



Methanol as an energy carrier

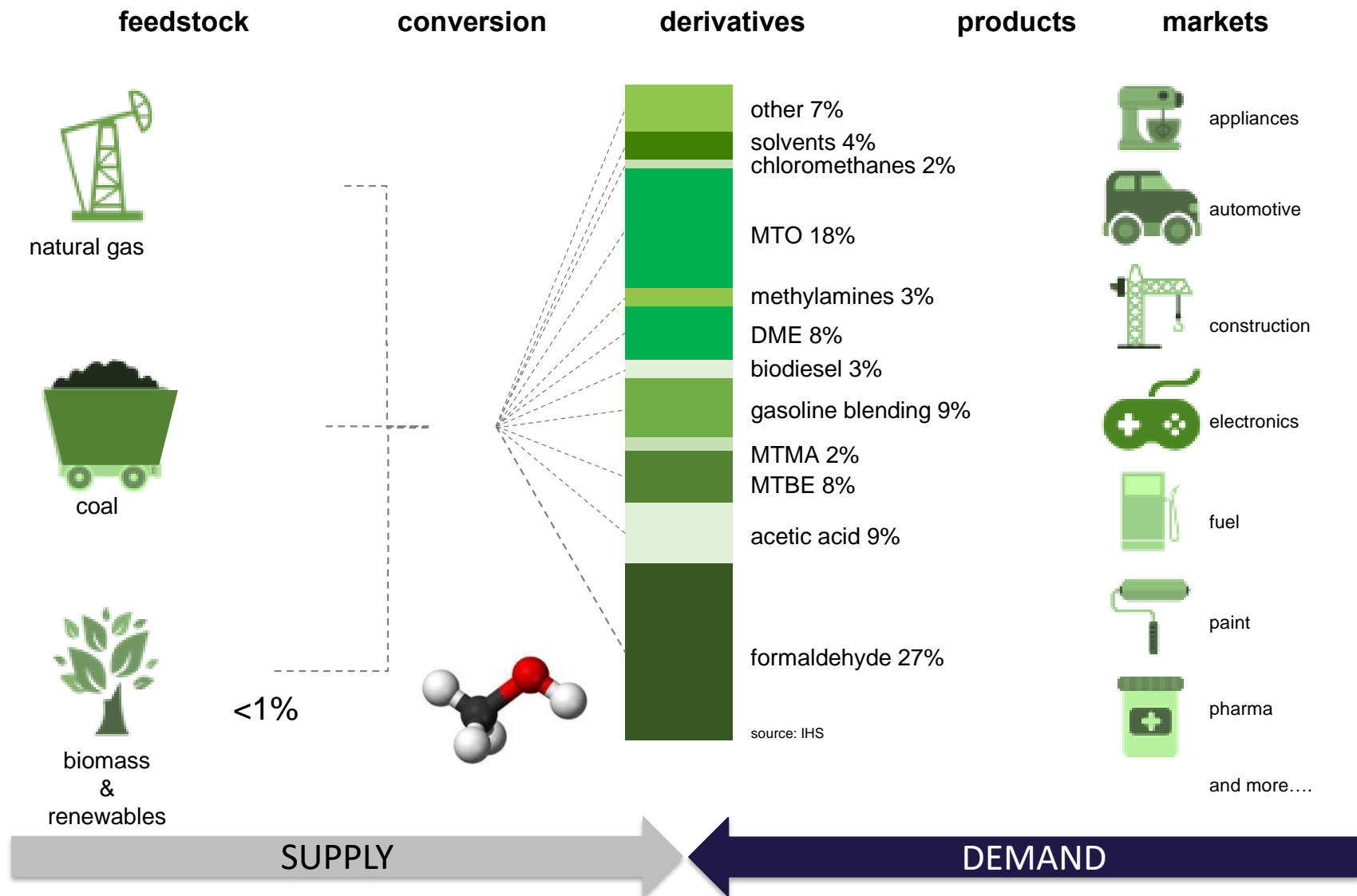
Worldwide status

Eelco Dekker

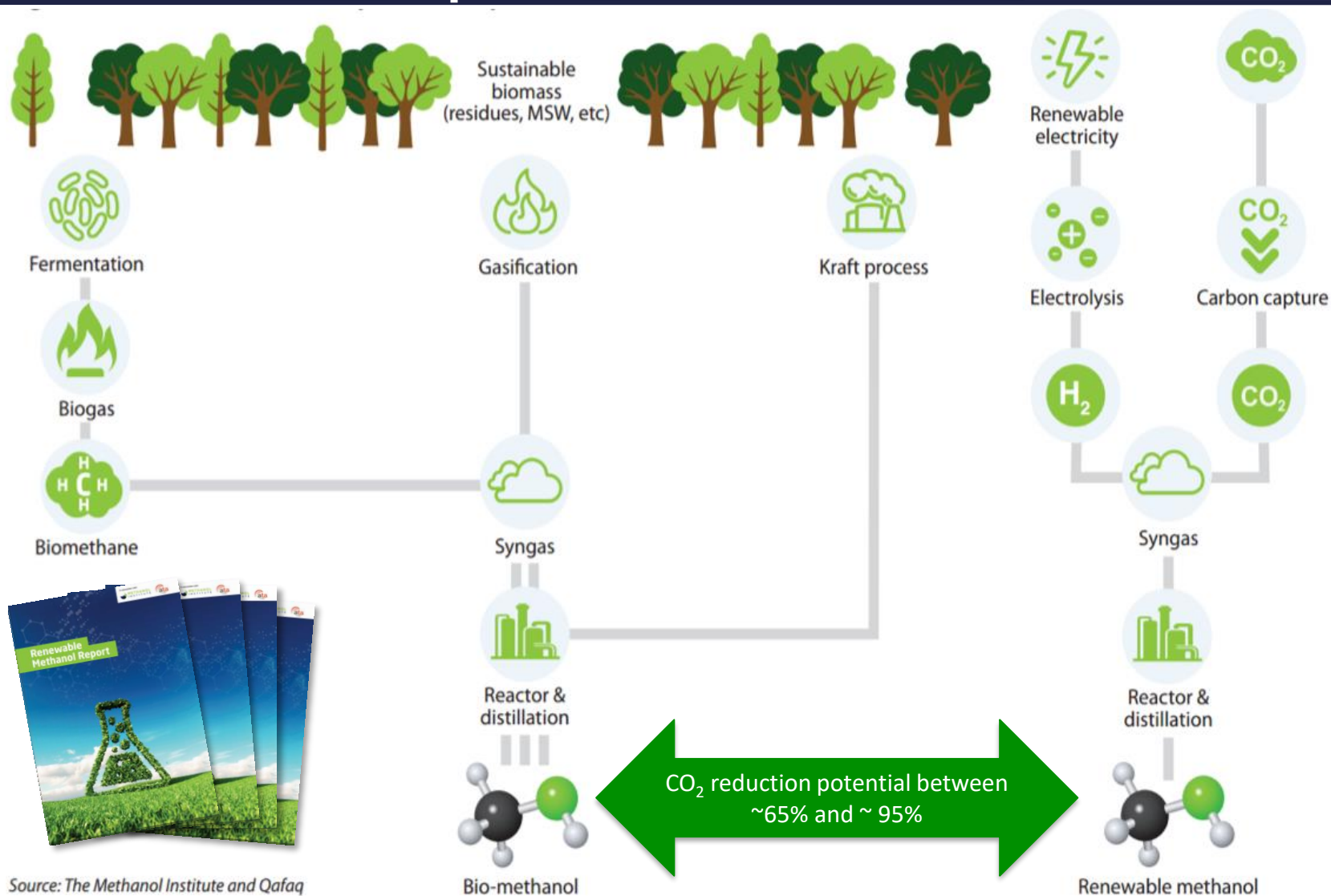
Lund Methanol Day, November 5, 2020

Singapore | Washington | Brussels | Beijing | Delhi

Broad feedstock range, many applications



Several climate neutral pathways make methanol a future proof fuel



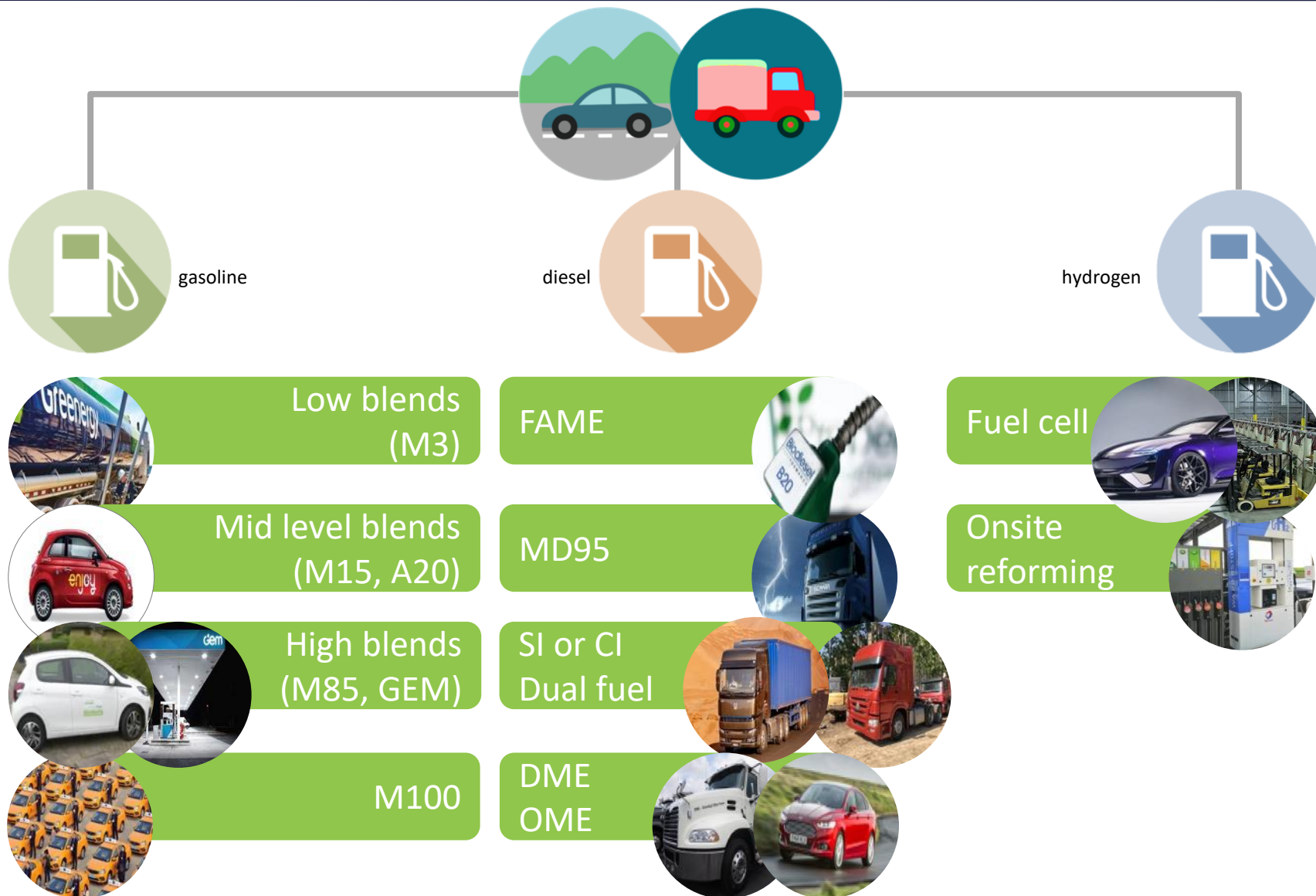
Methanol fuel use developing globally



Clean energy demand drives new markets



Solutions for gasoline, diesel and e-mobility



Increasing number of vessels operating on methanol as a marine fuel

DUAL FUEL



FUEL CELL

PROJECT R&D

Quantity	>12	1	1 + 1	2	1	+4
Vessel Type	Chemical Tankers	Ropax Ferry	Pilot Boat	Tourist Boat	Ferry	Cruise Ships, Fishing Boats, Barges, Dredges, Others
Owner	MOL, WL, Marininvest, Mitsui, NYK, Waterfront Shipping, Mitsui O.S.K. Lines, Ltd., Westfal-Larsen Management, Marininvest/Skagerack Invest. IINO Kaiun Kaisha, Ltd., Mitsui & Co Ltd., and the NYK Group	Stena Line	MI/SMA ScandiNaos	Innogy HTWG Konstanz	Viking Line	SUMMETH/MARTEC, Lean Ships, Methaship, Billion Miles ¹ , FiTech ² , IWAJ ³ , PCG Product Vessel ⁴ , NTU ² , GMM, Fastwater, Port of Rotterdam Barge, Jupiter, Paxell, Methanex Fishing ⁵
Engine Type	2 Stroke Man	4 Stroke Wärtsila	High Speed Scania, Weichai	Serenergy Fuel Cell Stacks		Si Hybrid, Dual Fuel, etc.
Design	New Build	Retrofit				New Build & Retrofit

All projects are based in the EU unless noted otherwise China/SG¹, EU/China/SG², India³, Malaysia⁴, China⁵

Powering low emission electricity



Fuel cells

- Remote power supply
- Stationary back up power
- Hotel load
- Range extender



Gensets



Turbines

Displacing solid fuels to provide clean heat



Industrial
boilers



Ceramic
kilns



Tobacco
driers



Cook stoves

Policy is an important driver behind methanol as a fuel



- As a climate neutral fuel solution when made from renewables
- As a chemical solution to store renewable electricity



- As a clean fuel drastically cut emissions and improve local air quality

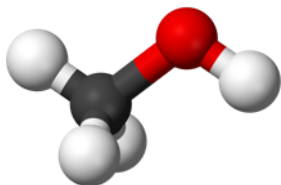


- As a product that helps improve local economies and reduce dependency on energy imports

Methanol is fundamental for a sustainable, future proof energy transition



Legislation drives changes to clean, renewable alternatives



Methanol, and its derivatives offer many benefits



Especially when made from sustainable, renewable feedstocks



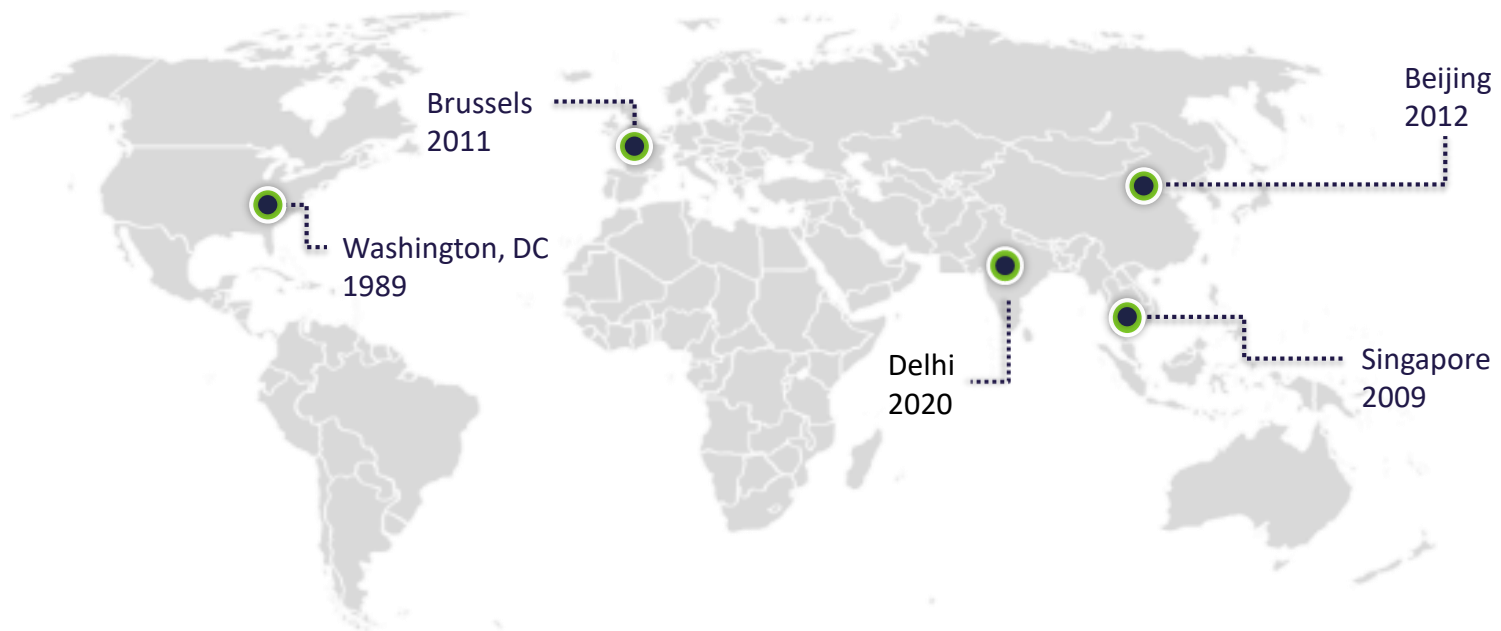
In a range of different applications from cars to ships, from power to heat



Essential to remove prejudices against methanol and convert disapproval to enthusiasm and support

Attachments

- The Methanol Institute (MI) was established in 1989
- Three decades later, MI is recognized as the trade association for the global methanol industry
- We facilitate methanol's increased adoption from our Singapore headquarters and regional offices in Washington DC, Brussels, Singapore, Beijing and Delhi



Our members are industry leaders



Tier 1



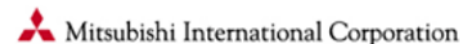
Tier 2



Tier 3



ecofuel



Tier 4



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