

1A3B Road Transportation

GHG mitigation options	Renewable energy			
Target (CO2 reduction)	Cost reduction and fuel quality control			
Drivers	Waste management		Value creation for domestic agricultural product	
Capacity gap and barrier	Lack of feedstock		Unclear integrated policy for bio-feedstock utilization	
Technology options and Research questions	<p style="text-align: center;">Waste to oil</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>Long-term - MSW to Oil (Fischer Tropsch or catalytic conversion)</p> <p>Short-term - Plastic Waste to Oil (Pyrolysis)</p> <p>Current - Used tyre to Oil (Pyrolysis) - Used vegetable oil to Oil (Pyrolysis)</p> <p>Research questions - How to improve performance of Catalytic Conversion and Yield - What is new flexible raw material - How to utilize MSW, optimal solution</p> </div>		<p style="text-align: center;">Bio-energy</p> <div style="border: 1px dashed gray; padding: 5px;"> <p>Long-term - Biofuel for jet (emphasize for niche market) - to be transition to EV</p> <p>Short-term - 2nd generation biofuel (BTL), Butanol, Hydrotreated vegetable oil (HVO) - Compressed Biogas (CBG),</p> <p>Current - Biofuel: 1st gen biofuel (sugar- and starch-based ethanol, oil-crop based biodiesel and straight vegetable oil)</p> <p>Research questions - How to improve performance catalytic conversion and yield - What is flexible raw material - How to enhance value-creation - How to utilize bio-material, optimal solution for bio-material, e.g. drug, food and etc. (energy is lowest value added, need to balance market) - Bio-economy</p> </div>	
Current technology support	<p>Waste-to-Oil - DEDE: Training and project implementation for waste-to-oil - ENCON fund, TRF, NRCT: R&D funding</p>		<p>Bio-energy - DEDE: Training and project implementation for biofuel, CBG - PTT RTI: R&D activities for 2nd and 3rd gen biofuel - ENCON fund, TRF, NRCT: R&D funding - NSTDA: R&D activities and funding for biodiesel (FAME)</p>	
Resources	<p>Policy and regulation: - Promote domestic industries related to new innovative products in mobility, vehicle and energy businesses, e.g. parts of EV, batteries and etc by provide privileges, e.g. tax incentives, BOI and etc for domestic firms and new start-up with in-house R&D</p>	<p>Institution: - Strengthen capability of the existing institute/association, e.g. TAI, EVAT and expand their function for technical service and R&D activities - Set up centers of excellences for government agencies and research universities in each single technology, and linkage with the industries.</p>	<p>Financing: Cluster national R&D budget and funding according to priorities</p>	<p>Capacity building: - Strengthen international relations and research network to enhance R&D activities, e.g. training, exchange programmes, research projects and etc at all level. - Develop accessible database for experts, publications, patents and intellectual properties.</p>
References	<p>Bio-energy, Waste-to-Oil EPPO/ERI - Roadmap for CBG in Thailand IEA - Biofuels for Transport</p>			