

Overview of Study of Effects of Introduction of Externally-powered Idle Stop Power Supply System for Freezer Trucks

1 System structure

(1) Power supply stand

- A stand which supplies electric power to the truck

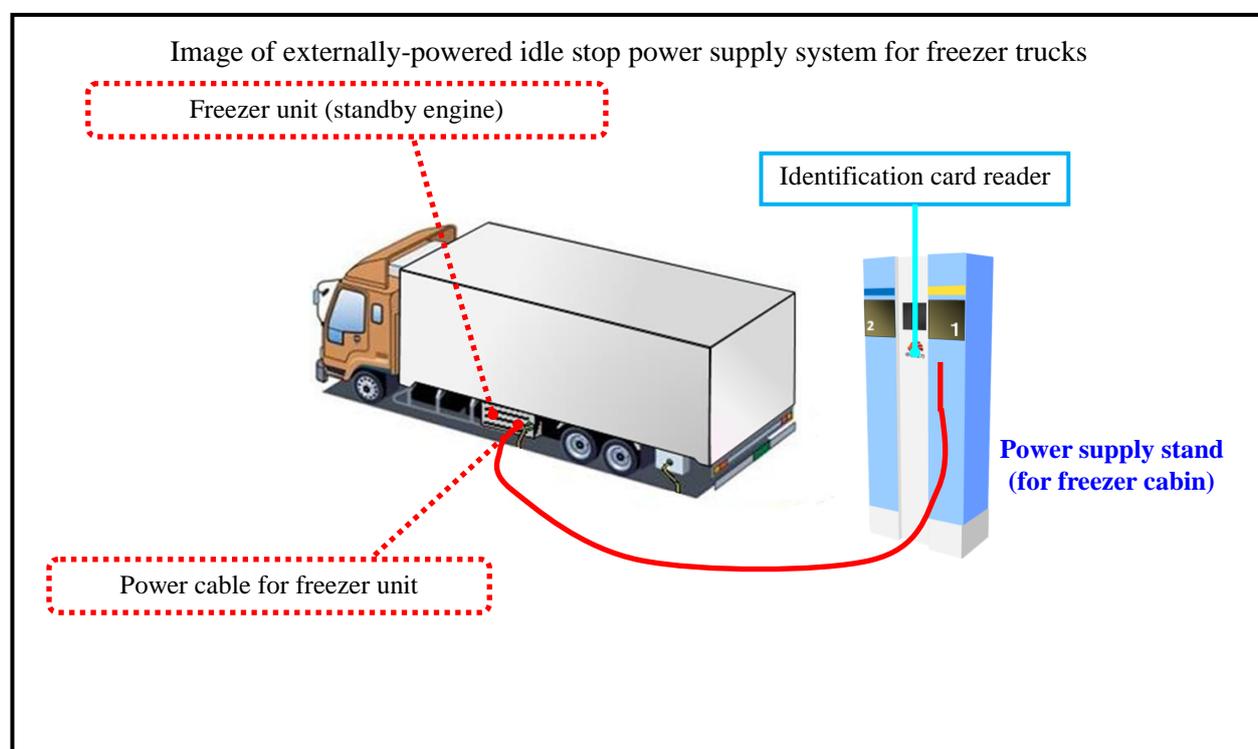
(2) Power inlet / Power cable (side of truck)

- Because most large freezer trucks are already fitted with power inlets for use on ferries at the time of purchase, as long as a power cable is provided, they can be used without the necessity for any further investment.

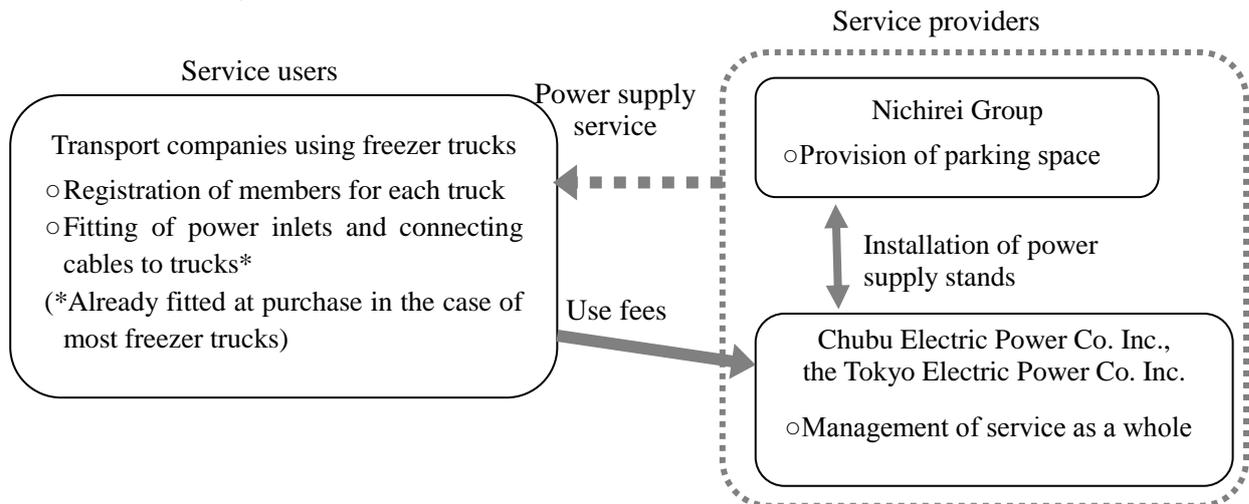
* We have developed and will be providing a new service for the freezer cabins of trucks fitted with freezer units. Previously, when a truck was on standby, the use of a standby engine was necessary for cooling and heat retention. The new service, which uses power supply stands to provide electric power, enables the compressor to function and the freezer unit to operate even when the engine is switched off.

2 Method of use

- The user is identified by means of a card issued by Chubu Electric Power Co., Inc. and the Tokyo Electric Power Co., Inc., and connects the power cable at the side of the truck to the power supply stand.
- The user pays a fee, depending on the actual amount of use, at a later date.



3 Scheme for the study



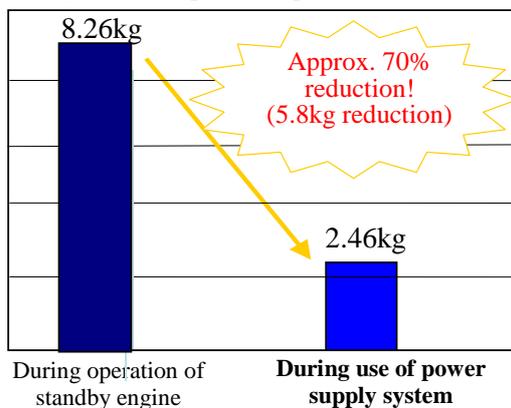
Use fees

Basic fee	Metered fee
For each identification card	For each 1kWh
1,050 yen per month (tax included)	36 yen (tax included)

4 Effects of introduction

(1) Reduction of CO₂ emissions

CO₂ emissions per truck per hour



[Basis for conversion]

- Rate of consumption of light oil during operation of standby engine = 3.2 l/hr (from manufacturer's catalogue)
- CO₂ emissions coefficient for light oil = 2.58kg-CO₂/l
- Power consumption = 7kWh (from manufacturer's catalogue)
- CO₂ emissions coefficient = 0.351kg-CO₂/kWh (CO₂ emissions coefficient for 10 standard power utilities (following adjustment); Federation of Electric Power Companies of Japan, September 2010)
- 60Hz; Freezer cabin temperature: -29°C

It is expected that CO₂ emissions will be reduced by approximately 17.4 t (=5.8 kg/h × 6 h/day × 250 days/year × 2 trucks) for each power supply stand when used for each freezer truck for 6 hours per day for 250 days per year. Because two units will be used in this study, a reduction of approximately 35 tons of CO₂ is expected.

(2) Other effects

	Effect
Parking space owners, etc.	<ul style="list-style-type: none"> ○ Reduction of noise due to idling ○ Improvement of air quality around parking space
Transport companies	<ul style="list-style-type: none"> ○ Reduction of amount of fuel used (cost)* Approx. 130,000 yen/year/truck ○ Improvement of working environment
Truck drivers	<ul style="list-style-type: none"> ○ Reduction of noise and vibration due to idling (comfortable rest / good sleep, safe driving)

* Converted based on use for 6 hours per day (average figure based on survey) for 250 days per year, at a cost of 100 yen/liter for light oil.