



Welcome to findit**in**birmingham's breakfast meeting
'Recycling and Waste Management'
Thursday 2 February2012

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Birmingham City Council



www.finditinbirmingham.com



NISP[®]

NATIONAL INDUSTRIAL SYMBIOSIS PROGRAMME

Peter Levett and Kym Miller

NISP West Midlands

Symbiosis Definition:

‘An interaction between two different organisms living in close physical association to the advantage of both’

Concise Oxford Dictionary, 8th Edition



What is 'Industrial Symbiosis'?

Modified from Chertow, Yale 2000

“Industrial symbiosis engages **traditionally separate industries** and other organisations in a collective approach to competitive advantage involving **physical exchanges of materials, energy, water** and/or by products together with **collaboration on the shared use of assets, logistics, experts and knowledge transfer.**”

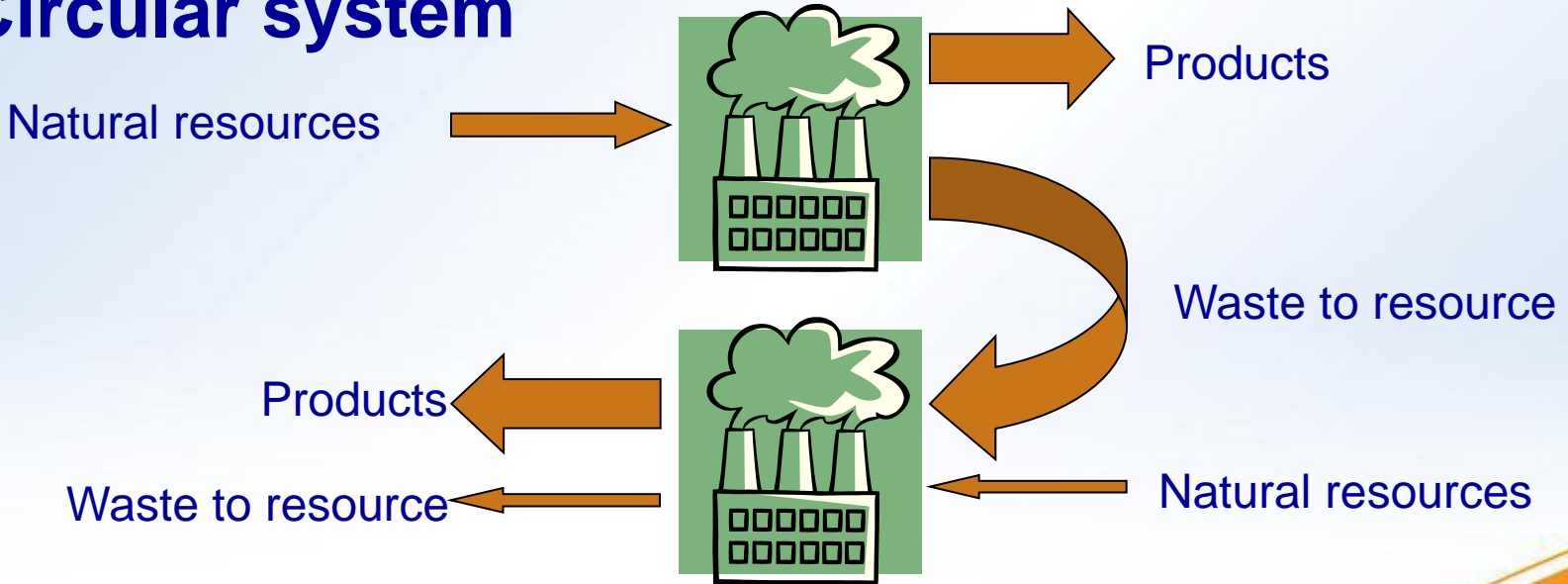
Connecting Industry – Creating Opportunity

Industrial Symbiosis for a circular economy

Linear system



Circular system



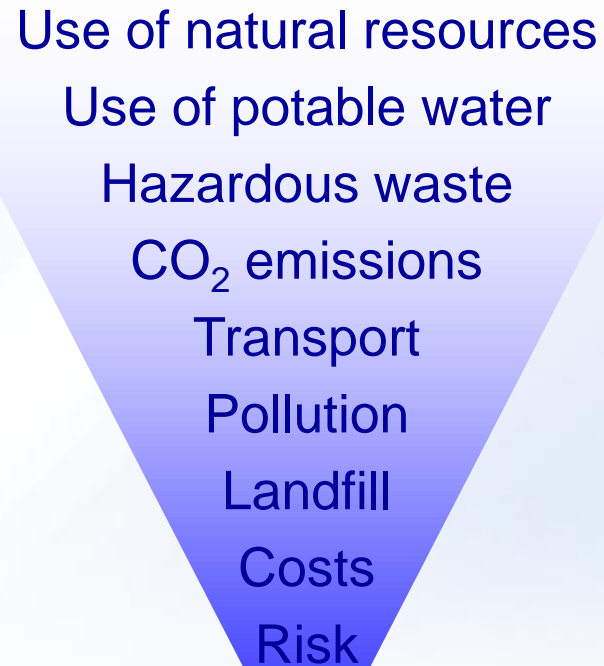
Industrial Symbiosis delivers....

NISP INCREASES



Jobs
Sales
Learning
Innovation
Bottom line
New business
Inward investment
Knowledge transfer
Utilisation of assets

NISP REDUCES



Use of natural resources
Use of potable water
Hazardous waste
CO₂ emissions
Transport
Pollution
Landfill
Costs
Risk

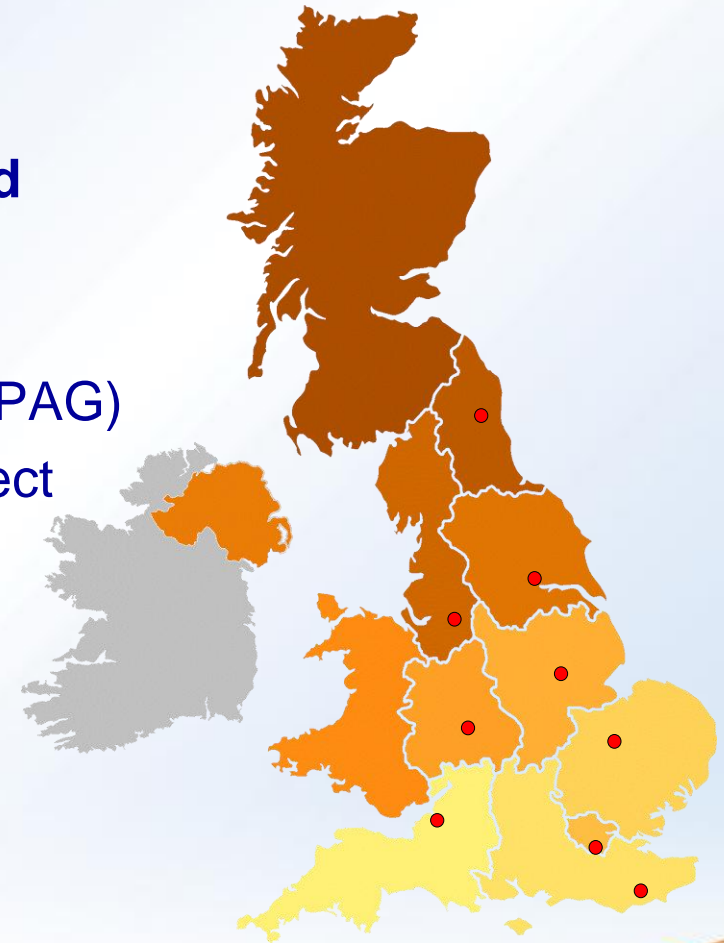
WRAP & Industrial Symbiosis Priority Materials



What is NISP?

Regionally Delivered, Nationally Coordinated

- 10 Regional Teams across the UK
 - England & N. Ireland
- Business led Programme Advisory Groups (PAG)
 - (Ricoh UK, Denso, Wiseman, Eden Project etc)
- Benefits of National Programme
- Devised and managed by International Synergies Limited and funded by WRAP in England
 - but a business initiative
- FREE to industry & public sector support



NISP has circa 13,000 Members

Corporates

- Wiseman Dairies
- Veolia
- Ginsters
- Toyota
- Associated British Ports
- SITA
- Diageo
- Shell
- Befesa Abengoa
- Western Power
- Bombardier
- Michelin
- Corus
- DS Smith Packaging
- Honda

SMEs

- Premier Automotive Group
- BOC
- IKEA
- Johnson Matthey
- Sainsburys
- Rentokil
- Lafarge Plasterboard
- Coors Brewers
- Severn Trent
- Anderson Group
- Tarmac
- Laing O'Rourke
- Jaguar Land Rover
- Carillion
- Saint Gobain
- Recycled UK Limited
- G&P Batteries
- Forge Recycling
- Premier Waste
- Renewable Energy Growers
- Power Minerals
- Industrial Cost Reduction Limited
- Anglo Beef Foods
- The Cheese Co.
- Lower Reule Bioenergy
- Alutrade
- Bridgnorth Aluminium
- Chemtech
- Invasive Vegetation Management
- Jack Moody Holdings Limited

Micros

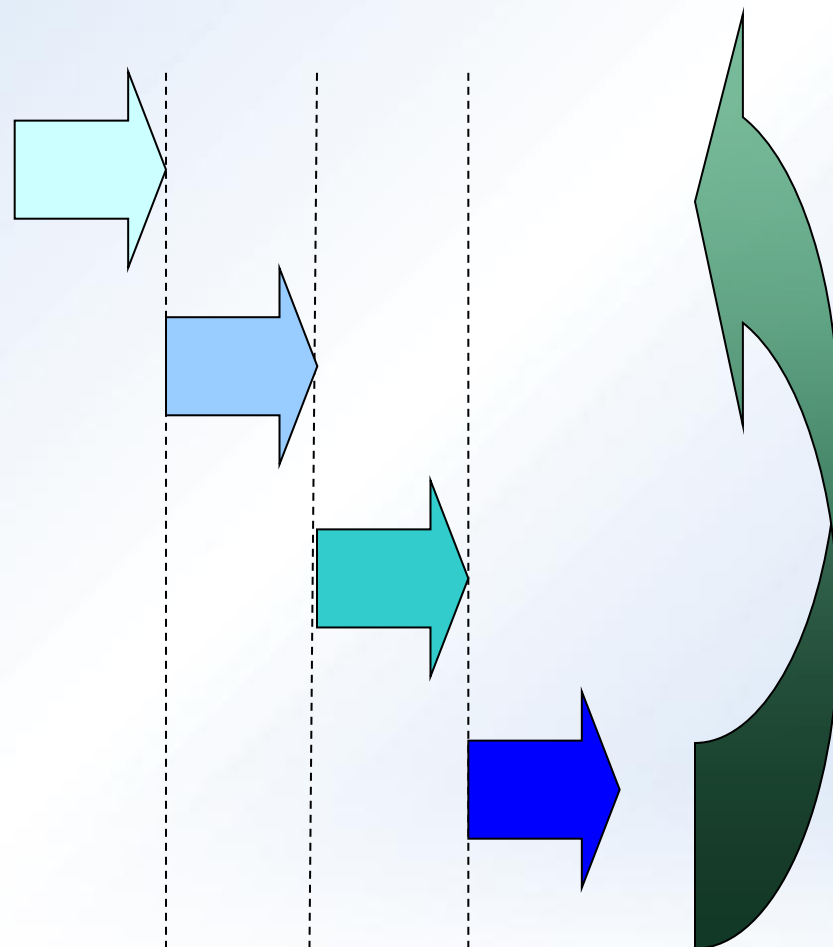
- Land Network International Ltd
- Link Waste
- Arrow Environmental
- Marches Wood Energy Network
- Akristos
- Kito Engineering Solutions
- Facility Water Management
- Rabbitt Recycling
- Clarkson Enterprise
- Sustainable Resources
- MPS Limited
- UK Recycling
- Analytichem
- Samplas
- JBS Waste Management

KEY POINTS

- All sizes: Multi-nationals, SMEs, Micros, Entrepreneurs
- All sectors/all resources (priority to 6 key streams)

Types of CO₂ emissions savings

- **Input savings** – Lower embedded energy in recycled materials than virgin raw materials to be processed.
- **Process savings** – savings in gas, electricity or other fuel use by one of synergy partners
- **Fuel substitution**- replacing fossil fuels with other fuel sources
- **Transport savings** – reduction in transport directly associated with synergy
- **Disposal savings** – reduction in biodegradable material sent to landfill



Accolades Include...

Awards



- Winner of *Best Carbon Reduction* project at edie.net Environmental Excellence Awards, 2010.



- One of fifty '*Top 50 Green Leaders*' awarded by Sustainability West Midlands, 2010.



- Winner of *Global Environmental Impact Award* from British Expertise International, 2009.

Policy



- Cited as an example of '*Best Practice*' in the European Union's Waste Framework Directive and the new Pro-Innovation call under FP7.

Working with NISP

Member registration

- Company and contact details
- Resource details (haves & wants)

Identify matches

- Identify potential reuse/recycling options
- Facilitate introductions

Synergy Management

- Facilitate meetings
- Assist in overcoming barriers

Reporting and Sign off

- Calculate savings
- Outputs document sign off
- Case study

NISP in Action

NISP Work in Birmingham



Island Delight/ Agri Energy. Food waste to anaerobic digestion.

- Cost savings £1,800
- £30 tonnes of landfill diversion.

Glendale Grounds Management/ Greener Composting. Green waste sent to composting facility.

- £30,000 of cost savings to Glendale
- 1,000 tonnes of landfill diversion.

Case Study : Tyres



Birse Civils / Credential Environmental.
Tyre bales used to divert the canal at
Selly Oak.
•1,000 tonnes of virgin material savings.

A+R Recycling/ NISP. Identification of
feedstocks including additional
materials for Phase 2 development.

Future Events

February 8th – 'Quick Wins' Workshop

Coventry City Council, Coventry

February 16th - 'Resource Efficiency' Training

The Oak House, Lincoln

March 6th - 'Quick Wins' Workshop

Center Parcs, Sherwood Forest, Newark

Brian Robinson A&R Recycling Ltd



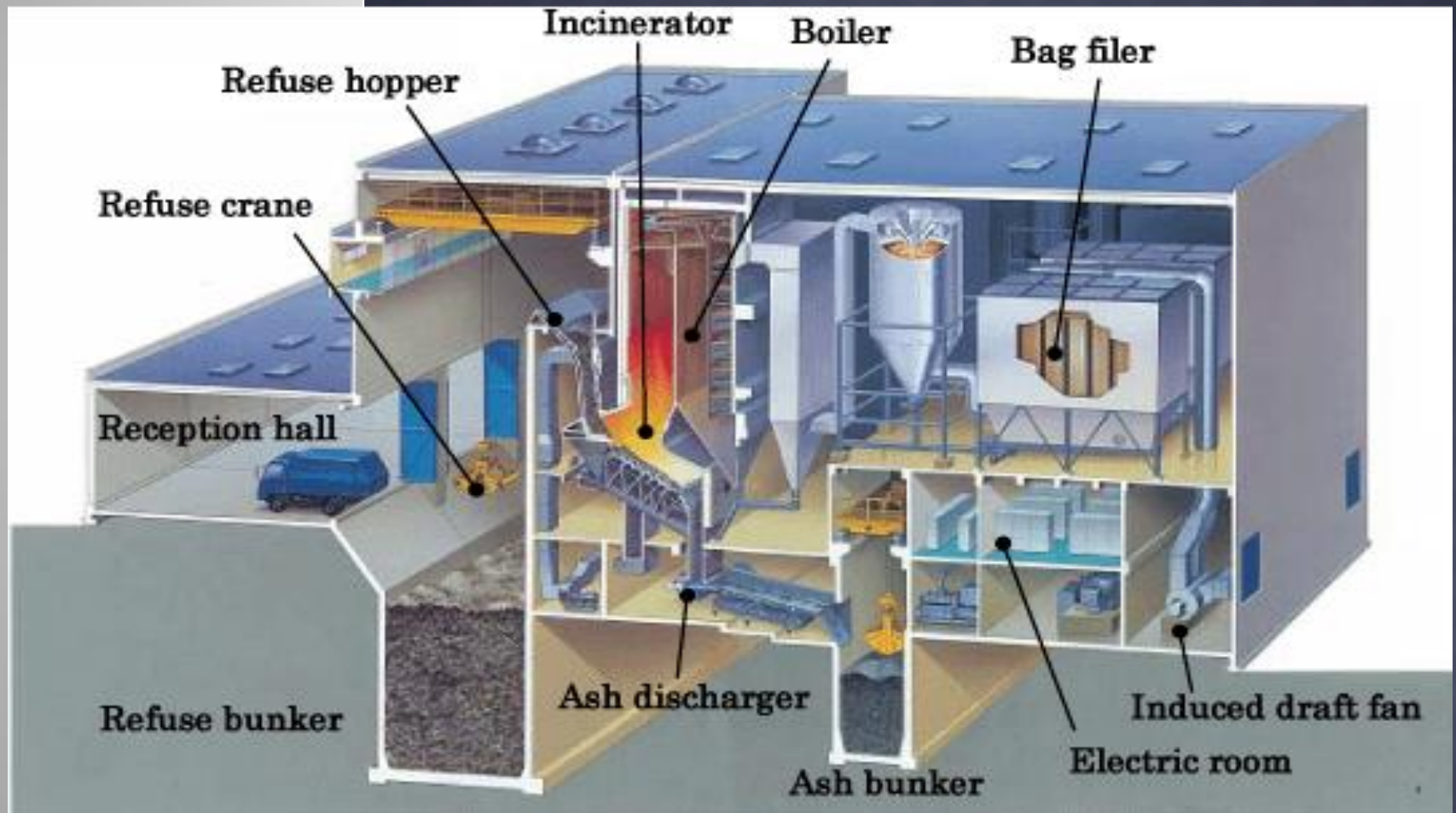
Dumped Tyres- Big Problem



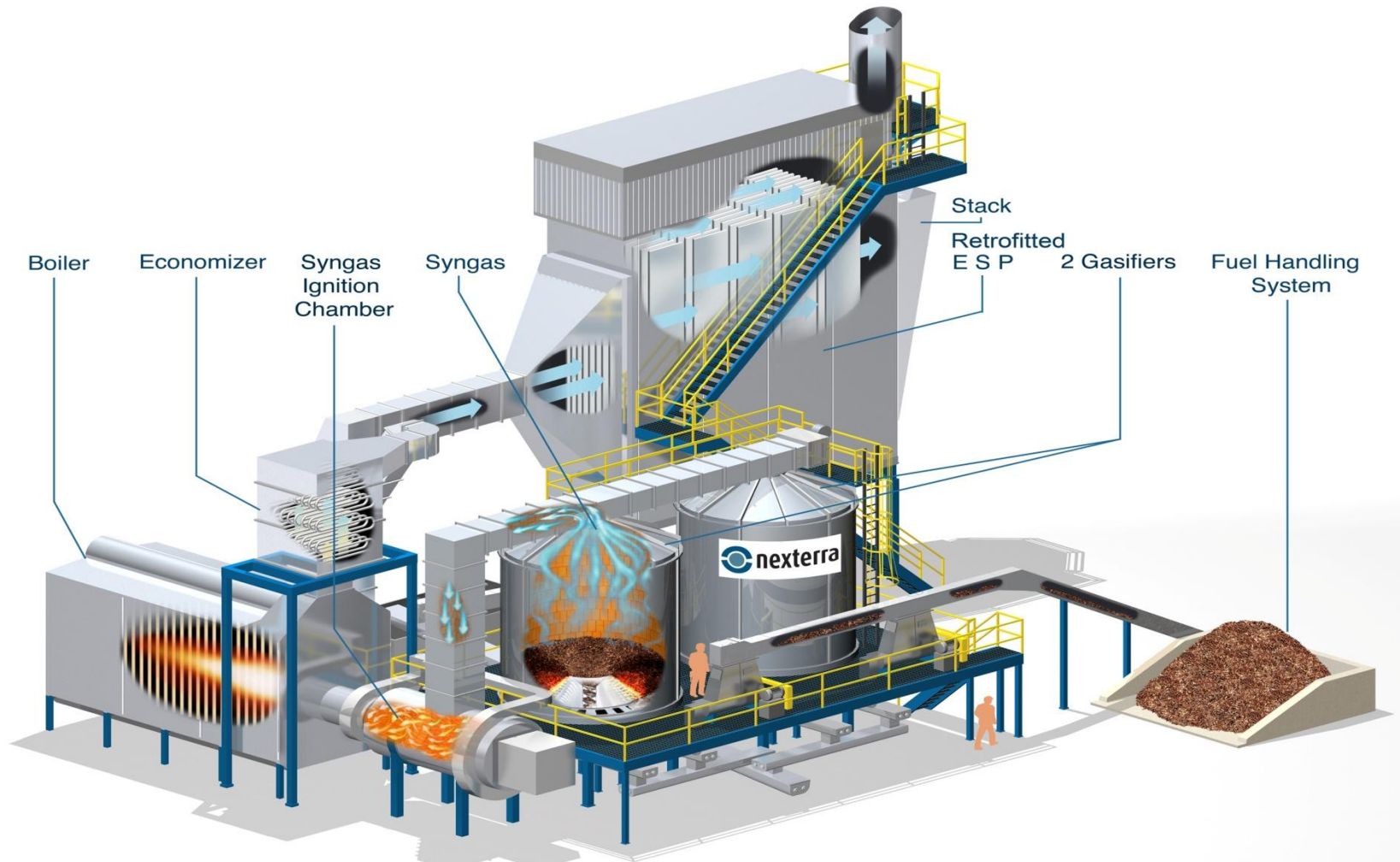
Working Local & Efficient



INCINERATION PLANT

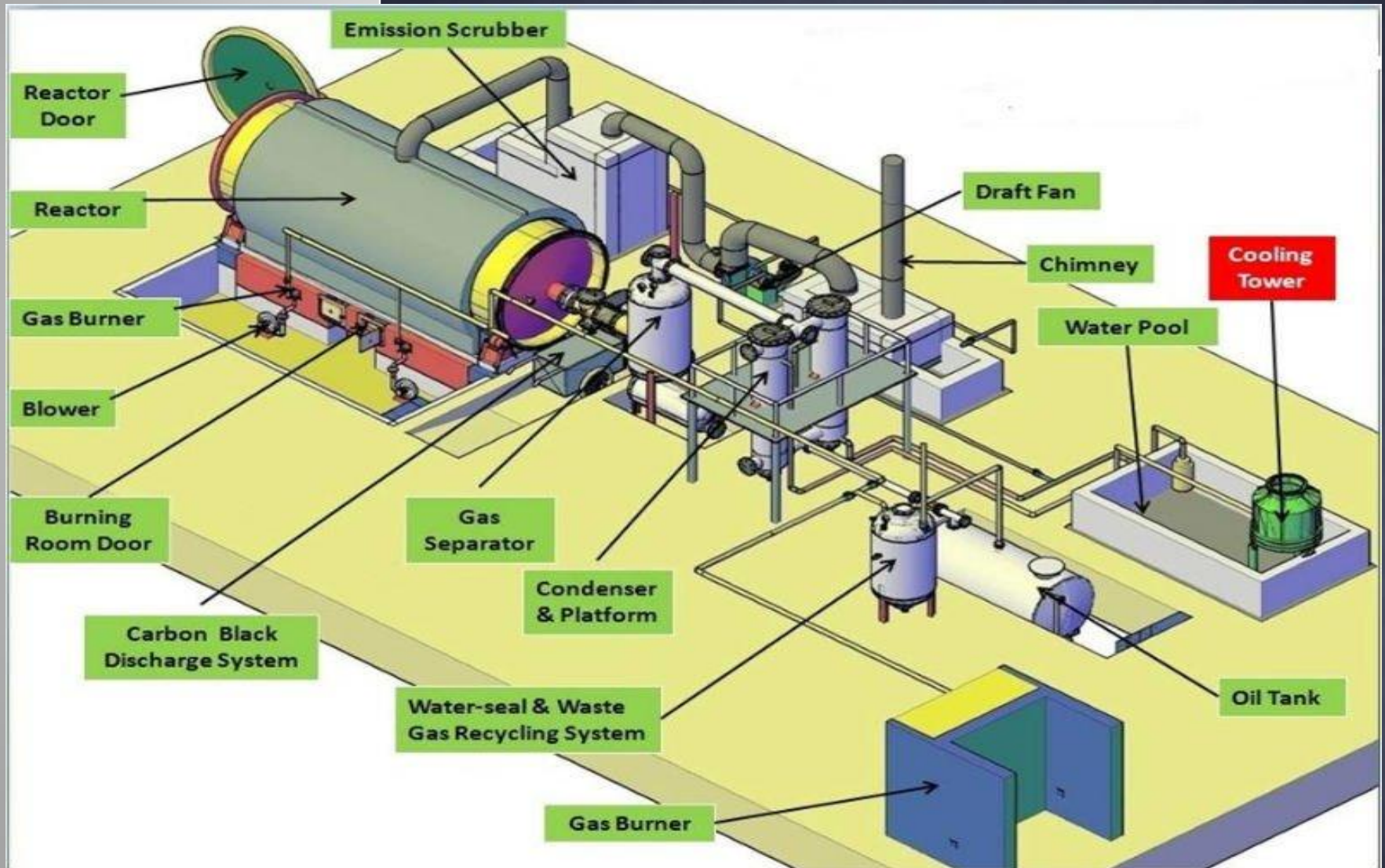


GASIFICATION PLANT



Nexterra Gasification System at Kruger Products Tissue Mill in New Westminster B.C.

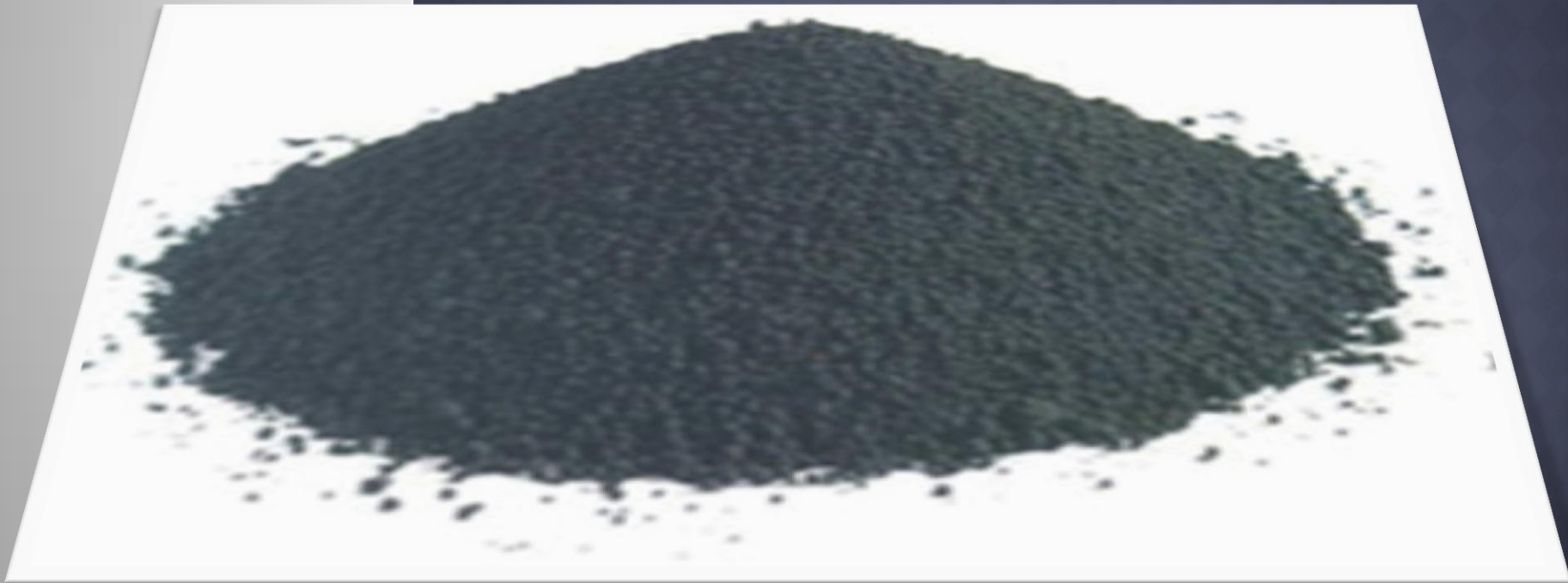
PYROLYSIS PLANT



OIL FROM PYROLYSIS



CARBON BLACK FROM PYROLYSIS



BY PRODUCTS OF PYROLYSIS PROCESS



10%

35%

45%

NC Gas 10%

Jill Rowe
Business Development Manager at
Birmingham City Council for
Fleet and Waste Management



Thank you for listening

