



People  
Planet  
Purpose



# SUSTAINABILITY IMPACT REPORT

2020-2021



北京顺义国际学校  
INTERNATIONAL SCHOOL OF BEIJING

# 2020-2021 SUSTAINABILITY IMPACT REPORT



The International School of Beijing (ISB) is evolving into a healthier, more sustainable place of learning. The objective of this Sustainability Impact Report is to share with our students, staff, parents, and the greater international school community the progress we are making towards our [Sustainability Roadmap 2025](#) commitments.

2020 and 2021 presented new challenges for our school and community during the developing Covid-19 pandemic. With our school community navigating the difficulties of online learning, and with students and staff unable to return to China, it would have been easy to temporarily set aside our ambition for a more sustainable ISB. However, as we teach in our classrooms, whether physical or virtual, global issues such as climate change are not going to take a year off. We believe taking purposeful action to positively impact people and the planet is critical, potentially even more so during these difficult times.

Sustainability comes alive when we empower our students and staff to challenge what is possible. 2020 and 2021 demonstrated the wealth of ideas and passion that lives within our community exemplified by the installation of our living green wall, conversion to battery electric vehicles, a continuing commitment for our campus to be powered by renewable energies, and reduction of our greenhouse gas emissions by over 80 percent.

Impactful Sharing is one branch on our symbolic sustainability tree. With this report, we invite you to join the conversation and hope you enjoy reading about our progress, but more importantly find at least one idea to take back to your school or organization to support the amplification of positive impact.

Special thanks to Matthew Yamatin, our former Sustainability Manager, whose passion and contributions made the difference for ISB to become a leading school in sustainability practices.

**About this report:** This Sustainability Impact Report covers events and activities that occurred during the 2020 and 2021 calendar years. At times, we may preview items that occurred in early 2022. For data presented in this report, the scope includes operations over which we have operational control (e.g., our campus and bus service). Climate data was determined in alignment with the GHG Protocol Corporate Accounting and Reporting Standard methodology.

# CO-CURRICULAR

## LEARNING + SHARING

### Goal

Develop and introduce service learning and sustainability guidelines for whole school co-curricular program with the intent of establishing holistic impact thinking and action by 2020.

### Commitment to

Foster a new generation of environmental leaders by providing mentoring, networking, and EXPERIENTIAL LEARNING OPPORTUNITIES THAT PREPARE STUDENTS WITH THE INSIGHT AND FORESIGHT TO SAFEGUARD OUR ENVIRONMENT IN THE YEARS AND DECADES TO COME.

### Commitment to

Support student entrepreneurship by facilitating sustainability-minded opportunities on campus.

Despite the unique challenges of 2020 and 2021, ISB continued to embed service learning and sustainability into the co-curricular program.

- Two leadership training sessions were provided to High School students focused on conducting high-impact fundraising and community events.
- Service groups successfully restarted activities in late 2020 and adapted to the new environment. For some groups, this meant serving their beneficiaries virtually and for others identifying new beneficiaries within Beijing.
- ISB established the Student Empowerment Fund to provide grants and loans to student groups and projects. The Fund is geared towards service learning, sustainability, and creative learning-focused projects in support of ISB's Vision: Empowered with Purpose and Compassion. Since 2020, five grant and loan requests have been approved totaling 36,500 RMB.

Students and staff continue to set high expectations together around sustainability on campus. Highlights from their work include:

- Sustainable Fashion Runway Project. In this experiential learning opportunity, 15 students designed a fashion line while learning and investigating the ethical and environmental issues of fast fashion. The organization [KERU](#) ran this activity and provided all the materials needed.
- More than 10 students collaborated with ISB leadership over a two-year period to turn the idea of a living green wall into reality.
- The Net Impact ISB club developed High School mentoring lessons to build awareness of sustainable action on campus, which included a video collaboration with the Filmism club.
- The High School Student Council started working with our catering vendor to better understand and develop strategies around reducing food waste.
- Net Impact ISB, Student Council, and Greenkeepers collaborated to launch an environmental awareness week to parallel the global COP26 event.

ISB continues to build partnerships with external organizations. KERU, a non-profit organization focusing on training the next generation of young leaders to tackle issues of sustainability, provided expert guidance on the Sustainable Fashion Runway Project and we have several partners and entrepreneurs lined up to speak to students as we look to 2022.



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Sustainable Fashion ELO;  
Net Impact ISB team

# GOVERNANCE

## LEARNING + SHARING

### Goal

Establish Sustainability Guiding Statements and develop a Sustainability Action Plan to support achievement of the Sustainability Roadmap 2025 by 2019.

### Goal

Develop and integrate a Social Cost of Carbon and Water into purchasing processes by 2025.

### Commitment to

Facilitate strong governance structures to ensure integration of sustainability into all operational practices and participation of the ISB community.

### Commitment to

Create, maintain, and continuously improve programs that drive progress towards this Sustainability Roadmap.



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As a demonstration of the strength of our governance structure, we successfully completed our first transition of the dedicated sustainability manager position at the end of 2021. Paola Alonso Trejo has succeeded Matthew Yamatin to coordinate with school leadership, students, and staff to create, maintain, and continuously improve programs to drive positive impact.



Paola, Matthew, and Net Impact students

# IMPACTFUL SHARING

## LEARNING + SHARING

### Commitment to

Transparent and open sharing of ISB's progress to this Roadmap via ISB's public website on an annual basis starting in 2019.

### Commitment to

Communicate ISB's 'People, Planet, Purpose' sustainability story to educate, engage, and motivate the ISB community.

### Commitment to

Recognize individuals providing significant contributions to ISB's sustainability accomplishments.

### Commitment to

Cultivate external partnerships within the wider community that help inform ISB's efforts and amplify our local and global impact.

We published our first [Sustainability Impact Report](#) in January 2021 covering the 2019 calendar year. We've received universally positive reactions to the report and inquiries from other schools on how they can start reporting themselves or one of the projects we shared.

During 2020 and 2021, six articles were published presenting our 'People, Planet, Purpose' story. These articles discuss our student-centered learning approach with the living green wall and plant-based foods among other topics. Externally, our program was highlighted by JingKids ([here](#) and [here](#)), and Timeout Beijing as an example of how to successfully incorporate sustainability on campus.

We continue to recognize staff members through the Darren Smyth Sustainability Change Agent award. Between 2020 and 2021, the efforts of 24 staff were highlighted. Their actions included reducing energy consumption, evaluating the vendors and products we purchase from a sustainability perspective (e.g., clothing, chocolate, coffee, gifts), eliminating single-use wear, holding clothing swaps, and building the business capacity of local companies.

To further amplify our impact, ISB presented the 'Value of Sustainable Schools' at the ACAMIS Conference in 2021. The slides of this presentation are available [here](#).



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[2019 Sustainability Impact Report](#)

# FOOD PEOPLE

## Standard

Develop Sustainable + Healthful Food Standard (w/consideration towards nutrition, labeling, sourcing, and impact) by 2020.

## Commitment to

Educate and empower the ISB community to make sustainable food choices and form healthy eating habits.

## Commitment to

Promote drinking water on campus to support healthy choices and hydration.

ISB has coordinated with our food service vendor, Sodexo, to complete the initial phase of development of the Sustainable + Healthy Food Standard. The Standard is driven by science and utilizes national-level guidance from Canada for setting expectations around nutrition, food education, and climate impact. In early 2022, staff, student, and parent engagement workshops will be conducted to obtain feedback prior to implementation of the Standard next school year.

In collaboration with Sodexo, ISB has already implemented several improvements to our food service. Nutritional labeling was added to the digital menus for dishes served in the Middle/High School Cafeteria. Plastic packaging was eliminated and replaced with plant-based alternatives. Drinks high in sugar such as sports drinks are no longer sold. Menu items have also been adjusted to reduce our climate impact by providing two plant-based dish options each day.

One of the most eagerly anticipated initiatives was the introduction of plant-based products on Earth Day in 2021. Siri C and Raima P, a pair of passionate students, built a climate change project centered on plant-based diets and were joined by other students as they continued to campaign for more plant-based options in the cafeteria. These students were ahead of their time, as research states that not only are plant-rich diets better for health but are also one of the most impactful solutions to prevent climate change. Read more about this initiative [here](#).

Siri and Raima, who graduated from ISB in 2021, said, "It's amazing to see that we, as students, were able to make a difference in our school with our [Grade 10] science project; we saw the need for change and ISB listened. The integration of more vegetarian and vegan options into the ISB cafeteria is not just a win for people with plant-based diets but offers the opportunity for more students to be involved in creating a more sustainable future through their meal choice."



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Plant-based event

# Waste PEOPLE

## Target

Reduce waste per student by 60 percent by 2025 from a 2017 baseline, where waste is defined as 'no longer wanted materials leaving the campus not managed by one of the 5Rs'.

## Commitment to

Improve awareness and education of the ISB community on the 5Rs (refuse, reduce, reuse, recycling, rot) and the impacts of the waste we generate.

## Commitment to

Long-term ambition to become a zero-waste school.

We estimate that our waste generation in 2020 and 2021 was lower than 2019 because of campus closures related to Covid-19. These closures also resulted in a delay to some of our planned activities until 2022, including the next whole-school waste audit and composting launch.

In 2018, ISB students conducted a food waste audit (read more about the audit [here](#)). A recommendation from that audit was to more frequently monitor food waste. In 2021, Sodexo implemented its Food Waste program to measure food waste daily. Early findings indicate food served but not eaten by students is a major source. Sodexo is collaborating with the High School Student Council to develop ideas to reduce this source of food waste.



BEGINNING	APPROACHING	MEETING	MASTERING
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Grade 2 Reduce Reuse Recycling

# WATER

## PEOPLE

**Target**

Reduce water withdrawal by 25 percent by 2025 from a 2018 baseline.

**Commitment to**

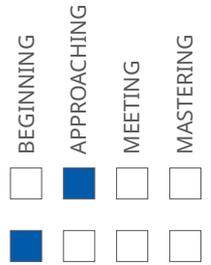
Minimizing additional stress on the Beijing water system from new water needs through focus on reuse and efficiency.

ISB consumed 62,245 and 66,738 cubic meters of water across the campus in 2020 and 2021. This reflects a 26-percent and 21-percent reduction compared to our 2018 baseline. We anticipate most of the reduction during this period was a result of the campus closures related to Covid-19.

In 2021, we conducted a campus water audit to understand how and where we are using water. From this audit, we have identified a few key areas of opportunity to improve, including:

- Establish guidelines on when, how frequently, and how long to water our vegetation.
- Evaluate areas of turf grass to determine if some can be replaced with less water intensive landscape.
- Optimization of heating and cooling to reduce cooling tower water use.

With this new understanding, ISB finalized its 2025 water reduction target at 25 percent compared to a 2018 baseline.



Cooling towers at ISB

# WELLNESS + SAFETY

## PEOPLE

**Commitment to**

Review staff and student injury rates with the intent of establishing a target by 2025.

**Commitment to**

Assessing compensation of all on-site workers with comparison to the Beijing-specific living wage.

**Commitment to**

Promote healthy lifestyles via existing wellness + safety programs and positive campus nudges.

**Commitment to**

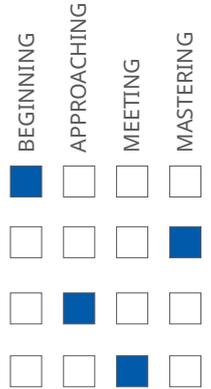
Assess and communicate results of community satisfaction with indoor environmental biannually.

To support the wellness of all workers on campus, ISB conducted a living wage assessment in 2021. The assessment evaluated gross pay and in-kind benefits against the Beijing-specific Living Wage as determined by the Fair Wage Network. Our process followed the spirit of the Living Wage Auditor Guidance as published by the Global Living Wage Coalition.

A Living Wage is defined by the Global Living Wage Coalition as “the remuneration received for a standard workweek by a worker in a particular place sufficient to afford a decent standard of living for the worker and her or his family. Elements of a decent standard of living include food, water, housing, education, health care, transportation, clothing, and other essential needs including provision for unexpected events.”

The assessment found that all direct ISB employees and most of our vendors’ workers who work on the ISB campus are paid a Living Wage. ISB is increasing its commitment towards the wellness of all workers on campus and has incorporated Living Wage requirements in all new vendor contracts starting in 2022, which will make ISB a Living Wage community.

Our student and staff wellness councils continued to support healthy lifestyles with activities and events such as skiing and hiking trips.



Staff enjoying the White River ice hiking trip

# EMISSIONS

## PLANET

### Target

100 percent of electricity from renewable sources starting in 2020

### Target

Reduce Scope 1 and 2 greenhouse gas emissions by 80 percent by 2025 from a 2018 baseline.

### Target

Achieve net-zero greenhouse gas emissions by 2050. As part of this target ISB commits to reducing Scope 1+2+3 emissions by 90 percent by 2050 from a 2018 baseline.

### Commitment to

Reducing greenhouse gas emissions to align with the most ambitious aim of the Paris Agreement, to limit global temperature rise to 1.5C above pre-industrial levels, meaning to reach net-zero emissions by no later than 2050.

ISB reduced its Scope 1+2 emissions by a staggering 81 percent in 2020 and 79 percent in 2021 compared to its 2018 baseline. This places ISB well beyond the level required to meet the highest ambition of the Paris Agreement, limiting global temperature rise to 1.5°C.

These reductions were predominately from ISB's switch to renewable wind power at the start of 2020. The campus closures related to Covid-19 also played a part in the reductions. ISB is committed to the continued use of 100 percent renewable power and has secured additional wind power through 2022. Read more about this achievement [here](#). We also published a case study for others looking to switch to renewable power in our [2019 Sustainability Impact Report](#).

Current climate science states that we all must reach net-zero emissions by 2050 to mitigate against the worst impacts of climate change. Matching what we teach in our classrooms, ISB is increasing its ambition and is establishing two new climate targets:

- Reduce Scope 1+2 greenhouse gas emissions by 80 percent by 2025 from a 2018 baseline.
- Achieve net-zero greenhouse gas emissions by 2050. As part of this target, ISB commits to reducing Scope 1+2+3 emissions by 90 percent by 2050 from a 2018 baseline.

Our complete emission data is provided in the Impact Data Table at the end of this Report.

# ENERGY

## PLANET

### Target

Achieve an ENERGY STAR\* building score of 50 by 2025 and 75 by 2030.

### Commitment to

Assess energy use by building and space type to inform ENERGY STAR goal setting by 2020.

### Commitment to

Engaging campus in energy conservation

### Commitment to

Conduct on-site renewable energy study to inform goal setting.

### Commitment to

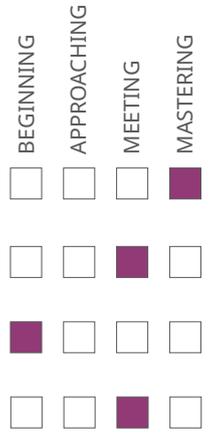
Assess feasibility, timeline and develop initial action steps for the transition into a fossil-free campus

ISB achieved an ENERGY STAR score of 33 in 2020 and 16 in 2021 (on a scale of 0 to 100, where 100 represents the best-performing buildings). The high score in 2020 is explained by taking into consideration the campus closures related to Covid-19 during that year. This unique situation provided key learnings on the potential to reduce energy usage across various systems. However, finishing with a score of 16 in 2021 reflects a significant improvement from the year 2019 when a score of 10 was achieved.

In 2021, we conducted a campus energy audit and from the findings we have focused on improvements to building operation before shifting to building or structural improvements. An indoor air policy was developed incorporating many of these improvements with consideration of the results of the prior indoor environmental satisfaction survey:

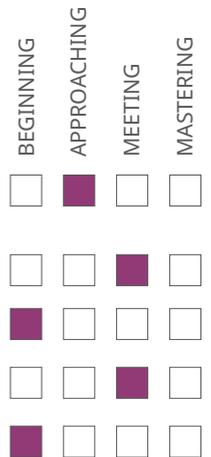
- Following on from the work completed by 2020 ISB graduates Hannah L and Anna N, we established night and weekend thermostat adjustments ("setbacks") to ensure efficiency in the heating and cooling systems.
- Optimized individual thermostat settings to prevent overheating and cooling.
- Adjusted overall building temperature to better match the season.
- Optimized lighting timers to reduce lighting of spaces when not used.
- Recommendation to install a real-time indoor air monitoring system.

ISB staff and students conducted a study of on-site renewable energy opportunities in 2021. Solar on the main building roof was identified as the option with the highest potential with respect to the financial and environmental impact. The Net Impact ISB and Greenkeepers clubs initiated a petition to demonstrate the level of support for a solar roof project. To date, 203 students and staff have signed the petition, and this petition now will be shared with parents to request their support. ISB is currently in discussions with solar vendors to obtain project proposals.



Guanting wind turbine

Learn more about the how we reduced our greenhouse gas emissions in our **EMISSION REDUCTION STRATEGY CASE STUDY**



Students demonstrate solar panels on the roof

# PROCUREMENT

## PLANET

### Target

50 of procurement spend meeting sustainability purchasing standard by 2025, 100% by 2030.

### Standard

Develop sustainable purchasing standard for paper, lighting, and electronics by 2022, other relevant items by 2025.

### Commitment to

Purchasing in an environmental, social, and financially sustainable manner.

### Commitment to

Creating a culture of sustainable purchasing across the community.

### Commitment to

Including environmental and social criteria as part of major partner procurement and require major partners to support the achievement of and provide reporting for relevant ISB targets and commitments.

Sustainable procurement gained momentum across the school these past two years as departments began embedding concerns around people and the planet into their decision-making process. Here are a few highlights:

- The Student Activities department and Dragon Council student club identified the company Tsunami Sports to procure athletic clothing for coaches and students. Tsunami Sports makes our products from their Eco-fit fabric containing 50 percent Recycled PET (i.e., plastic bottles). The products are delivered in water soluble biodegradable bags – ISB can confirm the bag rapidly dissolves as we tested this ourselves!
- The Purchasing department launched the refillable marker pilot with more than 20 teachers to determine the feasibility of a transition away from single use markers. This project originated from 2019 ISB graduate Louisa Song and we are excited to see it come to life!
- The Facilities department worked with our on-site printing vendor to switch all our copy paper to a product that is Forestry Stewardship Council (FSC) certified. FSC is a non-profit organization that has set the globally recognized standard for sustainable forest management.

Towards our commitments, ISB launched its Sustainable Purchasing Standard at the end of 2021. Moving forward, all new electronics will be EPEAT Silver or Gold, and energy-using equipment will have a China Energy Label score of 1. We are also working to switch from virgin fiber products to bamboo and recycled fibers for the various paper products around the school.



	BEGINNING	APPROACHING	MEETING	MASTERING
Target	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Standard	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Commitment to	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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ISB Cross Country showing off their eco uniforms.

# RESILIENCE + ADAPTATION

## PLANET

### Goal

Develop a Climate Preparedness and Campus Resilience Plan by 2023.

The recent IPCC Special Report on the impacts of global warming of 1.5°C builds on past climate science to present us with a range of potential impacts to our planet. It is our responsibility to our current and future students to understand how those changes will impact ISB and prepare for them. We will use leading tools such as the World Resource Institute's Aquaduct Water Risk Atlas to conduct a climate scenario analysis to better understand the potential impacts to ISB under a range of climate scenarios through 2050.



	BEGINNING	APPROACHING	MEETING	MASTERING
Goal	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

# DESIGN

## CAMPUS

### Commitment to

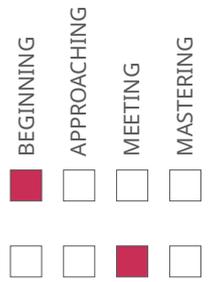
Responsible campus design that minimizes negative impacts on the local community.

### Commitment to

Enhance student and staff well-being and productivity through incorporation of biophilia\* into campus design and subsequent ISB strategic planning processes.

ISB's new Early Years Learning Community is a masterclass in biophilic design, an approach to increase occupant connectivity to the natural environment. The [award-winning](#) space leans heavily on natural elements including wood flooring, furniture and signs, usage of natural colors for the walls and soft furniture, potted plants, bamboo garden, and even a fish tank built into one of the walls. This type of design has been shown to improve student and staff performance and well-being and we are excited to be able to introduce our youngest students into this type of environment.

With momentum in green building design to promote staircases over elevators, we challenged our students to identify a nature-friendly solution. Inspired by the challenge, the students identified an opportunity to construct a living green wall in the large three-story staircases. Sixteen students from Middle School and High School have worked to bring this project to life over the past two years with construction of one of the largest indoor living green walls completed during the summer of 2021. Read more about the green living wall [here](#).



ISB's Early Years Learning Community

# LANDSCAPE

## CAMPUS

### Target

Electrify 75 percent of maintenance equipment by 2025; 100 percent by 2030.

### Standard

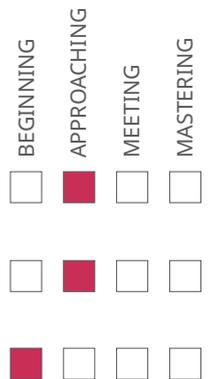
Develop Sustainable Landscape Guidelines to outline methods to review, discuss, and decide how best to maintain or improve campus landscape space from an ecological, functional, and aesthetic perspective.

### Commitment to

Reduce the negative impacts of landscape design and maintenance practices towards the wellness of the ISB community and ecosystem.

As we completed our water and energy audit, we uncovered many synergies with our approach to landscape. One resulting action was the development of a landscape policy that provides our expectations around purposeful irrigation and electrification of lawncare equipment. Battery-powered lawncare equipment has advanced significantly and ISB will be transitioning all equipment next year, a win for the health of everyone on our campus.

The act of planting a tree is a powerful environmental awareness activity. Understanding the impact of this on our younger students, a group of four students from the Greenkeepers club are coordinating a tree planting activity for our Grade 5 students. The tree, a native Chinese Ash, will be planted on campus in the spring.



# OPERATIONS

## CAMPUS

### Goal

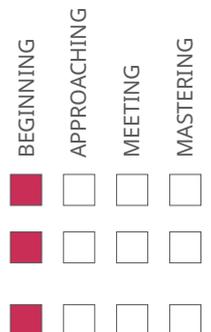
Achieve LEED Operation + Maintenance certification by 2030 at Silver level or higher.

### Standard

Develop ISB Green Cleaning Standard by 2022.

### Commitment to

Develop best practice guidelines for managing and operating buildings and capital goods in excess of 500,000 RMB in a sustainable and energy-efficient manner in order to assist in achievement of sustainability-related targets, standards, and commitments.



The development of the policies and standards stated herein will support progress towards the expectations of many LEED Operation + Maintenance credits. To align with our 2030 timeline for an ENERGY STAR score of 75, we are targeting 2030 to achieve LEED Operation + Maintenance certification for ISB.

# CONSTRUCTION

## CAMPUS

### Standard

Develop ISB Green Building Standards by 2024, reviewed and revised every four years.

### Commitment to

All significant standalone new construction to achieve LEED\* certification at Silver level or higher.

### Commitment to

Prioritizing sustainable design elements determined by research to have a positive impact on student and staff wellness and academic learning and performance.

Development of ISB's Green Building Standard is delayed until 2024 as we prioritize time and resources towards progressing with operational targets.

See discussion in the Design leaf for recently constructed sustainable design elements that are having a positive impact on the wellness and learning performance of our students and staff.



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ISB's Living Green Wall

# TRANSPORTATION

## CAMPUS

### Target

Electrify 75 percent of bus and taxi fleet by 2025; 100 percent by 2030.

### Commitment to

Reduce emissions of harmful vehicle-related air pollutants within the community and particularly on campus.

ISB's Net Impact club was awarded the [Green Apple Day of Service Deep Impact Award](#) from the Center for Green Schools at the U.S. Green Building Council for its bus electrification project in 2020. ISB's bus fleet continues to operate these 27 buses, driving over 600,000 kilometers these past two years. ISB extended our wind energy purchase to cover all energy consumed by these buses, resulting in 100 percent emission free transportation.

In 2020, we looked inward to the 12 vehicles owned by ISB. With four coming due for replacement, a study was done to determine the feasibility of converting them to electric. The conclusion was positive and in 2021 all four were transitioned along with the installation of EV chargers on campus. These vehicles will also be powered entirely by wind power.



BEGINNING	APPROACHING	MEETING	MASTERING
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ISB's new electric vehicles

# IMPACT DATA

As part of ISB's commitment to transparency, below is a compilation of environmental, social, and governance indicators. All reported values represent the best available data at the time of publication. Data may be adjusted in the future to incorporate updated methodology, structural changes, and/or minor corrections. Additional details on these changes are included as footnotes where applicable. Environmental Data is based on the calendar year.

	Units	2021	2020	2019	2018
Students (EY3 - Grade 12 / September)	#	1660	1790	1784	1722
Staff	#	420		418	399
Female	%	65%			
Male	%	35%			
Women in Leadership	%	54%			
Women in Faculty	%	137	134		
Women in Support Staff	%	146	141		
Student-Driven Sustainability Projects Implemented	#	2	0	2	2
Staff Recognized as Sustainability Change Agents	#	11	13	6	0
Students Making an Impact News Articles	#	3	3	3	1
Scope 1 - Direct <sup>1</sup>	MTCO <sub>2</sub> e	3198	2639	3415	3728
Scope 2 - Purchased Electricity <sup>2</sup>	MTCO <sub>2</sub> e	0	0	10118	10437
Scope 1 + 2 Emission Reduction from 2018 (Target 80% by 2025)	%	77%	81%	4%	-
Scope 2 - Electricity (default supply) <sup>2</sup>	MTCO <sub>2</sub> e	9439	7447	10118	10437
Scope 3 - Fuel- and Energy Related Activities <sup>3</sup>	MTCO <sub>2</sub> e		63	682	703
Scope 3 - Waste	MTCO <sub>2</sub> e	61	63	68	66
Scope 3 - School Travel	MTCO <sub>2</sub> e	96	8	943	917
Scope 3 - Employee Commuting	MTCO <sub>2</sub> e	0	0	3162	2975
Total Greenhouse Gas Emissions (Scope 1+2+3)	MTCO <sub>2</sub> e	4038	4036	18099	18579
Total Energy Use	MWH	26179	20752	27166	29130
Electricity - Buildings	MWH	9587	7689	10268	10771
Electricity - Buses+Owned Vehicles	MWH	434	217	184	11
Natural Gas / Diesel / Petrol	MWH	16158	12846	16714	18348
Renewable Electricity Use	MWH	10021	7906	0	0
Renewable Electricity	%	100	100	0	0
Bus Fleet Electrification (Target 75 by 2025)	%	50	50	50	4
ISB Vehicle Electrification	%	33	0	0	0
ENERGY STAR Scores (Target 50 by 2025)	1 to 100 (100 is best)	16	33	9	7
Water Withdrawal	Cubic Meters	66738	62245	94060	84670
Water Withdrawal Reduction from 2018 (Target 25% by 2025)	%	21%	26%	-11%	-
Waste Landfilled / Incinerated	Metric Tons	39	No data	116	113
Waste Recycled	Metric Tons	1.3	No data	3.5	6
Waste Composted	Metric Tons	0	0	<1	1
Waste Generated per Student	kg / student	0.023		0.065	0.066
Compost and Recycling Rates	%	21	No data	4	6

## Footnotes:

1.) Direct emissions means emissions that are in our direct control. This includes the natural gas we burn in our boilers, the diesel in our buses, and the refrigerants released from our chillers.

2.) Best practice is to report the emissions from electricity in two ways. The first is based on who you buy your electricity from, which could be from a wind or solar farm, resulting in no emissions; this is called the market method. The second is based on where you are and the average emission impact of the electricity in the region; this is called the location method. The intent of showing both is to understand the impact of your electricity purchasing decisions.

3.) Fuel- and Energy Related Activities refers to the emissions associated with extracting, processing, and transporting the energy consumed, whether it be coal, natural gas, or oil.

MTCO<sub>2</sub>e = metric tons of carbon dioxide equivalents. All greenhouse gases have different global warming potentials; to determine the carbon dioxide equivalent of methane (CH<sub>4</sub>) for example, you would multiple the emissions by its global warming potential of 28.

# CASE STUDY: EMISSION REDUCTION STRATEGY

The message from climate scientists is clear, the world must start reducing the amount of greenhouse gas emissions it generates to prevent the worst impacts of climate change. At ISB, we have developed a climate strategy to dramatically reduce our contribution to global emissions. While this strategy will take a decade or more to fully implement, we are excited to share our progress. Our emissions in 2020 and 2021 were on average 80 percent lower than in 2019.

The intent of this case study is to share, in detail, our strategy to help other schools achieve a similar level of impact.

## Step 1: Measure

Following the common phrase “you can’t manage what you don’t measure,” the first step for any organization is to measure your greenhouse gas footprint. There are many greenhouse gas calculators available online to help you. For many schools, this exercise is easier than it may appear and will consist of simply collecting energy data (e.g., electricity and natural gas) and multiplying them against standard emission factors.

ISB started measuring its impacts in 2018 and these values can be found in the data table of this report. We used the following emission factors:

- For electricity, the Ministry of Ecology and Environment of the People’s Republic of China provides annual regional emission factors. Search for “年度减排项目中国区域电网基准线排放因子” in your browser.
- For everything else, the UK Department for Business, Energy & Industrial Strategy, available [here](#).

## Step 2: Develop your Net Zero Strategy

Climate science is currently indicating that we must reach net zero by no later than 2050 to avoid the worst impacts of climate change. Net zero means to reduce emissions by at least 90 percent and for any remaining emissions, find ways to directly remove an equal or greater amount from the atmosphere.

For ISB and many other schools, a similar net zero strategy can be used. Phase out the use of fossil fuels and switch to renewable sources of electricity. Fossil fuels including petrol, diesel, and natural gas are commonly used for heating, cooking, and vehicles. The technology to electrify these already exists with heat pumps, induction stoves, and electric vehicles and continues to improve.

## Step 3: Implementation

At ISB, our goal is to work on one major emission system per year. In 2019, we began our electric bus program due to the added student health benefit and visibility. In 2020, we made the switch to 100 percent renewable electricity. In 2021, we conducted an energy audit and implemented several operational changes. In 2022, we are working to remove fossil fuel powered lawncare equipment from campus.