



Overview of Micro-grid Research and Development Activities in Japan

Satoshi Morozumi

**The New Energy and Industrial Technology
Development Organization (NEDO)**

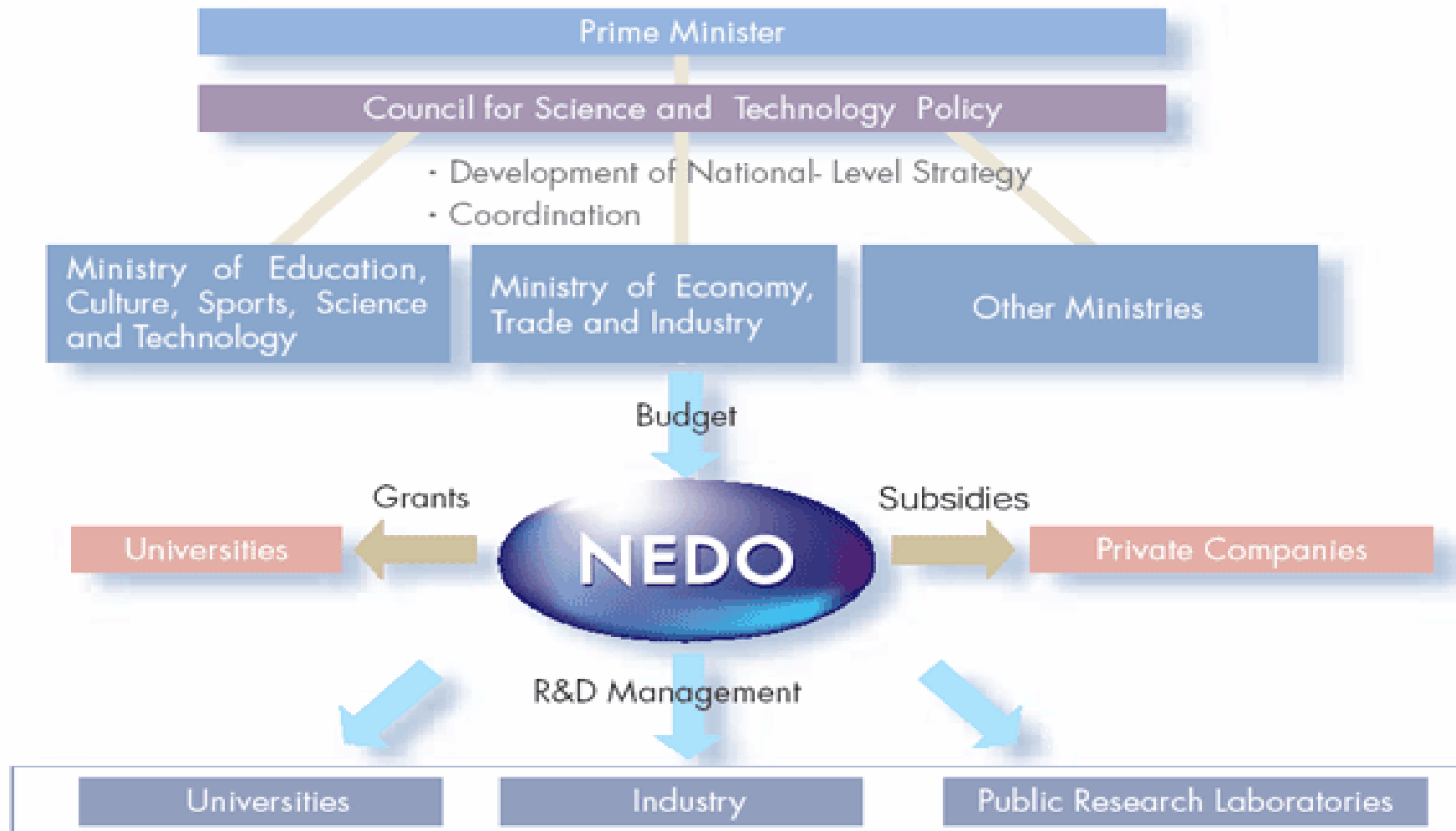
Montreal 2006 – Symposium on Microgrids
June 23, 06

The New Energy and Industrial Technology Development Organization (NEDO)

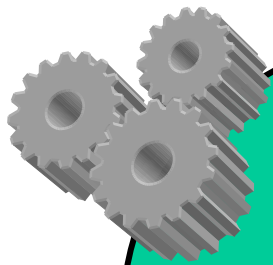
Role of NEDO



NEDO's R&D Promotion Scheme



NEDO's Activities



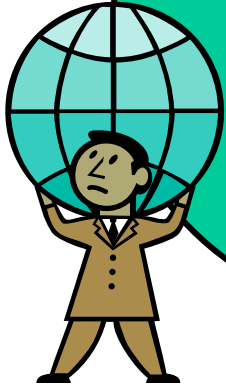
Industrial Technology Sector



New Energy and Energy Conservation Sector

Grid-Connected Power System

International Cooperation



Other NEDO Activities

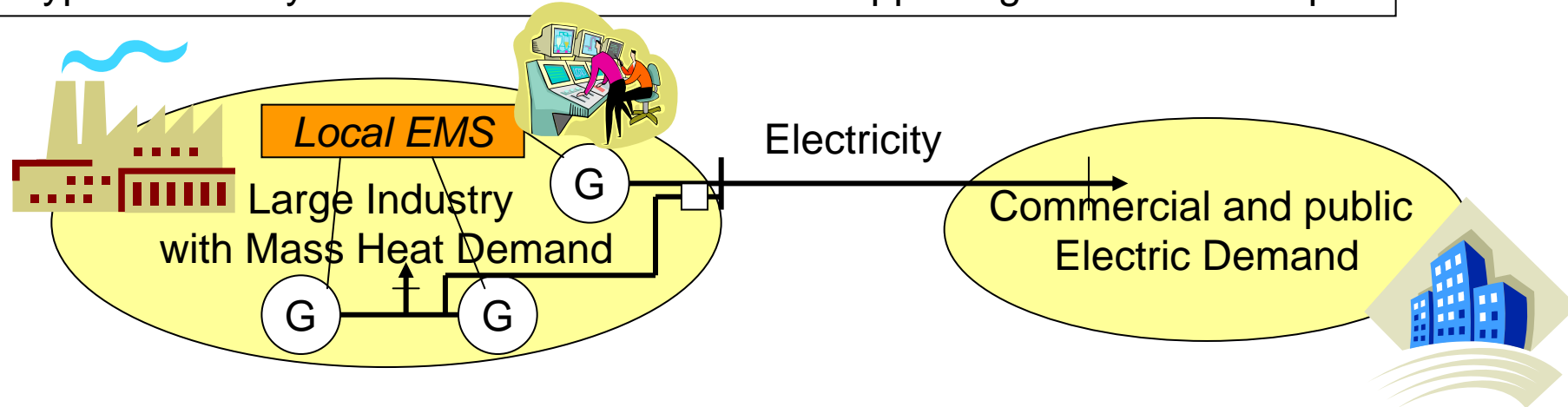
Micro-Grid Battery Storage System Protection
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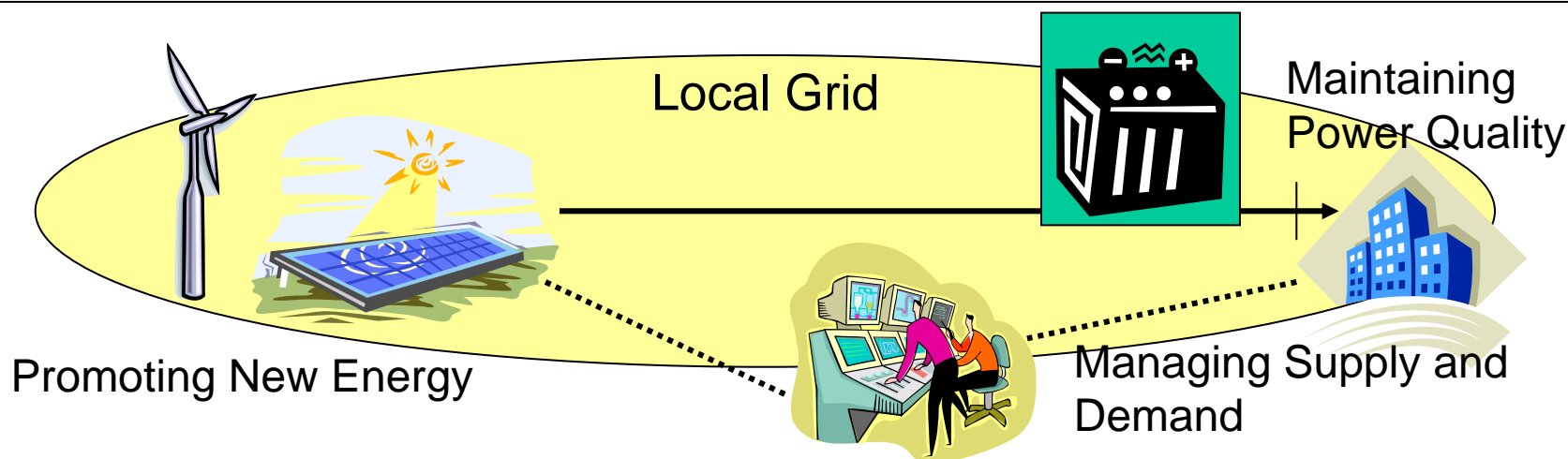
Difference between Commercial Local Grid and Demonstrative Micro-Grid



Typical recently introduced commercial self-supporting local Grid in Japan



Demonstrative Micro-Grid Projects added several values (NEDO Supporting)



NEDO's Micro-Grid Projects



New Energy Technology Dept.
Grid-Connected Power Systems Group

Promoting and managing projects

[1] Demonstrative Project on New Power Network Systems (FY2004-2007)

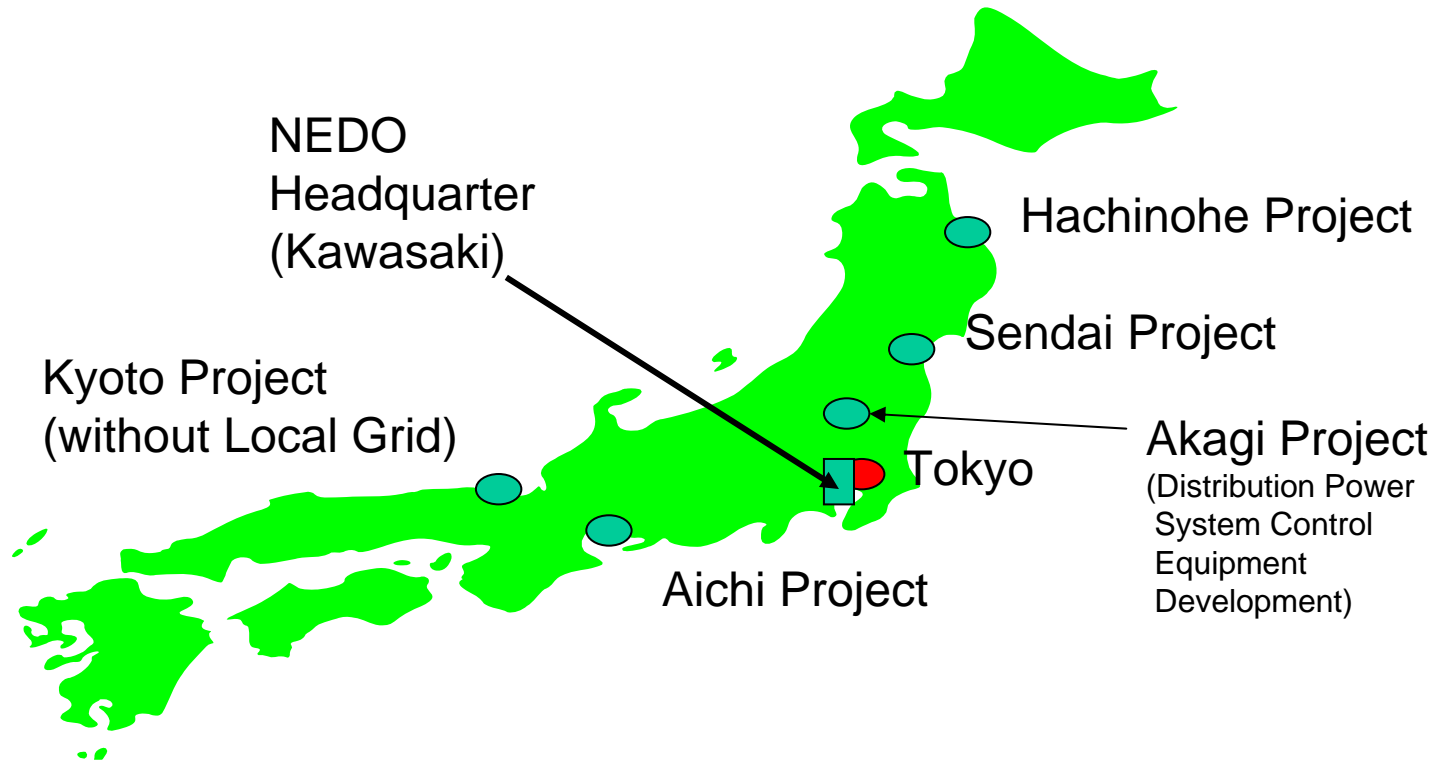
[2] Demonstrative Project of Regional Power Grids with Various New Energies (FY2003-2007)

[3] Demonstrative Project on Grid-Interconnection of Clustered Photovoltaic Power Generation Systems (FY2003-2007)

[4] Wind Power Stabilization Technology Development Project (FY2004-2007)

* Large Scale PV Power Station Project, New Battery Technology for Renewable Energy will start from FY2006.

NEDO's Micro-Grid Related Projects



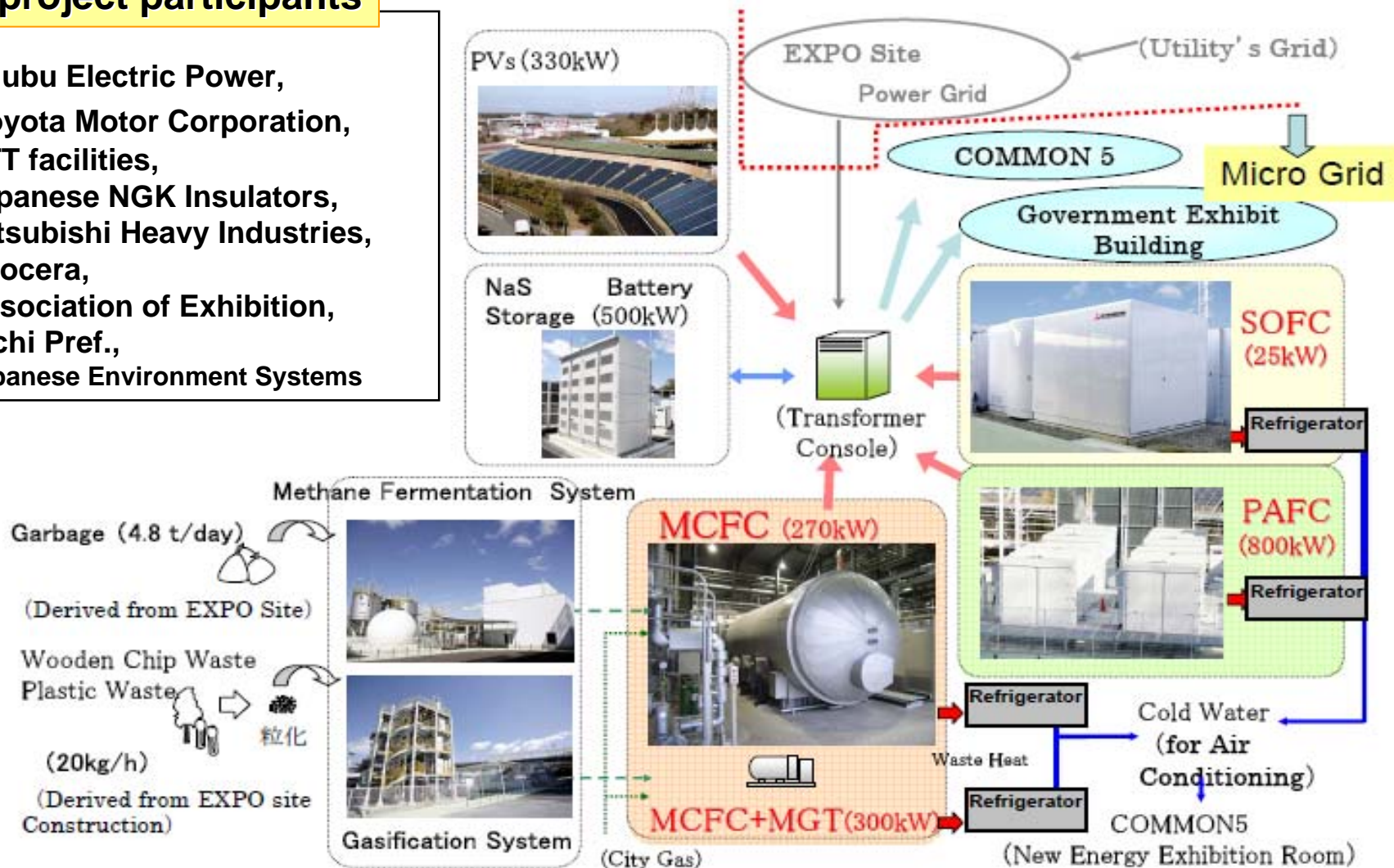
- Demonstration Sites for “Demonstrative Project on New Power Network Systems Project” and “Demonstrative Project of Regional Power Grids with Various New Energies “



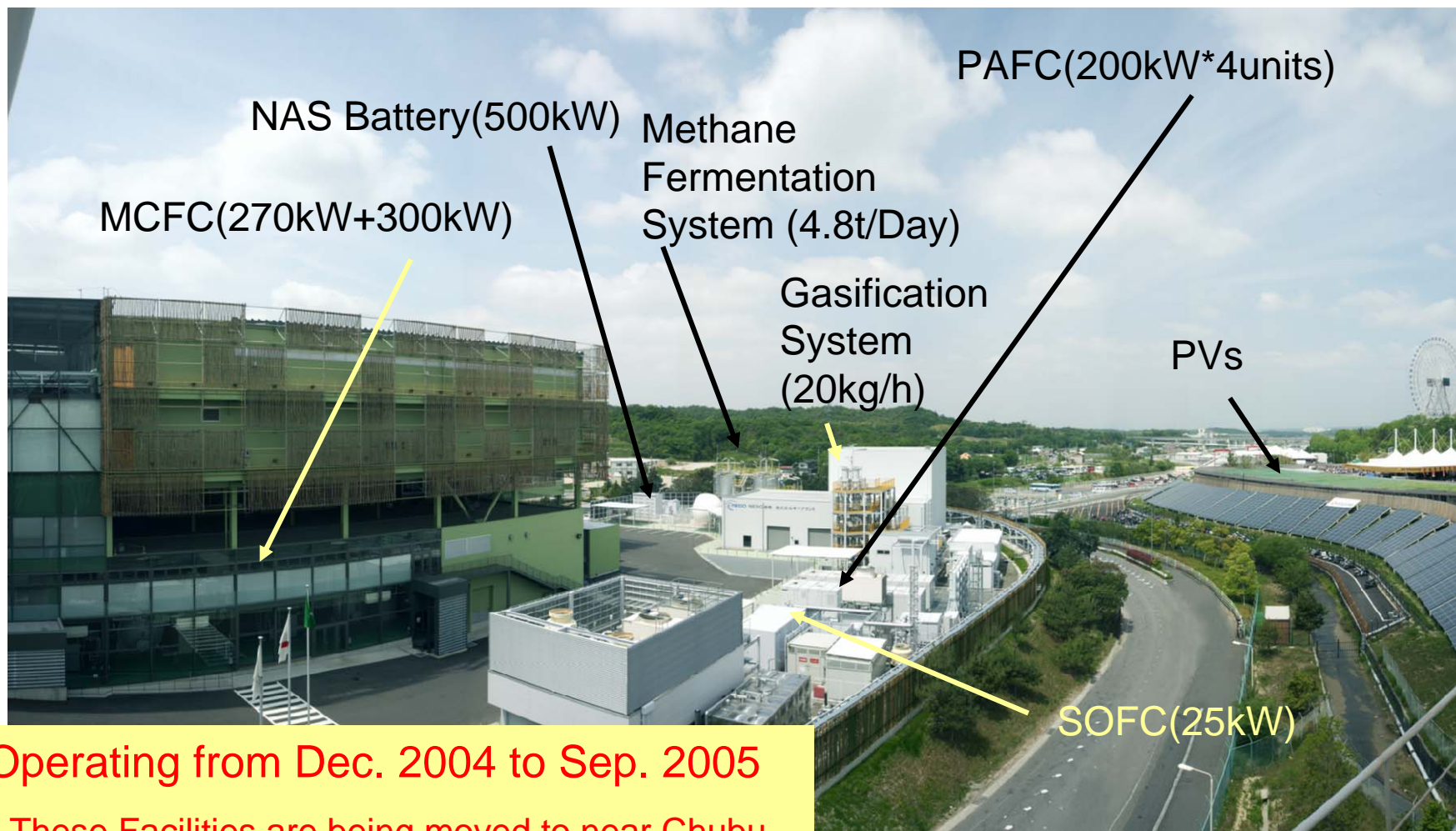
Demonstrative Project of Regional Power Grids with Various New Energies (Aichi Project)

project participants

Chubu Electric Power,
 Toyota Motor Corporation,
 NTT facilities,
 Japanese NGK Insulators,
 Mitsubishi Heavy Industries,
 Kyocera,
 Association of Exhibition,
 Aichi Pref.,
 Japanese Environment Systems



Demonstrative Project of Regional Power Grids with Various New Energies (Aichi Project)



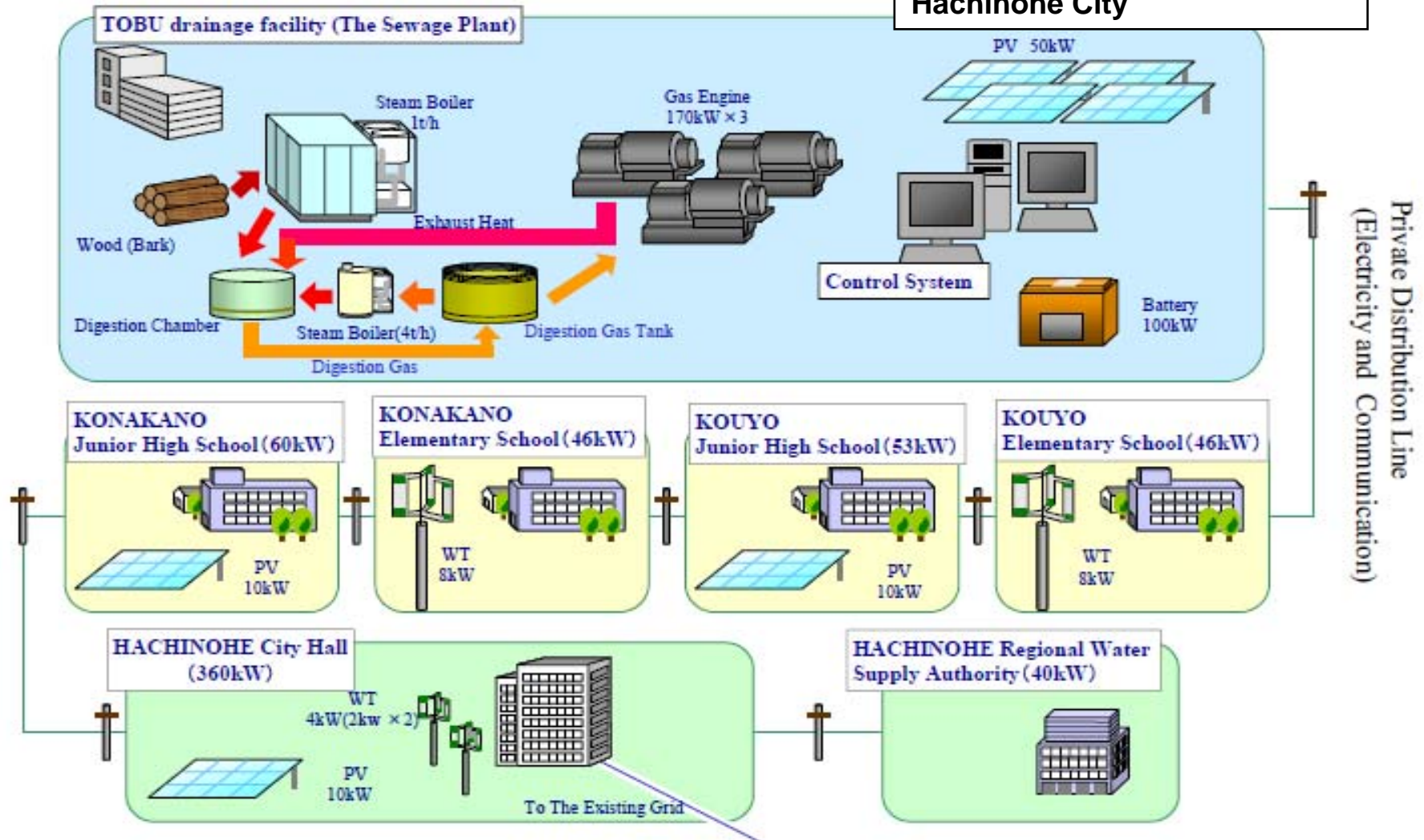
Operating from Dec. 2004 to Sep. 2005

* These Facilities are being moved to near Chubu International Area *

Demonstrative Project of Regional Power Grids with Various New Energies (Hachinohe Project)

project participants

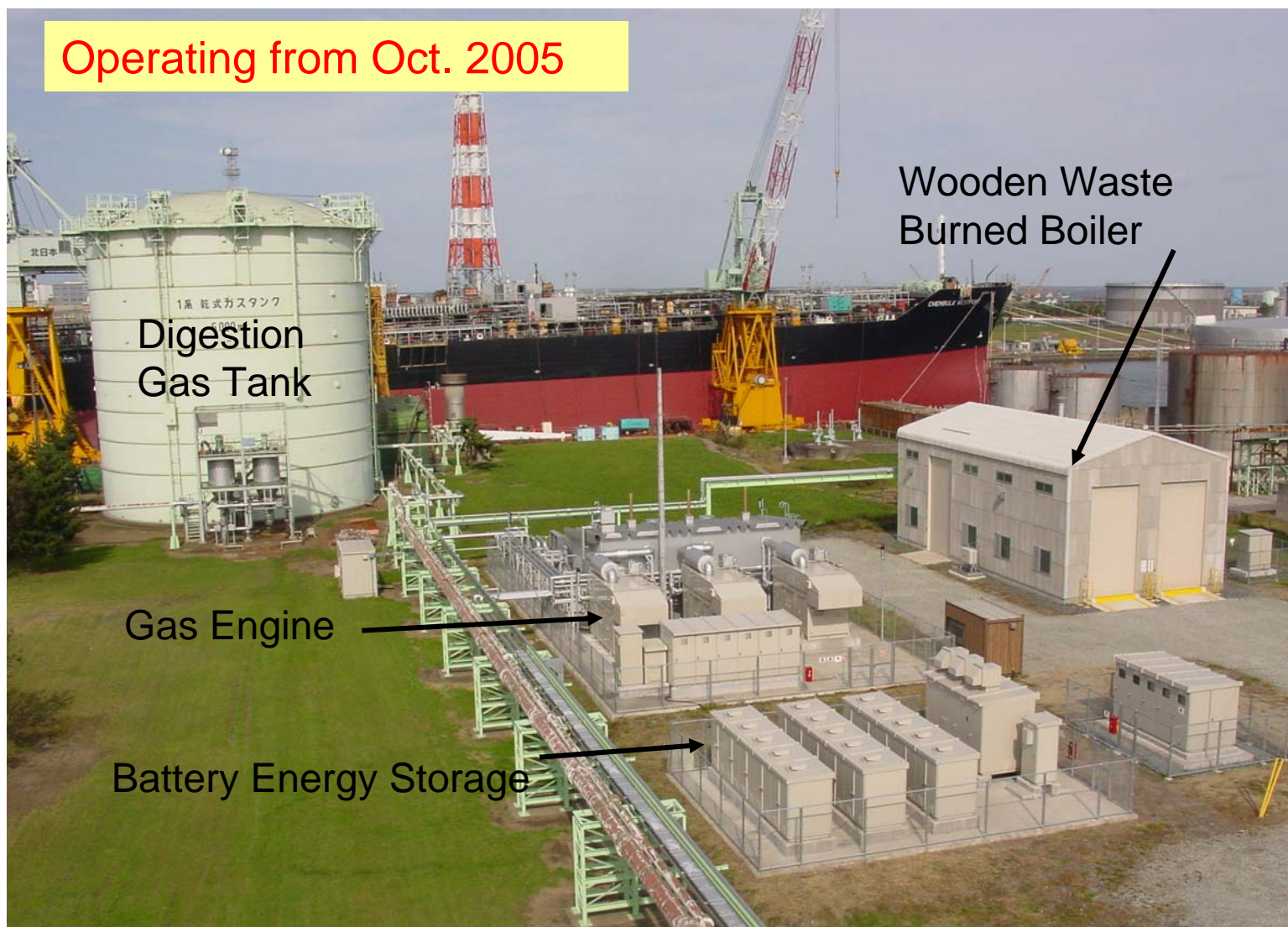
Mitsubishi research institute,
Mitsubishi Electric,
Hachinohe City



Demonstrative Project of Regional Power Grids with Various New Energies (Hachinohe Project)



Operating from Oct. 2005



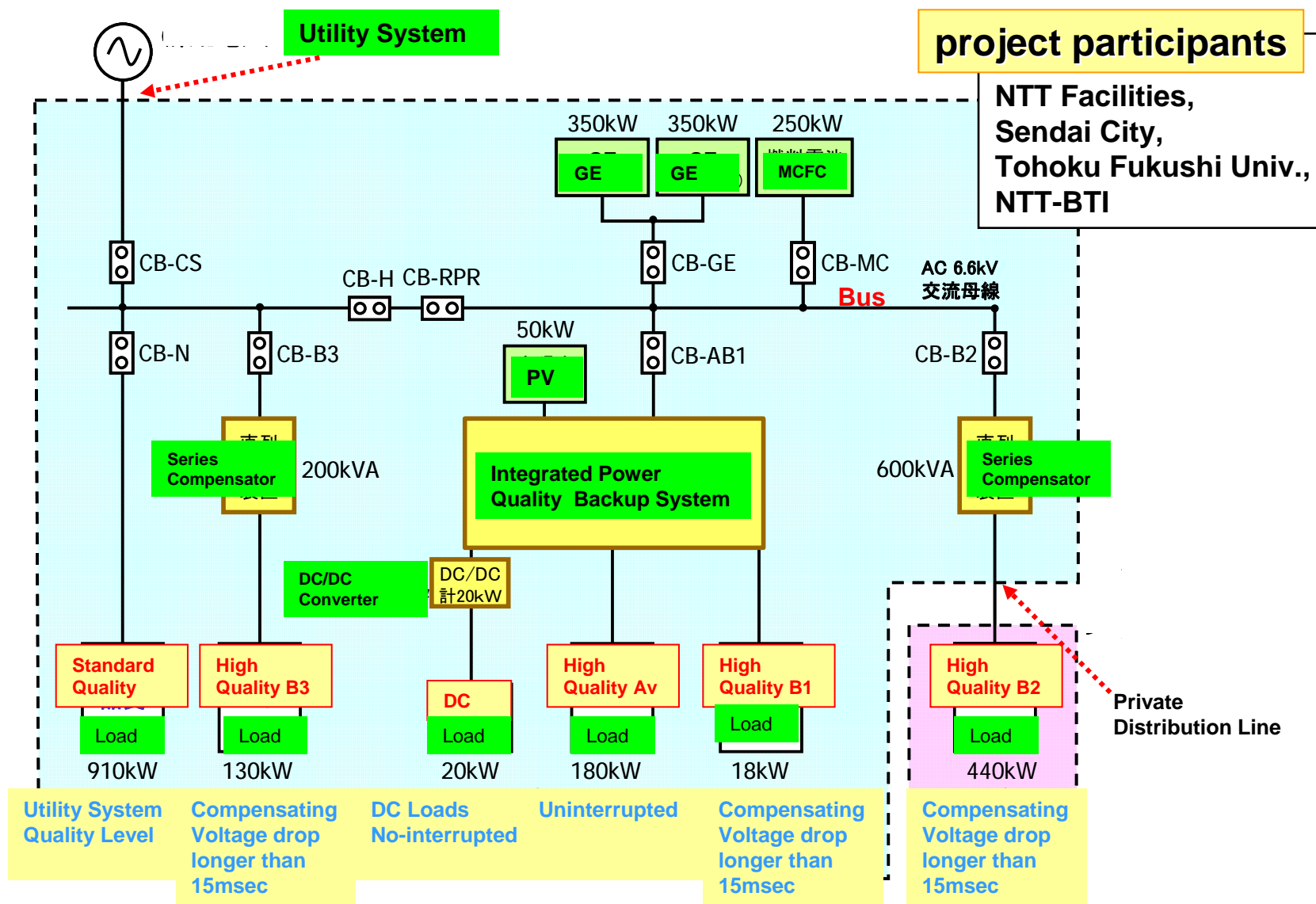
1系 乾式ガスタンク
Digestion Gas Tank

Wooden Waste Burned Boiler

Gas Engine

Battery Energy Storage

Demonstrative Project on Power Supply Systems by Service Level (New Power Network Systems: Sendai)



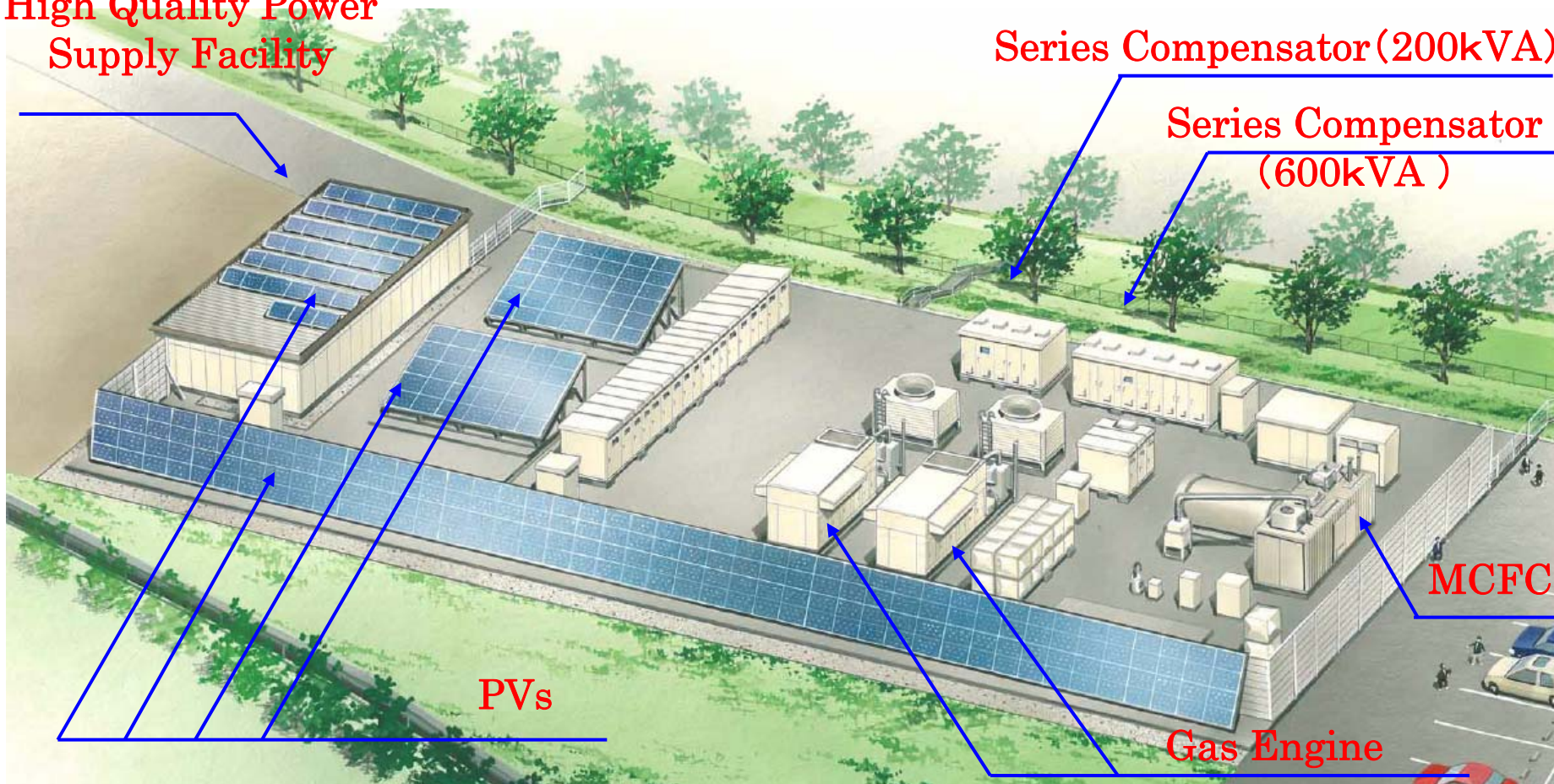
Demonstrative Project on Power Supply Systems by Service Level (New Power Network Systems: Sendai)



High Quality Power Supply Facility

Series Compensator (200kVA)

Series Compensator (600kVA)



Under Constructing. This system will start operation from June 2007.