## Environmental Loads

Energy consumption decreased by 5.14 million GJ Nin 2007, while $CO_2$ emissions rose by 3,140 t. The emissions coefficient of electricity consumption in China became larger compared to the coefficient in 2006[(1)]. The LNG consumption volume at the company cafeteria of Tamron Optical (Foshan) (TOF) increased considerably due to the increase in workers. Copy paper consumption also rose due to shifting from stock forms to copy paper following changes in internal systems in 2006. Also, in compiling this report, we calculated $CO_2$ emissions by determining energy consumed by company vehicles used in the domestic market in Japan, as well as energy consumption in the distribution network linking factories and sales offices.

(1) For 2006, by referring to "Method to calculate greenhouse gas emissions from business enterprises" (Version 1.6), the coefficient of 0.000378 is used. For 2007, by referring to "$CO_2$ estimation – Manual for calculating and reporting greenhouse gas emissions (Version 2.1)", energy consumption is calculated in a formula of (GJ) x 0.000555.



### INPUT

**Energy**

| | |
|---|---|
| Electric power | 46,269,837kWh |
| Crude oil | 232kℓ |
| Kerosene oil | 18.9kℓ |
| Diesel oil | 0.6kℓ |
| PPG | 23,200㎥ |
| Natural gas | 81,000㎥ |
| **Total** | **429,600MJ** |

**Paper**

| | |
|---|---|
| Copy paper | 20.6t |
| Stock forms | 0.3t |

**Water**

| | |
|---|---|
| Clean water | 405,000㎥ |
| Sewage water | 12,000㎥ |

**Raw/auxiliary materials**

Metal (brass, aluminum)
Glass
Plastic
Chemicals (drugs, solvents, cleaners)
Gas (nitrogen, oxygen, argon)
Electrical components
Cardboard

**Transportation energy**

| | |
|---|---|
| Diesel oil | 140.8kℓ |
| Gasoline | 80.5kℓ |
| **Total** | **221.3kℓ** |

**Manufacturing raw materials/ parts at suppliers** ▶ **Development, design and production at Tamron** ▶ **Transportation between factories and delivery to stores (logistics/business vehicles)** ▶ **Customers**

### OUTPUT

**$CO_2$ Emissions**

| | |
|---|---|
| Electric power | 22,771t-$CO_2$ |
| Crude oil | 628t-$CO_2$ |
| Kerosene oil | 47t-$CO_2$ |
| Diesel oil | 2t-$CO_2$ |
| LPG | 7t-$CO_2$ |
| Natural gas | 167t-$CO_2$ |
| **Total** | **23,622t-$CO_2$** |

**Waste entrusted for intermediate treatment**

| | |
|---|---|
| Industrial waste | 608.1t |
| General waste | 158.6t |
| **Total** | **766.7t** |

**Recycled**

| | |
|---|---|
| Paper | 33.9t |
| Cardboard | 48.8t |
| Metal | 41.8t |
| Glass | 0.4t |
| Plastic | 33.8t |
| Grinding sludge | 16.7t |
| Waste fluid | 249.3t |
| Others | 41.5t |
| **Total** | **466.2t** |

**Products *2**

| | |
|---|---|
| **Total** | **23,075t** |

**$CO_2$ Emissions during Transportation*1**

| | |
|---|---|
| Diesel oil | 369t-$CO_2$ |
| Gasoline | 187t-$CO_2$ |
| **Total** | **556t-$CO_2$** |

**Scope of INPUT Items**
Omiya head office (including Tokyo/Osaka sales offices), three factories in Aomori, Tamron Optical (Foshan), China

**Scope of OUTPUT Items**
Omiya head office (including Tokyo/Osaka sales offices), three factories in Aomori, Tamron Optical (Foshan), China (excluding Tamron Optical (Foshan) as for waste entrusted for intermediate treatment)

*1 The volume of $CO_2$ emissions during transportation is the volume of emissions from overland transportation of products and parts between factories and business vehicles used by business departments including sales offices.
*2 The output figure for products includes output from Tamron Optical (Foshan), from a report for 2007.