

Employment and Occupational Safety and Health Indicators

Employment Indicators

	Unit	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Number of Employees on a Consolidated Basis ^{*1 *3}	Persons	13,052	13,107	12,771	11,741	13,057
Male	Persons	11,516	11,677	11,389	10,479	11,691
Female	Persons	1,536	1,430	1,382	1,262	1,366
Pulp and Paper Business	Persons	7,449	7,516	7,337	7,368	8,047
Paper-Related Business	Persons	1,316	1,285	1,286	1,286	1,297
Wood Products and Construction Related Business	Persons	1,669	1,670	1,671	1,636	2,273
Other Businesses	Persons	2,397	2,399	2,263	1,238	1,226
Cross-Organizational ^{*2}	Persons	221	237	214	213	214
Overseas	Persons	1,621	1,785	1,745	1,662	2,723
Male	Persons	—	1,531	1,531	1,433	2,385
Female	Persons	—	254	214	229	338
Percent of upper management from the local community	%	—	—	83.2	80.6	74.1
New graduate hired ^{*4}	Persons	106	150	160	240	265
Male	Persons	97	135	143	218	239
Female	Persons	9	15	17	22	26
Mid-career recruits ^{*4}	Persons	189	123	190	146	163
Male	Persons	169	110	169	136	141
Female	Persons	20	13	21	10	22
The rate of employment of people with disabilities ^{*1 *7}	%	1.91	1.78	1.99	1.98	1.94
Employees reemployed after retirement age ^{*8}						
Nippon Paper Ind.	Persons	67	53	112	172	185
Consolidated companies in Japan	Persons			309	327	331
Average age of employees ^{*1 *4}	Years	41.8	41.9	42.7	43.3	43.3
Male	Years	41.8	41.9	42.7	43.3	43.3
Female	Years	41.5	42.0	42.0	42.8	43.1
Average years of employment ^{*1 *4}	Years	20.9	21.0	18.7	19.0	19.1
Male	Years	20.9	21.1	19.0	19.2	19.2
Female	Years	20.0	20.0	15.9	17.8	18.2
Turnover rate(Includes employees leaving at the mandatory retirement age) ^{*1 *4}	%	—	3.3	3.8	4.2	2.9
Female employees in management ^{*1 *5}						
Nippon Paper Ind.	%	1.49	1.48	1.57	1.60	1.86
Consolidated companies in Japan	%	1.63	1.70	1.81	1.90	2.14
Consolidated subsidiaries outside Japan ^{*6}	%	12.3	16.0	17.8	20.4	23.2
Dispatched workers ^{*1 *4}	Persons	—	—	87	131	77
Male	Persons	—	—	28	51	27
Female	Persons	—	—	59	80	50

*1 Fiscal year-end data

*2 Employees responsible for multiple businesses

*3 Data scope: consolidated companies

*4 Data scope: consolidated companies in Japan

*5 Beginning with fiscal 2013 percentages have been adjusted retroactively to exclude associate directors, employees commissioned for specific purposes, employees on temporary assignment from other companies, and other non-full-time personnel to present percentages of only full-time employees.

*6 Managerial personnel at the level of section manager or positions higher

*7 Data scope: Nippon Paper Industries Co., Ltd.

*8 Data scope: Beginning with fiscal 2014, figures cover consolidated subsidiaries in Japan and management employees. Until fiscal 2013, figures covered only non-management employees at Nippon Paper Industries.

Work-Life Balance Indicators

	Unit	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Employees taking child-care leave ^{※1}	Persons	25	29	25	24	26
Male	Persons	0	1	4	0	0
Female	Persons	25	28	21	24	26
recently giving birth	%	96	90	91	100	100
who returned to work	%	—	—	100	100	100
Employees taking maternity/paternity leave ^{※2}	Persons	—	153	164	167	186
Male	Persons	—	140	141	145	160
Female	Persons	—	13	23	22	26
Average number of days taken for maternity/paternity leave ^{※2}						
Male	Days	—	3.3	3.1	3.2	3.0
Female	Days	—	66.0	85.6	79.4	64.9
Employees taking nursing-care leave ^{※2}	Persons	—	0	2	0	1
Total number of working hours ^{※3}	Hours	1,821	1,831	1,885	1,912	1,927
The rate of annual paid leave taken by employees ^{※3}	%	69.3	70.9	69.2	66.8	68.3

※1 Data scope: consolidated subsidiaries in Japan

※2 Data scope: In fiscal 2014, figures covered consolidated subsidiaries in Japan. In fiscal 2013, figures covered only Nippon Paper Industries.

※3 Data scope: Non-management employees of Nippon Paper Industries

Occupational Accidents

(Calendar year)

		2012	2013	2014	2015	2016
Frequency rate for occupational accidents requiring time off from work	Nippon Paper Group [※]	0.77	0.30	0.40	0.40	0.10
	Nippon Paper Group (including affiliates)	0.55	0.56	0.65	0.43	0.39
Occupational accident severity rate	Nippon Paper Group [※]	0.74	0.76	0.02	0.02	0.01
	Nippon Paper Group (including affiliates)	0.54	0.30	0.06	0.02	0.03

※ Data Scope : The manufacturing facilities of Nippon Paper Industries Co., Ltd., Nippon Paper Crecia Co., Ltd., Nippon Paper Papyrus Co., Ltd., and Kitakami Paper Co., Ltd.

Acquisition of ISO Certification

Acquisition of ISO 9001 Certification (as of March 31, 2017)

Company Name	Mills/Operating Division/ Production Subsidiaries
Nippon Paper Industries Co., Ltd.	Hokkaido Mill (Shiraoi 10M/C), Akita Mill, Nakoso Mill, Kanto Mill, Fuji Mill(Yoshinaga), Otake Mill
(Chemical Division) June 29, 2017~ Chemical Sales Division	Gotsu Mill*, Iwakuni Mill, Higashimatsuyama Mill, Yufutsu Mill
Nippon Paper Crecia Co., Ltd.	Tokyo Mill
Nippon Paper Papyrus Co., Ltd.	Harada Mill, Suita Mill, Kochi Mill
Nippon Seitai Corporation	Hokkaido Office, Maebashi Mill, Saitama Mill, Kyoto Mill
NIPPON PAPER UNITEC CO., LTD.	Four business sites at headquarters (construction/electricity/control systems/plant engineering)
Kokusaku Kiko Co., Ltd.	Headquarters / Equipment & Facilities Department / Yufutsu Department / Shiraoi Department / Asahikawa Department
NANKO UNYU CO.,LTD.	Port Transport Department, Land Transport Department, Ishinomaki Office, Iwanuma Office, Nakoso Office, Akita Sales Office, Tokyo Branch
Nippon Paper Ishinomaki Technology Co., Ltd.	Headquarters
GAC Co., Ltd.	Headquarters/Mill, Marketing Division
FLOWRIC CO., LTD.	Headquarters, Concrete Research Center, Nagoya Mill
N&E Co., Ltd.	
Australian Paper	Maryvale, Preston
Juho Thermal Oy	Kauttona
Siam Nippon Industrial Paper Co., Ltd.	
Nippon Dynawave Packaging Co.	

* Certifications obtained for CMC and cellulose powder production.

Acquisition of FSSC 22000 Certifications (as of March 31, 2017)

Company Name	Mills/ Operating Division/ Production Subsidiaries
Nippon Paper Industries Co., Ltd.	
(Paper-Pak Division) June 29, 2017~ Paper Pak Sales Division	SOKA PAPER-PAK CO., LTD., EGAWA PAPER-PAK CO., LTD., MIKI PAPER-PAK CO., LTD., ISHIOKA KAKO CO., LTD.
(Chemical Division) June 29, 2017~ Chemical Sales Division	Gotsu Mill*

* CMC, cellulose powder, and stevia and licorice sweeteners (all for use in food)

The status of Eco-Action 21 acquisition (as of March 31, 2017)

Company Name	Mill / Operating Division
Akita Juho Chemicals Co., Ltd.	Head Office Plant

Acquisition of ISO 14001 Certification (as of March 31, 2017)

Company Name	Mills/Operating Division/ Production Subsidiaries
Nippon Paper Industries Co., Ltd.	Kushiro Mill, Hokkaido Mill, Akita Mill, Ishinomaki Mill, Iwanuma Mill, Nakoso Mill, Kanto Mill, Fuji Mill, Otake Mill, Iwakuni Mill, Yatsushiro Mill
(Paper-Pak Division) June 29, 2017~ Paper Pak Sales Division	Paper-Pak Division (Ochanomizu and Oji regions), SOKA PAPER-PAK CO., LTD., EGAWA PAPER-PAK CO., LTD., MIKI PAPER-PAK CO., LTD., ISHIOKA KAKO CO., LTD.
(Chemical Division) June 29, 2017~ Chemical Sales Division	Gotsu Mill, Iwakuni Mill, Higashimatsuyama Mill, Yufutsu Mill
Nippon Paper Crecia Co., Ltd.	Tokyo Mill, Kaisei Mill, Koyo Mill, Kyoto Mill
Nippon Paper Papyrus Co., Ltd.	Harada Mill, Suita Mill, Kochi Mill
Kitakami Paper Co., Ltd.	Headquarters/Ichinoseki Mill
NP Trading Co., Ltd.	Headquarters/Sapporo Branch Office/ Chubu Branch Office/Kansai Branch Office/Chugoku Branch Office/Kyushu Branch Office/Shizuoka Sales Office
Nippon Seitai Corporation	Headquarters, Hokkaido Office, Niigata Office, Maebashi Mill, Saitama Mill, Kansai Office, Kyusyu Office
Daishowa Uniboard Co., Ltd.	Headquarters/Miyagi Mill
N&E Co., Ltd.	
Sakurai Co., Ltd.	Headquarters
Nippon Paper Ishinomaki Technology Co., Ltd.	Headquarters
Australian Paper	Maryvale
Juho Thermal Oy	Kauttona

Forest Management and Raw Material Procurement-Related Indicators

Tree Species Nippon Paper Industries Co., Ltd. Procured from Overseas, and Their Countries of Origin (Fiscal 2016)

Hardwood (tonnes=bone dry tonnes)

Country	Percentage	Species
Australia	24%	Eucalyptus
South Africa	22%	Acacia
Brazil	20%	Eucalyptus, Acacia
Vietnam	17%	Acacia
Chile	16%	Eucalyptus
Total	100%	

Softwood (tonnes=bone dry tonnes)

Country	Percentage	Species
Australia	73%	Radiata pine, Caribbean pine
U.S.A	19%	Douglas fir
Russia	8%	Yezo spruce
Total	100%	

Overseas Afforestation Areas by Country (1,000 hectares)

Country	End of 2010	End of 2011	End of 2012	End of 2013	End of 2014	End of 2015	End of 2016
Australia	79	77	38	38	36	15	15
Chile	13	13	13	13	13	13	13
Brazil	62	62	62	54	54	50	52
South Africa	11	11	11	11	11	11	11
Total	165	163	124	116	114	89	91

Status of Forest Certification Acquisition for Overseas Afforestation Project and Company-Owned Forests in Japan

Overseas Plantation Project by operating company	Certification system name (License no)	Date of acquisition
PTP (Australia)	AFS	June 2006
BTP (Australia)	AFS	April 2006
Volterra (Chile)	FSC® (FSC®C120260)	January 2014
	CERTFORCHILE	December 2007
Forestco (South Africa)	FSC® (FSC®C012171)	April 2003
AMCEL (Brazil)	FSC® (FSC®C023383)	December 2008
	CERFLOR	September 2014

Company-owned forests in Japan by area	Certification system name	Date of acquisition
Hokkaido	SGEC	December 2005
Tohoku	SGEC	October 2007
Kanto and Chubu	SGEC	October 2007 [※]
Kinki, Chugoku and Shikoku	SGEC	December 2006
Kyushu	SGEC	March 2005

[※]The Company's Kitayama Forest in Shizuoka Prefecture was certified in December 2003.

Breakdown of company-owned forests in Japan by IUCN(International Union for Conservation of Nature) (as of March 31, 2017) (1,000 hectares)

IUCN category		Commercial forest area*	Environmental forest area*	Total	% Share	Ratio of environmental forest area (%)	
I	Strict nature reserve / wilderness area	0	0	0	0%	-	Protected area that is managed mainly for scientific research or wilderness
II	National park	0.6	4.5	5.1	6%	88%	Protected area managed mainly for ecological processes and recreation
III	Natural monument or Feature	0	0	0	0%	-	Protected area managed mainly for specific natural monument
IV	Habitat / species management area	0	0	0	0%	-	Protected area managed mainly for particular species or habitats
V	Protected landscape/seascape	2.5	0.7	3.2	4%	22%	Protected area managed mainly for landscape/seascape protection and recreation
VI	Protected area with sustainable use of natural resources	0	0	0	0%	-	Protected area managed mainly for the sustainable use of ecosystems
Not Applicable		69.0	12.4	81.4	91%	15%	
Total		72.1	17.6	89.7	100%	20%	

* Commercial forest area: The portion of Company-owned forests utilized as resources under appropriate forest management.

Environmental forest area: The portion of forests where environmental functions are conserved.

The logging of trees for the purpose of lumber production is prohibited in this portion.

Environmental Accounting*

Environmental Conservation Costs

(Fiscal 2016)

(Millions of Yen)

Category	Investment	Cost
(1) Business area costs		
①Pollution prevention costs	1,260	11,119
②Global environmental conservation costs	4,037	722
③Resources circulation costs	428	8,568
(2) Upstream/downstream cost	-	2,097
(3) Administration cost	-	297
(4) R&D cost	-	994
(5) Social activity costs	-	63
(6) Environmental remediation costs	-	546
Total	5,725	24,406

* Accounting standards are based on Environmental Accounting Guidelines 2005

Data Scope: consolidated subsidiaries in Japan

Environmental Benefits of Environmental

Conservation (Fiscal 2016)

(Millions of Yen)

Effect	Amount
Income from company-owned forests in Japan	430
Reduced expenses from energy saved	1,344
Reduced disposal expenses through the effective use of waste	4,495
Gain on sales from the recycled waste	451
Reduced expenses through the recycling of shipping material	49
Total	6,769

Environment-Related Indicators

Balance of Materials for All Businesses (Principal Materials) (Fiscal 2016)*1

[Units] GWh = Gigawatt hours, BDt = Bone-dry tonnes, ADt = Air-dry tonnes Note: t indicates Tonnes (also called Metric Tons)

INPUT → OUTPUT

energy input		Water consumption		GHG emissions		Nitrogen	
Purchased electricity	2,148GWh		957m t	8.21m t			1.48k t
Oil	177k k ℓ	River water	769m t	SOx emissions	3.7k t	Phosphorous	0.25k t
Coal	2,626k t	Industrial water	133m t	NOx emissions	9.4k t	Total Waste Generated	911k BDt
Gas	243k t	Well water	55m t	Soot and dust	1.4k t	Final disposal subtotal	106k BDt
Other fossil fuels	18k t	Public water supply	1m t	Chemical substances subject to the PRTR Law*3		Recycled subtotal	805k BDt
Other non-fossil fuels*2	6,184k t	Raw Material		Amount released	191 t	Products manufactured	
(Black liquor subtotal:	4,620k t)	Woodchips	5,361k BDt	Amount transferred	83 t	Paper, household Paper	4.47m t
Chemical substances subject to the PRTR Law*3		Logs	724k BDt	Wastewater	933m t	Paperboard	2.16m t
Amount handled	12,012t	Pulp	478k ADt	Public water	923m t	Pulp	227k t
		Recycled paper(Pulp)	3,139k ADt	Sewerage	10m t	Paper container	100k t
		Base Paper	113k BDt	COD/BOD	62.5k t	Chemical products	111k t
				SS	25.5k t	Building materials	68k t
						Electricity	1,191GWh

*1 In fiscal 2016, the scope of organizations covered in calculating the balance of materials was changed to include Amapá Florestal e Celulose S.A. (AMCEL) and Nippon Dynawave Packaging Company, and exclude Nippon Paper Industries USA Co., Ltd.

*2 Biomass fuels and waste fuels

*3 Japan only

Major Environmental Performance Data*1

		Unit	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016
Energy	Fossil energy input	Millions GJ	91	97	95	94	99
	Non-fossil energy input*2	Millions GJ	66	77	80	81	91
Water consumption		Million t	953	883	939	942	957
Waste water	Amount discharged	Million t	905	907	918	920	933
	COD/BOD	Thousand t	54.0	56.0	63.7	62.9	62.5
	SS	Thousand t	21.3	22.0	23.6	26.0	25.5
Gas emissions	GHG emissions	Million t-CO ₂	-	-	-	-	8.21
	SOx	Thousand t	3.50	3.34	4.32	5.08	3.77
	NOx	Thousand t	7.95	9.03	8.78	9.61	9.42
	Soot and dust	Thousand t	1.04	1.52	1.54	1.47	1.40
Waste	Total Waste Generated	Thousand t	737	819	850	839	911
	Final disposal subtotal	Thousand t	49	71.9	54.2	52.4	106

*1 Changes in the Data Collection Scope:
 in fiscal 2013 (added) Australian Paper
 in fiscal 2014 (added) Jujo Thermal Oy and South East Fibre Exports Pty. Ltd. (excluded) SHIKOKU COCA-COLA BOTTLING CO., LTD.
 in fiscal 2015 (added) Siam Nippon Industrial Paper Co., Ltd. (excluded) The Shoalhaven Mill of Australian Paper,
 South East Fibre Exports Pty. Ltd.
 in fiscal 2016 (added) Amapá Florestal e Celulose S.A. (AMCEL) (excluded) Nippon Paper Industries USA Co., Ltd.
 Nippon Dynawave Packaging Company

*2 Energy from biomass and waste

Environment-Related Complaints (FY 2016)

Complaints	Noise	Vibration	Odor	Dust and mist dispersal	Smoke	Other	Total
Number	1	1	2	5	0	1	10

External Awards for Environmental Conservation Activities (FY 2016)

Recipient	Award	Award Organization
Nippon Paper Industries Co., Ltd	Excellence Award for Global Warming Action Plan System	Tokyo's Chiyoda ward
Kitakami Paper Co., Ltd.	Eco-Action Award for Iwate Prefectural Assembly	Iwate Prefectural Assembly for prevention of Global Warming

Amounts of Substances Subject to the PRTR Law Released and Transferred^{※1} (FY 2016)

Cabinet Order No.	CAS No	Chemical Substance	Unit	Amount Released	Amount Transferred
1	—	Water-soluble zinc compounds	t	2	13
2	79-06-1	Acrylamide	t	0	0
4	—	Acrylic acid and water-soluble salt	t	0	0
6	818-61-1	Acrylic acid 2-hydroxyethyl ester	t	0	0
9	107-13-1	Acrylonitrile	t	0	0
33	1332-21-4	Asbestos	t	0	2
48	2104-64-5	O-ethyl-O-(4-nitrophenyl)phenylphosphonothioate	t	2	0
57	110-80-5	Ethylene glycol monoethyl ether	t	1	1
80	1330-20-7	Xylene	t	3	0
85	111-30-8	Glutaraldehyde	t	0	0
98	79-11-8	Chlorodifluoromethane	t	0	0
127	67-66-3	Chloroform ^{※2}	t	45	22
144	—	Inorganic cyanide compounds (except complex salts and cyanates)	t	2	0
149	56-23-5	Tetrachloromethane	t	0	36
150	123-91-1	1,4-dioxane	t	1	0
154	108-91-8	Cyclohexylamine	t	1	0
213	127-19-5	N,N-dimethyl acetamide	t	0	0
232	68-12-2	N,N-dimethylmethanamide	t	0	0
243	—	Dioxins ^{※2}	g-TEQ	0.7	5.7
272	—	Copper salts (water-soluble, except complex salts)	t	2	0
296	95-63-6	1,2,4-trimethylbenzene	t	3	0
300	108-88-3	Toluene	t	29	9
302	91-20-3	Naphthalene	t	0	0
318	75-15-0	Carbon disulfide	t	7	0
333	302-01-2	Hydrazine	t	0	0
374	—	Hydrogen fluoride and its water-soluble salts	t	70	0
395	—	Water-soluble salts of peroxodisulfuric acid	t	0	0
405	—	Boron compounds	t	17	0
407	—	Poly (oxyethylene) alkyl ether (alkyl C=12-15)	t	0	0
410	9016-45-9	Polyoxyethylene nonylphenyl ether	t	0	0
411	50-00-0	Formaldehyde	t	5	0
412	—	Manganese and its compounds	t	3	0
414	108-31-6	Maleic anhydride	t	0	0
415	79-41-4	Methacrylic acid	t	0	0
418	2867-47-2	2-(dimethylamino) ethyl methacrylate	t	0	0
419	97-88-1	N-butyl methacrylate	t	0	0
420	80-62-6	Methyl methacrylate	t	0	0
438	1321-94-4	Methylnaphthalene	t	0	0
448	101-68-8	Methylenebis (4,1-phenylene) diisocyanate	t	0	0
455	110-91-8	Morpholine	t	0	0
合計 ^{※3}			t	191	83

※1 A summary of the release or transfer volumes of substances, excluding dioxins, that are handled in quantities of at least 1 tonne by Group companies. Dioxins and formaldehyde are designated type 1 chemical substances.

※2 Includes unintentionally generated chloroform and dioxins.

※3 Dioxins are not included in total data.

The Nippon Paper Group Environmental Action Plan (Green Action Plan 2020) - Fiscal 2016 Progress Report

	Green Action Plan 2020	Progress
1. Anti-global warming action	<ul style="list-style-type: none"> Reduce greenhouse gas emissions by 10% compared to fiscal 2013. ※1 	<ul style="list-style-type: none"> Reduced greenhouse gas emissions by 1.5% compared to fiscal 2013 by updating and consolidating facilities, and moving forward with fuel conversion.
	<ul style="list-style-type: none"> Reduce logistics-generated CO2 emissions. 	<ul style="list-style-type: none"> Continuously working to reduce CO2 emissions by shortening transportation distances and advancing highly efficient modal shift transport.
2. Protection and development of forest Resources	<ul style="list-style-type: none"> Advance domestic company-owned forest operations and the overseas afforestation project (Tree Farm Initiative) to ensure the sustainable nurturing of forest resources. 	<ul style="list-style-type: none"> As of the end of 2016, total afforested areas came to 91,000 ha.
	<ul style="list-style-type: none"> Maintain forest certifications in all proprietary forests, both domestically and internationally. 	<ul style="list-style-type: none"> Currently maintaining SGEC, FSC ®2, and PEFC certification for 181,000 ha of company-owned forests in Japan and overseas.
	<ul style="list-style-type: none"> Ensure that all wood materials for pulp and paper are endorsed under forest certification schemes. 	<ul style="list-style-type: none"> Using only PEFC- or FSC ® -certified wood materials (including controlled material and controlled wood) for pulp and paper.
	<ul style="list-style-type: none"> Enhance traceability and facilitate the procurement of sustainable forest resources. 	<ul style="list-style-type: none"> In working to enhance traceability through the use of forest certifications, cleared the requirements of PEFC rules in their entirety and FSC ® rules to 97% with respect to the assessment of imported wood chip risk in fiscal 2016.
3. Recycling of Resources	<ul style="list-style-type: none"> Promote greater use of wastepaper by achieving advances in wastepaper utilization technologies. 	<ul style="list-style-type: none"> As a result of vigorous efforts to use wastepaper, wastepaper pulp accounted for 38% of pulp used to produce paper, and 89% of pulp used to produce paperboard.
	<ul style="list-style-type: none"> Increase the waste recycling rate to at least 98%. ※1 	<ul style="list-style-type: none"> Waste recycling rate came to 98.4% because of efforts to reduce waste generation and to recycle boiler ash.
4. Observance of environment-related laws and reduction of environmental Load	<ul style="list-style-type: none"> Use the environmental management system to strengthen environmental management and reduce environmental impact. 	<ul style="list-style-type: none"> ISO14001 and other environmental management system standards are being implemented in locations with high environmental impact to ensure regulatory compliance and reduce environmental impact.
	<ul style="list-style-type: none"> Properly manage chemical substances in accordance with the Nippon Paper Group Chemical Substance Management Guidelines. 	<ul style="list-style-type: none"> In locations where chemical substances are being used, records on substance types and amounts are being kept, and safety data sheets are being used, to properly manage chemical substances. In fiscal 2016, water chillers were updated and recovery facilities were newly installed to reduce chloroform emissions at Nippon Paper Industries Co., Ltd.'s Iwakuni Mill.
5. Development of eco-friendly technologies and products	<ul style="list-style-type: none"> Enhance the more sophisticated use of wood materials. 	<ul style="list-style-type: none"> Developed Minerpa™, a functional material that is a composite of minerals and cellulose fiber and offers excellent anti-odor, antibacterial, fire-resistance, and radiation shielding properties. A high-capacity (annual capacity of 500 tonnes) production facility for industrial TEMPO-oxidized CNF was installed at Nippon Paper Industries Co., Ltd.'s Ishinomaki Mill. Operations began in April 2017. Finalized the decision to install a high-capacity (annual capacity of 30 tonnes) facility to produce CM-CNF at the Gotsu Mill. CM-CNF will be for use as a food and cosmetics additive. Operations scheduled to start in September 2017.
	<ul style="list-style-type: none"> Develop equipment technology for facilitating a departure from reliance on fossil energy. 	<ul style="list-style-type: none"> Began test production of torrefied pellets, a new biomass solid fuel, in Thailand.
	<ul style="list-style-type: none"> Reduce the environmental load through the provision of ecofriendly products and services. 	<ul style="list-style-type: none"> Nippon Paper Industries Co., Ltd. advanced the renewable energy business to help reduce its environmental load. It did this by starting to install wind turbines for a wind-power plant (scheduled to begin operating in January 2018) on land adjacent to the Akita Mill. Sold CFA® concrete admixture (making effective use of pulverized-coal boiler ash from Nippon Paper Industries Co., Ltd.'s Ishinomaki Mill) for use in recovery construction in the Ishinomaki area of Miyagi Prefecture, Japan. Began sales of NP-PAK Bio paper cartons (made almost totally from plant-derived recyclable biomass material) for chilled liquids.
6. Environmental Communication	<ul style="list-style-type: none"> Disclose environment-related information to stakeholders and accelerate environmental communication through dialogue and other means. 	<ul style="list-style-type: none"> Shared risk information and invigorated dialogue with society through publication of the Sustainability Report and through environmental risk communication efforts undertaken at individual mills.
	<ul style="list-style-type: none"> Proactively participate in and support environment conservation activities. 	<ul style="list-style-type: none"> Actively participated in environmental protection endeavors including clean-up and greening initiatives organized by local communities, while promoting various activities including mill tours and internships.
7. Biodiversity Commitments	<ul style="list-style-type: none"> Advance companywide biodiversity initiatives in accordance with the Nippon Paper Group Basic Policies on Protection of Biodiversity. 	<ul style="list-style-type: none"> As a fiscal 2016 education activity on the importance of protecting biodiversity, conducted environmental e-learning, under the theme of Forests and Biodiversity, for Group and affiliate employees. Worked with the Wild Bird Society of Japan to conduct habitat surveys on birds in general, and the Blakiston's fish owl in particular.

※1 For manufacturing sites in Japan.

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