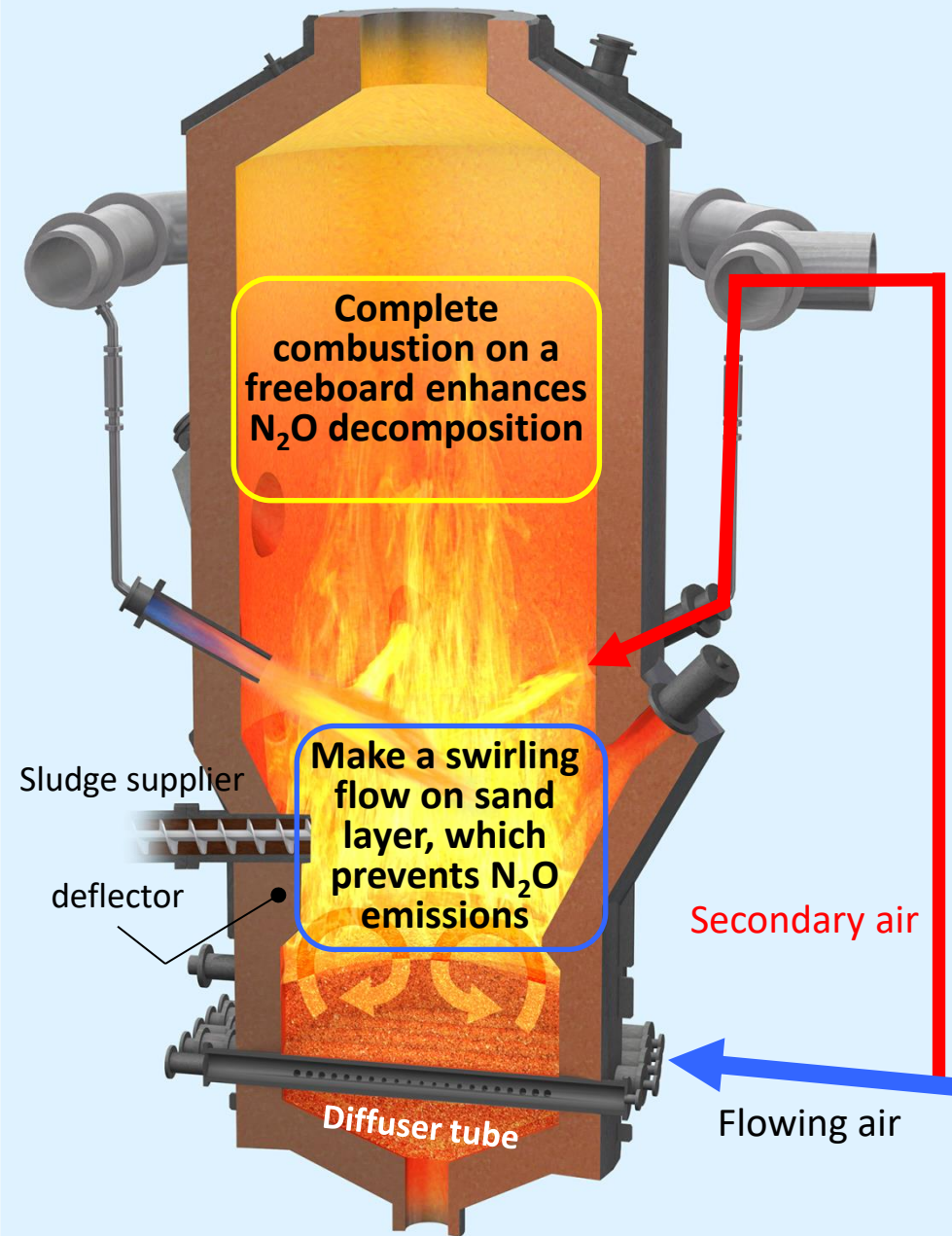


# : Two-stage Combustion Type Swirling Fluidized bed Furnace



## Summary

The combination of **Two-stage combustion technology**: directly supplies the part of flowing air to the freeboard area and **Low air ratio of whole airflow** enables the reduction of greenhouse gas emissions and energy saving.

## Features

### Effect of two-stage combustion

- Prevent  $N_2O$  generation at sand layer
- Supplied secondary air makes freeboard high-temperature and facilitates  $N_2O$  decomposition

⇒ **Enable the reduction of  $N_2O$  emissions** with no additional supplemental fuel

### Effect of low air ratio

- Reduce the **consumption of supplemental fuel** and **power consumption of blowers**

## Range of application

Adaptable to newly established swirling fluidized bed and upgraded existing facilities

- Applicable to dewatered sewage sludge mixtures including residue and grit (co-incineration or mixing ratio should be 5% or less)
- Furnace capacity : 10~300wet-t/day
- Sludge property: water content rate: 70 – 84%, Organic matter: 60-92%
- Loading rate: 70-100% of furnace's capacity

## Effect of introduction

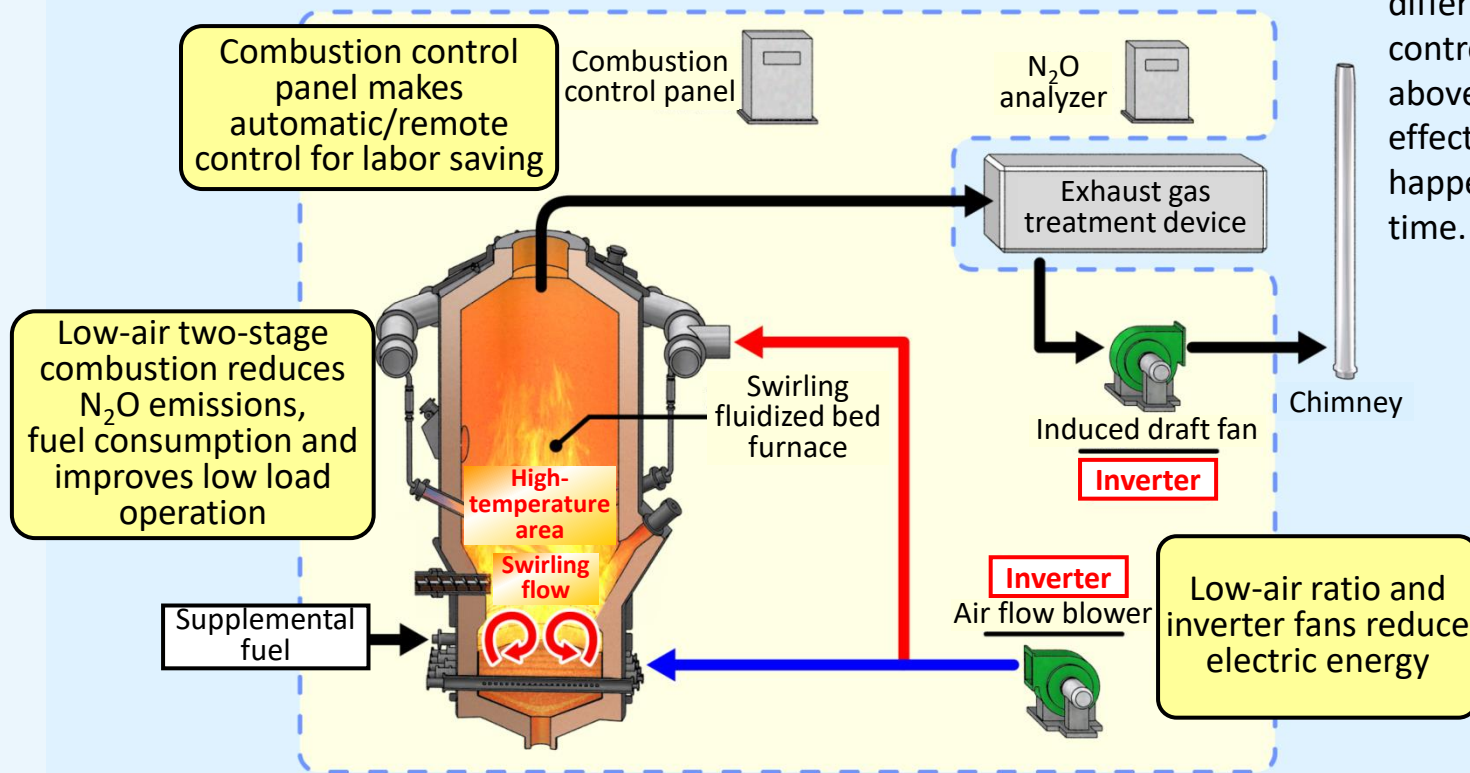
Conditions of trial calculation: 100 wet-t/day, water content rate: 76%, Organic matter: 80%

The results of calculation varies depending on treatment capacities and sludge properties.

Compared to a swirling fluidized bed furnace:

- Reduce greenhouse gas emissions by 50%<sup>※1</sup>
- Reduce fuel consumption by 75%<sup>※2</sup>
- Reduce electric consumption by 35%

\*1 and 2 are the results from the different combustion control methods. The above reduction effects may not happen at the same time.



※ Equipment like a binary generator or a dryer can be combined to follow the national standards.