

# High Concentration-adaptive Filtering/Thickening Mesophilic Digestion System

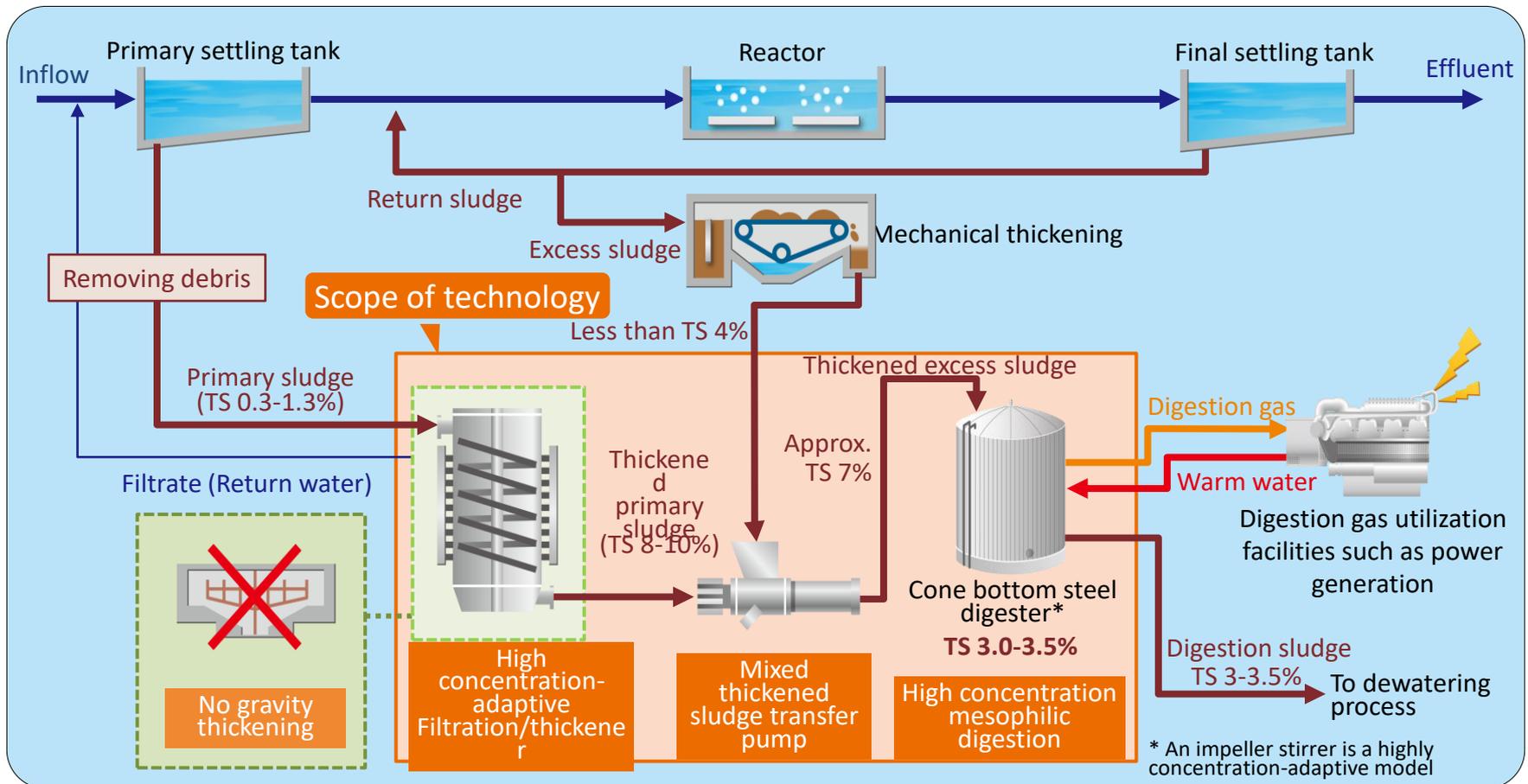
High concentration system reduces the facility cost of sludge digestion

## Summary of Technology

**Thickening:** A filtration/thickener thickens **primary sludge until TS 8-10%** (existing gravity thickener is TS 3%)

**Transportation:** Mix thickened primary sludge and thickened excess sludge (less than TS 4%) inside pump and transport it efficiently

**Digestion:** Impeller stirrers mix highly concentrated digestion sludge (TS 3-3.5%) by low power



## Scope of Application\*

\* For the application beyond the scope, separate consideration is required

- Thickening : Thickening primary sludge and excess sludge separately
- Concentration of sludge: Primary sludge is TS 0.3-1.3%, Thickened excess sludge is less than TS 4%
- Digestion: Only cone bottom steel digester (registered on JS Innovation Program)

\* Stirrers should be high concentration-adaptive models

## Recommended conditions

### ① Low economic efficiency, small site area

- Highly concentrated primary sludge reduces supplied sludge into digester by approx. 40%
- Reduce heat quantity for heating digester → Increases digestion gas energy can be utilized for other than heating
- Reducing LCC and footprint of sludge treatment facilities

### ② Requiring energy-saving

- Reduce power consumption of digester by 30%
- Substantially satisfy the performance index value of less than 270-280 [kWh/t-VS decomposition] that is subject to the subsidy.

### ③ Requiring retrofit of gravity thickening facilities

- Significantly reduce the retention time of primary sludge and prevent it being decomposed
- In the primary sludge thickening process, increasing the recovery rate of solid matters by more than 95% reduces the load of return water.

# Image of sludge reduction by high concentration technology

