

Africa Australia Technology + Infrastructure Conference 2017

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4 September 2017



Energy Farmers
AUSTRALIA

Introduction to Energy Farmers



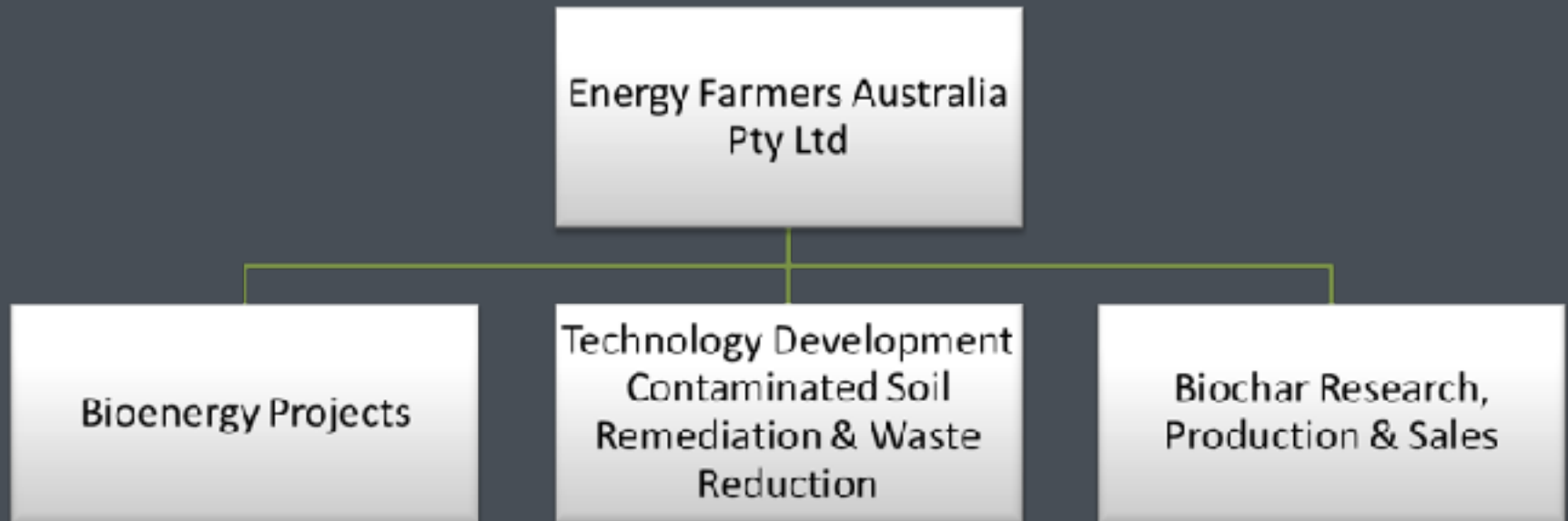
Dr. Stephen Joseph



Dr. Paul Blackwell

- Legal – William & Hughes
- Marketing – Blaze Digital

What we do

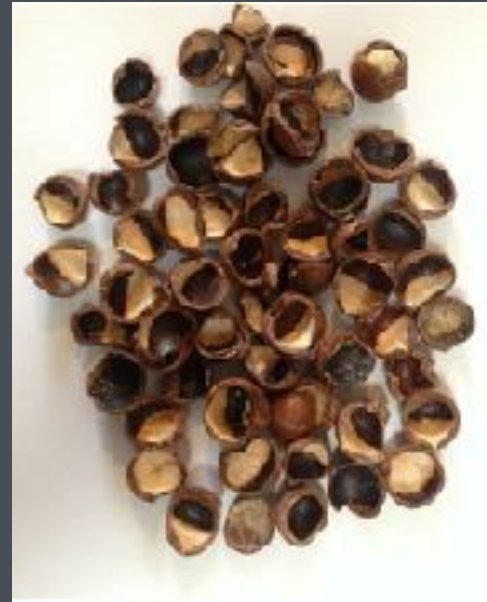




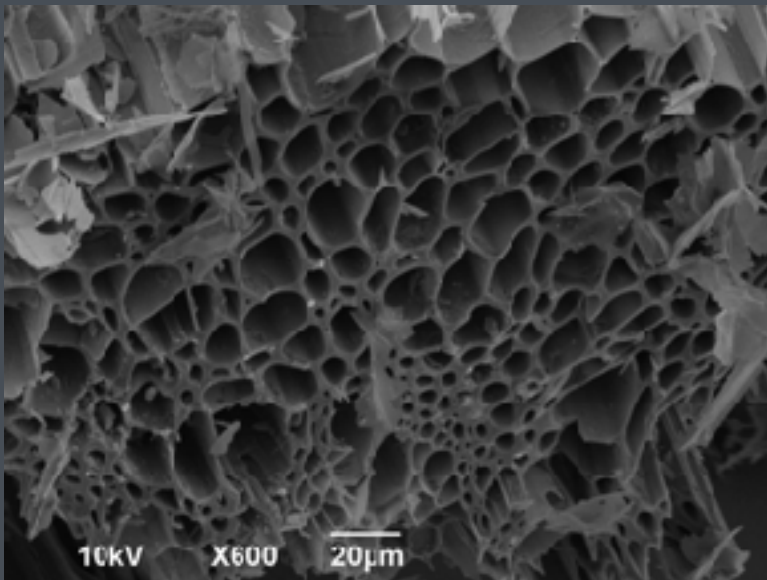
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Feedstocks

- Macadamia Shell
- Poultry Litter
- Sawdust & Woodchip
- Wheat Straw
- Lupin and Canola Trash
- Invasive Weeds
- Olive Pips and Trash
- Spinifex grass



Biochar



- Provide habitat for soil microbes
- Increases microbial activity
- Increases WHC
- Holds nutrients
- Increases soil carbon & is a form of on farm CCS

Uses for Biochar

Soil Amendment

- Improves fertiliser efficiency
 - Reduce fertiliser inputs
- Improves soil moisture holding capacity
- Reduces soil compaction
- Promotes soil health (mycorrhizal fungi)
- Ideally in conjunction with compost or organic fertiliser



Uses for Biochar

Livestock feed supplement

- Improvement in animal weight gain
- Reduction in odors
- Improvement in health with less drenching
- Increased stocking rates
- Improved soils when combined with dung beetles
 - Carbon credit generation



Uses for Biochar

Water Treatment or avoidance of pollution

- Highly absorbent
- Based on natural organic feedstock which would otherwise be waste

Waste to Energy

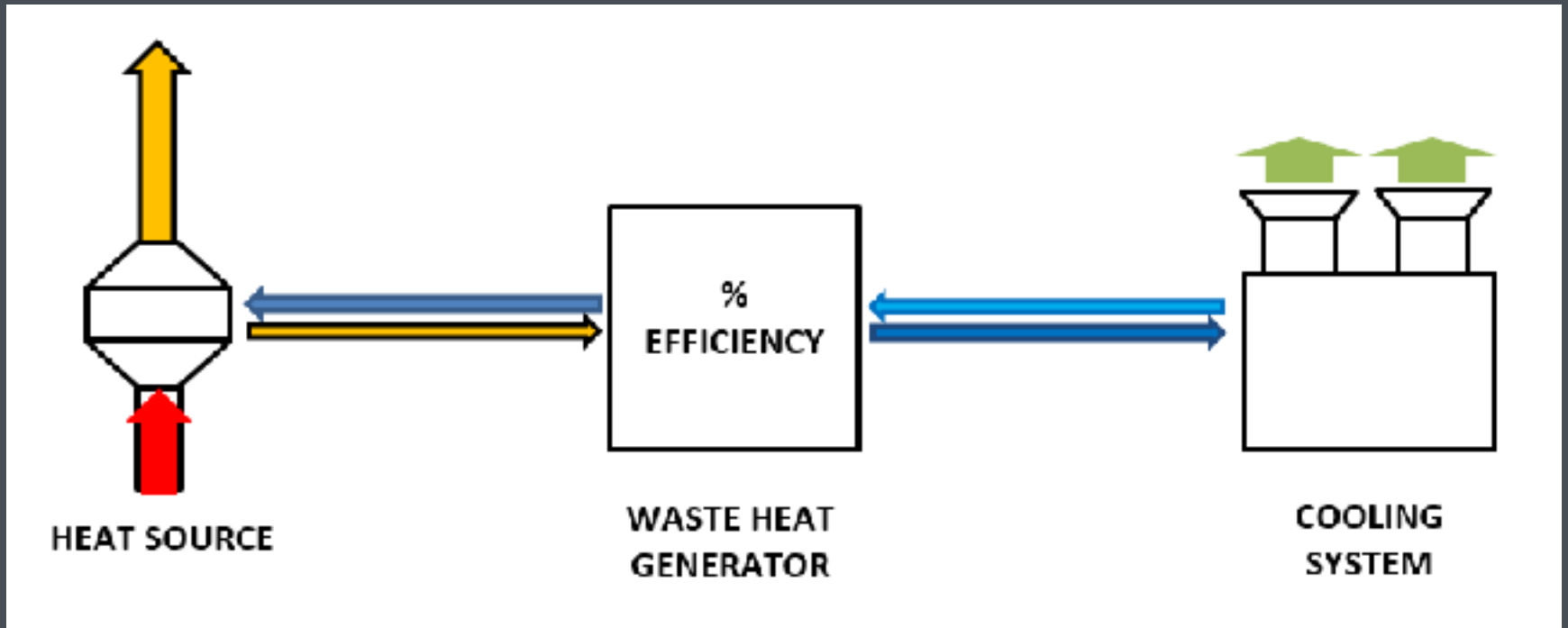
Waste Heat

- Nominal 1 MWh per dry tonne
- Heating, steam, drying

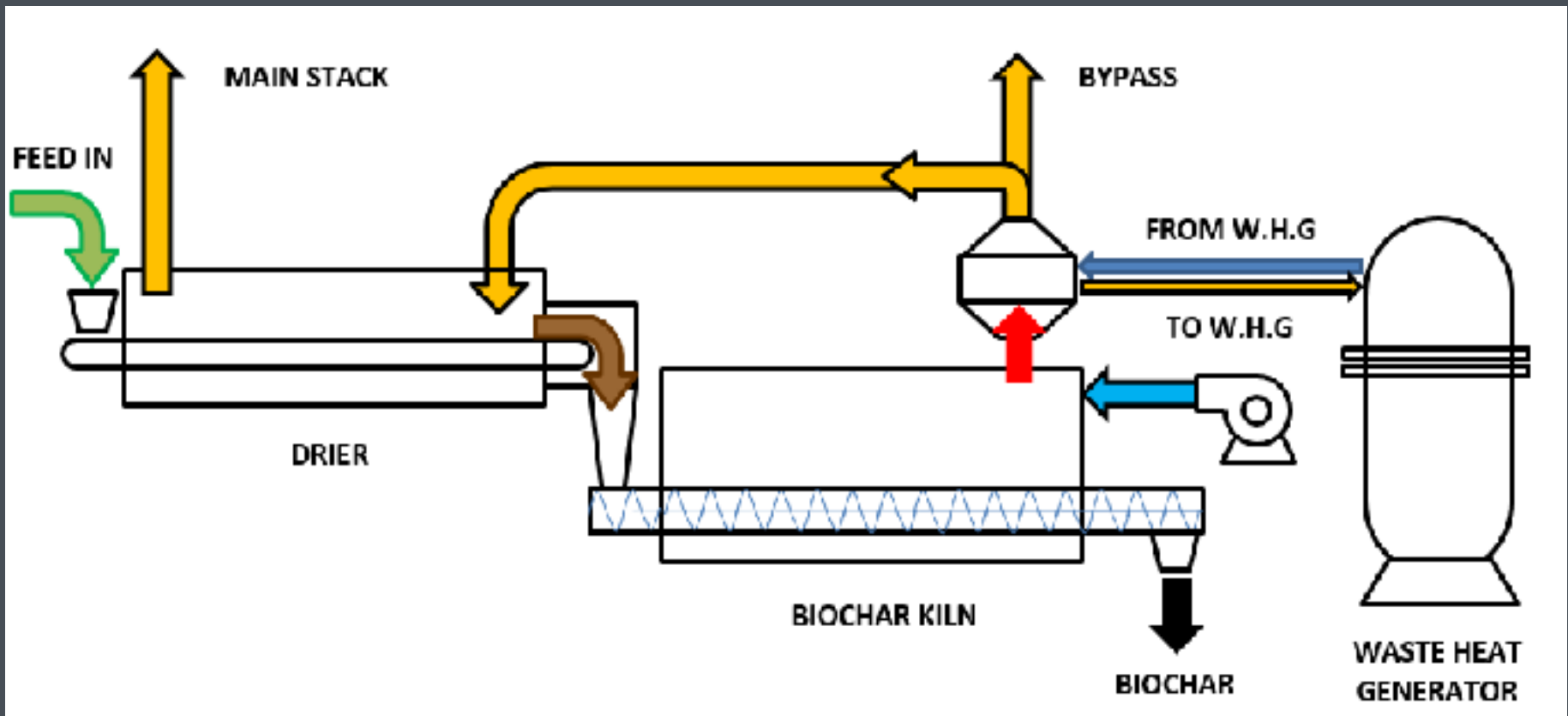
Power Generation

- Small scale (25kw – 1 MW)
- Multiple units for larger demands
- Off-grid, community based
- Options for generation technology

Technology Overview



Technology Overview



Advantages of EFA Design

- Continuous flow
- Simple design reduces fabrication / maintenance cost
- Handle a wide range of feedstocks, including fine particle sizes, generally <25mm
- High temperatures destroy pathogens
- Low emissions
- Can be made mobile
- Scalability



EFA Waste to Energy Unit

- 25kW capacity
- Stirling Engine – efficiency & simplicity
- Develop demonstration unit in Australia.
- Opportunity for local fabrication / assembly
- Production units cost competitive.



QUESTIONS

Thank you!

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