

Jordan **B**ottle **R**ecovery **P**roject

Development Inc.

About Development Inc

We are an innovative circularity and recycling solution-provider in the commercial and public sector in UAE, Lebanon, Jordan and Egypt.



1. Operating our *patented technology for recycling plastics and glass rejects (ROGP)*
2. *Innovative collection of recyclables in collaboration with leading multinational FMCGs, UN and local Governments*
3. *Innovating Net Negative end products in partnership with international labs and commercializing at large scale*
4. Pioneers and leading experts in MENA on the *Reverse Vending Machines (RVM)* technology
5. Project managing large construction and demolition waste projects

ACHIEVEMENTS

In 3 years of operation, we have made considerable achievements towards a more sustainable future

8,000 TONS

of plastic diverted from landfills

25,000 TONS

of glass diverted from landfills

400,000 TONS

of rubble recovered as part of the Beirut explosion cleanup project led by us

500+ Products

made of ROGP installed

2 National Projects

To collect, treat and recycle plastics and glass (Lebanon and Jordan)

100+ RVMs

managed by Development Inc + 700 RVMs installed

~6,000

collection points including hotels, bars, restaurants, schools, supermarkets and residential apartments

Regional alliance

Signed regional alliance with the UN, Nestle, PepsiCo, Diageo, IBI to work together in 22 countries. Alliance is still growing

TRACTION

We have drawn a lot of attention from various organizations in private sector, media, academic institutions and international organizations

University of Pennsylvania – World’s leading Materials Library

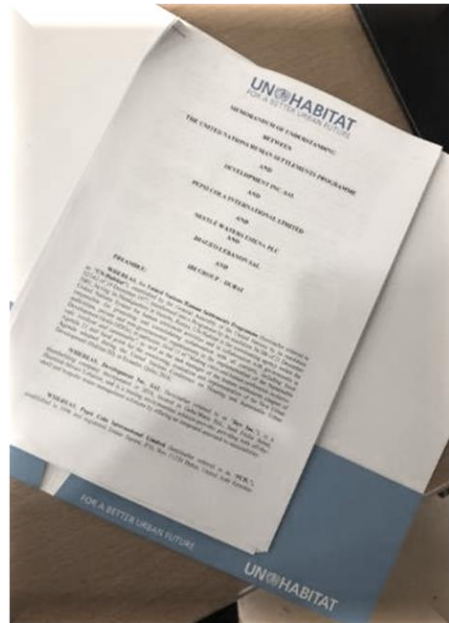
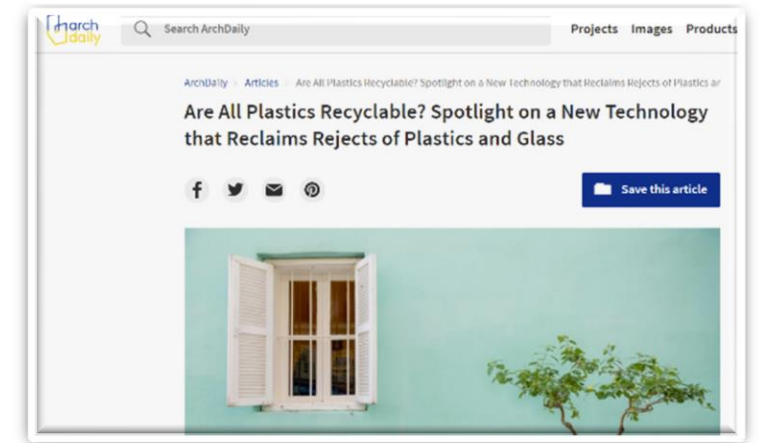
Email:

egw@pobox.upenn.edu

Message:

I am writing to you on behalf of the Penn Libraries’ Fisher Fine Arts Library. We recently opened a new materials resource library and we would very much like to include a sample of your ROGP composite material in our new collection.

ArchDaily – Largest online architecture portal



MENA Plastic Waste Alliance Agreement with

- UN HABITAT
- Nestle
- PepsiCo
- Diageo
- IBI Group

World Economic Forum video about ROGP



“Let me Breathe” story about ROGP



OUR PARTNERS

We are collaborating with multinationals, international organizations, NGOs and governmental entities

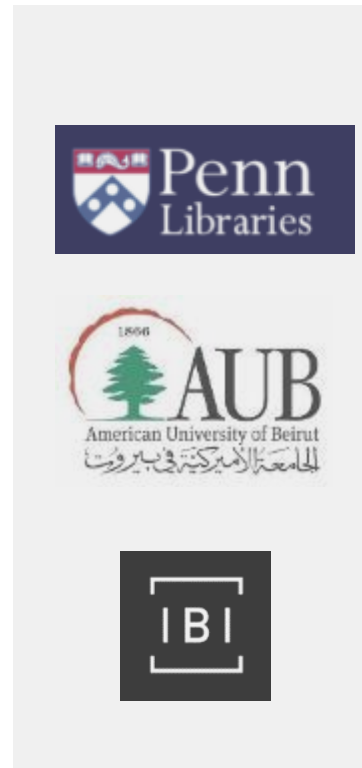
Commercial Partners



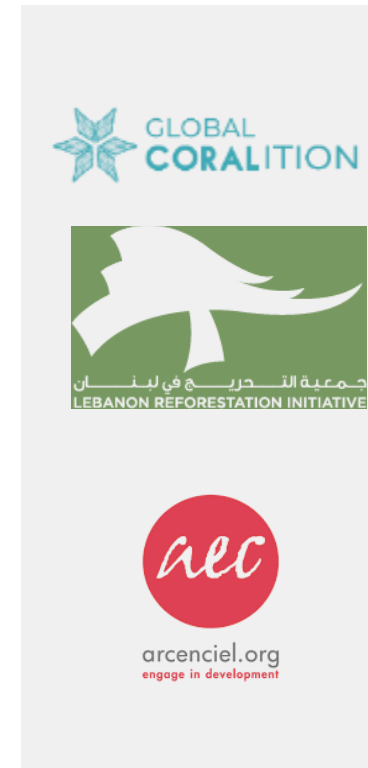
International Organizations



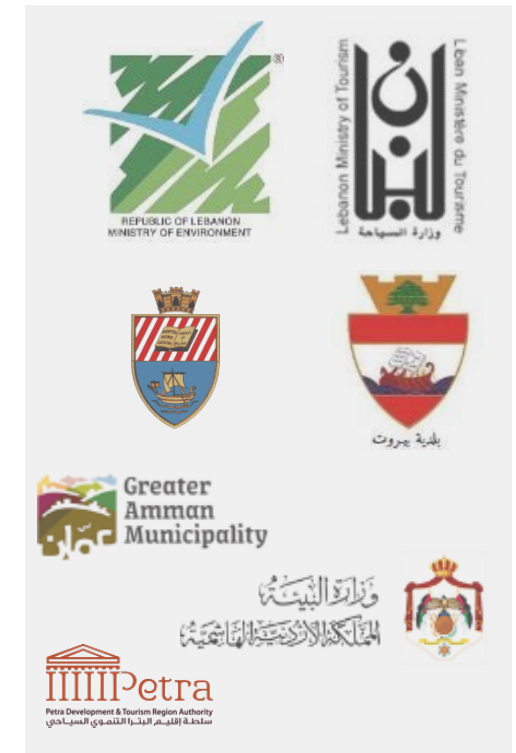
Technology research partnerships



NGOs



Government Entities



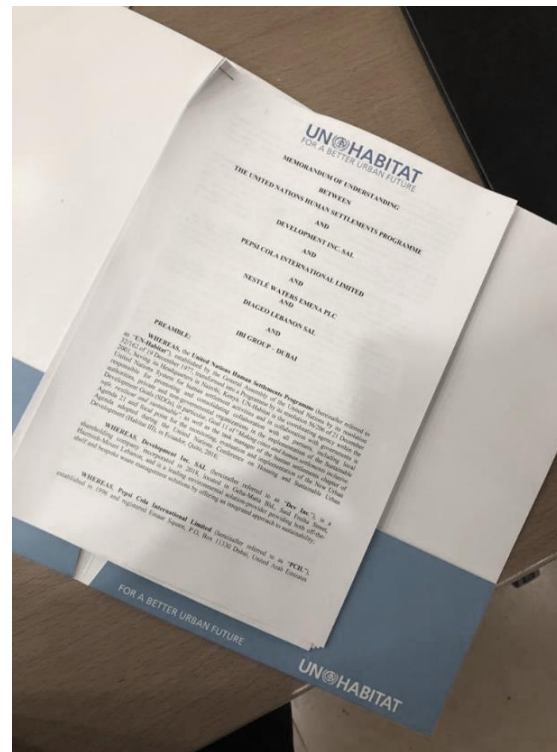
MENA REGIONAL ALLIANCE

Signed a regional alliance agreement to work towards sustainability across MENA region



Objectives

- Facilitate extended producer responsibility in MENA (KSA, UAE, Jordan, Algeria, Morocco)
- Support for a wide-scope joint collection and recycling initiatives in selected countries
- Invest in recycling infrastructure
- Work on completing the currently lacking R-PET regulations for food grade packaging
- Introduce innovations to tackle the issues of plastic rejects and low value plastics
- Create incentives for the public and F&B locations to encourage recycling



Background – Municipal Solid Waste in Jordan

Jordan currently has no developed system or infrastructure for effective collection, treatment and recycling of plastic waste and other recyclables.

Around 2.7M tons of solid waste is generated in Jordan per year, estimated to increase to 5.2M ton by 2034, according to the study by UNDP

- 48 % of municipal solid waste is landfilled,
- 45 % is openly dumped
- 7 % is recovered / recycled

Plastic waste as a share of total municipal solid waste is 16% resulting in an estimated 360,000 tons of annually

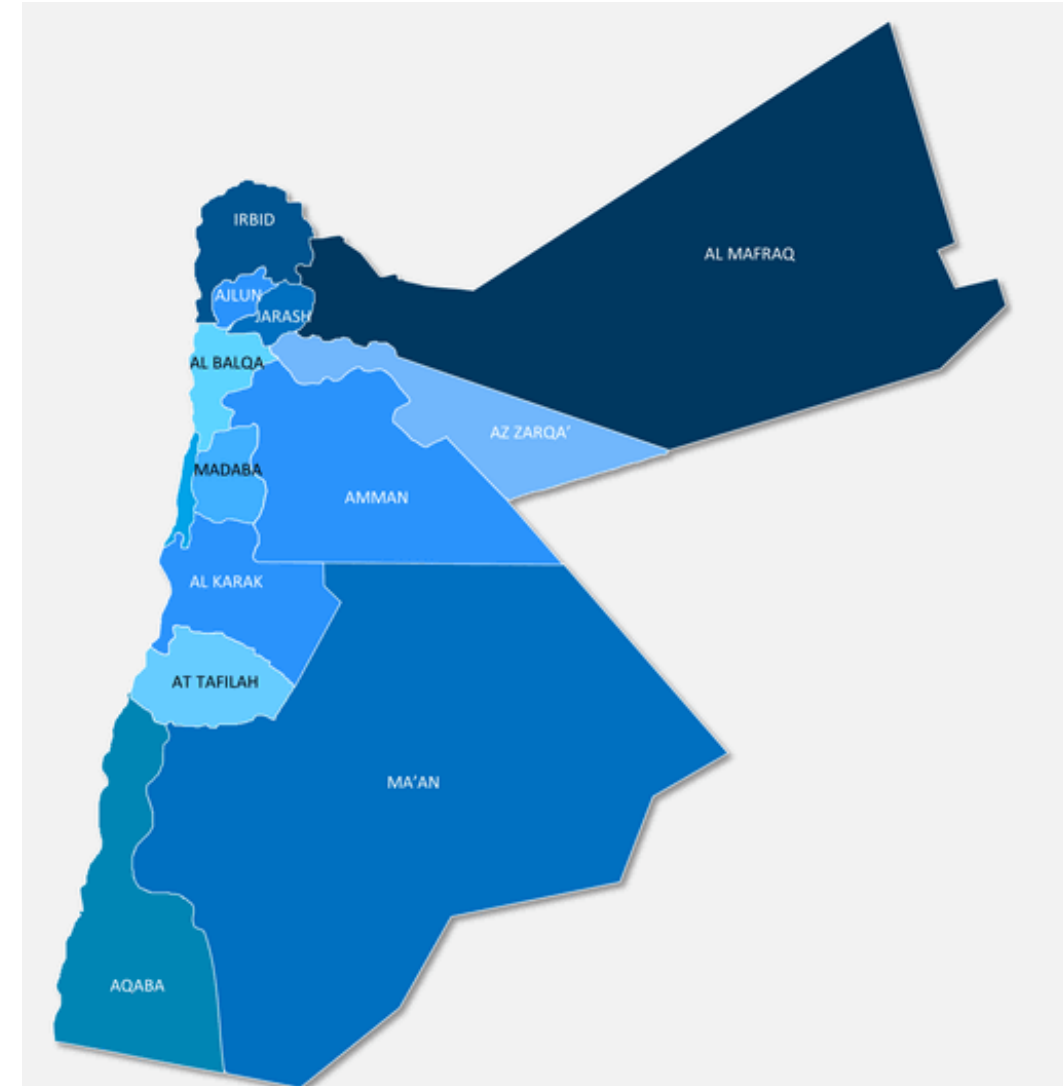
The participation of the local Jordanian private sector in the different working fields of MSW is still limited and very modestly explored. Almost all MSW recycling activities in Jordan, present and past, are considered pilot projects and small-scale interventions.

The vast majority of the recycling pilot projects in Jordan are mostly initiated and supported by the NGOs and other international organizations, for short and/or mid-term funding schedules.

6,000 – 7,000 individual waste pickers collect waste directly from the MSW collection containers dispatched over the urban cities, or the MSW delivered to the official landfill/dumpsites are sorted by them

Legislation for the introduction of an Extended Producer Responsibility (EPR) system for packaging materials is being developed and expected to come into force during 2023, which created a significant momentum across both the Government and private sector to address the plastic waste problem.

9/24/2022





Jordan **B**ottle **R**ecovery **P**roject **S**cope

SUMMARY APPROACH

We built a combination of various collection channels to meet our ambitious targets, supported with innovative enabling tools and methods

Collection Channels		A. Reverse Vending Machines	B. Bottle Recovery Network	C. Supporting Existing Collection Schemes	D. Recycling					
		A.1 Phase 1 - RVMs – Carrefour (two options)	A.2 Phase 2 - RVMs – GIZ	A.3 Phase 3 - UN Habitat <ul style="list-style-type: none"> Commitment from regional alliance (7 RVMs) 	B.1 Collection locations HORECA sector - 250 shortlisted locations (200 for plastics and 50 for glass) + 50 new locations yearly increase	B.2 Serve HORECA sector out of Amman using partner NGOs	C.1 Partnering with local environmental NGOs (7 NGOs and 2 startups)	C.2 Partnering with Greater Amman Municipality & GIZ	C.3 Support Petra Authority Sustainability Efforts	C.4 Informal sector collection (improving micro economy)
Enablers	Supporting Tools	Mobile plastic crushers	Compaction cages	Custom made one-way bins	ROGP technology					
	Behavioral levers	RVM redemption scheme	HORECAS sector ranking in partnership with Ministry of Tourism	Incentives for participating locations	BI analytics	Project reporting				
	Recycling Technology	ROGP (“Rejects of Glass and Plastics”)								

CONTROL ENVIRONMENT

A strong control framework is put in place to ensure control of the operations, accuracy and transparency of the collected quantities- Aiming on “Bottle to Bottle” mechanism

Collection schedule



Location control



Weighing control



Analytics and reporting



Key controls:

- Route plan with schedule of visits for Operations team
- GPS monitoring of the route and stops

Key controls:

- Perform bar-code reading of the bin using the handheld device
- Each bin in a particular outlet is marked with a barcode to ensure that no locations are missed

Key controls:

- Recyclables are weighed on a mobile scale before off-take
- Scale wirelessly connected to the handheld device
- Weight recorded instantly in the handheld and the cloud server

Key controls:

- End-of-day upload of handheld data to a cloud tool
- Analytical data and dashboard available for viewing to project participants



Enabling Features

BEHAVIORAL LEVERS – RVM REDEMPTION SCHEME

Creation of effective redemption schemes for the RVM projects aimed to increase project collected recyclables and provide broad visibility



Develop a joint, fraud-free and reliable redemption scheme for the network of RVMs.

The scheme is based on a point system which would allow users to exchange their points earned through collection of the bottles and cans for a Coca Cola product. In this way, people are incentivized to collect more, in addition to promoting brand loyalty.

The scheme should allow for Coca-Cola promotions when needed, such as happy hours, preferred treatment for certain brands etc.

The exact mechanism of redemption as well as the value of points will be jointly determined during the course of project.

Implementing HORECA Sector Ranking System for green locations



In collaboration with the relevant Ministry of Tourism and leading restaurants, bars and hotels, Development Inc. will initiate its industry backed ranking system for HORECA players in the countries participating in the project. The ranking system will list these locations on the following criteria:

- “Green Location” – for outlets where collection of plastic packaging waste exceeds a predefined threshold

The ranking system will act as a driver for new locations to join the platform, as interested HORECA players will be interested to be well ranked by the Ministry of Tourism). This will also encourage participating outlets to exert more efforts in meeting sustainability targets.

Project KPIs for consortium partners and HORECA sector participants will be authenticated by UN HABITAT and displayed on their landing page for Project Zero.

TOOLS - MOBILE PLASTIC CRUSHER

We will deploy our in-house developed mobile crusher to increase vehicle efficiency by 600% and reduce carbon emissions



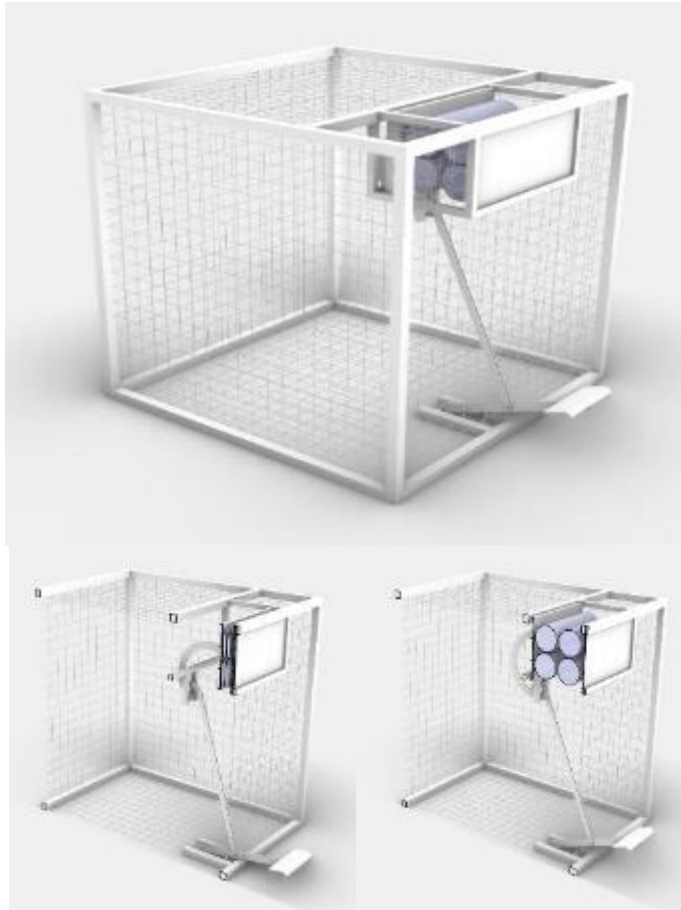
This is a unique solution designed and developed in-house by Development Inc. This technology can help in reducing the volume of the collected plastic and aluminium can up to six (6) times / increase the vehicle capacity by 600%, while keeping the crushed bottles and cans isolated and contained against liquid spillage and bad odours.

We will install the plastic crusher in the collection vehicle and consequently reduce the number of vehicles needed to reach Coca Cola targets and at the same time reduce the needed trips done by the vehicle to unload the collected recyclables.

This also will directly decrease the projects' carbon footprint as a result of decreasing the pollution generated from several vehicles and more trips compared to when conventional collection methods are applied.

TOOLS - COMPACTION CAGES

We have developed compaction cages which decrease volume by 400%, thus reducing number of required vehicle trips and reducing carbon footprint



Development Inc. has developed this tailor-made solution with the intention of sorting out the issue of low collection weights for plastic bottles, and solving the lack of storage areas in targeted selected locations.

Development Inc. compaction cages increase operation efficiency by increasing collected weights, decreasing the frequency of needed collection trips per location and by increasing the collection truck efficiency by 400%. This upgrade will also assist in showcasing Coca Cola as an innovative and sustainable market leader.

TOOLS – ONE-WAY BINS

Our unique one-way bins are made of project's collected plastic rejects using the patented ROGP technology



Our modified bins allow easy access to drop in the bottles without the need to touch the bin.

Since our bins are one-way, it prevents unauthorized access and removal of the collected recyclables from the bin.

The bins come with a pre-installed locking system, which allows them to be emptied only by our team when they are performing the collection from the location where the bin is located.

BEHAVIORAL LEVERS – INCENTIVES

Various practical and low-cost incentives can significantly impact behavioral aspects of recyclables collection

We propose a combination of two types of incentives:

Residential areas:

Repay communities for their participation in the collection schemes by placing public use products made of recycled plastics (ROGP technology). The budget for these products could be predefined based on certain threshold of collected recyclables and branded by Nestle Waters. By this, Nestle Waters would also send a clear message that it is putting in the best effort to avoid any low-value plastics and rejects being thrown away in the landfills

Commercial areas:

In addition to the ranking system explained on the previous page, the F&B outlets can be rewarded by a special volume rebate linked to the collection quantities.



Smart BI analytics reporting based on RVM redemption schemes



Building on the back of the RVM redemption scheme, we will be producing quarterly analytics reports for Nestle Waters .

The analytics would include the following types of data:

- Demographic analytics (broad age group, area of residence, gender, etc.)
- Product related (brand, product, packaging type)

These reports will enable Nestle Waters to more effectively analyze its customer base, their recycling habits, product preferences and any correlation between these factors.

BEHAVIORAL LEVERS – PROJECT MANAGEMENT AND REPORTING

We apply an agile project management approach and transparent KPI reporting

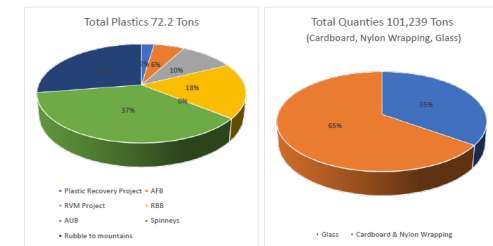
Development Inc. will project manage all the activities in scope in alignment with Nestle Waters.

In addition, we will also manage administrative aspects of the project.

Customer support and hotline facilities for all matters relating to RVM operations and collection of recyclables from designated locations will be available 12 hours per day / 6 days a week. All complaints will be dealt with within 1 working day.

We will prepare and distribute monthly progress reports within 15 working days following the month end. The progress reports will contain:

- weights collected (in tons);
- collected recyclables by type;
- collected recyclables by location;
- Collected recyclables by channel;
- bottlenecks encountered and proposed solutions



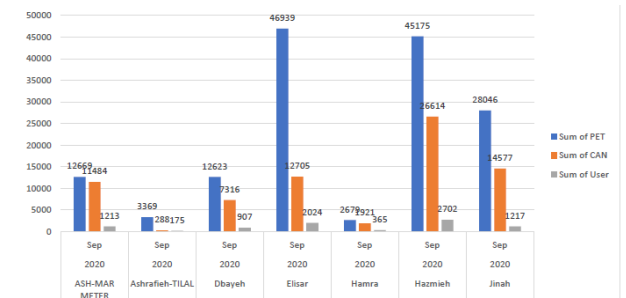
Environmental Impact:

1) GHGs/month avoided by recycling rather than landfilling using EPA's WARM model:

Recyclable Type	Metric tons/month of avoided CO2E emissions	Equivalent number of cars taken off the road:
Glass	11.67	30.22
Plastics	127.88	331.30
Cardboard	238.30	617.35
Total	377.85	978.87

2) Total Environmental Impact by Month

2019	Metric tons/month of avoided CO2E emissions	Equivalent number of cars taken off the road:
August'19	245.97	637.19
September'19	408.76	1,058.97
October'19	182.44	472.64
November'19	304.44	788.7
December'19	269.55	699.36
TOTAL	1,411.16	3,656.86





ROGP TECHNOLOGY - SUMMARY

ROGP is our own patented technology which recycles plastics and glass into a durable and price competitive new material with numerous applications

- ✓ “Rejects of Glass and Plastics” (ROGP) is a **one-stop-shop** solution for plastic and glass recycling
- ✓ Able to recycle **all 80+ types of plastics** and all types of glass **using single production line**, with minimal segregation
- ✓ **Incentivises** plastic and glass waste **collection and create new markets**
- ✓ **Creates jobs** and new economy for waste pickers, sorters and local communities
- ✓ Turns an environmental liability into an abundant resource
- ✓ Significant **cost advantage** over alternative materials

“The Holy Grail for plastic recycling is technology that allows commingling of the various types and grades of plastic to eliminate the labour-intensive and costly segregation process.”

*Dave Cornell, Technical Director
Association of Plastic Recyclers*

SOLUTION: ROGP TECHNOLOGY

ROGP



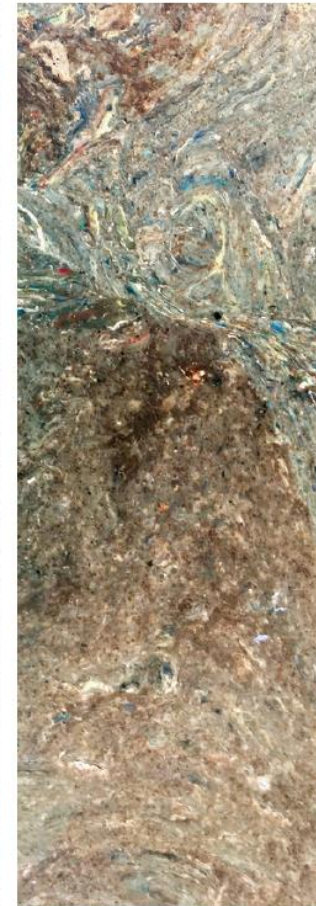
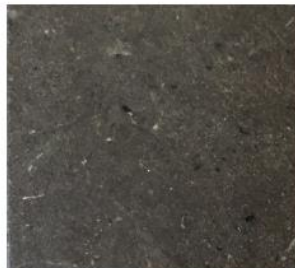
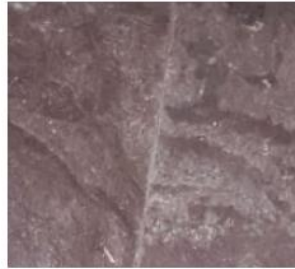
ROGP TECHNOLOGY - APPLICATIONS

Based on customer needs, ROGP can be shaped into a variety of end-products...



ROGP TECHNOLOGY – MATERIAL FINISHING

...and can be made in a variety of colors and finishes



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