



# —Highlights of Our Environmental Activities in FY 2017— Creating Value from Light and Illuminating a Bright Future

Here we will report on the new environmental activities that the Stanley Group has been working on, as well as activities that are worth taking note of.



## Achieving energy-savings of 70%

### Switching to full LED headlamps for the N-Box

The Honda Motor Company, Ltd.'s N-Box was the number one new model in terms of vehicles sold in Japan in FY 2017. The headlamps on the N-Box were switched from a halogen to LED design, while front turn signals with sequential function were equipped on the N-Box Custom, their top-of-the-line model. Both types represent the first instances in which our headlamps have been equipped on light motor vehicles. The N-Box has achieved energy-savings of 70% over prior models, while at the same time increasing the sense of safety for drivers when driving at nighttime and in rainy weather that comes with lighting that is brighter and travels farther.

Bi-function LED unit, which make it possible to switch between high-beams and low-beams on a single unit, needed to be cooled via a fan. But we newly developed the Fan-less Bi-function LED unit, which curbs power consumption by disusing the fan, as a single lens-type. This is now the lamp equipped on said vehicles.

Moreover, using the onboard network to control the lights makes it possible to reduce the number of body harnesses, which contributes to reducing the overall weight of the vehicle.



N-BOX Custom : Full LED nine-lamp system headlamp



N-BOX : Full LED headlamps (Projector-type)

#### Fan-less Bi-function LED unit

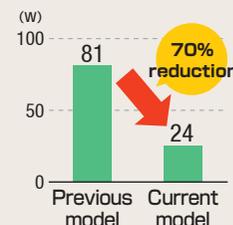


Reduces LED power consumption by 36% over our previous Bi-function LED units.



Curbs power consumption while maintaining the same light distribution performance, and disusing the fan.

#### N-Box headlamp power consumption



#### Views

Successfully reducing power consumption and maintaining light distribution performance through a specialized design

Yasuyuki Zanna  
Design Department, Utsunomiya Technical Center

In order to achieve full LED lamps that are still designed to be moderately-priced, it was important that we develop a fan-less version of our Bi-function LED units. Disusing the fans required that the electricity be reduced, which would have reduced the light distribution performance as things stood. So we utilized a specialized design, thus achieving performance that met the approval of our customer.



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## Creating Value from Light and Illuminating a Bright Future



Our high efficiency, high durability specialized LEDs are used at the front lines of the fishing industry

### Developing environmentally friendly LED fishing lights

Stanley newly developed fishing lights equipped with specialized LED technology that boasts high efficiency and high durability for fishing boats in Central Vietnam, for which we carried out an onsite demonstration project to verify their effectiveness at reducing emissions of greenhouse gases and other such benefits.

The LED fishing lights we developed have a die-cast aluminum casing that was designed to be thin. This allows it to efficiently illuminate the ocean's surface with directional light distribution at a power consumption of 197W, while also improving its durability against salt damage.

For the demonstration project, we switched the existing metal halide lamps on 40 fishing boats over to our LED fishing lights. This resulted in reducing power consumption and fuel consumption by roughly 70% when illuminating an area of ocean with equal brightness, which led to improving the work onboard the boats by means of reducing the heat radiating from the lights, making the lights maintenance-free, and improving safety (since the lights cannot be broken the way glass can).

It was also confirmed that the haul of fish caught was equal to or greater than that with the existing light sources. In addition, cutting down on fuel consumption extended their traveling distance, which in turn improved convenience and led to striking a balance in terms of reducing energy and economy regarding the fishing business.

The Stanley Group will continue to proactively promote environmentally-friendly initiatives globally through the use of our cutting-edge technology in order to contribute to the conservation of the global environment on into the future.

※ This demonstration project was carried out as a commissioned project by the New Energy and Industrial Technology Development Organization (NEDO) as one of its Dissemination and Promotion of Global Warming Countermeasure Technology Feasibility Studies and Demonstration Projects pertaining to the Joint Crediting Mechanism (JCM), the goal of which is to promote the dissemination of low-carbon technologies and products to developing countries.

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Coping with the harsh environments of coastal zones

### Developing LED lights for port facilities

Stanley Electric Japan and Suzhou Stanley Electric in China have developed LED lights for port facilities. These CE-compliant products (that meet the standards of EU member countries) have been installed on 143 pieces of equipment of the International Car Operators in Belgium. This has resulted in cutting power consumption by 65% compared with their previous lighting equipment, while also contributing to work safety by boosting brightness and visibility.

In addition to having long operating lives and high efficiency, our LED lights were designed to be resistant against salt damage and corrosion to accommodate the harsh environments of coastal zones. As such, they acquired Type I certification under the Nippon Kaiji Kyokai's Type Certification for LED Floodlights for Port Facility-Use.



Type I certification under the Type Certification for LED Lights for Port Facility-Use

▶ See Page 17 for related information



#### Views

Taking on the challenge of acquiring Type Certification for LED Lights for Port Facility-Use!

Ryosuke Yamazaki

Design Department, Yokohama Technical Center

We designed and developed LED lights for port facilities, where the use of LED lights has yet to become widespread, thus acquiring Type I certification for our LED lights for port facilities. Using a lighting design that achieves uniform brightness within container terminals made it possible for us to achieve power-savings over the conventional lights, which had used high-voltage sodium-vapor lamps as their light source. Based on this recently acquired know-how, we will continue working to design environmentally-friendly products on into the future.



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**Creating Value from Light and Illuminating a Bright Future**



**Preventing global warming via sustainable energy**  
 Promoting the adoption of solar power generation equipment across the Group as a whole

As part of our counter-measures against global warming via sustainable energy, the Stanley Group has adopted solar power generation equipment at our head office, Hatano Factory, Utsunomiya Technical Center, and Yokohama Technical Center.



Bird's-eye view of the rooftop solar panels on our Okazaki Factory (storage building)

In FY 2017, we installed solar power generation equipment at our Okazaki Factory (storage building), Hiroshima Factory, Stanley Iwaki Works, and Stanley Niigata Works.

At our Hiroshima Factory and Stanley Niigata Works, we switched to solar power generation equipment via captive use, and supplied the generated electricity to the air conditioning and lighting within the factories. In addition, we made efforts to equalize out electricity (cut electricity peaks) while also working to curb CO<sub>2</sub> emissions.

At Guangzhou Stanley Electric in China we began generating solar power via captive use in 2011, and further augmented the generating equipment there in FY 2017.

In the future, we plan to install this equipment at our Okazaki Factory (New B Building) and Thai Stanley, and will continue contributing to the prevention of global warming through sustainable energy.



Hiroshima Factory Solar power monitors



**Reducing energy consumption through thorough equipment operation and maintenance**  
 Control and management activities for our equipment

Since FY 2017, the Stanley Group has been enhancing our operation and maintenance for buildings/utility equipment, production equipment, and testing/inspection equipment at the global level through coordination between our General Affairs Department, Production Technology Center, and Quality Assurance Department, with this being spearheaded by our Environmental Planning & Management Department. Since equipment degrades over time, performing the proper maintenance and inspections in an ongoing manner is conducive to preventative maintenance. The degradation of equipment not only causes defects like malfunctions and decreased precision, but also leads to increased energy usage. As such, undertaking these activities will allow us to keep these sorts of defects and energy losses down to a minimum. What is more, by getting a grasp of the equipment's condition and upgrading it at the proper time, we will install equipment with the latest in energy-saving performance through these activities.



**Achieving sustainable societies**  
 The connection between our environmental activities and the Sustainable Development Goals (SDGs)

In September 2015, the United Nations adopted the Sustainable Development Goals (SDGs), which consist of 17 goals and 169 targets for resolving a variety of social challenges in areas such as the environment, health, human rights, poverty, and peace.

These have been positioned as "goals for all people" for the year 2030 that indicate an ideal vision for the future. Of these 17 goals, our environmental activities contribute to the four areas listed above.

We will continue working to achieve the SDGs through products and services borne through Stanley's "boundless pursuit of the value of light."

<p><b>6</b> CLEAN WATER AND SANITATION</p>	<p>Ensure availability and sustainable management of water and sanitation for all</p>
<p><b>7</b> AFFORDABLE AND CLEAN ENERGY</p>	<p>Ensure access to affordable, reliable, sustainable and modern energy for all</p>
<p><b>12</b> RESPONSIBLE CONSUMPTION AND PRODUCTION</p>	<p>Ensure sustainable consumption and production patterns</p>
<p><b>13</b> CLIMATE ACTION</p>	<p>Take urgent action to combat climate change and its impacts</p>