Agenda

01 The impact of coronavirus on global polyethylene demand

02 Capacity scaling up in faltering market conditions

03 Supply and demand outlook: long-term perspective
Impact of covid-19 on PE demand
World Polyethylene demand trend

PE demand by region in 2019

- NORTH AMERICA: 14%
- SOUTH & CENTRAL AMERICA: 15%
- EUROPE: 5%
- FORMER USSR: 17%
- MIDDLE EAST: 3%
- AFRICA: 4%
- NORTH EAST ASIA: 4%
- ASIA AND PACIFIC: 38.1%


- WORLD: 4%
- EUROPE: 3%
- N. AMERICA: 2%
- S & C AMERICA: 5%
- MIDDLE EAST: 4.0%
- FORMER USSR: 3.0%
- AFRICA: 2.0%
- NEA: 1.0%
- SEA: 1.0%

Global GDP growth 2019-2020 +2.8%

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World Polyethylene demand trend

PE demand by region in 2020


- NORTH AMERICA
- SOUTH & CENTRAL AMERICA
- FORMER USSR
- MIDDLE EAST
- ASIA AND PACIFIC

Global GDP growth 2019-2020 - 4%
### Covid-19 impact on global PE demand

**PE Global Demand 2020 vs 2019**

- **4.5%**
  - Global PE demand growth expectation pre-virus

- **0.15%**
  - Current estimated global PE demand growth

A **4.5 Mt demand contraction** if compared with the previous forecast.
Covid-19 impact by PE type (global scenario)

World PE demand by type, in 2020

- HDPE: 36%
- LLDPE: 45%
- LDPE: 19%

World PE demand growth by type (2019-2020)

- HDPE: -3
- LLDPE: 1
- LDPE: 3

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Covid-19 impact by PE type (European scenario)

Europe PE demand by type, in 2020

Europe PE demand growth by type (2019-2020)

Output vs Demand

99%
78%
59%
31%
40%

HDPE
LLDPE
LDPE

99%
78%
59%
31%
40%
Main end-use applications for PE

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<tr>
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<th>Extrusion packaging</th>
<th>Injection moulding</th>
<th>Blow moulding</th>
<th>Others</th>
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<tbody>
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<td>LDPE</td>
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65%
The share of LLDPE and LDPE demand for extrusion packaging

49%
The overall share of PE demand for extrusion packaging
PE supply trend
PE global incremental capacity (2019-2025) by type before Covid-19

PE incremental capacity split

- HDPE: 42%
- LDPE: 7%
- LLDPE: 52%

HDPE capacity increase compared with the installed capacity in 2018: 38%
LLDPE capacity increase compared with the installed capacity in 2018: 38%
LDPE capacity increase compared with the installed capacity in 2018: 10%

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The total new annual capacity that was expected to start operations globally in 2020 is 7.1 Mt. The PE capacity that has been delayed or moved to 2021 is 3.1 Mt.
Total planned capacity additions in 2019-25 (Mt/year)
Longer term perspective
PE demand recovery in 2021 and mid-term outlook

PE Global Demand 2019 - 2021

A 3.7 Mt demand contraction in 2021

World PE demand growth by type (2019-2024)

- HDPE
- LLDPE
- LDPE

PE Global Demand 2019 - 2021

Demand (Mt)

PE demand recovery in 2021 and mid-term outlook

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The fall of PE plant utilization rate in 2020 versus 2019

-3%  
The fall of PE plant utilization rate in 2020 versus 2019

2028  
When the average PE plant utilization rate is expected to reach 2019 level
01  Growing shares will come from larger recycling volumes and reduced consumption growth.

02  Sustainability issues that existed pre-COVID remain in place.

03  The share of recycled PE is expected to double its rate by 2030.
Summary

- Demand for PE has been helped by that for consumer non-durable applications like food packaging.
- Overall, Covid-19 outbreak completely eroded the expected PE demand increase in 2020.
- Long-term demand outlook downsized but PE capacity, even with delays, will continue to grow.
- PE plants utilization rates are expected to reach again 2019 levels only in 2028.
- Sustainability will remain a priority and the long-term outlook for recycled PE is positive.
Thank you

Lorenzo Meazza
Market Analyst

Lorenzo.Meazza@icis.com