

Portfolio Approach to Sustainability Challenges



Ken Faulkner

Great Lakes Plastics Forum

October 11, 2018

NOVA Chemicals at a Glance



Number of Employees

2,900 worldwide



Annual Sales, 2017 (U.S.\$)

\$3.8 billion



Leadership

Todd Karran
President and CEO



Products

Ethylene and Polyethylene
Chemical Co-Products
Expandable Styrenic Polymers



Community
Investment/Giving

\$2.4 million (USD) **6,000** hrs



Responsible Care[®]
Our commitment to sustainability.

NOVA Chemicals helps shape a world where products vital to our health and happiness are even better tomorrow than they are today.

Taking a Portfolio Approach

- **Investing “at source” to stop the flow of plastics in Southeast Asia**
 - Project STOP in Indonesia
- **Engaging communities and employees**
 - Great Canadian Shoreline Clean Up (Canada)
 - Hard to Recycle initiative (Pennsylvania)
- **Sustainability Strategy design work – complete in 2018**
- **Work with governments, industry and communities**
 - Deeper understanding of challenges and work for solutions
- **Significant investments in Research and Development**
 - work with customers to make products with greater recyclability and downgauging

Project STOP: A new approach

- Zero leakage partnerships with cities -sustained technical assistance and catalyst funding targeting zero plastics leakage into the ocean
- Building circular economy value chains to increase plastics recycling –new revenue, new jobs and reduced landfill burden
- Designing and implementing practical solutions in partnership with local government agencies, private sector companies and the informal waste economy
- Targeting wider impact on government policy and industry practices and seeking to inspire and inform other practitioners and communities working on this issue
- Social benefits: Health, fisheries, tourism, job creation

NOVA Chemicals is proud to donate over \$2M CDN to Project STOP

We are Committed to Industry Goals

100% of plastics packaging is recyclable or recoverable by 2030.

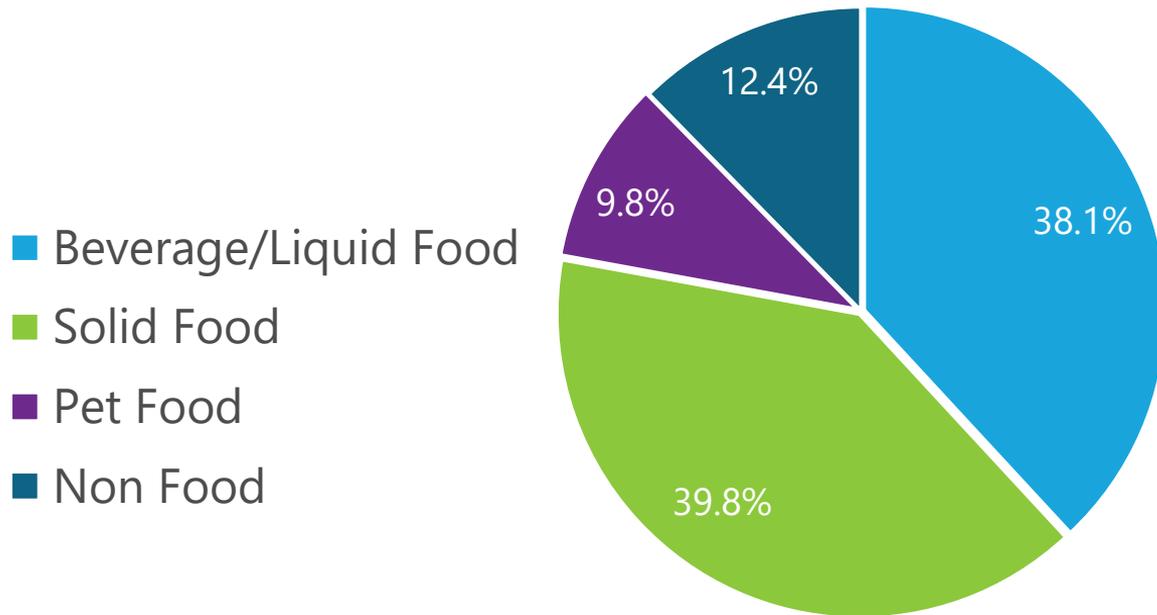
100% of plastics packaging is re-used, recycled, or recovered by 2040.

100% of Canadian resin manufacturing sites operated by CPIA members will participate in OPERATION CLEAN SWEEP Blue by 2022.

Case Study: Stand Up Pouch

Estimated NA Annual Growth Rate 2014-2019: 7.4%

Estimated NA 2019 Consumption: 30 Billion units



Case Study: All PE Stand Up Pouch

Objective: Create a recyclable packaging alternative to non-recyclable mixed plastic pouches

Technical Requirements for Market Conversion

- Barrier performance
- Clarity & print quality equivalence
- Stiffness and sealability to achieve equal pouch making speed
- Ability to incorporate zippers, fitments
- Cost neutral
- Meet ASTM code #2 and How2Recycle criteria



NOVA Chemicals Leading Packaging Capability

Helping our **customers and brand owners** bring **better-designed, better-performing** products to market **faster**



9 Layer Line



Adhesive Laminator



Shrink Tunnel



Vertical FFS



Injection Molder



Compression Molder



Thermoformer



Horizontal FFS

For more information

www.novachem.com

www.systemiq.earth/stop



novachemicals.com



Responsible Care®
Our commitment to sustainability.

© 2017 NOVA Chemicals - All rights reserved.

The information contained herein is provided for general reference purposes only. By providing the information contained herein, NOVA Chemicals makes no guaranty or warranty and does not assume any liability, with respect to the accuracy or completeness of such information, or product results in any specific instance, and hereby expressly disclaims any implied warranties of merchantability or fitness for a particular purpose or any other warranties or representations whatsoever, expressed or implied. Nothing contained herein shall be construed as a license to use the products of NOVA Chemicals in any manner that would infringe any patent. Nothing herein shall be copied, reproduced, distributed or otherwise used without the express written permission of NOVA Chemicals.

NOVA Chemicals' logo is a registered trademark of NOVA Brands Ltd.; authorized use/utilisation autorisée.

Responsible Care® is a registered trademark of the Chemistry Industry Association of Canada (CIAC).