Sanix / 4651

COVERAGE INITIATED ON: 2013.11.12
LAST UPDATE: 2019.03.14

Research Coverage Report by Shared Research Inc.

INDEX

How to read a Shared Research report: This report begins with the trends and outlook section, which discusses the company's most recent earnings. First-time readers should start at the business section later in the report.

Key financial data

Income statement (JPYmn)	FY03/09 Cons.	FY03/10 Cons.	FY03/11 Cons.	FY03/12 Cons.	FY03/13 Cons.	FY03/14 Cons.	FY03/15 Cons.	FY03/16 Cons.	FY03/17 Cons.	FY03/18 Cons.	FY03/19 Est.
Sales	**25,234**	**24,539**	**28,980**	**31,454**	**43,366**	**84,212**	**95,629**	**61,916**	**50,955**	**49,993**	**49,434**
YoY	-4.8%	-2.8%	18.1%	8.5%	37.9%	94.2%	13.6%	-35.3%	-17.7%	-1.9%	-1.1%
Gross profit	**10,559**	**9,918**	**10,276**	**10,442**	**13,370**	**21,421**	**18,907**	**13,783**	**14,142**	**14,044**	
YoY	-9.8%	-6.1%	3.6%	1.6%	28.0%	60.2%	-11.7%	-27.1%	2.6%	-0.7%	
GPM	41.8%	40.4%	35.5%	33.2%	30.8%	25.4%	19.8%	22.3%	27.8%	28.1%	
Operating profit	**-597**	**390**	**502**	**410**	**1,870**	**4,508**	**-3,142**	**-2,229**	**1,036**	**1,246**	**1,338**
YoY	-	-	28.6%	-18.3%	356.4%	141.0%	-	-	-	20.3%	7.4%
OPM	-	1.6%	1.7%	1.3%	4.3%	5.4%	-	-	2.0%	2.5%	2.7%
Recurring profit	**-620**	**225**	**430**	**348**	**1,789**	**4,310**	**-3,439**	**-1,949**	**907**	**1,019**	**1,290**
YoY	-	-	91.2%	-19.1%	414.1%	140.9%	-	-	-	12.3%	26.6%
RPM	-	0.9%	1.5%	1.1%	4.1%	5.1%	-	-	1.8%	2.0%	2.6%
Net income	**-4,145**	**-3,676**	**50**	**14**	**1,575**	**2,965**	**-4,966**	**-4,602**	**416**	**1,180**	**534**
YoY	-	-	-	-71.8%	-	88.2%	-	-	-	183.7%	-54.7%
Net margin	-	-15.0%	0.2%	0.0%	3.6%	3.5%	-	-	0.8%	2.4%	1.1%
Per share data											
Shares issued (year-end; '000)	48,919	48,919	48,919	48,919	48,919	48,919	48,919	48,919	48,919	48,919	
EPS	-87	-77	1	0	33	62	-104	-96	9	25	11
EPS (fully diluted)	-	-	-	-	-	-	-	-	-	-	
Dividend per share	-	-	-	-	-	-	-	-	-	-	-
Book value per share	224	147	148	149	185	247	153	54	59	85	
Balance sheet (JPYmn)											
Cash and cash equivalents	1,065	1,255	1,138	1,366	3,559	9,237	7,026	3,038	5,578	5,482	
Total current assets	**3,895**	**5,153**	**5,890**	**6,964**	**14,652**	**38,649**	**31,569**	**16,930**	**17,522**	**16,172**	
Tangible fixed assets	15,328	11,828	11,763	11,724	12,326	14,181	15,099	12,417	12,278	11,926	
Investments and other assets	1,570	1,991	1,843	1,802	1,533	1,914	1,906	1,458	1,518	1,625	
Intangible fixed assets	77	1,023	910	796	685	573	545	440	325	214	
Total assets	**20,869**	**19,996**	**20,407**	**21,286**	**29,196**	**55,317**	**49,120**	**31,248**	**31,645**	**29,938**	
Accounts payable	530	1,159	868	1,386	5,460	20,115	18,537	7,227	6,365	5,079	
Short-term debt	5,335	5,654	3,186	3,085	4,186	5,948	7,416	11,014	13,504	11,825	
Total current liabilities	**8,536**	**9,342**	**6,961**	**8,381**	**14,873**	**36,582**	**35,560**	**24,642**	**25,586**	**23,003**	
Long-term debt	16	1,726	4,319	3,630	2,870	3,725	3,055	1,077	484	325	
Total fixed liabilities	**1,603**	**3,599**	**6,343**	**5,770**	**5,486**	**6,907**	**6,229**	**3,976**	**3,212**	**2,857**	
Total liabilities	**10,139**	**12,941**	**13,304**	**14,151**	**20,359**	**43,489**	**41,789**	**28,618**	**28,799**	**25,861**	
Total net assets	**10,730**	**7,055**	**7,103**	**7,135**	**8,837**	**11,828**	**7,331**	**2,629**	**2,845**	**4,076**	
Total interest bearing debt	5,351	7,380	7,505	6,714	7,056	9,674	10,471	12,091	13,988	12,150	
Cash flow statement (JPYmn)											
Cash flows from operating activities	-89	563	55	1,260	2,185	4,934	-1,794	-5,403	1,668	2,184	
Cash flows from investing activities	815	-2,304	-214	-151	-222	-3,271	-1,181	1,062	-409	171	
Cash flows from financing activities	-696	1,946	43	-882	230	2,433	647	1,288	1,437	-2,156	
Financial ratios											
ROA (RP-based)	-	1.1%	2.1%	1.7%	7.1%	10.2%	-	-	2.9%	3.3%	
ROE	-	-	0.7%	0.2%	19.8%	28.8%	-	-	15.4%	34.4%	
Equity ratio	51.3%	35.1%	34.7%	33.4%	30.2%	21.3%	14.9%	8.3%	8.9%	13.5%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Net income refers to income attributable to parent company shareholders

Recent updates

Highlights

On **March 14, 2019**, Sanix Incorporated announced the restart of the Tomakomai Power Plant.

On March 13, 2019, the company resumed operations at the Tomakomai Power Plant, which had been suspended due to the Hokkaido Eastern Iburi earthquake that occurred on September 6, 2018. The impact of the restart of the plant was factored into the FY03/19 earnings forecasts revised in November 2018.

On **March 6, 2019**, Shared Research updated the report following interviews with the company.

On **February 13, 2019**, the company announced earnings results for Q3 FY03/19; see the results section for details.

For previous releases and developments, please refer to the News and topics section.

Trends and outlook

Quarterly trends and results

Cumulative	FY03/18				FY03/19				FY03/19	
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	% of FY	FY Est.
Sales	12,098	24,162	36,571	49,993	11,733	24,447	37,037		74.9%	49,434
YoY	6.5%	2.2%	-0.2%	-1.9%	-3.0%	1.2%	1.3%			-1.1%
Gross profit	3,722	6,685	10,420	14,044	3,540	7,503	11,197		76.0%	14,735
YoY	21.1%	-0.3%	-0.6%	-0.7%	-4.9%	12.2%	7.5%			4.9%
GPM	30.8%	27.7%	28.5%	28.1%	30.2%	30.7%	30.2%			29.8%
SG&A expenses	3,325	6,546	9,646	12,798	3,436	6,815	10,219			
YoY	-5.5%	-0.9%	-1.7%	-2.4%	3.3%	4.1%	5.9%			
SG&A ratio	27.5%	27.1%	26.4%	25.6%	29.3%	27.9%	27.6%			
Operating profit	396	138	773	1,246	103	688	978		73.1%	1,338
YoY	-	34.0%	14.7%	20.3%	-74.0%	398.6%	26.5%			7.4%
OPM	3.3%	1.1%	6.2%	9.3%	0.9%	5.4%	7.8%			2.7%
Recurring profit	292	-29	558	1,019	154	689	938		72.7%	1,290
YoY	-	-	23.5%	12.3%	-47.3%	-	68.1%			26.6%
RPM	2.4%	-	4.5%	7.6%	1.3%	5.4%	7.5%			2.6%
Net income	209	-155	341	1,180	111	194	193		36.1%	534
YoY	-	-	568.6%	183.7%	-46.9%	-	-43.4%			-54.7%
Net margin	1.7%	-	2.7%	8.8%	0.9%	1.5%	1.5%			1.1%

Quarterly	FY03/18				FY03/19			
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales	12,098	12,064	12,409	13,422	11,733	12,714	12,590	
YoY	6.5%	-1.9%	-4.4%	-6.3%	-3.0%	5.4%	1.5%	
Gross profit	3,722	2,963	3,735	3,624	3,540	3,963	3,694	
YoY	21.1%	-18.4%	-1.1%	-1.0%	-4.9%	33.7%	-1.1%	
GPM	30.8%	24.6%	30.1%	27.0%	30.2%	31.2%	29.3%	
SG&A expenses	3,325	3,221	3,100	3,152	3,436	3,379	3,404	
YoY	-5.5%	4.4%	-3.2%	-4.4%	3.3%	4.9%	9.8%	
SG&A ratio	27.5%	26.7%	25.0%	23.5%	29.3%	26.6%	27.0%	
Operating profit	396	-258	635	473	103	585	290	
YoY	-	-	11.2%	30.7%	-74.0%	-	-54.3%	
OPM	3.3%	-	5.1%	3.5%	0.9%	4.6%	2.3%	
Recurring profit	292	-321	587	461	154	535	249	
YoY	-	-	134.8%	1.3%	-47.3%	-	-57.6%	
RPM	2.4%	-	4.7%	3.4%	1.3%	4.2%	2.0%	
Net income	209	-364	496	839	111	83	-1	
YoY	-	-	151.8%	129.9%	-46.9%	-	-	
Net margin	1.7%	-	4.0%	6.3%	0.9%	0.7%	-	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Net income refers to net income attributable to parent company shareholders

Quarterly segment earnings

Segment sales and profit (cumulative)	FY03/18				FY03/19			
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales	**12,098**	**24,162**	**36,571**	**49,993**	**11,733**	**24,447**	**37,037**	
YoY	6.5%	2.2%	-0.2%	-1.9%	-3.0%	1.2%	1.3%	
Solar Engineering	4,500	8,716	12,846	17,870	2,779	5,947	9,664	
YoY	-21.8%	-27.2%	-30.9%	-31.9%	-38.2%	-31.8%	-24.8%	
Environmental Resources Development	4,957	10,149	15,914	21,755	5,826	12,099	17,913	
YoY	33.5%	29.0%	28.9%	27.0%	17.5%	19.2%	12.6%	
Home Sanitation	2,329	4,611	6,765	8,922	2,711	5,495	8,074	
YoY	40.7%	38.9%	36.9%	36.0%	16.4%	19.2%	19.3%	
Establishment Sanitation	310	685	1,045	1,444	415	905	1,385	
YoY	33.6%	40.1%	40.1%	39.8%	33.9%	32.1%	32.5%	
Operating profit	**396**	**138**	**773**	**1,246**	**103**	**688**	**978**	
YoY	-	34.0%	14.7%	20.3%	-74.0%	398.6%	26.5%	
Solar Engineering	442	937	1,347	1,668	-88	55	513	
YoY	-	143.4%	8.0%	-0.1%	-	-94.1%	-61.9%	
Environmental Resources Development	338	-57	502	972	439	962	1,088	
YoY	164.1%	-	-26.0%	-5.5%	29.9%	-	116.7%	
Home Sanitation	402	749	1,103	1,471	580	1,238	1,704	
YoY	58.9%	46.0%	43.8%	50.3%	44.3%	65.3%	54.5%	
Establishment Sanitation	40	98	130	179	52	128	196	
YoY	185.7%	226.7%	136.4%	90.4%	30.0%	30.6%	50.8%	
Adjustments	-826	-1,590	-2,310	-3,045	-880	-1,696	-2,524	
Segment sales and profit (quarterly)	**FY03/18**				**FY03/19**			
(JPYmn)	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Sales	**12,098**	**12,064**	**12,409**	**13,422**	**11,733**	**12,714**	**12,590**	
YoY	6.5%	-1.9%	-4.4%	-6.3%	-3.0%	5.4%	1.5%	
Solar Engineering	4,500	4,216	4,130	5,024	2,779	3,168	3,717	
YoY	-21.8%	-32.2%	-37.7%	-34.1%	-38.2%	-24.9%	-10.0%	
Environmental Resources Development	4,957	5,192	5,765	5,841	5,826	6,273	5,814	
YoY	33.5%	24.9%	28.7%	22.1%	17.5%	20.8%	0.8%	
Home Sanitation	2,329	2,282	2,154	2,157	2,711	2,784	2,579	
YoY	40.7%	37.1%	32.8%	33.1%	16.4%	22.0%	19.7%	
Establishment Sanitation	310	375	360	399	415	490	480	
YoY	33.6%	45.9%	40.1%	39.0%	33.9%	30.7%	33.3%	
Operating profit	**396**	**-258**	**635**	**473**	**103**	**585**	**290**	
YoY	-	-	11.2%	30.7%	-74.0%	-	-54.3%	
Solar Engineering	442	495	410	321	-88	143	458	
YoY	-	9.3%	-52.4%	-23.9%	-	-71.1%	11.7%	
Environmental Resources Development	338	-395	559	470	439	523	126	
YoY	164.1%	-	453.5%	33.9%	29.9%	-	-77.5%	
Home Sanitation	402	347	354	368	580	658	466	
YoY	58.9%	33.5%	39.4%	73.6%	44.3%	89.6%	31.6%	
Establishment Sanitation	40	58	32	49	52	76	68	
YoY	185.7%	262.5%	28.0%	25.6%	30.0%	31.0%	112.5%	
Adjustments	-826	-764	-720	-735	-880	-816	-828	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

SE segment earnings

Cumulative (JPYmn)	FY03/18 Q1	FY03/18 Q2	FY03/18 Q3	FY03/18 Q4	FY03/19 Q1	FY03/19 Q2	FY03/19 Q3	FY03/19 Q4
Sales	4,500	8,716	12,846	17,870	2,779	5,947	9,664	
YoY	-21.8%	-27.2%	-30.9%	-31.9%	-38.2%	-31.8%	-24.8%	
Direct sales	4,147	7,992	11,858	16,647	2,602	5,564	9,142	
YoY	-20.8%	-27.4%	-31.0%	-31.3%	-37.3%	-30.4%	-22.9%	
Wholesales	266	576	816	1,026	114	288	400	
YoY	-45.5%	-36.0%	-39.0%	-45.7%	-57.1%	-50.0%	-51.0%	
Others	86	147	171	196	62	94	121	
Cost of sales	2,998	5,737	8,551	12,308	2,018	4,174	6,557	
Cost ratio	66.6%	65.8%	66.6%	68.9%	72.6%	70.2%	67.8%	
Materials	1,901	3,659	5,533	8,291	1,246	2,581	4,016	
% of sales	42.2%	42.0%	43.1%	46.4%	44.8%	43.4%	41.6%	
Labor	403	773	1,125	1,433	269	523	772	
% of sales	9.0%	8.9%	8.8%	8.0%	9.7%	8.8%	8.0%	
Subcontracting	227	423	597	898	111	298	582	
% of sales	5.0%	4.9%	4.6%	5.0%	4.0%	5.0%	6.0%	
Others	465	879	1,293	1,680	391	769	1,183	
Gross profit	1,501	2,978	4,294	5,562	761	1,772	3,106	
YoY	0.9%	-9.0%	-22.4%	-25.1%	-49.3%	-40.5%	-27.7%	
GPM	33.4%	34.2%	33.4%	31.1%	27.4%	29.8%	32.1%	
SG&A expenses	1,059	2,040	2,947	3,893	849	1,717	2,593	
YoY	-31.9%	-29.4%	-31.2%	-32.3%	-19.8%	-15.8%	-12.0%	
SG&A ratio	23.5%	23.4%	22.9%	21.8%	30.6%	28.9%	26.8%	
Personnel expenses	439	869	1,294	1,769	415	846	1,275	
Operating profit	442	937	1,347	1,668	-88	55	513	
YoY	-	143.4%	8.0%	-0.1%	-	-94.1%	-61.9%	
Quarterly (JPYmn)	**FY03/18 Q1**	**FY03/18 Q2**	**FY03/18 Q3**	**FY03/18 Q4**	**FY03/19 Q1**	**FY03/19 Q2**	**FY03/19 Q3**	**FY03/19 Q4**
Sales	4,500	4,216	4,130	5,024	2,779	3,168	3,717	
YoY	-21.8%	-32.2%	-37.7%	-34.1%	-38.2%	-24.9%	-10.0%	
Direct sales	4,147	3,845	3,866	4,789	2,602	2,962	3,578	
YoY	-20.8%	-33.4%	-37.3%	-32.1%	-37.3%	-23.0%	-7.4%	
Wholesales	266	310	240	210	114	174	112	
YoY	-45.5%	-24.8%	-45.2%	-61.9%	-57.1%	-43.9%	-53.3%	
Others	86	61	24	25	62	32	27	
Cost of sales	2,998	2,739	2,814	3,757	2,018	2,156	2,383	
Cost ratio	66.6%	65.0%	68.1%	74.8%	72.6%	68.1%	64.1%	
Materials	1,901	1,758	1,874	2,758	1,246	1,335	1,435	
% of sales	42.2%	41.7%	45.4%	54.9%	44.8%	42.1%	38.6%	
Labor	403	370	352	308	269	254	249	
% of sales	9.0%	8.8%	8.5%	6.1%	9.7%	8.0%	6.7%	
Subcontracting	227	196	174	301	111	187	284	
% of sales	5.0%	4.6%	4.2%	6.0%	4.0%	5.9%	7.6%	
Others	465	414	414	387	391	378	414	
Gross profit	1,501	1,477	1,316	1,268	761	1,011	1,334	
YoY	0.9%	-17.3%	-41.7%	-33.0%	-49.3%	-31.6%	1.4%	
GPM	33.4%	35.0%	31.9%	25.2%	27.4%	31.9%	35.9%	
SG&A expenses	1,059	981	907	946	849	868	876	
YoY	-31.9%	-26.4%	-35.0%	-35.6%	-19.8%	-11.5%	-3.4%	
SG&A ratio	23.5%	23.3%	22.0%	18.8%	30.6%	27.4%	23.6%	
Personnel expenses	439	430	425	475	415	431	429	
Operating profit	442	495	410	321	-88	143	458	
YoY	-	9.3%	-52.4%	-23.9%	-	-71.1%	11.7%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Quarterly (three-month) results are based on differences between figures for the current quarter and those for the previous quarter.

Sales, volume, and unit price for solar power system

Cumulative	FY03/18 Q1	FY03/18 Q2	FY03/18 Q3	FY03/18 Q4	FY03/19 Q1	FY03/19 Q2	FY03/19 Q3	FY03/19 Q4
Sales (JPYmn)	4,147	7,992	11,858	16,647	2,602	5,564	9,142	
YoY	-20.8%	-27.4%	-31.0%	-31.3%	-37.3%	-30.4%	-22.9%	
PV system sales volume (kW)	22,397	42,515	65,323	91,882	14,099	31,761	52,681	
YoY	-13.6%	-25.2%	-24.1%	-26.4%	-37.0%	-25.3%	-19.4%	
PV system price (JPY'000/kW)	185	188	182	181	185	175	174	
YoY	-8.4%	-3.0%	-9.1%	-6.7%	-0.3%	-6.8%	-4.4%	
Quarterly	**FY03/18 Q1**	**FY03/18 Q2**	**FY03/18 Q3**	**FY03/18 Q4**	**FY03/19 Q1**	**FY03/19 Q2**	**FY03/19 Q3**	**FY03/19 Q4**
Sales (JPYmn)	4,147	3,845	3,866	4,789	2,602	2,962	3,578	
YoY	-20.8%	-33.4%	-37.3%	-32.1%	-37.3%	-23.0%	-7.4%	
PV system sales volume (kW)	22,397	20,118	22,808	26,559	14,099	17,662	20,920	
YoY	-13.6%	-34.9%	-21.9%	-31.5%	-37.0%	-12.2%	-8.3%	
PV system price (JPY'000/kW)	185	191	170	180	185	168	171	
YoY	-8.4%	2.3%	-19.7%	-0.9%	-0.3%	-12.3%	0.9%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods.
Unit price is calculated as sales divided by volume.

SE segment expenses

SE expenses (cumulative)		FY03/18				FY03/19		
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Marginal profit	2,178	4,252	6,164	8,360	1,226	2,673	4,480	
Marginal profit ratio	48.4%	48.8%	48.0%	46.8%	44.1%	45.0%	46.4%	
Fixed costs	1,734	3,309	4,806	6,270	1,311	2,613	3,960	
Fixed cost ratio	38.5%	38.0%	37.4%	35.1%	47.2%	43.9%	41.0%	
Breakeven point	3,583	6,783	10,015	13,403	2,973	5,813	8,543	
Breakeven point ratio	79.6%	77.8%	78.0%	75.0%	107.0%	97.7%	88.4%	
SE expenses (quarterly)		FY03/18				FY03/19		
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Marginal profit	2,178	2,074	1,912	2,195	1,226	1,448	1,806	
Marginal profit ratio	48.4%	49.2%	46.3%	43.7%	44.1%	45.7%	48.6%	
Fixed costs	1,734	1,575	1,497	1,464	1,311	1,302	1,347	
Fixed cost ratio	38.5%	37.4%	36.2%	29.1%	47.2%	41.1%	36.2%	
Breakeven point	3,583	3,201	3,233	3,350	2,973	2,849	2,772	
Breakeven point ratio	79.6%	75.9%	78.3%	66.7%	107.0%	89.9%	74.6%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Figures, derived from ratios and sales results or monthly amounts, may differ from the company's publicly announced numbers.
Cumulative quarterly figures represent the total results for the quarter.

Environmental Resources Development (ERD) segment earnings

Cumulative		FY03/18				FY03/19		
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales	4,957	10,149	15,914	21,755	5,826	12,099	17,913	
YoY	33.5%	29.0%	28.9%	27.0%	17.5%	19.2%	12.6%	
Waste plastic processing	1,835	3,672	5,712	7,556	2,052	4,105	6,451	
YoY	8.1%	6.5%	5.7%	5.5%	11.8%	11.8%	12.9%	
Power generation	2,318	4,878	7,830	11,095	2,996	6,342	8,939	
YoY	89.4%	74.9%	74.4%	63.0%	29.2%	30.0%	14.2%	
Other	804	1,599	2,372	3,104	778	1,652	2,523	
YoY	1.6%	-2.0%	-3.4%	-2.0%	-3.2%	3.3%	6.4%	
Gross profit	778	851	1,905	2,846	926	1,930	2,545	
GPM	15.7%	8.4%	12.0%	13.1%	15.9%	16.0%	14.2%	
SG&A expenses	439	908	1,403	1,873	486	968	1,457	
SG&A ratio	8.9%	8.9%	8.8%	8.6%	8.3%	8.0%	8.1%	
Operating profit	338	-57	502	972	439	962	1,088	
YoY	164.1%	-	-26.0%	-5.5%	29.9%	-	116.7%	
Quarterly		FY03/18				FY03/19		
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales	4,957	5,192	5,765	5,841	5,826	6,273	5,814	
YoY	33.5%	24.9%	28.7%	22.1%	17.5%	20.8%	0.8%	
Waste plastic processing	1,835	1,837	2,040	1,844	2,052	2,053	2,346	
YoY	8.1%	4.9%	4.4%	5.0%	11.8%	11.8%	15.0%	
Power generation	2,318	2,560	2,952	3,265	2,996	3,346	2,597	
YoY	89.4%	63.6%	73.6%	40.9%	29.2%	30.7%	-12.0%	
Other	804	795	773	732	778	874	871	
YoY	1.6%	-5.5%	-6.2%	3.0%	-3.2%	9.9%	12.7%	
Gross profit	778	73	1,054	941	926	1,004	615	
GPM	15.7%	1.4%	18.3%	16.1%	15.9%	16.0%	10.6%	
SG&A expenses	439	469	495	470	486	482	489	
SG&A ratio	8.9%	9.0%	8.6%	8.0%	8.3%	7.7%	8.4%	
Operating profit	338	-395	559	470	439	523	126	
YoY	164.1%	-	453.5%	33.9%	29.9%	-	-77.5%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Figures, derived from ratios and sales results, may differ from the company's publicly announced numbers.

Sales, volume, and unit price for waste plastic processing

Cumulative (JPYmn)	FY03/18 Q1	FY03/18 Q2	FY03/18 Q3	FY03/18 Q4	FY03/19 Q1	FY03/19 Q2	FY03/19 Q3	FY03/19 Q4
Sales (JPYmn)	1,835	3,672	5,712	7,556	2,052	4,105	6,451	
YoY	8.1%	6.5%	5.7%	5.5%	11.8%	11.8%	12.9%	
Acceptance volume (t)	81,720	161,477	248,057	324,249	84,496	166,179	254,985	
YoY	-3.8%	-2.7%	-3.2%	-2.9%	3.4%	2.9%	2.8%	
Unit price (JPY'000/t)	22.5	22.7	23.0	23.3	24.3	24.7	25.3	
YoY	12.4%	9.4%	9.2%	8.7%	8.2%	8.6%	9.9%	
Quarterly (JPYmn)	**FY03/18 Q1**	**FY03/18 Q2**	**FY03/18 Q3**	**FY03/18 Q4**	**FY03/19 Q1**	**FY03/19 Q2**	**FY03/19 Q3**	**FY03/19 Q4**
Sales (JPYmn)	1,835	1,837	2,040	1,844	2,052	2,053	2,346	
YoY	8.1%	4.9%	4.4%	5.0%	11.8%	11.8%	15.0%	
Acceptance volume (t)	81,720	79,757	86,580	76,192	84,496	81,683	88,806	
YoY	-3.8%	-1.5%	-4.0%	-2.1%	3.4%	2.4%	2.6%	
Unit price (JPY'000/t)	22.5	23.0	23.6	24.2	24.3	25.1	26.4	
YoY	12.4%	6.5%	8.8%	7.2%	8.2%	9.1%	12.1%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods.
Unit price is calculated as sales divided by volume.

Home Sanitation (HS) segment earnings

Cumulative (JPYmn)	FY03/18 Q1	FY03/18 Q2	FY03/18 Q3	FY03/18 Q4	FY03/19 Q1	FY03/19 Q2	FY03/19 Q3	FY03/19 Q4
Sales	2,329	4,611	6,765	8,922	2,711	5,495	8,074	
YoY	40.7%	38.9%	36.9%	36.0%	16.4%	19.2%	19.3%	
Termite control service	728	1,364	1,970	2,628	925	1,831	2,623	
YoY	14.8%	12.6%	15.7%	21.7%	27.1%	34.2%	33.1%	
Floor and ceiling ventilation systems	315	635	946	1,254	411	870	1,328	
YoY	69.4%	30.7%	41.4%	68.8%	30.5%	37.0%	40.4%	
Foundation repairing & building strengthening work	460	911	1,428	1,957	571	1,110	1,600	
YoY	77.6%	217.4%	226.8%	56.7%	24.1%	21.8%	12.0%	
Other	825	1,699	2,419	3,081	803	1,681	2,521	
YoY	42.7%	27.5%	13.6%	27.8%	-2.7%	-1.1%	4.2%	
Gross profit	1,292	2,523	3,726	4,947	1,637	3,327	4,826	
GPM	55.5%	54.7%	55.1%	55.4%	60.4%	60.5%	59.8%	
SG&A expenses	890	1,774	2,622	3,475	1,057	2,089	3,121	
SG&A ratio	38.2%	38.5%	38.8%	38.9%	39.0%	38.0%	38.7%	
Operating profit	402	749	1,103	1,471	580	1,238	1,704	
YoY	58.9%	46.0%	43.8%	50.3%	44.3%	65.3%	54.5%	
Quarterly (JPYmn)	**FY03/18 Q1**	**FY03/18 Q2**	**FY03/18 Q3**	**FY03/18 Q4**	**FY03/19 Q1**	**FY03/19 Q2**	**FY03/19 Q3**	**FY03/19 Q4**
Sales	2,329	2,282	2,154	2,157	2,711	2,784	2,579	
YoY	40.7%	37.1%	32.8%	33.1%	16.4%	22.0%	19.7%	
Termite control service	728	636	606	658	925	906	792	
YoY	14.8%	10.2%	23.2%	44.3%	27.1%	42.5%	30.7%	
Floor and ceiling ventilation systems	315	320	311	308	411	459	458	
YoY	69.4%	6.7%	69.9%	316.2%	30.5%	43.4%	47.3%	
Foundation repairing & building strengthening work	460	451	517	529	571	539	490	
YoY	77.6%	1510.7%	244.7%	-34.9%	24.1%	19.5%	-5.2%	
Other	825	874	720	662	803	878	840	
YoY	42.7%	15.8%	-9.7%	136.4%	-2.7%	0.5%	16.7%	
Gross profit	1,292	1,231	1,203	1,221	1,637	1,690	1,499	
GPM	55.5%	53.9%	55.8%	56.6%	60.4%	60.7%	58.1%	
SG&A expenses	890	884	848	853	1,057	1,032	1,032	
SG&A ratio	38.2%	38.7%	39.4%	39.5%	39.0%	37.1%	40.0%	
Operating profit	402	347	354	368	580	658	466	
YoY	58.9%	33.5%	39.4%	73.6%	44.3%	89.6%	31.6%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods.

Sales, volume, and unit price for termite control services

Cumulative	FY03/18				FY03/19			
(JPYmn)	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Sales (JPYmn)	728	1,364	1,970	2,628	925	1,831	2,623	
YoY	14.8%	12.6%	15.7%	21.7%	27.1%	34.2%	33.1%	
Treatment area ('000sqm)	426	800	1,167	1,560	545	1,078	1,534	
YoY	8.4%	6.6%	11.0%	16.5%	27.9%	34.7%	31.4%	
Price per sqm (JPY'000)	1.71	1.70	1.69	1.68	1.70	1.70	1.71	
YoY	5.9%	5.7%	4.2%	4.4%	-0.7%	-0.4%	1.3%	
Quarterly	**FY03/18**				**FY03/19**			
(JPYmn)	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**
Sales (JPYmn)	728	636	606	658	925	906	792	
YoY	14.8%	10.2%	23.2%	44.3%	27.1%	42.5%	30.7%	
Treatment area ('000sqm)	426	374	367	393	545	1,078	1,534	
YoY	8.4%	4.6%	22.0%	36.8%	27.9%	42.5%	24.3%	
Price per sqm (JPY'000)	1.71	1.70	1.65	1.67	1.70	0.84	0.52	
YoY	5.9%	5.3%	1.0%	5.5%	-0.7%	0.0%	5.1%	

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods.
Price per sqm is calculated as sales divided by treatment area.

Q3 FY03/19 results

- Sales: JPY37.0bn (+1.3% YoY)
- Operating profit: JPY978mn (+26.5% YoY)
- Recurring profit: JPY938mn (+68.1% YoY)
- Net income*: JPY193mn (-43.4% YoY)

*Net income refers to net income attributable to parent company shareholders.

Sales increased in the Home Sanitation (HS) and Establishment Sanitation (ES) segments as the company properly distributed its management resources, including the human resources. Moreover, the Environmental Resources Development (ERD) segment saw sales growth due to expansion of electric power sales by the new electric power generation (PPS) business.

Earnings were bolstered by rising sales at the HS, ES, and ERD businesses, which together were more than enough to offset the impact of decline in sales at the SE business and leave the company with higher earnings at both the operating and recurring profit levels. Net income attributable to parent company shareholders fell due to JPY427mn in extraordinary loss booked to cover the expenses expected to be incurred to repair the damage to the Iburi power plant caused by the earthquake that struck the eastern part of the Iburi region of Hokkaido.

Sanix implemented a new medium-term management plan (for FY03/17 through FY03/19) to cope with the business environment surrounding the solar electric power market. According to the new medium-term plan, in FY03/18, it established a general headquarter for the SE, HS, and ES businesses, a cross-segmental organization that enables employees to join forces and conduct effective sales and installation activities across the three businesses that share the same sales offices. Further, in a bid to deploy personnel properly, the company transferred part of the SE segment staff to the HS and ES segments.

The Iburi power plant was shut down following the earthquake that hit the eastern part of the Iburi region of Hokkaido in September 2018. The company is currently in the process of repairing the damage caused by the earthquake. Restart is scheduled for March 2019. The damage is expected to have a full-year impact of JPY1.2bn in lower sales and JPY1.2bn decline in operating profit. Sanix has already booked an extraordinary loss of JPY427mn. Concurrently with the repairs, the company also carried out a boiler inspection (every two years) and a regular turbine inspection (every four years) that had been slated for FY03/20. It thus expects the power plant to be operating throughout FY03/20.

In November 2018 Sanix revised its full-year FY03/19 forecasts due to the damage to the Tomakomai Power Plant. In cumulative Q3, versus the company's revised full-year forecasts, progress was sales 74.9% (73.2% of full-year results in cumulative Q3 FY03/18), operating profit 73.1% (62.0%), recurring profit 72.7% (54.8%), and net income 36.1% (28.9%). Excluding the ERD business, progress was largely as planned at the segment level, while operating profit for the ERD business was above plan. This is because the periodic inspection (repair) costs will be booked in Q4 rather than in Q3 as previously planned.

Solar Engineering (SE) segment

- Sales: JPY9.7bn (-24.8% YoY)
- Operating profit: JPY513mn (-61.9% YoY)

Sales from solar power system installations were JPY9.1bn (-22.9% YoY). There were fewer installation projects due to lengthening times to approve FIT scheme projects.

In cumulative Q3, sales from solar power system installations, the core business in the segment, were JPY9.1bn (-22.9% YoY). Sales weakened on lower volume, down 19.4% YoY to 52,681kW. However in standalone Q3, installation sales were JPY3.6bn (+20.8% QoQ) and volume was 20,920kW (+18.4% QoQ) as the approval processes began wrapping up from Q2. The unit price of solar power systems in cumulative Q3 was JPY174,000/kW (-4.4% YoY according to Shared Research calculations). The company reduced prices for solar power system installations in step with a decline in purchase prices under the fixed-price purchase scheme (FIT scheme). Approval procedures for facilities to which the 2018 purchasing price of JPY18/kWh (JPY21/kWh in fiscal 2017) was applied began to wrap up in Q2 (July JPY18/kWh (JPY21/kWh in fiscal 2017) scheme (FI accompanying this trend, the company lowered unit prices for solar power systems.

In earnings, the company promoted cost reductions by moving personnel to the HS business and cutting materials costs. However, the segment saw profit fall on a decline in gross profit on weaker sales. In Q3 standalone, profit rose despite lower sales. The OPM increased on lower cost-of-sales and SG&A expense ratios.

Gross profit was JPY3.1bn (-27.7% YoY), GPM fell 1.3pp YoY to 32.1%, and the CoS ratio was 67.8%. The company succeeded in lowering materials costs, and the percentage drop in GPM was lower than that for unit prices for solar power systems. The materials cost and labor cost ratios fell in the CoS breakdown. The ratio of materials cost to sales fell 1.5pp YoY to 41.6% as the procurement cost of solar power modules fell. The ratio of labor costs to sales fell 0.8pp YoY to 8.0%. Sales fell, but the company reduced its labor cost ratio YoY by transferring some personnel from the SE segment to the HS and ES segments. In Q3 standalone, gross profit was JPY1.3bn (+1.4% YoY) and GPM 35.9% (+4.0pp YoY). The materials cost ratio was 38.6% (-6.8pp YoY), and labor cost ratio 7.6% (-1.8pp YoY).

SG&A expenses were JPY2.6bn (-12.0% YoY), reflecting a fall in personnel and other expenses. In Q3 standalone, SG&A expenses were JPY876mn (-3.4% YoY).

SE business marginal profit ratio and breakeven point

The marginal profit ratio (profit ratio after subtracting variable costs such as materials costs, subcontracting costs, and transportation costs) fell 1.6pp YoY to 46.4%. The marginal profit ratio dropped as the ratio of subcontracting costs to sales rose.

Fixed costs (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) were down JPY846mn or 17.6% YoY to JPY4.0bn because the company transferred personnel from the SE segment to the HS segment. Fixed cost ratio rose 3.6pp YoY to 41.0% as sales fell at a greater rate than fixed costs did. Despite lower marginal profit ratio, as a result of the fall in fixed costs, the breakeven point for sales (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) finished at JPY8.5bn, down JPY1.5bn or 14.7% YoY.

Environmental Resources Development (ERD) segment

- Sales: JPY17.9bn (+12.6% YoY)
- Operating profit: JPY1.1bn (+116.7% YoY)

Sales rose on higher plastic fuel income. Sales from plastic fuel rose 12.9% YoY to JPY6.5bn on an increase in plastic waste intake to 254,985 tons (+2.8% YoY) and efforts to raise the unit price received for waste plastics. Sales from electric power generation rose 14.2% YoY to JPY8.9bn on increased sales volume of wholesale power to power companies in the new electric power generation (PPS) business. The Tomakomai Power Plant shutdown caused by the Hokkaido earthquake in September 2018 resulted in a YoY loss of roughly JPY800mn power sales. The restart of the power station is scheduled for March 2019 due to time required to procure made-to-order components.

Profit rose on higher GPM accompanying an increase in the unit price received for waste plastics at the waste plastics processing business. In Q3 FY03/18, the company recorded repair expenses of JPY600mn associated with regular biennial inspections at the Tomakomai Power Plant. However, inspections were not conducted during cumulative Q3 FY03/19, which also contributed to increased profit. Additionally, higher sales and stabilization of electricity procurement costs at the new electric power generation (PPS) business contributed to profit growth. In Q2 FY03/18, profit margins fell as the company had to resort to purchasing high-cost electricity to handle increased sales volume. However, in Q4 FY03/18 Sanix changed its procurement method and became able to secure profit corresponding to sales volume without being influenced by supply and demand. In Q3 standalone, profit fell YoY and QoQ due to the shutdown at the Tomakomai Power Plant following the Hokkaido earthquake.

Home Sanitation (HS) segment

- ▷ Sales: JPY8.1bn (+19.3% YoY)
- ▷ Operating profit: JPY1.7bn (+54.5% YoY)

The strong top-line gains reflect growth in multiple areas, including termite control services, where revenues rose 33.1% YoY to JPY2.6bn, in-floor/in-ceiling ventilation system installation work, where revenues rose 40.4% to JPY1.3bn, and foundation repairing and strengthening construction work services to households, where revenues rose 12.0% to JPY1.6bn. The company transferred employees from the SE segment to expand businesses under the HS segment, and strengthened sales and work operations to provide detailed maintenance proposals to general households.

Profits increased despite higher personnel expenses stemming from increases in staffing levels, thanks to higher sales, improvement in work efficiency, and decline in the subcontracting cost ratio. GPM was 59.8% (+4.7pp YoY). The share of sales from relatively high-margin services such as termite control services and floor and ceiling ventilation systems installation work increased, while the share of relatively low-margin others (e.g., subcontracted construction work such as renovation) fell.

Establishment Sanitation (ES) segment

- ▷ Sales: JPY1.4bn (+32.5% YoY)
- ▷ Operating profit: JPY196mn (+50.8% YoY)

Sales were driven by the segment's mainstay anti-rust equipment installation business (product name: Daelman Shock), where sales rose 85.3% YoY to JPY667mn. By transferring people from its SE business the company was able to increase the number of employees at the ES segment and expand the business, focusing especially on sales to owners of building and condominiums and building closer ties with management companies and other partners.

Although personnel expenses and other fixed costs rose on the increase in the staff, the rise in sales as well as improved work efficiency and decline in the outsourced processing cost ratio pushed up profits.

Other topics: Plans for the FIT scheme for fiscal 2019 onward

In January 2019 the government committee that determines the price paid under the FIT scheme released its proposal for prices to be paid for fiscal 2019. The plan calls for solar power generation systems of 10kW to less than 500kW to receive JPY14/kWh

(JPY18/kWh in fiscal 2018). The company said it would be able to sell systems at prices where customers could get a return and it could still make a profit due to cost cuts.

For details on previous quarterly and annual results, please refer to the Historical performance section.

Full-year company forecast

	FY03/18			FY03/19		
(JPYmn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Sales	**24,162**	**25,831**	**49,993**	**24,447**	**24,987**	**49,434**
YoY	2.2%	-5.4%	-1.9%	1.2%	-3.3%	-1.1%
Cost of sales	17,477	18,472	35,949	16,944	17,755	34,699
Gross profit	**6,685**	**7,359**	**14,044**	**7,503**	**7,232**	**14,735**
YoY	-0.3%	-1.0%	-0.7%	12.2%	-1.7%	4.9%
GPM	27.7%	28.5%	28.1%	30.7%	28.9%	29.8%
SG&A expenses	6,546	6,252	12,798	6,815	6,582	13,397
SG&A ratio	27.1%	24.2%	25.6%	27.9%	26.3%	27.1%
Operating profit	**138**	**1,108**	**1,246**	**688**	**650**	**1,338**
YoY	34.0%	18.8%	20.3%	398.6%	-41.3%	7.4%
OPM	0.6%	4.3%	2.5%	2.8%	2.6%	2.7%
Recurring profit	**-29**	**1,048**	**1,019**	**689**	**601**	**1,290**
YoY	-	48.7%	12.3%	-	-42.7%	26.6%
RPM	-0.1%	4.1%	2.0%	2.8%	2.4%	2.6%
Net income	**-155**	**1,335**	**1,180**	**194**	**340**	**534**
YoY	-	137.5%	183.7%	-	-74.5%	-54.7%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Note that net income refers to income attributable to shareholders of the parent

Earning by segment

	FY03/18			FY03/19		
(JPY mn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Sales	**24,162**	**23,518**	**47,680**	**24,447**	**24,987**	**49,434**
YoY	2.2%	-13.9%	-6.4%	1.2%	6.2%	3.7%
Solar Engineering (SE)	8,716	9,154	17,870	5,947	7,296	13,243
YoY	-27.2%	-35.8%	-31.9%	-31.8%	-20.3%	-25.9%
Home and Establishment Sanitation (HS/ES)	5,296	5,070	10,366	6,400	6,316	12,716
YoY	39.1%	33.9%	36.5%	20.8%	24.6%	22.7%
Environmental Resource Development (ERD)	10,149	11,606	21,755	12,099	11,374	23,473
YoY	29.0%	25.3%	27.0%	19.2%	-2.0%	7.9%
Operating profit	**138**	**1,108**	**1,246**	**688**	**650**	**1,338**
YoY	34.0%	18.8%	20.3%	398.6%	-41.3%	7.4%
Solar Engineering (SE)	937	731	1,668	55	1,066	1,121
YoY	143.4%	-43.1%	-0.1%	-94.1%	45.8%	-32.8%
Home and Establishment Sanitation (HS/ES)	847	803	1,650	1,366	1,136	2,502
YoY	56.0%	51.5%	53.8%	61.3%	41.5%	51.6%
Environmental Resource Development (ERD)	-57	1,029	972	962	13	975
YoY	-	127.7%	-5.5%	-	-98.7%	0.3%
Unallocated expenses	-1,590	-1,455	-3,045	-1,696	-1,566	-3,262

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

SE segment: earnings

	FY03/18			FY03/19		
(JPY mn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Sales	**8,716**	**9,154**	**17,870**	**5,947**	**7,296**	**13,243**
YoY	-27.2%	-35.8%	-31.9%	-31.8%	-20.3%	-25.9%
Sale and installation of PV systems	7,992	8,655	16,647	5,564	7,078	12,642
YoY	-27.4%	-34.5%	-31.3%	-30.4%	-18.2%	-24.1%
Wholesale operations	576	450	1,026	288	184	472
YoY	-36.0%	-54.5%	-45.7%	-50.0%	-59.1%	-54.0%
Cost of sales	5,737	6,571	12,308	4,174	4,549	8,723
Cost ratio	65.8%	71.8%	68.9%	70.2%	62.3%	65.9%
Material costs	3,659	4,632	8,291	2,581	3,148	5,729
Labor costs	773	660	1,433	523	449	972
Gross profit	2,978	2,584	5,562	1,772	2,747	4,519
GPM	34.2%	28.2%	31.1%	29.8%	37.7%	34.1%
SG&A expenses	2,040	1,853	3,893	1,717	1,681	3,398
Personnel expenses	869	900	1,769	846	858	1,704
Operating profit	**937**	**731**	**1,668**	**55**	**1,066**	**1,121**
YoY	143.4%	-43.1%	-0.1%	-94.1%	45.8%	-32.8%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

SE segment: costs

	FY03/18			FY03/19		
(JPYmn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Marginal profit	4,253	4,110	8,364	2,670	3,531	6,201
Marginal profit ratio	48.8%	44.9%	46.8%	44.9%	48.4%	46.9%
Fixed costs	3,306	2,964	6,270	2,580	2,448	5,028
Fixed cost ratio	37.9%	32.4%	35.1%	43.4%	33.6%	38.0%
Breakeven point	6,775	6,601	13,397	5,746	5,058	10,721
Breakeven point ratio	77.7%	72.1%	75.0%	96.6%	69.3%	81.0%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Figures may differ from company announcements as the figures in each category are calculated from percentages and sales

HS segment: earnings

	FY03/18			FY03/19		
(JPY mn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Sales	4,611	4,311	8,922	5,495	5,443	10,938
YoY	38.9%	32.9%	36.0%	19.2%	26.3%	22.6%
Termite control service	1,364	1,264	2,628	1,831	1,478	3,309
YoY	12.6%	33.3%	21.7%	34.2%	16.9%	25.9%
Floor and ceiling ventilation systems	635	619	1,254	870	821	1,691
YoY	30.7%	68.2%	46.8%	37.0%	32.6%	34.8%
Foundation repairing & building strengthening work	911	1,046	1,957	1,110	1,281	2,391
YoY	217.4%	254.6%	236.3%	21.8%	22.5%	22.2%
Other	1,699	1,382	3,081	1,681	1,864	3,545
YoY	27.5%	-15.3%	3.9%	-1.1%	34.9%	15.1%
Gross profit	2,523	2,424	4,947	3,327	3,131	6,458
GPM	54.7%	56.2%	55.4%	60.5%	57.5%	59.0%
SG&A expenses	1,774	1,701	3,475	2,089	2,106	4,195
SG&A ratio	38.5%	39.5%	38.9%	38.0%	38.7%	38.4%
Operating profit	749	722	1,471	1,238	1,024	2,262
YoY	46.0%	54.9%	50.3%	65.3%	41.8%	53.8%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Environment Resources Development segment: earnings

	FY03/18			FY03/19		
(JPY mn)	1H Act.	2H Act	FY Act.	1H Act.	2H Est.	FY Est.
Sales	10,149	11,606	21,755	12,099	11,374	23,473
YoY	29.0%	25.3%	27.0%	19.2%	-2.0%	7.9%
Waste plastic processing	3,672	3,884	7,556	4,105	4,017	8,122
YoY	6.5%	5.3%	5.8%	11.8%	3.4%	7.5%
Power generation	4,878	6,217	11,095	6,342	5,754	12,096
YoY	74.9%	54.8%	63.0%	30.0%	-7.4%	9.0%
Other	1,599	1,505	3,104	1,652	1,603	3,255
YoY	-2.0%	-3.3%	-2.6%	3.3%	6.5%	4.9%
Gross profit	851	1,995	2,846	1,930	933	2,863
GPM	8.4%	17.2%	13.1%	16.0%	8.2%	12.2%
SG&A expenses	908	965	1,873	968	919	1,887
SG&A ratio	8.9%	8.3%	8.6%	8.0%	8.1%	8.0%
Operating profit	-57	1,029	972	962	13	975
YoY	-	127.7%	-5.5%	-	-98.7%	0.3%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
From FY03/19, the power sales and new electric power generation businesses will be recategorized as wholesale and retail power sales

Full-year FY03/19 earnings forecast

Along with its release of 1H FY03/19 results, the company revised its forecast for the full year. The company's revised forecast sees full-year sales coming in at JPY49.4bn (-1.1% YoY), operating profit at JPY1.3bn (+7.4% YoY), recurring profit at JPY1.3bn (+26.6% YoY), and net income attributable to parent company shareholders at JPY534mn (-54.7% YoY).

Compared to the initial forecast, the company lowered projections by JPY565mn in sales, JPY851mn in operating profit, JPY809mn in recurring profit, and JPY1.1bn in net income attributable to parent company shareholders.

The downward revision to the full-year forecast was primarily due to the suspension of operations at the Tomakomai Power Plant in the aftermath of the 2018 Hokkaido Eastern Iburi Earthquake in September. The company said sales are now expected to come in below its previous forecast due to the cessation of electric power sales at the Tomakomai Power Plant, which is not expected to be restarted until early March 2019. Due to the shortfall in sales stemming from the shutdown of the Tomakomai Power Plant and increases in fixed costs, operating profit and recurring profit are also expected to come in below the company's previous forecasts. Net income attributable to parent company shareholders is likewise expected to fall short of the company's previous forecast due to the booking of an extraordinary loss to cover the added expenses incurred to repair the damage to the Tomakomai Power Plant caused by the earthquake.

The company forecasts that the impact of the disaster on the Tomakomai Power Plant will be a primary factor contributing to a JPY1.2bn decline in sales and a JPY1.2bn drop in operating profit. The company also expects to book an extraordinary loss of JPY420mn.

SE segment

The company forecasts sales of JPY13.2bn (-25.9% YoY) and operating profit of JPY1.1bn (-32.8% YoY). The company expects both sales and profits to be concentrated in 2H as the impact of elongated period required for receiving approval will gradually dissipate.

Sanix revised down the segment sales and profit forecasts by JPY321mn and JPY386mn, respectively, compared to the initial forecast in accordance with the revised forecast announced at the time of its 1H FY03/19 results announcement. The company conducted these revisions considering the divergence between initial forecasts and actual 1H results. As of end-1H, approval processes for solar power systems were taking longer than initially expected. However, these processes have begun wrapping up, and the company forecasts an upward trend in installation volume from Q3.

In the SE segment, the company expects lower sales as it will need to respond to changes in the market environment due to revisions to the FIT Act as the solar power generation market continues to be harsh. The company expects both lower volume and sales price. The company expects a decline in sales price corresponding to the purchasing price in the FIT scheme declining from JPY21/kWh in FY03/18 to JPY18/kWh.

The company plans to continue to reduce fixed costs such as personnel expenses by transferring some personnel from the SE segment to the HS segment. The company expects profits to fall due to lower sales, despite making progress to reduce cost price by lowering materials costs.

SE business marginal profit ratio and breakeven point

The company expects the marginal profit ratio (profit ratio after subtracting variable costs such as material costs, outsourcing costs, and transportation) to rise 0.1pp YoY to 46.9%. The company expects materials costs to make up a lower percentage of variable costs. The company expects the ratio of material costs to sales to decline 3.1pp YoY to 43.3%.

The company expects fixed costs (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) to be down JPY1.2bn YoY to JPY5.0bn. As a result, the company forecasts the breakeven point for sales (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) to finish at JPY10.7bn, down JPY2.7bn YoY.

HS segment

The company forecasts sales of JPY10.9bn (+22.6% YoY) and operating profit of JPY2.3bn (+53.8% YoY).

The company revised up the segment sales and operating profit forecasts by JPY581mn and JPY456mn, respectively, compared to initial forecasts in the revised forecast announced at the time of its 1H FY03/19 results announcement. These revisions accounted for 1H results that exceeded initial forecasts and current strong performance.

The company expects that the HS segment will secure higher sales by strengthening efforts to tap into demand from past customers as it increases the number of personnel through transfers from the SE segment. The company forecasts that fixed costs will rise due to the increase in personnel. However, the company is making efforts to prevent a decline in profitability by absorbing higher fixed costs with higher sales.

Environmental Resources Development segment

The company forecasts sales of JPY24.5bn (+7.9% YoY) and operating profit of JPY975mn (+0.3% YoY).

Sanix revised down the segment sales and operating profit forecasts by JPY857mn and JPY880mn, respectively, compared to initial forecasts in accordance with the revised forecast announced at the time of its 1H FY03/19 results announcement. The company made these revisions in consideration of divergence between 1H results and initial forecasts and the impact of natural disasters on the Tomakomai Power Plant. 1H plastic fuel sales were robust and exceeded initial forecasts, but electric power generation business revenue was below expectations due to a natural disaster that caused an operational suspension at the Tomakomai Power Plant, bringing its performance in line with initial forecast. Although the company expects plastic fuel sales to continue yielding strong results and outperform initial forecasts, electric power generation business revenue is projected to finish below initial predictions because the Tomakomai Power Plant will not resume operations until the beginning of March 2019. Sanix forecasts that the disaster affecting the Tomakomai Power Plant will primarily contribute to a JPY1.2bn decline in sales and a JPY1.2bn drop in operating profit.

Sales in the Environmental Resources Development segment increases mainly on higher plastic fuel sales and growth in electric power generation business revenue. Although electric power generation business revenue was in line with initial forecasts until Q2, Sanix predicts it to fall in 2H because the Tomakomai Power Plant, which suffered a suspension due to an earthquake, will not resume operations until the beginning of March 2019.

Despite higher sales, the company expects operating profit to be flat YoY due to rising fixed costs at the Tomakomai Power Plant.

Outlook

New medium-term management plan announced

In May 2014, Sanix unveiled its Sun Shine Plan 2016, a medium-term management goal covering the period from FY03/15 through FY03/17. The plan called for an increase in sales and installations of solar power systems. Accordingly, up until Q2 FY03/15, the company had expanded personnel in the SE segment based on a forecast of sales growth in the medium term.

However, problems emerged in September 2014 regarding power utilities' grid-connection capacity for solar power and other renewable energies, and in January 2015, the Feed-in Tariff Scheme for Renewable Energy was revised. In light of this, the company announced in February 2015 that it would temporarily abandon its medium-term management plan.

In FY03/16, even as sales related to the SE segment faltered, Sanix responded to changes in its business environment with measures to streamline operations, including a combination of a voluntary retirement program and the elimination and consolidation of stores in order to reduce labor cost and other fixed costs. Specifically, 690 workers in technical and administrative positions in the SE segment voluntarily retired in May 2015, followed by another 229 in December 2015, again mostly in the SE segment. Then in February 2016, 70 employees across all positions were let go as part of reorganization.

Sanix announced a new medium-term management plan in April 2016 (for FY03/17 through FY03/19) aiming to improve performance by seeking a further 500 voluntary retirements in June and July 2016, scaling back the SE segment, and refocusing on the HS and ES segments.

Figures for medium-term management plan

(JPYmn)	FY03/17 Act.	FY03/18 Act.	FY03/19 Est.	FY03/17 MTP	FY03/18 MTP	FY03/19 MTP
Sales	50,955	49,993	50,000	46,670	45,250	46,850
YoY	-17.7%	-1.9%	0.0%	-24.6%	-3.0%	3.5%
Gross profit	14,142	14,044	15,440	13,530	13,780	14,810
GPM	27.8%	28.1%	30.9%	29.0%	30.5%	31.6%
SG&A expenses	13,106	12,798	13,250	12,990	12,570	12,620
SG&A ratio	25.7%	25.6%	26.5%	27.8%	27.8%	26.9%
Operating profit	1,036	1,246	2,190	540	1,210	2,190
YoY	-	20.3%	75.8%	-	124.1%	81.0%
OPM	2.0%	2.5%	4.4%	1.2%	2.7%	4.7%
Recurring profit	907	1,019	2,100	420	1,160	2,160
YoY	-	12.3%	106.1%	-	176.2%	86.2%
OPM	1.8%	2.0%	4.2%	0.9%	2.6%	4.6%
Net income	416	1,180	1,610	-120	800	1,590
YoY	-	183.7%	36.4%	-	-	98.8%
Net margin	0.8%	2.4%	3.2%	-	1.8%	3.4%

Source: Shared Research based on company data

Figures for medium-term management plan by segment

(JPYmn)	FY03/17 Act.	FY03/18 Act.	FY03/19 Est.	FY03/17 MTP	FY03/18 MTP	FY03/19 MTP
Sales	50,955	49,993	50,000	46,670	45,250	46,850
YoY	-17.7%	-1.9%	0.0%	-24.6%	-3.0%	3.5%
Solar Engineering	26,225	17,870	13,565	21,910	18,070	17,230
YoY	-34.2%	-31.9%	-24.1%	-45.0%	-17.5%	-4.6%
% of sales	51.5%	35.7%	27.1%	46.9%	39.9%	36.8%
Home and Establishment Sanitation	7,595	10,366	12,104	8,930	9,960	11,140
YoY	2.0%	36.5%	16.8%	20.0%	11.5%	11.8%
% of sales	14.9%	20.7%	24.2%	19.1%	22.0%	23.8%
Environmental Resource Development	17,133	21,755	24,331	15,830	17,220	18,480
YoY	24.3%	27.0%	11.8%	14.9%	8.8%	7.3%
% of sales	33.6%	43.5%	48.7%	33.9%	38.1%	39.4%
Gross profit	14,142	14,044	15,440	13,530	13,780	14,810
GPM	27.8%	28.1%	30.9%	29.0%	30.5%	31.6%
SG&A expenses	13,106	12,798	13,250	12,990	12,570	12,620
SG&A ratio	25.7%	25.6%	26.5%	27.8%	27.8%	26.9%
Operating profit	1,036	1,246	2,190	540	1,210	2,190
YoY	-	20.3%	75.8%	-	124.1%	81.0%
OPM	2.0%	2.5%	4.4%	1.2%	2.7%	4.7%
Solar Engineering	1,669	1,668	1,508	1,040	1,620	1,360
YoY	-	-0.1%	-9.6%	-	55.8%	-16.0%
% of OP (excl. unallocated)	44.3%	38.9%	28.0%	33.9%	43.5%	28.9%
OPM	6.4%	9.3%	11.1%	4.7%	9.0%	7.9%
Home and Establishment Sanitation	1,073	1,650	2,018	1,120	1,190	1,740
YoY	60.9%	53.8%	22.3%	67.9%	6.3%	46.2%
% of OP (excl. unallocated)	28.5%	38.5%	37.5%	36.5%	32.0%	37.0%
OPM	14.1%	15.9%	16.7%	12.5%	11.9%	15.6%
Environmental Resource Development	1,029	972	1,856	910	910	1,600
YoY	264.9%	-5.5%	90.9%	222.7%	0.0%	75.8%
% of OP (excl. unallocated)	27.3%	22.7%	34.5%	29.6%	24.5%	34.0%
OPM	6.0%	4.5%	7.6%	5.7%	5.3%	8.7%
Unallocated	-2,735	-3,045	-3,192	-2,530	-2,510	-2,510
Net income	416	1,180	1,610	-120	800	1,590
YoY	-109.0%	183.7%	36.4%	-	-	98.8%
Net margin	5.6%	2.4%	3.2%	5.6%	5.6%	5.6%

Source: Shared Research based on company data

Measures to streamline operations

The company will seek about 500 workers to take voluntary retirement in June and July 2016. It hopes to reduce full-year fixed costs by JPY3.9bn via measures including a review of compensation levels for all employees during FY03/17, personnel reduction in the SE segment, elimination and consolidation of stores, closing of its logistics center, downsizing of its power conditioner production operation, and personnel reduction at the head office.

SE segment

SE segment plan

(JPYmn)	FY03/17 Act.	FY03/18 Act.	FY03/19 Est.	FY03/17 MTP	FY03/18 MTP	FY03/19 MTP
Sales	26,225	17,870	13,565	21,910	18,070	17,230
YoY	-34.2%	-31.9%	-24.1%	-45.0%	-17.5%	-4.6%
Gross profit	7,423	5,562	4,934	6,073	5,360	5,060
GPM	28.3%	31.1%	36.4%	27.7%	29.7%	29.4%
SG&A expenses	5,754	3,893	3,426	4,903	3,740	3,700
SG&A ratio	21.9%	21.8%	25.3%	22.4%	20.7%	21.5%
Operating profit	1,669	1,668	1,508	1,170	1,620	1,360
YoY	-	-0.1%	-9.6%	-	38.5%	-16.0%
OPM	6.4%	9.3%	11.1%	5.3%	9.0%	7.9%

Source: Shared Research based on company data

The company forecasts a decrease in sales in the SE segment due to contraction of the solar power system market in the medium term. However, by reducing the workforce, eliminating and consolidating stores, and scaling down or closing facilities to suit the scale of sales, the company intends to ensure profits.

Sales forecasts are based on market contraction and reduced market share. The figures postulate the capacity of solar power systems to be installed during each year and use the minimum values from a number of predictions, assuming 4,500MW in FY03/16, 4,500MW in FY03/17, 3,500MW in FY03/18, and 3,031MW in FY03/19. Based on a 2.5% market share in FY03/16 (the company's estimate), Sanix forecasts its share to stay in the 1.6-1.8% range in the medium term. It assumes the price under the feed-in tariff scheme for electricity generated on a solar power system of 10kW or more will be JPY24/kWh in FY03/17, JPY22/kWh in FY03/18, and JPY20/kWh in FY03/19.

In addition to the voluntary retirements and reorganizational dismissals that occurred in FY03/16, the company will seek 500 more volunteers to take an early retirement incentive package in June and July 2016. It also plans to transfer some personnel from the SE segment to the HS and ES segments. As part of the streamlining of operations, during June 2016 it will eliminate and consolidate its stores in the SE segment from eighteen down to nine and will close its Osaka logistics center at the end of June. Furthermore, it will downsize its power conditioner production operation to reduce fixed costs.

With these various measures, the company's FY03/17 forecast calls for a decrease in average monthly fixed costs in the SE segment from the JPY1.2bn seen in 2H FY03/16 to JPY545mn in 2H FY03/17.

HS and ES segments

HS and ES segments plan

(JPYmn)	FY03/17 Act.	FY03/18 Act.	FY03/19 Est.	FY03/17 MTP	FY03/18 MTP	FY03/19 MTP
Sales	7,595	10,366	12,104	8,930	9,960	11,140
YoY	2.0%	36.5%	16.8%	20.0%	11.5%	11.8%
Gross profit	3,695	5,636	6,661	4,680	5,390	6,060
GPM	48.7%	54.4%	55.0%	52.4%	54.1%	54.4%
SG&A expenses	2,621	3,984	4,643	3,540	4,200	4,320
SG&A ratio	34.5%	38.4%	38.4%	39.6%	42.2%	38.8%
Operating profit	1,073	1,650	2,018	1,140	1,190	1,740
YoY	60.9%	53.8%	22.3%	70.9%	4.4%	46.2%
OPM	14.1%	15.9%	16.7%	12.8%	11.9%	15.6%

Source: Shared Research based on company data

According to its medium-term management plan, the company aims to increase sales and profits by increasing personnel in the HS and ES segments.

Starting in FY03/13, the company worked to expand the SE segment, so the HS and ES segments were scaled down, and the focus was placed on after-sales maintenance for existing customers. With personnel transfers from the SE segment in FY03/17, these segments will again be expanded to curtail further shrinkage of the existing customer base, and new sales which have not been conducted since 2006 will be restarted.

Environmental Resources Development segment

ERD segment plan

(JPYmn)	FY03/17 Act.	FY03/18 Act.	FY03/19 Est.	FY03/17 MTP	FY03/18 MTP	FY03/19 MTP
Sales	17,133	21,755	24,331	15,830	17,220	18,480
YoY	24.3%	27.0%	11.8%	14.9%	8.8%	7.3%
Waste plastic processing	7,139	7,556	7,947	6,860	7,140	7,310
YoY	-1.2%	5.8%	5.2%	-5.1%	4.1%	2.4%
Electricity business	6,806	11,095	13,230	5,680	6,770	7,880
YoY	70.7%	63.0%	19.2%	42.5%	19.2%	16.4%
Others	3,188	3,104	3,154	3,290	3,310	3,290
Gross profit	3,023	2,846	3,845	3,000	3,030	3,690
GPM	17.6%	13.1%	15.8%	19.0%	17.6%	20.0%
SG&A expenses	1,994	1,873	1,989	2,090	2,120	2,090
SG&A ratio	11.6%	8.6%	8.2%	13.2%	12.3%	11.3%
Operating profit	1,029	972	1,856	910	910	1,600
YoY	264.9%	-5.5%	90.9%	222.7%	0.0%	75.8%
OPM	6.0%	4.5%	7.6%	5.7%	5.3%	8.7%

Source: Shared Research based on company data

According to the medium-term management plan, the company aims to increase sales by expanding its electricity retail business. It also plans to improve the gross profit margin by raising the waste plastic recycling unit price, improving the quality of its plastic fuel, and diversifying the customer base for its plastic fuel.

Business

Description

Sanix began as a termite control services company, and from the early-2000s branched out into the environmental resources development field, including power generation business. In March 2010, the company commenced solar power generation business. As of May 2017, the company has four business segments: the Solar Engineering (SE) segment focused on commercial solar power generation, the Environmental Resources Development (ERD) segment conducting power generation via waste recycling, and the Home Sanitation (HS) and Establishment Sanitation (ES) segments conducting termite control and other services for residences and corporations respectively.

Segments

The company's four business segments are SE, HS, ES, and ERD.

Sales, operating profit by segment

(JPYmn)	FY03/10 Act.	FY03/11 Act.	FY03/12 Act.	FY03/13 Act.	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Sales	**24,539**	**28,980**	**31,454**	**43,366**	**84,221**	**95,629**	**61,916**	**50,955**	**49,993**
YoY	-2.8%	18.1%	8.5%	37.9%	94.2%	13.5%	-35.3%	-17.7%	-1.9%
Solar Engineering	-	-	-	-	56,637	72,247	39,871	26,225	17,870
YoY	-	-	-	-	-	27.6%	-44.8%	-34.2%	-31.9%
% of total	-	-	-	-	67.2%	75.5%	64.4%	51.5%	35.7%
Commercial Photovoltaic (PV) Solutions	-	-	1,411	9,617	51,340	-	-	-	-
YoY	-	-	-	581.6%	433.9%	-	-	-	-
% of total	-	-	4.5%	22.2%	61.0%	-	-	-	-
Home Sanitation	14,056	16,657	15,395	14,814	10,819	7,605	6,519	6,562	8,922
YoY	-4.1%	18.5%	-7.6%	-3.8%	-27.0%	-	-14.3%	0.7%	36.0%
% of total	57.3%	57.5%	48.9%	34.2%	12.8%	8.0%	10.5%	12.9%	17.8%
Establishment Sanitation	2,547	2,811	2,757	3,965	6,011	1,040	924	1,033	1,444
YoY	-14.4%	10.4%	-1.9%	43.8%	51.6%	-	-11.2%	11.8%	39.8%
% of total	10.4%	9.7%	8.8%	9.1%	7.1%	1.1%	1.5%	2.0%	2.9%
Environmental Resources Development	7,934	9,511	11,890	14,967	16,051	14,735	14,601	17,133	21,755
YoY	4.4%	19.9%	25.0%	25.9%	7.2%	-8.2%	-0.9%	17.3%	27.0%
% of total	32.3%	32.8%	37.8%	34.5%	19.1%	15.4%	23.6%	33.6%	43.5%
Operating profit	**390**	**502**	**410**	**1,870**	**4,508**	**-3,142**	**-2,229**	**1,036**	**1,246**
YoY	-	28.6%	-18.3%	356.4%	141.0%	-	-	-	20.3%
Solar Engineering	-	-	-	-	4,782	-2,291	-202	1,669	1,668
YoY					-	-	-	-	-0.1%
% of total					45.4%	-	-	44.3%	38.9%
Commercial Photovoltaic (PV) Solutions	-	-	-265	320	4,410	-	-	-	-
YoY	-	-	-	-	-	-	-	-	-
% of total	-	-	-	8.4%	62.1%	-	-	-	-
Home Sanitation	3,365	2,608	2,482	1,776	1,141	1,634	614	979	1,471
YoY	-3.0%	-22.5%	-4.8%	-28.5%	-35.7%	-	-62.4%	59.4%	50.3%
% of total	136.6%	102.4%	97.5%	46.7%	16.1%	-	-	26.0%	34.3%
Establishment Sanitation	211	154	41	139	190	-48	53	94	179
YoY	-	-27.2%	-73.3%	240.5%	36.5%	-	-	77.4%	90.4%
% of total	8.6%	6.0%	1.6%	3.7%	2.7%	-	-	2.5%	4.2%
Environmental Resources Development	-1,112	-216	288	1,568	1,365	970	282	1,029	972
YoY	-	-	-	444.8%	-12.9%	-28.9%	-70.9%	264.9%	-5.5%
% of total	-	-	11.3%	41.2%	19.2%	-	-	27.3%	22.7%
Adjustments	-2,074	-2,044	-2,134	-1,932	-2,598	-3,406	-2,977	-2,735	-3,045

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
From FY03/15, following PV Systems sales and construction restructuring, the home-PV system business was moved from commercial PV, HS, ES business to the SE segment. Earnings for the Commercial PV, HS, and ES businesses up to FY03/14 were figures prior to segment changes, while those for FY03/15 and later reflect these changes.

In FY03/15, the company changed the Commercial Photovoltaic Solutions (CPS) segment to the Solar Engineering (SE) segment as it changed the solar power system sales and installations structure. The SE business encompasses the former CPS business, the West Japan residential solar power arm of the HS business, and the East Japan residential solar power arm of the ES business.

Per the above, from FY03/15, the company's segments are Solar Engineering (SE), Environmental Resources Development (ERD), and Home Sanitation and Establishment Sanitation (HS/ES).

Solar Engineering (SE) segment

This segment is involved in the sale and installation of commercial and residential solar power systems, and wholesale solar power systems.

Home Sanitation (HS) segment

This segment provides termite control-related installation, ceiling and floor ventilation system installation, and foundation repairing and strengthening construction work for buildings.

In July 2006, the company was ordered by regulatory authorities to suspend operations in relation to door-to-door sales practices (see Termite Control Services and Floor/Ceiling Ventilation Systems). Subsequently, the company ceased new customer acquisition activities and decided to focus operations on after-sales maintenance for existing customers. According to the medium-term management plan announced in April 2016, the company intends to take resources it had concentrated in the SE segment and redistribute them to the HS and ES segments in order to increase the number of new customers and the total number of customers under management, thereby increasing profits.

Establishment Sanitation (ES) segment

In FY03/16, the ES segment accounted for 1.5% of total sales. This segment provides corporate customers with installation services relating to environmental sanitation, as well as maintenance services relating to office building and condominium plumbing facilities.

Environmental Resources Development (ERD) segment

In FY03/16, the ERD segment accounted for 23.6% of total sales. The main businesses are waste plastic recycling, power generation and organic waste fluid processing. Waste plastic recycling involves taking waste plastic from industrial customers and processing it at the company’s plastic-resource development factory into industrial waste-based plastic fuel. The power generation business uses this as its main fuel for generating electricity, which is sold to end-users (undisclosed). Furthermore, the company intends to sell plastic fuel as boiler fuel to paper companies.

Main businesses

Although the company operates a diverse array of businesses, its main businesses, explained in detail below, are: Solar Engineering; waste plastic recycling and power generation in the Environmental Resources Development segment; and termite control services and floor & ceiling ventilation systems installation in the Home Sanitation segment.

Solar Engineering (35.7% of sales, 38.9% of sales before adjustments in FY03/18)

Overview

This segment engages in the installation and sale of commercial and residential solar power systems as well as the wholesale of these systems. An important feature of this segment is its end-to-end nature—the company does everything from solar power system procurement through to sales and installation. This allows the company to eliminate intermediary margins at the distribution level, enabling it to offer solar power generation systems at low prices.

Since the company sells and installs the systems, it receives a lump fee covering both equipment and installation. Sales may be calculated by the simple formula of installed capacity (kW) multiplied by the installation fee per kW (yen). As of May, 2018, the company charged approximately JPY180,000 per kW for the sale and installation of solar power systems. Sanix says this is 15-20% lower than its competitors.

This segment began supplying residential solar power generation systems in October 2009. In FY03/12 the company began handling commercial solar power systems of 10kW to 50kW capacity that can be installed in low-voltage power systems, offering them as a solution for the effective use of locations like factory/office building roofs and idle land.

> PV systems of 10kW-50kW capacity, which can be installed in low-voltage power systems, do not require notification or other administrative procedures, and qualify for full purchase of power under the Feed-in Tariff (FIT) scheme (see Feed-in Tariff (FIT) Scheme). PV systems with capacity of 50kW and over require declaration of compliance with safety regulations and participation of a senior licensed electrician.

Most sales are to owners of idle land, fallow agricultural plots, and condominiums and factories. In East Japan, the company focused on the wholesale of solar power systems to residential construction companies until FY03/14. The company shifted its focus onto direct sales and installations of solar power systems from FY03/15.

The company regards its cost competitiveness as one of its primary strengths. As explained above, by performing end-to-end services spanning procurement, sales, and installation, the company is able to eliminate intermediary margins on every phase. It also monitors the market for low-cost materials and procures volume discounts on materials through regular, large-scale orders, while also working on in-house production. All these efforts add up and allows the company to offer low-price solar power generation systems.

Commercial Solar Power System

Source: Shared Research based on company data

According to the company, under Japan's current feed-in tariff (FIT) scheme, customers who install the company's solar power systems are almost assured of reaping benefits. After a solar power system is installed, a customer is able to monitor the amount of electricity generated daily and subsequently receives payment from the electricity company for the power fed back into the grid. Hence, in a short period, customers can confirm the performance of their investment. As a result, in some cases, within a few months after installation Sanix obtains new orders through introductions from existing customers or additional orders from such customers.

The products and services sold by the company in its SE segment require a substantial amount of explanation, which means that differentiation depends not only on price but also sales channel. From the initial inquiry to installation, a sales company will need to discuss and explain a wide range of issues with the customer—these include installation method, power generation simulations, payment method, and the advantages of installing a solar power system. Consequently, specialist knowledge, the ability to respond to customer needs, and skills in explaining various aspects hold the key to closing a sale. This is not the type of product that can be simply handed over to a customer in a store, and to win a sales contract an installer or specialist sales person must visit the customer's site and confirm the exact location where the solar power system will be installed and agree on a date and time for the installation work to be carried out. Furthermore, after-sales service is also an important part of the business, which means the company's know-how in providing explanations and staff training programs cultivated in sales activities in the termite control business could be effectively leveraged. From a sales point of view, solar power systems have installation benefits based on policies such as the FIT scheme, and solar power has a positive image since it is an environment-friendly renewable power source. Hence, compared with termite control services, solar power may be seen as having more immediate appeal among potential customers. Since there is no need to perform a free-of-charge inspection of the customer's premises during the initial period of sales discussions, sales staff can achieve efficient progress in their sales activities.

Price competitiveness in the SE business

Strength in the SE business lies in its price competitiveness

Shared Research believes that one of the company's strengths is price competitiveness. The manufacturing technology for solar power panels is well established. Since manufacturing is relatively standardized, it is probably difficult to achieve differentiation based on product quality. If the product is all essentially the same, selling cheaper is a logical tactical approach.

As of May, 2018, the company has been charging approximately JPY180,000 per kW for the sale and installation of commercial solar power systems, as mentioned earlier. Sanix says this is 15-20% lower than its competitors. Although price for solar systems varies depending on installation conditions, making it difficult to compare simple averages, the government committee that determines the price paid under the FIT scheme releases average system costs. For 2017, it put the average for systems of 10kW to less than 50kW at JPY300,000 per kW (+0.6% YoY). Hence, the company's average price per kW was very low in comparison with the overall market.

Costs for solar power systems for 10kW to less than 50kW and the company's unit price (JPY1,000/kW)

(JPY'000)	2013	2014	2015	2016	2017
a) Cost of PV system (per kW)	383	346	325	327	Over 300
YoY	-10.9%	-9.7%	-6.1%	0.6%	-
	FY03/14	FY03/15	FY03/16	FY03/17	FY03/18
b) Sanix PV system price (per kW)	243	226	220	194	181
YoY	-24.9%	-7.1%	-2.5%	-11.8%	-6.7%
b) ÷ a)	63.4%	65.2%	67.7%	59.4%	-

Source: Shared Research based on company data
*The company determines its unit price per kW by dividing sales by volume

Cost-effectiveness of solar power systems offered by Sanix

Assume that the installation cost of a 1kW facility of the company's solar power system is JPY190,000 (for the solar power system and connection fees). If the feed-in tariff is JPY18/kWh (the price of electricity generated by the solar power facility for fiscal 2018), and the solar power system generates 1,323kWh of electricity per 1kW of system capacity (assuming that the capacity utilization is 15% although it varies depending on the amount of sunlight and the angle of the solar power module), then the annual revenue from power sales would be JPY24,000.

Under this scenario, assuming the annual maintenance cost of JPY6,000/kW, the initial investment recovery period would be 11 years, the gross yield about 9%, and the internal rate of return (IRR) about 7%.

Annual revenue from electricity sales per 1kW of power facility, maintenance cost (if the feed-in tariff is JPY21/kWh)

Capacity utilization rate	15%
Power generated (kWh)	1,323
Annual revenue per 1kW (JPY1,000)	24
Maintenance cost per 1kW (JPY1,000)	6

*The maintenance cost and capacity utilization rate are taken from Feed-in Tariff Calculation Committee documents

Solar power system 20-year cash flow (per 1kW)

(JPY'000)	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19	Yr 20
Initial investments	-206	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Revenue from electric power sales	24	24	24	23	23	23	23	23	23	23	23	23	22	22	22	22	22	22	22	22
Operating and maintenance costs	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5	-5
Cash flows	-187	19	19	18	18	18	18	18	18	18	18	18	17	17	17	17	17	17	17	17
Total cash flows	-187	-168	-149	-131	-113	-94	-76	-58	-40	-23	-5	12	30	47	64	81	98	115	132	149
IRR	6.9%																			
Gross rate of return	9.2%																			

*Degradation rate is set at 0.5% a year, with facilities operating for 20 years; costs of equipment removal are not considered.

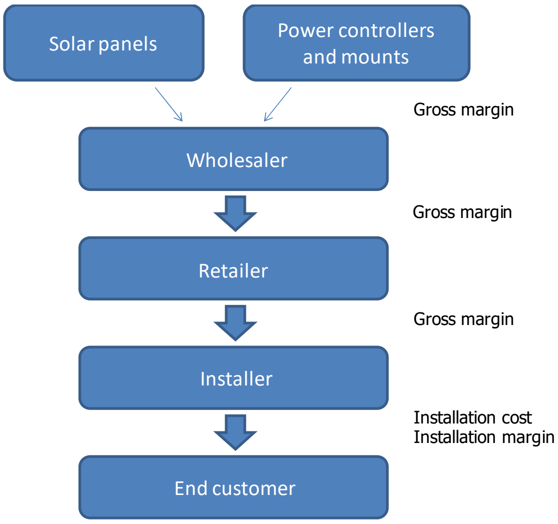
Mechanism to maintain cost-competitiveness

The company says it achieves lower prices thanks to the following two key aspects. First, it works to procure solar power modules at the lowest possible price by constantly monitoring the market for suppliers of high-quality, low-priced panels. Second, by operating an end-to-end service encompassing procurement, direct sales and installation, Sanix can save money by eliminating multiple intermediaries. The company says this is a substantial advantage as virtually no large providers in this particular niche (small-scale “commercial”—i.e. producing electricity for sale—installations) offer a similar end-to-end service.

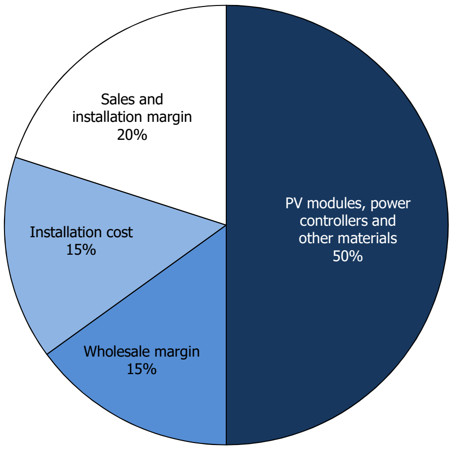
The company’s scale provides an advantage in volume discount negotiations. Specifically, the company focuses on small- to medium-sized solar power systems, and operates an order-based business. Hence, based on its installation plans, the company can continually place large-lot orders with solar power module suppliers. In contrast, given the order volume from small-scale providers that specialize in residential solar power systems are small, major solar power module manufacturers do not have the sales structure to deal directly with these small-lot dealers (i.e., order volume too small to make it worth dealing directly with these small-lot customers). Construction companies that handle mega-solar projects are able to place large-lot order for materials but may not be able to enjoy volume discounts given that such orders are done on an ad hoc basis. Sanix gathers a large number of small and medium-sized orders (i.e., its overall order volume is high and stable), and can deal directly with manufacturers for the best volume discounts. Furthermore, the company is trying to reduce costs by producing equipment such as inverters and panel mounts in-house.

With regard to the second aspect, generally within the sales channel, manufacturers, wholesalers and retailers of solar power panels, panel mounts and inverters add their own margin at each stage. By the time the product reaches the consumer, these margins add up to a substantial premium inflating the final price. Sanix does everything more or less by itself, sharing the savings with the customer as a lower price while earning a healthy margin. This is critically important because for the customer, a “commercial” installation is an investment and the initial price determines the return on this investment over the years.

Solar Power Value Chain



Breakdown of Solar Power Costs and Profit Margin



Source: Shared Research based on company data

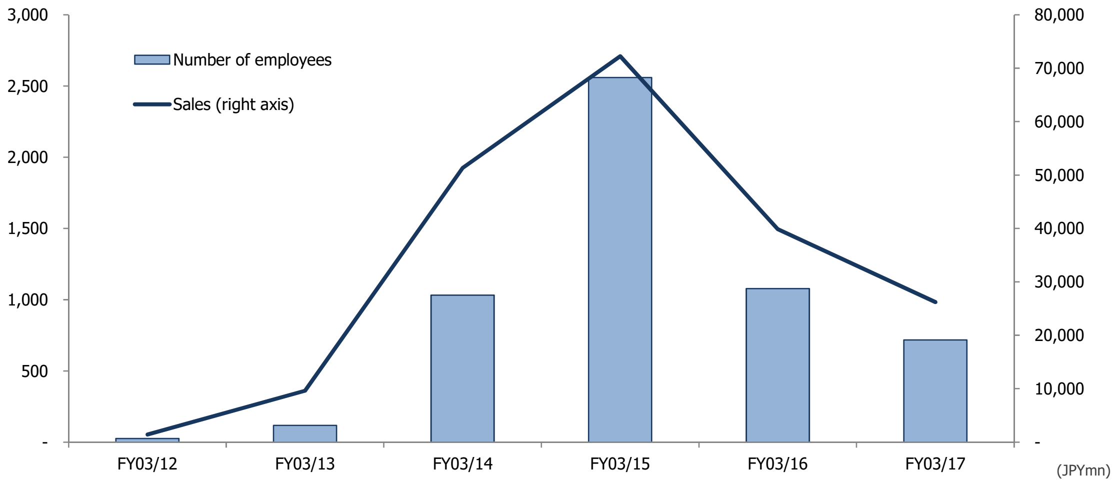
Organization of the solar power business

With regard to organization, in 2010 the company established Shanri (Shanghai) Energy Science and Technology Co., Ltd., as a solar power module manufacturing subsidiary in China. In 2012, to meet the needs of a full-fledged commercial solar power business, the company set up Sanix Engineering Inc. (100%-owned subsidiary) to handle planning, design, sales, installation and consulting for commercial solar power systems. Hence, the company is building on its track record in the residential solar power system field to establish itself in the commercial solar power market. In FY03/15, Sanix combined the commercial and residential PV businesses that had been dispersed throughout the company to form the Solar Engineering (SE) segment. The company established a system to develop the solar power segment from the SE segment headquarters in East and West Japan.

Sanix aggressively expanded its workforce in the SE segment from 58 sales staff and 277 technicians as of the end of March 2013 to 648 sales staff and 1,937 technicians as of end September 2014. However, electricity companies began to suspend responses to applications for connecting solar power facilities in September 2014, highlighting the problem of grid connection volume. In January 2015, the government revised the output control rules, making it difficult for the company to increase sales in the SE segment in line with the personnel expansion. As a cost-cutting measure, Sanix in May 2015 conducted a voluntary retirement program for workers in technical and administrative positions in the SE segment, resulting in the early retirement of 609 employees. This was followed by another 229 in December 2015, again mostly in the SE segment. In February 2016, 70 employees across all positions were let go as part of reorganization as the company sought to cope with falling sales. Between June and July 2016, about 500 employees left in a new early retirement program.

In April 2017, Sanix integrated the SE business departments in western and eastern Japan into a single SE business division, streamlining the organization into an efficient management structure.

Sales of commercial and residential PV businesses and the number of employees



	FY03/12	FY03/13	FY03/14	FY03/15	FY03/16	FY03/17	FY03/18
Sales (JPYmn)	1,411	9,617	51,340	72,247	39,871	26,225	17,870
Number of employees	25	117	1,032	2,560	1,077	716	496

Source: Shared Research based on company data

Structure of earnings of the SE segment

SE segment sales

Sales in the SE segment primarily consist of sales from installations of solar power systems. A simple formula for calculating sales is the capacity installed (kW) as measured by the number of units sold multiplied by system price per kW.

Sales and sales volume for the SE segment

(JPYmn)	FY03/14	FY03/15	FY03/16	FY03/17	FY03/18
Total sales	56,637	72,247	39,871	26,225	17,870
YoY	197.9%	27.6%	-44.8%	-34.2%	-31.9%
PV systems	47,396	67,697	34,419	24,228	16,647
YoY	206.4%	42.8%	-49.2%	-29.6%	-31.3%
Wholesale of PV systems	9,172	4,451	5,351	1,889	1,026
Other	68	98	99	107	196
PV systems sales volume (kW)	195,079	299,881	156,395	124,786	91,882
YoY	308.0%	53.7%	-47.8%	-20.2%	-26.4%
PV system price per kW (JPY'000)	243	226	220	194	181
YoY	-24.9%	-7.1%	-2.5%	-11.8%	-6.7%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Sales of solar power systems had been on the rise until Q3 FY03/15 because of government measures to promote solar power generation. However, a major power utility in September 2014 began to put a hold on requests for grid connections, raising concerns about the capacity of power that can be connected to their networks. The government revised its output control rules in January 2015, reducing demand for solar power energy.

The company's unit price per 1kW continues to decline. This is because the company is seeking to compensate for a decline in feed-in tariffs and the benefits of solar power systems by reducing the unit price. Declining material costs and price competition with peers have also contributed to the price fall.

SE segment expenses

These include materials costs, such as solar power modules (including those manufactured in-house) and other solar power system components (such as inverters, power generation monitors, cables, and mounts); labor costs for construction personnel; and fees for outsourced processing. The material costs-to-sales ratio and the labor expense ratio have been declining since

FY03/16. The material costs-to-sales ratio fell because of a decline in procurement prices, such as those for solar cell modules, while the labor expense ratio was lowered as the number of employees declined.

SG&A expenses mainly comprises of fixed components, such sales force labor costs and advertising expenses. SG&A expenses began to decline in FY03/16. Advertising spending fell after the company stopped placing ads in newspapers. Labor costs dropped because of a decline in the number of employees.

Variable costs include materials, outsourced processing, and transportation. The marginal profit ratio was 46.8% in FY03/18 against 44.5% in FY03/17.

SE segment cost structure

(JPYmn)	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Total sales	56,637	72,247	39,871	26,225	17,870
YoY	197.9%	27.6%	-44.8%	-34.2%	-31.9%
CoGS	43,621	60,180	31,853	18,802	12,308
YoY	-	38.0%	-47.1%	-41.0%	-34.5%
CoGS ratio	77.0%	83.3%	79.9%	71.7%	68.9%
Raw materials	-	41,679	22,483	13,320	8,291
YoY	-	-	-46.1%	-40.8%	-37.8%
% of sales	-	57.7%	56.4%	50.8%	46.4%
Labor	-	9,238	4,618	2,253	1,433
YoY	-	-	-50.0%	-51.2%	-36.4%
% of sales	-	12.8%	11.6%	8.6%	8.0%
Gross profit	13,016	12,067	8,017	7,423	5,562
YoY	-	-	-33.6%	-7.4%	-25.1%
GPM	23.0%	16.7%	20.1%	28.3%	31.1%
SG&A expenses	8,234	14,358	8,220	5,754	3,893
YoY	-	-	-42.7%	-30.0%	-32.3%
SG&A-to-sales ratio	14.5%	19.9%	20.6%	21.9%	21.8%
Personnel expenses	3,109	5,979	3,594	2,194	1,769
Operating profit	4,782	-2,291	-202	1,669	1,668
YoY	-	-	-	-	-0.1%
OPM	8.4%	-3.2%	-0.5%	6.4%	9.3%
Marginal profit ratio	35.2%	33.1%	36.8%	44.5%	46.8%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Competitors in solar power

Direct competitors include the Hiroshima-based West Holdings Corporation (JASDAQ: 1407), which began as a house renovation firm and expanded into the solar power business. West is shifting from residential solar power systems toward mega-solar projects and commercial solar power systems. The company also provides maintenance services and engages in power and energy-conservation businesses.

Companies that compete with Sanix in a portion of their business include—in solar power modules—Sharp Corporation (TSE1: 6753), Kyocera Corporation (TSE1: 6971), Panasonic Corporation (TSE1: 6752), Mitsubishi Electric Corporation (TSE1: 6503), and Solar Frontier K.K. (subsidiary of Showa Shell Sekiyu K.K. (TSE1: 5002)). In solar power systems sales, partial competitors include Yamada Denki Co., Ltd. (TSE1: 9831), while in installation there are competing housing equipment firms in each local area.

However, there are very few companies competing on an end-to-end basis encompassing manufacture, sales and installation in the way Sanix does. Based on this fact, as mentioned previously, the company may be seen as having an advantage over its competitors through its structure that allows it to offer lower prices. It is also significant that the company has consciously chosen to focus on the 10kW to 50kW system market, thereby avoiding competition. In other words, for small, local housing equipment installers, the 10kW to 50kW range is beyond their capabilities, and for major construction companies, the scale is below their business threshold, meaning excessive competition is unlikely to occur.

Environmental Resources Development (43.5% of sales and 22.7% of operating profit before adjustments in FY03/18)

This segment's business is divided into waste plastic processing, electric power sales, organic waste liquid processing, landfill and other disposal, and others. The waste plastic processing and electric power sales account for a large portion of the segment's operations.

ERD performance

(JPYmn)	FY03/10 Act.	FY03/11 Act.	FY03/12 Act.	FY03/13 Act.	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Sales	7,934	9,511	11,890	14,967	16,051	14,735	14,601	17,133	21,755
YoY	4.4%	19.9%	25.0%	25.9%	7.2%	-8.2%	-0.9%	17.3%	27.0%
Waste plastic processing	4,295	5,023	6,673	8,665	9,103	7,534	7,227	7,139	7,556
YoY	19.2%	16.9%	32.8%	29.9%	5.1%	-17.2%	-4.1%	-1.2%	5.8%
Electric power sales	1,276	1,427	2,303	3,370	3,416	3,795	3,986	6,806	11,095
YoY	-17.7%	11.8%	61.4%	46.3%	1.4%	11.1%	5.0%	70.7%	63.0%
Power sales (Tomakomai Power Station)	1,276	1,427	2,303	3,370	3,416	3,795	3,739	3,881	3,474
YoY	-17.7%	11.8%	61.4%	46.3%	1.4%	11.1%	-1.5%	3.8%	-10.5%
PPS business	-	-	-	-	-	-	247	2,925	7,621
YoY	-	-	-	-	-	-	-	-	160.5%
Organic waste liquid processing	1,474	1,444	1,595	1,602	1,768	1,635	1,604	1,768	1,748
Landfill and other disposal	415	939	706	607	628	619	702	648	654
Others	472	676	611	722	1,134	1,150	1,080	770	701
Gross profit	424	1,337	1,974	3,739	3,596	2,793	2,177	3,023	2,846
GPM	5.3%	14.1%	16.6%	25.0%	22.4%	19.0%	14.9%	17.6%	13.1%
SG&A expenses	1,537	1,553	1,686	2,171	2,232	1,823	1,895	1,994	1,873
SG&A-to-sales ratio	19.4%	16.3%	14.2%	14.5%	13.9%	12.4%	13.0%	11.6%	8.6%
Operating profit	-1,112	-216	288	1,568	1,365	970	282	1,029	972
YoY	-	-	-	444.8%	-12.9%	-28.9%	-70.9%	264.9%	-5.5%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

From FY03/19, the power sales and new electric power generation businesses will be recategorized as wholesale and retail power sales

Waste plastic processing

The waste plastic processing business collects plastic generated during the production processes of industrial customers, and Sanix then crushes and processes this plastic at its own factory. The company receives a processing fee for these services from customers whose waste it collects. Revenues vary according to the volume and fee charged. An important feature of this business is that the company turns the waste plastic it processes into fuel, which is then used in its power generation business.

The company conducts this business nationwide, and its customers span all industries, from large companies to small enterprises. The company's appropriate processing method and system to turn waste plastic into regenerated fuel is appraised highly by its customers and its processing volume is increasing.

Plastic fuel sales

(JPYmn)	FY03/10 Act.	FY03/11 Act.	FY03/12 Act.	FY03/13 Act.	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Sales	4,295	5,023	6,673	8,665	9,103	7,534	7,227	7,139	7,556
YoY	19.2%	16.9%	32.8%	29.9%	5.1%	-17.2%	-4.1%	-1.2%	5.8%
Volume processed (tons)	241,000	290,738	348,854	370,362	404,794	363,440	381,584	330,599	333,952
YoY	41.9%	20.6%	20.0%	6.2%	9.3%	-10.2%	5.0%	-13.4%	1.0%
Processing price (JPY'000)	17.8	17.3	19.1	23.4	22.5	20.7	18.9	21.6	22.6
YoY	-16.0%	-3.1%	10.7%	22.3%	-3.9%	-7.8%	-8.6%	14.0%	4.8%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

The company entered the industrial waste processing business in 1994. It has established a large network of plants nationwide, through which it processes and recycles industrial waste. As of May 2017, the Sanix Group operated factories (waste plastic intermediate processing plants) at 15 locations throughout Japan. The plants were set up for the purpose of processing industrial waste plastic generated by companies and other work sites.

Its customers span all industries, from large companies to small enterprises, and total around 7,500 companies. In FY03/18, the company's total annual amount processed was around 330,000 tons. According to the company, this is the largest amount processed in Japan. Japan's waste plastic processing market is approximately 5.0mn tons, so the company's processing capacity is equivalent to about 8% of all waste plastic processed annually in Japan.

Sanix's waste plastic recycling flow is as follows.

- The company collects waste plastic generated by companies and other work sites and delivers it to the processing plant;
- The plastic is separated by suitable or non-suitable use as fuel;
- Plastic is processed in a crusher;
- After crushed, the suitable plastic is compressed into 1-meter cubes and packaged for use as plastic fuel. The plastic not suitable for fuel is processed at cement companies, or used landfills.

Since Sanix is able to process all types of plastic, but subcontracts this to a number of waste processing companies and provides strict guidance in the separation of such waste. All waste plastic storage and processing are conducted in enclosed spaces (inside plants and storage areas), thereby preventing airborne dispersion of waste, spills and noise pollution. Waste brought to the company's plants is also strictly managed, including through analysis and testing, throughout the processing system.

Article 3 of Japan's Waste Processing Law, which was amended in 2000, stipulates "A business operator must take responsibility for waste generated in its operations and dispose of such waste appropriately." This means that companies generating industrial waste are responsible for the waste's processing and disposal. Although the law mandates processing by the companies generating waste, such companies may contract this work out to authorized industrial waste processors. However, if an industrial waste processor improperly processes or illegally dumps waste, the company that generated the industrial waste and contracted the industrial waste processor may be liable to criminal penalties and obligated to restore a damaged area to its original state. For this reason, when a waste generating company selects a waste plastic processor, an important criterion is not only price but also whether the contractor will process the waste appropriately. The customer usually inspects the processing facilities and confirms the equipment and processing methods to be employed. Sanix has built a reputation for its appropriate processing, and this has been a decisive factor in the growth of the business.

Competition in waste plastic recycling generally encompasses three to four operators in each of Japan's 47 prefectures. Major operators include Taiheiyo Cement Corporation (TSE1: 5233), Mitsubishi Materials Corporation (TSE1: 5711), and JFE Kankyo Corporation (subsidiary of JFE Holdings, Inc. (TSE1: 5411)). In addition to its reliability for appropriate recycling methods, Sanix says that its other strength is that it generates power after recycling; meaning customers are able to contribute to the effective reuse of waste materials. Furthermore, the recycling capacity of each plant is high enough to accept large and steady waste shipments.

Factors affecting earnings of the waste plastic processing business

Sales of the waste plastic recycling may be calculated by multiplying the volume of waste recycled by the average recycling unit price. The recycling volume is dependent on the overall volume of industrial waste generated in Japan. Although this volume is affected to a certain extent by the fortunes of economy, customers use waste processing firms on an ongoing basis and this usage does not greatly fluctuate. The recycling unit price is determined by negotiation, and may be affected by such factors as area, fluctuation in expenses, and the level of economic activity.

Waste plastic recycling companies are also involved in the sale of plastic fuel, and although the company sells plastic fuel to Sanix Energy Inc., these sales are eliminated as intercompany transactions at the consolidated level. In addition, the company also sells plastic fuels as boiler fuel to paper companies.

Cost of goods sold for industrial waste recycling business mainly comprises of outsourced work and labor costs. These two costs are essential for the operation of the processing plants, and are estimated to be partially controlled depending on the level of capacity utilization. Consequently, the main factors affecting profitability of the waste plastic recycling business are fluctuation in recycling volume, fluctuation in unit processing price, sales volume of post-processed plastic fuel, and fluctuation of selling prices.

Power generation business

Revenue at the power generation business largely comes from retail sales of procured electricity to general households and wholesale to electricity companies.

Sanix purchases electricity from power plants operated by its subsidiaries and customers using solar power systems the company has built and sold. Further, it procures electricity via face-to-face negotiations with electricity companies and purchases it from Japan Electric Power eXchange (JPEX). Because purchasing electricity from JPEX is relatively expensive, an increase in the share of electricity procured from JPEX tends to lead to a decline in profit margins at the power generation business. In FY03/18, the company increased the share of electricity procured from JPEX as it was under pressure to meet increasing demand, which pushed down profit margins at the ERD business. From FY03/19 onward, by integrating the power generation business at the Tomakomai Power Plant with that in Honshu, the company plans to lower the share of electricity procured from JPEX and stabilize procurement costs.

In retail sales, the company sells electricity to low-voltage consumers (e.g., stores, offices, and general households) with contract load of less than 50kW, and to high-voltage consumers (e.g., factories, large commercial facilities, and hospitals) with contract load of more than 50kW. In wholesale, the company sells electricity generated at the Tomakomai Power Plant as well as that procured at a relatively low cost via face-to-face negotiations with electricity companies to power producers and suppliers.

Power generation business at Tomakomai Power Plant

A unique feature of the power generation business at the Tomakomai Power Plant is use of waste plastic fuel. In this business, revenue is proportionate to the volume of power generated and it is a stable source of earnings for the company. Although the power plant has experienced a variety of problems in the past (see History), it was operating steadily as of May 2018. Improvements in the quality of plastic fuel has enabled Sanix to raise its power generation efficiency and made it possible to grow revenues.

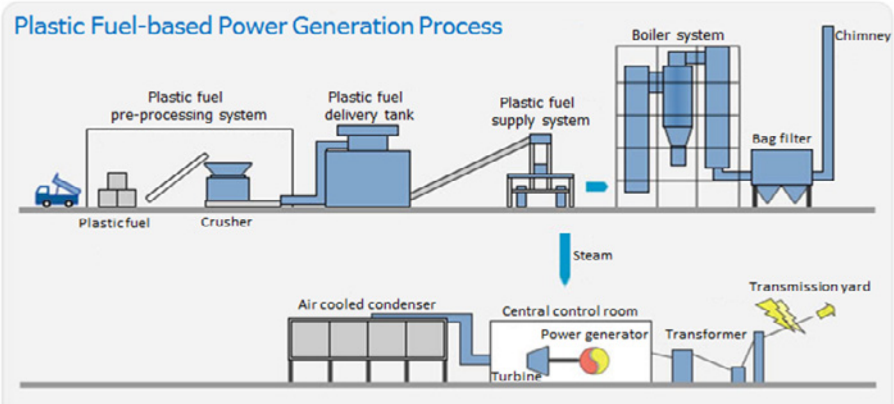
Sanix Energy Inc., which handles the power generation business, was established in October 2001, and commenced operation of the Sanix Energy Tomakomai Power Station in Hokkaido in 2003. This facility runs completely on waste plastic fuel and supplies electricity.

Tomakomai Power Station

Source: Shared Research based on company data

The flow of operations at Sanix Energy's Tomakomai Power Station is as follows.

- Plastic fuel is re-crushed at the power station into pieces up to 30mm.
- This plastic fuel is fed into the boiler furnace to produce steam, which turns the turbine to generate electricity.
- Electricity is sent through transmission lines to supply the electricity purchaser.



Source: Shared Research based on company data

The power station has one turbine generator with the maximum output of 74,000kW (equivalent to the power needed to supply 23,000 households). Of the 74,000kW capacity, approximately 15% is used within the company's plant and the remaining 85% is sold.

The power station's basic design differs from the most common waste-to-energy (WtE) method, which is called Refuse Derived Fuel (RDF). The plant adopts a method whereby finely crushed waste plastic (boiler furnace fuel) only is directly fed through four chutes using compressed air into a single-fuel fired boiler (a boiler fired exclusively by waste plastic). The resulting high-temperature, high pressure steam turns a turbine to generate electricity. After power generation, the steam is recovered using an air-cooled condenser and the water is reused. For this reason, there is absolutely no output of heated wastewater, which is often cited as for power plants. Soot is recovered and together with the incineration ash is detoxified and recycled or sent to its consolidated subsidiary, C&R Co., Ltd. to be used in landfills.

Through technology development, the boiler is operated with an internal temperature of over 850 degrees centigrade, and the generation of dioxins is prevented by cooling this to 200 degrees centigrade.

Sanix Energy's Tomakomai Power Station has encountered several problems since 2005 to 2009, and unavoidably temporarily halted operations (see History). However, the plant appears to have overcome these problems and implemented many improvements to increase its power generation capacity. As of May 2017, it was operating smoothly and the company believes it can steadily increase energy output through enhancement of fuel quality and other measures.

Factors affecting power generation earnings at Tomakomai Power Plant

The simple formula for calculating sales is volume of power sold multiplied by the unit selling price. The unit price is agreed by negotiation.

Main expenses include materials cost (such as landfill and chemicals costs), labor cost and outsourced work cost. Fuel cost is waste plastic processed by other companies in the Sanix Group, meaning there is no fluctuation risk for materials cost. Labor cost may also be assumed as essentially fixed, meaning profits are steady when the plant is operating smoothly.

However, since regular inspections (once every two years) and continual maintenance are necessary, profit is potentially affected if the plant does not operate for the number of days planned or if there is a rise in maintenance costs. In FY03/18, the company booked JPY600mn in inspection and repair costs as income from the sale of power declined at the Tomakomai Power Station, impacted by the regular inspection (conducted once every two years) and annual repairs in 1H. In addition, generation efficiency deteriorates based on fuel quality attributable to the mixture of metal and chlorine, leading to a risk of not being able to meet its electricity sales volume target.

Home Sanitation Segment (17.8% of sales and 34.3% of operating profit before adjustments in FY03/18)

The HS segment provides termite control, foundation repairing and strengthening, and ceiling and floor ventilation work for households.

HS segment performance

(JPYmn)	FY03/10 Act.	FY03/11 Act.	FY03/12 Act.	FY03/13 Act.	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Sales	14,056	16,657	15,395	14,814	10,819	7,605	6,519	6,562	8,922
YoY	-4.1%	18.5%	-7.6%	-3.8%	-27.0%	-29.7%	-14.3%	0.7%	36.0%
Termite control services	4,775	4,095	3,498	2,690	3,264	2,783	2,459	2,159	2,628
YoY	-9.7%	-14.2%	-14.6%	-23.1%	21.3%	-14.7%	-11.6%	-12.2%	21.7%
Floor and ceiling ventilation systems	2,996	2,568	2,092	1,310	1,641	1,078	895	854	1,254
YoY	17.5%	-14.3%	-18.5%	-37.4%	25.3%	-34.3%	-17.0%	-4.6%	46.8%
Foundation repairing & building strengthening work	2,977	2,110	1,614	831	930	549	377	582	1,957
YoY	-37.8%	-29.1%	-23.5%	-48.5%	11.9%	-41.0%	-31.3%	54.4%	236.3%
Other	3,308	7,884	8,191	9,983	4,984	3,195	2,788	2,967	3,083
YoY	62.5%	138.3%	3.9%	21.9%	-50.1%	-35.9%	-12.7%	6.4%	3.9%
Gross profit	8,455	7,964	7,381	6,161	4,845	3,755	3,255	3,285	4,947
GPM	60.2%	47.8%	47.9%	41.6%	44.8%	49.4%	49.9%	50.1%	55.4%
SG&A expenses	5,090	5,356	4,899	4,385	3,703	2,121	2,640	2,306	3,475
SG&A-to-sales ratio	36.2%	32.2%	31.8%	29.6%	34.2%	27.9%	40.5%	35.1%	38.9%
Operating profit	3,365	2,608	2,482	1,776	1,141	1,634	614	979	1,471
YoY	-3.0%	-22.5%	-4.8%	-28.5%	-35.7%	43.2%	-62.4%	59.4%	50.3%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
In FY03/15, the company changed the structure for the solar power system sales and installations. Since then, the residential solar power construction business was moved from the HS segment to the SE segment.

Termite control services and floor/ceiling ventilation systems are included in the Home Sanitation (HS) segment and the termite control service is its original business since the company's founding. The company applies termite eradication agents to the wooden-structured houses of customers and installs ventilation systems. Revenue is derived from the provision of services and construction work, as well as anti-termite agents and other products. As of May 2015, the company has been executing sales activities for past customers in the Kansai region and western Japan.

In July 2006, the company was the subject of administrative sanctions ordered by the Ministry of Economy, Trade and Industry (METI) for violations of the Act on Specified Commercial Transactions (see History). Since then, in addition to thorough measures to prevent recurrence of these problems, the company stopped acquiring new customers. For this reason, although at its peak this business served 320,000 customers, the number fell to about 120,000 as of May 2018.

In 2006, the company began focusing on providing after-sales maintenance to existing customers of its termite control and floor/ceiling ventilation system services. In March 2013, its focus shifted again, this time to the installation of solar power generation systems. For these reasons, sales have continued to decline in the termite control and floor/ceiling ventilation system installation businesses.

However, in January 2015 the government revised the Feed-in Tariff Scheme for Renewable Energy, changing output control rules. In response to this change in the segment's business environment, the company promoted the streamlining of operations to achieve sustainable growth, reducing the numbers of both workers and stores in the SE segment. From FY03/17, it plans to take resources it had concentrated in the SE segment and redistribute them to the HS and ES segments with the aim of stimulating a recovery in performance.

Termite-control services

	FY03/10	FY03/11	FY03/12	FY03/13	FY03/14	FY03/15	FY03/16	FY03/17	FY03/18
Sales (JPYmn)	4,775	4,095	3,498	2,690	3,264	2,783	2,459	2,159	2,628
Treatment area (sqm)	2,803	2,433	2,086	1,626	1,990	1,696	1,521	1,339	1,560
Price per sqm (JPY'000)	1.70	1.68	1.68	1.65	1.64	1.64	1.62	1.61	1.68

Source: Shared Research based on company data

Sales for termite-control services can be obtained by multiplying the construction area by the unit price. The construction area has been on the decline. The unit price has remained stable at around JPY1,500 to JPY1,800 per square meters.

Foundation repairing and reinforcement work for households

	FY03/10	FY03/11	FY03/12	FY03/13	FY03/14	FY03/15	FY03/16	FY03/17	FY03/18
Sales (JPYmn)	2,977	2,110	1,614	831	930	549	377	1,249	1,957
Number of construction works	6,479	4,593	3,437	1,807	1,963	1,170	803	3,714	5,551
Unit price (JPY'000)	0.46	0.46	0.47	0.46	0.47	0.47	0.47	0.34	0.35

Source: Shared Research based on company data

Sales for foundation repairing and reinforcement work for households can be obtained by multiplying the number of projects by the unit price. The number of projects, which had been on the decline up to FY03/17, began to register a YoY increase that year, reaching 5,551 projects in FY03/18. The unit price has remained stable at around JPY400,000 per project.

The HS segment has GPM of about 40-60%, compared with 20-40% for the company as a whole. We believe that the HS segment has a higher GPM because termite-control services have a high GPM.

Strengths and weaknesses

Strengths

- **Low-priced solar power producer:** In the solar power business, the company provides attractive services at low prices based on its system for procuring low-priced components and its end-to-end operations covering all aspects from procurement to installation.
- **Niche market player with strong sales know-how:** Solar power generation systems of the sort handled by Sanix, with capacities between 10kW and 50kW—suitable for installation in low-voltage power systems—are too large to be handled by small, local housing equipment installers but are below the size threshold handled by major construction groups. Since the company started out selling termite control services and installing floor/ceiling ventilation systems, it has ample experience in door-to-door sales and a workforce proficient in small- to medium-scale installation projects. Hence the foundations already existed on which the company could build its commercial solar power business focusing on 10kW to 50kW systems ahead of potential competitors. Shared Research feels this is also one of the reasons the company is able to gain volume discounts when procuring solar power modules.
- **Stable earnings source:** The waste plastic processing business, once a customer enters a service contract, the probability of the customer changing service providers is quite low. In addition, stable operations in the power generation business have enabled the company to secure sales and profits. The company has stable source profits from its Environmental Resources Development segment.

Weaknesses

- **Management culture that historically tended to incorrectly discount risk:** Sanix's earnings slumped for 10 years after peaking in FY03/02. One of the causes of this slump was a full-scale entry into the power generation business in FY03/03, which involved capital investment of JPY12.0bn—an amount greater than the entire operating profit at the time. The Environmental Resources Development segment with its power generation business, lost money every year until FY03/11 (see "Segment Breakdown"). In FY03/15, the company expanded personnel sharply in the solar power business, but it incurred losses in FY03/15 and FY03/16 due to a change in the business environment. Shared Research feels that while the company is prone to move aggressively, in hindsight it often underestimated future risks in the past, both to its reputation and bottom line.
- **Sustainable cost competitiveness:** Shared Research believes that Sanix's competitive advantage in solar power business is providing both direct sales and installation, focused on solar power generating system of less than 50kW. The company has developed a system where it can provide a stable volume of orders to solar power generating equipment makers by bundling small lot orders together and offer competitive low prices. On the other hand, Sanix's strategy is based on being cost competitive, and consequently, may lose its competitiveness if competitors and new entrants with greater financial strength, initiates a low-priced strategy with a disregard for profits in the short term. In addition, the company's cost competitiveness is not based on commanding an overwhelming market share through production volume, and this low-price strategy may be imitated by competitors. It is inevitable that when competitors imitate the company's business model, the company may lose its low-price competitive advantage.
- **Dependence on solar power market:** Since FY03/12, the company has focused on direct sales and construction of solar power generating systems. Sales in the SE segment accounted for 35.7% of total sales in FY03/18 (51.5% in FY03/17). If the market shows a shrinking trend, it may affect the company's business results. Although Sanix increased its personnel in FY03/15 toward expansion of the segment size, changes in the solar power business environment, including the problem of grid connection volume at electric power companies, forced the company to book losses in FY03/15 and FY03/16 due to a failure to absorb the burden of the increased fixed costs.

Group companies

The Sanix Group comprises of the parent company and 10 consolidated subsidiaries.
The main subsidiaries are listed below (shareholding ratio in parentheses).

- Sanix Engineering Inc. (100%): planning, design, sales, and installation of commercial solar power systems
- Shanri (Shanghai) Energy Science and Technology Co., Ltd. (100%): Manufacture of PV modules and sales to Sanix.
- Sanix Energy Inc. (98.6%): Purchasing of processed plastic fuel (processed by the parent company for use in its power station), and sales of the electricity

Market and value chain

Market overview

Policies to promote solar power in Japan

FIT Act implemented in July 2012 to launch a system of feed-in tariffs for renewable energy

As a policy to promote the spread of renewable energy, the Act on Special Measures Concerning Procurement of Renewable Electric Energy by Operators of Electric Utilities (often abbreviated to "FIT Act") was enacted in August 2011 and implemented in July 2012. The result was a feed-in tariff mechanism under which the government guarantees the purchase of electricity generated by five types of renewable energy sources, such as solar, wind, and geothermal power, at predetermined prices for a certain period of time. The costs of purchasing power is added to electricity prices as a levy.

The spread of solar power in Spain and Germany is attributed to the introduction of a system similar to the feed-in tariff mechanism. The use of solar power tends to rise when purchase prices for renewable energy are high.

Revised FIT Act implemented in April 2017

According to a document released by the Agency for Natural Resources and Energy, the combined capacity of power generation facilities that use renewable sources reached 53.2mn kW at end October 2016, about 2.5 times the level of end June 2012, when the figure was about 20.6mn Kw. The cost of purchasing renewable energy, which was JPY0.3tn in fiscal 2012, rose to JPY2.3tn in fiscal 2016 (of which the levy was JPY1.8tn, JPY675 per average household). The agency expects that the cost of renewable energy purchases will increase to JPY3.7-4.0tn in 2030.

In April 2017, the Partial Revision of the Act on Special Measures Concerning Procurement of Electricity from Renewable Energy Sources by Electricity Utilities (the revised FIT Act) was implemented to address the growing financial burdens on the public and an increase in idle facilities. The revised FIT Act sets forth medium- to long-term purchase price targets and calls for the establishment of a system of competitive bidding.

Purchase of excess electricity from systems of less than 10kW

For solar power generation systems of less than 10kW, the FIT scheme is applied, and surplus solar power generated by households is sold to electric utility companies. When the scheme was launched in 2009, the feed-in tariff for surplus power was set at JPY48/kWh (including tax) to promote use. Electricity companies was to purchase power generated at a fixed tariff for 10 years from installation of the solar power system. The tariff for newly installed generation capacity has been lowered each year thereafter. The feed-in tariffs for fiscal 2016 (March 2017) and later are shown in the table below.

Under the revised FIT Act, the target rate for residential solar power in 2019 will be roughly equivalent to household electricity prices (JPY24/kWh). The law also calls for the purchase price to match the market price (JPY11/kWh) at an early date in 2020 or thereafter.

Feed-in tariffs for less than 10kW of solar power

Procurement type		Price per 1kWh				Procurement
		FY2016	FY2017	FY2018	FY2019	period
Less than 10kW	Output control equipment not required	JPY31	JPY28	JPY26	JPY24	10 years
	Output control equipment required	JPY33	JPY30	JPY28	JPY26	
Less than 10kW (double power generation)	Output control equipment not required	JPY25	JPY25		JPY24	
	Output control equipment required	JPY27	JPY27		JPY26	

Source: Shared Research with data from the Agency for Natural Resources and Energy
*The installation of output control equipment is required within the service areas of Hokkaido Electric Power Company, Tohoku Electric Power Company, Hokuriku Electric Power Company, Chugoku Electric Power Company, Shikoku Electric Power Company, Kyushu Electric Power Company, and Okinawa Electric Power Company.

Net metering for systems of 10kW or more

In July 2012, a system called “net metering” was established within the FIT scheme, for facilities generating 10kW of solar power or more. Under this scheme, producers can sell all power generated to electricity companies, regardless of their own consumption. In 2012, the tariff stood at JPY40/kWh (excluding tax). The tariff is fixed for 20 years, from the time of installation. The tariff was lowered in 2013 and 2014, to JPY36/kWh (excluding tax) and JPY32/kWh (excluding tax) respectively. The tariff was further lowered in fiscal 2015 to JPY29/kWh (excluding tax) for facilities concluding connection contracts with electricity companies by June and to JPY27/kWh (excluding tax) for facilities concluding connection contracts in July and later. The tariff was lowered yet again in 2016, to JPY24/kWh (excluding tax). The feed-in tariffs for fiscal 2016 and later are shown in the table below.

Under the revised FIT Act, the target rate for non-residential solar power is JPY14/kWh in 2020 and JPY7/kWh in 2030.

Feed-in tariffs for 10kW or more of solar power

Procurement type	Procurement price per 1kWh				Procurement period
	FY2016	FY2017	FY2018	FY2019	
From 10kW to less than 2,000kW	JPY24	JPY21	JPY18		20 years
2,000kW or more	JPY24	Determined by auction			

Source: Shared Research with data from the Agency for Natural Resources and Energy

The tariff and purchase period set under the FIT scheme are set each year by the Minister of Economy, Trade and Industry prior to the commencement of the fiscal year. The minister is required to take into account the opinions of a neutral, third-party committee (Feed-in Tariff Calculation Committee), which conducts public deliberations.

Barriers to entry

It is possible for a local home builder to go into the solar power generation system installation business tomorrow. However, given that Sanix (involved in the whole process from manufacturing to sales, to installation and maintenance), has already achieved low prices of sources, generated some brand equity, and gained scale to leverage advertising costs, new entrants may find it difficult to compete with the company. Sanix has also cut costs and made installations more efficient by producing power conditioners in-house and changing panel mounts. The company hopes that unique products and installation methods will allow it to lower costs—a further competitive advantage.

Significant capital investment and operating know-how are required in the plastic waste recycling business. Consequently, given the additional capital investment and know-how needed post-recycling, there appears to be little merits for a new company to enter into this business field.

Strategy

Sanix's corporate mission since its founding has been "To Make the Dirty Clean" and has been focused on businesses where a few others would fear to tread. The company has gained valuable know-how and competitive advantage in being the first mover. An example of this ability was the company's termite control services that developed into a substantial business and continued to grow until FY03/02.

However, after the company was ordered by regulatory authorities to suspend operations for three months in its termite control services and floor/ceiling ventilation systems operations, Sanix's management made the decision to stop soliciting new business for good and focus on providing maintenance services to existing customers only. Facing declining sales, the company reduced headcount and started searching for the next business opportunity.

Since 2009, Sanix looked at direct sales and installations of solar power systems as its next frontier and consequently changed the business focus. Then, in January 2015 the government revised the Feed-in Tariff Scheme for Renewable Energy, changing output control rules. In response to this change in the SE segment's business environment, the company promoted the streamlining of operations to achieve sustainable growth, reducing the numbers of both workers and stores in the SE segment.

From FY03/17, it plans to take resources it had concentrated in the SE segment and redistribute them to the HS and ES segments with the aim of stimulating a recovery in performance.

Historical performance

1H FY03/19 results

Sales:	JPY24.4bn (+1.2% YoY)
Operating profit:	JPY688mn (+398.6% YoY)
Recurring profit:	JPY689mn (versus loss of JPY29mn in 1H FY03/18)
Net profit*:	JPY194mn (versus loss of JPY155mn in 1H FY03/18)

*Net profit refers to net profit attributable to parent company shareholders.

Sales in the Solar Engineering (SE) segment decreased due to the shrinking market of solar electric power generation. However, sales increased in the Home Sanitation (HS) and Establishment Sanitation (ES) segments as the company properly distributed its management resources, including the human resources. Moreover, the Environmental Resources Development (ERD) segment saw sales growth due to expansion of electric power sales by the new electric power generation (PPS) business.

Earnings were bolstered by rising sales at the HS, ES, and ERD businesses, which together were more than enough to offset the impact of decline in sales at the SE business and leave the company with higher earnings at both the operating and recurring profit levels. Underpinned by the gains at the recurring profit level, net income attributable to parent company shareholders also finished higher despite a JPY377mn in extraordinary loss booked to cover the expenses expected to be incurred to repair the damage to the Tomakomai Power Plant caused by the earthquake that struck the eastern part of the Iburi region of Hokkaido.

Sanix implemented a new medium-term management plan (for FY03/17 through FY03/19) to cope with the business environment surrounding the solar electric power market. According to the new medium-term plan, in FY03/18, it established a general headquarter for the SE, HS, and ES businesses, a cross-segmental organization that enables employees to join forces and conduct effective sales and installation activities across the three businesses that share the same sales offices. Further, in a bid to deploy personnel properly, the company transferred part of the SE segment staff to the HS and ES segments.

The Tomakomai Power Plant was shut down due to an earthquake that hit the eastern part of the Iburi region of Hokkaido in September 2018 (Q2). The company is currently in the process of inspecting the plant and repairing the damage caused by the earthquake, and expects to have the plant up and running again in early March 2019.

In light of the disaster affecting the Tomakomai Power Plant, the company announced revisions to its FY03/19 full-year forecast as it released 1H financial results. Verses the revised full-year forecast, 1H sales achieved 49.5% (48.3% in 1H FY03/18 verses full-year FY03/18 results), operating profit 51.4% (11.1%), recurring profit 53.4% (recurring loss of JPY29mn in 1H FY03/18 versus full-year recurring profit of JPY1.0bn in FY03/18), and net income attributable to parent company shareholders 36.3% (net loss of JPY155mn in 1H FY03/18 versus full-year net income of JPY1.2bn in FY03/18). In 1H FY03/18, the company conducted regular inspections at Tomakomai Power Plant and recorded JPY600mn in repair expenses, which resulted in sluggish progress for all profit categories.

Solar Engineering (SE) segment

Sales:	JPY5.9bn (-31.8% YoY)
Operating profit:	JPY55mn (-94.1% YoY)

The drop in sales reflects a sharp decline in revenues from installations of solar power systems, which fell 30.4% YoY to JPY5.6bn. In 1H FY03/19, the number of facilities fell as FIT business plan approval took longer than expected. According to the "Status of review of application for FIT" published in July 2018 by the Agency for Natural Resources and Energy, review process has begun on schedule for applications seeking approval to apply 2018 FIT rates. Approval processes began wrapping up during Q2 (July–September 2018), and the installation volume is expected to increase starting in Q3. According to the company, customers can reap benefits from installing solar power systems, and hence there is still demand for them.

In earnings, the company promoted cost reductions by moving personnel to the HS business and cutting materials costs. However, the segment saw profit fall on a decline in gross profit on weaker sales.

Sales from solar power system installations, the segment's core business, were JPY5.9bn (-30.4% YoY). Sales weakened on lower volume at a 25.3% drop YoY to 31,761kW. The enforcement of the revised FIT Act elongated the period required for receiving approval of solar power systems, which also led to the decline in installation volume. The unit price of solar power systems (dividing sales from installations by solar power system volume) was JPY175,000/kW (-6.8% YoY according to Shared Research calculations). The company reduced prices for solar power system installations in accordance with a decline in purchase prices under the fixed-price purchase scheme (FIT scheme). Approval procedures for facilities to which the 2018 purchasing price of JPY18/kWh (JPY21/kWh in fiscal 2017) is applied began to wrap up in Q2 (July–September 2018). This contributed to sales, and with this, the company lowered unit prices for solar power systems.

Gross profit was JPY1.8bn (-40.5% YoY), GPM fell 4.4pp YoY to 28.9%, and the CoGS ratio was 70.2%. The company found success with its efforts to lower material costs, and the drop in GPM was lower than the rate of decline in unit prices for solar power systems. The materials cost and labor cost ratios rose in the CoGS breakdown. The ratio of materials cost to sales was on a downward trend since FY03/16 thanks to the company's efforts to lower materials costs for solar power modules and inverters. However, it increased 1.4pp YoY to 43.4% in 1H FY03/19 as the procurement source of solar power modules lowered production volume and adjusted inventory from Q3 FY03/18. The ratio of labor costs to sales fell 0.1pp YoY to 8.8%. Sales fell, but the company maintained a flat labor cost ratio YoY by transferring a portion of personnel in the SE segment to the HS and ES segments.

SG&A expenses were JPY1.7bn (-15.8% YoY), reflecting a fall in personnel and other expenses.

SE business marginal profit ratio and breakeven point

The marginal profit ratio (profit ratio after subtracting variable costs such as materials costs, subcontracting costs, and transportation costs) fell 3.8pp YoY to 45.0%. The marginal profit ratio dropped as the ratio of materials costs to sales rose.

Fixed costs (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) were down JPY696mn or 21.0% YoY to JPY2.6bn because the company transferred personnel from the SE segment to the HS segment. Fixed cost-to-sales ratio rose 6.0pp YoY to 43.9% as sales fell at a greater rate than fixed costs did. Despite lower marginal profit ratio, as a result of the fall in fixed costs, the breakeven point for sales (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) finished at JPY5.8bn, down JPY970mn or 14.3% YoY.

Environmental Resources Development (ERD) segment

Sales:	JPY12.1bn (+19.2% YoY)
Operating profit:	JPY962mn (versus loss of JPY57mn in 1H FY03/18)

Sales from plastic fuel sales rose 11.8% YoY to JPY4.1bn on an increase in plastic waste acceptance volume to 166,000 tons (+2.9% YoY) and efforts to raise the unit price received for waste plastics.

Sales from electric power generation rose 30.0% YoY to JPY6.3bn thanks to growth in volume of wholesale to power producers and suppliers. The Tomakomai Power Plant achieved about the same amount of sales from electric power generation as it did in 1H FY03/18, despite suspending operations for about a month due to the 2018 Hokkaido Eastern Iburi Earthquake in September. The results did not change significantly YoY because the plant had also suspended operations for regular biennial inspections in 1H FY03/18. Sanix forecasts the Tomakomai plant will resume operations early March 2019 because it will require time to procure made-to-order parts beforehand.

Profit rose on higher GPM accompanying an increase in the unit price received for waste plastics at the waste plastics processing business. Regarding electric power generation business revenue, improved electricity generation efficiency at the Tomakomai

Power Plant as a result of selectively receiving waste products that can be converted into quality fuel also led to higher profit. In 1H FY03/18, the company recorded repair expenses of JPY600mn associated with regular biennial inspections at the Tomakomai Power Plant. However, inspections were not conducted during 1H FY03/19, which also contributed to increased profit. Additionally, higher sales and stabilization of electricity procurement costs at the new electric power generation (PPS) business contributed to profit growth. In Q2 FY03/18, profit margins fell as the company had to purchase high-cost electricity to handle increased sale volume. However, since Q4 FY03/18, Sanix changed its method for electricity procurement and became able to secure profit corresponding to sales without being influenced by supply and demand for electricity.

Home Sanitation (HS) segment

Sales: JPY5.5bn (+19.2% YoY)

Operating profit: JPY1.2bn (+65.3% YoY)

The strong top-line gains reflect growth in multiple areas, including termite control services, where revenues rose 34.2% YoY to JPY1.8bn, in-floor/in-ceiling ventilation system installation work, where revenues rose 37.0% to JPY870mn, and foundation repairing and strengthening construction work services to households, where revenues rose 21.8% to JPY1.1bn. The company transferred employees from the SE segment to expand businesses under the HS segment, and strengthened sales and work operations to provide detailed maintenance proposals to general households.

Profits increased despite higher personnel expenses stemming from increases in staffing levels, thanks to higher sales, improvement in work efficiency, and decline in the outsourced processing cost ratio. GPM rose 5.8pp YoY to 60.5% as the share of sales from relatively high-margin services such as termite control services, floor/ ceiling ventilation system installation work, and foundation repair and building reinforcement work increased while the share of sales from relatively low-margin others (e.g., subcontracted construction work such as reforms) fell.

Establishment Sanitation (ES) segment

Sales: JPY905mn (+32.1% YoY)

Operating profit: JPY128mn (+30.6% YoY)

Sales were driven by the segment's mainstay anti-rust equipment installation business (product name: Daelman Shock), where sales rose 79.8% YoY to JPY433mn. By transferring people from its SE business, the company was able to increase the number of employees at the ES segment and expand the business, focusing especially on sales to owners of building and condominiums and building closer ties with management companies and other partners.

Although personnel expenses and other fixed costs rose on the increase in the staff, the rise in sales as well as improved work efficiency and decline in the outsourced processing cost ratio pushed up profits.

Q1 FY03/19 results

- Sales: JPY11.7bn (-3.0% YoY)
- Operating profit: JPY103mn (-74.0% YoY)
- Recurring profit: JPY154mn (-47.3% YoY)
- Net profit*: JPY111mn (-46.9% YoY)

*Net profit refers to net profit attributable to parent company shareholders.

Sales in the Solar Engineering (SE) segment decreased due to an increase in the time required for obtaining approval for solar power systems under the revised FIT Act. However, sales increased in the Home Sanitation (HS) and Establishment Sanitation (ES) segments as the company properly distributed its management resources, including the human resources. Moreover, the

Environmental Resources Development (ERD) segment saw sales growth due to expansion of the new electric power generation (PPS) business.

In earnings, while profits rose on higher sales in HS, ES, and ERD, the SE business booked a loss due to weaker sales, leading to an overall decline in profits.

Sanix implemented a new medium-term management plan (for FY03/17 through FY03/19) to cope with the business environment surrounding the solar electric power market. According to the new medium-term plan, in FY03/18, it established a general headquarter for the SE, HS, and ES businesses, a cross-segmental organization that enables employees to join forces and conduct effective sales and installation activities across the three businesses that share the same sales offices. Further, in a bid to deploy personnel properly, the company transferred part of the SE segment staff to the HS and ES segments.

Versus the company forecasts for 1H FY03/19, Q1 sales reached 48.3% (50.1% in Q1 FY03/18 versus 1H FY03/18 results), operating profit 11.9% (287.0% in Q1 FY03/18 versus 1H FY03/18 result), recurring profit 18.8% (recurring profit of JPY292mn in Q1 FY03/18 versus a loss of JPY29mn in 1H FY03/18), and net income attributable to parent company shareholders of 17.3% (net income of JPY209mn in Q1 FY03/18 versus a net loss of JPY155mn in 1H FY03/18). Sales and profit at the SE segment undershot plan, but sales and profits at all the other segments (HS, ES, and ERD) surpassed plan. As a result, overall sales and all profit categories finished the quarter above plan. In Q2 FY03/18, the company posted a loss in the ERD segment due to the booking of repair expenses and suspension of the Tomakomai Power Plant accompanying an inspection required by law once every two years. However, no such inspection was scheduled for Q2 FY03/19.

Solar Engineering (SE) segment

- ▷ Sales: JPY2.8bn (-38.2% YoY)
- ▷ Operating loss: JPY88mn (vs. a JPY442mn profit in Q1 FY03/18)

The drop in sales reflects a sharp decline in revenues from installations of solar power systems, which fell 37.3% YoY to JPY2.6bn. In Q1 FY03/19, the number of facilities fell as FIT business plan approval took longer than expected. According to the “Status of review of application for FIT” published in July 2018 by the Agency for Natural Resources and Energy, review process has begun on schedule for applications seeking approval to apply 2018 FIT rates. The company expects to obtain approval from Q2 onward. According to the company, customers can reap benefits from installing solar power systems, and hence there is still demand for them.

In earnings, the company promoted cost reductions by moving personnel to the HS business and cutting materials costs. However, the segment booked a loss because of decline in gross profit on weaker sales. As of end-Q1 FY03/19, there were 464 employees (versus 512 at end-FY03/18) at the SE segment.

Sales from solar power system installations, the segment’s core business, were JPY2.6bn (-37.3% YoY). Sales weakened on lower volume at a 37.0% drop YoY to 14,099kW. The enforcement of the revised FIT Act elongated the period required for receiving approval of solar power systems, which also led to the decline in installation volume. The unit price of solar power systems (dividing sales from installations by solar power system volume) was JPY185,000/kW (-0.3% YoY according to Shared Research calculations).

Gross profit was JPY761mn (-49.3% YoY), GPM fell 6.0pp to 27.4%, and the CoGS ratio was 72.6%. The materials cost and labor cost ratios rose in the CoGS breakdown. The ratio of materials cost to sales was on a downward trend since FY03/16 thanks to the company’s efforts to lower materials costs for solar power modules and inverters. However, it increased 2.6pp YoY to 44.8% in Q1 FY03/19 as the procurement source of solar power modules lowered production volume and adjusted inventory from Q3 FY03/18. The ratio of labor costs to sales increased 2.6pp YoY to 9.7%. Although labor costs fell owing to the transfer of some employees at the SE segment to the HS and ES segments, the labor cost-to-sales ratio increased because of lower sales.

SG&A expenses were JPY849mn (-19.8% YoY), reflecting a fall in personnel and other expenses.

SE business marginal profit ratio and breakeven point
The marginal profit ratio (profit ratio after subtracting variable costs such as materials costs, subcontracting costs, and transportation costs) fell 4.3pp YoY to 44.1%. The marginal profit ratio dropped as the ratio of materials costs to sales rose.

Fixed costs (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) were down JPY423mn or 24.4% YoY to JPY1.3bn because the company transferred personnel from the SE segment to the HS segment. Fixed cost-to-sales ratio rose 8.6pp YoY to 47.2% as sales fell at a greater rate than fixed costs did. Despite lower marginal profit ratio, as a result of the fall in fixed costs, the breakeven point for sales (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) finished at JPY3.0bn, down JPY610mn or 17.0% YoY.

Environmental Resources Development (ERD) segment

- ▷ Sales: JPY5.8bn (+17.5% YoY)
- ▷ Operating profit: JPY439mn (+29.9% YoY)

Plastic fuel sales rose 11.8% YoY to JPY2.1bn on an increase in plastic waste acceptance volume to 84,000 tons (+3.4% YoY) and efforts to raise the unit price received for waste plastics.

Sales from the electric power generation business rose 29.2% YoY to JPY3.0bn thanks to increased sales volume in wholesale to power producers and suppliers in the new electric power generation (PPS) business.

Profit rose on higher GPM accompanying an increase in the unit price received for waste plastics at the waste plastics processing business. Regarding electric power generation business revenue, improved electricity generation efficiency at the Tomakomai Power Plant as a result of selectively receiving waste products that can be converted into quality fuel also led to higher profit. Additionally, higher sales and stabilization of electricity procurement costs at the new electric power generation (PPS) business contributed to profit growth. In Q2 FY03/18, profit margins fell as the company had to purchase high-cost electricity to handle increased sale volume. However, since Q4 FY03/18, Sanix changed its method for electricity procurement and became able to secure profit corresponding to sales without being influenced by supply and demand for electricity.

Home Sanitation (HS) segment

- ▷ Sales: JPY2.7bn (+16.4% YoY)
- ▷ Operating profit: JPY580mn (+44.3% YoY)

The strong top-line gains reflect growth in multiple areas, including termite control services, where revenues rose 27.1% YoY to JPY925mn, floor/ ceiling ventilation system installation work, where revenues rose 30.5% to JPY411mn, and foundation repairing and strengthening construction work services to households, where revenues rose 24.1% to JPY571mn. The company transferred employees from the SE segment to expand businesses under the HS segment, and strengthened sales and work operations to provide detailed maintenance proposals to general households. The number of employees at the HS segment as of end-Q1 FY03/19 was 582 (versus 528 at end-Q1 FY03/18).

Profits increased, despite higher personnel expenses and other fixed costs on increased number of employees, thanks to higher sales, improvement in work efficiency, and decline in the subcontracting cost-to-sales ratio. GPM rose 4.9pp YoY to 60.4% as the share of sales from relatively high-margin services such as termite control services, floor/ ceiling ventilation system installation work, and foundation repair and building reinforcement work increased while the share of sales from relatively low-margin others (e.g., subcontracted construction work such as reforms) fell.

Establishment Sanitation (ES) segment

- ▷ Sales: JPY415mn (+33.8% YoY)
- ▷ Operating profit: JPY52mn (+30.7% YoY)

Sales were driven by the segment's main anti-rust equipment installation business (product name: Daelman Shock), where revenues rose 104.2% YoY to JPY206mn. By transferring people from its SE business, the company was able to increase the number of employees at the ES segment and expand the business, focusing especially on sales to owners of building and condominiums and building closer ties with management companies and other partners.

Although personnel expenses and other fixed costs rose on the increase in the staff, the rise in sales as well as improved work efficiency and decline in the outsourced processing cost ratio pushed up profits.

Full-year FY03/18 results

- ▷ Sales: JPY50.0bn (-1.9% YoY)
- ▷ Operating profit: JPY1.2bn (+20.3% YoY)
- ▷ Recurring profit: JPY1.0bn (+12.3% YoY)
- ▷ Net profit*: JPY1.2bn (+183.7% YoY)

*Net profit refers to net profit attributable to parent company shareholders.

Sales in the Solar Engineering (SE) segment decreased due to the shrinking market of solar electric power generation. However, sales increased in the Home Sanitation (HS) and Establishment Sanitation (ES) segments as the company properly distributed its management resources, including the human resources. Moreover, the Environmental Resources Development (ERD) segment saw sales growth due to expansion of the new electric power generation (PPS) business.

In 1H, the Environmental Resources Development (ERD) segment incurred a fall in profit as the Tomakomai Power Plant suspended operation for mandatory inspection and repair work, causing JPY600mn in repair costs. However, all profit items rose due to reduced SG&A expenses resulting from increased sales in the Home Sanitation (HS) and Established Sanitation (ES) segments and streamlining management.

Sanix implemented a new medium-term management plan (for FY03/17 through FY03/19) to cope with the business environment surrounding the solar electric power market, which has been shrinking mainly due to the revised Feed-in Tariff (FIT) Act. According to the new medium-term plan, Sanix promoted the streamlining of operations, such as a reduction in personnel, integration of stores, and downsizing of the distribution and production divisions in the previous year. In FY03/18, the second year of the plan, it established a general headquarter for the SE, HS, and ES businesses, a cross-segmental organization that enables employees to join forces and conduct effective sales and installation activities across the three business that share the same sales offices. In a bid to deploy personnel properly, the company transferred part of the SE segment staff to the HS and ES segments.

Solar Engineering (SE) segment

- ▷ Sales: JPY17.9bn (-31.9% YoY)
- ▷ Operating profit: JPY1.7bn (-0.1% YoY)

The drop in sales reflects a sharp decline in revenues from installations of solar power systems, where revenues fell 31.3% YoY to JPY16.6bn. Following revision in the Feed-in Tariff (FIT) Act, the company saw an increase in demand for ancillary equipment installation and other work under its maintenance business, but segment sales were hit hard by the changes in the law that resulted in a decline in demand for commercial solar power systems.

The business saw a rise in profits due in part to cost cuts on streamlining operations, falls in material prices, and reductions in personnel expenses. In terms of cost of goods sold, the company recorded a valuation loss of JPY401mn on inventories of company-produced power conditioners (JPY777mn valuation loss on inventories of company-produced power conditioners in FY03/17).

Sales from solar power system installations, the segment's core business, were JPY16.6bn (-31.3% YoY). Sales weakened on lower volume at a 26.4% drop to 91,882kW. Lower sales can be attributed to the decline in installation volume of commercial solar power systems caused by the shrinking of the solar power system market and the reduction of unit price following the revision of the feed-in tariff. The enforcement of the revised FIT Act elongated the period required for receiving approval of solar power systems, which also led to the decline in installation volume. In FY03/18, the unit price for solar power systems declined as the percentage of low unit price installations increased, which received approval following the revision of the FIT Act. As a result, the unit price of solar power systems (dividing sales from installations by solar power system volume) was JPY181,000/kW (-6.7% according to Shared Research calculations).

Gross profit was JPY5.6bn (-25.1% YoY), GPM rose 2.8pp to 31.1%, and the CoGS ratio was 68.9%. The material cost and labor expense ratios declined in the CoGS breakdown. The ratio of material cost to sales dropped 4.4pp YoY to 46.4%, as in addition to narrower valuation losses on inventories of company-produced power conditioners, the company worked to lower materials costs on solar power modules and power conditioners. The ratio of labor expenses to sales dropped 0.6pp YoY to 8.0% as a result of the voluntary retirement program implemented in Q2 FY03/17 and the transfer of some employees at the SE segment to the HS and ES segments in April 2017. The number of employees in the SE segment fell from 1,011 in March 2016 to 448 in September 2017.

SG&A expenses were JPY3.9bn (-32.3% YoY), reflecting a fall in personnel and other expenses.

SE business marginal profit ratio and breakeven point

The marginal profit ratio (profit ratio after subtracting variable costs such as material costs, outsourcing costs, and transportation) rose 2.3pp YoY to 46.8%. The marginal profit ratio rose as the ratio of material costs to sales decreased.

Fixed costs (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) were down JPY2.9bn YoY to JPY6.3bn because the company transferred personnel from the SE segment to the HS segment. As sales and fixed costs fell, the ratio of fixed costs was even YoY at 35.1%. As a result of the rise in marginal profit ratio and the fall in fixed costs, the breakeven point for sales (Shared Research estimate based on monthly average fixed costs disclosed by Sanix) finished at JPY13.4bn, down JPY7.3bn YoY.

SE business quarterly earnings

In Q4 (January to March), sales were JPY5.0bn (-34.1% YoY or +21.6% QoQ). Gross profit was JPY1.3bn (-33.0% YoY or -3.6% QoQ). Operating profit was JPY321mn (-23.9% YoY or -21.7% QoQ).

Looking at quarterly trends, the marginal profit ratio has been improving since Q3 FY03/15 (31.1%). In Q4, this rising trend has ended as the marginal profit ratio was 43.7% (down1.9pp QoQ). Fixed costs were JPY1.5bn in Q4 (-35.6% YoY or +2.2% QoQ). The breakeven point for sales was JPY3.4bn (-32.8% YoY or +3.6% QoQ).

Environmental Resources Development (ERD) segment

- ▷ Sales: JPY21.8bn (+27.0% YoY)
- ▷ Operating profit: JPY972mn (-5.5% YoY)

Revenues from plastic fuel sales rose 5.5% YoY, to JPY7.6bn. Plastic waste acceptance volume was 324,000 tons (-2.9% YoY). However, sales rose YoY through efforts to raise unit price for accepted plastic waste.

Revenues from electric power generation rose 63.0% YoY, to JPY11.1bn. In Q2 (July to September), despite a sales decline due to the suspension of operation at the Tomakomai Power Plant for mandatory inspection and repair work, sales growth at the new electric power generation (PPS) business led to the higher revenue. The company carried out mandatory inspection (required every two years) and repair work (every year) at the Tomakomai Power Plant in Q2 (July to September). The suspension of operation at the plant due to this led to a decline of JPY300mn in electric power generation business revenue. The company saw a higher sales volume at the new electric power generation (PPS) business, which boosted sales at the business to JPY7.6bn (+160.5%).

There was an improvement in the profit margin due to a rise in the unit price received for waste plastics. In the new electric power generation business, the company needed to procure electricity at a higher price in order to respond to the higher sales volume in Q2 (July to September), resulting in a lower profit margin. However, profit margin improved in Q3 (October to December) compared to Q2 as the company was able to procure electricity at lower price. In Q4 (January to March), the company changed its method of procuring electricity, allowing it to secure profits which corresponds to its sales without being impacted by supply and demand for electricity. As stated above, the company booked JPY600mn as a result of repair expenses at the Tomakomai Power Plant relating to mandatory inspection (required every two years), leading to lower profits.

Home Sanitation (HS) segment

- ▷ Sales: JPY8.9bn (+36.0% YoY)
- ▷ Operating profit: JPY1.5bn (+50.3% YoY)

The strong top-line gains reflect growth in multiple areas, including termite control services, where revenues rose 21.7% YoY to JPY2.6bn, in-floor/in-ceiling ventilation system installation work, where revenues rose 68.8% to JPY1.3bn, and foundation repairing and strengthening construction work services to households, where revenues rose 56.7% to JPY2.0bn. The company transferred employees from the SE segment to expand businesses under the HS segment, and improved and expanded its customer management systems.

Sales rose as the company strengthened efforts to tap into demand from past customers by increasing personnel. Profits increased due to the growth of sales though personnel expenses and other fixed costs rose on the increase in the staff.

Establishment Sanitation (ES) segment

- ▷ Sales: JPY1.4bn (+39.7% YoY)
- ▷ Operating profit: JPY179mn (+89.8% YoY)

Sales were driven by the segment's main anti-rust equipment installation business, where revenues rose 335.0% YoY to JPY522mn. In the anti-rust installation business, daelman shock system (a device that prevents urinary calcium adhere to toilet bowls and oil and water fur in sinks by sending an electric current to a coil wrapped around the outside of the water pipes) has driven sales. According to the company, increased personnel by transferring employees from its SE business was one of the big contributing factors.

Although personnel expenses and other fixed costs rose on the increase in the staff, the rise in sales pushed up profits.

Full-year FY03/17 results

- ▷ Sales: JPY51.0bn (-17.7% YoY)
- ▷ Operating profit: JPY1.0bn (versus operating loss of JPY2.2bn in FY03/16)

▷ Recurring profit: JPY907mn (versus recurring loss of JPY1.9bn in FY03/16)

▷ Net income*: JPY416mn (versus net loss of JPY4.6bn in FY03/16)

*Net income refers to net income attributable to parent company shareholders.

Sales in the SE segment finished the year substantially down, hurt by changes in the environment for the solar electric power business and a shrinking market. Although sales fell significantly in the SE segment, the company was in the black for each profit stage because GPM recovered on cost cuts from streamlining operations and lower raw material prices and other CoGS, and also thanks to a significant reduction in SG&A costs.

Solar Engineering (SE) segment

▷ Sales: JPY26.2bn (-34.2% YoY)

▷ Operating profit: JPY1.7bn (versus operating loss of JPY202mn in FY03/16)

Solar power system business sales were down 29.6% YoY and sales in the solar power system wholesale business were down 64.7% YoY, mainly due to a fall in installation projects for commercial solar power systems. Operating profit improved substantially from the previous year due to cost cuts in personnel and other expenses on streamlining operations and lower CoGS of materials, such as of solar power modules, despite the substantial fall in sales. Operating profit was also affected by the company booking JPY777mn in valuation loss from lower inventory profitability for company produced power conditioners. Operating profit would have been JPY2.4bn had there not been such effects.

Sales of solar power system installations, the mainstay of this segment, fell 29.6% YoY to JPY24.2bn. Sales weakened on lower volume at a 20.2% drop to 124,786kW. The unit price was lowered in conjunction with a revision of the feed-in tariff for electricity from solar power generation facilities under the renewable energy feed-in tariff system, weighing on sales.

Gross profit fell 7.4% to JPY7.4bn, GPM climbed 8.2pp to 28.3%, and CoGS was 71.7%. Materials cost and labor expense ratios declined in the CoGS breakdown. The material costs-to-sales ratio dropped 5.6pp YoY to 50.8% owing to success in efforts to reduce material costs, such as for solar power modules and forex rate benefits. The labor expenses ratio declined 3.0pp YoY to 8.6% mainly on savings from conducting voluntary retirements in the previous fiscal year and in 1H. The number of employees in this segment averaged 758 in FY03/17, down from 1,485 in FY03/16.

As explained earlier, Sanix in Q4 posted JPY777mn in valuation losses linked with power conditioners that the company produced in-house. Excluding such losses, gross profit was JPY8.2bn (+2.3% YoY), GPM 31.3% (+10.2pp YoY), CoGS 68.7%, materials cost JPY12.5bn, and the material-to-sales ratio 47.8% (-8.6pp YoY).

SG&A expenses were down 30.0% YoY to JPY5.8bn, mainly on lower personnel costs.

SE business marginal profit ratio and breakeven-point trends
The marginal profit ratio (profit ratio after subtracting variable costs such as material costs, outsourcing costs, and transportation) increased 7.7pp YoY to 44.5% thanks to a decline in the ratio of material costs to sales. (This excludes the impact of the JPY777mn valuation losses linked with power conditioners that the company produced in-house.)

Fixed costs (Shared Research estimate from monthly fixed costs disclosed by Sanix) declined by JPY5.7bn YoY to JPY9.2bn, but the fixed cost ratio only dropped 2.2pp to 35.1% due to sales contraction. Breakeven point for sales dropped by JPY19.8bn YoY to JPY20.7bn (Shared Research estimate from monthly fixed costs disclosed by Sanix) due to the upturn by the marginal profit ratio and decline in fixed costs.

Quarterly trend for the SE business
In Q4, sales declined 27.9% YoY to JPY7.6bn, after increasing every quarter from JPY5.8bn in Q1.

Looking at quarterly trends, the marginal profit ratio has been improving since Q3 FY03/15 (31.1%), and rose to 45.6% in Q4 FY03/17.

Fixed costs were JPY2.3bn in Q4, the same level as the previous quarter, and the breakeven point for sales slightly rose QoQ from JPY4.8bn to JPY5.0bn.

Environmental Resources Development (ERD) segment

- ▷ Sales: JPY17.1bn (+17.3% YoY)
- ▷ Operating profit: JPY1.0bn (+264.9% YoY)

Plastic fuel income fell 1.2% YoY to JPY7.1bn. Plastic waste acceptance volume was 331,000 tons (-13.4% YoY), but income was on par with the previous year due to raising purchasing prices.

Electric power generation business revenue was up 70.7% YoY to JPY6.8bn. The new electric power generation (PPS) business saw a surge in sales of high-voltage power, with revenue reaching JPY2.9bn (from JPY247mn in FY03/16). The company, which provides electricity to small- and medium-sized users of high-voltage power, expanded sales thanks to a rise in the number of customers, which totaled some 1,100 at end Q4. Even though the PPS business had a revenue increase, its contribution to profit seems to have been minimal because expenses also rose.

Operating profit was up as GPM recovered due to a review of purchasing prices of waste plastic, a fall in inspection and maintenance fees at the Tomakomai Power Plant, and improved profitability for organic waste liquid processing.

Home Sanitation (HS) segment

- ▷ Sales: JPY6.6bn (+0.7% YoY)
- ▷ Operating profit: JPY979mn (+59.3% YoY)

While termite control services were down YoY, sales of foundation repairing and strengthening construction work services to households were up YoY. Profits increased because the company continued to cut expenses by lowering operating expenses and improving productivity through strengthened sales capability.

Establishment Sanitation (ES) segment

- ▷ Sales: JPY1.0bn (+11.8% YoY)
- ▷ Operating profit: JPY94mn (+75.7% YoY)

Waterproof coating repair for buildings and installations of anti-rust equipment were up YoY (both are building and condominium maintenance-related products). Higher sales pushed up profits.

FY03/16 results

- ▷ Sales: JPY61.9bn (-35.3% YoY)
- ▷ Operating loss: JPY2.2bn (versus operating loss of JPY3.1bn in FY03/15)
- ▷ Recurring loss: JPY1.9bn (versus recurring loss of JPY3.4bn in FY03/15)
- ▷ Net loss: JPY4.6bn (versus net loss of JPY5.0bn in FY03/15)

Sales finished the year down, hurt by sudden changes in the market environment for the solar electric power business. The company streamlined operations and improved its earnings structure, but the sharp drop in sales in the solar electric power business still left earnings in the red. There were operating losses in Q1 through Q3, but Q4 saw an operating profit of JPY628mn due in large part to the streamlining of operations.

Extraordinary losses booked during the period include a total of JPY991mn in asset impairment charges stemming from store closures and the write-down of the book value of certain fixed assets in the Solar Engineering segment whose future earnings potential was in doubt, JPY796mn in losses on the sale of fixed assets, JPY403mn to cover payouts to employees accepting voluntary early retirement, and a JPY316mn in expenses to settle a lawsuit.

In order to increase its ability to respond to changes in the operating environment for its solar power generation business, the company moved to strengthen its network in the Kanto, Kansai, and Chukyo regions (where there is large demand for electric power), and stepped up marketing. The company also cut fixed costs and otherwise improved its earnings structure by consolidating stores and downsizing staff with the help of a voluntary retirement program targeting some 900 employees in FY03/16.

Solar Engineering (SE) segment

- Sales: JPY39.9bn (-44.8% YoY)
- Operating loss: JPY202mn (versus operating loss of JPY2.3bn in FY03/15)

Sales in East Japan finished the year up 8.4%, but this increase was overshadowed by the 58.8% drop in the much larger sales in the West Japan region, which was hit hard by adverse changes in the operating environment, leaving segment sales down for the year. Although streamlining aided profitability by reducing personnel and other fixed costs, it was not enough to offset the sharp drop in sales and the segment finished the year in the red.

Through streamlining measures and reduction in fixed costs such as labor costs, the company improved its profitability, but the fall in sales was rather large, resulting in an operating loss. However, this loss was not as large as in FY03/15.

Sales and installation of solar power generation systems came to JPY34.4bn (-45.4% YoY). Sales in West Japan came to JPY20.7bn (-58.9% YoY), and the Kyushu/Shikoku region, which had a large ratio of sales in FY03/15, saw decreased sales following changes to output control rules in January 2015. Sales in East Japan came to JPY13.7bn (+8.4% YoY), indicating the success of expansion in the store network in FY03/15 and other efforts to strengthen the sales structure.

Gross profit was JPY8.0bn (-33.6% YoY) and the gross profit margin rose 3.4pp to 20.1%. The CoGS-to-sales ratio was 79.9%, with the ratios of overall costs declining. The ratio of material costs to sales fell 1.3pp year-on-year to 56.4%. Purchasing prices fell following negotiations with suppliers. The ratio of labor costs to sales fell 1.2pp to 11.6%, as labor costs fell on voluntary retirements. The ratio of outsourced processing fees to sales fell 2.3pp to 4.1%, indicating that efforts to do more internally are helping to lower outsourcing fees.

SG&A expenses came to JPY8.2bn (-42.7% YoY), due mainly to reductions in labor costs.

SE segment marginal profit ratio and breakeven point

The marginal profit ratio (profit margin after deducting variable costs [materials, supplies, outsourced processing, and transportation] from sales) increased 3.6pp year-on-year to 36.8%. The rise was mainly due to a fall in the ratios of materials and outsourcing fees to sales.

Fixed costs (estimated by Shared Research based on the company's fixed cost monthly average) came to JPY14.9bn, which was a decline of JPY9.6bn year-on-year. However, the fixed cost ratio rose 3.4pp to 37.3%, due to a fall in sales. The breakeven point (estimated by Shared Research based on the company's fixed cost monthly average) stood at JPY40.4bn, a decline of JPY33.4bn year-on-year.

SE segment quarterly comparison

The marginal profit ratio has been steadily rising every quarter since Q3 FY03/15, when it was 31.1%. The ratio was 33.8% in Q1 FY03/16, 35.6% in Q2, 37.9% in Q3, and 39.9% in Q4.

Fixed costs decreased from JPY4.5bn in Q1 to JPY3.7bn in Q2, JPY3.6bn in Q3, and JPY3.1bn in Q4, largely due to reductions in fixed costs across the board, through measures including releasing about 900 workers to voluntary retirement and eliminating or consolidating stores.

As a result, the breakeven point declined from JPY13.4bn in Q1 FY03/16 to JPY10.3bn in Q2, JPY9.5bn in Q3, and JPY7.7bn in Q4.

Environmental Resources Development (ERD) segment

- ▷ Sales: JPY14.6bn (+0.9%YoY)
- ▷ Operating profit: JPY282mn (-70.9% YoY)

Despite an increase in collection volume of waste plastic, plastic fuel sales declined 4.3% due to a drop in unit prices. Electricity sales finished the year up 5.0%, bolstered by the addition of new power producers and suppliers (PPS). Despite the rise in segment sales, operating profit finished the year down sharply, hurt by the temporary loss of power production capacity and additional expenses stemming from the maintenance and inspection work at the Tomakomai power station, which was temporarily shut down for mandatory maintenance and inspection on its boilers (once every two years) and turbines (once every four years).

Home Sanitation (HS) segment

- ▷ Sales: JPY6.5bn (-14.3% YoY)
- ▷ Operating profit: JPY614mn (-62.4% YoY)

Segment sales and earnings declined as the company transferred its residential PV systems operations from this segment to the SE segment and the main business of the HS segment became sanitation maintenance operations, such as termite control services and floor/ceiling ventilation systems.

Establishment Sanitation (ES) segment

- ▷ Sales: JPY924mn (-11.2% YoY)
- ▷ Operating profit: JPY53mn (versus loss of JPY48mn in FY03/15).

The company transferred residential PV systems operations from this segment to the SE segment, and the main business of the ES segment became sanitation maintenance operations for high-rise buildings and condominiums. As a result, segment sales fell but reduced costs resulted in higher operating profit.

Income statement

Income statement (JPYmn)	FY03/09 Cons.	FY03/10 Cons.	FY03/11 Cons.	FY03/12 Cons.	FY03/13 Cons.	FY03/14 Cons.	FY03/15 Cons.	FY03/16 Cons.	FY03/17 Cons.	FY03/18 Cons.
Total sales	**25,234**	**24,539**	**28,980**	**31,454**	**43,366**	**84,212**	**95,629**	**61,916**	**50,955**	**49,993**
YoY	-4.8%	-2.8%	18.1%	8.5%	37.9%	94.2%	13.6%	-35.3%	-17.7%	-1.9%
CoGS	14,675	14,621	18,704	21,013	29,996	62,800	76,721	48,133	36,812	35,948
Gross profit	**10,559**	**9,918**	**10,276**	**10,442**	**13,370**	**21,421**	**18,907**	**13,783**	**14,142**	**14,044**
YoY	-9.8%	-6.1%	3.6%	1.6%	28.0%	60.2%	-11.7%	-27.1%	2.6%	-0.7%
GPM	41.8%	40.4%	35.5%	33.2%	30.8%	25.4%	19.8%	22.3%	27.8%	28.1%
SG&A expenses	11,155	9,528	9,774	10,032	11,500	16,913	22,049	16,013	13,106	12,798
SG&A-to-sales ratio	44.2%	38.8%	33.7%	31.9%	26.5%	20.1%	23.1%	25.9%	25.7%	25.6%
Operating profit	**-597**	**390**	**502**	**410**	**1,870**	**4,508**	**-3,142**	**-2,229**	**1,036**	**1,246**
YoY	-	-	28.6%	-18.3%	356.4%	141.0%	-	-	-	20.3%
OPM	-	1.6%	1.7%	1.3%	4.3%	5.4%	-	-	2.0%	2.5%
Non-operating income	122	124	126	133	138	209	278	561	208	205
Non-operating expenses	146	290	198	195	219	407	575	280	338	432
Recurring profit	**-620**	**225**	**430**	**348**	**1,789**	**4,310**	**-3,439**	**-1,949**	**907**	**1,019**
YoY	-	-	91.2%	-19.1%	414.1%	140.9%	-	-	-	12.3%
RPM	-	0.9%	1.5%	1.1%	4.1%	5.1%	-	-	1.8%	2.0%
Extraordinary gains	613	162	75	4	143	-	-	-	-	-
Extraordinary losses	3,995	3,779	153	10	19	-	271	991	177	-
Tax charges	136	283	302	329	337	1,345	1,256	308	312	-163
Implied tax rate	-3.4%	-8.3%	85.8%	96.3%	17.6%	31.2%	-33.9%	-10.5%	42.7%	-16.0%
Net income	**-4,145**	**-3,676**	**50**	**14**	**1,575**	**2,965**	**-4,966**	**-4,602**	**416**	**1,180**
YoY	-	-	-	-71.8%	-	88.2%	-	-	-	183.7%
Net margin	-	-	0.2%	0.0%	3.6%	3.5%	-	-	0.8%	2.4%

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Past segment data

(JPYmn)	FY03/10 Act.	FY03/11 Act.	FY03/12 Act.	FY03/13 Act.	FY03/14 Act.	FY03/15 Act.	FY03/16 Act.	FY03/17 Act.	FY03/18 Act.
Sales	**24,539**	**28,980**	**31,454**	**43,366**	**84,221**	**95,629**	**61,916**	**50,955**	**49,993**
YoY	-2.8%	18.1%	8.5%	37.9%	94.2%	13.5%	-35.3%	-17.7%	-1.9%
Solar Engineering	-	-	-	-	56,637	72,247	39,871	26,225	17,870
YoY	-	-	-	-	-	27.6%	-44.8%	-34.2%	-31.9%
% of total	-	-	-	-	67.2%	75.5%	64.4%	51.5%	35.7%
Commercial Photovoltaic (PV) Solutions	-	-	1,411	9,617	51,340	-	-	-	-
YoY	-	-	-	581.6%	433.9%	-	-	-	-
% of total	-	-	4.5%	22.2%	61.0%	-	-	-	-
Home Sanitation	14,056	16,657	15,395	14,814	10,819	7,605	6,519	6,562	8,922
YoY	-4.1%	18.5%	-7.6%	-3.8%	-27.0%	-	-14.3%	0.7%	36.0%
% of total	57.3%	57.5%	48.9%	34.2%	12.8%	8.0%	10.5%	12.9%	17.8%
Establishment Sanitation	2,547	2,811	2,757	3,965	6,011	1,040	924	1,033	1,444
YoY	-14.4%	10.4%	-1.9%	43.8%	51.6%	-	-11.2%	11.8%	39.8%
% of total	10.4%	9.7%	8.8%	9.1%	7.1%	1.1%	1.5%	2.0%	2.9%
Environmental Resources Development	7,934	9,511	11,890	14,967	16,051	14,735	14,601	17,133	21,755
YoY	4.4%	19.9%	25.0%	25.9%	7.2%	-8.2%	-0.9%	17.3%	27.0%
% of total	32.3%	32.8%	37.8%	34.5%	19.1%	15.4%	23.6%	33.6%	43.5%
Operating profit	**390**	**502**	**410**	**1,870**	**4,508**	**-3,142**	**-2,229**	**1,036**	**1,246**
YoY	-	28.6%	-18.3%	356.4%	141.0%	-	-	-	20.3%
Solar Engineering	-	-	-	-	4,782	-2,291	-202	1,669	1,668
YoY					-	-	-	-	-0.1%
% of total					45.4%	-	-	44.3%	38.9%
Commercial Photovoltaic (PV) Solutions	-	-	-265	320	4,410	-	-	-	-
YoY	-	-	-	-	-	-	-	-	-
% of total	-	-	-	8.4%	62.1%	-	-	-	-
Home Sanitation	3,365	2,608	2,482	1,776	1,141	1,634	614	979	1,471
YoY	-3.0%	-22.5%	-4.8%	-28.5%	-35.7%	-	-62.4%	59.4%	50.3%
% of total	136.6%	102.4%	97.5%	46.7%	16.1%	-	-	26.0%	34.3%
Establishment Sanitation	211	154	41	139	190	-48	53	94	179
YoY	-	-27.2%	-73.3%	240.5%	36.5%	-	-	77.4%	90.4%
% of total	8.6%	6.0%	1.6%	3.7%	2.7%	-	-	2.5%	4.2%
Environmental Resources Development	-1,112	-216	288	1,568	1,365	970	282	1,029	972
YoY	-	-	-	444.8%	-12.9%	-28.9%	-70.9%	264.9%	-5.5%
% of total	-	-	11.3%	41.2%	19.2%	-	-	27.3%	22.7%
Adjustments	-2,074	-2,044	-2,134	-1,932	-2,598	-3,406	-2,977	-2,735	-3,045

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods
Operating profit composition (shown in "% of OP excl. adjustments") is based on simple aggregation of segments before adjustments. As it includes segments with operating losses, the percentage may add up to over 100%.
In FY03/15, the company changed the structure for the solar power system sales and installations. Since then, the residential solar power construction business was moved from the HS segment to the SE segment.

The company's earnings for the past 10 years went through three stages. Until FY03/10, the company had a poor record of sales and operating profit/loss. Sales and profits improved during the period from FY03/11 through FY03/14. However, starting in FY03/15, Sanix has been seeking to bounce back from an earnings slump.

Sales decline, poor operating profit/loss until FY03/10

Sales declined for five straight years until FY03/10. The company also had a poor record of operating profit/loss during the period. The HS segment had a sales decline after it stopped seeking new customers. The ERD segment also tended to post a sales decline and continued to post an operating loss.

Past performance of the home sanitation (HS) segment

In July 2006, the company faced administrative sanctions from the Ministry of Economy, Trade and Industry (METI) based on the Specified Commercial Transactions Act, which included a three-month suspension of operations at six stores. In response to the sanctions, Sanix reviewed its compliance system, and changed its organization to prevent any incidents from recurring, but segment operating profit was significantly affected and stagnated at roughly JPY2.0bn in FY03/07.

In FY03/08, earnings bottomed as new services such as foundation repairs and reinforcement and cost reduction measures such as store mergers, job cuts, and pay cuts helped turn around operating profit. However, segment profit declined again in FY03/09 and FY03/10. Termite-control and floor/ceiling ventilation businesses were highly profitable, but the company stopped seeking new clients for these services after it received the sanctions mentioned earlier. The company instead focused on maintenance for existing customers.

Past performance of Environmental Resources Development (ERD) segment

The ERD segment posted losses from FY03/01 until FY03/11 because of expenses linked with capital investments. However, the operating loss began to narrow from FY03/05 until FY03/07. This is primarily because the company gradually increased power generation and sales volume, and wrote off JPY9.6bn for impairment losses in FY03/05, which contributed to a reduction in depreciation expense (a JPY1.7bn decline in FY03/06 from FY03/05).

However, operating loss was widened in FY03/08 and FY03/09. In FY03/08, together with safety measures taken following the fire in FY03/07, the plant suspended operations again in November 2007 after flue gas concentration exceeded the level specified in the plant's pollution prevention agreement. As a result of these plant suspensions, the company restrained its volume of waste plastic to avoid a build-up of fuel inventories, which contributed to a decline in revenues for power generation and plastic processing services. Consequently, segment operating losses once again expanded.

FY03/11 – FY03/14: Increased sales and profits due to strong performance of the SE, ERD segments

The company increased sales and profits during a period from FY03/11 through FY03/14. The SE segment made contributions to the company's overall earnings. The ERD segment also posted an increase in sales and profits. However, the HS segment, which was designated as a non-core business, had a decline in sales and profits during the period.

Changes in the performance of the SE segment

The company, which began to sell residential solar power systems in FY03/10, began to put emphasis on the procurement, sale, and construction of commercial solar power systems in FY03/13, positioning this business as a major pillar of its operations.

In July 2012, a mechanism was adopted in which solar power of over 10kW would all be purchased, a move that increased demand for solar power systems. The SE segment had a sudden expansion in earnings as a result.

Changes in performance of the ERD segment

A change in end-user in FY03/11, improved utilization rates from stable operations, and an increase in unit selling prices in FY03/12 and FY03/13 led to a sales rise. Furthermore, volume in waste plastic operations expanded favorably during this period, and together with cost reductions and improvement in production, the Environmental Resources Development segment saw a significant profit increase.

FY03/15 and later: seeking to overcome earnings slump

In FY03/15, the company tried to increase the number of employees along with an expansion in the SE segment. However, a major power utility under the feed-in tariff system suspended responding to any new requests submitted by solar power operators in September 2014 and onward, which created a grid connection capacity problem. The incident prompted a January 2015 change in output rules, a development that led to a decline in demand for solar power.

As a result, the company – most noticeably in the SE segment – had a sales increase but a profit drop in FY03/15. Sales fell in FY03/16 mainly because of a decline in sales in the SE segment. Although the company implemented an early retirement program and merged or closed some of its stores, it continued to post an operating loss.

In FY03/17, earnings recovered after the SE segment carried out an early retirement program, merged or closed some of its outlets, and made efforts to reduce procurement costs. In FY03/18, sales were even YoY as the company transferred personnel from the SE segment to the HS and ES segments. As a result, profits in each category rose due to the cut in SG&A expenses.

Company forecasts versus actual results

Results vs. Initial Est. (JPYmn)	FY03/09 Cons.	FY03/10 Cons.	FY03/11 Cons.	FY03/12 Cons.	FY03/13 Cons.	FY03/14 Cons.	FY03/15 Cons.	FY03/16 Cons.	FY03/17 Cons.	FY03/18 Cons.
Sales (Initial Est.)	29,297	25,000	27,500	38,000	38,000	71,500	161,500	78,000	46,670	47,680
Sales (Results)	25,234	24,539	28,980	31,454	43,366	84,212	95,629	61,916	50,955	49,993
Results vs. Initial Est.	**-13.9%**	**-1.8%**	**5.4%**	**-17.2%**	**14.1%**	**17.8%**	**-40.8%**	**-20.6%**	**9.2%**	**4.9%**
Operating profit (Initial Est.)	1,922	750	1,240	1,300	2,000	8,000	14,000	4,000	600	1,210
Operating profit (Results)	-597	390	502	410	1,870	4,508	-3,142	-2,229	1,036	1,246
Results vs. Initial Est.	**-**	**-48.0%**	**-59.5%**	**-68.5%**	**-6.5%**	**-43.6%**	**-**	**-**	**72.7%**	**3.0%**
Recurring profit (Initial Est.)	1,882	720	1,150	1,250	1,970	7,950	13,800	3,820	480	1,090
Recurring profit (Results)	-620	225	430	348	1,789	4,310	-3,439	-1,949	907	1,019
Results vs. Initial Est.	**-**	**-68.8%**	**-62.6%**	**-72.2%**	**-9.2%**	**-45.8%**	**-**	**-**	**89.0%**	**-6.5%**
Net income (Initial Est.)	1,680	600	900	830	1,820	5,100	8,830	2,820	-60	810
Net income (Results)	-4,145	-3,676	50	14	1,575	2,965	-4,966	-4,602	416	1,180
Results vs. Initial Est.	**-**	**-**	**-94.5%**	**-98.3%**	**-13.5%**	**-41.9%**	**-**	**-**	**-**	**45.7%**

Source: Shared Research based on company data
Initial Est. = Company forecasts; figures may differ from company materials due to differences in rounding methods

Past trends show a significant difference between the company's forecasts and actual results. Management's earnings forecasts are unreliable and may be revised several times a year. In addition, its actual results even differ from its revised earnings forecasts, indicating the company is unable to accurately forecast sales and profits.

Balance sheet

Balance sheet (JPYmn)	FY03/09 Cons.	FY03/10 Cons.	FY03/11 Cons.	FY03/12 Cons.	FY03/13 Cons.	FY03/14 Cons.	FY03/15 Cons.	FY03/16 Cons.	FY03/17 Cons.	FY03/18 Cons.
ASSETS										
Cash and deposits	1,065	1,255	1,138	1,366	3,559	9,237	7,026	3,038	5,578	5,482
Notes and accounts receivable	1,678	2,056	2,521	3,309	7,357	22,205	14,800	6,693	6,017	5,485
Inventories	617	1,221	1,642	1,767	2,898	6,145	10,285	7,164	5,458	4,517
Deferred tax assets	111	288	299	245	299	597	17	8	12	412
Allowance for doubtful accounts	-107	-109	-105	-107	-142	-624	-1,237	-693	-544	-525
Other	530	443	395	385	681	1,089	678	720	1,001	801
Total current assets	3,895	5,153	5,890	6,964	14,652	38,649	31,569	16,930	17,522	16,172
Buildings and structures (net)	3,041	2,248	2,260	2,090	1,890	1,890	2,533	1,909	1,720	2,080
Machinery, equipment, and vehicles (net)	2,493	162	144	239	557	1,270	1,640	1,323	1,234	1,189
Land	9,535	8,980	8,980	8,980	8,890	9,180	9,399	8,001	7,941	7,811
Other	258	439	380	415	990	1,841	1,527	1,184	1,383	846
Total tangible fixed assets	15,328	11,828	11,763	11,724	12,326	14,181	15,099	12,417	12,278	11,926
Goodwill	-	961	849	737	625	513	401	289	177	65
Other	-	62	61	59	60	59	143	151	148	148
Total intangible assets	77	1,023	910	796	685	573	545	440	325	214
Investment securities	369	367	405	501	317	339	450	91	145	151
Lease and guarantee deposits	1,070	960	820	781	706	723	742	644	669	629
Deferred tax assets	20	318	233	129	96	313	66	59	52	170
Other	112	345	385	391	415	540	648	664	652	675
Investment and total other assets	1,570	1,991	1,843	1,802	1,533	1,914	1,906	1,458	1,518	1,625
Total fixed assets	16,975	14,843	14,516	14,322	14,545	16,668	17,551	14,317	14,122	13,766
Total assets	20,869	19,996	20,407	21,286	29,196	55,317	49,120	31,248	31,645	29,938
LIABILITIES										
Notes and accounts payable	530	1,159	868	1,386	5,460	20,115	18,537	7,227	6,365	5,079
Short-term debt	5,335	5,654	3,186	3,085	4,186	5,948	7,416	11,014	13,504	11,825
Accounts payable–other	1,438	1,141	1,449	2,330	3,166	4,836	4,408	3,298	2,644	3,069
Accrued expenses	700	731	754	825	931	1,813	2,000	1,374	1,041	1,049
Other	533	657	704	755	1,130	3,870	3,199	1,729	2,032	1,981
Total Current Liabilities	8,536	9,342	6,961	8,381	14,873	36,582	35,560	24,642	25,586	23,003
Long-term debt	16	1,726	4,319	3,630	2,870	3,725	3,055	1,077	484	325
Net defined benefit liability	1,130	1,212	1,329	1,382	1,419	1,534	1,490	1,371	1,404	1,465
Other	457	661	695	759	1,197	1,648	1,684	1,528	1,324	1,067
Total fixed liabilities	1,603	3,599	6,343	5,770	5,486	6,907	6,229	3,976	3,212	2,857
Total liabilities	10,139	12,941	13,304	14,151	20,359	43,489	41,789	28,618	28,799	25,861
Net assets										
Capital stock	14,042	14,042	14,042	14,042	14,042	14,042	14,042	14,042	14,041	14,041
Capital surplus	1,759	-	-	-	-	4	4	1	1	1
Retained earnings	-3,524	-5,441	-5,391	-5,377	-3,733	-769	-5,588	-10,193	-9,777	-8,597
Treasury stock	-1,611	-1,611	-1,611	-1,611	-1,611	-1,581	-1,481	-1,481	-1,481	-1,481
Accumulated other comprehensive income	35	34	33	53	111	102	325	229	28	76
Non-controlling interests	29	30	30	29	29	29	29	31	32	35
Total net assets	10,730	7,055	7,103	7,135	8,837	11,828	7,331	2,629	2,845	4,076
Working capital	1,765	2,117	3,296	3,690	4,794	8,235	6,548	6,630	5,110	4,923
Total interest-bearing debt	5,351	7,380	7,505	6,714	7,056	9,674	10,471	12,091	13,988	12,150
Net debt	4,286	6,125	6,367	5,349	3,497	437	3,445	9,053	8,410	6,668

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Assets

Changes in assets

Over the past 10 years, the amount of total assets declined until FY03/10, rose during the period from FY03/13 through FY03/14, and again began to decline in FY03/15.

The amount of tangible fixed assets declined until FY03/10 as the company wrote down impairment losses primarily in the ERD segment. The combined assets rose in FY03/14 mainly because of an increase in liquid assets. This was due to growth in the SE segment (the old Photovoltaic Solutions segment), which led to an increase in notes receivable, accounts receivable, and inventory assets. In FY03/15 and thereafter, accounts receivable and inventory assets declined as the SE segment contracted. Liquid assets accounted for 54.2% of total assets at that time.

Main asset items

The company's major assets items are cash and cash equivalents, notes receivable and accounts receivable, inventory assets, and tangible fixed assets.

Tangible fixed assets

Tangible fixed assets declined over the past 10 years since the company wrote down impairment losses mainly at the ERD segment from FY03/08 until FY03/10.

Of the tangible fixed assets, depreciation has been progressing for buildings and structures, machinery and equipment, and vehicles in FY03/18. The main tangible fixed assets were in the form of land. Specifically, they were facilities the ERD segment's organic waste fluid processing facility (Fukuoka Prefecture), a waste plastic processing facility (Gunma Prefecture), and a landfill disposal facility operated by the company's C&R Co. Ltd. unit.

Liabilities

Changes in liabilities

The amount of total liabilities has changed in tandem with overall assets over the past 10 years. The amount continued to fall until FY03/09, began to rise from FY03/13 until FY03/14, and again started to fall in FY03/15.

The amount of total liabilities declined until FY03/09 as the company paid back long-term debt. In FY03/13 and FY03/14, accounts payable, accounts receivable, and interest-bearing debt rose with the growth of the SE segment. Accounts payable and receivable started to decline in FY03/15 as the SE segment shrank.

Main liability items

Much of the company's liability is accounts payable and interest-bearing debt.

Notes and accounts payable

Notes and accounts payable, as did liquid assets, increased with growth in the SE segment starting in FY03/13. The amount increased until FY03/14, but began to fall in FY03/15.

Interest-bearing debt

Interest-bearing debt continued to increase until FY03/11 due to stagnant earnings but, such debt declined in FY03/12. Later, the debt amount has been on a rising trend due to expansion of businesses and a return of dull performance. Regarding the balance of the company short and long-term interest-bearing debt, the ratio of short-term debt has increased since FY03/13.

Net assets

Net losses since FY03/03 continued to negatively impact net assets until FY03/10. Net assets were on a gradual recovery since FY03/11 due to an improvement in earnings. However, net assets decreased to JPY2.6bn in FY03/16 as the company booked net losses in FY03/15 and in FY03/16. Net asset increased to JPY4.1bn in FY03/18 after the company posted a net income of JPY1.2bn. The equity ratio rose to 13.5% in FY03/18 from 8.9% in FY03/17.

Cash flow statement

Cash flow statement (JPYmn)		FY03/09 Cons.	FY03/10 Cons.	FY03/11 Cons.	FY03/12 Cons.	FY03/13 Cons.	FY03/14 Cons.	FY03/15 Cons.	FY03/16 Cons.	FY03/17 Cons.	FY03/18 Cons.
Cash flows from operating activities	(1)	-89	563	55	1,260	2,185	4,934	-1,794	-5,403	1,668	2,184
Pre-tax profit		-4,002	-3,392	352	341	1,913	4,309	-3,710	-4,293	729	1,019
Depreciation		910	583	416	371	387	547	887	918	668	709
Impairment losses		3,313	3,701	-	-	19	-	271	991	-	-
Goodwill amortization		-	56	112	112	112	112	112	112	112	112
Change in accounts receivable–trade		177	42	-465	-788	-4,000	-14,848	7,405	8,107	675	532
Change in inventories		128	-604	-425	-124	-967	-3,229	-4,091	3,108	1,704	947
Change in accounts payable–trade		-86	546	-291	519	4,013	14,665	-1,922	-11,074	-804	-1,308
Income taxes paid		-87	-135	-157	-271	-202	-536	-1,929	-287	-252	-396
Cash flows from investing activities	(2)	815	-2,304	-214	-151	-222	-3,271	-1,181	1,062	-409	171
Purchase of tangible fixed assets		-358	-472	-176	-93	-616	-1,687	-1,254	-679	-454	-314
Proceeds from sale of tangible fixed assets		1,167	179	1	4	104	18	-	709	62	202
Purchase of intangible fixed assets		-	-	-	-	-	-	-32	-93	-25	-37
Proceeds from sale of marketable securities		8	-	-	-	258	-	-	318	-	-
Free cash flow	(1+2)	726	-1,741	-159	1,109	1,962	1,663	-2,975	-4,341	1,259	2,355
Cash flows from financing activities		-696	1,946	43	-882	230	2,433	647	1,288	1,437	-2,156
Change in short-term debt		-289	29	-2,920	-100	1,013	1,662	1,360	3,757	2,851	-1,284
Proceeds from long-term debt		-	2,020	3,530	-	210	1,870	485	-	-	-
Repayments of long-term debt		-196	-20	-485	-761	-862	-894	-1,026	-2,128	-954	-553
Simple FCF	(Net income + A + B - C)	-3,811	-3,156	1,580	798	2,563	5,378	-6,940	-4,262	-803	1,463
Depreciation and amortization	(A)	910	639	528	483	499	659	999	1,030	780	821
Capital expenditures	(B)	-358	-472	-176	-93	-616	-1,687	-1,286	-772	-479	-351
Working capital changes	(C)	219	-352	-1,178	-394	-1,105	-3,441	1,687	-82	1,520	187

Source: Shared Research based on company data
Figures may differ from company materials due to differences in rounding methods

Cash flows from operating activities

The company's cash flows from operating activities are influenced by changes in net income, depreciation expenses, and working capital. During the period from FY03/08 through FY03/10, and in FY03/16, impairment losses had a positive impact on the company's cash flows from operating activities.

Cash flows from investing activities

Increases or decreases in fixed deposits and spending to acquire tangible fixed assets are the main factors impacting the company's cash flows from investing activities. Its solar power-related operations do not require large amounts of capital expenditures, but additional capacity at its plastic waste recycling facilities and power generation plants may necessitate a temporary increase in capital expenditures.

Cash flows from financing activities

Cash flows from financing activities change in line with rises and falls in interest-bearing debt. Since FY03/13, in conjunction with an increase in interest-bearing debt, cash flows from financing activities have remained positive.

Other information

History

Sanix Inc. was established in April 1975 in Sasebo City, Nagasaki Prefecture, to provide termite control and corrosion-proof services to homeowners.

Shinichi Munemasa, the founder and former president saw a business opportunity in "dirty jobs", work that most people wouldn't want to do. His mission became "To Make the Dirty Clean." Munemasa took upon himself to visit the U.S. and receive the necessary job training to expand his business. In 1982, Sanix established a foothold in western (Kansai) Japan, and expanded to East Japan (Kanto) in 1992.

In the 1990s, the company sought to branch out into new business fields and expand operations. In 1994, Sanix started operations to recycle and reduce industrial waste, as well as render such waste harmless. In 1999, it established a factory in Okazaki City, Aichi Prefecture, to process plastic waste into fuel. Sanix listed its shares on the second sections of the Tokyo Stock Exchange, Osaka Stock Exchange and Fukuoka Stock Exchange, respectively, in 1997. Its shares advanced to the first sections of the Tokyo Stock Exchange and the Osaka Securities Exchange, respectively, in 1999.

The company continued to expand in the early 2000s, and established Sanix Energy Inc. (currently a consolidated subsidiary) to sell generated power from plastic fuel in 2001. In 2003, Sanix Energy completed the construction of the Sanix Energy Tomakomai Power Station, in Tomakomai City, Hokkaido.

When discussing the company's history, a business suspension order (also discussed elsewhere in this report) in 2006 must be mentioned. In July 2006, the company received administrative sanctions from the Ministry of Economy, Trade and Industry (METI) for violations of the Act on Specified Commercial Transactions (a misrepresentation, failure to clearly state the purpose of solicitation, forceful solicitation, act of taking advantage of the impaired judgment of a person and having such person conclude a sales contract, violation of the principle of suitability). The sanctions were imposed after the company was found to have pressed insistently to obtain contracts during door-to-door sales. Under the guise of a free-of-charge check, sales staff reported to householders that there were problems that required addressing when in fact no such problems existed. Such cases were said to include contracts signed with incapacitated individuals (dementia and schizophrenia sufferers). As a preventive measure, the company stopped new sales of termite control and floor-ceiling ventilation systems, and introduced a new business structure to only satisfy requests from existing customers. As a result, such problems have not reoccurred.

At the same time, the company encountered several problems at Tomakomai Power Plant from 2005 to 2009 as follows.

- In August 2005, there was a fire in a waste plastic fuel delivery tank.
- In FY03/07, there was a fire, and operation of the plant was suspended until June to enable extra fire prevention systems to be installed and management to be strengthened.
- For approximately two weeks in November 2007, operations were suspended after flue gas concentration exceeded the level specified in the plant's pollution prevention agreement.
- In 2009, the plant voluntarily suspended operations after dioxins were detected in the soot and smoke from two power-generating boilers at levels exceeding the plant's pollution control rules. Regulators ordered the plant to rectify the problem.

After the administrative sanctions by the METI, Sanix scaled back its termite control operations, while its power generation business was operating at a loss. Unable to find new business opportunities, earnings struggled until FY03/09.

Starting in 2009, Sanix looked at the sale and installation of solar power generation systems as a business opportunity and worked to change the direction of the company, but the government revised the Feed-in Tariff Scheme for Renewable Energy in January 2015, including changes to output control rules. As part of its response to the changing business environment, the company promoted a streamlining of operations to achieve sustainable growth and reduced the number of workers and stores in its SE segment.

Under the medium-term management plan announced in April 2016, Sanix will establish a scale for its SE segment that is suited to the market environment to increase profitability. It will also refocus on its sanitation operations and increase the scale of its HS and ES segments. For its ERD segment, Sanix will give attention to efficiency and profitability.

News and topics

November 2018

On **November 13, 2018**, the company announced revisions to its full-year FY03/19 earnings forecast.

Revised company forecast for FY03/19:

- ▷ Sales: JPY49.4bn (versus JPY50.0bn in the previous forecast)
- ▷ Operating profit: JPY1.3bn (versus JPY2.2bn)
- ▷ Recurring profit: JPY1.3bn (versus JPY2.1bn)
- ▷ Net income*: JPY534mn (versus JPY1.6bn)
- ▷ Earnings per share: JPY11.19 (versus JPY33.68)

*Net income attributable to parent company shareholders

Reason for revision

Sales are expected to come in below the company's previous forecast due to the cessation of electric power sales by the Tomakomai Power Plant, which has been shut down and is not expected to be restarted until early March 2019. Due to the shortfall in sales stemming from the shutdown of the Tomakomai Power Plant and increases in fixed costs, operating profit and recurring profit are also expected to come in below the company's previous forecast. Net income attributable to parent company shareholders is likewise expected to come in below the company's previous forecast as the company is booking an extraordinary loss to cover the added expenses incurred to repair the damage to the Tomakomai Power Plant caused by the earthquake.

On **November 5, 2018**, the company announced the impact of the 2018 Hokkaido Eastern Iburi earthquake on the company.

Sanix's Tomakomai Power Plant ceased generating power as a result of the September 2018 Hokkaido Eastern Iburi earthquake, and the company conducted inspections of all power generation facilities, and disassembly and inspection of the steam turbine and generator.

Extent of damage

When checking damage to the steam turbine and generator (the most important components at the power plant) it became evident that certain parts require replacement, and that this would take a considerable amount of time as the parts are made to order. Apart from this, although there were slight deviations and damage to various power generation facilities caused by the earthquake, the company stated that it has already begun on repairs, and that such damage will not influence the timeline for resumed operations.

Timeline for coming back online

The company expects operations to resume in early March, 2019.

Impact on performance
The impact on performance is currently being calculated, and will be disclosed as soon as identified.

May 2018

On **May 14, 2018**, the company made an announcement concerning the deletion of its Notes Relating to Going Concern Assumptions.

In the medium-term management plan (for FY03/17 through FY03/19) that the company announced in April 2016, the company worked to improve its governance structure, redistributing balanced management resources among business segments and strengthening business fundamentals through a process of thorough rationalization. As a result, in FY03/18 the company recorded an operating profit, recurring profit, and net profit attributable to parent company shareholders for the second consecutive financial year. Further, by implementing the medium-term management plan the company restored profitability, and paid off short-term debt as well as securing necessary working capital.

In view of these circumstances, in March 2018 the company judged that conditions or events giving rise to significant doubt concerning the premise of a going concern had disappeared, and decided to delete its Notes Relating to Going Concern Assumptions.

Major shareholders

Top shareholders	Shares held ('000)	Shareholding ratio
BION Co., Ltd.	8,716	18.23%
Hiroshi Munemasa	6,454	13.50%
Korea Securities Depository–EBEST (Standing proxy: Citibank N.A. Tokyo Branch)	1,870	3.91%
Sanix Mutual Aid Society	1,700	3.56%
Japan Trustee Services Bank, Ltd. (Trust account)	1,237	2.59%
The Master Trust Bank of Japan, Ltd. (Trust account)	930	1.95%
Sanix Employees' Shareholding Association	919	1.92%
Japan Trustee Services Bank, Ltd. (Trust account 5)	580	1.21%
The Nishi-Nippon City Bank, Ltd.	536	1.12%
Japan Trustee Services Bank, Ltd. (Trust account 2)	441	0.92%
SUM	23,387	48.92%

Source: Shared Research based on company data
(As of March 31, 2018)

Company profile

Company Name	Head Office
Sanix Incorporated	2-1-23, Hakata Ekimae Higashi, Hakata-ku, Fukuoka
Phone	**Listed On**
+81-92-436-8870	Tokyo Stock Exchange 1st Section, Fukuoka Stock Exchange
Established	**Exchange Listing**
September 12, 1978	September 13, 1996
Website	**Fiscal Year-End**
http://sanix.jp/lang_en/index.html	March
IR Contact	**IR Web**
Management and Planning Division	-
IR Mail	**IR Phone**
W961151@sanix.co.jp	+81-92-436-8882

We offer corporate clients comprehensive report coverage, a service that allows them to better inform investors and other stakeholders by presenting a continuously updated third-party view of business fundamentals, independent of investment biases. Shared Research can be found on the web at http://www.sharedresearch.jp.

Current Client Coverage of Shared Research Inc.

Accordia Golf Trust	Financial Products Group Co., Ltd.	Nisshinbo Holdings Inc.
Adastria Co., Ltd.	FreeBit Co., Ltd.	NS TOOL CO., LTD.
ADJUVANT COSME JAPAN CO., LTD.	FRONTEO, Inc.	NTT URBAN DEVELOPMENT CORPORATION
Aeon Delight Co., Ltd.	Fujita Kanko Inc.	Oki Electric Industry Co., Ltd
Aeon Fantasy Co., Ltd.	Gamecard-Joyco Holdings, Inc.	ONO SOKKI Co., Ltd.
Ai Holdings Corporation	GCA Corporation	ONWARD HOLDINGS CO.,LTD.
ANEST IWATA Corporation	Grandy House Corporation	Pan Pacific International Holdings Corporation
AnGes Inc.	Hakuto Co., Ltd.	PARIS MIKI HOLDINGS Inc.
Anicom Holdings, Inc.	Happinet Corporation	PIGEON CORPORATION
Anritsu Corporation	Harmonic Drive Systems Inc.	RACCOON HOLDINGS, Inc.
Apaman Co., Ltd.	HOUSEDO Co., Ltd.	RESORTTRUST, INC.
Arealink Co.,Ltd.	IDOM Inc.	ROUND ONE Corporation
Artspark Holdings Inc.	IGNIS LTD.	RVH Inc.
AS ONE CORPORATION	Inabata & Co., Ltd.	RYOHIN KEIKAKU CO., LTD.
Ateam Inc.	Infocom Corporation	SanBio Company Limited
Aucfan Co., Ltd.	Infomart Corporation	SANIX INCORPORATED
AVANT CORPORATION	Intelligent Wave, Inc.	Sanrio Company, Ltd.
Axell Corporation	ipet Insurance CO., Ltd.	SATO HOLDINGS CORPORATION
Azbil Corporation	istyle Inc.	SBS Holdings, Inc.
AZIA CO., LTD.	Itochu Enex Co., Ltd.	Seikagaku Corporation
BEENOS Inc.	JSB Co., Ltd.	Seria Co.,Ltd.
Bell-Park Co., Ltd.	JTEC Corporation	SHIP HEALTHCARE HOLDINGS, INC.
Benefit One Inc.	J Trust Co., Ltd	SIGMAXYZ Inc.
B-lot Co.,Ltd.	Japan Best Rescue System Co., Ltd.	SMS Co., Ltd.
Canon Marketing Japan Inc.	JINS Inc.	Snow Peak, Inc.
Career Design Center Co., Ltd.	JP-HOLDINGS, INC.	Solasia Pharma K.K.
Carna Biosciences, Inc.	KAMEDA SEIKA CO., LTD.	SOURCENEXT Corporation
CARTA HOLDINGS, INC	Kenedix, Inc.	Star Mica Co., Ltd.
CERES INC.	KFC Holdings Japan, Ltd.	Strike Co., Ltd.
Chiyoda Co., Ltd.	KI-Star Real Estate Co., Ltd.	SymBio Pharmaceuticals Limited
Chugoku Marine Paints, Ltd.	Kondotec Inc.	Synchro Food Co., Ltd.
cocokara fine Inc.	Kumiai Chemical Industry Co., Ltd.	TAIYO HOLDINGS CO., LTD.
COMSYS Holdings Corporation	Lasertec Corporation	Takashimaya Company, Limited
CRE, Inc.	LUCKLAND CO., LTD.	Take and Give Needs Co., Ltd.
CREEK & RIVER Co., Ltd.	MATSUI SECURITIES CO., LTD.	Takihyo Co., Ltd.
Daiseki Co., Ltd.	Medical System Network Co., Ltd.	TEAR Corporation
DIC Corporation	MEDINET Co., Ltd.	Tenpo Innovation Inc.
Digital Arts Inc.	MedPeer,Inc.	3-D Matrix, Ltd.
Digital Garage Inc.	Mercuria Investment Co., Ltd.	TKC Corporation
DIGITAL HEARTS HOLDINGS Co., Ltd	Milbon Co., Ltd.	TOKAI Holdings Corporation
Dream Incubator Inc.	MIRAIT Holdings Corporation	Tri-Stage Inc.
Earth Corporation	Monex Goup Inc.	VISION INC.
Elecom Co., Ltd.	NAGASE & CO., LTD	VISIONARY HOLDINGS CO., LTD.
Emergency Assistance Japan Co., Ltd.	NAIGAI TRANS LINE LTD.	WirelessGate, Inc.
en-Japan Inc.	NanoCarrier Co., Ltd.	YELLOW HAT LTD.
euglena Co., Ltd.	Net One Systems Co.,Ltd.	YOSHINOYA HOLDINGS CO., LTD.
Evolable Asia Corp.	Nichi-Iko Pharmaceutical Co., Ltd.	YUMESHIN HOLDINGS CO., LTD.
FaithNetwork Co., Ltd.	Nihon Denkei Co., Ltd.	Yume no Machi Souzou Iinkai Co., Ltd.
Ferrotec Holdings Corporation	Nippon Koei Co., Ltd.	Yushiro Chemical Industry Co., Ltd.
FIELDS CORPORATION	NIPPON PARKING DEVELOPMENT Co., Ltd.	ZAPPALLAS, INC.

Attention: If you would like to see companies you invest in on this list, ask them to become our client, or sponsor a report yourself.

Contact Details

Shared Research Inc.
3-31-12 Sendagi Bunkyo-ku Tokyo, Japan
URL: https://sharedresearch.jp
Phone: +81 (0)3 5834-8787
Email: info@sharedresearch.jp