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Making the Business & Economic Case for Safer Chemistry

Research Highlights - Presentation at the Green Chemistry & Commerce Council Annual Meeting

Libby Bernick
Sr Vice President, North America



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Research Scope & Themes



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	Theme
Opportunities	1. Market growth
	2. Trends in capital flows
	3. Market demand
	4. Job growth
Risks	5. Shareholder and NGO activism
	6. Chemical restrictions
	7. Business value at risk
	8. Societal costs of accidents and incidents

Example Research Findings



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GC3
GREEN CHEMISTRY &
COMMERCE COUNCIL
Business Mainstreaming Green Chemistry



Theme 1: Market Growth

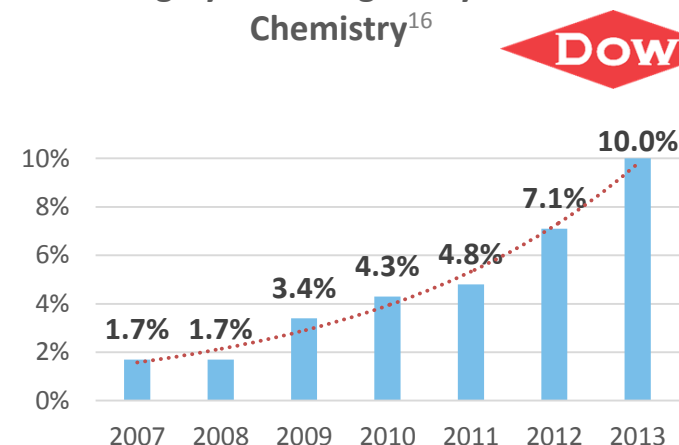
Growth Rates of Safer Chemistry vs Conventional Market

Sector	Safer Chemistry Market	Conv. Market	Time Period
Building Materials	+2000% ¹	+176% ²	2009-2030
Chemistry	+3200% ³	+133% ³	2011-2020
Personal Care	+10.12% CAGR (US) ⁴	+4.43% CAGR (global) ⁵	2012-2016
Cleaning Products	+20% CAGR ⁶	+1.5% CAGR ⁷	2007-2011

“We have seen 6-10% annual growth in the natural products sector, compared to near-zero growth for conventional products.”

–Martin Wolf, Director, Sustainability & Authenticity, Seventh Generation

Sales “Highly Advantaged” by Sustainable Chemistry¹⁶



Example Research Findings



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Theme 2: Trends in Capital Flow

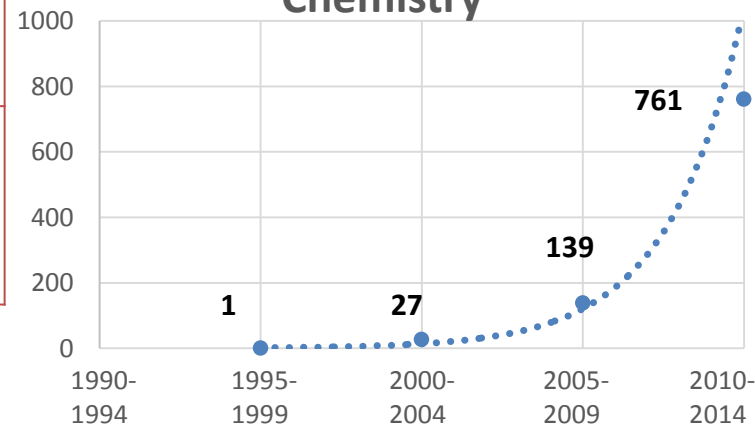
Investments in Safer Chemistry

Sector	Investment Type	Investment in Safer Chemistry	Time Period
Chemicals	Safer Chemistry R&D	57% of chemical companies in MSCI World Index invested in green chemistry R&D ¹⁷	2013
Chemicals	Safer Chemistry R&D	11-15% of average chemistry company's R&D budget ¹⁸	2011
Building Materials	Research Grant	\$3 million for USGBC research of health hazards, from Google ¹⁹	2013
Advanced Materials	Investment (Various)	\$4.9 billion invested in advanced materials industry; can help drive green chemistry ²⁰	2002-2013

*"55% of members believe the ROI of green chemistry R&D is greater than for standard investments."*²⁵

– American Chemistry Society (2013 survey)

US Patents Issued for Sustainable Chemistry²⁶



Example Research Findings

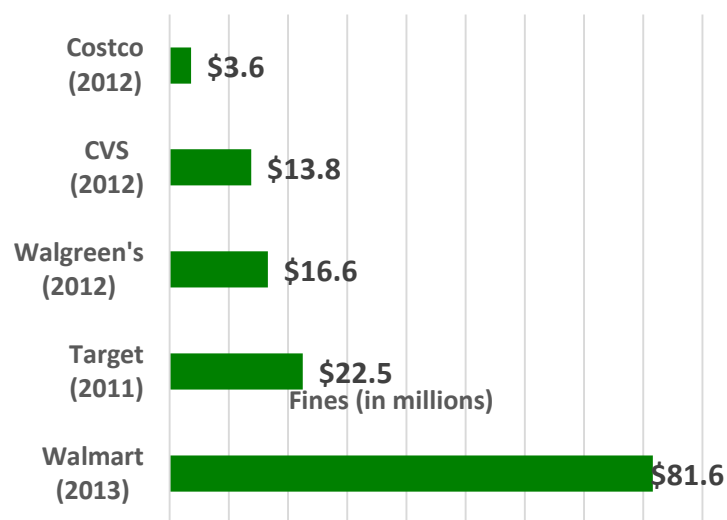


Theme 7: Business Value at Risk

Impacts on Business Value

Sector	Business Value at Risk	Impact	Time Period
All	Federal Enforcement	\$9.7 billion in private industry cleanup actions and equipment, along with \$163 million in fines ⁸⁶	2014
All	Tort Settlements	\$17 million in settlements for violating California Prop 65 ⁸⁷	2013
Consumer Products	Lawsuits	25 lawsuits filed against companies using BPA in their products ⁸⁸	2009-2010
Beauty & Personal Care	Market Share	-8.4% in market share of Johnson & Johnson due to consumer concern about ingredients ⁸⁹	2008-2010
Toys	Shareholder Value	-25% stock price of RC2 from lead-painted toys ⁹⁰	2007
Health Care	Market Share	Existing vendor lost \$70 million contract because it could not provide PVC/DEHP-free medical products ⁹¹	2005-2010
Chemicals	Market Value	\$200 billion (or 31% of assets' value) due to lawsuits and toxic releases ⁹²	2001
Chemicals	Regulatory Fines	\$16.5 million of DuPont for Teflon [®] pollution; faced class-action lawsuits ⁹³	2005-2008

Fines for Mishandling Hazardous Chemicals⁹⁴



Example Research Findings



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Theme 3: Market Demand

Increased Demand for Safer Chemistry

Sector	Buyer	Purchasing of Safer Chemistry Products	Time Period
Retail	Walmart (\$476B in revenue) ²⁷	Vendor disclosure of priority chemicals and certification of private brands as USEPA DFE ²⁸	2014-2018
Retail	Target (\$72B in revenue) ²⁹	Chemicals are the most important sustainability issue for Target's customers ³⁰	2014
Retail	Staples (\$23B in revenue) ³¹	Corporate customer—who represent 50% of revenue—have increased demand for safer chemistry products ³²	2014
Retail	Various	+500% sales of BPA-free baby bottles ³³	2008
Health Care	Group Purchasing Organizations (\$135M in medical product purchasing)	Adoption of standardized questionnaire; top-rated product attributes include being free of heavy metals, persistent synthetic chemicals and PVC ³⁴	2014
Furniture	Ashley Furniture	Toxic flame retardants no longer added to foam cushions (largest US furniture retailer) ³⁵	2015
Public	Federal Agencies	95% of new contracting must include sustainability requirements, such as non-toxic or less toxic materials ³⁶	2009-Present
Public	Federal Agencies (\$50B in annual purchasing)	GSA requires buying a product with reduced health or environmental effects that serves the same purpose ³⁷	2013

Conclusions & Recommendations



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Please see the report for the full conclusions and a complete set of recommendations

Safer chemistry's potential for creating business and economic value is promising, poised for take off, and not yet fully realized. The evidence for this is market growth, capital flows and market demand showing upward trajectories during the past 5 years. Expanding regulations, continued NGO and shareholder activism, loss of access to major markets, and chemical mismanagement place significant value at risk.

Recommendations

- *Act now.* Businesses that have not yet evaluated their individual business case for safer chemistry within their specific product portfolio and market segment are strongly encouraged to do so, given the potential for revenue growth and business value at risk.
- *Think bigger.* Quantify the societal benefits of the total addressable market for policy makers and investors to make the economic case for green chemistry.
- *Communicate the business context.* Improved “Safer Chemistry” communications and metrics are needed.
 - A number of interviewees noted the difficulty in translating the potential benefits of adopting safer chemistry into conventional business terms for their peers in finance, marketing and procurement. The results of this research, which center on documenting the business and economic value of safer chemistry, should be helpful in bridging this communication gap. We recommend that stakeholders continue to quantify and monetize the value of safer chemistry in cross-sector communications, research and publications

Thank you!



Libby Bernick
Senior Vice President,
North America



Philadelphia, PA. USA.

Tel: +1 484 685 6029

E-Mail: libby.bernick@trucost.com



Libby Bernick, P.E.
Sr Vice President

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