Biosolids reuse as fertilizer and fuel by advanced dryer of high efficiency using heat pump with self-heat recuperation

- **Members of Demonstration**

  OKAWARA MFG.CO.,LTD・Hadano city office ・Kansai Electric Power CO.,INC

- **Site of Demonstration**

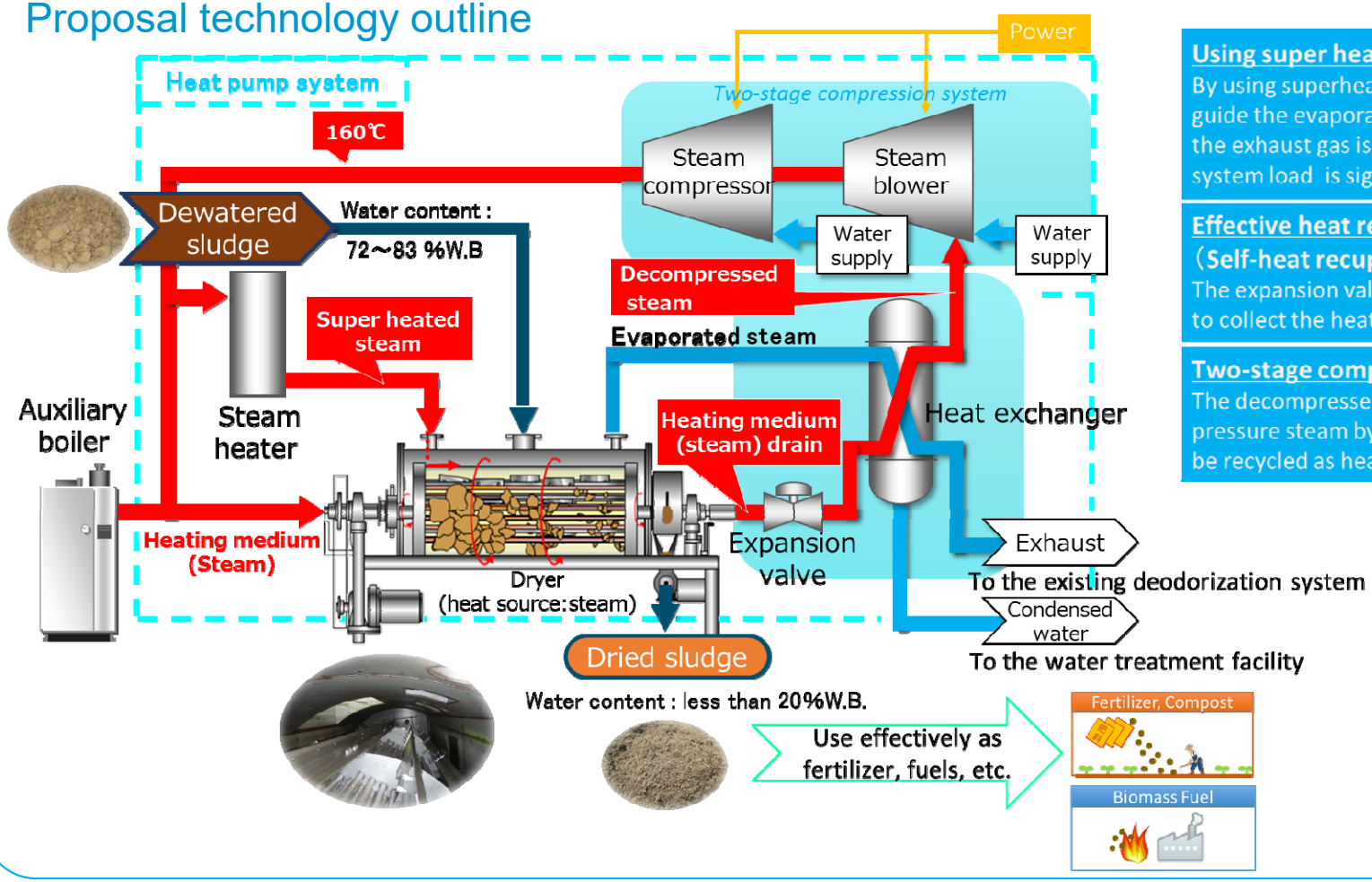
  Hadano Wastewater Treatment Plant（Kanagawa Pref.）

- **Demonstration Overview**

  The objective of this study is to demonstrate the performance of high efficiency heat pump dryer for sewage sludge based on self-heat recuperation, reduce the sludge disposal cost in small or medium local governments, and also expand effective applications.

Effective reduction in life cycle cost, energy consumption and CO_2 emission !

Proposal technology outline



Technical features

Using super heated steam as a carrier gas instead of air

By using superheated steam instead of air blown into the dryer to guide the evaporated steam out through the outlet, the amount of the exhaust gas is significantly reduced and thus the deodorization system load is significantly decreased.

Effective heat recovery from exhaust

（Self-heat recuperation）

The expansion valve decompresses the heat medium drain enabling to collect the heat energy from the exhaust turning drain into steam.

Two-stage compression system

The decompressed steam becomes high temperature and high pressure steam by two-stage compression system, which enables to be recycled as heating medium for drying.

Demonstration plant