation, and recycling of the waste. Any revenue generated from recycling certain materials are used by the NGO to support their core mission.

By segregating the office waste, INDEVCO encourages employees to be more responsible and sustainable citizens, care for the environment, and help L’Ecoute achieve their humanitarian mission. We also encourage employees to segregate waste at home and feel free to bring this waste to the office bins for recycling, extending the initiative’s impact to the homes of employees.

Napco National Launched ‘Zero-Waste Offices’ across Saudi Operations in Jeddah, Dammam & Riyadh

On World Environment Day 2020, 5 June, Napco National partnered with Naqaa Sustainability Solutions company to launch its ‘Zero-Waste Offices’ initiative at its Jeddah/Hira offices under the slogan #WeAreGreen. The primary goal of this initiative is to promote the importance of recycling and sustainability.

From July 2020 - December 2022, Napco National collected 2.42 MT of recyclable waste (paper & plastic) for recycling

Naqaa Sustainability Solutions company provided containers to segregate office waste by type (plastic, paper, and general waste), as well as collected the waste monthly and sent to recycling at the Waste Collection and Recycling Company Limited (Wasco) in Jeddah. In addition, Napco National distributed multi-purpose fabric bags to all employees to reduce the use of single-use plastic bags.

On Global Recycling Day, 18 March 2022, Napco National expanded its ‘Zero-Waste Offices’ initiative to include its head offices in Dammam and Riyadh. On World Environment Day 2022, waste segregation bins were distributed to all branches in Saudi Arabia.

See full articles at <https://news.napconational.com/corporate/napco-sustainability-program-towards-a-zero-waste-offices-environment/>

<https://news.napconational.com/corporate/napco-national-presents-the-environmental-achievements-of-its-zero-waste-offices-program/>

<https://news.napconational.com/corporate/coinciding-with-the-global-recycling-day-napco-national-launches-zero-waste-offices-program-in-head-offices-branches-in-the-kingdom-of-saudi-arabia/>

<https://news.napconational.com/corporate/zero-waste-offices-a-napco-sustainability-program-initiative-now-in-dammam-and-riyadh-branches/>

INDEVCO Flexible Packaging Companies Recycle Sludge Waste

INDEVCO Flexible Packaging division member companies, Masterpak Nile in Egypt and Interstate Inks in Lebanon are sending sludge waste for treatment and recycling. Interstate Inks’ residual solvents and water are being recycled and re-used while Rotopak in the UAE annually reclaims over 85 MT of solvent from waste inks to reduce hazardous waste in line with Dubai municipality guidelines.

Partnering for Circularity

Alliance to End Plastic Waste

In 2020, we joined the Alliance to End Plastic Waste (AEPW), partnering with other key players in the industry, including suppliers and brands, to find joint solutions to the plastic waste problem globally. With plastics playing a fundamental role in multiple industries and offering a lightweight, durable, and customizable solution that is not easily replaceable, major companies across the plastics value chain came together to find real solutions to the plastic waste issue by supporting four strategic pillars.

Infrastructure	Innovation	Education & Engagement	Cleanup
Supporting the development of infrastructure systems that capture plastic scrap and divert waste from the environment See 'KSA Packaging Working Group' on page 116	Innovating solutions to address the plastic waste issues, such as redesigning products for circularity and developing advanced recycling technologies See 'Innovating Sustainable Products' on page 124	Empowering communities with knowledge to support the development of circular solutions	Engaging communities in cleanup activities to promote waste collection, segregation, and recycling See 'Clean Ups to Divert Plastics from Environment' on page 112

See full press release at www.prnewswire.com/ae/news-releases/five-companies-join-membership-ranks-to-end-plastic-waste-805627344.html

In 2021, INDEVCO and subsidiary Napco National played an active role in setting up the Regional Task Group (RTG) for the Middle East and North Africa region. INDEVCO Board Member and President of Napco Packaging, Marwan Frem, took on the role of Co-Chair for the RTG alongside Nicholas Kolesch, Vice President - Projects. The role of the RTG is to translate the AEPW global strategy into the regional context and identify key areas of work in line with the AEPW's 5 areas of focus: engaging with cities, creating value for recyclates, advanced recovery and recycling, design for circularity, and societal behavior.

See full article at <https://news.indevcogroup.com/corporate/indevco-co-chairs-alliance-to-end-plastic-waste-middle-east-north-africa-regional-task-group/>

In 2022, AEPW nominated INDEVCO Consultancy Sustainability Strategy & Governance Manager, Gacia Apikian, to serve on an expert panel to evaluate submissions to the 'Circular Solutions for Flexibles' competition and help select innovative solutions to support in solving the plastic waste issue across the value the chain. As a judge on the evaluation panel, we reviewed, scored, and provided feedback on the applications assigned to us using the scoring rubric. After the panel reviews, five finalists were selected from which one project won the \$3 million USD support during the pitching at the live event in New York in November. Submissions ranged from advanced recycling technologies/tools, innovative product designs, plastic waste recovery/collection tools, university research studies, etc.

See more at <https://www.circularesolutions.theallianceprize.org/>

KSA Packaging Working Group

In 2021, Napco National joined the Kingdom of Saudi Arabia (KSA) Packaging Working Group alongside suppliers, major brands, and other key industry members. The KSA Packaging Working Group was established under the Federation of Saudi Chambers to address the development of the circular economy for post-consumer packaging in Saudi Arabia. In 2022, the KSA Packaging Working Group signed an agreement and began working with the National Center for Waste Management (MWAN) to set regulations for the circularity of packaging in Saudi Arabia.

INDEVCO North America is a member of the Sustainable Packaging Coalition



References:

- [1] Circular Economy in Cities of the MENA Region: Prospects and Challenges for Material Circularity. (2021) Friedrich Ebert Stiftung. <https://library.fes.de/pdf-files/bueros/amman/18984.pdf>
- [2 & 5] Embracing the circular economy: new ME and global initiatives. World Future Energy Summit. <https://www.worldfutureenergysummit.com/en-gb/future-insights-blog/embracing-the-circular-economy-new-me-and-global-initiatives.html>
- [3] How a circular economy could save the GCC \$138bn by 2030. (2019) Arabian Business. <https://www.arabianbusiness.com/politics-economics/413126-how-circular-economy-couldsave-the-gcc-138bn-by-2030>
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- [6 & 8] Saudi Arabia - Country Commercial Guide - Waste Management. (2022) Trade.gov. <https://www.trade.gov/country-commercial-guides/saudi-arabia-waste-management>
- [9] Energy and Waste Solutions. United Nations Development Programme (UNDP). <https://www.undp.org/lebanon/projects/energy-and-waste-solutions-0>
- [10] To calculate the approximate landfill surface saved, we followed the following assumptions
 - When disposing, plastic waste would be compressed in bales
 - Each waste bale holds 400 kg (0.4 MT) with a width of 110 cm, height of 80 cm, and length of 130 cm
 - Volume of bale = LxWxH= 1.144 m³
 - Landfill area per bale = LxW= 1.43 m²
- [11] United States Environmental Protection Agency (2015, March). WARM Version 13: Exhibit 4, p. 5. <https://www3.epa.gov/epawaste/conservation/tools/warm/pdfs/Plastics.pdf>
Net landfilling emissions = 0.04MTCO_{2e}/Short Tonne = 0.0363 MTCO_{2e} /tonne
- [12] Pusch, Thema Umwelt, 1/2009, p. 3 <https://timeforchange.org/plastic-bags-and-plastic-bottles-CO2-emissions>
Derivation: Recycling of plastic saves on average about 2.5 kg CO₂ per kg of plastic (~2.5 MTCO₂ per MT of plastic)



INDEVCO

2019-2022 Global
GRI-Referenced Sustainability Report

published in 2023