

Global PET Outlook

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GLOBAL SERVICE
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PET Day 2008

Artimino, October 9th

Contents

- 2008; the year of demand destruction
- Industry restructuring
- Will Europe ever reinvest ?
- More imports ? Where from ?
- Recycling; more than a gesture ?

- Member of PCI Consulting Group
- Consortium of companies
- Primary focus on Polyester Chain
 - PET Packaging Resin
 - Polyester / PET Recycling
 - Fibres
 - Film
 - Raw Materials (Px, PTA, MEG, DMT)
- The leading global consulting group in its field
- Clients include all major players throughout the chain
- Locations
 - UK
 - Singapore for Asia
 - Sao Paulo
- Consultants with hands-on experience of the PET industry

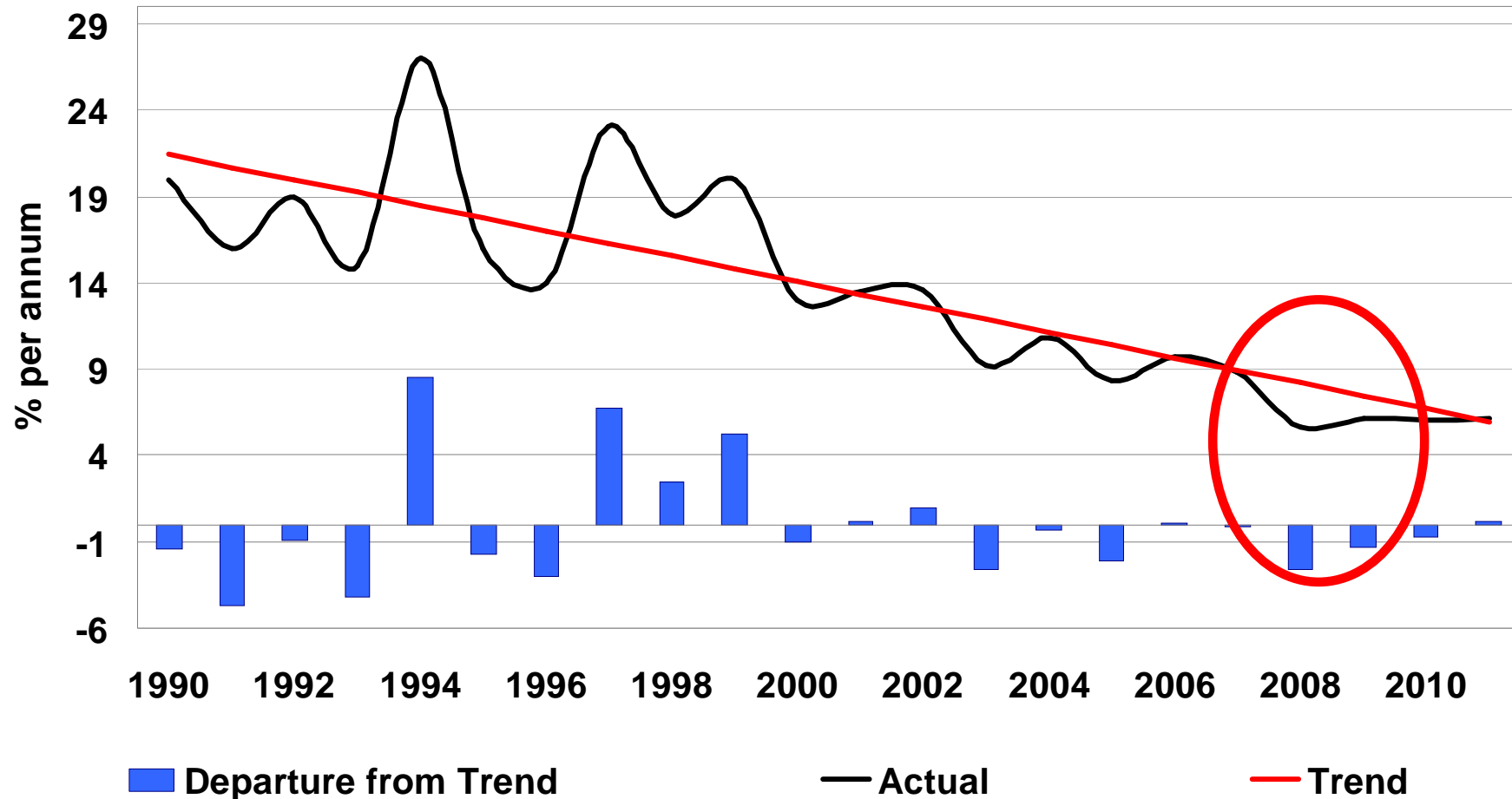
Consulting Services

- Regular Market/ Business Reports
- Single client research
 - Market/commercial assessments
 - Segments
 - Regions
 - Benchmarking of costs/quality
 - Marketing plans/entry strategies
 - PET and PET conversion
 - Technology studies/assessments
 - Business acquisition/sale
 - Competitor profiling
- Multi client studies:
 - Regional Supply/Demand Reports
 - Europe/Asia/Americas/Middle East
 - Occasional studies:
 - China PET industry
 - PET potential in the beer market

2008: The year of demand destruction

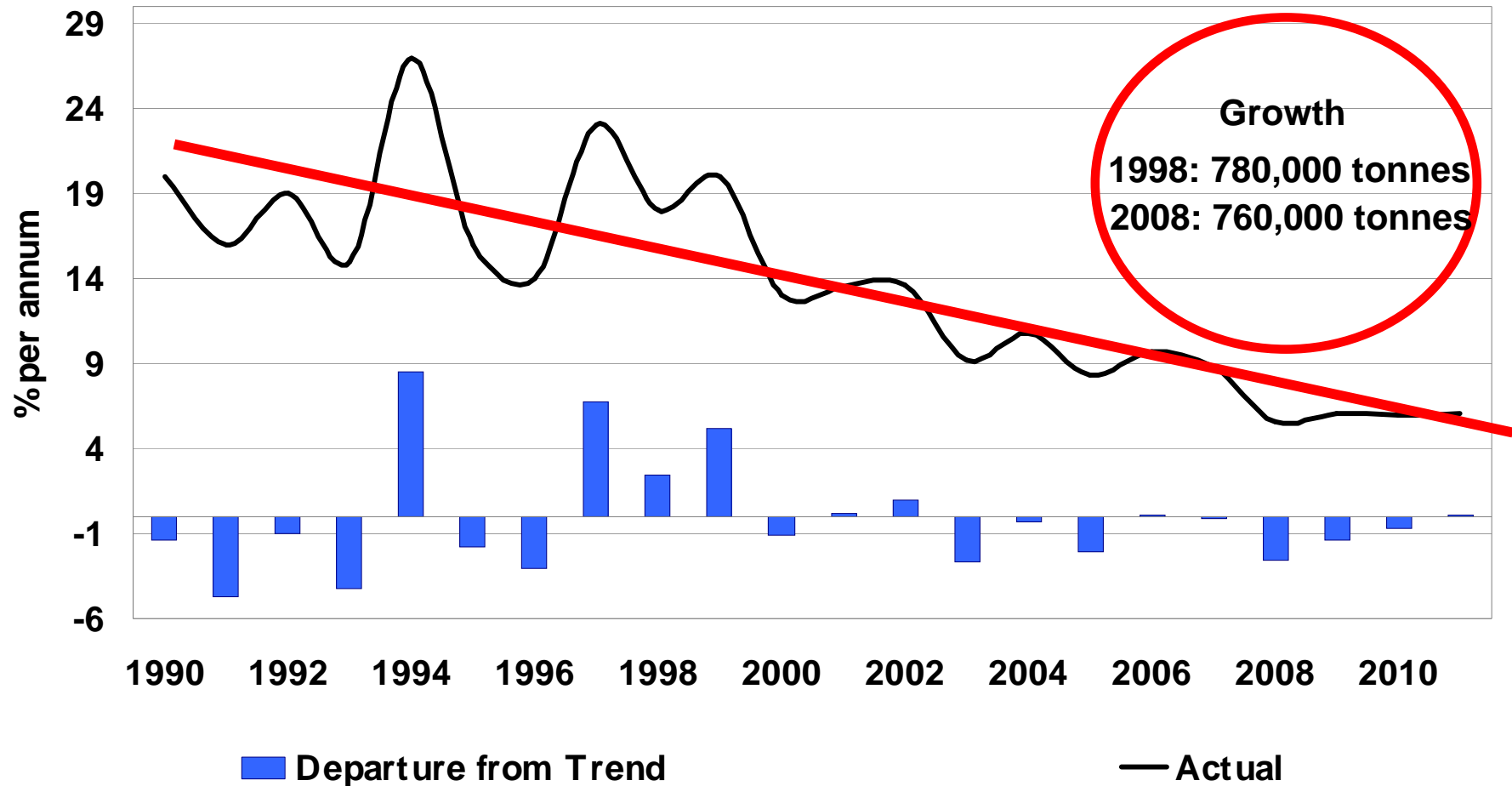
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What is happening to Growth ?



Global PET Outlook

What is happening to growth ?



Global PET Outlook

	Previous Projection Q3 2007 (‘000 Tonnes)	Current Projection Q3 2008 (‘000 Tonnes)	Difference (‘000 Tonnes)
CSD	4,959	4,889	-70
Water	3,902	3,848	-54
Other Drinks	2,642	2,652	10
Food	1,337	1,336	-1
Non Food	618	640	22
Sheet	1,652	1,956	304
RPET	-756	-889	-133
Total	14,354	14,432	78

Three drivers

- Downturn in economy reducing disposable incomes and demand for beverages.
- Bottle light-weighting
- Increased use of RPET

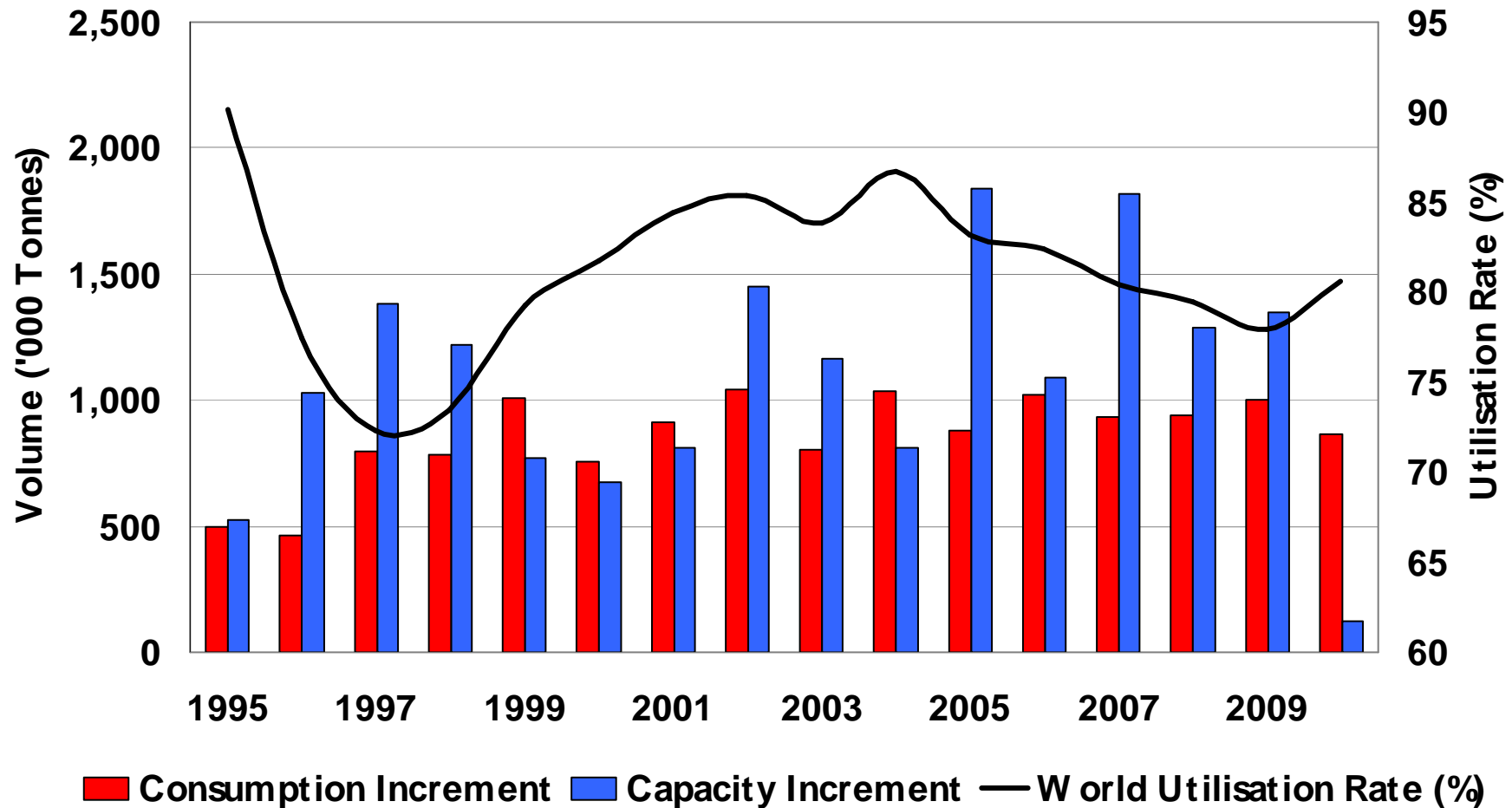
Impact of lightweighting



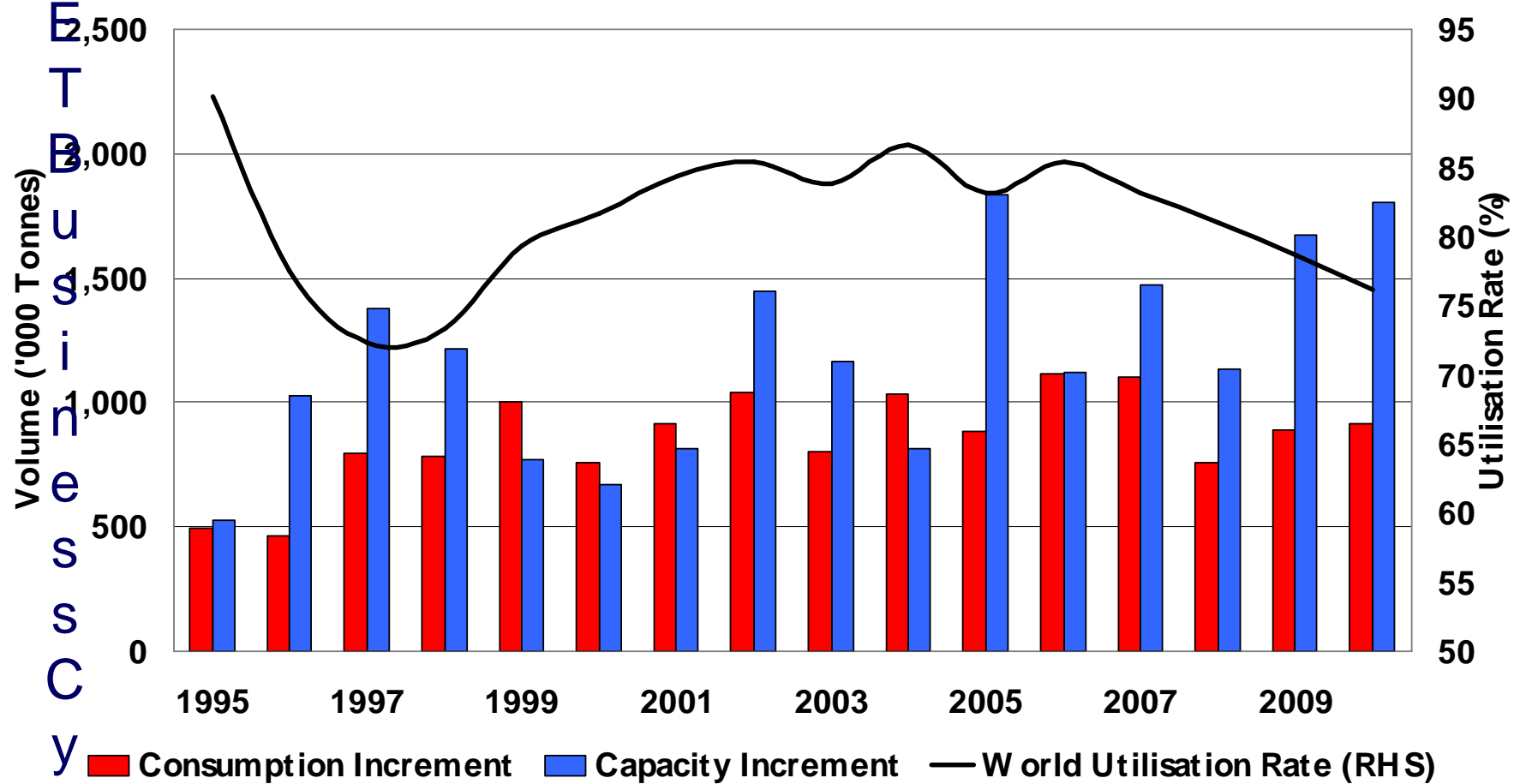
Nestle 0.5l "Eco bottle"

- 2007 : 14.5 gms
- 2008: 12.3
- 2009 : 10.5 gms
- Reduction of 27%
- Nestle has close to 40% of PET water market in USA

PET Business Cycle: 2007 View



PPET Business Cycle: 2008 View



Industry Restructuring

Strategic Responses to Low Earnings

- **Withdrawals/closures**
- **New technologies to achieve lower capital and operating costs:**
 - Integrex
 - Scale
 - Simplified, lower cost polymer processes, Uhde, Zimmer
- **Location close to:**
 - Raw materials, *or*
 - Viable customer base with limited local supply
 - Locations providing inherent *delivery cost* advantages
- **Acquisition and merger**
- **Integration through the chain**

Closures/Rationalisation

- Daehan (Korea): 140,000 tonnes.
- Braskem (Brazil): 80,000 tonnes.
- Tuntex (Taiwan): 70,000 tonnes.
- Smaller plants in Asia: 230,000 tonnes.
- Eastman (USA): 350,000 tonnes
- Eastman sale of 5 plants 800 kt capacity
- Kimex (Mexico): 50,000 tonnes.
- M&G (Brazil): 200,000 tonnes (temporary?).
- Tongkook now sold.
- Wellman Europe sold, then liquidated
- Wellman US now in Ch 11, withdrawel from fibres
- Elana retrenchment
- Tergal in Ch 11

Changes in Rankings of PET Producers

Company		2006	Share	Company		2008	Share
1	Eastman Company	1,505	8.9%	1	M&G	1,925	10.6%
2	M&G	1,268	7.5%	2	Invista	1,235	6.8%
3	Invista	1,025	6.1%	3	Artenius (La Seda)	1,005	5.5%
4	Far Eastern Textile	858	5.1%	4	Indorama	966	5.3%
5	Nan Ya	798	4.7%	5	Far Eastern Textile	898	4.9%
6	Wellman	683	4.0%	6	DAK	810	4.4%
7	Sang Fang Xiang (Jiangyin Xinye)	511	3.0%	7	Nan Ya	788	4.3%
8	KP Chemical Group	462	2.7%	8	Eastman Company	775	4.3%
9	Equipolymers	450	2.7%	9	Sang Fang Xiang (Jiangyin Xinye)	700	3.8%
10	Indorama	445	2.6%	10	Wellman	655	3.6%

Global Survivors

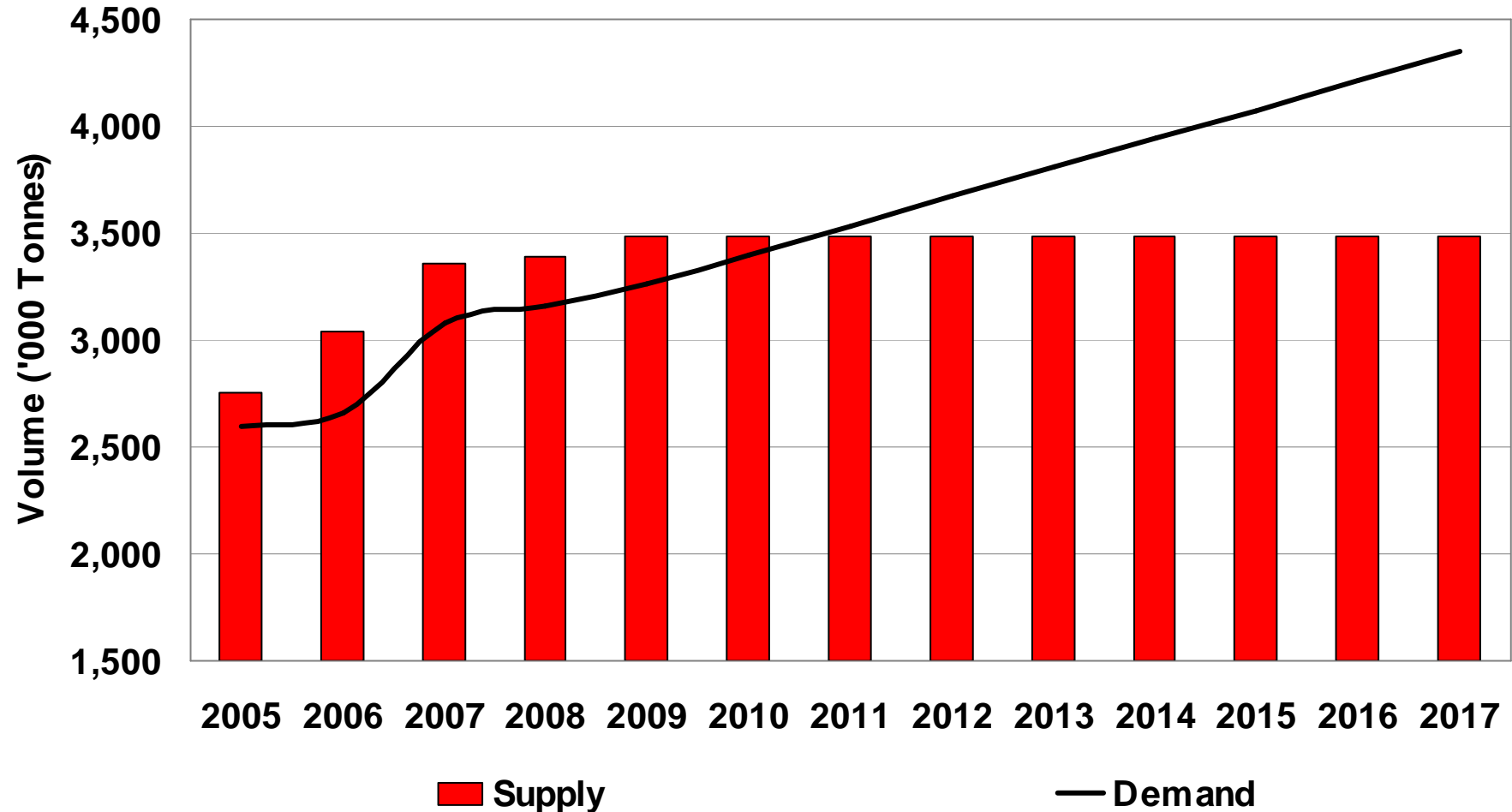
- **Scale**
- **Lower cost technology**
- **Low overheads**
- **Proximity/integration to raw material supply**
- **Competitive logistics**

 **Brand owners - producers with this profile**

Will Europe reinvest in PET ?

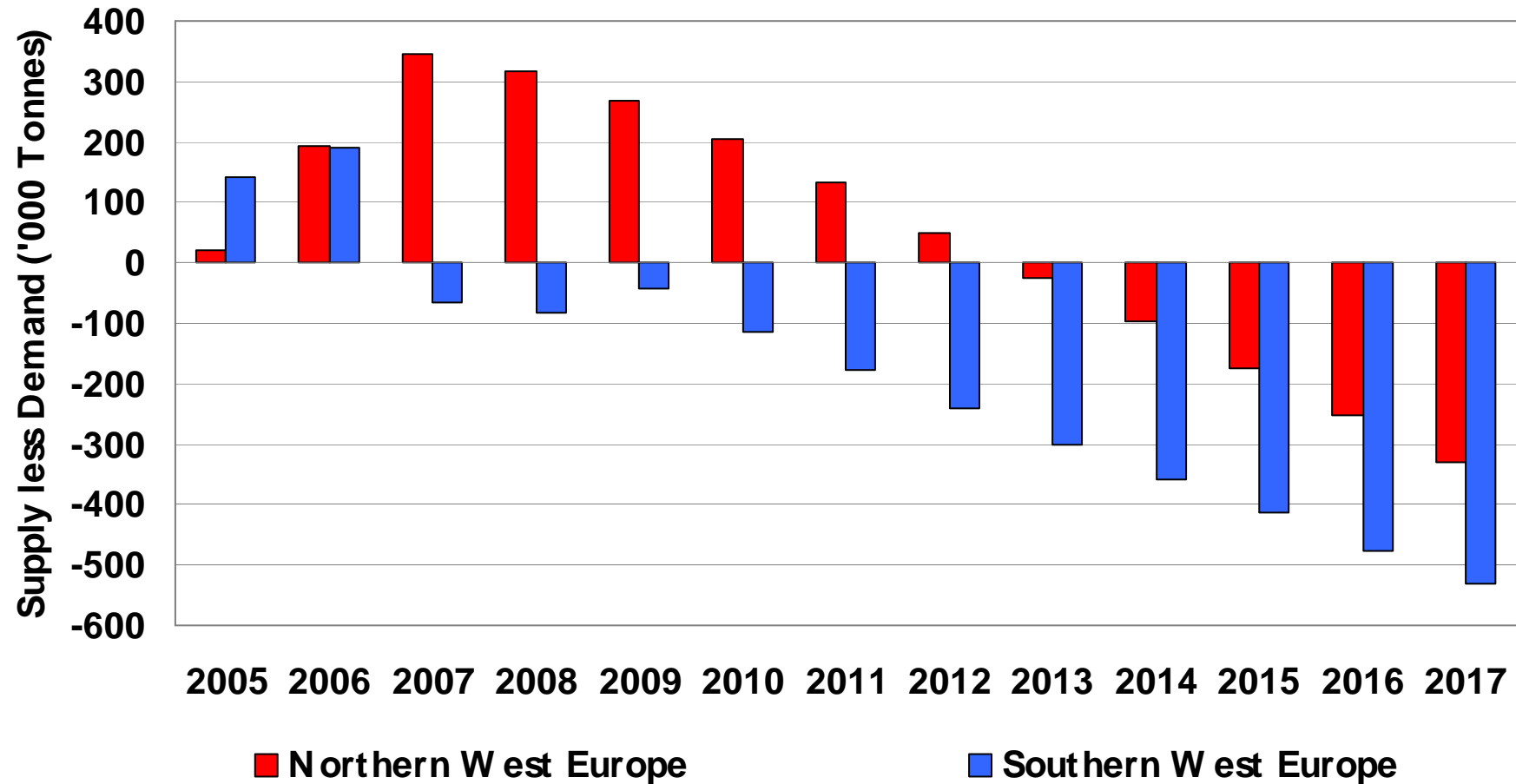
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West Europe Supply: Demand Projection



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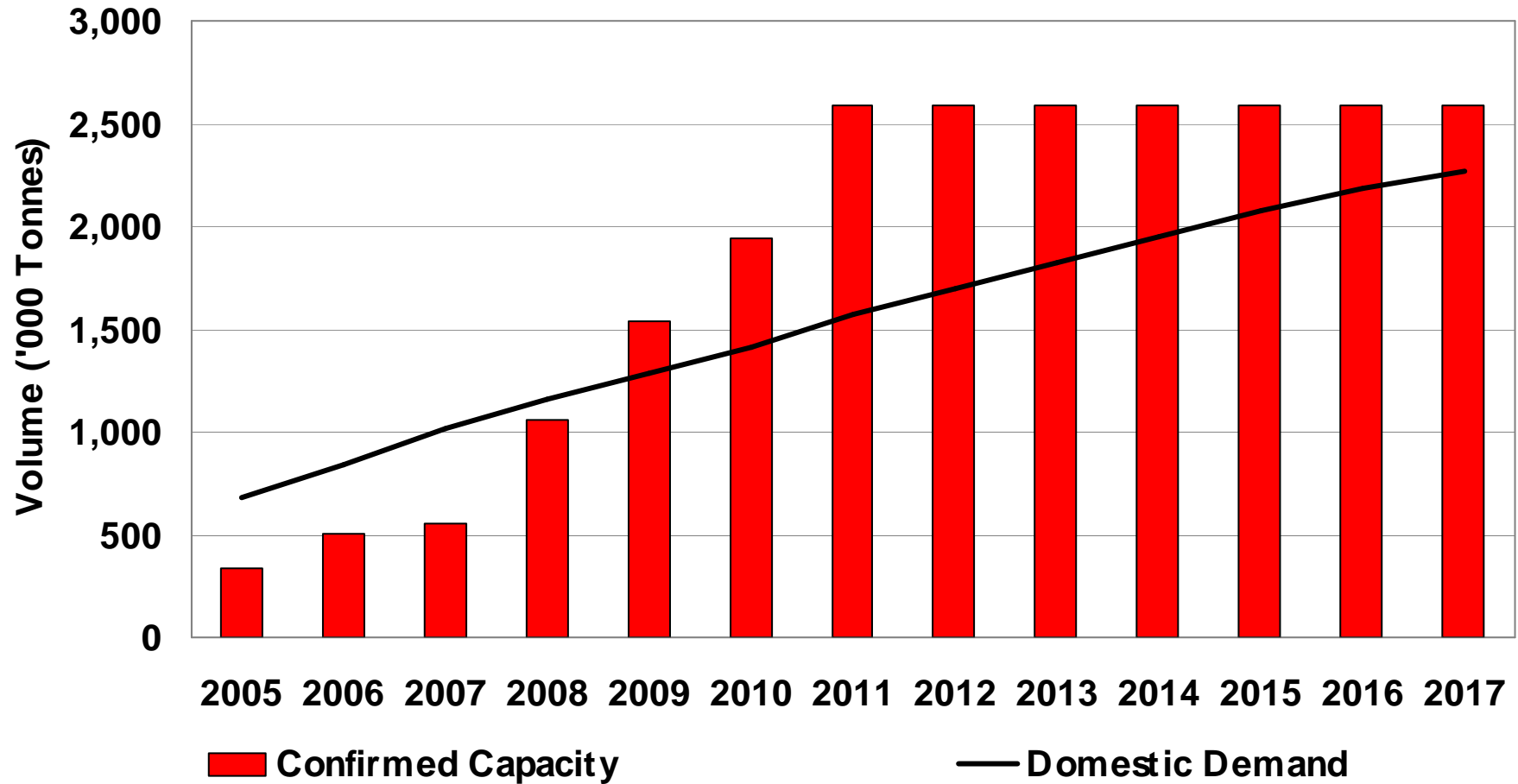
Big Differences between Supply and Demand in North and South



More Imports? Where from?

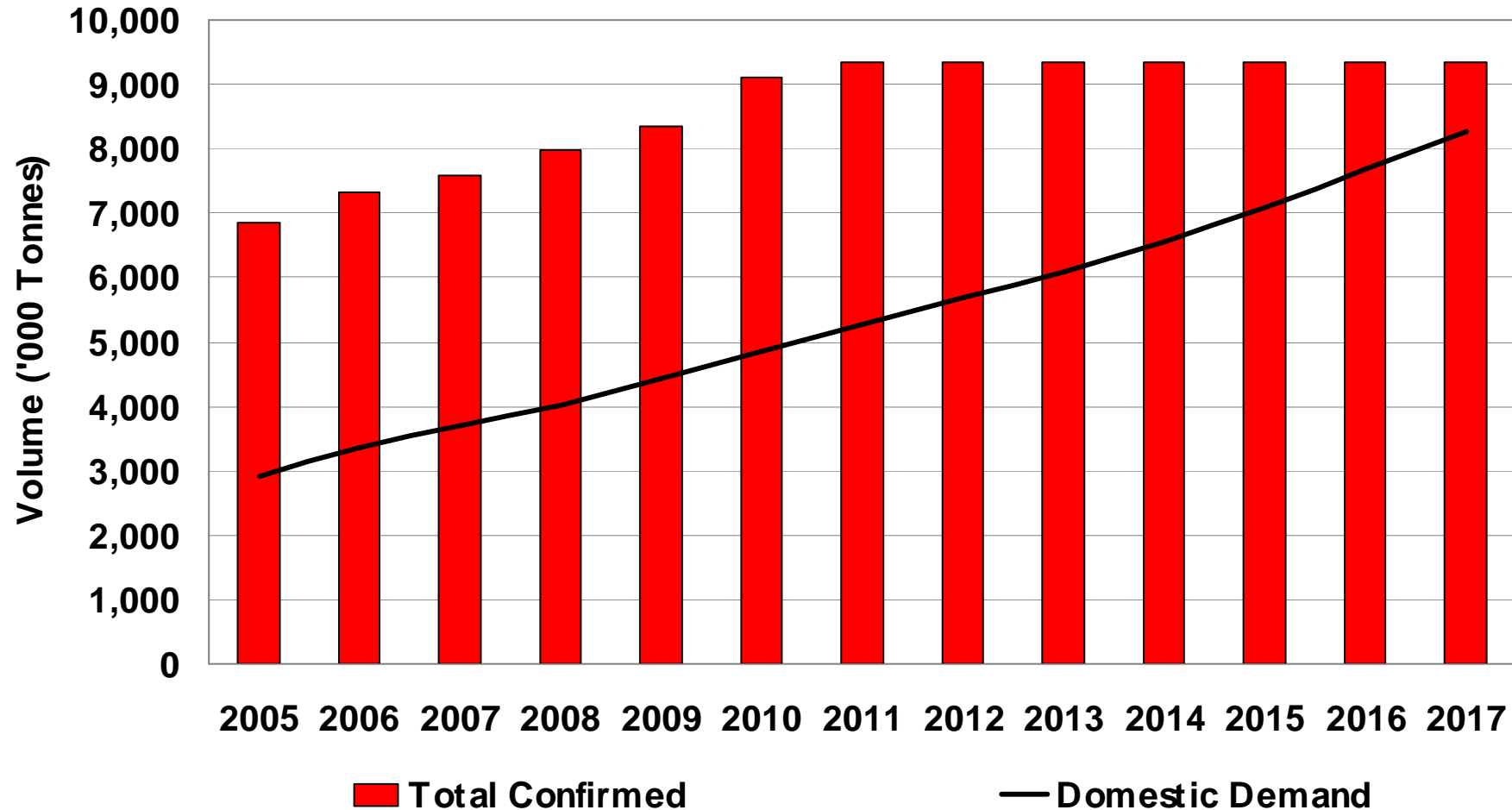
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Supply: Demand Balance in Middle East



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Supply: Demand Balance in Asia/Pacific



PET Recycling: More than a Gesture ?

PET Recycling: More than a Gesture?

- Concerns at global warming provide a more coherent framework than previous concerns which have triggered PET recycling.
- Greenhouse gas emissions increasingly being used as a basis for differential taxation between products; this may change the price/cost equation.
- Public pressures are not always so coherent when asked to pay for the environmental improvements.
- Many more brand owners seeing value in adopting recycled content.
- Food grade RPET capacity expanding; legislation enabling greater use.

Growth in Bottle-to-Bottle

- Few country regulations mandate recycle content.
- Driven by:
 - Consumer groups.
 - End users/bottlers.
 - Retailers.
 - Favourable economics in specific circumstances.
- New regulations in EU facilitate use of RPET.

End User Strategies

- Coca Cola
 - US target to use 10% recycled content.
 - CCE (Coke bottler Great Britain, France & Benelux) target is an average of 25% recycled content across its products by 2010.
- Pepsi
 - Committed to 10% recycled content target in US.
- Wal-Mart
 - Global target to reduce packaging by 5% by 2013 and introduced scorecard system for suppliers.
 - Asda (UK) target to reduce packaging by 25% on own label foods by 2007
- M&S (European retailer)
 - 'Plan A because there is no Plan B':
 - 25% reduction in use of packaging.
 - Sourcing materials from sustainable or recycled sources.
 - Supply contract with Closed Loop London for food grade RPET
- Tesco (Retailer)
 - Now using 100% RPET bottles for beverages in some markets

Evian: 25% RPET Content Bottle



- Evian water bottles with 25% recycled PET
- 1.5 litre bottle introduced in April 2008.
- AFSSA, France's food standards agency, allows up to 25% recycled content in bottles and extended this to mineral water this year.
- Evian aims to be the first mineral water brand to introduce RPET content bottles in the French market.

Innocent – 100% RPET content bottle



- Innocent introduced 100% RPET bottles for its smoothie products in January 2008

Source: Innocent website

Several Proven Technologies

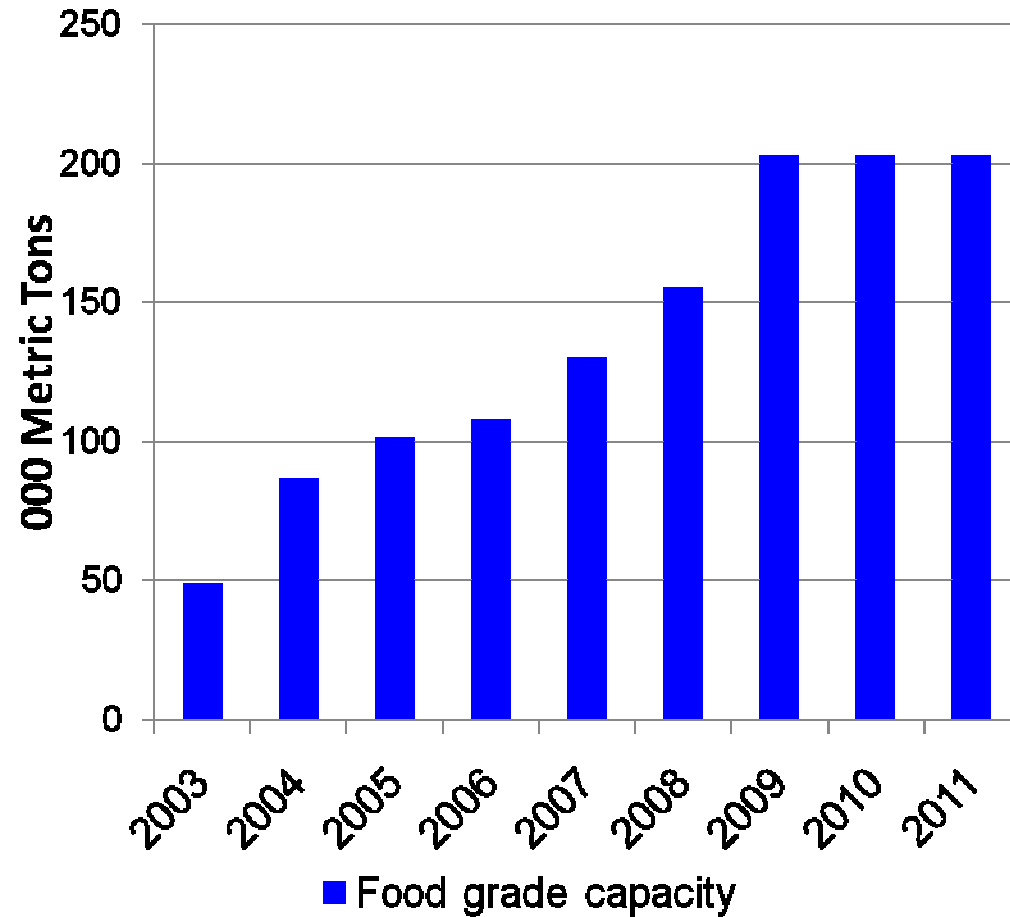
- Direct blend
 - Flake
 - Extrude
 - Solid state
- URRC (intermediate stage)
 - Flake
 - Wash
 - Kiln
 - Filter
- Chemical recycling

Growth in Bottle-to-Bottle

Several proven technologies

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Growth in Bottle-to-Bottle Processing Capacity Europe



- European food grade capacity to grow 56% to 200,000 metric tons between 2007 and 2009

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