"IMPACT OF REGULATIONS ON OLEOCHEMICAL DOWNSTREAM INDUSTRY"

SESSION 1: CARING FOR THE ENVIRONMENT
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Contents of Presentation

EMERY OLEOCHEMICALS GROUP

REGULATIONS & THE OLEOCHEMICAL INDUSTRY

PROSPECTS FOR DOWNSTREAM OLEOCHEMICAL PLAYERS
Emery Oleochemicals Group

WHO WE ARE & WHAT WE REPRESENT
50:50 joint venture between PTT Global Chemical and Sime Darby Plantation.

One of the world's leading producer of oleochemicals from natural oils and fats. Headquarters in Malaysia.

Sales 2010: Approximately USD 1 Billion
1,100 employees operating worldwide.

Worldwide distribution network.
OUR VISION
To become the world leader in value added natural based chemicals.
CREATING VALUE WITH OUR SOLUTIONS

Whatever business you are in
Personal care, home care, pharmaceuticals, food additives, paper, agriculture, animal feed, rubber, paints, coatings, plastics, polymers, textiles, oilfield, industrial chemicals, biofuels.

We have the brands that you can trust

Whatever your oleochemical needs

Fatty alcohols
- Short chain
- Long Chain
- Fractionated
- Broad Cut

Fatty acids
- Distilled
- Fractionated
- Polyunsaturated
- Conjugated
- Food Grade

Dimer and Trimer Acids

Glycerine and Triacetine
- Kosher
- Pharma Grades
- Non-GMO

Methyl Esters
- Fractionated
- Broad Cut

Plastic Additives

Oilfield Chemicals

Ozone Acids
- Azelaic Acid
- Pelargonic Acid

Whatever the application

- Surfactants
- Lubricants
- Antioxidants
- Defoamers
- Softeners

- Surfactants
- Detergents

- Curing Agents
- Sealants
- Corrosion Inhibitors
- Polymer Intermediates

- Humectants
- Solubilisers
- Plasticisers
- Preserving Agents

- Biofuels
- Solvents for Agrochemicals

- Lubricants
- Release Agents
- Antistatic Agents
- Antifogging agents
- Viscosity Regulators
- Slip agents
- Anti-blocking agents

- Carrier fluids
- Lubricants
- Cleaners
- Emulsifiers
- Rheology Additives

- Lubricants
- Plasticisers
- Coatings
- Amine Condensates
- Polyester Fibres

Creating Value | www.emeryoleo.com
REGULATIONS & THE OLEOCHEMICAL INDUSTRY

General Introduction

Regulatory Matters: Regional

“Sustainability” & “Renewability”

Roundtable Sustainable Palm Oil (RSPO)

Sustainable

Anti-Dumping Measures

Regulations related to Renewable Energy
Chemical policies & Regulations can be related to:
• Government actions, market forces, industry best practices and product stewardship.

Policies and Regulations influence economies, environment and way of life.
Specifically for the Oleochemical Industry with a global footprint, they impact:
• Markets
• Industries
• Supply (Value) chain
• Technological change over a period of time

Examples of such regulations & policies
• REACh (EU), PEANCS (China), NICNAS (Australia),
• TSCA (USA), CEPA (Canada), TCCL (Korea), CSCL (Japan), etc
• Those related to matters such as Sustainability (RSPO, etc.), Green Chemistry, Carbon Footprint, etc.
GENERAL TYPES OF EXEMPTIONS

- Articles
- Intentionally vs. Unintentionally formed/present (e.g. impurities, by-products, etc.)
- Final Use (e.g. Cosmetics, Pesticides, Pharmaceuticals, etc.)
- Intermediates (Related to Use of Final Product, Site-limited)
- Mixtures (Status of Components, Hydrates)
- Naturally Occurring Chemicals
- Radioactive Materials
- Export Only Chemicals
- Transient Chemicals (Just Passing Through)
- Biotechnology Products
- Activity (ex. R&D)
- Exemptions Unique to Specific CCL’s (e.g. “salts exemption”)
- Certain Classes of Polymers

EXEMPTION WARNINGS

- Exemption Variability: “Same” Exemption Can Vary Across Spectrum of Global Chemical Control Laws
- Missing Exemptions: Not All Exemptions are Present in All Chemical Control Law
REGULATORY MATTERS : Regional (1)

REACH: A complex piece of legislation
- All chemical products manufactured in or imported into Europe are subject to registration under REACH & Regulatory Impact Analysis shows REACH influences economies, environment & way of life
- Registration for 2011 (> 1000 t/a) completed with the next registration milestone (100t/a > but < 1000t/a) to be 2013 – start SIEF work & nomination of Lead Registrants early.
- EU Commission estimates cost to industry to be between €2.8bn - 5.2bn over 11 yrs. with testing costs alone estimated at €2.6bn
- Therefore, it is important to have data sharing & set up strong justifications for the testing proposals in order to avoid unnecessary testing to take place

Important Reference Lists to consider in meeting the requirements of REACh:

- **Official List** where compliance is obligatory
  - Candidate List of SVHCs
  - CLP Inventory
  - REACH Annex XIV (Authorization) & Annex XVII (Restriction)
  - Persistent Organic Pollutants (Stockholm Convention)
  - Prior Informed Consent (Rotterdam Convention)
- **Unofficial List** where compliance is not obligatory but may be requested
  - SIN List (ChemSec List of Substances of Concern)
  - ETUC List (Trade Union List of Substance of Concern)
  - Lists from the Automotive & Electronic Industries
PEANCS aka REACH China

- China's existing REACH-like regulation for chemical substances is known as Provisions on the Environmental Administration of New Chemical Substances effective October 15, 2010
- Issued by State Environmental Protection Administration (SEPA) of the Ministry of Environmental Protection (MEP)
- Existing" chemical substances, i.e. those that have been published to the Inventory of Existing Chemical Substances (IECSC) manufactured or imported in China
- Data testing to be done in China & may request search to confirm if chemical substance was not notified/registered

TSCA Reform Legislations

- Safe Chemicals Act of 2011 designed to modernize the Toxic Substances Control Act (TSCA)
- Main goal is to assess & regulate 6,750 organic HPV & MPV chemicals reported for 2006
- Inventory Update Rule (IUR) by end of 2012
  - 2,750 organic HPV chemicals (≥ 1M lbs/yr)
  - 4,000 organic MPV chemicals (≥ 25,000 & < 1M lbs/yr)
Sustainability (1): Sustainable Chemistry - *A Business Prospective*

- Chemical products made of *renewable raw materials*
  - Biofuels, palm oil & its derivatives, starch,
- Substances with low toxicity or ecological footprint, biodegradable

In all cases, sustainable chemistry products must also be competitive and financially sustainable

Specifically, in marketing oleochemicals means following the ecological principles of the production, promoting the principles in marketing of the products and combining economic considerations with the long-term effect on the society.
Sustainability (2)

Why Sustainability is crucial to Future Business Growth?

- **Future Investments**
  - Sustainable practices (ex. Life Cycle Analysis) are sought out by ethical investors.
  - Companies with proven sustainability records (Ex. Cadbury) globally & locally can make profit through employee productivity & investments due to good public reputations.

- **Leadership in the Market**
  - Sustainability regulation pushes competition in industry to innovate & create solutions, driving up profits for companies that provide the best products.
  - Rise in consumer demand for sustainability improvements.

- **Government Legislations**
  - Designed to encourage businesses to reduce environmental impact, i.e. in carbon emissions, water supply & energy security which are now linked with business costs.
  - Governments have become more persistent at prosecuting businesses that pollute.

- **Ethical Business Practice**
  - Long-term strategy to improve employee confidence & Corporate Sustainability.
  - Can regain costs of managing sustainability via government grants & increased sales.
"SUSTAINABLE“ and "RENEWABLE" (1)

- **Understanding the Difference Between "Renewable" and "Sustainable"**
  - A process is renewable if it can be done more than once
  - A process that's renewable, however, is not necessarily sustainable.
  - To be "sustainable" or "capable of being sustained" is to be capable of being continued with minimal long-term effect on the environment, preferably, indefinitely.

- **Drivers for Renewable Feedstock**
  - Environmental Benefit
  - Renewable Feedstock
  - Security of Supply
  - Legislation
  - New product functionalities
  - Economics
  - New Markets for Agriculture
  - Technology platform
  - Consumer Preference Green Products
“Sustainable” & “Renewable” (2)
Lifecycle of chemical products based on renewable resources

- A full carbon footprint of a product incorporates every stage of the product's life, from cradle to grave.
Roundtable Sustainable Palm Oil (RSPO)

- Formed in 2004 with the objective:
  - To promote the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders.
- Has more than 389 members including:
  - Oil palm growers, producers of consumer products, retailers, banks, investors and non-governmental organizations (NGOs).
- HQ in Zürich with the secretariat located in Kuala Lumpur.

**RSPO Supply Chain Certification**
- A system where RSPO Certified PO or products are part of the supply chain of RSPO Certified

**Logo for RSPO**

**Green Palm Certificate**
Regulations related to Renewable Energy

  - EU Directive on Renewable Energy (RED)
  - 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector
  - Improve the legal framework for promoting renewable electricity
  - Requires national action plans that establish pathways for the development of renewable energy sources including bio-energy
  - Creates cooperation mechanisms to help achieve the targets cost effectively and establishes the sustainability criteria for biofuel

- Implemented on July 1st, 2010 & requires diesel importers and refiners to use 1.15 billion gallons of biodiesel in 2010.
- RFS sets mandatory blend levels for renewable fuels
- Establish greenhouse gas (GHG) reduction criteria & a methodology for calculating lifecycle GHG emissions
- Sets a phase-in for renewable fuel volumes beginning with 9 billion gallons in 2008 and ending at 36 billion gallons in 2022.
- Clean Air Act Section 211(o): EPA is required to set the renewable fuel standards each November for the following year
Anti-Dumping Measures (1)

Anti-dumping measures [(EC) No 1225/2009]
- Adopted after an investigation of the importing country, when dumping and material injury resulting therefrom has occurred.

What is dumping?
- Company is dumping if it is exporting a product to the EU at prices lower than the normal value of the product (the domestic prices of the product or the cost of production) on its own domestic market.
- EC is responsible for investigating allegations of dumping by exporting producers in non-EU countries.
- Investigation undertaken after receiving complaint from EU producers of the product concerned, but it can also do so on its own initiative.
What is an anti-dumping proceeding?

- After receiving a complaint from the EU producers of the product, EC publishes a notice in the EU's Journal opening an anti-dumping proceeding.
- Maximum time limit for an investigation for these proceedings is 15 months.
- Findings are published in the Official Journal, ex., as a regulation imposing anti-dumping duties or terminating the proceeding without duties being imposed.

Recent Issue

- Notice of initiation of an anti-dumping proceeding concerning imports of certain fatty alcohols and their blends by several Asian producers offering material at below cost originating in India, Indonesia and Malaysia.
- EC launched an investigation based on the complaints filed by a specialty chemical supplier (withdrawn) and an integrated energy and chemical company.
- EC investigation resulted in fines for producers in Malaysia, Indonesia & India.
PROSPECTS FOR DOWNSTREAM OLEOCHEMICAL PLAYERS

CHALLENGES & OPPORTUNITIES AHEAD

“Innovation is the lifeblood that enables players in this industry to meet the evolving needs of the consumers needs”
The Global Economy
- Major Developed Economy (USA, EU, Japan, etc)
- Brazil, Russia, India & China
- 25% of world’s land coverage
- 40% of world’s population
- Hold combined GDP of 15.435 Trillion dollars
- Oleochemical Hub within the ASEAN region

Industrial Action Required
- Introduction of new Regulations such as REACH, etc.
- To meet Renewability requirement of the Oleochemical Industry
- Sustainability for growth (more environmental friendly)

Petrochemical versus Oleochemical
- Growing new markets for green-based chemicals & polymers
Ex. of Green-based Chemicals: Bio-lubricants

It is expected that by 2030 – 30% of lubricants are expected to be bio-degradable

Cost & Properties
- Biolubricants are 2.5 to 3.0 times more expensive than conventional but also half as much as fully synthetic lubricants
- Vegetable oils present issues with their oxidative and temperature stability

Regulations
- European Eco-label harmonises specifications across European countries
- National legislation and initiatives in Germany, Austria, Switzerland, Sweden, France and Portugal

Environmental Benefits
Social Benefits
Economical Benefits

SUSTAINABILITY
Ex. of Green-based Polymers: Poly-Lactic Acid for Plastic Production

Sunlight → Crop → Sugar solution → Fermentation → PHA → Plastic product

Biodegradation to CO₂ and H₂O

Source: www.worldofteaching.com
Challenges & Opportunities Ahead (2)

The challenge for the oleo-chemical players is to deliver **Innovative, Sustainable** products that

- Are Safe for the Consumers
- Are Environmentally Friendly & Biodegradable
- Are Cost effective (Value for money factors)
- Include performance of each ingredient
- Have a program of continuous Product Development
- Have processing and manufacturing efficiency

Future development influences:

- Effects on raw materials, i.e., world capacity growth for the oleo basics
- Manufacturers who are currently struggling with issues of oversupply, declining profit margins and problems related to de-formulation.
- The introductions of regulations such as Detergent Directive and Dangerous Substances Directive as well as the low VOC (volatile organic compound) Directive that involves reduction of harmful solvent in chemical products
- Are obliging manufacturers to produce biodegradable products (ex. MES) due to increasing consumer awareness
Thank you for your attention

By:
Dr. Surina Ismail
Global Director, IP Management
Under what circumstances can anti-dumping measures be imposed?

The investigation must show that:
1. there is dumping by the exporting producers in the country/countries concerned
2. material injury has been suffered by the Community industry concerned
3. there is a causal link between the dumping and injury found
4. the imposition of measures is not against the Community interest.