



TRENDS AND CHANGES IN THE GLOBAL WAX MARKET

Webinar

February 15, 2022

Today's Speaker



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Content of this presentation has been sourced from Kline & Company's syndicated analysis of the global wax business, titled, Global Wax Industry: Market Analysis and Opportunities

- This recently published report analyzes post-COVID-19 market trends and establishes a market map for the wax industry, assessing whether the supply in other wax categories will grow to close the gap.

The report provides:

- Base year estimates for 2021, along with estimates for 2020
- Mid-term for 2025 and long-term forecast for 2030
- Market estimates in both units: Million Pounds and Kilotonnes

Recently
Published
~December
2021



Kline's 7th in-depth edition covering the global wax industry

Introduction

- Industry overview
 - Wax types, properties, grade
 - Key applications
- Executive summary
 - Regional supply
 - Regional demand
 - Pricing
 - Trade balance

Regional profiles

- North America
- Latin America
- Europe
- Asia
- Middle East & Africa

Product profiles

- Petroleum wax
- Petrolatum
- Microcrystalline wax
- Polyethylene wax
- Fischer-Tropsch wax
- Alpha olefin wax
- Vegetable wax
- Modified wax

Pricing

- Wax pricing analysis
 - By wax type
 - By region

Research Methodology and Data Sources



Interviews

Extensive interviews were conducted with industry experts belonging to the wax value chain, including respondents with well-founded expertise in:

- Base oil/wax refining
- Wax de-oiling
- Broking/Trading/Marketing
- Formulating/Blending
- End-use applications



Secondary sources

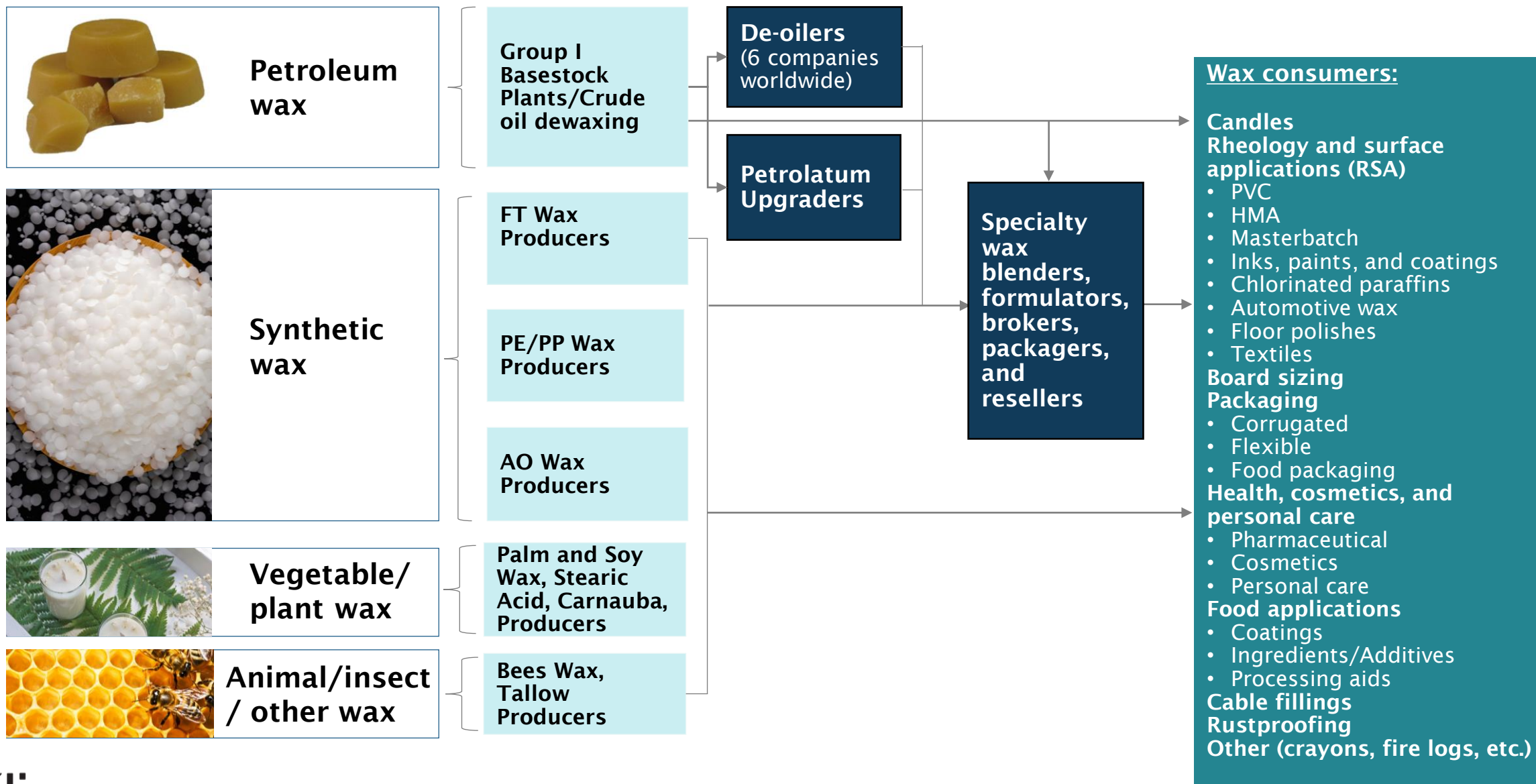
Secondary sources included wax and candle associations, trade associations, natural/vegetable oil boards/associations, government data repositories, economic and business data from global organizations (likes of United Nations, and OECD, amongst others), and company websites



In-house analysis

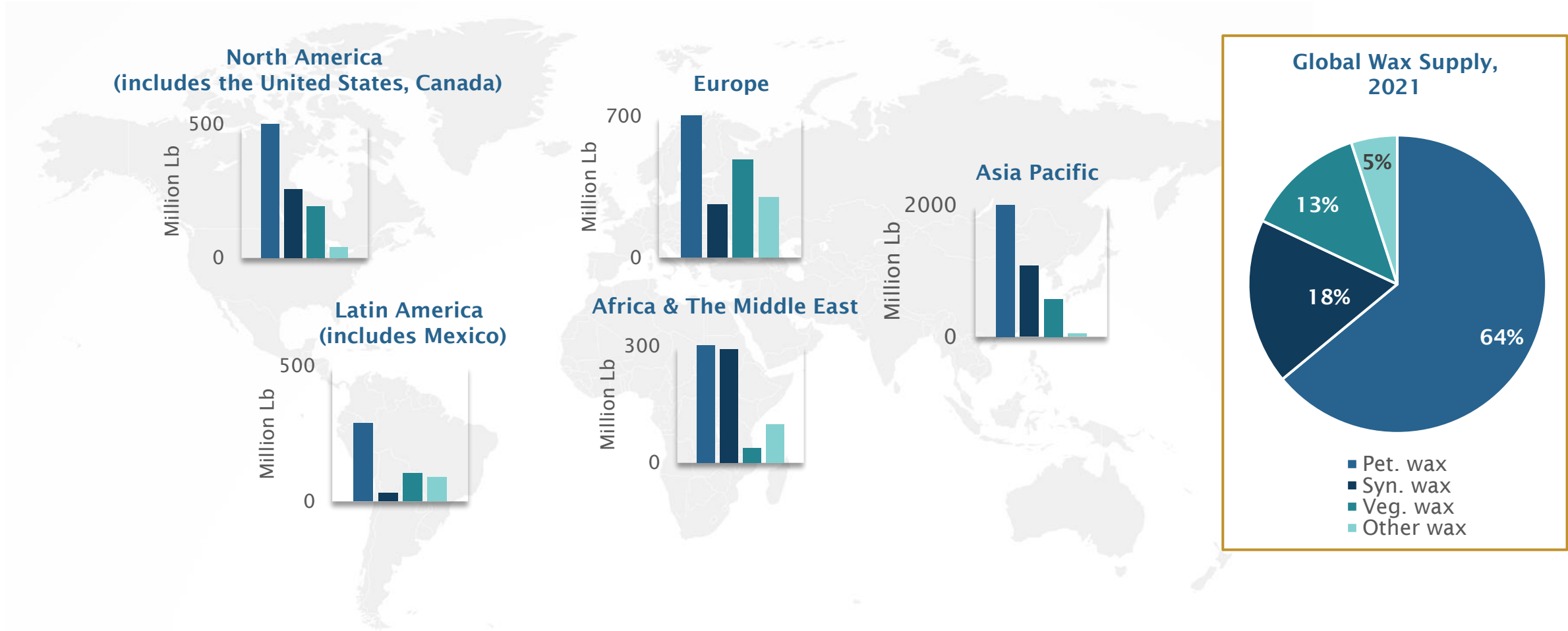
Detailed plant-wise analysis of wax supplying facilities was done to establish wax supply. Supply forecast was developed via site-by-site analysis of each plant producing petroleum, FT, PE/PP, and AO wax. Demand estimates were established by understanding regional material availability and demand pull. Demand forecast is tied to regional economic forecasts and consumer preferences.

Global Wax Industry Structure and Supply Chain



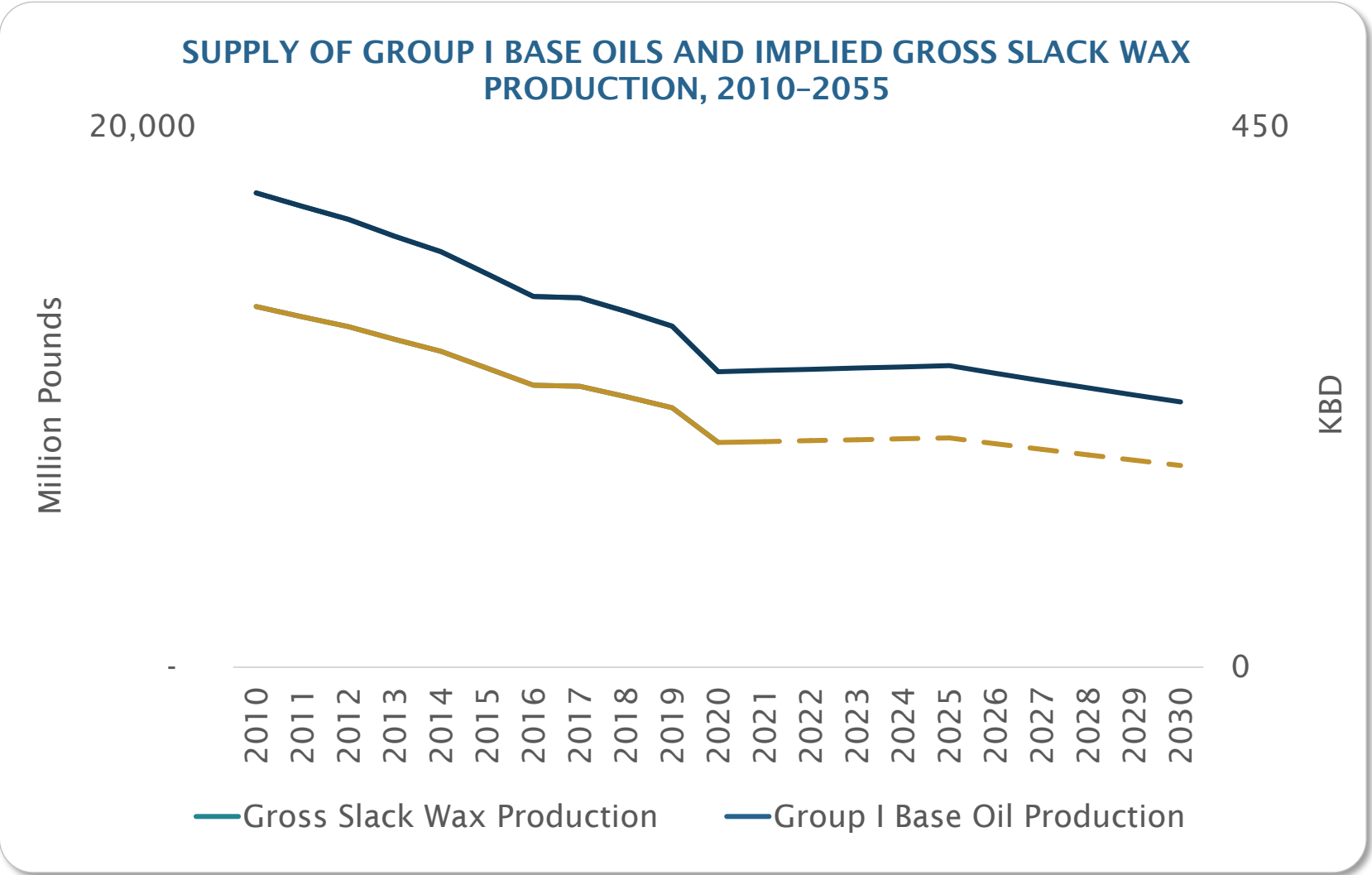


Global wax supply, estimated at 10.9 billion pounds in 2021, is led by Asia, which accounts for more than half of the supply.





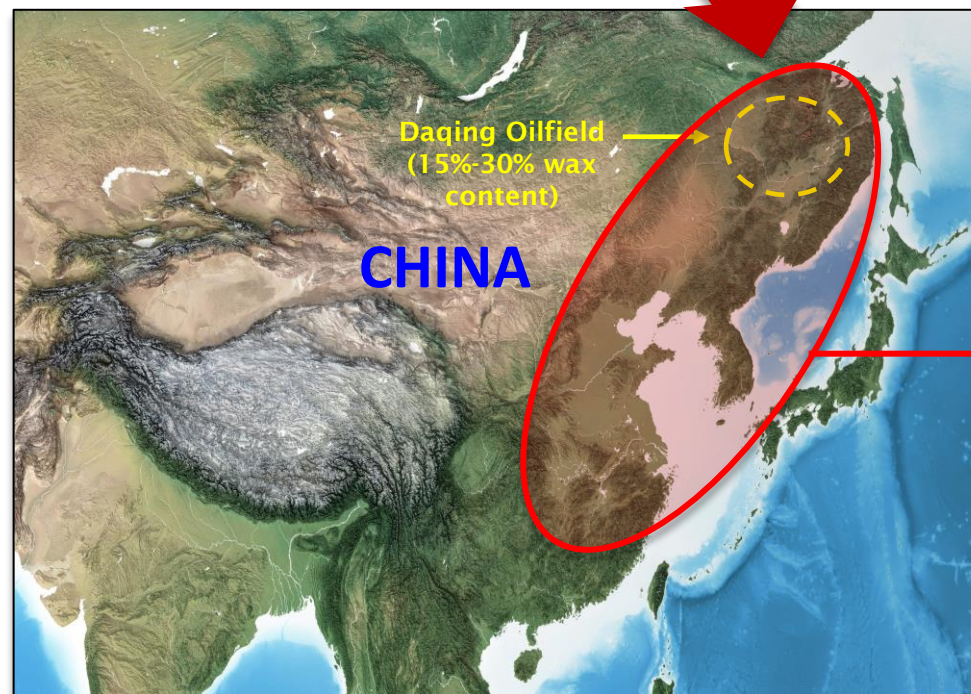
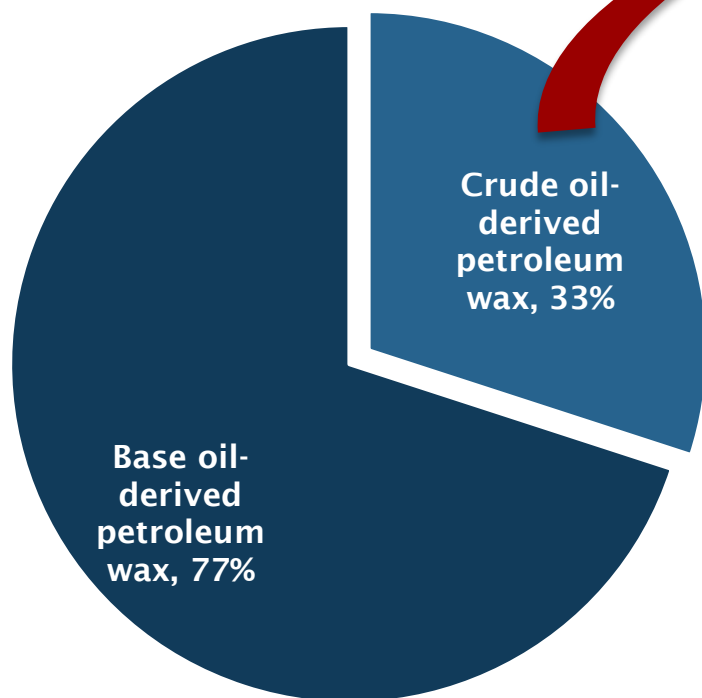
Supply of petroleum wax that is associated with base oil production continues to decline.



The supply of Group I base oil-derived petroleum wax is destined to decline in the next 5-10 years, as the production of Group I base oils declines

➤ Base oil-derived petroleum waxes account for nearly 77% of the global petroleum derived waxes. The balance supply of petroleum wax is met by waxes derived from crude oil dewaxing.

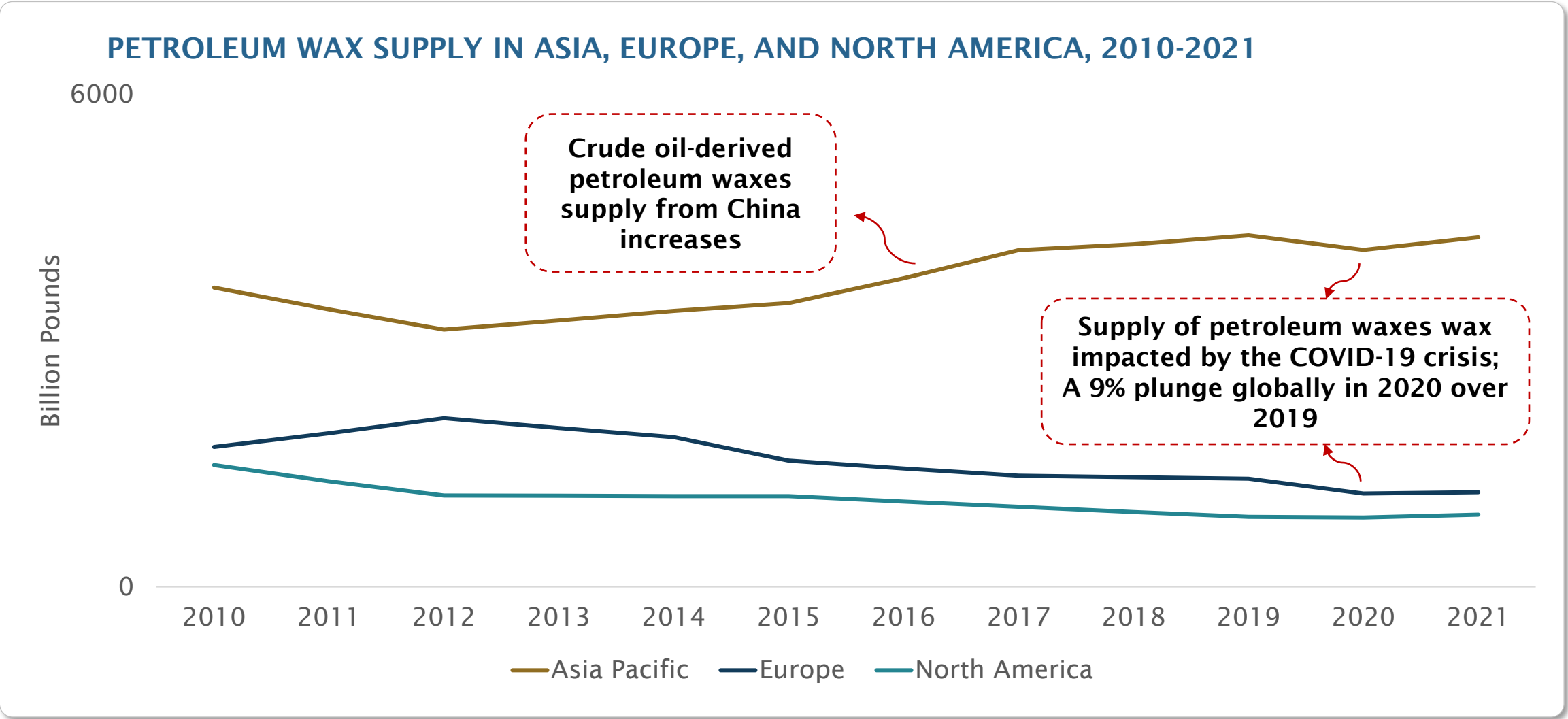
PETROLEUM WAX SUPPLY BY SOURCE



Crude oil-derived wax-producing refineries are located in Northeastern and Northern China, closer to the Daqing oilfield.



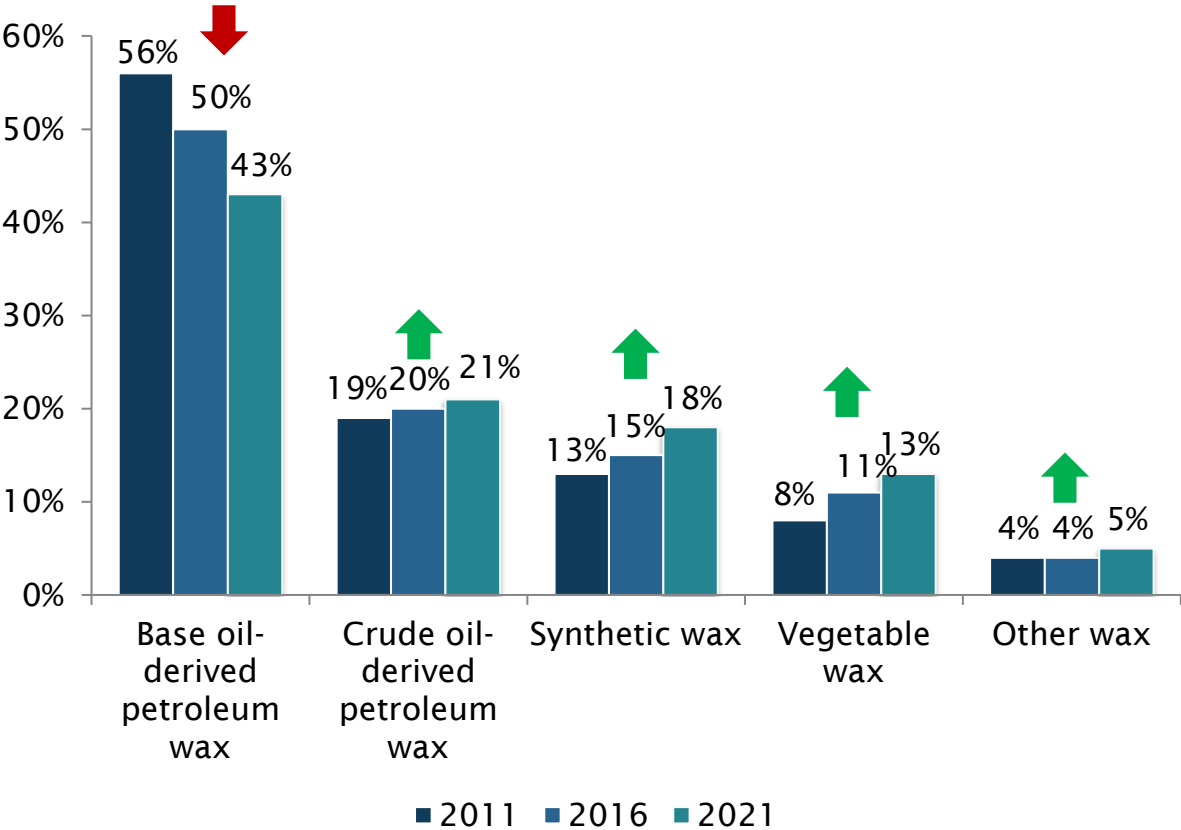
Petroleum wax supply in Europe and North America continues to deteriorate, while the supply from Asia continues to grow.



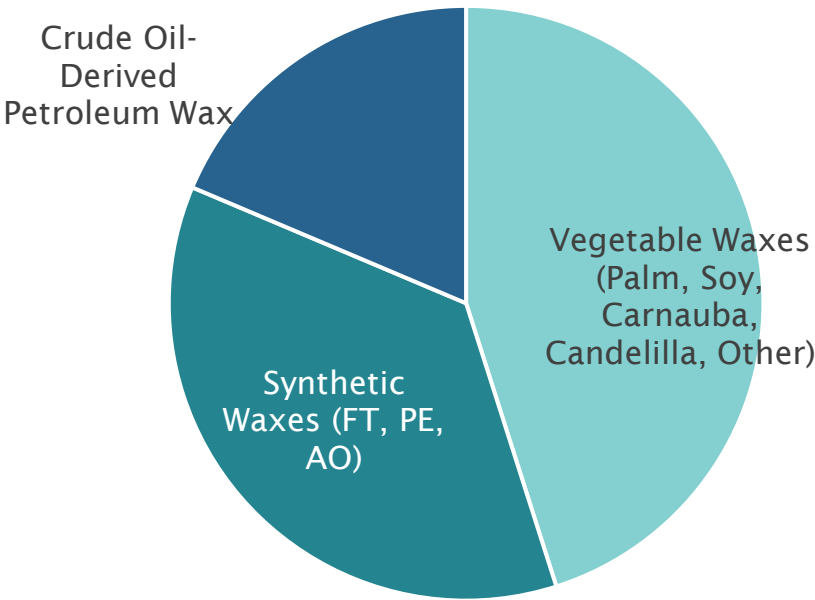


As the supply of base oil-derived petroleum wax deteriorates, crude oil-derived petroleum waxes and non-petroleum synthetic and natural waxes provide resilience to the wax industry.

CHANGE IN WAX COMPOSITION



NON-PETROLEUM AND CRUDE OIL-DERIVED WAX SUPPLY ADDITION, 2011-2021



Synthetic and vegetable waxes have seen the most significant growth in the last 10 years.

How well will synthetic and vegetable waxes fit in the global sustainability drive?

- Are consumer preferences changing in order to make their end-products low on carbon footprints and recyclable?
- Which wax types are most sustainable in nature and are best suited for top wax applications?

SYNTHETIC WAXES (Direct PE/PP, By-product PE, FT, AO)

By-product PE waxes:

- Thermal degradation of waste plastic
- Refining of plastic waste
~Replacing the 'end-of-life' concept with 'regeneration'



Direct PE wax:

- Bio-based PE waxes
~sugarcane-sourced ethanol; 100% renewable source for bio plastics



FT waxes:

- GTL technology-derived waxes, which use natural gas as a source material

VEGETABLE WAXES (Palm, Soy, Stearic Acid, Rice, Others)

Soft wax applications:

- Palm and soy oil-derived waxes
~Candles, cosmetics, food-based packaging



Hard wax applications

- Rice bran oil wax



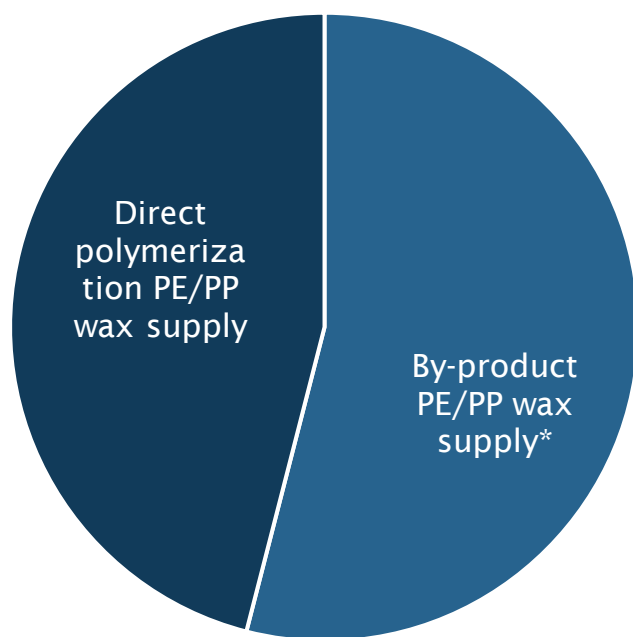
Negative impact:

~ "The other oil spill"



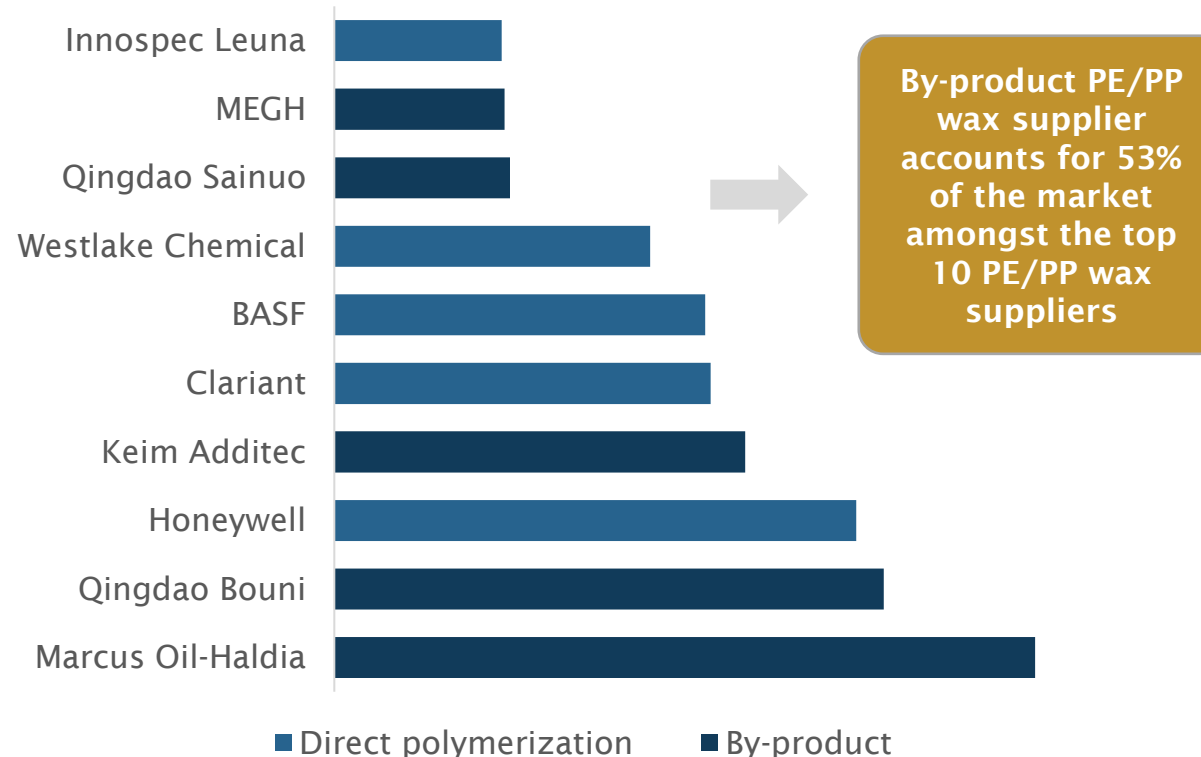
➤ The PE/PP wax market is split between direct polymer PE/PP wax producers and by-product wax producers.

GLOBAL PE/PP WAX PRODUCTION BY TECHNOLOGY, 2021



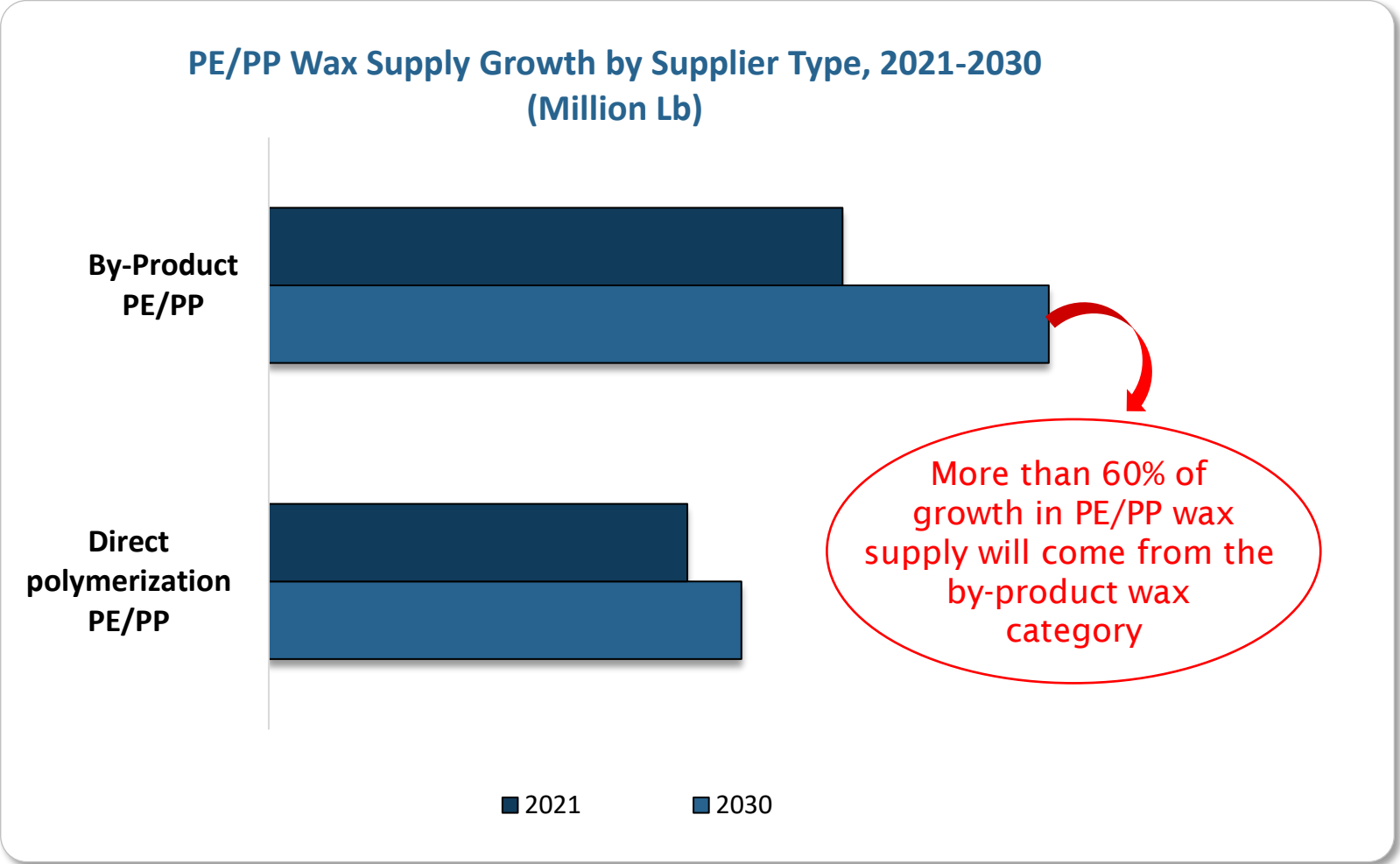
**Includes waxes produced via thermal degradation process and refining of waste plastic.*

TOP 10 PE/PP WAX SUPPLIERS ~70% OF THE MARKET





By-product PE/PP waxes, due to their sustainable label, are forecast to see a stronger growth than direct polymerization waxes in the next 10 years.

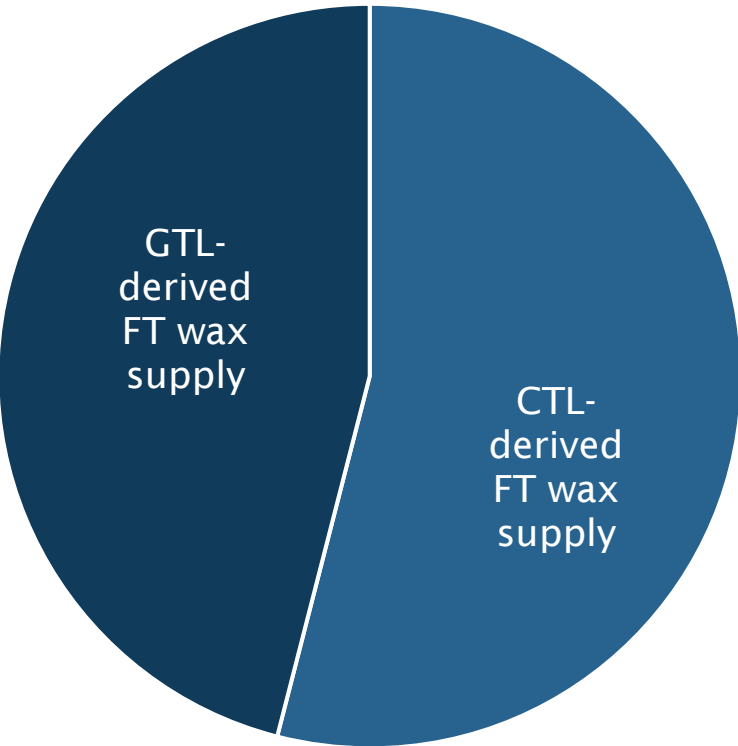


Green Mantra, Clariter, and MEGH are some examples of growing by-product PE wax producers.

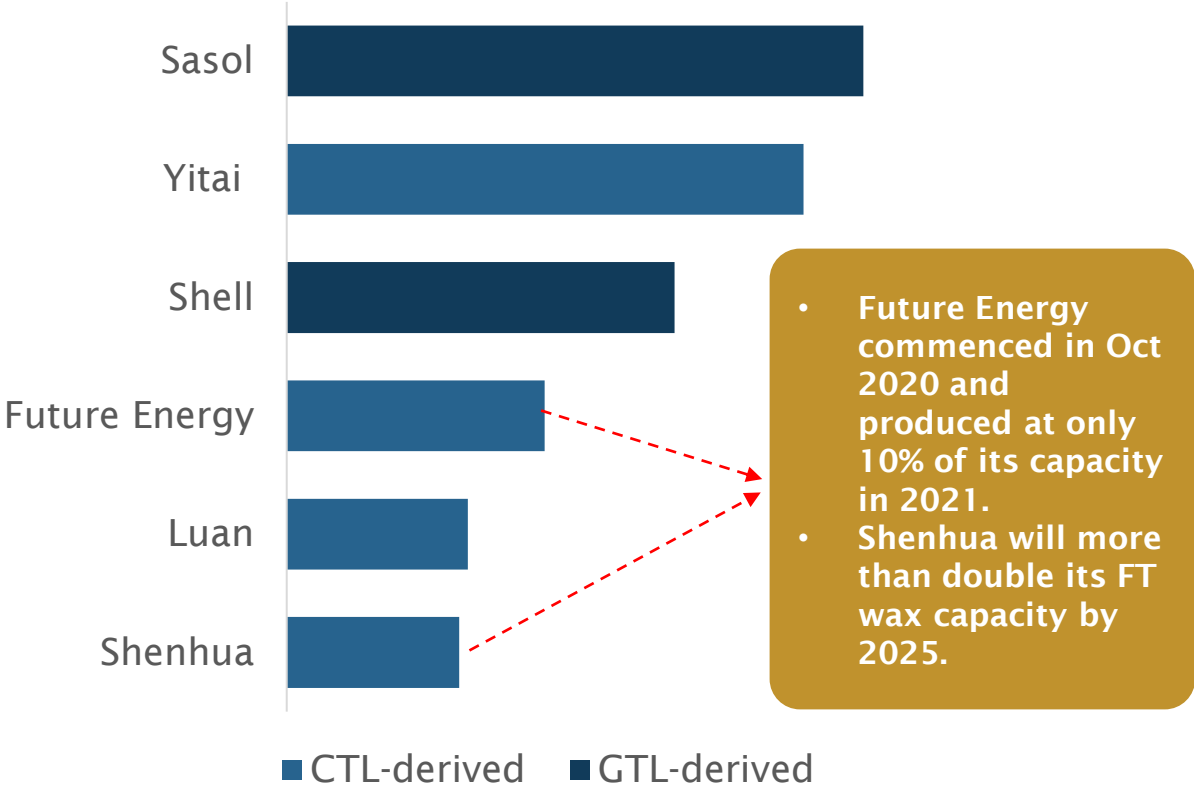


FT waxes produced via CTL technology are growing. In the next 10 years, these waxes will account for a majority of all FT wax supply growth.

GLOBAL FT WAX PRODUCTION BY TECHNOLOGY, 2021



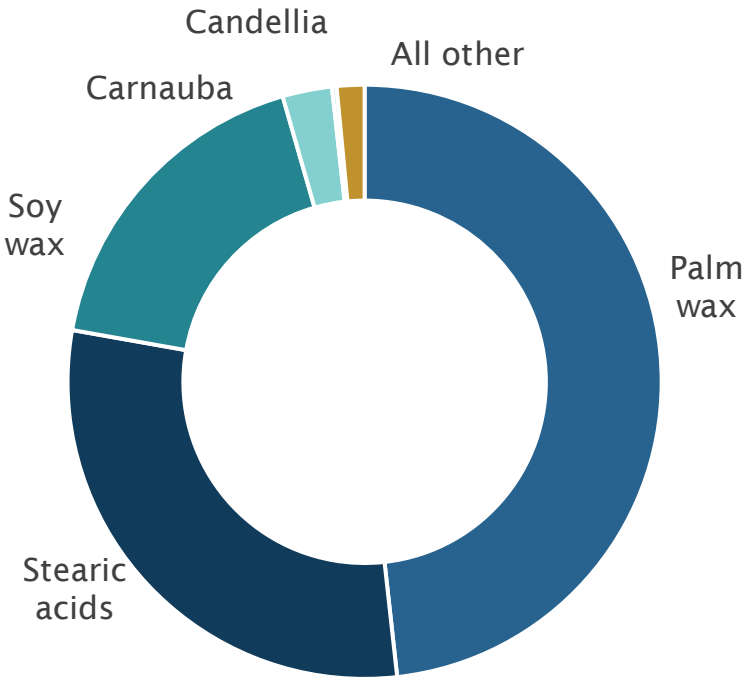
GLOBAL FT WAX SUPPLIERS





Vegetable waxes are produced from renewable plant-based sources, carry a green-label on them, and are gaining tailwinds.

GLOBAL VEGETABLE WAX SUPPLY, 2021



VEGETABLE WAXES ARE GROWING IN THE MARKET SPACE OF SOFTER WAXES:



Candles



Corrugated boxes



Cosmetics and personal care products



Polishes

STRONG TREND TOWARD SUSTAINABILITY AND ENERGY TRANSITION ARE RESULTING IN GROWTH IN DEMAND FOR VEGETABLE WAXES IN SOME OTHER APPLICATION AREAS:



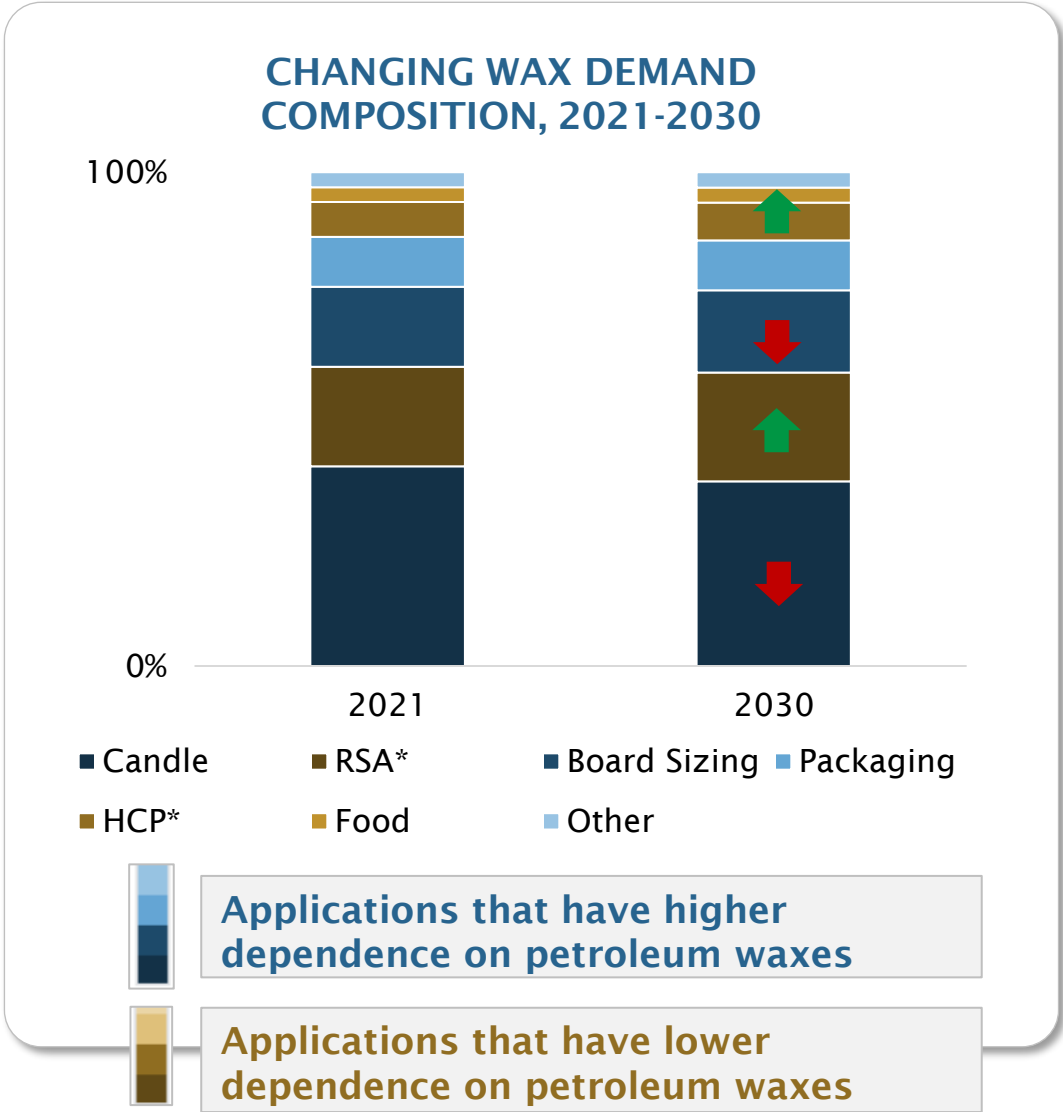
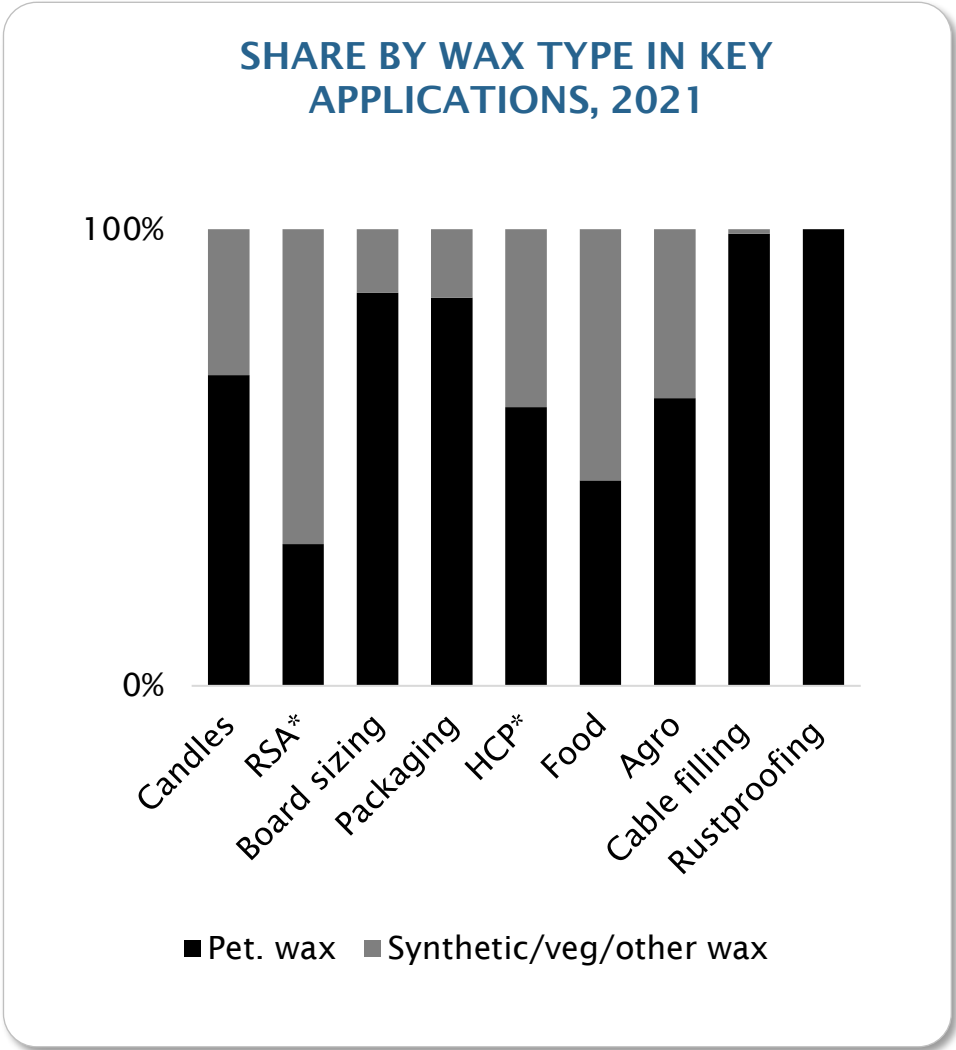
Food packaging



Engineering Thermoplastics/ Masterbatches

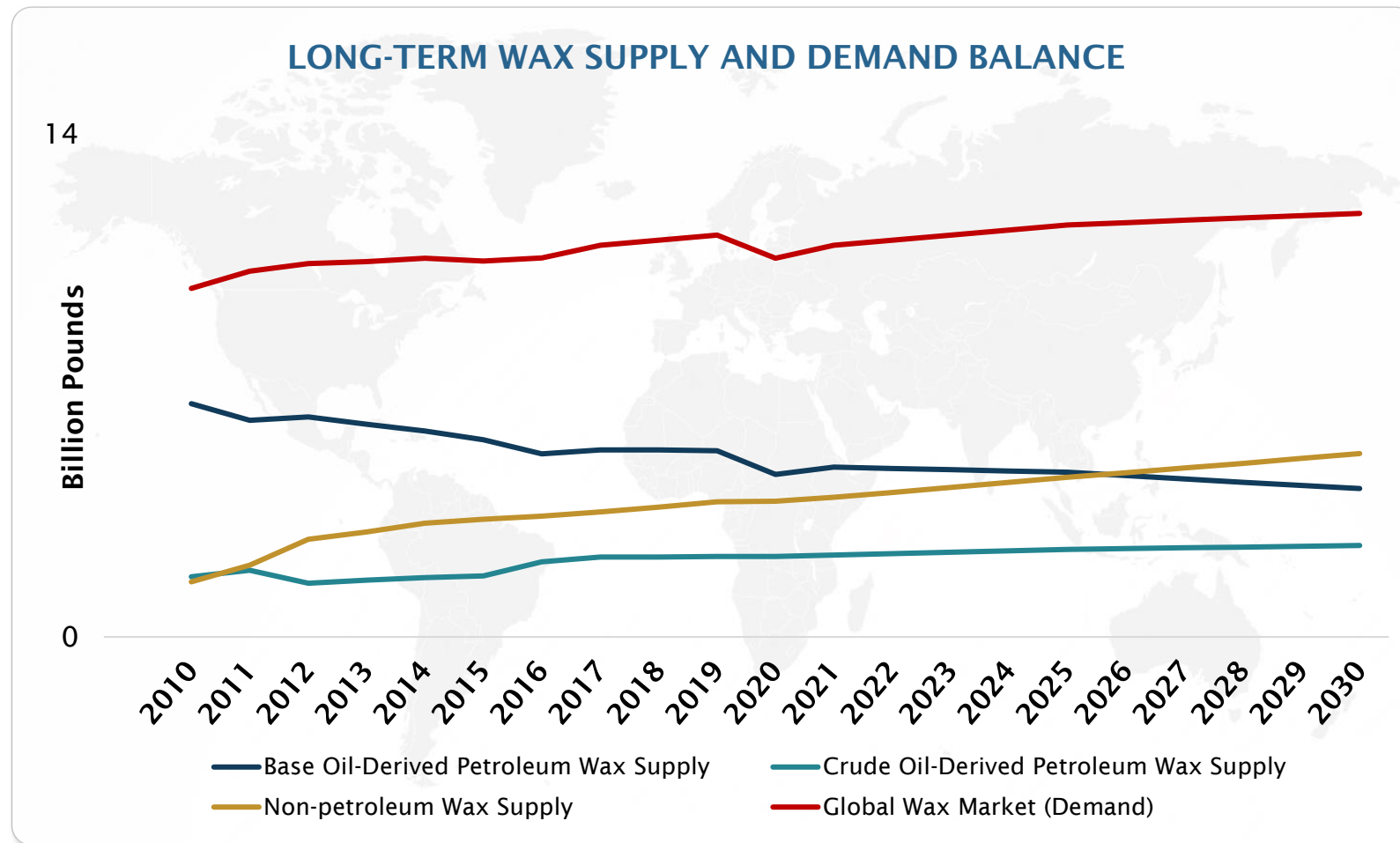


Applications that are more dependent on petroleum waxes are likely to take a beating in the long run as the supply of petroleum waxes deteriorates.



Global Wax Supply and Demand Outlook

The supply of waxes is estimated to remain tight due to continuous erosion of Group I base oil-derived petroleum waxes and will be driven toward applications that have the flexibility and adeptness of switching waxes in their formulations.



Global Wax Market (Demand)

- Applications that have the flexibility and adeptness of switching waxes in their formulations will grow to absorb changes in the supply landscape.

Non-petroleum Wax Supply

- Synthetic and natural wax suppliers will step up to fill-in for the pet. wax loss.

Base Oil-Derived Petroleum Wax Supply

- Will continue to erode

Crude Oil-Derived Petroleum Wax Supply

- Will scale up



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