



Changing where chemicals come from

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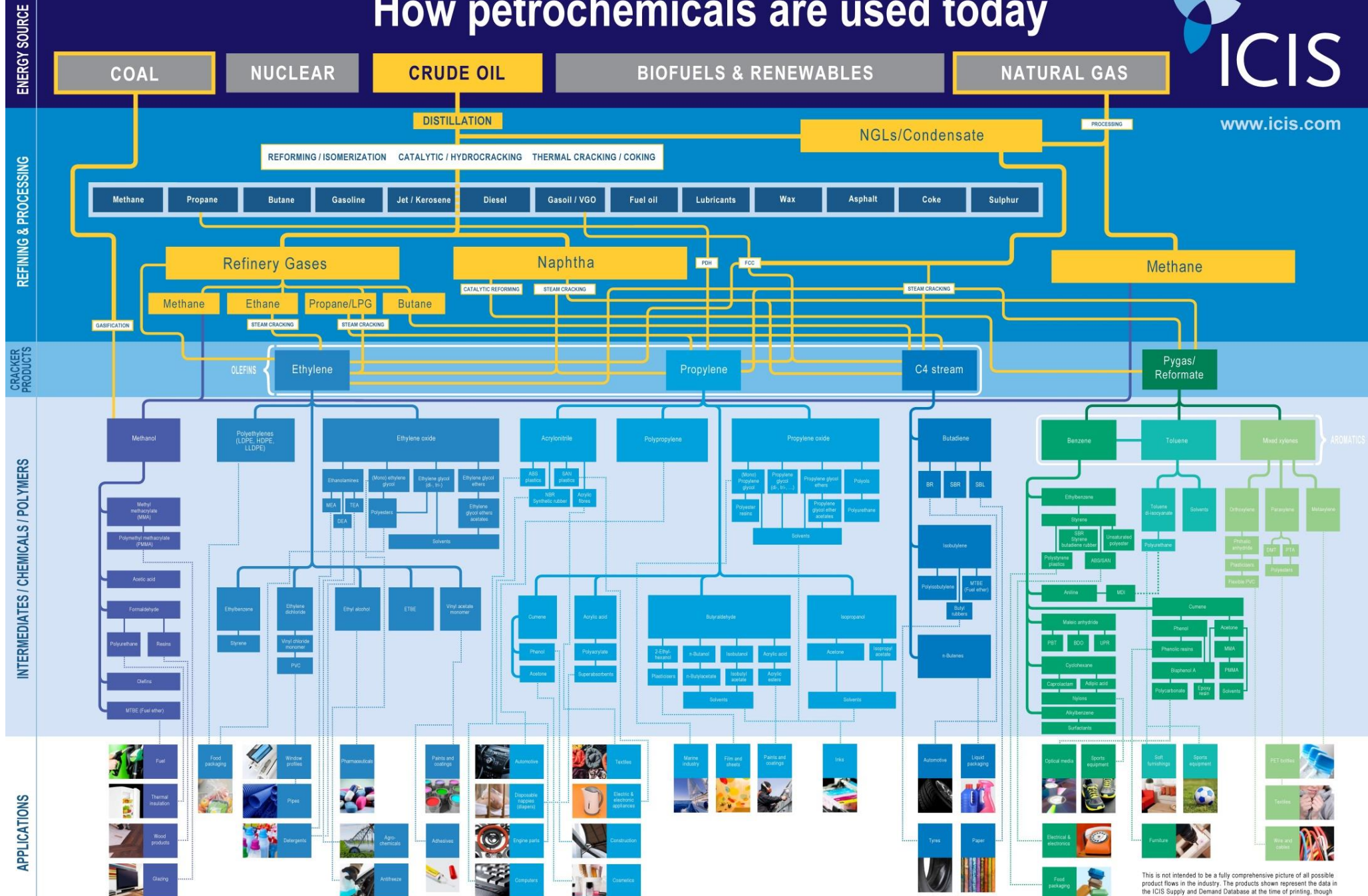


Where it currently all comes from

The primary source of most chemical feedstocks is oil

- The petrochemical industry consumes about 10% (and growing) of oil production
- The current rate of production is about 35 billion barrels of oil a year
- This equates to about about 15 billion tonnes of carbon dioxide a year
- So, 10% is about 1.5 billion tonnes of carbon dioxide a year

How petrochemicals are used today



How it is classified – and where is it used

- Methanol and derivatives
 - Fuel, Thermal Insulation, Wood Products, Glazing
- Ethylene and derivatives
 - Food Packaging, Construction, Detergents, Pharmaceuticals, Agrichemicals, Paints/Coatings, Adhesives, Antifreeze
- Propylene
 - Automotive, Nappies, Electronics, Textiles, Appliances, Construction, Cosmetics, Paints/Coatings, Films, Inks
- C4
 - Automotive, Liquid Packaging, Tyres, Paper
- Aromatics
 - Electronics, Furniture/Furnishings. Food Packaging, Sports Equipment, Textiles, Wire/cables

No, but where does it really come from?

The primary source of most chemical feedstocks is oil

- Oil is produced from biological deposits laid down millennia ago
- Most of it is burned to produce energy but, in the process, produces carbon dioxide
- Petrochemicals go into a variety of uses, some of which are buried, some of which are burned and some of which get into the environment
- If we could replace the feedstocks for the chemical industry with biologically produced ones, we could lower the increase in anthropogenic carbon dioxide by up to 1.5 billion tonnes a year
- And if we buried the polymers (about 40%) we would effectively be sequestering carbon dioxide

What is stopping us?

- The goal would be to replace the current feedstocks with identical biologically produced ones
- Much of the chemistry needed to deliver this is known
- But not a lot of it has been scaled up to commercial feasibility
- The new plants would require significant amounts of capital
- And when first introduced the products would cost more – so customers may not use them
- Regulations could be used to drive the market
 - But they need to use an “escalator” approach that drives behavior over a time period that matches capability
- We need agreed plan that balances industrial capabilities with societal needs
- And it has to include all stakeholders



This is only part of the solution!!

Questions

- 1. Do you agree that replacing petrochemical feedstocks with sustainably produced ones is important? (as part of the overall solution)
- 2. Should the government have a target to reduce the use of petrochemical feedstocks by a certain date (similar to banning ICE cars)?
- 3. How can stakeholders support the chemistry industry to transition in this way?

Thank you



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Society of chemical industry



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