

VFA as a Route to Renewable Transport Fuel

Ruyi Hu 09-2011



Ruyi Hu



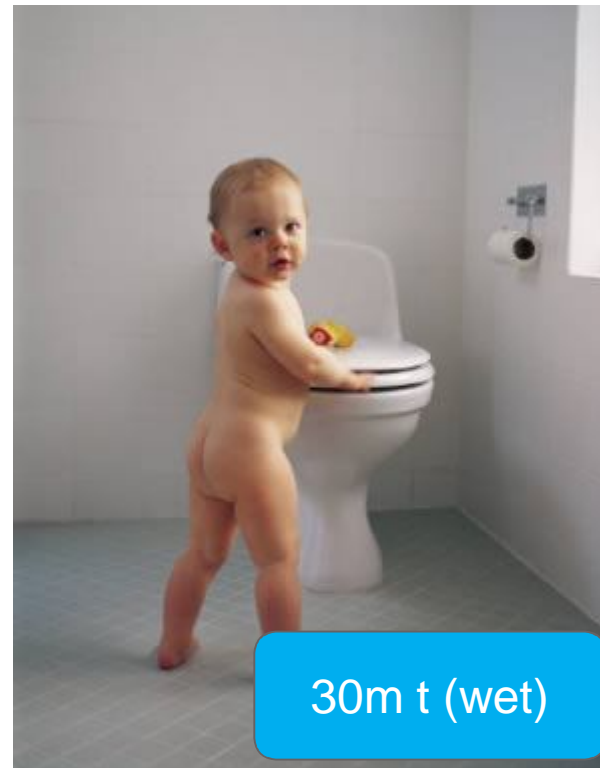
Biowastes for 2nd generation biofuel



105m t (wet)

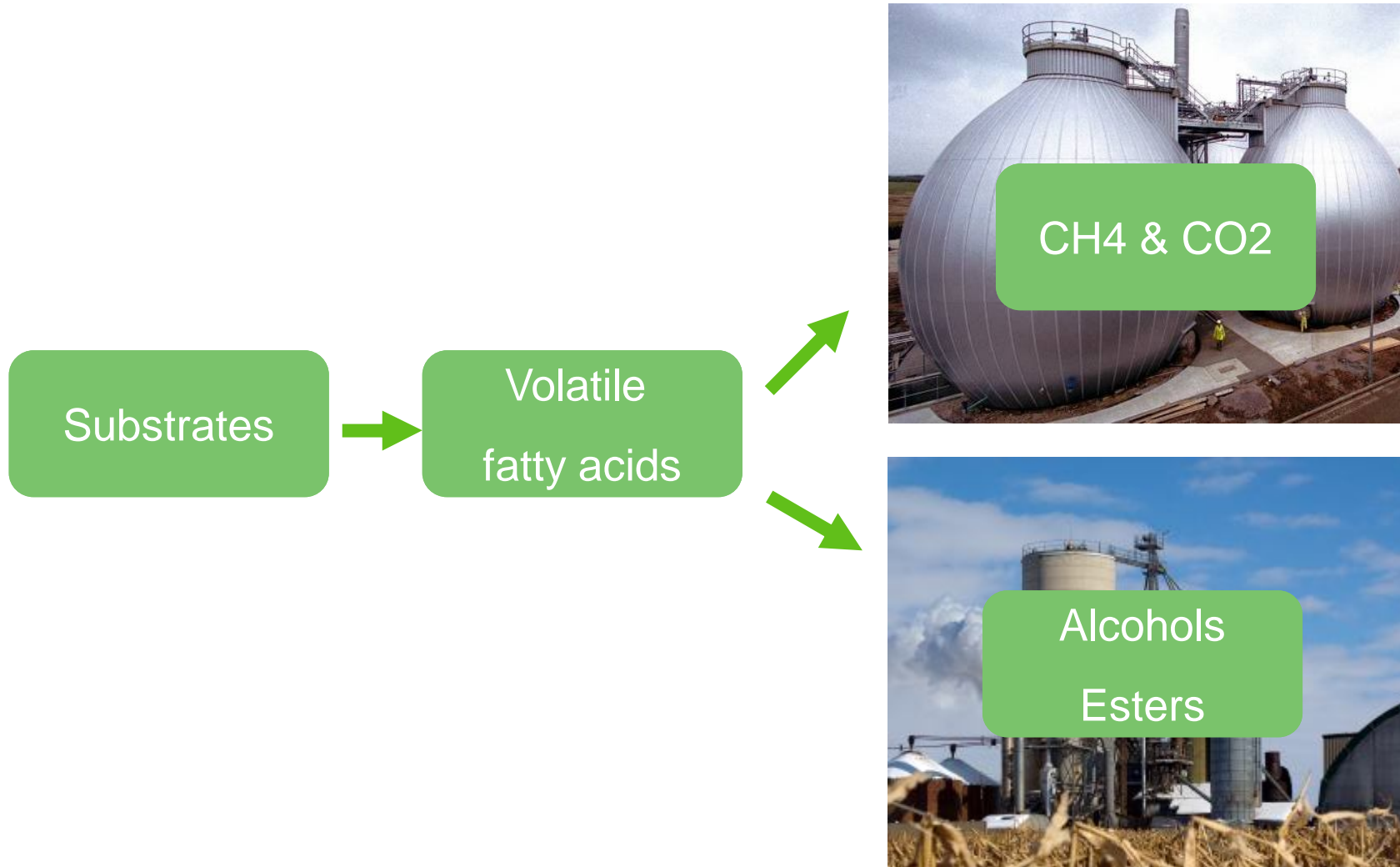


16m t (wet)

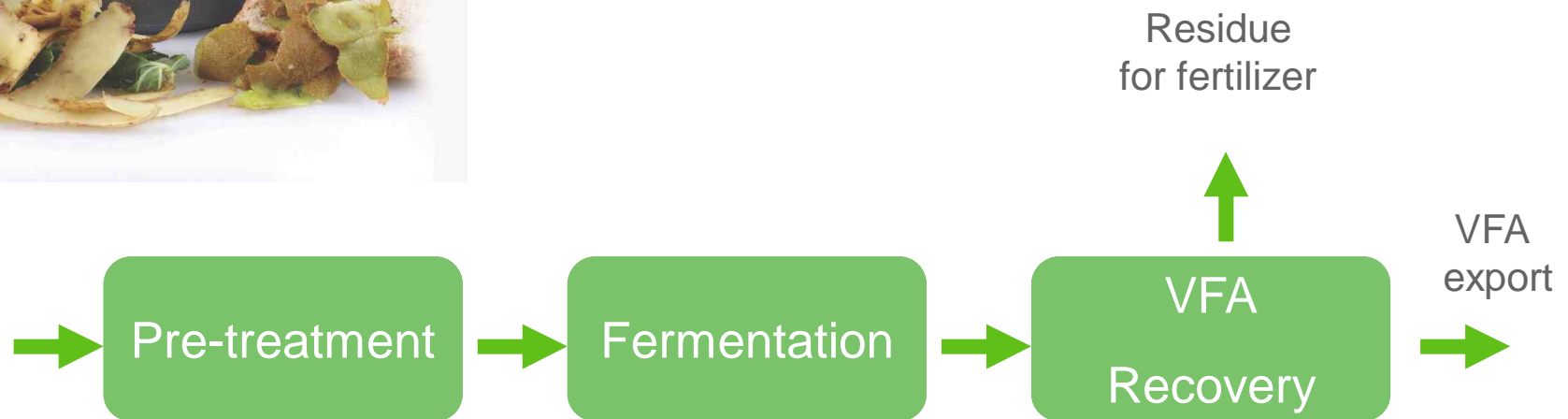


30m t (wet)

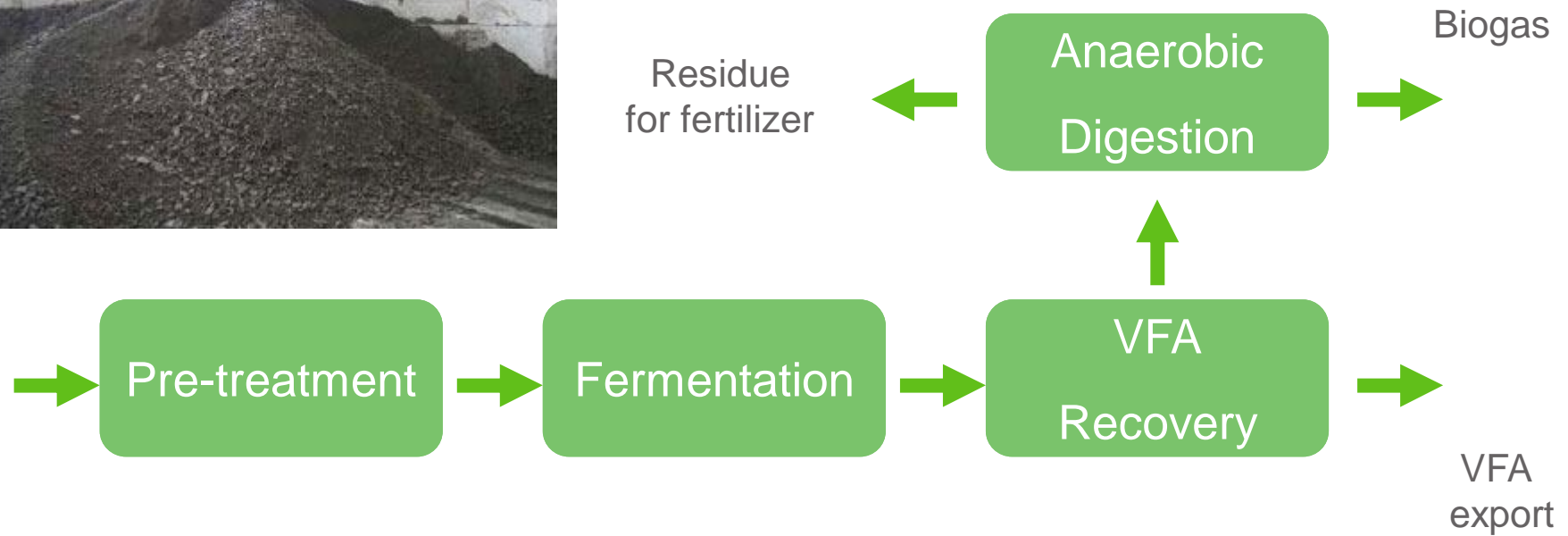
VFA concept



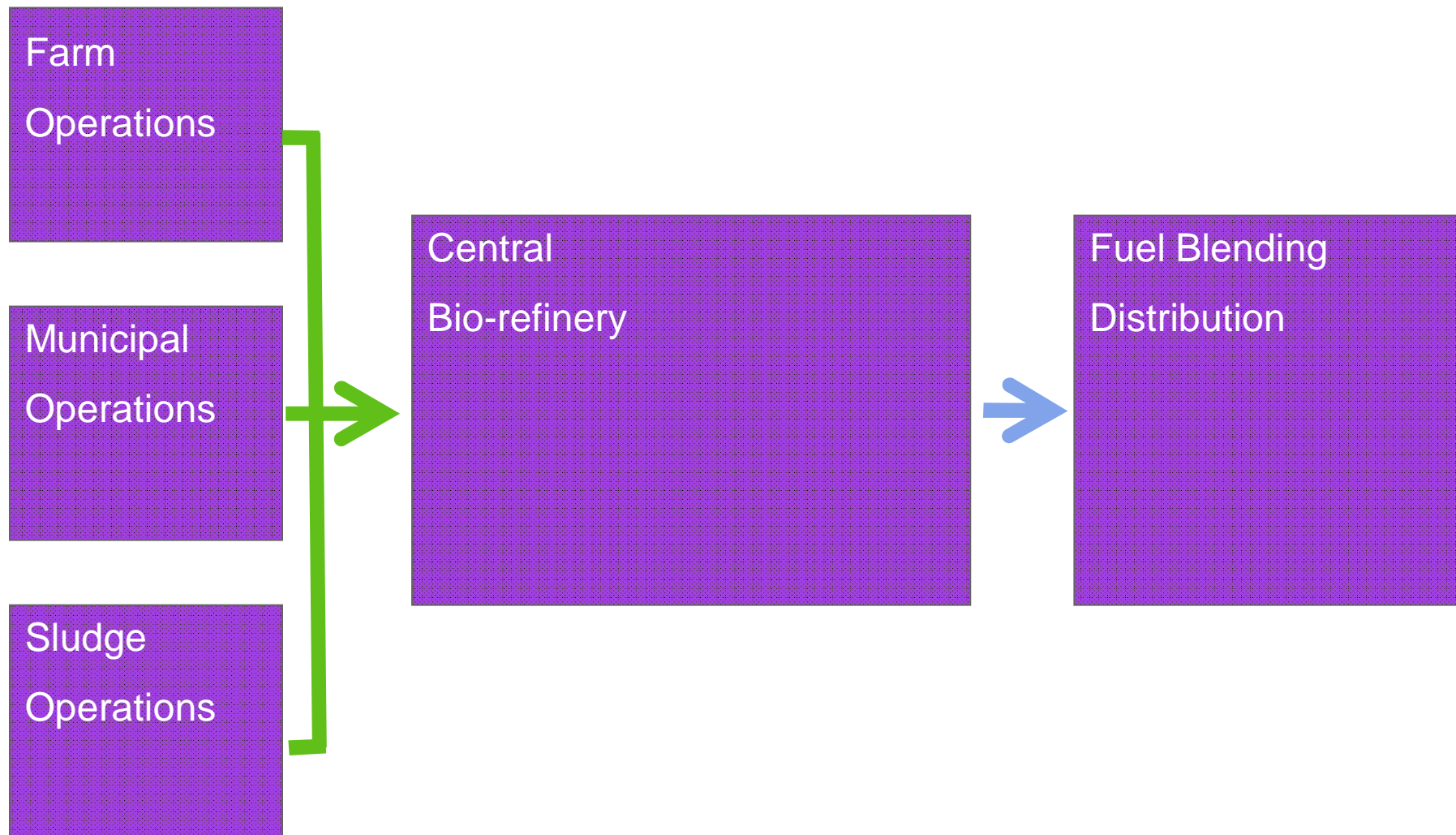
VFA route for food and farm waste



VFA route for sewage sludge



Alcohol and/or ester production



Biofuel route vs. Biogas route

Average All consumers UK industry (2009-10)	Pence per kWh
Coal	0.86
Gas oil	4.32
Gas	1.67

Impacts	Biofuel route	Biogas route
---------	---------------	--------------

-

Summary

- VFA offer a possible and convenient route for biofuel production from waste organic streams.
- The remaining challenges include
 1. More efficient substrate hydrolysis to achieve greater VFA yield;
 2. Effective VFA recovery (Reverse Osmosis or Absorption)
 3. Low cost catalysts and better reactor design for Biofuel production

Thank you

