



Downstream Oil's Dilemma

Prepared for the IEA IEF OPEC Symposium on Energy Outlooks

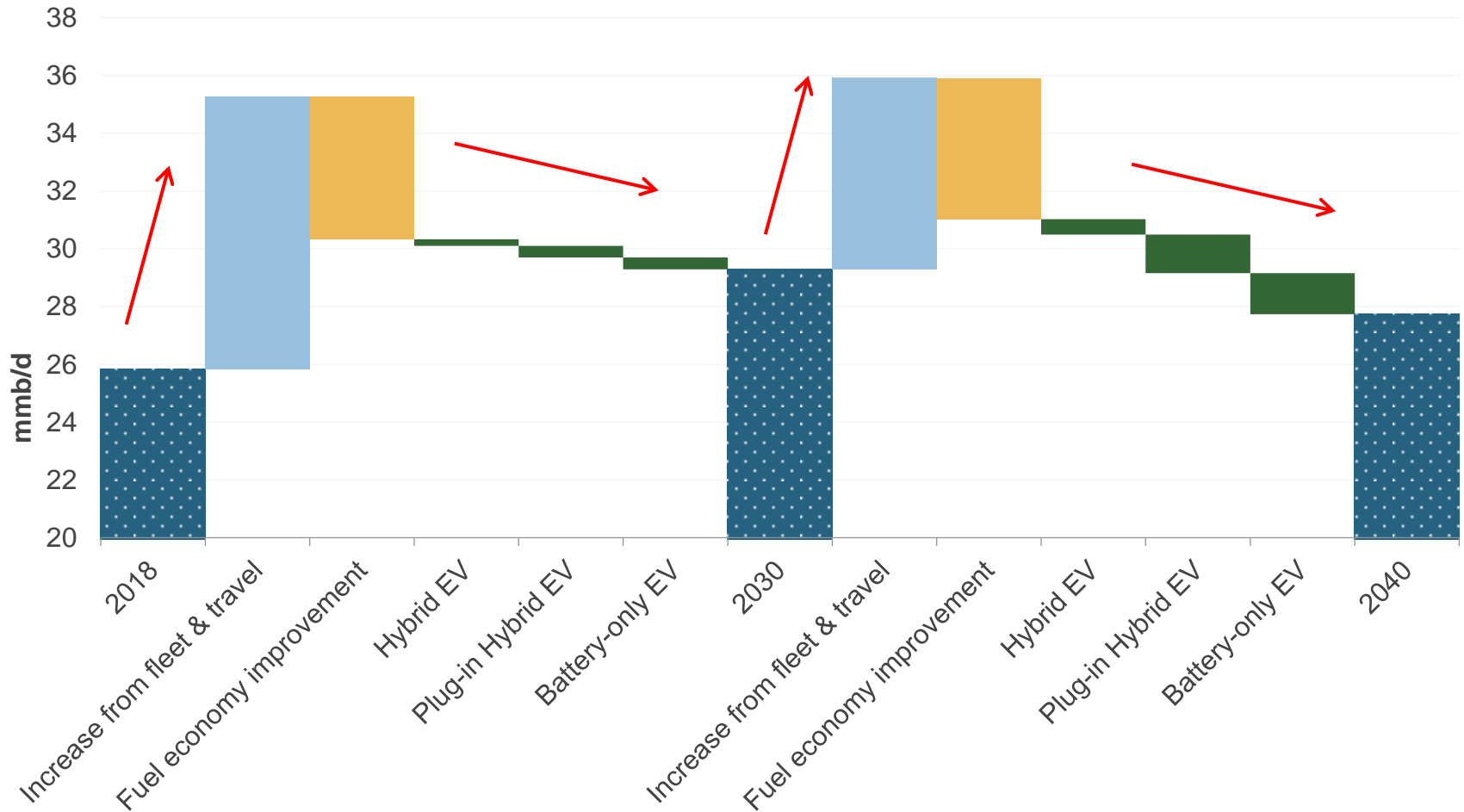
Jeff Brown, Ph.D.

President, FGE

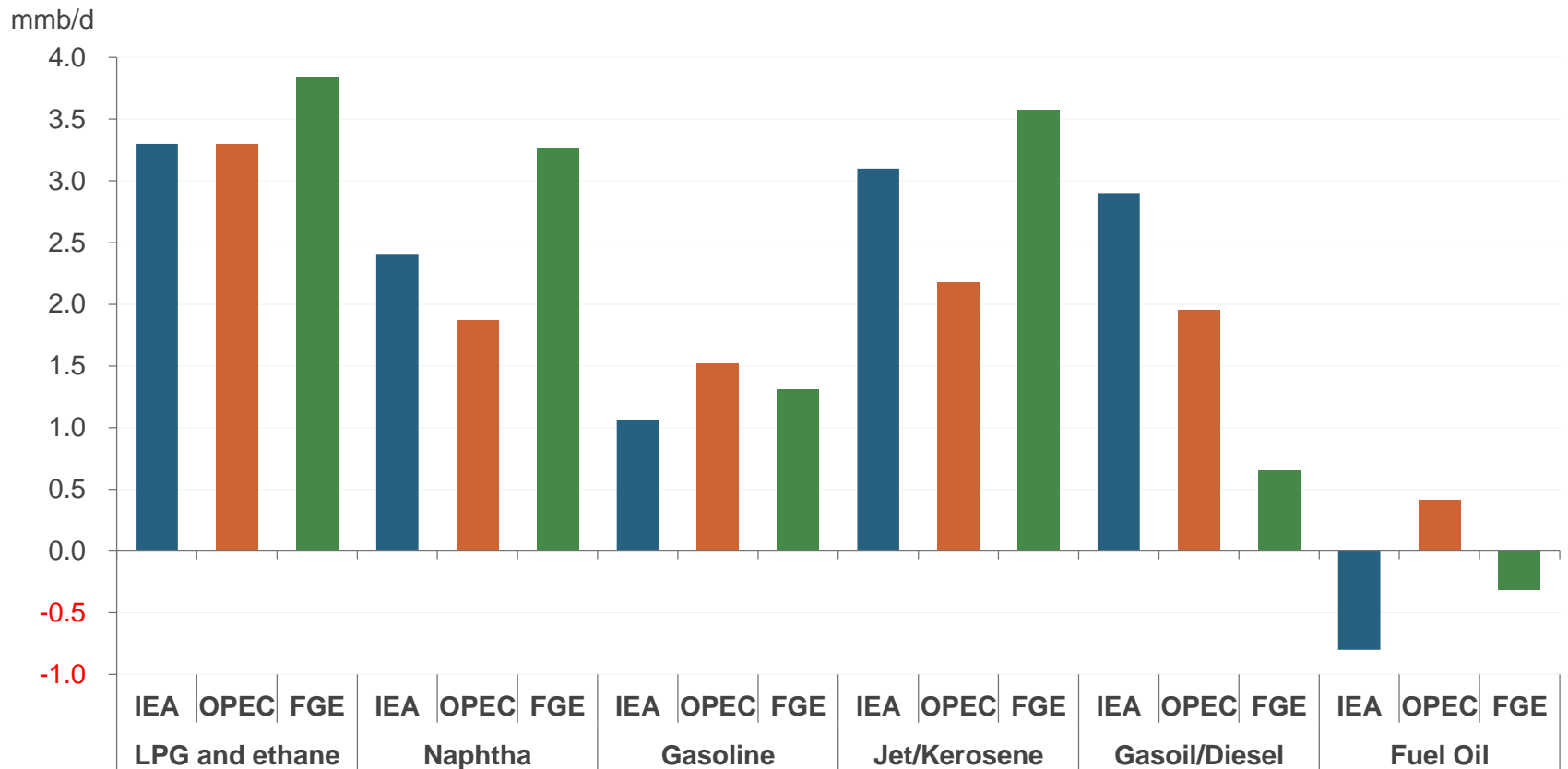
This material contains confidential and privileged information intended solely for the recipient. The dissemination, distribution, or copying by any means whatsoever without FGE's prior written consent is strictly prohibited.

Transport Fuels Under Attack: Fuel economy first...then EVs

Components of Change in Global Gasoline Demand Between 2018-2040

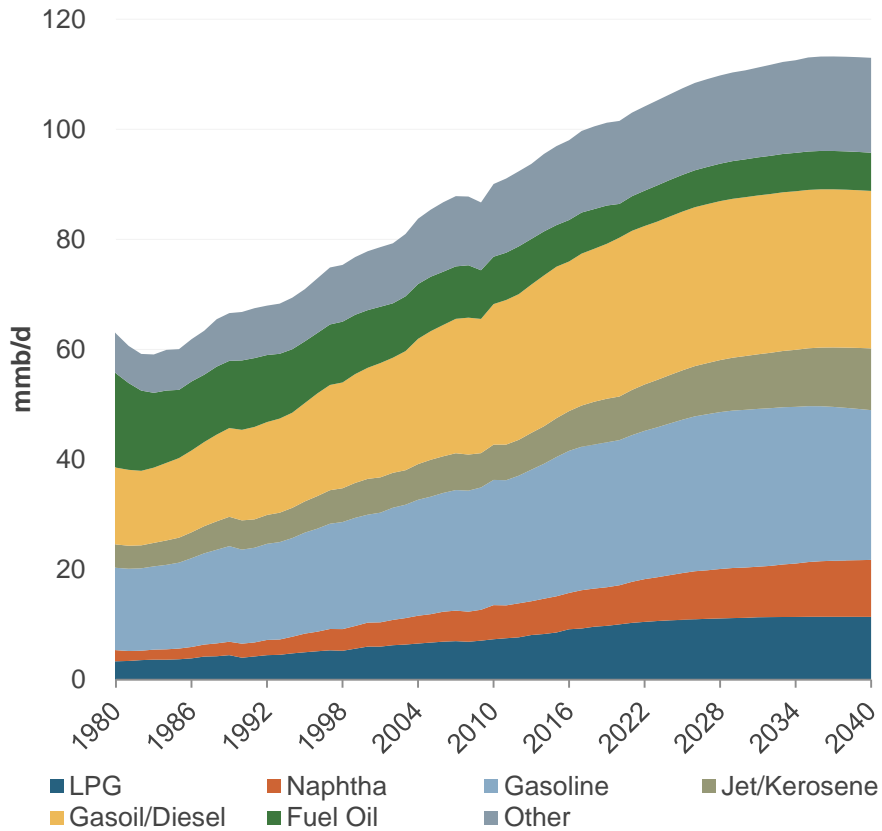


Global Oil Demand Growth by Product 2018-2040 Comparison

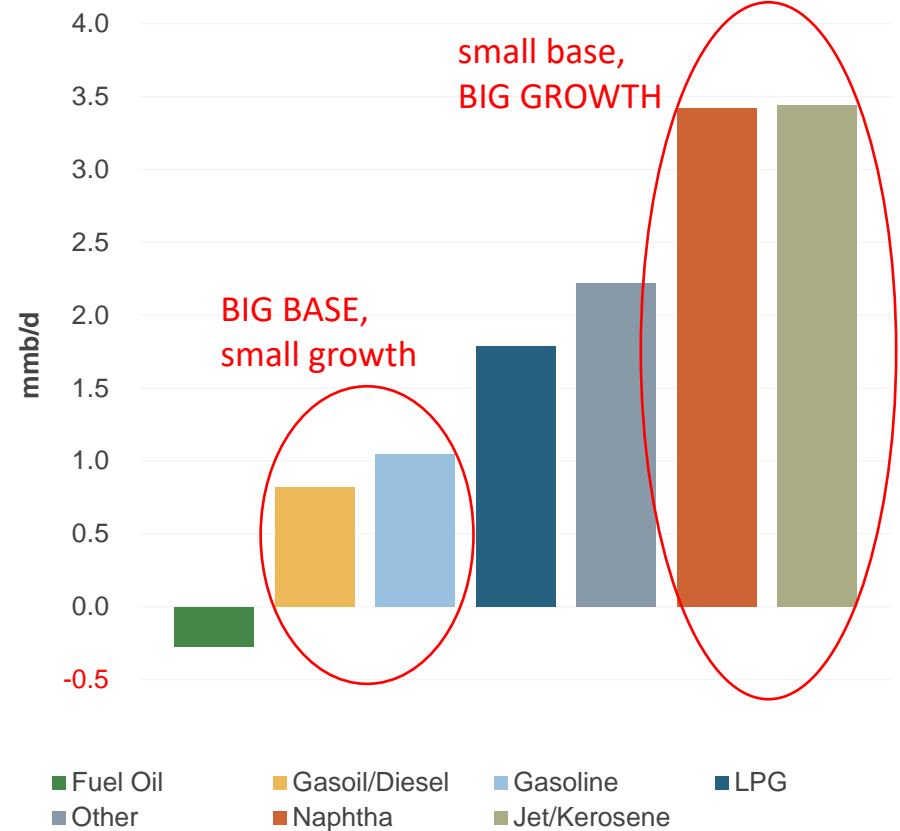


Future Fuels Mismatch!

Global Oil Demand by Product



Global Oil Demand Growth by Product 2018-40

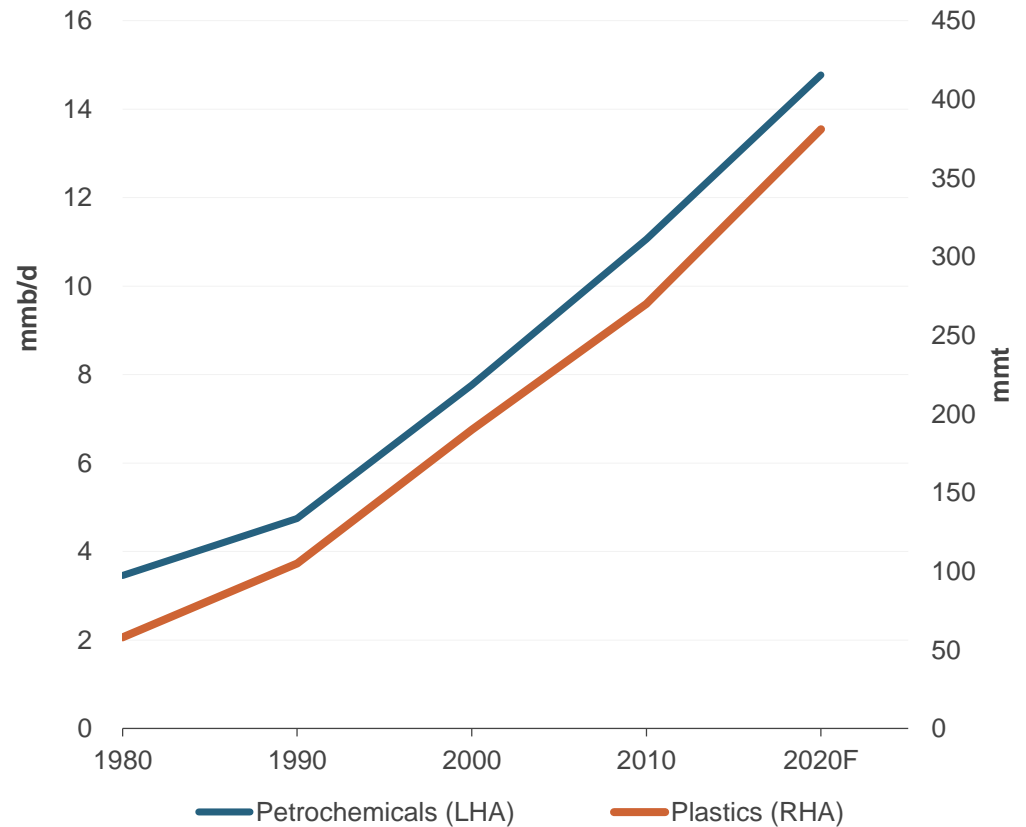


Are Petchems the Answer?



Source: Pinterest

Petchem Feedstock* Demand vs. Plastics Production

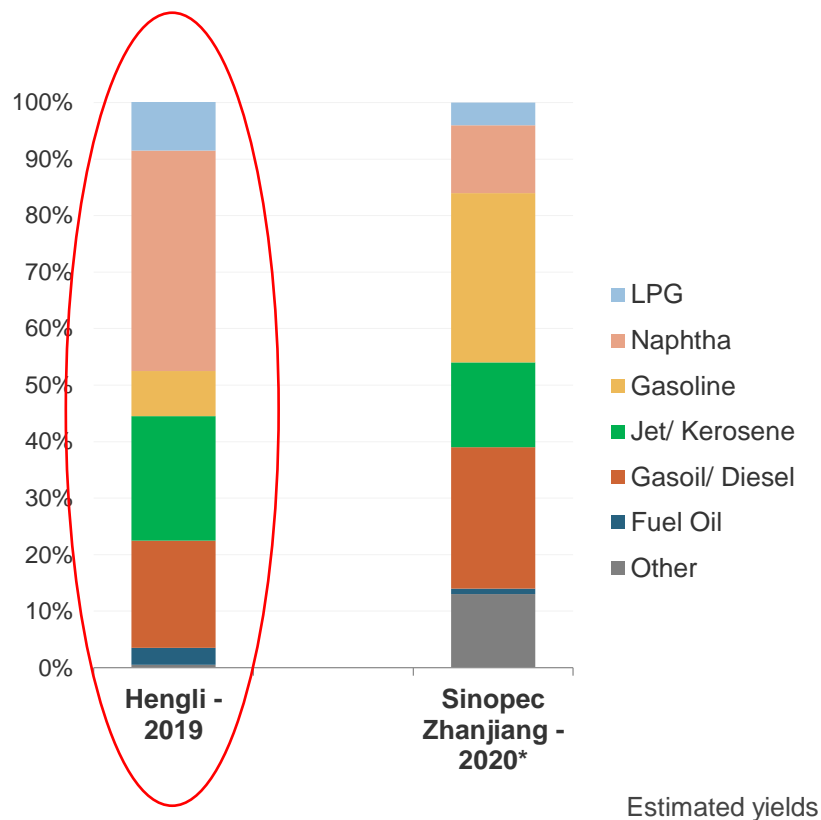


*: Ethane, LPG, naphtha

Shift in Refinery Yields of Petchem Integrated Refineries

The perfect refinery?

	Hengli Petrochemical's Dalian Refinery	Sinopec Zhanjiang's Guangdong Refinery
CDU	400	200
Coker	0	0
FCC/RFCC	0	79
HDC	370	38
Catalytic Reformer	234	43
HDT	60	75
RDS	0	76
Alkylation	0	7



Downstream Oil's Dilemma—Differing Approaches

- Full speed ahead towards petrochemicals
- Invest in a growing region
- Don't build...don't spend...don't stay (exit)
- Find value through trading/optionality
- New areas?

Huge \$\$\$ at risk...what if consensus is wrong?



Thank You

Research & Analysis | Consultancy Services | Data Analytics | Commercial Advisory Services | Multi-Client Studies

www.fgenergy.com | FGE@fgenergy.com

Global Headquarters

FGE London:

FGE House
133 Aldersgate Street
London, EC1A 4JA
United Kingdom
Tel: +44 (0) 20 7726 9570

Asian Headquarters

FGE Singapore:

8 Eu Tong Sen Street
#20-89/90 The Central
Singapore 059818
Tel: +65 6222 0045
Fax: +65 6222 0309

Global Offices

Tokyo:	+81 (3) 6256 0299
Dubai:	+971 (4) 457 4270
Honolulu:	+1 (808) 944 3637
Los Angeles:	+1 (714) 593 0603
Beijing:	+86 (10) 5106 8410
Houston:	+1 (281) 819 1983