



ENERGY SOLUTIONS

CONSULTING and ENGINEERING

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Cell: 082 324 7178 Fax: 086 542 4497 25 Ou Meule Road, Bredasdorp Industrial, Bredasdorp, 7280

SPECIALISING IN THE DESIGN AND MANUFACTURING OF RENEWABLE
ENERGY PRODUCTS AND PROJECTS

TECHNOLOGY

Thermal

- Solar
- Gasification

Electrical

- Solar
- Gasification

Determined by client/STH engagement

- RE = focus
- Promoting IS and CE practices



TECHNOLOGY

Thermal

- Solar
- Gasification

Electrical

- Solar
- Gasification



APPLICATION



The Applicable Fields of Industry	Application	Form of Heat	Temperature °C
Agricultural	Dryers	Air	30 - 120
	Sustainable fish farming	Water	30 - 92
	Distillery	Steam	130 - 150
	Milk Industry	Water	30 - 92
	PowerGeneration	Steam	130 - 150
	Irrigation	Steam	130 - 150
	Hydroponics	Water	30 - 92
Industrial Power Generation	Steam generator	Steam	120 - 180
	Internal Combustion Generator	Gas	30 - 15
Food Production	Cleaning	Water Vapor	80 - 150
	Concentrating	Steam	130 - 190
	Drying	Steam(air)	130 - 240
Plastics Fabrication	Initiation	Steam	130 - 150
	Sharp Separation	Steam	150
	Extruding	Steam	150
	Drying	Steam(air)	180
	Mixing	Steam	150
Glass Working	Plashing	Steam(air)	110 - 150
	Fiber Drying	Steam(air)	130 - 180
Chemical Industry	Soaking	Air	150 - 180
	Drying	Air	150 - 180
Paper Industry	Bleaching Craft	Steam	150 - 180
	Drying	Steam	150
Wood Working	Drying Cellar	Air	80 - 120
	Preparing Plywood	Steam	120 - 180
	Pressed Fiber Board	Steam	200
Synthetic Rubber	Initiating	Steam	130
	Monomer Recovery	Steam	130
	Drying	Steam(Air)	130
Road Construction	Melting Pitch	Steam	120 - 180



CASE STUDY

Floraland in Bredasdorp



F L O R A L A N D
fresh • preserved • dried
EXPORTERS

- Flower drying and packing facility
- Dying of flowers and pods
- Biomass waste produced
- Dried, dyed and packed flowers exported

- High disposal cost (longer distances)
- Environmentally responsible (already harvesting rain water)
- Export market demands environmentally friendly practices



PROBLEM

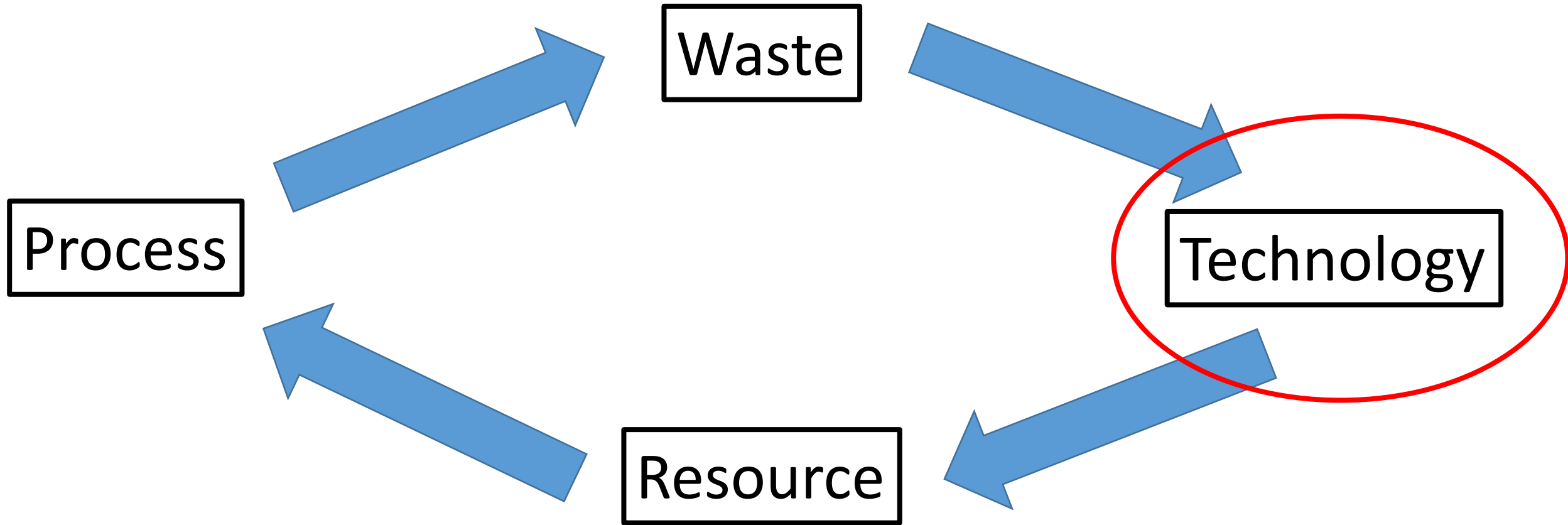
Client required solution to waste streams

STH Energy Identified need for heat on site

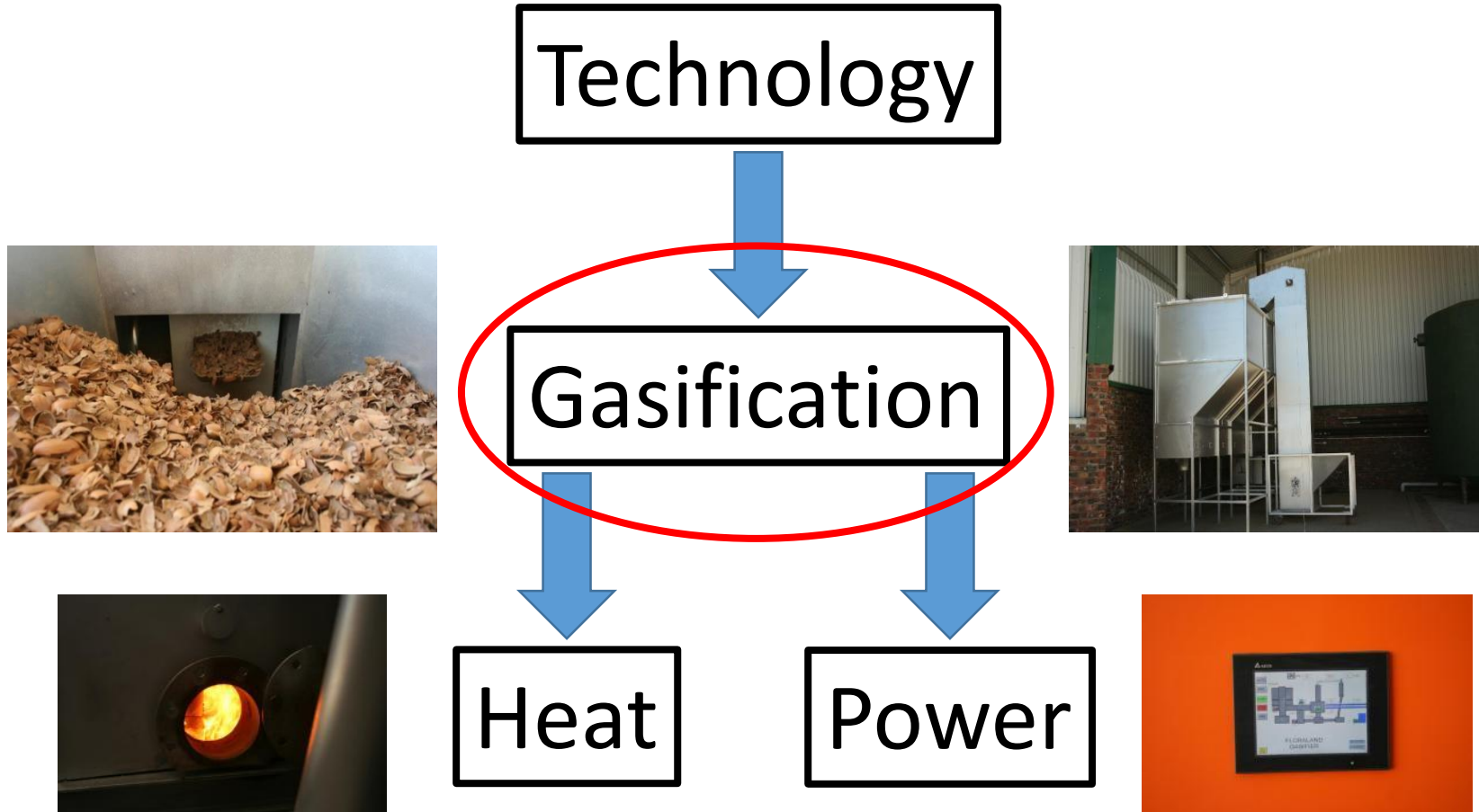
STH Energy and client determined gasification to be
“best-fit” tech



PROBLEM

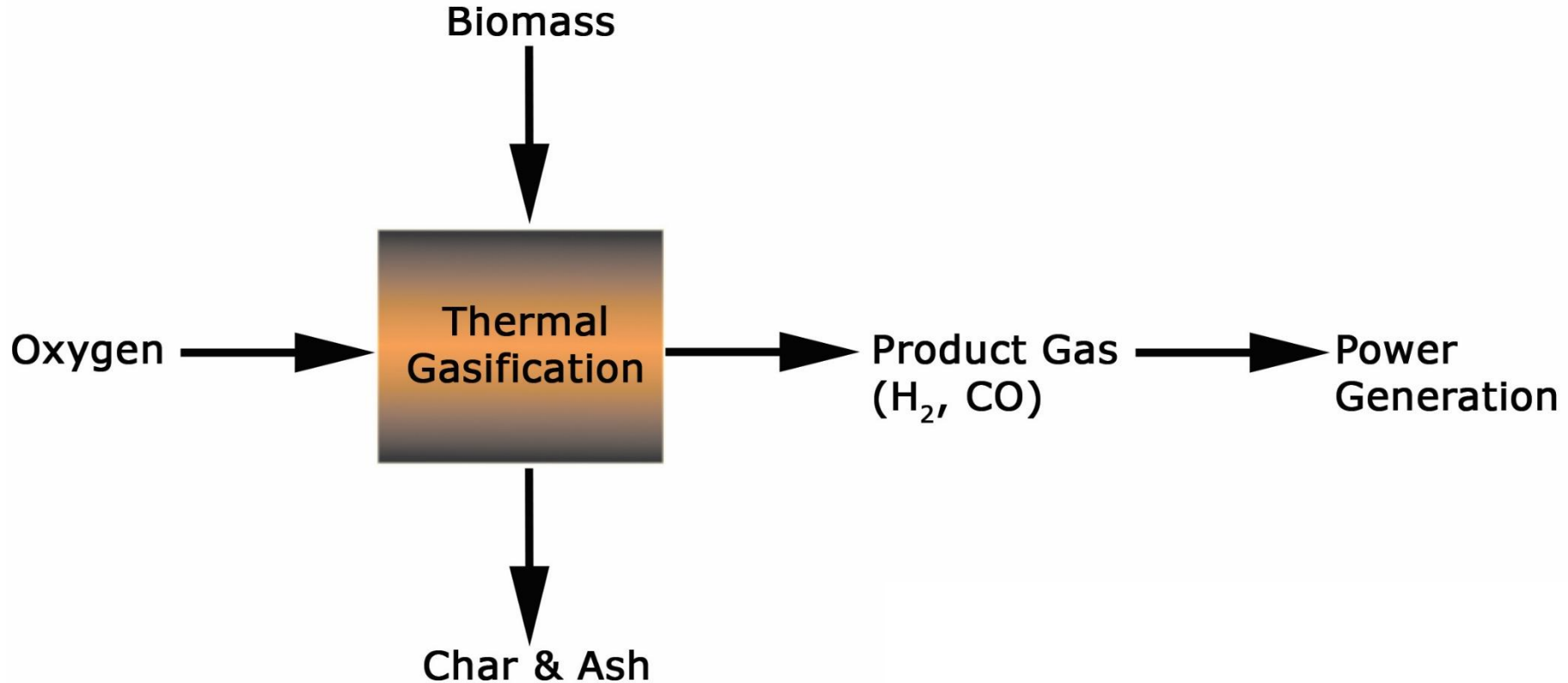


SOLUTION



SOLUTION

Gasification



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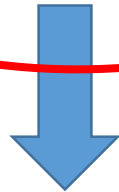


SOLUTION

Technology



Solar Thermal

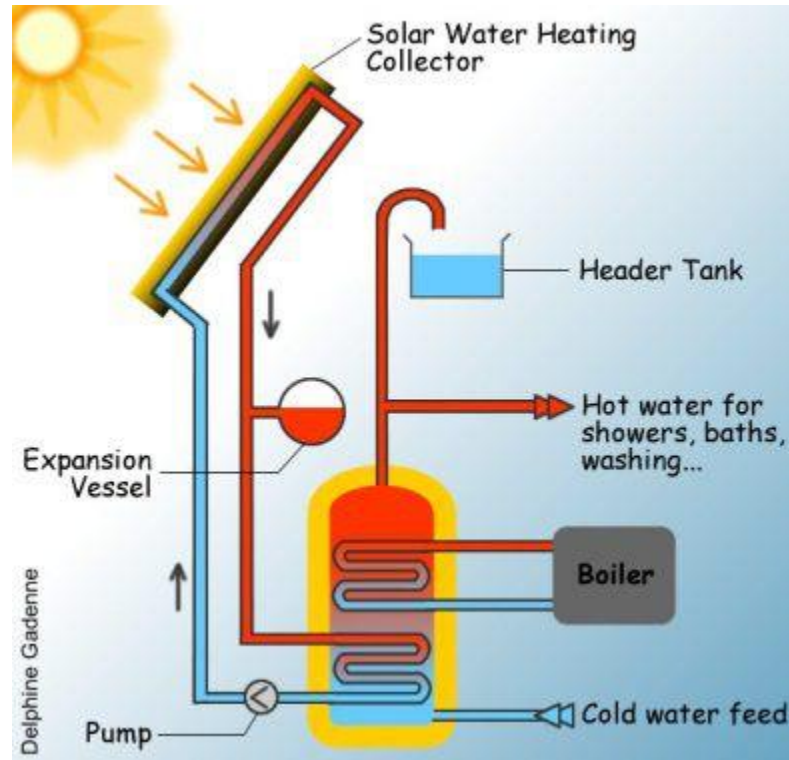


Heat



SOLUTION

Solar Thermal

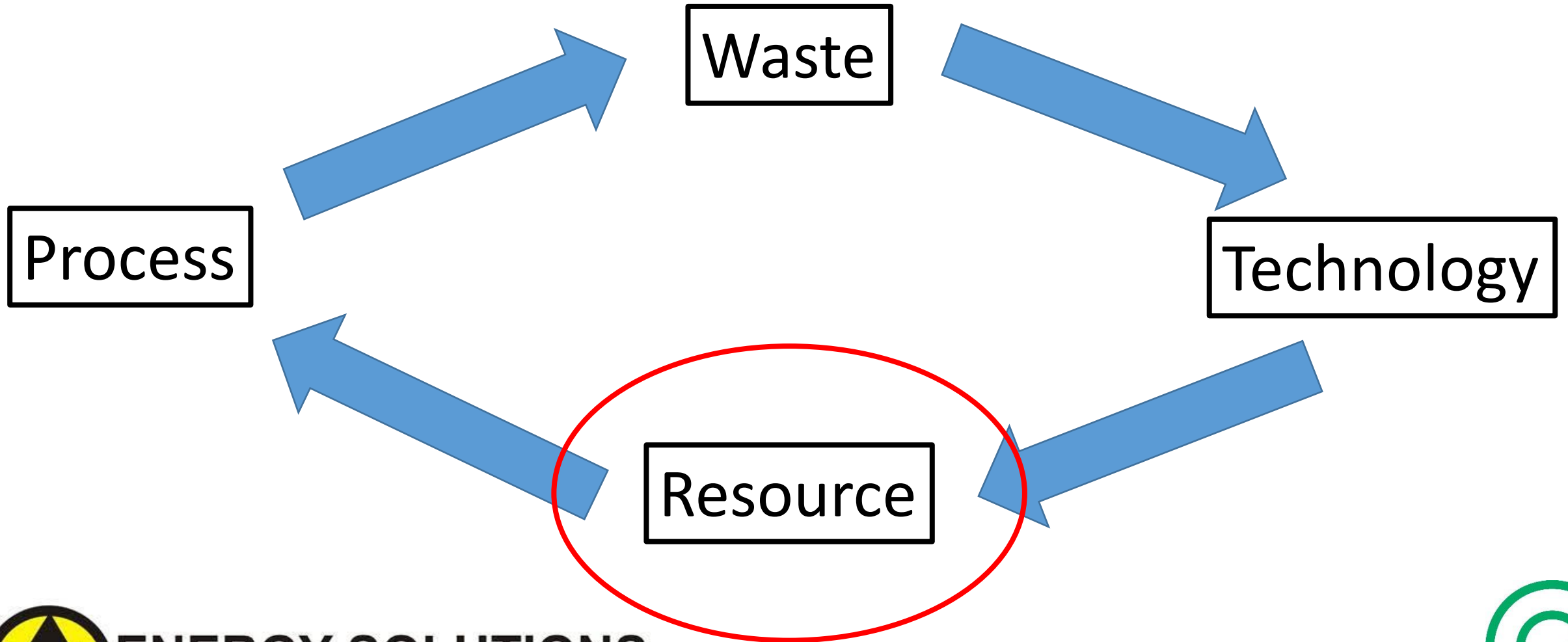


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PROBLEM



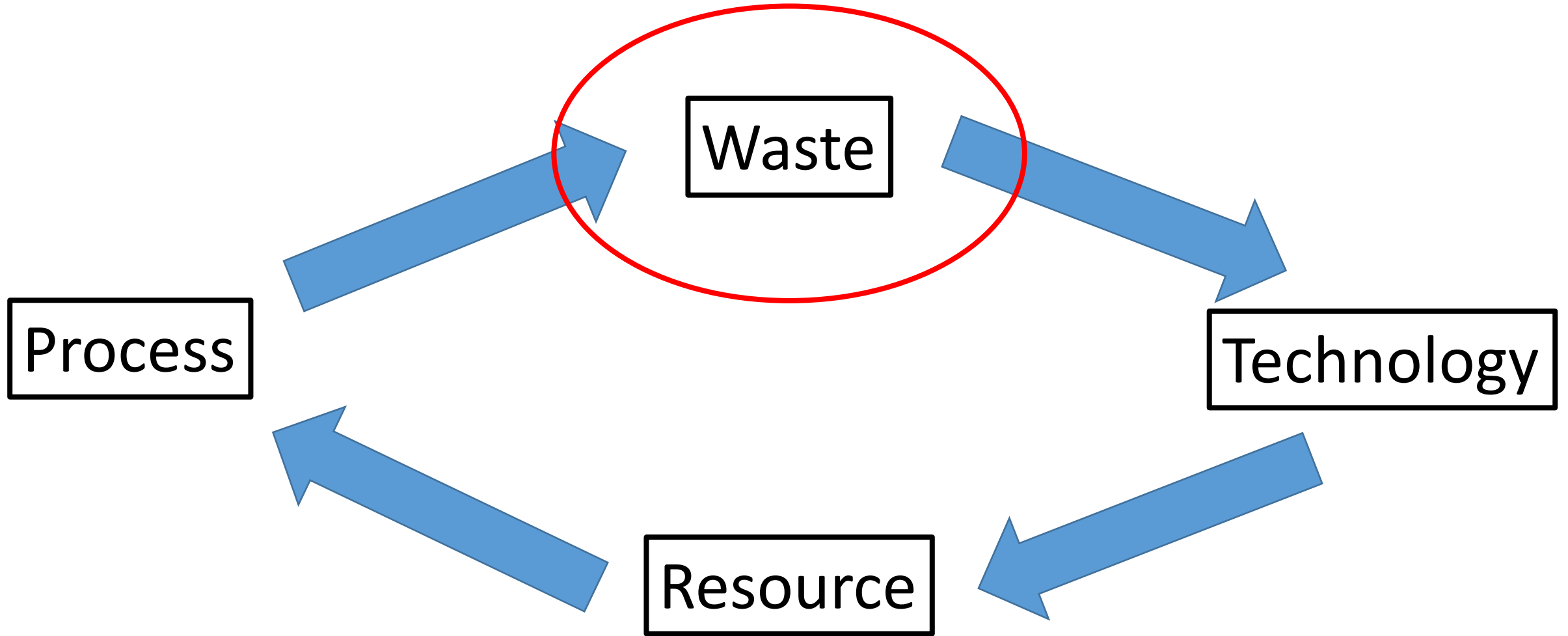
SOLUTION

Flower Drying and Packing

- Requires heating for drying → Gasification/Solar Thermal
- Requires heating for drying → Gasification/Solar Thermal
- Lighting requirements vast → Gasification



PROBLEM



SOLUTION

Wastes derived from Flower Drying and Packing

- Biomass from pruning
- Biomass from seed pods
- Plastics (very small quantities)



Mixed and shredded



Gasified



SOLUTION ADVANTAGES

Overall Efficiency

Resource Efficiency

- Organic waste as a resource
- Recyclables separated

Energy Efficiency

- Gasification = higher efficiency than coal boiler
- Renewable energy in form of Solar Thermal
- Future steam turbine/rankine engine



CONCLUSION

“Medium Term” cost savings

“Security of demand”



Job Security

Business Sustainability



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THANK YOU

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ON BEHALF OF
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