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THE ENERGY  
REGULATION  
AND MARKETS  
REVIEW

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EDITOR  
DAVID L SCHWARTZ

LAW BUSINESS RESEARCH

# THE ENERGY REGULATION AND MARKETS REVIEW

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For further information please email  
[Adam.Sargent@lbresearch.com](mailto:Adam.Sargent@lbresearch.com)

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Editor  
DAVID L SCHWARTZ

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# EDITOR'S PREFACE

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Safe and reliable delivery of electricity and natural gas has been the hallmark of energy policy and regulation in the industrialised world for the past 75 years. More recently, regulators, policymakers and the industry began to focus their attention on ways to improve economic efficiency, increase productivity and reduce costs through a seemingly endless series of reforms.

In some countries, utilities were encouraged to enhance transmission and interconnection facilities with neighbouring systems in order to pool energy resources. More recently, utilities have been encouraged to participate in regional organisations to buy and sell power, and to administer transmission, dispatch and scheduling of a variety of energy products. Certain countries have encouraged utility efficiency through a variety of performance-based incentives.

Policymakers have tried to reduce the barriers to entry by requiring non-discriminatory treatment among transmission users, and prohibiting affiliate abuse. Utilities were encouraged to unbundle certain utility services; in some cases, regulators required the divestiture of generation or transmission facilities. Utilities have even been encouraged to provide retail wheeling services to facilitate competition for delivery service customers.

Many markets have developed competitive bid-based electricity auctions to set energy and capacity prices, which often take into consideration the cost of transmission congestion. These markets tend to be administered by independent or governmental entities that do not have a market position bias. Clearing prices set in these markets are intended to send price signals to maximise short-term efficiency (scheduling, dispatching and selling energy), as well as long-term efficiency (building new or retiring old generation and transmission facilities).

In certain countries, lawmakers and policymakers have encouraged developers to build and finance new renewable resources and to develop more effective means of conserving energy, through a variety of 'carrots' and 'sticks'. These measures have included subsidies such as feed-in tariffs and renewable energy credits, as well as utility

requirements through renewable portfolio standards. In certain competitive markets, conserving electricity has been converted into a demand-side product ('negawatts') with near or equal value to supply-side generation (megawatts). New 'smartgrid' technologies have been created to increase the efficiency of transmission, generation, distribution and individual consumers' energy use.

Now, however, the myriad of efficiency mechanisms faces new and unprecedented challenges. Transmission and distribution systems are ageing and desperately need upgrading. Severe new environmental requirements are leading to mass retirements of baseload coal-generation resources. Fuel prices are volatile, adding long-term uncertainty to energy prices. Spikes in the price of raw materials are making the development of new infrastructure all the more expensive. Cyber-security threats are exposing the vulnerabilities of our energy networks. And the global economy continues to threaten our ability to obtain the necessary credit to build and finance energy infrastructure.

This is the sobering backdrop for this inaugural edition of *The Energy Regulation and Markets Review*. I would like to thank all of the authors for their thoughtful consideration of these difficult challenges. As can be seen in these chapters, we have much to consider and resolve before we can achieve the kinds of energy security and efficiency that we have been pursuing.

**David L Schwartz**

Latham & Watkins LLP

Washington, DC

June 2012

## Chapter 13

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# JAPAN

*Reiji Takahashi, Atsutoshi Maeda, Shun Hirota and Yuko Suzuki<sup>1</sup>*

### I OVERVIEW

Japan is a country with limited energy resources and as such, energy legislation in Japan can essentially be divided into legislation concerning electricity and that concerning gas.

Electricity serves as an indispensable element of the social infrastructure of Japan and in recognition of the high level of public interest attached to the provision of electric utilities, certain market entry regulations are in place to regulate the industry. Also, because electric power consumers – especially general consumers – currently have virtually no options in selecting an electric power supplier, strict regulations are in place to monitor the content of all contracts executed between power companies and such consumers in the interests of consumer protection. Due to the events of the recent earthquake and the accident at the Fukushima nuclear power plant, however, a movement seeking to amend the current legislation can now be discerned, along with an increased interest in future developments in this area.

The gas industry in Japan can be divided into the following two major enterprises: the town gas industry, which is the primary source of natural gas to consumer residences through piping, and the liquefied petroleum gas ('LPG') industry, which provides LPG via cylinders to consumers in areas where piped gas is not yet available.

In principle, the approval required for entry into the town gas industry as well as the price of the gas itself are strictly regulated under Japanese law. In contrast, entry into the LPG industry only requires registration with the relevant authority and prices for such LPG may be freely set by the provider.

As of March 2008, statistics show that around 28.38 million consumers utilise town gas whereas the corresponding number of consumers for LPG is around 26 million. These statistics are in direct competition with each other.

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<sup>1</sup> Reiji Takahashi and Atsutoshi Maeda are partners and Shun Hirota and Yuko Suzuki are associates at Anderson Mōri & Tomotsune.

## II REGULATION

### i The regulators

The energy industry in Japan, which encompasses electric power and gas, is regulated by the Ministry of Economy, Trade and Industry ('the METI') or, more specifically, the Ministry's Agency for Natural Resources and Energy. The Ministry of Economy, Trade and Industries Establishment Act provides for the Ministry's jurisdiction over matters concerning comprehensive policies in relation to energy and mineral resources and over matters concerning the securing of the stable and efficient provision of gas, electric power and heating to Japan, and for the handling of such matters by the Ministry's Agency for Natural Resources and Energy.

#### *Main sources of law and regulation*

The Electricity Business Act is the main source of legislation regulating businesses involving the generation, transmission and sales (distribution) of electric power (collectively, 'electric power utilities'). In addition to this, the Electricity Business Act Enforcement Orders and the Ordinance for Enforcement of the Electricity Business Act further provide detailed regulations for the enforcement and government of the system provided under Electricity Business Act.

As for nuclear power, regulation is provided in the Atomic Energy Fundamental Act, the Act on Compensation for Nuclear Damage and other such specialised legislation.<sup>2</sup>

The Gas Business Act is the main source of legislation regulating businesses involving town gas. In addition to this, the Gas Business Act Enforcement Orders and the Ordinance for Enforcement of the Gas Business Act further provide detailed regulations for the enforcement and government of the system provided under Gas Business Act.

As for LPG, the main source of legislation regulating businesses involving LPG is the Act Concerning the Securing of Safety and the Optimisation of Transaction of Liquefied Petroleum Gas ('the LP Gas Act'). In addition to this, the LP Gas Act Enforcement Orders and the Ordinance for Enforcement of the LP Gas Act further provide detailed regulations for the enforcement and government of the system provided under the LP Gas Act.

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2 Although, since the accident at Fukushima in 2011, various legislative acts for compensation and support pursuant to nuclear damage have been enacted in Japan and there have also been significant recent developments in these legal fields, these developments will nevertheless not be covered in this chapter. For an update on such developments, please refer to Naoki Iguchi, Ava Tabila and Yuko Suzuki, 'After The Quake: Rethinking Japan's Renewable Energy Policy', *SEERIL Current Practice*, vol. 7, p. 21.

ii **Regulated activities**

*Electricity*

Under the Electricity Business Act, entities engaging in electric power utilities subject to regulation are categorised under the following five groups:

- a* entities supplying electric power to meet the general demand of consumers and businesses ('general electric utilities');
- b* business operators utilising production facilities the output of which is in excess of 2 million kW for the provision of electric power to general electric utilities ('wholesale electricity utilities');
- c* business operators that execute agreements for the supply of electric power in excess of 50kW and provide such electric power through the use of electric lines and cables owned by general electric utilities (known in Japan as 'power producer suppliers' or 'PPSs');
- d* business operators utilising their own privately owned power production facilities, electric lines and cables to supply electric power to specified consumers ('specified electricity utilities'); and
- e* business operators that have executed long-term agreements with general electric utilities for the supply of electric power (known in Japan as 'independent power producers' or 'IPPs').

Of the five aforementioned categories, most prominent are the general electric utilities. There are currently 10 such regional electric companies in Japan, their representative being the Tokyo Electric Power Co, Ltd ('TEPCO'). These companies at one time held regional monopolies over Japan's electric power industry and even now continue to cut imposing figures in the energy industry.

As for the remaining categories, two entities (Electric Power Development Co Ltd (or J-Power), and the Japan Atomic Power Company) currently fall under the category of wholesale electricity utilities; 52 corporate entities currently exist as PPSs, represented by the Ennet Corporation, a company established by the joint venture of TOKYO GAS Co Ltd, OSAKA GAS Co Ltd and NTT Facilities Inc; various others operate under the heading of specified electricity utilities, one of the more famous being Roppongi Energy Service Co Ltd, a supplier of electric power whose generators are located beneath the Roppongi Hills business complex in Tokyo's Minato ward and which supplies electric power to the entire Roppongi Hills complex. Many still function as IPPs, such as the large majority of business operators utilising feed-in tariffs ('FITs') to carry out solar and wind power-generation businesses discussed in Section V, *infra*.

Entities intending to engage in any general electric utilities, wholesale electricity utilities and specified electricity utilities activities are required to obtain approval from the METI prior to commencing of such business. Criteria for the grant of such approval include whether the applicant has sufficient financial resources and technical capabilities to properly perform such businesses or whether such business is based on a reliable business plan. Applicants will be judged on their ability to cater to the energy consumption demands of the general public and whether they will be capable of running a sound business. Applicants are required to submit their applications for approval to the METI in the form prescribed by the relevant laws. Processing time for such applications

will depend on the approval applied for. In general, an application for approval in relation to a general electric utility will require three to four months, whereas approval for a wholesale electricity utility will require anywhere from five weeks to two months with approval for specified electricity utilities requiring five to eight weeks.

In contrast, entities intending to engage in any of the activities of PPSs are only required to file a notification with the METI upon the commencing such business.

Even in cases where neither approval nor notification are required for commencement of business, when conducting an electric power generation business, the METI must still be notified of the installation work plans of the power stations depending on the type of power generation and scale of the generator facilities (additional authorisation will also be necessary in the event of installation of nuclear power stations). The majority of entities deemed as IPPs will likely be subject to these requirements.

## *Gas*

### *Town gas businesses targeting general consumers*

The Gas Business Act stipulates that entities intending to perform gas businesses targeting households, corporations and other such general consumers must obtain the relevant approval to become an operator of such gas businesses ('general consumer gas utility business operators' or GCGUBOs') from the METI.

Applications for the relevant approvals involve the necessary submission of application forms in which statutorily required data such as details of the service area, gas generating facility and such other necessary information are described. The criteria stipulated in the Gas Business Act for the grant of such approval include the existence of sufficient demand for gas in the intended service area, the adequacy of the applicant's gas provision capability, whether the applicant's entry into the market will result in an excess in the supply of gas in the service area, whether the applicant has sufficient financial resources and technical capabilities to properly perform such business, and whether the proposed gas utility is based on a reliable business plan.

Although the foregoing criteria do not specifically limit town gas providers to one provider per service area, in reality, the public administrative procedures utilised by the relevant regulatory authorities requiring that the applicant's entry into the market does not result in an excess in the supply of gas in the service area effectively limits each service area to a single town gas provider.

If all necessary criteria are met, the METI will be required to grant its approval. In principle, the entire application and approval process will require around four months to complete.

As of March 2008, 212 GCGUBOs have received the necessary approvals and are currently operating such businesses (of this number, 32 are public utilities).

Regional monopolies have been recognised in relation to these business operators and, accordingly, the percentage of operators for the service areas in large metropolitan areas is understandably high. The share of the largest operator Tokyo Gas (service area: Kanto region with Tokyo as its main focus) currently accounts for about 35.8 per cent of the market whereas the combined share of the four major corporations (Tokyo Gas, Osaka Gas, Tohou Gas and Saibu Gas) providing service areas in large metropolitan areas accounts for about 73.1 per cent (based on sales volume as of January 2012).



*Other types of town gas business*

In addition to the above, the Gas Business Act also imposes certain restrictions on operators providing LPG to housing estates and other such residences by entities through the use of simplified gas-generating facilities ('community gas utility business operators'), facilitating the large-volume supply of gas (defined as the provision of gas to consumer in excess of 100,000 cubic metres per year, discussed in greater detail below) via gas pipelines over a certain size, which are independently maintained or utilised by such operators ('gas pipeline service operators') and undertaking the business of providing large-volume supply of gas to consumers ('commercial-scale gas suppliers').

*Seller of LPG*

The LP Gas Act stipulates that necessary registration for the sale of LPG must be obtained from the Minister for Economy, Trade and Industry when intending to establish sales offices catering to two or more prefectures and from the prefectural governor when catering to only one prefecture.

Registration involves the necessary submission of application forms in which statutorily required data, such as details of the sales office, gas storage facilities and other necessary information, are described. Applicants will be registered with the corresponding authority (either the Minister for Economy, Trade and Industry or the prefectural governor) as long as there are no applicable statutory grounds for denial of the application.

Registrations will require 30 days to process or 15 days if the registration is applied for via the relevant authority's electronic information processing system.

As of March 2011, the number of business operators that have obtained the necessary registrations and are currently engaged in the sale of LPG has risen to 20,047. Entry barriers to this section of the industry are low and a large number of small and medium-sized businesses have been entering into the LPG industry in which even retail rates are not regulated. Due to the aggressive introduction of all-electric technology town gas and other such products from the electric power companies, however, this figure is still less than half of when LPG sales were at their peak (54,000 operators in 1967).

**iii Ownership and market access restrictions**

There are no particular restrictions on foreign investment in the electric power industry or the gas industry. The only existing restrictions are those imposed by the general laws regulating the entry of foreign investment in Japan stipulated in the Foreign Exchange and Foreign Trade Act. For example, if a foreign investor were to obtain 10 per cent or more of the shares of an electric power or gas utility (including both town gas and LP gas), intend to set up a branch for the conduct of electric power or gas business or otherwise engage in any such activities, the Foreign Exchange and Foreign Trade Act requires that the relevant authorities be notified in advance of such activities. Furthermore, in the event of the performance of any such activities requiring advance notification of the relevant authorities, a follow-up report after such performance must also be submitted accordingly. Both prior notification and follow-up reports must be submitted to the Bank of Japan, which in turn will facilitate the submission of such notifications and reports to the Minister of Finance or such other relevant minister in charge.

iv Transfers of control and assignments

*Electricity*

The prior approval of the METI is necessary in the event that a transfer of the business of a general electric utility, wholesale electricity utility and specified electricity utility in its entirety is contemplated, or in the event of a merger or demerger whereby the surviving entity completely absorbs any such business. The criteria for the granting of such approval is the same as that for the original grant of approval to operate such businesses. Notification of the METI is also required upon the handover of any equipment or facilities in relation to general electric utilities, wholesale electricity utilities and specified electricity utilities.

In the case of a PPS, in the event of any transfer of such business in its entirety or of any merger or demerger whereby the surviving entity completely absorbs such business, the succeeding entity is only required to notify the METI.

*Gas*

The transfer or acquisition of all or part of a general consumer gas utility business requires authorisation from the METI before it can be effective, as does the merger or demerger of any entity that is a GCGUBO whereby all or part of a general consumer gas utility business is succeeded by the surviving company. The criteria for the grant of such required authorisation is the same as that for the original grant of approval to operate such businesses.

In the case of LPG businesses, however, in the event of any transfer of such business in its entirety or of any merger or demerger whereby the surviving entity completely absorbs such business, the succeeding entity is only required to notify the METI or the prefectural governor as relevant.

### III TRANSMISSION/TRANSPORTATION AND DISTRIBUTION SERVICES

i Electric power

*Integrated system for the production and transmission of electric power*

In Japan, following the close of World War II and up until 1995, the production and transmission of electric power as well as the its assorted related retail operations, were run as a single integrated utility by the 10 electric power companies, each with their respective regional monopolies over the 10 main regions of Japan.

Since 1995, after four stages of institutional reform, Japan finally realised the liberalisation of its electric power generation and sales sectors. That being said, it should still be noted, however, that the electric power transmission sector is still very much dominated by the aforementioned 10 power companies that have continued as general electricity utilities (as only PPSs are capable of transmitting electric power using their own electric power transmission facilities). The securing of the stable provision of electric power has been cited as a reason for this and as a result, general electricity utilities (electric power companies such as TEPCO) have an overwhelming competitive advantage in the electric power industry over other competitors engaged in the production and transmission of electric power and related retail operations.

Notwithstanding the foregoing, because the electric power distribution grid is a public infrastructure, measures have been implemented to prevent general electricity utilities from abusing their dominant market positions and to ensure the transparency of the electric power industry.

First, general electric utilities are required to notify the METI of the contents of their electric power transmission service agreements and may only execute electric power transmission service agreements containing such notified terms and conditions. If any such entity were to refuse to provide its electric power transmission services without a justifiable reason, the METI has the authority to order such entity to provide its services.

Second, general electric utilities are forbidden from transacting with specific business operators in relation the provision of electric power transmissions services if pursuant to the transaction such operators are granted unfair advantages or disadvantages.

Third, the electric power transmission sectors of general electricity utilities are required to keep their accounts separate from each other and the misappropriation of information between entities is strictly prohibited.

Last, the Electricity Business Act also provides for the establishment of organisations to support electricity transmission and distribution and that perform functions such as the propagation of rules regulating electric power transmission and monitoring of compliance thereto.

### *Separation of electric power transmission sectors*

Despite the aforementioned promotion of more transparency and fairness in electric power transmission services provided under the Electricity Business Act, the cost of such services is still relatively costly (although somewhat dated, statistics from the energy transmission and distribution sector indicate that the combined excess profits of the 10 power companies in 2006 was roughly ¥850 billion) and this inhibits the entry of new entrants into the electric power generation and related retail operation sectors. This, coupled with the cessation of operations of almost all the nuclear power plants in Japan following the accident at Fukushima, has resulted in the current feeling in Japan that the expansion of electric utilities by operators other than these 10 power companies is key to maintenance of the provision of electric power to Japan.

As a result, on 27 December 2011, the Agency for Natural Resources and Energy's Electric Power Systems Reform Taskforce announced that in order to consolidate the competitive environment and promote the entry of new business operators into the electric power generation and retail operations sectors, it would be necessary to study the separation and neutralisation of the general electricity utilities from the electric power transmission sector and publish the results of such study.<sup>3</sup> Future developments in this regard will be carefully observed and noted.

### *Fully distributed cost method*

General electric utilities are required to obtain the approval of the METI in relation to the setting of rates and other conditions for the supply of electric power. A condition for the

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3 [www.meti.go.jp/committee/kenkyukai/energy/denryoku\\_system/007\\_giji.html](http://www.meti.go.jp/committee/kenkyukai/energy/denryoku_system/007_giji.html).

grant of such approval is that the 'rates consist of fair costs incurred as a result of efficient management and fair profits'. Calculation of electricity rates is supposedly subject to the General Electric Utility Supply Provisions' rules for fee calculation, which aim to limit costs and reduce electricity prices by making 'efficient management' a requirement for all such operators. In reality, however, it has been pointed out that TEPCO can easily declare prices higher than necessary and unjustifiably increase electricity rates and many share serious doubts as to the ability of the METI to monitor it.

## ii Gas

### *Transportation obligations for town gas*

As mentioned earlier, because GCGUBOs are, pursuant to public administrative procedure, restricted by the practical principle of one town gas service provider per service area, it has been acknowledged that town gas provider monopolies exist within certain regions.

In exchange for such monopoly, GCGUBOs are obligated to broaden the piping grid, in other words to provide gas transportation. As mentioned later in this article, the revitalisation of competition through the utilisation of the piping grid by GCGUBOs in order to liberalise rates for commercial-scale supplying of gas is highly anticipated.

Nevertheless, current transportation rates are still relatively expensive and revitalisation of competition merely through the utilisation of the piping grid by GCGUBOs is far from sufficient. As of March 2008, of the 207 new entrants to the commercial-scale gas supplier industry, only 52 entrants will be utilising gas transportation – barely 25 per cent.

### *Rate system for gas businesses*

A GCGUBO wishing to possess a regional monopoly, because its consumers lack the freedom to choose their provider, is required to base its rate upon its costs incurred while under 'efficient management' plus a reasonable rate of return (a rate calculated by the FDC) as stipulated in the general supply provisions approved by the METI. Costs incurred while under 'efficient management' refers to costs assumed to be incurred by a GCGUBO in its business operations pursuant to the necessary exercise of its corporate activities, while 'reasonable rate of return' refers to the reasonable total amount of production costs, provision and distribution costs and general administrative costs as calculated based on actual and realistic future prospects of operations, plus the amount of any funds obtained from interest and dividends to the extent fairly raisable or attainable respectively, as necessary for the realisation of the reasonable development of the business.

Raising of rates is subject to the approval of the METI, however, the lowering of rates is not subject to such requirement and merely requires notification of the relevant change in rate.

LPG pricing is not subject to regulation and prices may be set as negotiated between the relevant parties of each transaction. Because of the accumulation of retailer's overheads, which accounts for over 60 per cent of the retail price of LPG, said retail price of LPG has become more expensive than that of town gas.

## IV ENERGY MARKETS

### i Japan Electric Power Exchange

The Japan Electric Power Exchange ('the JEPX') exists for the benefit of all electric power-related transactions. It was founded in 28 November 2003 as a market for the commodity trading of electric power and serves as an intermediary for electric power spot trading, forward transactions and other such transactions. (It is possible to undertake both buy and sell orders through the JEPX.) In order to participate in electric power commodity trading on the JEPX, membership as a trade affiliate is necessary. At 16 February 2012, 54 companies are trade affiliates of the JEPX.

The JEPX is managed by a general incorporated association comprising electric power companies and other such entities. It is a private exchange that operates and is regulated by its own market rules.

### ii Terms and conditions of supply

#### *Electricity*

General electric utilities are required to only execute contracts with consumers, the terms and conditions of which have been approved by the METI. Such entities are also prohibited from refusing to supply electric power to consumers unless there are legitimate grounds for doing so.

Additionally, specified electricity utilities are required to notify the METI of the contents of their electric power supply contracts.

In direct contrast, PPSs are free to set the terms and conditions of their electric power supply contracts at their discretion, based only on negotiations with their relevant counterparties.

#### *Gas*

#### *Obligation to supply*

In recognition of the inevitably monopolistic nature of the general consumer gas utility business and other such considerations, GCGUBOs are subject to an obligation to supply gas and accordingly are prohibited from rejecting an application for the supply of gas received from a consumer and, in principle, from cutting off gas already supplied to a consumer.

This is not the case with LPG and no such obligations are imposed on LPG business operators.

#### *Liberalisation of the town gas business*

As a result of amendments to the relevant legislation, the town gas industry is currently experiencing an overhaul of its competitive environment due to the relaxation of regulations. Specifically:

- a* it has become possible for a town gas supplier to supply gas to the service area of another town gas supplier or other 'white' areas (areas not already serviced by any specific town gas supplier);
- b* companies other than town gas suppliers may now enter into the commercial scale gas utility business;

- c* pricing for commercial scale gas supplying has been liberalised; and
- d* in order to encourage new entrants to enter the market, a gas transport system whereby the utilisation of existing gas piping belonging to other business operators is allowed has been set up.

In particular, the scope of the liberalisation of commercial scale gas supply pricing has been progressively expanding due to legislative amendments. Beginning with the first round of reforms in March 1995, which saw the liberalisation of the rates for the supply of gas to consumers whose annual usage exceeded over 2 million cubic metres, as of the fourth round of reforms, which took effect from April 2007 the rates for supply of gas to consumers whose annual usage exceeds 100,000 cubic metres have also been liberalised, accounting for the liberalisation of roughly 62 per cent of the total volume of town gas sales in Japan.

As a result of these efforts, 28 new gas companies have entered into the gas industry (based on approval applications and notifications as of 1 July 2009) and as of 2008, 12.2 per cent of the total volume of commercial-scale gas supplied can be attributed to such new entrants. New entrants entering into commercial-scale gas supplier business include such entities as electric power companies, international natural gas utilities and commercial enterprises.

### iii Market developments

#### *Electricity*

The Agency for Natural Resources and Energy's Electric Power Systems Reform Taskforce announced on 27 December 2011 that in light of 'the Electric Power Market lacking depth and difficult to utilise in terms of capacity' there is 'a necessity to invigorate competition throughout the Electric Power Trade Market'.

#### *Gas*

With respect to gas, no particularly noteworthy market developments are currently anticipated or under consideration.

## V RENEWABLE ENERGY AND CONSERVATION

### i Electricity

#### *The Renewable Electric Energy Act*

Japan was subject to a huge development in the area of renewable energy in the past year. The Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities ('the Renewable Electric Energy Act') was enacted with the objective of introducing FITs (a system whereby the total volume of electric power is bought back at a fixed price). The Renewable Electric Energy Act was enacted on 26 August 2011 and promulgated on 30 August 2011. It will be effective as of 1 July 2012.

The major requirements of the Renewable Electric Energy Act can be summarised as follows:

- a* General electric utilities, specified electric utilities and PPSs are expected to become providers of renewable electric energy and as such must execute all applications

for contracts for sale of electric power submitted to them by renewable electric energy suppliers and facilitate the connection of the power generating facilities of such suppliers to their own electric facilities for transformation, transmission and distribution of electric power.

- b* Renewable electric energy is defined as electric power obtained and converted through the use of electric transduction facilities from renewable energy sources such as solar, wind, water (currently statutorily limited only to small and medium hydroelectric generators with output of less than 30,000kW), geothermal, biomass and other sources as stipulated in the relevant cabinet order.
- c* Sales prices and contract terms shall be as set by the METI upon the input of the Committee for Calculation of Procurement Cost and Related Matters.
- d* In order to be eligible for the above benefits, renewable electric energy suppliers are required to acquire certification from the METI for their power-generating facilities.
- e* All transactional costs will ultimately be borne by the electric power consumers (both private and corporate).

#### *Sales prices and contract terms*

Based on the METI's Overview of the Act on Special Measures concerning the Procurement of Renewable Electric Energy by Operators of Electric Utilities,<sup>4</sup> published after the Cabinet's enactment of the Renewable Energy Act, renewable energy other than solar power is expected to be charged at a rate ranging from ¥15 per kW to ¥20 per kW for terms ranging from 15 to 20 years. As for solar power, in consideration of the previous FIT, prices are expected to be approximately ¥40 per kW with terms of 10 years for residential users and 15 to 20 years for all other users. Notwithstanding the foregoing, however, even though expected figures regarding prices and terms have already been published, the actual final figures have not yet been officially announced. As the provisions on sales price and contract terms are still scheduled to be subject to public comment no later than one month before the Renewable Energy Act is set to take effect, official announcements in this regard can be expected around late May.

#### **ii Gas**

In terms of gas-related renewable energy, biogas has been generating a lot of attention in recent years. Biogas is a flammable gas produced by the fermentation of organic waste such as raw sewage, food waste and livestock excretions, a feature that allows it to be harvested at sewage treatment plants, food factories and other such locations. Major town gas utilities like Tokyo Gas and Osaka Gas have in recent years established guidelines for and promoted the purchase of biogas.

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4 Available at [www.meti.go.jp/press/20110311003/20110311003-3.pdf](http://www.meti.go.jp/press/20110311003/20110311003-3.pdf).

## **VI THE YEAR IN REVIEW**

As previously noted, gas industry regulations have not been subject to any substantial changes in recent years. On the other hand, the electric power industry regulations have, following the events at Fukushima in 2011, witnessed great reforms such as revisions for the integration of a single system for the production and transmission of electric power and the introduction of FITs. It is considered that these reforms are likely to encourage the emergence of new entrants to the energy industry and merit attention in light of potential future developments arising.

## **VII CONCLUSIONS AND OUTLOOK**

The events at Fukushima in 2011 served as the main catalyst for the reforms that the electric power industry has recently been facing. The full extent of these reforms and their effects, however, remain to be seen. In the meantime, the industry awaits the suspension of all nuclear power stations in Japan by May 2012, due to growing public and political sentiment as a result of the accident, an occurrence that is likely to result in further power shortages this summer.

Under these circumstances, Japan will become increasingly reliant on its remaining sources of energy, that is, oil and liquefied natural gas (LNG). These traditional sources of fuel are regarded as more stable and reliable; however, because they are ultimately non-renewable resources, this in and of itself introduces an entirely different set of issues. At the end of the day, Japan's energy requirements may push it in the direction of renewable energy such as those discussed above. The output of such energy sources is, however, substantially smaller compared with nuclear energy, not to mention inherently unstable and less reliable. Accordingly, Japan's demand for alternative and reliable sources of energy may even result in renewed interest in the gas industry, which in turn will surely lead to further developments in this field.

With both the rapidly shifting facets of the energy industry and the unstable political climate currently looming over Japan's Diet at the moment, the only thing that can be said with any certainty is that change is imminent. Exactly how and in what form such change will take place remains to be seen and it is certainly worth keeping a close eye on Japan in the years to come.



## Appendix 1

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# ABOUT THE AUTHORS

### **REIJI TAKAHASHI**

*Anderson Mōri & Tomotsune*

Reiji Takahashi is a partner at Anderson Mōri & Tomotsune. He studied at the University of Tokyo (LLB) and the University of Virginia (LLM). He is a lecturer of University of Tokyo Graduate Schools of Law and Politics and is admitted to the Bar in Japan (Dai-ni Tokyo Bar Association) and New York.

### **ATSUTOSHI MAEDA**

*Anderson Mōri & Tomotsune*

Atsutoshi Maeda is a partner at Anderson Mōri & Tomotsune. He studied at the University of Tokyo (LLB) and University College London (LLM) and is a member of the Dai-ni Tokyo Bar Association.

### **SHUN HIROTA**

*Anderson Mōri & Tomotsune*

Shun Hirota is an associate at Anderson Mōri & Tomotsune. He studied at the University of Tokyo (LLB) and the University of Tokyo School of Law (JD) and is a member of the Dai-ni Tokyo Bar Association.

### **YUKO SUZUKI**

*Anderson Mōri & Tomotsune*

Yuko Suzuki is an associate at Anderson Mōri & Tomotsune. She studied at the University of Tokyo (LLB) and the University of Tokyo School of Law (JD) and is a member of the Dai-ni Tokyo Bar Association.

**ANDERSON MŌRI  
& TOMOTSUNE**

Izumi Garden Tower  
6-1, Roppongi 1-chome, Minato-ku  
Tokyo 106-6036  
Japan  
Tel: +81 3 6888 1000  
reiji.takahashi@amt-law.com  
atsutoshi.maeda@amt-law.com  
shun.hirota@amt-law.com  
yuko.suzuki@amt-law.com  
[www.amt-law.com/en/](http://www.amt-law.com/en/)