

Pulp & Paper Statistics 2018

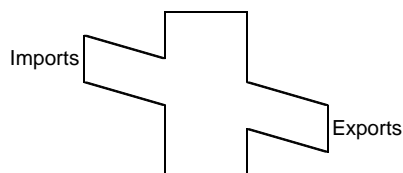
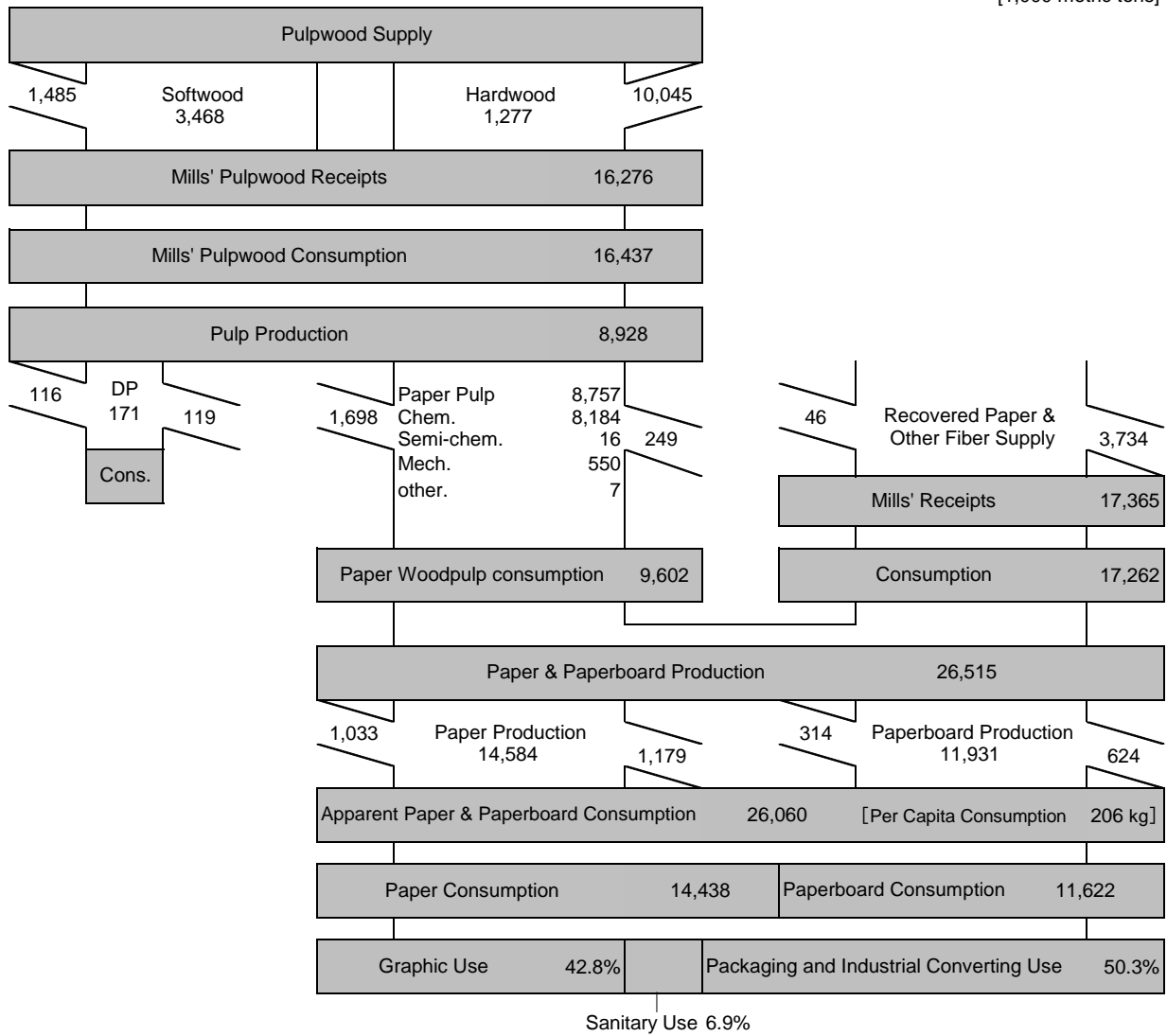
Japan Paper Association

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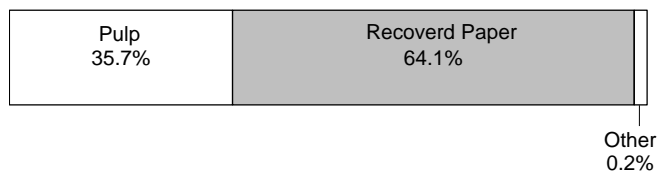
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Outline of Japanese Pulp and Paper Industry 2017

[1,000 metric tons]



Composition Ratio of Raw Material



Paper and Paperboard Production

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Newsprint | 3,419 | 3,720 | 3,349 | 2,985 | 2,906 | 2,779 |
| Printing & Communication | 11,756 | 11,503 | 9,547 | 8,384 | 8,309 | 8,242 |
| Uncoated | 3,272 | 3,115 | 2,408 | 2,053 | 2,058 | 2,007 |
| Coated | 6,730 | 6,730 | 5,661 | 4,971 | 4,861 | 4,876 |
| Communication | 1,754 | 1,658 | 1,478 | 1,360 | 1,390 | 1,360 |
| Packaging | 1,049 | 975 | 904 | 891 | 877 | 896 |
| Sanitary Tissue | 1,735 | 1,764 | 1,792 | 1,766 | 1,807 | 1,789 |
| Other Paper | 1,078 | 939 | 794 | 804 | 807 | 877 |
| Paper, Total | 19,037 | 18,901 | 16,387 | 14,830 | 14,706 | 14,584 |
| Containerboard | 9,676 | 9,311 | 8,647 | 9,187 | 9,364 | 9,682 |
| Linerboard | 5,790 | 5,535 | 5,183 | 5,459 | 5,547 | 5,778 |
| Corrugating Medium | 3,886 | 3,776 | 3,464 | 3,728 | 3,817 | 3,903 |
| Boxboard | 2,097 | 1,891 | 1,673 | 1,570 | 1,576 | 1,597 |
| Other Paperboard | 1,019 | 850 | 656 | 642 | 629 | 652 |
| Paperboard, Total | 12,791 | 12,051 | 10,977 | 11,398 | 11,569 | 11,931 |
| Paper & Paperboard | 31,828 | 30,952 | 27,363 | 26,228 | 26,275 | 26,515 |

Source: Ministry of Economy, Trade and Industry

Paper and Paperboard Domestic Demand

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Newsprint | 3,699 | 3,759 | 3,349 | 3,033 | 2,926 | 2,777 |
| Printing & Communication | 11,866 | 11,993 | 9,949 | 8,893 | 8,670 | 8,428 |
| Uncoated | 3,512 | 3,140 | 2,493 | 2,125 | 2,091 | 2,024 |
| Coated | 6,462 | 6,876 | 5,570 | 4,954 | 4,743 | 4,598 |
| Communication | 1,891 | 1,977 | 1,886 | 1,813 | 1,836 | 1,806 |
| Packaging | 1,041 | 952 | 852 | 729 | 717 | 714 |
| Sanitary Tissue | 1,725 | 1,810 | 1,856 | 1,946 | 1,994 | 1,996 |
| Other Paper | 924 | 826 | 797 | 747 | 730 | 773 |
| Paper, Total | 19,254 | 19,338 | 16,804 | 15,348 | 15,037 | 14,689 |
| Containerboard | 9,392 | 9,342 | 8,728 | 8,884 | 9,022 | 9,205 |
| Boxboard | 2,314 | 2,236 | 2,094 | 1,983 | 1,999 | 2,026 |
| Other Paperboard | 1,006 | 858 | 667 | 650 | 645 | 662 |
| Paperboard, Total | 12,713 | 12,435 | 11,489 | 11,517 | 11,665 | 11,892 |
| Paper & Paperboard | 31,967 | 31,774 | 28,293 | 26,866 | 26,702 | 26,581 |

Source: Ministry of Economy, Trade and Industry, Ministry of Finance, Japan Paper Association

Note: Domestic Demand = Domestic Shipment + Imports ± Change of Merchants' Inventories

Paper and Paperboard Exports

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Newsprint | 139 | 216 | 58 | 6 | 5 | 4 |
| Printing | 650 | 673 | 1,085 | 740 | 824 | 850 |
| Uncoated | 209 | 245 | 219 | 204 | 253 | 246 |
| Coated | 441 | 429 | 866 | 536 | 571 | 605 |
| Packaging | 88 | 74 | 140 | 201 | 219 | 244 |
| Other Paper | 68 | 93 | 64 | 64 | 68 | 82 |
| Paper, Total | 944 | 1,056 | 1,346 | 1,010 | 1,116 | 1,179 |
| Containerboard | 295 | 99 | 70 | 307 | 392 | 565 |
| Linerboard | 101 | 37 | 55 | 138 | 185 | 284 |
| Corrugating Medium | 194 | 63 | 15 | 169 | 207 | 281 |
| Boxboard | 151 | 66 | 25 | 19 | 20 | 30 |
| Other Paperboard | 42 | 19 | 21 | 20 | 25 | 29 |
| Paperboard, Total | 488 | 185 | 115 | 347 | 437 | 624 |
| Paper & Paperboard | 1,432 | 1,240 | 1,461 | 1,357 | 1,553 | 1,803 |

Source: Ministry of Finance

Paper and Paperboard Imports

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-------------------------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Newsprint | 613 | 376 | 138 | 49 | 24 | 11 |
| Printing & Communication | 593 | 1,017 | 1,220 | 1,139 | 997 | 976 |
| Uncoated | 150 | 85 | 109 | 135 | 138 | 131 |
| Coated | 301 | 554 | 684 | 487 | 372 | 353 |
| Communication | 142 | 379 | 427 | 517 | 487 | 492 |
| Packaging | 12 | 5 | 14 | 8 | 7 | 8 |
| Sanitary Tissue | 5 | 13 | 5 | 12 | 13 | 21 |
| Other Paper | 24 | 27 | 20 | 18 | 19 | 17 |
| Paper, Total | 1,247 | 1,438 | 1,396 | 1,226 | 1,060 | 1,033 |
| Containerboard | 97 | 126 | 134 | 56 | 42 | 41 |
| Linerboard | 87 | 107 | 87 | 46 | 40 | 41 |
| Corrugating Medium | 9 | 19 | 47 | 10 | 2 | 0 |
| Boxboard | 125 | 188 | 243 | 256 | 267 | 262 |
| Other Paperboard | 1 | 1 | 18 | 14 | 13 | 11 |
| Paperboard, Total | 223 | 315 | 395 | 325 | 323 | 314 |
| Paper & Paperboard | 1,470 | 1,754 | 1,791 | 1,551 | 1,383 | 1,347 |

Source: Ministry of Finance

Consumption of Pulp, Recovered Paper and Other Materials

[1,000 metric tons]

| For Paper and Paperboard | | | | | | |
|---------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
| Pulp | 13,541 [42.8] | 12,281 [39.5] | 10,407 [37.4] | 9,466 [35.6] | 9,521 [35.6] | 9,602 [35.7] |
| Recoverd Paper | 18,055 [57.0] | 18,743 [60.4] | 17,412 [62.5] | 17,092 [64.3] | 17,160 [64.2] | 17,231 [64.1] |
| Other | 53 [0.2] | 33 [0.1] | 31 [0.1] | 31 [0.1] | 31 [0.2] | 31 [0.2] |
| Total | 31,648 [100.0] | 31,057 [100.0] | 27,850 [100.0] | 26,589 [100.0] | 26,712 [100.0] | 26,864 [100.0] |

| For Paper | | | | | | |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
| Pulp | 12,124 [67.8] | 11,334 [62.4] | 9,569 [59.4] | 8,695 [59.7] | 8,764 [60.7] | 8,829 [61.9] |
| Recoverd Paper | 5,740 [32.1] | 6,809 [37.5] | 6,519 [40.5] | 5,850 [40.2] | 5,653 [39.2] | 5,407 [37.9] |
| Other | 27 [0.2] | 21 [0.1] | 23 [0.1] | 23 [0.1] | 23 [0.1] | 23 [0.2] |
| Total | 17,892 [100.0] | 18,164 [100.0] | 16,111 [100.0] | 14,567 [100.0] | 14,441 [100.0] | 14,259 [100.0] |

| For Paperboard | | | | | | |
|-----------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
| Pulp | 1,416 [10.3] | 947 [7.7] | 838 [7.1] | 771 [6.4] | 756 [6.2] | 773 [6.1] |
| Recoverd Paper | 12,314 [89.5] | 11,934 [92.6] | 10,893 [92.8] | 11,242 [93.5] | 11,506 [93.8] | 11,824 [93.8] |
| Other | 26 [0.2] | 12 [0.1] | 8 [0.1] | 8 [0.1] | 8 [0.0] | 8 [0.1] |
| Total | 13,756 [100.0] | 12,893 [100.0] | 11,740 [100.0] | 12,022 [100.0] | 12,271 [100.0] | 12,605 [100.0] |

Source: Ministry of Economy, Trade and Industry

Note: The figure in parentheses represents the composition ratio.

Pulp Production

[1,000 metric tons]

| | | | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|--------------------|------------|----------|--------|--------|-------|--------------|--------------|--------------|
| Dissolving | | | 80 | 79 | 87 | 136 | 159 | 171 |
| Sulphate | Bleached | Softwood | 1,387 | 1,540 | 1,292 | 1,093 | 1,093 | 1,117 |
| | | Hardwood | 6,881 | 6,745 | 6,265 | 5,978 | 5,898 | 6,006 |
| | Total | | 8,268 | 8,284 | 7,557 | 7,070 | 6,991 | 7,122 |
| | Unbleached | | 1,525 | 1,205 | 1,057 | 1,039 | 1,031 | 1,043 |
| Semichemical | | | 95 | 45 | 31 | 20 | 18 | 16 |
| Mechanical | | | 1,405 | 1,203 | 738 | 586 | 584 | 550 |
| Other | | | 26 | 22 | 10 | 24 | 24 | 25 |
| Paper Grades Total | | | 11,319 | 10,760 | 9,393 | 8,739 | 8,648 | 8,757 |
| Total | | | 11,399 | 10,838 | 9,480 | 8,875 | 8,807 | 8,928 |

Source: Ministry of Economy, Trade and Industry

Pulp Exports

[1,000 metric tons]

| | | | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|--------------------|------------|--|------|------|------|------------|------------|------------|
| Dissolving | | | 12 | 19 | 28 | 82 | 109 | 119 |
| Sulphate | Bleached | | 109 | 100 | 229 | 173 | 69 | 87 |
| | Unbleached | | 12 | 73 | 151 | 156 | 168 | 162 |
| Other | | | 0 | 2 | 3 | 3 | 1 | 1 |
| Paper Grades Total | | | 121 | 175 | 382 | 332 | 237 | 249 |
| Total | | | 132 | 195 | 410 | 415 | 346 | 369 |

Source: Ministry of Finance

Pulp Imports

[1,000 metric tons]

| | | | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|--------------------|------------|----------|-------|-------|-------|--------------|--------------|--------------|
| Dissolving | | | 169 | 127 | 107 | 100 | 108 | 116 |
| Sulphite | | | 38 | 12 | 6 | 3 | 5 | 5 |
| Sulphate | Bleached | Softwood | 1,259 | 963 | 860 | 927 | 909 | 975 |
| | | Hardwood | 1,047 | 850 | 549 | 503 | 482 | 566 |
| | Total | | 2,306 | 1,813 | 1,409 | 1,430 | 1,391 | 1,541 |
| | Unbleached | | 82 | 38 | 28 | 17 | 17 | 23 |
| Semichemical | | | 76 | 39 | 38 | 24 | 18 | 19 |
| Mechanical | | | 421 | 288 | 222 | 109 | 96 | 81 |
| Other | | | 22 | 42 | 29 | 32 | 26 | 29 |
| Paper Grades Total | | | 2,964 | 2,233 | 1,732 | 1,615 | 1,552 | 1,698 |
| Total | | | 3,133 | 2,360 | 1,839 | 1,715 | 1,660 | 1,814 |

Source: Ministry of Finance

Recoverd Paper Suply and Demand

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-----------------------------------|--------|--------|--------|--------|--------|--------|
| Consumption | 18,055 | 18,743 | 17,412 | 17,092 | 17,160 | 17,231 |
| Receipts | 18,238 | 18,687 | 17,385 | 17,174 | 17,139 | 17,365 |
| Exports | 372 | 3,710 | 4,374 | 4,261 | 4,138 | 3,734 |
| Imports | 278 | 77 | 44 | 35 | 43 | 46 |
| Net Recovery | 18,332 | 22,320 | 21,715 | 21,401 | 21,233 | 21,053 |
| Consumption of Paper & Paperboard | 31,758 | 31,382 | 27,752 | 26,314 | 26,132 | 26,027 |
| Recovery Rate (%) | 57.7 | 71.1 | 78.2 | 81.3 | 81.3 | 80.9 |

Source: Ministry of Economy, Trade and Industry, Ministry of Finance, Paper Recycling Promotion Center

Note: Consumption of Paper & Paperboard = Shipments + Imports - Exports

Recovery Rate = Net Recovery / New Supply of Paper & Paperboard

Composition Ratio of Recoverd Paper Consumption 2017

| | For Paper | For Paperboard |
|--------------------------------------|---------------|----------------|
| Consumption (1,000 metric tons, %) | 5,300 [100.0] | 11,818 [100.0] |
| Old Newspaper (%) | 63.8 | 2.0 |
| Magazine (%) | 6.0 | 14.5 |
| Corrugated (%) | 0.0 | 76.7 |
| Finepaper Printed & Coated Paper (%) | 28.5 | 3.3 |
| Other (%) | 1.7 | 3.5 |

Source: Ministry of Economy, Trade and Industry, Paper Recycling Promotion Center

Recovery Rate by Grades

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|----------------------|-------|-------|-------|-------|-------|-------|
| Old Newspaper (%) | 117.5 | 141.9 | 146.0 | 148.6 | 147.3 | 146.6 |
| Corrugated (%) | 83.2 | 100.8 | 109.0 | 112.9 | 111.7 | 111.5 |
| Magazine & Other (%) | 32.9 | 40.5 | 46.0 | 45.2 | 45.4 | 45.4 |

Source: Paper Recycling Promotion Center

Recoverd Paper Exports

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|---|------------|--------------|--------------|--------------|--------------|--------------|
| Corrugated | 177 | 1,623 | 2,214 | 1,895 | 1,797 | 1,651 |
| Mainly Made from Bleached Chemical Pulp | 3 | 97 | 109 | 89 | 106 | 108 |
| Newspaper | 131 | 655 | 441 | 385 | 365 | 266 |
| Mainly Made from Mechanical Pulp | | 850 | 1,058 | 1,066 | 979 | 865 |
| Other | 61 | 486 | 552 | 827 | 890 | 843 |
| Total | 372 | 3,710 | 4,374 | 4,261 | 4,138 | 3,734 |
| (By Destination) | | | | | | |
| China | 57 | 3,108 | 3,489 | 2,971 | 2,916 | 2,440 |
| South Korea | 56 | 177 | 100 | 346 | 301 | 285 |
| Thailand | 113 | 165 | 440 | 335 | 295 | 270 |
| Vietnam | 3 | 53 | 140 | 292 | 262 | 224 |
| Taiwan | 108 | 170 | 128 | 216 | 234 | 386 |

Source: Ministry of Finance

Recoverd Paper Imports

[1,000 metric tons]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|---|------------|-----------|-----------|-----------|-----------|-----------|
| Corrugated | 198 | 64 | 29 | 11 | 12 | 10 |
| Mainly Made from Bleached Chemical Pulp | | | | 23 | 28 | 26 |
| Other | 80 | 14 | 14 | 1 | 4 | 10 |
| Total | 278 | 77 | 44 | 35 | 43 | 46 |
| (By Origin) | | | | | | |
| USA | 260 | 74 | 44 | 33 | 38 | 37 |

Source: Ministry of Finance

Pulpwood Receipts

[1,000 BDT]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 |
|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Domestic Supply | 5,619 | 5,411 | 4,955 | 4,762 | 4,767 | 4,745 |
| Softwood | 3,603 | 3,824 | 3,425 | 3,416 | 3,446 | 3,468 |
| Hardwood | 2,016 | 1,586 | 1,531 | 1,346 | 1,322 | 1,277 |
| Imports | 14,222 | 13,839 | 11,769 | 11,568 | 11,538 | 11,531 |
| Softwood | 2,912 | 2,638 | 1,987 | 1,596 | 1,512 | 1,485 |
| Hardwood | 11,310 | 11,200 | 9,782 | 9,972 | 10,026 | 10,045 |
| Total | 19,841 | 19,249 | 16,724 | 16,330 | 16,305 | 16,276 |

Source: Japan Paper Association

Pulpwood Imports by Origin

[1,000 BDT]

| | 2000 | 2005 | 2010 | 2015 | 2016 | 2017 | |
|--------------------|-----------------|---------------|---------------|---------------|---------------|---------------|---------------|
| USA | Total | 3,363 | 905 | 649 | 625 | 656 | 717 |
| | Softwood | 828 | 822 | 649 | 625 | 656 | 717 |
| | Hardwood | 2,535 | 83 | - | - | - | - |
| Canada | Total | 437 | 167 | 163 | 106 | 95 | 18 |
| | Softwood | 162 | 167 | 163 | 106 | 95 | 18 |
| | Hardwood | 275 | - | - | - | - | - |
| Newzealand | Total | 437 | 281 | 380 | 243 | 327 | 229 |
| | Softwood | 389 | 258 | 291 | 130 | 161 | 89 |
| | Hardwood | 48 | 23 | 89 | 102 | 167 | 140 |
| Australia | Total | 4,463 | 4,710 | 4,244 | 2,548 | 2,203 | 2,537 |
| | Softwood | 1,117 | 1,017 | 732 | 621 | 494 | 538 |
| | Hardwood | 3,346 | 3,693 | 3,512 | 1,927 | 1,710 | 1,999 |
| Chile | Total | 1,402 | 1,668 | 2,345 | 1,813 | 2,053 | 1,960 |
| | Softwood | 48 | 65 | - | - | - | - |
| | Hardwood | 1,354 | 1,603 | 2,345 | 1,813 | 2,053 | 1,960 |
| Brazil | Total | 596 | 678 | 582 | 613 | 745 | 591 |
| | Softwood | 146 | 140 | - | - | - | - |
| | Hardwood | 451 | 537 | 582 | 613 | 745 | 591 |
| South Africa | Total | 1,419 | 3,261 | 1,410 | 1,176 | 1,501 | 1,409 |
| | Softwood | - | - | - | - | - | - |
| | Hardwood | 1,419 | 3,261 | 1,410 | 1,176 | 1,501 | 1,409 |
| Vietnam | Total | 270 | 633 | 1,066 | 2,991 | 2,691 | 2,672 |
| | Softwood | - | - | - | - | - | - |
| | Hardwood | 270 | 633 | 1,066 | 2,991 | 2,691 | 2,672 |
| Other | Total | 1,835 | 1,537 | 929 | 1,453 | 1,264 | 1,398 |
| | Softwood | 222 | 170 | 151 | 114 | 106 | 124 |
| | Hardwood | 1,613 | 1,367 | 778 | 1,349 | 1,159 | 1,274 |
| Grand Total | Total | 14,222 | 13,839 | 11,769 | 11,568 | 11,538 | 11,531 |
| | Softwood | 2,912 | 2,638 | 1,987 | 1,596 | 1,512 | 1,485 |
| | Hardwood | 11,310 | 11,200 | 9,782 | 9,972 | 10,026 | 10,045 |

Source: Japan Paper Association

Composition Ratio of Energy Sources

| | 2005FY | 2016FY |
|-------------------------|-------------|-------------|
| Fuel oil | 20.4 | 6.2 |
| Coal | 21.1 | 26.4 |
| Gas | 3.9 | 6.1 |
| Ele.power | 13.0 | 8.6 |
| Fossil energy | 58.3 | 47.3 |
| Black liquor | 32.3 | 33.3 |
| Bark P-s | 5.1 | 9.9 |
| Waste energy | 4.3 | 9.5 |
| Renewable energy | 41.7 | 52.7 |

Source: Japan Paper Association

JPA's Environmental Action Plan

1. Environmental Principle

JPA member companies are committed to contribute to building of economically and environmentally sound sustainable society by actively addressing environmental issues as typified by global environmental problems.

2. Environmental Policy

1. Realize a low carbon society
2. Realize a natural symbiosis society
3. Realize a recycling society
4. Address environmental risk issues
5. Ensure steady progress in environmental management

3. Major Course of Action

- 1) Through fuel conversion and development of energy savings equipment, reduce fossil energy derived CO₂ emissions by 1.39million tons from the level of FY 2005 by FY 2020 (Phase I), by 2.86million tons from the level of FY 2005 by FY 2030 (Phase II).
- 2) JPA set the target to expand forest area owned or managed by member companies at home and abroad by 425 thousand hectares from the level of FY 1990 to 700 thousand hectares by FY 2020 (Phase I), by 525 thousand hectares from the level of FY 1990 to 800 thousand hectars by FY 2030 (Phase II).
- 3) JPA member companies shall actively make efforts to promote efficient use of domestic wood resources including thinning wood.
- 4) JPA member companies shall achieve a recovered paper utilization rate of 65% by FY 2020.
- 5) JPA member companies shall reducefinal disposal volume of industrial wastes to 130 thousand tons on a wet weight basis by FY 2020.
- 6) JPA member companies shall ensure a thorough management of the chemicals to control the chemical risks.

[JPA established in March 2012, modified in December 2014 and in March 2016]

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