

INTERNAL

# Waste utilization in the circular economy

Marko Nokkala

Senior Sales Manager

Valmet South Africa Ltd.

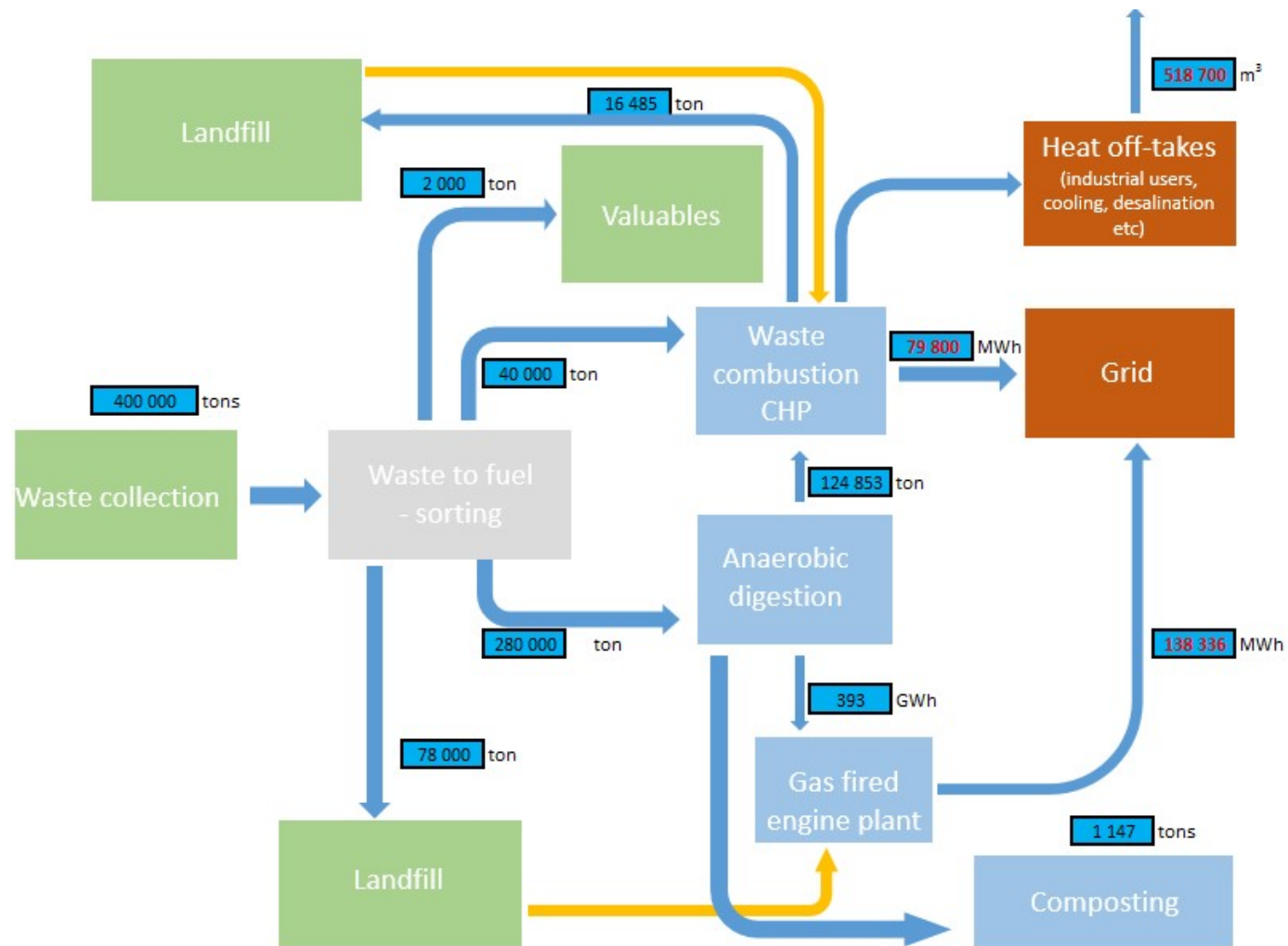
# Basic assumptions going forward

Fundamentals need to be in place

- Waste sorting is a must to make use of waste in more efficient way
- We must assume that space and legislation on landfills will tighten so current way of working must change
- Intelligent and well-informed decision-makers should solve the optimization problem of waste minimization in most efficient way
- There are many options available globally to come to the decision above but the following should be observed:
  - Waste to energy is dealing with waste residues
  - Depending on type of waste there are choices: incineration, gasification, combustion
  - Landfilling should be only an option for the ultimate residues: ash and non-combustable materials
  - Instead of trying to do it on your own, you should observe experience and practice of what works elsewhere
- For waste to energy project to work, a reasonable gate fee together with power off-take agreement must be in place

# Snapshot of waste and energy streams

Target: to maximize energy output from waste



# Benefits form Waste to Energy

A true win-win solution

- **Economic benefits**
  - Reduce use of oil and gas in power generation
  - Reduce landfilling volume and cost
  - Profitable business for investors
- **Social benefits**
  - Decent job opportunities
  - Cleaner cities
  - Expand availability of power
  - Potential for clean water
  - University cooperation
- **Environmental benefits**
  - Methane emission reduction
  - CO<sub>2</sub> reduction
  - Reduce pollution and littering

INTERNAL

