Executive Summary

PETROCHEMICALS in EUROPE and GLOBAL OUTLOOK

CEE POLYOLEFIN MARKET OUTLOOK

APPLICATION SEGMENTS – DRIVERS OF PLASTIC DEMAND

MOL GROUP POLYOLEFIN MARKET PRESENCE

MOL GROUP - POLYMER UPGRADE AND CAPACITY EXPANSION IN BRATISLAVA – NEW LD4
Petrochemicals significantly contribute to the economic and social welfare

- The EU petrochemical industry employs more than 300,000 people in Europe

- Indirectly it generates three or four times this number of jobs in user industries across Europe

- Petrochemicals contribute €155 bn to the overall European GDP
Regional Variations on Ethylene Supply
(Million Tonnes)

North America

Asia

Middle East

Europe

Differences between regions
Trends in ethylene production: ethane and coal based developments, mixed-feed to improve economics

Global ethylene production by process, kt

Source: Nexant

- Shift to LPG-naphtha mixed feedstock
- Share of naphtha cracking will not fall below 35% on long term
- Limits of ethane cracking: availability of ethane and logistics
- Low price level of petroleum may delay further penetration of ethane
- Increasing ethane import to Europe
- Mostly coal based
- Not expected to quickly penetrate into the business due to high capital intensity of the technology
Further penetration of alternative propylene technologies (until 30% in 10 years)

4.3% demand growth requires on purpose investments

Source: Nexant
Polyolefin Outlook – Matured Markets vs Growing Markets in Europe

Demand Growth is driven by CEE region

2014 Actual: ~24 mta

2030 Forecast: ~ 32 mta

Source: Nexant
Polyolefin Europe Markets – Matured (WE) vs Fast Growing Markets (CEE)

**WE:** Spain, Portugal, France, UK, Belgium, The Netherlands, Switzerland, Germany, Austria, N Italy, Norway, Denmark, Sweden, Finland

- **POPULATION:** 414 m
- **POLYMER DEMAND:** ~20 mta
- **POLYOLEFIN CONSUMPTION:** 48 kg/person

**CEE:** Hungary, Slovakia, Czech Republic, Poland, Romania, FYU markets, Bulgaria, Baltic States (Latvia, Lithuania, Estonia), Ukraine (excl. Russia)

- **POPULATION:** 264 m
- **POLYMER DEMAND:** 4.8 mta
- **POLYOLEFIN CONSUMPTION:** 20 kg/person
Polyolefin Outlook - CEE gradually closes the gap to the matured WE market

WE GDP Growth~ 1.86%  |  CE GDP Growth~ 2.66%  |  EE GDP Growth~ 3.55%

Polyolefin consumption per capita (kg/person)

Source: Nexant
Application segments – Packaging is 40% from EU plastic demand

- Packaging segment sets the polyolefin market trend
- Expected profitability and local growth sets automotive segment into focus
Application segments - Drivers for growth ‘Lighter is much more productive’

The trends are intact - Cost efficiency, sustainability and environmental regulations are key drivers for higher plastics utilization.

1. Light weight cars
   - Substitution of glass in packaging
     - Cost efficiency
     - Sustainability endeavors
   - Increased food packaging
     - Rising consumption of ready meals
     - Food security & increased shelf life
Application segments - Packaging drives the demand growth for plastic consumption

Packaging materials breakdown in 2011:
- Glass packaging: 7%
- Other packaging: 5%
- Flexible plastic packaging: 14%
- Flexible foil packaging: 2%
- Flexible paper packaging: 5%
- Rigid plastic packaging: 22%
- Board packaging: 30%

Packaging materials breakdown in 2016:
- Glass packaging: 7%
- Other packaging: 4%
- Flexible plastic packaging: 15%
- Flexible foil packaging: 2%
- Flexible paper packaging: 5%
- Rigid plastic packaging: 24%
- Board packaging: 29%

Drivers of material substitution:

- Substitution of glass in packaging:
  > Cost efficiency
  > Sustainability endeavors

- Increased food packaging:
  > Rising consumption of ready meals
  > Food security & increased shelf life

Source: PIRA International Ltd
Application segments - Automotive should be in focus

PP has the largest share ~ 37% within applied plastics

Plastic content in vehicles

Source: AT Kearney

Drivers of material substitution
- Decreasing weight
- Improving fuel efficiency
Application segments – Light Weight Vehicles ‘Plastic Inside – Out’

200 kg plastics and 80 kg rubber in an average car and their share will grow further
MOL Group – Value Chain from Crude Oil to Polymers

- Crude oil
- Naphtha: 1329 kt
- Ethylene: 656 kt (Traded: 0%)
  - LDPE: 151 kt / 3.4%
  - LLDPE: none
  - HDPE: 349 kt / 5.8%
  - Other et. derivatives: none
- Propylene: 327 kt (Traded: 22%, Traded: 6%)
  - PP: 443 kt / 4.8%
  - Other pr. derivatives: none
- + 662 kt other petchem feedstock
- + ca. 130 kt refinery propylene
We are selling more than 1 MTY

- to ~1600 customers
- in 10 segments (with a large share in Automotive and Packaging)
- via sales offices operating in seven countries – in Germany, Poland, Italy, France, Austria, Romania and Ukraine
LDPE4 – Polymer Upgrade and Capacity Expansion

• 300 mEUR investment

• 220 kt/y (replacement of existing absolute lines)

• Tubular Technology Lupotech T, LyondellBasell

• 30 Types of PE in the Product Portfolio

Planned start up Q1 2016
“It is not the strongest of the species that survives, nor the most intelligent, but the one most responsive to change.”

~Charles Darwin, 1809

THANK YOU FOR YOUR ATTENTION

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