



SUSTAINABILITY REPORT

20
21

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INTRODUCTION

The Covid-19 pandemic continued to dominate 2021. Even as majority of Singapore's population got vaccinated, new variants emerged which required additional booster shots and more time to achieve herd immunity; clusters forming at hotspots required constant adjustments to prevailing measures to stem the spread and avoid overtaxing our healthcare system.

Singapore's construction industry continued to face mounting challenges from acute labour shortage to skyrocketing material costs, resulting in some firms going under.

The downtime due to Covid-19 amounted to over 2,000 lost man-days for HSL and further strained our projects' progress.

Despite the many challenges faced, HSL continued to seek avenues to contribute its engineering expertise towards a better world. This year, we launched the HSL Sustainability Story (<https://youtu.be/gV2FyzwZkQ8>) which outlines the four areas of our business in Water, Energy, Food and Environment (WEFE). As we pivot our business to WEFE amidst a dynamic landscape, we continue to prioritise our people and the safe execution of our projects.

This report covers what HSL has achieved against the backdrop of the Covid-19 pandemic, and sets a precedent in reporting how we have supported a more sustainable world in line with our WEFE vision.



LABOUR

For the most part of 2021, working from home (WFH) remained the default in Singapore. With the exception of the month of April where up to 75% of staff were allowed back to workplaces, Singapore continued to encourage the transition towards a hybrid work model, allowing no more than 50% of employees who are able to work from home at the workplace at anytime.

Default WFH
not more than 50%
of employees at the
workplace at anytime

The future of work, as shared by our CEO during town hall, must thus navigate the balance between allowing employees autonomy and flexibility without sacrificing productivity and team cohesion.

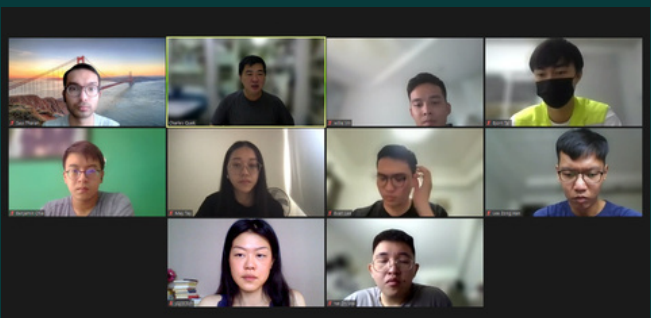
As
remote working
becomes the norm,
the way we hire,
engage & pay our
people will change

Salary

1. **Staff:** Restored pre-Covid salary levels & introduced extra task allowances
2. **Workers:** structured performance-based incentive scheme resulting in an 18% increase in average incentive per worker

Learning & Development

1. Initiated CEO mentoring sessions on HSL's key business areas (WEFE) for a pilot group of young engineers
2. Plan to put in place an annual training program for all employees (HITS)



LABOUR

Restoring

staff salaries to
pre-Covid levels

The 2020 Salary Rationalisation Exercise lasted from June to December and was initiated at the onset of the pandemic to save jobs and surmount the crisis together. From January 2021, staff had their salaries return to pre-pandemic levels with the exception of Management team, who continued to take pay cuts in solidarity with the company.

75

staff expanded their
job scopes & earned
task allowances

Instead of replacement hires in 2021, we redistributed tasks so that existing staff had the opportunity to grow in their roles while earning extra allowances.

16

cross-border hires

Despite border restrictions, we capitalised on the momentum of remote working and managed to set up teams in Malaysia, Philippines, Myanmar and Bangladesh, some of whom are existing staff who were unable to return to Singapore.

↑18%

Average incentive
per worker

To make the most of the labour we had in the manpower crunch, HSL devised a performance-based incentive scheme that remunerates according to tasks accomplished. This boosted workers' incentives an additional 18%, relative to pre-Covid times.



LABOUR

>\$270,000

**HSL Care Fund
disbursed to over
500 employees**

We continued to do our best to help employees whose livelihoods have been severely impacted by Covid-19. Over S\$270,000 of the HSL Care Fund has been disbursed to more than 500 employees or used for pandemic relief in India, Bangladesh, Sri Lanka and Myanmar where our employees have families in.

Adequate training and support must be provided in the bid to increase productivity.

In 2021, we clocked close to 20,000 total training hours, of which almost two-thirds went into Safety topics, underlying our commitment towards a safe and healthy workforce.

In October, we launched the Graduate Development Programme to look into HSL's key business areas in WEFE, with CEO Charles taking the helm.

While the HSL In-house Training and Sharing (HITS) has been in place since 2015, it gradually took a backseat as we focused our efforts on rebounding stronger. In 2022, we aim to put in place a year-round calendar of HITS for all employees.

Close to
20,000
**Total training
hours**

64%
**of total training
hours spent on
Safety topics**

“Higher productivity should come from a combination of improved processes, effective upskilling, & respect for employees' wellbeing.”

— Norna, HR Head



SAFETY & HEALTH

Our people are our greatest asset in achieving a sustained, safe and healthy workplace. Our efforts are thus focused on keeping our employees engaged and cared for. HSL group has close to 700 migrant workers, of which approximately 530 are in Singapore.

Employee Wellbeing

1. Mental wellness: Mass psychoeducation workshops and platform for two-way communication with Management
2. Physical wellness: Care packs and 3 meals catered for those under movement restriction order

KNOW App

A comprehensive digital safety management tool first introduced in 2020



2.6 mil
Total man-hours
for 2021

>2,000
Lost man-days
due to Covid-19
(Sep-Oct '21)



10.5 mil
Safe man-hours
since last Lost
Time Injury

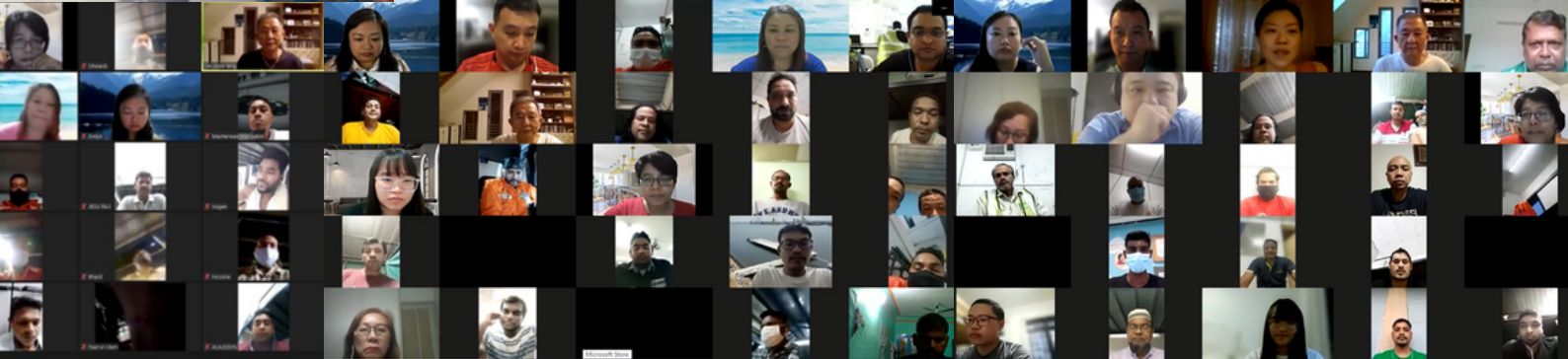
SAFETY & HEALTH

KEY INDICATOR	ACTIVITY / PROJECT	OBJECTIVE
Mental Wellness	<ul style="list-style-type: none">• Mass psychoeducation workshops in Tamil & Bengali (Oct-Nov '21)• Regular Zoom sessions with Chairman	To educate and equip workers with skills to manage stress and empower them by providing a platform for two-way communication with Management.
Physical Wellness	<ul style="list-style-type: none">• Care packs containing food and hygiene items given out quarterly• 3 meals catered for workers under the Movement Restriction Order	To prioritise employees' wellbeing so that they can continue to give their best to the company.









SAFETY & HEALTH

The digitalisation trend has gained traction due to the pandemic as digital products and solutions, such as digitally enabled collaboration and remote monitoring become favoured over physical ones. Since 2020, digitalisation has been one of HSL's key thrust in improving our productivity.



Expanding use of KNOW App : Easy-to-find Information Improves Transparency & Audit-Readiness

A comprehensive tool to digitalise safety management, KNOW app was first introduced to employees in 2020 and has been expanded to our new project sites this year.

>1,000
Permit-To-Work
processed each week



HSL Safety Team in Nov 2019

>2,000
Checklists & forms
processed each week

Going completely
Paperless
for all checklists &
forms

On 23 November, HSL Safety Manager Norshairazi was invited to share about KNOW App at the Contractor Safety Watch Group, a platform initiated by PUB to reinforce safety culture through the sharing of best industrial practices.

>2 hours
saved per person per
day on Whatsapp

As illustrated by our WEFE vision, HSL aims to contribute in the areas of **Water**, **Energy**, **Food** and **Environment** (WEFE) towards a more sustainable world. This is how we performed in 2021.

WEFE 2021

Key highlights of how HSL contributed to WEFE in 2021:

New projects

1. Meranti Retention Pond
2. Pulau Punggol Barat Sewerage Upgrading

AgriHub

A cost-effective, low-carbon, controlled environment food production & distribution hub

MOU with SK ecoplant

Introduction & Implementation of Solid Oxide Fuel Cell (SOFC) in Singapore & the region

AOP Skid

In-house designed & built Advanced Oxidation Process (AOP) skid for wastewater management

Jurong Island Innovation Challenge

1. Hydrokinetic turbines
2. Fuel cell technology
3. Tank waste as a resource

Rainwater harvesting booster pumps

Increasing rainwater usage by up to 5x

For more details about HSL's WEFE vision, please visit:
<https://youtu.be/gV2FyzwZkQ8>

In terms of our project wins in 2021, HSL is grateful to have two new additions that contribute to better stormwater management, wastewater management, and a cleaner environment.

01 — Retention pond with landscape and biodiversity features at Meranti, Jurong Island

The retention pond will serve as a water catchment for 80 Ha of surrounding land during extreme stormwater events and increase flood resilience in Jurong Island.

Designed as nature-based solution, the pond will not be lined with impervious materials but instead integrate with Jurong Island's existing natural sandy terrain. Trees, shrubs and herbs will be planted to promote biodiversity and wildlife and create a natural ecosystem.

↑ **Flood
resilience**

Water catchment for
80 Ha
of surrounding land

02 — Sewerage Scheme to serve Pulau Punggol Barat Contract 3

This project allows us to contribute to efficient wastewater management and preserve a clean environment for surrounding communities.

Located in Seletar, it will channel the loads from the Construction Industries Park at Pulau Punggol Timor for treatment at the Changi Water Reclamation Plant. Just as we are commissioning our C22B project, we are embarking on a new sewerage project that will transport wastewater to it for treatment.

Retention pond with landscape & biodiversity features in Meranti, Jurong Island



AGRIHUB



Engineering Sustainability, Building Resilience

In 2021, HSL set up CEA Asia, its Food arm which will lead the development and management of a cost-effective, low-carbon, controlled environment food production and distribution hubs (AgriHubs).

HSL AgriHub

We are looking at transforming our existing building facilities into a prototype AgriFood platform, housing leading vertical Farms, FarmTech partners and plant-based FoodTech partners for controlled environment agriculture and aquaculture.



**Enabling
Sustainable Farming**

MOU WITH SK ECOPLANT



Collaboration on the Implementation of Solid Oxide Fuel Cell (SOFC)

On 17 November, HSL CEO Charles Quek was in Seoul to sign two agreements with SK ecoplant to solidify our partnership in exploring opportunities for fuel cell technology.

This breakthrough technology provides stable and sustainable energy solutions for a decarbonised world. This collaboration is an important part of HSL's WEFE vision in supporting the transition towards green energy.



AOP SKID



Led by Chen Feng

Wastewater Management with Advanced Oxidation Process (AOP) Pilot Test

After successful completion of the design, construction and commissioning of AOP skid in April, HSL continued to assist our client with preventative maintenance and ad-hoc technical support through to Q1 2022.

The in-house design and built AOP skid leverages HSL's engineering and construction expertise to provide industry solutions for wastewater management.

**Promote
circularity**
by recovering water for
process reuse

↓ Carbon
emission during
incineration

↓ Cost
of waste disposal
trucking



Left: Construction of AOP Skid in progress; Right: AOP Skid deployed at site

JURONG ISLAND INNOVATION CHALLENGE

Rising to the Sustainability Challenge with Technology & Collaboration

In 2021, HSL participated in the Jurong Island Innovation Challenge (JIIC) to demonstrate our commitment to our WEFE vision. The JIIC seeks solutions in the areas of energy management, emissions reduction, water management, and waste management.



Led by Santosh

01 — Recovering Energy from Discharged Seawater with Hydrokinetic Turbines

HSL, together with Ocean Pixel and New Energy Corporation, proposed the pilot deployment of a Counter-Rotating Hydrokinetic Turbines (CoRHkiT) that utilises discharged seawater to generate power.

Collaborating
with

OceanPixel
fluid . energy . intelligence

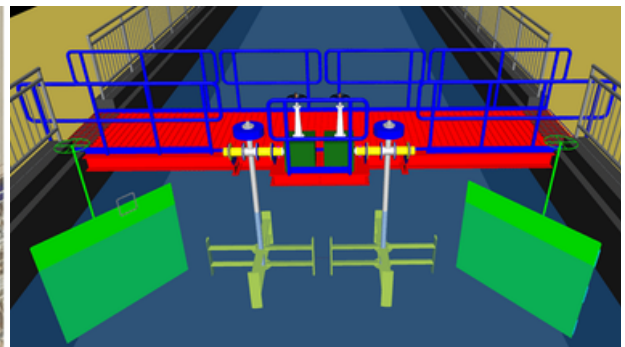
New Energy
CORPORATION

This energy recovery solution contributes to our WEFE vision with an estimated potential annual energy recovery of ~88MWh to 122MWh.

Annual energy
recovery of
**88-122
MWh**

**2 units of
5kW-rated
turbine units
per CoRHkiT**

**Adjustable
gates to control
flow for optimal
performance**



Left: Proposed locations for CoRHkiT; Right: CoRHkiT in the canal

JURONG ISLAND INNOVATION CHALLENGE



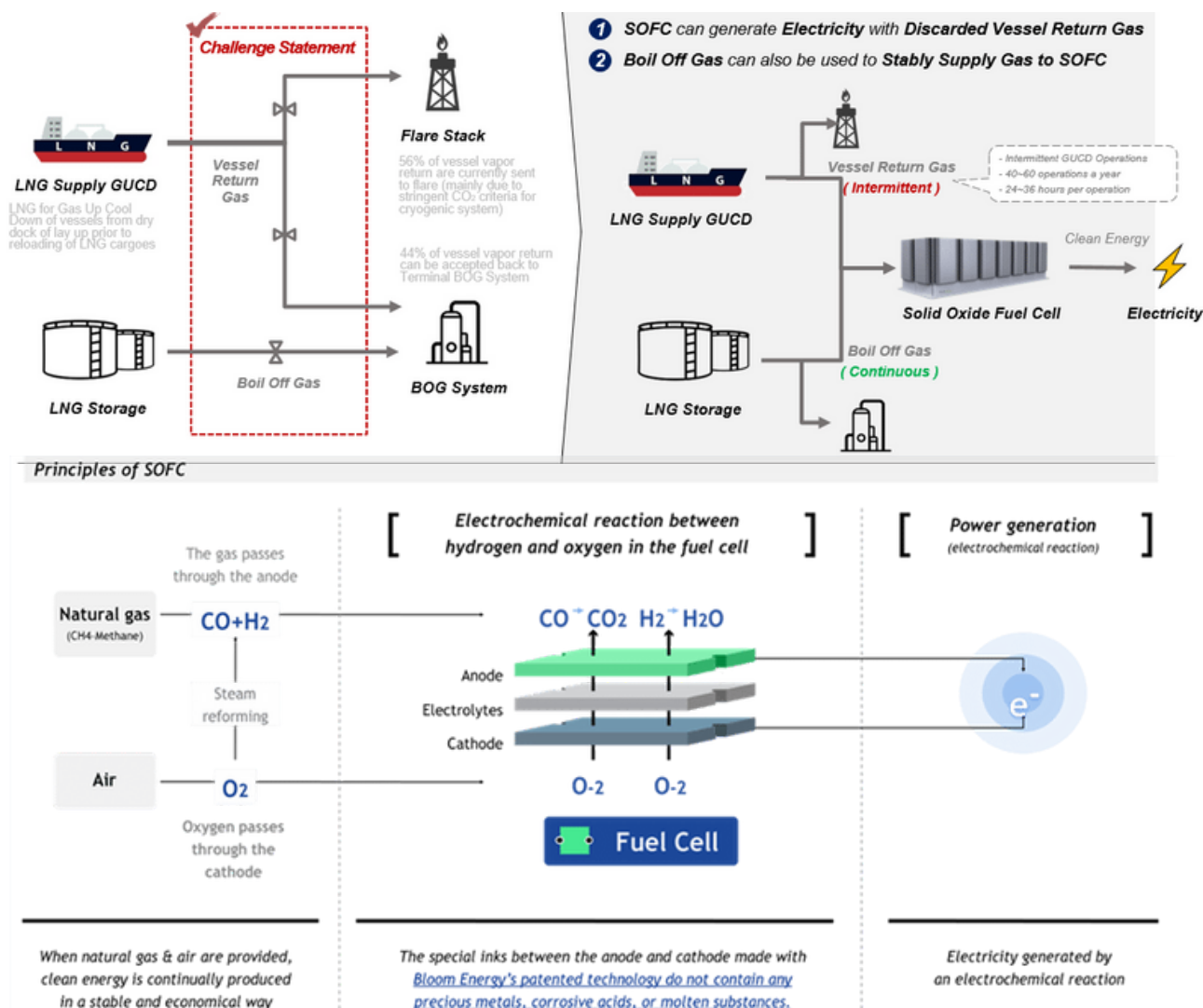
Led by Maung Hla Thein

Collaborating with
SK ecoplant

02 — Converting Waste Gas to Electrical Energy with Fuel Cell Technology

Collaborating with SK ecoplant, HSL proposed the utilisation of Vessel Return Gas (VRG), currently regarded as waste gas, as a fuel for Solid Oxide Fuel Cell (SOFC).

In adopting this breakthrough technology, HSL is able to not only further our WEFE vision but also align itself with the Singapore Green Plan 2030 by demonstrating active decarbonisation efforts towards energy transition.



Top: Diagram of processes involved; Bottom: Principles of SOFC, courtesy of SK ecoplant

JURONG ISLAND INNOVATION CHALLENGE



Led by Chen Feng

Collaborating
with



03 — Tank Waste as a Resource

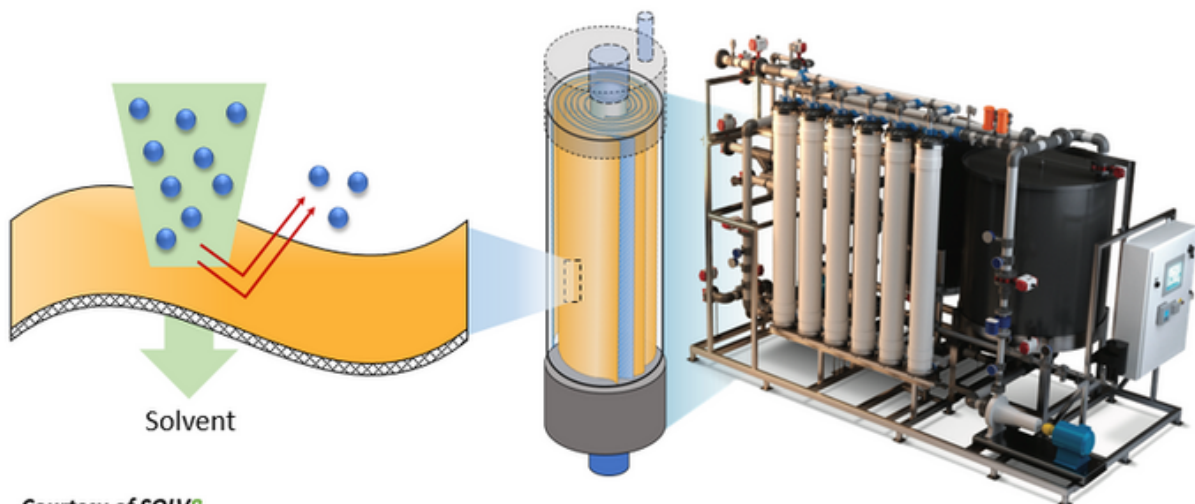
HSL is supporting a deep-tech spinoff from NUS to develop and build a novel process for sustainable recovery of solvents and chemicals from tank cleaning wastes.

By applying membrane separation techniques, we aim to reduce 90% of related energy consumption, while enabling high-purity solvent and chemical recovery and reuse.

Energy
consumption
↓ **90%**

**High flux &
purity**

**Capacity &
installation
flexibility**



Courtesy of SOLV8

Diagram of Solvent Nanofiltration System: molecularly separate chemicals from solvents without heat

RAINWATER HARVESTING



**Increasing
rainwater
usage by
up to 5x**

**Targeting to
meet 15% of
total water
consumption**

Increasing Rainwater Usage Efficiency with Booster Pumps

Since 2017, HSL has installed a total of six rainwater harvesting tanks with a total capacity of 12m³. In 2021, we installed two units of rainwater harvesting booster pumps to boost the water pressure and increase rainwater usage.

Rainwater harvesting is a traditional, sustainable and easy source of water for non-potable usage in our industry building. This reduces the pressure on processed supply water (i.e. PUB tap water) and encourages green living.



KNOWLEDGE SHARING

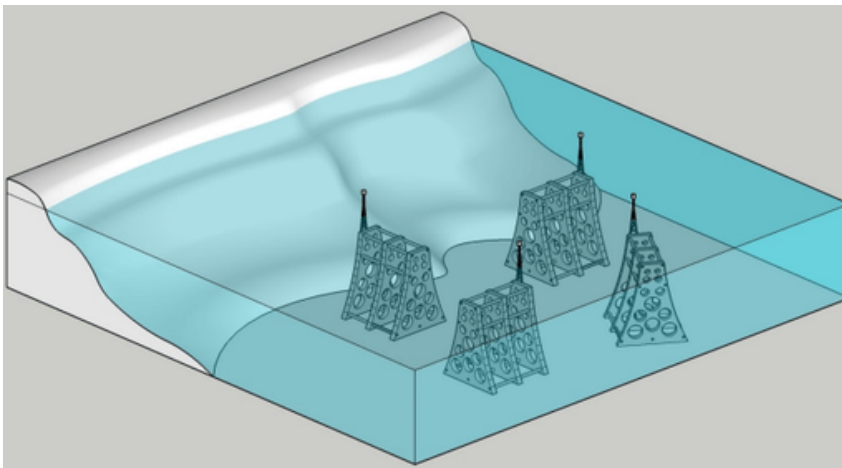
To build a better world, thinkers and doers must come together to share ideas, collaborate and act. From tackling climate change to the future of work, HSL continues to build on its capabilities to adapt, transform and grow.

Forum for Climate Change Adaptation

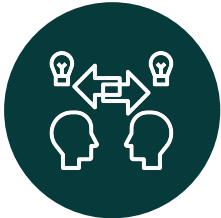
Initiated by HSL in 2020, the FCCA is a group of stakeholders interested in engineered and hybrid solutions that mitigate climate change impacts

Asian Development Bank MAR²E³S

A global knowledge sharing platform on enhancing ocean health by concentrating on four areas - Marine Aquaculture, Reefs, Renewable Energy, and Ecotourism for Ecosystem Services (MAR²E³S)



KNOWLEDGE SHARING



01 — Advancing Industry Knowledge

In 2021, the Forum for Climate Change Adaptation (FCCA) held quarterly sessions online which were well attended. Topics discussed range from educational (e.g. sea-level projections and implications for coastal defence) to case studies and potential projects.

4

Sessions in
2021

8

Topics on
Coastal
Adaptation

>20

Companies

50

Participants per
session on
average

The FCCA also submitted two papers for the Water Convention 2022, a flagship event of the 10th Singapore International Water Week. One was contributed by Delta Marine Consultants, and the other by HSL together with DHI Singapore and the National University of Singapore (NUS).



02 — Sharing on a Global Platform

HSL was invited to present on a webinar series organized by the Asian Development Bank (ADB), where we shared about the Artificial Reef project that we collaborated with NUS to deliver.

The recording may be viewed here:

<https://events.development.asia/learning-events/high-relief-artificial-reefs-biodiversity-enhancement>

CORPORATE SOCIAL RESPONSIBILITY



>\$30,000 RAISED FOR PANDEMIC RELIEF

HSL conducted two donation drives in the months of June and August to contribute to the pandemic relief in India, Bangladesh and Myanmar where some of our employees are from and have families residing in. The amount raised was matched dollar-for-dollar by the company and reached a total of \$31,400.



SPONSORED 72 UNITS OF VENTILATORS

22 units of oxygen concentrators went to Sri Lanka and 50 units to Myanmar for pandemic relief.



As part of the fundraising effort that raised 250 units for Sri Lanka, a HSL representative together with our local partner were invited to the official handing over ceremony held in October at the Foreign Ministry, organized by the Ministry of Foreign Affairs.



DONATED \$15,000 TO LOCAL CHARITIES

HSL participated in three charity golf tournaments in the months of March and July for National Arthritis Foundation, Yellow Ribbon Fund and Kwong Wai Shiu Hospital.

LOOKING AHEAD

2022 will be a defining year. Key decisions on the way we live, work, travel and bank will shape a generation. From tackling climate change to the future of the office, important decisions will be made on humanities' greatest challenges. No country, company or community can tackle the future alone.

Even though the future is at our doorstep, crafting the future of work will take concerted effort and a much longer trajectory.

HSL endeavours to create a people-first and purpose-driven organisation that is able to make a positive impact on the world while propelling future growth.

Our focus will be on developing our people and building up our knowledge, continuing to digitalise our processes, and aligning our efforts towards our WEFE vision, forging a more sustainable and resilient future for all.



ACKNOWLEDGEMENTS

We would like to acknowledge the contributions of the people who worked tirelessly on the projects mentioned within. Below is the list of names of those responsible for its concept and coordination:

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Emlyn	Sim Yun
Hla	Yuyin
Jenny	
Karen	
Norna	
Norshairazi	

**Thank you for your continued support in
our efforts to contribute to a better
world. 🌱**

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