



TBWES

Waste to Energy Solutions

Contact

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SUSTAINABLE DEVELOPMENT GOALS

1 NO POVERTY 	2 ZERO HUNGER 	3 GOOD HEALTH AND WELL-BEING 	4 QUALITY EDUCATION 	5 GENDER EQUALITY 	6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY 	8 DECENT WORK AND ECONOMIC GROWTH 	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE 	10 REDUCED INEQUALITIES 	11 SUSTAINABLE CITIES AND COMMUNITIES 	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION 	14 LIFE BELOW WATER 	15 LIFE ON LAND 	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 	17 PARTNERSHIPS FOR THE GOALS 	 SUSTAINABLE DEVELOPMENT GOALS

Concept

Sustainability

Evaluating options to maximize renewables



Decarbonization

Alternate fuels with hybrid systems for energy transition

Viability

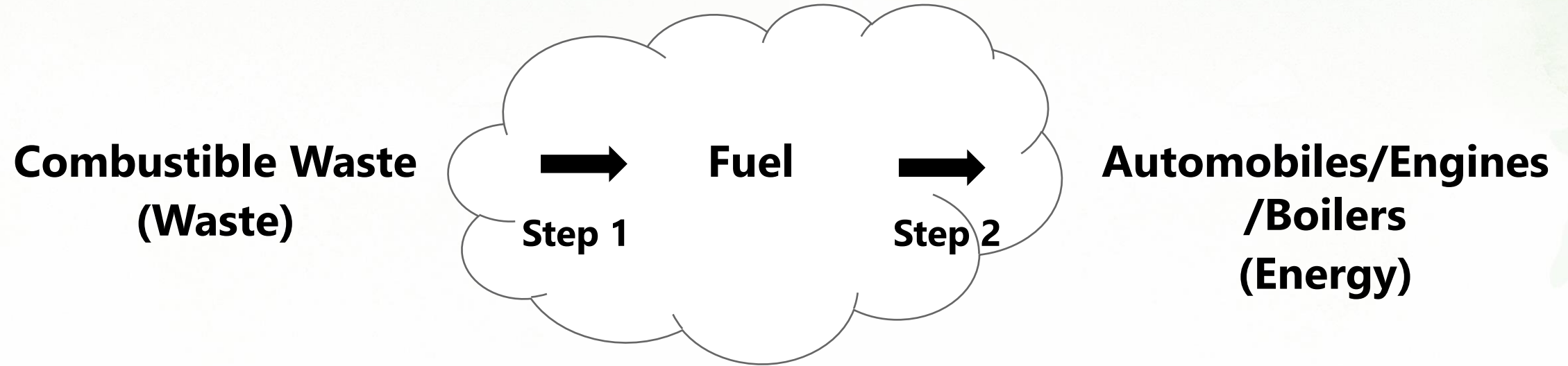
Volatility in fuel cost and availability

- The fuel source for steam & power has been continuously changing.
- This change is driven by availability, costs & environmental considerations
- Fuel Sourcing – *driven by* Cost, Availability, Environmental impact & Waste disposal
- Equipment Design – *driven by* Reliability, Availability, Efficiency & Flexibility
- It has been TBWES's efforts to excel on these parameters & provide an economical solution to our clients, specially customized for their situations

Waste to Energy Solutions

- **WTE boilers for Industrial Waste (TBWES Proprietary)**
 - Distillery Waste - Spentwash / Slop boilers
 - Non-Recyclable Solid Waste boilers
 - FlexiSource™
 - Scheduled waste, Refuse Derived Fuel (RDF), Sludge
- **WTE Heat Recovery Boilers (TBWES Proprietary)**
 - Downstream of Waste Gasifier
 - Downstream of Waste Rotary Kiln
 - Downstream of Waste Stokers/Incinerators
- **WTE Boilers for Municipal Solid Waste – (Steinmuller Technology)**
 - MSW fired boilers (NCV > 1100 kcal/kg)

Waste to Energy Approach



- Can we get rid of two steps to reduce lifecycle costs?
- Can we help customers to get rid of waste and add value to their plant?
- Can we reach zero solid discharge in industry by combustion at source?
- Can we reduce overall carbon footprint of the chain?
- **Can we bring Circularity within or in the vicinity of the plants?**

Case Study – Non-Recyclable Solid Waste

Recycling paper plants



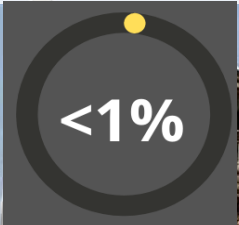
Case Study – Non-Recyclable Waste



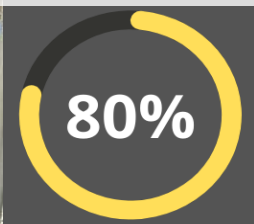
STEAM TO FUEL



UNBURNT CARBON



EFFICIENCY

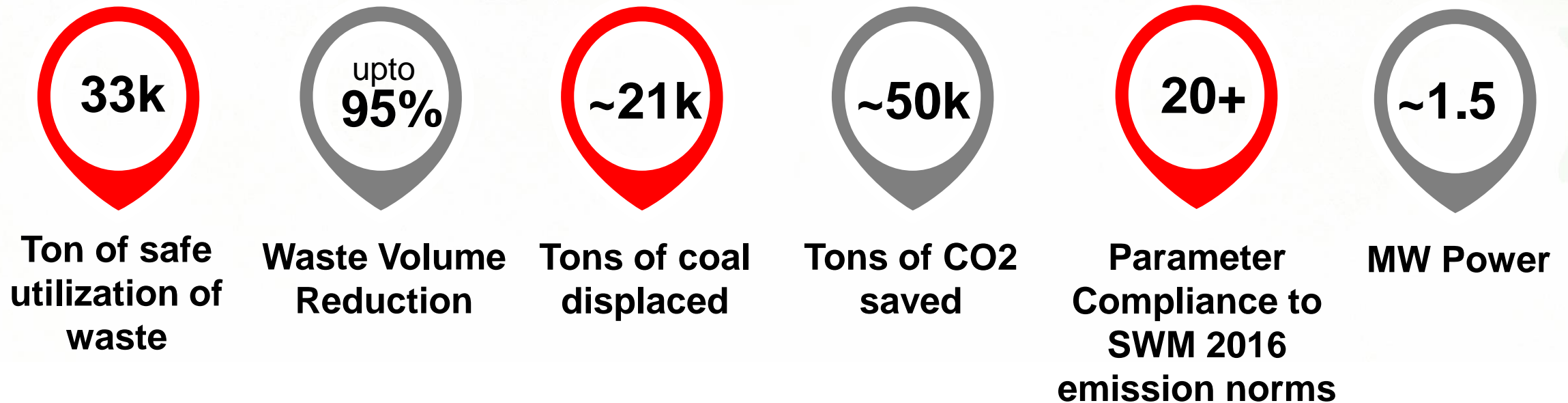


Waste to Energy plant at Paper Mill in Gujarat

Fuel - NRSW
Boiler - 1 X 100 TPD, 14 TPH, 45 kg/cm², 400 °C with special combustion system
FGCS – Dry Type with PAC & Hydrated Lime dosing system

Case Study – Social Environment Impact

Major benefits



* Based on certain assumptions