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Sakishima Smart Community Osaka Japan

Perfect Smart City Project

Sakishima Smart Community Alliance, City of Osaka,
Osaka City University, Obayashi Corporation
21/05/2014

Greeting & Self-introduction



Tsuyoshi NAGAIRO
Chairman
Sakishima smart
community alliance
Deputy director of
URBENES of Osaka city
university



Sakishima Smart Community Alliance

Chair person:Tsuyoshi NAGAIRO

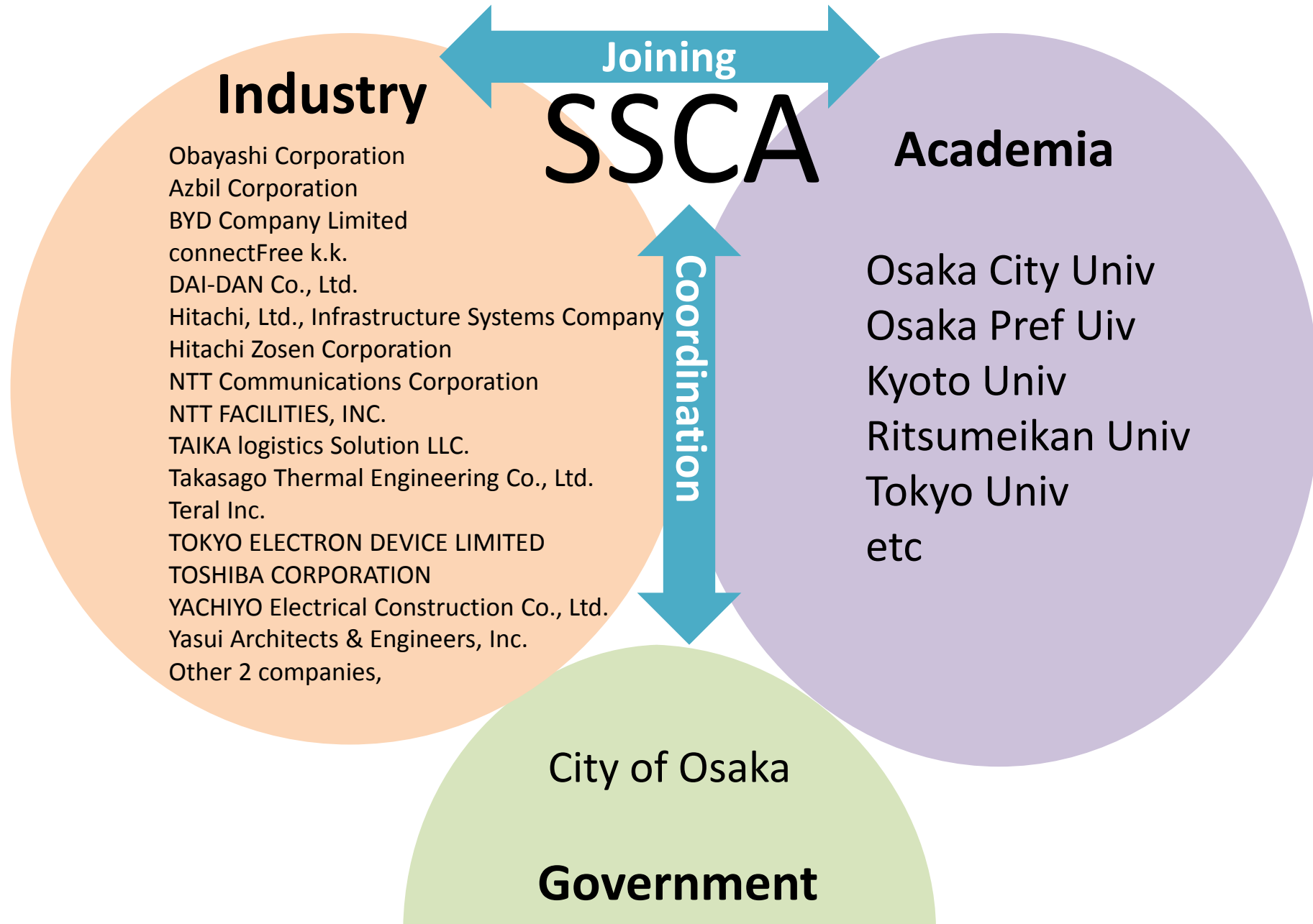
Partnership

Perfect Smart City

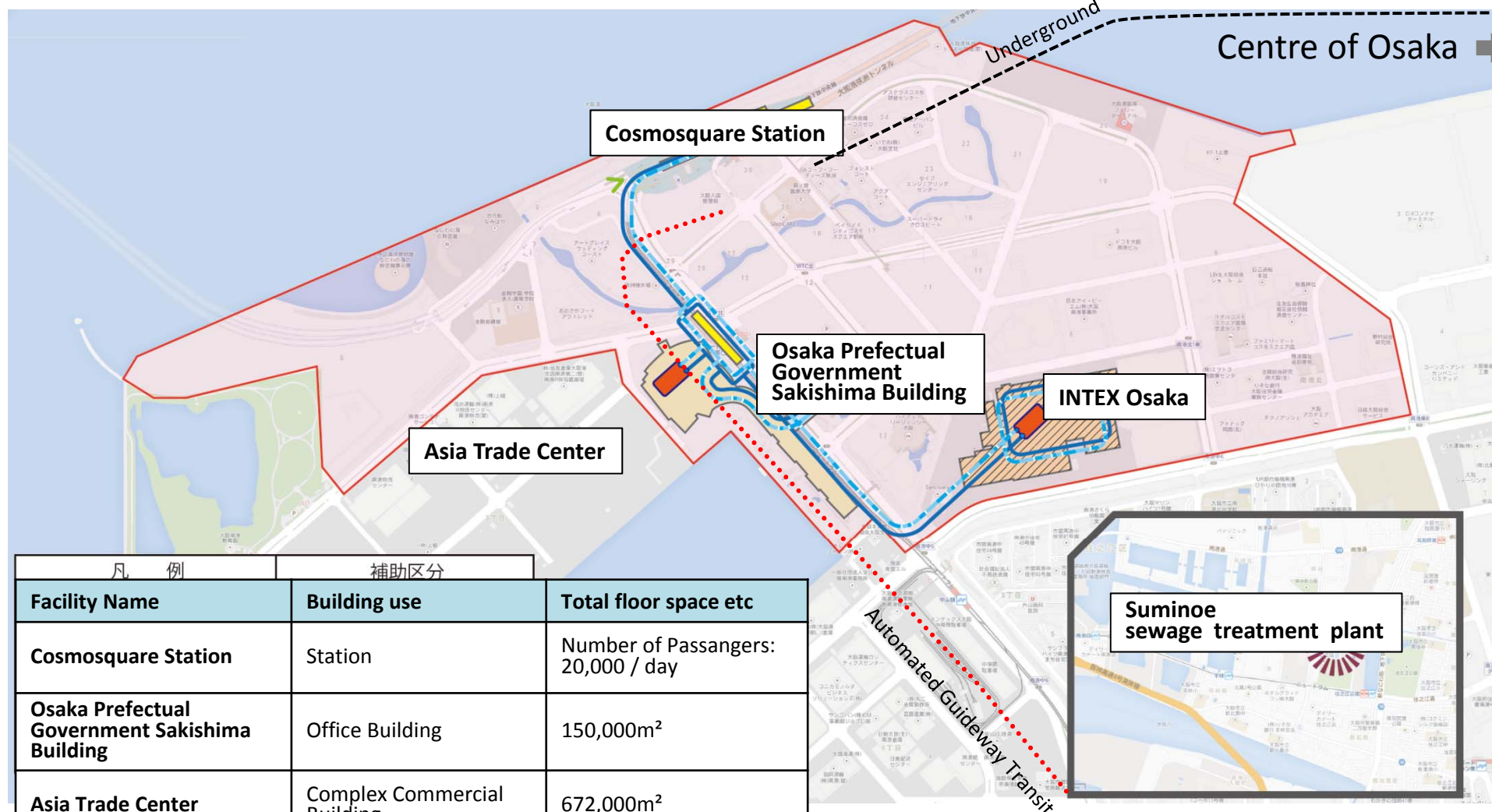


Chair person: Tsuyoshi NAGAIRO

About SSICA



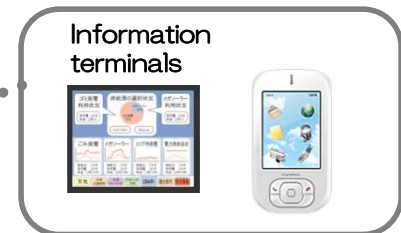
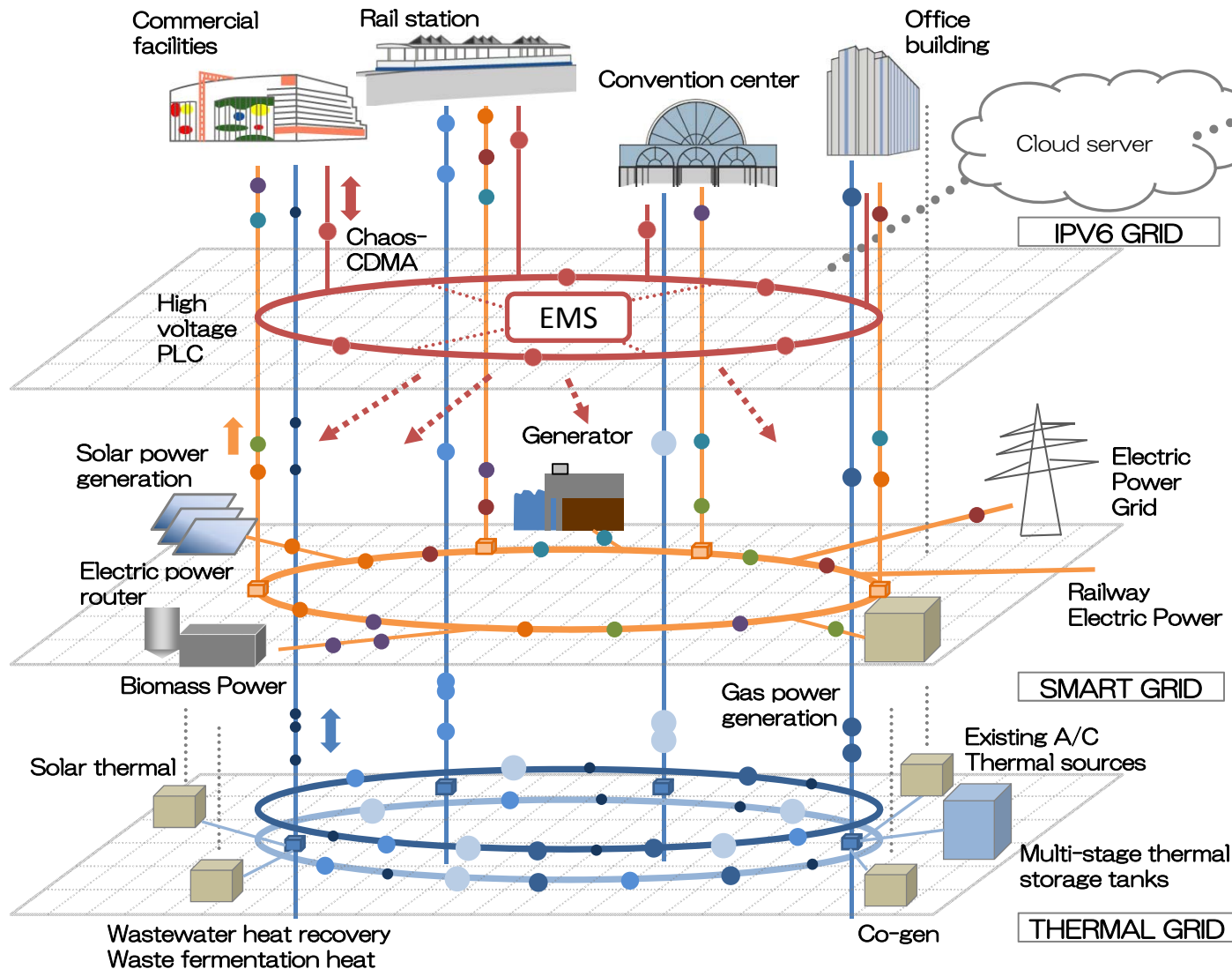
District information



凡 例	補助区分	
Facility Name	Building use	Total floor space etc
Cosmosquare Station	Station	Number of Passangers: 20,000 / day
Osaka Prefectural Government Sakishima Building	Office Building	150,000m ²
Asia Trade Center	Complex Commercial Building	672,000m ²
INTEX Osaka	Convension Hall	133,000m ²
Suminoe sewage treatment plant	sewage treatment plant	Water treatment capacity: 220,000m ³ /day,

Vision of smart energy system

Aiming to stabilize energy demand supply and improve disaster prevention preparedness.



Information

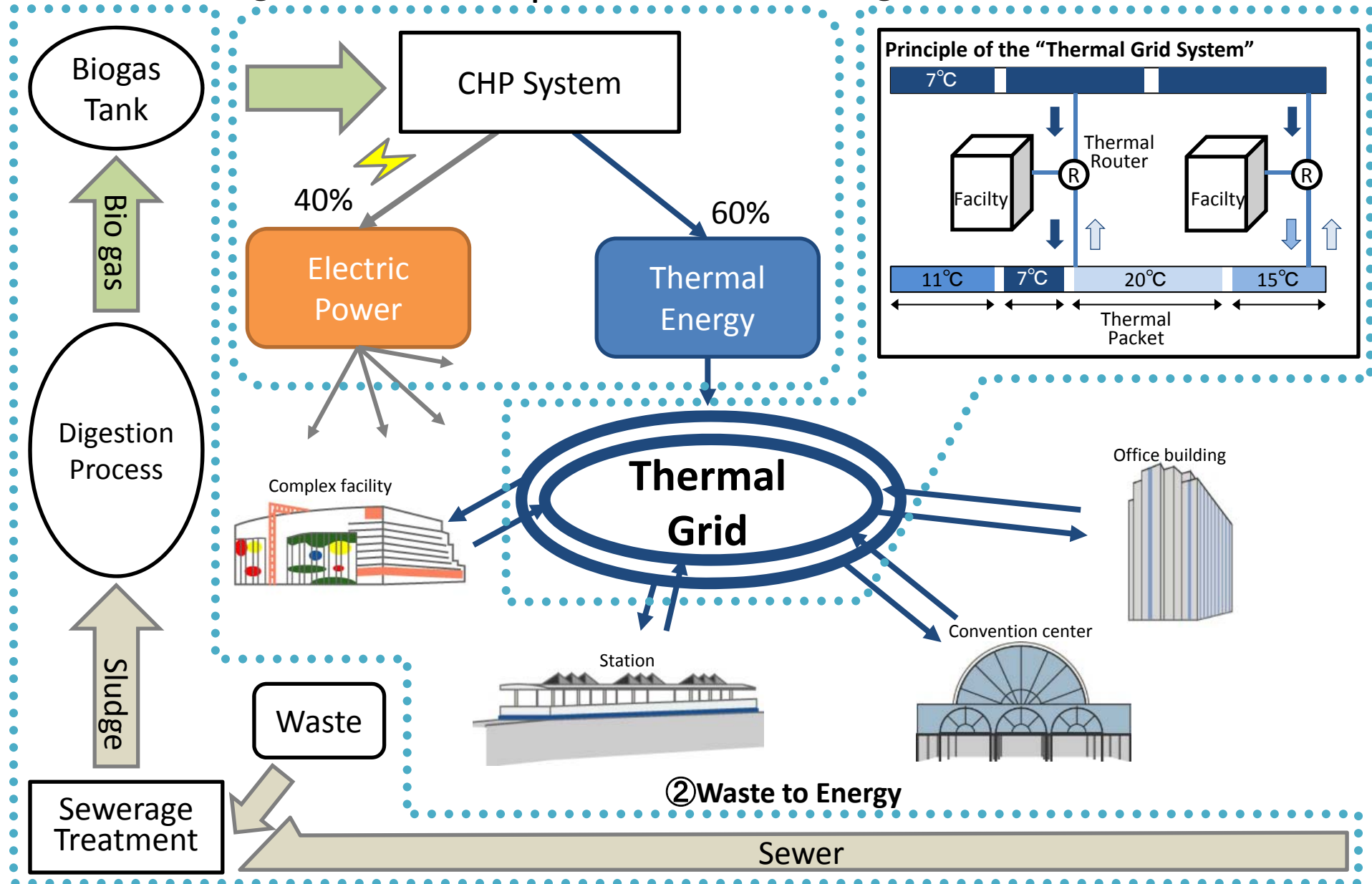
Electricity

Heat

Project Outline and Technologies

① Combined heat and power

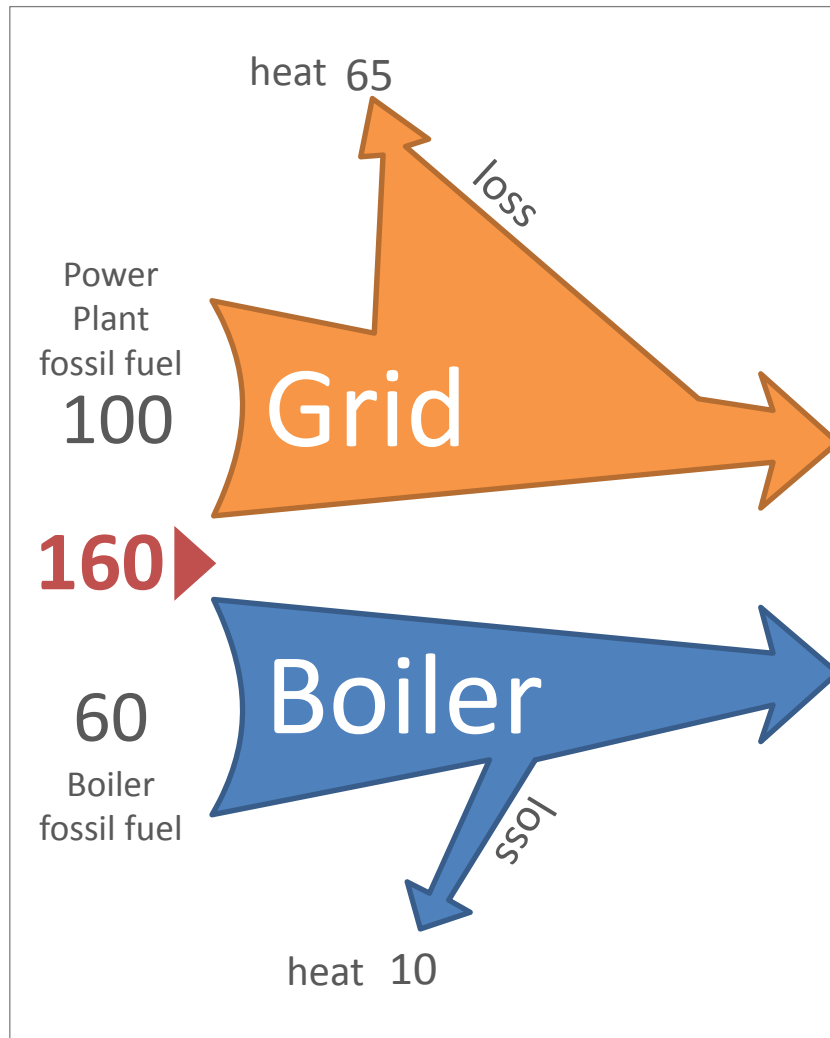
③ Thermal Grid



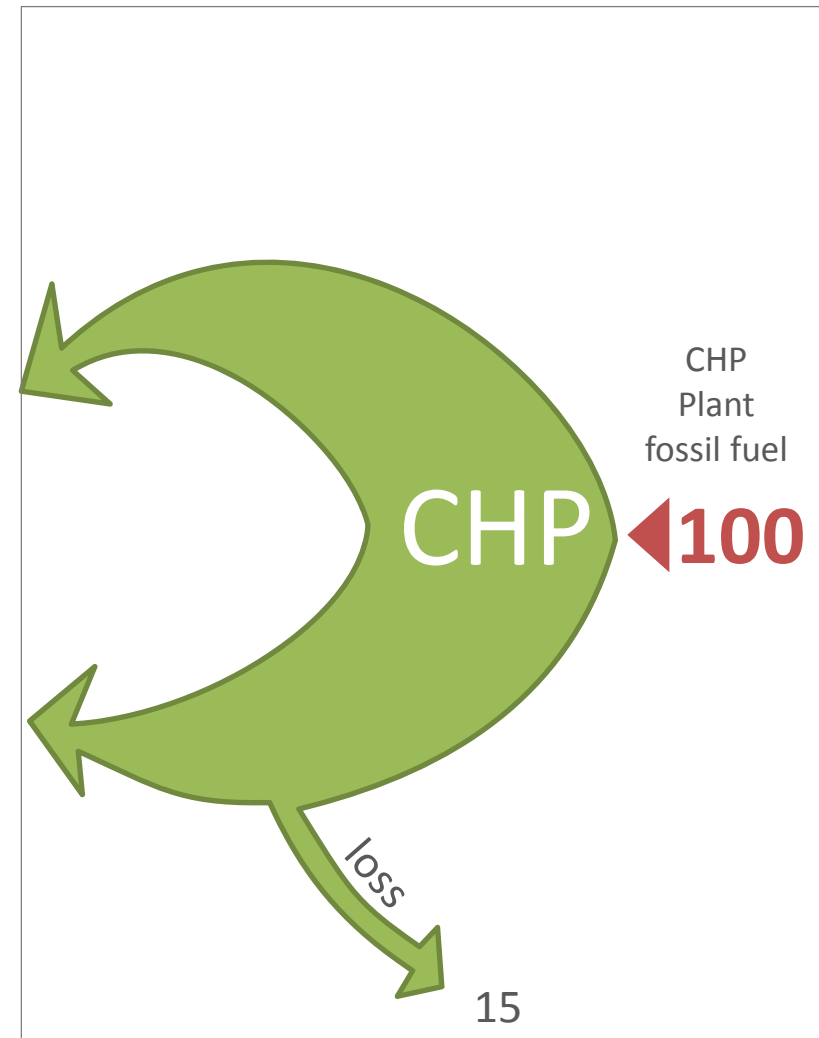
Our Challenges-①

① Combined heat and power

Conventnional uiltity generation and boiler



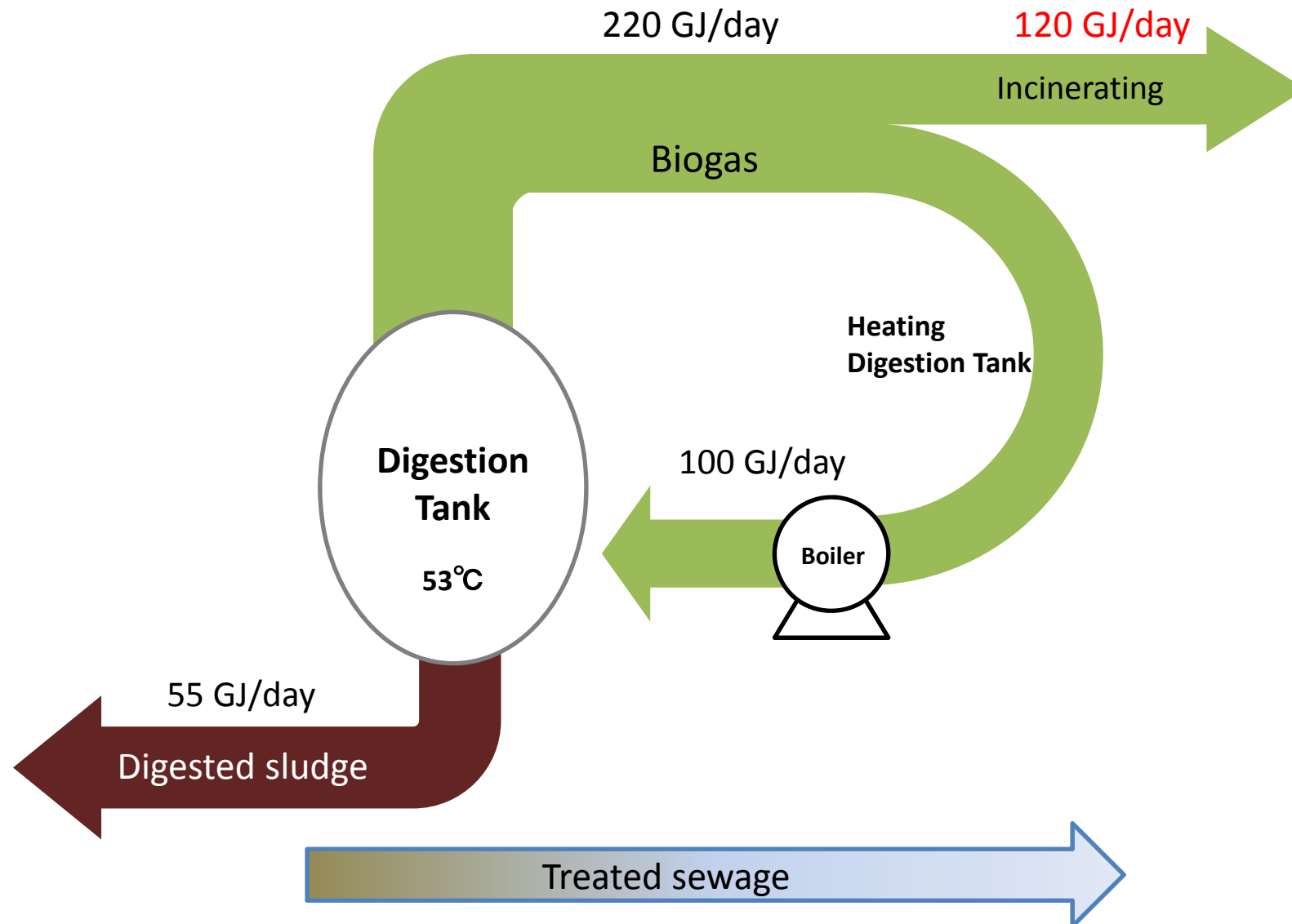
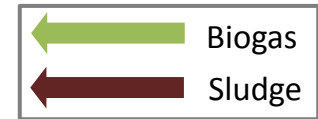
Combined heat and power



Our Challenges-②

② Waste to Energy: Conventional system

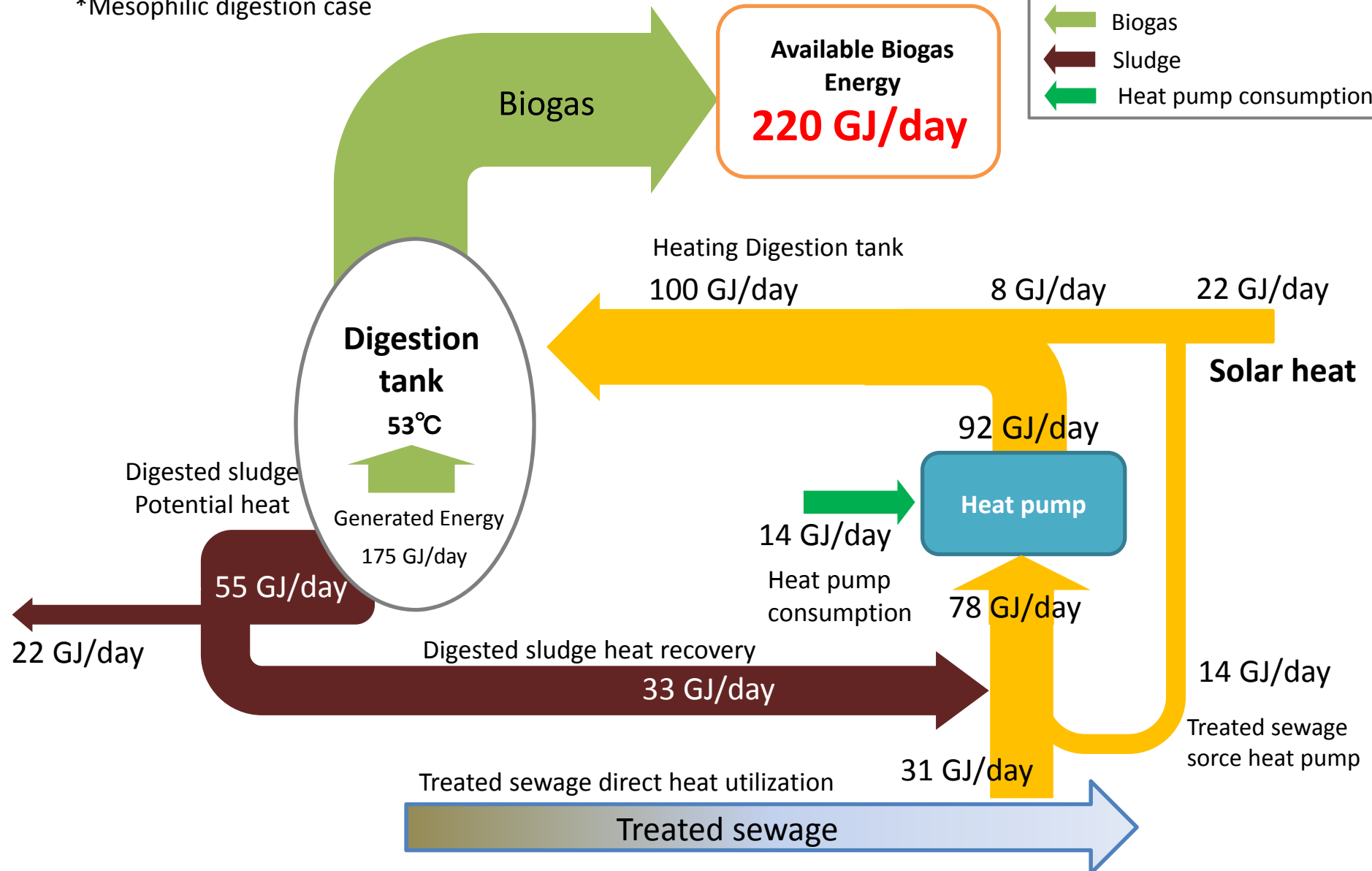
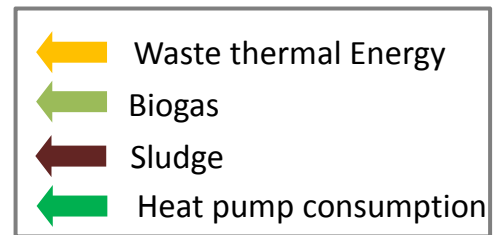
*Mesophilic digestion case



Our Challenges-②

② Waste to Energy: New System

*Mesophilic digestion case



Our Challenge-③



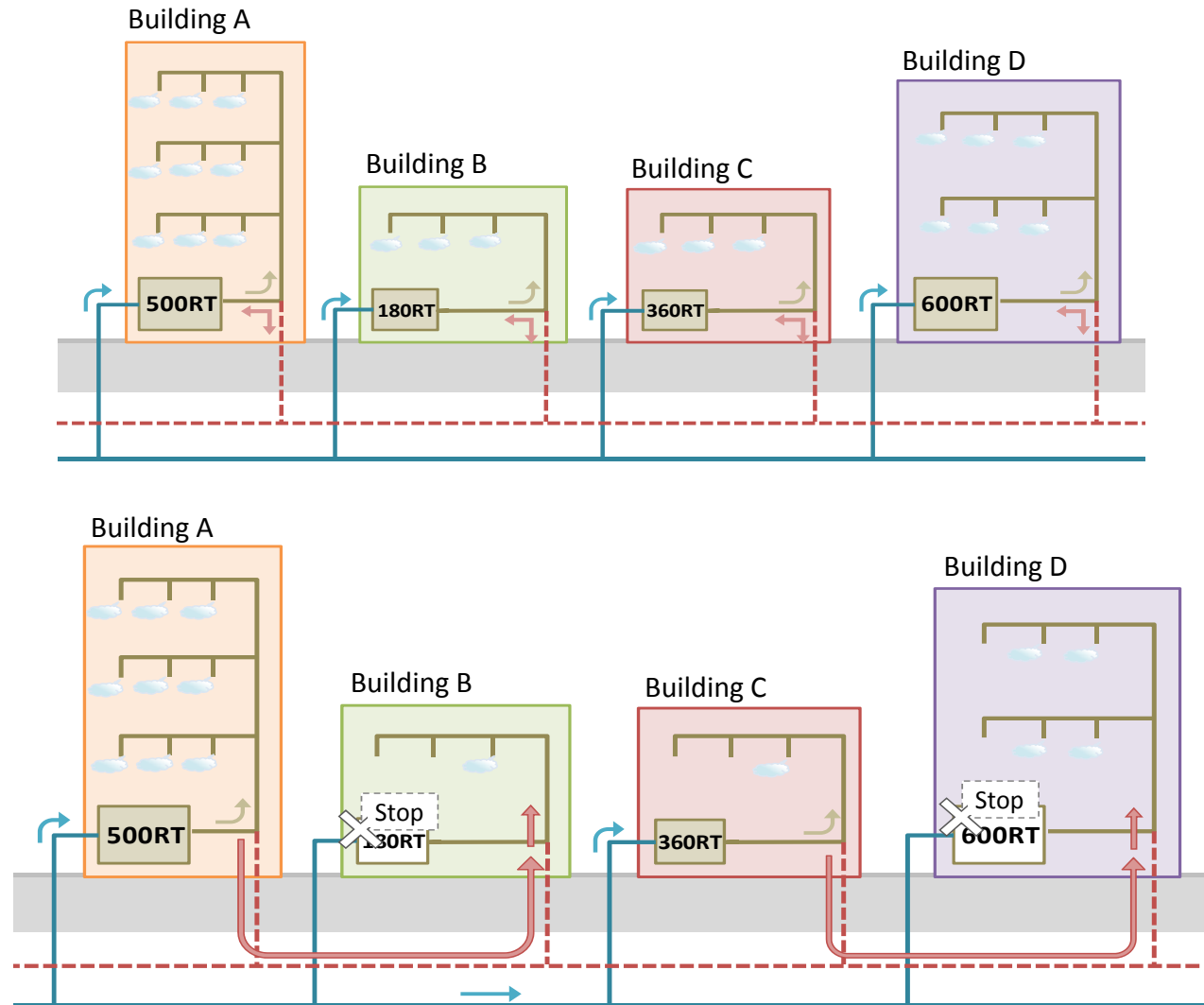
③Thermal Grid

Features

1. To connect buildings (chillers and loads) via loop pipes.
2. To bring diversity effect into real energy conservation operation
3. To realize chilled water cascade use or serial use, which require flow route changer, and which allow large temperature difference operation
4. To select chillers to be operated from a number of chillers in buildings in optimum manner
5. To plan variable chilled water temperature operation

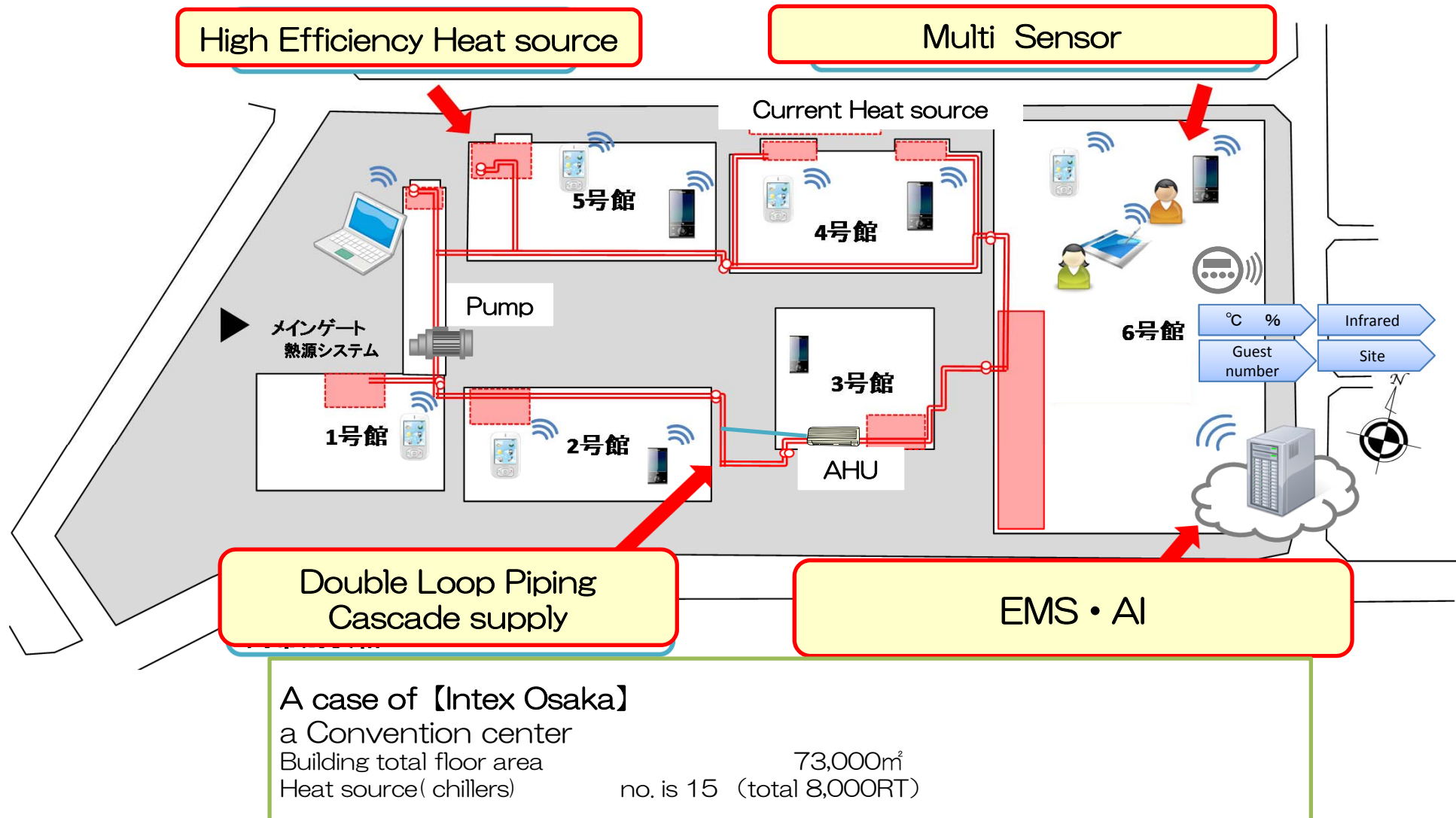
Our Challenges-③

③ Thermal Grid; To connect buildings via loop pipes



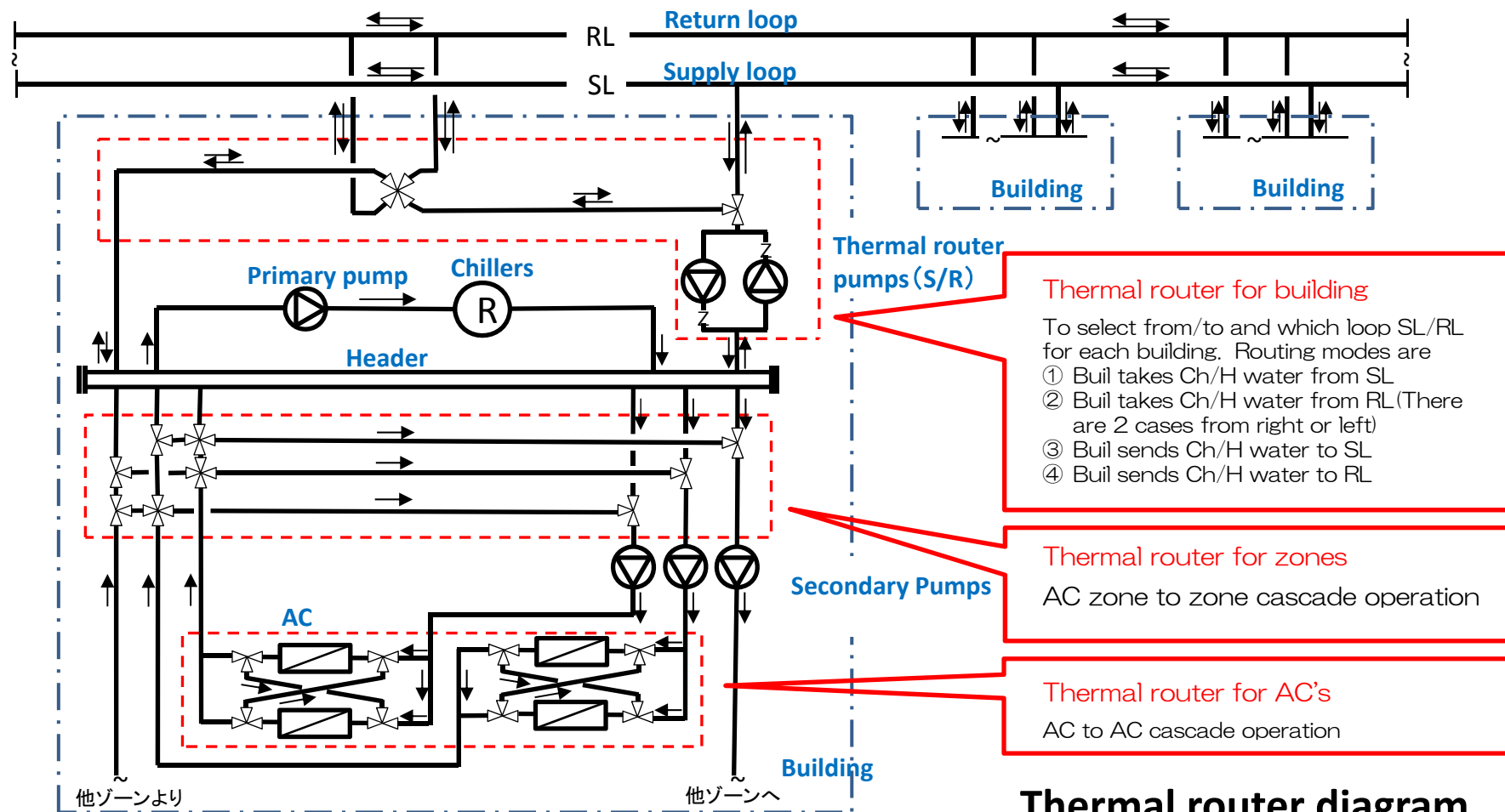
Our Challenges-③

③Thermal Grid; To connect buildings via loop pipes



Our Challenges-③

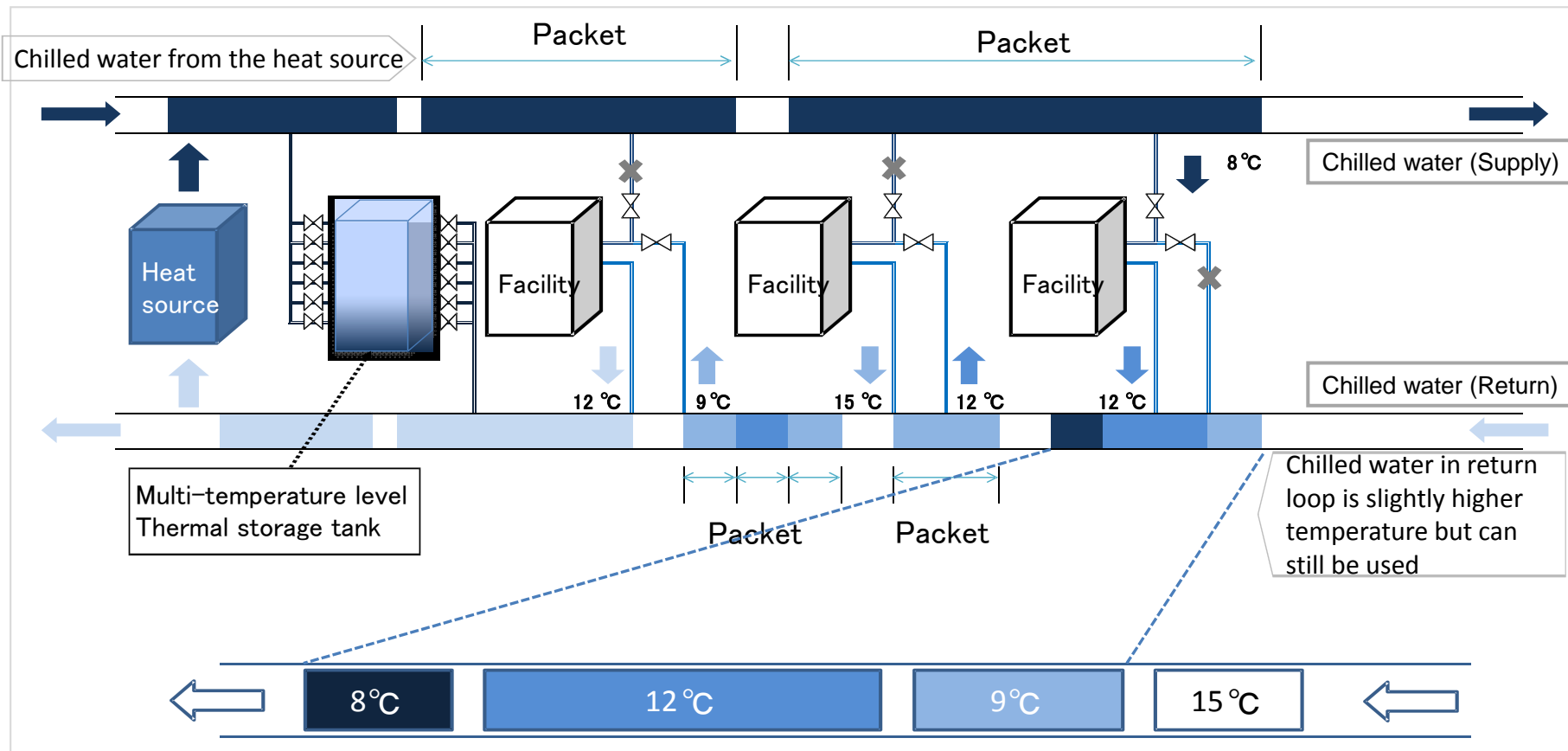
③Thermal Grid; To connect loop pipes and buildings via thermal router



Thermal router diagram

Our Challenges-③

③ Thermal Grid; Various temperature supply with packet concept



10,000 t_{-CO2eq}

per year

Technologies required in Sakishima

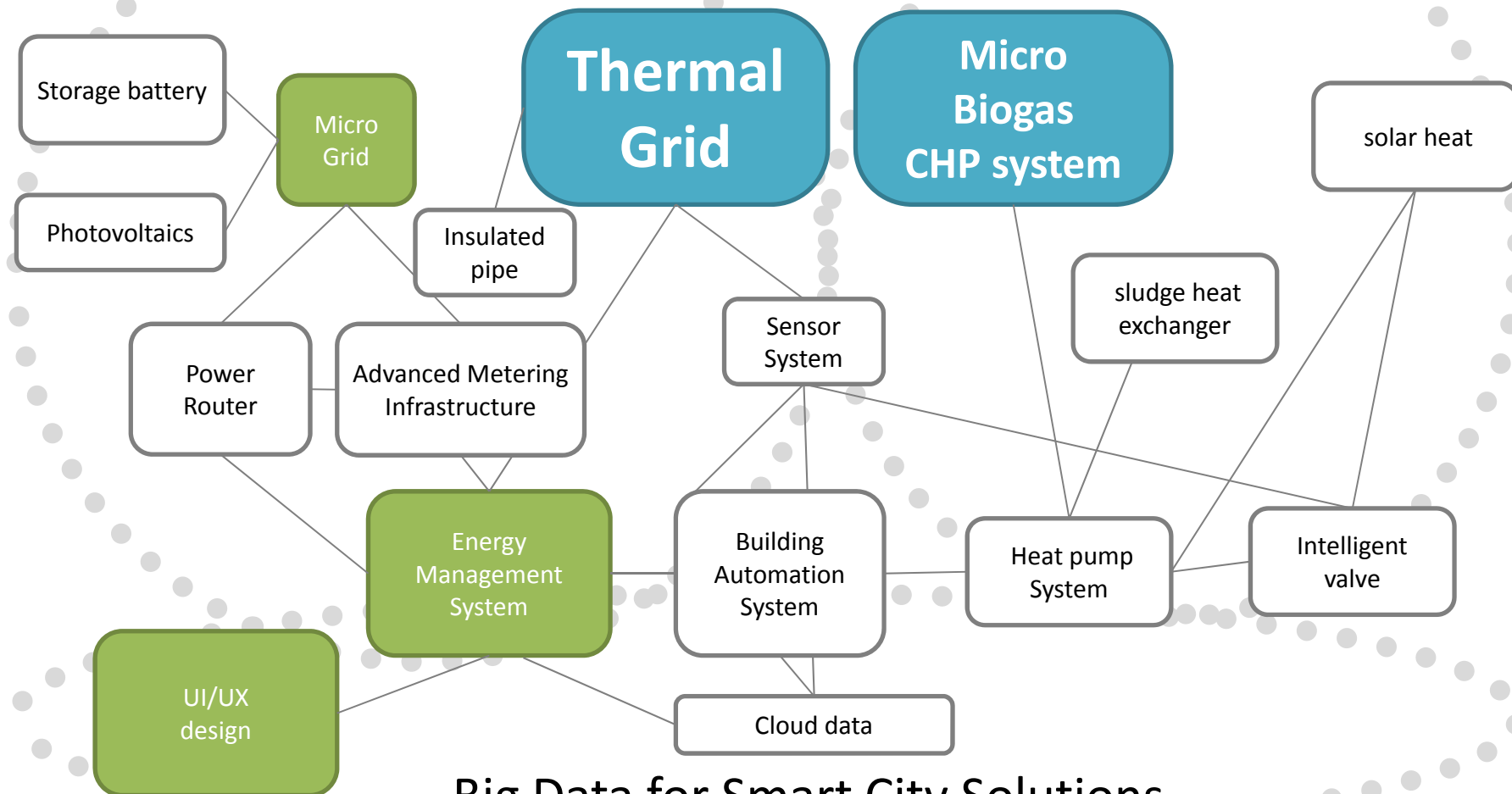


Investor

Business chance

Energy Infrastructure

Waste as a Resource



Thank you for your kind Attention!

Sakishima Asia Smart Community Alliance

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