

Japan Credit Rating Agency, Ltd. (JCR) announces the following credit rating.

## Showa Denko K.K. (security code: 4004)

### <Affirmation>

Long-term Issuer Rating:	A-
Outlook:	Stable
Bonds:	A-
Subordinated Loan:	BBB
Shelf Registration:	Preliminary A-
CP:	J-1

### Rationale

- (1) Showa Denko K.K. (the "Company") is one of major diversified chemicals companies. It offers characteristic products based on its own inorganic/organic chemical and aluminum technologies and boasts the largest global shares for a number of products, including high-quality large-diameter graphite electrodes for electric furnaces and high-purity gases for electronics. It has recently been pursuing aggressive growth strategies, as part of which it made former Hitachi Chemical Company, Ltd., current Showa Denko Materials Company, Ltd. ("Showa Denko Materials"), a consolidated subsidiary in 2020, thereby establishing a system that widely covers various technologies from midstream to downstream, especially for the semiconductor and automobile industries. Meanwhile, it sold the aluminum can, aluminum rolling, energy storage devices/systems and other businesses in 2021.
- (2) The Company is successfully laying out a business foundation to achieve growth. It is making steady progress in integration with Showa Denko Materials and reorganizing the business portfolio in line with the initial plan. Its performance in recent years has been severely affected by the COVID crisis but is now recovering from the worst time. Moreover, the probability of medium- and long-term demand growth has risen for the products with strong industry presence, such as graphite electrodes and semiconductor-related products, helped also by changes in the social environment, etc. Interest-bearing debt, which grew drastically due to the large-scale acquisition, has been shrinking since reaching its peak at the end of the fiscal year ended December 2020 (FY2020), and JCR assumes that the financial structure will improve from here on as per the Company's policy. Based on the above, JCR affirmed the ratings on the Company and retained the Stable outlook.
- (3) FY2020 reported a loss at the operating level partly because of the deterioration of the business environment and integration-related expenses, ending with a net loss of 76.3 billion yen. The Company forecasts an operating income of 85.0 billion yen for FY2021, driven by a turnaround in demand for petrochemicals, graphite electrodes and mobility components, growth in demand for semiconductor-related products such as high-purity gases for electronics and CMP slurries and so forth. Effective cost reductions and elimination of temporary factors will also likely help boost overall results. As the Company will post extraordinary losses in relation to business disposal and structural reforms, it will end FY2021 with a net loss again, which is estimated at 25.0 billion yen; yet, it will probably be able to keep improving its performance for the time being.
- (4) Net DER as of the end of FY2020 with the equity content of preferred shares taken into account rose to 1.8x from below 0.4x a year earlier. The Company has expressed its intention to improve this to around 1x by FY2025 and is in fact taking such measures as the disposal of non-core businesses and downsizing working capital. It has recently raised 82.3 billion yen through a capital increase to cover the funds for growth areas including semiconductor-related. All in all, net DER is expected to fall to as low as below 1.5x as of the end of FY2021, which suggests that the Company will make a great step forward towards attaining financial targets.

Shigenobu Tonomura, Takeshi Fujita

## Rating

Issuer: Showa Denko K.K.

### <Affirmation>

Long-term Issuer Rating: A- Outlook: Stable

Issue	Amount (bn)	Issue Date	Due Date	Coupon	Rating
Bonds no. 27	JPY 10	June 23, 2015	June 23, 2022	0.734%	A-
Bonds no. 28	JPY 10	Dec. 1, 2016	Dec. 1, 2021	0.200%	A-
Bonds no. 29	JPY 7	Dec. 1, 2016	Dec. 1, 2026	0.500%	A-
Bonds no. 30	JPY 10	Apr. 23, 2019	Apr. 23, 2024	0.190%	A-
Bonds no. 31	JPY 10	Apr. 23, 2019	Apr. 23, 2029	0.430%	A-
Issue	Amount	Execution Date	Due Date	Interest Rate	Rating
Subordinated Committed Syndicated Loan	(Note 1)	(Note 2)	Apr. 27, 2055	(Note 3)	BBB

### Notes:

1. Borrowing Limit: JPY 275 billion
2. The loan can be executed once during the period of April 27, 2020 to April 27, 2025.
3. JPY TIBOR + spread until the day before the interest payment date in April 2025  
JPY TIBOR + initial spread + 1.0% on and after the interest payment date in April 2025

Shelf Registration: Preliminary A-

Maximum: JPY 120 billion

Valid: two years effective from November 28, 2020

CP: J-1

Maximum: JPY 70 billion

Rating Assignment Date: October 18, 2021

The assumptions for the credit ratings and the definitions of the rating symbols are published as "Types of Credit Ratings and Definitions of Rating Symbols" (January 6, 2014) in Information about JCR Ratings on JCR's website (<https://www.jcr.co.jp/en/>).

Outline of the rating methodology is shown as "JCR's Rating Methodology" (November 7, 2014), "Chemicals" (March 26, 2012) and "Ratings of Hybrid Securities (September 10, 2012) in Information about JCR Ratings on JCR's website (<https://www.jcr.co.jp/en/>).

### Glossary:

A preliminary rating is a credit rating assigned as a preliminary evaluation while material terms for issue to be rated are not yet finalized. When the issuing terms are finalized, JCR will confirm them and will assign a credit rating anew. The rating level of the final rating may be different from that of the preliminary rating, depending on the final content of the terms, etc.

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JCR publishes its press releases regarding the rating actions both in Japanese and in English on the same day. In case that it takes time to translate rating rationale, JCR may publicize the summary version, which will be replaced by the full translated version within three business days. (Regarding Structured Finance products, JCR only publicize the summary version in English.)

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## INFORMATION DISCLOSURE FORM

Japan Credit Rating Agency, Ltd.

### Disclosure Required by Paragraph (a)(1)(ii) of Rule 17g-7

Issuer:	Showa Denko K.K.
Rating Publication Date:	October 21, 2021

1

The Symbol, Number, or Score in the Rating Scale used to Denote Credit Rating Categories and Notches and, the Identity of the Obligor or the Identity and a Description of the Security or Money Market Instrument as Required by Paragraph (a)(1)(ii)(A) of Rule 17g-7

- Please see the news release. If the credit rating is a private rating, please see the report for private rating.

2

The version of the procedure or methodology used to determine the credit rating; as Required by Paragraph (a)(1)(ii)(B) of Rule 17g-7

- Please see the news release. If the credit rating is a private rating, please see the report for private rating.

3

The Main Assumptions and Principles used in Constructing the Procedures and Methodologies used to Determine the Credit Rating as Required by Paragraph (a)(1)(ii)(C) of Rule 17g-7

- The credit rating methodology assumes, in principle, to be applied to assess the likelihood of a given debt payment in light of its issuer's condition and business environment, etc. in the relevant future. There is certain limitation, however, in the time horizon that the rating foresees.
- The credit rating methodology assumes, in principle, that the factors posted in the below are particularly important for such likelihood to be determined, and that the rating determination is made by evaluating each of them not only quantitatively but also employing qualitative analyses.

#### A) Business Bases

The likelihood of a given debt payment is highly conditional to its issuer's business bases - how they can be maintained/ expanded into the future and thereby secure earnings and cash flows in adequacy and in a sustainable way.

#### B) Financial Grounds and Asset Quality

The likelihood of debt payment is highly dependent on the degree of the issuer's indebtedness and loss absorption capacity in terms of equity capital. Also notable is that a financial institution might see a significant loss of financial grounds as a result of changes in value of the assets under its possession.

#### C) Liquidity Positions

The likelihood of debt payment is highly dependent on the adequacy of the issuer's cash and other sources of repayment (liquidity positions).

D) Related Parties' Status and Stance of Support/ Assistance for the Issuer

The likelihood of debt payment is affected one way or the other by the issuer's related parties such as parent company, subsidiary, guarantor, and the government of the issuer's business domicile, etc. - by their own conditions and/ or position of support/ assistance for the issuer.

E) Order of Seniority in Debt Payment

The likelihood of debt payment can be different between given debts of the same issuer. The likelihood of debt payment for an individual debt is dependent on the issuer's discretion, and/ or its rank relative to other debts of the same issuer in the order of seniority in principal/ interest payment which is determined by design as financial product or by laws, etc.

4 The Potential Limitations of the Credit Rating as Required by Paragraph (a)(1)(ii)(D) of Rule 17g-7

- The credit rating herewith presented by JCR is its summary opinion with regard to the likelihood of given debt payment and hence not necessarily a perfect representation of such likelihood. The credit rating is not intended to estimate the probability of default or the loss on given default, either.
- The objective of the credit rating herewith presented does not include any concerns other than the likelihood of debt payment, such as risks of price changes, market liquidity, etc.
- The credit rating herewith presented is necessary to be reviewed along with possible changes of the issuer of rated objects in its business performance and/ or circumstances which include regulatory environment, and hence subject to possible alteration.

5 Information on the Uncertainty of the Credit Rating as Required by Paragraph (a)(1)(ii)(E) of Rule 17g-7

- The information used for the determination of credit rating as herewith presented is obtained by JCR from the issuer of rated objects and other sources that JCR trusts in terms of accuracy and reliability but possibly contains errors due to human, non-human or other causes. Consequently, the credit rating determined on the grounds of such information does not constitute, explicitly or implicitly, any representation or warrant of JCR on the information itself or any consequences of its use in terms of accuracy, relevance, timeliness, wholeness, market value, or usefulness for any specific purposes.

6 Use of Due Diligence Services of a Third Party in Taking the Rating Action as Required by Paragraph (a)(1)(ii)(F) of Rule 17g-7

- There is no use of any third-party due diligence service in the determination of the credit rating herewith presented.

7 Use of Servicer or Remittance Reports to Conduct Surveillance of the Credit Rating Required by Paragraph (a)(1)(ii)(G) of Rule 17g-7

- There is no use of any servicer or remittance report to conduct surveillance of the credit rating herewith presented.

8 The Types of Data Relied Upon for the Purpose of Determining the Credit Rating as Required by Paragraph (a)(1)(ii)(H) of Rule 17g-7

- The information posted in the below, which includes data, is used for the determination of the credit rating herewith presented.

A) Audited financial statements presented by the rating stakeholders

B) Explanations of business performance, management plans, etc. presented by the rating stakeholders

## 9 Overall assessment of the Quality of Information Available and Considered in Determining the Credit Rating as Required by Paragraph (a)(1)(ii)(I) of Rule 17g-7

- JCR holds its basic policies for securing the quality of information as a base of due diligence for the determination of credit ratings. The information used as a base for the determination of credit rating herewith presented satisfies such policies, which include the audit by an independent auditor, the warranty made by the issuer, the publication by the issuer, some independent media or, otherwise, JCR analyst's scrutiny, etc.
- JCR sees no particular weakness in the quality of information used for the determination of the credit rating herewith presented as compared to the information used in other cases of the credit rating for comparable issuers or ratable objects.
- If the credit rating is an Indication, please see the report for Indication.

## 10 Information Relating to Conflicts of Interest as Required by Paragraph (a)(1)(ii)(J) of Rule 17g-7

- JCR receives payment of compensation for the determination of the credit rating herewith presented from either one of those parties who are issuer, underwriter, depositor or sponsor.
- JCR did not receive in the last fiscal year in the past payment of compensation from the same party for any kind of JCR's service other than the determination of public or private credit rating, such as one in the ancillary business.

## 11 Explanation or Measure of the Potential Volatility of the Credit Rating as Required by Paragraph (a)(1)(ii)(K) of Rule 17g-7

### A) Business Bases

The credit rating is subject to alteration if there is improvement or deterioration of the issuer's business bases, since its revenue, etc. may improve or deteriorate by the change in its business management policies, clients' preferences, competitive situation, or a technological innovation. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change in the business bases is large.

### B) Financial Grounds and Asset Quality

The credit rating is subject to alteration if the issuer increases/ decreases its debt/ capital or vice versa and thereby makes its individual debt payment liability less or more bearable and its loss absorption capacity into the future decreased or increased. Also, the changes in the quality of asset under the issuer's holding may affect the credit rating, since such changes could raise or lower the likelihood of future loss of the issuer's financial grounds. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change in the financial grounds and/ or asset quality is large.

### C) Liquidity Positions

The credit rating is subject to alteration if there is a change in the issuer's financial management policy or in the relations with fund procurement sources and the change thereby makes its liquidity positions improve or deteriorate. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change is large.

D) Related Parties' Status and Stance of Support/ Assistance for the Issuer

The credit rating is subject to alteration if there is a change in the issuer's parent company or subsidiary, guarantor or other provider of credit enhancement, or the government of the issuer's business domicile, or other related parties' own conditions and/ or position of support/ assistance for the issuer, and the change thereby makes its business bases, financial grounds and/ or liquidity positions improve or deteriorate, and/ or making the effectiveness of guarantee and other credit enhancement improve or deteriorate. The resultant alteration of the credit rating is usually a notch, with possibility of a few notches if and when the change is large.

E) Order of Seniority in Debt Payment and Non-Payment Forgiven by Contract

The credit rating is subject to alteration if there is a change in the rated debt's status in the order of seniority relative to other debts caused by the improvement/ deterioration of the issuer's financial condition. The resultant alteration of the credit rating is usually a notch, with possibility of a few notches if and when the change is large. Also, in case of the financial products for which non-payment of interest/ principal is contractually permissible, the credit rating is subject to alteration if and when the likelihood of such non-payment is projected to increase or decrease. The resultant alteration of the credit rating could be by a notch but often as much as a few notches.

F) Rise and Fall in General Economy and Markets

The credit rating is subject to alteration if there is a rise/ fall in the general economy and/ or the markets inducing the issuer's revenues/ expenses to increase/ decrease and vice versa, etc. The resultant alteration of the credit rating is usually by a notch, with possibility of a few notches if and when the change is exceptionally large.

G) Various Events

The credit rating is subject to alteration on occurrence of various events, such as change in the issuer's major shareholders, M&A and other organizational change, accident, violation of the law, litigation, legal/ regulatory change, natural disaster, etc., which are unforeseeable at the time when the credit rating is determined, causing a significant change on the issuer's business bases, financial grounds, etc. The resultant alteration of the credit rating could be by a notch but more often than not as much as a few notches.

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Information on the Content of the Credit Rating, Including the Historical Performance of the Credit Rating and the Expected Probability of Default and the Expected Loss in the Event of Default as Required by Paragraph (a)(1)(ii)(L) of Rule 17g-7

- Historical records of the credit rating herewith presented are posted in the end of this paper.
- The credit rating herewith presented by JCR is its summary opinion with regard to the likelihood of given debt payment and hence not necessarily a perfect representation of such likelihood. The credit rating is not intended to estimate the probability of default or the loss on given default, either.
- Facts of the probability of default are posted as Form NRSRO Exhibit 1 on the JCR website under the URL:

<https://www.jcr.co.jp/en/service/company/regu/nrsro/>

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Information on the Sensitivity of the Credit Rating to Assumptions Made as Required by Paragraph (a)(1)(ii)(M) of Rule 17g-7

A) Business Bases

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's business bases and powers of earning or cash flow generation, etc. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's business bases on some drastic change in the operational environments, etc.

B) Financial Grounds and Asset Quality

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's financial grounds and asset

quality. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's financial grounds and/ or asset quality on some drastic change in its business bases.

C) Liquidity Risks

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the issuer's liquidity positions. The resultant change of the credit rating is most likely by a notch, as JCR speculates, but possibly as much as a few notches if the development is rapid in improvement or deterioration of the issuer's liquidity positions on some drastic change in its financial management policy or relations with fund procurement sources, etc.

D) Order of Seniority in Debt Payment and Non-Payment Forgiven by Contract

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the order of seniority in repayment of interests and principal. JCR assumes the resultant change of the credit rating is most likely by a notch. The change could be as much as a few notches if the issuer's financial structure differs so much and thereby the balance between debts shifted so greatly. Rating change is also possible in case of the financial products for which non-payment of interest/ principal is contractually permissible, if and when the assumptions made at the time of its determination turns out to be inaccurate. The change of the credit rating is assumed to be by a notch but often as much as a few notches.

E) Rise and Fall in General Economy and Markets

The credit rating herewith presented could be changed if and when the assumptions made at the time of its determination turn out to be inaccurate with regard to the prospects of general economy and markets. JCR expects the change should be most likely by a notch but could be as much as a few notches, should the economy or the markets change so greatly.

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Information on the Representations, Warranties, and Enforcement Mechanisms of an Asset-backed Security as Required by Paragraph (a)(1)(ii)(N) of rule 17g-7

- The credit rating herewith presented is not for an ABS product, and hence no relevant issue.

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## The Historical Performance of the Credit Rating

Issuer Name	Issue Name	Publication Date	Rating	Outlook/Direction
Showa Denko K.K.	Issuer(Long-term)	December 8, 2005	BBB	Stable
Showa Denko K.K.	Issuer(Long-term)	October 13, 2006	BBB	Positive
Showa Denko K.K.	Issuer(Long-term)	September 10, 2007	BBB+	Positive
Showa Denko K.K.	Issuer(Long-term)	October 2, 2008	BBB+	Positive
Showa Denko K.K.	Issuer(Long-term)	September 16, 2009	BBB+	Stable
Showa Denko K.K.	Issuer(Long-term)	September 24, 2010	BBB+	Positive
Showa Denko K.K.	Issuer(Long-term)	September 15, 2011	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 12, 2012	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 18, 2013	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 16, 2014	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 15, 2015	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 12, 2016	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 13, 2017	A-	Stable
Showa Denko K.K.	Issuer(Long-term)	September 19, 2018	A-	Positive
Showa Denko K.K.	Issuer(Long-term)	March 22, 2019	A	Positive
Showa Denko K.K.	Issuer(Long-term)	September 9, 2019	A	Positive
Showa Denko K.K.	Issuer(Long-term)	December 18, 2019	#A	Negative
Showa Denko K.K.	Issuer(Long-term)	April 21, 2020	A	Negative
Showa Denko K.K.	Issuer(Long-term)	September 23, 2020	A-	Stable
Showa Denko K.K.	CP	December 11, 1989	J-1	
Showa Denko K.K.	CP	February 18, 1991	J-1	
Showa Denko K.K.	CP	May 16, 1991	J-1	
Showa Denko K.K.	CP	December 27, 1991	J-2	
Showa Denko K.K.	CP	June 18, 1998	J-1	
Showa Denko K.K.	CP	July 1, 1999	J-1	
Showa Denko K.K.	CP	July 10, 2000	J-2	
Showa Denko K.K.	CP	September 4, 2001	J-2	
Showa Denko K.K.	CP	August 22, 2002	J-2	
Showa Denko K.K.	CP	June 27, 2003	J-2	
Showa Denko K.K.	CP	September 8, 2004	J-2	
Showa Denko K.K.	CP	September 1, 2005	J-2	
Showa Denko K.K.	CP	October 13, 2006	J-2	
Showa Denko K.K.	CP	September 10, 2007	J-2	
Showa Denko K.K.	CP	October 2, 2008	J-2	
Showa Denko K.K.	CP	September 16, 2009	J-2	
Showa Denko K.K.	CP	September 24, 2010	J-2	
Showa Denko K.K.	CP	September 15, 2011	J-1	
Showa Denko K.K.	CP	September 12, 2012	J-1	
Showa Denko K.K.	CP	September 18, 2013	J-1	
Showa Denko K.K.	CP	September 16, 2014	J-1	
Showa Denko K.K.	CP	September 15, 2015	J-1	
Showa Denko K.K.	CP	September 12, 2016	J-1	
Showa Denko K.K.	CP	September 13, 2017	J-1	
Showa Denko K.K.	CP	September 19, 2018	J-1	
Showa Denko K.K.	CP	March 22, 2019	J-1	
Showa Denko K.K.	CP	September 9, 2019	J-1	
Showa Denko K.K.	CP	April 21, 2020	J-1	
Showa Denko K.K.	CP	September 23, 2020	J-1	
Showa Denko K.K.	Shelf Registration	November 27, 2020	A-	
Showa Denko K.K.	Bonds no.27	June 17, 2015	A-	
Showa Denko K.K.	Bonds no.27	September 15, 2015	A-	
Showa Denko K.K.	Bonds no.27	September 12, 2016	A-	
Showa Denko K.K.	Bonds no.27	September 13, 2017	A-	
Showa Denko K.K.	Bonds no.27	September 19, 2018	A-	
Showa Denko K.K.	Bonds no.27	March 22, 2019	A	
Showa Denko K.K.	Bonds no.27	September 9, 2019	A	
Showa Denko K.K.	Bonds no.27	December 18, 2019	#A	Negative



## The Historical Performance of the Credit Rating

Issuer Name	Issue Name	Publication Date	Rating	Outlook/Direction
Showa Denko K.K.	Bonds no.27	April 21, 2020	A	
Showa Denko K.K.	Bonds no.27	September 23, 2020	A-	
Showa Denko K.K.	Bonds no.28	November 25, 2016	A-	
Showa Denko K.K.	Bonds no.28	September 13, 2017	A-	
Showa Denko K.K.	Bonds no.28	September 19, 2018	A-	
Showa Denko K.K.	Bonds no.28	March 22, 2019	A	
Showa Denko K.K.	Bonds no.28	September 9, 2019	A	
Showa Denko K.K.	Bonds no.28	December 18, 2019	#A	Negative
Showa Denko K.K.	Bonds no.28	April 21, 2020	A	
Showa Denko K.K.	Bonds no.28	September 23, 2020	A-	
Showa Denko K.K.	Bonds no.29	November 25, 2016	A-	
Showa Denko K.K.	Bonds no.29	September 13, 2017	A-	
Showa Denko K.K.	Bonds no.29	September 19, 2018	A-	
Showa Denko K.K.	Bonds no.29	March 22, 2019	A	
Showa Denko K.K.	Bonds no.29	September 9, 2019	A	
Showa Denko K.K.	Bonds no.29	December 18, 2019	#A	Negative
Showa Denko K.K.	Bonds no.29	April 21, 2020	A	
Showa Denko K.K.	Bonds no.29	September 23, 2020	A-	
Showa Denko K.K.	Bonds no.30	April 17, 2019	A	
Showa Denko K.K.	Bonds no.30	September 9, 2019	A	
Showa Denko K.K.	Bonds no.30	December 18, 2019	#A	Negative
Showa Denko K.K.	Bonds no.30	April 21, 2020	A	
Showa Denko K.K.	Bonds no.30	September 23, 2020	A-	
Showa Denko K.K.	Bonds no.31	April 17, 2019	A	
Showa Denko K.K.	Bonds no.31	September 9, 2019	A	
Showa Denko K.K.	Bonds no.31	December 18, 2019	#A	Negative
Showa Denko K.K.	Bonds no.31	April 21, 2020	A	
Showa Denko K.K.	Bonds no.31	September 23, 2020	A-	
Showa Denko K.K.	Loan(subordinated)	April 27, 2020	BBB+	
Showa Denko K.K.	Loan(subordinated)	September 23, 2020	BBB	

## Attestation Required by Paragraph (a)(1)(iii) of Rule 17g-7

I, Shigenobu Tonomura, have responsibility to this Rating Action and to the best of my knowledge:

- A) No part of the credit rating was influenced by any other business activities.
- B) The credit rating was based solely upon the merits of the obligor, security, or money market instrument being rated.
- C) The credit rating was an independent evaluation of the credit risk of the obligor, security, or money market instrument.

殿村 成信

Shigenobu Tonomura

General Manager of Corporate Rating Department II

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