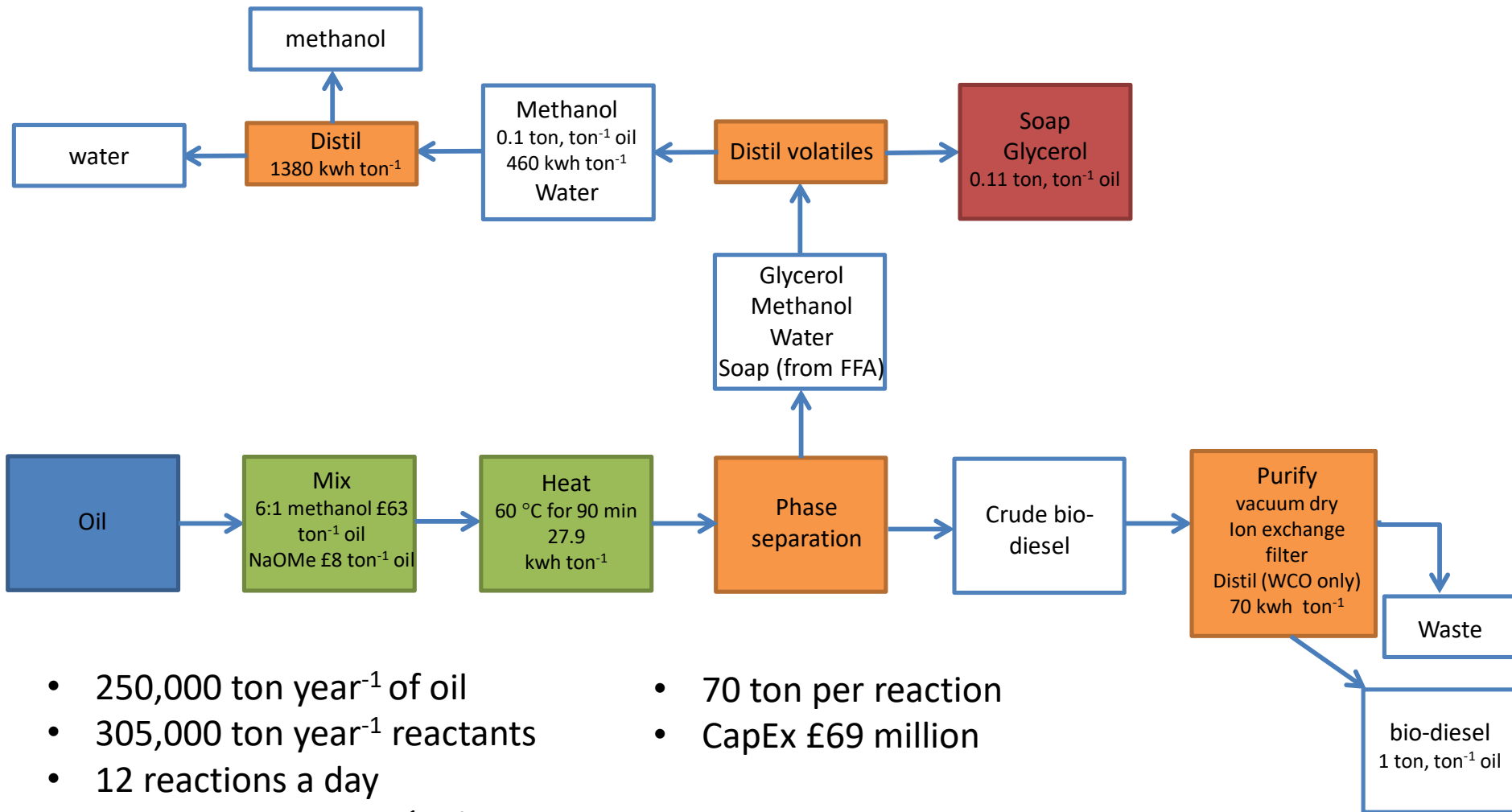


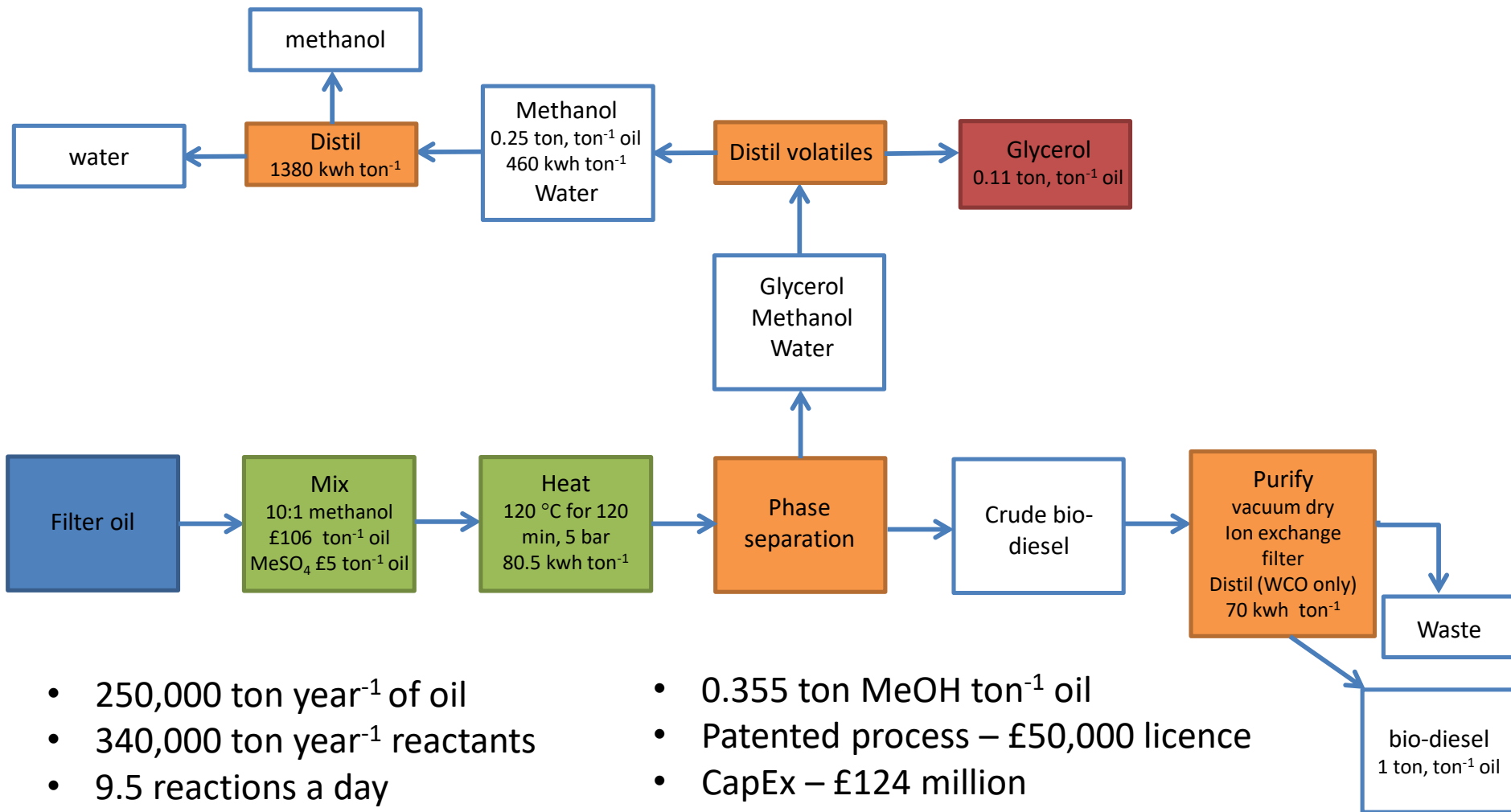
Base catalysed bio-diesel - batch



- 250,000 ton year⁻¹ of oil
- 305,000 ton year⁻¹ reactants
- 12 reactions a day
- 0.21 ton MeOH ton⁻¹ oil

- 70 ton per reaction
- CapEx £69 million

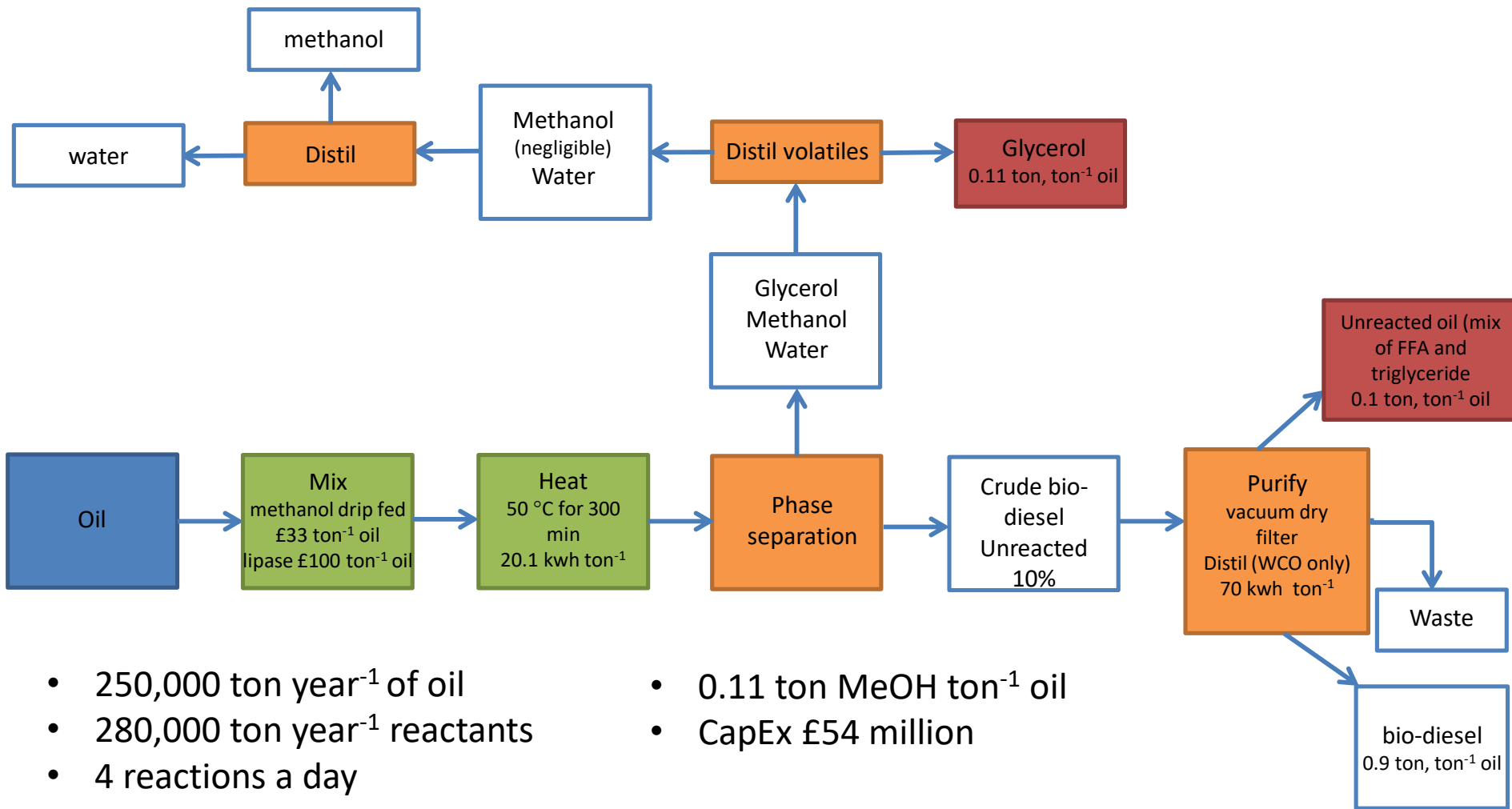
Acid catalysed bio-diesel - batch



- 250,000 ton year⁻¹ of oil
- 340,000 ton year⁻¹ reactants
- 9.5 reactions a day
- 98 ton per reaction

- 0.355 ton MeOH ton⁻¹ oil
- Patented process – £50,000 licence
- CapEx – £124 million

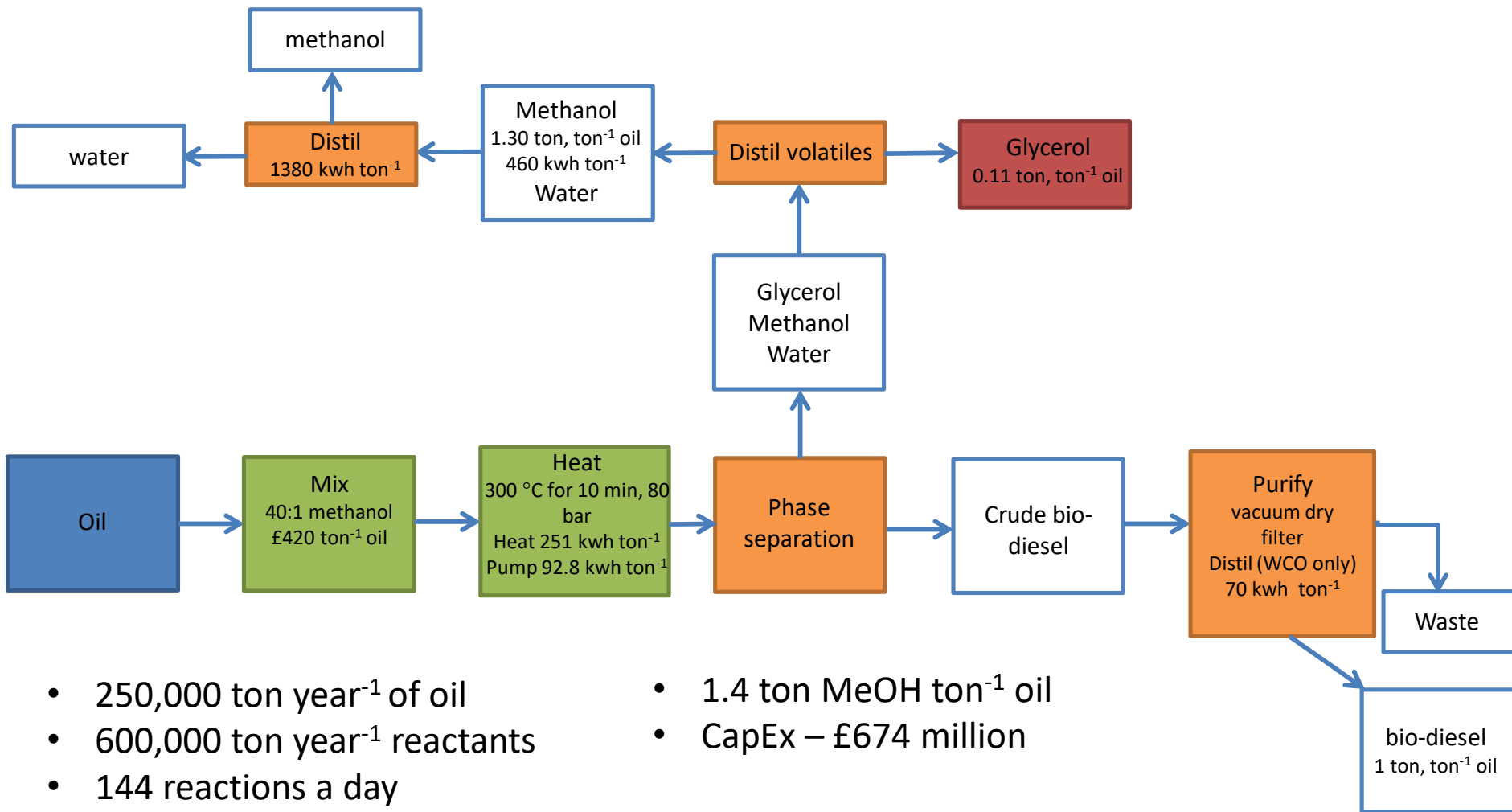
Enzymatic catalysed bio-diesel - batch



- 250,000 ton year⁻¹ of oil
- 280,000 ton year⁻¹ reactants
- 4 reactions a day
- 200 ton per reaction

- 0.11 ton MeOH ton⁻¹ oil
- CapEx £54 million

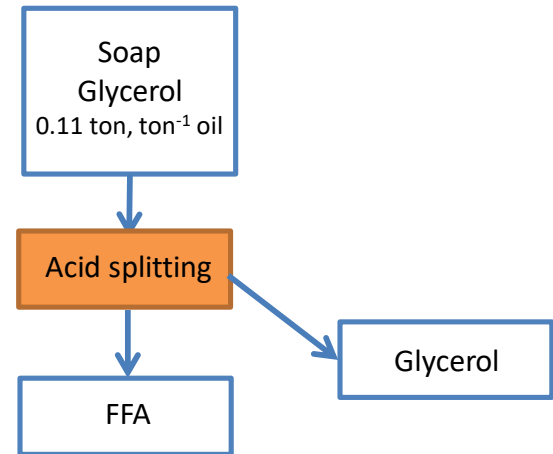
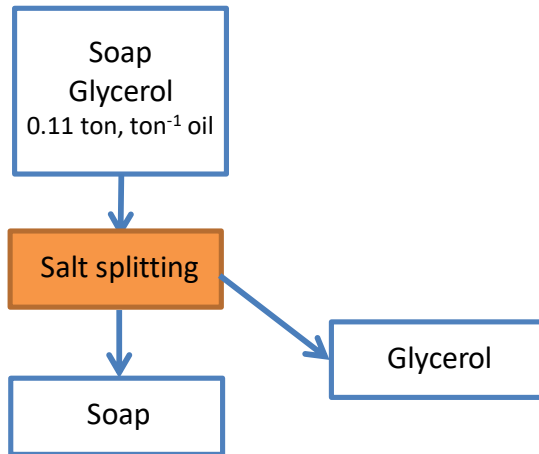
scMeOH bio-diesel - flow



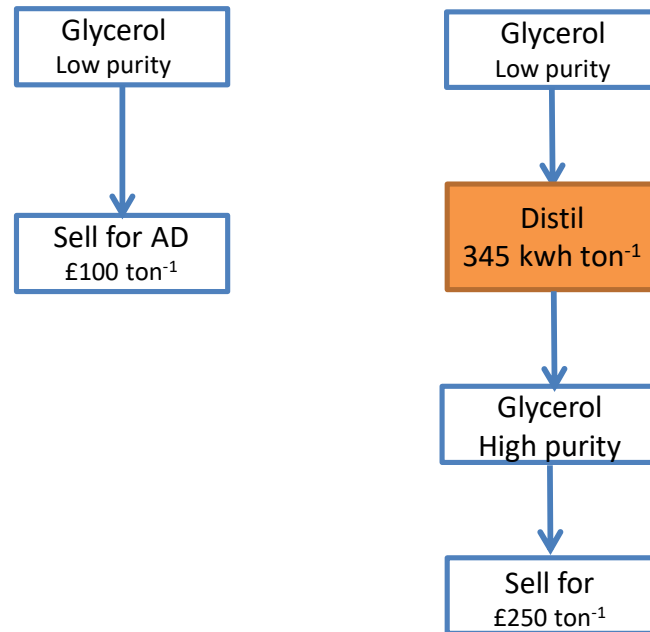
- 250,000 ton year⁻¹ of oil
- 600,000 ton year⁻¹ reactants
- 144 reactions a day
- 11.4 ton per reaction

- 1.4 ton MeOH ton⁻¹ oil
- CapEx – £674 million

Soap options



Glycerol options



Oil pre-treatment

