



Ricardo  
Energy & Environment

A wide-angle, high-angle photograph of Paris, France, taken during the 'blue hour' of sunset. The Eiffel Tower stands prominently in the center-right, its lattice structure silhouetted against the soft, purple and pink sky. The foreground and middle ground are filled with the dense, multi-story buildings of Paris, showing a mix of architectural styles. A wide, tree-lined boulevard runs through the center of the frame. The overall atmosphere is serene and urban.

## Session D: Thinking Strategically

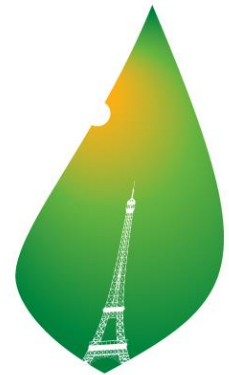
INDC implementation

Timothy Fill

7 June 2016

## What was COP21?

- The 21<sup>st</sup> yearly Conference of the Parties (**COP**) to the United Nations Framework Convention on Climate Change (**UNFCCC**)
- Largest ever COP
- 160 Intended National Determined Contributions (INDC) submitted by the end of Paris, covering 187 countries
- Largest ever gathering of heads of state – 150 under one roof
- Pledges of action by broad spectrum of cities, regions, investors, technology providers, etc.



**PARIS2015**  
UN CLIMATE CHANGE CONFERENCE  
**COP21·CMP11**



## COP21 – key outcomes

- Mitigation: 2°C, balance/net zero in 2<sup>nd</sup> half of century, NDCs on 5 year cycle, long-term emissions development strategies
- Adaptation: global goal, Adaptation Communication
- Finance: collective goal to rise from US\$100 billion floor, new market mechanisms and accounting, technology support and capacity building
- Transparency: single framework, covers mitigation, adaptation & support, global stocktake
- Governance: legally binding “as to process”, ratification provisions, INDCs to NDCs



## Who submitted an INDC?

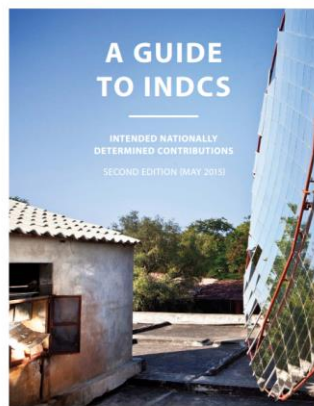
Many countries, including:

- South Asia
  - Bangladesh
  - India
  - Pakistan
  - Sri Lanka
- South East Asia and Pacific
  - Afghanistan
  - Brunei
  - Cambodia
  - Fiji
  - Lao
  - Nepal
  - Malaysia
  - Myanmar
  - Micronesia
  - Nauru
  - Philippines
  - Thailand
  - Togo
  - Tuvalu
  - Vietnam



# INDCs - Linking National and International Climate Policy

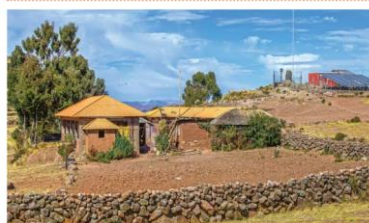
- Intended **Nationally Determined Contribution** = Country Specific Climate Plan.
- No set template for INDCs but the best include:
  - National **Mitigation** Targets (can be quantified and also be divided by industry, region, city). Two targets, a more ambitious target which they could achieve with climate finance
  - **Adaptation** “contributions” including impacts, priorities, plans, strategies, costs
  - **Implementation plans** including requirements for financial support and **Measurement, Reporting and Verification (MRV)** plans



www.odn.org  
www.ricardo-aea.com



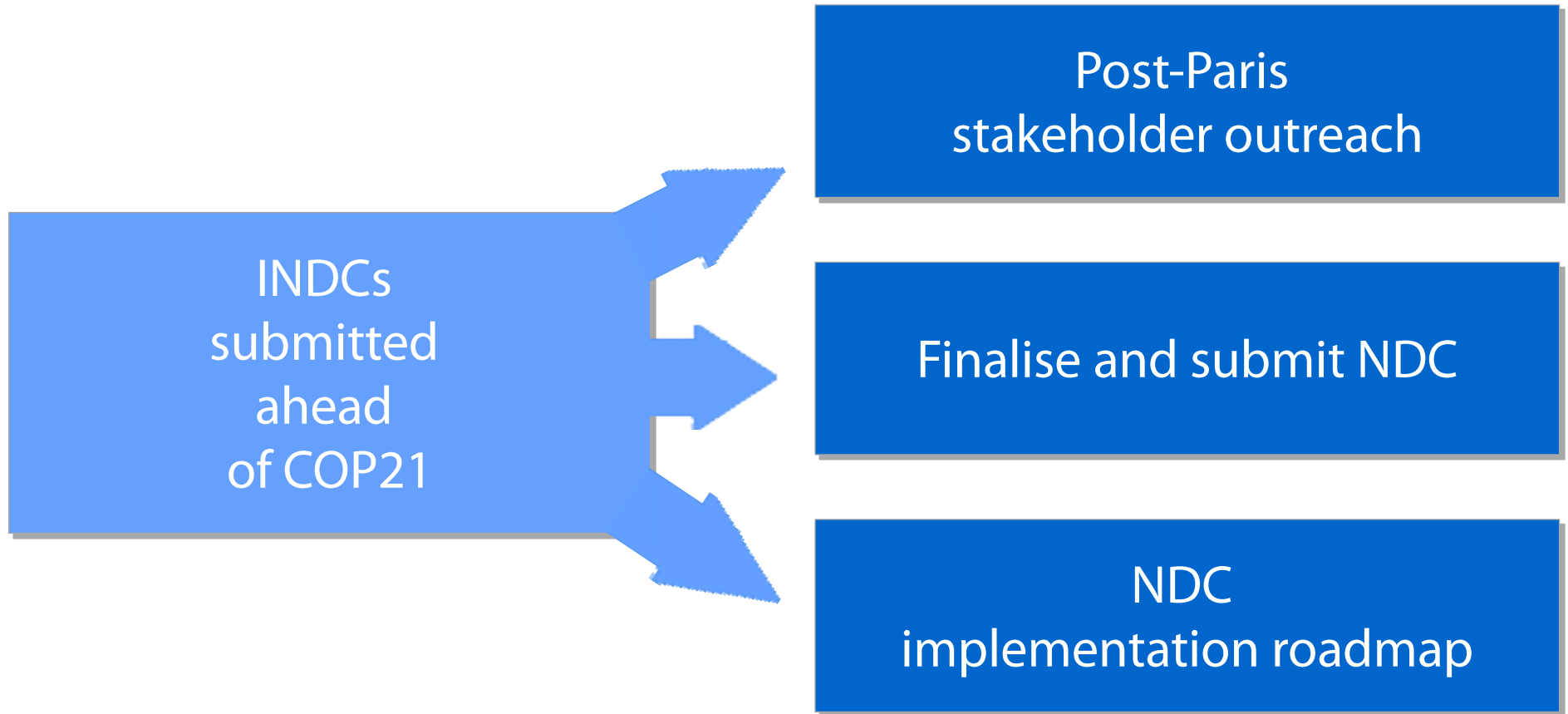
## WORKING PAPER



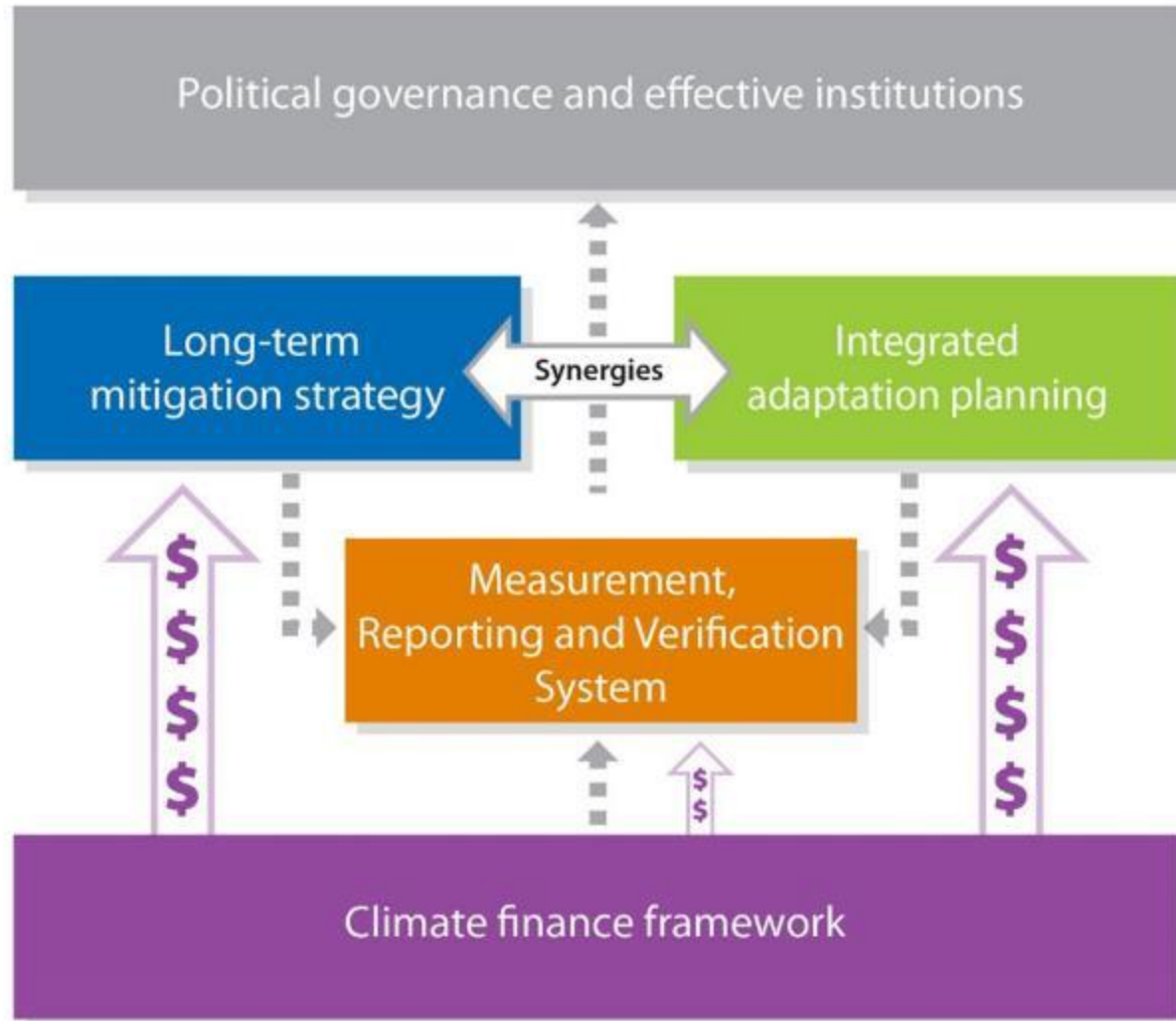
Supporting ambitious Intended  
Nationally Determined Contributions:  
Lessons learned from developing  
countries



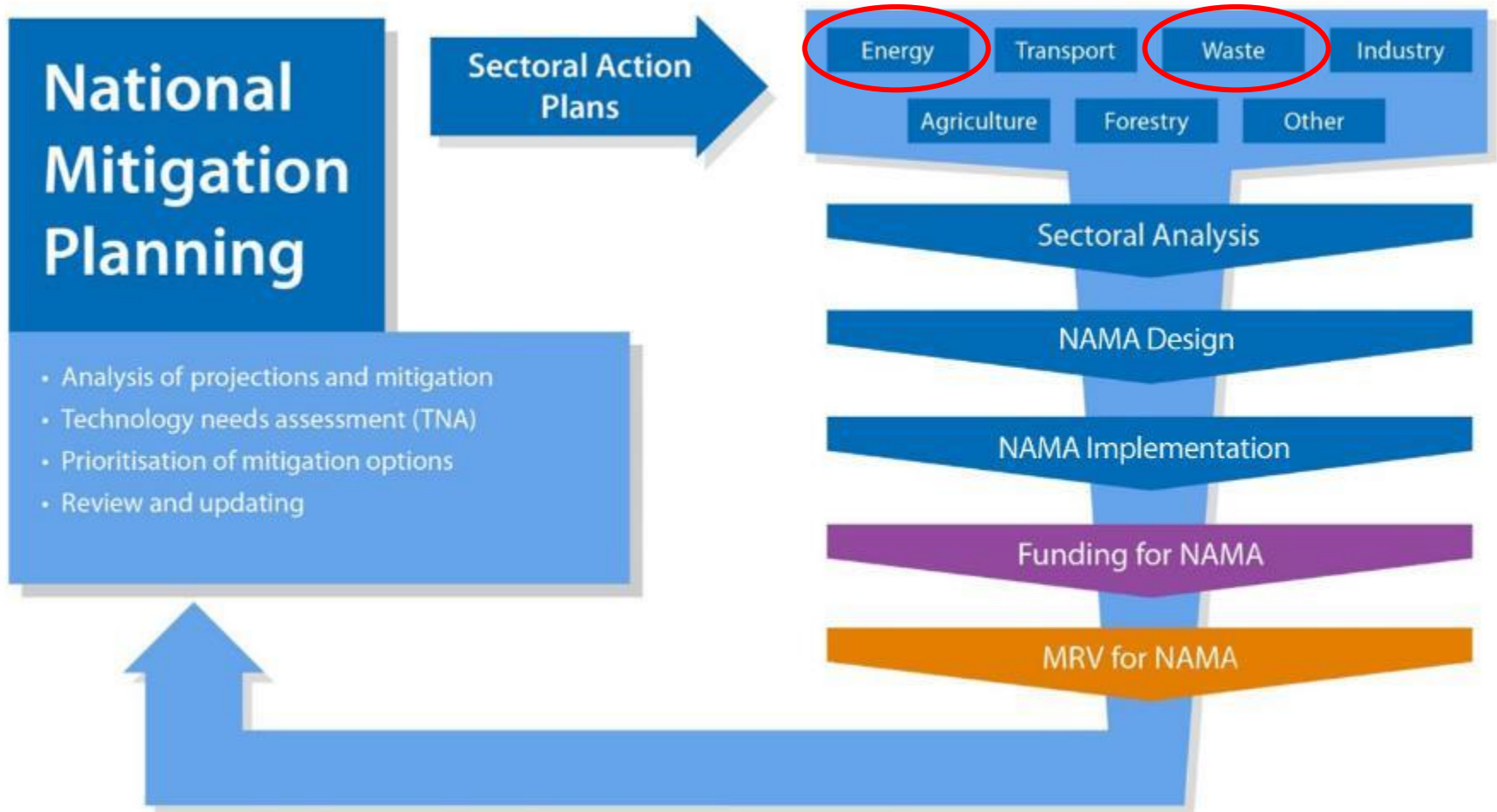
# National implementation – next steps



# Five pillars of NDC implementation



# Long-term mitigation strategy





# What Role can Waste to Energy play?

## Disposal

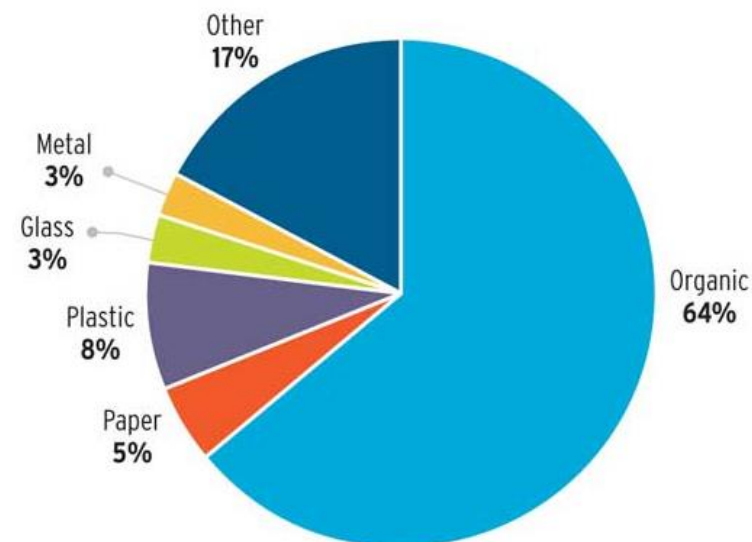
- Landfill gas (LFG) is mainly methane and CO<sub>2</sub>
- Global landfill methane emissions up to 70 million tonnes / year
- Methane 25 times more damaging than CO<sub>2</sub>
- Modern engineered landfills minimise uncontrolled LFG emissions
  - Flaring LFG creates CO<sub>2</sub>, water and energy
  - Gas engine use energy to generate power
  - LFG can be upgraded to a biofuel



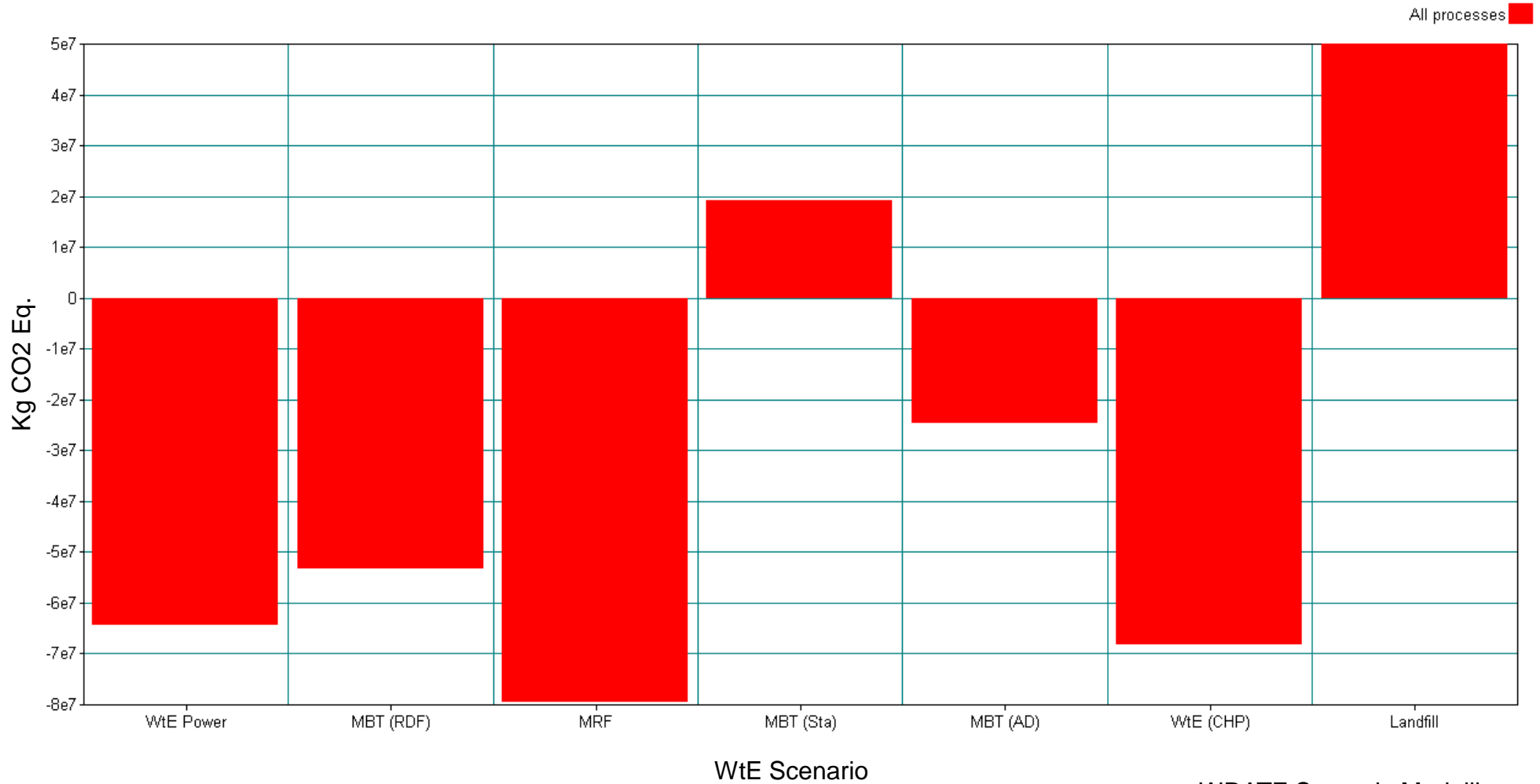
# What Role can Waste to Energy play?

## Recovery

- Waste recovery diverts waste from landfill - reduces uncontrolled GHG emissions
- Treatment by WtE:
  - Feedstock typically 50% or greater biogenic carbon
  - Generates Renewable Energy (power and/or heat, biofuels)
  - Renewable energy / fuels will offset fossil fuelled generators



# Potential WtE Climate Change Benefits (LCA)



WRATE Scenario Modelling  
 250,000 tpa Residual Waste  
 Golder Associates (UK) Ltd, 2011