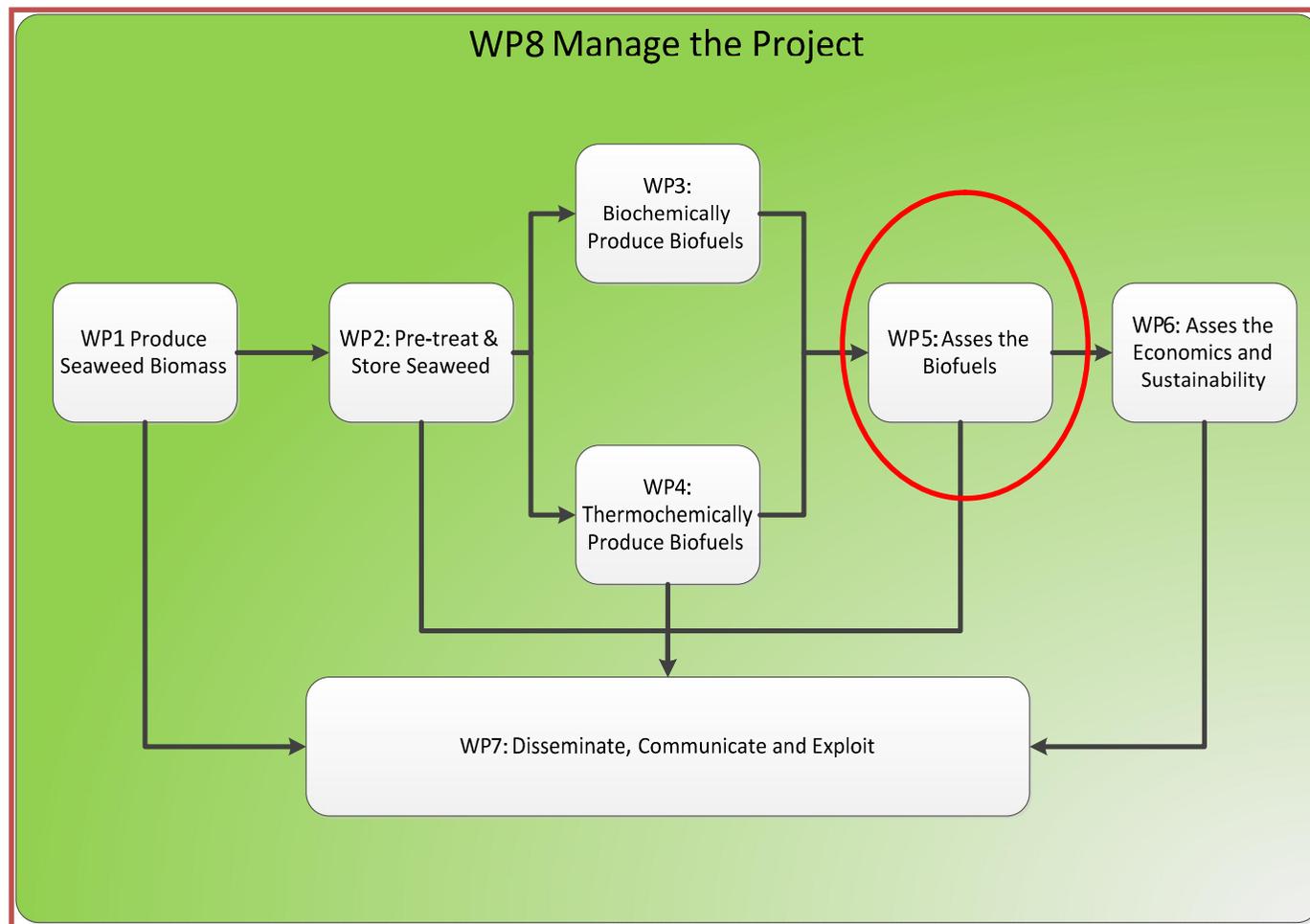


WP5: Fuel suitability and by-product application tests



WP-5 flow



Objectives



- To determine the suitability of the produced fuels in the use of combustion engines
- To perform a combustion engine test with selected fuels from WP 3 and 4
- To assess the use of the residues from the fractionation and fermentation processes, specifically the protein and the mineral fractions



Partner roles



- DTI: Fuels suitability (Advisory Board)
- ECN: Minerals
- DLO: Protein and minerals
- 28 PM
- M20-42



Tasks



Task	Partner
Fuel suitability tests: screening test and engine test (biofuel blend)	DTI
Assesment of the minerals	ECN
Assesment and upgrading of Proteins	DLO



Deliverables



- D5.1 : Seaweed derived biofuels and blend derived from fermentation [42]
 - A report with evaluation of the performance ABE and blends as gasoline substitute, with commercial grade gasoline as the reference. Analyses will include octane number, ignitability limits, flame speed, flash point, volumetric energy content and solubility limits. Engine tests on a spark-ignited engine include transient emissions measurements (FTIR) to examine the exhaust gas composition for both regulated and non-regulated emissions, including aldehydes, methane, ethanol and various other hydrocarbons.
- D5.2 : Seaweed derived fuels from thermochemical conversion [42]
 - Evaluate the performance of thermochemically derived furanics as diesel fuel and additive, with commercial grade diesel as the reference. Analyses will include lubricity, cetane number/cetane index, miscibility, corrosivity, health and safety hazards. Engine tests on a compression-ignited engine will include NOX and particulates formation. Cylinder pressure measurements will reveal combustion characteristics such as ignition delay, rate of heat release and cylinder pressure oscillations related to diesel engine knocking.
- D5.3 : Valorisation potential of the side streams [38]
 - A report describing the economic potential of the side streams, primarily the protein and mineral streams, based on the compositional data gathered in WP2-5 as well as the methane production of the side streams.



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