



FY2022  
ITE Environmental  
Sustainability  
Disclosures

Every Green Touch

Builds A Green World



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# About this Report

*Every touch leaves a trace. Every green touch builds a green world.*

How we define ‘Sustainability’ will affect how we go about pursuing our Sustainability Strategy.

In the context of ITE, sustainability is about ‘doing well’ through fulfilling our Mission and roles, and ‘doing good’ through co-creating social and environmental solutions. To achieve both, it is important that we attract, develop and retain our people; enrich the lives of our students and learners; engage and contribute to the industry and the community; and create a positive impact on our environment.

Our FY2022 Environmental Sustainability Disclosures summarises the collective efforts and contributions made by our staff and students, for the period 1 Apr 2022 to 31 Mar 2023. It also outlines our commitment, broad directions and targets ahead, as well as our plans to get there.

This report is prepared based on the **Accountant-General’s Guidelines for Environmental Sustainability Disclosure Requirements**, and in line with the **GreenGov.SG\*** initiatives and targets. The report also makes reference to the **United Nations Sustainable Development Goals (UN SDGs)** and identifies material issues that are of great importance to ITE and our stakeholders.

In reporting our key Environmental Sustainability Targets and Performance covering Gas & Electricity, Water and Waste, we have adopted as our baseline, the average of our performance from FY2018 – FY2020.

At this juncture, only Scope 1 and Scope 2 carbon emissions are reported, and the data includes our subsidiary, ITE Education Services Pte Ltd, which resides within the premises of ITE Headquarters. The report excludes all other ITE’s subsidiaries, namely Crest Secondary School, Spectra Secondary and NorthLight School.

We recognise that sustainability is a work-in-progress and there is much room for improvement. We endeavour to continue to learn; enhance our reporting framework, matrix and measurements; and develop strategies and action plans to bring us closer to our longer term vision and targets, in alignment with Singapore Green Plan 2030.



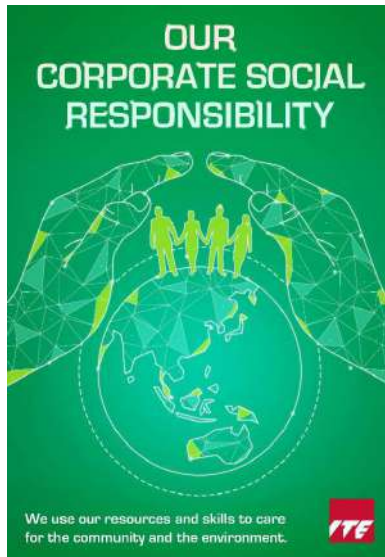
\*GreenGov.SG is a key component under the Singapore Green Plan 2030. Under GreenGov.SG, the public sector will strive to attain ambitious sustainability targets in carbon abatement and resource efficiency, and be a positive influence and enabler of green efforts. As a public organisation, ITE is committed to align with the directions set under GreenGov.SG.



# Quick History

The push for environmental sustainability is not new in ITE. Back in 2002, we set up an Environmental Management Committee (EMC) to look into resource conservation and environmental protection in ITE.

As part of our ITE Care values, we have also, since then, articulated our care for the community and the environment, via the 'ITE Corporate Social Responsibility (CSR) Policy'.



In 2010, with renewed emphasis on sustainability, the EMC was replaced by the Environmental Sustainability Initiatives (ESI) Committee, with enhanced and expanded focus on students and staff, guided by a 5-yearly Environmental Sustainability Strategic Roadmap. The current Environmental Sustainability Strategic Roadmap (2020 – 2024) centres on three Goals – (1) An Environmentally Responsible Organisation; (2) Ready for the Green Economy; and (3) Active Citizenship in Environmental Sustainability.

In recognition of our sustainability efforts and progress, we have won many organisational awards and recognition over the years (see [Figure 1](#)), including the nation's top sustainability award – **President's Award for the Environment** – achieved in 2014.

Our efforts in caring for the environment have also garnered both ITE staff and students many environmental accolades such as the HSBC/NYAA Youth Environmental Care Awards, Bayer Young Environmental Envoy Awards, the NEA EcoFriends Awards, Singapore Energy Grand Challenge (Youth), etc.

“ We use our resources and skills to care for the community and the environment. ”

Figure 1 – Key Organisational Sustainability Awards and Recognition (Last 10 Years)



# Board and Senior Management Statements

What we have done over the last 20 years have laid a strong foundation as we progress in the next phase of our Sustainability journey. In February this year, we made the pledge to be a 'Contributor' and 'Advocate' for sustainability initiatives, under the 'Green Nation Pledge'. The ITE Board and Senior Management have also articulated their Commitment to Sustainability, as follows:



We have a responsibility to be faithful stewards to safeguard the planet for future generations.

Singapore has committed to achieving net zero emissions by 2050. Every institution, industry, business and individual have the responsibility to embrace sustainability and take steps to decarbonize their systems and processes. ITE, as an education institution, is taking on multiple roles of educating the students and campus users to adopt sustainability practices, equipping students with new skills for emerging green jobs and role-modelling sustainable practices in our buildings, work processes and culture.

Every step forward reflects our commitment to ensure future generations will continue to thrive.

**Andrew Chong**  
Chairman  
ITE Board of Governors

ITE's core purpose is to equip our students and learners with knowledge, competencies and dispositions that will enable them to chart their future. To fulfill this purpose, we need to respond to the challenges that impact and shape the future. One such challenge is climate change.

ITE is committed to instilling sustainability values in the design of our buildings, the way we work, the resources we consume and galvanising the ITE community to make a concerted effort to consciously reduce their carbon footprint, reduce waste and be consciously efficient in their use of electricity and water.

We will also review and revise our curriculum to include green topics and skills so as to ensure our students are well equipped for the green economy. ITE staff and students will also work with the community to advocate sustainability messages and collaborate with them on green projects and initiatives.

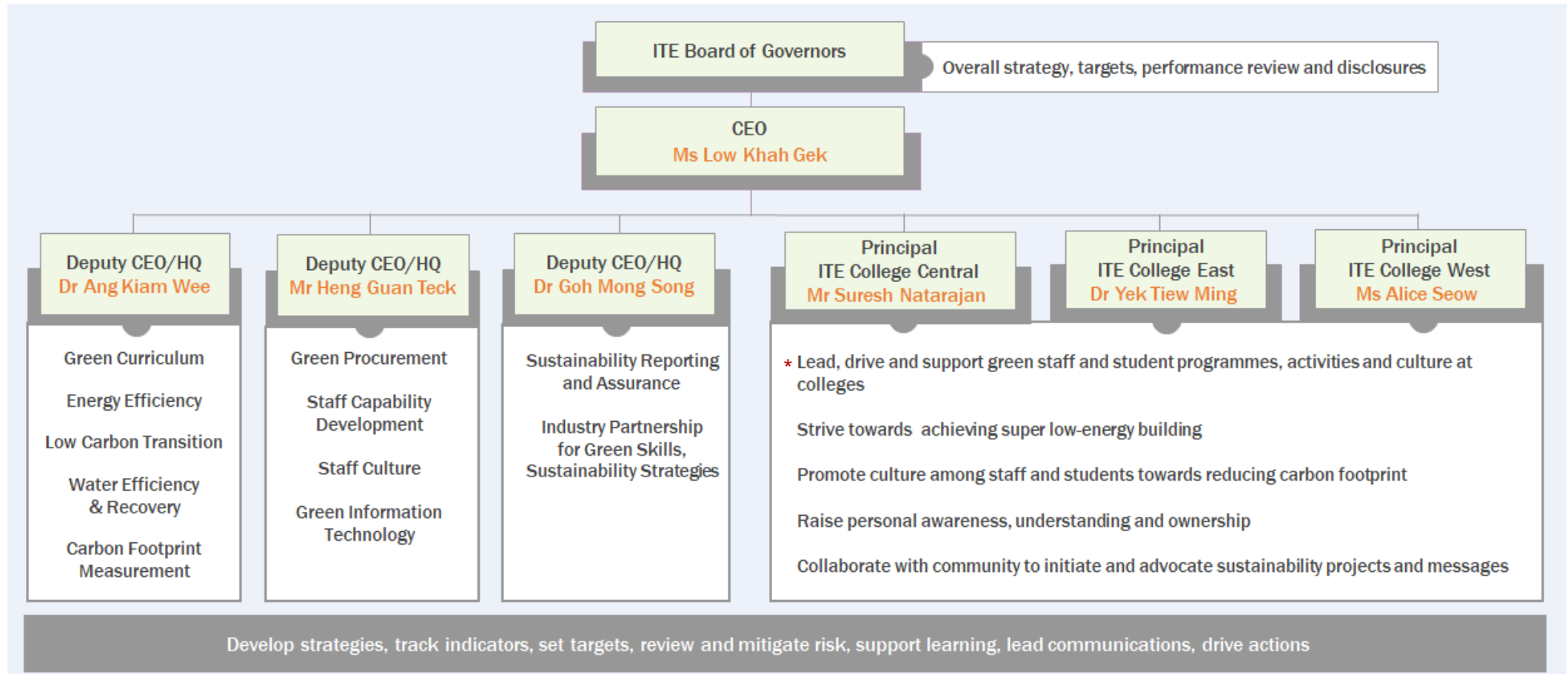
**Low Khah Gek**  
Chief Executive Officer



# Governance Structure for Sustainability

Our governance structure for sustainability reflects leadership's commitment, with senior management taking the lead to champion Sustainability initiatives and measures (see [Figure 2](#) below).

Figure 2 – ITE's Governance Structure for Sustainability



\* The existing Environmental Sustainability Initiatives (ESI) Committee, chaired by a Director and comprising members from HQ and Colleges, helps to drive and coordinate ITE-wide sustainability efforts among staff and students.

# Materiality Assessment

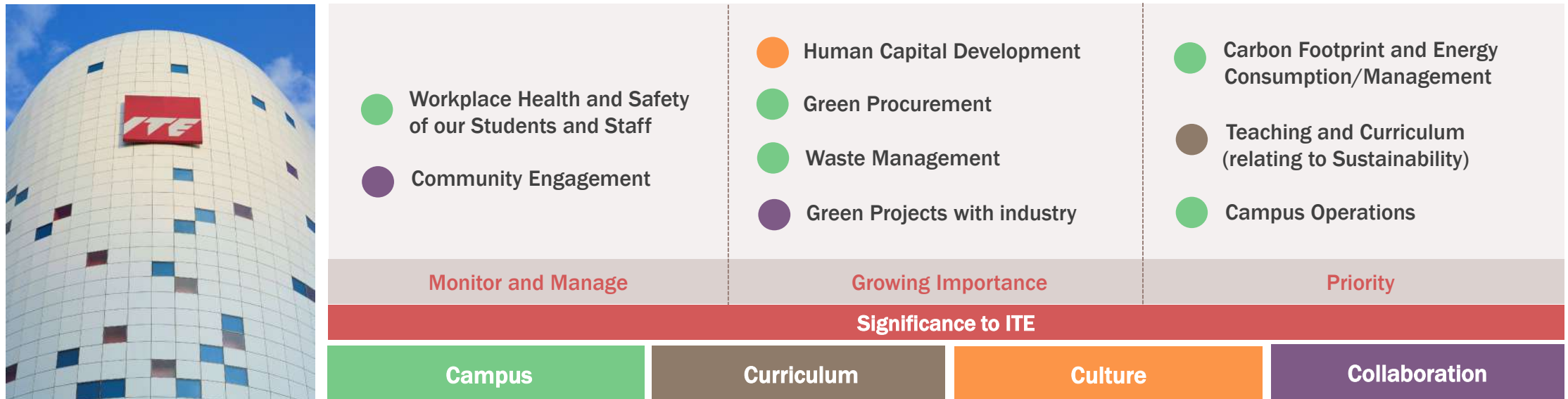
A material sustainability issue is an economic, environmental, or social issue in which a company has an impact, or may be impacted by. In ensuring the success and effectiveness of our sustainability strategy and efforts, it is important for us to determine what are our key material priorities.

We have done an internal review to define our materialities, based on input and sensing collated from different stakeholders through various existing channels and platforms. We have, for a start, identified **9 Material Topics** that are important to ITE, viz, Carbon Footprint and Energy Consumption, Campus Operations, Waste Management, Teaching and Curriculum, Human Capital Development, Green Procurement, Workplace Health and Safety, Green Projects with industry and Community Engagement.

We have further classified and prioritised these materialities based on their significance and importance to ITE, as shown in [Figure 3](#).

Moving forward, our plan is to further engage our stakeholders to review, affirm and prioritise our materiality topics. This will be done as part of our strategic planning process in early 2024, which will incorporate external consultation and Focus Groups with all our key stakeholder groups.

Figure 3 – Our Key Materialities










# Priority UN Sustainable Development Goals (SDGs)



We affirmed our support for the United Nations (UN) Sustainable Development Goals (SDGs) and have identified **seven priority SDGs** (see [Figure 4](#)) which are currently relevant to areas where we can best contribute and create impact, aligned to our key focus and priorities.

Collectively, the nine materiality topics identified in the earlier slide and the seven SDGs here have guided us in coming up with the **4Cs Environmental Sustainability Framework** comprising **Campus, Curriculum, Culture and Collaboration**.

Figure 4 – Seven Priority UN SDGs for ITE

UN SDGs	Description	Why is it More Relevant for ITE
	<b>Goal 3: Good Health and Well-Being</b> Ensure healthy lives and promote well-being for all at all ages	We nurture the physical and socio-emotional health of our students, take care of our staff well-being, and ensure that our campus is safe and clean for all to study and work in.
	<b>Goal 4: Quality Education</b> Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	We provide education and training for school leavers and adult learners so that they can acquire skills, knowledge and values which enable employability and personal growth.
	<b>Goal 8: Decent Work and Economic Growth</b> Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	We strive to provide meaningful jobs which support the development of our students and workforce, and contribute to the growth of our economy.
	<b>Goal 9: Industry, Innovation and Infrastructure</b> Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation	We work closely with our stakeholders in the ecosystem so that collectively we mutually support each other in the circular economy.
	<b>Goal 12: Responsible Consumption and Production</b> Ensure sustainable consumption and production patterns	We focus on enhancing our efficiency and effectiveness so that we can minimise environmental impact of our operations and commit to support the circular economy.
	<b>Goal 13: Climate Change</b> Take urgent action to combat climate change and its impact	We contribute our part to help address the challenges of climate change.
	<b>Goal 17: Partnerships for the Goals</b> Strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development	We look for opportunities to partner our stakeholders to support the SDGs by working together on projects or collaborations which enhance sustainability awareness and actions.



# Our Sustainability Focus

Premised on four closely-connected pillars of **Campus**, **Curriculum**, **Culture** and **Collaboration**, ITE's sustainability focus and directions are broadly outlined in Figure 5. Adopting a 'whole-of-community' approach, it involves staff, students, industry/employers, community and stakeholders working together to create and deliver impact and outcomes.

Figure 5 - Sustainability Framework



### Sustainable and Smart Campuses in ITE

Occupying a total gross floor area of 437,724m<sup>2</sup> in a land scarce Singapore, we recognise the significant impact that our buildings and operations can make to our environment.

Our three Colleges are designed and built to create a sustainable and green environment, and all of them are **BCA Green Mark Platinum** certified. Over the years ITE has continued to innovate, adopt and explore solutions/practices to further improve our efficiency and sustainability measures. As part of ITE's infrastructure rejuvenation plans, ITE College East (CE) embarked on a Guaranteed Energy Savings Programme in 2017 to upgrade the Chillers to be more energy efficient types. This has reduced the energy consumption in CE by about 15%.

As our training facilities undergo retrofitting and modification to stay up-to-date with latest industry technologies and practices, we ensure all new modifications consider sustainable practices such as the incorporation of smart air conditioning systems and the utilisation of energy-efficient lighting solutions.

Moving ahead, ITE strives to achieve BCA Super Low Energy (SLE) Certification standards for all our 3 campuses by 2025. The first of the three campuses, ITE College East (CE), is targeted to achieve BCA SLE standards in 2023. To achieve this, we have installed LED lightings at communal areas and identified energy-efficient Electronically Commutated motors for the Air-Handling Units for installation.

To increase energy efficiency, we have also upgraded the Integrated Building Management System at HQ & ITE College Central (CC) with advanced analytics which enable maintenance teams to predict potential breakdowns and replace parts/components before they fail or become inefficient. By closely tracking energy consumption, temperature, vibration and other parameters, we also ensure that any inefficiencies and abnormalities can be addressed in a timely manner.



Integrated Building Management System Dashboard

In addition, we have started to utilise renewable energy sources, by participating in the SolarNova Phase 3 initiative (a programme jointly led by EDB and HDB), where 786 solar panels were installed in HQ&CC and another 684 panels at CE, generating a total of about 640 MWh of solar energy annually. We plan to install additional horizontal and vertical solar panels by 2025 to increase the solar photovoltaic capacity.

Besides optimising our energy usage, we have also actively pursued water efficiency. ITE is currently **Water Efficient Building** certified by PUB and we target to obtain ISO 46001:2019 Water Efficiency Management Systems certification by 2025. With this certification, ITE will have a water efficiency management system to ensure continual improvement and efficient usage of water.

To reduce the total waste disposed in our Colleges, ITE will also be embarking on food waste recycling. The food waste will be properly segregated, consolidated and transported to the Tuas Nexus food waste treatment plant which is targeted to be operational in 2025.

Collectively, all these contribute to our efforts in combating climate changes.

### Learning Facilities Supporting Sustainability

To support training in sustainability, we have partnered industry leaders to set up sustainability-related learning facilities. Some of the recent ones include:

- **ITE-Johnson Controls Building Technologies & Solution Centre** where students learn to operate chiller plant system, handle modern building systems, solutions and technologies, to support Singapore's goal of 80% energy efficient buildings by 2030.
- **ITE-Sembcorp Centre for Sustainable Solutions** to train students for 'green-collar' jobs in the solar energy sector, in alignment with Singapore Green Plan 2030.
- **Horticulture Technology (HortITech) Hub** where students learn and manage fully automated farming facility from seeding to harvesting, in support of Singapore's 30:30 goal, where 30% of the country's food needs will be produced domestically by 2030.

THE STRAITS TIMES

(11 NOV 2022)

Fully automated facility at ITE to train students in high-productivity urban farming



Horticulture Technology Hub

### Creating a Green Living Lab for All

Besides co-creating sustainability-related facilities with industry partners, we have also designed and incorporated many green features and activities around the campuses. For example, ITE College Central (CC)'s Vertical Farming and Pop-up Hydroponics Farms run by students not only provides valuable experiential learning opportunities to raise their eco-consciousness, but also addresses crucial topics such as food security, environmental conservation, and self-sufficiency. A total of 800kg of veggies have been harvested from these two initiatives and donated to needy families.



Vertical Farming and Hydroponics Farms

To move towards a circular economy and reduce waste, we also deployed multi-stream collection bins across all campuses for e-waste, fashion items, sports shoes, and other recycling waste. Annually, an average of 1,000kg e-waste was collected at each campus.

### Green Procurement – The way to go

Besides the building infrastructure, we have also implemented green procurement practices as part of our sustainability drive. For examples:

- New office ICT equipment must meet latest ENERGY STAR standards (since 2012)
- Events and functions organised by ITE are to be held in venues with at least a Green Mark Certified rating (since 2015)
- Printing paper procured must be accredited with the Enhanced Singapore Green Label (SGLS+) by the Singapore Environment Council
- Electrical appliances and lightings must meet the minimum ticks '✓' under NEA's Mandatory Energy Labelling Scheme (since 2016). Each Department also has to take into account energy efficiency and lifecycle costs to optimise cost-effectiveness.

More recently, we have further enhanced our procurement systems and processes to include green procurement requirements and ensure that suppliers and materials meet green standards. Environmental sustainability measures are incorporated in our procurement policies and ISO quality procedures, with internal checks in place to ensure Sustainability is considered in all purchases.

### Quality Education for the Nation

As a public institution and a major provider of vocational and technical education (VTE) in Singapore, for us to achieve our social and economic mission, we need to ensure we provide 'Quality Education' for our students. In FY2022, we have provided 27,849 PET students with meaningful VTE, and enabled 1,346 to progress beyond their *Nitec* and *Higher Nitec* education with our ITE Work-Study Diploma (WSDip) programmes, including 4 new ones launched in 2022 (bringing the total number of WSDip to 36 in 2022). Another 46,732 CET training places were provided to adult learners. In ensuring the success of our students, we achieved a high Student Success of 90.8%, and 8 out of 10 ITE graduates found job within 6 months of graduation.

### Curriculum Ready for the Green Economy

As we transition to the Green Economy, ITE has been proactively equipping our learners with sustainability-related skills and competencies. This includes preparing them for career opportunities in several sectors, such as civil and structural engineering, green finance, high-tech agriculture, transport and the built environment.

Our curriculum is regularly reviewed to keep abreast of key industry developments. For instance, our courses in Urban Greenery and Landscape Management include mangrove carbon sequestration. Courses in Built Environment include green energy audit and net zero energy standards.

### Formal Curriculum

To prepare our students with new skills in the Green Economy, we currently have 6 PET Courses (in areas such as Electrical Engineering, Electrical Technology, Landscape Management & Design, Built Environment, Urban Greenery & Landscaping and Architectural Technology) and 17 Modules/Electives in Sustainability-related areas. With more green jobs emerging, we will be increasing 'Green Contents' in our curriculum and programmes.

In FY2022, we have planned for new courses relating to sustainability, such as the WSDip in Agriculture & Aquaculture Technology (announced in Nov 22 for launch in Apr 23) as a progression pathway for our graduates to capitalise on opportunities in the high-tech agri-food industry.

To inculcate green awareness and mindset for all our students, we introduced an **Eco-Sustainability Life Skills module** to educate them on fundamental concepts such as the consequences of global warming, renewable energy sources, and conservation efforts. In addition, we are also planning to roll out a **new baseline sustainability module** for all Year 1 students in Jul 2023, and looking at infusing industry sustainability use cases in all trade courses.

### Hi-Tech 'Real World' Authentic Learning

Central to our pedagogy approach is the concept of '*Workplace @Campus, Campus@Workplace*'.

'*Workplace@Campus*'. We co-opt leading industry players to co-create high-tech authentic learning facilities within our campuses, which allow us to train our students using the most up-to-date technologies and equipment. Some of the latest facilities include ITE-Sembcorp Centre for Sustainable Solutions, HortiTEch Hub, Smart Manufacturing Hub and Urban Mobility Centre.



ITE-Sembcorp Centre for Sustainable Solutions

'*Campus@Workplace*'. Today, all our students experience real world learning in the workplace, via a structured 6-month industry internship. This allows them to work on real work processes and projects, and be mentored by industry experts. This is made possible by our strong network of more than 5,000 internship companies.

### Leveraging Technology in Teaching and Learning

To enhance student learning, we also leverage on technology such as Virtual Reality, Augmented Reality and Mixed Reality, which are extensively deployed across our training facilities and classrooms. This allows students to immerse and practise in simulated real-world scenarios (such as flight simulation, working at heights or in oil rigs), where real work environment poses safety concerns.

Artificial Intelligence (AI) has also been used in innovative ways. For instance, AI-enabled video analytics was used in the assessment of students' practical skills (eg. to troubleshoot and service a computer or a pump valve). Using head-mounted camera, students video-record how they carry out practical tasks and the lecturer is able to use High Performance Computer (HPC) to assess and give immediate feedback to students, significantly cutting down the assessment time.



Use of head-mounted camera to record practical tasks

### Informal Curriculum

Apart from the formal curriculum, various programmes, events and initiatives outside the classroom help students to build up interest in sustainable practices as well as hone their green skills. Some of the key events in FY2022 include:

- ITE-Vocational Training Council (VTC) International Student Seminar 2022
- Singapore-Shizuoka Agri Food Forum 2022
- Hosting Volocopter's First Public VoloCity Exhibition in Asia
- Singapore Energy Grand Challenge (Youth) 2022
- CNA Green Plan Challenge 2022
- ITE-National Youth Council Green Plan Conversation
- Impact Festival 2022 - Sustainability Hackathon
- ITE Climate Change and Sustainability Forum
- 3M Green Challenge@South East

Our students performed well at various green challenges and competitions. For example, at the Singapore Energy Grand Challenge (Youth) 2022 organised by the Energy Market Authority, a team of CE students emerged as champion (IHL Category – Sembcorp Industries) for their project on making use of open seas through innovative automated devices to increase the capture of solar energy.

Besides this, some other awards won by our students for their sustainability projects include:

- NParks Singapore Garden Festival Landscape Design Challenge 2022 [Gold Award]
- Sembcorp Marine Green Wave Environmental Care Competition 2022 [Top Prize]
- ITE-NTU Entrepreneur Competition #startable 2022 [Distinction Award]

### Continuing Education and Training

In FY2022, we have 30 CET courses relating to Sustainability, including the WSQ course on National Electric Vehicle (EV) Specialist Safety Certification to prepare Singapore's automotive service industry for the widespread adoption of EVs.

We have also introduced more bite-sized and accessible offerings, such as Micro-Learning Courses (MLCs) for our learners to quickly pick up the latest concepts and developments. These include 5 MLCs on the Circular Green Economy (in partnership with ALBA E-Waste) as well as MLCs on Sustainable Transport.

Moving ahead, we plan to expand our sustainability-related CET offerings, including working with industry partners to co-develop new contents in emerging areas as well as working with companies and SMEs to conduct customised courses that support their sustainability needs.

### Sustainability – High on ITE’s Agenda

Culture starts from the top. During her context setting at the annual ITE Work Plan Seminar held on 3 Feb 2023 attended by 400 staff, CEO/ITE reiterated Singapore’s push for sustainability and the implications on future jobs and skills, and correspondingly the implications on ITE as an education institution. She called on staff to keep ourselves abreast of the changes, both in terms of ensuring relevant curriculum for our students as well as to do our part in combating climate changes. The management team also discussed extensively on this topic at the annual Corporate Review Forum held on 10 Mar 2023, which featured a sharing by an industry expert on how to kickstart a Net Zero journey.

### Building Culture and Competency in Sustainability

To drive home the importance of sustainability among staff, a number of programmes were organised, such as:

- **International TPET Conference 2022** organised by ITE from 28-29 Jun 2022 focusing on ‘Pivoting TPET for a Sustainable Future’, attended by more than 450 staff
- **35th Real Leadership Series** focusing on ‘Sustainable Economy’ attended by 200 management staff
- **Passion@Work Learning Journeys** (10 Feb and 10 Mar 2023), where 66 staff visited College East to learn more about sustainability topics like carbon footprint calculation

- **Workshops and Learning Programmes** on Carbon Calculation and Sustainability Reporting, including briefings and/or roadshows on ISO14001
- **Innovation Projects** where staff developed solutions to enhance programmes and processes, including in the area of sustainability. Out of 391 Projects by staff in FY2022, 36 (9%) were sustainability-related.
- Regular updates by the ESI Committee on ITE’s Sustainability efforts, both on website as well as through posters and e-mailers

### Strong Belief in People Development

Central to our efforts to create a sustainable workforce is our belief in Human Capital development – to retain, motivate and develop our staff to ensure they stay relevant. The ITE Total Learning Plan roadmap focused on 3 broad areas – Digital, Organisational and Technology (D.O.T.), which includes an emphasis on digital and technology skills and adaptations to new teaching and learning practices to meet organisational and learner needs.

In 2022, an exceptional 42,338 (+92%) out of 22,000 planned learning places were achieved. To keep our academic staff in tune with industry changes and workplace practices, 602 (36%) underwent Industry Engagement/Industry Attachment and brought back new knowledge to share with their peers and students.



International TPET Conference (28 – 29 Jun 2022)



Real Leadership Series (23 Feb 2023)



Passion@Work Learning Journey on ‘Sustainability’

### Keeping Everyone Safe – Workplace Health and Safety

As part of ensuring a happy work culture and safe environment for our staff and students, we also place high emphasis on ensuring a high standard of workplace safety. We are **ISO 45001 (Workplace Health and Safety)** certified since Nov 2019.

We closely track cases of ‘Slips, Trips and Falls (STF)’ as part of workplace safety monitoring. In the past few years, there has been no major injury reported. As we focus on preventive measures to safeguard workplace safety, our staff also took interest in this and have innovatively come up with ideas to enhance workplace safety.

For example, a team of staff incorporated AI technology into existing robots, which were then programmed to detect and deter instances of hydraulic oil hazards that might cause unforeseen injuries to workers. This project, which leveraged on technology to mitigate workplace accidents, was one of the 27 projects participating at ITE Smartathon in Nov 2022.

### Students – Our Sustainability Ambassadors!

For our students, we have many programmes in place, including college-specific ones, to promote a strong culture of sustainability, including Eco Orientation for all new intake of students.

In FY2022, the Colleges ran some 150 programmes focusing on green practices and Food Energy Water (FEW) Conservation. Many of these programmes were driven or initiated by staff in the schools, as well as through Student clubs, Co-Curricular Activities (CCAs) and projects, including ground-up efforts from students who are passionate about the cause. These include upcycling workshops, Bring Your Own (BYO) reusable bags and containers campaigns, and Grow Your Own Greens (GYOG) activities.

In Jan 2022, a new **ITE Environmental Stewardship Programme** was introduced to create awareness in climate change issues and to develop young leaders in environmental stewardship. Funded by Khurana Foundation, it includes funding to recognise students who have made exemplary contribution to climate change mitigation efforts and those who were involved in green innovation projects.

The culture of sustainability is reinforced through many competitions and events which our students take part in, outside of their formal curriculum.



Eco Orientation for all New Intake of Students



Environmental Stewardship Leadership Camp on Biodiversity & Conservation – Sep 2022



Green Ambassadors Club



April Environmental Workshop



Gifting at Therapeutic Urban Farming @ ITE College Central

By growing and extending partnerships in the broader community that ITE is embedded in, our staff and students gain opportunities to keep abreast with green developments and also put their ideas and skills to benefit those around us.

## Strong Industry Engagement in Co-Creating Learning

In 2022, ITE has **253 active Industry MOU/LOC partners**. Of these, 31 were newly signed and about a third are closely related to sustainability, spanning a diverse range of industries.

Our MOU/LOC partners bring their in-depth expertise to enrich student learning, such as providing internship attachment opportunities for students, contributing to our curriculum review and course development, and refreshing or developing new training facilities in ITE. For instance, through our MOU signed with Hyundai Motor and Komoco Motors in Sep 2022, up to 10 students annually will be granted internships at Hyundai Motor and Komoco Motors to acquire the latest knowledge in Hyundai Motor's sustainable mobility, electric vehicles and advanced automotive technologies.

Being setting up new training facilities, existing facilities were also updated. For example, we work with MOU partner ABB Ltd to develop the means for energy monitoring and optimisation of an existing industrial robot in the Automation Hub at CC.

In Jul 2022, ITE became the first education institution to collaborate with ALBA E-Waste to spearhead the adoption of the circular economy in resource sustainability in e-waste management. The collaboration includes the development of sustainability-related online courses and the Agents of Change for E-Waste (ACE) programme to develop our students to be advocates for the circular economy.



Collaboration with ALBA on E-Waste Smart Recycling

Further examples of our collaboration with MOU partners on sustainability are listed below:

- MOU with Sembcorp Industries on innovation in solar technology adoption & environmental solutions
- Joint Poly MOU with Shizuoka Prefecture on research and innovation in agri-food
- MOU with ZF Asia Pacific Pte Ltd and Robert Bosch (South East Asia) Pte Ltd on Autonomous Driving; and BYD Singapore Pte Ltd on Clean Transport
- MOU with Diversey on re-purposing of waste materials, sustainability projects to help the less-privileged
- MOU with Soilbuild Construction Group to collaborate in skills development in the Built Environment sector

Besides MOUs/LOCs, ITE has, today, a strong network of **more than 5,000 companies** partnering us in providing internship opportunities for our students, as well as in co-delivering our wide range of WSDip programmes.

## Industry Projects on Sustainability

With our strong technical expertise, we collaborate with various agencies and firms, including SMEs, to co-develop solutions and improve productivity. In the process, our staff and students learn of challenges that industry face and apply their knowledge and skills.

For example, the Technology Development Centre (TDC) worked with Sport Singapore on a project to use wireless/ultrasonic sensors for real-time monitoring of water at their premises. This project optimised resource allocation, and its leakage detection function helped to minimise water wastage and won the Most Scalable Collaboration Award at the Singapore International Chamber of Commerce (SICC) Award 2022.



Industry Project with Sport Singapore to minimise water wastage



Our Colleges and TDC worked with partners on various projects to bring about water conservation, energy efficient and reduction of carbon footprints, such as:

- Smart digitalisation of water flow meter
- Energy efficient building energy management system
- Smart factor environment monitoring

## Student Industry Projects on Sustainability

Besides staff, our students have also demonstrated their innovation and resourcefulness in various green industry projects. For instance, at the SME Sustainability Drive in collaboration with National Youth Achievement Award Council (NYAA), a team of College East students worked with iTEA Café to reduce the amount of ice given per drink, which significantly reduced electricity and water consumption, winning themselves a sustainability study trip to Switzerland in 2022.



## Global Learning and Sharing on Sustainability

In 2022, ITE joined the Association for the Advancement of Sustainability in Higher Education, a not-for-profit organisation with about 900 Institutes of Higher Learning (IHLs) worldwide as registered members, to learn and share best practices on sustainability.

Through our partnerships with overseas education institutions, our students gain the opportunity to engage and brainstorm alongside their overseas peers. At the ITE-VTC International Student Seminar 2022 themed '*Post COVID-19: Towards an Inclusive and Sustainable Future*' and attended by 600 students from six countries, students jointly presented on their ideas and reflections on sustainable development.

## Local Exchanges

To keep staff abreast on sustainability efforts made in local schools and IHLs, our staff attended the UN Global Compact Network Singapore (GCNS) Summit 2022 to learn from panelists and network with other IHL representatives who are involved in developing sustainability curriculum.

## Community Engagement in Sustainability

We also actively engage the community to increase their eco-consciousness and inculcate sustainability habits.

We organised various green workshops and recycling drives for the community, with students playing an active role in the outreach process. For instance, College West (CW) students taught residents from Choa Chu Kang constituency on how to set up a self-sustaining worm compost system for regeneration of food waste into compost that could be used as plant fertilisers.



Worm Composting Workshop for the Community

In addition to local community service, students also have the opportunity to work on overseas community service projects. For example, 58 students from the three ITE Colleges participated in three community service trips to Batam, Kota Tinggi and Negri Sembilan in partnership with our MOU partner Diversey in Sep 2022, to deliver Diversey's signature 'Soap for Hope' and 'Coffeebriques' recycling programme with a cold-press machine designed by ITE, to help and benefit the underprivileged.

# FY2022 Sustainability Progress

## FY2022 HIGHLIGHTS

### CAMPUS

2.5% ↓

reduction in **Energy Usage** from FY18-20 (avg)



35% ↓

reduction in **Waste Disposal** from FY18-20 (avg)



1,470 **Solar Panels** generating 640MWh of **Solar Energy** annually (for ITE HQ/CC and CE)

31% ↓

reduction in **Paper Usage** from FY18-20 (avg)



**Green Nation Pledge**



- ITE to be a **'Contributor'** and **'Advocate'**

20.5% ↑

increase in **Water Consumption** from FY18-20 (avg)



Implemented **Green Procurement Practices**



1,000kg **e-waste** collected annually at each campus



### CULTURE

42,338

**Staff Learning Places** (100% increase from 21,143 in FY2021)



602 **Academic Staff** participated in **Industry Engagement and Attachments**

391 **Innovation Projects**



0 **Major Workplace Injury**



150 **Sustainability Events for Students**

### CURRICULUM

**ALL** PET Students attend **Eco-Sustainability LifeSkills Module**

23

**Sustainability-related PET Courses/Modules/ Electives**



30

**Sustainability-related CET Courses (including MLCs)**

### COLLABORATION

> 5,000 **Industry Partners**



**Awarded SICC Most Scalable Collaboration Award 2022 for Industry Project**



253 **Active MOU/LOC Partners**



**Note:** In FY2022, activities were still picking up. There were still some Covid-19 restrictions in place, both locally and globally. Going forward, we expect staff and student activities to fully resume. All these will peak by 2024/25 before stabilising at around FY2025. Meanwhile, we will continue to phase in other carbon reduction mitigation measures.




# FY2022 Sustainability Progress

In aligning with GreenGov.SG environmental focus and directions, as well as relevant UN SDG Goals on *'Responsible Consumption and Production'* and *'Climate Change'*, our key environmental sustainability measures for the last 3 years are summarised in [Figure 6](#).

Compared to our baseline, ITE has:

- Reduced its Carbon Emissions (Scope 1 & Scope 2) in FY2022, and cut down significantly in terms of its waste generation and paper usage.
- However, water consumption has increased significantly in FY2022 by 20%. This is largely attributed to the increase in footfalls following the resumption of work and lessons on campus after the removal of COVID-19 Safe Management Measures, as well as high number of events held by community groups and other agencies within our premises.

Figure 6 – Sustainability Measurements

UN SDGs	Indicators	FY2022	FY2021	Baseline* (Average of FY2018 - 2020)
<b>1 Campus</b>   	<b>Responsible Consumption &amp; Action For Climate Change</b>			
	<b>Carbon Emissions</b>			
	<b>Scope 1 Emissions</b>			
	Gas consumption (in kWh)	126,533 kWh	152,348 kWh	149,080 kWh
	Gas consumption (Kg CO <sub>2</sub> e)	<b>25,544</b>	<b>30,759</b>	<b>30,096</b>
	<b>Scope 2 Emissions</b>			
	Electricity Usage (in kWh)	40,170,287 kWh	38,647,512 kWh	41,186,772 kWh
	Electricity Usage (Kg CO <sub>2</sub> e)	<b>16,297,085</b>	<b>15,679,401</b>	<b>16,709,473</b>
	<b>Total of Scope 1 &amp; 2 Emissions</b>			
	Gas & Electricity (kWh)	40,296,820 kWh	38,799,860 kWh	41,335,852 kWh
	Gas & Electricity (Kg CO <sub>2</sub> e)	<b>16,322,629</b>	<b>15,710,160</b>	<b>16,739,569</b>
	<b>Water Consumption</b>	347,576 m <sup>3</sup>	258,840 m <sup>3</sup>	288,420 m <sup>3</sup>
<b>Waste Generation</b>	524 Tonnes	598 Tonnes	807 Tonnes	
<b>Paper Usage</b>	29 Tonnes	25.8 Tonnes	42 Tonnes	




**Note:** Gas consumed by our cafeteria stallholders/commercial tenants can be excluded in our reporting as they hold separate metering accounts.

# FY2022 Sustainability Progress

Other measurements supporting the relevant UN SDGs are also shown in [Figure 7](#).

- In supporting **quality education**, the high Student Enrolment in our various programmes (PET, CET and WSDip), as well as the high Student Success and Employment rate in FY2022, will continue to motivate us to do more and better, especially in expanding the progression pathways for our students and graduates via the ITE Diploma pathway.
- In promoting **decent work and economic growth**, our staff have shown keenness to keep themselves relevant via learning programmes and participation in Industry Engagement (IE) and Industry Attachment (IA). With rapid changes happening in industry, IA/IE increasingly forms a critical component for staff to refresh and renew their skills. Through IE/IA, staff are able to bring the latest knowledge and industry practices back to ITE, which can in turn serve as important input in terms of new courses, curriculum design, workplace practices, industry projects, as well as other solutioning opportunities with the industry.
- In supporting **innovations and partnerships**, we have seen our network of industry partners growing over the last 3 years. These partnerships have not only played an instrumental role in ensuring the relevance and richness of our student learning experience, they have also helped in our staff capability development. We will continue to grow and forge new collaborations and partnerships going forward.





Figure 7 – Sustainability Measurements

UN SDGs	Indicators	FY2022	FY2021	FY2020
<b>2 Curriculum</b> 	<b>Quality Education and Economic Growth</b>			
	PET Enrolment	27,849	28,231	28,149
	CET Training Places	46,732	44,327	32,846
	Work-Study Diploma (WSDip) Enrolment	1,346	929	736
	Student Success Rate	90.8%	89.8%	88.0%
	Graduate Employability	82.9%	82.9%	77.9%
<b>3 Culture</b> 	<b>Sustainable Human Capital</b>			
	Total No. of Staff Learning Places	42,338	21,143	20,230
	% of Academic Staff participate in Industry Engagement (IE) and Industry Attachment (IA)	36% (602)	41% (655)	30% (468)
	No. of Innovation Projects [% on Sustainability-related projects]	391 [36 (9%)]	311 [29 (9%)]	300 [8 (3%)]
<b>4 Collaboration</b> 	<b>Partnerships on Sustainability and Innovations</b>			
	No. of Active MOU/LOC Industry Partners	253	220	181
	No. of New MOU/LOC Industry Partners	31	62	27
	No. of New MOUs/LOCs with Sustainability focus	10 (32%)	8 (13%)	2 (7%)
	No. of Internship Companies	4,894	4,862	3,913
	No. of WSDip Companies	318	181	179

# Looking Ahead: ITE's Aspirations

As we align with the directions set under GreenGov.SG, our Sustainability aspirations are summarised in [Figure 8](#).

Figure 8 – Key Targets and Initiatives Aligned with GreenGov.SG

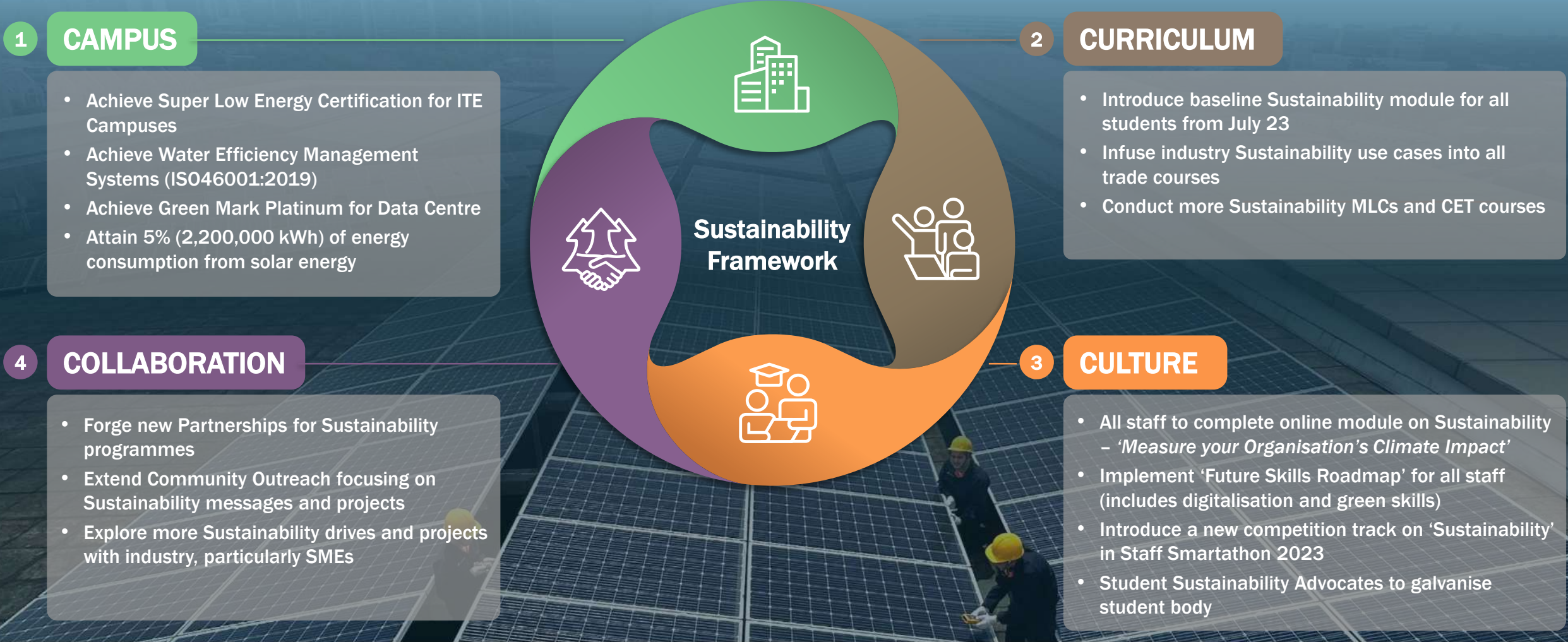
S/N	Environmental Sustainability Indicators	Baseline (Average of FY2018 – 20)	Long-Term Targets	Year to be achieved	KEY ACTIONS
1	<b>Annual Energy Usage (Electricity &amp; Gas)</b> 	41,335,852 kWh  94.59 EUI (kWh/m <sup>2</sup> )	<b>10% Reduction</b> in Energy Utilisation Index (EUI) <ul style="list-style-type: none"> <li>Reduce by <b>4,133,585 kWh</b></li> </ul> *Equivalence of <b>9.46 Energy Utilisation Index (EUI)</b>	2030	<ul style="list-style-type: none"> <li>Adopt Green Procurement and switch to relevant low-energy or energy-efficient devices</li> <li>Review/Calibrate the efficiency of our Building Management System</li> <li>Convert unnecessary air-con spaces to non air-con spaces (i.e. corridor/foyer within air-con spaces)</li> <li>Consolidate operations/activities within designated facilities</li> <li>Plan, implement and monitor Energy Saving initiatives, through an Energy Audit process (half-yearly)</li> <li>Educate ITE community on reduction of electricity/gas usage</li> <li>Achieve Green Mark Platinum <b>Super Low Energy Standards by 2025</b> [CE – 2023; CC – 2024; CW – 2025]                             <ul style="list-style-type: none"> <li>Install relevant chillers, high volume fans, etc.</li> <li>Educate ITE community on reduction of electricity</li> <li>Prepare report and apply to BCA for audit</li> </ul> </li> <li>Achieve <b>Green Mark Platinum for Data Centre</b> by 2025</li> <li><b>5% (2,200,000 kWh) of energy consumption from solar energy</b> by 2025 – Install vertical solar panels at the 3 campuses [CE – 2023; CC – 2024; CW – 2025]</li> </ul> 
2	<b>Annual Water Consumption</b> 	288,420 m <sup>3</sup>  19 WEI (l/person/day)	<b>10% Reduction</b> in Water Consumption <ul style="list-style-type: none"> <li>Reduce by <b>28,842 m<sup>3</sup></b></li> </ul> *Equivalence of <b>1.9 Water Efficiency Index (WEI)</b>	2030	<ul style="list-style-type: none"> <li>Install relevant devices to reduce volume of water from taps and reduce wastage</li> <li>Reduce frequency of jet washing at common circulation areas</li> <li>Use less water in landscape irrigation</li> <li>Educate ITE community on reduction of water usage</li> <li>All ITE premises are <b>Water Efficient Building (WEB) Certified</b>. We will next seek to achieve <b>ISO46001:2019 Water Efficiency Management Systems</b> by 2025</li> </ul>
3	<b>Waste Disposal</b> 	807 Tonnes  0.03 WDI (kg/person/day)	<b>30% Reduction</b> in Waste Disposal <ul style="list-style-type: none"> <li>Reduce by <b>242 tonnes</b></li> </ul> *Equivalence of <b>0.009 Waste Disposal Index (WDI)</b>	2030	<ul style="list-style-type: none"> <li>Separate out food waste, collect and work with NEA to adopt off-site food waste treatment at Tuas Nexus (2025)</li> <li>Plan and implement recycling of different training materials (i.e. electric wires, metals, pipes, etc.) and other recyclable items (e.g. paper, plastic bottles, aluminum cans, e-Waste, etc.)</li> <li>Educate stakeholders, canteen vendors, staff and students on reducing food waste</li> </ul>

\* [Note](#): Texts in green are targets aligned with national directions under GreenGov.SG

# Looking Ahead: Key Action Plans

To fulfil our environmental sustainability goals and targets, our key action plans are outlined in [Figure 9](#). Works are already on-going by various project teams. We will communicate the targets and key actions to all staff to ensure alignment and buy-in, as well as to encourage further ground-up initiatives and support.

Figure 9 – Sustainability Action Plans



# Reflections & Conclusion

Putting together our first Environmental Sustainability Disclosures has been a very useful exercise, as we learned about ways to kickstart our Net Zero journey, how to calculate and track carbon footprints, and where we stand currently compared to national targets and goals. It has also enabled us to take a holistic and longer-term view in designing our responses towards achieving Net Zero emissions by 2045.

Moving forward, there is scope for greater learning, innovations and improvement, which we endeavor to do so.

## GLOSSARY

BCA	Building and Construction Authority
CCA	Co-Curricular Activity
CC	ITE College Central
CE	ITE College East
CET	Continuing Education and Training
CW	ITE College West
EMC	Environment Management Committee
ESI	Environmental Sustainability Initiatives
HSBC	Hong Kong and Shanghai Banking Corporation
IA	Industry Attachment
IE	Industry Engagement
IHL	Institute of Higher Learning
LOC	Letter of Collaboration
MLC	Micro-Learning Course
MOU	Memorandum of Understanding
NEA	National Environment Agency
NTU	Nanyang Technological University
NYAA	National Youth Achievement Award Council
PET	Pre-Employment Training
PUB	Public Utilities Board
SDG	Sustainable Development Goal
SICC	Singapore International Chamber of Commerce
TDC	Technology Development Centre
TPET	Technical and Professional Education and Training
VTC	Vocational Training Council, Hong Kong SAR
VTE	Vocational and Technical Education
WSDip	ITE Work-Study Diploma



Join Us  
in our Sustainability  
Journey!

**THANK YOU**

