Plant for Recycling Plastics to Fuel

By: Andrew Trainor

Background

> 348 Million metric tons of plastic generated each year

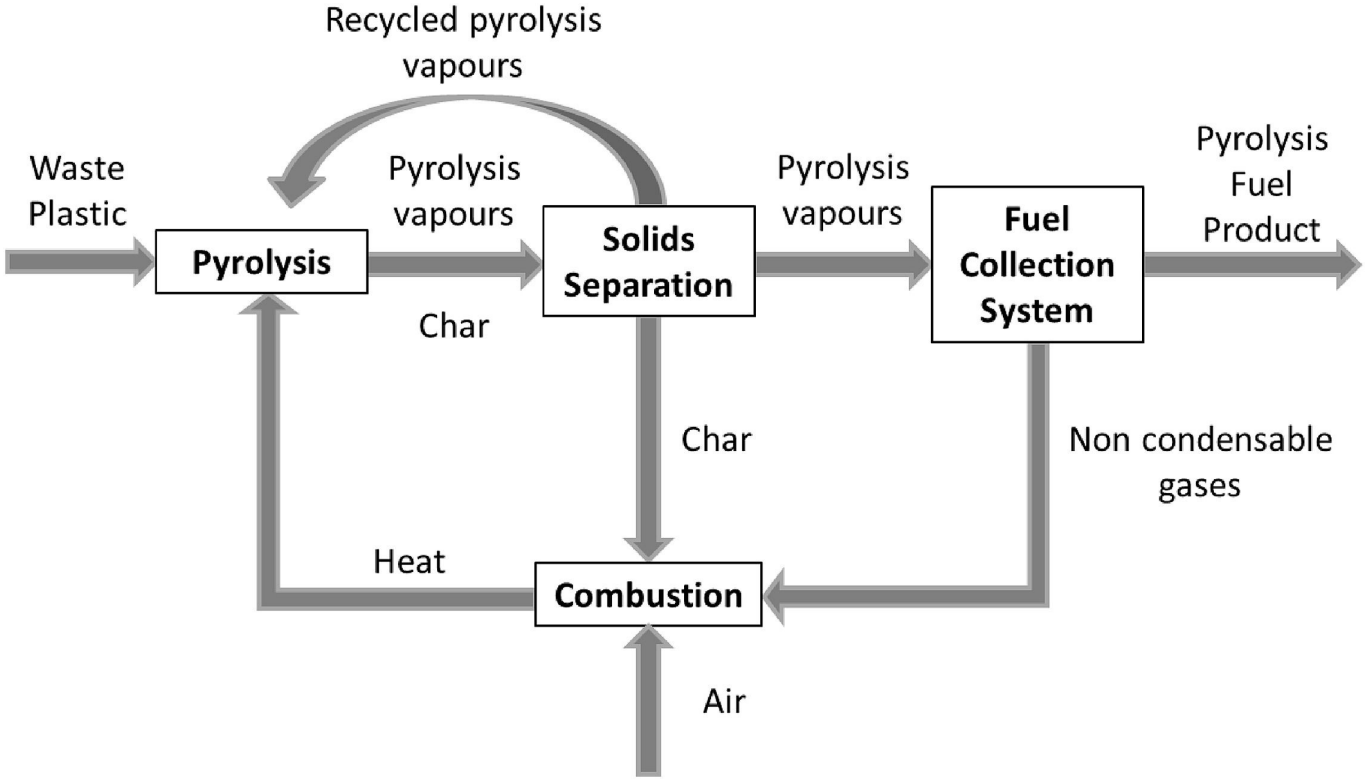
> 8.8 Million metric tons end up in the sea each year

Can take 450-1000 years to biodegrade

Saxena, Conversion of waste plastic to Fuel: Pyrolysis

www.newscientist.com/article/2165118-why-the-uks-plastic-bottle-deposit-plan-doesnt-go-far-enough/

Chemical Process



Fivga, Pyrolysis of plastic waste for production of heavy fuel substitute

Proposal

- Get funding
  - $210,000,000
- Build Factory
- Collect Profits
  - $980,000,000 / Yr
  - $98,000,000 / Yr each

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www.youtube.com/watch?v=Plr_iNU-hGw

Impact

- 432,000 Million metric tons eliminated each year
  - 211 Billion birds saved
- 5.31 Million barrels of oil extracted
  - Less drilling
- $980 Million in revenue

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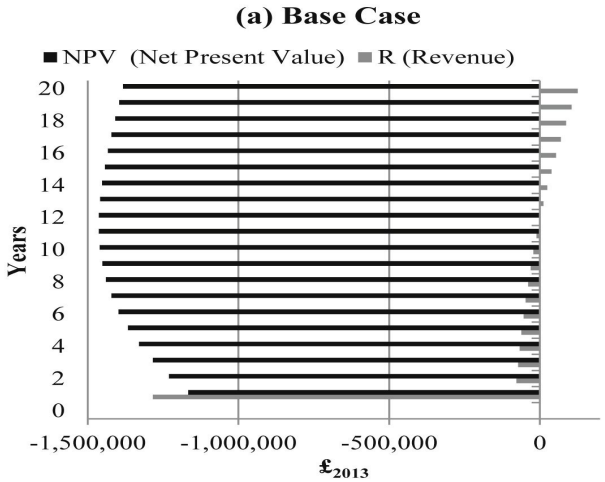
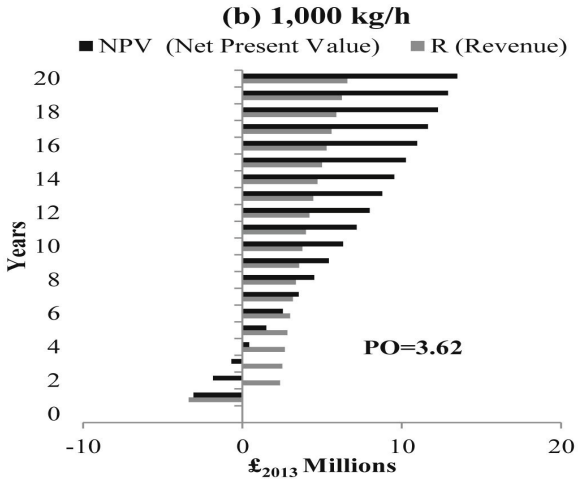
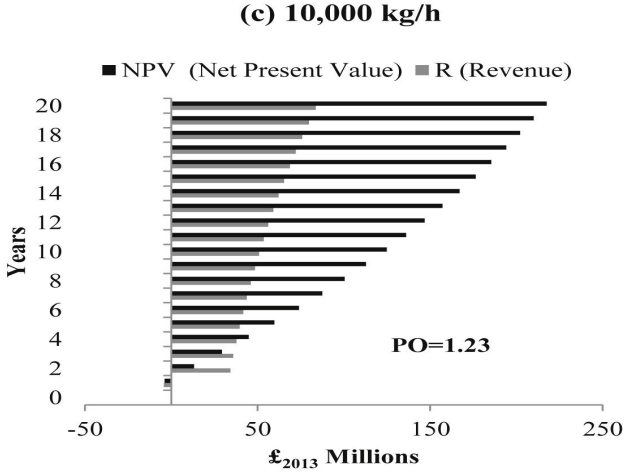
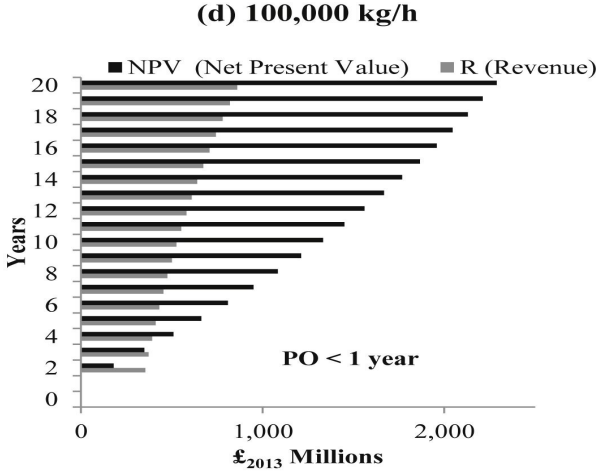
www.thisisinsider.com/brewery-invented-edible-six-pack-rings-2016-5

Sustainability









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Plant Design

https://plasticenergy.com/

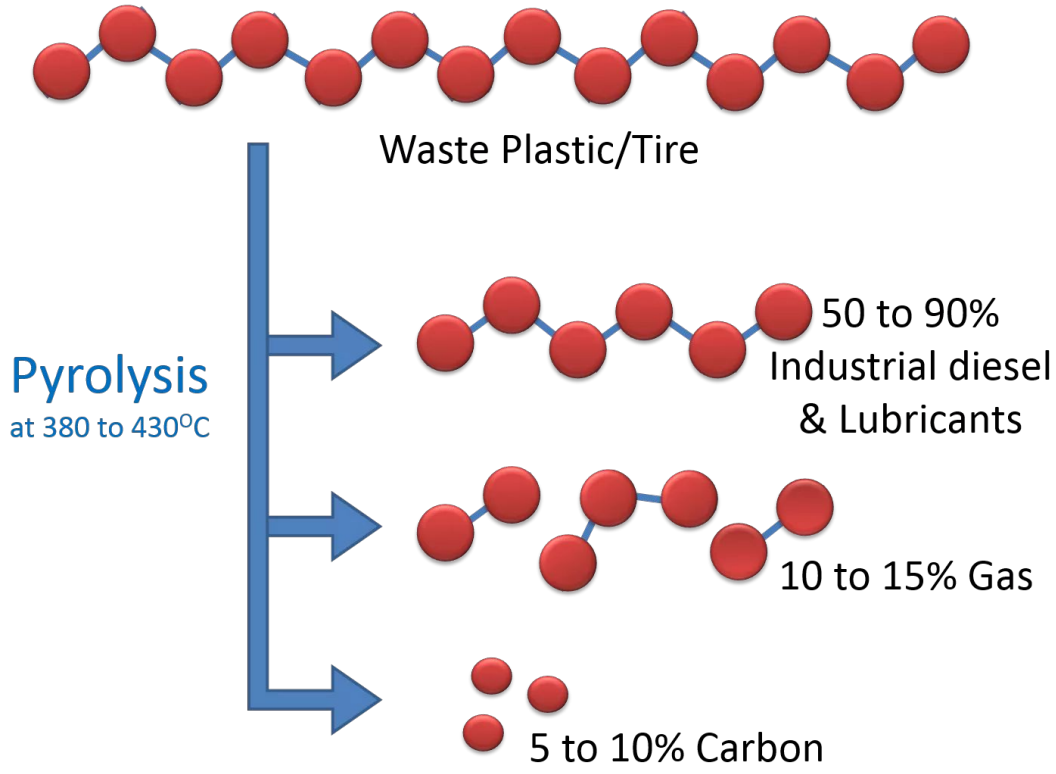
https://www.google.com/maps

Conclusion

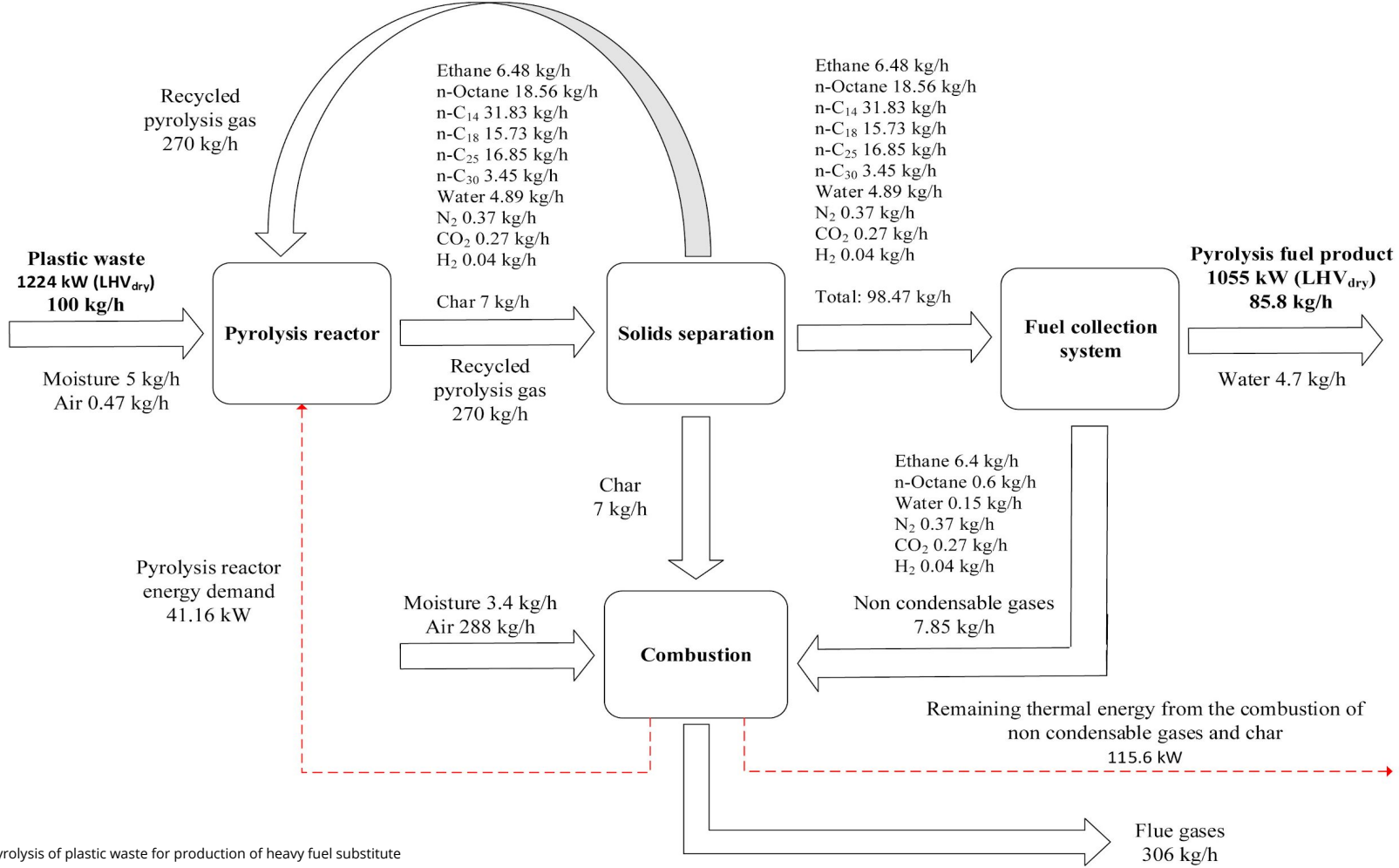
- Use large untapped resource
- Generate large profits
- Contribute to environmental progress
- Benefit economy

http://theconversation.com/if-we-cant-recycle-it-why-not-turn-our-waste-plastic-into-fuel-96128

Chemical Decomposition



http://www.plasticwastedisposal.com/what-is-pyrolysis/



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Composition

Compound	wt.%
Ethane	6.49
n-Octane	18.58
n-C14	31.86
n-C18	15.75
n-C25	16.87
n-C30	3.45
Char	7.00
Total	100

http://www.stars-mg.com/wp/product/funding-solutions/

Catalysis

Homogeneous catalysts

- Lewis acids
- Fused metals (AlCl3, lithium, sodum...)

Heterogeneous catalysts

- Zeolites
- Silica-alumina
- Nanocrystalline zeolites

Product Yield (% wt.)		Thermal Pyrolysis	Catalytic Pyrolysis
Gas Fraction		13.0	63.5
Liquid Fraction	Total	84.0	35.0
	C6-C12	56.55	99.92
	C13-C23	37.79	0.08
	>C23	5.66	0.0
Solid Fraction		3.0	1.5

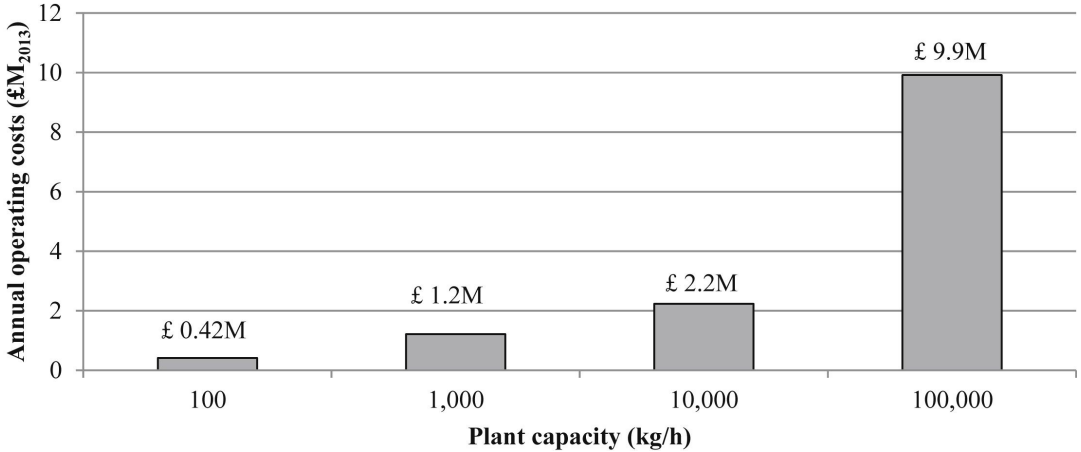
Saxena, Conversion of waste plastic to Fuel: Pyrolysis

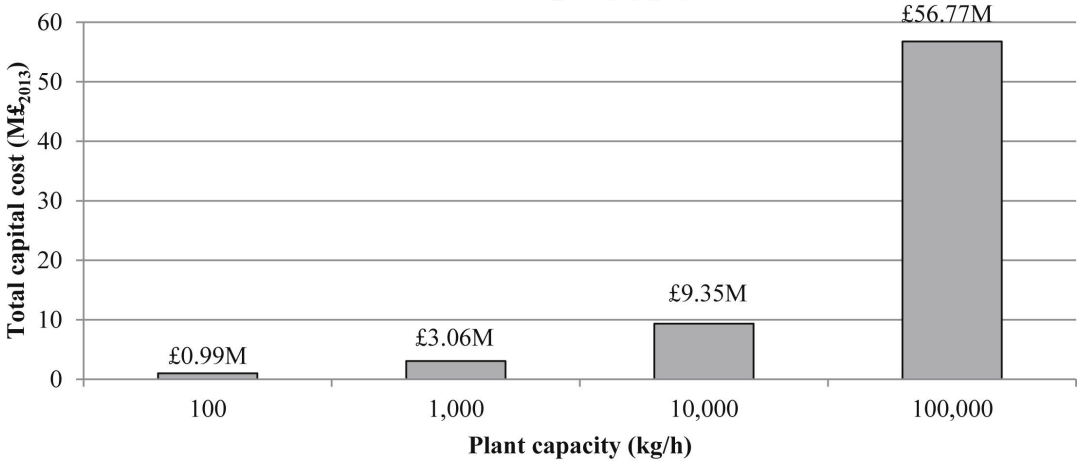
Funding

- Large Company Sponsorship
- College Professors
- Capital Stock
- Greenpeace
- Liberals

http://www.stars-mg.com/wp/product/funding-solutions/

Operating Cost





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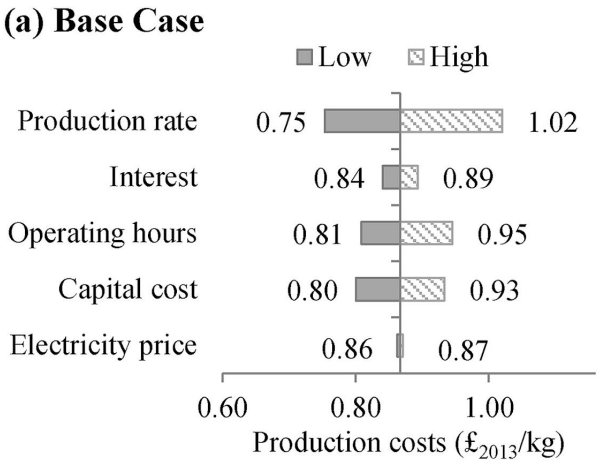
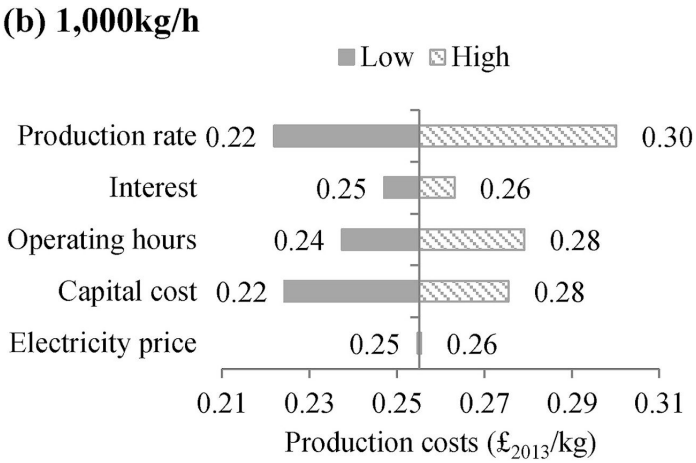
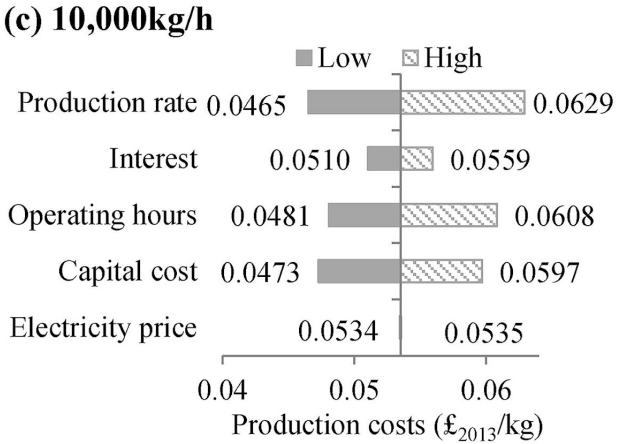
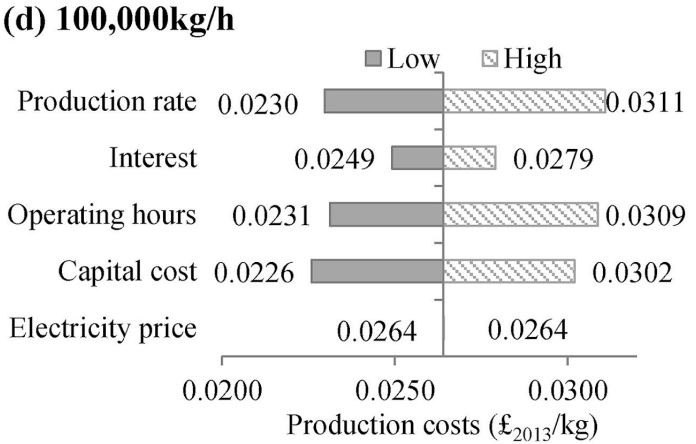
Production and Cost









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