

MinebeaMitsumi Smart City Solution

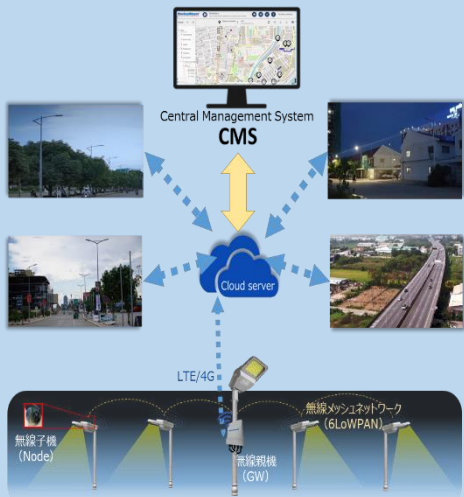


SMART CITY SOLUTIONS

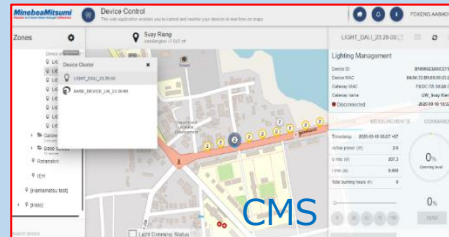
2023 January

MinebeaMitsumi Smart City Solutions

① Wireless technology 6LoWPAN

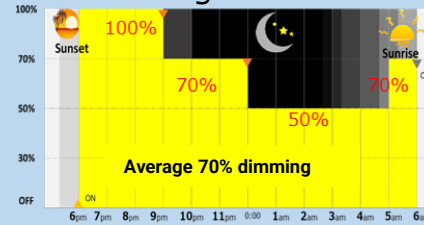


② Centralized management MAP on CMS

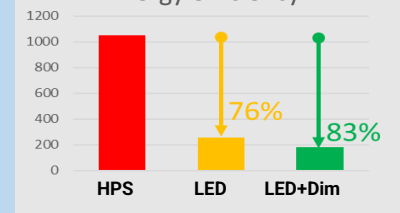


③ Reduction of electricity cost = GHG emission reduction

Example of Dimming schedule



Energy efficiency:

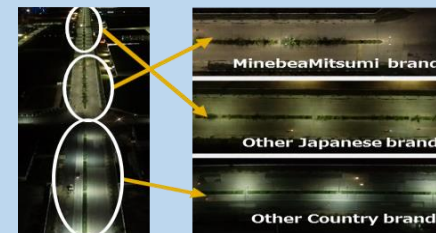


④ Efficient lighting

Automatic Lighting and dimming by motion sensor or astronomical sunrise/sunset



Uniformity and efficient lighting

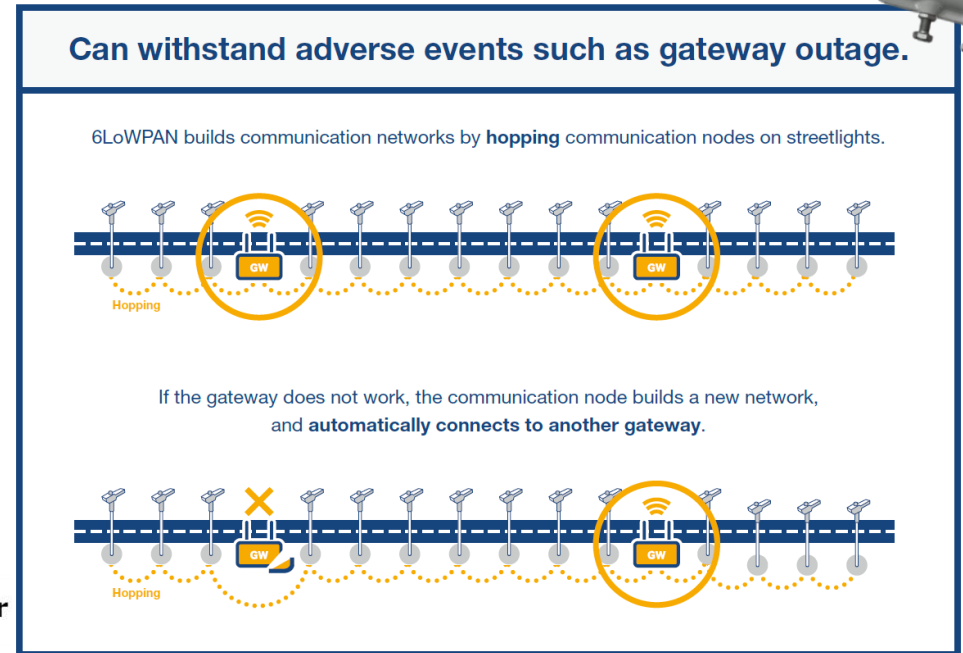
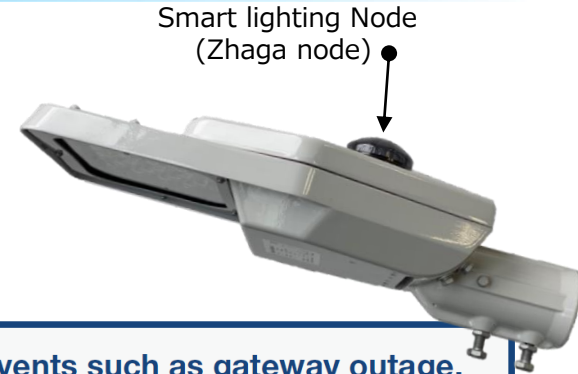
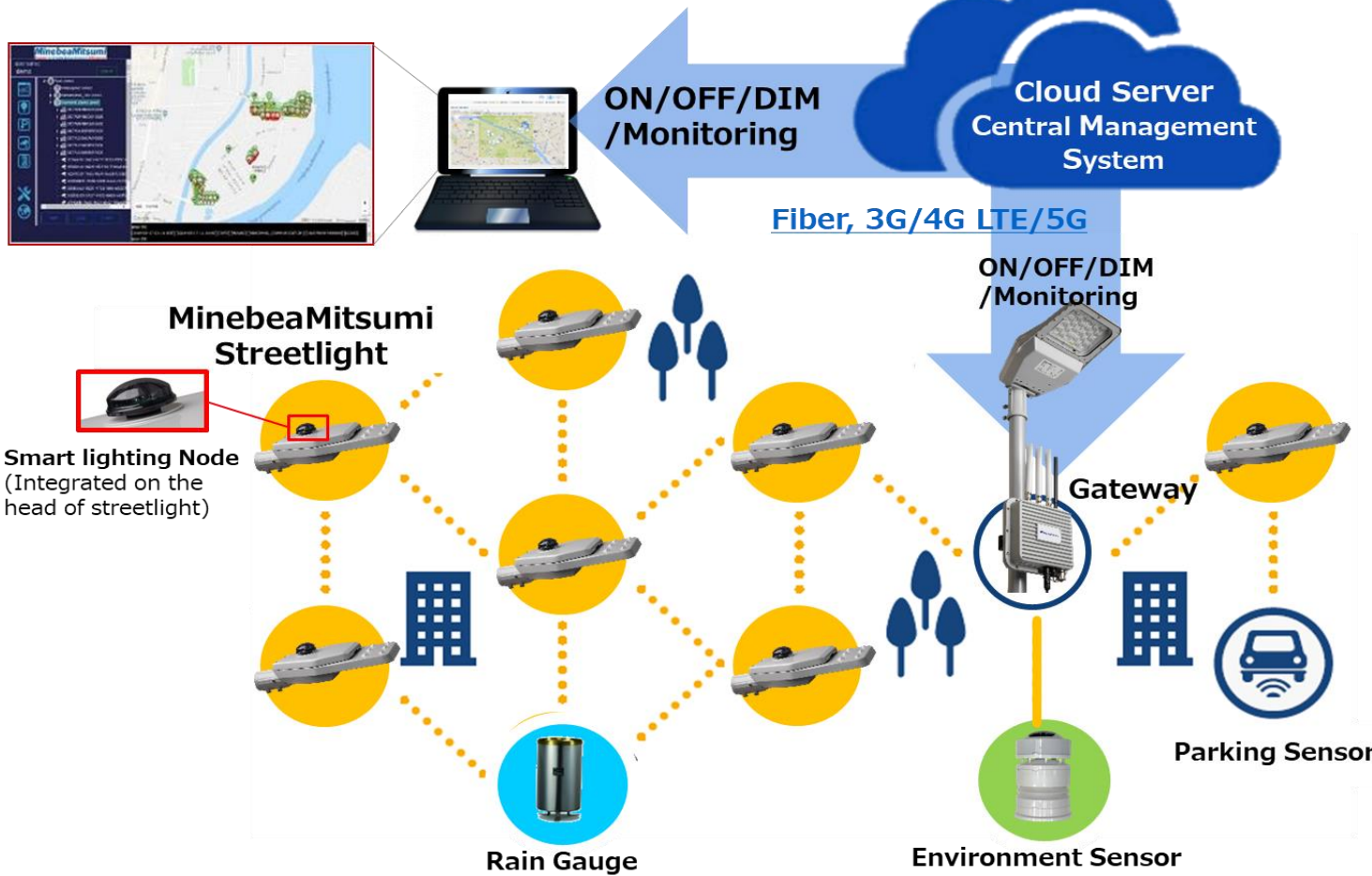


⑤ Expandability



MinebeaMitsumi Wireless network platform

It is a communication method that supports smart cities that are resistant to obstacles and troubles.



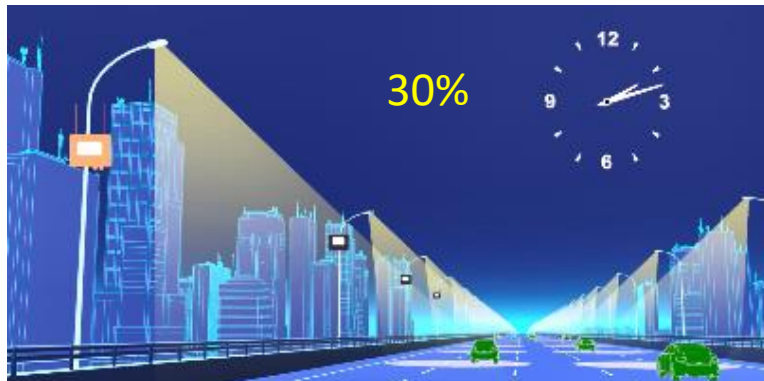
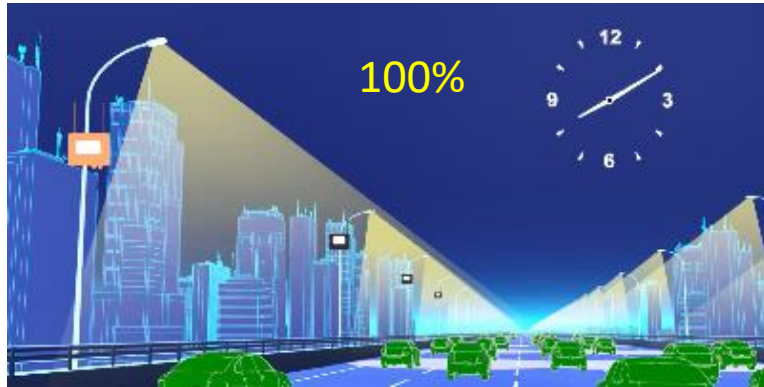
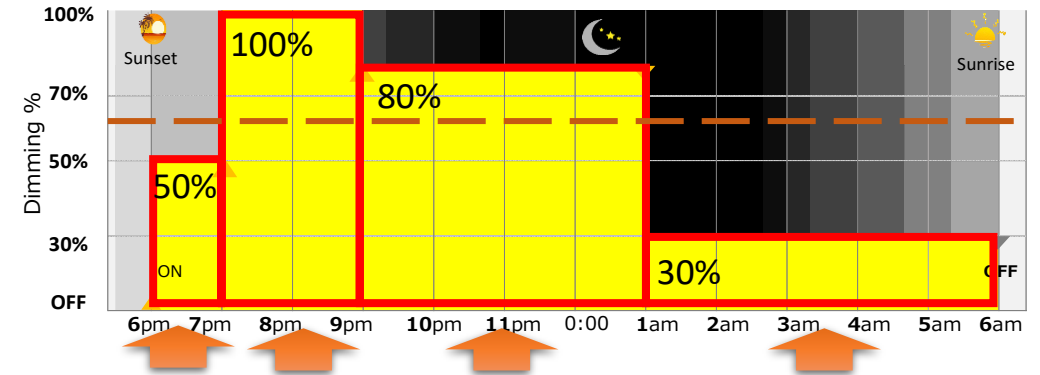
- 6LoWPAN allows to connect all sorts of IoT devices to an IP network and transmit IPv6 data packets end to end across a low power wireless network.
- Our gateway supports dual network communications: 6LoWPAN IoT sensors/devices using low volume of data packets, and high bandwidth devices such as security cameras that require high volume data packets transfer.

Dimming control : What is dimming?

Smart lighting to contribute to reduction of GHG emissions.

We offer advanced lighting system that significantly helps in energy savings by applying dimming control of lights to provide optimum brightness on road to match the traffic volumes and people`s activities.

Example of dimming pattern



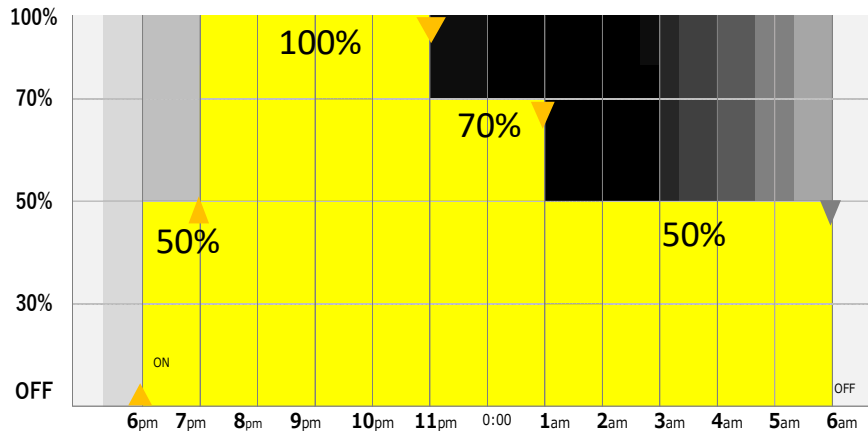
Dimming control: Energy efficiency

Excellent energy-saving performance and CO₂ emission reduction

Our smart LED streetlights can reduce power consumption up to 90% compared to conventional mercury lamps. This is a significant contribution to the reduction of CO₂ emissions.

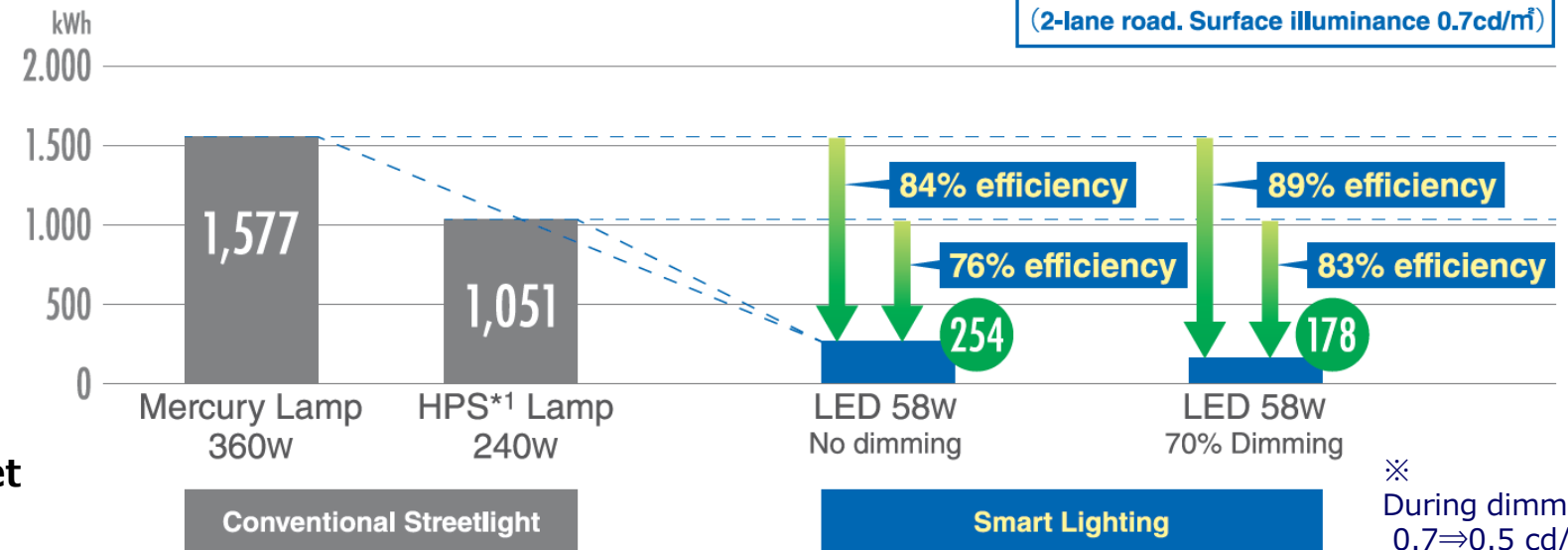


■ Dimming pattern (Average 70% dim)



Sunrise ————— → Sunset

■ Energy efficiency achieved after implementation of Smart Lighting: Comparison of annual power consumption by 1 unit of lamp



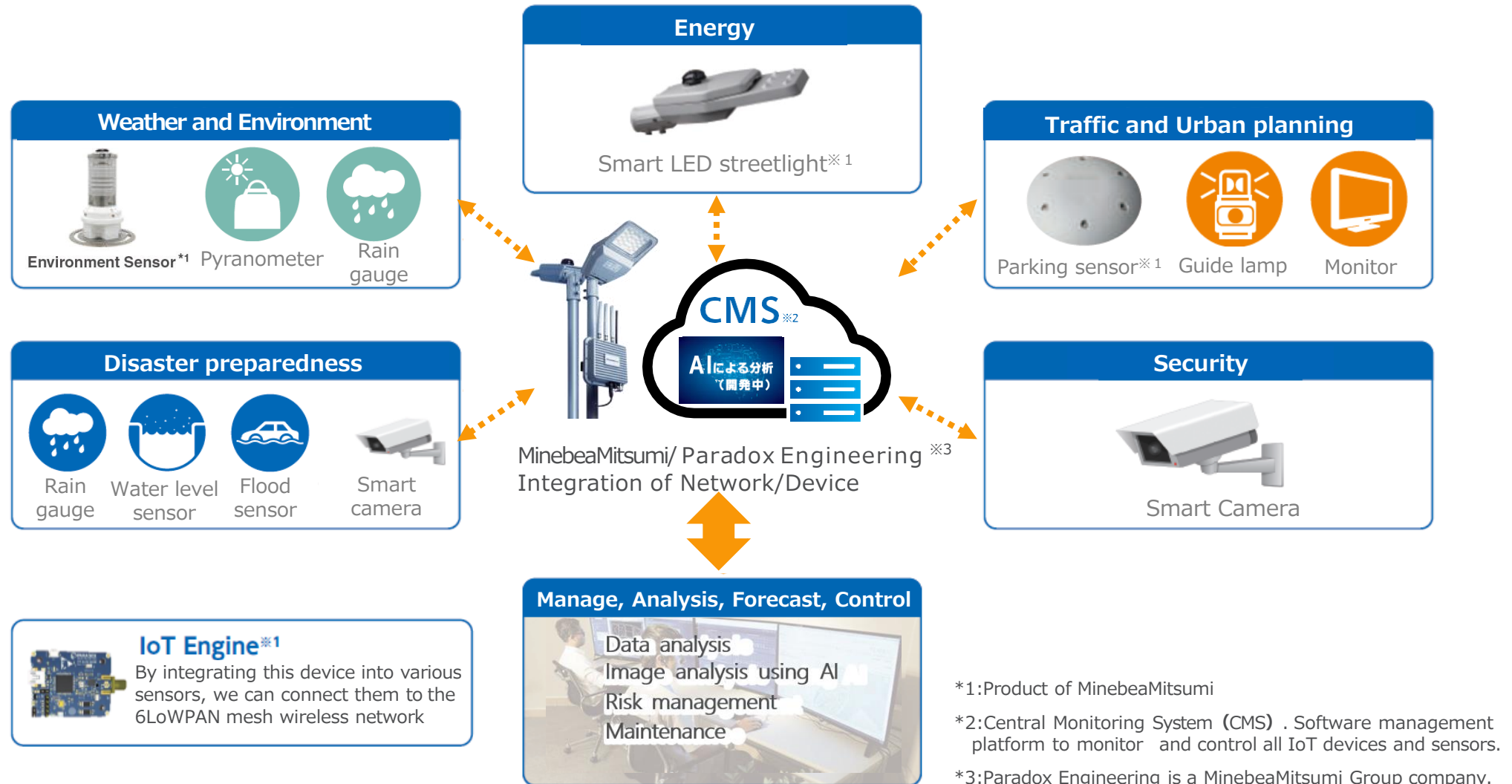
※ During dimming 0.7⇒0.5 cd/m²

The **annual electricity cost saving is 85.2 million yen** if **3,000 lights** are replaced with smart lighting (average 70% dimming), from mercury lamps. 53.17 million yen cost saving from HPS lamps

※Electricity tariff: 20.3円/kWh

Expandability for Smart, Open Cities

Our wireless network can be expanded by integrating additional sensors and IoT devices. This allows our valued customers to innovate and design new applications of their needs.



Worldwide Installation

- = Installed qty
- * = Demonstration
- (●) = Planned installation



Summary (As of Sept. 2022)	
Smart Lighting (Incl. planned qty) ※5	114,782
Streetlight only (Inc.. Planned qty)	88,470
Parking sensors	9,357
Sensors + Camera	166

Notes:
 (※ 1) : Qty of MinebeaMitsumi Streetlights compatible for smart lighting.
 (※ 2) : Planned qty of smart lighting installation in Spain.
 (※ 3) : Planned qty of smart lighting installation in Japan.
 (※ 4) : Planned qty of streetlight installation only in Japan.
 (※ 5) : Includes the qty of MinebeaMitsumi lighting Nodes installed with other streetlights.

MinebeaMitsumi Inc.

<http://www.minebeamitsumi.com/>

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