

# **Environmental Data**

Climate Change (Products) ·····	213
Climate Change (Corporate Activities) ······	217
Air Quality	223
Resource Dependency: Achievements in Reuse	225
Resource Dependency (Facility Waste)	226
Water Resource Management ·····	228
Strengthening Our Business Foundations	
to Address Environmental Issues	229
Material Balance	232
Environmental Conservation Cost	232

Estimates (as of July 2020) have been used for the FY2019 actuals for CO<sub>2</sub>, VOC, industrial waste, and water at European facilities.

# Climate Change (Products)

#### CO<sub>2</sub> Emissions from New Vehicles (Global)\*



In fiscal 2019, CO<sub>2</sub> emissions in Nissan's main markets of Japan, the U.S., Europe, and China were 34.8% lower than fiscal 2000 levels, as measured by Corporate Average Fuel Economy (CAFE). Especially, improved in China from 2018 due to EV expansion and fuel consumption improvement.

\* Reduction in CO<sub>2</sub> emissions calculated by Nissan.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# Corporate Average Fuel Economy (CAFE, JC08 Mode) in Japan



0 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 (FY)

In fiscal 2019, mainly due to strong sales of the Serena e-POWER and new DAYZ, the average fuel economy improved to 22.6 km/L. This represents an improvement of 7% compared to fiscal 2018. Provisional values determined by Nissan are used.

# Corporate Average Fuel Economy (CAFE) in the United States



2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019
 ●PC ●LDT

In fiscal 2019, sales resulted in a CAFE of 41.4 mpg for passenger cars, the same performance observed for fiscal 2018. In the light-duty truck segment,

comparatively heavier models have received more market acceptance which decreases the CAFE from 28.8 mpg to 27.8 mpg. Updated 2018 results on PC to 39.9 from 39.8mpg and LDT to 28.8 from 28.5 due to revision in the official report.

# CO2 Emission Index from Nissan Vehicles in Europe\*



In 2019, average CO<sub>2</sub> emission in Europe was improved by 1g due to EV mix increase and heavier models mix decrease.

#### Corporate Average Fuel Consumption in China



In 2019, fuel economy for domestically produced and imported vehicles improved approximately 8% and 1%, respectively. The incremental introduction of EVs and fuel consumption improvement for ICEs are the main factor for domestic production models.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

#### Revenue, Global Sales Volume and Production Volume Data

	(¥ billion)					(k unit)			
	FY2018	FY2019		FY2018	FY2019			FY2018	FY2019
Revenue*1	12,968.7	11,217.6	Global Sales Volume*2	5,516	4,930		Global Production Volume <sup>*2</sup>	5,362	4,757
			Japan	596	534		Japan	901	758
			North America	1,897	1,620		North America* <sup>3</sup>	1,587	1,340
			Europe	643	521		Europe*4	661	508
			Asia	1,888	1,821		Asia <sup>*5</sup>	2,046	1,991
			Other	492	434		Other*6	167	160

\*1 Management pro-forma basis (includes Chinese joint ventures in proportionate consolidation).

\*2 Global sales volume and global production volume for China and Taiwan consider values from January to December.

\*4 Production in the U.K., Spain, Russia and France.

\*5 Production in Taiwan, Thailand, Philippines, Indonesia, China, India and South Korea.\*6 Production in South Africa, Brazil, Egypt and Argentina.

\*3 Production in the U.S. and Mexico.

## Powertrain Type Ratios (Shipment-Based)

	Unit	Gasoline-powered vehicles	Diesel-powered vehicles	e-POWER vehicles	Electric vehicles	Hybrid drive vehicles	Natural-gas drive vehicles
Japan	%	63.7	2.4	21.5	3.2	9.2	0.1
North America	%	98.7	0.4	0	0.9	0.1	0
Europe	%	67.7	24.1	0	8.2	0	0
Other	%	91.3	7.4	0	0.8	0.5	0
Global	%	87.8	6.4	2.5	1.9	1.3	0

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# EVs

#### EV and e-POWER Vehicle Sales



\*Includes the sale of EVs by joint ventures in China.

# Hybrids

# Hybrid Units Shipped



## The Xtronic Transmission

#### ICE with CVT\* Sales



\*CVT: Continuously Variable Transmission

In fiscal 2019, we sold 2.7 million additional Xtronic CVT vehicles, bringing the cumulative total to 29.7 million.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI305-1 GRI305-2 GRI305-4 GRI305-5

# Climate Change (Corporate Activities)

Energy Input (FY)								
	Unit	2015	2016	2017	2018	2019		
Total	MWh	9,683,528	10,189,082	9,532,840	9,252,737	8,443,465		
By region								
Japan	MWh	4,115,353	4,497,562	4,084,912	3,700,532	3,522,281		
North America	MWh	2,583,613	2,643,303	2,452,299	2,570,438	2,269,797		
Europe	MWh	1,107,279	1,093,103	1,126,186	1,048,201	838,714		
Other	MWh	1,877,283	1,955,115	1,869,443	1,933,566	1,812,673		
By energy source								
Primary								
Natural gas	MWh	3,346,141	3,537,674	3,701,640	3,579,998	3,126,933		
LPG	MWh	303,826	249,426	179,945	191,405	175,996		
Coke	MWh	206,307	217,431	218,618	200,527	172,500		
Heating oil	MWh	188,943	209,232	147,522	113,200	91,315		
Gasoline	MWh	302,564	303,040	299,000	259,045	241,010		
Diesel	MWh	55,099	57,488	48,259	53,074	23,044		
Heavy oil	MWh	34,289	43,853	27,652	15,995	16,287		

						(FY)
	Unit	2015	2016	2017	2018	2019
External						
Electricity (purchased)	MWh	4,979,114	5,247,663	4,755,897	4,711,467	4,445,380
Renewable energy*1	MWh	141,076	157,226	133,212	135,574	153,773
Chilled water	MWh	12,116	12,919	6,661	7,487	7,025
Heated water	MWh	4,630	4,690	5,000	5,000	5,000
Steam	MWh	100,000	136,593	128,038	102,324	126,811
Internal						
Electricity (in-house generation)	MWh	9,423	11,847	14,609	13,214	12,164
Renewable energy*2	MWh	9,423	11,847	14,609	13,214	12,164
Total renewable energy	MWh	150,499	169,073	147,821	148,788	165,937

\*1 Volume of renewable energy in electricity purchased by Nissan.

\*2 Volume of renewable energy generated by Nissan at its facilities and consumed for its own purposes.



GRI302-1 GRI302-3 GRI302-4

# **Global Energy Consumption**



The total energy consumption of our global corporate activities during fiscal 2019 was about 8.443 million MWh, a 9% decrease from fiscal 2018. This reduction was primarily due to the promotion of energy-saving activities at facilities and a decline in total production volume. Production sites globally accounted for 7.486million MWh\* of total energy consumption.

 \* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.
 >> P100

#### Energy per Vehicle Produced



In fiscal 2019, energy per vehicle produced was 1.78MWh increased by 3.3% compared to fiscal 2018.

Data for the Japan region includes the manufacture of powertrains and other components for overseas assembly. Since the denominator is vehicles produced in the region, this tends to result in higher values for Japan.

By region	Unit	2019
Japan	MWh/vehicle	4.70
North America	MWh/vehicle	1.69
Europe	MWh/vehicle	1.65
Other	MWh/vehicle	0.84



#### Energy per Revenue



In fiscal 2019, global Nissan facilities saw energy per revenue result of 0.76 MWh, increased by 20% from 2018. We are taking ongoing steps toward decoupling financial capital generation from energy use.

#### **Carbon Footprint**

						(1)
	Unit	2015	2016	2017	2018	2019
Scope 1	t-CO2	926,790	963,661	912,476	889,444	765,370
Scope 2	t-CO2	2,547,951	2,614,028	2,394,109	2,339,883	2,173,236
Scope 1+2	t-CO2	3,474,741	3,577,689	3,306,584	3,229,327	2,938,606
Japan	t-CO2	1,479,572	1,579,089	1,333,335	1,208,303	1,142,233
North America	t-CO2	800,724	823,340	683,332	738,234	607,605
Europe	t-CO2	208,088	176,285	228,998	221,692	182,973
Other	t-CO2	986,359	998,976	1,060,920	1,061,098	1,005,794
Scope 3	t-CO2	144,145,000	150,462,000	213,715,000	203,106,900	173,138,601

In fiscal 2019, the total of Scope 1 and 2 emissions was 2.939 million tons. Total CO<sub>2</sub> emissions from manufacturing processes were 2.408 million tons (Scope 1 emissions: 0.670 million tons; Scope 2 emissions: 1.738 million tons).\*

\* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.

>>> P100

(EV)

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# Corporate Carbon Footprint per Vehicle Sold



In fiscal 2019, overall corporate emissions were reduced by 34.0% compared to fiscal 2005, representing steady progress toward our fiscal 2022 goal.

# Carbon Footprint of Manufacturing Activities



#### Manufacturing CO<sub>2</sub> per Vehicle Produced



In fiscal 2019, our manufacturing CO<sub>2</sub> emissions per vehicle produced were 0.51 tons, 30.1% less than fiscal 2005.

#### Scope 1 and 2 Emissions per Revenue



In fiscal 2019, CO<sub>2</sub> emissions from our global operations were 0.26 ton per ¥1 million of revenue.

\* Value in 2018 was corrected.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

 $( \models \lor )$ 

#### **Logistics Volume**

						(11)
	Unit	2015	2016	2017	2018	2019
Total	mil ton-km	35,546	39,930	35,635	34,903	28,288
Inbound	mil ton-km	11,221	10,634	9,699	10,164	8,083
Outbound	mil ton-km	24,325	29,296	25,935	24,739	20,205
Sea	%	60.1	60.9	57.6	60.9	63.8
Road	%	26.5	24.8	25.9	23.3	23.0
Rail	%	13.0	14.0	16.1	14.9	12.7
Air	%	0.3	0.4	0.4	0.9	0.6

In fiscal 2019, global shipping decreased by around 19% compared to the previous fiscal year, to 28,288 million ton-km. We continue to strengthen our efforts to reduce shipping by upsizing trucks, improving truck loading rates, improving the fuel economy of car-transporting ships and shifting to rail and sea shipping.

# CO<sub>2</sub> Emissions from Logistics

	Unit	2015	2016	2017	2018	2019
Total	t-CO2	1,598,891	1,926,477	1,567,248	1,482,982	1,144,338
Inbound*	t-CO2	797,034	809,088	739,610	762,314	582,957
Outbound*	t-CO2	801,857	1,117,389	827,638	720,667	561,381
				· · · · · · · · · · · · · · · · · · ·		· · · · · · · · · · · · · · · · · · ·
Sea	%	18.3	17.8	20.0	19.9	21.1
Road	%	65.7	62.1	64.6	60.3	64.1
Rail	%	5.4	5.6	7.0	6.7	5.9
Air	%	10.6	14.5	8.4	13.1	8.9

\*"Inbound" includes parts procurement from suppliers and transportation of knockdown parts;
"Outbound" includes transportation of complete vehicles and service parts.
\* Value in 2016 were corrected after recalculation.

In fiscal 2019, CO<sub>2</sub> emissions from logistics were 1,144,338 tons, down approximately 23% from the previous fiscal year. A substantial contribution to the reduction of overall CO<sub>2</sub> emissions was made by production volume decrease and reduction of air shipping.

(FY)

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## CO<sub>2</sub> Emissions per Vehicle Transported



In fiscal 2019, CO<sub>2</sub> emissions per vehicle transported were 0.38 tons,

#### GRI305-3

#### Scope 3 Emissions by Category

We conducted a study based on the Corporate Value Chain (Scope 3) Accounting and Reporting Standard from the GHG Protocol and found that about 90% of Scope 3 emissions were from the use of sold products.

		(11)
Category	Unit	2019
1.Purchased goods & services	kt-CO <sub>2</sub>	15,620
2.Capital goods	kt-CO <sub>2</sub>	994
3.Fuel- and energy-related activities	kt-CO <sub>2</sub>	358
4.Upstream transportation & distribution	kt-CO <sub>2</sub>	583
5.Waste generated in operations	kt-CO <sub>2</sub>	171
6.Business travel	kt-CO <sub>2</sub>	221
7.Employee commuting	kt-CO <sub>2</sub>	238*
8.Upstream leased assets	kt-CO <sub>2</sub>	0
9.Downstream transportation & distribution	kt-CO <sub>2</sub>	760
10.Processing of sold products	kt-CO <sub>2</sub>	8
11.Use of sold products	kt-CO2	153,428*
12.End-of-life treatment of sold products	kt-CO <sub>2</sub>	369
13.Downstream leased assets	kt-CO <sub>2</sub>	389
14.Franchises	kt-CO <sub>2</sub>	0
15.Investments	kt-CO <sub>2</sub>	0
Total		173,139

\* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.

>>> P100

(FV)



#### **Carbon Credit**

Nissan Motor Iberica, S.A. in Barcelona and Cantabria, Spain, entered EU-ETS, and the verified allowance earned for fiscal 2019 was 38,845 tons.

#### Employee Commuting CO<sub>2</sub> Emissions



In fiscal 2013, Nissan introduced a companywide CO<sub>2</sub> reduction plan for car commuting employees in Japan. This plan encourages car commuters to shift from internal combustion engine vehicles to electric vehicles. For fiscal 2019, CO<sub>2</sub> emissions from car commuting in Japan were approximately 28 kton<sup>\*</sup>, or 2.6 ton-CO<sub>2</sub>/vehicle annually.

 $^{\ast}$  Calculated by using the parameters below together with vehicle homologation data:

- Average car commuting range (Japan): 9,227 km/vehicle-year
- CO<sub>2</sub> emission factor for gasoline-powered vehicles (National Greenhouse Gas Inventory Report of Japan [2009]): 0.33 kg-CO<sub>2</sub>e/km
- CO<sub>2</sub> emission factor for electricity (Tokyo Electric Power Company [FY2018]): 0.000455 t-CO<sub>2</sub>/kWh
- Employees of Nissan offices and manufacturing plants in Japan, fiscal 2018

# Air Quality

#### Emissions

In fiscal 2019, NOx and SOx emissions from Nissan facilities in Japan were 380 tons and 14 tons respectively. both NOx and SOx reduced due to production volume decrease in 2019.

						(FY)
	Unit	2015	2016	2017	2018	2019
NOx	ton	450	430	619	418	380
SOx	ton	37	31	36	34	14

# Volatile Organic Compounds (VOCs)

In fiscal 2019, VOCs from manufacturing plants were 6,465 tons globally, a reduction from fiscal 2018. We actively continue to promote activities to reduce VOCs, such as switching to materials including water-based paints.

						( )
	Unit	2015	2016	2017	2018	2019
Total	ton	10,820	11,933	10,564	8,433	6,465
Japan	ton	2,850	3,580	3,232	2,188	2,016
North America	ton	5,309	4,851	4,284	3,847	3,135
Europe	ton	2,661	3,502	3,048	2,397	1,315

\* Value in 2017 and in 2018 were corrected after recalculation.

(FV)

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# VOCs per Vehicle Produced



# (FY) By region Unit 2019 Japan kg/vehicle 2.66 North America kg/vehicle 2.34 Europe kg/vehicle 2.59

# Released Substances Designated by PRTR Law (Japan)\*

In fiscal 2018, released substances designated by the PRTR (Pollutant Release and Transfer Register) Law in Japan were 3,914 tons, decrease from fiscal 2017.

						(FY)
	Unit	2014	2015	2016	2017	2018
Japan site total	ton	3,879	4,129	4,472	4,422	3,914
Oppama	ton	402	488	872	796	715
Tochigi	ton	1,317	1,435	1,179	920	655
Kyushu	ton	1,152	1,173	1,406	1,697	1,573
Yokohama	ton	547	531	545	559	539
Iwaki	ton	114	132	144	62	54
NTC	ton	347	370	325	388	378

\* The table shows chemical substance emissions calculated based on the Japanese government PRTR guidelines. PRTR emissions show total volume excluding substances adherent to the product.



GRI301-2 GRI301-3

# PRTR Emissions per Vehicle Produced (Japan)



In fiscal 2018, PRTR emissions per vehicle produced in Japan were 4.35 kg, a decrease from fiscal 2017.

# Resource Dependency: Achievements in Reuse

#### Proper Use of Regulated Chemical Substances



Nissan revised its standard for the assessment of hazards and risks in the Renault-Nissan Alliance, actively applying restrictions to substances not yet covered by regulations but increasingly subject to consideration around the world. As a result, the number of substances covered by the

Nissan Engineering Standard in fiscal 2019 rose to 4,069. These steps are thought to be necessary for future efforts in the repair, reuse, remanufacture and recycle loop for resources.

For more information on chemical substances governance.

#### **Recycled Plastic Usage in Vehicle**

We are making efforts to expand the use of recycled plastic in our vehicles, as well as developing technologies for this. Recycled plastic use in fiscal 2019 was 11%, based on the rate achieved by our best-selling model in Europe.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

#### Automotive Shredder Residue to Landfill Ratio

After removing ferrous and nonferrous metals from ELVs, in accordance with the End-of-Life Vehicle Recycling Law in Japan, the ratio of ASR taken to landfills for final disposal was zero in fiscal 2019 as same as 2018's result. This was achieved by enhancing recycling capability through the acquisition of additional facilities that comply with the law.

#### **Material Ratio**

In 2019, ferrous metals accounted for 61% of the materials used in our automobiles by weight. Nonferrous metals made up another 12% and resins 15%, with miscellaneous materials making up the final 13%. To further reduce our use of natural resources, we are advancing initiatives to expand the use of recycled materials in each of these categories.

#### **Recovered Bumpers**



# Resource Dependency (Facility Waste)

#### Waste

Waste generated globally in fiscal 2019 amounted to 188,556 tons, a slight decrease from 206,645 tons in fiscal 2018. Waste generated globally from production sites in fiscal 2019 was 184,573 tons.\*

\* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.

>>> P100

						(FY)
	Unit	2015	2016	2017	2018	2019
Total	ton	159,345	158,939	152,674	206,645	188,556
By region				<u>.</u>	<u>`</u>	· · · · · · · · · · · · · · · · · · ·
Japan	ton	63,630	61,115	61,327	69,829	63,315
North America	ton	49,129	45,459	35,177	64,514	57,762
Europe	ton	37,204	41,110	45,268	49,662	48,187
Other	ton	9,382	11,255	10,903	22,639	19,291
By treatment met	hod		-	^	^	· · · · · · · · · · · · · · · · · · ·
Waste for disposal	ton	11,355	8,707	8,041	7,231	6,414
Recycled	ton	147,990	150,231	144,633	199,414	182,141

GRI306-2

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

## Waste per Vehicle Produced



In fiscal 2019, waste per vehicle produced slightly increased to 39.64kg.

# Waste for Disposal per Vehicle Produced



In fiscal 2019, we reduced the volume of waste for disposal to a total of 1.35 kg per vehicle produced as same level of 2018's.

		(FY)
地域別	Unit	2019
Japan	kg/vehicle	83.53
North America	kg/vehicle	43.11
Europe	kg/vehicle	94.86
Other	kg/vehicle	8.97

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI303-1 GRI303-3 GRI303-4

# Water Resource Management

# Water Input for Corporate Activities

In fiscal 2019, water input for corporate activities was 23,714 km<sup>3</sup>, a 10% decrease compared with the fiscal 2018 level. Water input from production sites was 22,613,338 m<sup>3</sup>.\*

\* This figure is subject to assurance by KPMG AZSA Sustainability Co., Ltd. For details, please see here.

>>> P100

						(FY)
	Unit	2015	2016	2017	2018	2019
Total	1,000m <sup>3</sup>	28,570	29,118	26,197	26,420	23,714
		-				
Japan	1,000m <sup>3</sup>	14,990	15,563	13,115	13,022	11,932
North America	1,000m <sup>3</sup>	5,427	5,483	4,905	4,930	4,776
Europe	1,000m <sup>3</sup>	2,330	2,299	2,155	2,093	1,798
Other	1,000m <sup>3</sup>	5,823	5,774	6,023	6,376	5,207

Cleaner Effluent Through Wastewater Treatment

Nissan thoroughly processes and is promoting activities to reduce wastewater at its various plants.

						(FY)
	単位	2015	2016	2017	2018	2019
Total	1,000m <sup>3</sup>	20,680	20,516	17,410	17,345	15,512
Japan	1,000m <sup>3</sup>	12,976	12,681	10,376	10,472	9,438
North America	1,000m <sup>3</sup>	3,916	4,028	3,382	3,190	2,752
Europe	1,000m <sup>3</sup>	1,740	1,767	1,564	1,539	1,528
Other	1,000m <sup>3</sup>	2,048	2,040	2,088	2,143	1,794
Quality						
Chemical oxygen demand (COD) Japan only	kg	28,042	29,730	26,451	21,149	18,795



#### GRI303-4 GRI306-1

# Water Discharge from Corporate Activities (Per Vehicle Produced)



In fiscal 2019, water discharge per vehicle produced was 3.26 m<sup>3</sup>, which was a 1% increase compared to fiscal 2018.

		(FY)
By region	Unit	2019
Japan	m <sup>3</sup> /vehicle	12.45
North America	m <sup>3</sup> /vehicle	2.05
Europe	m <sup>3</sup> /vehicle	3.01
Other	m <sup>3</sup> /vehicle	0.83

Data for the Japan region includes the manufacture of powertrains and other components for overseas assembly. Since the denominator is vehicles produced in the region, this tends to result in higher values for Japan.

# Strengthening Our Business Foundations to Address Environmental Issues

#### Global Top Selling Model's Lifecycle Improvements

We have been expanding the application of the LCA method and enhancing the understanding of the environmental impact of our products in quantitative terms, especially our best-selling models worldwide. LCAs have been conducted for over 90% of these models.

#### LCA Conducted Product Ratio in Sales Volume (EU Market)



Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

With the Altima and Rogue, for example, improvements in internal combustion engine efficiency and vehicle weight reduction have led to both enhanced safety features and lower CO<sub>2</sub> emissions.

#### Lifecycle CO<sub>2</sub> Equivalent Emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, etc.)



#### Production & logistics Fuel & electricity production Usage Maintenance ELV

\*1 Production in EU, 150,000 km driven in EU (basis for comparison).

\*2 Production in EU, 150,000 km driven in EU (basis for comparison).

# LCA Comparison for e-POWER Models

Nissan introduced its new e-POWER powertrain in 2016, marking another significant milestone in the electrification strategy with lifecycle emission improvements.

Compared to their gasoline-powered counterpart models, the Note e-POWER and Serena e-POWER have achieved 18%—27% reductions in CO<sub>2</sub> emissions.

#### Lifecycle CO<sub>2</sub> Equivalent Emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, etc.)



Production & logistics
 Fuel & electricity production
 Usage
 Maintenance
 ELV
 Production in Japan, 100,000 km driven in Japan (basis for comparison).

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

# LCA Comparison for the New Nissan LEAF

Compared to conventional vehicles of the same class in Japan, the Nissan LEAF results in approximately 32% lower CO<sub>2</sub> emissions during its lifecycle. We are making efforts to reduce CO<sub>2</sub> emissions during EV production by improving the yield ratio of materials, using more efficient manufacturing processes and increasing the use of recycled materials.



Lifecycle CO<sub>2</sub> Equivalent Emissions (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, etc.)

# Production & logistics Fuel & electricity production

Production in Japan, 100.000 km driven in Japan

#### Lifecycle Improvements Beyond Climate Change

Emissions Improvement in the New Serena e-POWER over Its Lifecycle



Nissan is expanding the scope of LCAs to include not just greenhouse gases but also a variety of chemicals amid growing societal concerns over air quality and ocean acidification and eutrophication. Our calculations show that, compared to conventional gasoline engines, the Serena e-POWER is significantly more environmentally friendly, achieving 11%-27% emission reductions for all targeted chemical substances and achieving environmental benefits throughout its lifecycle.

Contents	CEO Message	CSO Message	Corporate Purpose / ESG Highlights	Sustainability at Nissan	Nissan's Contribution to the SDGs	The Alliance
Environmental	Social	Governance	ESG Data	Editorial Policy	GRI Content Index	Quick Guide For Investors

GRI301-1 GRI302-1 GRI303-1 GRI305-1 GRI305-2 GRI305-7 GRI306-1 GRI306-2

# Material Balance

#### Input

		(FY)
	Unit	2019
Raw materials	ton	5,818,699
Energy	MWh	8,481,499
Renewable energy	MWh	154,606
Water withdrawal	1,000m <sup>3</sup>	23,714

#### Output

		(FY)
	Unit	2019
Vehicles produced		
Global production volume	k unit	4,757
CO <sub>2</sub> emissions	t-CO2	2,962,403
Water discharge	1,000m <sup>3</sup>	15,512
Emissions		
NOx	ton	380
SOx	ton	14
VOC	ton	6,465
Waste		
For recycling	ton	193,229
For final disposal	ton	6,914

# Environmental Conservation Cost

		20	18	2019	
	Unit	Investment	Cost	Investment	Cost
Total	mil ¥	3,790	171,245	2,538	183,578
Business area	mil ¥	20	1,775	15	1,790
Upstream/ downstream	mil ¥	0	706	0	639
Management	mil ¥	0	8,041	0	8,973
R&D	mil ¥	3,770	160,263	2,523	172,011
Social activities	mil ¥	0	308	0	146
Damage repairs	mil ¥	0	153	0	19

			(FY)
	Unit	2018	2019
Total	mil ¥	8,262	6,207
Cost reduction	mil ¥	372	540
Profit	mil ¥	7,890	5,667

\* All environmental costs are based on the guidelines provided by Japan's Ministry of the Environment, and calculated for activities in Japan only.