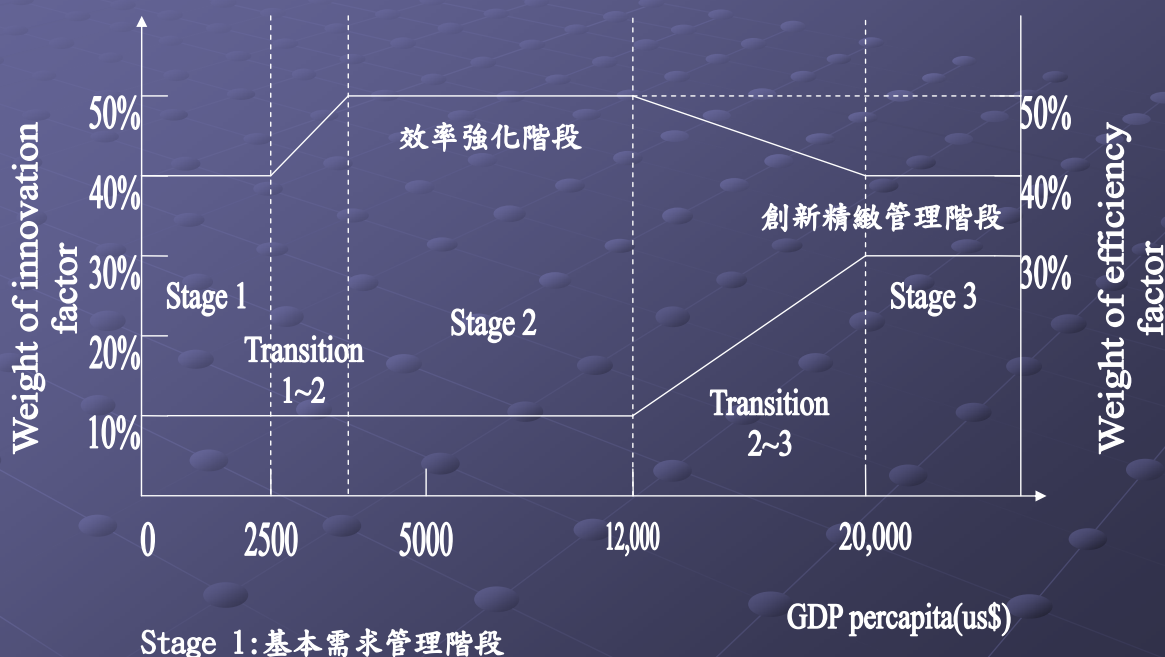


前瞻性環保科技未來發展趨勢

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WEP全球競爭力旗鑑指標 -各發展階段創新因素與效率因素的權重



創新精緻管理階段所面臨水的問題

- 水量、水質、節能減排(平日的優養問題、洪水期的高濁度問題)
- 地震、洪災、旱災及其他天災之供水問題(水量、水質)
- 貯水容量(緊急貯水、瓶裝水、脫鹽水容量、地下貯水、海中貯水)
- Drinking Water Safety Plan(The Bonn Charter)
- WHO : Guidelines for Drinking-Water Quality (4th edition)

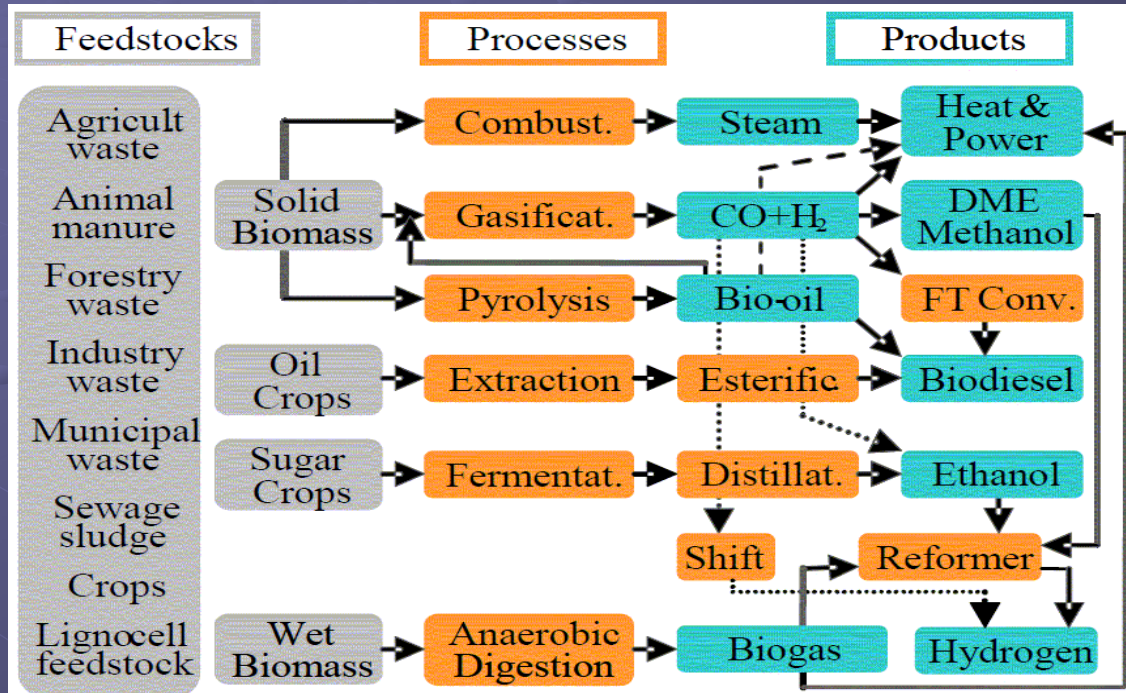
生質能源技術

- 生質能源依生質物原料可分為四個世代

| Bioenergy | Feedstocks |
|----------------------------|---|
| 1 st Generation | <ul style="list-style-type: none">● Food crops (corn, soybeans)● Oil crops |
| 2 nd Generation | <ul style="list-style-type: none">● Agricultural and forestry waste● Non-food energy crops |
| 3 rd Generation | <ul style="list-style-type: none">● Algae● Microalgae |
| 4 th Generation | <ul style="list-style-type: none">● Genetic engineered biomass for better carbon sequestration |

生質能源技術

● 依生質物來源而異的轉化途徑



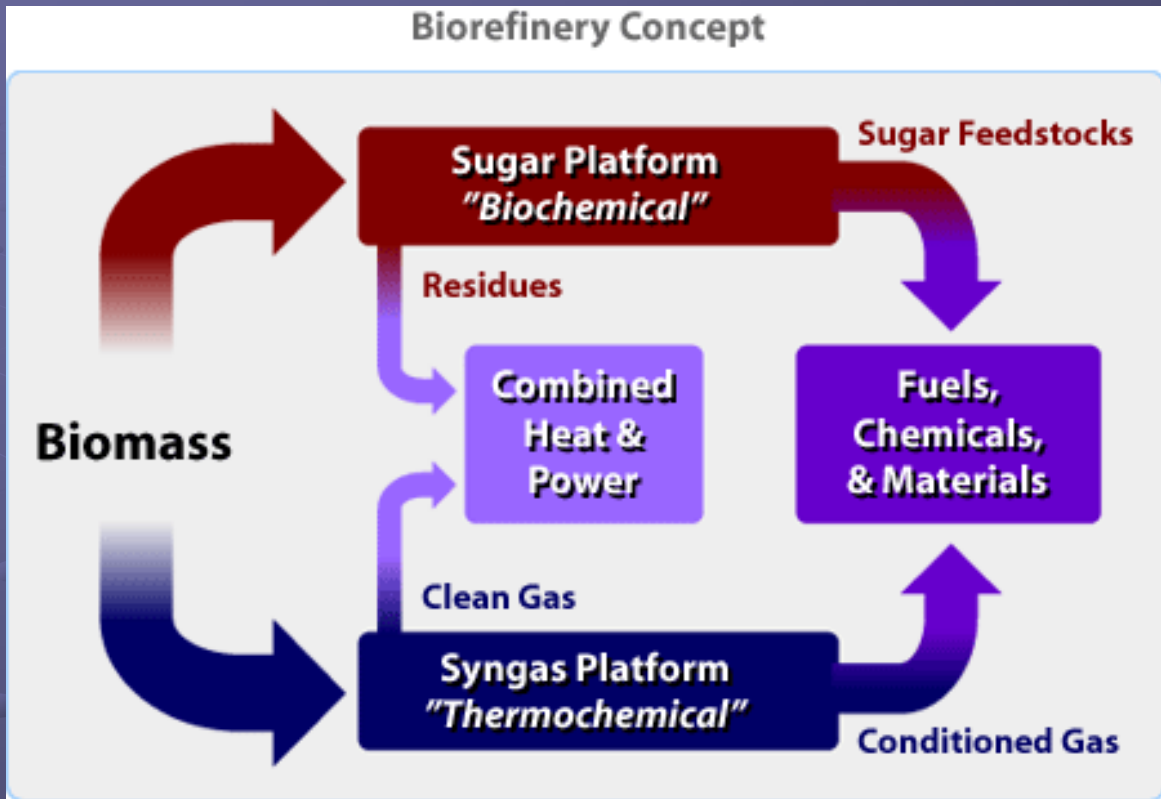
Source: IEA Energy Technology Essentials – Biomass for Power Generation and CHP, 2007

焙燒 (Torrefaction)



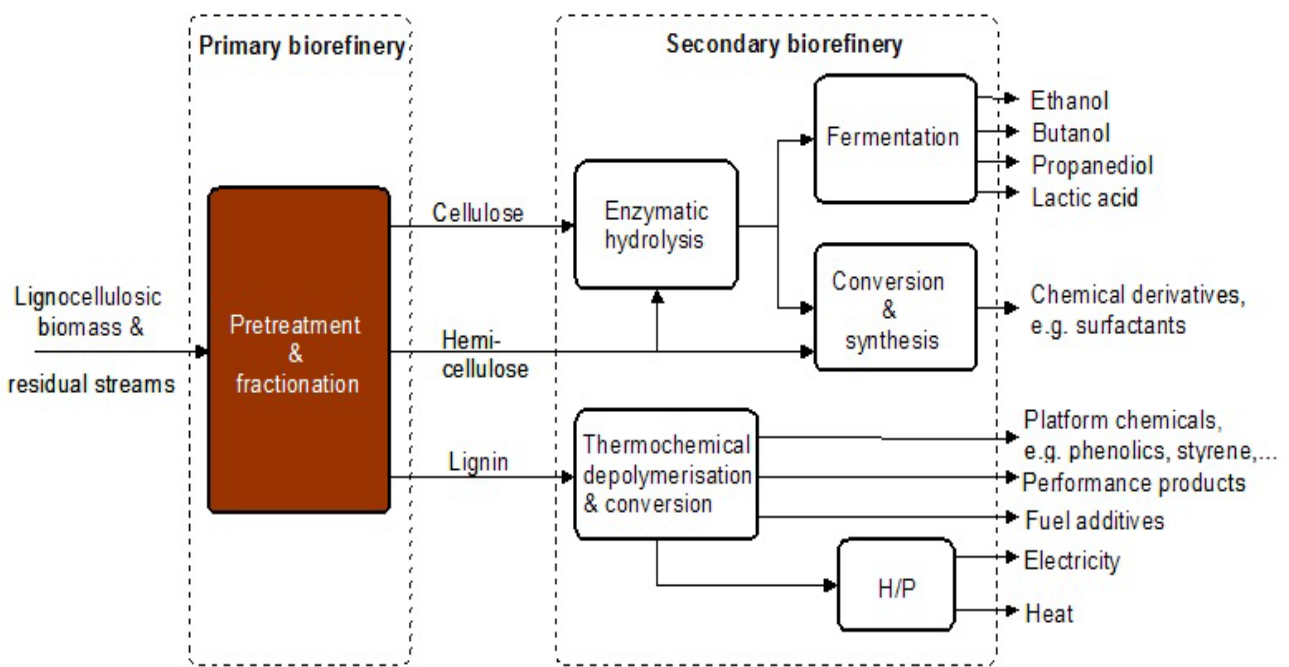
Source: <http://biocharfarms.org/>

生物精煉的概念



Source: <http://www.nrel.gov/biomass/biorefinery.html>

木質纖維素的生物精煉程序例子



A possible biorefinery including biomass fractionation.

Source: <http://www.ecn.nl/>