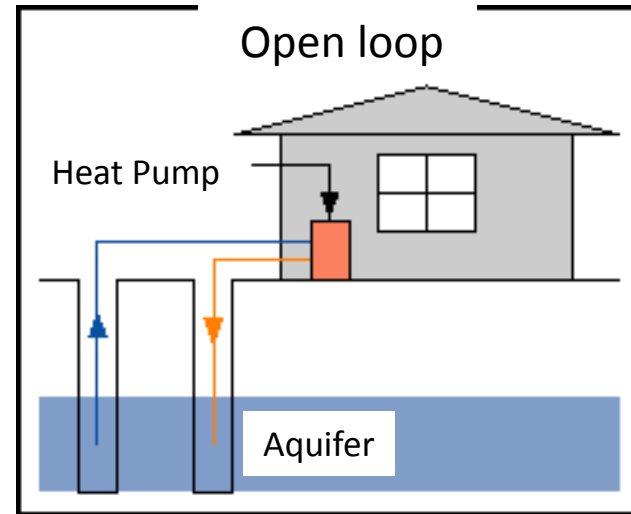
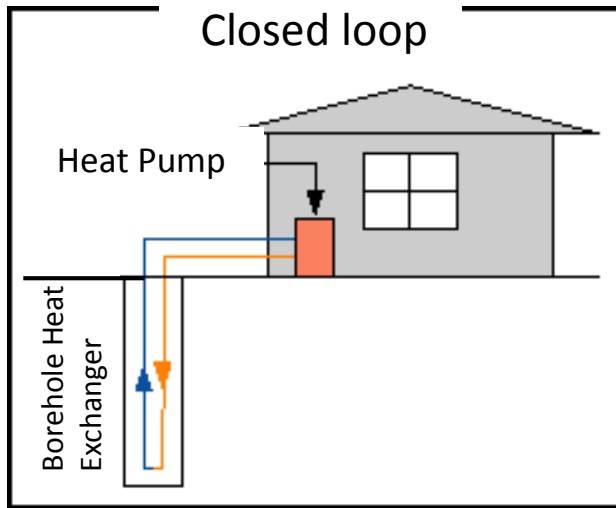


Current Trend in Ground Source Heat Pumps in Japan

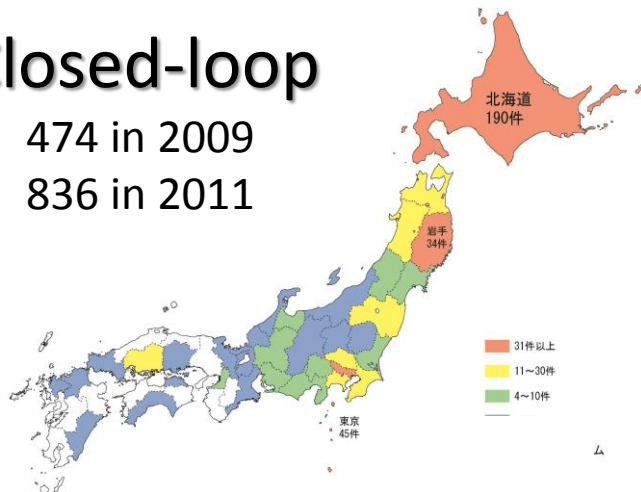
Masakatsu SASADA
Geo-Heat Promotion Association of Japan
5-29-20 Ogikubo, Suginami-ku, Tokyo 167-0051,
Japan
e-mail: geohpajs@geohpaj.org

Ground Source Heat Pumps



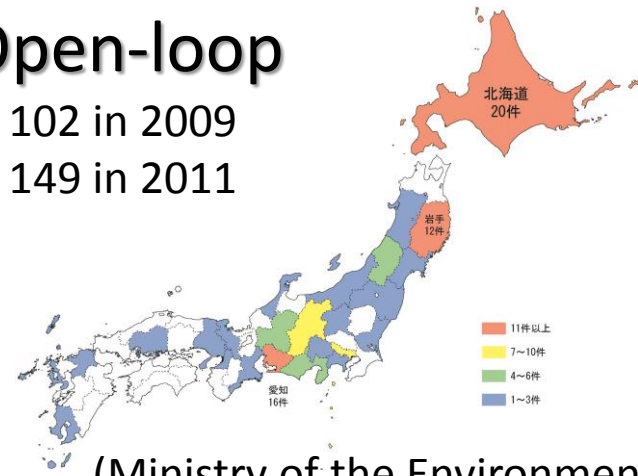
Closed-loop

474 in 2009
836 in 2011



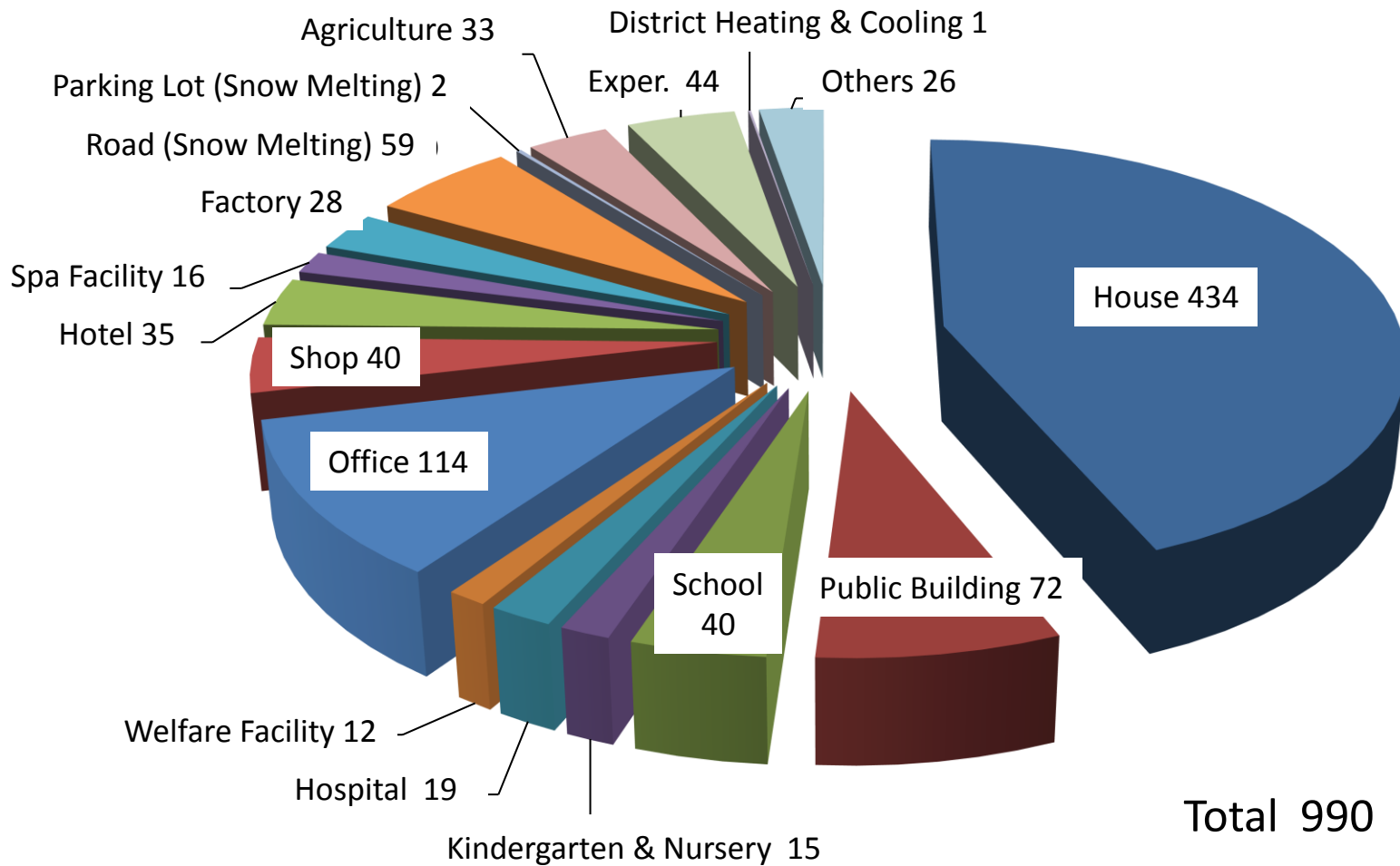
Open-loop

102 in 2009
149 in 2011



(Ministry of the Environment, 2010)

Facilities using Ground Source Heat Pump Systems



(Ministry of the Environment, 2012)

Ground source Heat Pump Systems for Houses



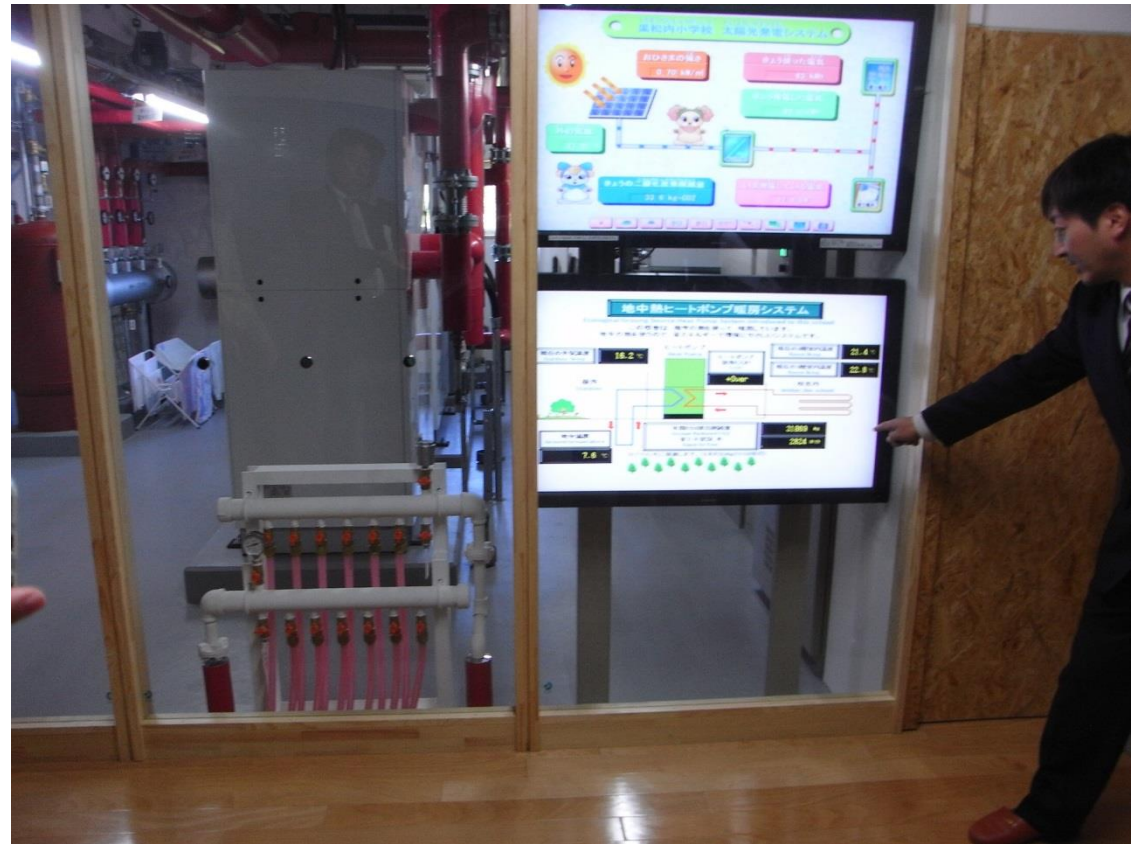
(Asahi Kasei Homes)

Ground Source Heat Pumps for Public Building



Kasukabe City Hall, Saitama Pref.

Ground Source Heat Pump System for School



Kuromatsunai Elementary School in Hokkaido

Swimming Pool



Swimming pool at the school, Morimura Gakuen



Heat pump

Geothermal Snow Melting Systems



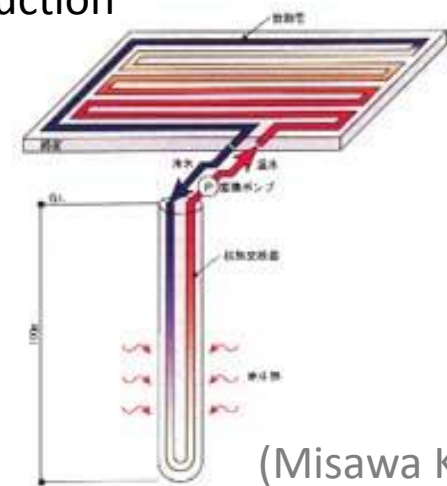
Yamagata Pref. (Japan Groundwater Dev. Co.)



Aomori Pref. (Misawa Kankyo)



Snow melting system under construction (JGD)



(Misawa Kankyo)

District Heating and Cooling for “Tokyo Sky Tree Town”



(Tobu Railway Co.)

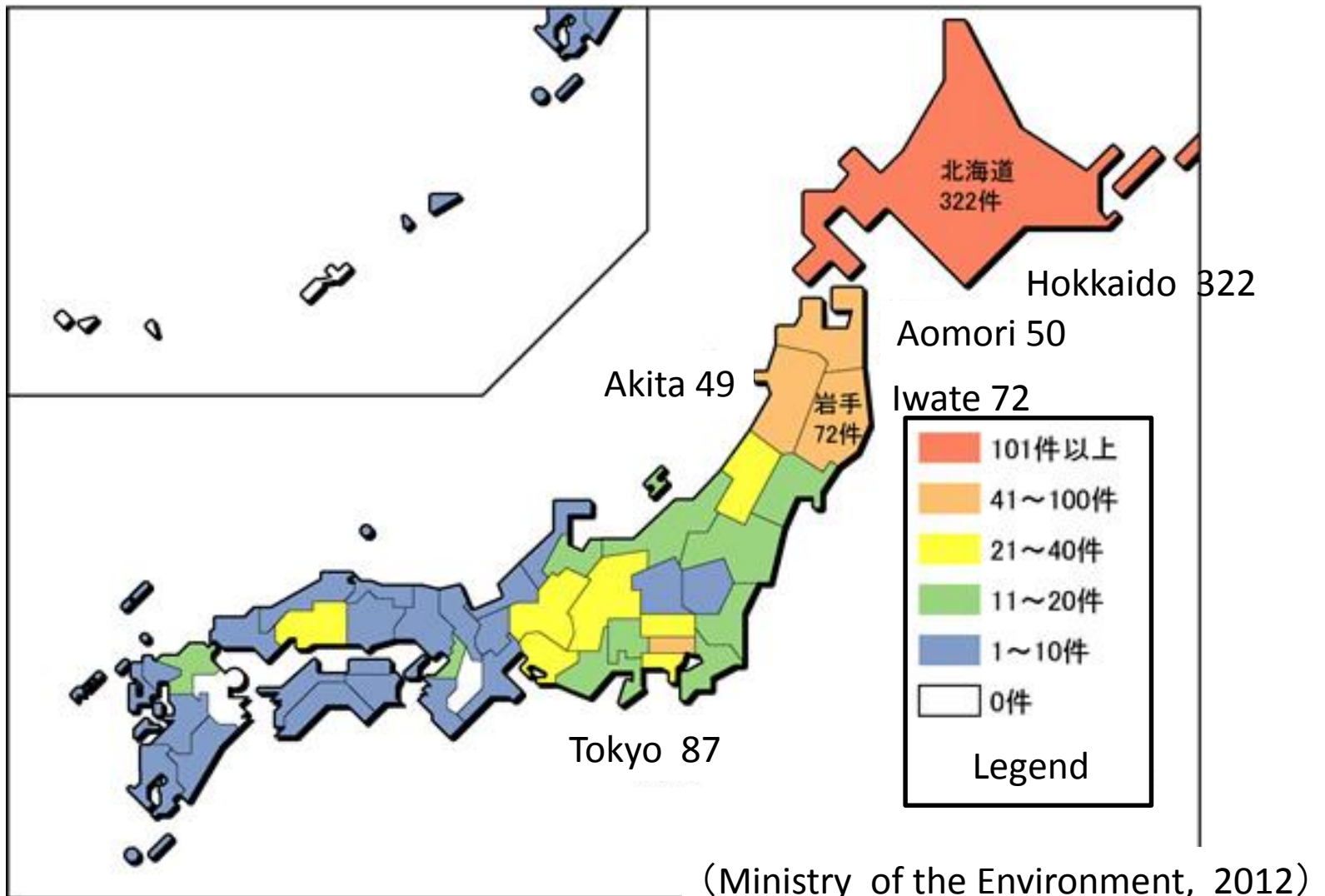


Ground source heat pump system
and the Diet Members

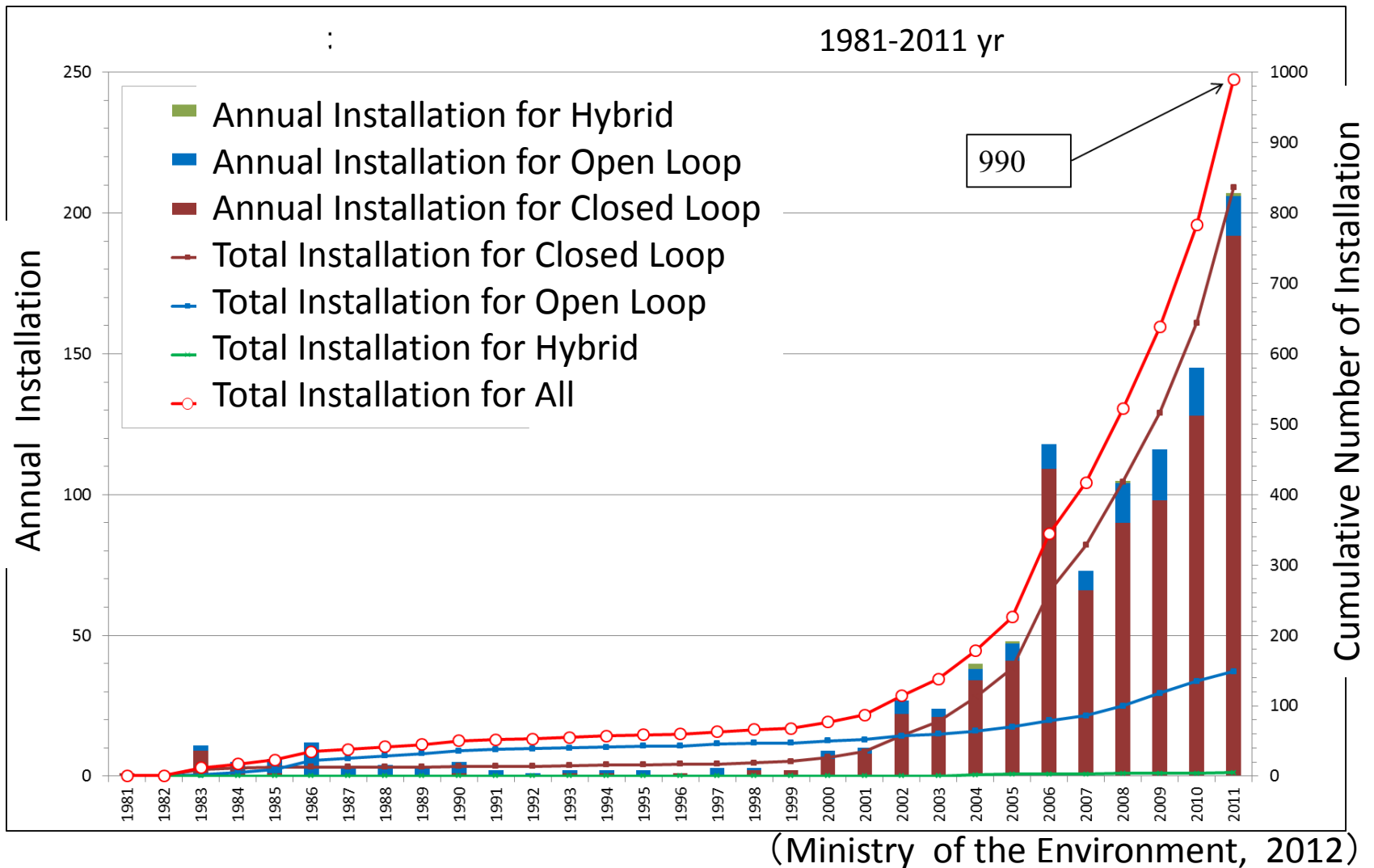


Ground heat exchanger
under construction
(Taisei Corporation)

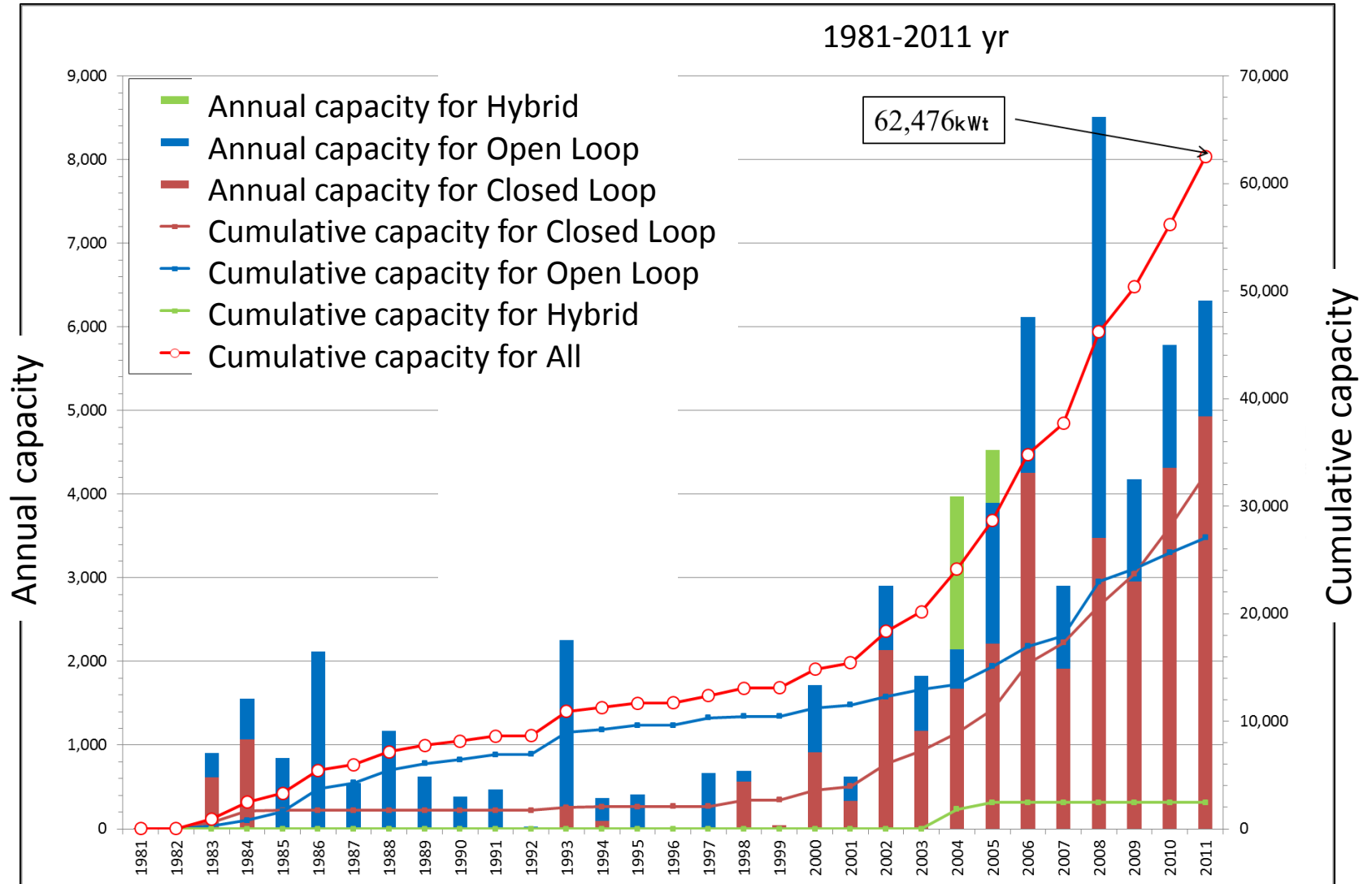
Number of Facilities using Ground Source Heat Pump



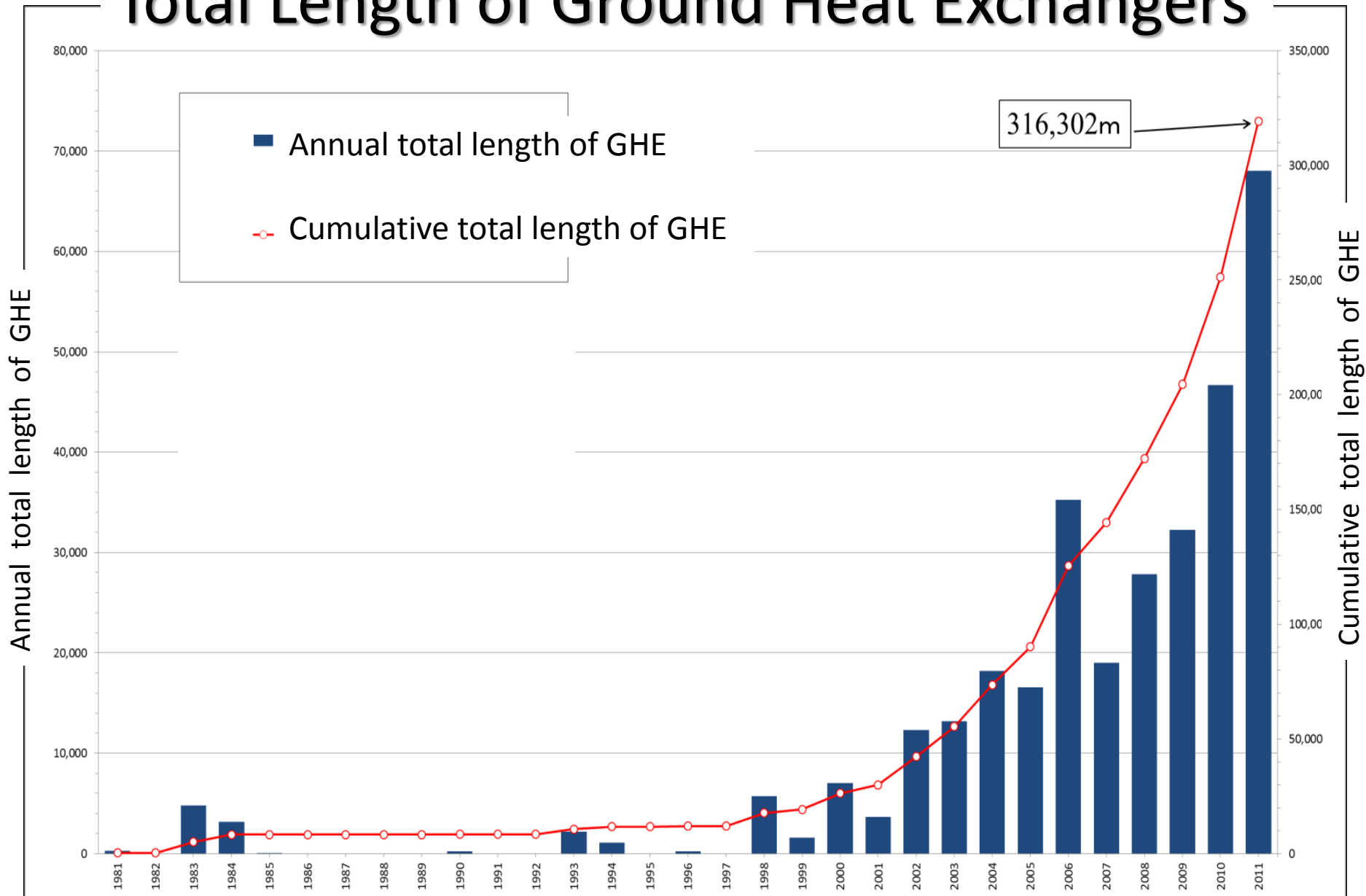
Number of Facilities using Ground Source Heat Pump



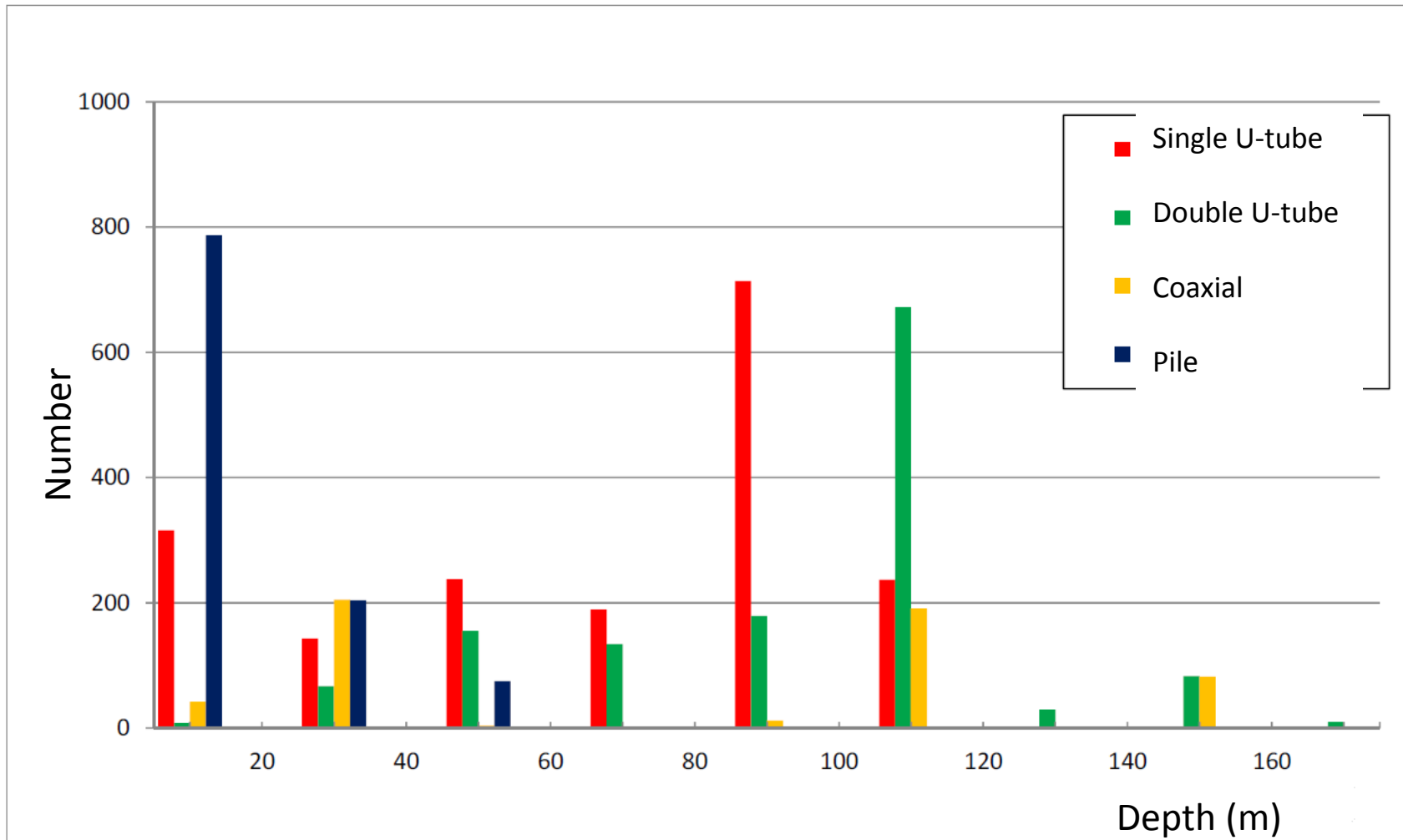
System Capacity of Ground Source Heat Pump



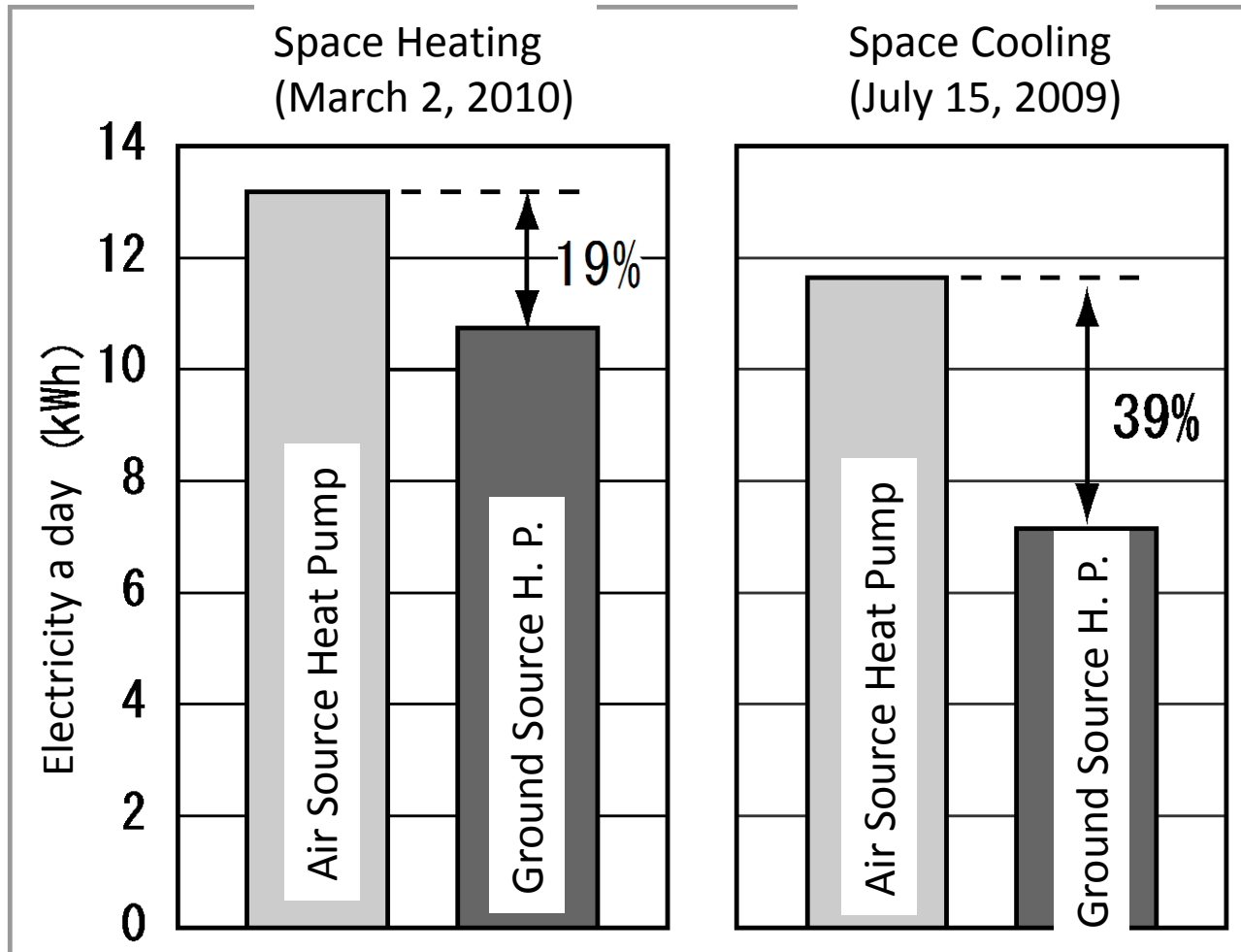
Total Length of Ground Heat Exchangers



Number of Ground Heat Exchangers



Power-saving by Ground Source Heat Pump

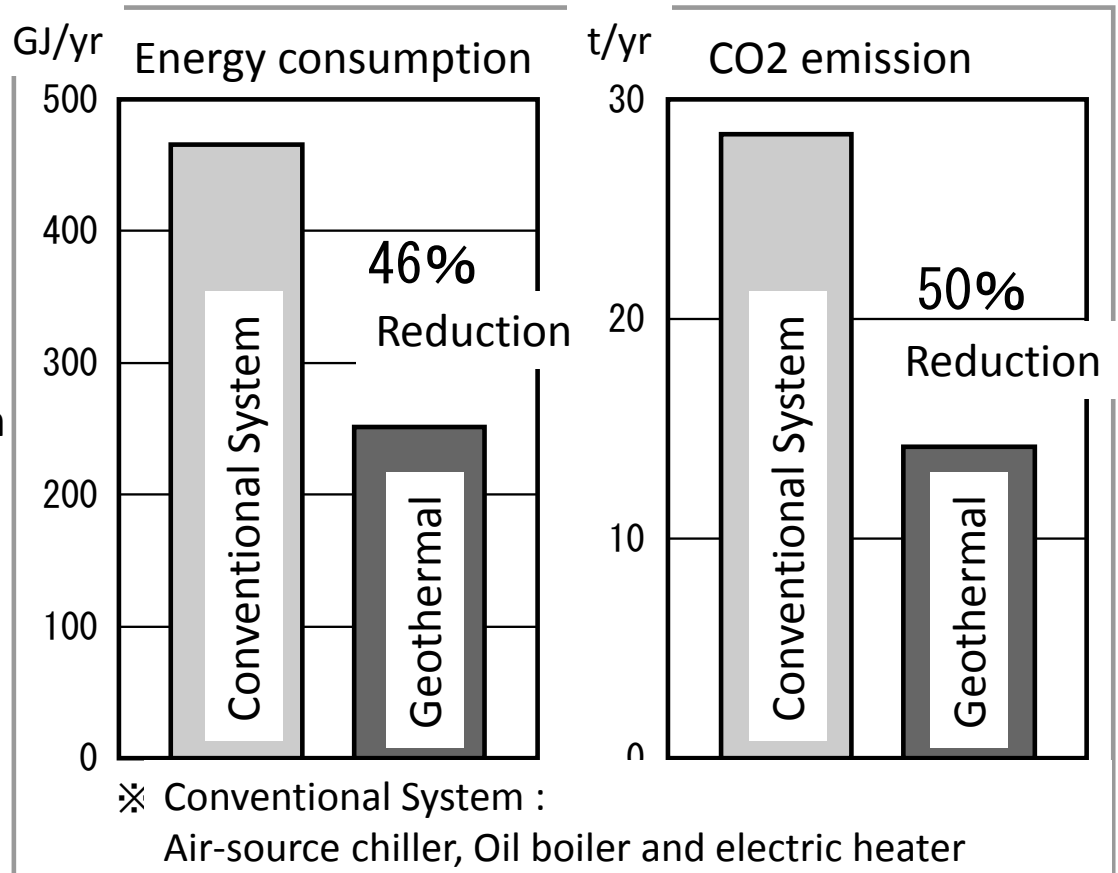


(JFE Steel Welded Pipe Manufacturing Co.)

Energy Conservation and CO₂ Reduction



Ground source heat pump system for space heating and cooling, and snow melting at Hirosaki Town Center



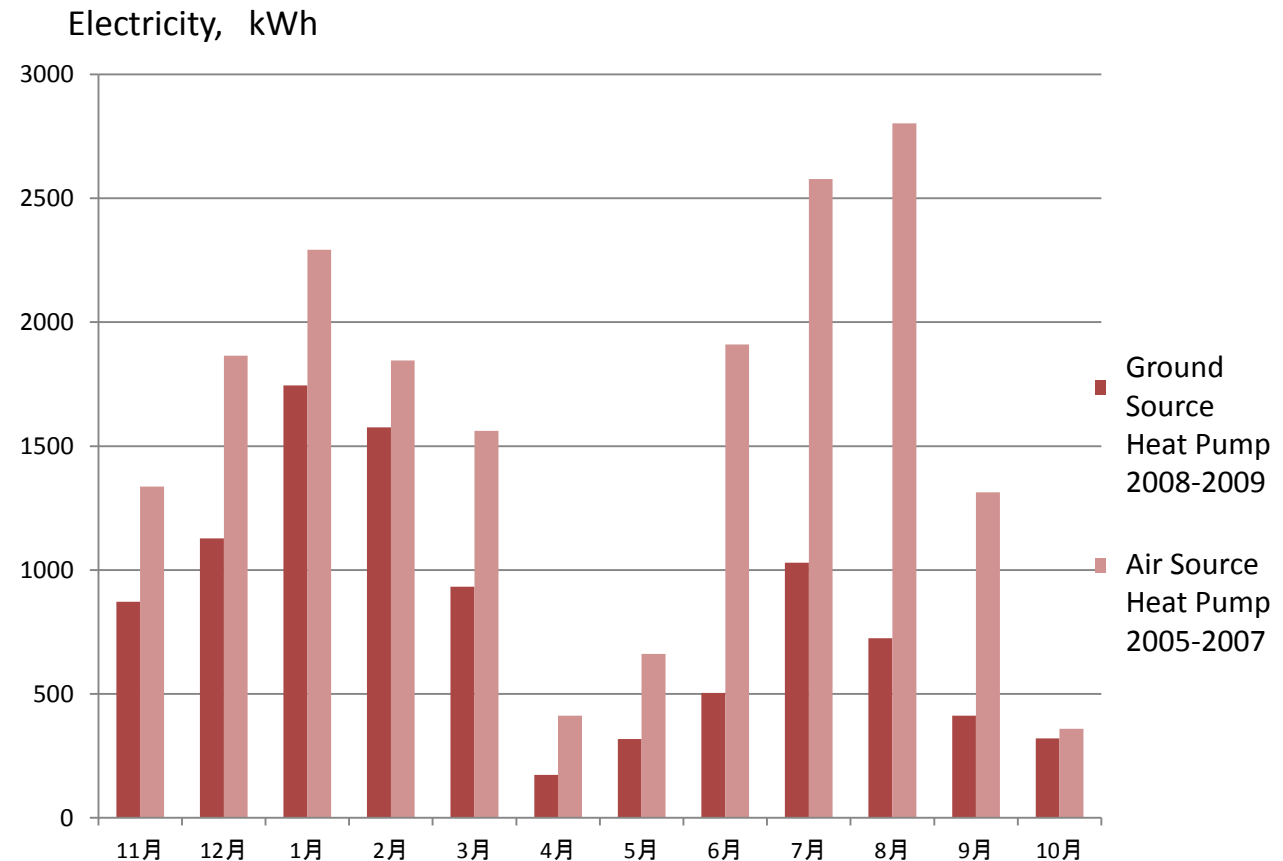
Energy Conservation for Office Building in Tokyo



Parking Lot where 8 ground heat exchangers of 75 m in length are settled

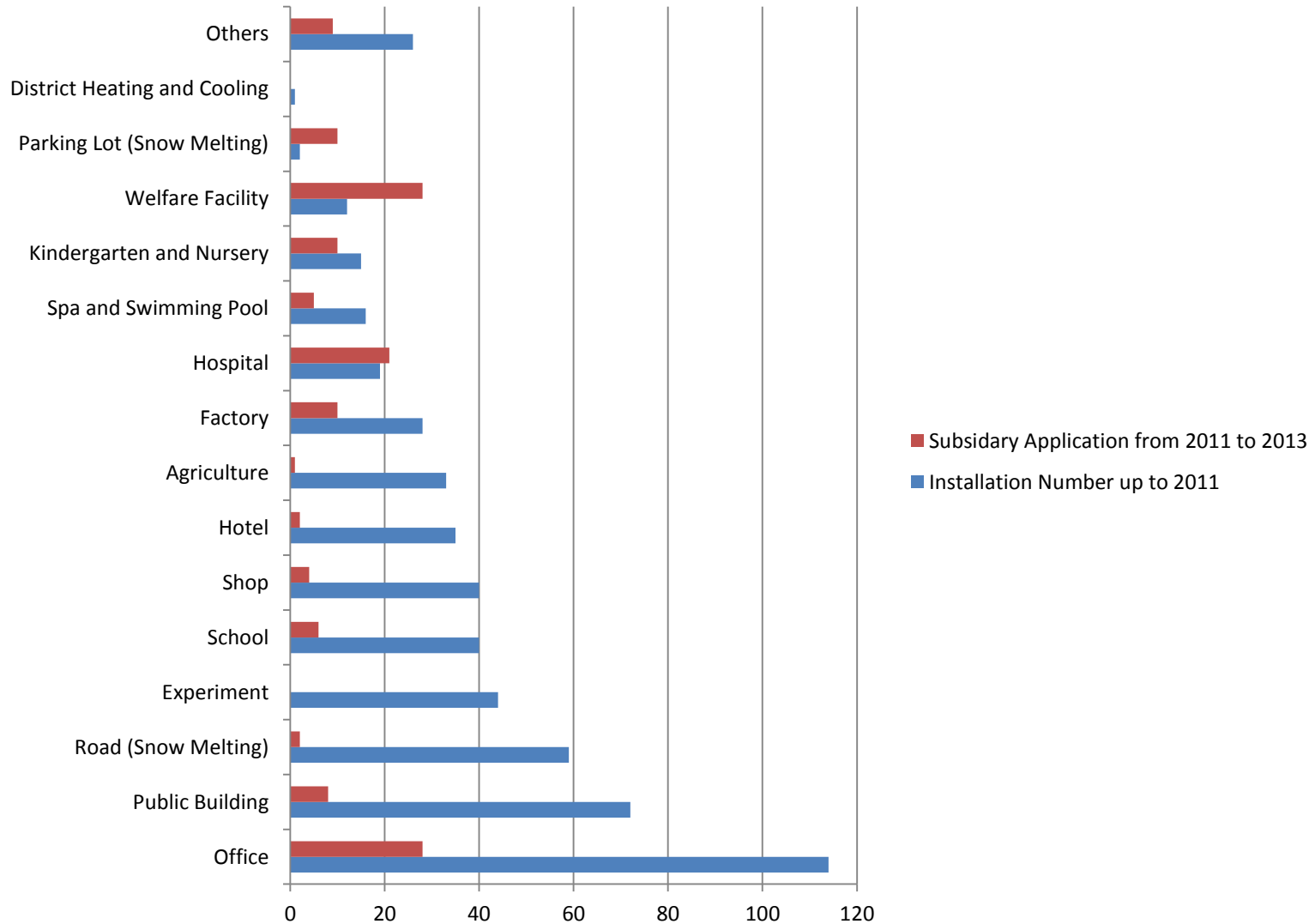


Ground source and air source hybrid heat pump



Electricity consumption of ground- and air-source heat pumps
(Sasada, 2010)

Current Trend for GSHP



New National Stadium for 2020 Olympic and Paralympic



Japan Sport Council