



Soneva

Soneva Total Impact Assessment 2017



Welcome to Soneva

An aerial photograph of a tropical resort. The resort features several large, multi-story buildings with traditional thatched roofs and wooden balconies, nestled among dense green tropical vegetation, including many palm trees. The resort is situated on a white sandy beach that meets clear, turquoise water. In the background, the ocean extends to a deep blue horizon under a clear sky.

Guardians of places that have existed long before us, our unique vision is inspired by nature's magnitude, mystery and enchanting beauty. We work hand in hand with the environment to craft beautiful, beyond bespoke experiences where discovery is a way of life.

Soneva is built on the foundation that a business must exist for a greater purpose than shareholder returns. We believe in a natural excellence in everything we do, whether it is delivering the ultimate in guest experiences or providing energy to the rural poor in Myanmar via the Soneva Foundation. We strive to set the benchmark for responsible tourism and we are strong advocates for the overall positive impact of travel and tourism, and the key role it plays in conservation.

www.soneva.com

www.soneva.com/sustainabilityreport

www.soneva.com/sonevafoundation

CFO and Deputy CEO's Statement



Finding clarity in the soup of data that pervades our increasingly interconnected lives can be a challenge. Today's 'information' is as likely to misdirect as it is to inform. The speed, abundance and accessibility of data can foster erratic decision-making, causing companies to pinball from one well-meaning environmental or social commitment to the next. The costs of such ill-informed commitments soon add up to a perception that sustainability is a tax on performance. This couldn't be further from the truth.

Through the years we have seen that our commitment and drive to operate in the most sustainable way possible has added to the bottom line, not negatively impacted it. To a large degree this is a function of the clarity of purpose which signposts our path, but as important to our success in this area has been our grasp on the underlying data which ultimately combine to become the information flows which inform our decision-making.

The Total Impact Assessment (TIA) allows us to get to the root of each area of our operations and to understand and cost our sustainability impacts. Building and maintaining world class resorts is a resource intensive endeavour. While every area of our resort design and build process is guided by the highest sustainability standards, inevitably the build process draws from our natural resources. The benefit of the TIA is that we can make informed decisions of how and where to minimize and offset impact of our developments and ongoing operational activities.

Equally importantly, our TIA informs where we should invest our energies and our finances for our human and social capital. Initiatives such as Women in Soneva, which aims to increase the percentage of women employed in hospitality in the Maldives, have the potential to influence the tourism industry far more widely than our own resorts. The financial cost of Soneva Ocean Stewards, our local islands swimming programme, remains low and it is confirmed again this year that the human resource investment pays back hugely, as the communities gain so much in terms of life-saving skills and environmental awareness. On an international scale, the TIA confirms that our investment via the Soneva Foundation pays both environmental and social dividends.

The stories in our sustainability report demonstrate that leadership on sustainability is embedded in the strata of our company. Sustainability is in our DNA. This report demonstrates how the TIA then informs and fine-tunes our decision-making and supports us to continue pioneering environmentally and socially responsible tourism.

Bruce Bromley
Chief Financial Officer and Deputy CEO, Soneva
Trustee, Soneva Foundation



The Women in Soneva programme aims to increase the percentage of Maldivian women employed in hospitality by creating a welcoming and safe environment for all hosts to live and work in, as well as directly addressing career opportunities for women.

Social and Environmental Conscience Statement



This report presents the quantitative impacts of our operations and our supply chain. It complements our sustainability report which presents a qualitative assessment of our initiatives at www.soneva.com/sustainabilityreport.

The Total Impact Assessment (TIA) tool, which we developed in-house, allows us to take a 'planetary boundaries' view of all our social and environmental impacts. This includes direct impacts at our resorts and indirect impacts via our supply chain and guest air travel. The TIA enables us to make informed decisions on how to minimize our negative impacts and maximize positive impacts.

In this report, you will find data and methodology on Natural Capital, Human Capital and Social Capital.

Natural Capital refers to our CO₂ emissions and the 'services' that we draw on from nature, such as water and land use. This section also accounts for impacts in our supply chain. We have installed 700 kWp solar PV on Soneva Fushi which provides around 15% of electricity needs. We plan to expand our renewable energy portfolio, however, even at 100% renewable energy, this will only account for 18% of our carbon emissions. Therefore, it is imperative that we offset our indirect emissions, such as guest air travel, which count for 82% of our total. To this end, we have been implementing carbon mitigation projects such as the Myanmar Stoves Campaign through the Soneva Foundation since 2009 and as a result, Soneva has been carbon neutral since 2012.

Managing our carbon footprint is one thing. What was more surprising to learn from the TIA was that 83% of our natural capital cost comes from the production of our food and beverage. Measures to reduce our natural capital cost include increasing the yield from our vegetable gardens to over \$100,000 in value in 2017 and removing beef from our menus due to its high environmental cost.

We continue to invest in our Human Capital, the hosts that make up Soneva. The Women in Soneva programme directly addresses the underrepresentation of Maldivian women in the hospitality industry by creating a welcoming and safe environment for all hosts to live and work in, as well as directly addressing career opportunities for women.

Social Capital refers to community outreach and partnerships. It is wonderful to see how our hosts work side-by-side with our local communities to develop initiatives such as Soneva Ocean Stewards, our local swimming programme, and social enterprises such as Soneva Water, a community-led enterprise to provide locally-produced drinking water in reusable glass bottles. These are fantastic examples of how personal host development and community engagement complement each other so well.

Our Total Impact Assessment confirms we are making significant positive social, environmental and economic contributions and demonstrates that social and environmental progress should go hand-in-hand.

Arnfinn Oines
Social and Environmental Conscience, Soneva
Secretary, Soneva Foundation



Indirect emissions, such as guest air travel, are mitigated through carbon mitigation programmes such as the Myanmar Stoves Campaign through the Soneva Foundation.



Soneva Total Impact Assessment 2017

The Soneva Total Impact Assessment (TIA) allows us to take a 'planetary boundaries' view of all our social and environmental impacts. This includes direct impacts at our resorts and indirect impacts via our supply chain and guest air travel. Measuring our impacts provides us with a tool to drive better decision-making, more effective resource allocation and to influence the business decisions of our suppliers.

In summary, Soneva's Total Impact for 2017 was \$46 million net positive, a 92% increase from the previous year. Our natural capital cost – resources provide by nature - has risen by 35%. This is partly explained through increasing our property portfolio to include our latest resort, Soneva Jani. Adjusting the baseline to include Soneva Jani, there is a 5% reduction in natural capital showing increased efficiency. Our positive impacts have had solid increases across the board. Our social capital increased to \$3.9 million during the reporting period and our human capital rose to over \$2.5 million. These figures present an upward trend that we will endeavor to continue.

TOTAL IMPACT \$46,375,910

Key

Bars represent the scale of our impact

Green represents a positive contribution

- Direct
- Indirect

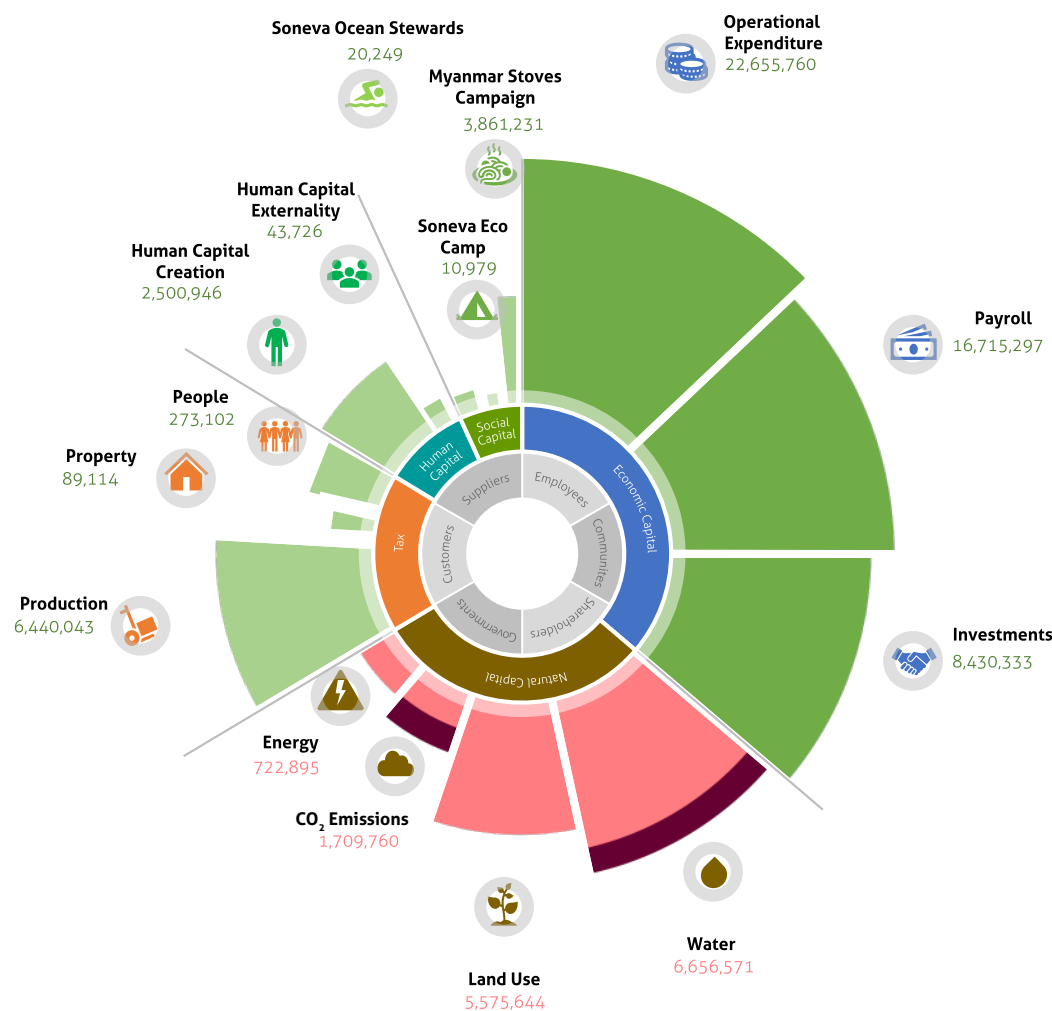
Red represents a negative contribution

- Direct
- Indirect

Definitions

Direct: Impacts from Soneva business operations.

Indirect: Impacts via our supply chain; human development improvements in social wellbeing; indirect CO₂ emissions such as guest air travel.



Carbon Footprint & Mitigation 2017

Soneva's vision is to become decarbonising through implementing programmes that will result in a net absorption of CO₂. An environmental levy of 2% is added to each guest's stay. The Soneva Foundation invests this in projects that have a positive environmental, social and economic impact and importantly, offset carbon emission from resort activities and guest flights.



Soneva has been carbon neutral for both direct and indirect emissions since 2012. Our total carbon footprint for 2017 was 57,718 tonnes CO₂ of which 82% was from indirect emissions.

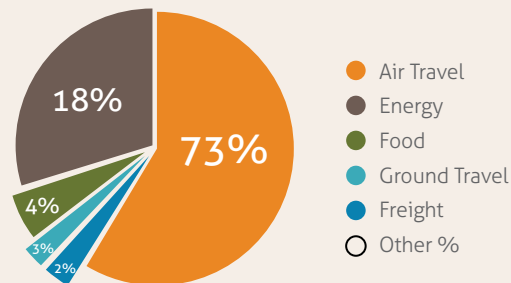
TOTAL CARBON FOOTPRINT

57,718

tonnes CO₂ in 2017

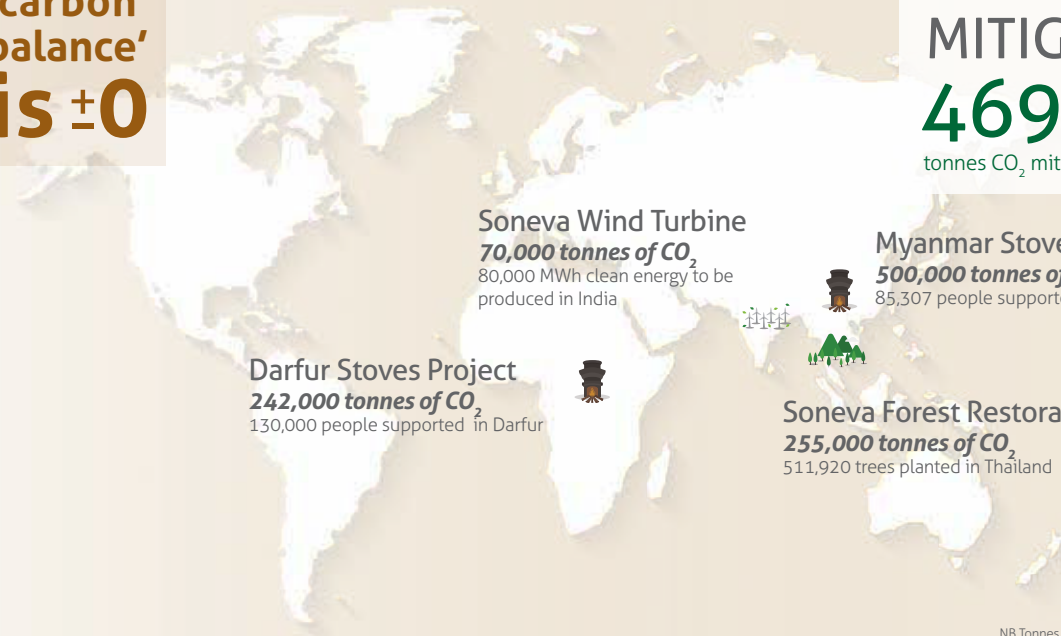
↓ This is -1% relative to 2009 base year

Soneva carbon footprint by source:



Soneva's 'carbon balance' is ±0

CARBON MITIGATION
469,587
tonnes CO₂ mitigated since 2008



NB Tonnes of CO₂ refers to the amount to be mitigated over the lifecycle of the project

Soneva Foundation mitigation targets₁

+1M tonnes of CO₂

7 years

Myanmar Stoves Campaign

7 years

Darfur Stoves Project

40 years

Soneva Forest Restoration Project

20 years

Soneva Wind Turbine

1 Mitigation targets over lifecycle of projects



The social capital investment in our Soneva Ocean Stewards swimming programme pays back hugely as the communities gain so much in terms of life-saving skills and environmental awareness.

Soneva Total Impact Assessment Methodology

The Soneva Total Impact Assessment (TIA) methodology is inspired by the pioneering efforts of companies such as Puma and PwC to measure their Environmental Profit and Loss (EP&L) and Total Impact Measurement and Management (TIMM) respectively. As yet, there is no industry standard for environmental and social reporting so we have developed our methodology internally with the intention to improve on it year-on-year. Our Human Capital and Social Capital sections were developed with assistance from GIST Advisory.

The TIA assesses impacts from sources over which we have direct and indirect control within the following five categories.

1. Natural Capital

- a. CO₂ emissions
CO₂ emissions from energy, air travel, ground travel, food, paper, waste and water from Soneva's direct and indirect operations.
- b. Direct water use
- c. Environmental Profit and Loss
Impacts from energy, water, land use and CO₂ emissions via the food and beverage products in our supply chain. Collectively we refer to these supply chain impacts as our EP&L.

2. Human Capital

- a. Human Capital Creation
The value of the jobs created and sustained in our operations by salary, training, working environment and experience.
- b. Human Capital Externalities
The value created in society from hosts' post-Soneva employment.

3. Social Capital

- a. Social Capital calculates the value of the relative improvement in well-being of individuals comprising the communities Soneva has been involved in.

4. Economic Capital

- a. Payroll
- b. Operational Expenditure
- c. Investments

5. Tax

- a. Property Tax
- b. People Tax
- c. Production Tax

The total value for each category is combined with the Natural Capital deficit to give the value of the Total Impact Assessment.

Inclusions and Exclusions

Soneva accounts for all of its direct and indirect impacts and no impacts have been intentionally omitted from this report.

Base Year Selection

To measure performance Soneva has set a base year of 2015 as a reference against which to assess progress on reductions targets in the future years.

Quality Assurance

The data provided by Soneva Fushi, Soneva Jani and Soneva Kiri presented in this report was obtained under the supervision of Soneva Social & Environmental Conscience and is assumed to be accurate and complete.

Where accurate measures of emissions are not possible, estimates have been made. Soneva strives to improve the accuracy of its measurement and reporting of this voluntary disclosure.

Natural Capital

Natural capital represents the positive and negative impacts that our operations have on the natural environment.

Environmental Profit and Loss

We calculate the true cost of ecosystem services provided for our food and beverage products via our supply chain. There are a number of environmental drivers of which we assess land use, water, energy and CO₂ emissions. Collectively we refer to these impacts as our Environmental Profit and Loss (EP&L). We have placed a monetary value on each of the four environmental drivers based on research from academic papers as shown in Figure 1.

Figure 1: Environmental Drivers

Environmental Drivers				
	Land use	Water	Energy	CO _{2e}
Pricing methodology	Global farmland index approach	Cost of green, blue and grey water	Oil = energy	Social cost of carbon/effective cost of carbon
Breakdown of usage per kg of top ten products	Feed production, grazing processing, infrastructure, etc.	The green, blue and grey water footprint of farm animals and animal products	Crop and feed production, building and construction, up/downstream processes, etc.	Feed production, on-farm energy usage, transportation, commodity delivery, water supply, etc.
Derived costs	USD 5,861/ha	USD 1.98/m ³	USD 108/barrel of oil	USD 35/tonnes of CO _{2e}

Analysis

We have completed detailed studies of 44 of our top products, accounting for 75% of our total food purchase dollar value. For the remaining products we have used averages in categories such as meat, seafood, fruit and vegetables, groceries, dairy, alcoholic beverages and non-alcoholic beverages using the following methodology:

1. A universally acceptable model of Life Cycle Assessment.
2. Conversion of the environmental impact in monetary terms – refer to Figure 1.
3. Land use, water, energy and carbon emissions breakdown – refer to example in Figure 2.

CO₂ Emissions

Our CO₂ emissions (for methodology see page 102) and our EP&L constitute the Natural Capital component of our TIA. We have converted our CO₂ emissions to a dollar value using a conversion factor of \$35 per tonne of CO₂. For water consumption we use a conversion factor of \$1.98 per m³ as shown in Figure 1.

Figure 2: Life Cycle Assessment: case study of beef

Land use		Unit	Amount	Notes: Land use
For a billion kgs		Ha	6,106,000	1. Effects of improved productivity upon population size and reduced time to slaughter, in combination with increased cropping yields has reduced the land use per kg of beef.
For 1 kg		Ha/kg	0.006	
Total land used per kg of beef		Ha/kg	0.006	
Water usage				Notes: Water
In feed				1. Feed depends on method of farming - grazing, mixed or industrial. Figures taken from The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products. 2. World average of water footprint has been used for the "Green, Blue & Grey Water" inputs. 3. Increased crop yields have per hectare resulted in a reduction of water use per kg of feed of 19% for corn silage, 65% for grain, 89% for soybeans, 14% for pasture.
Grazing	Green	L/kg	21,121	
	Blue	L/kg	465	
	Grey	L/kg	243	
Mixed	Green	L/kg	14,803	
	Blue	L/kg	508	
	Grey	L/kg	401	
Industrial	Green	L/kg	8,849	
	Blue	L/kg	683	
	Grey	L/kg	712	
Total water in 1 kg of beef		L/kg		
	Green	L/kg	14,924	
	Blue	L/kg	552	
	Grey	L/kg	452	
Summary: Water use				
Feed		L/kg	15,928	
Miscellaneous (maintenance, drinking)		L/kg	-	
Total water in 1 kg of beef		L/Kg	15,928	
Energy	%	Unit	Amount	Notes: Energy
Processing plant	75%	Mj/kg	12	1. Timeframe consideration: 485 days birth - slaughter. 2. Carbon is the fundamental unit of energy within animal systems; thus differences in total maintenance energy can be considered to be a proxy for both resource use and CO₂ emissions.
On-site processes	14%	Mj/kg	2	
Upstream processes	7%	Mj/kg	1	
Transport	4%	Mj/kg	1	
Fossil fuel energy		Mj/kg	-	
Total energy	100%		16	

CO _{2e}	%	Unit	Amount	Notes: Carbon emissions
Enteric processes	30 %	Kg CO ₂ /kg	4.71	1. Crop production in Australia is usually dry (no irrigation) but chemically intensive. Crop storage also adds significant weight to energy costs. 2. Total CO₂ emissions per kg of beef is averaged from three different case studies (Victoria, NSW and USA). 3. Manure management is considered 0% because it is fed back into the system. 4. Studies evaluating CO₂ footprint of beef production show ranges per kg from 8.4-25.5 CO₂/kg.
Feed production	40 %	Kg CO ₂ /kg	6.27	
On-farm energy consumptions	20 %	Kg CO ₂ /kg	3.14	
Manure management	0 %	Kg CO ₂ /kg	-	
Transportation	4 %	Kg CO ₂ /kg	0.63	
Commodity delivery	2 %	Kg CO ₂ /kg	0.31	
Water supply	2 %	Kg CO ₂ /kg	0.31	
Administration	2 %	Kg CO ₂ /kg	0.31	
Total CO_{2e}/kg of beef	100%	Kg CO₂/kg	15.7	

Human Capital

Human capital calculates the value of the jobs created and sustained in our operations by salary, training, working environment and experience, namely Human Capital Creation. It also calculates Human Capital Externalities, which is the value created in society by hosts post-Soneva employment.

The key drivers of Human Capital are:

- Skills generated by company training.
- Value of association with company brand.
- Individual capacity to absorb and apply training.

Focus groups

The analysis constitutes two separate focus groups:

- Total employees in individual cohorts at Soneva Fushi and Soneva Kiri at the end of each financial year.
- New hires and trainees hired in each individual cohort annually.

Data collection

The following data points for hosts and trainees are used for the analysis. Data is segregated into five individual cohorts based on Soneva's employee structure and obtained from metrics collected on an annual basis by the human resources (HR) team:

- Total Employee Headcount (cohort-wise).
- Average Age of Employees (cohort-wise).
- Average Salary: Average annual compensation at the end of financial year for each cohort.
- Cost of Training: Marginal costs such as fees paid to external trainers, travel costs for training programme, and absorbed or allocable costs.

Quantification and valuation of HCX™

General reporting measures do not reflect the value of human capital impacts beyond a narrow 'incurred-cost' value whilst also ignoring the lifetime returns on the same. The value of the 'asset' created by skills training and other forms of human resource development is neither estimated nor reported. The positive externalities from attrition are usually neither measured nor reported. To address these failings in most reporting systems, the following key valuation parameters are incorporated in assumptions of GIST Advisory's HCX™ model:

- Future annual salary growth rate.
- Future annual attrition rate.
- Future annual increase in compensation attributable to Soneva.
- Per capita Human Capital (HC) distribution across training period.
- Discount rate.
- Long-run inflation rate.

Social Capital

Social capital calculates the value of the well-being generated by our outreach and philanthropic activities. To enable this, it is necessary to estimate quantitative (i.e. monetary) as well as qualitative values of the benefits gained as a result of Soneva CSR activities which are known to lead to improvement in well-being (i.e. social capital) at the individual and community level.

Drivers

Three programmes have been assessed that generate positive benefits for stakeholders across South East Asia. These are:

- Myanmar Stoves Campaign
- Soneva Learn To Swim
- Soneva Eco Camp

The key drivers of social capital externalities for these three material programmes are:

- Income benefits stemming from productivity gains / employment opportunities.
- Indirect savings (i.e. monetary costs avoided) for beneficiaries attributable for Soneva initiatives.

Valuation and data collection

Valuing and measuring social capital both in physical and monetary terms involves developing benchmarks and metrics that identify welfare improvements as a direct result of a specific programme and derived within a specified period of time.

Table 1: Myanmar Stoves Campaign data indicators

Indicator	Unit	2015	2016	2017
Target population				
Location	Myanmar	Pyawbwe, Meikhtila and Tharsi	Pyawbwe, Mandalay and Magway	Pyawbwe, Mandalay and Magway
Total population of region	Number	255,506	772,636	772,636
Total number of households in region	Number	50,048	172,194	172,194
Total number of households covered under programme outreach	Number	3,974	4,225	5,015
Average number of people per household in region	Number	4.6	4.6	4.6
Percentage of women in total population	%	52.00%	54.00%	54.00%
Percentage of children in total population	%	28.00%	28.00%	28.00%
Primary occupation of households in region	Description	Farmers	Farmers	Farmers
Average monthly income per household in region	US\$	\$71.00	\$71.00	\$71.00

Table 1: Myanmar Stoves Campaign data indicators

Indicator	Unit	2015	2016	2017
Cook stove details				
Type of cook stove (primary) used prior to programme intervention	Description	Three stone cook stove	Three stone cook stove	Three stone cook stove
Type of fuel utilised by three stone cook stove (primary)	Description	Fuel wood	Fuel wood	Fuel wood
Thermal efficiency of three stone cook stove	%	10%	10%	10%
Quantity of fuel wood consumed per household per year (prior to programme intervention)	Kgs/year	3,938	3,938	3,938
Type of cook stove (secondary) used post programme intervention	Description	Envirofit M5000	Envirofit M5000	Envirofit M5000
Primary fuel used by Envirofit M5000 (secondary)	Description	Fuel wood	Fuel wood	Fuel wood
Market price of Envirofit M5000 cook stove	US\$	\$30.00	\$30.00	\$30.00
Thermal efficiency of Envirofit M5000	%	29.7%	29.7%	29.7%
Percent improvement in average fuel consumption by switching to Envirofit M5000 versus traditional three stone cook stove	%	50%	50%	50%
Unit cost of fuel wood	US\$/Kg	\$0.02	\$0.02	\$0.02
Percentage improvement in CO emitted per kg of fuel wood for Envirofit M5000 versus three stone cook stove	%	70.9%	70.9%	70.9%
Percentage improvement in Particle Matter (PM) emitted per kg of fuel wood for Envirofit M5000 versus three stone cook stove	%	44.7%	44.7%	44.7%
CO ₂ emitted per cook stove per year for three stone cook stove	Tonnes CO ₂ /year	7.8	7.8	7.8
CO ₂ emitted per cook stove per year for Envirofit M5000	Tonnes CO ₂ /year	3.05	3.05	3.05
Estimated social cost of carbon (current estimates based on Trucost)	US\$/tCO ₂	\$121.00	\$121.00	\$121.00
Vendor training-				
Total number of vendors trained	Number	152	31	196
Percentage to local vendors employed post-training	%	100%	100%	100%
Average number of cook stoves sold per vendor in financial year	Number	33	136	26
Average income per cook stove sold (over period of two years) for vendor	US\$/cook stove	\$2.00	\$2.00	\$2.00
Average monthly income per vendor post-training in financial year	US\$/vendor	\$66.00	\$272.58	\$51.17
Cost of the programme				
Total cost of programme design & management in financial year	US\$	\$65,989	\$37,092	\$69,200
Total cost of programme implementation in financial year	US\$	\$60,000	\$60,000	\$60,000
Total fixed costs associated with programme in financial year	US\$	\$125,989	\$97,092	\$129,200
Percentage of total fixed costs borne by Soneva in financial year	%	100%	100%	100%
Total cost of purchasing Envirofit M5000 cook stoves in financial year	US\$	\$176,760	\$69,495	\$188,348
Total cost of distributing Envirofit M5000 cook stoves in financial year	US\$	\$5,939	\$2,985	\$6,069
Total variable costs associated with programme in financial year	US\$	\$182,699	\$72,480	\$194,417
Percentage of total variable costs borne by Soneva in financial year	%	100%	100%	100%

Table 2: Myanmar Stoves Campaign assumptions

Description	Unit	FY
Health expenditure		
Percentage of COPD afflicted population seeking healthcare	%	100%
Vendor training		
Average increase in annual income post-training	%	5%
Discount rate for NPV of future incomes	%	0%
Inflation rate	%	5%
Average quit rate (i.e., rate at which trained vendors quit occupation)		
Years 1-5	%	10%
Years 6-10	%	25%
Years 11+	%	20%
Notes:		
<ul style="list-style-type: none"> • Women are primarily vulnerable to respiratory diseases caused by indoor air pollution. • The most harmful constituents of indoor air pollution are particle matter (PM) and carbon monoxide (CO). The average reduction of both these pollutants (CO & PM) has been used as a proxy for reduction in the health cost of target population. 		

Table 3: Soneva Ocean Stewards data indicators

Indicator	Unit	2015	2016	2017
Target population				
Location	Baa Atoll, Maldives			
Target population	Children			
Total population of the region	Number	13,856	13,856	13,856
Swimming lessons				
Total number of children covered under programme	Number	62	63	90
Total number of adults covered under programme	Number	8	30	0
Annual frequency of conducting programme	Number	1	1	1
Average number of classes conducted under single programme schedule	Number	12	3	16
Average cost per beneficiary for participating in alternative programme providing same benefits (i.e. fees paid for similar swimming lessons to private instructors)	US\$	\$40	\$40	\$40

Table 3: Soneva Ocean Stewards data indicators

Indicator	Unit	2015	2016	2017
Employment				
Total number of adults trained under programme	Number	8	20	0
Total number of adults employed as swimming instructors post-training	Number	0	0	0
Skill development-employment ratio	%	0%	0%	0%
Average annual income of women employed as swimming instructors in financial year	US\$	\$7,000	\$7,000	\$7,000
Costs of the programme				
Total number of personnel employed under programme in financial year	Number	10	4	1
Total work hours per programme for employed personnel in financial year	Number	28.50	21.25	18.00
Average CTC per personnel in financial year	US\$ / personnel	\$698	\$698	\$698
Total average CTC of personnel for programme in financial year	US\$	\$6,984	\$2,794	\$698
Percentage of total fixed costs borne by Soneva in financial year	%	100%	100%	100%
Total fixed costs borne by Soneva in financial year	US\$	\$2,794	\$2,794	\$2,794
Total cost of travel incurred by programme in financial year	US\$	\$1,057	\$144	\$472
Other variable costs (material, literature, etc.)	US\$	\$1,523	\$0	\$233
Other personnel costs (hosts apart from trainers) in financial year	US\$	\$7,612	\$5,141	\$0
Total variable costs associated with programme in financial year	US\$	\$10,192	\$5,285	\$705
Percentage of total variable costs borne by Soneva in financial year	%	100%	100%	100%
Opportunity costs associated with the programme				
Total number of volunteers associated with the programme	Number	11	14	18
Average hourly wage rate in region in financial year	US\$	\$5.73	\$5.73	\$5.73
Total number of hours under programme in financial year	Hours	20	85	150
Average opportunity cost of volunteering (based on forgone incomes) per volunteer for programme in financial year	US\$/person	\$114.60	\$487.05	\$859.50
Total opportunity cost of volunteering (based on forgone incomes) for programme in financial year	US\$	\$1,260.60	\$6,818.70	\$15,471.00

Table 4: Soneva Ocean Stewards assumptions

Description	Unit	FY
Swimming Classes		
Opportunity costs (estimated hourly wages) per volunteer	US\$	\$5.73
Swim Instructors		
Average quit rate (i.e. rate at which swimming instructors quit occupation)		
Years 1-2	%	0%
Years 3-4	%	0%
Years 5+	%	0%
Estimated lifespan for income generation	Years	10
Average increase in annual income post-training	%	8%
Discount rate for NPV of future incomes	%	4%
Inflation rate	%	8%

Table 5: Soneva Eco Camp data indicators

Indicator	Unit	2015	2016	2017
Target population				
Location	Baa Atoll, Maldives			
Target population type	Children			
Total population of region	Number	13,856	13,856	13,856
Eco Camp programme				
Total number of children covered under programme	Number	84	150	262
Total number of schools in the region	Number	12	12	12
Number of schools covered under the programme in financial year	Number	4	2	7
Number of Soneva Eco Camps conducted annually	Number	5	3	9
Average number of students participating in each Eco Camp	Number	17	50	29

Table 5: Soneva Eco Camp data indicators

Indicator	Unit	2015	2016	2017
Cost of the programme				
Total number of personnel employed under programme in financial year	Number	1	1	1
Total work hours per programme for employed personnel in financial year	Number	60	126	163
Total CTC per personnel in financial year	US\$	\$685	\$1,314	\$3,200
Total fixed costs borne by Soneva in financial year	US\$	\$685	\$1,314	\$3,200
Total cost of programme design and management in financial year	US\$	\$0	\$0	\$0
Total cost of travel incurred by programme in financial year	US\$	\$389	\$548	\$792
Other variable costs (material, literature, etc.)	US\$	\$0	\$0	\$0
Total variable costs associated with programme in financial year	US\$	\$389	\$548	\$792
Opportunity costs associated with the programme				
Total number of volunteers associated with the programme	Number	20	40	20
Average hourly wage rate in region in financial year	US\$	\$5.73	\$5.73	\$5.73
Total number of hours under programme in financial year	Hours	3	32	45
Average opportunity cost of volunteering (based on forgone incomes) per volunteer for programme in financial year	US\$/person	\$17.19	\$183.36	\$257.85
Total opportunity cost of volunteering (based on forgone incomes) for programme in financial year	US\$	\$343.80	\$7,334.40	\$5,157.00

Economic Capital

Economic Capital uses the financial figures from Soneva's fiscal year and summarises three categories:

- Payroll
- Operational Expenditure
- Investments

Tax

Tax impact uses the financial figures from Soneva's fiscal year and summarises three categories:

- Property Tax
- People Tax
- Production Tax

Carbon Footprint Methodology

Carbon Survey

The management of our carbon footprint is a key component of our commitment. To identify where to invest in carbon reduction, Soneva conducts an annual *Carbon Survey*.

Each of our resorts has a designated sustainability officer who collects and reports performance data on all resort activities and equipment that emit greenhouse gases. In addition to monitoring our own emissions, we also collect data on emissions from activities that occur outside the resort property but which can be directly attributed to the activities of the resort – this includes emissions from the freight transport of goods and the air travel of our hosts and guests.

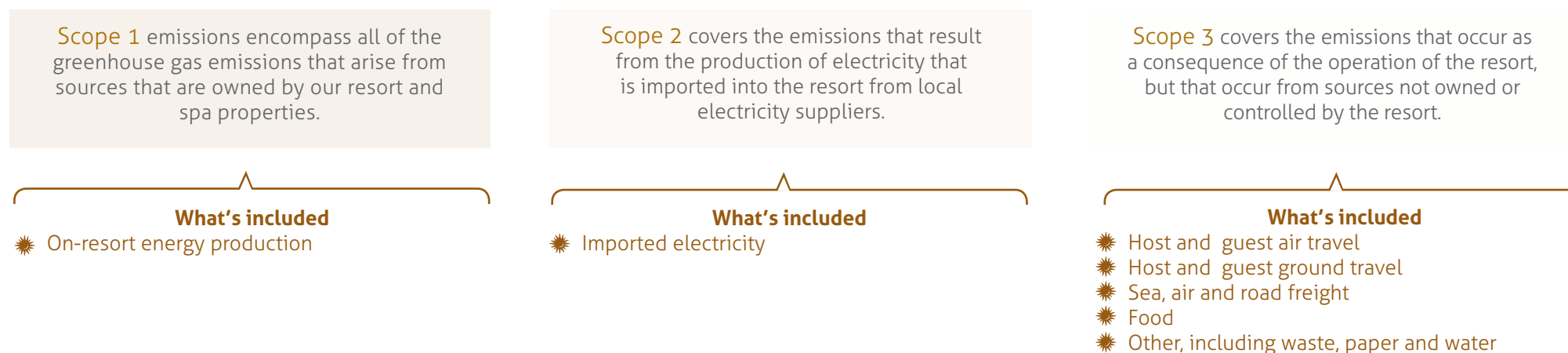
Scope

For our annual carbon survey we collect and report emissions data on activities in eight categories that collectively capture all the CO₂ emissions associated with Soneva resorts. These categories are: energy, air travel, ground travel, freight, food, paper, waste and water.

In order to meet international conventions on emissions reporting we further group these emissions into three baskets or 'scopes'. Each scope reflects how the emissions relate to the activities of the resort. Figure 1 provides a key for identifying how each category of emissions is grouped by scope.

Throughout this document we report emissions by both scope and the activity category responsible for the emissions.

Figure 1: The scope of our carbon footprint analysis



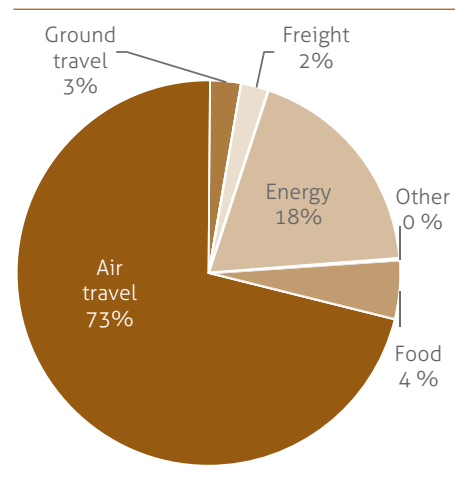
Carbon Footprint

Soneva had a total carbon footprint for 2017 of 57,719 tonnes CO₂. This represented a decrease of 1% on the 2009 baseline figure of 58,044 tonnes CO₂.

Guest and host air travel emissions represent the vast majority of Soneva emissions with 73% of the total, while energy emissions are the second largest contributor to the overall footprint with 18% of measured emissions. Remaining emissions account for 9% of the total carbon footprint seen in Figure 2.

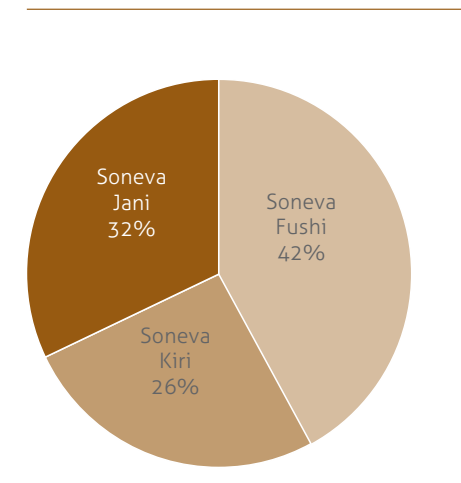
The distribution of the total emissions is 61% for Soneva Fushi and 39% for Soneva Kiri as seen in Figure 3.

Figure 2: Soneva emissions by source



Source: Soneva Carbon Calculator

Figure 3: Soneva emissions by resort



Source: Soneva Carbon Calculator

Table 1: Breakdown of 2017 emissions

Tonnes of CO ₂ unless otherwise stated	Scope 1	Scope 2	Scope 3							Totals		Per-resident-night		
			Air Travel	Ground Travel	Freight	Food	Waste	Paper	Water	Total emissions Scope 1&2	Total emissions Scope 1-3	Per-resident-night Scope 1&2 in kg	Per-resident-night Scope 1-3 in kg	Per-resident-night excl. air travel in kg
Soneva Fushi	3,918	0	17,324	1,010	720	1,135	-85	9	0	3,918	20,114	20	125	35
Soneva Jani	3,349	0	13,919	529	363	646	-35	19	0	3,349	15,441	35	194	50
Soneva Kiri	2,530	530	10,762	190	198	693	-11	6	0	3,060	11,837	29	140	39
Soneva	9,797	530	42,005	1,729	1,281	2,474	-131	34	0	10,327	47,392	26	146	40

Source: Soneva Carbon Calculator

Per-resident-night comparisons

Another useful approach for comparing the carbon footprints of each property is to interpret the emissions through a measure of 'per-unit' emissions such as per-guest-night or per-guest-stay. We use *per-resident-night*. This is defined as:

$$\frac{\text{Total carbon footprint}}{\text{Total guest nights} + \text{Total host nights}}$$

The reason for favouring a per-resident-night measure is that it is relatively effective at neutralizing the impact of changing occupancy or host levels on the overall emissions data. A per-resident-night approach also has an advantage over a per-guest-night perspective in that it neutralizes the impact of different resourcing policies and hosts residing on or off resort.

Table 1 provides a breakdown of emissions by source for each of the Soneva resorts. The columns on the right of the table illustrate the emissions per-resident-night for each property.

Soneva had a footprint of 146 kgs CO₂ per-resident-night in 2017. Excluding air travel the carbon footprint per-resident-night was 40 kgs CO₂.

Emissions reductions

Soneva reduced its total carbon footprint by 1% against the baseline emissions of 2009.

The majority of these emissions increments were through lower air travel emissions, largely reflecting an increase in average length of stay at each properties.

Adjusting for the contribution of air travel emissions, the overall performance of Soneva was up 14%. On a per-resident-night basis (excluding air travel) emissions were down 1% compared to 2009, which indicates increased efficiency. Considering only energy, Soneva emissions increased by 7% overall and 1% on a per-resident-night basis. This largely reflects the bigger villas constructed at Soneva Fushi and Soneva Jani.

Table 2: Change in emissions relative to 2009 base-year

% change relative to 2009	Scope 1	Scope 2	Scope 3							Totals		Per-resident-night		
			Air Travel	Ground Travel	Freight	Food	Waste	Paper	Water	Total emissions Scope 1&2	Total emissions Scope 1-3	Per-resident-night Scope 1&2	Per-resident-night Scope 1-3	Per-resident-night excl. air travel
Soneva Fushi	+17%	±0%	+5%	+51%	+4%	+13%	-707%	-18%	±0%	+17%	+8%	+8%	-1%	+8%
Soneva Jani	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%	±0%
Soneva Kiri	-13%	100%	-16%	-40%	+4%	-13%	-500%	-15%	±0%	+5%	-12%	-4%	-20%	-10%
Soneva	+7%	100%	-3%	+14%	+3%	+1%	-495%	-8%	±0%	+7%	-1%	+1%	-7%	-1%

Source: Soneva Carbon Calculator

Breakdown of 2017 emissions

Table 3: Breakdown of 2017 emissions

Scope	Source	Quantity	Unit	CO ₂ (kg/yr)	Percentage of total resort emissions
Scope 1 (Direct emissions)	Energy consumption				
	Charcoal	34,758	kg	80,534	0.14%
	Methanol	78,952	L	101,059	0.18%
	Kerosene	1,101	L	2,786	0.00%
	Diesel for power consumption	3,385,756	L	9,073,826	15.72%
	Liquified petroleum gas	177,682	kg	538,378	0.93%
Scope 2	Imported electricity from local electricity supplier	56,480	kWh	530,429	0.92%
Scope 3 (Indirect emissions)	Air travel				
	Long Haul International (>5,000km)	163,201,769	km	34,295,220	59.42%
	Medium Haul International (1,000-5,000km)	27,732,387	km	5,179,578	8.97%
	Short Haul International (<1,000km)	340,199	km	113,310	0.20%
	Jet Fuel (Seaplane)	955,286	L	2,416,874	4.19%
	Ground travel				
	Motorcycle/scooter	90,000	km	6,570	0.01%
	Diesel for transport	226,288	L	606,453	1.05%
	Gasoline for transport	481,993	L	1,115,813	1.93%
	Food				
Non-vegetarian meals	1,141,671	Meals	1,997,925	3.46%	
Vegetarian meals	380,557	Meals	475,696	0.82%	

Scope	Source	Quantity	Unit	CO ₂ (kg/yr)	Percent of total resort emissions
Scope 3 (Indirect emissions)	Freight				
	Air – Long Haul (>5,000km)	417,994	Tonnes km	148,154	0.26%
	Air – Medium Haul (1,000-5,000km)	653,948	Tonnes km	863,212	1.50%
	Air – Short Haul (<1,000km)	80,083	Tonnes km	250,796	0.43%
	Road	70,995	Tonnes km	8,732	0.02%
	Ship	751,593	Tonnes km	9,771	0.02%
	Paper				
	Office paper (0% recycled content)	4,698	kg	13,362	0.02%
	Office paper (100% recycled content)	8,125	kg	14,544	0.03%
	Toilet paper / tissue paper / serviettes	6,496	kg	6,496	0.01%
	Waste				
	Landfill – mixed solid waste	84,400	kg	10,128	0.02%
	Organics dumped at sea	30,664	kg	1,840	0.00%
	Biochar produced	28,174	kg	-14,087	-0.02%
	Recycled food scraps (organic)	312,589	kg	-37,511	-0.06%
	Recycled garden waste	267,298	kg	2,673	0.00%
	Recycled glass	50,395	kg	-4,536	-0.01%
	Recycled metal	15,045	kg	-21,665	-0.04%
	Recycled plastic	9,880	kg	-4,150	-0.01%
	Recycled paper	59,797	kg	-63,385	-0.11%
	Water				
	Rainwater collected	142,834	m ³	0	0.00 %
Deep well	46,464	m ³	0	0.00 %	
On-site desalination	54,052	m ³	0	0.00 %	
Total emissions for 2017				57,718,825	100%

Our methodology

The Soneva Carbon Footprint Report is modelled on the World Resources Institute / World Business Council for Sustainable Development (WRI/WBCSD) *Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard, Revised Edition*.

The Soneva Carbon Calculator collects and analyses emissions data from Soneva resort and spa properties and this information is then reported in an annual Carbon Inventory Report for each property.

Our operational boundaries

Soneva's operational inventory follows the 'control' approach and includes carbon emissions from sources over which it has operational control.

The GHG Protocol identifies three Scope categories for common classification and comparison of resort emissions:

- Scope 1: Direct Carbon Emissions from sources that are owned by resort/spa
- Scope 2: Indirect Carbon Emissions from the generation of purchased electricity
- Scope 3: Indirect Carbon Emissions that occur as a consequence of the activities of the resort/spa, but occur from sources not owned or controlled by the resort/spa

According to the Greenhouse Gas Protocol, Scopes 1 and 2 must be included in any carbon footprint assessment. The inclusion of Scope 3 emissions is optional and Soneva has opted to include it in our Carbon Footprint analysis. Carbon dioxide (CO₂) is the primary greenhouse gas that is included in this inventory. Other gases, such as CH₄ and N₂O are more minor contribution sources based on Soneva's activities and are included as part of the CO₂ results.

Inclusions and exclusions

- Emission sources are identified with reference to the methodology described in the GHG Protocol and the ISO 14064-1 (2006) standard.
- Soneva accounts for all of its direct and indirect emissions and no emissions have been intentionally omitted from this report.

Good practice

A number of good practice guidance documents are used in the calculations of the Soneva Carbon Footprint Report. These include:

- Greenhouse Gas Protocol Corporate Standard
- Guidelines to DEFRA's GHG Conversion Factors: Methodology Paper for Transport Emission Factors (2008)
- Environmental Defense Paper Calculator

- US-EPA Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks
- US-EPA – Direct Emissions from Mobile Combustion Sources

Note that for ease of general interpretation we have adopted a convention of ignoring the equivalence "e" in our presentation of emissions and merely refer to CO₂ emissions.

Base year selection

In order to set a reduction target and to measure performance against that target, Soneva has set a base year which acts as a reference year against which to assess its progress reductions targets in the future years.

The base year has been established as the period July 2008 – June 2009. This period is in line with Soneva's financial year.

Data collection and quantification methodologies

Emissions factors

Each emissions source has an associated emissions factor which indicates the average emissions from the source relative to the intensity of that activity.

These emissions factors are used to derive estimates of greenhouse gas emissions based on the amount of fuel combusted on industrial production levels, distances travelled or similar activity data.

Emission factors assume a linear relation between the intensity of the activity and the emissions resulting from this activity.

Table 4 on page 109 details the sources of the relevant data and the emissions factors which have been used. The volume of CO₂ emissions has been calculated by multiplying the activity data from the resort by the relevant emissions factor.

Other assumptions

The following assumptions were made in calculating resort emissions:

- Flights: Precise routing is not known and estimated based on guest's country of residence. As a result, those flights are categorised as either short (<1,000 km), medium (1,001-5,000 km), or long (5,000 km+) haul. Distances are then estimated based on Soneva Flight Distance Calculator.
- Seaplane: Average occupancy assumed to be 15 passengers per flight (maximum capacity 16), in calculation of total flights from total passengers flown.
- Soneva Kiri plane: Emissions are calculated based on Jet A fuel consumption.

- Petrol: Assumed to be used exclusively for vehicles and so is classified as ground travel combustion, Scope 3. This includes company owned boats, which could have been put in Scope 1.
- Charcoal: Considered Residential/Commercial Coal with an emissions factor of 2.317 kg CO₂ / kg.
- Canned heat: Considered as methanol with an emissions factor of 1.28 kg CO₂ /L.
- Water desalination and pumping: Energy use is already included in energy figures so desalination and water pumping does not have a specific carbon impact.
- Laundry: All laundry energy and water is already included in energy and water figures.
- Freight: At present freight is measured from source port to resort, but no account has been taken of the transport of the product from its place of origin. Work to improve the measurement and reporting of emissions from freight is ongoing.

- Paper: Recycled paper is considered to be made of 100% recycled content. Non-recycled paper is considered to contain 0% recycled fibres.
- Food: Meals are estimated to be 25% vegetarian and 75% non-vegetarian. Each meal is estimated as an average composite meal with its carbon impact estimated using the low carbon diet calculator (<http://www.eatlowcarbon.org/Carbon-Calculator.html>).
- The emissions from the properties' Six Senses Spas are included in the Carbon Footprint Inventory.

Quality Assurance

The data provided by Soneva Fushi, Soneva Jani and Soneva Kiri presented in this report was obtained under the supervision of Soneva Social & Environment Conscience and is assumed to be accurate and complete.

In many instances accurate measures of emissions are not possible, and estimates have had to be made. Soneva continues to strive towards improving the accuracy of its measurement and reporting.



Table 4: Emissions factors used in estimating carbon footprint

Emission Source	Units	Emissions Factor	Factor Source
Energy			
Coal – residential/commercial (charcoal)	kg	2.317	California Climate Action Registry – General Reporting Protocol – v3. 1 Jan 2009
Methanol (canned heat)	L	1.28	EPA – Direct Emissions from Mobile Combustion Sources
Kerosene	L	2.53	EPA – Direct Emissions from Mobile Combustion Sources
Diesel	L	2.68	EPA – Direct Emissions from Mobile Combustion Sources
Liquefied petroleum gas (LPG)	kg	3.03	EPA – Direct Emissions from Mobile Combustion Sources
Imported electricity from Thailand electricity grid	kWh	0.583	US Department of Energy – Energy Information Administration
Air travel			
Long haul (>5,000km)	Tonnes km	0.1106 (0.211 with RFI of 1.9)*	DEFRA 2008. RFI DEFRA 2008
Medium haul (1,000-5,000km)	Tonnes km	0.0983 (0.187 with RFI of 1.9)*	DEFRA 2008. RFI DEFRA 2008
Short haul (<1,000km)	Tonnes km	0.1753 (0.331 with RFI of 1.9)*	DEFRA 2008. RFI DEFRA 2008
Jet fuel (own plane)	L	2.53	EPA – Direct Emissions from Mobile Combustion Sources
Ground Travel			
Motorbike – small (moped/scooter - approx 120 c.c.)	Km	0.073	carboncounted.com values
Diesel for transport	L	2.68	EPA – Direct Emissions from Mobile Combustion Sources
Petrol for transport	L	2.315	EPA – Direct Emissions from Mobile Combustion Sources
Freight			
Air – long haul (>5,000km)	Tonnes km	0.60	carboncounted.com values
Air – medium haul (1,000-5,000km)	Tonnes km	1.32	carboncounted.com values
Air – short haul (<1,000km)	Tonnes km	1.85	carboncounted.com values
Ship	Tonnes km	0.013	carboncounted.com values
Road: truck	Tonnes km	0.123	carboncounted.com values

* The Soneva Carbon Calculator includes a Radiative Forcing Indicator (RFI) to reflect the added global warming effect of greenhouse gases when emitted in the stratosphere.

Table 4: Emissions factors used in estimating carbon footprint

Emission Source	Units	Emissions Factor	Factor Source
Food			
Non-vegetarian meals	each	0.00175	Estimate based on low carbon diet calculator
Vegetarian meals	each	0.00125	Estimate based on low carbon diet calculator
Paper			
Office paper (0 % recycled content)	kg	2.844	Environmental Defence Fund Paper Calculator: papercalculator.org
Office paper (100 % recycled content)	kg	1.79	Environmental Defence Fund Paper Calculator: papercalculator.org
Toilet paper / tissue paper / serviettes	kg	1	Wuppertal Institute's MIPS data tables.
Waste			
Landfill – mixed solid waste	kg	0.12	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-6
Organics dumped at sea	kg	0.06	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Biochar produced	kg	-0.6**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled food scraps (organic)	kg	-0.12**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled garden waste	kg	0.01	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled glass	kg	-0.09**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled metal	kg	-1.44**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled paper	kg	-1.06**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Recycled plastic	kg	-0.42**	EPA Solid Waste Management and Greenhouse – Sept 2006, Exhibit 8-8
Water			
Rainwater collected	m ³	0	carboncounted.com values
Deep well	m ³	0	carboncounted.com values
On-site desalination	m ³	0	carboncounted.com values

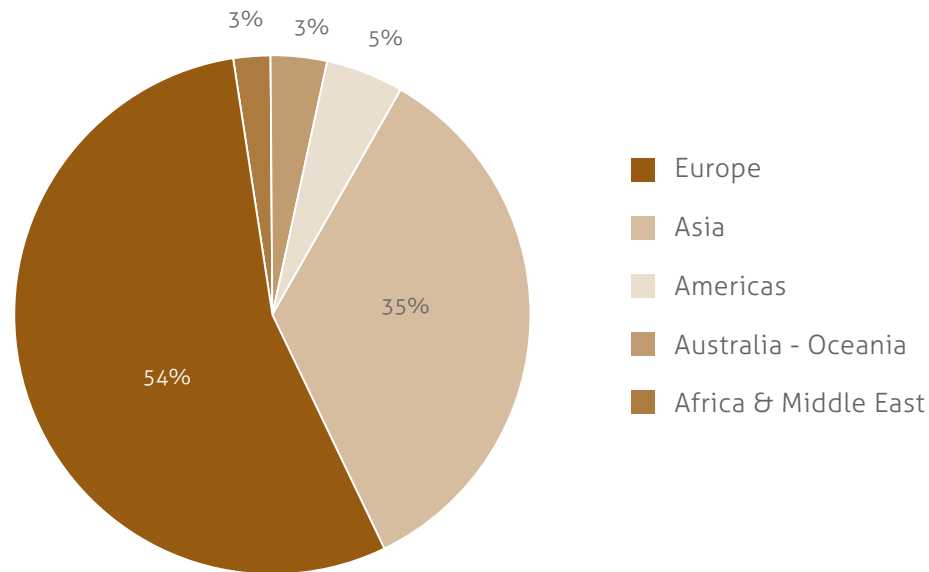
** Under the sign convention used in this report, the negative value indicates that emissions are improved as it represent the incremental change in GHG emissions involved in recycling or composting compared to landfill.

Market

The majority of our guests are from Europe (54%) followed by Asia (35%), Americas (5%), Australia-Oceania (3%) and Africa & Middle East (3%). This makes our resorts long haul destinations for most of these guests and it means that the environmental impact of our resorts begins before our guests arrive on our islands and continues after they leave.

Our resorts had 25,438 room nights in 2017. We employ 893 hosts. Our total revenue in 2017 was US\$ 39.8 million*.

* Revenue refers to Soneva Holdings Pte Limited





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