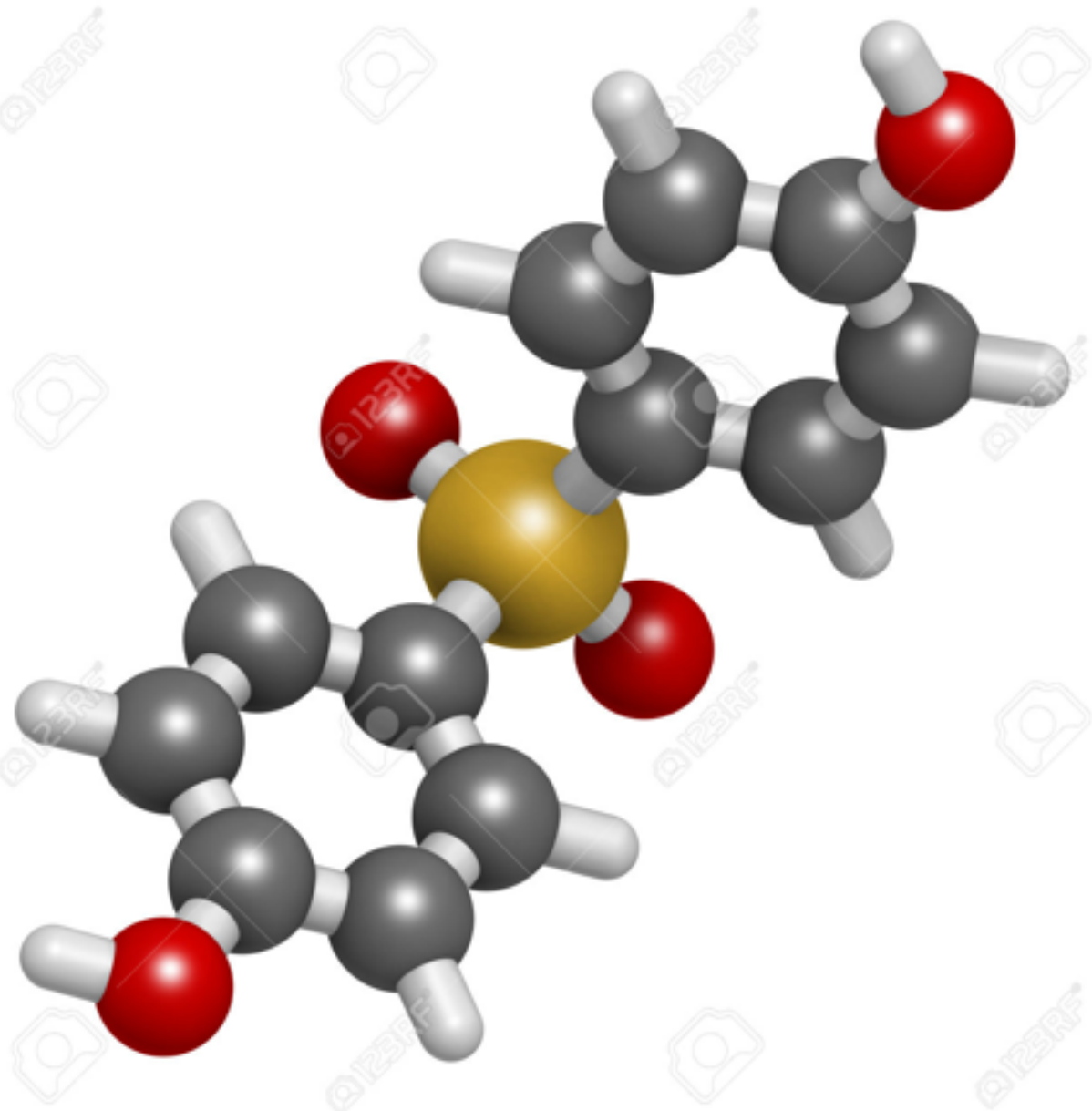
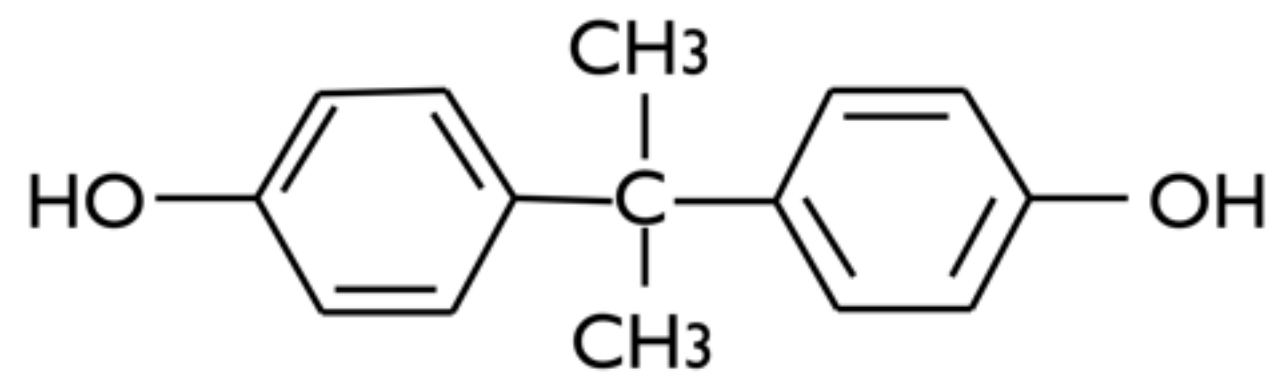


A BPA SUBSTITUTE

SAFE, AFFORDABLE, AND CLEAN

Sponsor: New Venture Development

Organization: Umass Lowell



INTRODUCTION

BISPHENOL A

- Discovered in 1891 by Russian chemist Aleksandr Dianin
- Used to harden polycarbonate plastics, invented in the 1950s
- Very common in everything from cars to sales receipts
- Most common, and dangerous, in plastic bottles

THE DARK SIDE

- Chromosome damage in female ovaries
- Decreased sperm production in males
- Early onset puberty
- Various behavioral changes
- Altered immune functions
- Estrogenicity
- Endocrine disruptor

OUR MISSION

- To successfully market and sell our safe BPA replacement chemical
- To have major beverage companies use our chemical instead of BPA
- To dominate the plastic bottle market so drinking is safer for people of all ages
- To eventually spread into other markets, such as baby products

IDEA AND TECHNOLOGY

BPA IN GENERAL

- It has been used to harden plastics for more than 40 years
- It's everywhere!
- Medical devices, compact discs, dental sealants, water bottles, the lining of canned foods and drinks, and many other products.

WHAT DOES IT DO TO US?

BPA COULD POTENTIALLY DAMAGE:

- Brain
- Behavior and prostate glands in fetuses
- Infants
- Young adults

BPA COULD DAMAGE ENVIRONMENT

- BPA is used in the production of epoxy resins, polycarbonate resins, and polyester resins.
- It is water soluble.
- It is also likely being released into the air as well.

OUR SOLUTION!

PROF. DANIEL SCHMIDT

AT UMASS LOWELL HAS SUCCESSFULLY:

- Alternative epoxy resins
- Demonstrated a compound that can form a network with similar properties to the equivalent BPA-based material
- No structural similarity to estrogen

**SO WHAT ARE WE TRYING TO
ACHIEVE?**

- **PLASTIC BOTTLES THAT WILL NOT CAUSE ANY
HEALTH EFFECT TO HUMAN BODY**
- **OUR SUBSTANCE DOES NOT CONTAIN
POLYCARBONATE**
- **COST THE SAME!**

MARKET SURVEY

OUR FOCUS

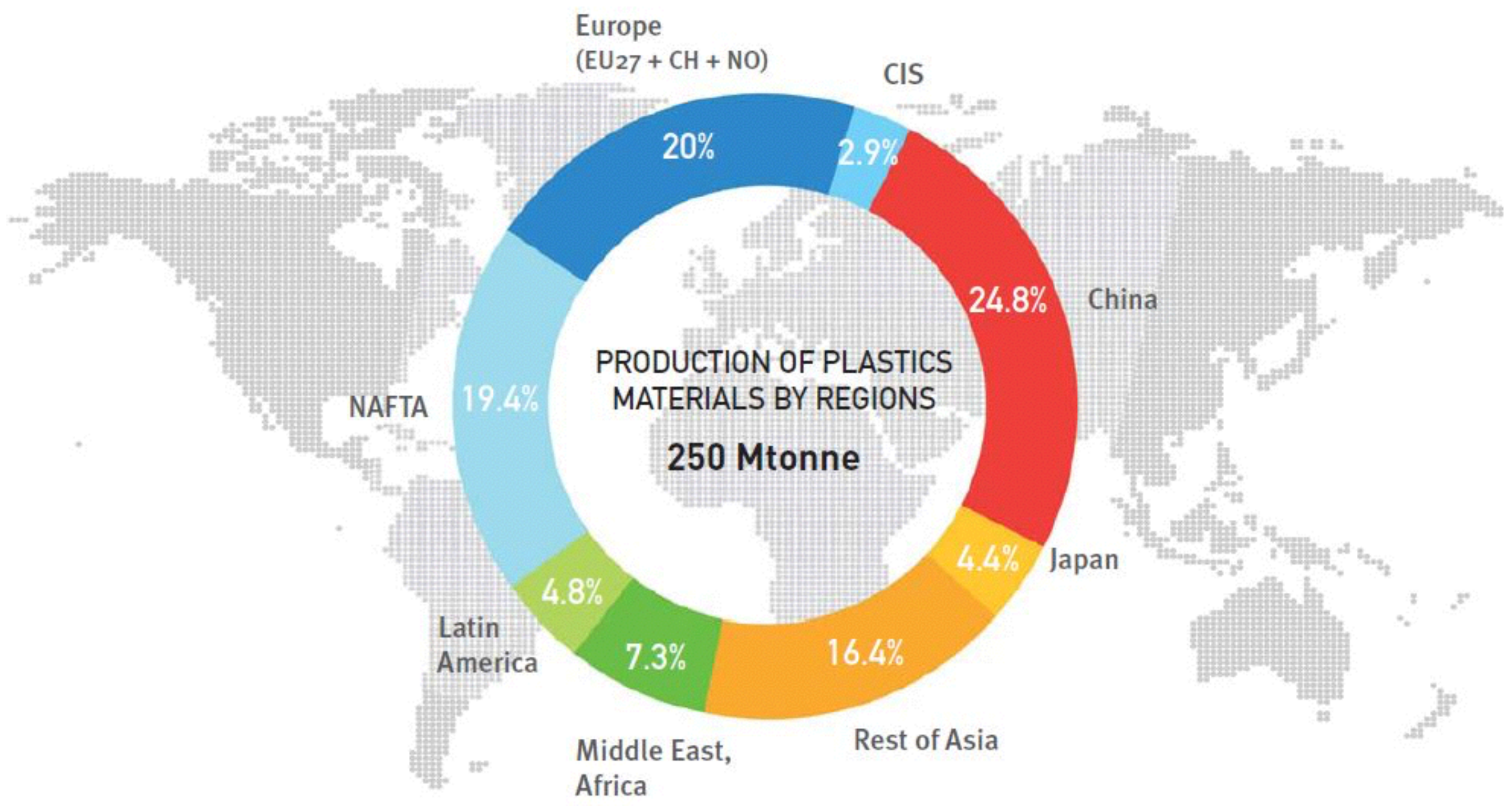


Coca-Cola

★ IT IS ESTIMATED THAT COMPANIES SUCH AS
THESE SPEND BETWEEN \$700-\$1400 PER TON

SURVEY

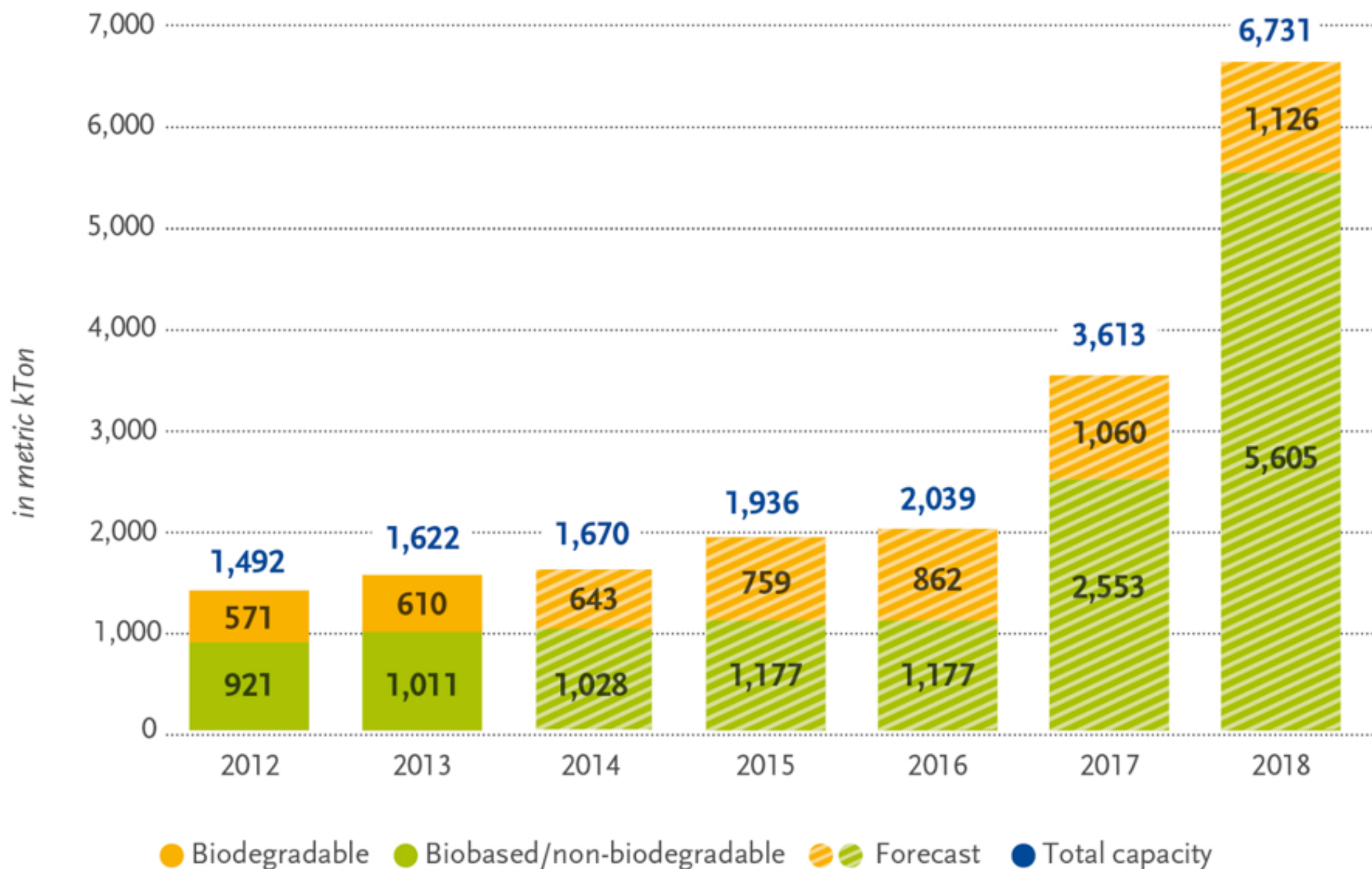
- ▶ ~50 Billion plastic bottles were made last year.
- ▶ ~8 Billion pounds of BPA made last year.



BPA MARKET

- The BPA market is very large, accounting for \$14.6 billion in sales in 2014.
- 8 Billion pounds of BPA is manufactured every year.
- BPA free chemicals.
- same price

Global production capacities of bioplastics



Source: European Bioplastics, Institute for Bioplastics and Biocomposites, nova-Institute (2014)

More information: www.bio-based.eu/markets and www.downloads.ifbb-hannover.de

GROWTH RATE

- The BPA market is very large, accounting for \$14.6 billion in sales in 2014. 8 Billion pounds of BPA is manufactured every year.
- The global BPA market is expected to grow by 5.2% annually, reaching \$21.9 billion by the year 2022.
- Expecting the rate of growth to be the same as that of BPA.
- The Asia-Pacific area is the largest BPA market and accounts of for 54% of the global market.
- The growth rate of North America and Europe is below the average growth rate, with 4.5% and 4.3%.
- The attractiveness of the market is 5.5/7.

CONTINUED . . .

-
- THE GROWTH RATE OF NORTH AMERICA AND EUROPE IS BELOW THE AVERAGE GROWTH RATE, WITH 4.5% AND 4.3%.
 - THE ATTRACTIVENESS OF THE MARKET IS 6.25/10.

CRITICAL SUCCESS FACTORS

- Not harmful to human health.
- Will increase competitiveness and attract new customers.
- Our product is sustainable and eco-friendly.
- Cost is same as that of BPA,hence affordable.

Factors	Weight	Rating	Score
Size of market	0.1	4	0.4
Sales growth rate	0.3	9	2.7
Competitor	0.2	7	1.4
Industry's profitability	0.2	6	1.2
Barriers to entry	0.15	3	0.45
Regulations	0.05	2	0.1
Total	1		6.25

**SPECIFIC
STRATEGIES, PLANS AND
ACTIONS**

CUSTOMER RELATIONSHIPS

- Global market
- Develop and maintain
- Sustainable and long-term customer relationships

CUSTOMER RELATIONSHIPS

1. Promote
2. Distribute
3. Track
4. Respond

DISTRIBUTION AND CHANNELS

DIRECT CHANNEL

- Phone calls
- Sales teams
- Face-to-face negotiation

INDIRECT CHANNEL

- Word of mouth
- Advertisement
- Online web sites

KEY PARTNERS

- Plastic bottle manufacturers
- Raw material suppliers
- Investors

KEY ACTIVITIES

MANUFACTURING/PURCHASING

- Tests backup claims
- Development
- Marketing

KEY RESOURCES

- Equipment, certification, human resources, prototype and training
- Testing tools or standards
- Mass media
- Investors

COMPETITION AND TRENDS

AN EVER-GROWING MARKET

- Formaldehyde and Phthalates
- Bisphenol S
- Bisphenol F

**ALL ARE HARMFUL TO
HUMAN HEALTH!**

A TRENDING TOPIC

- Discovered in the late 19th Century
- Become popular with Polycarbonates in the mid 20th Century
- Has become one of the most popular chemicals in the world
- Sales rise as wind turbines become popular

REVENUE

CASH IS KING

- Asset sales will be our main source of revenue
- Total polycarbonate market is \$273.15 billion
- Approximately 50 billion polycarbonate bottles made each year
- We will target them, which includes Coca-Cola, Pepsico, and Nestle

COST STRUCTURE

- Costs of materials and supplies
- Costs of energy, water, and fuel
- Production worker wages

SWOT ANALYSIS

➤ **Strengths**

- ▶ Non-toxic, eco-friendly, sustainable

➤ **Weaknesses**

- ▶ Many competitors, barriers to entry

➤ **Opportunities**

- ▶ Sales growth potential, public awareness of harmful chemicals

➤ **Threats**

- ▶ Competitors, projected growth of BPA

CONCLUSION

WE HAVE FOUND THAT...

- the current market for BPA (Bisphenol A) is growing consistently.
- Implement a healthier BPA product.
- Our future plan is to pursue in an additional application such as sports safety equipment manufacturers, automobile, and installation of wire.
- BPA is the starting material for making polycarbonate plastics.

- WE'RE TARGETING ON DOMINATING 80% OF BPA MARKET WITH OUR BPA SUBSTITUTION.
- ACCORDING TO A SURVEY 81 PERCENT OF AMERICANS HAVE DETECTABLE LEVELS OF BPS IN THEIR URINE. AND ONCE IT ENTERS THE BODY IT CAN AFFECT CELLS IN WAYS THAT PARALLEL BPA.
- WE'RE TARGETING ON DOMINATING 80% OF BPA MARKET WITH OUR BPA SUBSTITUTION.

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Q & A

THANK YOU!

Shruthi Kathare Shriya Desai XIA MIN (Summer)

Ryan Lally Krin Yongvongphaiboon