

# Intellectual Property Activities of the Osaka Gas Group

## Our Intellectual Property Strategies

The Osaka Gas Group has been actively committed to intellectual property activities from the viewpoint of technology management, acquiring intellectual property rights on our technological development results and patents on business models for information technology business promotion.

We currently implement our intellectual property activities strategically based on the following three basic policies:

### (1) Development of Strong Patent Network by Patent Portfolio Management (PPM)

We develop a portfolio of strong patent network including basic and fringe patents for each major product or business in order to secure competitive advantages in our business.

### (2) Revenue Increase by Optimum Use of Intellectual Property Rights

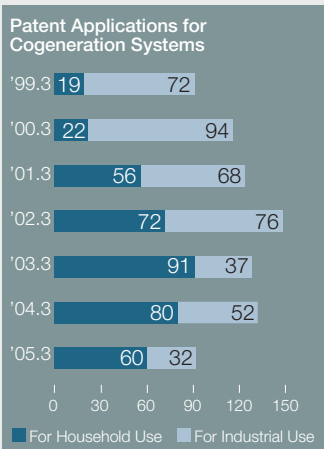
We endeavor to increase revenue by optimum use of our intellectual property value for active licensing activities of open

patents and for development of new business based on a review of our existing patents.

### (3) Reinforcement of Risk Management for Intellectual Property Activities

We implement risk management at a high level for protecting our own intellectual property, scaling with the intellectual property rights of other companies.

## Intellectual Property Applications



The number of patent applications by Osaka Gas Group for the term ended March 31, 2005, was 491. Based on the strategy of selection and concentration, we recently focused on the patent applications that are considered to be critical for our business strategies. Particularly, we have actively applied patents for cogeneration systems that contribute to solutions of energy and environment issues and for industrial-use gas equipment where the market is being liberalized.

At present, we also focus on the development of residential cogeneration systems by applying our cogeneration technologies, one of our specialties, as well

as on consolidation of our intellectual property rights. Specifically, we develop a strong patent network for fuel reforming equipment, which is one of our competitive edges, by the Patent Portfolio Management.

During this term, we also applied 25 business model patents for customer services and electricity retail systems in line with liberalization of electric power. Aside from these, we applied 68 design patents and 83 trademark patents.

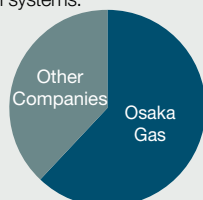
### Number of Patent Applications

'99.3	'00.3	'01.3	'02.3	'03.3	'04.3	'05.3
988	1,095	979	904	759	635	491

## Patent Applications for Residential Cogeneration Technologies

### Patent Applications for Self-Learning Control

We have acquired patents by the PPM (Patent Portfolio Management) to protect the intellectual property rights of our development results for self-learning control systems.



Number of Patent Applications for self-Learning Control Systems (Comparison with Other Companies)

In our residential cogeneration system business, we have been preparing for patent acquisition and development of self-learning control systems for the fuel-cell method currently under development, in addition to our existing gas-engine method ECOWILL. This is intended for improvement of the energy-saving functions and further reduction of carbon dioxide.

The self-learning control system is an optimal operation control system to

maximize energy-saving functions by projecting daily customer demand of electricity and heat based on the historical data and by activating, stopping, and adjusting the power operation of cogeneration systems automatically.

As in the said business, we have applied many patents for fuel reforming equipment that produces hydrogen out of natural gas by use of our own catalyst technologies.

## Our Patent Ownership and Licensing Activities

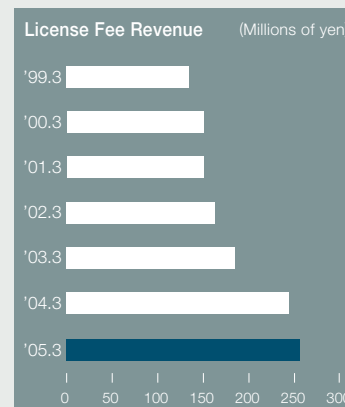
The number of patent rights owned by Osaka Gas Group is 1,339.

We own (1) patents for a Non-excavation Construction Method and Underground Facility Inspection Technology that contribute to cost reductions and security in the gas supply business; (2) environmental protection technology patents for Wastewater Processing Technology, which has already been launched in the Chinese market in the industrial-use energy business; (3) patents for Floor Heating Systems and Bathroom Heating and Drying Equipment, which are spreading rapidly in the residential energy business; and (4) many patents in the non-energy market segments such as material technologies (the core technologies of Osaka Gas Group), environment and

information technologies, all of which are expected to grow significantly.

In order to increase the revenue of our own business by effective use of intellectual property rights, we implement patent assessment of industrial use value as well as research on qualitative methods for assessment of industrial use effects.

Meanwhile, we contribute to increase the business earnings by recent active licensing activities for the rights available for external use. The license fee revenue for the term ended March 2005 totaled about 0.25 billion yen as a result of our technology information disclosure concerning cogeneration systems and fuel cells and of our active licensing activities in the materials business.

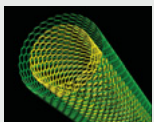


Number of Patents Owned by Osaka Gas Group (as of March 31, 2005): 1,339



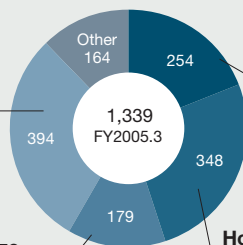
### Production, Transport and Supply Business: 394

- LNG plant facilities (e.g. invar piping)
- Pipeline construction method (e.g. non-excavation construction method)
- Pipeline maintenance (e.g. underground facility inspection technology), etc



### Material Technology Business: 179

- Lithium rechargeable battery materials
- Activated carbon fibers for desulfurization and denitration
- Fluorene
- Carbon nanotubes, etc



### Industrial-Use Energy Business: 254

- Cogeneration
- Fuel cells
- Environmental protection technologies (e.g. wastewater processing technology), etc.

### Household-Use Energy Business: 348

- Residential cogeneration systems
- Floor heating systems
- Bathroom heating and drying equipment, etc.



## Revision of Employee Invention Rule

The Osaka Gas Group pays compensation for patent applications and registrations and performance bonuses to internal inventors as compensation for employee inventions.

In the term ended March 2005, we revised the intellectual property rule that regulates compensation and performance bonuses, aiming for enhancement of competitiveness to meet the demands of a liberalized energy market and for incentives to unique inventions leading to the creation of new markets.

### <Revised Points>

- The compensation level is raised to 2–5 times the current level, and the compensation is to be paid according to the profit without any upper limit.

- In addition to contributions by internal use of domestic patents and licensing activities, earnings from foreign patents and cross licensing activities are to be rewarded as an invention effect.

- The board of review, which consists of the Technology Division, the Corporate Strategy Department, the Legal Department, and the Human Resources Department, reviews the amount of the reward and bonus. The review results are to be disclosed across the board and re-examined in case there is any objection.

As stated above, the rule has been revised to be more transparent based on recent precedents and in line with expansion of the reward range as well as the rise in the

reward standards and abolishment of the upper limit. Furthermore, we newly established a presidential award system for inventors who have delivered successful results in intellectual property activities that contribute to business earnings. These are intended to cultivate incentives for income realization by use of intellectual property rights and for achievement of outstanding inventions.

We also give proper attention to employee invention litigation risks by revising the relevant rules after communications with all the employees based on the revision draft and reflecting the response to the new rules and by establishing a system of criticism by inventors for the reward.