OUR COMMITMENT to a Circular Economy

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

SUSTAINABILITY CONTEXT

INDEVCO Flexible Packaging and Napco National Flexible Packaging are
developing internal circular economies in Lebanon and Saudi Arabia, respectively,
to increase the uptake of plastic scrap collection and recycling. The divisions
have invested in recycling facilities and scrap collection, sorting and cleaning
equipment.

Currently, the plastics plants use closed loop mechanical recycling to
channel collected scrap into the same application or into applications requiring
similar quality recycled resins, rather than combining all scrap into lower value final-use
applications that cannot be recycled again.

B2B plastic films comprise one of the most attractive segments for recycling cost-
benefit balance, as The Ellen MacArthur Foundation reports in The New Plastics
Economy. Immense opportunity exists for films and bags that do not fit into existing
recycling streams: 95% of the value of plastic packaging materials is lost after
first-use; 72% of plastic packaging is not recovered with 40% landfilled and 32%
leaking out of the collection system.¹

And only 5% of material value is retained
after considering loss during sorting and reprocessing.²

With Saudi Vision 2030 energizing a range of industries, Saudi Arabia’s Public
Investment Fund (PIF) announced a plan in October 2017 to establish The
Saudi Recycling Company as a waste
management government enterprise
to support and operate investments in
domestic recycling sector projects in
alliances with private-sector companies.³

The Gulf Petrochemicals & Chemicals
Association (GPCA) emphasizes
further that developing the recycling
infrastructure in Gulf Cooperation Council
(GCC) countries, among the largest
producers of plastic resins in the world,
could add as many as 10 new jobs per ton
of plastic waste.⁴

By reducing virgin raw material
consumption and increasing reuse and
recycling, INDEVCO and Napco align
with UN Sustainable Development
Goal SDG12 Responsible Consumption
and Production.⁵ We will also focus on
developing partnerships with government
entities, resin producers, and industry
associations to further plastic scrap
management and recycling infrastructures,
in line with SDG17 Partnerships.⁶
OUTCOMES
Collection, Sorting & Washing of Plastic Scrap

Impact

Invested in new recycling line and a high-speed turbo mixer in Saudi Arabia, as well as a new washing and recycling plant in Lebanon

Maintained steady collection of recyclable plastic scrap, of which 49.6% was from sister companies in Saudi Arabia:

- Plastic films, clogs and lumps, bumpers and non-woven diaper trim
  - Saved 58,855 m² in landfill area
  - Reduced greenhouse gas (GHG) emissions associated with landfilling by 597.6 metric tons of carbon dioxide equivalent (MTCO₂E)

Resin waste
- Converted 100% by sister companies

PVC Core waste

In 2017, Napco Recom Branch collected 96% of the group’s post-industrial plastic scrap recycled, while sister company Masterpak in Lebanon collected 4%.

Resin waste was washed and sent for converting into quality recycled plastics. Film, clog, lump, non-woven, and bumper waste were segregated by polymer family and color, then ground, washed and sent for conversion into premium applications. PVC core waste was sold for reuse.

Napco continues to invest in equipment infrastructure and enlarge scrap collection geographically within Jeddah in western Saudi Arabia and Jubail and Dammam in the Eastern Province. The operation optimizes sorting by material and color and includes both dry and wet washing capabilities to ensure the possibility of converting premium applications.

For petrochemical producers, Napco offers 24/7 on-premises collection and recycling of polymer scraps. It also collects diaper pack trim from sister companies within Napco Consumer Products division, agri and strawberry films from local farms,
and post-commercial films from shipping agencies, warehouses and commercial centers.

In Lebanon, Masterpak grew its recycling capabilities by launching a new plastics recycling plant in Bazyoun in September. This plant separates and washes agri films from local growers and post-consumer waste purchased from local 3rd party collectors.

By diverting plastic scrap that would have been landfilled or incinerated into useful applications, the plants support UN SDG12 (Target 12.5) to substantially reduce waste generation through recycling and reuse.9
In 2017, Napco Recom Branch in Saudi Arabia and Masterpak in Lebanon converted post-industrial plastic scrap into recycled resins. Sister companies incorporated nearly 39% of these recycled resins into plastic films, thermoforming sheets, bitumens, drip irrigation pipes, injection molding grates and pallets. Agri and strawberry films, for example, were reconverted into mulch film and silage covers, while diaper trim pack was converted into films for the bitumen industry. Other resins were used to produce garbage bags and bin liners, as well as irrigation pipes. INDEVCO Polymer Application Center for Technology (PACT) works with the group’s recycling centers to recycle and compound difficult polymers, such as multi-layer barrier films, to selectively streamline the plastic scrap for higher value converting. Napco is further developing new ranges of compounded and recycled products for blown films, thermoforming films, and injected molded products. Regenerating plastic scrap into quality resins replaces virgin resins and promotes sustainable and efficient use of natural resources, in line with UN SDG12 (Target 12.2).11

Increased production of recycled resins in Saudi Arabia and Lebanon by 62.5% from 2016
Reduced GHG emissions by approximately 75,235 metric tons of carbon dioxide equivalent (MTCO₂E)¹⁰

Sister companies converted 38.6% of recycled resins
Began regenerating recycled resins from agricultural films and post-consumer waste in Lebanon at new recycling plant in Q4 2017
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REFERENCES


7. To calculate the approximate landfill surface saved, we followed the following assumptions
   a) When disposing, plastic waste would be compressed in bales
   b) Each waste bale holds 400 kg (0.4 MT) with a width of 110 cm, height of 80 cm, and length of 130 cm
   c) Volume of bale = LxWxH= 1.144 m3
   d) Landfill area per bale = LxW= 1.43 m2

   Net landfilling emissions = 0.04MTCO2E/Short Tonne = 0.0363 MTCO2E/tonne
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10 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 CO$_2$ per kg of plastic (~2.5 MTCO$_2$ per MT of plastic)