

UPM BIOFUELS PLANNING FOR THE FUTURE

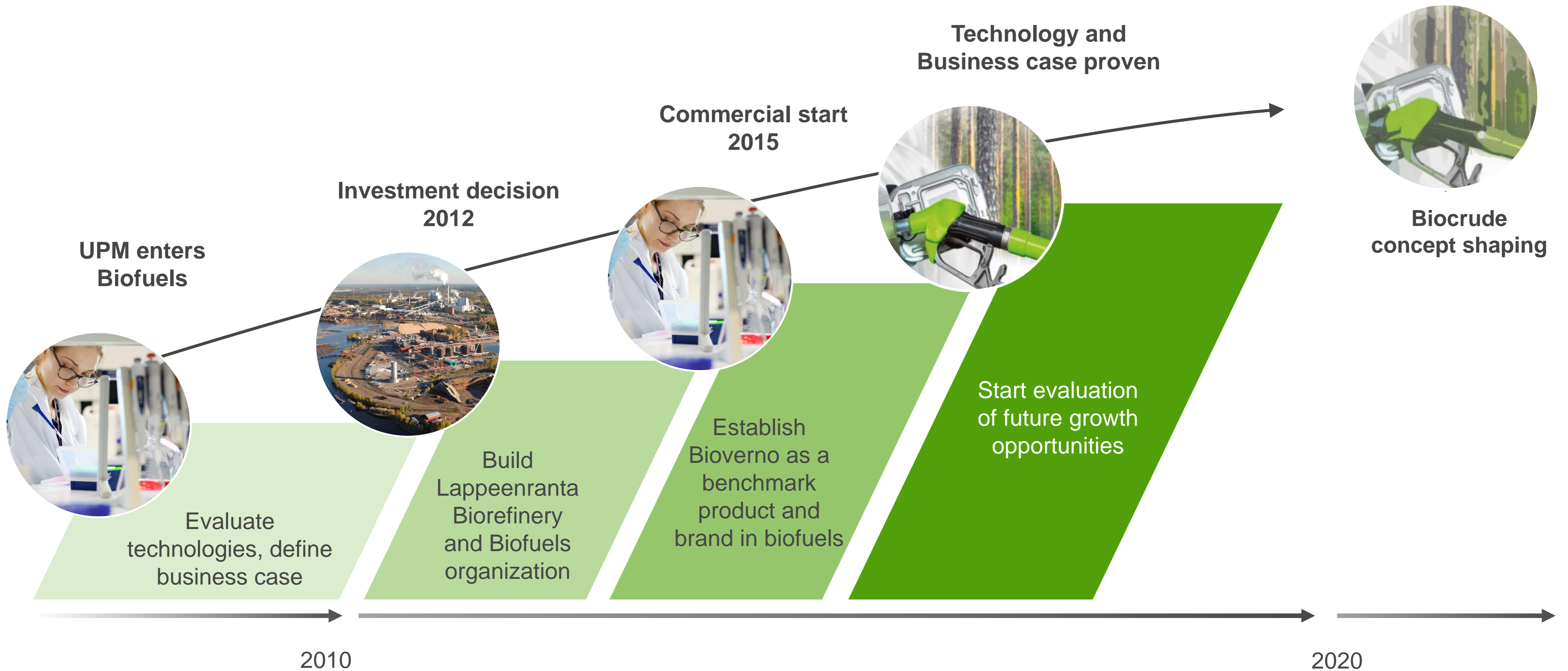
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UPM Biofuels in existing and future end use



UPM Biofuels business evolving












UPM Biorefining

Demand driven by sustainability – regulations in place to bring sustainable alternatives for mitigating climate change

- Demand for advanced biofuels is growing due to stricter environmental standards and sustainability
- EU 2020: 10% target in place
- Consumer demand increasingly driven by sustainability



UPM TARGET MARKETS

	EXPLOIT	EXPLORE
The Nordics	 Fuel retail	  Dedicated green fleets, marine
Central Europe		  Dedicated green fleets and marine
The USA		   

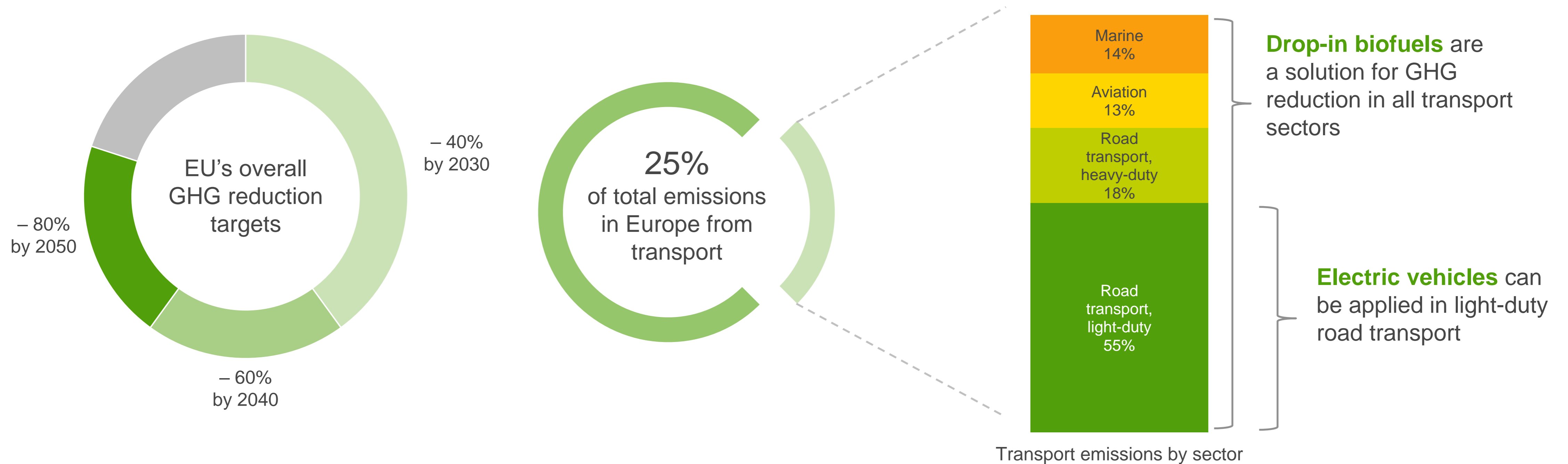
Regulations coming our way

- EU targets an overall 40% reduction in GHG emissions by 2030
- Burden share among EU member states for non-ETS sectors published in July
- EU's GHG targets cannot be met without significant emission cuts in transport
- New update of EU's Renewable Energy Directive (RED) expected by year end, where the role of advanced biofuels will be described



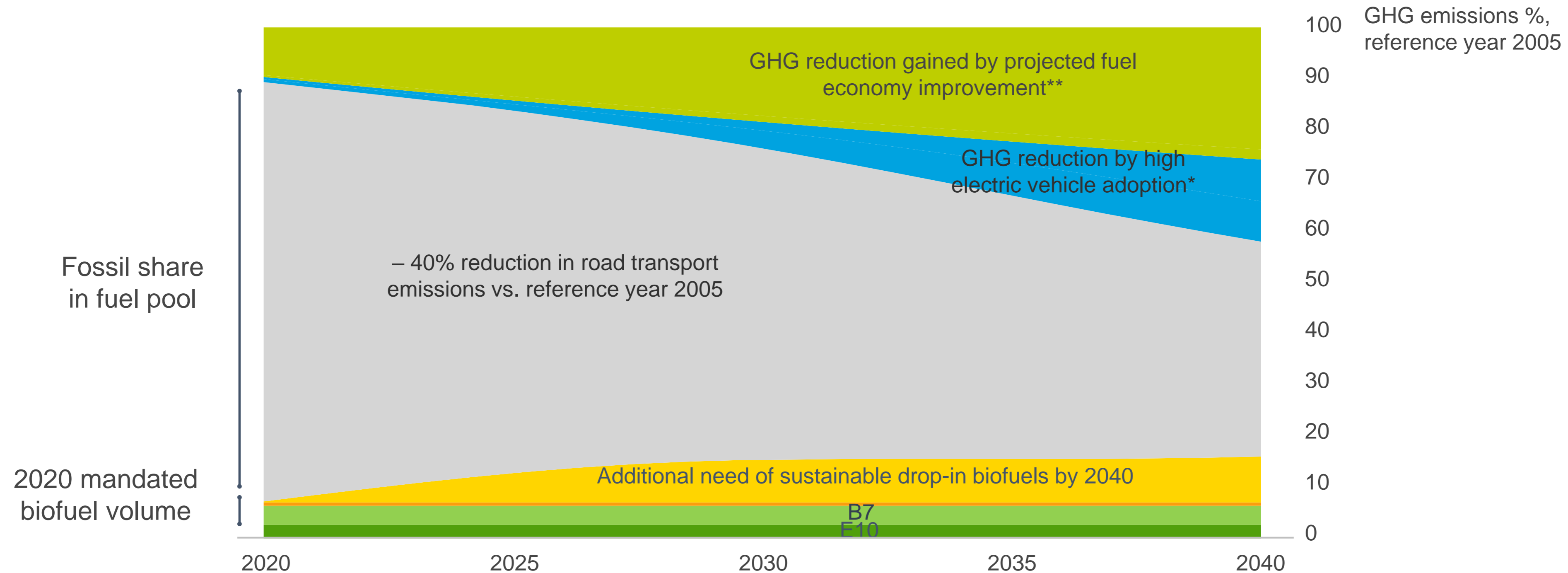
Significant emission cuts needed in transportation sector

EU's greenhouse gas reduction targets cannot be met without significant emission cuts in transport – actions needed in all sectors



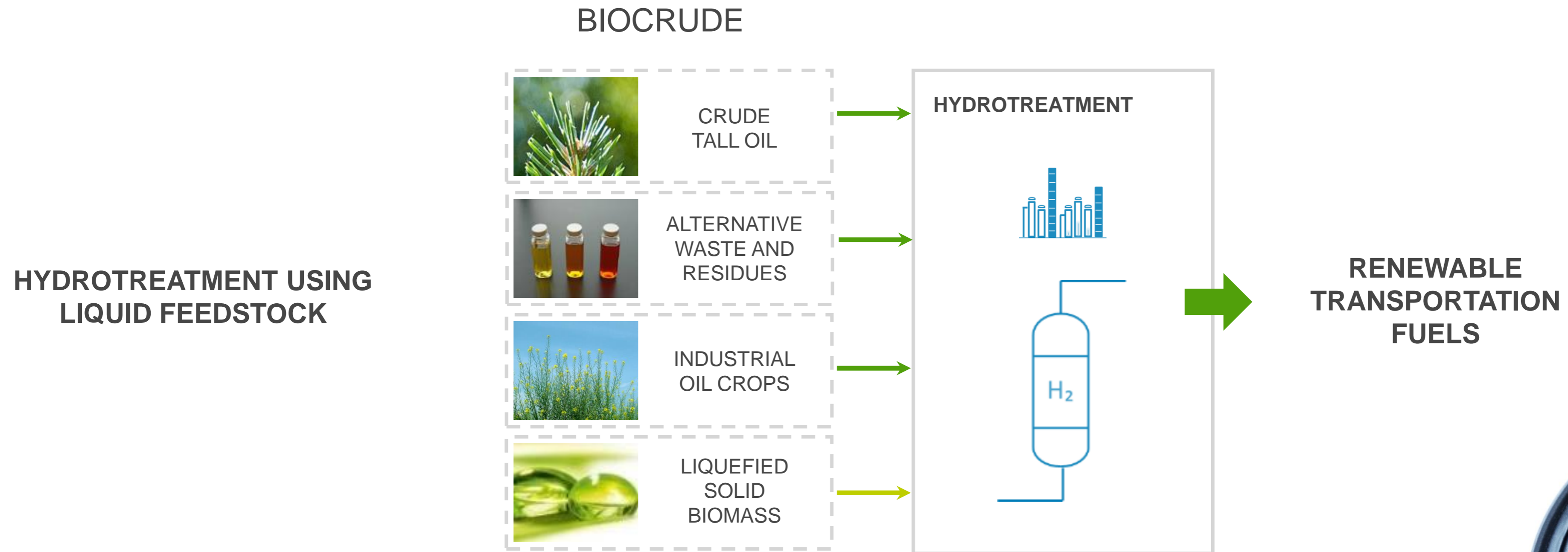
All energy and technology options needed

Decarbonizing European transport requires effective use of all energy and technology options – renewable drop-in fuels a fast-lane solution

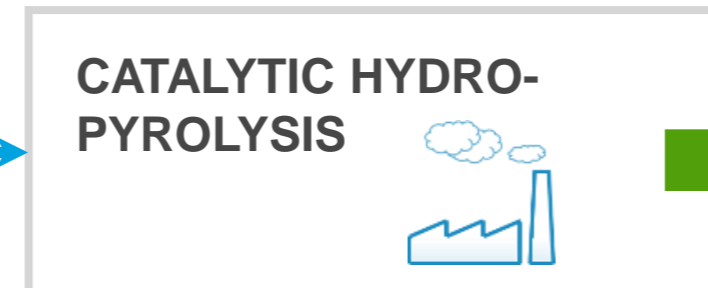
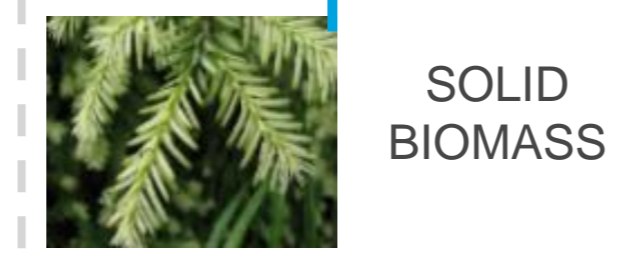


* Calculated based on "Global EV sales outlook to 2040" by Bloomberg New Energy Finance
* Assuming EV's represent 38% of new car sales in Europe by 2040 + EV's are fully emission free
** Assuming annual energy efficiency improvement of 2% in light-duty, 0,5% in heavy-duty

Feedstock and technology alternatives



TECHNOLOGY USING SOLID BIOMASS



UPM Biorefining

UPM Biofuels – the way forward



- ✓ Prove technology and business case of world's first producer of renewable wood based diesel
- Develop new alternatives in sustainable liquid feedstocks
- Growth in new markets, customer segments and applications
- Develop product portfolio and maximize product value
- Continue developing biofuel production to new process technologies using solid wood biomass
- Evaluate opportunities for scaling up biofuels business



UPM

The Biofore
Company